STATE OF CONNECTICUT
CONNECTICUT SITING COUNCIL
Ten Franklin Square, New Britain, CT 06051
Phone: (860) 827-2935 Fax: (860) 827-2950
E-Mail: siting.council@ct.gov
www.ct.gov/csc

November 23, 2009

Thomas J. Regan, Esq.
Brown Rudnick LLP
CityPlace I, 185 Asylum Street
Hartford, CT 06103

RE: **EM-CLEARWIRE-015-091030** – Clearwire Corporation notice of intent to modify an existing telecommunications facility located at 623 Pine Street, Bridgeport, Connecticut.

Dear Attorney Regan:

The Connecticut Siting Council (Council) hereby acknowledges your notice to modify this existing telecommunications facility, pursuant to Section 16-50j-73 of the Regulations of Connecticut State Agencies with the following conditions:

- The coax shall be installed per the structural analysis report dated October 28, 2009 and sealed by Richard Sambor, P.E.; and

- Not more than 45 days after completion of construction, the Council shall be notified in writing that the coax was installed as specified.

The proposed modifications are to be implemented as specified here and in your notice dated October 30, 2009, 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. Please be advised that the validity of this action shall expire one year from the date of this letter. 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,

S. Derek Phelps
Executive Director

SDP/MP/CDM/laf

c: The Honorable Bill Finch, Mayor, City of Bridgeport
Melanie J. Howlett, Associate City Attorney, City of Bridgeport
Robert Knapp, Radio Communications

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November 6, 2009

The Honorable Bill Finch
Mayor
City of Bridgeport
City Hall Annex
999 Broad Street
Bridgeport, CT 06604

RE: **EM-CLEARWIRE-015-091030** – Clearwire Corporation notice of intent to modify an existing telecommunications facility located at 623 Pine Street, Bridgeport, Connecticut.

Dear Mayor Finch:

The Connecticut Siting Council (Council) received this request to modify an existing telecommunications facility, pursuant to Regulations of Connecticut State Agencies Section 16-50j-72.

If you have any questions or comments regarding this proposal, please call me or inform the Council by November 20, 2009.

Thank you for your cooperation and consideration.

Very truly yours,

S. Derek Phelps

S. Derek Phelps
Executive Director

SDP/jbw

Enclosure: Notice of Intent

c: Melanie J. Howlett, Associate City Attorney, City of Bridgeport

CSC
CONNECTICUT SITING COUNCIL

CC EM-CLEARWIRE-015-091030

In re:
Clearwire Corporation's Notice to Make an Exempt Modification to an Existing Facility at 623 Pine Street, Bridgeport, Connecticut. : EXEMPT MODIFICATION NO. _____
: October 30, 2009

ORIGINAL

NOTICE OF EXEMPT MODIFICATION

Pursuant to Conn. Agencies Regs. §§ 16-50j-73 and 16-50j-72(b), Clearwire Corporation ("Clearwire") hereby gives notice to the Connecticut Siting Council ("Council") and the City of Bridgeport of Clearwire's intent to make an exempt modification to an existing lattice tower (the "Tower") located at 623 Pine Street in Bridgeport, Connecticut. Specifically, Clearwire plans to add 3 WiMAX antennas, 3 Samsung Remote Radio Heads ("Remote Radio Heads") and 2 Dragonwave dishes required for backhaul. Under the Council's regulations (Conn. Agencies Regs. § 16-50j-72(b)), Clearwire's plans do not constitute a modification subject to the Council's review because Clearwire will not change the height of the tower, will not extend the boundaries of the compound, will not increase the noise levels at the site, and will not increase the total radio frequency electromagnetic radiation power density at the site to levels above applicable standards.

Clearwire is currently developing a 4G wireless broadband network to provide high-speed wireless data and VoIP service within the State of Connecticut. Clearwire's 4G service leverages the WiMAX technology to enable enhanced wireless data communications. In order to accomplish the upgrade at this site, Clearwire plans to add 3 WiMAX antennas, 3 Remote Radio Heads, 2 dishes and install additional WiMAX-related electronic equipment at the base of the Tower.

BROWN RUDNICK LLP
CITYPLACE I
185 ASYLUM STREET
HARTFORD, CT 06103
(860) 509-6500

The Tower is a 248-foot lattice tower located at 623 Pine Street in Bridgeport, Connecticut (latitude 41° 09' 56.5" N, longitude 73° 12' 59.9" W). The property is owned by Andrew Knapp, Lillian Knapp and Robert Knapp. Multiple carriers are currently located on the Tower. Presently,

Sprint has 9 CDMA antennas spread over three sectors with an antenna centerline at 85 feet. Sprint's base station equipment is located adjacent to the base of the Tower. A site plan with the Tower specifications is attached.

Clearwire plans to remove and replace 3 of Sprint's existing antennas and install 3 WiMAX antennas. Clearwire also proposes to locate 3 Remote Radio Heads (one per sector) and add 2 Dragonwave dishes on the Tower. The new antennas, Remote Radio Heads and dishes will have the same centerline as the existing antennas – 85 feet. Six cables, 5/16" in diameter, will run to the new WiMAX antennas (two per panel). Additionally, 2 coax cables, ½" in diameter, will run to the new dishes (one per dish). To confirm that the Tower can support these changes, Clearwire commissioned URS Corporation to perform a structural analysis of the Tower (attached). According to the structural analysis dated October 28, 2009; "The tower and its foundation are considered structurally adequate with the wind load classification specified above and the proposed antenna loading" (Page 3, Structural Analysis Report).

Within the existing compound Clearwire will install one WiMAX power cabinet inside an existing equipment room within the existing equipment building located adjacent to the Tower. The existing room that will house the power cabinet is approximately 20-feet by 10-feet. Hence, no increase in the size of the building is necessary. Excluding brief, minor, construction-related noise during the addition of the antennas and dishes and the installation of the equipment cabinets, the proposed changes to the Tower will not increase noise levels at the site.

The addition of the new WiMAX antennas, Remote Radio Heads and dishes will not adversely impact the health and safety of the surrounding community or the people working on the Tower. The total radio frequency exposure measured around the Tower will be below the National Council on Radiation Protection and Measurements' ("NCRP") standard adopted by the

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185 ASYLUM STREET
HARTFORD, CT 06103
(860) 509-6500

Federal Communications Commission ("FCC"). The worst-case power density analysis for the antennas, measured at the base of the Tower, indicates that the proposed antennas will emit .000261% of the NCRP's standard for maximum permissible exposure. A cumulative power density analysis indicates that together, all of the antennas on the Tower will emit 51.41% of the NCRP's standard for maximum permissible exposure. Therefore, the power density levels will be below the FCC mandated radio frequency exposure limits in all locations around the Tower, even with extremely conservative assumptions. The power density analysis is attached.

In conclusion, Clearwire's proposed plan to remove and replace 3 of Sprint's existing antennas with 3 WiMAX antennas and to add 3 Remote Radio Heads, 2 dishes and WiMAX associated base station equipment does not constitute a modification subject to the Council's jurisdiction because Clearwire will not increase the height of the Tower, will not extend the boundaries of the site, will not increase the noise levels at the site, and the total radio frequency electromagnetic radiation power density will stay within all applicable standards. *See* Conn. Agencies Regs. § 16-50j-72.

Clearwire Corporation

By: _____

Thomas J. Regan
Brown Rudnick LLP
185 Asylum Street, CityPlace I
Hartford, CT 06103-3402
Email - tregan@brownrudnick.com
Phone - 860.509.6522
Fax - 860.509.6622

BROWN RUDNICK LLP
CITYPLACE I
185 ASYLUM STREET
HARTFORD, CT 06103
(860) 509-6500

Certificate of Service

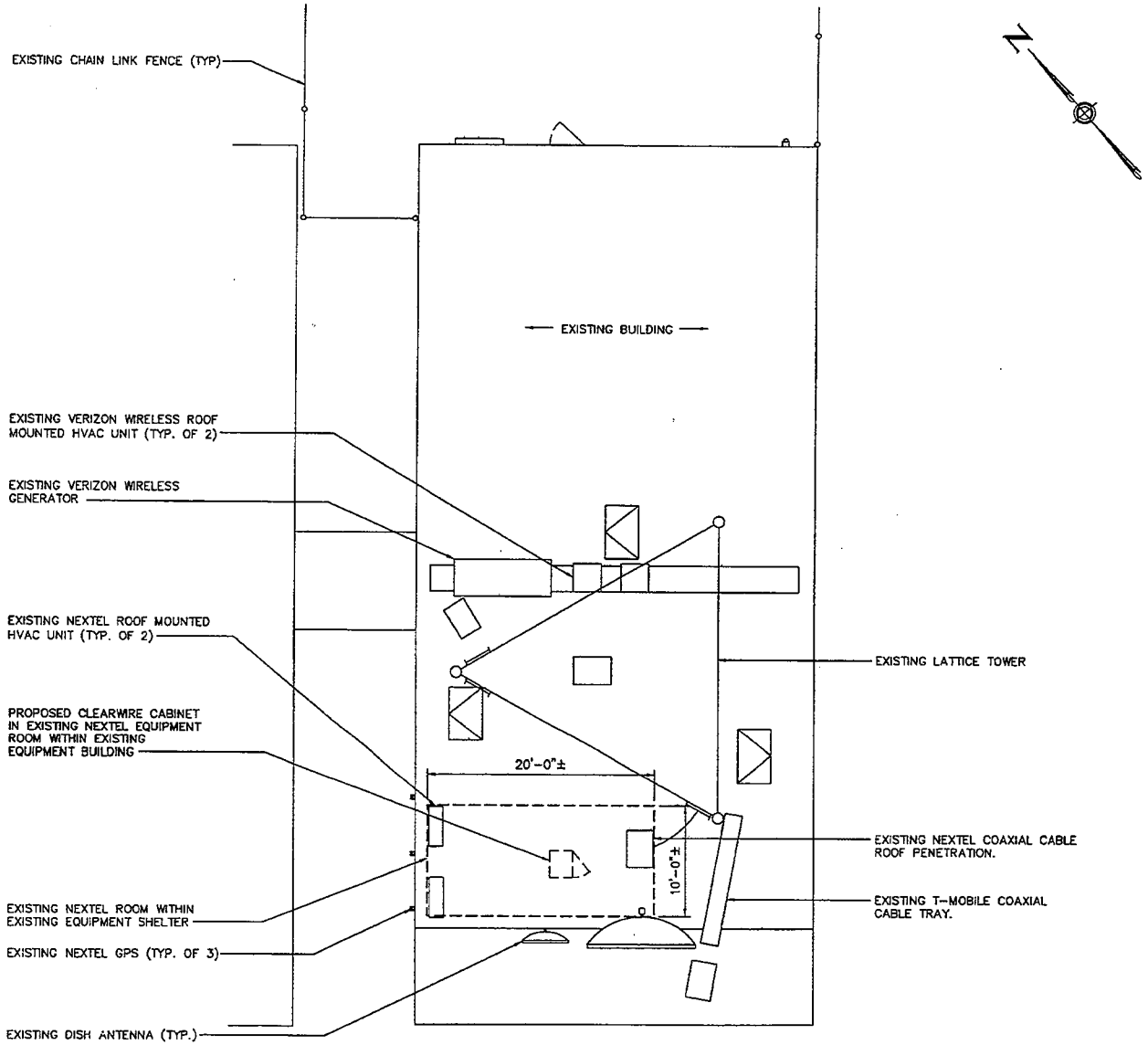
This is to certify that on this 30th day of October, 2009, the foregoing Notice of Exempt Modification was sent, via first class mail, to the following:

City of Bridgeport
Office of the Mayor
Mayor Bill Finch
999 Broad Street
Bridgeport, CT 06604

By: _____
Thomas J. Regan

40265917 v1 - 025064/0017

BROWN RUDNICK LLP
CITYPLACE I
185 ASYLUM STREET
HARTFORD, CT 06103
(860) 509-6500



1 / SC-1 PARTIAL ROOF PLAN

SCALE: 1" = 15'-0"

clearwire
4400 CARILLON POINT
KIRKLAND, WA 98033

TRANSCEND WIRELESS, LLC
10 INDUSTRIAL AVENUE
MAHWAH, NJ 07430

A&E FIRM
URS CORPORATION AES
500 ENTERPRISE DRIVE, SUITE 3B
ROCKY HILL, CONNECTICUT
1-(860)-529-8882

NO.	DATE	REVISIONS	BY	CHK	APP'D
2	10/22/09	FINAL	KAP	JCF	ICA
1	10/06/09	REVIEW	PD	JCF	ICA

NOT TO SCALE | DESIGNED BY: JCF | DRAWN BY: PD

A&E SEAL

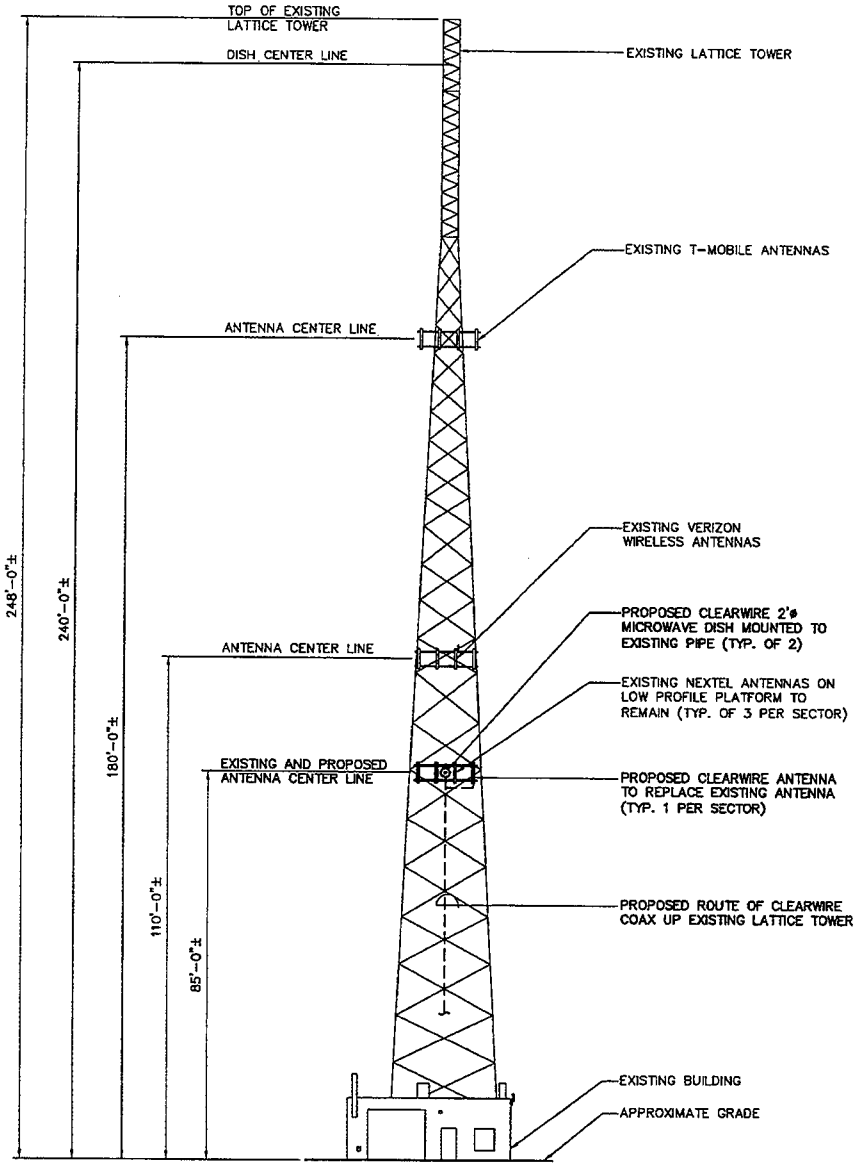
STATE OF CONNECTICUT
IGNACIO C. ARRAIZA
No. 8704
LICENSED ARCHITECT

BRIDGEPORT WEST

CT-BDR0073

623 PINE STREET
BRIDGEPORT, CT 06605

PROJECT NO.	DRAWING NAME	DATE	SHEET NO.	REV
TW3-017 36924371	SC-1	10/06/09	1 OF 2	0



1 / SC-2 **TOWER ELEVATION**
SCALE: 1" = 40'-0"

clearwire
4400 CARILLON POINT
KIRKLAND, WA 98033

TRANSCEND WIRELESS, LLC
10 INDUSTRIAL AVENUE
MAHWAH, NJ 07430

A&E FIRM
URS CORPORATION AES
500 ENTERPRISE DRIVE, SUITE 3B
ROCKY HILL, CONNECTICUT
1-(860)-529-8882

NO.	DATE	REVISIONS	BY	CHK	APP'D
2	10/22/09	FINAL	KAP	JCF	ICA
1	10/06/09	REVIEW	PD	JCF	ICA

NOT TO SCALE | DESIGNED BY: JCF | DRAWN BY: PD

A&E SEAL

STATE OF CONNECTICUT
IGNACIO C. APPIANI
No. 870
LICENSED ARCHITECT

BRIDGEPORT WEST

CT-BDR0073

623 PINE STREET
BRIDGEPORT, CT 06605

PROJECT NO.	DRAWING NAME	DATE	SHEET NO.	REV
TW3-017 36924371	SC-2	10/06/09	2 OF 2	0

DETAILED STRUCTURAL ANALYSIS AND EVALUATION OF AN EXISTING 248' SSVMW SELF SUPPORT LATTICE TOWER FOR NEW ANTENNA ARRANGEMENT

Site I.D #: **CT-BDR0073**
Site Name: **Bridgeport West**
Address: **623 Pine Street,**
Bridgeport, CT 06605

prepared for

clearwire
wireless broadband

440 CARILLION POINT
KIRKLAND, WA 98033

TRANSCEND WIRELESS, LLC
10 INDUSTRIAL AVENUE,
MAHWAH, NJ 07430

prepared by

URS

URS CORPORATION
500 ENTERPRISE DRIVE, SUITE 3B
ROCKY HILL, CT 06067
TEL. 860-529-8882

36924371.00017
TW3-017 (Rev 1)

October 28, 2009

TABLE OF CONTENTS

1. EXECUTIVE SUMMARY

This report summarizes the structural analysis of the existing 248' self support lattice tower structure, located at 623 Pine Street, Bridgeport, CT. The analysis was conducted in accordance with the 2005 Connecticut State Building Code and the TIA/EIA-222-F standard for a basic wind velocity of 90 mph (fastest mile) and 78 mph (fastest mile) concurrent with 0.50" ice. The antenna loading considered in the analysis consists of all existing and proposed antennas, transmission lines, and ancillary items as outlined in the Introduction Section of this report. The proposed Clearwire modification is as follows:

Proposed Antenna and Mount	Carrier	Antenna Center Elevation
On the existing Sprint Nextel T-frame:-		
Remove:		
(3) KWM AM-X-WM-17-65-00T antennas with (3) RET's and (3) TMA's (1) Radiowaves HPLP1-23 dish	**Sprint Nextel (Existing)**	
Install:		**@ 88'**
(3) Argus LLPX310R antennas (3) Samsung Remote Radio Heads U-RAS (2) Dragonwave 0.6m dishes and (2) 1/2" dia coax (6) Argus APC-D8 coax	**Clearwire (Proposed)**	

The results of the analysis indicate that the tower structure has the capacity to support the proposed loading conditions. **The tower and its foundation are considered structurally adequate with the wind load classification specified above and the 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 and structural member sizes taken from the manufacturers original design documents prepared by Rohn Inc., dated July 7, 1998.
3) Foundation analysis performed by KM Consulting Engineers dated July 14, 1998 for tower reactions taken from manufacturers original design documents.
4) Antenna and mount configuration as specified in Section 2 and 6.
5) Coaxial cable orientation as specified in Section 6 of this report.
6) Structural analysis prepared by URS Corporation, dated December 4, 2007 and field photographs taken by URS during November 2007.

1. **EXECUTIVE SUMMARY** - ***continued***

This report is only valid as per the assumptions and data utilized in this report for antenna inventory, mounts and associated cables. The user of this report shall field verify the assumption of the antenna and mount configuration as well as the physical condition of the tower. Notify the engineer in writing immediately if any of the information in this report is found to be other than specified.

If you should have any questions, please call.

Sincerely,

URS Corporation

Richard A. Sambor, P.E.
Senior Structural Engineer

RAS/kab
cc: ICA – URS, CF/Book

2. INTRODUCTION

The subject tower is located 623 Pine Street, Bridgeport, CT. The structure is an existing 248' self supporting three-legged steel tapered lattice tower designed and manufactured by Rohn Inc.

The inventory is summarized in the table below:

Antenna Type	*Carrier*	*Mount*	*Antenna Centerline Elevation*	*Cable*
(1) Beacon	Unknown (existing)	Platform w/ handrails	259'	-
(3) Omni 24' x 3" Antennas	Unknown (existing)	Mounted on same platform above	269'	(7) 1-1/4" coax cables and (1) ½" coax cable
(2) Omni 8' x 3" Antennas	Unknown (existing)	Mounted on same platform above	260'	Included in cable above
(2) Scala CL 400 Antennas	Unknown (existing)	Mounted on same platform above	258'	Included in cable above
(2) Decibel DB806 Omni antennas	Unknown (existing)	(2) 6' Standoff	233'	(2) 7/8" coax cables
(6) APX16PV-16PVL-X antennas	T-Mobile (existing)	(3) 15' T-Frames	180'	(24) 1-5/8" coax cables (12 redundant)
(6) RFS APL 196516 and (6) RFS APL 866513 antennas	Verizon (existing)	(3) 15' Boom Gates	108'	(12) 1-5/8" coax cables
(2) 48"x8"x8" Antenna (assumed)	TV 65 (existing)	(1) 4' Standoff	101'	Unknown
(9) EMS RV65-13 panel antennas	Sprint Nextel (existing)	(3) 15' T-Frames	88'	(9) 1-1/4" coax cables (6) 1-5/8" coax cables (1) 1/2" coax cable
(3) Argus LLPX310R antennas (3) Samsung Remote Radio Heads U-RAS (2) Dragonwave 0.6m dishes	**Clearwire (proposed)**	**Mounted on same T- Frames above**	**88'**	**(2) 1/2" dia coax (6) Argus APC-D8 coax**

Note: Refer to Section 6 Tower Feed Line Plan for coaxial cable locations.

This structural analysis of the communications tower was performed by URS Corporation (URS) for Clearwire. 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 stress on the tower and the effect of forces to the foundation of the tower resulting from existing and proposed antenna arrangements.

3. ANALYSIS METHODOLOGY AND LOADING CONDITIONS

The structural analysis was done in accordance with the Connecticut State Building Code, TIA/EIA-222-F—Structural Standard for Steel Antenna Towers and Antenna Supporting Structures, and the American Institute of Steel Construction (AISC) Manual of Steel Construction – Allowable Stress Design (ASD).

The analysis was conducted using RISA Tower 5.3. Two load conditions were evaluated as shown below which were compared to allowable stresses according to AISC and TIA/EIA.

Load Condition 1 =90 mph (fastest mile) Wind Load (without ice) + Tower Dead Load
Load Condition 2 =78 mph (fastest mile) Wind Load (with ice) + Ice Load + Tower Dead Load

Please note that wind pressure is a function of velocity squared. Under Load Condition 2, a 25 percent reduction in wind pressure is allowed by code to account for the unlikelihood of the full wind pressure and ice load occurring at the same time. The same results may be achieved by utilizing a lower wind pressure without taking the 25 percent reduction, as shown above.

The TIA/EIA standard permits a one-third increase in allowable stresses for towers and uni-poles less than 700 feet tall. For the purposes of this analysis, in computing the load capacity the allowable stresses of the tower members were increased by one-third.

4. FINDINGS AND EVALUATION

Stresses on the tower structure were evaluated to compare with allowable stresses in accordance with AISC. The results of the analysis indicate that the calculated stresses under the proposed loading were below the allowable stresses (see table below). Detailed analysis and calculations for the proposed load condition are provided in section 6 of this report. An analysis of the foundation was not performed as the calculated reactions at the base of the structure were less than the original design reactions. The tower anchor bolts and foundation were found to be structurally adequate.

Tower Base Reactions:
For detailed proposed tower reactions, see drawing no. E-1 in section 6 of this report.

Tower Base Reactions

Tower Forces	Proposed Tower Load Reactions	Original Design Load Reactions
Compression (kips)	354	524.8
Uplift (kips)	291	460.5
Total Shear (kips)	69	93.1
Moment (kips-ft)	7985	11758.6

Tower Component Stress vs. Capacity Summary

Component / (Section No.)	Controlling Component/ Elevation	Stress (% capacity)	Pass/Fail	Comments:
Tower Leg (T13)	Bolt Tension/28'-48'	56.9%	Pass	
Diagonal (T12)	Gusset Bearing/28'-48'	82.3%	Pass	
Horizontal (T13)	Bolt Shear/8'-28'	47.1%	Pass	
Top Girt (T1)	Bolt Shear/256'	16.6%	Pass	
Anchor Bolts	Tension	36.0%	Pass	

5. CONCLUSIONS

The results of the analysis indicate that the tower structure has the capacity to support the proposed loading conditions. **The tower and its foundation are considered structurally adequate with the wind load classification specified above and the proposed antenna loading.**

Limitations/Assumptions:

This report is based on the following:

1) Tower inventory as listed in this report.
2) Tower is properly installed and maintained.
3) All members are as specified in the original design documents and are in good condition.
4) All required members are in place.
5) All bolts are in place and are properly tightened.
6) Tower is in plumb condition.
7) All member protective coatings are in good condition.
8) All tower members were properly designed, detailed, fabricated, and installed and have been properly maintained since erection.
9) Foundations were properly constructed to support original design loads as specified in the original design documents.
10) All coaxial cable is installed as specified in Section 6 of this report

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. Removing/replacing antennas
C. 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.

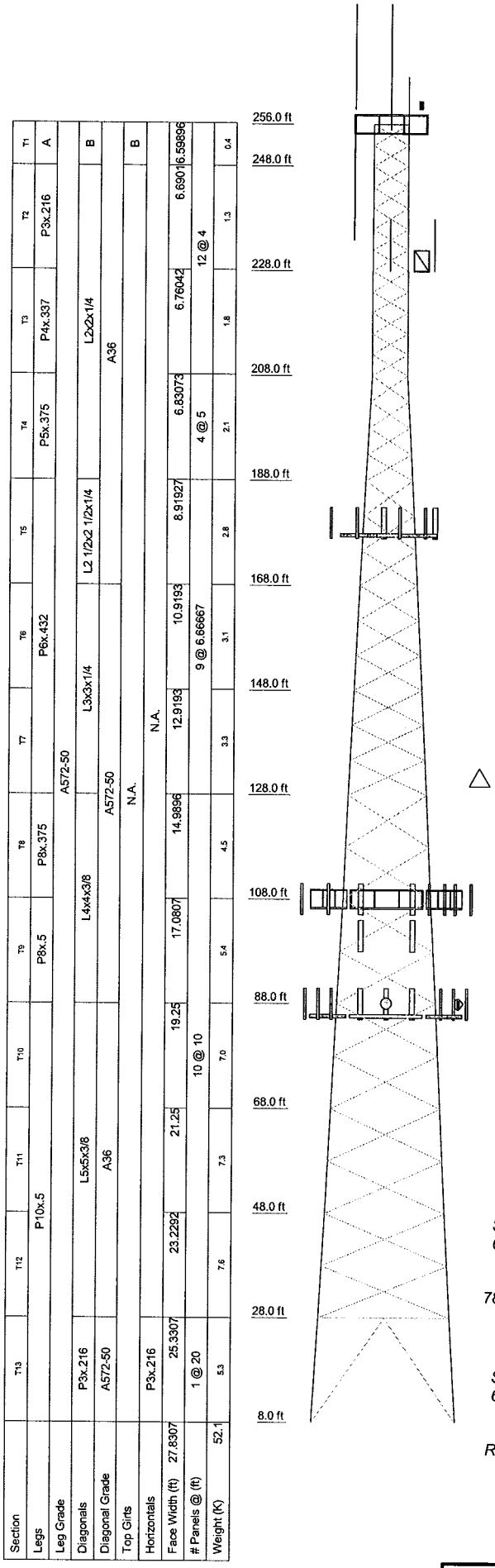
Ongoing and Periodic Inspection and Maintenance:

After the Contractor has successfully completed the installation and the work has been accepted, the owner will be responsible for the ongoing and periodic inspection and maintenance of the tower.

The owner shall refer to TIA/EIA-222-F for recommendations for maintenance and inspection. The frequency of the inspection and maintenance intervals is to be determined by the owner based upon actual site and environmental conditions. It is recommended that a complete and thorough inspection of the entire tower structural system be performed at least yearly and more frequently as conditions warrant. According to TIA/EIA-222-F section 14.1, Note 1: It is recommended that the structure be inspected after severe wind and/or ice storms or other extreme loading conditions.

6. DRAWINGS AND DATA

RISA TOWER INPUT/OUTPUT SUMMARY



Section		T1	T2	T3	T4	T5	T6	T7	T8	T9	T10	T11	T12	T13
Legs		A	P3x.216	P4x.337	P5x.375	P6x.432		A572-50	P8x.375	P8x.5	P10x.5			
Leg Grade														
Diagonals		B	L2x2x1/4			L2 1/2x2 1/2x1/4	L3x3x1/4		L4x4x3/8			L5x5x3/8		P3x.216
Diagonal Grade				A36				A572-50				A36		A572-50
Top Girts		B						N.A.						
Horizontals														P3x.216
Face Width (ft)	27.8307	6.59896	6.69016	6.76042	6.83073	8.91927	10.9193	12.9193	14.9896	17.0807	19.25	21.25	23.2292	25.3307
# Panels @ (ft)		0.4	1.3	1.8	2.1	2.8	3.1	3.3	4.5	5.4	7.0	7.3	7.6	5.3
Weight (K)	52.1		12 @ 4		4 @ 5		9 @ 6.66667				10 @ 10			1 @ 20

DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION	TYPE	ELEVATION
24' x 3" Omni (Up) (Unknown)	269	(2) APL196516-42T2 (Verizon)	108
24' x 3" Omni (Up) (Unknown)	269	(2) APL196516-42T2 (Verizon)	108
8'x3" Omni (Unknown)	260	(2) APL196516-42T2 (Verizon)	108
8'x3" Omni (Unknown)	260	(2) APL866513-42T0 (Verizon)	108
Beacon (Unknown)	259	(2) APL866513-42T0 (Verizon)	108
(2) Scala CL400 Antenna (Unknown)	258	(2) APL866513-42T0 (Verizon)	108
15' Platform with handrail (Unknown)	256	Pirod 4' Side Mount Standoff (1) (TV 65)	101
24' x 3" Omni (Down) (Unknown)	244	(2) 48"x8"x8" Antenna (TV 65)	101
Decibel DB806 (Unknown)	233	(3) RV65-13 (Sprint Nextel)	88
Decibel DB806 (Unknown)	233	(3) RV65-13 (Sprint Nextel)	88
Pirod 6' Side Mount Standoff (1) (Unknown)	230	(3) RV65-13 (Sprint Nextel)	88
Pirod 6' Side Mount Standoff (1) (Unknown)	230	LLPX310R (Clearwire)	88
(2) APX16PV-16PVL-X (T-Mobile)	180	LLPX310R (Clearwire)	88
(2) APX16PV-16PVL-X (T-Mobile)	180	LLPX310R (Clearwire)	88
(2) APX16PV-16PVL-X (T-Mobile)	180	Remote Radio Heads U-RAS (Clearwire)	88
Pirod 15' T-Frame Sector Mount (1) (T-Mobile)	178	Remote Radio Heads U-RAS (Clearwire)	88
Pirod 15' T-Frame Sector Mount (1) (T-Mobile)	178	Remote Radio Heads U-RAS (Clearwire)	88
Pirod 15' T-Frame Sector Mount (1) (T-Mobile)	178	Dragonwave 0.6m Dish (Clearwire)	88
Rohn 6'x15' Boom Gate (1) (Verizon)	108	Dragonwave 0.6m Dish (Clearwire)	88
Rohn 6'x15' Boom Gate (1) (Verizon)	108	Pirod 15' T-Frame Sector Mount (1) (Sprint Nextel)	86
Rohn 6'x15' Boom Gate (1) (Verizon)	108	Pirod 15' T-Frame Sector Mount (1) (Sprint Nextel)	86
		Pirod 15' T-Frame Sector Mount (1) (Sprint Nextel)	86

SYMBOL LIST

MARK	SIZE	MARK	SIZE
A	P2.5x.203	B	L1 3/4x1 3/4x3/16

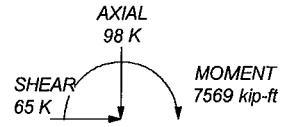
MATERIAL STRENGTH

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

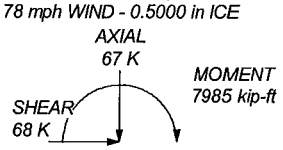
TOWER DESIGN NOTES

1. Tower is located in Fairfield County, Connecticut.
2. Tower designed for a 90 mph basic wind in accordance with the TIA/EIA-222-F Standard.
3. Tower is also designed for a 78 mph basic wind with 0.50 in ice.
4. Deflections are based upon a 50 mph wind.
5. TOWER RATING: 82.3%

MAX. CORNER REACTIONS AT BASE:
DOWN: 354 K
UPLIFT: -291 K
SHEAR: 41 K



TORQUE 70 kip-ft
78 mph WIND - 0.5000 in ICE



TORQUE 58 kip-ft
REACTIONS - 90 mph WIND

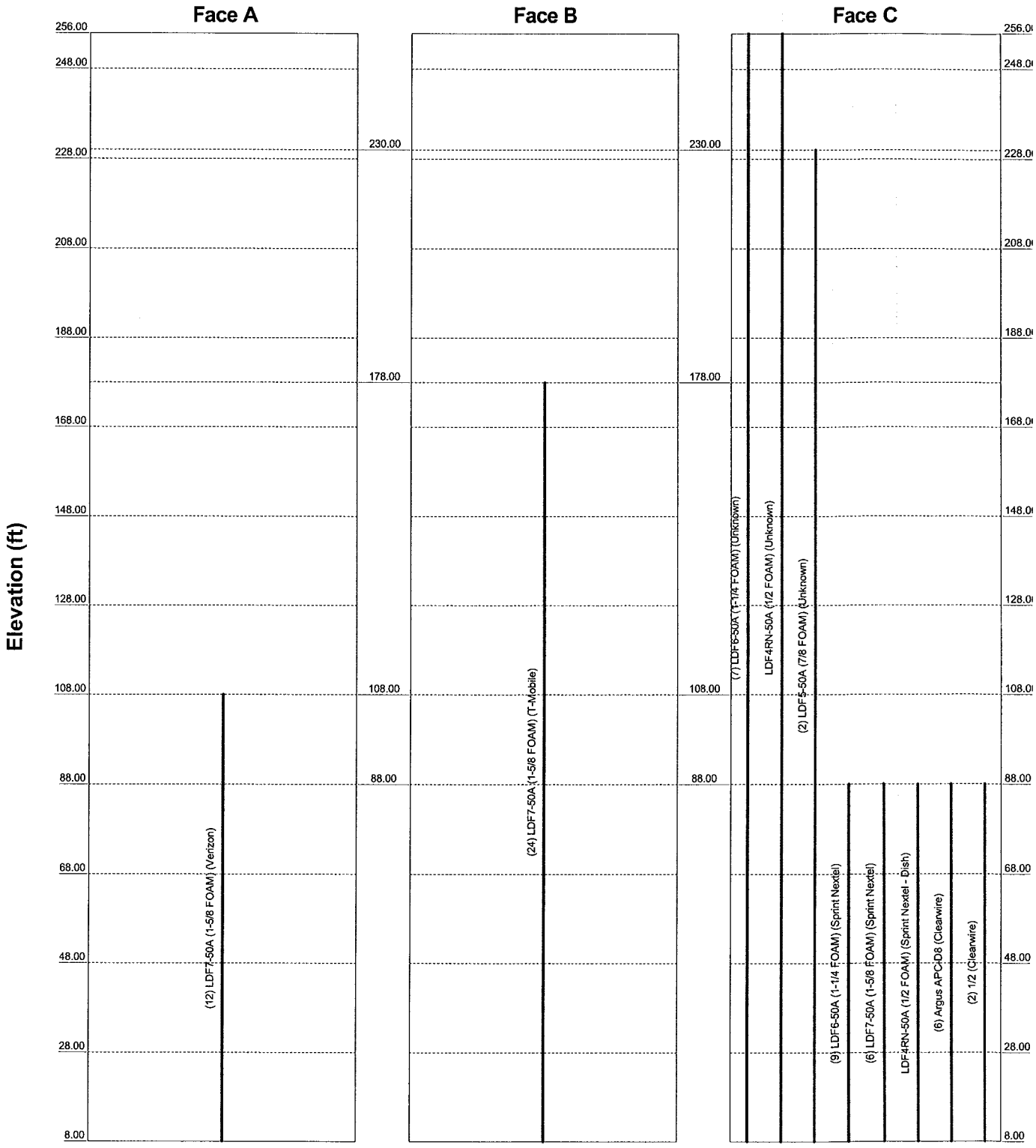
URS Corporation
500 Enterprise Drive, Suite 3B
Rocky Hill, CT 06067
Phone: (860) 529-8882
FAX: (860) 529-3991

Job:	***248' Self Supporting Lattice Tower***
Project:	***CT-BDR0073 - Bridgeport West***
Client: Clearwire - TW3-017 (Rev. 1)	Drawn by: Kevin Barker / App'd:
Code: TIA/EIA-222-F	Date: 10/28/09 / Scale: N
Path: P:\08\ERI Files\TW3-017 248 ROHN Bridgeport CT.eri	Dwg No.

RISA TOWER FEEDLINE DISTRIBUTION CHART

8' - 256'

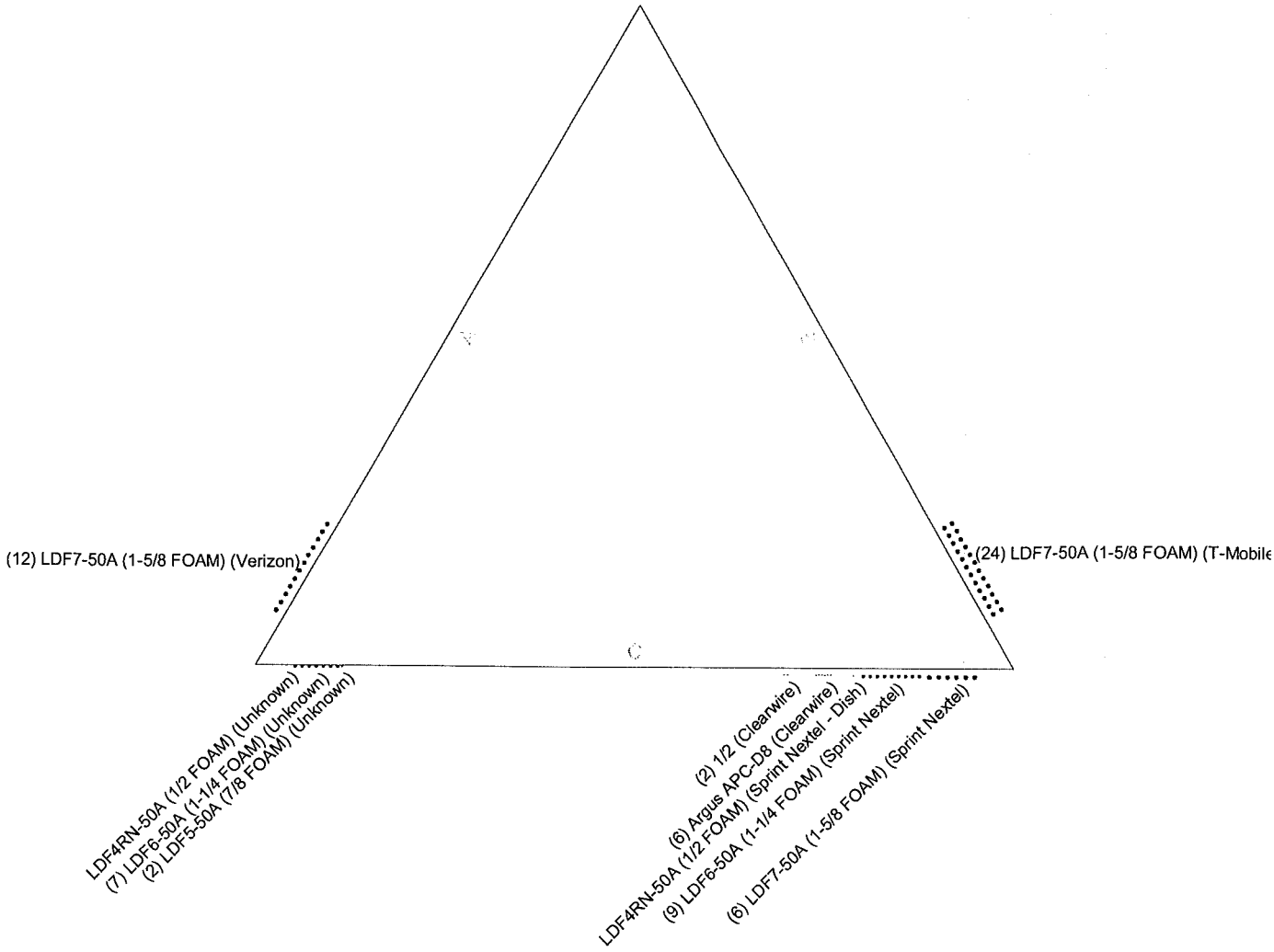
Round Flat App In Face App Out Face Truss Leg



URS Corporation	Job: ***248' Self Supporting Lattice Tower***
500 Enterprise Drive, Suite 3B	Project: ***CT-BDR0073 - Bridgeport West***
Rocky Hill, CT 06067	Client: Clearwire - TW3-017 (Rev. 1) — Drawn by: Kevin Barker — App'd:
Phone: (860) 529-8882	Code: TIA/EIA-222-F — Date: 10/28/09 — Scale: N
FAX: (860) 529-3991	Path: P:\08\ERI Files\TW3-017 248 ROHN Bridgeport CT.erl — Dwg No.

RISA TOWER FEEDLINE PLAN

Round _____ Flat _____ App In Face ..... App Out Face



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Path: P:\08\ERI Files\TW3-017 248_ROHN_Bridgeport_CT.eri		Dwg No.	

RISA TOWER DETAILED OUTPUT

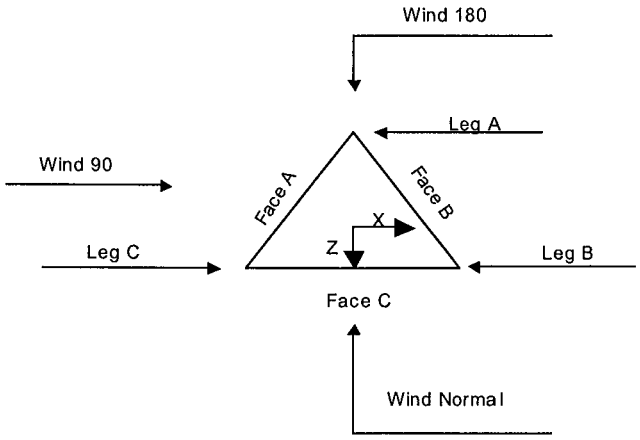
Tower Input Data

The main tower is a 3x free standing tower with an overall height of 256.00 ft above the ground line.
The base of the tower is set at an elevation of 8.00 ft above the ground line.
The face width of the tower is 6.60 ft at the top and 27.83 ft at the base.
This tower is designed using the TIA/EIA-222-F standard.
The following design criteria apply:

Tower is located in Fairfield County, Connecticut.
Basic wind speed of 90 mph.
Nominal ice thickness of 0.5000 in.
Ice density of 56 pcf.
A wind speed of 78 mph is used in combination with ice.
Deflections calculated using a wind speed of 50 mph.
A non-linear (P-delta) analysis was used.
Pressures are calculated at each section.
Stress ratio used in tower member design is 1.333.
Local bending stresses due to climbing loads, feedline supports, and appurtenance mounts 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)	Triangulate Diamond Inner Bracing	Use Top Mounted Sockets
Add IBC .6D+W Combination		



Triangular Tower

Tower Section Geometry

Tower Section	Tower Elevation	Assembly Database	Description	Section Width	Number of Sections	Section Length
	ft			ft		ft
T1	256.00-248.00			6.60	1	8.00
T2	248.00-228.00			6.69	1	20.00
T3	228.00-208.00			6.76	1	20.00
T4	208.00-188.00			6.83	1	20.00
T5	188.00-168.00			8.92	1	20.00
T6	168.00-148.00			10.92	1	20.00
T7	148.00-128.00			12.92	1	20.00
T8	128.00-108.00			14.99	1	20.00
T9	108.00-88.00			17.08	1	20.00
T10	88.00-68.00			19.25	1	20.00
T11	68.00-48.00			21.25	1	20.00
T12	48.00-28.00			23.23	1	20.00
T13	28.00-8.00			25.33	1	20.00

Tower Section Geometry *(cont'd)*

Tower Section	Tower Elevation	Diagonal Spacing	Bracing Type	Has K Brace End Panels	Has Horizontals	Top Girt Offset	Bottom Girt Offset
	ft	ft				in	in
T1	256.00-248.00	4.00	X Brace	No	No	0.0000	0.0000
T2	248.00-228.00	4.00	X Brace	No	No	0.0000	0.0000

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
T3	228.00-208.00	4.00	X Brace	No	No	0.0000	0.0000
T4	208.00-188.00	5.00	X Brace	No	No	0.0000	0.0000
T5	188.00-168.00	6.67	X Brace	No	No	0.0000	0.0000
T6	168.00-148.00	6.67	X Brace	No	No	0.0000	0.0000
T7	148.00-128.00	6.67	X Brace	No	No	0.0000	0.0000
T8	128.00-108.00	10.00	X Brace	No	No	0.0000	0.0000
T9	108.00-88.00	10.00	X Brace	No	No	0.0000	0.0000
T10	88.00-68.00	10.00	X Brace	No	No	0.0000	0.0000
T11	68.00-48.00	10.00	X Brace	No	No	0.0000	0.0000
T12	48.00-28.00	10.00	X Brace	No	No	0.0000	0.0000
T13	28.00-8.00	20.00	K Brace Down	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
T1 256.00-248.00	Pipe	P2.5x.203	A572-50 (50 ksi)	Single Angle	L1 3/4x1 3/4x3/16	A36 (36 ksi)
T2 248.00-228.00	Pipe	P3x.216	A572-50 (50 ksi)	Single Angle	L2x2x1/4	A36 (36 ksi)
T3 228.00-208.00	Pipe	P4x.337	A572-50 (50 ksi)	Single Angle	L2x2x1/4	A36 (36 ksi)
T4 208.00-188.00	Pipe	P5x.375	A572-50 (50 ksi)	Single Angle	L2x2x1/4	A36 (36 ksi)
T5 188.00-168.00	Pipe	P6x.432	A572-50 (50 ksi)	Single Angle	L2 1/2x2 1/2x1/4	A36 (36 ksi)
T6 168.00-148.00	Pipe	P6x.432	A572-50 (50 ksi)	Single Angle	L3x3x1/4	A572-50 (50 ksi)
T7 148.00-128.00	Pipe	P6x.432	A572-50 (50 ksi)	Single Angle	L3x3x1/4	A572-50 (50 ksi)
T8 128.00-108.00	Pipe	P8x.375	A572-50 (50 ksi)	Single Angle	L4x4x3/8	A572-50 (50 ksi)
T9 108.00-88.00	Pipe	P8x.5	A572-50 (50 ksi)	Single Angle	L4x4x3/8	A572-50 (50 ksi)
T10 88.00-68.00	Pipe	P10x.5	A572-50 (50 ksi)	Single Angle	L5x5x3/8	A36 (36 ksi)
T11 68.00-48.00	Pipe	P10x.5	A572-50 (50 ksi)	Single Angle	L5x5x3/8	A36 (36 ksi)
T12 48.00-28.00	Pipe	P10x.5	A572-50 (50 ksi)	Single Angle	L5x5x3/8	A36 (36 ksi)
T13 28.00-8.00	Pipe	P10x.5	A572-50 (50 ksi)	Pipe	P3x.216	A572-50 (50 ksi)

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Top Girt Type	Top Girt Size	Top Girt Grade	Bottom Girt Type	Bottom Girt Size	Bottom Girt Grade
T1 256.00-248.00	Single Angle	L1 3/4x1 3/4x3/16	A36 (36 ksi)	Single Angle		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
T13 28.00-8.00	None	Flat Bar		A36 (36 ksi)	Pipe	P3x.216	A572-50 (50 ksi)

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Gusset Area (per face) ft^2	Gusset Thickness in	Gusset Grade	Adjust. Factor A_f	Adjust. Factor A_r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals in	Double Angle Stitch Bolt Spacing Horizontals in
T1 256.00-248.00	2.00	0.1875	A36 (36 ksi)	1	1	1.05	36.0000	36.0000
T2 248.00-228.00	2.00	0.2500	A36 (36 ksi)	1	1	1.05	36.0000	36.0000
T3 228.00-208.00	2.00	0.2500	A36 (36 ksi)	1	1	1.05	36.0000	36.0000
T4 208.00-188.00	2.00	0.2500	A36 (36 ksi)	1	1	1.05	36.0000	36.0000
T5 188.00-168.00	2.00	0.2500	A36 (36 ksi)	1	1	1.05	36.0000	36.0000
T6 168.00-148.00	2.00	0.2500	A36 (36 ksi)	1	1	1.05	36.0000	36.0000
T7 148.00-128.00	2.00	0.2500	A36 (36 ksi)	1	1	1.05	36.0000	36.0000
T8 128.00-108.00	2.00	0.3750	A36 (36 ksi)	1	1	1.05	36.0000	36.0000
T9 108.00-88.00	2.00	0.3125	A36 (36 ksi)	1	1	1.05	36.0000	36.0000
T10 88.00-68.00	2.00	0.3750	A36 (36 ksi)	1	1	1.05	36.0000	36.0000
T11 68.00-48.00	2.00	0.3750	A36 (36 ksi)	1	1	1.05	36.0000	36.0000
T12 48.00-28.00	2.00	0.3750	A36 (36 ksi)	1	1	1.05	36.0000	36.0000
T13 28.00-8.00	2.00	0.3750	A36 (36 ksi)	1	1	1.05	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 Y	K Brace Diags X Y	Single Diags X Y	Girts X Y	Horiz. X Y	Sec. Horiz. X Y	Inner Brace X Y
T1 256.00-248.00	Yes	No	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T2 248.00-228.00	Yes	No	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T3 228.00-208.00	Yes	No	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T4 208.00-188.00	Yes	No	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T5 188.00-168.00	Yes	No	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T6 168.00-148.00	Yes	No	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T7 148.00-128.00	Yes	No	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T8 128.00-108.00	Yes	No	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T9 108.00-88.00	Yes	No	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T10 88.00-68.00	Yes	No	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T11 68.00-48.00	Yes	No	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T12 48.00-28.00	Yes	No	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T13 28.00-8.00	Yes	No	0.5	0.5 0.5	0.5 0.5	0.5 0.5	1 1	0.5 0.5	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 256.00-248.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	1	0.0000	0.75	0.0000	1
T2 248.00-228.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	1	0.0000	0.75	0.0000	1
T3 228.00-208.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	1	0.0000	0.75	0.0000	1
T4 208.00-188.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	1	0.0000	0.75	0.0000	1
T5 188.00-168.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	1	0.0000	0.75	0.0000	1
T6 168.00-148.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	1	0.0000	0.75	0.0000	1
T7 148.00-128.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	1	0.0000	0.75	0.0000	1
T8 128.00-108.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	1	0.0000	0.75	0.0000	1

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
T9 108.00-88.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	1	0.0000	0.75	0.0000	1
T10 88.00-68.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	1	0.0000	0.75	0.0000	1
T11 68.00-48.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	1	0.0000	0.75	0.0000	1
T12 48.00-28.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	1	0.0000	0.75	0.0000	1
T13 28.00-8.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	1	0.0000	0.75	0.0000	1

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Leg Connection Type	Leg		Diagonal		Top Girt		Bottom Girt		Mid Girt		Long Horizontal		Short Horizontal	
		Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.
T1 256.00-248.00	Flange	0.7500 A325N	4	0.6250 A325N	1	0.5000 A325N	1	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T2 248.00-228.00	Flange	0.8750 A325N	4	0.6250 A325N	1	0.6250 A325N	1	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T3 228.00-208.00	Flange	1.0000 A325N	4	0.6250 A325N	1	0.6250 A325N	1	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T4 208.00-188.00	Flange	1.0000 A325N	6	0.6250 A325N	1	0.7500 A325N	1	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T5 188.00-168.00	Flange	1.0000 A325N	6	0.7500 A325N	1	0.6250 A325N	1	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T6 168.00-148.00	Flange	1.0000 A325N	6	0.7500 A325N	1	0.6250 A325N	1	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T7 148.00-128.00	Flange	1.0000 A325N	8	0.7500 A325N	1	0.7500 A325N	1	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T8 128.00-108.00	Flange	1.0000 A325N	8	0.7500 A325N	1	0.6250 A325N	1	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T9 108.00-88.00	Flange	1.0000 A325N	12	0.7500 A325N	1	0.7500 A325N	1	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T10 88.00-68.00	Flange	1.0000 A325N	12	0.8750 A325N	1	0.7500 A325N	1	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T11 68.00-48.00	Flange	1.0000 A325N	12	0.8750 A325N	1	0.7500 A325N	1	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T12 48.00-28.00	Flange	1.0000 A325N	12	0.8750 A325N	1	0.7500 A325N	1	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T13 28.00-8.00	Flange	1.0000 A325N	16	0.7500 A325N	3	0.7500 A325N	1	0.6250 A325N	0	0.6250 A325N	0	0.7500 A325N	2	0.6250 A325N	0

Feed Line/Linear Appurtenances - Entered As Round Or Flat

Description	Face or Leg	Allow Shield	Component Type	Placement ft	Face Offset in	Lateral Offset (Frac FW)	#	# Per Row	Clear Spacing in	Width or Diameter in	Perimeter in	Weight klf
LDF6-50A (1-1/4 FOAM) (Unknown)	C	Yes	Ar (CfAe)	256.00 - 8.00	0.0000	0.42	7	7	1.5500	1.5500		0.00
LDF4RN-50A (1/2 FOAM) (Unknown)	C	Yes	Ar (CfAe)	256.00 - 8.00	0.0000	0.46	1	1	0.6300	0.6300		0.00
LDF5-50A (7/8 FOAM) (Unknown)	C	Yes	Ar (CfAe)	230.00 - 8.00	0.0000	0.39	2	2	1.0900	1.0900		0.00
LDF7-50A (1-5/8 FOAM) (Verizon)	A	Yes	Ar (CfAe)	108.00 - 8.00	3.0000	-0.36	12	12	1.9800	1.9800		0.00
LDF7-50A (1-5/8 FOAM) (T-Mobile)	B	Yes	Ar (CfAe)	178.00 - 8.00	3.0000	0.36	24	12	1.9800	1.9800		0.00
LDF6-50A (1-1/4 FOAM) (Sprint Nextel)	C	Yes	Ar (CfAe)	88.00 - 8.00	3.0000	-0.34	9	9	1.5500	1.5500		0.00
LDF7-50A (1-5/8 FOAM) (Sprint Nextel)	C	Yes	Ar (CfAe)	88.00 - 8.00	3.0000	-0.42	6	6	1.9800	1.9800		0.00
LDF4RN-50A (1/2 FOAM) (Sprint Nextel - Dish)	C	Yes	Ar (CfAe)	88.00 - 8.00	3.0000	-0.29	1	1	0.6300	0.6300		0.00
Argus APC-D8 (Clearwire)	C	Yes	Ar (CfAe)	88.00 - 8.00	3.0000	-0.25	6	6	1.0000	0.3125		0.00
1/2 (Clearwire)	C	Yes	Ar (CfAe)	88.00 - 8.00	3.0000	-0.2	2	2	1.0000	0.5800		0.00

Feed Line/Linear Appurtenances Section Areas

Tower Section	Tower Elevation ft	Face	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
T1	256.00-248.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	7.653	0.000	0.000	0.000	0.04
T2	248.00-228.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	19.497	0.000	0.000	0.000	0.10
T3	228.00-208.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	22.767	0.000	0.000	0.000	0.11
T4	208.00-188.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	22.767	0.000	0.000	0.000	0.11
T5	188.00-168.00	A	0.000	0.000	0.000	0.000	0.00
		B	19.800	0.000	0.000	0.000	0.20
		C	22.767	0.000	0.000	0.000	0.11
T6	168.00-148.00	A	0.000	0.000	0.000	0.000	0.00
		B	39.600	0.000	0.000	0.000	0.39
		C	22.767	0.000	0.000	0.000	0.11
T7	148.00-128.00	A	0.000	0.000	0.000	0.000	0.00
		B	39.600	0.000	0.000	0.000	0.39
		C	22.767	0.000	0.000	0.000	0.11

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
T8	128.00-108.00	A	0.000	0.000	0.000	0.000	0.00
		B	39.600	0.000	0.000	0.000	0.39
		C	22.767	0.000	0.000	0.000	0.11
T9	108.00-88.00	A	39.600	0.000	0.000	0.000	0.20
		B	39.600	0.000	0.000	0.000	0.39
		C	22.767	0.000	0.000	0.000	0.11
T10	88.00-68.00	A	39.600	0.000	0.000	0.000	0.20
		B	39.600	0.000	0.000	0.000	0.39
		C	71.925	0.000	0.000	0.000	0.40
T11	68.00-48.00	A	39.600	0.000	0.000	0.000	0.20
		B	39.600	0.000	0.000	0.000	0.39
		C	71.925	0.000	0.000	0.000	0.40
T12	48.00-28.00	A	39.600	0.000	0.000	0.000	0.20
		B	39.600	0.000	0.000	0.000	0.39
		C	71.925	0.000	0.000	0.000	0.40
T13	28.00-8.00	A	39.600	0.000	0.000	0.000	0.20
		B	39.600	0.000	0.000	0.000	0.39
		C	71.925	0.000	0.000	0.000	0.40

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
T1	256.00-248.00	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		12.987	0.000	0.000	0.000	0.11
T2	248.00-228.00	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		33.163	0.000	0.000	0.000	0.29
T3	228.00-208.00	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		39.433	0.000	0.000	0.000	0.34
T4	208.00-188.00	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		39.433	0.000	0.000	0.000	0.34
T5	188.00-168.00	A	0.500	0.000	0.000	0.000	0.000	0.00
		B		29.800	0.000	0.000	0.000	0.56
		C		39.433	0.000	0.000	0.000	0.34
T6	168.00-148.00	A	0.500	0.000	0.000	0.000	0.000	0.00
		B		59.600	0.000	0.000	0.000	1.12
		C		39.433	0.000	0.000	0.000	0.34
T7	148.00-128.00	A	0.500	0.000	0.000	0.000	0.000	0.00
		B		59.600	0.000	0.000	0.000	1.12
		C		39.433	0.000	0.000	0.000	0.34
T8	128.00-108.00	A	0.500	0.000	0.000	0.000	0.000	0.00
		B		59.600	0.000	0.000	0.000	1.12
		C		39.433	0.000	0.000	0.000	0.34
T9	108.00-88.00	A	0.500	59.600	0.000	0.000	0.000	0.56
		B		59.600	0.000	0.000	0.000	1.12
		C		39.433	0.000	0.000	0.000	0.34
T10	88.00-68.00	A	0.500	59.600	0.000	0.000	0.000	0.56
		B		59.600	0.000	0.000	0.000	1.12
		C		115.021	13.571	0.000	0.000	1.15
T11	68.00-48.00	A	0.500	59.600	0.000	0.000	0.000	0.56
		B		59.600	0.000	0.000	0.000	1.12
		C		115.021	13.571	0.000	0.000	1.15
T12	48.00-28.00	A	0.500	59.600	0.000	0.000	0.000	0.56

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		59.600	0.000	0.000	0.000	1.12
		C		115.021	13.571	0.000	0.000	1.15
T13	28.00-8.00	A	0.500	59.600	0.000	0.000	0.000	0.56
		B		59.600	0.000	0.000	0.000	1.12
		C		115.021	13.571	0.000	0.000	1.15

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
T1	256.00-248.00	A	0.000	0.000	0.000	0.000
		B	0.000	0.000	0.000	0.000
		C	0.000	0.767	0.791	1.342
T2	248.00-228.00	A	0.000	0.000	0.000	0.000
		B	0.000	0.000	0.000	0.000
		C	0.000	1.608	1.890	3.215
T3	228.00-208.00	A	0.000	0.000	0.000	0.000
		B	0.000	0.000	0.000	0.000
		C	0.000	1.907	2.201	3.813
T4	208.00-188.00	A	0.000	0.000	0.000	0.000
		B	0.000	0.000	0.000	0.000
		C	0.000	1.560	1.802	3.121
T5	188.00-168.00	A	0.000	0.000	0.000	0.000
		B	0.000	0.899	1.493	2.247
		C	0.000	1.189	1.716	2.973
T6	168.00-148.00	A	0.000	0.000	0.000	0.000
		B	0.000	1.708	3.405	5.125
		C	0.000	1.130	1.958	3.391
T7	148.00-128.00	A	0.000	0.000	0.000	0.000
		B	0.000	1.652	3.293	4.956
		C	0.000	1.093	1.893	3.279
T8	128.00-108.00	A	0.000	0.000	0.000	0.000
		B	0.000	1.171	3.112	4.684
		C	0.000	0.775	1.789	3.099
T9	108.00-88.00	A	0.000	1.134	3.014	4.537
		B	0.000	1.134	3.014	4.537
		C	0.000	0.750	1.733	3.002
T10	88.00-68.00	A	0.000	1.108	3.681	5.540
		B	0.000	1.108	3.681	5.540
		C	0.000	2.391	6.686	11.953
T11	68.00-48.00	A	0.000	1.089	3.619	5.446
		B	0.000	1.089	3.619	5.446
		C	0.000	2.350	6.572	11.751
T12	48.00-28.00	A	0.000	1.074	3.569	5.372
		B	0.000	1.074	3.569	5.372
		C	0.000	2.318	6.483	11.590
T13	28.00-8.00	A	1.588	3.072	0.000	0.000
		B	1.588	3.072	0.000	0.000
		C	2.884	6.629	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
T1	256.00-248.00	-5.4706	3.8624	-6.0941	4.2885
T2	248.00-228.00	-6.1091	4.3170	-6.9816	4.9185
T3	228.00-208.00	-6.3087	4.4997	-7.4716	5.3209
T4	208.00-188.00	-6.8920	4.8959	-8.4507	5.9942
T5	188.00-168.00	0.2172	6.8342	-0.8798	8.3012
T6	168.00-148.00	6.1684	8.5945	5.7076	10.2410
T7	148.00-128.00	6.7754	9.7456	6.2423	11.6069
T8	128.00-108.00	6.7958	10.0179	6.5513	12.5223
T9	108.00-88.00	-6.8933	14.2639	-9.0511	17.0389
T10	88.00-68.00	5.1770	20.7906	6.0671	25.2285
T11	68.00-48.00	5.5396	22.3110	6.5088	27.1300
T12	48.00-28.00	5.8873	23.7703	6.9351	28.9666
T13	28.00-8.00	7.9607	32.2174	9.1443	38.1320

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
15' Platform with handrail	C	None			0.0000	256.00	No Ice	33.80	33.80	2.04
(Unknown)							1/2" Ice	43.60	43.60	2.75
24' x 3" Omni (Up)	A	From Leg	0.00		0.0000	269.00	No Ice	7.20	7.20	0.06
(Unknown)			0.00				1/2" Ice	9.50	9.50	0.10
			0.00							
24' x 3" Omni (Up)	A	From Face	6.00		0.0000	269.00	No Ice	7.20	7.20	0.06
(Unknown)			0.00				1/2" Ice	9.50	9.50	0.10
			0.00							
24' x 3" Omni (Down)	A	From Face	6.00		0.0000	244.00	No Ice	7.20	7.20	0.06
(Unknown)			0.00				1/2" Ice	9.50	9.50	0.10
			0.00							
8'x3" Omni	C	From Face	6.00		0.0000	260.00	No Ice	2.40	2.40	0.02
(Unknown)			0.00				1/2" Ice	3.17	3.17	0.03
			0.00							
8'x3" Omni	B	From Leg	0.00		0.0000	260.00	No Ice	2.40	2.40	0.02
(Unknown)			0.00				1/2" Ice	3.17	3.17	0.03
			0.00							
Beacon	B	From Face	3.00		0.0000	259.00	No Ice	2.10	2.10	0.02
(Unknown)			3.00				1/2" Ice	2.40	2.40	0.04
			0.00							
(2) Scala CL400 Antenna	A	From Face	6.00		0.0000	258.00	No Ice	3.89	3.89	0.02
(Unknown)			0.00				1/2" Ice	4.17	4.17	0.04
			0.00							
Pirod 6' Side Mount Standoff	A	From Leg	3.00		0.0000	230.00	No Ice	4.97	4.97	0.07
(1)			0.00				1/2" Ice	6.12	6.12	0.13
(Unknown)			0.00							
Decibel DB806	A	From Leg	6.00		0.0000	233.00	No Ice	1.59	1.59	0.02
(Unknown)			0.00				1/2" Ice	1.93	1.93	0.03
			0.00							
Pirod 6' Side Mount Standoff	B	From Leg	3.00		0.0000	230.00	No Ice	4.97	4.97	0.07
(1)			0.00				1/2" Ice	6.12	6.12	0.13
(Unknown)			0.00							
Decibel DB806	B	From Leg	6.00		0.0000	233.00	No Ice	1.59	1.59	0.02

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
(Unknown)			0.00			1/2" Ice	1.93	1.93	0.03
			0.00						
Pirod 15' T-Frame Sector	A	From Leg	1.00	0.0000	178.00	No Ice	15.00	15.00	0.50
Mount (1)			0.00			1/2" Ice	20.60	20.60	0.65
(T-Mobile)			0.00						
Pirod 15' T-Frame Sector	B	From Leg	1.00	0.0000	178.00	No Ice	15.00	15.00	0.50
Mount (1)			0.00			1/2" Ice	20.60	20.60	0.65
(T-Mobile)			0.00						
Pirod 15' T-Frame Sector	C	From Leg	1.00	0.0000	178.00	No Ice	15.00	15.00	0.50
Mount (1)			0.00			1/2" Ice	20.60	20.60	0.65
(T-Mobile)			0.00						
(2) APX16PV-16PVL-X	A	From Leg	2.00	0.0000	180.00	No Ice	6.70	2.00	0.04
(T-Mobile)			4.00			1/2" Ice	7.13	2.33	0.07
			0.00						
(2) APX16PV-16PVL-X	B	From Leg	2.00	0.0000	180.00	No Ice	6.70	2.00	0.04
(T-Mobile)			4.00			1/2" Ice	7.13	2.33	0.07
			0.00						
(2) APX16PV-16PVL-X	C	From Leg	2.00	0.0000	180.00	No Ice	6.70	2.00	0.04
(T-Mobile)			4.00			1/2" Ice	7.13	2.33	0.07
			0.00						
Rohn 6'x15' Boom Gate (1)	A	From Leg	3.00	0.0000	108.00	No Ice	16.00	16.00	0.70
(Verizon)			0.00			1/2" Ice	25.00	25.00	1.10
			0.00						
Rohn 6'x15' Boom Gate (1)	B	From Leg	3.00	0.0000	108.00	No Ice	16.00	16.00	0.70
(Verizon)			0.00			1/2" Ice	25.00	25.00	1.10
			0.00						
Rohn 6'x15' Boom Gate (1)	C	From Leg	3.00	0.0000	108.00	No Ice	16.00	16.00	0.70
(Verizon)			0.00			1/2" Ice	25.00	25.00	1.10
			0.00						
(2) APL196516-42T2	A	From Leg	6.00	0.0000	108.00	No Ice	3.47	2.96	0.01
(Verizon)			0.00			1/2" Ice	3.86	3.35	0.03
			0.00						
(2) APL196516-42T2	B	From Leg	6.00	0.0000	108.00	No Ice	3.47	2.96	0.01
(Verizon)			6.00			1/2" Ice	3.86	3.35	0.03
			0.00						
(2) APL196516-42T2	C	From Leg	6.00	0.0000	108.00	No Ice	3.47	2.96	0.01
(Verizon)			0.00			1/2" Ice	3.86	3.35	0.03
			0.00						
(2) APL866513-42T0	A	From Leg	6.00	0.0000	108.00	No Ice	4.29	3.73	0.02
(Verizon)			0.00			1/2" Ice	4.67	4.10	0.05
			0.00						
(2) APL866513-42T0	B	From Leg	6.00	0.0000	108.00	No Ice	4.29	3.73	0.02
(Verizon)			0.00			1/2" Ice	4.67	4.10	0.05
			0.00						
(2) APL866513-42T0	C	From Leg	6.00	0.0000	108.00	No Ice	4.29	3.73	0.02
(Verizon)			0.00			1/2" Ice	4.67	4.10	0.05
			0.00						
Pirod 4' Side Mount Standoff	A	From Leg	2.00	0.0000	101.00	No Ice	2.72	2.72	0.05
(1)			0.00			1/2" Ice	4.91	4.91	0.09
(TV 65)			0.00						
(2) 48"x8"x8" Antenna	A	From Leg	4.00	0.0000	101.00	No Ice	3.73	3.73	0.02
(TV 65)			0.00			1/2" Ice	4.29	4.29	0.04
			0.00						
Pirod 15' T-Frame Sector	A	From Leg	1.75	0.0000	86.00	No Ice	15.00	15.00	0.50
Mount (1)			0.00			1/2" Ice	20.60	20.60	0.65
(Sprint Nextel)			0.00						
Pirod 15' T-Frame Sector	B	From Leg	1.75	0.0000	86.00	No Ice	15.00	15.00	0.50

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
Mount (1)			0.00			1/2" Ice	20.60	20.60	0.65
(Sprint Nextel)			0.00						
Pirod 15' T-Frame Sector	C	From Leg	1.75	0.0000	86.00	No Ice	15.00	15.00	0.50
Mount (1)			0.00			1/2" Ice	20.60	20.60	0.65
(Sprint Nextel)			0.00						
(3) RV65-13	A	From Leg	4.00	0.0000	88.00	No Ice	5.60	3.27	0.02
(Sprint Nextel)			0.00			1/2" Ice	5.99	3.63	0.06
			0.00						
(3) RV65-13	B	From Leg	4.00	0.0000	88.00	No Ice	5.60	3.27	0.02
(Sprint Nextel)			0.00			1/2" Ice	5.99	3.63	0.06
			0.00						
(3) RV65-13	C	From Leg	4.00	0.0000	88.00	No Ice	5.60	3.27	0.02
(Sprint Nextel)			0.00			1/2" Ice	5.99	3.63	0.06
			0.00						
LLPX310R	A	From Leg	4.00	0.0000	88.00	No Ice	4.94	2.81	0.04
(Clearwire)			0.00			1/2" Ice	5.32	3.33	0.08
			0.00						
LLPX310R	B	From Leg	4.00	0.0000	88.00	No Ice	4.94	2.81	0.04
(Clearwire)			0.00			1/2" Ice	5.32	3.33	0.08
			0.00						
LLPX310R	C	From Leg	4.00	0.0000	88.00	No Ice	4.94	2.81	0.04
(Clearwire)			0.00			1/2" Ice	5.32	3.33	0.08
			0.00						
Remote Radio Heads U-RAS	A	From Leg	4.00	0.0000	88.00	No Ice	1.80	0.78	0.03
(Clearwire)			0.00			1/2" Ice	1.99	0.92	0.04
			0.00						
Remote Radio Heads U-RAS	B	From Leg	4.00	0.0000	88.00	No Ice	1.80	0.78	0.03
(Clearwire)			0.00			1/2" Ice	1.99	0.92	0.04
			0.00						
Remote Radio Heads U-RAS	C	From Leg	4.00	0.0000	88.00	No Ice	1.80	0.78	0.03
(Clearwire)			0.00			1/2" Ice	1.99	0.92	0.04
			0.00						

Dishes

Description	Face or Leg	Dish Type	Offset Type	Offsets: Horz Lateral ft / Vert ft	Azimuth Adjustment °	3 dB Beam Width °	Elevation ft	Outside Diameter ft		Aperture Area ft^2	Weight K
Dragonwave 0.6m	A	Paraboloid	From	4.00	0.0000		88.00	2.17	No Ice	3.72	0.03
Dish		w/Radome	Leg	0.00					1/2" Ice	4.01	0.05
(Clearwire)				0.00							
Dragonwave 0.6m	B	Paraboloid	From	4.00	0.0000		88.00	2.17	No Ice	3.72	0.03
Dish		w/Radome	Leg	0.00					1/2" Ice	4.01	0.05
(Clearwire)				0.00							

Tower Pressures - No Ice

$G_H = 1.100$

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
T1 256.00-248.00	252.00	1.788	37	55.073	A	7.288	3.833	3.833	34.47	0.000	0.000
					B	7.288	3.833		34.47	0.000	0.000
					C	6.498	11.487		21.32	0.000	0.000
T2 248.00-228.00	238.00	1.759	36	140.339	A	14.486	11.667	11.667	44.61	0.000	0.000
					B	14.486	11.667		44.61	0.000	0.000
					C	12.596	31.163		26.66	0.000	0.000
T3 228.00-208.00	218.00	1.715	36	143.411	A	14.433	15.000	15.000	50.96	0.000	0.000
					B	14.433	15.000		50.96	0.000	0.000
					C	12.232	37.767		30.00	0.000	0.000
T4 208.00-188.00	198.00	1.669	35	166.784	A	13.731	18.577	18.577	57.50	0.000	0.000
					B	13.731	18.577		57.50	0.000	0.000
					C	11.929	41.344		34.87	0.000	0.000
T5 188.00-168.00	178.00	1.619	34	209.441	A	16.136	22.120	22.120	57.82	0.000	0.000
					B	14.643	41.920		39.11	0.000	0.000
					C	14.420	44.887		37.30	0.000	0.000
T6 168.00-148.00	158.00	1.564	32	249.441	A	21.542	22.120	22.120	50.66	0.000	0.000
					B	18.137	61.720		27.70	0.000	0.000
					C	19.584	44.887		34.31	0.000	0.000
T7 148.00-128.00	138.00	1.505	31	290.145	A	24.284	22.123	22.123	47.67	0.000	0.000
					B	20.991	61.723		26.75	0.000	0.000
					C	22.391	44.889		32.88	0.000	0.000
T8 128.00-108.00	118.00	1.439	30	335.098	A	26.139	28.802	28.802	52.42	0.000	0.000
					B	23.027	68.402		31.50	0.000	0.000
					C	24.350	51.569		37.94	0.000	0.000
T9 108.00-88.00	98.00	1.365	28	377.703	A	25.545	68.406	28.806	30.66	0.000	0.000
					B	25.545	68.406		30.66	0.000	0.000
					C	26.826	51.573		36.74	0.000	0.000
T10 88.00-68.00	78.00	1.279	27	422.939	A	34.382	75.493	35.893	32.67	0.000	0.000
					B	34.382	75.493		32.67	0.000	0.000
					C	31.377	107.818		25.79	0.000	0.000
T11 68.00-48.00	58.00	1.175	24	462.730	A	37.389	75.492	35.892	31.80	0.000	0.000
					B	37.389	75.492		31.80	0.000	0.000
					C	34.435	107.817		25.23	0.000	0.000
T12 48.00-28.00	38.00	1.041	22	503.540	A	40.584	75.499	35.899	30.93	0.000	0.000
					B	40.584	75.499		30.93	0.000	0.000
					C	37.671	107.824		24.67	0.000	0.000
T13 28.00-8.00	18.00	1	21	549.566	A	2.000	94.828	35.927	37.10	0.000	0.000
					B	2.000	94.828		37.10	0.000	0.000
					C	2.000	125.856		28.10	0.000	0.000

Tower Pressure - With Ice

$G_H = 1.100$

Section Elevation ft	z ft	K_Z	q_z psf	t_Z in	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
T1 256.00-248.00	252.00	1.788	28	0.5000	55.740	A	7.288	8.424	5.167	32.88	0.000	0.000
						B	7.288	8.424		32.88	0.000	0.000
						C	5.946	20.644		19.43	0.000	0.000
T2 248.00-228.00	238.00	1.759	27	0.5000	142.005	A	14.486	21.479	15.000	41.71	0.000	0.000
						B	14.486	21.479		41.71	0.000	0.000

Section Elevation ft	z ft	K_Z	q_z psf	t_Z in	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
						C	11.271	53.034		23.33	0.000	0.000
T3 228.00-208.00	218.00	1.715	27	0.5000	145.078	A	14.433	24.786	18.333	46.75	0.000	0.000
						B	14.433	24.786		46.75	0.000	0.000
						C	10.620	62.312		25.14	0.000	0.000
T4 208.00-188.00	198.00	1.669	26	0.5000	168.453	A	13.731	28.017	21.916	52.50	0.000	0.000
						B	13.731	28.017		52.50	0.000	0.000
						C	10.610	65.890		28.65	0.000	0.000
T5 188.00-168.00	178.00	1.619	25	0.5000	211.110	A	16.136	31.349	25.459	53.61	0.000	0.000
						B	13.889	60.250		34.34	0.000	0.000
						C	13.163	69.593		30.76	0.000	0.000
T6 168.00-148.00	158.00	1.564	24	0.5000	251.110	A	21.542	32.209	25.459	47.37	0.000	0.000
						B	16.417	90.100		23.90	0.000	0.000
						C	18.151	70.512		28.71	0.000	0.000
T7 148.00-128.00	138.00	1.505	23	0.5000	291.814	A	24.284	33.126	25.462	44.35	0.000	0.000
						B	19.328	91.074		23.06	0.000	0.000
						C	21.005	71.466		27.53	0.000	0.000
T8 128.00-108.00	118.00	1.439	22	0.5000	336.767	A	26.139	38.412	32.142	49.79	0.000	0.000
						B	21.455	96.841		27.17	0.000	0.000
						C	23.040	77.071		32.11	0.000	0.000
T9 108.00-88.00	98.00	1.365	21	0.5000	379.373	A	24.022	97.487	32.146	26.46	0.000	0.000
						B	24.022	97.487		26.46	0.000	0.000
						C	25.557	77.705		31.13	0.000	0.000
T10 88.00-68.00	78.00	1.279	20	0.5000	424.608	A	32.523	105.172	39.232	28.49	0.000	0.000
						B	32.523	105.172		28.49	0.000	0.000
						C	39.681	159.310		19.72	0.000	0.000
T11 68.00-48.00	58.00	1.175	18	0.5000	464.399	A	35.561	105.779	39.231	27.76	0.000	0.000
						B	35.561	105.779		27.76	0.000	0.000
						C	42.828	159.938		19.35	0.000	0.000
T12 48.00-28.00	38.00	1.041	16	0.5000	505.209	A	38.782	106.431	39.239	27.02	0.000	0.000
						B	38.782	106.431		27.02	0.000	0.000
						C	46.134	160.608		18.98	0.000	0.000
T13 28.00-8.00	18.00	1	16	0.5000	551.236	A	2.000	122.889	39.269	31.44	0.000	0.000
						B	2.000	122.889		31.44	0.000	0.000
						C	15.571	174.753		20.63	0.000	0.000

Tower Pressure - Service

$G_H = 1.100$

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
T1 256.00-248.00	252.00	1.788	11	55.073	A	7.288	3.833	3.833	34.47	0.000	0.000
					B	7.288	3.833		34.47	0.000	0.000
					C	6.498	11.487		21.32	0.000	0.000
T2 248.00-228.00	238.00	1.759	11	140.339	A	14.486	11.667	11.667	44.61	0.000	0.000
					B	14.486	11.667		44.61	0.000	0.000
					C	12.596	31.163		26.66	0.000	0.000
T3 228.00-208.00	218.00	1.715	11	143.411	A	14.433	15.000	15.000	50.96	0.000	0.000
					B	14.433	15.000		50.96	0.000	0.000
					C	12.232	37.767		30.00	0.000	0.000
T4 208.00-188.00	198.00	1.669	11	166.784	A	13.731	18.577	18.577	57.50	0.000	0.000
					B	13.731	18.577		57.50	0.000	0.000
					C	11.929	41.344		34.87	0.000	0.000

Section Elevation	z	K_Z	q_z	A_G	Face	A_F	A_R	A_{leg}	Leg %	C_AA_A In Face	C_AA_A Out Face
ft	ft		psf	ft^2		ft^2	ft^2	ft^2		ft^2	ft^2
T5 188.00-168.00	178.00	1.619	10	209.441	A	16.136	22.120	22.120	57.82	0.000	0.000
					B	14.643	41.920		39.11	0.000	0.000
					C	14.420	44.887		37.30	0.000	0.000
T6 168.00-148.00	158.00	1.564	10	249.441	A	21.542	22.120	22.120	50.66	0.000	0.000
					B	18.137	61.720		27.70	0.000	0.000
					C	19.584	44.887		34.31	0.000	0.000
T7 148.00-128.00	138.00	1.505	10	290.145	A	24.284	22.123	22.123	47.67	0.000	0.000
					B	20.991	61.723		26.75	0.000	0.000
					C	22.391	44.889		32.88	0.000	0.000
T8 128.00-108.00	118.00	1.439	9	335.098	A	26.139	28.802	28.802	52.42	0.000	0.000
					B	23.027	68.402		31.50	0.000	0.000
					C	24.350	51.569		37.94	0.000	0.000
T9 108.00-88.00	98.00	1.365	9	377.703	A	25.545	68.406	28.806	30.66	0.000	0.000
					B	25.545	68.406		30.66	0.000	0.000
					C	26.826	51.573		36.74	0.000	0.000
T10 88.00-68.00	78.00	1.279	8	422.939	A	34.382	75.493	35.893	32.67	0.000	0.000
					B	34.382	75.493		32.67	0.000	0.000
					C	31.377	107.818		25.79	0.000	0.000
T11 68.00-48.00	58.00	1.175	8	462.730	A	37.389	75.492	35.892	31.80	0.000	0.000
					B	37.389	75.492		31.80	0.000	0.000
					C	34.435	107.817		25.23	0.000	0.000
T12 48.00-28.00	38.00	1.041	7	503.540	A	40.584	75.499	35.899	30.93	0.000	0.000
					B	40.584	75.499		30.93	0.000	0.000
					C	37.671	107.824		24.67	0.000	0.000
T13 28.00-8.00	18.00	1	6	549.566	A	2.000	94.828	35.927	37.10	0.000	0.000
					B	2.000	94.828		37.10	0.000	0.000
					C	2.000	125.856		28.10	0.000	0.000

Tower Forces - No Ice - Wind Normal To Face

Section Elevation	Add Weight	Self Weight	Face	e	C_F	R_R	D_F	D_R	A_E	F	w	Ctrl. Face
ft	K	K							ft^2	K	klf	
T1 256.00-248.00	0.08	0.40	A	0.202	2.59	0.591	1	1	9.553	1.24	0.16	C
			B	0.202	2.59	0.591	1	1	9.553			
			C	0.327	2.228	0.624	1	1	13.670			
T2 248.00-228.00	0.16	1.26	A	0.186	2.642	0.588	1	1	21.343	2.90	0.14	C
			B	0.186	2.642	0.588	1	1	21.343			
			C	0.312	2.265	0.62	1	1	31.904			
T3 228.00-208.00	0.17	1.74	A	0.205	2.579	0.591	1	1	23.306	3.07	0.15	C
			B	0.205	2.579	0.591	1	1	23.306			
			C	0.349	2.175	0.632	1	1	36.100			
T4 208.00-188.00	0.17	2.06	A	0.194	2.617	0.589	1	1	24.675	3.22	0.16	C
			B	0.194	2.617	0.589	1	1	24.675			
			C	0.319	2.246	0.622	1	1	37.646			
T5 188.00-168.00	0.37	2.72	A	0.183	2.655	0.587	1	1	29.121	3.62	0.18	C
			B	0.27	2.379	0.607	1	1	40.097			
			C	0.283	2.342	0.611	1	1	41.841			
T6 168.00-148.00	0.56	3.07	A	0.175	2.681	0.586	1	1	34.496	4.53	0.23	B
			B	0.32	2.244	0.622	1	1	56.543			
			C	0.258	2.412	0.604	1	1	46.699			
T7 148.00-128.00	0.56	3.24	A	0.16	2.735	0.583	1	1	37.183	4.71	0.24	B
			B	0.285	2.336	0.611	1	1	58.732			
			C	0.232	2.493	0.597	1	1	49.209			
T8 128.00-108.00	0.59	4.41	A	0.164	2.721	0.584	1	1	42.951	5.03	0.25	B
			B	0.273	2.371	0.608	1	1	64.613			

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 klf	Ctrl. Face
			C	0.227	2.51	0.596	1	1	55.094			
T9 108.00-88.00	0.78	5.28	A	0.249	2.441	0.602	1	1	66.695	5.07	0.25	B
			B	0.249	2.441	0.602	1	1	66.695			
			C	0.208	2.571	0.592	1	1	57.356			
T10 88.00-68.00	1.08	6.95	A	0.26	2.408	0.604	1	1	80.012	6.40	0.32	C
			B	0.26	2.408	0.604	1	1	80.012			
			C	0.329	2.221	0.625	1	1	98.790			
T11 68.00-48.00	1.08	7.23	A	0.244	2.456	0.6	1	1	82.710	6.17	0.31	C
			B	0.244	2.456	0.6	1	1	82.710			
			C	0.307	2.276	0.618	1	1	101.087			
T12 48.00-28.00	1.08	7.52	A	0.231	2.497	0.597	1	1	85.665	5.73	0.29	C
			B	0.231	2.497	0.597	1	1	85.665			
			C	0.289	2.326	0.613	1	1	103.722			
T13 28.00-8.00	1.08	5.23	A	0.176	2.677	0.586	1	1	57.553	4.39	0.22	C
			B	0.176	2.677	0.586	1	1	57.553			
			C	0.233	2.491	0.598	1	1	77.212			
Sum Weight:	7.77	52.07						OTM	6112.50 kip-ft	56.05		

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 klf	Ctrl. Face
T1 256.00-248.00	0.08	0.40	A	0.202	2.59	0.591	0.8	1	8.096	1.12	0.14	C
			B	0.202	2.59	0.591	0.8	1	8.096			
			C	0.327	2.228	0.624	0.8	1	12.370			
T2 248.00-228.00	0.16	1.26	A	0.186	2.642	0.588	0.8	1	18.445	2.67	0.13	C
			B	0.186	2.642	0.588	0.8	1	18.445			
			C	0.312	2.265	0.62	0.8	1	29.385			
T3 228.00-208.00	0.17	1.74	A	0.205	2.579	0.591	0.8	1	20.419	2.86	0.14	C
			B	0.205	2.579	0.591	0.8	1	20.419			
			C	0.349	2.175	0.632	0.8	1	33.654			
T4 208.00-188.00	0.17	2.06	A	0.194	2.617	0.589	0.8	1	21.929	3.01	0.15	C
			B	0.194	2.617	0.589	0.8	1	21.929			
			C	0.319	2.246	0.622	0.8	1	35.260			
T5 188.00-168.00	0.37	2.72	A	0.183	2.655	0.587	0.8	1	25.894	3.37	0.17	C
			B	0.27	2.379	0.607	0.8	1	37.169			
			C	0.283	2.342	0.611	0.8	1	38.957			
T6 168.00-148.00	0.56	3.07	A	0.175	2.681	0.586	0.8	1	30.188	4.24	0.21	B
			B	0.32	2.244	0.622	0.8	1	52.916			
			C	0.258	2.412	0.604	0.8	1	42.782			
T7 148.00-128.00	0.56	3.24	A	0.16	2.735	0.583	0.8	1	32.326	4.37	0.22	B
			B	0.285	2.336	0.611	0.8	1	54.533			
			C	0.232	2.493	0.597	0.8	1	44.731			
T8 128.00-108.00	0.59	4.41	A	0.164	2.721	0.584	0.8	1	37.724	4.67	0.23	B
			B	0.273	2.371	0.608	0.8	1	60.008			
			C	0.227	2.51	0.596	0.8	1	50.224			
T9 108.00-88.00	0.78	5.28	A	0.249	2.441	0.602	0.8	1	61.586	4.68	0.23	B
			B	0.249	2.441	0.602	0.8	1	61.586			
			C	0.208	2.571	0.592	0.8	1	51.991			
T10 88.00-68.00	1.08	6.95	A	0.26	2.408	0.604	0.8	1	73.135	5.99	0.30	C
			B	0.26	2.408	0.604	0.8	1	73.135			
			C	0.329	2.221	0.625	0.8	1	92.514			
T11 68.00-	1.08	7.23	A	0.244	2.456	0.6	0.8	1	75.233	5.75	0.29	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 klf	Ctrl. Face
48.00			B	0.244	2.456	0.6	0.8	1	75.233			
			C	0.307	2.276	0.618	0.8	1	94.200			
T12 48.00-28.00	1.08	7.52	A	0.231	2.497	0.597	0.8	1	77.549	5.31	0.27	C
			B	0.231	2.497	0.597	0.8	1	77.549			
			C	0.289	2.326	0.613	0.8	1	96.188			
T13 28.00-8.00	1.08	5.23	A	0.176	2.677	0.586	0.8	1	57.153	4.36	0.22	C
			B	0.176	2.677	0.586	0.8	1	57.153			
			C	0.233	2.491	0.598	0.8	1	76.812			
Sum Weight:	7.77	52.07						OTM	5682.43 kip-ft	52.41		

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 klf	Ctrl. Face
T1 256.00-248.00	0.08	0.40	A	0.202	2.59	0.591	0.85	1	8.460	1.15	0.14	C
			B	0.202	2.59	0.591	0.85	1	8.460			
			C	0.327	2.228	0.624	0.85	1	12.695			
T2 248.00-228.00	0.16	1.26	A	0.186	2.642	0.588	0.85	1	19.170	2.73	0.14	C
			B	0.186	2.642	0.588	0.85	1	19.170			
			C	0.312	2.265	0.62	0.85	1	30.015			
T3 228.00-208.00	0.17	1.74	A	0.205	2.579	0.591	0.85	1	21.141	2.91	0.15	C
			B	0.205	2.579	0.591	0.85	1	21.141			
			C	0.349	2.175	0.632	0.85	1	34.265			
T4 208.00-188.00	0.17	2.06	A	0.194	2.617	0.589	0.85	1	22.615	3.06	0.15	C
			B	0.194	2.617	0.589	0.85	1	22.615			
			C	0.319	2.246	0.622	0.85	1	35.857			
T5 188.00-168.00	0.37	2.72	A	0.183	2.655	0.587	0.85	1	26.701	3.43	0.17	C
			B	0.27	2.379	0.607	0.85	1	37.901			
			C	0.283	2.342	0.611	0.85	1	39.678			
T6 168.00-148.00	0.56	3.07	A	0.175	2.681	0.586	0.85	1	31.265	4.31	0.22	B
			B	0.32	2.244	0.622	0.85	1	53.823			
			C	0.258	2.412	0.604	0.85	1	43.761			
T7 148.00-128.00	0.56	3.24	A	0.16	2.735	0.583	0.85	1	33.540	4.46	0.22	B
			B	0.285	2.336	0.611	0.85	1	55.583			
			C	0.232	2.493	0.597	0.85	1	45.851			
T8 128.00-108.00	0.59	4.41	A	0.164	2.721	0.584	0.85	1	39.031	4.76	0.24	B
			B	0.273	2.371	0.608	0.85	1	61.159			
			C	0.227	2.51	0.596	0.85	1	51.442			
T9 108.00-88.00	0.78	5.28	A	0.249	2.441	0.602	0.85	1	62.863	4.78	0.24	B
			B	0.249	2.441	0.602	0.85	1	62.863			
			C	0.208	2.571	0.592	0.85	1	53.332			
T10 88.00-68.00	1.08	6.95	A	0.26	2.408	0.604	0.85	1	74.854	6.09	0.30	C
			B	0.26	2.408	0.604	0.85	1	74.854			
			C	0.329	2.221	0.625	0.85	1	94.083			
T11 68.00-48.00	1.08	7.23	A	0.244	2.456	0.6	0.85	1	77.102	5.85	0.29	C
			B	0.244	2.456	0.6	0.85	1	77.102			
			C	0.307	2.276	0.618	0.85	1	95.922			
T12 48.00-28.00	1.08	7.52	A	0.231	2.497	0.597	0.85	1	79.578	5.42	0.27	C
			B	0.231	2.497	0.597	0.85	1	79.578			
			C	0.289	2.326	0.613	0.85	1	98.071			
T13 28.00-8.00	1.08	5.23	A	0.176	2.677	0.586	0.85	1	57.253	4.37	0.22	C
			B	0.176	2.677	0.586	0.85	1	57.253			
			C	0.233	2.491	0.598	0.85	1	76.912			

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 klf	Ctrl. Face
Sum Weight:	7.77	52.07						OTM	5789.95 kip-ft	53.32		

Tower Forces - With Ice - Wind Normal 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 klf	Ctrl. Face
T1 256.00-248.00	0.19	0.64	A	0.282	2.345	0.611	1	1	12.432	1.19	0.15	C
			B	0.282	2.345	0.611	1	1	12.432			
			C	0.477	1.932	0.686	1	1	20.110			
T2 248.00-228.00	0.38	1.87	A	0.253	2.428	0.603	1	1	27.432	2.79	0.14	C
			B	0.253	2.428	0.603	1	1	27.432			
			C	0.453	1.969	0.675	1	1	47.046			
T3 228.00-208.00	0.43	2.38	A	0.27	2.378	0.607	1	1	29.485	3.01	0.15	C
			B	0.27	2.378	0.607	1	1	29.485			
			C	0.503	1.896	0.699	1	1	54.170			
T4 208.00-188.00	0.43	2.72	A	0.248	2.444	0.601	1	1	30.578	3.09	0.15	C
			B	0.248	2.444	0.601	1	1	30.578			
			C	0.454	1.967	0.675	1	1	55.098			
T5 188.00-168.00	0.99	3.48	A	0.225	2.515	0.596	1	1	34.814	3.36	0.17	C
			B	0.351	2.169	0.633	1	1	52.022			
			C	0.392	2.08	0.648	1	1	58.286			
T6 168.00-148.00	1.55	4.00	A	0.214	2.55	0.593	1	1	40.654	4.11	0.21	B
			B	0.424	2.018	0.662	1	1	76.042			
			C	0.353	2.164	0.634	1	1	62.826			
T7 148.00-128.00	1.55	4.26	A	0.197	2.607	0.59	1	1	43.820	4.23	0.21	B
			B	0.378	2.109	0.643	1	1	77.889			
			C	0.317	2.252	0.621	1	1	65.401			
T8 128.00-108.00	1.58	5.53	A	0.192	2.624	0.589	1	1	48.754	4.42	0.22	B
			B	0.351	2.169	0.633	1	1	82.749			
			C	0.297	2.303	0.615	1	1	70.444			
T9 108.00-88.00	2.13	6.49	A	0.32	2.243	0.622	1	1	84.691	4.44	0.22	B
			B	0.32	2.243	0.622	1	1	84.691			
			C	0.272	2.373	0.608	1	1	72.785			
T10 88.00-68.00	2.96	8.52	A	0.324	2.233	0.624	1	1	98.112	6.31	0.32	C
			B	0.324	2.233	0.624	1	1	98.112			
			C	0.469	1.944	0.682	1	1	148.332			
T11 68.00-48.00	2.96	8.89	A	0.304	2.284	0.617	1	1	100.852	6.00	0.30	C
			B	0.304	2.284	0.617	1	1	100.852			
			C	0.437	1.996	0.667	1	1	149.543			
T12 48.00-28.00	2.96	9.28	A	0.287	2.33	0.612	1	1	103.932	5.52	0.28	C
			B	0.287	2.33	0.612	1	1	103.932			
			C	0.409	2.046	0.655	1	1	151.398			
T13 28.00-8.00	2.96	6.19	A	0.227	2.51	0.596	1	1	75.264	4.70	0.23	C
			B	0.227	2.51	0.596	1	1	75.264			
			C	0.345	2.183	0.631	1	1	125.805			
Sum Weight:	21.04	65.20						OTM	5725.91 kip-ft	53.14		

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_E ft²	F K	w klf	Ctrl. Face
T1 256.00-248.00	0.19	0.64	A	0.282	2.345	0.611	0.8	1	10.974	1.12	0.14	C
			B	0.282	2.345	0.611	0.8	1	10.974			
			C	0.477	1.932	0.686	0.8	1	18.920			
T2 248.00-228.00	0.38	1.87	A	0.253	2.428	0.603	0.8	1	24.534	2.65	0.13	C
			B	0.253	2.428	0.603	0.8	1	24.534			
			C	0.453	1.969	0.675	0.8	1	44.792			
T3 228.00-208.00	0.43	2.38	A	0.27	2.378	0.607	0.8	1	26.598	2.90	0.14	C
			B	0.27	2.378	0.607	0.8	1	26.598			
			C	0.503	1.896	0.699	0.8	1	52.046			
T4 208.00-188.00	0.43	2.72	A	0.248	2.444	0.601	0.8	1	27.832	2.97	0.15	C
			B	0.248	2.444	0.601	0.8	1	27.832			
			C	0.454	1.967	0.675	0.8	1	52.976			
T5 188.00-168.00	0.99	3.48	A	0.225	2.515	0.596	0.8	1	31.587	3.20	0.16	C
			B	0.351	2.169	0.633	0.8	1	49.244			
			C	0.392	2.08	0.648	0.8	1	55.653			
T6 168.00-148.00	1.55	4.00	A	0.214	2.55	0.593	0.8	1	36.345	3.93	0.20	B
			B	0.424	2.018	0.662	0.8	1	72.759			
			C	0.353	2.164	0.634	0.8	1	59.196			
T7 148.00-128.00	1.55	4.26	A	0.197	2.607	0.59	0.8	1	38.963	4.02	0.20	B
			B	0.378	2.109	0.643	0.8	1	74.023			
			C	0.317	2.252	0.621	0.8	1	61.200			
T8 128.00-108.00	1.58	5.53	A	0.192	2.624	0.589	0.8	1	43.526	4.19	0.21	B
			B	0.351	2.169	0.633	0.8	1	78.458			
			C	0.297	2.303	0.615	0.8	1	65.836			
T9 108.00-88.00	2.13	6.49	A	0.32	2.243	0.622	0.8	1	79.886	4.18	0.21	B
			B	0.32	2.243	0.622	0.8	1	79.886			
			C	0.272	2.373	0.608	0.8	1	67.674			
T10 88.00-68.00	2.96	8.52	A	0.324	2.233	0.624	0.8	1	91.607	5.97	0.30	C
			B	0.324	2.233	0.624	0.8	1	91.607			
			C	0.469	1.944	0.682	0.8	1	140.396			
T11 68.00-48.00	2.96	8.89	A	0.304	2.284	0.617	0.8	1	93.740	5.65	0.28	C
			B	0.304	2.284	0.617	0.8	1	93.740			
			C	0.437	1.996	0.667	0.8	1	140.977			
T12 48.00-28.00	2.96	9.28	A	0.287	2.33	0.612	0.8	1	96.175	5.18	0.26	C
			B	0.287	2.33	0.612	0.8	1	96.175			
			C	0.409	2.046	0.655	0.8	1	142.171			
T13 28.00-8.00	2.96	6.19	A	0.227	2.51	0.596	0.8	1	74.864	4.58	0.23	C
			B	0.227	2.51	0.596	0.8	1	74.864			
			C	0.345	2.183	0.631	0.8	1	122.690			
Sum Weight:	21.04	65.20						OTM	5451.10 kip-ft	50.55		

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_E ft²	F K	w klf	Ctrl. Face
T1 256.00-248.00	0.19	0.64	A	0.282	2.345	0.611	0.85	1	11.338	1.13	0.14	C
			B	0.282	2.345	0.611	0.85	1	11.338			
			C	0.477	1.932	0.686	0.85	1	19.218			
T2 248.00-228.00	0.38	1.87	A	0.253	2.428	0.603	0.85	1	25.259	2.69	0.13	C
			B	0.253	2.428	0.603	0.85	1	25.259			
			C	0.453	1.969	0.675	0.85	1	45.356			
T3 228.00-	0.43	2.38	A	0.27	2.378	0.607	0.85	1	27.320	2.92	0.15	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 klf	Ctrl. Face
208.00			B	0.27	2.378	0.607	0.85	1	27.320			
			C	0.503	1.896	0.699	0.85	1	52.577			
T4 208.00-188.00	0.43	2.72	A	0.248	2.444	0.601	0.85	1	28.519	3.00	0.15	C
			B	0.248	2.444	0.601	0.85	1	28.519			
			C	0.454	1.967	0.675	0.85	1	53.507			
T5 188.00-168.00	0.99	3.48	A	0.225	2.515	0.596	0.85	1	32.394	3.24	0.16	C
			B	0.351	2.169	0.633	0.85	1	49.939			
			C	0.392	2.08	0.648	0.85	1	56.311			
T6 168.00-148.00	1.55	4.00	A	0.214	2.55	0.593	0.85	1	37.422	3.97	0.20	B
			B	0.424	2.018	0.662	0.85	1	73.580			
			C	0.353	2.164	0.634	0.85	1	60.103			
T7 148.00-128.00	1.55	4.26	A	0.197	2.607	0.59	0.85	1	40.177	4.07	0.20	B
			B	0.378	2.109	0.643	0.85	1	74.989			
			C	0.317	2.252	0.621	0.85	1	62.250			
T8 128.00-108.00	1.58	5.53	A	0.192	2.624	0.589	0.85	1	44.833	4.25	0.21	B
			B	0.351	2.169	0.633	0.85	1	79.530			
			C	0.297	2.303	0.615	0.85	1	66.988			
T9 108.00-88.00	2.13	6.49	A	0.32	2.243	0.622	0.85	1	81.087	4.25	0.21	B
			B	0.32	2.243	0.622	0.85	1	81.087			
			C	0.272	2.373	0.608	0.85	1	68.951			
T10 88.00-68.00	2.96	8.52	A	0.324	2.233	0.624	0.85	1	93.233	6.05	0.30	C
			B	0.324	2.233	0.624	0.85	1	93.233			
			C	0.469	1.944	0.682	0.85	1	142.380			
T11 68.00-48.00	2.96	8.89	A	0.304	2.284	0.617	0.85	1	95.518	5.74	0.29	C
			B	0.304	2.284	0.617	0.85	1	95.518			
			C	0.437	1.996	0.667	0.85	1	143.119			
T12 48.00-28.00	2.96	9.28	A	0.287	2.33	0.612	0.85	1	98.114	5.26	0.26	C
			B	0.287	2.33	0.612	0.85	1	98.114			
			C	0.409	2.046	0.655	0.85	1	144.477			
T13 28.00-8.00	2.96	6.19	A	0.227	2.51	0.596	0.85	1	74.964	4.61	0.23	C
			B	0.227	2.51	0.596	0.85	1	74.964			
			C	0.345	2.183	0.631	0.85	1	123.469			
Sum Weight:	21.04	65.20						OTM	5519.80 kip-ft	51.19		

Tower Forces - Service - Wind Normal 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 klf	Ctrl. Face
T1 256.00-248.00	0.08	0.40	A	0.202	2.59	0.591	1	1	9.553	0.38	0.05	C
			B	0.202	2.59	0.591	1	1	9.553			
			C	0.327	2.228	0.624	1	1	13.670			
T2 248.00-228.00	0.16	1.26	A	0.186	2.642	0.588	1	1	21.343	0.89	0.04	C
			B	0.186	2.642	0.588	1	1	21.343			
			C	0.312	2.265	0.62	1	1	31.904			
T3 228.00-208.00	0.17	1.74	A	0.205	2.579	0.591	1	1	23.306	0.95	0.05	C
			B	0.205	2.579	0.591	1	1	23.306			
			C	0.349	2.175	0.632	1	1	36.100			
T4 208.00-188.00	0.17	2.06	A	0.194	2.617	0.589	1	1	24.675	0.99	0.05	C
			B	0.194	2.617	0.589	1	1	24.675			
			C	0.319	2.246	0.622	1	1	37.646			
T5 188.00-168.00	0.37	2.72	A	0.183	2.655	0.587	1	1	29.121	1.12	0.06	C
			B	0.27	2.379	0.607	1	1	40.097			
			C	0.283	2.342	0.611	1	1	41.841			

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 klf	Ctrl. Face
T6 168.00-148.00	0.56	3.07	A	0.175	2.681	0.586	1	1	34.496	1.40	0.07	B
			B	0.32	2.244	0.622	1	1	56.543			
			C	0.258	2.412	0.604	1	1	46.699			
T7 148.00-128.00	0.56	3.24	A	0.16	2.735	0.583	1	1	37.183	1.45	0.07	B
			B	0.285	2.336	0.611	1	1	58.732			
			C	0.232	2.493	0.597	1	1	49.209			
T8 128.00-108.00	0.59	4.41	A	0.164	2.721	0.584	1	1	42.951	1.55	0.08	B
			B	0.273	2.371	0.608	1	1	64.613			
			C	0.227	2.51	0.596	1	1	55.094			
T9 108.00-88.00	0.78	5.28	A	0.249	2.441	0.602	1	1	66.695	1.56	0.08	B
			B	0.249	2.441	0.602	1	1	66.695			
			C	0.208	2.571	0.592	1	1	57.356			
T10 88.00-68.00	1.08	6.95	A	0.26	2.408	0.604	1	1	80.012	1.98	0.10	C
			B	0.26	2.408	0.604	1	1	80.012			
			C	0.329	2.221	0.625	1	1	98.790			
T11 68.00-48.00	1.08	7.23	A	0.244	2.456	0.6	1	1	82.710	1.90	0.10	C
			B	0.244	2.456	0.6	1	1	82.710			
			C	0.307	2.276	0.618	1	1	101.087			
T12 48.00-28.00	1.08	7.52	A	0.231	2.497	0.597	1	1	85.665	1.77	0.09	C
			B	0.231	2.497	0.597	1	1	85.665			
			C	0.289	2.326	0.613	1	1	103.722			
T13 28.00-8.00	1.08	5.23	A	0.176	2.677	0.586	1	1	57.553	1.35	0.07	C
			B	0.176	2.677	0.586	1	1	57.553			
			C	0.233	2.491	0.598	1	1	77.212			
Sum Weight:	7.77	52.07						OTM	1886.57 kip-ft	17.30		

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_E ft²	F K	w klf	Ctrl. Face
T1 256.00-248.00	0.08	0.40	A	0.202	2.59	0.591	0.8	1	8.096	0.35	0.04	C
			B	0.202	2.59	0.591	0.8	1	8.096			
			C	0.327	2.228	0.624	0.8	1	12.370			
T2 248.00-228.00	0.16	1.26	A	0.186	2.642	0.588	0.8	1	18.445	0.82	0.04	C
			B	0.186	2.642	0.588	0.8	1	18.445			
			C	0.312	2.265	0.62	0.8	1	29.385			
T3 228.00-208.00	0.17	1.74	A	0.205	2.579	0.591	0.8	1	20.419	0.88	0.04	C
			B	0.205	2.579	0.591	0.8	1	20.419			
			C	0.349	2.175	0.632	0.8	1	33.654			
T4 208.00-188.00	0.17	2.06	A	0.194	2.617	0.589	0.8	1	21.929	0.93	0.05	C
			B	0.194	2.617	0.589	0.8	1	21.929			
			C	0.319	2.246	0.622	0.8	1	35.260			
T5 188.00-168.00	0.37	2.72	A	0.183	2.655	0.587	0.8	1	25.894	1.04	0.05	C
			B	0.27	2.379	0.607	0.8	1	37.169			
			C	0.283	2.342	0.611	0.8	1	38.957			
T6 168.00-148.00	0.56	3.07	A	0.175	2.681	0.586	0.8	1	30.188	1.31	0.07	B
			B	0.32	2.244	0.622	0.8	1	52.916			
			C	0.258	2.412	0.604	0.8	1	42.782			
T7 148.00-128.00	0.56	3.24	A	0.16	2.735	0.583	0.8	1	32.326	1.35	0.07	B
			B	0.285	2.336	0.611	0.8	1	54.533			
			C	0.232	2.493	0.597	0.8	1	44.731			
T8 128.00-108.00	0.59	4.41	A	0.164	2.721	0.584	0.8	1	37.724	1.44	0.07	B
			B	0.273	2.371	0.608	0.8	1	60.008			

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 klf	Ctrl. Face
			C	0.227	2.51	0.596	0.8	1	50.224			
T9 108.00-88.00	0.78	5.28	A	0.249	2.441	0.602	0.8	1	61.586	1.44	0.07	B
			B	0.249	2.441	0.602	0.8	1	61.586			
			C	0.208	2.571	0.592	0.8	1	51.991			
T10 88.00-68.00	1.08	6.95	A	0.26	2.408	0.604	0.8	1	73.135	1.85	0.09	C
			B	0.26	2.408	0.604	0.8	1	73.135			
			C	0.329	2.221	0.625	0.8	1	92.514			
T11 68.00-48.00	1.08	7.23	A	0.244	2.456	0.6	0.8	1	75.233	1.77	0.09	C
			B	0.244	2.456	0.6	0.8	1	75.233			
			C	0.307	2.276	0.618	0.8	1	94.200			
T12 48.00-28.00	1.08	7.52	A	0.231	2.497	0.597	0.8	1	77.549	1.64	0.08	C
			B	0.231	2.497	0.597	0.8	1	77.549			
			C	0.289	2.326	0.613	0.8	1	96.188			
T13 28.00-8.00	1.08	5.23	A	0.176	2.677	0.586	0.8	1	57.153	1.35	0.07	C
			B	0.176	2.677	0.586	0.8	1	57.153			
			C	0.233	2.491	0.598	0.8	1	76.812			
Sum Weight:	7.77	52.07						OTM	1753.84 kip-ft	16.17		

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_E ft²	F K	w klf	Ctrl. Face
T1 256.00-248.00	0.08	0.40	A	0.202	2.59	0.591	0.85	1	8.460	0.36	0.04	C
			B	0.202	2.59	0.591	0.85	1	8.460			
			C	0.327	2.228	0.624	0.85	1	12.695			
T2 248.00-228.00	0.16	1.26	A	0.186	2.642	0.588	0.85	1	19.170	0.84	0.04	C
			B	0.186	2.642	0.588	0.85	1	19.170			
			C	0.312	2.265	0.62	0.85	1	30.015			
T3 228.00-208.00	0.17	1.74	A	0.205	2.579	0.591	0.85	1	21.141	0.90	0.04	C
			B	0.205	2.579	0.591	0.85	1	21.141			
			C	0.349	2.175	0.632	0.85	1	34.265			
T4 208.00-188.00	0.17	2.06	A	0.194	2.617	0.589	0.85	1	22.615	0.95	0.05	C
			B	0.194	2.617	0.589	0.85	1	22.615			
			C	0.319	2.246	0.622	0.85	1	35.857			
T5 188.00-168.00	0.37	2.72	A	0.183	2.655	0.587	0.85	1	26.701	1.06	0.05	C
			B	0.27	2.379	0.607	0.85	1	37.901			
			C	0.283	2.342	0.611	0.85	1	39.678			
T6 168.00-148.00	0.56	3.07	A	0.175	2.681	0.586	0.85	1	31.265	1.33	0.07	B
			B	0.32	2.244	0.622	0.85	1	53.823			
			C	0.258	2.412	0.604	0.85	1	43.761			
T7 148.00-128.00	0.56	3.24	A	0.16	2.735	0.583	0.85	1	33.540	1.38	0.07	B
			B	0.285	2.336	0.611	0.85	1	55.583			
			C	0.232	2.493	0.597	0.85	1	45.851			
T8 128.00-108.00	0.59	4.41	A	0.164	2.721	0.584	0.85	1	39.031	1.47	0.07	B
			B	0.273	2.371	0.608	0.85	1	61.159			
			C	0.227	2.51	0.596	0.85	1	51.442			
T9 108.00-88.00	0.78	5.28	A	0.249	2.441	0.602	0.85	1	62.863	1.47	0.07	B
			B	0.249	2.441	0.602	0.85	1	62.863			
			C	0.208	2.571	0.592	0.85	1	53.332			
T10 88.00-68.00	1.08	6.95	A	0.26	2.408	0.604	0.85	1	74.854	1.88	0.09	C
			B	0.26	2.408	0.604	0.85	1	74.854			
			C	0.329	2.221	0.625	0.85	1	94.083			
T11 68.00-	1.08	7.23	A	0.244	2.456	0.6	0.85	1	77.102	1.81	0.09	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 klf	Ctrl. Face
48.00			B	0.244	2.456	0.6	0.85	1	77.102			
			C	0.307	2.276	0.618	0.85	1	95.922			
T12 48.00-28.00	1.08	7.52	A	0.231	2.497	0.597	0.85	1	79.578	1.67	0.08	C
			B	0.231	2.497	0.597	0.85	1	79.578			
			C	0.289	2.326	0.613	0.85	1	98.071			
T13 28.00-8.00	1.08	5.23	A	0.176	2.677	0.586	0.85	1	57.253	1.35	0.07	C
			B	0.176	2.677	0.586	0.85	1	57.253			
			C	0.233	2.491	0.598	0.85	1	76.912			
Sum Weight:	7.77	52.07						OTM	1787.02 kip-ft	16.46		

Discrete Appurtenance Pressures - No Ice $G_H = 1.100$

Description	Aiming Azimuth °	Weight K	$Offset_x$ ft	$Offset_z$ ft	z ft	K_z	q_z psf	C_AA_C Front ft²	C_AA_C Side ft²
15' Platform with handrail	0.0000	2.04	0.00	0.00	256.00	1.796	37	33.80	33.80
24' x 3" Omni (Up)	0.0000	0.06	0.00	-3.72	269.00	1.821	38	7.20	7.20
24' x 3" Omni (Up)	300.0000	0.06	-6.81	-3.93	269.00	1.821	38	7.20	7.20
24' x 3" Omni (Down)	300.0000	0.06	-6.87	-3.97	244.00	1.771	37	7.20	7.20
8'x3" Omni	180.0000	0.02	0.00	7.89	260.00	1.804	37	2.40	2.40
8'x3" Omni	120.0000	0.02	3.28	1.89	260.00	1.804	37	2.40	2.40
Beacon	60.0000	0.02	5.74	0.15	259.00	1.802	37	2.10	2.10
Scala CL400 Antenna	300.0000	0.04	-6.84	-3.95	258.00	1.800	37	7.78	7.78
Pirod 6' Side Mount Standoff (1)	0.0000	0.07	0.00	-6.90	230.00	1.741	36	4.97	4.97
Decibel DB806	0.0000	0.02	0.00	-9.89	233.00	1.748	36	1.59	1.59
Pirod 6' Side Mount Standoff (1)	120.0000	0.07	5.97	3.45	230.00	1.741	36	4.97	4.97
Decibel DB806	120.0000	0.02	8.57	4.95	233.00	1.748	36	1.59	1.59
Pirod 15' T-Frame Sector Mount (1)	0.0000	0.50	0.00	-6.73	178.00	1.619	34	15.00	15.00
Pirod 15' T-Frame Sector Mount (1)	120.0000	0.50	5.83	3.36	178.00	1.619	34	15.00	15.00
Pirod 15' T-Frame Sector Mount (1)	240.0000	0.50	-5.83	3.36	178.00	1.619	34	15.00	15.00
APX16PV-16PVL-X	0.0000	0.08	4.00	-7.61	180.00	1.624	34	13.40	4.01
APX16PV-16PVL-X	120.0000	0.08	4.59	7.27	180.00	1.624	34	13.40	4.01
APX16PV-16PVL-X	240.0000	0.08	-8.59	0.34	180.00	1.624	34	13.40	4.01
Rohn 6'x15' Boom Gate (1)	0.0000	0.70	0.00	-12.86	108.00	1.403	29	16.00	16.00
Rohn 6'x15' Boom Gate (1)	120.0000	0.70	11.14	6.43	108.00	1.403	29	16.00	16.00
Rohn 6'x15' Boom Gate (1)	240.0000	0.70	-11.14	6.43	108.00	1.403	29	16.00	16.00
APL196516-42T2	0.0000	0.02	0.00	-15.86	108.00	1.403	29	6.94	5.92
APL196516-42T2	120.0000	0.02	10.74	13.13	108.00	1.403	29	6.94	5.92
APL196516-42T2	240.0000	0.02	-13.74	7.93	108.00	1.403	29	6.94	5.92
APL866513-42T0	0.0000	0.04	0.00	-15.86	108.00	1.403	29	8.59	7.47
APL866513-42T0	120.0000	0.04	13.74	7.93	108.00	1.403	29	8.59	7.47
APL866513-42T0	240.0000	0.04	-13.74	7.93	108.00	1.403	29	8.59	7.47
Pirod 4' Side Mount Standoff (1)	0.0000	0.05	0.00	-12.30	101.00	1.377	29	2.72	2.72
48"x8"x8" Antenna	0.0000	0.04	0.00	-14.30	101.00	1.377	29	7.46	7.46
Pirod 15' T-Frame Sector	0.0000	0.50	0.00	-12.98	86.00	1.315	27	15.00	15.00

Description	Aiming Azimuth °	Weight K	$Offset_x$ ft	$Offset_z$ ft	z ft	K_z	q_z psf	C_AA_C Front ft^2	C_AA_C Side ft^2
Mount (1)									
Pirod 15' T-Frame Sector Mount (1)	120.0000	0.50	11.24	6.49	86.00	1.315	27	15.00	15.00
Pirod 15' T-Frame Sector Mount (1)	240.0000	0.50	-11.24	6.49	86.00	1.315	27	15.00	15.00
RV65-13	0.0000	0.06	0.00	-15.11	88.00	1.323	27	16.80	9.80
RV65-13	120.0000	0.06	13.09	7.56	88.00	1.323	27	16.80	9.80
RV65-13	240.0000	0.06	-13.09	7.56	88.00	1.323	27	16.80	9.80
LLPX310R	0.0000	0.04	0.00	-15.11	88.00	1.323	27	4.94	2.81
LLPX310R	120.0000	0.04	13.09	7.56	88.00	1.323	27	4.94	2.81
LLPX310R	240.0000	0.04	-13.09	7.56	88.00	1.323	27	4.94	2.81
Remote Radio Heads U-RAS	0.0000	0.03	0.00	-15.11	88.00	1.323	27	1.80	0.78
Remote Radio Heads U-RAS	120.0000	0.03	13.09	7.56	88.00	1.323	27	1.80	0.78
Remote Radio Heads U-RAS	240.0000	0.03	-13.09	7.56	88.00	1.323	27	1.80	0.78
	Sum Weight:	8.48							

Discrete Appurtenance Pressures - With Ice $G_H = 1.100$

Description	Aiming Azimuth °	Weight K	$Offset_x$ ft	$Offset_z$ ft	z ft	K_z	q_z psf	C_AA_C Front ft^2	C_AA_C Side ft^2	t_z in
15' Platform with handrail	0.0000	2.75	0.00	0.00	256.00	1.796	28	43.60	43.60	0.5000
24' x 3" Omni (Up)	0.0000	0.10	0.00	-3.72	269.00	1.821	28	9.50	9.50	0.5000
24' x 3" Omni (Up)	300.0000	0.10	-6.81	-3.93	269.00	1.821	28	9.50	9.50	0.5000
24' x 3" Omni (Down)	300.0000	0.10	-6.87	-3.97	244.00	1.771	28	9.50	9.50	0.5000
8'x3" Omni	180.0000	0.03	0.00	7.89	260.00	1.804	28	3.17	3.17	0.5000
8'x3" Omni	120.0000	0.03	3.28	1.89	260.00	1.804	28	3.17	3.17	0.5000
Beacon	60.0000	0.04	5.74	0.15	259.00	1.802	28	2.40	2.40	0.5000
Scala CL400 Antenna	300.0000	0.08	-6.84	-3.95	258.00	1.800	28	8.34	8.34	0.5000
Pirod 6' Side Mount Standoff (1)	0.0000	0.13	0.00	-6.90	230.00	1.741	27	6.12	6.12	0.5000
Decibel DB806	0.0000	0.03	0.00	-9.89	233.00	1.748	27	1.93	1.93	0.5000
Pirod 6' Side Mount Standoff (1)	120.0000	0.13	5.97	3.45	230.00	1.741	27	6.12	6.12	0.5000
Decibel DB806	120.0000	0.03	8.57	4.95	233.00	1.748	27	1.93	1.93	0.5000
Pirod 15' T-Frame Sector Mount (1)	0.0000	0.65	0.00	-6.73	178.00	1.619	25	20.60	20.60	0.5000
Pirod 15' T-Frame Sector Mount (1)	120.0000	0.65	5.83	3.36	178.00	1.619	25	20.60	20.60	0.5000
Pirod 15' T-Frame Sector Mount (1)	240.0000	0.65	-5.83	3.36	178.00	1.619	25	20.60	20.60	0.5000
APX16PV-16PVL-X	0.0000	0.14	4.00	-7.61	180.00	1.624	25	14.26	4.65	0.5000
APX16PV-16PVL-X	120.0000	0.14	4.59	7.27	180.00	1.624	25	14.26	4.65	0.5000
APX16PV-16PVL-X	240.0000	0.14	-8.59	0.34	180.00	1.624	25	14.26	4.65	0.5000
Rohn 6'x15' Boom Gate (1)	0.0000	1.10	0.00	-12.86	108.00	1.403	22	25.00	25.00	0.5000
Rohn 6'x15' Boom Gate (1)	120.0000	1.10	11.14	6.43	108.00	1.403	22	25.00	25.00	0.5000
Rohn 6'x15' Boom Gate (1)	240.0000	1.10	-11.14	6.43	108.00	1.403	22	25.00	25.00	0.5000
APL196516-42T2	0.0000	0.06	0.00	-15.86	108.00	1.403	22	7.72	6.69	0.5000
APL196516-42T2	120.0000	0.06	10.74	13.13	108.00	1.403	22	7.72	6.69	0.5000
APL196516-42T2	240.0000	0.06	-13.74	7.93	108.00	1.403	22	7.72	6.69	0.5000

Description	Aiming Azimuth °	Weight K	$Offset_x$ ft	$Offset_z$ ft	z ft	K_z	q_z psf	C_AA_C Front ft^2	C_AA_C Side ft^2	t_z in
APL866513-42T0	0.0000	0.09	0.00	-15.86	108.00	1.403	22	9.34	8.20	0.5000
APL866513-42T0	120.0000	0.09	13.74	7.93	108.00	1.403	22	9.34	8.20	0.5000
APL866513-42T0	240.0000	0.09	-13.74	7.93	108.00	1.403	22	9.34	8.20	0.5000
Pirod 4' Side Mount Standoff (1)	0.0000	0.09	0.00	-12.30	101.00	1.377	21	4.91	4.91	0.5000
48"x8"x8" Antenna	0.0000	0.08	0.00	-14.30	101.00	1.377	21	8.57	8.57	0.5000
Pirod 15' T-Frame Sector Mount (1)	0.0000	0.65	0.00	-12.98	86.00	1.315	20	20.60	20.60	0.5000
Pirod 15' T-Frame Sector Mount (1)	120.0000	0.65	11.24	6.49	86.00	1.315	20	20.60	20.60	0.5000
Pirod 15' T-Frame Sector Mount (1)	240.0000	0.65	-11.24	6.49	86.00	1.315	20	20.60	20.60	0.5000
RV65-13	0.0000	0.17	0.00	-15.11	88.00	1.323	21	17.98	10.88	0.5000
RV65-13	120.0000	0.17	13.09	7.56	88.00	1.323	21	17.98	10.88	0.5000
RV65-13	240.0000	0.17	-13.09	7.56	88.00	1.323	21	17.98	10.88	0.5000
LLPX310R	0.0000	0.08	0.00	-15.11	88.00	1.323	21	5.32	3.33	0.5000
LLPX310R	120.0000	0.08	13.09	7.56	88.00	1.323	21	5.32	3.33	0.5000
LLPX310R	240.0000	0.08	-13.09	7.56	88.00	1.323	21	5.32	3.33	0.5000
Remote Radio Heads U-RAS	0.0000	0.04	0.00	-15.11	88.00	1.323	21	1.99	0.92	0.5000
Remote Radio Heads U-RAS	120.0000	0.04	13.09	7.56	88.00	1.323	21	1.99	0.92	0.5000
Remote Radio Heads U-RAS	240.0000	0.04	-13.09	7.56	88.00	1.323	21	1.99	0.92	0.5000
	Sum Weight:	12.68								

Discrete Appurtenance Pressures - Service $G_H = 1.100$

Description	Aiming Azimuth °	Weight K	$Offset_x$ ft	$Offset_z$ ft	z ft	K_z	q_z psf	C_AA_C Front ft^2	C_AA_C Side ft^2
15' Platform with handrail	0.0000	2.04	0.00	0.00	256.00	1.796	11	33.80	33.80
24' x 3" Omni (Up)	0.0000	0.06	0.00	-3.72	269.00	1.821	12	7.20	7.20
24' x 3" Omni (Up)	300.0000	0.06	-6.81	-3.93	269.00	1.821	12	7.20	7.20
24' x 3" Omni (Down)	300.0000	0.06	-6.87	-3.97	244.00	1.771	11	7.20	7.20
8'x3" Omni	180.0000	0.02	0.00	7.89	260.00	1.804	12	2.40	2.40
8'x3" Omni	120.0000	0.02	3.28	1.89	260.00	1.804	12	2.40	2.40
Beacon	60.0000	0.02	5.74	0.15	259.00	1.802	12	2.10	2.10
Scala CL400 Antenna	300.0000	0.04	-6.84	-3.95	258.00	1.800	12	7.78	7.78
Pirod 6' Side Mount Standoff (1)	0.0000	0.07	0.00	-6.90	230.00	1.741	11	4.97	4.97
Decibel DB806	0.0000	0.02	0.00	-9.89	233.00	1.748	11	1.59	1.59
Pirod 6' Side Mount Standoff (1)	120.0000	0.07	5.97	3.45	230.00	1.741	11	4.97	4.97
Decibel DB806	120.0000	0.02	8.57	4.95	233.00	1.748	11	1.59	1.59
Pirod 15' T-Frame Sector Mount (1)	0.0000	0.50	0.00	-6.73	178.00	1.619	10	15.00	15.00
Pirod 15' T-Frame Sector Mount (1)	120.0000	0.50	5.83	3.36	178.00	1.619	10	15.00	15.00
Pirod 15' T-Frame Sector Mount (1)	240.0000	0.50	-5.83	3.36	178.00	1.619	10	15.00	15.00
APX16PV-16PVL-X	0.0000	0.08	4.00	-7.61	180.00	1.624	10	13.40	4.01
APX16PV-16PVL-X	120.0000	0.08	4.59	7.27	180.00	1.624	10	13.40	4.01
APX16PV-16PVL-X	240.0000	0.08	-8.59	0.34	180.00	1.624	10	13.40	4.01
Rohn 6'x15' Boom Gate (1)	0.0000	0.70	0.00	-12.86	108.00	1.403	9	16.00	16.00

Description	Aiming Azimuth °	Weight K	$Offset_x$ ft	$Offset_z$ ft	z ft	K_z	q_z psf	C_AA_C Front ft^2	C_AA_C Side ft^2
Rohn 6'x15' Boom Gate (1)	120.0000	0.70	11.14	6.43	108.00	1.403	9	16.00	16.00
Rohn 6'x15' Boom Gate (1)	240.0000	0.70	-11.14	6.43	108.00	1.403	9	16.00	16.00
APL196516-42T2	0.0000	0.02	0.00	-15.86	108.00	1.403	9	6.94	5.92
APL196516-42T2	120.0000	0.02	10.74	13.13	108.00	1.403	9	6.94	5.92
APL196516-42T2	240.0000	0.02	-13.74	7.93	108.00	1.403	9	6.94	5.92
APL866513-42T0	0.0000	0.04	0.00	-15.86	108.00	1.403	9	8.59	7.47
APL866513-42T0	120.0000	0.04	13.74	7.93	108.00	1.403	9	8.59	7.47
APL866513-42T0	240.0000	0.04	-13.74	7.93	108.00	1.403	9	8.59	7.47
Pirod 4' Side Mount Standoff (1)	0.0000	0.05	0.00	-12.30	101.00	1.377	9	2.72	2.72
48"x8"x8" Antenna	0.0000	0.04	0.00	-14.30	101.00	1.377	9	7.46	7.46
Pirod 15' T-Frame Sector Mount (1)	0.0000	0.50	0.00	-12.98	86.00	1.315	8	15.00	15.00
Pirod 15' T-Frame Sector Mount (1)	120.0000	0.50	11.24	6.49	86.00	1.315	8	15.00	15.00
Pirod 15' T-Frame Sector Mount (1)	240.0000	0.50	-11.24	6.49	86.00	1.315	8	15.00	15.00
RV65-13	0.0000	0.06	0.00	-15.11	88.00	1.323	8	16.80	9.80
RV65-13	120.0000	0.06	13.09	7.56	88.00	1.323	8	16.80	9.80
RV65-13	240.0000	0.06	-13.09	7.56	88.00	1.323	8	16.80	9.80
LLPX310R	0.0000	0.04	0.00	-15.11	88.00	1.323	8	4.94	2.81
LLPX310R	120.0000	0.04	13.09	7.56	88.00	1.323	8	4.94	2.81
LLPX310R	240.0000	0.04	-13.09	7.56	88.00	1.323	8	4.94	2.81
Remote Radio Heads U-RAS	0.0000	0.03	0.00	-15.11	88.00	1.323	8	1.80	0.78
Remote Radio Heads U-RAS	120.0000	0.03	13.09	7.56	88.00	1.323	8	1.80	0.78
Remote Radio Heads U-RAS	240.0000	0.03	-13.09	7.56	88.00	1.323	8	1.80	0.78
	Sum Weight:	8.48							

Dish Pressures - No Ice

Elevation ft	Dish Description	Aiming Azimuth °	Weight K	$Offset_x$ ft	$Offset_z$ ft	K_z	A_A ft^2	q_z psf
88.00	Dragonwave 0.6m Dish	0.0000	0.03	0.00	-15.11	1.323	3.72	27
88.00	Dragonwave 0.6m Dish	120.0000	0.03	13.09	7.56	1.323	3.72	27
		Sum Weight:	0.06					

Dish Pressures - With Ice

Elevation ft	Dish Description	Aiming Azimuth °	Weight K	$Offset_x$ ft	$Offset_z$ ft	K_z	A_A ft^2	q_z psf	t_z in
88.00	Dragonwave 0.6m Dish	0.0000	0.05	0.00	-15.11	1.323	4.01	21	0.5000
88.00	Dragonwave 0.6m Dish	120.0000	0.05	13.09	7.56	1.323	4.01	21	0.5000
		Sum Weight:	0.10						

Dish Pressures - Service

Elevation ft	Dish Description	Aiming Azimuth °	Weight K	$Offset_x$ ft	$Offset_z$ ft	K_z	A_A ft^2	q_z psf
88.00	Dragonwave 0.6m Dish	0.0000	0.03	0.00	-15.11	1.323	3.72	8
88.00	Dragonwave 0.6m Dish	120.0000	0.03	13.09	7.56	1.323	3.72	8
		Sum Weight:	0.06					

Force Totals

Load Case	Vertical Forces K	Sum of Forces X K	Sum of Forces Z K	Sum of Overturning Moments, M_x kip-ft	Sum of Overturning Moments, M_z kip-ft	Sum of Torques kip-ft
Leg Weight	26.96					
Bracing Weight	24.16					
Total Member Self-Weight	51.12			24.86	-19.43	
Gusset Weight	0.95					
Total Weight	67.43			24.86	-19.43	
Wind 0 deg - No Ice		-0.01	-68.49	-7944.75	-18.42	7.30
Wind 30 deg - No Ice		32.84	-56.92	-6595.73	-3840.21	34.43
Wind 60 deg - No Ice		56.10	-32.39	-3742.36	-6544.44	52.24
Wind 90 deg - No Ice		65.72	0.02	26.26	-7663.42	57.67
Wind 120 deg - No Ice		59.31	34.26	4010.53	-6920.81	48.69
Wind 150 deg - No Ice		32.88	56.96	6648.33	-3843.46	22.53
Wind 180 deg - No Ice		-0.00	64.84	7563.61	-19.14	-6.53
Wind 210 deg - No Ice		-32.89	56.94	6646.43	3804.65	-34.21
Wind 240 deg - No Ice		-59.31	34.24	4009.44	6882.07	-55.99
Wind 270 deg - No Ice		-65.75	0.01	25.82	7627.06	-57.90
Wind 300 deg - No Ice		-56.15	-32.41	-3744.27	6509.46	-45.71
Wind 330 deg - No Ice		-32.89	-56.96	-6598.59	3804.65	-22.53
Member Ice	13.14					
Gusset Ice	0.40					
Total Weight Ice	98.08			74.62	-52.93	
Wind 0 deg - Ice		-0.01	-65.01	-7423.44	-52.12	6.60
Wind 30 deg - Ice		31.51	-54.60	-6238.82	-3696.69	39.82
Wind 60 deg - Ice		54.01	-31.18	-3534.95	-6304.88	62.18
Wind 90 deg - Ice		63.04	0.01	75.75	-7342.41	69.46
Wind 120 deg - Ice		56.30	32.52	3824.35	-6546.04	59.21
Wind 150 deg - Ice		31.54	54.63	6390.39	-3699.32	29.08
Wind 180 deg - Ice		-0.00	62.41	7297.24	-52.70	-5.91
Wind 210 deg - Ice		-31.54	54.61	6388.85	3593.49	-39.63
Wind 240 deg - Ice		-56.30	32.50	3823.47	6440.27	-65.82
Wind 270 deg - Ice		-63.06	0.01	75.40	7238.57	-69.65
Wind 300 deg - Ice		-54.05	-31.20	-3536.49	6202.16	-56.27
Wind 330 deg - Ice		-31.54	-54.63	-6241.13	3593.49	-29.08
Total Weight	67.43			24.86	-19.43	
Wind 0 deg - Service		-0.00	-21.14	-2462.13	0.30	2.25
Wind 30 deg - Service		10.14	-17.57	-2045.77	-1179.27	10.63
Wind 60 deg - Service		17.32	-10.00	-1165.10	-2013.91	16.12
Wind 90 deg - Service		20.28	0.01	-1.95	-2359.27	17.80
Wind 120 deg - Service		18.31	10.57	1227.77	-2130.07	15.03
Wind 150 deg - Service		10.15	17.58	2041.90	-1180.27	6.96
Wind 180 deg - Service		-0.00	20.01	2324.40	0.07	-2.02
Wind 210 deg - Service		-10.15	17.57	2041.32	1180.26	-10.56
Wind 240 deg - Service		-18.31	10.57	1227.43	2130.08	-17.28
Wind 270 deg - Service		-20.29	0.00	-2.08	2360.01	-17.87
Wind 300 deg - Service		-17.33	-10.00	-1165.69	2015.08	-14.11

Load Case	Vertical Forces K	Sum of Forces X K	Sum of Forces Z K	Sum of Overturning Moments, M_x kip-ft	Sum of Overturning Moments, M_z kip-ft	Sum of Torques kip-ft
Wind 330 deg - Service	[illegible]	-10.15	-17.58	-2046.65	1180.26	-6.96

Load Combinations

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

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
T1	256 - 248	Leg	Max Tension	12	4.09	-0.02	0.01
			Max. Compression	23	-6.09	0.04	-0.01
			Max. Mx	2	-5.82	0.04	0.01

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Force K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. My	13	-0.84	-0.00	0.04
			Max. Vy	15	0.05	-0.00	0.00
			Max. Vx	13	-0.04	-0.00	0.04
		Diagonal	Max Tension	9	1.80	0.00	0.00
			Max. Compression	3	-1.79	0.00	0.00
			Max. Mx	15	1.50	0.01	0.00
			Max. My	3	-1.55	0.00	0.00
			Max. Vy	15	-0.01	0.01	0.00
			Max. Vx	3	-0.00	0.00	0.00
		Top Girt	Max Tension	6	0.43	0.00	0.00
			Max. Compression	12	-0.45	0.00	0.00
			Max. Mx	14	-0.01	-0.02	0.00
			Max. My	20	0.01	0.00	0.00
			Max. Vy	14	0.01	0.00	0.00
			Max. Vx	20	-0.00	0.00	0.00
T2	248 - 228	Leg	Max Tension	12	20.78	-0.10	-0.03
			Max. Compression	2	-24.19	0.14	-0.03
			Max. Mx	2	-24.19	0.14	-0.03
			Max. My	3	-1.21	-0.00	-0.15
			Max. Vy	10	0.12	0.03	0.01
			Max. Vx	2	0.28	-0.02	0.02
		Diagonal	Max Tension	3	3.31	0.00	0.00
			Max. Compression	9	-3.33	0.00	0.00
			Max. Mx	23	2.70	0.02	-0.00
			Max. My	3	-3.00	-0.00	0.00
			Max. Vy	23	-0.01	0.02	-0.00
			Max. Vx	3	-0.00	0.00	0.00
T3	228 - 208	Leg	Max Tension	12	48.02	-0.07	-0.00
			Max. Compression	10	-54.07	0.61	-0.00
			Max. Mx	2	-54.06	0.61	0.06
			Max. My	9	-1.71	-0.02	0.38
			Max. Vy	10	-0.18	0.61	-0.00
			Max. Vx	13	-0.12	-0.02	0.37
		Diagonal	Max Tension	9	4.43	0.00	0.00
			Max. Compression	3	-4.51	0.00	0.00
			Max. Mx	23	3.50	0.02	-0.00
			Max. My	2	-2.95	0.00	0.01
			Max. Vy	23	-0.02	0.02	-0.00
			Max. Vx	15	-0.00	0.01	0.01
T4	208 - 188	Leg	Max Tension	12	66.31	-0.35	0.01
			Max. Compression	10	-75.10	0.38	-0.02
			Max. Mx	2	-59.91	0.61	0.06
			Max. My	9	-1.95	-0.03	0.60
			Max. Vy	2	0.13	0.61	0.06
			Max. Vx	13	-0.15	-0.03	0.60
		Diagonal	Max Tension	3	3.16	0.00	0.00
			Max. Compression	3	-3.18	0.00	0.00
			Max. Mx	25	1.75	0.02	0.00
			Max. My	22	-3.01	0.00	-0.01
			Max. Vy	25	0.02	0.02	0.00
			Max. Vx	22	0.00	0.00	0.00
T5	188 - 168	Leg	Max Tension	12	84.13	-0.84	0.01
			Max. Compression	10	-97.12	0.57	0.01
			Max. Mx	12	77.22	-0.94	0.01
			Max. My	9	-3.88	-0.03	0.84
			Max. Vy	12	-0.65	-0.94	0.01
			Max. Vx	9	0.61	-0.02	0.80
		Diagonal	Max Tension	3	4.90	0.00	0.00
			Max. Compression	3	-4.96	0.00	0.00
			Max. Mx	21	3.08	0.04	-0.01
			Max. My	21	-4.27	0.02	-0.01

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Force K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Vy	21	0.02	0.04	-0.01
			Max. Vx	21	0.00	0.00	0.00
T6	168 - 148	Leg	Max Tension	8	106.80	-0.53	0.01
			Max. Compression	6	-123.49	0.61	-0.01
			Max. Mx	10	-123.37	0.61	0.03
			Max. My	7	-4.64	-0.00	-0.62
			Max. Vy	12	0.08	-0.58	0.01
			Max. Vx	3	0.11	-0.01	-0.61
		Diagonal	Max Tension	3	5.22	0.00	0.00
			Max. Compression	3	-5.30	0.00	0.00
			Max. Mx	19	3.69	0.07	-0.01
			Max. My	20	-2.73	0.04	-0.01
			Max. Vy	21	0.03	0.07	-0.01
			Max. Vx	20	0.00	0.00	0.00
T7	148 - 128	Leg	Max Tension	8	129.17	-0.42	0.02
			Max. Compression	6	-149.87	1.47	-0.08
			Max. Mx	10	-149.50	1.48	0.07
			Max. My	7	-6.72	0.03	-1.03
			Max. Vy	2	-0.22	1.48	0.01
			Max. Vx	3	0.19	0.03	-1.02
		Diagonal	Max Tension	11	5.73	0.00	0.00
			Max. Compression	11	-5.83	0.00	0.00
			Max. Mx	21	4.00	0.08	-0.01
			Max. My	25	-4.96	0.05	0.01
			Max. Vy	21	0.04	0.08	-0.01
			Max. Vx	25	-0.00	0.00	0.00
T8	128 - 108	Leg	Max Tension	8	149.18	-0.91	0.05
			Max. Compression	6	-174.23	1.52	0.00
			Max. Mx	10	-173.64	1.52	0.00
			Max. My	9	-7.85	-0.10	2.01
			Max. Vy	2	-0.20	1.52	-0.01
			Max. Vx	9	0.34	-0.10	2.01
		Diagonal	Max Tension	11	7.33	0.00	0.00
			Max. Compression	11	-7.47	0.00	0.00
			Max. Mx	19	4.90	0.24	-0.03
			Max. My	18	-6.40	0.04	-0.03
			Max. Vy	21	0.08	0.22	-0.03
			Max. Vx	25	-0.01	0.00	0.00
T9	108 - 88	Leg	Max Tension	8	172.96	-0.98	-0.04
			Max. Compression	6	-205.07	1.74	-0.12
			Max. Mx	2	-204.28	1.74	0.03
			Max. My	5	-9.69	-0.10	1.74
			Max. Vy	2	0.22	1.52	-0.01
			Max. Vx	11	0.40	-0.10	-1.74
		Diagonal	Max Tension	11	8.95	0.00	0.00
			Max. Compression	11	-9.09	0.00	0.00
			Max. Mx	19	6.34	0.24	-0.03
			Max. My	25	-7.04	0.13	0.03
			Max. Vy	21	0.09	0.23	-0.03
			Max. Vx	25	-0.01	0.00	0.00
T10	88 - 68	Leg	Max Tension	8	201.02	-2.01	0.04
			Max. Compression	6	-241.30	1.85	-0.07
			Max. Mx	4	200.74	-2.02	-0.09
			Max. My	9	-13.56	-0.09	2.05
			Max. Vy	12	-1.11	-1.62	0.11
			Max. Vx	9	1.07	0.02	1.22
		Diagonal	Max Tension	11	11.94	0.00	0.00
			Max. Compression	11	-12.10	0.00	0.00
			Max. Mx	21	8.62	0.35	-0.03
			Max. My	25	-9.86	0.21	0.05
			Max. Vy	21	0.12	0.35	-0.03

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Force K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Vx	25	-0.01	0.00	0.00
T11	68 - 48	Leg	Max Tension	8	231.47	-1.67	0.03
			Max. Compression	6	-279.11	2.69	-0.05
			Max. Mx	6	-279.11	2.69	-0.05
			Max. My	9	-16.51	-0.13	2.31
			Max. Vy	2	-0.23	2.68	-0.02
			Max. Vx	9	0.32	-0.13	2.31
		Diagonal	Max Tension	11	13.16	0.00	0.00
			Max. Compression	11	-13.42	0.00	0.00
			Max. Mx	19	8.95	0.40	-0.04
			Max. My	24	-12.46	0.22	0.05
			Max. Vy	21	0.13	0.40	-0.04
			Max. Vx	24	-0.01	0.00	0.00
T12	48 - 28	Leg	Max Tension	8	260.61	-0.94	0.02
			Max. Compression	6	-315.89	3.61	0.08
			Max. Mx	2	-313.92	3.62	-0.04
			Max. My	9	-19.51	-0.17	3.48
			Max. Vy	2	-0.40	3.62	-0.04
			Max. Vx	9	-0.42	-0.17	3.48
		Diagonal	Max Tension	11	13.53	0.00	0.00
			Max. Compression	11	-13.86	0.00	0.00
			Max. Mx	19	8.70	0.46	-0.06
			Max. My	18	-12.16	0.24	-0.07
			Max. Vy	20	0.14	0.44	-0.06
			Max. Vx	18	0.01	0.00	0.00
T13	28 - 8	Leg	Max Tension	8	267.99	-3.61	0.07
			Max. Compression	6	-326.98	-0.00	0.00
			Max. Mx	2	-323.60	3.62	-0.04
			Max. My	9	-21.55	-0.09	2.30
			Max. Vy	12	-0.44	-3.62	-0.02
			Max. Vx	9	0.41	-0.09	2.30
		Diagonal	Max Tension	11	20.08	0.00	0.00
			Max. Compression	11	-20.48	0.00	0.00
			Max. Mx	24	19.59	0.44	0.00
			Max. My	23	-2.22	0.00	-0.00
			Max. Vy	24	-0.07	0.00	0.00
			Max. Vx	23	0.00	0.00	0.00
		Horizontal	Max Tension	11	11.64	-0.17	-0.11
			Max. Compression	11	-11.43	-0.17	-0.11
			Max. Mx	21	0.38	-0.29	-0.10
			Max. My	24	-11.10	-0.22	-0.14
			Max. Vy	21	-0.09	-0.29	-0.10
			Max. Vx	24	0.01	-0.22	-0.14

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
Leg C	Max. Vert	10	352.37	36.18	-19.56
	Max. H_x	10	352.37	36.18	-19.56
	Max. H_z	3	-251.82	-25.98	17.64
	Min. Vert	4	-289.70	-31.65	17.01
	Min. H_x	4	-289.70	-31.65	17.01
	Min. H_z	10	352.37	36.18	-19.56
Leg B	Max. Vert	6	353.79	-36.12	-19.72
	Max. H_x	12	-288.48	31.60	17.13

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
Leg A	Max. H_z	13	-250.60	25.87	17.85
	Min. Vert	12	-288.48	31.60	17.13
	Min. H_x	6	353.79	-36.12	-19.72
	Min. H_z	6	353.79	-36.12	-19.72
	Max. Vert	2	351.54	0.16	41.10
	Max. H_x	11	21.40	4.62	1.74
	Max. H_z	2	351.54	0.16	41.10
	Min. Vert	8	-290.73	-0.13	-35.96
	Min. H_x	5	21.38	-4.60	1.74
	Min. H_z	8	-290.73	-0.13	-35.96

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	67.43	0.00	0.00	24.86	-19.43	-0.00
Dead+Wind 0 deg - No Ice	67.43	-0.01	-68.47	-7931.15	-18.42	7.35
Dead+Wind 30 deg - No Ice	67.43	32.83	-56.90	-6583.38	-3832.92	34.50
Dead+Wind 60 deg - No Ice	67.43	56.08	-32.38	-3734.98	-6531.76	52.31
Dead+Wind 90 deg - No Ice	67.43	65.70	0.02	26.48	-7649.13	57.72
Dead+Wind 120 deg - No Ice	67.43	59.29	34.25	4003.82	-6909.08	48.71
Dead+Wind 150 deg - No Ice	67.43	32.87	56.94	6635.89	-3836.45	22.53
Dead+Wind 180 deg - No Ice	67.43	-0.00	64.81	7548.95	-19.14	-6.58
Dead+Wind 210 deg - No Ice	67.43	-32.88	56.92	6633.96	3797.62	-34.28
Dead+Wind 240 deg - No Ice	67.43	-59.29	34.23	4002.70	6870.30	-56.06
Dead+Wind 270 deg - No Ice	67.43	-65.73	0.01	26.06	7612.71	-57.95
Dead+Wind 300 deg - No Ice	67.43	-56.13	-32.40	-3736.86	6496.74	-45.73
Dead+Wind 330 deg - No Ice	67.43	-32.87	-56.94	-6586.21	3797.35	-22.53
Dead+Ice	98.08	0.00	-0.00	74.62	-52.93	-0.00
Dead+Wind 0 deg+Ice	98.08	-0.01	-64.98	-7410.88	-52.19	6.72
Dead+Wind 30 deg+Ice	98.08	31.49	-54.57	-6227.91	-3690.41	40.01
Dead+Wind 60 deg+Ice	98.08	53.98	-31.17	-3528.46	-6294.06	62.39
Dead+Wind 90 deg+Ice	98.08	63.00	0.01	76.09	-7330.03	69.63
Dead+Wind 120 deg+Ice	98.08	56.27	32.50	3818.34	-6535.41	59.31
Dead+Wind 150 deg+Ice	98.08	31.52	54.60	6379.64	-3693.29	29.07
Dead+Wind 180 deg+Ice	98.08	-0.00	62.38	7284.74	-52.78	-6.03
Dead+Wind 210 deg+Ice	98.08	-31.52	54.58	6378.09	3587.28	-39.82
Dead+Wind 240 deg+Ice	98.08	-56.27	32.49	3817.45	6429.43	-66.03
Dead+Wind 270 deg+Ice	98.08	-63.03	0.01	75.77	7225.97	-69.82
Dead+Wind 300 deg+Ice	98.08	-54.02	-31.19	-3529.95	6191.13	-56.36
Dead+Wind 330 deg+Ice	98.08	-31.52	-54.60	-6230.18	3587.04	-29.07
Dead+Wind 0 deg - Service	67.43	-0.00	-21.13	-2430.66	-19.14	2.27
Dead+Wind 30 deg - Service	67.43	10.13	-17.56	-2014.70	-1196.49	10.65
Dead+Wind 60 deg - Service	67.43	17.31	-9.99	-1135.59	-2029.47	16.15
Dead+Wind 90 deg - Service	67.43	20.28	0.01	25.34	-2374.31	17.82
Dead+Wind 120 deg - Service	67.43	18.30	10.57	1252.94	-2145.87	15.04
Dead+Wind 150 deg - Service	67.43	10.15	17.57	2065.35	-1197.53	6.95
Dead+Wind 180 deg - Service	67.43	-0.00	20.00	2347.19	-19.37	-2.03
Dead+Wind 210 deg - Service	67.43	-10.15	17.57	2064.76	1158.63	-10.58
Dead+Wind 240 deg - Service	67.43	-18.30	10.57	1252.60	2106.99	-17.30
Dead+Wind 270 deg - Service	67.43	-20.29	0.00	25.21	2336.17	-17.89
Dead+Wind 300 deg - Service	67.43	-17.32	-10.00	-1136.18	1991.76	-14.11
Dead+Wind 330 deg - Service	67.43	-10.15	-17.57	-2015.57	1158.60	-6.95

Solution Summary

Load Comb.	Sum of Applied Forces PX K	PY K	PZ K	Sum of Reactions PX K	PY K	PZ K	% Error
1	0.00	-67.43	0.00	-0.00	67.43	-0.00	0.000%
2	-0.01	-67.43	-68.49	0.01	67.43	68.47	0.023%
3	32.84	-67.43	-56.92	-32.83	67.43	56.90	0.024%
4	56.10	-67.43	-32.39	-56.08	67.43	32.38	0.025%
5	65.72	-67.43	0.02	-65.70	67.43	-0.02	0.024%
6	59.31	-67.43	34.26	-59.29	67.43	-34.25	0.023%
7	32.88	-67.43	56.96	-32.87	67.43	-56.94	0.024%
8	-0.00	-67.43	64.84	0.00	67.43	-64.81	0.025%
9	-32.89	-67.43	56.94	32.88	67.43	-56.92	0.024%
10	-59.31	-67.43	34.24	59.29	67.43	-34.23	0.023%
11	-65.75	-67.43	0.01	65.73	67.43	-0.01	0.024%
12	-56.15	-67.43	-32.41	56.13	67.43	32.40	0.025%
13	-32.89	-67.43	-56.96	32.87	67.43	56.94	0.024%
14	0.00	-98.08	0.00	-0.00	98.08	0.00	0.000%
15	-0.01	-98.08	-65.01	0.01	98.08	64.98	0.027%
16	31.51	-98.08	-54.60	-31.49	98.08	54.57	0.027%
17	54.01	-98.08	-31.18	-53.98	98.08	31.17	0.028%
18	63.04	-98.08	0.01	-63.00	98.08	-0.01	0.028%
19	56.30	-98.08	32.52	-56.27	98.08	-32.50	0.027%
20	31.54	-98.08	54.63	-31.52	98.08	-54.60	0.028%
21	-0.00	-98.08	62.41	0.00	98.08	-62.38	0.028%
22	-31.54	-98.08	54.61	31.52	98.08	-54.58	0.028%
23	-56.30	-98.08	32.50	56.27	98.08	-32.49	0.027%
24	-63.06	-98.08	0.01	63.03	98.08	-0.01	0.027%
25	-54.05	-98.08	-31.20	54.02	98.08	31.19	0.028%
26	-31.54	-98.08	-54.63	31.52	98.08	54.60	0.027%
27	-0.00	-67.43	-21.14	0.00	67.43	21.13	0.010%
28	10.14	-67.43	-17.57	-10.13	67.43	17.56	0.010%
29	17.32	-67.43	-10.00	-17.31	67.43	9.99	0.010%
30	20.28	-67.43	0.01	-20.28	67.43	-0.01	0.010%
31	18.31	-67.43	10.57	-18.30	67.43	-10.57	0.010%
32	10.15	-67.43	17.58	-10.15	67.43	-17.57	0.010%
33	-0.00	-67.43	20.01	0.00	67.43	-20.00	0.010%
34	-10.15	-67.43	17.57	10.15	67.43	-17.57	0.010%
35	-18.31	-67.43	10.57	18.30	67.43	-10.57	0.010%
36	-20.29	-67.43	0.00	20.29	67.43	-0.00	0.010%
37	-17.33	-67.43	-10.00	17.32	67.43	10.00	0.010%
38	-10.15	-67.43	-17.58	10.15	67.43	17.57	0.010%

Non-Linear Convergence Results

Load Combination	Converged?	Number of Cycles	Displacement Tolerance	Force Tolerance
1	Yes	4	0.00000001	0.00000001
2	Yes	4	0.00036259	0.00060455
3	Yes	4	0.00037822	0.00063036
4	Yes	4	0.00039192	0.00065293
5	Yes	4	0.00037778	0.00062942
6	Yes	4	0.00036251	0.00060408
7	Yes	4	0.00037785	0.00062948
8	Yes	4	0.00039181	0.00065265
9	Yes	4	0.00037821	0.00063023
10	Yes	4	0.00036270	0.00060465

11	Yes	4	0.00037787	0.00062989
12	Yes	4	0.00039190	0.00065319
13	Yes	4	0.00037795	0.00063007
14	Yes	4	0.00000001	0.00000001
15	Yes	4	0.00054608	0.00090667
16	Yes	4	0.00056117	0.00093101
17	Yes	4	0.00057464	0.00095269
18	Yes	4	0.00056056	0.00092927
19	Yes	4	0.00054596	0.00090524
20	Yes	4	0.00056061	0.00092926
21	Yes	4	0.00057445	0.00095220
22	Yes	4	0.00056126	0.00093094
23	Yes	4	0.00054646	0.00090710
24	Yes	4	0.00056093	0.00093114
25	Yes	4	0.00057480	0.00095409
26	Yes	4	0.00056090	0.00093121
27	Yes	4	0.00037455	0.00060459
28	Yes	4	0.00037935	0.00061053
29	Yes	4	0.00038356	0.00061652
30	Yes	4	0.00037902	0.00060969
31	Yes	4	0.00037424	0.00060352
32	Yes	4	0.00037899	0.00060963
33	Yes	4	0.00038348	0.00061637
34	Yes	4	0.00037934	0.00061049
35	Yes	4	0.00037463	0.00060467
36	Yes	4	0.00037936	0.00061086
37	Yes	4	0.00038377	0.00061740
38	Yes	4	0.00037934	0.00061084

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T1	256 - 248	5.985	31	0.2418	0.0406
T2	248 - 228	5.580	31	0.2389	0.0372
T3	228 - 208	4.603	31	0.2180	0.0279
T4	208 - 188	3.719	31	0.1905	0.0199
T5	188 - 168	2.963	31	0.1630	0.0150
T6	168 - 148	2.305	31	0.1424	0.0125
T7	148 - 128	1.734	31	0.1200	0.0105
T8	128 - 108	1.256	31	0.0965	0.0091
T9	108 - 88	0.883	31	0.0751	0.0083
T10	88 - 68	0.586	31	0.0584	0.0074
T11	68 - 48	0.350	31	0.0446	0.0065
T12	48 - 28	0.171	31	0.0300	0.0053
T13	28 - 8	0.055	27	0.0148	0.0039

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
269.00	24' x 3" Omni (Up)	31	5.985	0.2418	0.0406	140403
260.00	8'x3" Omni	31	5.985	0.2418	0.0406	140403
259.00	Beacon	31	5.985	0.2418	0.0406	140403

Elevation	Appurtenance	Gov. Load Comb.	Deflection	Tilt	Twist	Radius of Curvature
ft			in	°	°	ft
258.00	(2) Scala CL400 Antenna	31	5.985	0.2418	0.0406	140403
256.00	15' Platform with handrail	31	5.985	0.2418	0.0406	140403
244.00	24' x 3" Omni (Down)	31	5.379	0.2362	0.0354	76499
233.00	Decibel DB806	31	4.841	0.2244	0.0303	56685
230.00	Pirod 6' Side Mount Standoff (1)	31	4.697	0.2205	0.0289	52683
180.00	(2) APX16PV-16PVL-X	31	2.689	0.1543	0.0139	53635
178.00	Pirod 15' T-Frame Sector Mount (1)	31	2.623	0.1523	0.0136	53758
108.00	Rohn 6'x15' Boom Gate (1)	31	0.883	0.0751	0.0083	70050
101.00	Pirod 4' Side Mount Standoff (1)	31	0.772	0.0687	0.0080	73851
88.00	Dragonwave 0.6m Dish	31	0.586	0.0584	0.0074	77069
86.00	Pirod 15' T-Frame Sector Mount (1)	31	0.559	0.0569	0.0073	77874

Maximum Tower Deflections - Design Wind

Section No.	Elevation	Horz. Deflection	Gov. Load Comb.	Tilt	Twist
	ft	in		°	°
T1	256 - 248	19.326	6	0.7815	0.1363
T2	248 - 228	18.009	6	0.7725	0.1262
T3	228 - 208	14.844	6	0.7054	0.0990
T4	208 - 188	11.986	6	0.6156	0.0776
T5	188 - 168	9.544	6	0.5259	0.0602
T6	168 - 148	7.422	6	0.4589	0.0497
T7	148 - 128	5.584	6	0.3865	0.0415
T8	128 - 108	4.042	6	0.3104	0.0356
T9	108 - 88	2.844	6	0.2414	0.0322
T10	88 - 68	1.887	6	0.1877	0.0288
T11	68 - 48	1.130	6	0.1432	0.0254
T12	48 - 28	0.554	6	0.0962	0.0208
T13	28 - 8	0.176	2	0.0474	0.0152

Critical Deflections and Radius of Curvature - Design Wind

Elevation	Appurtenance	Gov. Load Comb.	Deflection	Tilt	Twist	Radius of Curvature
ft			in	°	°	ft
269.00	24' x 3" Omni (Up)	6	19.326	0.7815	0.1363	45690
260.00	8'x3" Omni	6	19.326	0.7815	0.1363	45690
259.00	Beacon	6	19.326	0.7815	0.1363	45690
258.00	(2) Scala CL400 Antenna	6	19.326	0.7815	0.1363	45690
256.00	15' Platform with handrail	6	19.326	0.7815	0.1363	45690
244.00	24' x 3" Omni (Down)	6	17.359	0.7638	0.1209	24627
233.00	Decibel DB806	6	15.613	0.7262	0.1050	17749
230.00	Pirod 6' Side Mount Standoff (1)	6	15.149	0.7138	0.1010	16473
180.00	(2) APX16PV-16PVL-X	6	8.660	0.4975	0.0555	16618
178.00	Pirod 15' T-Frame Sector Mount (1)	6	8.447	0.4910	0.0544	16651
108.00	Rohn 6'x15' Boom Gate (1)	6	2.844	0.2414	0.0322	21772
101.00	Pirod 4' Side Mount Standoff (1)	6	2.486	0.2209	0.0311	22942
88.00	Dragonwave 0.6m Dish	6	1.887	0.1877	0.0288	23909
86.00	Pirod 15' T-Frame Sector Mount (1)	6	1.803	0.1830	0.0285	24164

Bolt Design Data

Section No.	Elevation ft	Component Type	Bolt Grade	Bolt Size in	Number Of Bolts	Maximum Load per Bolt K	Allowable Load K	Ratio Load / Allowable	Allowable Ratio	Criteria
T1	256	Leg	A325N	0.7500	4	0.48	19.44	0.025 ✓	1.333	Bolt Tension
		Diagonal	A325N	0.6250	1	1.80	6.12	0.294 ✓	1.333	Gusset Bearing
		Top Girt	A325N	0.5000	1	0.45	4.12	0.108 ✓	1.333	Bolt Shear
T2	248	Leg	A325N	0.8750	4	1.63	26.46	0.062 ✓	1.333	Bolt Tension
		Diagonal	A325N	0.6250	1	3.33	6.44	0.517 ✓	1.333	Bolt Shear
T3	228	Leg	A325N	1.0000	4	6.38	34.56	0.185 ✓	1.333	Bolt Tension
		Diagonal	A325N	0.6250	1	4.51	6.44	0.701 ✓	1.333	Bolt Shear
T4	208	Leg	A325N	1.0000	6	8.90	34.56	0.257 ✓	1.333	Bolt Tension
		Diagonal	A325N	0.6250	1	3.18	6.44	0.493 ✓	1.333	Bolt Shear
T5	188	Leg	A325N	1.0000	6	11.84	34.56	0.343 ✓	1.333	Bolt Tension
		Diagonal	A325N	0.7500	1	4.90	9.06	0.541 ✓	1.333	Member Bearing
T6	168	Leg	A325N	1.0000	6	15.29	34.56	0.442 ✓	1.333	Bolt Tension
		Diagonal	A325N	0.7500	1	5.22	9.06	0.576 ✓	1.333	Gusset Bearing
T7	148	Leg	A325N	1.0000	8	14.29	34.56	0.413 ✓	1.333	Bolt Tension
		Diagonal	A325N	0.7500	1	5.73	9.06	0.632 ✓	1.333	Gusset Bearing
T8	128	Leg	A325N	1.0000	8	17.27	34.56	0.500 ✓	1.333	Bolt Tension
		Diagonal	A325N	0.7500	1	7.47	9.28	0.805 ✓	1.333	Bolt Shear
T9	108	Leg	A325N	1.0000	12	13.37	34.56	0.387 ✓	1.333	Bolt Tension
		Diagonal	A325N	0.7500	1	9.09	9.28	0.980 ✓	1.333	Bolt Shear
T10	88	Leg	A325N	1.0000	12	15.55	34.56	0.450 ✓	1.333	Bolt Tension
		Diagonal	A325N	0.8750	1	12.10	12.63	0.958 ✓	1.333	Bolt Shear
T11	68	Leg	A325N	1.0000	12	18.03	34.56	0.522 ✓	1.333	Bolt Tension
		Diagonal	A325N	0.8750	1	13.42	12.63	1.063 ✓	1.333	Bolt Shear
T12	48	Leg	A325N	1.0000	12	20.56	34.56	0.595 ✓	1.333	Bolt Tension
		Diagonal	A325N	0.8750	1	13.86	12.63	1.097 ✓	1.333	Bolt Shear
T13	28	Leg	A325N	1.0000	16	16.75	34.56	0.485 ✓	1.333	Bolt Tension
		Diagonal	A325N	0.7500	3	6.83	9.28	0.736 ✓	1.333	Bolt Shear
		Horizontal	A325N	0.7500	2	5.82	9.28	0.627 ✓	1.333	Bolt Shear

Compression Checks

Leg 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	256 - 248	P2.5x.203	8.00	4.00	50.7 K=1.00	24.247	1.7040	-6.09	41.32	0.147 ✓
T2	248 - 228	P3x.216	20.00	4.00	41.3 K=1.00	25.655	2.2285	-24.19	57.17	0.423 ✓
T3	228 - 208	P4x.337	20.00	4.00	32.5 K=1.00	26.838	4.4074	-54.07	118.29	0.457 ✓
T4	208 - 188	P5x.375	20.04	5.01	32.7 K=1.00	26.815	6.1120	-75.10	163.89	0.458 ✓
T5	188 - 168	P6x.432	20.03	6.68	36.5 K=1.00	26.312	8.4049	-97.12	221.15	0.439 ✓
T6	168 - 148	P6x.432	20.03	6.68	36.5 K=1.00	26.312	8.4049	-123.49	221.15	0.558 ✓
T7	148 - 128	P6x.432	20.04	6.68	36.5 K=1.00	26.311	8.4049	-149.87	221.15	0.678 ✓
T8	128 - 108	P8x.375	20.04	10.02	41.2 K=1.00	25.666	9.7193	-174.23	249.46	0.698 ✓
T9	108 - 88	P8x.5	20.04	10.02	41.8 K=1.00	25.580	12.7627	-205.07	326.48	0.628 ✓
T10	88 - 68	P10x.5	20.03	10.02	33.1 K=1.00	26.758	16.1007	-241.31	430.81	0.560 ✓
T11	68 - 48	P10x.5	20.03	10.02	33.1 K=1.00	26.758	16.1007	-279.11	430.82	0.648 ✓
T12	48 - 28	P10x.5	20.04	10.02	33.1 K=1.00	26.757	16.1007	-315.89	430.80	0.733 ✓
T13	28 - 8	P10x.5	20.05	20.05	33.2 K=0.50	26.753	16.1007	-326.98	430.75	0.759 ✓

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	256 - 248	L1 3/4x1 3/4x3/16	7.78	3.63	126.7 K=1.00	9.305	0.6211	-1.79	5.78	0.309 ✓
T2	248 - 228	L2x2x1/4	7.85	3.62	113.4 K=1.02	11.208	0.9380	-3.33	10.51	0.317 ✓
T3	228 - 208	L2x2x1/4	7.91	3.61	113.0 K=1.02	11.263	0.9380	-4.51	10.56	0.427 ✓
T4	208 - 188	L2x2x1/4	10.00	4.75	145.7 K=1.00	7.035	0.9380	-3.18	6.60	0.482 ✓
T5	188 - 168	L2 1/2x2 1/2x1/4	12.51	5.98	146.2 K=1.00	6.989	1.1900	-4.96	8.32	0.597 ✓
T6	168 - 148	L3x3x1/4	14.24	6.85	138.9 K=1.00	7.740	1.4400	-5.30	11.15	0.475 ✓
T7	148 - 128	L3x3x1/4	16.09	7.79	157.8 K=1.00	5.995	1.4400	-5.83	8.63	0.675 ✓
T8	128 - 108	L4x4x3/8	19.35	9.41	143.3 K=1.00	7.268	2.8600	-7.47	20.79	0.359 ✓
T9	108 - 88	L4x4x3/8	21.22	10.36	157.8 K=1.00	5.998	2.8600	-9.09	17.15	0.530 ✓

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 $\frac{P}{P_a}$
T10	88 - 68	L5x5x3/8	23.04	11.13	134.9 K=1.00	8.203	3.6100	-12.10	29.61	0.409 ✓
T11	68 - 48	L5x5x3/8	24.84	12.03	145.9 K=1.00	7.019	3.6100	-13.42	25.34	0.530 ✓
T12	48 - 28	L5x5x3/8	26.75	13.01	157.7 K=1.00	6.008	3.6100	-13.86	21.69	0.639 ✓
T13	28 - 8	P3x.216	24.38	23.59	121.7 K=0.50	10.091	2.2285	-20.48	22.49	0.911 ✓

Horizontal 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 $\frac{P}{P_a}$
T13	28 - 8	P3x.216	25.33	24.43	126.0 K=0.50	9.406	2.2285	-11.43	20.96	0.545 ✓

Top Girt 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	256 - 248	L1 3/4x1 3/4x3/16 KL/R > 200 (C) - 6	6.60	6.13	214.2 K=1.00	3.255	0.6211	-0.45	2.02	0.221 ✓

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	256 - 248	P2.5x.203	8.00	4.00	50.7	30.000	1.7040	4.09	51.12	0.080 ✓
T2	248 - 228	P3x.216	20.00	4.00	41.3	30.000	2.2285	20.78	66.85	0.311 ✓
T3	228 - 208	P4x.337	20.00	4.00	32.5	30.000	4.4074	48.02	132.22	0.363 ✓
T4	208 - 188	P5x.375	20.04	5.01	32.7	30.000	6.1120	66.31	183.36	0.362 ✓
T5	188 - 168	P6x.432	20.03	6.68	36.5	30.000	8.4049	84.13	252.15	0.334 ✓

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 $\frac{P}{P_a}$
T6	168 - 148	P6x.432	20.03	6.68	36.5	30.000	8.4049	106.80	252.15	0.424 ✓
T7	148 - 128	P6x.432	20.04	6.68	36.5	30.000	8.4049	129.17	252.15	0.512 ✓
T8	128 - 108	P8x.375	20.04	10.02	41.2	30.000	9.7193	149.18	291.58	0.512 ✓
T9	108 - 88	P8x.5	20.04	10.02	41.8	30.000	12.7627	172.96	382.88	0.452 ✓
T10	88 - 68	P10x.5	20.03	10.02	33.1	30.000	16.1007	201.02	483.02	0.416 ✓
T11	68 - 48	P10x.5	20.03	10.02	33.1	30.000	16.1007	231.47	483.02	0.479 ✓
T12	48 - 28	P10x.5	20.04	10.02	33.1	30.000	16.1007	260.61	483.02	0.540 ✓
T13	28 - 8	P10x.5	20.05	20.05	66.3	30.000	16.1007	267.99	483.02	0.555 ✓

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	256 - 248	L1 3/4x1 3/4x3/16	7.78	3.63	84.1	29.000	0.3604	1.80	10.45	0.172 ✓
T2	248 - 228	L2x2x1/4	7.85	3.62	74.1	29.000	0.5629	3.31	16.32	0.203 ✓
T3	228 - 208	L2x2x1/4	7.91	3.61	73.7	29.000	0.5629	4.43	16.32	0.271 ✓
T4	208 - 188	L2x2x1/4	10.00	4.75	96.2	29.000	0.5629	3.16	16.32	0.193 ✓
T5	188 - 168	L2 1/2x2 1/2x1/4	12.51	5.98	95.6	29.000	0.7284	4.90	21.12	0.232 ✓
T6	168 - 148	L3x3x1/4	14.24	6.85	90.3	32.500	0.9159	5.22	29.77	0.175 ✓
T7	148 - 128	L3x3x1/4	16.09	7.79	102.4	32.500	0.9159	5.73	29.77	0.193 ✓
T8	128 - 108	L4x4x3/8	19.35	9.41	93.3	32.500	1.8989	7.33	61.71	0.119 ✓
T9	108 - 88	L4x4x3/8	21.22	10.36	102.5	32.500	1.8989	8.95	61.71	0.145 ✓
T10	88 - 68	L5x5x3/8	23.04	11.13	86.9	29.000	2.4262	11.94	70.36	0.170 ✓
T11	68 - 48	L5x5x3/8	24.84	12.03	93.8	29.000	2.4262	13.16	70.36	0.187 ✓
T12	48 - 28	L5x5x3/8	26.75	13.01	101.3	29.000	2.4262	13.53	70.36	0.192 ✓
T13	28 - 8	P3x.216	24.38	23.59	243.3	30.000	2.2285	20.08	66.85	0.300 ✓

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 $\frac{P}{P_a}$
T13	28 - 8	P3x.216	25.33	24.43	252.0	30.000	2.2285	11.64	66.85	0.174 ✔

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 $\frac{P}{P_a}$
T1	256 - 248	L1 3/4x1 3/4x3/16	6.60	6.13	142.1	29.000	0.3779	0.43	10.96	0.039 ✔

Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	$SF*P_{allow}$ K	% Capacity	Pass Fail
T1	256 - 248	Leg	P2.5x.203	1	-6.09	55.08	11.1	Pass
		Diagonal	L1 3/4x1 3/4x3/16	11	-1.79	7.70	23.2	Pass
		Top Girt	L1 3/4x1 3/4x3/16	6	-0.45	2.69	16.6	Pass
T2	248 - 228	Leg	P3x.216	21	-24.19	76.21	31.7	Pass
		Diagonal	L2x2x1/4	27	-3.33	14.01	23.8	Pass
							38.8 (b)	
T3	228 - 208	Leg	P4x.337	52	-54.07	157.67	34.3	Pass
		Diagonal	L2x2x1/4	59	-4.51	14.08	32.0	Pass
							52.6 (b)	
T4	208 - 188	Leg	P5x.375	85	-75.10	218.47	34.4	Pass
		Diagonal	L2x2x1/4	92	-3.18	8.80	36.1	Pass
							37.0 (b)	
T5	188 - 168	Leg	P6x.432	112	-97.12	294.79	32.9	Pass
		Diagonal	L2 1/2x2 1/2x1/4	119	-4.96	11.09	44.8	Pass
T6	168 - 148	Leg	P6x.432	134	-123.49	294.79	41.9	Pass
		Diagonal	L3x3x1/4	140	-5.30	14.86	35.6	Pass
							43.2 (b)	
T7	148 - 128	Leg	P6x.432	155	-149.87	294.79	50.8	Pass
		Diagonal	L3x3x1/4	157	-5.83	11.51	50.6	Pass
T8	128 - 108	Leg	P8x.375	176	-174.23	332.53	52.4	Pass
		Diagonal	L4x4x3/8	178	-7.47	27.71	27.0	Pass
							60.4 (b)	
T9	108 - 88	Leg	P8x.5	191	-205.07	435.19	47.1	Pass
		Diagonal	L4x4x3/8	193	-9.09	22.87	39.8	Pass
							73.5 (b)	
T10	88 - 68	Leg	P10x.5	206	-241.31	574.28	42.0	Pass
		Diagonal	L5x5x3/8	208	-12.10	39.47	30.7	Pass
							71.9 (b)	
T11	68 - 48	Leg	P10x.5	221	-279.11	574.28	48.6	Pass
		Diagonal	L5x5x3/8	223	-13.42	33.78	39.7	Pass
							79.7 (b)	
T12	48 - 28	Leg	P10x.5	236	-315.89	574.26	55.0	Pass

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	$SF*P_{allow}$ K	% Capacity	Pass Fail
		Diagonal	L5x5x3/8	238	-13.86	28.91	47.9	Pass
							82.3 (b)	
T13	28 - 8	Leg	P10x.5	251	-326.98	574.19	56.9	Pass
		Diagonal	P3x.216	254	-20.48	29.97	68.3	Pass
		Horizontal	P3x.216	253	-11.43	27.94	40.9	Pass
							47.1 (b)	
							Summary	
						Leg (T13)	56.9	Pass
						Diagonal (T12)	82.3	Pass
						Horizontal (T13)	47.1	Pass
						Top Girt (T1)	16.6	Pass
						Bolt Checks	82.3	Pass
						RATING =	**82.3**	**Pass**

ANCHOR BOLT ANALYSIS

ANCHOR BOLT ANALYSIS

Input Data

Max Pier Reactions:

Uplift:	Uplift := 291·kips	*user input*
Shear:	Shear := 41·kips	*user input*
Compression:	Compression := 354·kips	*user input*

Anchor Bolt Data:

Use ASTM A354 GR. BC

Number of Anchor Bolts = N	$N := 16$	*user input*	
Bolt Ultimate Strength:	$F_u := 125 \cdot ksi$	*user input*	
Bolt Yield Strength:	$Fy := 109 \cdot ksi$	*user input*	
Bolt Modulus:	$E := 29000 \cdot ksi$	*user input*	
Thickness of Anchor Bolts	$D := 1.0in$	*user input*	
Threads per Inch:	$n := 8$	*user input*	
Coefficient of Friction:	$\mu := 0.55$	*user input*	(for baseplate with grout ASCE 10-97)

Anchor Bolt Area:

Gross Area of Bolt:

$$A_g := \frac{\pi}{4}\cdot D^2 \qquad A_g = 0.785\cdot in^2$$

Net Area of Bolt:

$$A_n := \frac{\pi}{4}\cdot\left(D - \frac{0.9743\cdot in}{n}\right)^2 \qquad A_n = 0.606\cdot in^2$$

Check Tensile Forces:

Maximum Tensile Force (Gross Area):

$$AllowableTension := 1.333\cdot\left(0.33\cdot A_g\cdot F_u\right) \qquad AllowableTension = 43.2\cdot kips$$

Note: 1.333 increase allowed per TIA/EIA

Maximum Tensile Force (Net Area):

$$F_{net.area} := 1.333\cdot\left(0.60\cdot A_n\cdot Fy\right) \qquad F_{net.area} = 52.8\cdot kips$$

Note: 1.333 increase allowed per TIA/EIA

Applied Tension:

$$MaxTension := \frac{Uplift}{N} \qquad MaxTension = 18.2\cdot kips$$

Check Stresses:

$$\frac{MaxTension}{F_{net.area}} = 0.34$$

$$Condition1 := if\left(\frac{MaxTension}{F_{net.area}} \le 1.00, "OK", "Overstressed"\right)$$

Condition1 = "OK"

Check Anchor Bolt Area:

Based on the ASCE 10-97 Design of Latticed Steel Transmission Structures

Required Area:

$$A_{s1} := \frac{Uplift}{Fy} + \frac{Shear}{\mu \cdot 0.85 \cdot Fy} \qquad A_{s1} = 3.5 \cdot in^2$$

$$A_{s2} := \left| \frac{Shear - (0.3 \cdot Compression)}{\mu \cdot 0.85 \cdot Fy} \right| \qquad A_{s2} = 1.3 \cdot in^2$$

Provided Area:

$$A_{sprovided} := A_n \cdot N \qquad A_{sprovided} = 9.7 \cdot in^2$$

$$Condition2 := if\left(\frac{A_{s1}}{A_{sprovided}} \le 1.00, "OK", "Overstressed"\right) \qquad \frac{A_{s1}}{A_{sprovided}} = 0.36$$

Condition2 = "OK"

$$Condition3 := if\left(\frac{A_{s2}}{A_{sprovided}} \le 1.00, "OK", "Overstressed"\right) \qquad \frac{A_{s2}}{A_{sprovided}} = 0.13$$

Condition3 = "OK"

CLEAR

4400 Carillon Point
Kirkland, WA 98033

To: HPC
From: Julius De La Cruz – Radio Frequency Engineer
Cc: Micah Hawthorne
Subject: Power Density Report for CT-BDR0073
Date: October 28, 2009

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1. Introduction:

This report is the result of Electromagnetic Field Intensities (EMF – Power Densities) study for the Clearwire broadband antenna installation on a Self Support Tower at 623 Pine Street, Bridgeport, CT 06605. This study incorporates the most conservative consideration for determining the practical combined worst case power density levels that would be theoretically encountered from locations surrounding the transmitting location:

2: Discussion:

The following assumptions were used in the calculations:

1). The emissions from Clearwire transmitters are in the (2496 – 2960) Frequency Band
2) The emissions from the Clearwire Microwave dishes are in the 23 GHz Frequency Band
3) The model number for Clearwire Antenna is Argus LLPX310R
4) The model number for the Microwave dish is Andrew VHLP1-23 with 12" Diameter.
5) The Clearwire panel antenna centerline is 88 feet.
6) The Clearwire microwave dish centerline is 88 feet.
7) The Maximum Transmit power from any Clearwire panel antenna is 251 Watts Effective Isotropic Radiated Power (EiRP) assuming 2 channels per sector.
8) The Maximum Transmit power from any Clearwire Microwave Dish is 346 Watts Effective Isotropic Radiated Power (EiRP) assuming 1 channel per dish.
9) All antennas are simultaneously transmitting and receiving 24 hours per day.
10) The average ground level of the studied area does not change significantly with respect to the transmitting location.

Equations given in "FCC OET Bulletin 65, Edition 97-01" were used with the above information to perform the calculations.

3: Conclusion:

Based on the above worst case assumptions, the power density calculation from the Clearwire antenna installation on a self-support tower at 623 Pine Street, Bridgeport, CT 06605 is 0.0000026 mW/cm^2. This value represents 0.000261% of the Maximum Permissible Exposure (MPE) standard of 1 milliwatt per square centimeter (mW/cm^2) set forth in the FCC/ANSI/IEEE C95-1-1991. Furthermore, the proposed antenna location for Clearwire will not interfere with existing public safety communications, AM or FM radio broadcasts, TV, Police Communications, HAM Radio communications or any other signals in the area.

The combined Power Density from all other carriers is 51.41 %. The combined Power Density for this site is 51.410261% of the M.P.E. standard.

cc/encls: via 1st Class Mail:

City of Bridgeport
Office of the Mayor
Mayor Bill Finch
999 Broad Street
Bridgeport, CT 06604

Town of East Haven
Town Hall
Mayor April Capone Almon
250 Main Street
East Haven, CT 06512

Town of Orange
Town Hall
First Selectman James Zeoli
617 Orange Center Road
Orange, CT 06477

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ORIGINAL

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October 30, 2009

Daniel F. Caruso, Chairman
Connecticut Siting Council
10 Franklin Square
New Britain, CT 06051

RE: Clearwire Corporation - Exempt Modifications (3)

Dear Mr. Caruso:

On behalf of Clearwire Corporation, enclosed for filing you will find an original and five (5) copies each of three (3) *"Notice to Make an Exempt Modification to an Existing Facility"*, as follows:

1. Bridgeport @ 623 Pine Street
2. East Haven @ 60 Commercial Street
3. Orange @ 525 Orange Center Road

I have also enclosed a copy of this transmittal letter which I would like to have date-stamped and returned to the courier delivering this package.

Also enclosed are three (3) checks in the amount of $500.00 each to cover the filing fee. If you have any questions, please feel free to contact me.

Very truly yours,

BROWN RUDNICK LLP

By: _____
Thomas J. Regan

TJR/bh
Enclosures
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