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
Internet: ct.gov/csc

Daniel F. Caruso
Chairman

December 29, 2006

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

RE: **EM-VER-054-028-061115** - Cellco Partnership d/b/a Verizon Wireless notice of intent to modify existing telecommunications facilities located at 48 Birch Mountain Road, Glastonbury; and 112 Munn Road, Colchester, Connecticut.

Dear Attorney Baldwin:

At a public meeting held on December 12, 2006, the Connecticut Siting Council (Council) acknowledged your notice to modify these existing telecommunications facilities, pursuant to Section 16-50j-73 of the Regulations of Connecticut State Agencies with the condition that all modifications on the executive summary of the structural analysis report for the Glastonbury tower are completed prior to the antenna installation and that a signed letter from a Professional Engineer is submitted to the Council to certify that the modifications have been properly completed.

The proposed modifications are to be implemented as specified here and in your notice dated November 15, 2006, including the placement of all necessary equipment and shelters within the tower compounds. 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 existing facility sites that would not increase tower heights, extend the boundaries of the tower sites, increase noise levels at the tower site boundaries by six decibels, and increase the total radio frequencies electromagnetic radiation power densities measured at the tower site boundaries to or above the standard adopted by the State Department of Environmental Protection pursuant to General Statutes § 22a-162. These facilities have also been carefully modeled to ensure that radio frequency emissions are conservatively below State and federal standards applicable to the frequencies now used on these towers.

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 any of these facilities 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,

Daniel F. Caruso
Chairman

DFC/MP/laf

c: The Honorable Jenny Contois, First Selectman, Town of Colchester
Christopher Beauchemin, Town Planner, Town of Colchester
The Honorable Susan Karp, Chairman Town Council, Town of Glastonbury
Richard J. Johnson, Town Manager, Town of Glastonbury
Kenith Leslie, Community Development Director, Town of Glastonbury
Brian Benito, Bureau of Police Support, Telecommunications
Thomas J. Regan, Esq., Brown Rudnick Berlack Israels, LLP
Christine Farrell, T-Mobile, Inc.
Michele G. Briggs, New Cingular Wireless PCS, LLC
Christopher B. Fisher, Esq., Cuddy & Feder LLP

ROBINSON & COLE LLP

KENNETH C. BALDWIN

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kbaldwin@rc.com
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EM-VER-054-028-061115

November 15, 2006

Via Hand Delivery

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

Re: **Notice of Exempt Modification**
48 Birch Mountain Road, Glastonbury, CT
112 Munn Road, Colchester, CT

Dear Mr. Phelps:

Cellco Partnership d/b/a Verizon Wireless ("Cellco") intends to install microwave dish antennas on each of the existing telecommunications towers described below. Please accept this letter as notification pursuant to R.C.S.A. § 16-50j-73, for construction at each facility tower that constitutes an exempt modification pursuant to R.C.S.A. § 16-50j-72(b)(2). In accordance with R.C.S.A. § 16-50j-73, a copy of this letter and attachments are being sent to Richard J. Johnson, Town Manager for the Town of Glastonbury and Jenny Contois, First Selectman for the Town of Colchester.

Birch Mountain Road, Glastonbury, CT

The Birch Mountain Road facility consists of a 225-foot self-supporting lattice tower capable of supporting multiple carriers within a fenced compound at 48 Birch Mountain Road in Glastonbury. The tower currently supports antennas of Sprint Nextel at the 177-foot level; Cellco at the 164-foot level and several emergency service providers at various locations on the tower. Cellco proposes to install one (1) microwave dish antenna at the 125-foot level on the existing tower. Attached behind Tab 1 is a tower elevation plan; a structural report; and an updated power density table for Cellco's existing and proposed antennas.

Munn Road, Colchester, CT

The Munn Road facility consists of a 320-foot self-supporting lattice tower capable of supporting multiple carriers within a fenced compound at 112 Munn Road

in Colchester. The tower currently supports antennas of the Connecticut State Police and other emergency service providers at various locations on the tower; Cellco at the 220-foot level; and Cingular at the 200-foot level. Cellco proposes to install two (2) microwave dish antennas, one at the 175-foot level and one at the 115-foot level on the existing tower. Attached behind Tab 2 is a tower elevation plan; a structural report; and an updated power density table for Cellco's existing and proposed antennas.

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

1. Cellco's proposed modifications will not result in any increase in the overall height of either of the existing structures.

2. Cellco's proposed modifications will not require the extension of the existing site boundaries at either of the sites identified.

3. Cellco's proposed modifications will not increase noise levels at the facility by six decibels or more at either of the facilities.

4. Cellco's proposed modifications will not result in radio frequency (RF) power density levels at either of the facilities that would exceed the Federal Communications Commission (FCC) adopted safety standard.

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

Sincerely,

Kenneth C. Baldwin

Enclosures
Copy to:
Richard J. Johnson, Glastonbury Town Manager
Jenny Contois, Colchester First Selectman
Sandy M. Carter

DETAILED STRUCTURAL ANALYSIS AND EVALUATION OF EXISTING 225' GUYED LATTICE TOWER FOR PROPOSED ANTENNA ARRANGEMENT

48 Birch Mountain Road
Glastonbury, Connecticut

prepared for

Verizon Wireless
99 East River Drive
East Hartford, Connecticut 06108

prepared by

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

36930993.00008
VZ1-168

Revision 2 October 20, 2006

TABLE OF CONTENTS

1. EXECUTIVE SUMMARY

This report summarizes the structural analysis of the existing 225' guyed lattice tower located at 48 Birch Mountain Road in Glastonbury, Connecticut. The analysis was conducted in accordance with the 2005 Connecticut State Building Code and the TIA/EIA-222-F standard for wind velocity of 80 mph (fastest mile) and 69 mph (fastest mile) concurrent with ½" ice. The antenna loading considered in the analysis consists of all existing and proposed antennas, transmission lines, and ancillary items as outlined in Section 6 of this report. The proposed Verizon Wireless modification is as follows:

Proposed Structural Modification		Elevation
Remove: **(1) Torque Arm** **(6) 3/8" EHS guy wires**	**(Proposed)**	**@ 87'**
Install: **(3) new outer guy anchors**	**(Proposed)**	**@ Grade**
Install: **(3) new 3/8" EHS guy wires to the outer anchors**	**(Proposed)**	**@ 44'-10"**
Install: **(3) new 1/2" EHS guy wires to the outer anchors**	**(Proposed)**	**@ 84'-10"**
Install: **(3) new 1/2" EHS guy wires to the outer anchors**	**(Proposed)**	**@ 116'-10"**
Remove: **All guy wires attached to inner anchors**	**(Proposed)**	**Varies**

Proposed Antenna and Mount	Carrier	Antenna Center Elevation
Install: **(1) PL6-59D dish on (1) new dish mount with (1) EW63 coax cable.**	**Verizon (Proposed)**	**@ 125'**
Remove: **(1) 6 FT dish, (1) dish mount, and (1) EW63 coax cable.**	**(Proposed)**	**@ 89'-6"**
Remove: **(1) 7.3 FT dish, (1) dish mount, and (1) EW63 coax cable.**	**(Proposed)**	**@ 88'-6"**
Remove: **(1) 7.3 FT dish, (1) dish mount, and (1) EW63 coax cable.**	**(Proposed)**	**@ 87'**
Remove: **(1) 4 FT dish, (1) dish mount, and (1) EW63 coax cable.**	**(Proposed)**	**@ 79'**
Remove: **(1) 6.5 FT dish, (1) dish mount, and (1) EW63 coax cable.**	**(Proposed)**	**@ 73'-3"**

The results of the analysis, with the modifications outlined in this report, indicate that the tower structure will be in compliance with the proposed loading conditions. **With the proposed modifications, the tower and foundations will be structurally adequate for the wind load classification specified above and all the existing and proposed antenna loading.**

This analysis is based on:

1) The tower structure's theoretical capacity, not including any assessment of the condition of the tower.
2) Tower geometry and structural member sizes taken from Guyed Tower Inventory and Mapping Report prepared by CSB Communications, dated January 19, 2006.
3) New guy anchors are installed per Section 6 of this report.
4) Antenna and mount configuration as specified in Section 6 of this report.

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 and connections. 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.

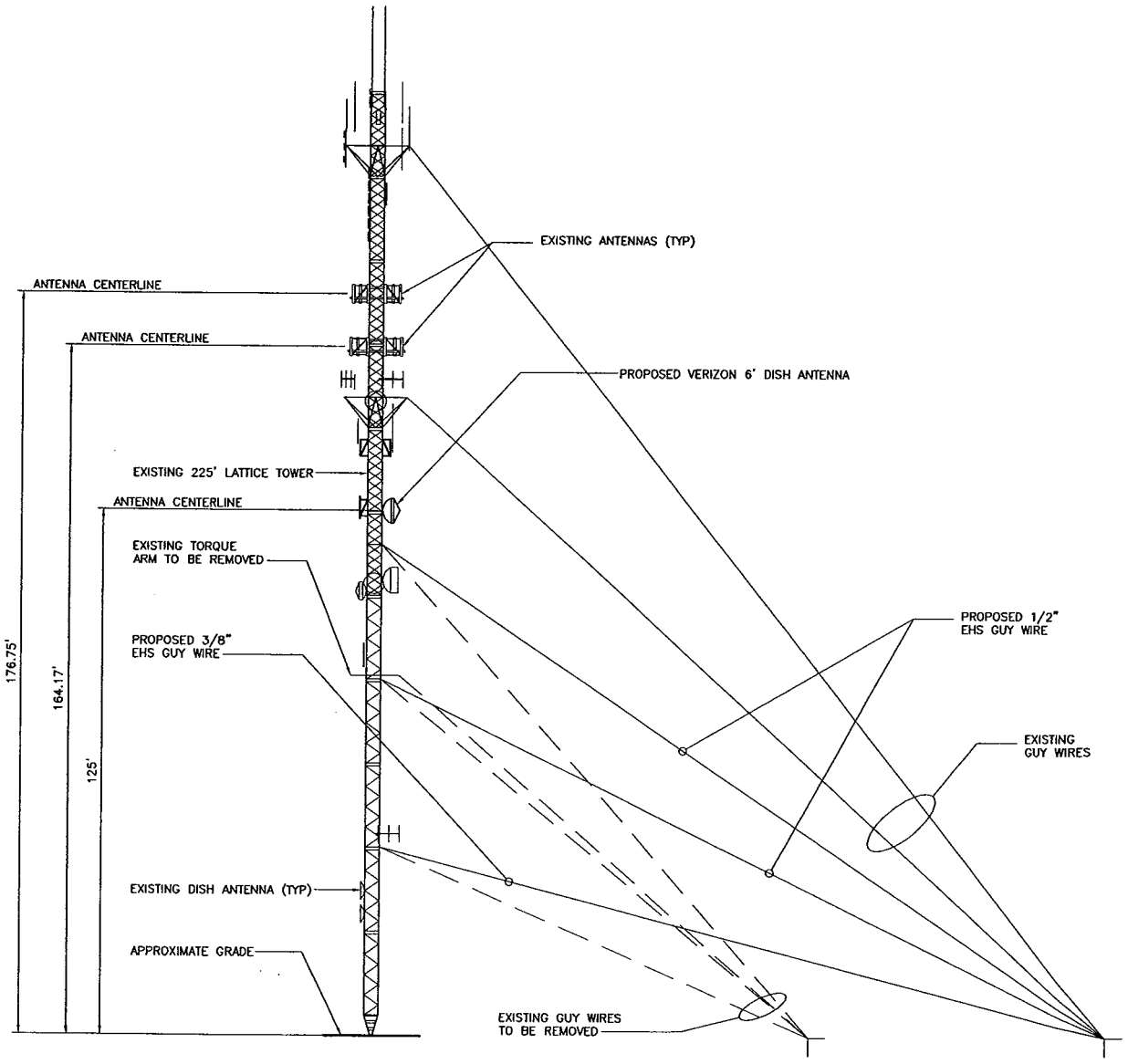
Sincerely,

URS Corporation

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

RAS/jek

cc: AA, DR, IA, CF/Book – URS



1 / L-1 TOWER ELEVATION

SCALE: 1" = 40'-0"

0 10 20 40 80

SITE ID NO:	36930993
Designed by:	DBP
Drawn by:	
Checked by:	
Approved by:	

URS CORPORATION AES
500 ENTERPRISE DRIVE
ROCKY HILL, CONNECTICUT
1-(860)-529-8882

CELLCO PARTNERSHIP DBA
VERIZON WIRELESS
WIRELESS COMMUNICATIONS FACILITY

SITE ADDRESS:
BIRCH MOUNTAIN
48 BIRCH MOUNTAIN ROAD
GLASTONBURY, CONNECTICUT

REV.	DATE:	DESCRIPTION

Scale: AS NOTED | Date: 10-31-06

Job No.VZ1-168 | File No. L-1 | Dwg. 1 of 1

Dwg. No. L-1

2. INTRODUCTION

The subject tower is located at 48 Birch Mountain Road in Glastonbury, Connecticut. The structure is a 225' guyed lattice tower.

The tower geometry and structure member sizes were taken from Guyed Tower Inventory and Mapping Report prepared by CSB Communications, dated January 19, 2006.

The inventory is summarized in Section 6 of this report.

This structural analysis of the communications tower was performed by URS Corporation (URS) for Verizon Wireless. The purpose of this analysis was to investigate the structural integrity of the existing tower with its existing and proposed antenna loads. This analysis was conducted to evaluate stress on the tower, tension in the guy wires 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 2005 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 4.6. Two load conditions were evaluated as shown below which were compared to allowable stresses according to AISC and TIA/EIA.

Load Condition 1 = 80 mph (fastest mile) Wind Load (without ice) + Tower Dead Load
Load Condition 2 = 69 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 monopoles 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 structure were evaluated to compare with allowable stresses in accordance with AISC. The calculated stresses under the proposed loading were within the allowable stresses. Detailed analysis and calculations for the proposed load condition are provided in section 6 of this report.

5. CONCLUSIONS

The results of the analysis, with the modifications outlined in this report, indicate that the tower structure will be in compliance with the proposed loading conditions. **With the proposed modifications, the tower and foundations will be structurally adequate for the wind load classification specified above and all the existing and 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 per 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

SK-1 — TOWER ELEVATION AND GUY ANCHOR DETAILS

NOTES

SITE NOTES

1. THE FOLLOWING STANDARD SPECIFICATIONS ARE INCORPORATED INTO THE WORK SHOWN HEREON UNLESS SUPERSEDED BY LOCAL REGULATIONS:
   - STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR ROADS, BRIDGES AND INCIDENTAL CONSTRUCTION" FORM 814A, DATED 1995 WITH SUPPLEMENT DATED JANUARY 2002.
   - "DEP BULLETIN 34, CONNECTICUT GUIDELINES FOR SOIL EROSION AND SEDIMENTATION CONTROL" AS PUBLISHED BY THE CONNECTICUT COUNCIL OF SOIL AND WATER CONSERVATION, DATED 2002.
2. THE CONTRACTOR SHALL ESTABLISH AND MAINTAIN SOIL EROSION AND SEDIMENTATION CONTROLS AT ALL TIMES DURING CONSTRUCTION. ALL SOIL EROSION AND SEDIMENTATION CONTROL MEASURES ARE SUBJECT TO INSPECTION AND MONITORING BY THE TOWN.
3. ALL DISTURBED AREAS SHALL BE RESTORED TO MATCH PRECONSTRUCTION CONDITIONS.
4. IF ANY FIELD CONDITIONS PRECLUDE COMPLIANCE WITH THE DRAWINGS AND/OR CONDITIONS SPECIFIED, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY ENGINEER AND SHALL NOT PROCEED WITH ANY AFFECTED WORK.
5. THE CONTRACTOR SHALL INSTALL ALL EROSION AND SEDIMENTATION CONTROL MEASURES PRIOR TO ANY GRADING ACTIVITIES.

SOIL

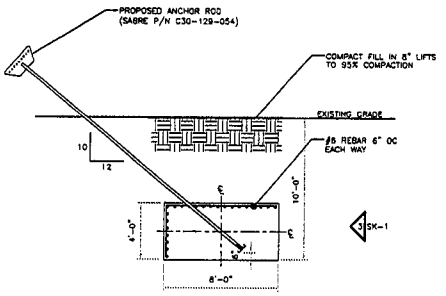
1. ALL SURFACES MUST BE FREE OF STANDING WATER PRIOR TO PLACING CONCRETE.
2. ALL FOUNDATIONS SHALL BEAR ON EXISTING UNDISTURBED ORGANIC FREE SOIL. ALL UNSUITABLE SOIL SHALL BE REMOVED AS DIRECTED BY THE ENGINEER AND REPLACED WITH COMPACTED GRANULAR FILL PLACED IN 8" LAYERS AND COMPACTED IN CONFORMANCE TO STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FROM 814A, 1995, WITH SUPPLEMENT DATED JANUARY 2002, SECTION 2.14.01 THROUGH 2.14.03 FOR COMPACTED GRANULAR FILL.
3. CONTACT THE ENGINEER IF GROUND WATER IS ENCOUNTERED AND DEWATERING IS REQUIRED.
4. FOUNDATION EXCAVATION SHALL BE INSPECTED PRIOR TO PLACEMENT OF REINFORCEMENT AND GUY ANCHOR RODS.

CONCRETE

1. ALL CONCRETE WORK SHALL BE IN ACCORDANCE WITH THE ACI 301, ACI 318 AND THE SPECIFICATION CAST-IN-PLACE CONCRETE.
2. ALL CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 3500 PSI AT 28 DAYS, UNLESS NOTED OTHERWISE. ALL CONCRETE TO BE AIR-ENTRAINED TO (4% TO 6%), SLUMP 3" TO 5".
3. REINFORCING STEEL SHALL CONFORM TO ASTM A 615, GRADE 60, DEFORMED UNLESS NOTED OTHERWISE. WELDED WIRE FABRIC SHALL CONFORM TO ASTM A 185 WELDED STEEL WIRE FABRIC UNLESS NOTED OTHERWISE. SPLICES SHALL BE CLASS "B" AND ALL HOOKS SHALL BE STANDARD, UNO.
4. THE FOLLOWING MINIMUM CONCRETE COVER SHALL BE PROVIDED FOR REINFORCING STEEL UNLESS SHOWN OTHERWISE ON DRAWINGS:
   - CONCRETE CAST AGAINST EARTH.....3 IN.
   - CONCRETE EXPOSED TO EARTH OR WEATHER:
     - #6 AND LARGER .....2 IN.
     - #5 AND SMALLER & WWF
   - CONCRETE NOT EXPOSED TO EARTH OR WEATHER OR NOT CAST AGAINST THE GROUND:
     - SLAB AND WALL .....3/4 IN.
     - BEAMS AND COLUMNS
5. A CHAMFER 3/4" SHALL BE PROVIDED AT ALL EXPOSED EDGES OF CONCRETE, UNO, IN ACCORDANCE WITH ACI 301 SECTION 4.2.4.
6. SPECIAL INSPECTION OF REINFORCEMENT, GUY ANCHOR RODS, AND CONCRETE IS REQUIRED PER 2005 CT STATE BUILDING CODE.
7. COLD WEATHER CONCRETE PLACING SHALL BE IN ACCORDANCE WITH ACI-306
8. NO FOOTING SHALL BE PLACED ON FROZEN GROUND. CONCRETE SHALL BE PROTECTED AGAINST FROST.
9. CONCRETE MIX SHOULD HAVE A SLUMP OF 3" (+/- 1")

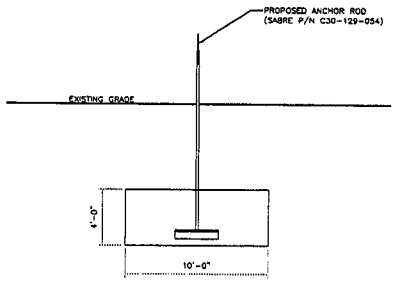
GUY ANCHORS AND TOWER

1. ANCHOR RADIUS IS FROM TOWER BASE TO INTERSECTION OF ROD WITH GROUND.
2. ALL WORK MUST BE PERFORMED BY QUALIFIED AND EXPERIENCED PERSONNEL.
3. TEMPORARY GUYS AND ANCHORS TO BE SUPPLIED AND INSTALLED BY ERECTOR.
4. ALL GUYS TO BE PROPERLY TENSIONED.
5. TOWER TO BE PLUMB IN ACCORDANCE WITH TIA/EIA-222-F
6. GROUNDING OF ALL WORK TO BE IN ACCORDANCE WITH STATE AND LOCAL BUILDING CODE, AS WELL AS TIA/EIA-222-F



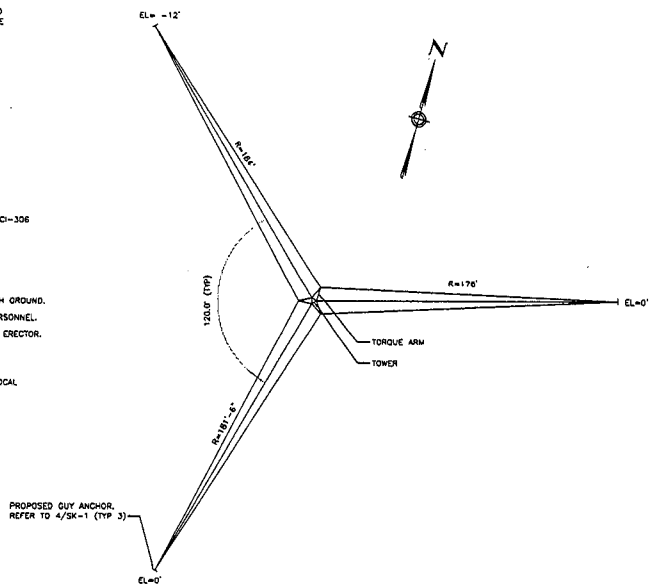
SIDE VIEW

4/SK-1 ANCHOR ROD DETAIL
SCALE: 3/8"=1'-0"

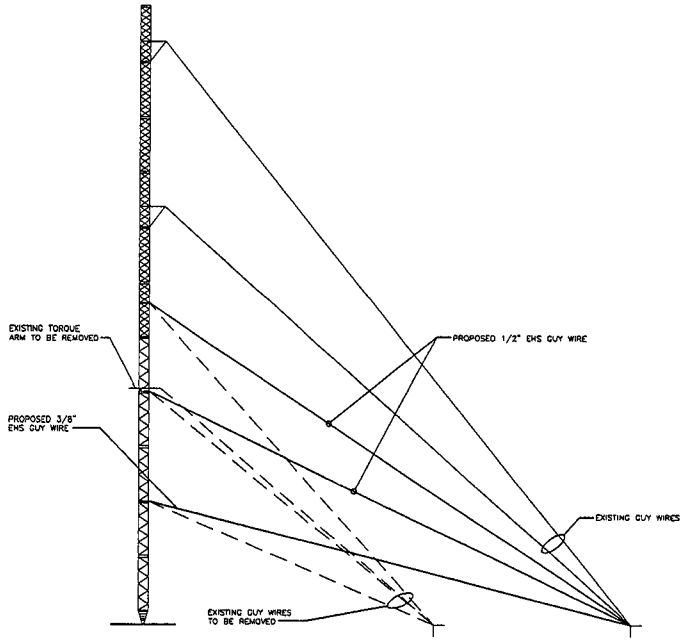


FRONT VIEW

3/SK-1 ANCHOR ROD DETAIL
SCALE: 3/8"=1'-0"



2/SK-1 TOWER PLAN
N.T.S.



1/SK-1 TOWER ELEVATION
N.T.S.

verizon wireless

ARE FIRM
HRS CORPORATION AES
500 ENTERPRISE DRIVE
SUITE 3B
ROCKY HILL, CONNECTICUT
1-(860)-529-8882

ARE SEAL

PROJECT NO: 36930993

JOB NO: VZ1-168

DRAWN BY:

CHECKED BY:

ISSUED FOR

10-20-06	STRUCTURAL	

BIRCH MOUNTAIN

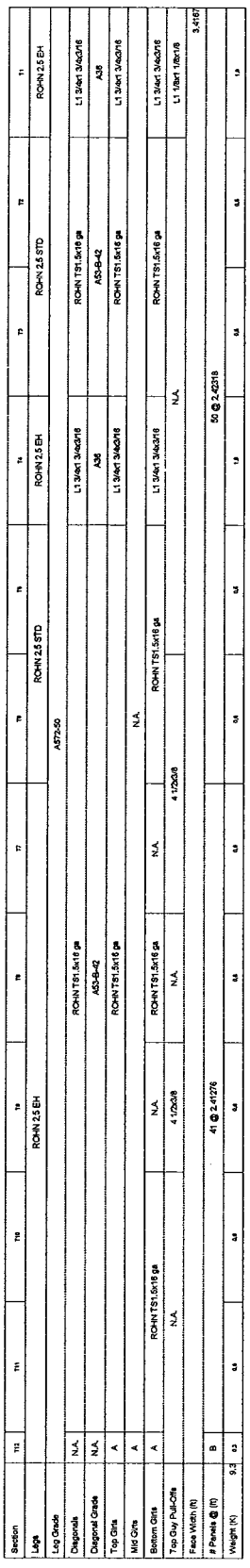
48 BIRCH MOUNTAIN ROAD
GLASTONBURY, CONNECTICUT

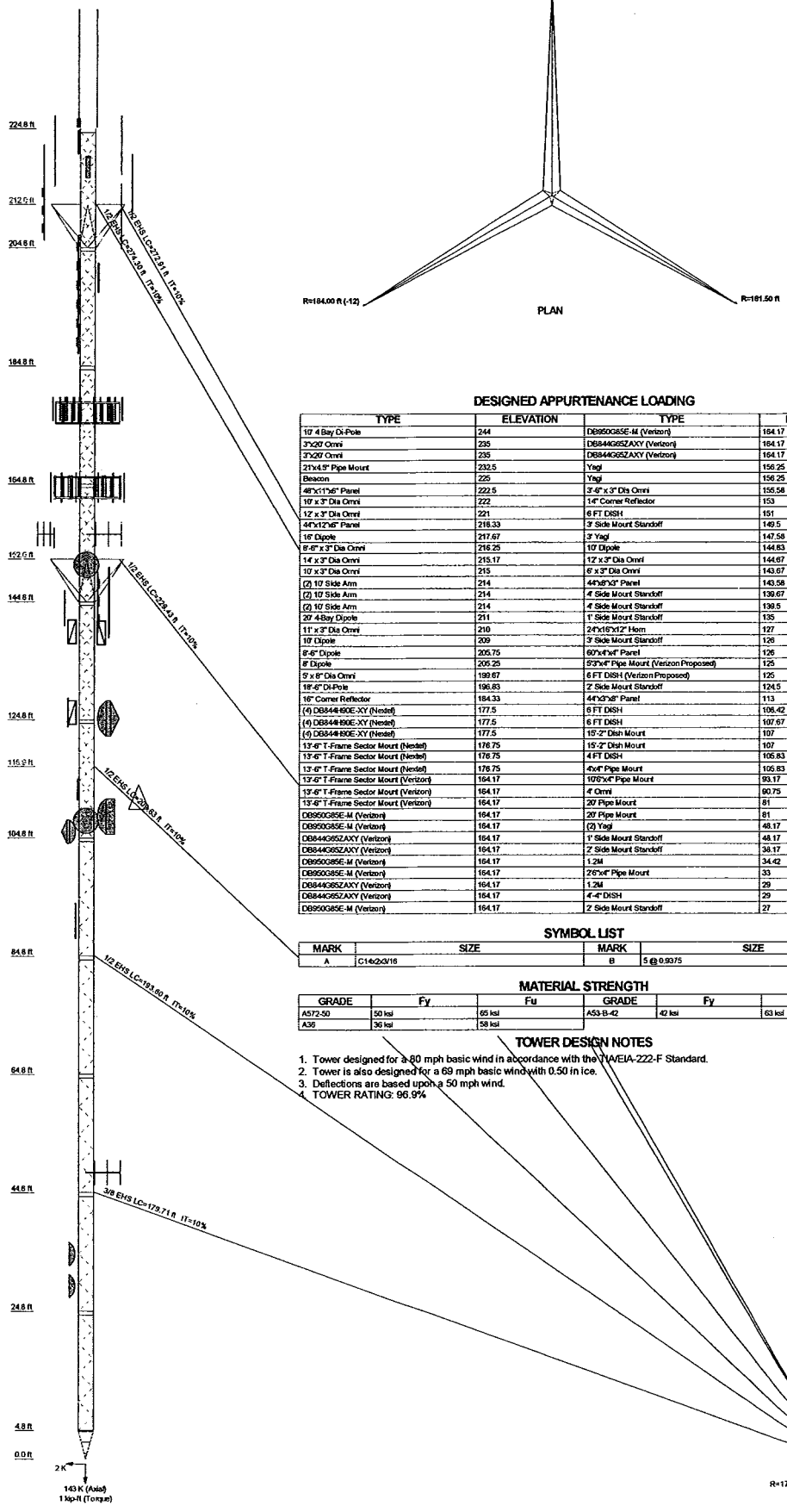
SCALE: AS NOTED

TOWER ELEVATION AND GUY ANCHOR DETAILS

SK-1

RISA TOWER INPUT/OUTPUT SUMMARY





DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION	TYPE	ELEVATION
10' 4 Bay Di-Pole	244	DB950G85E-M (Verizon)	164.17
3'x20' Omni	235	DB844G65ZAXY (Verizon)	164.17
3'x20' Omni	235	DB844G65ZAXY (Verizon)	164.17
21'x4.5" Pipe Mount	232.5	Yagi	156.25
Beacon	225	Yagi	156.25
48"x11"x5" Panel	222.5	3'-6" x 3" Dia Omni	155.58
10' x 3" Dia Omni	222	14" Corner Reflector	153
12' x 3" Dia Omni	221	6 FT DISH	151
44"x12"x5" Panel	218.33	3' Side Mount Standoff	149.5
16' Dipole	217.67	3' Yagi	147.58
8'-6" x 3" Dia Omni	216.25	10' Dipole	144.83
14' x 3" Dia Omni	215.17	12' x 3" Dia Omni	144.67
10' x 3" Dia Omni	215	6' x 3" Dia Omni	143.67
(2) 10' Side Arm	214	44"x8"x3" Panel	143.58
(2) 10' Side Arm	214	4' Side Mount Standoff	139.67
(2) 10' Side Arm	214	4' Side Mount Standoff	139.5
20' 4-Bay Dipole	211	1' Side Mount Standoff	135
11' x 3" Dia Omni	210	24"x16"x12" Horn	127
10' Dipole	209	3' Side Mount Standoff	126
8'-6" Dipole	205.75	60"x4"x4" Panel	126
8' Dipole	205.25	5'3"x4" Pipe Mount (Verizon Proposed)	125
9' x 8" Dia Omni	199.67	6 FT DISH (Verizon Proposed)	125
18'-6" Di-Pole	196.83	2' Side Mount Standoff	124.5
16" Corner Reflector	194.33	44"x3"x8" Panel	113
(4) DB844H90E-XY (Nextel)	177.5	8 FT DISH	106.42
(4) DB844H90E-XY (Nextel)	177.5	6 FT DISH	107.67
(4) DB844H90E-XY (Nextel)	177.5	15'-2" Dish Mount	107
13'-6" T-Frame Sector Mount (Nextel)	176.75	15'-2" Dish Mount	107
13'-6" T-Frame Sector Mount (Nextel)	176.75	4 FT DISH	105.83
13'-6" T-Frame Sector Mount (Nextel)	176.75	4'x4" Pipe Mount	105.83
13'-6" T-Frame Sector Mount (Verizon)	164.17	176"x4" Pipe Mount	93.17
13'-6" T-Frame Sector Mount (Verizon)	164.17	4' Omni	90.75
DB950G85E-M (Verizon)	164.17	20' Pipe Mount	81
DB950G85E-M (Verizon)	164.17	20' Pipe Mount	81
DB950G85E-M (Verizon)	164.17	(2) Yagi	48.17
DB844G65ZAXY (Verizon)	164.17	1' Side Mount Standoff	48.17
DB844G65ZAXY (Verizon)	164.17	2' Side Mount Standoff	38.17
DB950G85E-M (Verizon)	164.17	1.2M	34.42
DB950G85E-M (Verizon)	164.17	2'6"x4" Pipe Mount	33
DB844G65ZAXY (Verizon)	164.17	1.2M	29
DB844G65ZAXY (Verizon)	164.17	4'-4" DISH	29
DB950G85E-M (Verizon)	164.17	2' Side Mount Standoff	27

SYMBOL LIST

MARK	SIZE	MARK	SIZE
A	C14x2x3/16	B	5 @ 0.9375

MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A572-50	50 ksi	65 ksi	A53-B-42	42 ksi	63 ksi
A36	36 ksi	58 ksi			

TOWER DESIGN NOTES

1. Tower designed for a 80 mph basic wind in accordance with the TIA/EIA-222-F Standard.
2. Tower is also designed for a 69 mph basic wind with 0.50 in ice.
3. Deflections are based upon a 50 mph wind.
4. TOWER RATING: 96.9%

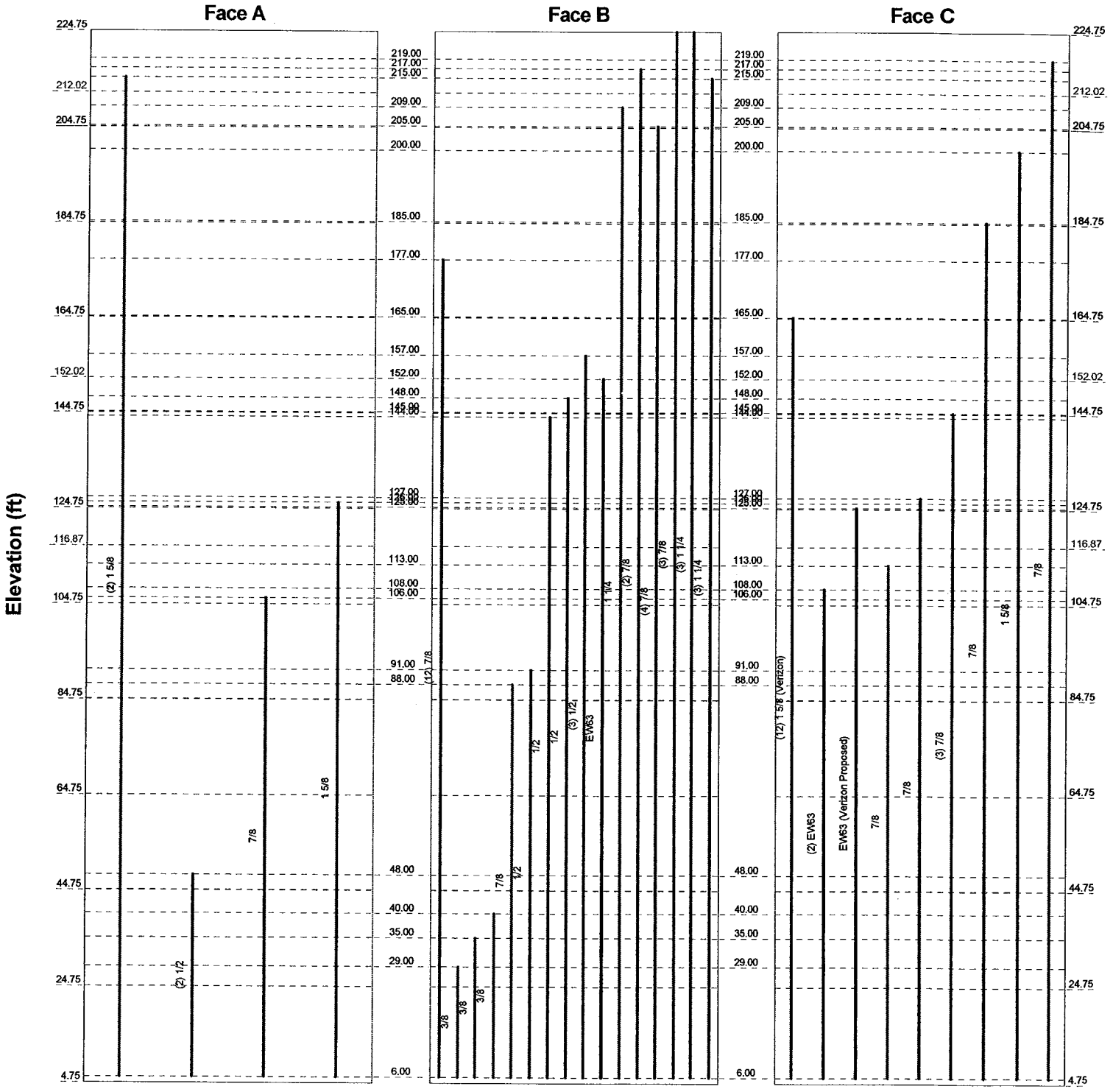
URS Corporation
500 Enterprise Drive, Suite 3B
Rocky Hill, CT 06067
Phone: (860) 529-8882
FAX: (860) 529-3991

Job: 225' Guyed Lattice Tower
Project: Glastonbury, CT
Client: Verizon Wireless | Drawn by: Staff | Appd:
Code: TIA/EIA-222-F | Date: 10/20/06 | Scale: NTS
Path: P:\08\16.5.2006 Rev2\ERI Files\Copy of GlastonburyREV2.ed | Dwg No. E-1

RISA TOWER FEEDLINE DISTRIBUTION CHART

Feedline Distribution Chart
4'9" - 224'9"

Round Flat App In Face App Out Face Truss Leg



URS Corporation 500 Enterprise Drive, Suite 3B Rocky Hill, CT 06067 Phone: (860) 529-8882 FAX: (860) 529-3991	Job: **225' Guyed Lattice Tower**	
	Project: **Glastonbury, CT**	
	Client: Verizon Wireless	Drawn by: Staff / App'd:
	Code: TIA/EIA-222-F	Date: 10/20/06 / Scale: NTS
	Path: P:\06\10.6.2006 Rev2\ERI Files\Copy of GlastonburyREV2.en	Dwg No. E-7

RISA TOWER DETAILED OUTPUT

RISATower	Job	Page
	225' Guyed Lattice Tower	1 of 56
URS Corporation 500 Enterprise Drive, Suite 3B Rocky Hill, CT 06067 Phone: (860) 529-8882 FAX: (860) 529-3991	Project Glastonbury, CT	Date 10:25:36 10/20/06
	Client Verizon Wireless	Designed by Staff

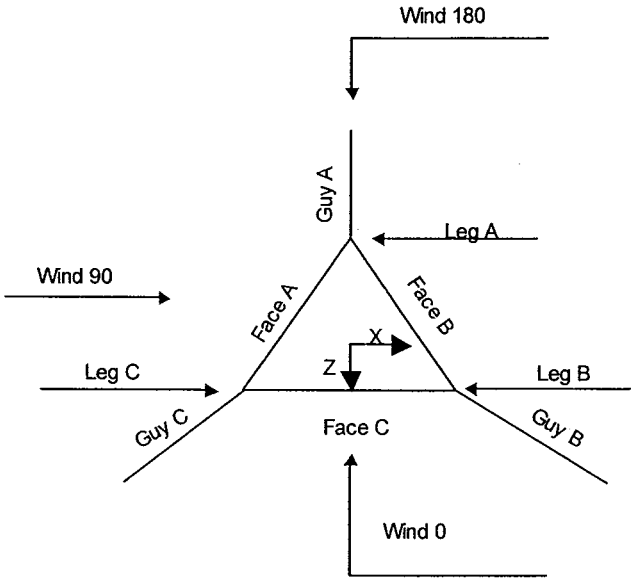
Tower Input Data

The main tower is a 3x guyed tower with an overall height of 224.75 ft above the ground line.
The base of the tower is set at an elevation of 0.00 ft above the ground line.
The face width of the tower is 3.42 ft at the top and tapered at the base.
This tower is designed using the TIA/EIA-222-F standard.
The following design criteria apply:

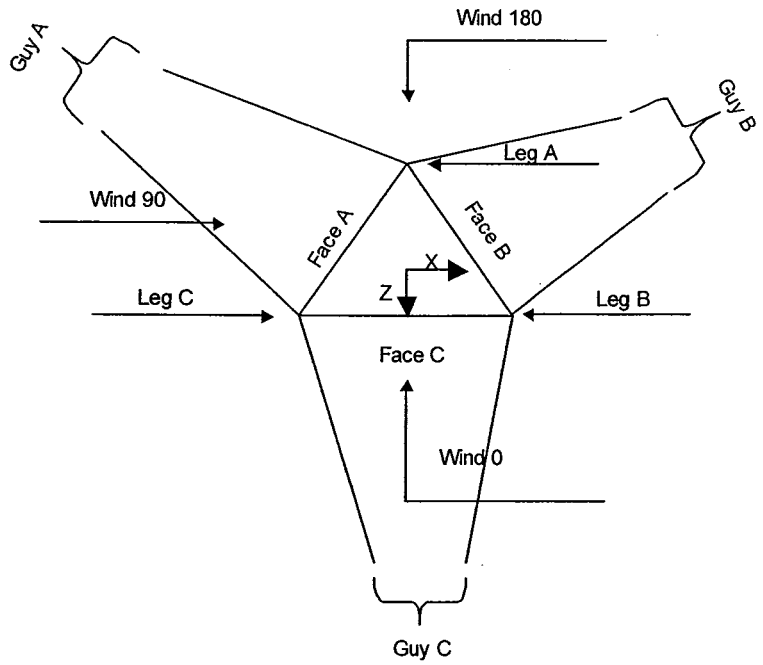
Basic wind speed of 80 mph.
Nominal ice thickness of 0.5000 in.
Ice density of 56 pcf.
A wind speed of 69 mph is used in combination with ice.
Temperature drop of 50 °F.
Deflections calculated using a wind speed of 50 mph.
Pressures are calculated at each section.
Safety factor used in guy design is 2.
Stress ratio used in tower member design is 1.333.
Local bending stresses due to climbing loads, 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		



Corner & Starmount Guyed Tower



Face Guyed

Tower Section Geometry

Tower Section	Tower Elevation	Assembly Database	Description	Section Width	Number of Sections	Section Length
	ft			ft		ft
T1	224.75-204.75			3.42	1	20.00
T2-T3	204.75-164.75			3.42	2	20.00
T4	164.75-144.75			3.42	1	20.00
T5-T6	144.75-104.75			3.42	2	20.00
T7-T11	104.75-4.75			3.42	5	20.00
T12	4.75-0.00			3.42	1	4.75

Tower Section Geometry *(cont'd)*

Tower Section	Tower Elevation ft	Diagonal Spacing ft	Bracing Type	Has K Brace End Panels	Has Horizontals	Top Girt Offset in	Bottom Girt Offset in
T1	224.75-204.75	2.42	X Brace	No	No	7.3750	0.0000
T2-T3	204.75-164.75	2.42	CX Brace	No	No	7.3750	0.0000
T4	164.75-144.75	2.42	X Brace	No	No	7.3750	0.0000
T5-T6	144.75-104.75	2.42	CX Brace	No	No	7.3750	0.0000
T7-T11	104.75-4.75	2.41	K Brace Left	No	No	7.3750	1.0000
T12	4.75-0.00	0.94	X Brace	No	Yes	1.0000	11.0000

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Leg Type	Leg Size	Leg Grade	Diagonal Type	Diagonal Size	Diagonal Grade
T1 224.75-204.75	Pipe	ROHN 2.5 EH	A572-50 (50 ksi)	Equal Angle	L1 3/4x1 3/4x3/16	A36 (36 ksi)
T2-T3 204.75-164.75	Pipe	ROHN 2.5 STD	A572-50 (50 ksi)	Pipe	ROHN TS1.5x16 ga	A53-B-42 (42 ksi)
T4 164.75-144.75	Pipe	ROHN 2.5 EH	A572-50 (50 ksi)	Equal Angle	L1 3/4x1 3/4x3/16	A36 (36 ksi)
T5-T6 144.75-104.75	Pipe	ROHN 2.5 STD	A572-50 (50 ksi)	Pipe	ROHN TS1.5x16 ga	A53-B-42 (42 ksi)
T7-T11 104.75-4.75	Pipe	ROHN 2.5 EH	A572-50 (50 ksi)	Pipe	ROHN TS1.5x16 ga	A53-B-42 (42 ksi)
T12 4.75-0.00	Pipe	ROHN 2.5 EH	A572-50 (50 ksi)	Pipe		A36 (36 ksi)

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Top Girt Type	Top Girt Size	Top Girt Grade	Bottom Girt Type	Bottom Girt Size	Bottom Girt Grade
T1 224.75-204.75	Equal Angle	L1 3/4x1 3/4x3/16	A36 (36 ksi)	Equal Angle	L1 3/4x1 3/4x3/16	A36 (36 ksi)
T2-T3 204.75-164.75	Pipe	ROHN TS1.5x16 ga	A53-B-42 (42 ksi)	Pipe	ROHN TS1.5x16 ga	A53-B-42 (42 ksi)
T4 164.75-144.75	Equal Angle	L1 3/4x1 3/4x3/16	A36 (36 ksi)	Equal Angle	L1 3/4x1 3/4x3/16	A36 (36 ksi)
T5-T6 144.75-104.75	Pipe	ROHN TS1.5x16 ga	A53-B-42 (42 ksi)	Pipe	ROHN TS1.5x16 ga	A53-B-42 (42 ksi)
T7-T11 104.75-4.75	Pipe	ROHN TS1.5x16 ga	A53-B-42 (42 ksi)	Pipe	ROHN TS1.5x16 ga	A53-B-42 (42 ksi)
T12 4.75-0.00	Channel	C14x2x3/16	A36 (36 ksi)	Channel	C14x2x3/16	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
T12 4.75-0.00	1	Channel	C14x2x3/16	A36 (36 ksi)	Channel		A36 (36 ksi)

Tower Section Geometry (cont'd)

Tower Elevation ft	Gusset Area (per face) ft²	Gusset Thickness in	Gusset Grade	Adjust. Factor A_f	Adjust. Factor A_r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals in	Double Angle Stitch Bolt Spacing Horizontals in
T1 224.75-204.75	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000
T2-T3 204.75-164.75	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000
T4 164.75-144.75	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000
T5-T6 144.75-104.75	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000
T7-T11 104.75-4.75	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000
T12 4.75-0.00	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000

Tower Section Geometry (cont'd)

Tower Elevation ft	Calc K Single Angles	Calc K Solid Rounds	K Factors[1] Legs	X Brace Diags X / Y	K Brace Diags X / Y	Single Diags X / Y	Girts X / Y	Horiz. X / Y	Sec. Horiz. X / Y	Inner Brace X / Y
T1 224.75-204.75	Yes	No	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T2-T3 204.75-164.75	Yes	No	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T4 164.75-144.75	Yes	No	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T5-T6 144.75-104.75	Yes	No	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T7-T11 104.75-4.75	Yes	No	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T12 4.75-0.00	Yes	No	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1

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

Tower Section Geometry (cont'd)

Tower Elevation ft	Leg		Diagonal		Top Girt		Bottom Girt		Mid Girt		Long Horizontal		Short Horizontal	
	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U
T1 224.75-204.75	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T2-T3 204.75-164.75	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T4 164.75-144.75	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T5-T6 144.75-104.75	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T7-T11 104.75-4.75	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T12 4.75-0.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75

Tower Section Geometry (cont'd)

Tower Elevation ft	Leg Connection Type	Leg		Diagonal		Top Girt		Bottom Girt		Mid Girt		Long Horizontal		Short Horizontal	
		Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.
T1 224.75-204.75	Flange	0.7500 A325N	4	0.6250 A325X	1	0.6250 A325N	1	0.6250 A325N	1	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T2-T3 204.75-164.75	Flange	0.7500 A325N	4	0.5000 A325X	1	0.5000 A325N	1	0.5000 A325N	1	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T4 164.75-144.75	Flange	0.7500 A325N	4	0.6250 A325X	1	0.6250 A325N	1	0.6250 A325N	1	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T5-T6 144.75-104.75	Flange	0.7500 A325N	4	0.5000 A325X	1	0.5000 A325N	1	0.5000 A325N	1	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T7-T11 104.75-4.75	Flange	0.7500 A325N	4	0.5000 A325X	1	0.5000 A325N	1	0.5000 A325N	1	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T12 4.75-0.00	Flange	0.7500 A325N	4	0.5000 A325X	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0

Guy Data

Guy Elevation ft	Guy Grade		Guy Size	Initial Tension K	%	Guy Modulus ksi	Guy Weight plf	L_u ft	Anchor Radius ft	Anchor Azimuth Adj. °	Anchor Elevation ft	End Fitting Efficiency %
84.8333	EHS	A	1/2	2.69	10%	21000	0.517	193.45	176.00	0.0000	0.00	100%
		B	1/2	2.69	10%	21000	0.517	198.40	181.50	0.0000	0.00	100%
		C	1/2	2.69	10%	21000	0.517	206.01	184.00	0.0000	-12.00	100%
116.866	EHS	A	1/2	2.69	10%	21000	0.517	209.45	176.00	0.0000	0.00	100%
		B	1/2	2.69	10%	21000	0.517	214.04	181.50	0.0000	0.00	100%
		C	1/2	2.69	10%	21000	0.517	222.84	184.00	0.0000	-12.00	100%
152.02	EHS	A	1/2	2.69	10%	21000	0.517	229.24	176.00	0.0000	0.00	100%
		B	1/2	2.69	10%	21000	0.517	233.38	181.50	0.0000	0.00	100%
		C	1/2	2.69	10%	21000	0.517	243.19	184.00	0.0000	-12.00	100%

212.02	EHS	A	1/2	2.69	10%	21000	0.517	272.68	176.00	0.0000	0.00	100%
		B	1/2	2.69	10%	21000	0.517	276.17	181.50	0.0000	0.00	100%
		C	1/2	2.69	10%	21000	0.517	287.03	184.00	0.0000	-12.00	100%
212.02	EHS	A	1/2	2.69	10%	21000	0.517	274.07	176.00	0.0000	0.00	100%
		B	1/2	2.69	10%	21000	0.517	277.59	181.50	0.0000	0.00	100%
		C	1/2	2.69	10%	21000	0.517	288.41	184.00	0.0000	-12.00	100%
44.8333	EHS	A	3/8	1.54	10%	21000	0.273	179.55	176.00	0.0000	0.00	100%
		B	3/8	1.54	10%	21000	0.273	184.88	181.50	0.0000	0.00	100%
		C	3/8	1.54	10%	21000	0.273	190.52	184.00	0.0000	-12.00	100%

Guy Data *(cont'd)*

Guy Elevation *ft*	*Mount Type*	*Torque-Arm Spread* *ft*	*Torque-Arm Leg Angle* °	*Torque-Arm Style*	*Torque-Arm Grade*	*Torque-Arm Type*	*Torque-Arm Size*
84.8333	Corner						
116.866	Corner						
152.02	Torque Arm	15.00	45.0000	Bat Ear	A53-B-35 (35 ksi)	Pipe	XP34.5x.03325 P2.5x.203
212.02	Torque Arm	15.00	45.0000	Bat Ear	A53-B-35 (35 ksi)	Pipe	XP34.5x.03325 P2.5x.203
212.02	Corner						
44.8333	Corner						

Guy Data *(cont'd)*

Guy Elevation *ft*	*Diagonal Grade*	*Diagonal Type*	*Upper Diagonal Size*	*Lower Diagonal Size*	*Is Strap.*	*Pull-Off Grade*	*Pull-Off Type*	*Pull-Off Size*
84.83	A572-50 (50 ksi)	Solid Round			No	A36 (36 ksi)	Flat Bar	4 1/2x3/8
116.87	A572-50 (50 ksi)	Solid Round			No	A36 (36 ksi)	Flat Bar	4 1/2x3/8
152.02	A572-50 (50 ksi)	Solid Round				A36 (36 ksi)	Solid Round	
212.02	A572-50 (50 ksi)	Solid Round				A36 (36 ksi)	Solid Round	
212.02	A572-50 (50 ksi)	Solid Round			No	A36 (36 ksi)	Equal Angle	L1 1/8x1 1/8x1/8
44.83	A572-50 (50 ksi)	Solid Round			No	A36 (36 ksi)	Flat Bar	4 1/2x3/8

Guy Data *(cont'd)*

Guy Elevation *ft*	*Cable Weight A* *K*	*Cable Weight B* *K*	*Cable Weight C* *K*	*Cable Weight D* *K*	*Tower Intercept A* *ft*	*Tower Intercept B* *ft*	*Tower Intercept C* *ft*	*Tower Intercept D* *ft*
84.8333	0.10	0.10	0.11		3.57	3.76	4.04	

Guy Elevation ft	Cable Weight A K	Cable Weight B K	Cable Weight C K	Cable Weight D K	Tower Intercept A ft	Tower Intercept B ft	Tower Intercept C ft	Tower Intercept D ft
					3.3 sec/pulse	3.3 sec/pulse	3.5 sec/pulse	
116.866	0.11	0.11	0.12		4.17	4.36	4.72	
					3.5 sec/pulse	3.6 sec/pulse	3.8 sec/pulse	
152.02	0.12	0.12	0.13		4.98	5.16	5.60	
					3.9 sec/pulse	3.9 sec/pulse	4.1 sec/pulse	
212.02	0.14	0.14	0.15		7.01	7.19	7.76	
					4.6 sec/pulse	4.6 sec/pulse	4.8 sec/pulse	
212.02	0.14	0.14	0.15		7.08	7.26	7.83	
					4.6 sec/pulse	4.7 sec/pulse	4.8 sec/pulse	
44.8333	0.05	0.05	0.05		2.85	3.02	3.20	
					2.9 sec/pulse	3.0 sec/pulse	3.1 sec/pulse	

Guy Data (cont'd)

Guy Elevation ft	Calc K Single Angles	Calc K Solid Rounds	Torque Arm K_x	Torque Arm K_y	Pull Off K_x	Pull Off K_y	Diagonal K_x	Diagonal K_y
84.8333	No	No			1	1	1	1
116.866	No	No			1	1	1	1
152.02	No	No	0.65	0.65	1	1	1	1
212.02	No	No	0.65	0.65	1	1	1	1
212.02	No	No			1	1	1	1
44.8333	No	No			1	1	1	1

Guy Data (cont'd)

Guy Elevation ft	Torque-Arm Bolt Size in	Torque-Arm Number	Torque-Arm Net Width Deduct in	Torque-Arm U	Pull Off Bolt Size in	Pull Off Number	Pull Off Net Width Deduct in	Pull Off U	Diagonal Bolt Size in	Diagonal Number	Diagonal Net Width Deduct in	Diagonal U
84.8333	0.6250 A325N	0	0.0000	0.75	0.6250 A325N	0	0.0000	0.75	0.6250 A325N	0	0.0000	0.75
116.866	0.6250 A325N	0	0.0000	0.75	0.6250 A325N	0	0.0000	0.75	0.6250 A325N	0	0.0000	0.75
152.02	0.0000 A325N	0	0.0000	1	0.0000 A325N	0	0.0000	1	0.0000 A325N	0	0.0000	1
212.02	0.0000 A325N	0	0.0000	1	0.6250 A325N	0	0.0000	0.75	0.6250 A325N	0	0.0000	0.75
212.02	0.6250 A325N	0	0.0000	0.75	0.6250 A325N	0	0.0000	0.75	0.6250 A325N	0	0.0000	0.75
44.8333	0.6250 A325N	0	0.0000	0.75	0.6250 A325N	0	0.0000	0.75	0.6250 A325N	0	0.0000	0.75

Guy Pressures

Guy Elevation ft	Guy Location	z ft	q_z psf	q_z Ice psf	Ice Thickness in
84.8333	A	42.42	18	13	0.5000
	B	42.42	18	13	0.5000
	C	36.42	17	13	0.5000
116.866	A	58.43	19	14	0.5000
	B	58.43	19	14	0.5000
	C	52.43	19	14	0.5000
152.02	A	76.01	21	16	0.5000
	B	76.01	21	16	0.5000
	C	70.01	20	15	0.5000
212.02	A	106.01	23	17	0.5000
	B	106.01	23	17	0.5000
	C	100.01	22	17	0.5000
212.02	A	106.01	23	17	0.5000
	B	106.01	23	17	0.5000
	C	100.01	22	17	0.5000
44.8333	A	22.42	16	12	0.5000
	B	22.42	16	12	0.5000
	C	16.42	16	12	0.5000

Guy-Mast Forces (Excluding Wind) - No Ice

Guy Elevation ft	Guy Location	Chord Angle °	Guy Tension Top Bottom K	F_x K	F_y K	F_z K	M_x kip-ft	M_y kip-ft	M_z kip-ft
84.8333	A	25.9879	2.73 2.69	0.00	1.24	-2.44	-2.44	0.00	0.00
	B	25.2925	2.73 2.69	2.12	1.21	1.23	1.19	0.00	-2.07
	C	28.0117	2.74 2.69	-2.08	1.33	1.20	1.31	0.00	2.27
			Sum:	0.05	3.78	-0.01	0.06	0.00	0.20
116.866	A	33.8828	2.75 2.69	0.00	1.57	-2.26	-3.10	0.00	0.00
	B	33.0627	2.75 2.69	1.97	1.54	1.14	1.52	0.00	-2.63
	C	35.2965	2.76 2.69	-1.92	1.63	1.11	1.61	0.00	2.79
			Sum:	0.05	4.74	-0.01	0.03	0.00	0.16
152.02	A	41.4989	2.77 2.69	-0.09	1.87	-2.04	-8.09	15.70	-14.01
	A	41.4989	2.77 2.69	0.09	1.87	-2.04	-8.09	-15.70	14.01
	B	40.6057	2.77 2.69	1.84	1.84	0.96	15.91	15.90	0.00
	B	40.6057	2.77 2.69	1.75	1.84	1.11	-7.95	-15.90	-13.77
	C	42.3679	2.77 2.69	-1.70	1.90	1.08	-8.24	15.49	14.28
	C	42.3679	2.77 2.69	-1.79	1.90	0.94	16.49	-15.49	0.00
			Sum:	0.09	11.22	0.00	0.02	0.00	0.51
212.02	A	50.9766	2.80 2.69	-0.08	2.20	-1.73	-9.54	13.27	-16.52
	A	50.9766	2.80 2.69	0.08	2.20	-1.73	-9.54	-13.27	16.52
	B	50.0916	2.80	1.56	2.18	0.81	18.85	13.51	0.00

Guy Elevation	Guy Location	Chord Angle	Guy Tension Top / Bottom K	F_x	F_y	F_z	M_x	M_y	M_z
ft		°		K	K	K	kip-ft	kip-ft	kip-ft
			2.69						
	B	50.0916	2.80	1.49	2.18	0.94	-9.43	-13.51	-16.33
			2.69						
	C	51.2451	2.81	-1.45	2.22	0.92	-9.60	13.20	16.63
			2.69						
	C	51.2451	2.81	-1.52	2.22	0.80	19.20	-13.20	0.00
			2.69						
			Sum:	0.07	13.19	0.02	-0.05	0.00	0.30
212.02	A	50.6206	2.80	0.00	2.19	-1.74	-4.32	0.00	0.00
			2.69						
	B	49.7438	2.80	1.54	2.17	0.89	2.14	0.00	-3.70
			2.69						
	C	50.9044	2.81	-1.50	2.21	0.87	2.18	0.00	3.77
			2.69						
			Sum:	0.04	6.57	0.01	-0.01	0.00	0.07
44.8333	A	14.4465	1.55	0.00	0.41	-1.50	-0.81	0.00	0.00
			1.54						
	B	14.0217	1.55	1.30	0.40	0.75	0.39	0.00	-0.68
			1.54						
	C	17.3396	1.56	-1.28	0.49	0.74	0.48	0.00	0.83
			1.54						
			Sum:	0.02	1.30	-0.01	0.07	0.00	0.15

Guy-Mast Forces (Excluding Wind) - Ice

Guy Elevation	Guy Location	Chord Angle	Guy Tension Top / Bottom K	F_x	F_y	F_z	M_x	M_y	M_z
ft		°		K	K	K	kip-ft	kip-ft	kip-ft
84.8333	A	25.9879	3.96	0.00	1.82	-3.52	-3.60	0.00	0.00
			3.87						
	B	25.2925	3.97	3.07	1.79	1.77	1.76	0.00	-3.06
			3.88						
	C	28.0117	3.99	-3.01	1.96	1.74	1.94	-0.00	3.35
			3.88						
			Sum:	0.07	5.58	-0.01	0.10	0.00	0.30
116.866	A	33.8828	3.99	0.00	2.31	-3.26	-4.55	0.00	0.00
			3.86						
	B	33.0627	4.00	2.86	2.27	1.65	2.24	0.00	-3.87
			3.87						
	C	35.2965	4.02	-2.79	2.40	1.61	2.37	-0.00	4.11
			3.87						
			Sum:	0.07	6.98	-0.00	0.06	0.00	0.23
152.02	A	41.4989	4.02	-0.13	2.73	-2.94	-11.84	22.61	-20.51
			3.85						
	A	41.4989	4.02	0.13	2.73	-2.94	-11.84	-22.61	20.51
			3.85						
	B	40.6057	4.03	2.65	2.70	1.38	23.36	22.96	0.00
			3.86						
	B	40.6057	4.03	2.52	2.70	1.60	-11.68	-22.96	-20.23
			3.86						
	C	42.3679	4.04	-2.46	2.80	1.56	-12.12	22.38	20.99
			3.86						

Guy Elevation	Guy Location	Chord Angle	Guy Tension Top Bottom K	F_x	F_y	F_z	M_x	M_y	M_z
ft		°		K	K	K	kip-ft	kip-ft	kip-ft
	C	42.3679	4.04 3.86	-2.58	2.80	1.35	24.23	-22.38	0.00
			Sum:	0.13	16.46	0.02	0.12	0.00	0.76
212.02	A	50.9766	4.07 3.83	-0.11	3.22	-2.48	-13.94	19.08	-24.15
	A	50.9766	4.07 3.83	0.11	3.22	-2.48	-13.94	-19.08	24.15
	B	50.0916	4.08 3.84	2.25	3.19	1.17	27.64	19.48	0.00
	B	50.0916	4.08 3.84	2.14	3.19	1.36	-13.82	-19.48	-23.93
	C	51.2451	4.09 3.84	-2.09	3.25	1.33	-14.09	19.03	24.40
	C	51.2451	4.09 3.84	-2.20	3.25	1.15	28.18	-19.03	0.00
			Sum:	0.10	19.33	0.05	0.02	0.00	0.47
212.02	A	50.6206	4.07 3.83	0.00	3.21	-2.51	-6.33	0.00	0.00
	B	49.7438	4.08 3.84	2.22	3.18	1.28	3.14	0.00	-5.43
	C	50.9044	4.10 3.84	-2.17	3.24	1.25	3.20	-0.00	5.54
			Sum:	0.05	9.63	0.02	0.00	0.00	0.11
44.8333	A	14.4465	2.30 2.26	0.00	0.64	-2.21	-1.27	0.00	0.00
	B	14.0217	2.31 2.27	1.93	0.63	1.11	0.62	0.00	-1.08
	C	17.3396	2.32 2.28	-1.90	0.76	1.10	0.75	0.00	1.30
			Sum:	0.03	2.03	-0.00	0.11	0.00	0.23

Guy-Mast Forces (Excluding Wind) - Service

Guy Elevation	Guy Location	Chord Angle	Guy Tension Top Bottom K	F_x	F_y	F_z	M_x	M_y	M_z
ft		°		K	K	K	kip-ft	kip-ft	kip-ft
84.8333	A	25.9879	2.73 2.69	0.00	1.24	-2.44	-2.44	0.00	0.00
	B	25.2925	2.73 2.69	2.12	1.21	1.23	1.19	0.00	-2.07
	C	28.0117	2.74 2.69	-2.08	1.33	1.20	1.31	0.00	2.27
			Sum:	0.05	3.78	-0.01	0.06	0.00	0.20
116.866	A	33.8828	2.75 2.69	0.00	1.57	-2.26	-3.10	0.00	0.00
	B	33.0627	2.75 2.69	1.97	1.54	1.14	1.52	0.00	-2.63
	C	35.2965	2.76 2.69	-1.92	1.63	1.11	1.61	0.00	2.79
			Sum:	0.05	4.74	-0.01	0.03	0.00	0.16
152.02	A	41.4989	2.77 2.69	-0.09	1.87	-2.04	-8.09	15.70	-14.01

Guy Elevation	Guy Location	Chord Angle	Guy Tension Top / Bottom K	F_x	F_y	F_z	M_x	M_y	M_z
ft		°		K	K	K	kip-ft	kip-ft	kip-ft
	A	41.4989	2.77	0.09	1.87	-2.04	-8.09	-15.70	14.01
			2.69						
	B	40.6057	2.77	1.84	1.84	0.96	15.91	15.90	0.00
			2.69						
	B	40.6057	2.77	1.75	1.84	1.11	-7.95	-15.90	-13.77
			2.69						
	C	42.3679	2.77	-1.70	1.90	1.08	-8.24	15.49	14.28
			2.69						
	C	42.3679	2.77	-1.79	1.90	0.94	16.49	-15.49	0.00
			2.69						
			Sum:	0.09	11.22	0.00	0.02	0.00	0.51
212.02	A	50.9766	2.80	-0.08	2.20	-1.73	-9.54	13.27	-16.52
			2.69						
	A	50.9766	2.80	0.08	2.20	-1.73	-9.54	-13.27	16.52
			2.69						
	B	50.0916	2.80	1.56	2.18	0.81	18.85	13.51	0.00
			2.69						
	B	50.0916	2.80	1.49	2.18	0.94	-9.43	-13.51	-16.33
			2.69						
	C	51.2451	2.81	-1.45	2.22	0.92	-9.60	13.20	16.63
			2.69						
	C	51.2451	2.81	-1.52	2.22	0.80	19.20	-13.20	0.00
			2.69						
			Sum:	0.07	13.19	0.02	-0.05	0.00	0.30
212.02	A	50.6206	2.80	0.00	2.19	-1.74	-4.32	0.00	0.00
			2.69						
	B	49.7438	2.80	1.54	2.17	0.89	2.14	0.00	-3.70
			2.69						
	C	50.9044	2.81	-1.50	2.21	0.87	2.18	0.00	3.77
			2.69						
			Sum:	0.04	6.57	0.01	-0.01	0.00	0.07
44.8333	A	14.4465	1.55	0.00	0.41	-1.50	-0.81	0.00	0.00
			1.54						
	B	14.0217	1.55	1.30	0.40	0.75	0.39	0.00	-0.68
			1.54						
	C	17.3396	1.56	-1.28	0.49	0.74	0.48	0.00	0.83
			1.54						
			Sum:	0.02	1.30	-0.01	0.07	0.00	0.15

Feed Line/Linear Appurtenances - Entered As Round Or Flat

Description	Face or Leg	Allow Shield	Component Type	Placement ft	Face Offset in	Lateral Offset (Frac FW)	#	# Per Row	Clear Spacing in	Width or Diameter in	Perimeter in	Weight plf
1 5/8 (Verizon)	C	Yes	Ar (CfAe)	165.00 - 6.00	0.0000	0	12	4	0.7500	1.9800		1.04
EW63	C	Yes	Af (CfAe)	108.00 - 6.00	0.0000	-0.3	2	2	1.5742	1.5742	5.0668	0.51
EW63 (Verizon Proposed)	C	Yes	Af (CfAe)	125.00 - 6.00	0.0000	-0.4	1	1	1.5742	1.5742	5.0668	0.51
7/8	B	Yes	Ar (CfAe)	177.00 - 6.00	0.0000	0	12	4	0.7500	1.1100		0.54
1 5/8	A	Yes	Ar (CfAe)	215.00 - 6.00	0.0000	0.45	2	2	0.5000	1.9800		1.04
3/8	B	Yes	Ar (CfAe)	29.00 - 6.00	-1.0000	-0.24	1	1	0.4500	0.4500		0.09
3/8	B	Yes	Ar (CfAe)	35.00 - 6.00	-1.0000	-0.25	1	1	0.4500	0.4500		0.09

Description	Face or Leg	Allow Shield	Component Type	Placement ft	Face Offset in	Lateral Offset (Frac FW)	#	# Per Row	Clear Spacing in	Width or Diameter in	Perimeter in	Weight plf
3/8	B	Yes	Ar (CfAe)	40.00 - 6.00	-1.0000	-0.26	1	1	0.4500	0.4500		0.09
1/2	A	Yes	Ar (CfAe)	48.00 - 6.00	2.2000	0.45	2	2	0.5000	0.5800		0.25
7/8	B	Yes	Ar (CfAe)	88.00 - 6.00	1.5000	0.4	1	1	1.1100	1.1100		0.54
1/2	B	Yes	Ar (CfAe)	91.00 - 6.00	-1.5000	-0.26	1	1	0.5800	0.5800		0.25
7/8	A	Yes	Ar (CfAe)	106.00 - 6.00	0.0000	-0.47	1	1	1.1100	1.1100		0.54
7/8	C	No	Ar (Leg)	113.00 - 6.00	0.0000	0	1	1	1.1100	1.1100		0.54
1 5/8	A	Yes	Ar (CfAe)	126.00 - 6.00	0.0000	-0.41	1	1	1.9800	1.9800		1.04
7/8	C	No	Ar (Leg)	127.00 - 6.00	0.0000	0	1	1	1.1100	1.1100		0.54
7/8	C	No	Ar (Leg)	145.00 - 6.00	0.0000	0	3	2	1.1100	1.1100		0.54
1/2	B	Yes	Ar (CfAe)	144.00 - 6.00	-1.5000	-0.28	1	1	0.5800	0.5800		0.25
1/2	B	Yes	Ar (CfAe)	148.00 - 6.00	-1.0000	-0.28	1	1	0.5800	0.5800		0.25
1/2	B	Yes	Ar (CfAe)	157.00 - 6.00	-1.0000	-0.3	3	2	0.5800	0.5800		0.25
EW63	B	Yes	Af (CfAe)	152.00 - 6.00	0.0000	-0.4	1	1	0.2500	1.5742	5.0668	0.51
7/8	C	No	Ar (Leg)	185.00 - 6.00	0.0000	0	1	1	1.1100	1.1100		0.54
1 5/8	C	No	Ar (Leg)	200.00 - 6.00	0.0000	0	1	1	1.9800	1.9800		1.04
1 1/4	B	Yes	Ar (CfAe)	209.00 - 6.00	0.0000	0.35	1	1	1.5500	1.5500		0.66
7/8	B	Yes	Ar (CfAe)	217.00 - 6.00	1.5000	0.15	2	2	0.7500	1.1100		0.54
7/8	B	Yes	Ar (CfAe)	205.00 - 6.00	0.0000	0.2	4	4	0.7500	1.1100		0.54
7/8	B	Yes	Ar (CfAe)	224.75 - 6.00	-2.0000	-0.25	3	3	0.2500	1.1100		0.54
1 1/4	B	Yes	Ar (CfAe)	224.75 - 6.00	-2.0000	-0.2	3	2	0.2500	1.5500		0.66
1 1/4	B	Yes	Ar (CfAe)	215.00 - 6.00	0.0000	-0.45	3	2	0.2500	1.5500		0.66
7/8	C	Yes	Ar (CfAe)	219.00 - 6.00	-1.5000	-0.35	1	1	1.1100	1.1100		0.54

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	224.75-204.75	A	3.382	0.000	0.000	0.000	0.02
		B	16.272	0.000	0.000	0.000	0.11
		C	1.318	0.000	0.000	0.000	0.01
T2	204.75-184.75	A	9.139	0.000	0.000	0.000	0.04
		B	29.567	0.000	0.000	0.000	0.19
		C	4.389	0.000	0.000	0.000	0.03
T3	184.75-164.75	A	11.750	0.000	0.000	0.000	0.04
		B	34.099	0.000	0.000	0.000	0.27
		C	7.165	0.000	0.000	0.000	0.05
T4	164.75-144.75	A	11.796	0.000	0.000	0.000	0.04
		B	38.308	0.951	0.000	0.000	0.33
		C	20.246	0.000	0.000	0.000	0.29
T5	144.75-124.75	A	15.864	0.000	0.000	0.000	0.04
		B	40.797	2.624	0.000	0.000	0.35
		C	24.108	0.033	0.000	0.000	0.33
T6	124.75-104.75	A	21.479	0.000	0.000	0.000	0.06
		B	40.833	2.624	0.000	0.000	0.35
		C	26.513	3.476	0.000	0.000	0.35
T7	104.75-84.75	A	24.300	0.000	0.000	0.000	0.07
		B	41.436	2.624	0.000	0.000	0.36
		C	27.600	7.871	0.000	0.000	0.38
T8	84.75-64.75	A	24.300	0.000	0.000	0.000	0.07
		B	43.650	2.624	0.000	0.000	0.37
		C	27.600	7.871	0.000	0.000	0.38
T9	64.75-44.75	A	24.614	0.000	0.000	0.000	0.07
		B	43.650	2.624	0.000	0.000	0.37
		C	27.600	7.871	0.000	0.000	0.38
T10	44.75-24.75	A	26.233	0.000	0.000	0.000	0.08
		B	44.766	2.624	0.000	0.000	0.37

Tower Section	Tower Elevation ft	Face	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
		C	27.600	7.871	0.000	0.000	0.38
T11	24.75-4.75	A	24.594	0.000	0.000	0.000	0.08
		B	43.031	2.460	0.000	0.000	0.35
		C	25.875	7.379	0.000	0.000	0.35
T12	4.75-0.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	0.00

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	224.75-204.75	A	0.500	2.545	2.118	0.000	0.000	0.05
		B		13.046	11.086	0.000	0.000	0.29
		C		2.506	0.000	0.000	0.000	0.02
T2	204.75-184.75	A	0.500	8.798	4.133	0.000	0.000	0.11
		B		23.300	22.933	0.000	0.000	0.52
		C		7.348	0.000	0.000	0.000	0.07
T3	184.75-164.75	A	0.500	13.450	4.133	0.000	0.000	0.11
		B		25.454	28.630	0.000	0.000	0.76
		C		12.062	0.171	0.000	0.000	0.12
T4	164.75-144.75	A	0.500	13.538	4.133	0.000	0.000	0.11
		B		28.858	34.771	0.000	0.000	0.95
		C		17.055	13.650	0.000	0.000	0.79
T5	144.75-124.75	A	0.500	21.189	4.133	0.000	0.000	0.11
		B		34.618	37.901	0.000	0.000	1.03
		C		24.396	13.697	0.000	0.000	0.89
T6	124.75-104.75	A	0.500	30.637	4.133	0.000	0.000	0.16
		B		34.717	37.901	0.000	0.000	1.03
		C		28.967	18.599	0.000	0.000	0.98
T7	104.75-84.75	A	0.500	36.000	4.133	0.000	0.000	0.19
		B		36.111	37.901	0.000	0.000	1.04
		C		31.033	24.854	0.000	0.000	1.06
T8	84.75-64.75	A	0.500	36.000	4.133	0.000	0.000	0.19
		B		40.867	37.901	0.000	0.000	1.08
		C		31.033	24.854	0.000	0.000	1.06
T9	64.75-44.75	A	0.500	36.428	4.426	0.000	0.000	0.19
		B		40.867	37.901	0.000	0.000	1.08
		C		31.033	24.854	0.000	0.000	1.06
T10	44.75-24.75	A	0.500	38.633	5.933	0.000	0.000	0.22
		B		44.461	37.901	0.000	0.000	1.10
		C		31.033	24.854	0.000	0.000	1.06
T11	24.75-4.75	A	0.500	36.219	5.563	0.000	0.000	0.21
		B		45.109	35.533	0.000	0.000	1.05
		C		29.094	23.301	0.000	0.000	0.99
T12	4.75-0.00	A	0.500	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	0.00

Feed Line Shielding

Section	Elevation	Face	A_R	A_R Ice	A_F	A_F Ice
	ft		ft^2	ft^2	ft^2	ft^2
T1	224.75-204.75	A	0.000	0.000	0.549	1.050
		B	0.000	0.000	2.641	5.433
		C	0.000	0.000	0.214	0.564
T2	204.75-184.75	A	0.892	2.049	0.000	0.000
		B	3.994	10.410	0.000	0.000
		C	0.250	0.792	0.000	0.000
T3	184.75-164.75	A	0.892	2.049	0.000	0.000
		B	4.607	12.177	0.000	0.000
		C	0.272	0.844	0.000	0.000
T4	164.75-144.75	A	0.000	0.000	1.040	1.981
		B	0.000	0.000	6.188	13.893
		C	0.000	0.000	2.372	4.817
T5	144.75-124.75	A	0.919	2.119	0.000	0.000
		B	5.866	16.454	0.000	0.000
		C	2.038	4.996	0.000	0.000
T6	124.75-104.75	A	1.353	3.217	0.188	0.308
		B	5.871	16.476	0.815	1.575
		C	2.503	6.264	0.347	0.599
T7	104.75-84.75	A	0.793	1.977	0.220	0.379
		B	2.972	8.384	0.826	1.605
		C	1.546	3.936	0.430	0.754
T8	84.75-64.75	A	0.866	2.160	0.000	0.000
		B	3.411	9.745	0.000	0.000
		C	1.690	4.300	0.000	0.000
T9	64.75-44.75	A	0.814	2.058	0.226	0.394
		B	3.122	8.919	0.868	1.708
		C	1.546	3.936	0.430	0.754
T10	44.75-24.75	A	1.009	2.705	0.000	0.000
		B	3.493	10.187	0.000	0.000
		C	1.690	4.300	0.000	0.000
T11	24.75-4.75	A	0.946	2.536	0.000	0.000
		B	3.353	9.971	0.000	0.000
		C	1.584	4.032	0.000	0.000
T12	4.75-0.00	A	0.000	0.000	0.000	0.000
		B	0.000	0.000	0.000	0.000
		C	0.000	0.000	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	224.75-204.75	1.1297	-2.8269	0.6652	-0.6743
T2	204.75-184.75	2.0454	-3.1178	1.1352	-0.2646
T3	184.75-164.75	1.8082	-2.7823	0.7063	-0.0451
T4	164.75-144.75	1.7528	-1.2821	0.8485	0.4922
T5	144.75-124.75	1.1471	-1.3587	0.0168	0.4103
T6	124.75-104.75	0.5877	-0.5851	-0.5767	1.0261
T7	104.75-84.75	0.7747	-0.1654	-0.3258	1.2979
T8	84.75-64.75	1.0241	-0.1696	-0.0246	1.2439
T9	64.75-44.75	0.9683	-0.1975	-0.0655	1.2324
T10	44.75-24.75	0.9934	-0.5523	0.0138	0.8797
T11	24.75-4.75	0.9965	-0.6366	0.0698	0.6606
T12	4.75-0.00	0.0000	0.0000	0.0000	0.0000

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft	Offsets: Vert ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
10' 4 Bay Di-Pole	A	From Leg	0.75	0.00	0.0000	244.00	No Ice	2.00	2.00	0.03
							1/2" Ice	3.00	3.00	0.05
			0.00							
21'x4.5" Pipe Mount	A	From Leg	0.50	0.00	0.0000	232.50	No Ice	9.45	9.45	0.23
							1/2" Ice	11.55	11.55	0.29
			0.00							
Beacon	C	From Leg	0.50	0.00	0.0000	225.00	No Ice	1.20	1.20	0.05
							1/2" Ice	1.36	1.36	0.21
			0.00							
3"x20' Omni	B	From Leg	0.50	0.00	0.0000	235.00	No Ice	6.00	6.00	0.03
							1/2" Ice	8.00	8.00	0.07
			0.00							
3"x20' Omni	C	From Leg	0.50	0.00	0.0000	235.00	No Ice	6.00	6.00	0.03
							1/2" Ice	8.00	8.00	0.07
			0.00							
48"x11"x6" Panel	C	From Leg	0.50	0.00	0.0000	222.50	No Ice	5.13	2.87	0.03
							1/2" Ice	5.52	3.18	0.06
			0.00							
44"x12"x6" Panel	A	From Leg	0.50	0.00	0.0000	218.33	No Ice	5.13	2.59	0.03
							1/2" Ice	5.50	2.90	0.06
			0.00							
10' x 3" Dia Omni	B	From Face	8.00	0.00	0.0000	222.00	No Ice	3.00	3.00	0.03
							1/2" Ice	4.03	4.03	0.05
			0.00							
12' x 3" Dia Omni	A	From Face	8.00	0.00	0.0000	221.00	No Ice	3.60	3.60	0.04
							1/2" Ice	4.83	4.83	0.06
			0.00							
11' x 3" Dia Omni	B	From Face	8.00	0.00	0.0000	210.00	No Ice	3.30	3.30	0.04
							1/2" Ice	4.43	4.43	0.06
			0.00							
(2) 10' Side Arm	A	From Face	0.50	0.00	0.0000	214.00	No Ice	6.60	6.60	0.30
							1/2" Ice	8.80	8.80	0.55
			0.00							
(2) 10' Side Arm	B	From Face	0.50	0.00	0.0000	214.00	No Ice	6.60	6.60	0.30
							1/2" Ice	8.80	8.80	0.55
			0.00							
(2) 10' Side Arm	C	From Face	0.50	0.00	0.0000	214.00	No Ice	6.60	6.60	0.30
							1/2" Ice	8.80	8.80	0.55
			0.00							
10' Dipole	C	From Face	8.00	0.00	0.0000	209.00	No Ice	4.00	4.00	0.05
							1/2" Ice	6.00	6.00	0.07
			0.00							
10' x 3" Dia Omni	B	From Leg	10.00	0.00	0.0000	215.00	No Ice	3.00	3.00	0.03
							1/2" Ice	4.03	4.03	0.05
			0.00							
8'-6" x 3" Dia Omni	B	From Leg	10.00	0.00	0.0000	216.25	No Ice	2.55	2.55	0.03
							1/2" Ice	3.43	3.43	0.04
			0.00							
20' 4-Bay Dipole	C	From Leg	10.00	0.00	0.0000	211.00	No Ice	4.00	4.00	0.06
							1/2" Ice	6.00	6.00	0.10
			0.00							
8'-6" Dipole	A	From Leg	10.00		0.0000	205.75	No Ice	4.00	4.00	0.05

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
			0.00			1/2" Ice	6.00	6.00	0.07
			0.00						
8' Dipole	A	From Leg	10.00	0.0000	205.25	No Ice	4.00	4.00	0.05
			0.00			1/2" Ice	6.00	6.00	0.07
			0.00						
16' Dipole	A	From Leg	10.00	0.0000	217.67	No Ice	4.00	4.00	0.06
			0.00			1/2" Ice	6.00	6.00	0.10
			0.00						
14' x 3" Dia Omni	C	From Leg	10.00	0.0000	215.17	No Ice	4.20	4.20	0.04
			0.00			1/2" Ice	5.63	5.63	0.07
			0.00						
5' x 8" Dia Omni	B	From Leg	1.00	0.0000	199.67	No Ice	2.70	2.70	0.05
			0.00			1/2" Ice	3.05	3.05	0.08
			0.00						
18'-6" Di-Pole	C	From Leg	0.50	0.0000	196.83	No Ice	4.00	4.00	0.06
			0.00			1/2" Ice	6.00	6.00	0.10
			0.00						
16" Corner Reflector	C	From Leg	0.50	0.0000	184.33	No Ice	2.88	2.88	0.03
			0.00			1/2" Ice	3.31	3.31	0.04
			0.00						
13'-6" T-Frame Sector Mount (Nextel)	A	From Leg	3.25	0.0000	176.75	No Ice	13.60	13.60	0.47
			0.00			1/2" Ice	18.40	18.40	0.60
			0.00						
13'-6" T-Frame Sector Mount (Nextel)	B	From Leg	3.25	0.0000	176.75	No Ice	13.60	13.60	0.47
			0.00			1/2" Ice	18.40	18.40	0.60
			0.00						
13'-6" T-Frame Sector Mount (Nextel)	C	From Leg	3.25	0.0000	176.75	No Ice	13.60	13.60	0.47
			0.00			1/2" Ice	18.40	18.40	0.60
			0.00						
(4) DB844H90E-XY (Nextel)	A	From Leg	4.50	0.0000	177.50	No Ice	2.87	3.73	0.01
			0.00			1/2" Ice	3.18	4.10	0.04
			0.00						
(4) DB844H90E-XY (Nextel)	B	From Leg	4.50	0.0000	177.50	No Ice	2.87	3.73	0.01
			0.00			1/2" Ice	3.18	4.10	0.04
			0.00						
(4) DB844H90E-XY (Nextel)	C	From Leg	4.50	0.0000	177.50	No Ice	2.87	3.73	0.01
			0.00			1/2" Ice	3.18	4.10	0.04
			0.00						
13'-6" T-Frame Sector Mount (Verizon)	A	From Leg	3.25	0.0000	164.17	No Ice	13.60	13.60	0.47
			0.00			1/2" Ice	18.40	18.40	0.60
			0.00						
13'-6" T-Frame Sector Mount (Verizon)	B	From Leg	3.25	0.0000	164.17	No Ice	13.60	13.60	0.47
			0.00			1/2" Ice	18.40	18.40	0.60
			0.00						
13'-6" T-Frame Sector Mount (Verizon)	C	From Leg	3.25	0.0000	164.17	No Ice	13.60	13.60	0.47
			0.00			1/2" Ice	18.40	18.40	0.60
			0.00						
DB950G85E-M (Verizon)	A	From Leg	4.50	0.0000	164.17	No Ice	2.29	4.24	0.01
			-6.00			1/2" Ice	2.65	4.62	0.03
			0.00						
DB950G85E-M (Verizon)	A	From Leg	4.50	0.0000	164.17	No Ice	2.29	4.24	0.01
			6.00			1/2" Ice	2.65	4.62	0.03
			0.00						
DB844G65ZAXY (Verizon)	A	From Leg	4.50	0.0000	164.17	No Ice	4.67	3.73	0.02
			-4.00			1/2" Ice	5.05	4.10	0.05
			0.00						
DB844G65ZAXY	A	From Leg	4.50	0.0000	164.17	No Ice	4.67	3.73	0.02

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
(Verizon)			4.00 0.00			1/2" Ice	5.05	4.10	0.05
DB950G85E-M	B	From Leg	4.50 -6.00 0.00	0.0000	164.17	No Ice 1/2" Ice	2.29 2.65	4.24 4.62	0.01 0.03
(Verizon)									
DB950G85E-M	B	From Leg	4.50 6.00 0.00	0.0000	164.17	No Ice 1/2" Ice	2.29 2.65	4.24 4.62	0.01 0.03
(Verizon)									
DB844G65ZAXY	B	From Leg	4.50 -4.00 0.00	0.0000	164.17	No Ice 1/2" Ice	4.67 5.05	3.73 4.10	0.02 0.05
(Verizon)									
DB844G65ZAXY	B	From Leg	4.50 4.00 0.00	0.0000	164.17	No Ice 1/2" Ice	4.67 5.05	3.73 4.10	0.02 0.05
(Verizon)									
DB950G85E-M	C	From Leg	4.50 -6.00 0.00	0.0000	164.17	No Ice 1/2" Ice	2.29 2.65	4.24 4.62	0.01 0.03
(Verizon)									
DB950G85E-M	C	From Leg	4.50 6.00 0.00	0.0000	164.17	No Ice 1/2" Ice	2.29 2.65	4.24 4.62	0.01 0.03
(Verizon)									
DB844G65ZAXY	C	From Leg	4.50 -4.00 0.00	0.0000	164.17	No Ice 1/2" Ice	4.67 5.05	3.73 4.10	0.02 0.05
(Verizon)									
DB844G65ZAXY	C	From Leg	4.50 4.00 0.00	0.0000	164.17	No Ice 1/2" Ice	4.67 5.05	3.73 4.10	0.02 0.05
(Verizon)									
Yagi	C	From Face	8.00 0.00 0.00	0.0000	156.25	No Ice 1/2" Ice	2.23 3.15	2.23 3.15	0.01 0.02
Yagi	A	From Face	8.00 0.00 0.00	0.0000	156.25	No Ice 1/2" Ice	2.23 3.15	2.23 3.15	0.01 0.02
3'-6" x 3" Dia Omni	A	From Face	8.00 0.00 0.00	0.0000	155.58	No Ice 1/2" Ice	0.84 1.06	0.84 1.06	0.02 0.03
14" Corner Reflector	A	From Leg	0.50 0.00 0.00	0.0000	153.00	No Ice 1/2" Ice	2.88 3.31	2.88 3.31	0.03 0.04
3' Side Mount Standoff	A	From Leg	2.00 0.00 0.00	0.0000	149.50	No Ice 1/2" Ice	2.72 4.91	2.72 4.91	0.05 0.09
3' Yagi	C	From Leg	1.50 0.00 0.00	0.0000	147.58	No Ice 1/2" Ice	2.08 3.79	2.08 3.79	0.03 0.05
44"x8"x3" Panel	C	From Leg	0.50 0.00 0.00	0.0000	143.58	No Ice 1/2" Ice	5.13 5.50	2.59 2.90	0.03 0.06
4' Side Mount Standoff	C	From Leg	2.00 0.00 0.00	0.0000	139.67	No Ice 1/2" Ice	2.72 4.91	2.72 4.91	0.05 0.09
6' x 3" Dia Omni	C	From Leg	4.00 0.00 0.00	0.0000	143.67	No Ice 1/2" Ice	1.77 2.13	1.77 2.13	0.02 0.03
4' Side Mount Standoff	B	From Leg	2.00 0.00 0.00	0.0000	139.50	No Ice 1/2" Ice	2.72 4.91	2.72 4.91	0.05 0.09
12' x 3" Dia Omni	B	From Leg	4.00	0.0000	144.67	No Ice	3.60	3.60	0.04

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
			0.00			1/2" Ice	4.83	4.83	0.06
			0.00						
1' Side Mount Standoff	B	From Leg	1.00	0.0000	135.00	No Ice	0.75	0.75	0.03
			0.00			1/2" Ice	0.95	0.95	0.04
			0.00						
10' Dipole	B	From Leg	1.00	0.0000	144.83	No Ice	4.00	4.00	0.05
			0.00			1/2" Ice	6.00	6.00	0.07
			0.00						
2' Side Mount Standoff	A	From Face	1.00	0.0000	124.50	No Ice	0.75	0.75	0.03
			0.00			1/2" Ice	0.95	0.95	0.04
			0.00						
24"x16"x12" Horn	A	From Face	2.00	0.0000	127.00	No Ice	1.87	2.80	0.10
			0.00			1/2" Ice	2.05	3.04	0.13
			0.00						
3' Side Mount Standoff	C	From Leg	2.00	0.0000	126.00	No Ice	2.72	2.72	0.05
			0.00			1/2" Ice	4.91	4.91	0.09
			0.00						
60"x4"x4" Panel	C	From Leg	3.00	0.0000	126.00	No Ice	2.78	2.78	0.10
			0.00			1/2" Ice	3.15	3.15	0.12
			0.00						
44"x3"x8" Panel	C	From Leg	0.50	0.0000	113.00	No Ice	1.52	3.42	0.50
			0.00			1/2" Ice	1.79	3.76	0.52
			0.00						
4'x4" Pipe Mount	C	From Leg	0.50	0.0000	105.83	No Ice	1.32	1.32	0.04
			0.00			1/2" Ice	1.58	1.58	0.06
			0.00						
15'-2" Dish Mount	A	From Leg	1.00	0.0000	107.00	No Ice	6.00	6.00	0.15
			0.00			1/2" Ice	6.25	6.25	0.19
			0.00						
15'-2" Dish Mount	B	From Leg	1.00	0.0000	107.00	No Ice	6.00	6.00	0.15
			0.00			1/2" Ice	6.25	6.25	0.19
			0.00						
4' Omni	C	From Leg	1.00	0.0000	90.75	No Ice	1.74	1.74	0.04
			0.00			1/2" Ice	2.60	2.60	0.05
			0.00						
10'6"x4" Pipe Mount	A	From Leg	0.50	0.0000	93.17	No Ice	4.72	4.72	0.11
			0.00			1/2" Ice	5.62	5.62	0.15
			0.00						
20' Pipe Mount	B	From Leg	1.00	0.0000	81.00	No Ice	9.00	9.00	0.22
			0.00			1/2" Ice	11.00	11.00	0.29
			0.00						
20' Pipe Mount	C	From Leg	1.00	0.0000	81.00	No Ice	9.00	9.00	0.22
			0.00			1/2" Ice	11.00	11.00	0.29
			0.00						
(2) Yagi	A	From Leg	1.50	0.0000	48.17	No Ice	1.00	1.00	0.01
			0.00			1/2" Ice	1.50	1.50	0.02
			0.00						
1' Side Mount Standoff	A	From Leg	0.50	0.0000	48.17	No Ice	0.75	0.75	0.03
			0.00			1/2" Ice	0.95	0.95	0.04
			0.00						
2' Side Mount Standoff	C	From Leg	1.00	0.0000	38.17	No Ice	1.30	1.30	0.03
			0.00			1/2" Ice	1.57	1.57	0.05
			0.00						
2'6"x4" Pipe Mount	C	From Leg	0.50	0.0000	33.00	No Ice	0.75	0.75	0.03
			0.00			1/2" Ice	0.95	0.95	0.04
			0.00						
2' Side Mount Standoff	C	From Leg	1.00	0.0000	27.00	No Ice	1.30	1.30	0.03

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
			0.00			1/2" Ice	1.57	1.57	0.05
			0.00						
5'3"x4" Pipe Mount	C	From Leg	0.50	0.0000	125.00	No Ice	1.88	1.88	0.06
(Verizon Proposed)			0.00			1/2" Ice	2.21	2.21	0.07
			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
6 FT DISH	A	Paraboloid w/Shroud (HP)	From Leg	1.00	0.0000		107.67	6.00	No Ice	28.30	0.11
				0.00					1/2" Ice	29.05	0.26
				0.00							
6 FT DISH	B	Paraboloid w/Shroud (HP)	From Leg	1.00	0.0000		108.42	6.00	No Ice	28.30	0.11
				0.00					1/2" Ice	29.05	0.26
				0.00							
4 FT DISH	C	Paraboloid w/Radome	From Leg	1.00	0.0000		105.83	4.00	No Ice	12.56	0.17
				0.00					1/2" Ice	13.09	0.24
				0.00							
6 FT DISH	A	Paraboloid w/Radome	From Leg	3.00	0.0000		151.00	6.00	No Ice	28.27	0.14
				0.00					1/2" Ice	29.05	0.29
				0.00							
4'-4" DISH	C	Paraboloid w/o Radome	From Leg	1.00	0.0000		29.00	4.00	No Ice	14.79	0.17
				0.00					1/2" Ice	15.00	0.24
				0.00							
1.2M	C	Paraboloid w/o Radome	From Leg	1.00	0.0000		34.42	4.00	No Ice	12.17	0.17
				0.00					1/2" Ice	13.09	0.23
				0.00							
1.2M	C	Paraboloid w/o Radome	From Leg	1.00	0.0000		29.00	4.00	No Ice	12.17	0.17
				0.00					1/2" Ice	13.09	0.23
				0.00							
6 FT DISH	B	Paraboloid w/Radome	From Leg	1.00	0.0000		125.00	6.00	No Ice	28.27	0.14
(Verizon Proposed)				0.00					1/2" Ice	29.05	0.29
				0.00							

Tower Pressures - No Ice

$G_H = 1.106$

Section Elevation ft	z ft	K_Z	q_z psf	A_G ft^2	Face	A_F ft^2	A_R ft^2	A_{leg} ft^2	Leg %	C_AA_A In Face ft^2	C_AA_A Out Face ft^2
T1 224.75-	214.75	1.708	28	73.126	A	9.764	12.966	9.583	42.16	0.000	0.000

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
204.75					B	7.672	25.856		28.58		
					C	10.099	10.901		45.63		
T2 204.75-184.75	194.75	1.661	27	73.126	A	0.000	26.415	9.583	36.28	0.000	0.000
					B	0.000	43.740		21.91		
					C	0.000	22.307		42.96		
T3 184.75-164.75	174.75	1.61	26	73.126	A	0.000	29.026	9.583	33.02	0.000	0.000
					B	0.000	47.660		20.11		
					C	0.000	25.060		38.24		
T4 164.75-144.75	154.75	1.555	25	73.126	A	8.975	21.380	9.583	31.57	0.000	0.000
					B	4.778	47.891		18.20		
					C	7.643	29.830		25.57		
T5 144.75-124.75	134.75	1.495	24	73.126	A	0.000	33.113	9.583	28.94	0.000	0.000
					B	2.624	53.099		17.20		
					C	0.033	40.238		23.80		
T6 124.75-104.75	114.75	1.428	23	73.126	A	1.004	38.293	9.583	24.39	0.000	0.000
					B	3.000	53.130		17.07		
					C	4.320	42.178		20.61		
T7 104.75-84.75	94.75	1.352	22	73.126	A	0.971	37.377	9.583	24.99	0.000	0.000
					B	2.989	52.334		17.32		
					C	8.633	39.924		19.74		
T8 84.75-64.75	74.75	1.263	21	73.126	A	0.000	37.701	9.583	25.42	0.000	0.000
					B	2.624	54.506		16.77		
					C	7.871	40.178		19.95		
T9 64.75-44.75	54.75	1.156	19	73.126	A	0.965	37.670	9.583	24.80	0.000	0.000
					B	2.947	54.398		16.71		
					C	8.633	39.924		19.74		
T10 44.75-24.75	34.75	1.015	17	73.126	A	0.000	39.492	9.583	24.27	0.000	0.000
					B	2.624	55.540		16.48		
					C	7.871	40.178		19.95		
T11 24.75-4.75	14.75	1	16	73.126	A	0.000	37.915	9.583	25.28	0.000	0.000
					B	2.460	53.945		16.99		
					C	7.379	38.558		20.86		
T12 4.75-0.00	2.38	1	16	9.324	A	6.190	2.465	2.465	28.48	0.000	0.000
					B	6.190	2.465		28.48		
					C	6.190	2.465		28.48		

Tower Pressure - With Ice

$G_H = 1.106$

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 224.75-204.75	214.75	1.708	21	0.5000	74.792	A	15.373	15.462	12.917	41.89	0.000	0.000
						B	19.958	25.962		28.13		
						C	13.741	15.422		44.29		
T2 204.75-184.75	194.75	1.661	20	0.5000	74.792	A	4.133	33.973	12.917	33.90	0.000	0.000
						B	22.933	40.114		20.49		
						C	0.000	33.780		38.24		
T3 184.75-164.75	174.75	1.61	20	0.5000	74.792	A	4.133	38.625	12.917	30.21	0.000	0.000
						B	28.630	40.500		18.68		
						C	0.171	38.442		33.45		
T4 164.75-144.75	154.75	1.555	19	0.5000	74.792	A	15.983	26.455	12.917	30.44	0.000	0.000
						B	34.709	41.774		16.89		
						C	22.663	29.971		24.54		

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
T5 144.75-124.75	134.75	1.495	18	0.5000	74.792	A	4.133	46.294	12.917	25.61	0.000	0.000
						B	37.901	45.388		15.51		
						C	13.697	46.624		21.41		
T6 124.75-104.75	114.75	1.428	18	0.5000	74.792	A	5.194	54.644	12.917	21.59	0.000	0.000
						B	37.694	45.465		15.53		
						C	19.368	49.928		18.64		
T7 104.75-84.75	94.75	1.352	17	0.5000	74.792	A	5.123	54.084	12.917	21.82	0.000	0.000
						B	37.664	47.788		15.12		
						C	25.469	47.159		17.78		
T8 84.75-64.75	74.75	1.263	16	0.5000	74.792	A	4.133	54.563	12.917	22.01	0.000	0.000
						B	37.901	51.845		14.39		
						C	24.854	47.456		17.86		
T9 64.75-44.75	54.75	1.156	14	0.5000	74.792	A	5.400	54.431	12.917	21.59	0.000	0.000
						B	37.562	52.009		14.42		
						C	25.469	47.159		17.78		
T10 44.75-24.75	34.75	1.015	12	0.5000	74.792	A	5.933	56.651	12.917	20.64	0.000	0.000
						B	37.901	54.998		13.90		
						C	24.854	47.456		17.86		
T11 24.75-4.75	14.75	1	12	0.5000	74.792	A	5.563	54.406	12.917	21.54	0.000	0.000
						B	35.533	55.861		14.13		
						C	23.301	45.785		18.70		
T12 4.75-0.00	2.38	1	12	0.5000	9.745	A	6.484	3.322	3.322	33.87	0.000	0.000
						B	6.484	3.322		33.87		
						C	6.484	3.322		33.87		

Tower Pressure - Service

$G_H = 1.106$

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 224.75-204.75	214.75	1.708	11	73.126	A	9.764	12.966	9.583	42.16	0.000	0.000
					B	7.672	25.856		28.58		
					C	10.099	10.901		45.63		
T2 204.75-184.75	194.75	1.661	11	73.126	A	0.000	26.415	9.583	36.28	0.000	0.000
					B	0.000	43.740		21.91		
					C	0.000	22.307		42.96		
T3 184.75-164.75	174.75	1.61	10	73.126	A	0.000	29.026	9.583	33.02	0.000	0.000
					B	0.000	47.660		20.11		
					C	0.000	25.060		38.24		
T4 164.75-144.75	154.75	1.555	10	73.126	A	8.975	21.380	9.583	31.57	0.000	0.000
					B	4.778	47.891		18.20		
					C	7.643	29.830		25.57		
T5 144.75-124.75	134.75	1.495	10	73.126	A	0.000	33.113	9.583	28.94	0.000	0.000
					B	2.624	53.099		17.20		
					C	0.033	40.238		23.80		
T6 124.75-104.75	114.75	1.428	9	73.126	A	1.004	38.293	9.583	24.39	0.000	0.000
					B	3.000	53.130		17.07		
					C	4.320	42.178		20.61		
T7 104.75-84.75	94.75	1.352	9	73.126	A	0.971	37.377	9.583	24.99	0.000	0.000
					B	2.989	52.334		17.32		
					C	8.633	39.924		19.74		
T8 84.75-64.75	74.75	1.263	8	73.126	A	0.000	37.701	9.583	25.42	0.000	0.000

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
					B	2.624	54.506		16.77		
					C	7.871	40.178		19.95		
T9 64.75-44.75	54.75	1.156	7	73.126	A	0.965	37.670	9.583	24.80	0.000	0.000
					B	2.947	54.398		16.71		
					C	8.633	39.924		19.74		
T10 44.75-24.75	34.75	1.015	6	73.126	A	0.000	39.492	9.583	24.27	0.000	0.000
					B	2.624	55.540		16.48		
					C	7.871	40.178		19.95		
T11 24.75-4.75	14.75	1	6	73.126	A	0.000	37.915	9.583	25.28	0.000	0.000
					B	2.460	53.945		16.99		
					C	7.379	38.558		20.86		
T12 4.75-0.00	2.38	1	6	9.324	A	6.190	2.465	2.465	28.48	0.000	0.000
					B	6.190	2.465		28.48		
					C	6.190	2.465		28.48		

Tower Forces - No 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 plf	Ctrl. Face
T1 224.75-204.75	0.14	0.94	A	0.311	2.268	0.619	1	1	17.793	1.53	76.37	B
		TA 0.95	B	0.458	1.96	0.677	1	1	25.182			
			C	0.287	2.331	0.612	1	1	16.771			
T2 204.75-184.75	0.26	0.55	A	0.361	2.146	0.637	1	1	16.815	1.79	89.41	B
			B	0.598	1.805	0.752	1	1	32.913			
			C	0.305	2.283	0.617	1	1	13.774			
T3 184.75-164.75	0.36	0.55	A	0.397	2.07	0.65	1	1	18.877	1.95	97.42	B
			B	0.652	1.781	0.787	1	1	37.491			
			C	0.343	2.189	0.63	1	1	15.786			
T4 164.75-144.75	0.67	0.93	A	0.415	2.035	0.658	1	1	23.040	2.24	112.15	B
		TA 0.95	B	0.72	1.779	0.835	1	1	44.747			
			C	0.512	1.884	0.704	1	1	28.641			
T5 144.75-124.75	0.72	0.55	A	0.453	1.969	0.675	1	1	22.337	2.36	118.05	B
			B	0.762	1.793	0.866	1	1	48.614			
			C	0.551	1.843	0.725	1	1	29.192			
T6 124.75-104.75	0.77	0.60	A	0.537	1.856	0.717	1	1	28.471	2.29	114.41	B
			B	0.768	1.796	0.87	1	1	49.249			
			C	0.636	1.786	0.776	1	1	37.059			
T7 104.75-84.75	0.81	0.62	A	0.524	1.87	0.71	1	1	27.519	2.11	105.46	B
			B	0.757	1.79	0.862	1	1	48.095			
			C	0.664	1.778	0.795	1	1	40.367			
T8 84.75-64.75	0.82	0.57	A	0.516	1.881	0.706	1	1	26.600	2.09	104.57	B
			B	0.781	1.803	0.881	1	1	50.659			
			C	0.657	1.78	0.79	1	1	39.619			
T9 64.75-44.75	0.82	0.62	A	0.528	1.866	0.712	1	1	27.800	1.93	96.44	B
			B	0.784	1.805	0.884	1	1	51.016			
			C	0.664	1.778	0.795	1	1	40.367			
T10 44.75-24.75	0.83	0.57	A	0.54	1.853	0.719	1	1	28.385	1.74	87.02	B
			B	0.795	1.813	0.893	1	1	52.201			
			C	0.657	1.78	0.79	1	1	39.619			
T11 24.75-4.75	0.78	0.57	A	0.518	1.877	0.707	1	1	26.810	1.62	80.76	B
			B	0.771	1.798	0.873	1	1	49.577			
			C	0.628	1.789	0.771	1	1	37.118			
T12 4.75-0.00	0.00	0.32	A	0.928	1.967	1	1	1	8.654	0.31	64.94	C
			B	0.928	1.967	1	1	1	8.654			
			C	0.928	1.967	1	1	1	8.654			

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	R_R	D_F	D_R	A_E ft²	F K	w plf	Ctrl. Face
Sum Weight:	6.98	9.27								21.95		

Tower Forces - No Ice - Wind 60 To Face

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	R_R	D_F	D_R	A_E ft²	F K	w plf	Ctrl. Face
T1 224.75-204.75	0.14	0.94	A	0.311	2.268	0.619	0.8	1	15.841	1.43	71.72	B
		TA 0.95	B	0.458	1.96	0.677	0.8	1	23.647			
			C	0.287	2.331	0.612	0.8	1	14.752			
T2 204.75-184.75	0.26	0.55	A	0.361	2.146	0.637	0.8	1	16.815	1.79	89.41	B
			B	0.598	1.805	0.752	0.8	1	32.913			
			C	0.305	2.283	0.617	0.8	1	13.774			
T3 184.75-164.75	0.36	0.55	A	0.397	2.07	0.65	0.8	1	18.877	1.95	97.42	B
			B	0.652	1.781	0.787	0.8	1	37.491			
			C	0.343	2.189	0.63	0.8	1	15.786			
T4 164.75-144.75	0.67	0.93	A	0.415	2.035	0.658	0.8	1	21.245	2.20	109.76	B
		TA 0.95	B	0.72	1.779	0.835	0.8	1	43.792			
			C	0.512	1.884	0.704	0.8	1	27.112			
T5 144.75-124.75	0.72	0.55	A	0.453	1.969	0.675	0.8	1	22.337	2.34	116.78	B
			B	0.762	1.793	0.866	0.8	1	48.090			
			C	0.551	1.843	0.725	0.8	1	29.186			
T6 124.75-104.75	0.77	0.60	A	0.537	1.856	0.717	0.8	1	28.270	2.26	113.01	B
			B	0.768	1.796	0.87	0.8	1	48.649			
			C	0.636	1.786	0.776	0.8	1	36.195			
T7 104.75-84.75	0.81	0.62	A	0.524	1.87	0.71	0.8	1	27.324	2.08	104.15	B
			B	0.757	1.79	0.862	0.8	1	47.498			
			C	0.664	1.778	0.795	0.8	1	38.640			
T8 84.75-64.75	0.82	0.57	A	0.516	1.881	0.706	0.8	1	26.600	2.07	103.48	B
			B	0.781	1.803	0.881	0.8	1	50.134			
			C	0.657	1.78	0.79	0.8	1	38.045			
T9 64.75-44.75	0.82	0.62	A	0.528	1.866	0.712	0.8	1	27.607	1.91	95.32	B
			B	0.784	1.805	0.884	0.8	1	50.427			
			C	0.664	1.778	0.795	0.8	1	38.640			
T10 44.75-24.75	0.83	0.57	A	0.54	1.853	0.719	0.8	1	28.385	1.72	86.14	B
			B	0.795	1.813	0.893	0.8	1	51.676			
			C	0.657	1.78	0.79	0.8	1	38.045			
T11 24.75-4.75	0.78	0.57	A	0.518	1.877	0.707	0.8	1	26.810	1.60	79.96	B
			B	0.771	1.798	0.873	0.8	1	49.085			
			C	0.628	1.789	0.771	0.8	1	35.642			
T12 4.75-0.00	0.00	0.32	A	0.928	1.967	1	0.8	1	7.416	0.26	55.65	C
			B	0.928	1.967	1	0.8	1	7.416			
			C	0.928	1.967	1	0.8	1	7.416			
Sum Weight:	6.98	9.27								21.61		

Tower Forces - No Ice - Wind 90 To Face

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	R_R	D_F	D_R	A_E ft²	F K	w plf	Ctrl. Face
T1 224.75-204.75	0.14	0.94 TA 0.95	A	0.311	2.268	0.619	0.85	1	16.329	1.46	72.88	B
			B	0.458	1.96	0.677	0.85	1	24.031			
			C	0.287	2.331	0.612	0.85	1	15.257			
T2 204.75-184.75	0.26	0.55	A	0.361	2.146	0.637	0.85	1	16.815	1.79	89.41	B
			B	0.598	1.805	0.752	0.85	1	32.913			
			C	0.305	2.283	0.617	0.85	1	13.774			
T3 184.75-164.75	0.36	0.55	A	0.397	2.07	0.65	0.85	1	18.877	1.95	97.42	B
			B	0.652	1.781	0.787	0.85	1	37.491			
			C	0.343	2.189	0.63	0.85	1	15.786			
T4 164.75-144.75	0.67	0.93 TA 0.95	A	0.415	2.035	0.658	0.85	1	21.694	2.21	110.36	B
			B	0.72	1.779	0.835	0.85	1	44.031			
			C	0.512	1.884	0.704	0.85	1	27.494			
T5 144.75-124.75	0.72	0.55	A	0.453	1.969	0.675	0.85	1	22.337	2.34	117.10	B
			B	0.762	1.793	0.866	0.85	1	48.221			
			C	0.551	1.843	0.725	0.85	1	29.187			
T6 124.75-104.75	0.77	0.60	A	0.537	1.856	0.717	0.85	1	28.320	2.27	113.36	B
			B	0.768	1.796	0.87	0.85	1	48.799			
			C	0.636	1.786	0.776	0.85	1	36.411			
T7 104.75-84.75	0.81	0.62	A	0.524	1.87	0.71	0.85	1	27.373	2.09	104.48	B
			B	0.757	1.79	0.862	0.85	1	47.647			
			C	0.664	1.778	0.795	0.85	1	39.072			
T8 84.75-64.75	0.82	0.57	A	0.516	1.881	0.706	0.85	1	26.600	2.08	103.76	B
			B	0.781	1.803	0.881	0.85	1	50.266			
			C	0.657	1.78	0.79	0.85	1	38.438			
T9 64.75-44.75	0.82	0.62	A	0.528	1.866	0.712	0.85	1	27.655	1.91	95.60	B
			B	0.784	1.805	0.884	0.85	1	50.574			
			C	0.664	1.778	0.795	0.85	1	39.072			
T10 44.75-24.75	0.83	0.57	A	0.54	1.853	0.719	0.85	1	28.385	1.73	86.36	B
			B	0.795	1.813	0.893	0.85	1	51.807			
			C	0.657	1.78	0.79	0.85	1	38.438			
T11 24.75-4.75	0.78	0.57	A	0.518	1.877	0.707	0.85	1	26.810	1.60	80.16	B
			B	0.771	1.798	0.873	0.85	1	49.208			
			C	0.628	1.789	0.771	0.85	1	36.011			
T12 4.75-0.00	0.00	0.32	A	0.928	1.967	1	0.85	1	7.726	0.28	57.97	C
			B	0.928	1.967	1	0.85	1	7.726			
			C	0.928	1.967	1	0.85	1	7.726			
Sum Weight:	6.98	9.27								21.69		

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 plf	Ctrl. Face
T1 224.75-204.75	0.36	1.46 TA 2.09	A	0.412	2.04	0.657	1	1	25.527	1.66	82.89	B
			B	0.614	1.796	0.762	1	1	39.748			
			C	0.39	2.084	0.648	1	1	23.727			
T2 204.75-184.75	0.70	0.94	A	0.509	1.888	0.702	1	1	27.995	2.53	126.32	B
			B	0.843	1.854	0.932	1	1	60.336			
			C	0.452	1.971	0.674	1	1	22.769			
T3 184.75-164.75	0.98	0.94	A	0.572	1.824	0.737	1	1	32.588	2.97	148.37	B
			B	0.924	1.961	1	1	1	69.130			
			C	0.516	1.88	0.706	1	1	27.308			
T4 164.75-144.75	1.85	1.44 TA 2.09	A	0.567	1.828	0.734	1	1	35.406	3.16*	158.17	B
			B	1	2.1	1	1	1	76.483			
			C	0.704	1.776	0.823	1	1	47.316			

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	R_R	D_F	D_R	A_E ft²	F K	w plf	Ctrl. Face
T5 144.75-124.75	2.03	0.94	A	0.674	1.777	0.802	1	1	41.254	3.04*	152.04	B
			B	1	2.1	1	1	1	83.290			
			C	0.807	1.821	0.902	1	1	55.739			
T6 124.75-104.75	2.16	1.02	A	0.8	1.816	0.896	1	1	54.179	2.90*	145.22	B
			B	1	2.1	1	1	1	83.159			
			C	0.927	1.964	1	1	1	69.295			
T7 104.75-84.75	2.28	0.90	A	0.792	1.81	0.89	1	1	53.236	2.75*	137.49	B
			B	1	2.1	1	1	1	85.452			
			C	0.971	2.042	1	1	1	72.627			
T8 84.75-64.75	2.32	0.84	A	0.785	1.806	0.884	1	1	52.372	2.57*	128.48	B
			B	1	2.1	1	1	1	89.746			
			C	0.967	2.034	1	1	1	72.310			
T9 64.75-44.75	2.33	0.90	A	0.8	1.816	0.896	1	1	54.190	2.35*	117.55	B
			B	1	2.1	1	1	1	89.571			
			C	0.971	2.042	1	1	1	72.627			
T10 44.75-24.75	2.38	0.84	A	0.837	1.848	0.927	1	1	58.455	2.06*	103.23	B
			B	1	2.1	1	1	1	92.899			
			C	0.967	2.034	1	1	1	72.310			
T11 24.75-4.75	2.25	0.84	A	0.802	1.817	0.898	1	1	54.412	2.03*	101.71	B
			B	1	2.1	1	1	1	91.394			
			C	0.924	1.96	1	1	1	69.086			
T12 4.75-0.00	0.00	0.49	A	1	2.1	1	1	1	9.806	0.27*	55.80	C
			B	1	2.1	1	1	1	9.806			
			C	1	2.1	1	1	1	9.806			
Sum Weight:	19.65	15.73			*$2A_g$ limit					28.29		

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 plf	Ctrl. Face
T1 224.75-204.75	0.36	1.46 TA 2.09	A	0.412	2.04	0.657	0.8	1	22.452	1.49	74.57	B
			B	0.614	1.796	0.762	0.8	1	35.756			
			C	0.39	2.084	0.648	0.8	1	20.979			
T2 204.75-184.75	0.70	0.94	A	0.509	1.888	0.702	0.8	1	27.169	2.33	116.72	B
			B	0.843	1.854	0.932	0.8	1	55.749			
			C	0.452	1.971	0.674	0.8	1	22.769			
T3 184.75-164.75	0.98	0.94	A	0.572	1.824	0.737	0.8	1	31.761	2.72	136.09	B
			B	0.924	1.961	1	0.8	1	63.404			
			C	0.516	1.88	0.706	0.8	1	27.274			
T4 164.75-144.75	1.85	1.44 TA 2.09	A	0.567	1.828	0.734	0.8	1	32.209	3.09	154.42	B
			B	1	2.1	1	0.8	1	69.541			
			C	0.704	1.776	0.823	0.8	1	42.784			
T5 144.75-124.75	2.03	0.94	A	0.674	1.777	0.802	0.8	1	40.428	3.04*	152.04	B
			B	1	2.1	1	0.8	1	75.709			
			C	0.807	1.821	0.902	0.8	1	53.000			
T6 124.75-104.75	2.16	1.02	A	0.8	1.816	0.896	0.8	1	53.140	2.90*	145.22	B
			B	1	2.1	1	0.8	1	75.620			
			C	0.927	1.964	1	0.8	1	65.422			
T7 104.75-84.75	2.28	0.90	A	0.792	1.81	0.89	0.8	1	52.211	2.75*	137.49	B
			B	1	2.1	1	0.8	1	77.919			
			C	0.971	2.042	1	0.8	1	67.534			
T8 84.75-64.75	2.32	0.84	A	0.785	1.806	0.884	0.8	1	51.546	2.57*	128.48	B
			B	1	2.1	1	0.8	1	82.166			

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	R_R	D_F	D_R	A_E ft^2	F K	w plf	Ctrl. Face
			C	0.967	2.034	1	0.8	1	67.339			
T9 64.75-44.75	2.33	0.90	A	0.8	1.816	0.896	0.8	1	53.110	2.35*	117.55	B
			B	1	2.1	1	0.8	1	82.058			
			C	0.971	2.042	1	0.8	1	67.534			
T10 44.75-24.75	2.38	0.84	A	0.837	1.848	0.927	0.8	1	57.268	2.06*	103.23	B
			B	1	2.1	1	0.8	1	85.319			
			C	0.967	2.034	1	0.8	1	67.339			
T11 24.75-4.75	2.25	0.84	A	0.802	1.817	0.898	0.8	1	53.299	2.03*	101.71	B
			B	1	2.1	1	0.8	1	84.287			
			C	0.924	1.96	1	0.8	1	64.426			
T12 4.75-0.00	0.00	0.49	A	1	2.1	1	0.8	1	8.509	0.24	51.16	C
			B	1	2.1	1	0.8	1	8.509			
			C	1	2.1	1	0.8	1	8.509			
Sum Weight:	19.65	15.73			*$2A_g$ limit					27.59		

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 ft^2	F K	w plf	Ctrl. Face
T1 224.75-204.75	0.36	1.46	A	0.412	2.04	0.657	0.85	1	23.221	1.53	76.65	B
		TA 2.09	B	0.614	1.796	0.762	0.85	1	36.754			
			C	0.39	2.084	0.648	0.85	1	21.666			
T2 204.75-184.75	0.70	0.94	A	0.509	1.888	0.702	0.85	1	27.375	2.38	119.12	B
			B	0.843	1.854	0.932	0.85	1	56.896			
			C	0.452	1.971	0.674	0.85	1	22.769			
T3 184.75-164.75	0.98	0.94	A	0.572	1.824	0.737	0.85	1	31.968	2.78	139.16	B
			B	0.924	1.961	1	0.85	1	64.836			
			C	0.516	1.88	0.706	0.85	1	27.282			
T4 164.75-144.75	1.85	1.44	A	0.567	1.828	0.734	0.85	1	33.008	3.16*	158.17	B
		TA 2.09	B	1	2.1	1	0.85	1	71.277			
			C	0.704	1.776	0.823	0.85	1	43.917			
T5 144.75-124.75	2.03	0.94	A	0.674	1.777	0.802	0.85	1	40.634	3.04*	152.04	B
			B	1	2.1	1	0.85	1	77.604			
			C	0.807	1.821	0.902	0.85	1	53.684			
T6 124.75-104.75	2.16	1.02	A	0.8	1.816	0.896	0.85	1	53.400	2.90*	145.22	B
			B	1	2.1	1	0.85	1	77.505			
			C	0.927	1.964	1	0.85	1	66.390			
T7 104.75-84.75	2.28	0.90	A	0.792	1.81	0.89	0.85	1	52.467	2.75*	137.49	B
			B	1	2.1	1	0.85	1	79.803			
			C	0.971	2.042	1	0.85	1	68.807			
T8 84.75-64.75	2.32	0.84	A	0.785	1.806	0.884	0.85	1	51.752	2.57*	128.48	B
			B	1	2.1	1	0.85	1	84.061			
			C	0.967	2.034	1	0.85	1	68.582			
T9 64.75-44.75	2.33	0.90	A	0.8	1.816	0.896	0.85	1	53.380	2.35*	117.55	B
			B	1	2.1	1	0.85	1	83.936			
			C	0.971	2.042	1	0.85	1	68.807			
T10 44.75-24.75	2.38	0.84	A	0.837	1.848	0.927	0.85	1	57.565	2.06*	103.23	B
			B	1	2.1	1	0.85	1	87.214			
			C	0.967	2.034	1	0.85	1	68.582			
T11 24.75-4.75	2.25	0.84	A	0.802	1.817	0.898	0.85	1	53.578	2.03*	101.71	B
			B	1	2.1	1	0.85	1	86.064			
			C	0.924	1.96	1	0.85	1	65.591			
T12 4.75-0.00	0.00	0.49	A	1	2.1	1	0.85	1	8.833	0.25	53.11	C

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	R_R	D_F	D_R	A_E ft^2	F K	w plf	Ctrl. Face
			B	1	2.1	1	0.85	1	8.833			
			C	1	2.1	1	0.85	1	8.833			
Sum Weight:	19.65	15.73			*$2A_g$ limit					27.83		

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 ft^2	F K	w plf	Ctrl. Face
T1 224.75-204.75	0.14	0.94	A	0.311	2.268	0.619	1	1	17.793	0.60	29.83	B
		TA 0.95	B	0.458	1.96	0.677	1	1	25.182			
			C	0.287	2.331	0.612	1	1	16.771			
T2 204.75-184.75	0.26	0.55	A	0.361	2.146	0.637	1	1	16.815	0.70	34.92	B
			B	0.598	1.805	0.752	1	1	32.913			
			C	0.305	2.283	0.617	1	1	13.774			
T3 184.75-164.75	0.36	0.55	A	0.397	2.07	0.65	1	1	18.877	0.76	38.05	B
			B	0.652	1.781	0.787	1	1	37.491			
			C	0.343	2.189	0.63	1	1	15.786			
T4 164.75-144.75	0.67	0.93	A	0.415	2.035	0.658	1	1	23.040	0.88	43.81	B
		TA 0.95	B	0.72	1.779	0.835	1	1	44.747			
			C	0.512	1.884	0.704	1	1	28.641			
T5 144.75-124.75	0.72	0.55	A	0.453	1.969	0.675	1	1	22.337	0.92	46.12	B
			B	0.762	1.793	0.866	1	1	48.614			
			C	0.551	1.843	0.725	1	1	29.192			
T6 124.75-104.75	0.77	0.60	A	0.537	1.856	0.717	1	1	28.471	0.89	44.69	B
			B	0.768	1.796	0.87	1	1	49.249			
			C	0.636	1.786	0.776	1	1	37.059			
T7 104.75-84.75	0.81	0.62	A	0.524	1.87	0.71	1	1	27.519	0.82	41.20	B
			B	0.757	1.79	0.862	1	1	48.095			
			C	0.664	1.778	0.795	1	1	40.367			
T8 84.75-64.75	0.82	0.57	A	0.516	1.881	0.706	1	1	26.600	0.82	40.85	B
			B	0.781	1.803	0.881	1	1	50.659			
			C	0.657	1.78	0.79	1	1	39.619			
T9 64.75-44.75	0.82	0.62	A	0.528	1.866	0.712	1	1	27.800	0.75	37.67	B
			B	0.784	1.805	0.884	1	1	51.016			
			C	0.664	1.778	0.795	1	1	40.367			
T10 44.75-24.75	0.83	0.57	A	0.54	1.853	0.719	1	1	28.385	0.68	33.99	B
			B	0.795	1.813	0.893	1	1	52.201			
			C	0.657	1.78	0.79	1	1	39.619			
T11 24.75-4.75	0.78	0.57	A	0.518	1.877	0.707	1	1	26.810	0.63	31.55	B
			B	0.771	1.798	0.873	1	1	49.577			
			C	0.628	1.789	0.771	1	1	37.118			
T12 4.75-0.00	0.00	0.32	A	0.928	1.967	1	1	1	8.654	0.12	25.37	C
			B	0.928	1.967	1	1	1	8.654			
			C	0.928	1.967	1	1	1	8.654			
Sum Weight:	6.98	9.27								8.57		

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 plf	Ctrl. Face
T1 224.75-204.75	0.14	0.94	A	0.311	2.268	0.619	0.8	1	15.841	0.56	28.01	B
		TA 0.95	B	0.458	1.96	0.677	0.8	1	23.647			
			C	0.287	2.331	0.612	0.8	1	14.752			
T2 204.75-184.75	0.26	0.55	A	0.361	2.146	0.637	0.8	1	16.815	0.70	34.92	B
			B	0.598	1.805	0.752	0.8	1	32.913			
			C	0.305	2.283	0.617	0.8	1	13.774			
T3 184.75-164.75	0.36	0.55	A	0.397	2.07	0.65	0.8	1	18.877	0.76	38.05	B
			B	0.652	1.781	0.787	0.8	1	37.491			
			C	0.343	2.189	0.63	0.8	1	15.786			
T4 164.75-144.75	0.67	0.93	A	0.415	2.035	0.658	0.8	1	21.245	0.86	42.87	B
		TA 0.95	B	0.72	1.779	0.835	0.8	1	43.792			
			C	0.512	1.884	0.704	0.8	1	27.112			
T5 144.75-124.75	0.72	0.55	A	0.453	1.969	0.675	0.8	1	22.337	0.91	45.62	B
			B	0.762	1.793	0.866	0.8	1	48.090			
			C	0.551	1.843	0.725	0.8	1	29.186			
T6 124.75-104.75	0.77	0.60	A	0.537	1.856	0.717	0.8	1	28.270	0.88	44.15	B
			B	0.768	1.796	0.87	0.8	1	48.649			
			C	0.636	1.786	0.776	0.8	1	36.195			
T7 104.75-84.75	0.81	0.62	A	0.524	1.87	0.71	0.8	1	27.324	0.81	40.69	B
			B	0.757	1.79	0.862	0.8	1	47.498			
			C	0.664	1.778	0.795	0.8	1	38.640			
T8 84.75-64.75	0.82	0.57	A	0.516	1.881	0.706	0.8	1	26.600	0.81	40.42	B
			B	0.781	1.803	0.881	0.8	1	50.134			
			C	0.657	1.78	0.79	0.8	1	38.045			
T9 64.75-44.75	0.82	0.62	A	0.528	1.866	0.712	0.8	1	27.607	0.74	37.24	B
			B	0.784	1.805	0.884	0.8	1	50.427			
			C	0.664	1.778	0.795	0.8	1	38.640			
T10 44.75-24.75	0.83	0.57	A	0.54	1.853	0.719	0.8	1	28.385	0.67	33.65	B
			B	0.795	1.813	0.893	0.8	1	51.676			
			C	0.657	1.78	0.79	0.8	1	38.045			
T11 24.75-4.75	0.78	0.57	A	0.518	1.877	0.707	0.8	1	26.810	0.62	31.23	B
			B	0.771	1.798	0.873	0.8	1	49.085			
			C	0.628	1.789	0.771	0.8	1	35.642			
T12 4.75-0.00	0.00	0.32	A	0.928	1.967	1	0.8	1	7.416	0.10	21.74	C
			B	0.928	1.967	1	0.8	1	7.416			
			C	0.928	1.967	1	0.8	1	7.416			
Sum Weight:	6.98	9.27								8.44		

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 plf	Ctrl. Face
T1 224.75-204.75	0.14	0.94	A	0.311	2.268	0.619	0.85	1	16.329	0.57	28.47	B
		TA 0.95	B	0.458	1.96	0.677	0.85	1	24.031			
			C	0.287	2.331	0.612	0.85	1	15.257			
T2 204.75-184.75	0.26	0.55	A	0.361	2.146	0.637	0.85	1	16.815	0.70	34.92	B
			B	0.598	1.805	0.752	0.85	1	32.913			
			C	0.305	2.283	0.617	0.85	1	13.774			
T3 184.75-164.75	0.36	0.55	A	0.397	2.07	0.65	0.85	1	18.877	0.76	38.05	B
			B	0.652	1.781	0.787	0.85	1	37.491			
			C	0.343	2.189	0.63	0.85	1	15.786			
T4 164.75-144.75	0.67	0.93	A	0.415	2.035	0.658	0.85	1	21.694	0.86	43.11	B
		TA 0.95	B	0.72	1.779	0.835	0.85	1	44.031			
			C	0.512	1.884	0.704	0.85	1	27.494			

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	R_R	D_F	D_R	A_E ft^2	F K	w plf	Ctrl. Face
T5 144.75-124.75	0.72	0.55	A	0.453	1.969	0.675	0.85	1	22.337	0.91	45.74	B
			B	0.762	1.793	0.866	0.85	1	48.221			
			C	0.551	1.843	0.725	0.85	1	29.187			
T6 124.75-104.75	0.77	0.60	A	0.537	1.856	0.717	0.85	1	28.320	0.89	44.28	B
			B	0.768	1.796	0.87	0.85	1	48.799			
			C	0.636	1.786	0.776	0.85	1	36.411			
T7 104.75-84.75	0.81	0.62	A	0.524	1.87	0.71	0.85	1	27.373	0.82	40.81	B
			B	0.757	1.79	0.862	0.85	1	47.647			
			C	0.664	1.778	0.795	0.85	1	39.072			
T8 84.75-64.75	0.82	0.57	A	0.516	1.881	0.706	0.85	1	26.600	0.81	40.53	B
			B	0.781	1.803	0.881	0.85	1	50.266			
			C	0.657	1.78	0.79	0.85	1	38.438			
T9 64.75-44.75	0.82	0.62	A	0.528	1.866	0.712	0.85	1	27.655	0.75	37.35	B
			B	0.784	1.805	0.884	0.85	1	50.574			
			C	0.664	1.778	0.795	0.85	1	39.072			
T10 44.75-24.75	0.83	0.57	A	0.54	1.853	0.719	0.85	1	28.385	0.67	33.74	B
			B	0.795	1.813	0.893	0.85	1	51.807			
			C	0.657	1.78	0.79	0.85	1	38.438			
T11 24.75-4.75	0.78	0.57	A	0.518	1.877	0.707	0.85	1	26.810	0.63	31.31	B
			B	0.771	1.798	0.873	0.85	1	49.208			
			C	0.628	1.789	0.771	0.85	1	36.011			
T12 4.75-0.00	0.00	0.32	A	0.928	1.967	1	0.85	1	7.726	0.11	22.65	C
			B	0.928	1.967	1	0.85	1	7.726			
			C	0.928	1.967	1	0.85	1	7.726			
Sum Weight:	6.98	9.27								8.47		

Force Totals (Does not include forces on guys)

Load Case	Vertical Forces K	Sum of Forces X K	Sum of Forces Z K	Sum of Torques kip-ft
Leg Weight	4.73			
Bracing Weight	4.54			
Total Member Self-Weight	9.27			
Guy Weight	2.82			
Total Weight	28.49			
Wind 0 deg - No Ice		0.47	-40.81	0.96
Wind 90 deg - No Ice		40.33	-0.35	-4.79
Wind 180 deg - No Ice		0.10	40.17	-0.46
Member Ice	6.46			
Guy Ice	3.45			
Total Weight Ice	56.38			
Wind 0 deg - Ice		0.38	-45.12	-1.09
Wind 90 deg - Ice		44.49	-0.28	-1.05
Wind 180 deg - Ice		0.08	44.19	1.51
Total Weight	28.49			
Wind 0 deg - Service		0.19	-15.94	0.37
Wind 90 deg - Service		15.76	-0.14	-1.87
Wind 180 deg - Service		0.04	15.69	-0.18

Load Combinations

Comb. No.	Description
1	Dead Only
2	Dead+Wind 0 deg - No Ice+Guy
3	Dead+Wind 90 deg - No Ice+Guy
4	Dead+Wind 180 deg - No Ice+Guy
5	Dead+Ice+Temp+Guy
6	Dead+Wind 0 deg+Ice+Temp+Guy
7	Dead+Wind 90 deg+Ice+Temp+Guy
8	Dead+Wind 180 deg+Ice+Temp+Guy
9	Dead+Wind 0 deg - Service+Guy
10	Dead+Wind 90 deg - Service+Guy
11	Dead+Wind 180 deg - Service+Guy

Maximum Member Forces

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Force K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
T1	224.75 - 204.75	Leg	Max Tension	4	8.12	-0.01	0.05
			Max. Compression	8	-14.52	-0.01	-0.15
			Max. Mx	3	-2.24	-0.86	-0.27
			Max. My	6	2.18	0.03	0.90
			Max. Vy	3	-1.13	-0.86	-0.27
			Max. Vx	2	1.24	0.08	0.85
		Diagonal	Max Tension	6	3.87	0.00	0.00
			Max. Compression	6	-3.08	-0.01	0.00
			Max. Mx	8	2.10	0.05	-0.00
			Max. My	7	-2.03	0.03	0.01
			Max. Vy	8	-0.03	0.05	-0.00
			Max. Vx	7	-0.01	0.03	0.01
		Top Girt	Max Tension	2	0.11	0.00	0.00
			Max. Compression	8	-0.21	0.00	0.00
			Max. Mx	5	-0.04	-0.01	0.00
			Max. My	7	-0.08	0.00	-0.00
			Max. Vy	5	0.01	0.00	0.00
			Max. Vx	7	0.00	0.00	0.00
		Bottom Girt	Max Tension	1	0.00	0.00	0.00
			Max. Compression	6	-2.44	0.00	0.00
			Max. Mx	5	-0.82	-0.01	0.00
			Max. My	7	-1.30	0.00	-0.00
			Max. Vy	5	0.01	0.00	0.00
			Max. Vx	7	0.00	0.00	0.00
		Guy A	Bottom Tension	8	10.09		
			Top Tension	8	10.32		
			Top Cable Vert	8	8.20		
			Top Cable Norm	8	6.27		
			Top Cable Tan	8	0.01		
			Bot Cable Vert	8	-7.60		
			Bot Cable Norm	8	6.63		
			Bot Cable Tan	8	0.01		
		Guy A	Bottom Tension	8	10.24		
			Top Tension	8	10.47		
			Top Cable Vert	8	8.28		
			Top Cable Norm	8	6.41		
			Top Cable Tan	8	0.00		
			Bot Cable Vert	8	-7.68		

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Force K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Bot Cable Norm	8	6.77		
			Bot Cable Tan	8	0.00		
		Guy B	Bottom Tension	6	8.48		
			Top Tension	6	8.71		
			Top Cable Vert	6	6.83		
			Top Cable Norm	6	5.41		
			Top Cable Tan	6	0.28		
			Bot Cable Vert	6	-6.32		
			Bot Cable Norm	6	5.64		
			Bot Cable Tan	6	0.34		
		Guy B	Bottom Tension	6	8.01		
			Top Tension	6	8.25		
			Top Cable Vert	6	6.43		
			Top Cable Norm	6	5.15		
			Top Cable Tan	6	0.29		
			Bot Cable Vert	6	-5.94		
			Bot Cable Norm	6	5.37		
			Bot Cable Tan	6	0.35		
		Guy C	Bottom Tension	7	9.83		
			Top Tension	7	10.08		
			Top Cable Vert	7	8.05		
			Top Cable Norm	7	6.07		
			Top Cable Tan	7	0.13		
			Bot Cable Vert	7	-7.43		
			Bot Cable Norm	7	6.43		
			Bot Cable Tan	7	0.18		
		Guy C	Bottom Tension	7	9.69		
			Top Tension	7	9.94		
			Top Cable Vert	7	7.90		
			Top Cable Norm	7	6.03		
			Top Cable Tan	7	0.15		
			Bot Cable Vert	7	-7.29		
			Bot Cable Norm	7	6.38		
			Bot Cable Tan	7	0.19		
		Top Guy Pull-Off	Max Tension	8	6.05	0.00	0.00
			Max. Compression	2	-1.08	0.00	0.00
			Max. Mx	5	1.71	-0.00	0.00
			Max. My	7	2.90	0.00	-0.00
			Max. Vy	5	0.00	0.00	0.00
			Max. Vx	7	0.00	0.00	0.00
		Torque Arm Top	Max Tension	8	12.41	0.00	0.00
			Max. Compression	2	-0.45	0.00	0.00
			Max. Mx	5	4.04	0.26	0.00
			Max. My	7	11.08	0.00	-0.00
			Max. Vy	5	-0.13	0.00	0.00
			Max. Vx	7	0.00	0.00	0.00
		Torque Arm Bottom	Max Tension	2	0.02	0.00	0.00
			Max. Compression	8	-13.18	0.00	0.00
			Max. Mx	6	-8.99	0.08	0.00
			Max. My	7	-1.32	0.00	0.00
			Max. Vy	6	0.03	0.00	0.00
			Max. Vx	7	0.00	0.00	0.00
T2	204.75 - 184.75	Leg	Max Tension	6	18.13	0.00	-0.20
			Max. Compression	8	-48.73	-0.00	0.14
			Max. Mx	7	0.06	-0.69	-0.17
			Max. My	6	1.00	0.02	0.78
			Max. Vy	7	-1.87	-0.69	-0.17
			Max. Vx	6	2.06	0.02	0.78
		Diagonal	Max Tension	7	1.81	0.00	0.00
			Max. Compression	7	-2.19	0.00	0.00

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Force K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Mx	7	1.81	0.00	0.00
			Max. My	7	0.09	0.00	0.00
			Max. Vy	7	-0.00	0.00	0.00
			Max. Vx	7	-0.00	0.00	0.00
		Top Girt	Max Tension	7	0.23	0.00	0.00
			Max. Compression	6	-0.48	0.00	0.00
			Max. Mx	5	-0.01	0.00	0.00
			Max. My	7	-0.03	0.00	0.00
			Max. Vy	5	-0.00	0.00	0.00
			Max. Vx	7	-0.00	0.00	0.00
		Bottom Girt	Max Tension	6	0.57	0.00	0.00
			Max. Compression	4	-0.15	0.00	0.00
			Max. Mx	5	0.13	0.00	0.00
			Max. Vy	5	-0.00	0.00	0.00
T3	184.75 - 164.75	Leg	Max Tension	6	19.82	0.00	-0.08
			Max. Compression	8	-50.07	-0.00	0.16
			Max. Mx	7	-35.79	0.58	-0.23
			Max. My	8	-36.50	-0.00	0.72
			Max. Vy	7	-0.49	-0.10	0.01
			Max. Vx	2	0.57	0.01	0.11
		Diagonal	Max Tension	8	1.64	0.00	0.00
			Max. Compression	8	-2.09	0.00	0.00
			Max. Mx	8	1.55	0.00	0.00
			Max. My	8	-0.11	0.00	-0.00
			Max. Vy	8	0.00	0.00	0.00
			Max. Vx	8	0.00	0.00	0.00
		Top Girt	Max Tension	6	0.41	0.00	0.00
			Max. Compression	4	-0.05	0.00	0.00
			Max. Mx	5	0.13	0.00	0.00
			Max. Vy	5	-0.00	0.00	0.00
		Bottom Girt	Max Tension	8	0.34	0.00	0.00
			Max. Compression	1	0.00	0.00	0.00
			Max. Mx	5	0.11	0.00	0.00
			Max. Vy	5	-0.00	0.00	0.00
			Max. Vx	7	0.00	0.00	0.00
T4	164.75 - 144.75	Leg	Max Tension	2	6.09	0.00	-0.42
			Max. Compression	8	-35.51	-0.00	-0.57
			Max. Mx	7	-27.96	-2.45	-0.58
			Max. My	6	-17.03	0.71	1.98
			Max. Vy	7	2.46	-0.64	-0.20
			Max. Vx	8	2.81	-0.00	-0.57
		Diagonal	Max Tension	7	7.77	-0.13	0.02
			Max. Compression	6	-5.41	0.00	0.00
			Max. Mx	8	7.08	0.15	0.00
			Max. My	7	-1.68	-0.04	-0.05
			Max. Vy	8	-0.07	0.15	0.00
			Max. Vx	7	-0.02	0.00	0.00
		Top Girt	Max Tension	6	1.22	0.00	0.00
			Max. Compression	4	-0.63	0.00	0.00
			Max. Mx	5	0.21	-0.01	0.00
			Max. My	7	0.25	0.00	0.00
			Max. Vy	5	0.01	0.00	0.00
			Max. Vx	7	-0.00	0.00	0.00
		Bottom Girt	Max Tension	8	1.83	0.00	0.00
			Max. Compression	6	-4.27	0.00	0.00
			Max. Mx	5	-0.64	-0.01	0.00
			Max. My	7	-1.11	0.00	0.00
			Max. Vy	5	0.01	0.00	0.00
			Max. Vx	7	-0.00	0.00	0.00

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Force K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
		Guy A	Bottom Tension	8	12.45		
			Top Tension	8	12.62		
			Top Cable Vert	8	8.50		
			Top Cable Norm	8	9.33		
			Top Cable Tan	8	0.01		
			Bot Cable Vert	8	-8.05		
			Bot Cable Norm	8	9.50		
			Bot Cable Tan	8	0.01		
		Guy B	Bottom Tension	6	9.78		
			Top Tension	6	9.95		
			Top Cable Vert	6	6.60		
			Top Cable Norm	6	7.44		
			Top Cable Tan	6	0.19		
			Bot Cable Vert	6	-6.19		
			Bot Cable Norm	6	7.56		
			Bot Cable Tan	6	0.28		
		Guy C	Bottom Tension	7	11.97		
			Top Tension	7	12.15		
			Top Cable Vert	7	8.34		
			Top Cable Norm	7	8.84		
			Top Cable Tan	7	0.07		
			Bot Cable Vert	7	-7.86		
			Bot Cable Norm	7	9.03		
			Bot Cable Tan	7	0.14		
		Torque Arm Top	Max Tension	8	16.35	0.00	0.00
			Max. Compression	2	-2.00	0.00	0.00
			Max. Mx	5	4.07	0.26	0.00
			Max. My	8	16.15	0.00	-0.00
			Max. Vy	5	0.13	0.00	0.00
			Max. Vx	8	-0.00	0.00	0.00
		Torque Arm Bottom	Max Tension	7	3.87	0.00	0.00
			Max. Compression	7	-17.52	0.00	0.00
			Max. Mx	8	-2.88	0.08	0.00
			Max. My	8	-16.83	0.00	-0.00
			Max. Vy	8	0.03	0.00	0.00
			Max. Vx	8	0.00	0.00	0.00
T5	144.75 - 124.75	Leg	Max Tension	1	0.00	0.00	0.00
			Max. Compression	7	-38.17	0.12	-0.06
			Max. Mx	7	-31.66	0.56	-0.17
			Max. My	8	-28.61	0.00	0.60
			Max. Vy	6	0.70	-0.03	-0.17
			Max. Vx	7	-0.69	0.21	-0.32
		Diagonal	Max Tension	8	1.07	0.00	0.00
			Max. Compression	6	-1.74	0.00	0.00
			Max. Mx	7	1.01	0.00	0.00
			Max. My	6	-0.36	0.00	0.00
			Max. Vy	7	-0.00	0.00	0.00
			Max. Vx	6	-0.00	0.00	0.00
		Top Girt	Max Tension	8	0.30	0.00	0.00
			Max. Compression	2	-0.20	0.00	0.00
			Max. Mx	5	0.06	0.00	0.00
			Max. Vy	5	-0.00	0.00	0.00
		Bottom Girt	Max Tension	8	0.60	0.00	0.00
			Max. Compression	1	0.00	0.00	0.00
			Max. Mx	5	0.26	0.00	0.00
			Max. Vy	5	-0.00	0.00	0.00
T6	124.75 - 104.75	Leg	Max Tension	1	0.00	0.00	0.00
			Max. Compression	7	-40.29	-0.04	-0.17
			Max. Mx	7	-30.83	0.56	-0.17

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Force K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. My	6	-28.68	-0.01	0.62
			Max. Vy	7	1.49	-0.35	0.03
			Max. Vx	6	-1.63	-0.01	0.62
		Diagonal	Max Tension	7	2.03	0.00	0.00
			Max. Compression	7	-2.20	0.00	0.00
			Max. Mx	7	2.03	0.00	0.00
			Max. My	6	-0.47	0.00	0.00
			Max. Vy	7	-0.00	0.00	0.00
			Max. Vx	6	-0.00	0.00	0.00
		Top Girt	Max Tension	6	0.70	0.00	0.00
			Max. Compression	1	0.00	0.00	0.00
			Max. Mx	5	0.25	0.00	0.00
			Max. Vy	5	-0.00	0.00	0.00
		Bottom Girt	Max Tension	6	0.49	0.00	0.00
			Max. Compression	1	0.00	0.00	0.00
			Max. Mx	5	0.27	0.00	0.00
			Max. Vy	5	-0.00	0.00	0.00
			Max. Vx	7	-0.00	0.00	0.00
		Guy A	Bottom Tension	8	11.92		
			Top Tension	8	12.05		
			Top Cable Vert	8	6.84		
			Top Cable Norm	8	9.92		
			Top Cable Tan	8	0.00		
			Bot Cable Vert	8	-6.47		
			Bot Cable Norm	8	10.01		
			Bot Cable Tan	8	0.00		
		Guy B	Bottom Tension	6	9.77		
			Top Tension	6	9.90		
			Top Cable Vert	6	5.52		
			Top Cable Norm	6	8.21		
			Top Cable Tan	6	0.16		
			Bot Cable Vert	6	-5.17		
			Bot Cable Norm	6	8.28		
			Bot Cable Tan	6	0.25		
		Guy C	Bottom Tension	7	11.76		
			Top Tension	7	11.91		
			Top Cable Vert	7	7.02		
			Top Cable Norm	7	9.62		
			Top Cable Tan	7	0.06		
			Bot Cable Vert	7	-6.61		
			Bot Cable Norm	7	9.73		
			Bot Cable Tan	7	0.13		
		Top Guy Pull-Off	Max Tension	6	5.58	0.00	0.00
			Max. Compression	1	0.00	0.00	0.00
			Max. Mx	5	2.27	0.01	0.00
			Max. My	3	2.84	0.00	-0.00
			Max. Vy	5	-0.01	0.00	0.00
			Max. Vx	3	0.00	0.00	0.00
T7	104.75 - 84.75	Leg	Max Tension	1	0.00	0.00	0.00
			Max. Compression	6	-48.94	0.13	0.92
			Max. Mx	7	-46.62	-1.08	0.05
			Max. My	6	-47.65	0.12	1.07
			Max. Vy	7	-1.98	-0.99	0.05
			Max. Vx	8	-2.24	0.08	-1.03
		Diagonal	Max Tension	6	2.13	0.00	0.00
			Max. Compression	6	-2.12	0.00	0.00
			Max. Mx	7	1.21	0.00	0.00
			Max. My	7	-1.08	0.00	-0.00
			Max. Vy	7	-0.00	0.00	0.00
			Max. Vx	7	0.00	0.00	0.00
		Top Girt	Max Tension	2	0.26	0.00	0.00

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Force K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Compression	7	-0.20	0.00	0.00
			Max. Mx	5	0.06	0.00	0.00
			Max. My	7	0.11	0.00	0.00
			Max. Vy	5	-0.00	0.00	0.00
			Max. Vx	7	-0.00	0.00	0.00
		Guy A	Bottom Tension	8	11.20		
			Top Tension	8	11.30		
			Top Cable Vert	8	5.06		
			Top Cable Norm	8	10.10		
			Top Cable Tan	8	0.00		
			Bot Cable Vert	8	-4.77		
			Bot Cable Norm	8	10.14		
			Bot Cable Tan	8	0.00		
		Guy B	Bottom Tension	6	9.25		
			Top Tension	6	9.34		
			Top Cable Vert	6	4.11		
			Top Cable Norm	6	8.39		
			Top Cable Tan	6	0.13		
			Bot Cable Vert	6	-3.81		
			Bot Cable Norm	6	8.42		
			Bot Cable Tan	6	0.20		
		Guy C	Bottom Tension	7	11.25		
			Top Tension	7	11.36		
			Top Cable Vert	7	5.46		
			Top Cable Norm	7	9.96		
			Top Cable Tan	7	0.04		
			Bot Cable Vert	7	-5.13		
			Bot Cable Norm	7	10.01		
			Bot Cable Tan	7	0.10		
		Top Guy Pull-Off	Max Tension	6	5.41	0.00	0.00
			Max. Compression	1	0.00	0.00	0.00
			Max. Mx	5	1.92	0.01	0.00
			Max. My	7	2.50	0.00	0.00
			Max. Vy	5	-0.01	0.00	0.00
			Max. Vx	7	-0.00	0.00	0.00
T8	84.75 - 64.75	Leg	Max Tension	1	0.00	0.00	0.00
			Max. Compression	7	-51.92	-0.15	-0.18
			Max. Mx	7	-48.00	-0.94	0.07
			Max. My	6	-48.94	0.13	0.92
			Max. Vy	7	-1.99	-0.83	0.02
			Max. Vx	8	-2.25	0.07	-0.84
		Diagonal	Max Tension	7	3.87	0.00	0.00
			Max. Compression	6	-3.48	0.00	0.00
			Max. Mx	6	-1.19	0.00	0.00
			Max. My	7	1.74	0.00	-0.00
			Max. Vy	6	-0.00	0.00	0.00
			Max. Vx	7	0.00	0.00	0.00
		Top Girt	Max Tension	6	1.73	0.00	0.00
			Max. Compression	7	-1.57	0.00	0.00
			Max. Mx	5	0.11	0.00	0.00
			Max. My	7	-1.57	0.00	0.00
			Max. Vy	5	-0.00	0.00	0.00
			Max. Vx	7	-0.00	0.00	0.00
		Bottom Girt	Max Tension	8	0.65	0.00	0.00
			Max. Compression	6	-0.34	0.00	0.00
			Max. Mx	5	0.07	0.00	0.00
			Max. My	7	0.53	0.00	0.00
			Max. Vy	5	-0.00	0.00	0.00
			Max. Vx	7	-0.00	0.00	0.00
T9	64.75 - 44.75	Leg	Max Tension	1	0.00	0.00	0.00
			Max. Compression	7	-56.55	-0.33	-0.13

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Force K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Mx	7	-35.00	-0.61	-0.01
			Max. My	6	-31.93	0.06	0.56
			Max. Vy	7	-1.05	-0.42	-0.11
			Max. Vx	8	-1.05	0.16	-0.33
		Diagonal	Max Tension	8	1.19	0.00	0.00
			Max. Compression	6	-1.20	0.00	0.00
			Max. Mx	7	0.44	0.00	0.00
			Max. My	6	0.13	0.00	0.00
			Max. Vy	7	-0.00	0.00	0.00
			Max. Vx	6	-0.00	0.00	0.00
		Top Girt	Max Tension	6	0.43	0.00	0.00
			Max. Compression	8	-0.35	0.00	0.00
			Max. Mx	5	0.08	0.00	0.00
			Max. My	7	-0.25	0.00	0.00
			Max. Vy	5	-0.00	0.00	0.00
			Max. Vx	7	-0.00	0.00	0.00
		Guy A	Bottom Tension	8	5.48		
			Top Tension	8	5.52		
			Top Cable Vert	8	1.45		
			Top Cable Norm	8	5.33		
			Top Cable Tan	8	0.00		
			Bot Cable Vert	8	-1.29		
			Bot Cable Norm	8	5.33		
			Bot Cable Tan	8	0.00		
		Guy B	Bottom Tension	6	4.49		
			Top Tension	6	4.52		
			Top Cable Vert	6	1.18		
			Top Cable Norm	6	4.37		
			Top Cable Tan	6	0.12		
			Bot Cable Vert	6	-1.00		
			Bot Cable Norm	6	4.38		
			Bot Cable Tan	6	0.14		
		Guy C	Bottom Tension	7	5.52		
			Top Tension	7	5.56		
			Top Cable Vert	7	1.75		
			Top Cable Norm	7	5.28		
			Top Cable Tan	7	0.04		
			Bot Cable Vert	7	-1.55		
			Bot Cable Norm	7	5.30		
			Bot Cable Tan	7	0.06		
		Top Guy Pull-Off	Max Tension	6	3.10	0.00	0.00
			Max. Compression	1	0.00	0.00	0.00
			Max. Mx	5	1.29	0.01	0.00
			Max. My	6	1.57	0.00	0.00
			Max. Vy	5	-0.01	0.00	0.00
			Max. Vx	6	-0.00	0.00	0.00
T10	44.75 - 24.75	Leg	Max Tension	1	0.00	0.00	0.00
			Max. Compression	7	-64.77	0.16	0.20
			Max. Mx	7	-35.59	-0.54	0.00
			Max. My	6	-32.51	0.07	0.48
			Max. Vy	7	-1.06	-0.33	-0.13
			Max. Vx	8	-1.06	0.15	-0.24
		Diagonal	Max Tension	7	1.87	0.00	0.00
			Max. Compression	6	-2.07	0.00	0.00
			Max. Mx	7	0.57	0.00	0.00
			Max. My	8	-0.25	0.00	-0.00
			Max. Vy	7	-0.00	0.00	0.00
			Max. Vx	8	0.00	0.00	0.00
		Top Girt	Max Tension	6	0.94	0.00	0.00
			Max. Compression	7	-0.71	0.00	0.00
			Max. Mx	5	0.11	0.00	0.00

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Force K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. My	8	0.60	0.00	-0.00
			Max. Vy	5	-0.00	0.00	0.00
			Max. Vx	8	0.00	0.00	0.00
		Bottom Girt	Max Tension	6	0.45	0.00	0.00
			Max. Compression	7	-0.23	0.00	0.00
			Max. Mx	5	0.08	0.00	0.00
			Max. My	8	0.10	0.00	-0.00
			Max. Vy	5	-0.00	0.00	0.00
			Max. Vx	8	0.00	0.00	0.00
T11	24.75 - 4.75	Leg	Max Tension	1	0.00	0.00	0.00
			Max. Compression	7	-64.15	-0.10	-0.21
			Max. Mx	7	-51.85	-0.48	0.07
			Max. My	8	-50.23	0.11	-0.42
			Max. Vy	7	3.34	-0.48	0.07
			Max. Vx	8	3.06	0.11	-0.42
		Diagonal	Max Tension	7	2.39	0.00	0.00
			Max. Compression	7	-2.45	0.00	0.00
			Max. Mx	7	2.39	0.00	0.00
			Max. My	6	-0.19	0.00	0.00
			Max. Vy	7	-0.00	0.00	0.00
			Max. Vx	6	0.00	0.00	0.00
		Top Girt	Max Tension	8	0.50	0.00	0.00
			Max. Compression	6	-0.31	0.00	0.00
			Max. Mx	5	0.09	0.00	0.00
			Max. My	8	0.08	0.00	-0.00
			Max. Vy	5	-0.00	0.00	0.00
			Max. Vx	8	0.00	0.00	0.00
		Bottom Girt	Max Tension	7	0.99	0.00	0.00
			Max. Compression	1	0.00	0.00	0.00
			Max. Mx	5	0.64	0.00	0.00
			Max. My	8	0.94	0.00	-0.00
			Max. Vy	5	-0.00	0.00	0.00
			Max. Vx	8	0.00	0.00	0.00
T12	4.75 - 0	Leg	Max Tension	1	0.00	0.00	0.00
			Max. Compression	7	-55.98	-0.19	0.14
			Max. Mx	6	-38.39	-1.75	-0.05
			Max. My	8	-46.01	0.75	-0.32
			Max. Vy	6	17.83	-1.34	-0.08
			Max. Vx	7	-0.95	-1.07	0.25
		Top Girt	Max Tension	7	11.29	-1.11	-0.04
			Max. Compression	1	0.00	0.00	0.00
			Max. Mx	8	9.46	-1.38	-0.10
			Max. My	8	9.46	-1.38	-0.10
			Max. Vy	8	-0.33	-1.38	-0.10
			Max. Vx	8	-0.06	-1.38	-0.10
		Bottom Girt	Max Tension	1	0.00	0.00	0.00
			Max. Compression	7	-1.00	-0.97	-0.02
			Max. Mx	8	-0.95	-1.09	-0.05
			Max. My	8	-0.95	-1.09	-0.05
			Max. Vy	8	-1.62	-1.09	-0.05
			Max. Vx	8	-0.15	-1.09	-0.05
		Mid Girt	Max Tension	7	0.05	0.00	0.00
			Max. Compression	1	0.00	0.00	0.00
			Max. Mx	5	0.04	0.01	0.00
			Max. My	5	0.04	0.00	0.00
			Max. Vy	8	-0.02	0.00	0.00
			Max. Vx	5	-0.00	0.00	0.00

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
Mast	Max. Vert	6	142.67	-0.31	1.39
	Max. H_x	4	86.54	0.06	-1.77
	Max. H_z	2	99.92	-0.44	1.61
	Max. M_x	1	0.00	-0.02	0.02
	Max. M_z	1	0.00	-0.02	0.02
	Max. Torsion	6	0.35	-0.31	1.39
	Min. Vert	1	66.43	-0.02	0.02
	Min. H_x	3	95.35	-1.77	0.47
	Min. H_z	8	135.46	0.06	-1.80
	Min. M_x	1	0.00	-0.02	0.02
	Min. M_z	1	0.00	-0.02	0.02
	Min. Torsion	8	-0.61	0.06	-1.80
Guy C @ 184 ft Elev -12 ft Azimuth 240 deg	Max. Vert	4	-8.72	-8.71	3.98
	Max. H_x	4	-8.72	-8.71	3.98
	Max. H_z	7	-50.62	-54.15	29.89
	Min. Vert	7	-50.62	-54.15	29.89
	Min. H_x	7	-50.62	-54.15	29.89
	Min. H_z	4	-8.72	-8.71	3.98
Guy B @ 181.5 ft Elev 0 ft Azimuth 120 deg	Max. Vert	3	-2.79	2.23	1.76
	Max. H_x	6	-39.96	43.81	27.91
	Max. H_z	6	-39.96	43.81	27.91
	Min. Vert	6	-39.96	43.81	27.91
	Min. H_x	3	-2.79	2.23	1.76
	Min. H_z	3	-2.79	2.23	1.76
Guy A @ 176 ft Elev 0 ft Azimuth 0 deg	Max. Vert	2	-1.46	-0.00	-1.28
	Max. H_x	8	-51.45	0.00	-64.42
	Max. H_z	2	-1.46	-0.00	-1.28
	Min. Vert	8	-51.45	0.00	-64.42
	Min. H_x	7	-27.47	-2.62	-33.84
	Min. H_z	8	-51.45	0.00	-64.42

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	66.43	0.02	-0.02	0.00	0.00	0.01
Dead+Wind 0 deg - No Ice+Guy	99.92	0.44	-1.61	0.00	0.00	-0.01
Dead+Wind 90 deg - No Ice+Guy	95.35	1.77	-0.47	0.00	0.00	-0.20
Dead+Wind 180 deg - No Ice+Guy	86.54	-0.06	1.77	0.00	0.00	0.32
Dead+Ice+Temp+Guy	102.36	0.01	-0.04	0.00	0.00	0.01
Dead+Wind 0 deg+Ice+Temp+Guy	142.67	0.31	-1.39	0.00	0.00	-0.35
Dead+Wind 90 deg+Ice+Temp+Guy	140.21	1.59	-0.56	0.00	0.00	0.35

Load Combination	Vertical	$Shear_x$	$Shear_z$	Overturning Moment, M_x	Overturning Moment, M_z	Torque
	K	K	K	kip-ft	kip-ft	kip-ft
Dead+Wind 180 deg+Ice+Temp+Guy	135.46	-0.06	1.80	0.00	0.00	0.61
Dead+Wind 0 deg - Service+Guy	67.97	0.19	-0.84	0.00	0.00	0.01
Dead+Wind 90 deg - Service+Guy	68.33	0.87	-0.14	0.00	0.00	-0.08
Dead+Wind 180 deg - Service+Guy	68.87	-0.01	0.74	0.00	0.00	0.13

Solution Summary

	Sum of Applied Forces			Sum of Reactions			
Load Comb.	PX	PY	PZ	PX	PY	PZ	% Error
	K	K	K	K	K	K	
1	0.00	-28.49	0.00	0.00	28.49	-0.00	0.009%
2	0.49	-28.77	-44.97	-0.49	28.77	44.97	0.005%
3	44.44	-28.52	-0.36	-44.44	28.52	0.36	0.004%
4	0.09	-28.22	44.33	-0.09	28.22	-44.33	0.003%
5	0.00	-56.38	0.00	0.00	56.38	0.00	0.006%
6	0.41	-57.00	-54.57	-0.41	57.00	54.57	0.003%
7	53.82	-56.44	-0.29	-53.82	56.44	0.30	0.005%
8	0.05	-55.75	53.64	-0.04	55.75	-53.64	0.005%
9	0.19	-28.60	-17.57	-0.19	28.60	17.57	0.004%
10	17.36	-28.51	-0.14	-17.36	28.51	0.14	0.008%
11	0.03	-28.39	17.32	-0.03	28.39	-17.31	0.009%

Non-Linear Convergence Results

Load Combination	Converged?	Number of Cycles	Displacement Tolerance	Force Tolerance
1	Yes	9	0.00000001	0.00008836
2	Yes	19	0.00006610	0.00006902
3	Yes	19	0.00005567	0.00005114
4	Yes	15	0.00000001	0.00003174
5	Yes	8	0.00000001	0.00006750
6	Yes	20	0.00005025	0.00003958
7	Yes	19	0.00008667	0.00005636
8	Yes	14	0.00009818	0.00005279
9	Yes	13	0.00000001	0.00004762
10	Yes	12	0.00000001	0.00008315
11	Yes	10	0.00000001	0.00009536

Maximum Tower Deflections - Service Wind

Section No.	Elevation	Horz. Deflection	Gov. Load Comb.	Tilt	Twist
	ft	in		°	°
T1	224.75 - 204.75	2.670	11	0.1321	0.0706
T2	204.75 - 184.75	3.125	11	0.1474	0.0609

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T3	184.75 - 164.75	3.427	11	0.0558	0.0508
T4	164.75 - 144.75	3.252	10	0.0946	0.0352
T5	144.75 - 124.75	2.905	10	0.0814	0.0282
T6	124.75 - 104.75	2.579	9	0.0984	0.0302
T7	104.75 - 84.75	2.280	9	0.0802	0.0406
T8	84.75 - 64.75	1.951	9	0.0638	0.0396
T9	64.75 - 44.75	1.742	9	0.0701	0.0301
T10	44.75 - 24.75	1.391	9	0.0997	0.0313
T11	24.75 - 4.75	0.912	9	0.1440	0.0432
T12	4.75 - 0	0.184	9	0.1806	0.0227

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
244.00	10' 4 Bay Di-Pole	11	2.670	0.1321	0.0706	403439
235.00	3"x20' Omni	11	2.670	0.1321	0.0706	403439
232.50	21'x4.5" Pipe Mount	11	2.670	0.1321	0.0706	403439
225.00	Beacon	11	2.670	0.1321	0.0706	403439
222.50	48"x11"x6" Panel	11	2.722	0.1378	0.0694	403439
222.00	10' x 3" Dia Omni	11	2.734	0.1390	0.0692	403439
221.00	12' x 3" Dia Omni	11	2.757	0.1414	0.0687	403439
218.33	44"x12"x6" Panel	11	2.818	0.1472	0.0673	314207
217.67	16' Dipole	11	2.834	0.1485	0.0670	284916
216.25	8'-6" x 3" Dia Omni	11	2.866	0.1509	0.0663	237318
215.17	14' x 3" Dia Omni	11	2.891	0.1525	0.0658	210564
215.00	10' x 3" Dia Omni	11	2.895	0.1527	0.0657	206892
214.00	(2) 10' Side Arm	11	2.918	0.1539	0.0652	187647
212.02	Guy	11	2.963	0.1553	0.0642	158454
212.02	Guy	11	2.963	0.1553	0.0642	158454
211.00	20' 4-Bay Dipole	11	2.986	0.1555	0.0637	146705
210.00	11' x 3" Dia Omni	11	3.008	0.1553	0.0633	136759
209.00	10' Dipole	11	3.031	0.1548	0.0628	127777
205.75	8'-6" Dipole	11	3.103	0.1499	0.0613	82002
205.25	8' Dipole	11	3.114	0.1487	0.0611	73425
199.67	5' x 8" Dia Omni	11	3.233	0.1276	0.0587	21986
196.83	18'-6" Di-Pole	11	3.288	0.1131	0.0575	15298
184.33	16" Corner Reflector	11	3.428	0.0547	0.0505	7185
177.50	(4) DB844H90E-XY	11	3.405	0.0464	0.0450	9285
176.75	13'-6" T-Frame Sector Mount	11	3.398	0.0464	0.0444	9652
164.17	13'-6" T-Frame Sector Mount	10	3.243	0.0961	0.0349	26011
156.25	Yagi	10	3.112	0.0988	0.0317	55425
155.58	3'-6" x 3" Dia Omni	10	3.100	0.0979	0.0315	60723
153.00	14" Corner Reflector	10	3.054	0.0938	0.0308	96096
152.02	Guy	10	3.036	0.0921	0.0305	123418
151.00	6 FT DISH	10	3.018	0.0902	0.0302	175222
149.50	3' Side Mount Standoff	10	2.990	0.0876	0.0298	387601
147.58	3' Yagi	10	2.956	0.0845	0.0292	149663
144.83	10' Dipole	10	2.906	0.0815	0.0282	91130
144.67	12' x 3" Dia Omni	10	2.904	0.0813	0.0282	89864
143.67	6' x 3" Dia Omni	10	2.886	0.0809	0.0278	84583
143.58	44"x8"x3" Panel	10	2.884	0.0808	0.0277	84286
139.67	4' Side Mount Standoff	10	2.817	0.0818	0.0259	85765
139.50	4' Side Mount Standoff	10	2.814	0.0819	0.0259	86134
135.00	1' Side Mount Standoff	10	2.738	0.0868	0.0240	97198
127.00	24"x16"x12" Horn	9	2.609	0.0969	0.0278	127168

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
126.00	3' Side Mount Standoff	9	2.596	0.0977	0.0289	134152
125.00	6 FT DISH	9	2.582	0.0983	0.0300	143609
124.50	2' Side Mount Standoff	9	2.575	0.0985	0.0305	149686
116.87	Guy	9	2.469	0.0959	0.0365	79930
113.00	44"x3"x8" Panel	9	2.412	0.0915	0.0384	64152
108.42	6 FT DISH	9	2.340	0.0852	0.0399	52196
107.67	6 FT DISH	9	2.328	0.0842	0.0401	51167
107.00	15'-2" Dish Mount	9	2.317	0.0832	0.0403	50758
105.83	4 FT DISH	9	2.298	0.0816	0.0405	51610
93.17	10'6"x4" Pipe Mount	9	2.078	0.0688	0.0409	31005
90.75	4' Omni	9	2.038	0.0672	0.0407	24408
84.83	Guy	9	1.952	0.0639	0.0396	18175
81.00	20' Pipe Mount	9	1.907	0.0635	0.0387	24041
48.17	(2) Yagi	9	1.460	0.0932	0.0304	64574
44.83	Guy	9	1.393	0.0995	0.0313	81945
38.17	2' Side Mount Standoff	9	1.253	0.1131	0.0370	31639
34.42	1.2M	9	1.169	0.1213	0.0410	21963
33.00	2'6"x4" Pipe Mount	9	1.135	0.1245	0.0421	19684
29.00	4'-4" DISH	9	1.033	0.1338	0.0439	15236
27.00	2' Side Mount Standoff	9	0.978	0.1385	0.0439	13900

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T1	224.75 - 204.75	14.150	6	0.4193	0.2360
T2	204.75 - 184.75	16.004	6	0.4482	0.2116
T3	184.75 - 164.75	17.342	6	0.1260	0.1336
T4	164.75 - 144.75	16.893	6	0.3688	0.0935
T5	144.75 - 124.75	15.518	6	0.3272	0.0773
T6	124.75 - 104.75	13.917	6	0.4249	0.0691
T7	104.75 - 84.75	12.131	6	0.4212	0.1002
T8	84.75 - 64.75	10.273	6	0.3998	0.1402
T9	64.75 - 44.75	8.767	6	0.4321	0.1577
T10	44.75 - 24.75	6.731	6	0.5475	0.1988
T11	24.75 - 4.75	4.196	6	0.7039	0.2004
T12	4.75 - 0	0.835	6	0.8262	0.1084

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
244.00	10' 4 Bay Di-Pole	6	14.150	0.4193	0.2360	79817
235.00	3"x20' Omni	6	14.150	0.4193	0.2360	79817
232.50	21'x4.5" Pipe Mount	6	14.150	0.4193	0.2360	79817
225.00	Beacon	6	14.150	0.4193	0.2360	79817
222.50	48"x11"x6" Panel	6	14.362	0.4377	0.2349	79817
222.00	10' x 3" Dia Omni	6	14.409	0.4417	0.2346	79817
221.00	12' x 3" Dia Omni	6	14.503	0.4494	0.2340	79817
218.33	44"x12"x6" Panel	6	14.753	0.4679	0.2323	62162

Elevation	Appurtenance	Gov. Load Comb.	Deflection	Tilt	Twist	Radius of Curvature
ft			in	°	°	ft
217.67	16' Dipole	6	14.815	0.4718	0.2318	56368
216.25	8'-6" x 3" Dia Omni	6	14.948	0.4791	0.2307	46951
215.17	14' x 3" Dia Omni	6	15.048	0.4836	0.2296	41658
215.00	10' x 3" Dia Omni	6	15.064	0.4841	0.2295	40932
214.00	(2) 10' Side Arm	6	15.157	0.4870	0.2284	37124
212.02	Guy	6	15.341	0.4894	0.2259	31349
212.02	Guy	6	15.341	0.4894	0.2259	31349
211.00	20' 4-Bay Dipole	6	15.435	0.4887	0.2244	29024
210.00	11' x 3" Dia Omni	6	15.527	0.4866	0.2228	27056
209.00	10' Dipole	6	15.619	0.4829	0.2211	25306
205.75	8'-6" Dipole	6	15.914	0.4594	0.2141	18071
205.25	8' Dipole	6	15.959	0.4541	0.2129	16705
199.67	5' x 8" Dia Omni	6	16.450	0.3650	0.1955	6344
196.83	18'-6" Di-Pole	6	16.681	0.3071	0.1848	4491
184.33	16" Corner Reflector	6	17.352	0.1247	0.1318	2098
177.50	(4) DB844H90E-XY	6	17.373	0.1563	0.1153	2616
176.75	13'-6" T-Frame Sector Mount	6	17.361	0.1641	0.1139	2710
164.17	13'-6" T-Frame Sector Mount	6	16.861	0.3743	0.0928	6305
156.25	Yagi	6	16.363	0.3868	0.0860	10087
155.58	3'-6" x 3" Dia Omni	6	16.317	0.3840	0.0855	10566
153.00	14" Corner Reflector	6	16.135	0.3705	0.0839	12930
152.02	Guy	6	16.064	0.3646	0.0833	14131
151.00	6 FT DISH	6	15.990	0.3583	0.0826	15642
149.50	3' Side Mount Standoff	6	15.878	0.3492	0.0815	18563
147.58	3' Yagi	6	15.734	0.3385	0.0800	24093
144.83	10' Dipole	6	15.524	0.3274	0.0773	31302
144.67	12' x 3" Dia Omni	6	15.512	0.3270	0.0772	30842
143.67	6' x 3" Dia Omni	6	15.435	0.3250	0.0760	28811
143.58	44"x8"x3" Panel	6	15.428	0.3248	0.0759	28685
139.67	4' Side Mount Standoff	6	15.125	0.3266	0.0709	27491
139.50	4' Side Mount Standoff	6	15.111	0.3276	0.0706	27520
135.00	1' Side Mount Standoff	6	14.756	0.3584	0.0651	28314
127.00	24"x16"x12" Horn	6	14.105	0.4138	0.0629	27375
126.00	3' Side Mount Standoff	6	14.022	0.4191	0.0657	26766
125.00	6 FT DISH	6	13.938	0.4239	0.0684	26175
124.50	2' Side Mount Standoff	6	13.896	0.4260	0.0697	25887
116.87	Guy	6	13.240	0.4394	0.0850	20641
113.00	44"x3"x8" Panel	6	12.896	0.4363	0.0921	18604
108.42	6 FT DISH	6	12.476	0.4284	0.0982	16709
107.67	6 FT DISH	6	12.407	0.4269	0.0990	16575
107.00	15'-2" Dish Mount	6	12.344	0.4256	0.0996	16587
105.83	4 FT DISH	6	12.234	0.4232	0.1002	17045
93.17	10'6"x4" Pipe Mount	6	11.018	0.4058	0.1018	8784
90.75	4' Omni	6	10.793	0.4038	0.1141	7217
84.83	Guy	6	10.280	0.3998	0.1399	5676
81.00	20' Pipe Mount	6	9.981	0.3980	0.1513	7704
48.17	(2) Yagi	6	7.114	0.5425	0.1937	14102
44.83	Guy	6	6.740	0.5476	0.1987	16121
38.17	2' Side Mount Standoff	6	5.969	0.5321	0.2023	8920
34.42	1.2M	6	5.511	0.5331	0.2019	6599
33.00	2'6"x4" Pipe Mount	6	5.331	0.5399	0.2016	6007
29.00	4'-4" DISH	6	4.802	0.5880	0.2005	4797
27.00	2' Side Mount Standoff	6	4.523	0.6328	0.2003	4421

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	224.75	Leg	A325N	0.7500	4	0.56	19.44	0.029 ✓	1.333	Bolt Tension
		Diagonal	A325X	0.6250	1	3.87	6.80	0.569 ✓	1.333	Member Bearing
		Top Girt	A325N	0.6250	1	0.21	6.44	0.033 ✓	1.333	Bolt Shear
		Bottom Girt	A325N	0.6250	1	2.44	6.44	0.379 ✓	1.333	Bolt Shear
T2	204.75	Leg	A325N	0.7500	4	0.25	19.41	0.013 ✓	1.333	Bolt Tension
		Diagonal	A325X	0.5000	1	2.19	4.38	0.499 ✓	1.333	Member Bearing
		Top Girt	A325N	0.5000	1	0.48	4.12	0.116 ✓	1.333	Bolt Shear
		Bottom Girt	A325N	0.5000	1	0.57	3.65	0.156 ✓	1.333	Member Bearing
T3	184.75	Leg	A325N	0.7500	4	4.66	19.44	0.240 ✓	1.333	Bolt Tension
		Diagonal	A325X	0.5000	1	2.09	4.38	0.477 ✓	1.333	Member Bearing
		Top Girt	A325N	0.5000	1	0.41	3.65	0.112 ✓	1.333	Member Bearing
		Bottom Girt	A325N	0.5000	1	0.34	3.65	0.093 ✓	1.333	Member Bearing
T4	164.75	Leg	A325N	0.7500	4	1.52	19.40	0.078 ✓	1.333	Bolt Tension
		Diagonal	A325X	0.6250	1	7.77	6.80	1.143 ✓	1.333	Member Bearing
		Top Girt	A325N	0.6250	1	1.22	6.44	0.190 ✓	1.333	Bolt Shear
		Bottom Girt	A325N	0.6250	1	4.27	6.44	0.662 ✓	1.333	Bolt Shear
T5	144.75	Leg	A325N	0.7500	4	0.00	19.43	0.000 ✓	1.333	Bolt Tension
		Diagonal	A325X	0.5000	1	1.74	4.38	0.397 ✓	1.333	Member Bearing
		Top Girt	A325N	0.5000	1	0.30	3.65	0.083 ✓	1.333	Member Bearing
		Bottom Girt	A325N	0.5000	1	0.60	3.65	0.165 ✓	1.333	Member Bearing
T6	124.75	Leg	A325N	0.7500	4	0.00	19.42	0.000 ✓	1.333	Bolt Tension
		Diagonal	A325X	0.5000	1	2.03	3.65	0.557 ✓	1.333	Member Bearing
		Top Girt	A325N	0.5000	1	0.70	3.65	0.191 ✓	1.333	Member Bearing
		Bottom Girt	A325N	0.5000	1	0.49	3.65	0.135 ✓	1.333	Member Bearing
T7	104.75	Leg	A325N	0.7500	4	0.00	19.44	0.000 ✓	1.333	Bolt Tension
		Diagonal	A325X	0.5000	1	2.13	3.65	0.583 ✓	1.333	Member Bearing
		Top Girt	A325N	0.5000	1	0.26	3.65	0.070 ✓	1.333	Member Bearing
T8	84.75	Leg	A325N	0.7500	4	0.00	19.40	0.000 ✓	1.333	Bolt Tension
		Diagonal	A325X	0.5000	1	3.87	3.65	1.059 ✓	1.333	Member Bearing
		Top Girt	A325N	0.5000	1	1.73	3.65	0.474 ✓	1.333	Member Bearing
		Bottom Girt	A325N	0.5000	1	0.65	3.65	0.178 ✓	1.333	Member Bearing
T9	64.75	Leg	A325N	0.7500	4	0.00	19.43	0.000 ✓	1.333	Bolt Tension
		Diagonal	A325X	0.5000	1	1.19	3.65	0.326 ✓	1.333	Member Bearing
		Top Girt	A325N	0.5000	1	0.43	3.65	0.118 ✓	1.333	Member Bearing
T10	44.75	Leg	A325N	0.7500	4	0.00	19.43	0.000 ✓	1.333	Bolt Tension
		Diagonal	A325X	0.5000	1	1.87	3.65	0.511 ✓	1.333	Member Bearing
		Top Girt	A325N	0.5000	1	0.94	3.65	0.258 ✓	1.333	Member Bearing
		Bottom Girt	A325N	0.5000	1	0.45	3.65	0.125 ✓	1.333	Member Bearing
T11	24.75	Leg	A325N	0.7500	4	0.00	19.44	0.000 ✓	1.333	Bolt Tension
		Diagonal	A325X	0.5000	1	2.39	3.65	0.654 ✓	1.333	Member Bearing

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
		Top Girt	A325N	0.5000	1	0.50	3.65	0.137 ✓	1.333	Member Bearing
		Bottom Girt	A325N	0.5000	1	0.99	3.65	0.270 ✓	1.333	Member Bearing
T12	4.75	Leg	A325N	0.7500	4	0.00	17.05	0.000 ✓	1.333	Bolt Tension

Guy Design Data

Section No.	Elevation ft	Size	Initial Tension K	Breaking Load K	Actual T K	Allowable T_a K	Required S.F.	Actual S.F.
T1	212.02 (A) (559)	1/2 EHS	2.69	26.90	10.28	13.45	2.000	2.616 ✓
	212.02 (A) (560)	1/2 EHS	2.69	26.90	10.32	13.45	2.000	2.606 ✓
	212.02 (B) (553)	1/2 EHS	2.69	26.90	7.59	13.45	2.000	3.544 ✓
	212.02 (B) (554)	1/2 EHS	2.69	26.90	8.71	13.45	2.000	3.087 ✓
	212.02 (C) (547)	1/2 EHS	2.69	26.90	9.49	13.45	2.000	2.834 ✓
	212.02 (C) (548)	1/2 EHS	2.69	26.90	10.08	13.45	2.000	2.669 ✓
	212.02 (A) (570)	1/2 EHS	2.69	26.90	10.47	13.45	2.000	2.569 ✓
	212.02 (B) (569)	1/2 EHS	2.69	26.90	8.25	13.45	2.000	3.263 ✓
	212.02 (C) (565)	1/2 EHS	2.69	26.90	9.94	13.45	2.000	2.706 ✓
T4	152.02 (A) (541)	1/2 EHS	2.69	26.90	12.58	13.45	2.000	2.138 ✓
	152.02 (A) (542)	1/2 EHS	2.69	26.90	12.62	13.45	2.000	2.132 ✓
	152.02 (B) (535)	1/2 EHS	2.69	26.90	9.71	13.45	2.000	2.770 ✓
	152.02 (B) (536)	1/2 EHS	2.69	26.90	9.95	13.45	2.000	2.704 ✓
	152.02 (C) (529)	1/2 EHS	2.69	26.90	12.03	13.45	2.000	2.237 ✓
	152.02 (C) (530)	1/2 EHS	2.69	26.90	12.15	13.45	2.000	2.214 ✓
T6	116.87 (A) (528)	1/2 EHS	2.69	26.90	12.05	13.45	2.000	2.232 ✓
	116.87 (B) (527)	1/2 EHS	2.69	26.90	9.90	13.45	2.000	2.718 ✓
	116.87 (C) (523)	1/2 EHS	2.69	26.90	11.91	13.45	2.000	2.259 ✓
T7	84.83 (A) (522)	1/2 EHS	2.69	26.90	11.30	13.45	2.000	2.381 ✓
	84.83 (B) (521)	1/2 EHS	2.69	26.90	9.34	13.45	2.000	2.880 ✓
	84.83 (C) (520)	1/2 EHS	2.69	26.90	11.36	13.45	2.000	2.369 ✓
T9	44.83 (A) (573)	3/8 EHS	1.54	15.40	5.52	7.70	2.000	2.790 ✓

Section No.	Elevation ft	Size	Initial Tension K	Breaking Load K	Actual T K	Allowable T_a K	Required S.F.	Actual S.F.
	44.83 (B) (572)	3/8 EHS	1.54	15.40	4.52	7.70	2.000	3.403 ✓
	44.83 (C) (571)	3/8 EHS	1.54	15.40	5.56	7.70	2.000	2.768 ✓

Compression Checks

Leg Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	Mast Stability Index	F_a ksi	A in^2	Actual P K	Allow. P_a K	Ratio $\frac{P}{P_a}$
T1	224.75 - 204.75	ROHN 2.5 EH	20.00	2.42	31.5 K=1.00	1.00	26.969	2.2535	-14.52	60.78	0.239 ✓
T2	204.75 - 184.75	ROHN 2.5 STD	20.00	2.42	30.7 K=1.00	0.98	26.602	1.7040	-48.73	45.33	1.075 ✓
T3	184.75 - 164.75	ROHN 2.5 STD	20.00	2.42	30.7 K=1.00	0.98	26.601	1.7040	-50.07	45.33	1.105 ✓
T4	164.75 - 144.75	ROHN 2.5 EH	20.00	2.42	31.5 K=1.00	0.97	26.265	2.2535	-35.51	59.19	0.600 ✓
T5	144.75 - 124.75	ROHN 2.5 STD	20.00	2.42	30.7 K=1.00	1.00	27.067	1.7040	-38.17	46.12	0.828 ✓
T6	124.75 - 104.75	ROHN 2.5 STD	20.00	2.42	30.7 K=1.00	1.00	27.067	1.7040	-40.29	46.12	0.874 ✓
T7	104.75 - 84.75	ROHN 2.5 EH	20.00	2.41	62.7 K=2.00	1.00	22.257	2.2535	-48.94	50.16	0.976 ✓
T8	84.75 - 64.75	ROHN 2.5 EH	20.00	2.41	62.7 K=2.00	1.00	22.257	2.2535	-51.92	50.16	1.035 ✓
T9	64.75 - 44.75	ROHN 2.5 EH	20.00	2.41	62.7 K=2.00	1.00	22.257	2.2535	-56.55	50.16	1.127 ✓
T10	44.75 - 24.75	ROHN 2.5 EH	20.00	2.41	62.7 K=2.00	1.00	22.257	2.2535	-64.77	50.16	1.291 ✓
T11	24.75 - 4.75	ROHN 2.5 EH	20.00	2.41	62.7 K=2.00	1.00	22.257	2.2535	-64.15	50.16	1.279 ✓
T12	4.75 - 0	ROHN 2.5 EH	5.14	2.03	26.4 K=1.00	0.98	27.052	2.2535	-55.98	60.96	0.918 ✓

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	224.75 - 204.75	L1 3/4x1 3/4x3/16	4.19	1.78	76.7 K=1.23	15.722	0.6211	-3.08	9.76	0.316 ✓
T2	204.75 - 184.75	ROHN TS1.5x16 ga	4.19	3.90	91.6	15.296	0.2627	-2.19	4.02	0.545

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P K	Allow. P_a K	Ratio P / P_a
T3	184.75 - 164.75	ROHN TS1.5x16 ga	4.19	3.90	91.6 K=1.00	15.296	0.2627	-2.09	4.02	0.520 ✓
T4	164.75 - 144.75	L1 3/4x1 3/4x3/16	4.19	1.78	76.7 K=1.23	15.722	0.6211	-5.41	9.76	0.554 ✓
T5	144.75 - 124.75	ROHN TS1.5x16 ga	4.19	3.90	91.6 K=1.00	15.296	0.2627	-1.74	4.02	0.433 ✓
T6	124.75 - 104.75	ROHN TS1.5x16 ga	4.19	3.90	91.6 K=1.00	15.296	0.2627	-2.20	4.02	0.548 ✓
T7	104.75 - 84.75	ROHN TS1.5x16 ga	4.18	3.89	91.5 K=1.00	15.317	0.2627	-2.12	4.02	0.528 ✓
T8	84.75 - 64.75	ROHN TS1.5x16 ga	4.18	3.89	91.5 K=1.00	15.317	0.2627	-3.48	4.02	0.865 ✓
T9	64.75 - 44.75	ROHN TS1.5x16 ga	4.18	3.89	91.5 K=1.00	15.317	0.2627	-1.20	4.02	0.297 ✓
T10	44.75 - 24.75	ROHN TS1.5x16 ga	4.18	3.89	91.5 K=1.00	15.317	0.2627	-2.07	4.02	0.515 ✓
T11	24.75 - 4.75	ROHN TS1.5x16 ga	4.18	3.89	91.5 K=1.00	15.317	0.2627	-2.45	4.02	0.609 ✓

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 P / P_a
T1	224.75 - 204.75	L1 3/4x1 3/4x3/16	3.42	2.84	109.7 K=1.10	11.715	0.6211	-0.21	7.28	0.029 ✓
T2	204.75 - 184.75	ROHN TS1.5x16 ga	3.42	3.18	74.7 K=1.00	17.822	0.2627	-0.48	4.68	0.102 ✓
T3	184.75 - 164.75	ROHN TS1.5x16 ga	3.42	3.18	74.7 K=1.00	17.822	0.2627	-0.05	4.68	0.012 ✓
T4	164.75 - 144.75	L1 3/4x1 3/4x3/16	3.42	2.84	109.7 K=1.10	11.715	0.6211	-0.63	7.28	0.087 ✓
T5	144.75 - 124.75	ROHN TS1.5x16 ga	3.42	3.18	74.7 K=1.00	17.822	0.2627	-0.20	4.68	0.044 ✓
T7	104.75 - 84.75	ROHN TS1.5x16 ga	3.42	3.18	74.7 K=1.00	17.822	0.2627	-0.20	4.68	0.043 ✓
T8	84.75 - 64.75	ROHN TS1.5x16 ga	3.42	3.18	74.7 K=1.00	17.822	0.2627	-1.57	4.68	0.335 ✓
T9	64.75 - 44.75	ROHN TS1.5x16 ga	3.42	3.18	74.7 K=1.00	17.822	0.2627	-0.35	4.68	0.075 ✓
T10	44.75 - 24.75	ROHN TS1.5x16 ga	3.42	3.18	74.7 K=1.00	17.822	0.2627	-0.71	4.68	0.152 ✓
T11	24.75 - 4.75	ROHN TS1.5x16 ga	3.42	3.18	74.7 K=1.00	17.822	0.2627	-0.31	4.68	0.066 ✓

Bottom 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	224.75 - 204.75	L1 3/4x1 3/4x3/16	3.42	2.84	109.7 K=1.10	11.715	0.6211	-2.44	7.28	0.336 ✓
T2	204.75 - 184.75	ROHN TS1.5x16 ga	3.42	3.18	74.7 K=1.00	17.822	0.2627	-0.15	4.68	0.033 ✓
T4	164.75 - 144.75	L1 3/4x1 3/4x3/16	3.42	2.84	109.7 K=1.10	11.715	0.6211	-4.27	7.28	0.587 ✓
T8	84.75 - 64.75	ROHN TS1.5x16 ga	3.42	3.18	74.7 K=1.00	17.822	0.2627	-0.34	4.68	0.072 ✓
T10	44.75 - 24.75	ROHN TS1.5x16 ga	3.42	3.18	74.7 K=1.00	17.822	0.2627	-0.23	4.68	0.049 ✓
T12	4.75 - 0	C14x2x3/16	0.66	0.42	17.2 K=1.00	20.767	3.3047	-1.00	68.63	0.015 ✓

Top Guy Pull-Off 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	224.75 - 204.75	L1 1/8x1 1/8x1/8	3.42	3.18	172.8 K=1.00	5.000	0.2656	-1.08	1.33	0.814
T6	124.75 - 104.75	4 1/2x3/8	3.42	3.18	352.2 K=1.00	21.600	1.6875	0.00	2.03	0.000*
T7	104.75 - 84.75	4 1/2x3/8	3.42	3.18	352.2 K=1.00	21.600	1.6875	0.00	2.03	0.000*
T9	64.75 - 44.75	4 1/2x3/8	3.42	3.18	352.2 K=1.00	21.600	1.6875	0.00	2.03	0.000*

* DL controls

Top Guy Pull-Off Bending Design Data

Section No.	Elevation ft	Size	Actual M_x kip-ft	Actual f_{bx} ksi	Allow. F_{bx} ksi	Ratio $\frac{f_{bx}}{F_{bx}}$	Actual M_y kip-ft	Actual f_{by} ksi	Allow. F_{by} ksi	Ratio $\frac{f_{by}}{F_{by}}$
T1	224.75 - 204.75	L1 1/8x1 1/8x1/8	-0.00	-0.168	23.760	0.007	-0.00	-0.324	23.760	0.014
T6	124.75 - 104.75	4 1/2x3/8	0.01	-0.110	27.000	0.004	0.00	0.000	27.000	0.000
T7	104.75 - 84.75	4 1/2x3/8	0.01	-0.110	27.000	0.004	0.00	0.000	27.000	0.000
T9	64.75 - 44.75	4 1/2x3/8	0.01	-0.110	27.000	0.004	0.00	0.000	27.000	0.000

Top Guy Pull-Off Interaction Design Data

Section No.	Elevation ft	Size	Ratio $\frac{P}{P_a}$	Ratio $\frac{f_{bx}}{F_{bx}}$	Ratio $\frac{f_{by}}{F_{by}}$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
T1	224.75 - 204.75	L1 1/8x1 1/8x1/8	0.814	0.007	0.014	0.835 ✓	1.333	H1-3 ✓
T6	124.75 - 104.75	4 1/2x3/8	0.000	0.004	0.000	0.004* ✓	1.000	H1-3 ✓
T7	104.75 - 84.75	4 1/2x3/8	0.000	0.004	0.000	0.004* ✓	1.000	H1-3 ✓
T9	64.75 - 44.75	4 1/2x3/8	0.000	0.004	0.000	0.004* ✓	1.000	H1-3 ✓

* DL controls

Torque-Arm Top Design Data

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P K	Allow. P_a K	Ratio $\frac{P}{P_a}$
T1	224.75 - 204.75 (549)	XP34.5x.03325	7.86	7.74	5.0 K=0.65	14.638	3.6003	-0.34	52.70	0.006 ✓
		d/t > 13000/Fy - 549								
T1	224.75 - 204.75 (556)	XP34.5x.03325	7.86	7.74	5.0 K=0.65	14.638	3.6003	-0.07	52.70	0.001 ✓
		d/t > 13000/Fy - 556								
T1	224.75 - 204.75 (561)	XP34.5x.03325	7.86	7.74	5.0 K=0.65	14.638	3.6003	-0.45	52.70	0.009 ✓
		d/t > 13000/Fy - 561								
T4	164.75 - 144.75 (531)	XP34.5x.03325	7.86	7.74	5.0 K=0.65	14.638	3.6003	-1.82	52.70	0.035 ✓
		d/t > 13000/Fy - 531								
T4	164.75 - 144.75 (532)	XP34.5x.03325	7.86	7.74	5.0 K=0.65	14.638	3.6003	-0.75	52.70	0.014 ✓
		d/t > 13000/Fy - 532								
T4	164.75 - 144.75 (538)	XP34.5x.03325	7.86	7.74	5.0 K=0.65	14.638	3.6003	-1.70	52.70	0.032 ✓
		d/t > 13000/Fy - 538								
T4	164.75 - 144.75 (543)	XP34.5x.03325	7.86	7.74	5.0 K=0.65	14.638	3.6003	-2.00	52.70	0.038 ✓
		d/t > 13000/Fy - 543								
T4	164.75 - 144.75 (544)	XP34.5x.03325	7.86	7.74	5.0 K=0.65	14.638	3.6003	-0.76	52.70	0.014 ✓
		d/t > 13000/Fy - 544								

Torque-Arm Bottom Design Data

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P K	Allow. P_a K	Ratio $\frac{P}{P_a}$
T1	224.75 - 204.75 (551)	P2.5x.203	10.71	10.54	86.8 K=0.65	14.312	1.7040	-11.89	24.39	0.488 ✓
T1	224.75 - 204.75 (552)	P2.5x.203	10.71	10.54	86.8 K=0.65	14.312	1.7040	-13.17	24.39	0.540 ✓

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	224.75 - 204.75 (557)	P2.5x.203	10.71	10.54	86.8 K=0.65	14.312	1.7040	-12.92	24.39	0.530 ✓
T1	224.75 - 204.75 (558)	P2.5x.203	10.71	10.54	86.8 K=0.65	14.312	1.7040	-9.05	24.39	0.371 ✓
T1	224.75 - 204.75 (563)	P2.5x.203	10.71	10.54	86.8 K=0.65	14.312	1.7040	-11.17	24.39	0.458 ✓
T1	224.75 - 204.75 (564)	P2.5x.203	10.71	10.54	86.8 K=0.65	14.312	1.7040	-13.18	24.39	0.541 ✓
T4	164.75 - 144.75 (533)	P2.5x.203	10.71	10.54	86.8 K=0.65	14.312	1.7040	-14.67	24.39	0.601 ✓
T4	164.75 - 144.75 (534)	P2.5x.203	10.71	10.54	86.8 K=0.65	14.312	1.7040	-16.89	24.39	0.693 ✓
T4	164.75 - 144.75 (539)	P2.5x.203	10.71	10.54	86.8 K=0.65	14.312	1.7040	-17.52	24.39	0.719 ✓
T4	164.75 - 144.75 (540)	P2.5x.203	10.71	10.54	86.8 K=0.65	14.312	1.7040	-9.98	24.39	0.409 ✓
T4	164.75 - 144.75 (545)	P2.5x.203	10.71	10.54	86.8 K=0.65	14.312	1.7040	-14.41	24.39	0.591 ✓
T4	164.75 - 144.75 (546)	P2.5x.203	10.71	10.54	86.8 K=0.65	14.312	1.7040	-16.92	24.39	0.694 ✓

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	224.75 - 204.75	ROHN 2.5 EH	20.00	2.42	31.5	30.000	2.2535	8.12	67.61	0.120 ✓
T2	204.75 - 184.75	ROHN 2.5 STD	20.00	2.42	30.7	30.000	1.7040	18.13	51.12	0.355 ✓
T3	184.75 - 164.75	ROHN 2.5 STD	20.00	2.42	30.7	30.000	1.7040	19.82	51.12	0.388 ✓
T4	164.75 - 144.75	ROHN 2.5 EH	20.00	2.42	31.5	30.000	2.2535	6.09	67.61	0.090 ✓

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	224.75 - 204.75	L1 3/4x1 3/4x3/16	4.19	1.78	43.5	29.000	0.3604	3.87	10.45	0.370 ✓
T2	204.75 - 184.75	ROHN TS1.5x16 ga	4.19	3.90	91.6	25.200	0.2627	1.81	6.62	0.274

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 $\frac{P}{P_a}$
T3	184.75 - 164.75	ROHN TS1.5x16 ga	4.19	3.90	91.6	25.200	0.2627	1.64	6.62	0.247 ✓
T4	164.75 - 144.75	L1 3/4x1 3/4x3/16	4.19	1.78	43.5	29.000	0.3604	7.77	10.45	0.744 ✓
T5	144.75 - 124.75	ROHN TS1.5x16 ga	4.19	3.90	91.6	25.200	0.2627	1.07	6.62	0.161 ✓
T6	124.75 - 104.75	ROHN TS1.5x16 ga	4.19	3.90	91.6	25.200	0.2627	2.03	6.62	0.307 ✓
T7	104.75 - 84.75	ROHN TS1.5x16 ga	4.18	3.89	91.5	25.200	0.2627	2.13	6.62	0.322 ✓
T8	84.75 - 64.75	ROHN TS1.5x16 ga	4.18	3.89	91.5	25.200	0.2627	3.87	6.62	0.584 ✓
T9	64.75 - 44.75	ROHN TS1.5x16 ga	4.18	3.89	91.5	25.200	0.2627	1.19	6.62	0.180 ✓
T10	44.75 - 24.75	ROHN TS1.5x16 ga	4.18	3.89	91.5	25.200	0.2627	1.87	6.62	0.282 ✓
T11	24.75 - 4.75	ROHN TS1.5x16 ga	4.18	3.89	91.5	25.200	0.2627	2.39	6.62	0.361 ✓

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	224.75 - 204.75	L1 3/4x1 3/4x3/16	3.42	2.84	71.0	29.000	0.3604	0.11	10.45	0.010 ✓
T2	204.75 - 184.75	ROHN TS1.5x16 ga	3.42	3.18	74.7	25.200	0.2627	0.23	6.62	0.035 ✓
T3	184.75 - 164.75	ROHN TS1.5x16 ga	3.42	3.18	74.7	25.200	0.2627	0.41	6.62	0.062 ✓
T4	164.75 - 144.75	L1 3/4x1 3/4x3/16	3.42	2.84	71.0	29.000	0.3604	1.22	10.45	0.117 ✓
T5	144.75 - 124.75	ROHN TS1.5x16 ga	3.42	3.18	74.7	25.200	0.2627	0.30	6.62	0.046 ✓
T6	124.75 - 104.75	ROHN TS1.5x16 ga	3.42	3.18	74.7	25.200	0.2627	0.70	6.62	0.105 ✓
T7	104.75 - 84.75	ROHN TS1.5x16 ga	3.42	3.18	74.7	25.200	0.2627	0.26	6.62	0.039 ✓
T8	84.75 - 64.75	ROHN TS1.5x16 ga	3.42	3.18	74.7	25.200	0.2627	1.73	6.62	0.262 ✓
T9	64.75 - 44.75	ROHN TS1.5x16 ga	3.42	3.18	74.7	25.200	0.2627	0.43	6.62	0.065 ✓
T10	44.75 - 24.75	ROHN TS1.5x16 ga	3.42	3.18	74.7	25.200	0.2627	0.94	6.62	0.143 ✓
T11	24.75 - 4.75	ROHN TS1.5x16 ga	3.42	3.18	74.7	25.200	0.2627	0.50	6.62	0.076 ✓
T12	4.75 - 0	C14x2x3/16	3.36	3.12	100.0	21.600	3.3047	11.29	71.38	0.158 ✓

Bottom 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 $\frac{P}{P_a}$
T2	204.75 - 184.75	ROHN TS1.5x16 ga	3.42	3.18	74.7	25.200	0.2627	0.57	6.62	0.086 ✓
T3	184.75 - 164.75	ROHN TS1.5x16 ga	3.42	3.18	74.7	25.200	0.2627	0.34	6.62	0.051 ✓
T4	164.75 - 144.75	L1 3/4x1 3/4x3/16	3.42	2.84	71.0	29.000	0.3604	1.83	10.45	0.176 ✓
T5	144.75 - 124.75	ROHN TS1.5x16 ga	3.42	3.18	74.7	25.200	0.2627	0.60	6.62	0.091 ✓
T6	124.75 - 104.75	ROHN TS1.5x16 ga	3.42	3.18	74.7	25.200	0.2627	0.49	6.62	0.075 ✓
T8	84.75 - 64.75	ROHN TS1.5x16 ga	3.42	3.18	74.7	25.200	0.2627	0.65	6.62	0.098 ✓
T10	44.75 - 24.75	ROHN TS1.5x16 ga	3.42	3.18	74.7	25.200	0.2627	0.45	6.62	0.069 ✓
T11	24.75 - 4.75	ROHN TS1.5x16 ga	3.42	3.18	74.7	25.200	0.2627	0.99	6.62	0.149 ✓

Mid 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 $\frac{P}{P_a}$
T12	4.75 - 0	C14x2x3/16	2.01	1.77	56.7	21.600	3.3047	0.04	71.38	0.001* ✓

* DL controls

Top Guy Pull-Off 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	224.75 - 204.75	L1 1/8x1 1/8x1/8	3.42	3.18	110.6	21.600	0.2656	6.05	5.74	1.054
T6	124.75 - 104.75	4 1/2x3/8	3.42	3.18	352.2	21.600	1.6875	5.58	36.45	0.153
T7	104.75 - 84.75	4 1/2x3/8	3.42	3.18	352.2	21.600	1.6875	5.41	36.45	0.148
T9	64.75 - 44.75	4 1/2x3/8	3.42	3.18	352.2	21.600	1.6875	3.10	36.45	0.085

Top Guy Pull-Off Bending Design Data

Section No.	Elevation ft	Size	Actual M_x kip-ft	Actual f_{bx} ksi	Allow. F_{bx} ksi	Ratio $\frac{f_{bx}}{F_{bx}}$	Actual M_y kip-ft	Actual f_{by} ksi	Allow. F_{by} ksi	Ratio $\frac{f_{by}}{F_{by}}$
T1	224.75 - 204.75	L1 1/8x1 1/8x1/8	-0.00	0.401	23.760	0.017	-0.00	0.780	23.760	0.033
T6	124.75 - 104.75	4 1/2x3/8	0.01	0.110	27.000	0.004	0.00	0.000	27.000	0.000
T7	104.75 - 84.75	4 1/2x3/8	0.01	0.110	27.000	0.004	0.00	0.000	27.000	0.000
T9	64.75 - 44.75	4 1/2x3/8	0.01	0.110	27.000	0.004	0.00	0.000	27.000	0.000

Top Guy Pull-Off Interaction Design Data

Section No.	Elevation ft	Size	Ratio $\frac{P}{P_a}$	Ratio $\frac{f_{bx}}{F_{bx}}$	Ratio $\frac{f_{by}}{F_{by}}$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
T1	224.75 - 204.75	L1 1/8x1 1/8x1/8	1.054	0.017	0.033	1.104 ✔	1.333	H2-1 ✔
T6	124.75 - 104.75	4 1/2x3/8	0.153	0.004	0.000	0.157 ✔	1.333	H2-1 ✔
T7	104.75 - 84.75	4 1/2x3/8	0.148	0.004	0.000	0.152 ✔	1.333	H2-1 ✔
T9	64.75 - 44.75	4 1/2x3/8	0.085	0.004	0.000	0.089 ✔	1.333	H2-1 ✔

Torque-Arm Top Design Data

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P K	Allow. P_a K	Ratio $\frac{P}{P_a}$
T1	224.75 - 204.75 (549)	XP34.5x.03325	7.86	7.74	7.6	21.000	3.6003	12.41	75.61	0.164 ✔
T1	224.75 - 204.75 (550)	d/t > 13000/Fy - 549 XP34.5x.03325	7.86	7.74	7.6	21.000	3.6003	11.30	75.61	0.149 ✔
T1	224.75 - 204.75 (555)	d/t > 13000/Fy - 550 XP34.5x.03325	7.86	7.74	7.6	21.000	3.6003	12.39	75.61	0.164 ✔
T1	224.75 - 204.75 (556)	d/t > 13000/Fy - 555 XP34.5x.03325	7.86	7.74	7.6	21.000	3.6003	8.89	75.61	0.118 ✔
T1	224.75 - 204.75 (561)	d/t > 13000/Fy - 556 XP34.5x.03325	7.86	7.74	7.6	21.000	3.6003	12.18	75.61	0.161 ✔
T1	224.75 - 204.75 (562)	d/t > 13000/Fy - 561 XP34.5x.03325	7.86	7.74	7.6	21.000	3.6003	11.16	75.61	0.148 ✔
T4	164.75 - 144.75 (531)	d/t > 13000/Fy - 562 XP34.5x.03325	7.86	7.74	7.6	21.000	3.6003	16.35	75.61	0.216 ✔
T4	164.75 - 144.75 (532)	d/t > 13000/Fy - 531 XP34.5x.03325	7.86	7.74	7.6	21.000	3.6003	14.65	75.61	0.194 ✔
T4	164.75 - 144.75	d/t > 13000/Fy - 532 XP34.5x.03325	7.86	7.74	7.6	21.000	3.6003	15.73	75.61	0.208

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 $\frac{P}{P_a}$
	(537)									✔
		d/t > 13000/Fy - 537								
T4	164.75 - 144.75 (538)	XP34.5x.03325	7.86	7.74	7.6	21.000	3.6003	10.81	75.61	0.143 ✔
		d/t > 13000/Fy - 538								
T4	164.75 - 144.75 (543)	XP34.5x.03325	7.86	7.74	7.6	21.000	3.6003	16.15	75.61	0.214 ✔
		d/t > 13000/Fy - 543								
T4	164.75 - 144.75 (544)	XP34.5x.03325	7.86	7.74	7.6	21.000	3.6003	13.43	75.61	0.178 ✔
		d/t > 13000/Fy - 544								

Torque-Arm Bottom Design Data

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P K	Allow. P_a K	Ratio $\frac{P}{P_a}$
T1	224.75 - 204.75 (564)	P2.5x.203	10.71	10.54	133.6	21.000	1.7040	0.02	35.79	0.000 ✔
T4	164.75 - 144.75 (533)	P2.5x.203	10.71	10.54	133.6	21.000	1.7040	1.92	35.79	0.054 ✔
T4	164.75 - 144.75 (534)	P2.5x.203	10.71	10.54	133.6	21.000	1.7040	3.56	35.79	0.100 ✔
T4	164.75 - 144.75 (540)	P2.5x.203	10.71	10.54	133.6	21.000	1.7040	3.87	35.79	0.108 ✔
T4	164.75 - 144.75 (545)	P2.5x.203	10.71	10.54	133.6	21.000	1.7040	2.28	35.79	0.064 ✔
T4	164.75 - 144.75 (546)	P2.5x.203	10.71	10.54	133.6	21.000	1.7040	3.86	35.79	0.108 ✔

Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	$SF*P_{allow}$ K	% Capacity	Pass Fail
T1	224.75 - 204.75	Leg	ROHN 2.5 EH	3	-14.52	81.02	17.9	Pass
T2	204.75 - 184.75	Leg	ROHN 2.5 STD	60	-48.73	60.43	80.6	Pass
T3	184.75 - 164.75	Leg	ROHN 2.5 STD	117	-50.07	60.42	82.9	Pass
T4	164.75 - 144.75	Leg	ROHN 2.5 EH	174	-35.51	78.90	45.0	Pass
T5	144.75 - 124.75	Leg	ROHN 2.5 STD	229	-38.17	61.48	62.1	Pass
T6	124.75 - 104.75	Leg	ROHN 2.5 STD	288	-40.29	61.48	65.5	Pass
T7	104.75 - 84.75	Leg	ROHN 2.5 EH	345	-48.94	66.86	73.2	Pass
T8	84.75 - 64.75	Leg	ROHN 2.5 EH	376	-51.92	66.86	77.7	Pass
T9	64.75 - 44.75	Leg	ROHN 2.5 EH	409	-56.55	66.86	84.6	Pass
T10	44.75 - 24.75	Leg	ROHN 2.5 EH	442	-64.77	66.86	96.9	Pass
T11	24.75 - 4.75	Leg	ROHN 2.5 EH	475	-64.15	66.86	95.9	Pass
T12	4.75 - 0	Leg	ROHN 2.5 EH	508	-55.98	81.26	68.9	Pass
T1	224.75 - 204.75	Diagonal	L1 3/4x1 3/4x3/16	26	3.87	13.93	27.8	Pass
T2	204.75 - 184.75	Diagonal	ROHN TS1.5x16 ga	109	-2.19	5.36	42.7 (b) 40.9	Pass

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	$SF*P_{allow}$ K	% Capacity	Pass Fail
T3	184.75 - 164.75	Diagonal	ROHN TS1.5x16 ga	129	-2.09	5.36	39.0	Pass
T4	164.75 - 144.75	Diagonal	L1 3/4x1 3/4x3/16	202	7.77	13.93	55.8	Pass
							85.8 (b)	
T5	144.75 - 124.75	Diagonal	ROHN TS1.5x16 ga	242	-1.74	5.36	32.5	Pass
T6	124.75 - 104.75	Diagonal	ROHN TS1.5x16 ga	338	-2.20	5.36	41.1	Pass
							41.8 (b)	
T7	104.75 - 84.75	Diagonal	ROHN TS1.5x16 ga	356	-2.12	5.36	39.6	Pass
							43.7 (b)	
T8	84.75 - 64.75	Diagonal	ROHN TS1.5x16 ga	408	-3.48	5.36	64.9	Pass
							79.4 (b)	
T9	64.75 - 44.75	Diagonal	ROHN TS1.5x16 ga	441	-1.20	5.36	22.3	Pass
							24.5 (b)	
T10	44.75 - 24.75	Diagonal	ROHN TS1.5x16 ga	474	-2.07	5.36	38.6	Pass
T11	24.75 - 4.75	Diagonal	ROHN TS1.5x16 ga	487	-2.45	5.36	45.7	Pass
							49.1 (b)	
T1	224.75 - 204.75	Top Girt	L1 3/4x1 3/4x3/16	4	-0.21	9.70	2.2	Pass
							2.5 (b)	
T2	204.75 - 184.75	Top Girt	ROHN TS1.5x16 ga	61	-0.48	6.24	7.6	Pass
							8.7 (b)	
T3	184.75 - 164.75	Top Girt	ROHN TS1.5x16 ga	118	0.41	8.83	4.6	Pass
							8.4 (b)	
T4	164.75 - 144.75	Top Girt	L1 3/4x1 3/4x3/16	175	1.22	13.93	8.8	Pass
							14.3 (b)	
T5	144.75 - 124.75	Top Girt	ROHN TS1.5x16 ga	232	0.30	8.83	3.4	Pass
							6.2 (b)	
T6	124.75 - 104.75	Top Girt	ROHN TS1.5x16 ga	289	0.70	8.83	7.9	Pass
							14.3 (b)	
T7	104.75 - 84.75	Top Girt	ROHN TS1.5x16 ga	347	-0.20	6.24	3.2	Pass
							5.2 (b)	
T8	84.75 - 64.75	Top Girt	ROHN TS1.5x16 ga	379	-1.57	6.24	25.1	Pass
							35.6 (b)	
T9	64.75 - 44.75	Top Girt	ROHN TS1.5x16 ga	414	-0.35	6.24	5.6	Pass
							8.8 (b)	
T10	44.75 - 24.75	Top Girt	ROHN TS1.5x16 ga	445	-0.71	6.24	11.4	Pass
							19.4 (b)	
T11	24.75 - 4.75	Top Girt	ROHN TS1.5x16 ga	480	0.50	8.83	5.7	Pass
							10.3 (b)	
T12	4.75 - 0	Top Girt	C14x2x3/16	513	11.29	95.15	11.9	Pass
T1	224.75 - 204.75	Bottom Girt	L1 3/4x1 3/4x3/16	7	-2.44	9.70	25.2	Pass
							28.5 (b)	
T2	204.75 - 184.75	Bottom Girt	ROHN TS1.5x16 ga	64	0.57	8.83	6.5	Pass
							11.7 (b)	
T3	184.75 - 164.75	Bottom Girt	ROHN TS1.5x16 ga	121	0.34	8.83	3.8	Pass
							7.0 (b)	
T4	164.75 - 144.75	Bottom Girt	L1 3/4x1 3/4x3/16	178	-4.27	9.70	44.0	Pass
							49.7 (b)	
T5	144.75 - 124.75	Bottom Girt	ROHN TS1.5x16 ga	235	0.60	8.83	6.8	Pass
							12.4 (b)	
T6	124.75 - 104.75	Bottom Girt	ROHN TS1.5x16 ga	293	0.49	8.83	5.6	Pass
							10.1 (b)	
T8	84.75 - 64.75	Bottom Girt	ROHN TS1.5x16 ga	384	0.65	8.83	7.4	Pass
							13.4 (b)	
T10	44.75 - 24.75	Bottom Girt	ROHN TS1.5x16 ga	450	0.45	8.83	5.2	Pass
							9.3 (b)	
T11	24.75 - 4.75	Bottom Girt	ROHN TS1.5x16 ga	483	0.99	8.83	11.2	Pass
							20.2 (b)	
T12	4.75 - 0	Bottom Girt	C14x2x3/16	516	-0.95	91.48	11.3	Pass
T12	4.75 - 0	Mid Girt	C14x2x3/16	519	0.04	71.38	0.1	Pass
T1	224.75 - 204.75	Guy A@212.02	1/2	560	10.32	13.45	76.7	Pass
		Guy A@212.02	1/2	570	10.47	13.45	77.9	Pass
T4	164.75 - 144.75	Guy A@152.02	1/2	542	12.62	13.45	93.8	Pass

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	$SF*P_{allow}$ K	% Capacity	Pass Fail
T6	124.75 - 104.75	Guy A@116.866	1/2	528	12.05	13.45	89.6	Pass
T7	104.75 - 84.75	Guy A@84.8333	1/2	522	11.30	13.45	84.0	Pass
T9	64.75 - 44.75	Guy A@44.8333	3/8	573	5.52	7.70	71.7	Pass
T1	224.75 - 204.75	Guy B@212.02	1/2	554	8.71	13.45	64.8	Pass
		Guy B@212.02	1/2	569	8.25	13.45	61.3	Pass
T4	164.75 - 144.75	Guy B@152.02	1/2	536	9.95	13.45	74.0	Pass
T6	124.75 - 104.75	Guy B@116.866	1/2	527	9.90	13.45	73.6	Pass
T7	104.75 - 84.75	Guy B@84.8333	1/2	521	9.34	13.45	69.4	Pass
T9	64.75 - 44.75	Guy B@44.8333	3/8	572	4.52	7.70	58.8	Pass
T1	224.75 - 204.75	Guy C@212.02	1/2	548	10.08	13.45	74.9	Pass
		Guy C@212.02	1/2	565	9.94	13.45	73.9	Pass
T4	164.75 - 144.75	Guy C@152.02	1/2	530	12.15	13.45	90.3	Pass
T6	124.75 - 104.75	Guy C@116.866	1/2	523	11.91	13.45	88.5	Pass
T7	104.75 - 84.75	Guy C@84.8333	1/2	520	11.36	13.45	84.4	Pass
T9	64.75 - 44.75	Guy C@44.8333	3/8	571	5.56	7.70	72.3	Pass
T1	224.75 - 204.75	Top Guy Pull-Off@212.02	L1 1/8x1 1/8x1/8	566	6.05	7.65	82.8	Pass
T6	124.75 - 104.75	Top Guy Pull-Off@116.866	4 1/2x3/8	524	5.58	48.59	11.8	Pass
T7	104.75 - 84.75	Top Guy Pull-Off@84.8333	4 1/2x3/8	349	5.41	48.59	11.4	Pass
T9	64.75 - 44.75	Top Guy Pull-Off@44.8333	4 1/2x3/8	415	3.10	48.59	6.7	Pass
T1	224.75 - 204.75	Torque Arm Top@212.02	XP34.5x.03325	549	12.41	100.78	12.3	Pass
T4	164.75 - 144.75	Torque Arm Top@152.02	XP34.5x.03325	531	16.35	100.78	16.2	Pass
T1	224.75 - 204.75	Torque Arm Bottom@212.02	P2.5x.203	564	-13.18	32.51	40.6	Pass
T4	164.75 - 144.75	Torque Arm Bottom@152.02	P2.5x.203	539	-17.52	32.51	53.9	Pass

	Summary	
Leg (T10)	96.9	Pass
Diagonal (T4)	85.8	Pass
Top Girt (T8)	35.6	Pass
Bottom Girt (T4)	49.7	Pass
Mid Girt (T12)	0.1	Pass
Guy A (T4)	93.8	Pass
Guy B (T4)	74.0	Pass
Guy C (T4)	90.3	Pass
Top Guy Pull-Off (T1)	82.8	Pass
Torque Arm Top (T4)	16.2	Pass
Torque Arm Bottom (T4)	53.9	Pass
Bolt Checks	85.8	Pass
RATING =	**96.9**	**Pass**

Site Name: Glastonbury, CT
Cumulative Power Density

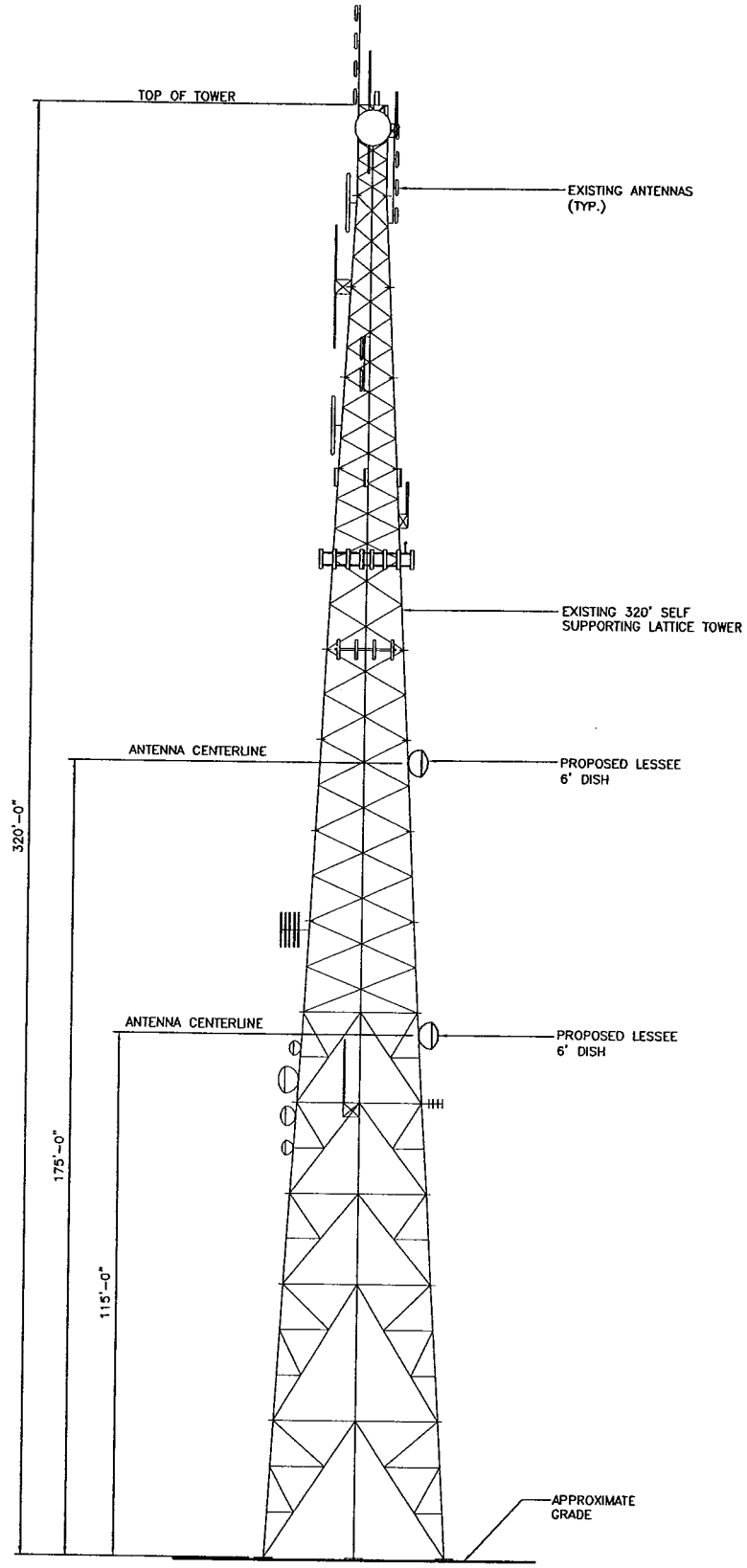
Operator	Operating Frequency	Number of Trans	ERP Per Trans	Total ERP	Distance to Target	Calculated Power Density	Maximum Permissable Exposure*	Fraction of MPE
	(MHz)		(watts)	(watts)	(feet)	(mW/cm^2)	(mW/cm^2)	(%)
VZW	875	9	200	1800	164.17	0.0240	0.583	4.12%
VZW PCS	1970	3	485	1455	164.17	0.0194	1.0	1.94%
VZW Microwave	6256.54	1	4265.8	4265.8	125	0.0982	1.0	9.82%

Total Percentage of Maximum Permissible Exposure 15.88%

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

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

Absolute worst case maximum values used.



1 / L-1 TOWER ELEVATION

SCALE: 1" = 40'-0"

0 10 20 40 80

SITE ID NO:	36930982
Designed by:	BAL
Drawn by:	
Checked by:	
Approved by:	

UBS CORPORATION AES
500 ENTERPRISE DRIVE
ROCKY HILL, CONNECTICUT
1-(860)-529-8882

CELLCO PARTNERSHIP DBA
VERIZON WIRELESS
WIRELESS COMMUNICATIONS FACILITY

SITE ADDRESS: MUNN ROAD
112 MUNN ROAD
COLCHESTER, CT 06415

REV.	DATE:	DESCRIPTION

Scale: AS NOTED | Date: 10-12-06

Job No.VZ1-166 | File No. L-1 | Dwg. 1 of 1

Dwg. No. L-1

DETAILED STRUCTURAL ANALYSIS AND EVALUATION OF 320' SELF SUPPORTING LATTICE TOWER FOR NEW ANTENNA ARRANGEMENT

112 Munn Road
Colchester, Connecticut

prepared for

Verizon Wireless
99 East River Drive
East Hartford, Connecticut 06108

prepared by

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

36930991.00008
VZ1-166

Revision 2 October 12, 2006

TABLE OF CONTENTS

1. EXECUTIVE SUMMARY

This report summarizes the structural analysis of the existing 320' self-supporting lattice tower structure located at 112 Munn Road in Colchester, Connecticut. The analysis was conducted in accordance with the 2005 Connecticut State Building Code, the TIA/EIA-222-F standard, and the Connecticut State Police Requirements for a wind velocity of 90 mph (fastest mile), 90 mph (fastest mile) concurrent with ½" ice, and 90 mph (fastest mile) concurrent with ½" ice at 90' AGL. 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 Verizon Wireless modification is as follows:

Proposed Antenna and Mount	Carrier	Antenna Center Elevation
Install (1) PL6-59D dish on (1) Dish Mount with (1) EW-63 coax cable routed up existing Verizon cable ladder.	**Verizon Wireless (Proposed)**	**@ 175'**
Install (1) PL6-59D dish on (1) Dish Mount with (1) EW-63 coax cable routed up existing Verizon cable ladder.	**Verizon Wireless (Proposed)**	**@ 115'**

The results of the analysis indicate that the existing tower structure is in compliance with the proposed loading conditions. **The tower and foundation are considered structurally adequate with the wind load specified above and the existing and proposed antenna loadings.** The tower sway is 0.61 degrees, and the tower twist is 0.26 degrees. These are within the Connecticut State Police specification of 0.75 degrees for twist and sway.

This analysis is based on:

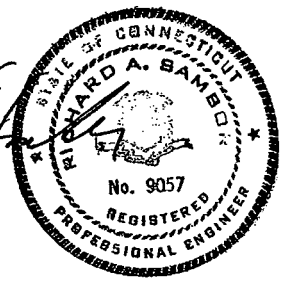
1) The tower structure's theoretical capacity, not including any assessment of the condition of the tower.
2) Tower geometry and structural member sizes taken from original construction drawings (Rohn File #: 43233AE) prepared by Rohn Industries, Inc., approved May 10, 2001.
3) Antenna and mount configuration as specified on the following page of this report.
4) Coax cable orientation as specified in section 6 of this report.

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. 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.
Manager Facilities Design

RAS/jek

cc: AA, DR, IA – URS
CF/Book

2. INTRODUCTION

The subject tower is located at 112 Munn Road in Colchester, Connecticut. The structure is a 320' self-supporting lattice tower structure designed by Rohn Industries, Inc.

The tower geometry and structure member sizes were taken from the original construction drawings (Rohn File #: 43233AE) prepared by Rohn Industries, Inc., approved May 10, 2001.

The inventory provided by the Connecticut State Police is summarized in the table below:

Antenna Type	Carrier	Mount	Antenna Centerline Elevation	Cable
(3) 6 FT dishes	(wind load)	(3) Dish Mount	320'	(3) EW63 coax cables
(1) PD128 antenna	CSP/FBI (existing)	Side Arm Mount	320'	(1) 7/8" coax cable
(1) PD128 antenna	CSP (existing)	Side Arm Mount	318'	(1) 7/8" coax cable
(1) 8 FT dish	CSP (existing)	Dish Mount	315'	(1) 7/8" coax cable
(1) DB224 antenna	SHF (existing)	Side Arm Mount	294'	(1) 7/8" coax cable
(1) PD320 antenna	DEP (existing)	Side Arm Mount	292'	(1) 7/8" coax cable
(2) DB809 antenna	CSP (existing)	Side Arm Mount	285'	(2) 1 5/8" coax cables
(2) OGT9 antenna	CSP (existing)	Side Arm Mount	275'	(2) 1 5/8" coax cables
(1) PD440 antenna	OEM (existing)	Side Arm Mount	257'	(1) 7/8" coax cable
(1) PD128 antenna	OEM (existing)	Side Arm Mount	243'	(1) 7/8" coax cable
(1) PD320 antenna	CSP (existing)	Side Arm Mount	227'	(1) 7/8" coax cable
(6) DB844 antennas and (6) DB948F85T2E-M antennas	Verizon (existing)	(3) T-Arms	220'	(12) 1 5/8" coax cables
(12) Powerwave 7770.00 antennas , (12) LPG21401 TMA's and (12) LPG13519 Diplexers	Cingular (existing)	(3) T-Arms	200'	(24) 1 5/8" coax cables
(1) 6 FT dish	**Verizon (proposed)**	**Dish Mount**	**175'**	**(1) EW63 coax cable**
(1) BA1012 antenna	OEM (existing)	Side Arm Mount	140'	(1) 7/8" coax cable
(1) PD688S antenna	NEU (existing)	Side Arm Mount	140'	(1) 7/8" coax cable
(1) DB212 antenna	NEU (existing)	Side Arm Mount	140'	(1) 7/8" coax cable
(1) PD156S antenna	DEP (existing)	Flush Mount	138'	(1) 7/8" coax cable
(1) 6 FT dish	**Verizon (proposed)**	**Dish Mount**	**115'**	**(1) EW63 coax cable**
(1) 4 FT dish	CSP (existing)	Dish Mount	112'	(1) EW108 coax cable
(1) 6 FT dish	CSP (existing)	Dish Mount	105'	(1) EW65 coax cable

Antenna Type	Carrier	Mount	Antenna Centerline Elevation	Cable
(1) PD458 antenna	CTT (existing)	Side Arm Mount	100'	(1) 7/8" coax cable
(1) DB437 antenna	FBI (existing)	Side Arm Mount (listed above)	100'	(1) 7/8" coax cable
(1) 6 FT dish	CSP (existing)	Dish Mount	97'	(1) 7/8" coax cable
(1) 4 FT dish	CSP (existing)	Dish Mount	90'	(1) 7/8" coax cable

This structural analysis of the communications tower was performed by URS Corporation (URS) for Verizon Wireless. The purpose of this analysis was to investigate the structural integrity of the existing tower with its existing and proposed antenna loads. This analysis was conducted to evaluate 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 2005 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 ERI Tower 3.0. Three 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 + Tower Dead Load
Load Condition 2 = 90 mph (fastest mile) Wind Load (with ice) + Ice Load + Tower Dead Load
Load Condition 3 = 78 mph (fastest mile) Wind Load (with ice) + Ice Load + Tower Dead Load (equivalent to 90 mph at the lowest dish level— 90' AGL)

The TIA/EIA standard permits a one-third increase in allowable stresses for towers and monopoles 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

The stresses on the tower structure were evaluated to compare with the allowable stress in accordance with AISC. The results of the analysis indicate that the existing tower structure is in compliance with the proposed loading conditions. The anchor bolts and foundation were found to be within allowable limits. Additionally, the tower sway is 0.61 degrees, and the tower twist is 0.26 degrees. These are within the Connecticut State Police specification of 0.75 degrees for twist and sway.

5. CONCLUSIONS

The results of the analysis indicate that the existing tower structure is in compliance with the proposed loading conditions. **The tower and foundation are considered structurally adequate with the wind load specified above and the existing and proposed antenna loadings.** The tower sway is 0.61 degrees, and the tower twist is 0.26 degrees. These are within the Connecticut State Police specification of 0.75 degrees for twist and sway.

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.

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.

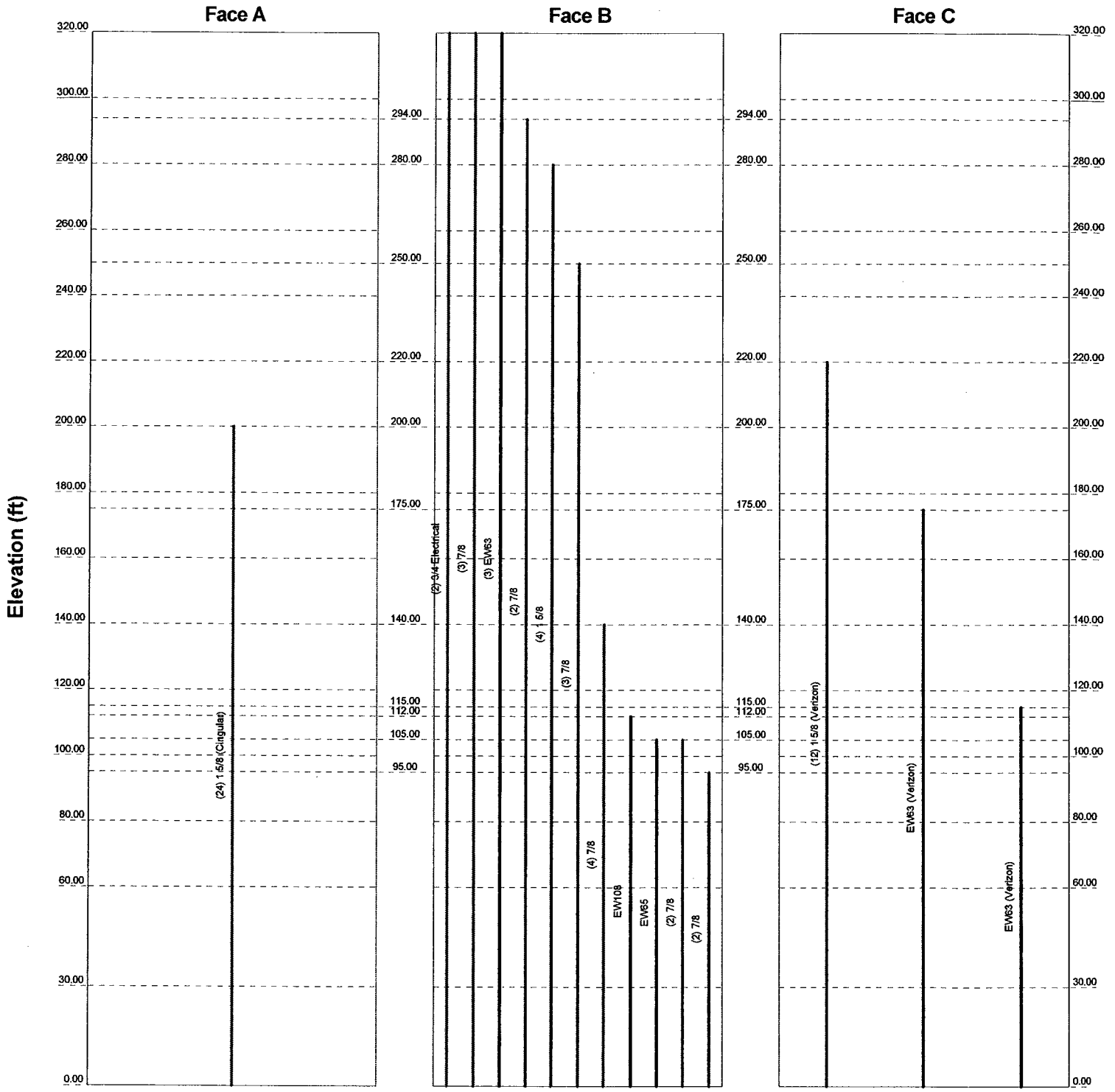
The owner shall refer to TIA/EIA-222-F for recommendations for maintenance and inspection. The frequency of the inspection and maintenance intervals is to be determined by the owner based upon actual site and environmental conditions. It is recommended that a complete and thorough inspection of the entire 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

ERI TOWER FEEDLINE DISTRIBUTION CHART

Feedline Distribution Chart
0' - 320'

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



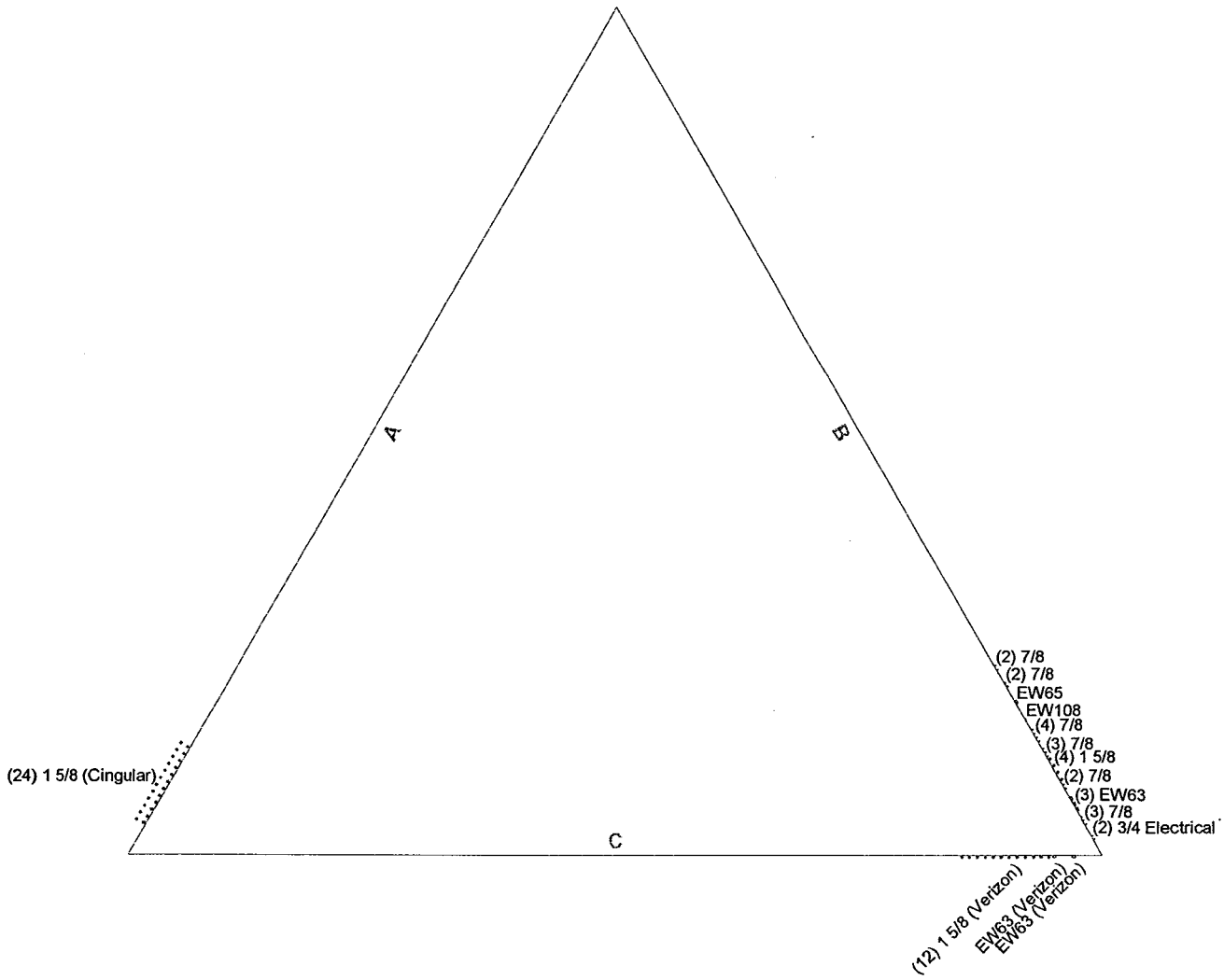
URS Corporation
500 Enterprise Drive, Suite 3B
Rocky Hill, CT 06067
Phone: (860) 529-8882
FAX: (860) 529-3991

Job: *320' Rohn SSVMW*			
Project: *CSP Tower - Colchester, CT*			
Client: Verizon Wireless	Drawn by: Staff	App'd:	
Code: TIA/EIA-222-F	Date: 10/12/06	Scale: NTS	
Path: P:\08\10.12.2006 Rev 2\ERI Files\Reinforced 320' Rohn SSVMW.eri		Dwg No. E-7	

ERI TOWER FEEDLINE PLAN

Feedline Plan

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



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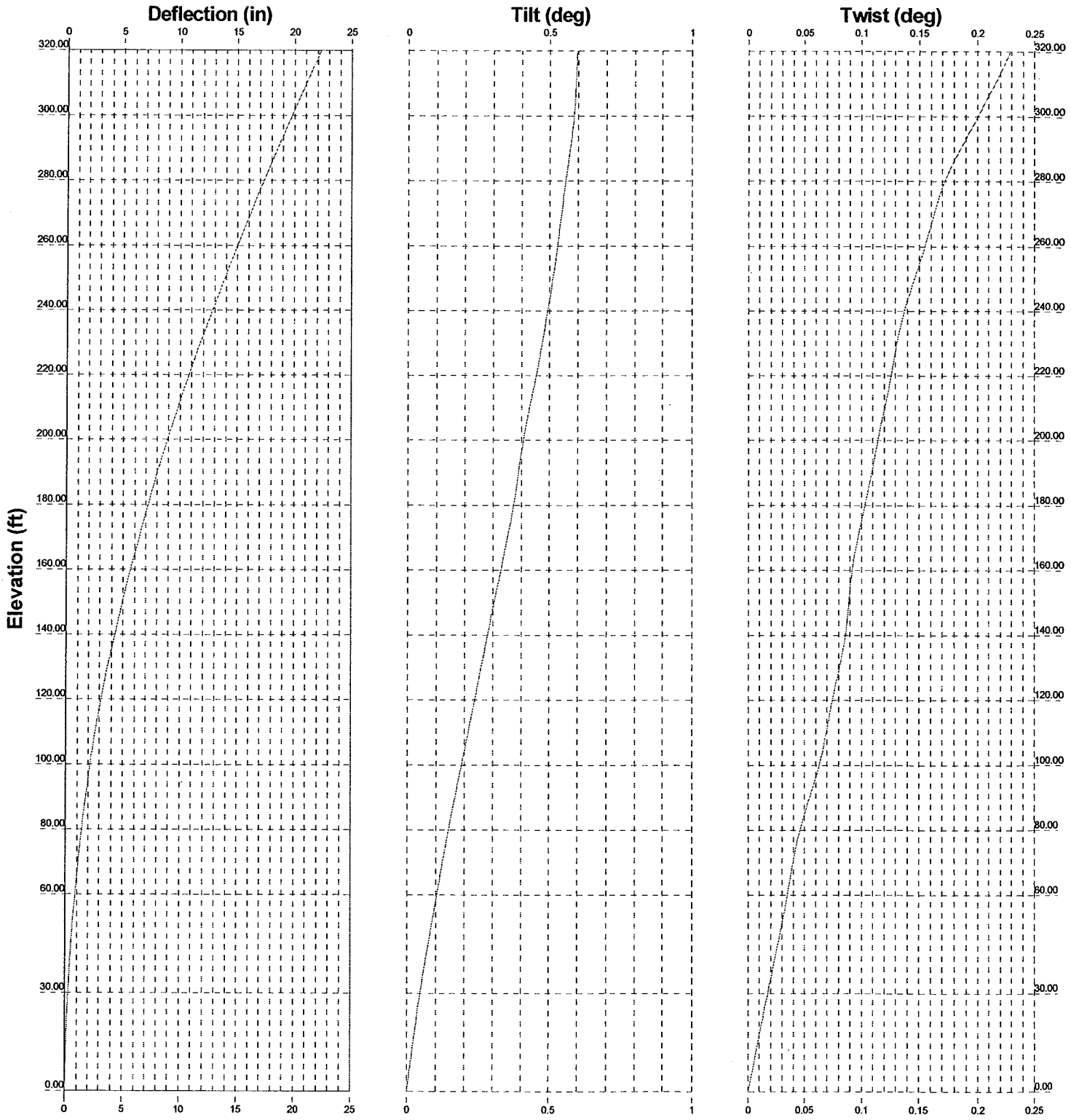
Job: ***320' Rohn SSVMW***		
Project: ***CSP Tower - Colchester, CT***		
Client: Verizon Wireless	Drawn by: Staff	App'd:
Code: TIA/EIA-222-F	Date: 10/12/06	Scale: NTS
Path: P:\08\10.12.2006 Rev 2\ERI Files\Reinforced 320' Rohn SSVMW.er		Dwg No. E-7

ERI TOWER DEFLECTION, TILT, TWIST

TIA/EIA-222-F - 78 mph/78 mph 0.5000 in Ice

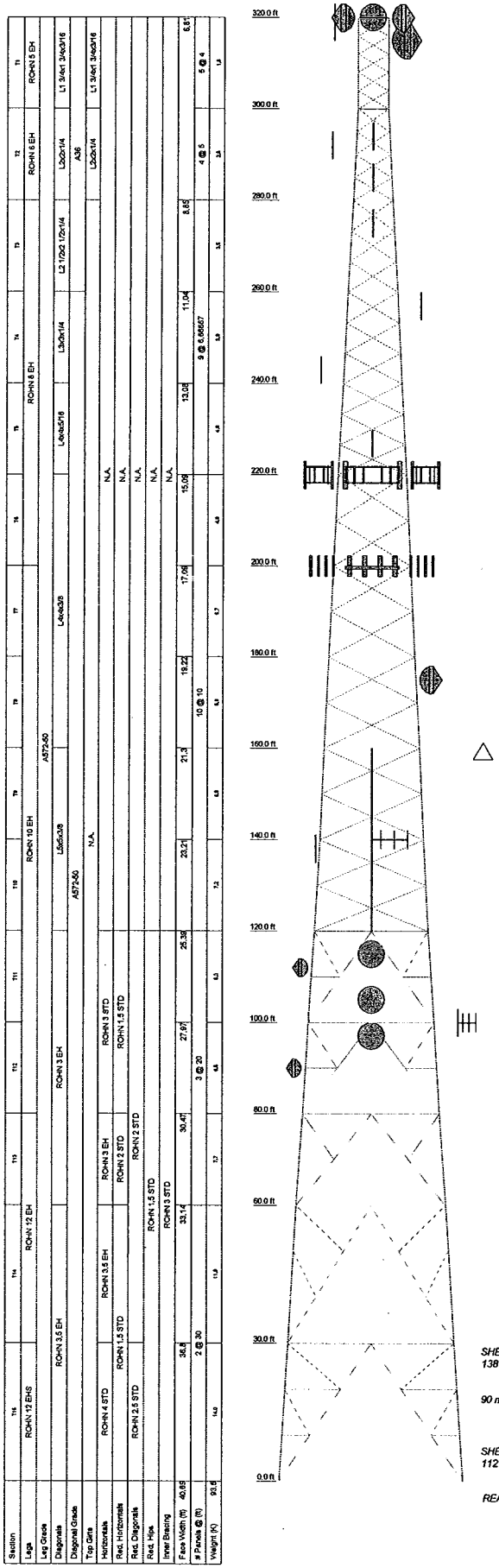
Dead+Wind 0 deg+Ice+Temp



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

Job: *320' Rohn SSVMW*			
Project: *CSP Tower - Colchester, CT*			
Client: Verizon Wireless	Drawn by: Staff	App'd:	
Code: TIA/EIA-222-F	Date: 10/12/06	Scale: NTS	
Path: P:\08\10.12.2006 Rev ZERI Files\78mph Reinforced 320' Rohn SSVMW.eri		Dwg No. E-5	

ERI TOWER INPUT/OUTPUT SUMMARY



MAX PIER FORCES:
DOWN: 692 K
UPLIFT: -555 K
SHEAR: 85 K

AXIAL
157 K
SHEAR
138 K
MOMENT
22530 kip-ft

TORQUE 286 kip-ft
90 mph WIND - 0.5000 in ICE

AXIAL
112 K
SHEAR
112 K
MOMENT
18495 kip-ft

TORQUE 182 kip-ft
REACTIONS - 90 mph WIND

APPURTENANCES

TYPE	ELEVATION	TYPE	ELEVATION
Dual Lights	320	DB844 (Verizon)	220
5'3"x4" Pipe Mount (CSP future)	320	DB948F85T2E-M (Verizon)	220
5'3"x4" Pipe Mount (CSP future)	320	DB948F85T2E-M (Verizon)	220
5'3"x4" Pipe Mount (CSP future)	320	DB844 (Verizon)	220
PD128 (CSP)	320	(4) 7770.00 (Cingular)	200
6' Side Mount Standoff	320	(4) 7770.00 (Cingular)	200
8 FT DISH	320	(4) LPG21401 TMA (Cingular)	200
8 FT DISH	320	(4) LPG21401 TMA (Cingular)	200
8 FT DISH	320	(4) LPG21401 TMA (Cingular)	200
PD128 (CSP)	318	(4) LPG13519 Diplexer (Cingular)	200
6' Side Mount Standoff	318	(4) LPG13519 Diplexer (Cingular)	200
8 FT DISH	315	(4) LPG13519 Diplexer (Cingular)	200
8'6"x4" Pipe Mount (CSP)	315	PIROD 12' Lightweight T-Frame (Cingular)	200
DB224 (SHF)	294	PIROD 12' Lightweight T-Frame (Cingular)	200
6' Side Mount Standoff	294	PIROD 12' Lightweight T-Frame (Cingular)	200
PD320 (DEP)	292	(4) 7770.00 (Cingular)	200
6' Side Mount Standoff	292	5'3"x4" Pipe Mount (Verizon)	175
(2) DB809 (CSP)	285	8 FT DISH (Verizon)	175
6' Side Mount Standoff	285	BA1012-0 (OEM)	140
(2) OGT9 (CSP)	275	PD588S-4 (NEU)	140
6' Side Mount Standoff	275	DB212-1 (NEU)	140
PD440 (OEM)	257	6' Side Mount Standoff	140
6' Side Mount Standoff	257	6' Side Mount Standoff	140
PD128 (OEM)	243	PD156S (DEP)	138
6' Side Mount Standoff	243	3'4"x4" Pipe Mount (DEP)	138
PD320 (CSP)	227	5'3"x4" Pipe Mount (Verizon)	115
6' Side Mount Standoff	227	6 FT DISH (Verizon)	115
DB844 (Verizon)	220	3'4"x4" Pipe Mount (CSP)	112
DB844 (Verizon)	220	4 FT DISH	112
DB948F85T2E-M (Verizon)	220	6 FT DISH	105
DB948F85T2E-M (Verizon)	220	5'3"x4" Pipe Mount (CSP)	105
DB844 (Verizon)	220	PD458 (CTT)	100
DB844 (Verizon)	220	DB437 (FBI)	100
DB948F85T2E-M (Verizon)	220	6' Side Mount Standoff	100
DB948F85T2E-M (Verizon)	220	6 FT DISH	97
Mounting Frame (Verizon)	220	5'3"x4" Pipe Mount (CSP)	97
Mounting Frame (Verizon)	220	3'4"x4" Pipe Mount (CSP)	90
Mounting Frame (Verizon)	220	4 FT DISH	90

MATERIAL STRENGTH

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

TOWER DESIGN NOTES

1. Tower designed for a 90 mph basic wind in accordance with the TIA/EIA-222-F Standard.
2. Tower is also designed for a 90 mph basic wind with 0.50 in ice.
3. Deflections are based upon a 90 mph wind.
4. TOWER RATING: 95.6%

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

Job:	320' Rohn SSVMW
Project:	CSP Tower - Colchester, CT
Client: Verizon Wireless	Drawn by: Staff / App'd:
Code: TIA/EIA-222-F	Date: 10/12/06 / Scale: NTS
Path: P:\08\10.12.2006 Rev 2\EB\ FlexReinforced 320' Rohn SSVMW.eri	Dwg No. E-1

ERI TOWER DETAILED OUTPUT

ERITower	Job	Page
	320' Rohn SSVMW	1 of 55
URS Corporation 500 Enterprise Drive, Suite 3B Rocky Hill, CT 06067 Phone: (860) 529-8882 FAX: (860) 529-3991	**Project** CSP Tower - Colchester, CT	**Date** 12:49:15 10/12/06
	Client Verizon Wireless	**Designed by** Staff

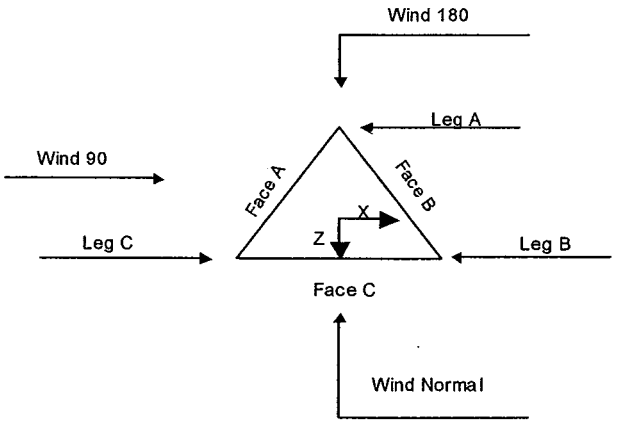
Tower Input Data

The main tower is a 3x free standing tower with an overall height of 320.00 ft above the ground line.
The base of the tower is set at an elevation of 0.00 ft above the ground line.
The face width of the tower is 6.81 ft at the top and 40.69 ft at the base.
This tower is designed using the TIA/EIA-222-F standard.
The following design criteria apply:

Basic wind speed of 90 mph.
Nominal ice thickness of 0.5000 in.
Ice density of 56 pcf.
A wind speed of 90 mph is used in combination with ice.
Temperature drop of 50 °F.
Deflections calculated using a wind speed of 90 mph.
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 ft	Assembly Database	Description	Section Width ft	Number of Sections	Section Length ft
T1	320.00-300.00			6.81	1	20.00
T2	300.00-280.00			6.81	1	20.00
T3	280.00-260.00			8.85	1	20.00
T4	260.00-240.00			11.04	1	20.00
T5	240.00-220.00			13.08	1	20.00
T6	220.00-200.00			15.09	1	20.00
T7	200.00-180.00			17.09	1	20.00
T8	180.00-160.00			19.22	1	20.00
T9	160.00-140.00			21.30	1	20.00
T10	140.00-120.00			23.21	1	20.00
T11	120.00-100.00			25.39	1	20.00
T12	100.00-80.00			27.97	1	20.00
T13	80.00-60.00			30.47	1	20.00
T14	60.00-30.00			33.14	1	30.00
T15	30.00-0.00			36.80	1	30.00

Tower Section Geometry *(cont'd)*

Tower Section	Tower Elevation ft	Diagonal Spacing ft	Bracing Type	Has K Brace End Panels	Has Horizontals	Top Girt Offset in	Bottom Girt Offset in

Tower Section	Tower Elevation ft	Diagonal Spacing ft	Bracing Type	Has K Brace End Panels	Has Horizontals	Top Girt Offset in	Bottom Girt Offset in
T1	320.00-300.00	4.00	X Brace	No	No	0.0000	0.0000
T2	300.00-280.00	5.00	X Brace	No	No	0.0000	0.0000
T3	280.00-260.00	6.67	X Brace	No	No	0.0000	0.0000
T4	260.00-240.00	6.67	X Brace	No	No	0.0000	0.0000
T5	240.00-220.00	6.67	X Brace	No	No	0.0000	0.0000
T6	220.00-200.00	10.00	X Brace	No	No	0.0000	0.0000
T7	200.00-180.00	10.00	X Brace	No	No	0.0000	0.0000
T8	180.00-160.00	10.00	X Brace	No	No	0.0000	0.0000
T9	160.00-140.00	10.00	X Brace	No	No	0.0000	0.0000
T10	140.00-120.00	10.00	X Brace	No	No	0.0000	0.0000
T11	120.00-100.00	20.00	K1 Down	No	Yes	0.0000	0.0000
T12	100.00-80.00	20.00	K1 Down	No	Yes	0.0000	0.0000
T13	80.00-60.00	20.00	K1 Down	No	Yes	0.0000	0.0000
T14	60.00-30.00	30.00	K2 Down	No	Yes	0.0000	0.0000
T15	30.00-0.00	30.00	K2 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 320.00-300.00	Pipe	ROHN 5 EH	A572-50 (50 ksi)	Equal Angle	L1 3/4x1 3/4x3/16	A36 (36 ksi)
T2 300.00-280.00	Pipe	ROHN 6 EH	A572-50 (50 ksi)	Equal Angle	L2x2x1/4	A36 (36 ksi)
T3 280.00-260.00	Pipe	ROHN 8 EH	A572-50 (50 ksi)	Equal Angle	L2 1/2x2 1/2x1/4	A36 (36 ksi)
T4 260.00-240.00	Pipe	ROHN 8 EH	A572-50 (50 ksi)	Equal Angle	L3x3x1/4	A572-50 (50 ksi)
T5 240.00-220.00	Pipe	ROHN 8 EH	A572-50 (50 ksi)	Equal Angle	L4x4x5/16	A572-50 (50 ksi)
T6 220.00-200.00	Pipe	ROHN 8 EH	A572-50 (50 ksi)	Equal Angle	L4x4x3/8	A572-50 (50 ksi)
T7 200.00-180.00	Pipe	ROHN 10 EH	A572-50 (50 ksi)	Equal Angle	L4x4x3/8	A572-50 (50 ksi)
T8 180.00-160.00	Pipe	ROHN 10 EH	A572-50 (50 ksi)	Equal Angle	L4x4x3/8	A572-50 (50 ksi)
T9 160.00-140.00	Pipe	ROHN 10 EH	A572-50 (50 ksi)	Equal Angle	L5x5x3/8	A572-50 (50 ksi)
T10 140.00-120.00	Pipe	ROHN 10 EH	A572-50 (50 ksi)	Equal Angle	L5x5x3/8	A572-50 (50 ksi)
T11 120.00-100.00	Pipe	ROHN 10 EH	A572-50 (50 ksi)	Pipe	ROHN 3 EH	A572-50 (50 ksi)
T12 100.00-80.00	Pipe	ROHN 10 EH	A572-50 (50 ksi)	Pipe	ROHN 3 EH	A572-50 (50 ksi)
T13 80.00-60.00	Pipe	ROHN 12 EH	A572-50 (50 ksi)	Pipe	ROHN 3 EH	A572-50 (50 ksi)
T14 60.00-30.00	Pipe	ROHN 12 EH	A572-50 (50 ksi)	Pipe	ROHN 3.5 EH	A572-50 (50 ksi)
T15 30.00-0.00	Pipe	ROHN 12 EHS	A572-50 (50 ksi)	Pipe	ROHN 3.5 EH	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 320.00-300.00	Equal Angle	L1 3/4x1 3/4x3/16	A36 (36 ksi)	Solid Round		A36 (36 ksi)
T2 300.00-280.00	Equal Angle	L2x2x1/4	A36 (36 ksi)	Solid Round		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
T11 120.00-100.00	None	Flat Bar		A36 (36 ksi)	Pipe	ROHN 3 STD	A572-50 (50 ksi)
T12 100.00-80.00	None	Flat Bar		A36 (36 ksi)	Pipe	ROHN 3 STD	A572-50 (50 ksi)
T13 80.00-60.00	None	Flat Bar		A36 (36 ksi)	Pipe	ROHN 3 EH	A572-50 (50 ksi)
T14 60.00-30.00	None	Flat Bar		A36 (36 ksi)	Pipe	ROHN 3.5 EH	A572-50 (50 ksi)
T15 30.00-0.00	None	Flat Bar		A36 (36 ksi)	Pipe	ROHN 4 STD	A572-50 (50 ksi)

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Secondary Horizontal Type	Secondary Horizontal Size	Secondary Horizontal Grade	Inner Bracing Type	Inner Bracing Size	Inner Bracing Grade
T11 120.00-100.00	Pipe		A572-50 (50 ksi)	Pipe	ROHN 3 STD	A572-50 (50 ksi)
T12 100.00-80.00	Pipe		A572-50 (50 ksi)	Pipe	ROHN 3 STD	A572-50 (50 ksi)
T13 80.00-60.00	Pipe		A572-50 (50 ksi)	Pipe	ROHN 3 STD	A572-50 (50 ksi)
T14 60.00-30.00	Pipe		A572-50 (50 ksi)	Pipe	ROHN 3 STD	A572-50 (50 ksi)
T15 30.00-0.00	Pipe		A572-50 (50 ksi)	Pipe	ROHN 3 STD	A572-50 (50 ksi)

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Redundant Bracing Grade		Redundant Type	Redundant Size	K Factor
T11 120.00-100.00	A572-50 (50 ksi)	Horizontal (1)	Pipe	ROHN 1.5 STD	1
		Diagonal (1)	Pipe	ROHN 2 STD	1
		Hip (1)	Pipe	ROHN 1.5 STD	1
		Hip Diagonal		ROHN 2.5 STD	1
T12 100.00-80.00	A572-50 (50 ksi)	Horizontal (1)	Pipe	ROHN 1.5 STD	1
		Diagonal (1)	Pipe	ROHN 2 STD	1
		Hip (1)	Pipe	ROHN 1.5 STD	1
		Hip Diagonal		ROHN 2.5 STD	1
T13 80.00-60.00	A572-50 (50 ksi)	Horizontal (1)	Pipe	ROHN 2 STD	1
		Diagonal (1)	Pipe	ROHN 2 STD	1
		Hip (1)	Pipe	ROHN 1.5 STD	1
		Hip Diagonal		ROHN 3 STD	1
T14 60.00-30.00	A572-50 (50 ksi)	Horizontal (1)	Pipe	ROHN 1.5 STD	1
		Horizontal (2)		ROHN 2 EH	
		Diagonal (1)	Pipe	ROHN 2 STD	1
		Diagonal (2)		ROHN 2.5 STD	
		Hip (1)	Pipe	ROHN 1.5 STD	1
		Hip (2)		ROHN 2 STD	
		Hip Diagonal		ROHN 2 STD	1
T15 30.00-0.00	A572-50 (50 ksi)	Horizontal (1)	Pipe	ROHN 1.5 STD	1
		Horizontal (2)		ROHN 2.5 EH	
		Diagonal (1)	Pipe	ROHN 2.5 STD	1
		Diagonal (2)		ROHN 2.5 STD	
		Hip (1)	Pipe	ROHN 1.5 STD	1
		Hip (2)		ROHN 2 STD	
		Hip Diagonal		ROHN 2.5 STD	1

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 320.00-300.00	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000
T2 300.00-280.00	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000
T3 280.00-260.00	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000
T4 260.00-240.00	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000
T5 240.00-220.00	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000
T6 220.00-200.00	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000
T7 200.00-180.00	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000
T8 180.00-160.00	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000
T9 160.00-140.00	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000
T10 140.00-120.00	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000
T11 120.00-100.00	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000
T12 100.00-	0.00	0.0000	A36	1	1	1	36.0000	36.0000

Tower Elevation ft	Gusset Area (per face) ft²	Gusset Thickness in	Gusset Grade	Adjust. Factor A_f	Adjust. Factor A_r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals in	Double Angle Stitch Bolt Spacing Horizontals in
80.00			(36 ksi)					
T13 80.00-60.00	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000
T14 60.00-30.00	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000
T15 30.00-0.00	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Calc K Single Angles	Calc K Solid Rounds	K Factors[1] Legs	X Brace Diags X Y	K Brace Diags X Y	Single Diags X Y	Girts X Y	Horiz. X Y	Sec. Horiz. X Y	Inner Brace X Y
T1 320.00-300.00	Yes	No	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T2 300.00-280.00	Yes	No	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T3 280.00-260.00	Yes	No	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T4 260.00-240.00	Yes	No	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T5 240.00-220.00	Yes	No	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T6 220.00-200.00	Yes	No	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T7 200.00-180.00	Yes	No	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T8 180.00-160.00	Yes	No	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T9 160.00-140.00	Yes	No	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T10 140.00-120.00	Yes	No	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T11 120.00-100.00	No	No	1	1 1	0.95 0.95	1 1	1 1	1 1	1 1	1 1
T12 100.00-80.00	No	No	1	1 1	0.95 0.95	1 1	1 1	1 1	1 1	1 1
T13 80.00-60.00	No	No	1	1 1	0.95 0.95	1 1	1 1	1 1	1 1	1 1
T14 60.00-30.00	No	No	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T15 30.00-0.00	No	No	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1

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

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Leg		Diagonal		Top Girt		Bottom Girt		Mid Girt		Long Horizontal		Short Horizontal	
	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U
T1 320.00-300.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T2 300.00-280.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T3 280.00-260.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T4 260.00-240.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T5 240.00-220.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T6 220.00-200.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T7 200.00-180.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T8 180.00-160.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T9 160.00-140.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T10 140.00-120.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T11 120.00-100.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T12 100.00-80.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T13 80.00-60.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T14 60.00-30.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T15 30.00-0.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Leg Connection Type	Leg		Diagonal		Top Girt		Bottom Girt		Mid Girt		Long Horizontal		Short Horizontal	
		Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.
T1 320.00-300.00	Flange	1.0000 A325N	6	0.6250 A325X	1	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T2 300.00-280.00	Flange	1.0000 A325N	8	0.6250 A325X	1	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T3 280.00-260.00	Flange	1.0000 A325N	8	0.7500 A325X	1	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T4 260.00-240.00	Flange	1.0000 A325N	8	0.7500 A325X	1	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T5 240.00-220.00	Flange	1.0000 A325N	8	0.7500 A325X	1	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T6 220.00-200.00	Flange	1.0000 A325N	12	0.7500 A325X	1	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T7 200.00-180.00	Flange	1.0000 A325N	12	0.8750 A325X	1	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0

Tower Elevation ft	Leg Connection Type	Leg		Diagonal		Top Girt		Bottom Girt		Mid Girt		Long Horizontal		Short Horizontal	
		Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.
T8 180.00-160.00	Flange	1.0000 A325N	12	0.8750 A325X	1	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T9 160.00-140.00	Flange	1.0000 A325N	12	0.8750 A325X	1	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T10 140.00-120.00	Flange	1.0000 A325N	12	0.8750 A325X	1	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T11 120.00-100.00	Flange	1.0000 A325N	12	0.7500 A325X	3	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.7500 A325X	2	0.6250 A325N	0
T12 100.00-80.00	Flange	1.0000 A325N	16	0.7500 A325X	3	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.7500 A325X	2	0.6250 A325N	0
T13 80.00-60.00	Flange	1.0000 A325N	16	0.7500 A325X	3	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.7500 A325X	2	0.6250 A325N	0
T14 60.00-30.00	Flange	1.0000 A325N	16	0.8750 A325X	3	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.7500 A325X	2	0.6250 A325N	0
T15 30.00-0.00	Flange	1.0000 A325N	24	0.8750 A325X	3	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.7500 A325X	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 plf
1 5/8 (Verizon)	C	Yes	Ar (CfAe)	220.00 - 0.00	0.0000	-0.4	12	12	1.9800	1.9800		1.04
3/4 Electrical	B	Yes	Ar (CfAe)	320.00 - 0.00	0.0000	0.48	2	2	1.1100	1.1100		0.54
7/8	B	Yes	Ar (CfAe)	320.00 - 0.00	0.0000	0.46	3	3	1.1100	1.1100		0.54
EW63	B	Yes	Af (CfAe)	320.00 - 0.00	0.0000	0.44	3	3	1.5742	1.5742	5.0668	0.51
7/8	B	Yes	Ar (CfAe)	294.00 - 0.00	0.0000	0.42	2	2	1.1100	1.1100		0.54
1 5/8	B	Yes	Ar (CfAe)	280.00 - 0.00	0.0000	0.4	4	4	1.9800	1.9800		1.04
7/8	B	Yes	Ar (CfAe)	250.00 - 0.00	0.0000	0.38	3	3	1.1100	1.1100		0.54
7/8	B	Yes	Ar (CfAe)	140.00 - 0.00	0.0000	0.36	4	4	1.1100	1.1100		0.54
EW108	B	Yes	Af (CfAe)	112.00 - 0.00	0.0000	0.34	1	1	0.5899	0.5899	2.0063	0.15
EW65	B	Yes	Af (CfAe)	105.00 - 0.00	0.0000	0.32	1	1	1.5742	1.5742	5.0668	0.51
7/8	B	Yes	Ar (CfAe)	105.00 - 0.00	0.0000	0.3	2	2	1.1100	1.1100		0.54
7/8	B	Yes	Ar (CfAe)	95.00 - 0.00	0.0000	0.28	2	2	1.1100	1.1100		0.54
EW63 (Verizon)	C	Yes	Af (CfAe)	175.00 - 0.00	0.0000	-0.45	1	1	1.5742	1.5742	5.0668	0.51
EW63 (Verizon)	C	Yes	Af (CfAe)	115.00 - 0.00	0.0000	-0.47	1	1	1.5742	1.5742	5.0668	0.51
1 5/8 (Cingular)	A	Yes	Ar (CfAe)	200.00 - 0.00	0.0000	-0.42	24	12	1.9800	1.9800		1.04

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	320.00-300.00	A	0.000	0.000	0.000	0.000	0.00
		B	9.250	7.871	0.000	0.000	0.08
		C	0.000	0.000	0.000	0.000	0.00

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
T2	300.00-280.00	A	0.000	0.000	0.000	0.000	0.00
		B	11.840	7.871	0.000	0.000	0.10
		C	0.000	0.000	0.000	0.000	0.00
T3	280.00-260.00	A	0.000	0.000	0.000	0.000	0.00
		B	26.150	7.871	0.000	0.000	0.19
		C	0.000	0.000	0.000	0.000	0.00
T4	260.00-240.00	A	0.000	0.000	0.000	0.000	0.00
		B	28.925	7.871	0.000	0.000	0.21
		C	0.000	0.000	0.000	0.000	0.00
T5	240.00-220.00	A	0.000	0.000	0.000	0.000	0.00
		B	31.700	7.871	0.000	0.000	0.22
		C	0.000	0.000	0.000	0.000	0.00
T6	220.00-200.00	A	0.000	0.000	0.000	0.000	0.00
		B	31.700	7.871	0.000	0.000	0.22
		C	39.600	0.000	0.000	0.000	0.25
T7	200.00-180.00	A	39.600	0.000	0.000	0.000	0.50
		B	31.700	7.871	0.000	0.000	0.22
		C	39.600	0.000	0.000	0.000	0.25
T8	180.00-160.00	A	39.600	0.000	0.000	0.000	0.50
		B	31.700	7.871	0.000	0.000	0.22
		C	39.600	1.968	0.000	0.000	0.26
T9	160.00-140.00	A	39.600	0.000	0.000	0.000	0.50
		B	31.700	7.871	0.000	0.000	0.22
		C	39.600	2.624	0.000	0.000	0.26
T10	140.00-120.00	A	39.600	0.000	0.000	0.000	0.50
		B	39.100	7.871	0.000	0.000	0.27
		C	39.600	2.624	0.000	0.000	0.26
T11	120.00-100.00	A	39.600	0.000	0.000	0.000	0.50
		B	40.025	9.117	0.000	0.000	0.27
		C	39.600	4.591	0.000	0.000	0.27
T12	100.00-80.00	A	39.600	0.000	0.000	0.000	0.50
		B	45.575	11.478	0.000	0.000	0.32
		C	39.600	5.247	0.000	0.000	0.27
T13	80.00-60.00	A	39.600	0.000	0.000	0.000	0.50
		B	46.500	11.478	0.000	0.000	0.32
		C	39.600	5.247	0.000	0.000	0.27
T14	60.00-30.00	A	59.400	0.000	0.000	0.000	0.75
		B	69.750	17.217	0.000	0.000	0.48
		C	59.400	7.871	0.000	0.000	0.41
T15	30.00-0.00	A	59.400	0.000	0.000	0.000	0.75
		B	69.750	17.217	0.000	0.000	0.48
		C	59.400	7.871	0.000	0.000	0.41

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	320.00-300.00	A	0.500	0.000	0.000	0.000	0.000	0.00
		B		17.583	11.204	0.000	0.000	0.26
		C		0.000	0.000	0.000	0.000	0.00
T2	300.00-280.00	A	0.500	0.000	0.000	0.000	0.000	0.00
		B		22.507	11.204	0.000	0.000	0.31
		C		0.000	0.000	0.000	0.000	0.00
T3	280.00-260.00	A	0.500	0.000	0.000	0.000	0.000	0.00
		B		44.483	11.204	0.000	0.000	0.53
		C		0.000	0.000	0.000	0.000	0.00
T4	260.00-240.00	A	0.500	0.000	0.000	0.000	0.000	0.00

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		49.758	11.204	0.000	0.000	0.58
		C		0.000	0.000	0.000	0.000	0.00
T5	240.00-220.00	A	0.500	0.000	0.000	0.000	0.000	0.00
		B		55.033	11.204	0.000	0.000	0.62
		C		0.000	0.000	0.000	0.000	0.00
T6	220.00-200.00	A	0.500	0.000	0.000	0.000	0.000	0.00
		B		55.033	11.204	0.000	0.000	0.62
		C		59.600	0.000	0.000	0.000	0.61
T7	200.00-180.00	A	0.500	59.600	0.000	0.000	0.000	1.23
		B		55.033	11.204	0.000	0.000	0.62
		C		59.600	0.000	0.000	0.000	0.61
T8	180.00-160.00	A	0.500	59.600	0.000	0.000	0.000	1.23
		B		55.033	11.204	0.000	0.000	0.62
		C		59.600	2.801	0.000	0.000	0.64
T9	160.00-140.00	A	0.500	59.600	0.000	0.000	0.000	1.23
		B		55.033	11.204	0.000	0.000	0.62
		C		59.600	3.735	0.000	0.000	0.65
T10	140.00-120.00	A	0.500	59.600	0.000	0.000	0.000	1.23
		B		69.100	11.204	0.000	0.000	0.74
		C		59.600	3.735	0.000	0.000	0.65
T11	120.00-100.00	A	0.500	59.600	0.000	0.000	0.000	1.23
		B		70.858	13.395	0.000	0.000	0.78
		C		59.600	6.536	0.000	0.000	0.68
T12	100.00-80.00	A	0.500	59.600	0.000	0.000	0.000	1.23
		B		81.408	17.033	0.000	0.000	0.90
		C		59.600	7.470	0.000	0.000	0.69
T13	80.00-60.00	A	0.500	59.600	0.000	0.000	0.000	1.23
		B		83.167	17.033	0.000	0.000	0.92
		C		59.600	7.470	0.000	0.000	0.69
T14	60.00-30.00	A	0.500	89.400	0.000	0.000	0.000	1.84
		B		124.750	25.550	0.000	0.000	1.38
		C		89.400	11.204	0.000	0.000	1.03
T15	30.00-0.00	A	0.500	89.400	0.000	0.000	0.000	1.84
		B		124.750	25.550	0.000	0.000	1.38
		C		89.400	11.204	0.000	0.000	1.03

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	320.00-300.00	A	0.000	0.000	0.000	0.000
		B	0.000	0.000	1.573	3.863
		C	0.000	0.000	0.000	0.000
T2	300.00-280.00	A	0.000	0.000	0.000	0.000
		B	0.000	0.000	1.727	4.132
		C	0.000	0.000	0.000	0.000
T3	280.00-260.00	A	0.000	0.000	0.000	0.000
		B	0.000	0.000	2.564	5.474
		C	0.000	0.000	0.000	0.000
T4	260.00-240.00	A	0.000	0.000	0.000	0.000
		B	0.000	0.000	3.155	6.564
		C	0.000	0.000	0.000	0.000
T5	240.00-220.00	A	0.000	0.000	0.000	0.000
		B	0.000	0.000	4.380	8.768
		C	0.000	0.000	0.000	0.000
T6	220.00-200.00	A	0.000	0.000	0.000	0.000

Section	Elevation	Face	A_R	A_R Ice	A_F	A_F Ice
	ft		ft^2	ft^2	ft^2	ft^2
		B	0.000	0.000	3.107	6.220
		C	0.000	0.000	3.109	5.460
T7	200.00-180.00	A	0.000	0.000	3.015	5.294
		B	0.000	0.000	3.013	6.031
		C	0.000	0.000	3.015	5.294
T8	180.00-160.00	A	0.000	0.000	2.945	5.170
		B	0.000	0.000	2.942	5.891
		C	0.000	0.000	3.091	5.449
T9	160.00-140.00	A	0.000	0.000	3.618	6.172
		B	0.000	0.000	3.616	7.032
		C	0.000	0.000	3.858	6.616
T10	140.00-120.00	A	0.000	0.000	3.569	6.087
		B	0.000	0.000	4.233	8.372
		C	0.000	0.000	3.805	6.526
T11	120.00-100.00	A	2.688	5.475	0.000	0.000
		B	3.335	7.936	0.000	0.000
		C	2.999	6.165	0.000	0.000
T12	100.00-80.00	A	2.572	5.239	0.000	0.000
		B	3.706	8.898	0.000	0.000
		C	2.913	5.993	0.000	0.000
T13	80.00-60.00	A	2.560	5.173	0.000	0.000
		B	3.748	8.938	0.000	0.000
		C	2.899	5.918	0.000	0.000
T14	60.00-30.00	A	4.171	8.402	0.000	0.000
		B	6.106	14.518	0.000	0.000
		C	4.723	9.612	0.000	0.000
T15	30.00-0.00	A	4.315	8.525	0.000	0.000
		B	6.318	14.730	0.000	0.000
		C	4.887	9.752	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	320.00-300.00	5.7821	2.9520	7.1025	3.6441
T2	300.00-280.00	6.6750	3.3779	8.5933	4.3612
T3	280.00-260.00	11.0518	5.2903	14.1421	6.8116
T4	260.00-240.00	12.7911	6.0842	16.6398	7.9470
T5	240.00-220.00	13.1492	6.2185	17.5579	8.3243
T6	220.00-200.00	26.2723	15.6197	32.4306	19.0842
T7	200.00-180.00	10.5398	19.5179	13.8444	23.4557
T8	180.00-160.00	12.1105	21.5914	15.7775	25.9400
T9	160.00-140.00	12.1464	21.3930	16.0555	26.1545
T10	140.00-120.00	15.0912	23.2372	20.2284	28.4681
T11	120.00-100.00	19.9795	28.9268	24.9235	33.1525
T12	100.00-80.00	24.3917	31.5250	30.3482	36.0111
T13	80.00-60.00	24.7156	31.5797	31.3068	36.6933
T14	60.00-30.00	26.5159	33.8668	33.5485	39.3179
T15	30.00-0.00	28.0485	35.8107	35.7092	41.8405

Discrete Tower Loads

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
Dual Lights	C	None		0.0000	320.00	No Ice	4.00	4.00	0.25
						1/2" Ice	4.80	4.80	0.40
5'3"x4" Pipe Mount (CSP future)	A	From Leg	0.50 0.00 0.00	0.0000	320.00	No Ice 1/2" Ice	1.88 2.21	1.88 2.21	0.06 0.07
5'3"x4" Pipe Mount (CSP future)	B	From Leg	0.50 0.00 0.00	0.0000	320.00	No Ice 1/2" Ice	1.88 2.21	1.88 2.21	0.06 0.07
5'3"x4" Pipe Mount (CSP future)	C	From Leg	0.50 0.00 0.00	0.0000	320.00	No Ice 1/2" Ice	1.88 2.21	1.88 2.21	0.06 0.07
PD128 (CSP)	C	From Leg	6.00 0.00 0.00	0.0000	320.00	No Ice 1/2" Ice	1.00 1.80	1.00 1.80	0.01 0.02
6' Side Mount Standoff	C	None		0.0000	320.00	No Ice	6.50	6.50	0.10
						1/2" Ice	8.50	8.50	0.17
PD128 (CSP)	C	From Leg	6.00 0.00 0.00	0.0000	318.00	No Ice 1/2" Ice	1.00 1.80	1.00 1.80	0.01 0.02
6' Side Mount Standoff	C	None		0.0000	318.00	No Ice	6.50	6.50	0.10
						1/2" Ice	8.50	8.50	0.17
6'8"x4" Pipe Mount (CSP)	C	From Leg	0.50 0.00 0.00	0.0000	315.00	No Ice 1/2" Ice	2.60 3.01	2.60 3.01	0.07 0.09
DB224 (SHF)	A	From Leg	6.00 0.00 0.00	0.0000	294.00	No Ice 1/2" Ice	3.15 5.67	3.15 5.67	0.03 0.04
6' Side Mount Standoff	A	None		0.0000	294.00	No Ice	6.50	6.50	0.10
						1/2" Ice	8.50	8.50	0.17
PD320 (DEP)	C	From Leg	6.00 0.00 0.00	0.0000	292.00	No Ice 1/2" Ice	2.25 4.05	2.25 4.05	0.03 0.04
6' Side Mount Standoff	C	None		0.0000	292.00	No Ice	6.50	6.50	0.10
						1/2" Ice	8.50	8.50	0.17
(2) DB809 (CSP)	A	From Leg	6.00 0.00 0.00	0.0000	285.00	No Ice 1/2" Ice	3.39 4.55	3.39 4.55	0.03 0.06
6' Side Mount Standoff	A	None		0.0000	285.00	No Ice	6.50	6.50	0.10
						1/2" Ice	8.50	8.50	0.17
(2) OGT9 (CSP)	A	From Leg	6.00 0.00 0.00	0.0000	275.00	No Ice 1/2" Ice	3.15 5.67	3.15 5.67	0.03 0.04
6' Side Mount Standoff	A	None		0.0000	275.00	No Ice	6.50	6.50	0.10
						1/2" Ice	8.50	8.50	0.17
PD440 (OEM)	B	From Leg	6.00 0.00 0.00	0.0000	257.00	No Ice 1/2" Ice	1.38 2.48	1.38 2.48	0.02 0.02
6' Side Mount Standoff	B	None		0.0000	257.00	No Ice	6.50	6.50	0.10
						1/2" Ice	8.50	8.50	0.17
PD128 (OEM)	C	From Leg	6.00 0.00 0.00	0.0000	243.00	No Ice 1/2" Ice	1.00 1.80	1.00 1.80	0.01 0.02
6' Side Mount Standoff	C	None		0.0000	243.00	No Ice	6.50	6.50	0.10
						1/2" Ice	8.50	8.50	0.17
PD320 (CSP)	A	From Leg	6.00 0.00	0.0000	227.00	No Ice 1/2" Ice	2.25 4.05	2.25 4.05	0.03 0.04

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
			0.00						
6' Side Mount Standoff	A	None		0.0000	227.00	No Ice	6.50	6.50	0.10
						1/2" Ice	8.50	8.50	0.17
DB844	A	From Leg	5.00	0.0000	220.00	No Ice	3.06	3.73	0.01
(Verizon)			6.00			1/2" Ice	3.39	4.10	0.04
			0.00						
DB844	A	From Leg	5.00	0.0000	220.00	No Ice	3.06	3.73	0.01
(Verizon)			-6.00			1/2" Ice	3.39	4.10	0.04
			0.00						
DB948F85T2E-M	A	From Leg	5.00	0.0000	220.00	No Ice	1.92	3.26	0.01
(Verizon)			4.00			1/2" Ice	2.22	3.62	0.03
			0.00						
DB948F85T2E-M	A	From Leg	5.00	0.0000	220.00	No Ice	1.92	3.26	0.01
(Verizon)			-4.00			1/2" Ice	2.22	3.62	0.03
			0.00						
DB844	B	From Leg	5.00	0.0000	220.00	No Ice	3.06	3.73	0.01
(Verizon)			6.00			1/2" Ice	3.39	4.10	0.04
			0.00						
DB844	B	From Leg	5.00	0.0000	220.00	No Ice	3.06	3.73	0.01
(Verizon)			-6.00			1/2" Ice	3.39	4.10	0.04
			0.00						
DB948F85T2E-M	B	From Leg	5.00	0.0000	220.00	No Ice	1.92	3.26	0.01
(Verizon)			4.00			1/2" Ice	2.22	3.62	0.03
			0.00						
DB948F85T2E-M	B	From Leg	5.00	0.0000	220.00	No Ice	1.92	3.26	0.01
(Verizon)			-4.00			1/2" Ice	2.22	3.62	0.03
			0.00						
DB844	C	From Leg	5.00	0.0000	220.00	No Ice	3.06	3.73	0.01
(Verizon)			6.00			1/2" Ice	3.39	4.10	0.04
			0.00						
DB844	C	From Leg	5.00	0.0000	220.00	No Ice	3.06	3.73	0.01
(Verizon)			-6.00			1/2" Ice	3.39	4.10	0.04
			0.00						
DB948F85T2E-M	C	From Leg	5.00	0.0000	220.00	No Ice	1.92	3.26	0.01
(Verizon)			4.00			1/2" Ice	2.22	3.62	0.03
			0.00						
DB948F85T2E-M	C	From Leg	5.00	0.0000	220.00	No Ice	1.92	3.26	0.01
(Verizon)			-4.00			1/2" Ice	2.22	3.62	0.03
			0.00						
Mounting Frame	A	From Leg	5.00	0.0000	220.00	No Ice	17.00	17.00	0.56
(Verizon)			0.00			1/2" Ice	20.00	20.00	0.70
			0.00						
Mounting Frame	B	From Leg	5.00	0.0000	220.00	No Ice	17.00	17.00	0.56
(Verizon)			0.00			1/2" Ice	20.00	20.00	0.70
			0.00						
Mounting Frame	C	From Leg	5.00	0.0000	220.00	No Ice	17.00	17.00	0.56
(Verizon)			0.00			1/2" Ice	20.00	20.00	0.70
			0.00						
PiROD 12' Lightweight T-Frame	A	None		0.0000	200.00	No Ice	10.20	10.20	0.25
(Cingular)						1/2" Ice	16.20	16.20	0.35
PiROD 12' Lightweight T-Frame	B	None		0.0000	200.00	No Ice	10.20	10.20	0.25
(Cingular)						1/2" Ice	16.20	16.20	0.35
PiROD 12' Lightweight T-Frame	C	None		0.0000	200.00	No Ice	10.20	10.20	0.25
(Cingular)						1/2" Ice	16.20	16.20	0.35

Description	Face or Leg	Offset Type	Offsets: Horz Lateral / Vert	Azimuth Adjustment	Placement		C_AA_A Front	C_AA_A Side	Weight
			ft / ft / ft	°	ft		ft^2	ft^2	K
(4) 7770.00	A	From Leg	3.00	0.0000	200.00	No Ice	5.88	2.93	0.04
(Cingular)			0.00			1/2" Ice	6.31	3.27	0.07
			0.00						
(4) 7770.00	B	From Leg	3.00	0.0000	200.00	No Ice	5.88	2.93	0.04
(Cingular)			0.00			1/2" Ice	6.31	3.27	0.07
			0.00						
(4) 7770.00	C	From Leg	3.00	0.0000	200.00	No Ice	5.88	2.93	0.04
(Cingular)			0.00			1/2" Ice	6.31	3.27	0.07
			0.00						
(4) LPG21401 TMA	A	From Leg	3.00	0.0000	200.00	No Ice	0.95	0.37	0.02
(Cingular)			0.00			1/2" Ice	1.09	0.48	0.02
			0.00						
(4) LPG21401 TMA	B	From Leg	3.00	0.0000	200.00	No Ice	0.95	0.37	0.02
(Cingular)			0.00			1/2" Ice	1.09	0.48	0.02
			0.00						
(4) LPG21401 TMA	C	From Leg	3.00	0.0000	200.00	No Ice	0.95	0.37	0.02
(Cingular)			0.00			1/2" Ice	1.09	0.48	0.02
			0.00						
(4) LPG13519 Diplexer	A	From Leg	3.00	0.0000	200.00	No Ice	0.27	0.18	0.01
(Cingular)			0.00			1/2" Ice	0.34	0.25	0.01
			0.00						
(4) LPG13519 Diplexer	B	From Leg	3.00	0.0000	200.00	No Ice	0.27	0.18	0.01
(Cingular)			0.00			1/2" Ice	0.34	0.25	0.01
			0.00						
(4) LPG13519 Diplexer	C	From Leg	3.00	0.0000	200.00	No Ice	0.27	0.18	0.01
(Cingular)			0.00			1/2" Ice	0.34	0.25	0.01
			0.00						
5'3"x4" Pipe Mount	B	From Leg	0.50	0.0000	175.00	No Ice	1.88	1.88	0.06
(Verizon)			0.00			1/2" Ice	2.21	2.21	0.07
			0.00						
PD688S-4	A	From Leg	6.00	0.0000	140.00	No Ice	0.35	0.35	0.00
(NEU)			0.00			1/2" Ice	0.63	0.63	0.00
			0.00						
DB212-1	B	None		0.0000	140.00	No Ice	4.40	4.40	0.03
(NEU)						1/2" Ice	8.42	8.42	0.07
6' Side Mount Standoff	B	None		0.0000	140.00	No Ice	6.50	6.50	0.10
						1/2" Ice	8.50	8.50	0.17
BA1012-0	A	From Leg	6.00	0.0000	140.00	No Ice	0.47	0.47	0.00
(OEM)			0.00			1/2" Ice	0.96	0.96	0.01
			0.00						
6' Side Mount Standoff	A	None		0.0000	140.00	No Ice	6.50	6.50	0.10
						1/2" Ice	8.50	8.50	0.17
PD156S	C	From Leg	1.00	0.0000	138.00	No Ice	0.44	0.44	0.01
(DEP)			0.00			1/2" Ice	0.79	0.79	0.01
			0.00						
3'4"x4" Pipe Mount	C	From Leg	0.50	0.0000	138.00	No Ice	1.05	1.05	0.04
(DEP)			0.00			1/2" Ice	1.27	1.27	0.05
			0.00						
5'3"x4" Pipe Mount	A	From Leg	0.50	0.0000	115.00	No Ice	1.88	1.88	0.06
(Verizon)			0.00			1/2" Ice	2.21	2.21	0.07
			0.00						
3'4"x4" Pipe Mount	C	From Leg	0.50	0.0000	112.00	No Ice	1.05	1.05	0.04
(CSP)			0.00			1/2" Ice	1.27	1.27	0.05
			0.00						
5'3"x4" Pipe Mount	A	From Leg	0.50	0.0000	105.00	No Ice	1.88	1.88	0.06
(CSP)			0.00			1/2" Ice	2.21	2.21	0.07
			0.00						

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
PD458 (CTT)	B	From Leg	6.00 0.00 0.00	0.0000	100.00	No Ice 1/2" Ice	2.88 4.34	2.88 4.34	0.02 0.05
DB437 (FBI)	B	From Leg	6.00 0.00 0.00	0.0000	100.00	No Ice 1/2" Ice	0.45 0.81	0.45 0.81	0.01 0.01
6' Side Mount Standoff	B	None		0.0000	100.00	No Ice 1/2" Ice	6.50 8.50	6.50 8.50	0.10 0.17
5'3"x4" Pipe Mount (CSP)	A	From Leg	0.50 0.00 0.00	0.0000	97.00	No Ice 1/2" Ice	1.88 2.21	1.88 2.21	0.06 0.07
3'4"x4" Pipe Mount (CSP)	C	From Leg	0.50 0.00 0.00	0.0000	90.00	No Ice 1/2" Ice	1.05 1.27	1.05 1.27	0.04 0.05

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
8 FT DISH	B	Paraboloid w/Radome	From Leg	1.00 0.00 0.00	Worst		315.00	8.00	No Ice 1/2" Ice	50.30 51.29	0.25 0.51
6 FT DISH	A	Paraboloid w/Radome	From Leg	1.00 0.00 0.00	Worst		320.00	6.00	No Ice 1/2" Ice	28.27 29.05	0.14 0.29
6 FT DISH	B	Paraboloid w/Radome	From Leg	1.00 0.00 0.00	Worst		320.00	6.00	No Ice 1/2" Ice	28.27 29.05	0.14 0.29
6 FT DISH	C	Paraboloid w/Radome	From Leg	1.00 0.00 0.00	Worst		320.00	6.00	No Ice 1/2" Ice	28.27 29.05	0.14 0.29
4 FT DISH	C	Paraboloid w/Radome	From Leg	1.00 0.00 0.00	Worst		112.00	4.00	No Ice 1/2" Ice	12.56 13.09	0.17 0.24
6 FT DISH	A	Paraboloid w/Radome	From Leg	1.00 0.00 0.00	Worst		105.00	6.00	No Ice 1/2" Ice	28.27 29.05	0.14 0.29
6 FT DISH	A	Paraboloid w/Radome	From Leg	1.00 0.00 0.00	Worst		97.00	6.00	No Ice 1/2" Ice	28.27 29.05	0.14 0.29
4 FT DISH	C	Paraboloid w/Radome	From Leg	1.00 0.00 0.00	Worst		90.00	4.00	No Ice 1/2" Ice	12.56 13.09	0.17 0.24
6 FT DISH (Verizon)	B	Paraboloid w/Radome	From Leg	1.00 0.00 0.00	Worst		175.00	6.00	No Ice 1/2" Ice	28.27 29.05	0.14 0.29
6 FT DISH (Verizon)	A	Paraboloid w/Radome	From Leg	1.00 0.00	Worst		115.00	6.00	No Ice 1/2" Ice	28.27 29.05	0.14 0.29

Description	Face or Leg	Dish Type	Offset Type	Offsets: Horz Lateral Vert	Azimuth Adjustment	3 dB Beam Width	Elevation	Outside Diameter	Aperture Area	Weight
				ft	°	°	ft	ft	ft^2	K
				0.00						

Tower Pressures - No Ice

$G_H = 1.084$

Section Elevation ft	z ft	K_z	q_z psf	A_G ft^2	Face	A_F ft^2	A_R ft^2	A_{leg} ft^2	Leg %	C_AA_A In Face ft^2	C_AA_A Out Face ft^2
T1 320.00-300.00	310.00	1.897	39	145.472	A	11.659	18.543	18.543	61.40	0.000	0.000
					B	17.958	27.793		40.53		
					C	11.659	18.543		61.40		
T2 300.00-280.00	290.00	1.861	39	167.656	A	12.596	22.122	22.122	63.72	0.000	0.000
					B	18.740	33.962		41.97		
					C	12.596	22.122		63.72		
T3 280.00-260.00	270.00	1.823	38	213.297	A	13.934	28.807	28.807	67.40	0.000	0.000
					B	19.241	54.957		38.82		
					C	13.934	28.807		67.40		
T4 260.00-240.00	250.00	1.783	37	255.594	A	19.443	28.800	28.800	59.70	0.000	0.000
					B	24.159	57.725		35.17		
					C	19.443	28.800		59.70		
T5 240.00-220.00	230.00	1.741	36	296.093	A	29.581	28.798	28.798	49.33	0.000	0.000
					B	33.073	60.498		30.78		
					C	29.581	28.798		49.33		
T6 220.00-200.00	210.00	1.697	35	336.193	A	24.136	28.798	28.798	54.40	0.000	0.000
					B	28.900	60.498		32.21		
					C	21.026	68.398		32.20		
T7 200.00-180.00	190.00	1.649	34	381.042	A	23.330	75.501	35.901	36.33	0.000	0.000
					B	31.203	67.601		36.34		
					C	23.330	75.501		36.33		
T8 180.00-160.00	170.00	1.597	33	423.141	A	25.852	75.498	35.898	35.42	0.000	0.000
					B	33.725	67.598		35.43		
					C	27.674	75.498		34.79		
T9 160.00-140.00	150.00	1.541	32	463.037	A	35.413	75.488	35.888	32.36	0.000	0.000
					B	43.287	67.588		32.37		
					C	37.797	75.488		31.68		
T10 140.00-120.00	130.00	1.48	31	503.943	A	38.616	75.504	35.904	31.46	0.000	0.000
					B	45.823	75.004		29.72		
					C	41.004	75.504		30.82		
T11 120.00-100.00	110.00	1.411	29	551.554	A	0.000	108.112	35.933	33.24	0.000	0.000
					B	9.117	104.259		31.69		
					C	4.591	100.540		34.18		
T12 100.00-80.00	90.00	1.332	28	602.352	A	0.000	110.303	35.927	32.57	0.000	0.000
					B	11.478	111.311		29.26		
					C	5.247	102.296		33.41		
T13 80.00-60.00	70.00	1.24	26	657.397	A	0.000	121.332	42.626	35.13	0.000	0.000
					B	11.478	122.122		31.91		
					C	5.247	111.148		36.62		
T14 60.00-30.00	45.00	1.093	23	1081.034	A	0.000	181.831	63.908	35.15	0.000	0.000
					B	17.217	186.700		31.34		
					C	7.871	174.188		35.10		
T15 30.00-0.00	15.00	1	21	1194.292	A	0.000	191.513	63.928	33.38	0.000	0.000
					B	17.217	195.240		30.09		
					C	7.871	181.701		33.72		

ERITower	Job	Page
	320' Rohn SSVMW	17 of 55
URS Corporation 500 Enterprise Drive, Suite 3B Rocky Hill, CT 06067 Phone: (860) 529-8882 FAX: (860) 529-3991	**Project** CSP Tower - Colchester, CT	**Date** 12:49:15 10/12/06
	Client Verizon Wireless	**Designed by** Staff

Tower Pressure - With Ice

$G_H = 1.084$

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 320.00-300.00	310.00	1.897	39	0.5000	147.138	A	16.101	21.877	21.877	57.60	0.000	0.000
						B	23.442	39.460		34.78		
						C	16.101	21.877		57.60		
T2 300.00-280.00	290.00	1.861	39	0.5000	169.325	A	16.795	25.461	25.461	60.25	0.000	0.000
						B	23.867	47.967		35.44		
						C	16.795	25.461		60.25		
T3 280.00-260.00	270.00	1.823	38	0.5000	214.966	A	17.649	32.147	32.147	64.56	0.000	0.000
						B	23.380	76.631		32.14		
						C	17.649	32.147		64.56		
T4 260.00-240.00	250.00	1.783	37	0.5000	257.263	A	23.764	32.139	32.139	57.49	0.000	0.000
						B	28.404	81.897		29.14		
						C	23.764	32.139		57.49		
T5 240.00-220.00	230.00	1.741	36	0.5000	297.762	A	34.511	32.137	32.137	48.22	0.000	0.000
						B	36.948	87.171		25.89		
						C	34.511	32.137		48.22		
T6 220.00-200.00	210.00	1.697	35	0.5000	337.862	A	28.158	32.137	32.137	53.30	0.000	0.000
						B	33.142	87.170		26.71		
						C	22.699	91.737		28.08		
T7 200.00-180.00	190.00	1.649	34	0.5000	382.711	A	25.442	98.841	39.241	31.57	0.000	0.000
						B	35.909	94.274		30.14		
						C	25.442	98.841		31.57		
T8 180.00-160.00	170.00	1.597	33	0.5000	424.810	A	28.426	98.837	39.237	30.83	0.000	0.000
						B	38.910	94.271		29.46		
						C	30.948	98.837		30.23		
T9 160.00-140.00	150.00	1.541	32	0.5000	464.706	A	38.064	98.826	39.226	28.66	0.000	0.000
						B	48.408	94.259		27.49		
						C	41.354	98.826		27.98		
T10 140.00-120.00	130.00	1.48	31	0.5000	505.612	A	41.722	98.844	39.244	27.92	0.000	0.000
						B	50.642	108.344		24.68		
						C	45.019	98.844		27.28		
T11 120.00-100.00	110.00	1.411	29	0.5000	553.224	A	0.000	140.454	39.275	27.96	0.000	0.000
						B	13.395	144.358		24.90		
						C	6.536	129.978		28.77		
T12 100.00-80.00	90.00	1.332	28	0.5000	604.022	A	0.000	143.481	39.269	27.37	0.000	0.000
						B	17.033	156.464		22.63		
						C	7.470	132.394		28.08		
T13 80.00-60.00	70.00	1.24	26	0.5000	659.068	A	0.000	155.248	45.969	29.61	0.000	0.000
						B	17.033	168.720		24.75		
						C	7.470	141.845		30.79		
T14 60.00-30.00	45.00	1.093	23	0.5000	1083.539	A	0.000	233.054	68.920	29.57	0.000	0.000
						B	25.550	257.251		24.37		
						C	11.204	221.769		29.58		
T15 30.00-0.00	15.00	1	21	0.5000	1196.797	A	0.000	244.216	68.942	28.23	0.000	0.000
						B	25.550	267.134		23.56		
						C	11.204	230.535		28.52		

Tower Pressure - Service

$G_H = 1.084$

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 320.00-300.00	310.00	1.897	39	145.472	A	11.659	18.543	18.543	61.40	0.000	0.000
					B	17.958	27.793		40.53		
					C	11.659	18.543		61.40		
T2 300.00-280.00	290.00	1.861	39	167.656	A	12.596	22.122	22.122	63.72	0.000	0.000
					B	18.740	33.962		41.97		
					C	12.596	22.122		63.72		
T3 280.00-260.00	270.00	1.823	38	213.297	A	13.934	28.807	28.807	67.40	0.000	0.000
					B	19.241	54.957		38.82		
					C	13.934	28.807		67.40		
T4 260.00-240.00	250.00	1.783	37	255.594	A	19.443	28.800	28.800	59.70	0.000	0.000
					B	24.159	57.725		35.17		
					C	19.443	28.800		59.70		
T5 240.00-220.00	230.00	1.741	36	296.093	A	29.581	28.798	28.798	49.33	0.000	0.000
					B	33.073	60.498		30.78		
					C	29.581	28.798		49.33		
T6 220.00-200.00	210.00	1.697	35	336.193	A	24.136	28.798	28.798	54.40	0.000	0.000
					B	28.900	60.498		32.21		
					C	21.026	68.398		32.20		
T7 200.00-180.00	190.00	1.649	34	381.042	A	23.330	75.501	35.901	36.33	0.000	0.000
					B	31.203	67.601		36.34		
					C	23.330	75.501		36.33		
T8 180.00-160.00	170.00	1.597	33	423.141	A	25.852	75.498	35.898	35.42	0.000	0.000
					B	33.725	67.598		35.43		
					C	27.674	75.498		34.79		
T9 160.00-140.00	150.00	1.541	32	463.037	A	35.413	75.488	35.888	32.36	0.000	0.000
					B	43.287	67.588		32.37		
					C	37.797	75.488		31.68		
T10 140.00-120.00	130.00	1.48	31	503.943	A	38.616	75.504	35.904	31.46	0.000	0.000
					B	45.823	75.004		29.72		
					C	41.004	75.504		30.82		
T11 120.00-100.00	110.00	1.411	29	551.554	A	0.000	108.112	35.933	33.24	0.000	0.000
					B	9.117	104.259		31.69		
					C	4.591	100.540		34.18		
T12 100.00-80.00	90.00	1.332	28	602.352	A	0.000	110.303	35.927	32.57	0.000	0.000
					B	11.478	111.311		29.26		
					C	5.247	102.296		33.41		
T13 80.00-60.00	70.00	1.24	26	657.397	A	0.000	121.332	42.626	35.13	0.000	0.000
					B	11.478	122.122		31.91		
					C	5.247	111.148		36.62		
T14 60.00-30.00	45.00	1.093	23	1081.034	A	0.000	181.831	63.908	35.15	0.000	0.000
					B	17.217	186.700		31.34		
					C	7.871	174.188		35.10		
T15 30.00-0.00	15.00	1	21	1194.292	A	0.000	191.513	63.928	33.38	0.000	0.000
					B	17.217	195.240		30.09		
					C	7.871	181.701		33.72		

Tower Forces - No 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 plf	Ctrl. Face
T1 320.00-300.00	0.08	1.79	A	0.208	2.571	0.592	1	1	22.637	3.39	169.39	B
			B	0.315	2.258	0.62	1	1	35.202			

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	R_R	D_F	D_R	A_E ft²	F K	w plf	Ctrl. Face
			C	0.208	2.571	0.592	1	1	22.637			
T2 300.00-280.00	0.10	2.50	A	0.207	2.573	0.592	1	1	25.689	3.76	187.98	B
			B	0.314	2.259	0.62	1	1	39.810			
			C	0.207	2.573	0.592	1	1	25.689			
T3 280.00-260.00	0.19	3.48	A	0.2	2.595	0.59	1	1	30.944	4.81	240.57	B
			B	0.348	2.176	0.632	1	1	53.959			
			C	0.2	2.595	0.59	1	1	30.944			
T4 260.00-240.00	0.21	3.83	A	0.189	2.634	0.588	1	1	36.382	5.40	270.09	B
			B	0.32	2.243	0.622	1	1	60.084			
			C	0.189	2.634	0.588	1	1	36.382			
T5 240.00-220.00	0.22	4.90	A	0.197	2.605	0.59	1	1	46.567	6.23	311.58	B
			B	0.316	2.254	0.621	1	1	70.638			
			C	0.197	2.605	0.59	1	1	46.567			
T6 220.00-200.00	0.47	4.82	A	0.157	2.744	0.583	1	1	40.915	5.98	298.83	B
			B	0.266	2.391	0.606	1	1	65.565			
			C	0.266	2.39	0.606	1	1	62.481			
T7 200.00-180.00	0.97	5.71	A	0.259	2.41	0.604	1	1	68.956	6.43	321.72	B
			B	0.259	2.41	0.604	1	1	72.054			
			C	0.259	2.41	0.604	1	1	68.956			
T8 180.00-160.00	0.98	5.93	A	0.24	2.469	0.599	1	1	71.095	6.58	329.02	B
			B	0.239	2.47	0.599	1	1	74.233			
			C	0.244	2.456	0.6	1	1	72.996			
T9 160.00-140.00	0.98	6.89	A	0.24	2.469	0.599	1	1	80.649	7.17	358.33	B
			B	0.239	2.47	0.599	1	1	83.788			
			C	0.245	2.454	0.601	1	1	83.129			
T10 140.00-120.00	1.02	7.17	A	0.226	2.51	0.596	1	1	83.628	7.45	372.51	B
			B	0.24	2.469	0.599	1	1	90.774			
			C	0.231	2.495	0.597	1	1	86.099			
T11 120.00-100.00	1.04	6.34	A	0.196	2.609	0.59	1	1	63.742	5.78	289.19	B
			B	0.206	2.578	0.592	1	1	70.791			
			C	0.191	2.628	0.589	1	1	63.762			
T12 100.00-80.00	1.09	6.51	A	0.183	2.653	0.587	1	1	64.759	5.98	298.78	B
			B	0.204	2.583	0.591	1	1	77.284			
			C	0.179	2.669	0.586	1	1	65.219			
T13 80.00-60.00	1.09	7.71	A	0.185	2.648	0.587	1	1	71.267	6.03	301.26	B
			B	0.203	2.585	0.591	1	1	83.660			
			C	0.177	2.674	0.586	1	1	70.379			
T14 60.00-30.00	1.64	11.86	A	0.168	2.706	0.584	1	1	106.267	8.22	273.89	B
			B	0.189	2.634	0.588	1	1	127.024			
			C	0.168	2.705	0.584	1	1	109.678			
T15 30.00-0.00	1.64	14.02	A	0.16	2.734	0.583	1	1	111.674	7.90	263.46	B
			B	0.178	2.671	0.586	1	1	131.655			
			C	0.159	2.74	0.583	1	1	113.776			
Sum Weight:	11.72	93.46						OTM	13947.19 kip-ft	91.11		

Tower Forces - No Ice - Wind 45 To Face

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	R_R	D_F	D_R	A_E ft²	F K	w plf	Ctrl. Face
T1 320.00-300.00	0.08	1.79	A	0.208	2.571	0.592	0.825	1	20.596	3.09	154.27	B
			B	0.315	2.258	0.62	0.825	1	32.059			
			C	0.208	2.571	0.592	0.825	1	20.596			
T2 300.00-	0.10	2.50	A	0.207	2.573	0.592	0.825	1	23.485	3.45	172.49	B

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	R_R	D_F	D_R	A_E ft²	F K	w plf	Ctrl. Face
280.00			B	0.314	2.259	0.62	0.825	1	36.530			
			C	0.207	2.573	0.592	0.825	1	23.485			
T3 280.00-260.00	0.19	3.48	A	0.2	2.595	0.59	0.825	1	28.505	4.51	225.56	B
			B	0.348	2.176	0.632	0.825	1	50.591			
			C	0.2	2.595	0.59	0.825	1	28.505			
T4 260.00-240.00	0.21	3.83	A	0.189	2.634	0.588	0.825	1	32.980	5.02	251.08	B
			B	0.32	2.243	0.622	0.825	1	55.856			
			C	0.189	2.634	0.588	0.825	1	32.980			
T5 240.00-220.00	0.22	4.90	A	0.197	2.605	0.59	0.825	1	41.390	5.72	286.05	B
			B	0.316	2.254	0.621	0.825	1	64.850			
			C	0.197	2.605	0.59	0.825	1	41.390			
T6 220.00-200.00	0.47	4.82	A	0.157	2.744	0.583	0.825	1	36.691	5.52	275.78	B
			B	0.266	2.391	0.606	0.825	1	60.508			
			C	0.266	2.39	0.606	0.825	1	58.802			
T7 200.00-180.00	0.97	5.71	A	0.259	2.41	0.604	0.825	1	64.873	5.95	297.34	B
			B	0.259	2.41	0.604	0.825	1	66.594			
			C	0.259	2.41	0.604	0.825	1	64.873			
T8 180.00-160.00	0.98	5.93	A	0.24	2.469	0.599	0.825	1	66.571	6.06	302.86	B
			B	0.239	2.47	0.599	0.825	1	68.331			
			C	0.244	2.456	0.6	0.825	1	68.154			
T9 160.00-140.00	0.98	6.89	A	0.24	2.469	0.599	0.825	1	74.452	6.52	325.93	B
			B	0.239	2.47	0.599	0.825	1	76.213			
			C	0.245	2.454	0.601	0.825	1	76.515			
T10 140.00-120.00	1.02	7.17	A	0.226	2.51	0.596	0.825	1	76.871	6.79	339.60	B
			B	0.24	2.469	0.599	0.825	1	82.755			
			C	0.231	2.495	0.597	0.825	1	78.924			
T11 120.00-100.00	1.04	6.34	A	0.196	2.609	0.59	0.825	1	63.742	5.65	282.68	B
			B	0.206	2.578	0.592	0.825	1	69.196			
			C	0.191	2.628	0.589	0.825	1	62.958			
T12 100.00-80.00	1.09	6.51	A	0.183	2.653	0.587	0.825	1	64.759	5.82	291.01	B
			B	0.204	2.583	0.591	0.825	1	75.276			
			C	0.179	2.669	0.586	0.825	1	64.301			
T13 80.00-60.00	1.09	7.71	A	0.185	2.648	0.587	0.825	1	71.267	5.88	294.03	B
			B	0.203	2.585	0.591	0.825	1	81.651			
			C	0.177	2.674	0.586	0.825	1	69.460			
T14 60.00-30.00	1.64	11.86	A	0.168	2.706	0.584	0.825	1	106.267	8.02	267.39	B
			B	0.189	2.634	0.588	0.825	1	124.011			
			C	0.168	2.705	0.584	0.825	1	108.301			
T15 30.00-0.00	1.64	14.02	A	0.16	2.734	0.583	0.825	1	111.674	7.72	257.43	B
			B	0.178	2.671	0.586	0.825	1	128.642			
			C	0.159	2.74	0.583	0.825	1	112.398			
Sum Weight:	11.72	93.46						OTM	12959.01 kip-ft	85.72		

Tower Forces - No Ice - Wind 60 To Face

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	R_R	D_F	D_R	A_E ft²	F K	w plf	Ctrl. Face
T1 320.00-300.00	0.08	1.79	A	0.208	2.571	0.592	0.8	1	20.305	3.04	152.11	B
			B	0.315	2.258	0.62	0.8	1	31.610			
			C	0.208	2.571	0.592	0.8	1	20.305			
T2 300.00-280.00	0.10	2.50	A	0.207	2.573	0.592	0.8	1	23.170	3.41	170.28	B
			B	0.314	2.259	0.62	0.8	1	36.062			
			C	0.207	2.573	0.592	0.8	1	23.170			

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	R_R	D_F	D_R	A_E ft²	F K	w plf	Ctrl. Face
T3 280.00-260.00	0.19	3.48	A	0.2	2.595	0.59	0.8	1	28.157	4.47	223.41	B
			B	0.348	2.176	0.632	0.8	1	50.110			
			C	0.2	2.595	0.59	0.8	1	28.157			
T4 260.00-240.00	0.21	3.83	A	0.189	2.634	0.588	0.8	1	32.494	4.97	248.37	B
			B	0.32	2.243	0.622	0.8	1	55.252			
			C	0.189	2.634	0.588	0.8	1	32.494			
T5 240.00-220.00	0.22	4.90	A	0.197	2.605	0.59	0.8	1	40.651	5.65	282.40	B
			B	0.316	2.254	0.621	0.8	1	64.023			
			C	0.197	2.605	0.59	0.8	1	40.651			
T6 220.00-200.00	0.47	4.82	A	0.157	2.744	0.583	0.8	1	36.088	5.45	272.49	B
			B	0.266	2.391	0.606	0.8	1	59.785			
			C	0.266	2.39	0.606	0.8	1	58.276			
T7 200.00-180.00	0.97	5.71	A	0.259	2.41	0.604	0.8	1	64.290	5.88	293.85	B
			B	0.259	2.41	0.604	0.8	1	65.813			
			C	0.259	2.41	0.604	0.8	1	64.290			
T8 180.00-160.00	0.98	5.93	A	0.24	2.469	0.599	0.8	1	65.924	5.98	299.13	B
			B	0.239	2.47	0.599	0.8	1	67.488			
			C	0.244	2.456	0.6	0.8	1	67.462			
T9 160.00-140.00	0.98	6.89	A	0.24	2.469	0.599	0.8	1	73.567	6.43	321.31	B
			B	0.239	2.47	0.599	0.8	1	75.131			
			C	0.245	2.454	0.601	0.8	1	75.570			
T10 140.00-120.00	1.02	7.17	A	0.226	2.51	0.596	0.8	1	75.905	6.70	334.90	B
			B	0.24	2.469	0.599	0.8	1	81.610			
			C	0.231	2.495	0.597	0.8	1	77.898			
T11 120.00-100.00	1.04	6.34	A	0.196	2.609	0.59	0.8	1	63.742	5.63	281.74	B
			B	0.206	2.578	0.592	0.8	1	68.968			
			C	0.191	2.628	0.589	0.8	1	62.844			
T12 100.00-80.00	1.09	6.51	A	0.183	2.653	0.587	0.8	1	64.759	5.80	289.91	B
			B	0.204	2.583	0.591	0.8	1	74.989			
			C	0.179	2.669	0.586	0.8	1	64.170			
T13 80.00-60.00	1.09	7.71	A	0.185	2.648	0.587	0.8	1	71.267	5.86	292.99	B
			B	0.203	2.585	0.591	0.8	1	81.364			
			C	0.177	2.674	0.586	0.8	1	69.329			
T14 60.00-30.00	1.64	11.86	A	0.168	2.706	0.584	0.8	1	106.267	7.99	266.46	B
			B	0.189	2.634	0.588	0.8	1	123.581			
			C	0.168	2.705	0.584	0.8	1	108.104			
T15 30.00-0.00	1.64	14.02	A	0.16	2.734	0.583	0.8	1	111.674	7.70	256.57	B
			B	0.178	2.671	0.586	0.8	1	128.212			
			C	0.159	2.74	0.583	0.8	1	112.201			
Sum Weight:	11.72	93.46						OTM	12817.84 kip-ft	84.95		

Tower Forces - No Ice - Wind 90 To Face

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	R_R	D_F	D_R	A_E ft²	F K	w plf	Ctrl. Face
T1 320.00-300.00	0.08	1.79	A	0.208	2.571	0.592	0.85	1	20.888	3.13	156.43	B
			B	0.315	2.258	0.62	0.85	1	32.508			
			C	0.208	2.571	0.592	0.85	1	20.888			
T2 300.00-280.00	0.10	2.50	A	0.207	2.573	0.592	0.85	1	23.800	3.49	174.71	B
			B	0.314	2.259	0.62	0.85	1	36.999			
			C	0.207	2.573	0.592	0.85	1	23.800			
T3 280.00-260.00	0.19	3.48	A	0.2	2.595	0.59	0.85	1	28.854	4.55	227.70	B
			B	0.348	2.176	0.632	0.85	1	51.072			

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	R_R	D_F	D_R	A_E ft²	F K	w plf	Ctrl. Face
			C	0.2	2.595	0.59	0.85	1	28.854			
T4 260.00-240.00	0.21	3.83	A	0.189	2.634	0.588	0.85	1	33.466	5.08	253.80	B
			B	0.32	2.243	0.622	0.85	1	56.460			
			C	0.189	2.634	0.588	0.85	1	33.466			
T5 240.00-220.00	0.22	4.90	A	0.197	2.605	0.59	0.85	1	42.130	5.79	289.70	B
			B	0.316	2.254	0.621	0.85	1	65.677			
			C	0.197	2.605	0.59	0.85	1	42.130			
T6 220.00-200.00	0.47	4.82	A	0.157	2.744	0.583	0.85	1	37.294	5.58	279.07	B
			B	0.266	2.391	0.606	0.85	1	61.230			
			C	0.266	2.39	0.606	0.85	1	59.327			
T7 200.00-180.00	0.97	5.71	A	0.259	2.41	0.604	0.85	1	65.457	6.02	300.82	B
			B	0.259	2.41	0.604	0.85	1	67.374			
			C	0.259	2.41	0.604	0.85	1	65.457			
T8 180.00-160.00	0.98	5.93	A	0.24	2.469	0.599	0.85	1	67.217	6.13	306.60	B
			B	0.239	2.47	0.599	0.85	1	69.174			
			C	0.244	2.456	0.6	0.85	1	68.845			
T9 160.00-140.00	0.98	6.89	A	0.24	2.469	0.599	0.85	1	75.337	6.61	330.56	B
			B	0.239	2.47	0.599	0.85	1	77.295			
			C	0.245	2.454	0.601	0.85	1	77.460			
T10 140.00-120.00	1.02	7.17	A	0.226	2.51	0.596	0.85	1	77.836	6.89	344.31	B
			B	0.24	2.469	0.599	0.85	1	83.901			
			C	0.231	2.495	0.597	0.85	1	79.949			
T11 120.00-100.00	1.04	6.34	A	0.196	2.609	0.59	0.85	1	63.742	5.67	283.61	B
			B	0.206	2.578	0.592	0.85	1	69.424			
			C	0.191	2.628	0.589	0.85	1	63.073			
T12 100.00-80.00	1.09	6.51	A	0.183	2.653	0.587	0.85	1	64.759	5.84	292.12	B
			B	0.204	2.583	0.591	0.85	1	75.563			
			C	0.179	2.669	0.586	0.85	1	64.432			
T13 80.00-60.00	1.09	7.71	A	0.185	2.648	0.587	0.85	1	71.267	5.90	295.06	B
			B	0.203	2.585	0.591	0.85	1	81.938			
			C	0.177	2.674	0.586	0.85	1	69.592			
T14 60.00-30.00	1.64	11.86	A	0.168	2.706	0.584	0.85	1	106.267	8.05	268.32	B
			B	0.189	2.634	0.588	0.85	1	124.441			
			C	0.168	2.705	0.584	0.85	1	108.497			
T15 30.00-0.00	1.64	14.02	A	0.16	2.734	0.583	0.85	1	111.674	7.75	258.29	B
			B	0.178	2.671	0.586	0.85	1	129.072			
			C	0.159	2.74	0.583	0.85	1	112.595			
Sum Weight:	11.72	93.46						OTM	13100.18 kip-ft	86.49		

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 plf	Ctrl. Face
T1 320.00-300.00	0.26	2.46	A	0.258	2.413	0.604	1	1	29.314	4.25	212.72	B
			B	0.428	2.012	0.663	1	1	49.612			
			C	0.258	2.413	0.604	1	1	29.314			
T2 300.00-280.00	0.31	3.23	A	0.25	2.439	0.602	1	1	32.116	4.69	234.63	B
			B	0.424	2.018	0.662	1	1	55.611			
			C	0.25	2.439	0.602	1	1	32.116			
T3 280.00-260.00	0.53	4.32	A	0.232	2.494	0.597	1	1	36.853	6.03	301.55	B
			B	0.465	1.949	0.68	1	1	75.518			
			C	0.232	2.494	0.597	1	1	36.853			
T4 260.00-	0.58	4.83	A	0.217	2.539	0.594	1	1	42.857	6.67	333.34	B

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	R_R	D_F	D_R	A_E ft²	F K	w plf	Ctrl. Face
240.00			B	0.429	2.01	0.664	1	1	82.764			
			C	0.217	2.539	0.594	1	1	42.857			
T5 240.00-220.00	0.62	6.22	A	0.224	2.518	0.596	1	1	53.651	7.50	375.11	B
			B	0.417	2.032	0.659	1	1	94.359			
			C	0.224	2.518	0.596	1	1	53.651			
T6 220.00-200.00	1.23	5.95	A	0.178	2.67	0.586	1	1	46.998	7.28	363.89	B
			B	0.356	2.157	0.635	1	1	88.467			
			C	0.339	2.198	0.629	1	1	80.356			
T7 200.00-180.00	2.46	7.00	A	0.325	2.232	0.624	1	1	87.097	7.74	387.14	B
			B	0.34	2.195	0.629	1	1	95.208			
			C	0.325	2.232	0.624	1	1	87.097			
T8 180.00-160.00	2.49	7.29	A	0.3	2.297	0.616	1	1	89.287	7.90	395.08	B
			B	0.314	2.261	0.62	1	1	97.369			
			C	0.306	2.281	0.618	1	1	91.990			
T9 160.00-140.00	2.50	8.55	A	0.295	2.311	0.614	1	1	98.768	8.41	420.71	B
			B	0.307	2.278	0.618	1	1	106.667			
			C	0.302	2.292	0.616	1	1	102.271			
T10 140.00-120.00	2.62	8.93	A	0.278	2.356	0.609	1	1	101.960	8.85	442.47	B
			B	0.314	2.258	0.62	1	1	117.861			
			C	0.285	2.338	0.611	1	1	105.441			
T11 120.00-100.00	2.68	7.69	A	0.254	2.426	0.603	1	1	84.676	7.53	376.44	B
			B	0.285	2.336	0.611	1	1	101.665			
			C	0.247	2.447	0.601	1	1	84.660			
T12 100.00-80.00	2.82	7.91	A	0.238	2.475	0.599	1	1	85.913	7.87	393.43	B
			B	0.287	2.331	0.612	1	1	112.802			
			C	0.232	2.494	0.597	1	1	86.554			
T13 80.00-60.00	2.83	9.27	A	0.236	2.482	0.598	1	1	92.884	7.84	392.16	B
			B	0.282	2.345	0.611	1	1	120.039			
			C	0.227	2.51	0.596	1	1	92.034			
T14 60.00-30.00	4.25	14.28	A	0.215	2.546	0.594	1	1	138.339	10.70	356.51	B
			B	0.261	2.405	0.605	1	1	181.120			
			C	0.215	2.547	0.594	1	1	142.842			
T15 30.00-0.00	4.25	16.66	A	0.204	2.583	0.591	1	1	144.389	10.25	341.83	B
			B	0.245	2.454	0.601	1	1	185.965			
			C	0.202	2.589	0.591	1	1	147.406			
Sum Weight:	30.44	114.60						OTM	17175.97 kip-ft	113.52		

Tower Forces - With Ice - Wind 45 To Face

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	R_R	D_F	D_R	A_E ft²	F K	w plf	Ctrl. Face
T1 320.00-300.00	0.26	2.46	A	0.258	2.413	0.604	0.825	1	26.496	3.90	195.13	B
			B	0.428	2.012	0.663	0.825	1	45.510			
			C	0.258	2.413	0.604	0.825	1	26.496			
T2 300.00-280.00	0.31	3.23	A	0.25	2.439	0.602	0.825	1	29.177	4.34	217.00	B
			B	0.424	2.018	0.662	0.825	1	51.435			
			C	0.25	2.439	0.602	0.825	1	29.177			
T3 280.00-260.00	0.53	4.32	A	0.232	2.494	0.597	0.825	1	33.765	5.70	285.21	B
			B	0.465	1.949	0.68	0.825	1	71.427			
			C	0.232	2.494	0.597	0.825	1	33.765			
T4 260.00-240.00	0.58	4.83	A	0.217	2.539	0.594	0.825	1	38.698	6.27	313.32	B
			B	0.429	2.01	0.664	0.825	1	77.793			
			C	0.217	2.539	0.594	0.825	1	38.698			

ERITower	Job: 320' Rohn SSVMW	Page: 24 of 55
URS Corporation 500 Enterprise Drive, Suite 3B Rocky Hill, CT 06067 Phone: (860) 529-8882 FAX: (860) 529-3991	Project: CSP Tower - Colchester, CT	Date: 12:49:15 10/12/06
	Client: Verizon Wireless	Designed by: Staff

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	R_R	D_F	D_R	A_E ft²	F K	w plf	Ctrl. Face
T5 240.00-220.00	0.62	6.22	A	0.224	2.518	0.596	0.825	1	47.611	6.99	349.40	B
			B	0.417	2.032	0.659	0.825	1	87.894			
			C	0.224	2.518	0.596	0.825	1	47.611			
T6 220.00-200.00	1.23	5.95	A	0.178	2.67	0.586	0.825	1	42.071	6.80	340.03	B
			B	0.356	2.157	0.635	0.825	1	82.667			
			C	0.339	2.198	0.629	0.825	1	76.384			
T7 200.00-180.00	2.46	7.00	A	0.325	2.232	0.624	0.825	1	82.645	7.23	361.58	B
			B	0.34	2.195	0.629	0.825	1	88.924			
			C	0.325	2.232	0.624	0.825	1	82.645			
T8 180.00-160.00	2.49	7.29	A	0.3	2.297	0.616	0.825	1	84.312	7.35	367.45	B
			B	0.314	2.261	0.62	0.825	1	90.560			
			C	0.306	2.281	0.618	0.825	1	86.574			
T9 160.00-140.00	2.50	8.55	A	0.295	2.311	0.614	0.825	1	92.107	7.75	387.30	B
			B	0.307	2.278	0.618	0.825	1	98.195			
			C	0.302	2.292	0.616	0.825	1	95.034			
T10 140.00-120.00	2.62	8.93	A	0.278	2.356	0.609	0.825	1	94.658	8.18	409.20	B
			B	0.314	2.258	0.62	0.825	1	108.999			
			C	0.285	2.338	0.611	0.825	1	97.563			
T11 120.00-100.00	2.68	7.69	A	0.254	2.426	0.603	0.825	1	84.676	7.36	367.76	B
			B	0.285	2.336	0.611	0.825	1	99.321			
			C	0.247	2.447	0.601	0.825	1	83.516			
T12 100.00-80.00	2.82	7.91	A	0.238	2.475	0.599	0.825	1	85.913	7.66	383.03	B
			B	0.287	2.331	0.612	0.825	1	109.821			
			C	0.232	2.494	0.597	0.825	1	85.247			
T13 80.00-60.00	2.83	9.27	A	0.236	2.482	0.598	0.825	1	92.884	7.65	382.42	B
			B	0.282	2.345	0.611	0.825	1	117.058			
			C	0.227	2.51	0.596	0.825	1	90.727			
T14 60.00-30.00	4.25	14.28	A	0.215	2.546	0.594	0.825	1	138.339	10.43	347.71	B
			B	0.261	2.405	0.605	0.825	1	176.649			
			C	0.215	2.547	0.594	0.825	1	140.881			
T15 30.00-0.00	4.25	16.66	A	0.204	2.583	0.591	0.825	1	144.389	10.01	333.61	B
			B	0.245	2.454	0.601	0.825	1	181.494			
			C	0.202	2.589	0.591	0.825	1	145.445			
Sum Weight:	30.44	114.60						OTM	16113.15 kip-ft	107.62		

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 plf	Ctrl. Face
T1 320.00-300.00	0.26	2.46	A	0.258	2.413	0.604	0.8	1	26.094	3.85	192.62	B
			B	0.428	2.012	0.663	0.8	1	44.924			
			C	0.258	2.413	0.604	0.8	1	26.094			
T2 300.00-280.00	0.31	3.23	A	0.25	2.439	0.602	0.8	1	28.757	4.29	214.49	B
			B	0.424	2.018	0.662	0.8	1	50.838			
			C	0.25	2.439	0.602	0.8	1	28.757			
T3 280.00-260.00	0.53	4.32	A	0.232	2.494	0.597	0.8	1	33.323	5.66	282.87	B
			B	0.465	1.949	0.68	0.8	1	70.842			
			C	0.232	2.494	0.597	0.8	1	33.323			
T4 260.00-240.00	0.58	4.83	A	0.217	2.539	0.594	0.8	1	38.104	6.21	310.46	B
			B	0.429	2.01	0.664	0.8	1	77.083			
			C	0.217	2.539	0.594	0.8	1	38.104			
T5 240.00-220.00	0.62	6.22	A	0.224	2.518	0.596	0.8	1	46.748	6.91	345.73	B
			B	0.417	2.032	0.659	0.8	1	86.970			

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	R_R	D_F	D_R	A_E ft²	F K	w plf	Ctrl. Face
			C	0.224	2.518	0.596	0.8	1	46.748			
T6 220.00-	1.23	5.95	A	0.178	2.67	0.586	0.8	1	41.367	6.73	336.62	B
200.00			B	0.356	2.157	0.635	0.8	1	81.838			
			C	0.339	2.198	0.629	0.8	1	75.816			
T7 200.00-	2.46	7.00	A	0.325	2.232	0.624	0.8	1	82.009	7.16	357.93	B
180.00			B	0.34	2.195	0.629	0.8	1	88.027			
			C	0.325	2.232	0.624	0.8	1	82.009			
T8 180.00-	2.49	7.29	A	0.3	2.297	0.616	0.8	1	83.602	7.27	363.50	B
160.00			B	0.314	2.261	0.62	0.8	1	89.587			
			C	0.306	2.281	0.618	0.8	1	85.800			
T9 160.00-	2.50	8.55	A	0.295	2.311	0.614	0.8	1	91.155	7.65	382.52	B
140.00			B	0.307	2.278	0.618	0.8	1	96.985			
			C	0.302	2.292	0.616	0.8	1	94.000			
T10 140.00-	2.62	8.93	A	0.278	2.356	0.609	0.8	1	93.615	8.09	404.45	B
120.00			B	0.314	2.258	0.62	0.8	1	107.733			
			C	0.285	2.338	0.611	0.8	1	96.437			
T11 120.00-	2.68	7.69	A	0.254	2.426	0.603	0.8	1	84.676	7.33	366.52	B
100.00			B	0.285	2.336	0.611	0.8	1	98.986			
			C	0.247	2.447	0.601	0.8	1	83.353			
T12 100.00-	2.82	7.91	A	0.238	2.475	0.599	0.8	1	85.913	7.63	381.55	B
80.00			B	0.287	2.331	0.612	0.8	1	109.395			
			C	0.232	2.494	0.597	0.8	1	85.061			
T13 80.00-	2.83	9.27	A	0.236	2.482	0.598	0.8	1	92.884	7.62	381.03	B
60.00			B	0.282	2.345	0.611	0.8	1	116.632			
			C	0.227	2.51	0.596	0.8	1	90.540			
T14 60.00-	4.25	14.28	A	0.215	2.546	0.594	0.8	1	138.339	10.39	346.45	B
30.00			B	0.261	2.405	0.605	0.8	1	176.010			
			C	0.215	2.547	0.594	0.8	1	140.601			
T15 30.00-	4.25	16.66	A	0.204	2.583	0.591	0.8	1	144.389	9.97	332.44	B
0.00			B	0.245	2.454	0.601	0.8	1	180.855			
			C	0.202	2.589	0.591	0.8	1	145.165			
Sum Weight:	30.44	114.60						OTM	15961.32 kip-ft	106.77		

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 plf	Ctrl. Face
T1 320.00-	0.26	2.46	A	0.258	2.413	0.604	0.85	1	26.899	3.95	197.64	B
300.00			B	0.428	2.012	0.663	0.85	1	46.096			
			C	0.258	2.413	0.604	0.85	1	26.899			
T2 300.00-	0.31	3.23	A	0.25	2.439	0.602	0.85	1	29.597	4.39	219.52	B
280.00			B	0.424	2.018	0.662	0.85	1	52.031			
			C	0.25	2.439	0.602	0.85	1	29.597			
T3 280.00-	0.53	4.32	A	0.232	2.494	0.597	0.85	1	34.206	5.75	287.54	B
260.00			B	0.465	1.949	0.68	0.85	1	72.011			
			C	0.232	2.494	0.597	0.85	1	34.206			
T4 260.00-	0.58	4.83	A	0.217	2.539	0.594	0.85	1	39.293	6.32	316.18	B
240.00			B	0.429	2.01	0.664	0.85	1	78.503			
			C	0.217	2.539	0.594	0.85	1	39.293			
T5 240.00-	0.62	6.22	A	0.224	2.518	0.596	0.85	1	48.474	7.06	353.08	B
220.00			B	0.417	2.032	0.659	0.85	1	88.817			
			C	0.224	2.518	0.596	0.85	1	48.474			
T6 220.00-	1.23	5.95	A	0.178	2.67	0.586	0.85	1	42.775	6.87	343.44	B

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	R_R	D_F	D_R	A_E ft²	F K	w plf	Ctrl. Face
200.00			B	0.356	2.157	0.635	0.85	1	83.495			
			C	0.339	2.198	0.629	0.85	1	76.951			
T7 200.00-180.00	2.46	7.00	A	0.325	2.232	0.624	0.85	1	83.281	7.30	365.23	B
			B	0.34	2.195	0.629	0.85	1	89.822			
			C	0.325	2.232	0.624	0.85	1	83.281			
T8 180.00-160.00	2.49	7.29	A	0.3	2.297	0.616	0.85	1	85.023	7.43	371.40	B
			B	0.314	2.261	0.62	0.85	1	91.533			
			C	0.306	2.281	0.618	0.85	1	87.348			
T9 160.00-140.00	2.50	8.55	A	0.295	2.311	0.614	0.85	1	93.058	7.84	392.07	B
			B	0.307	2.278	0.618	0.85	1	99.406			
			C	0.302	2.292	0.616	0.85	1	96.068			
T10 140.00-120.00	2.62	8.93	A	0.278	2.356	0.609	0.85	1	95.701	8.28	413.95	B
			B	0.314	2.258	0.62	0.85	1	110.265			
			C	0.285	2.338	0.611	0.85	1	98.688			
T11 120.00-100.00	2.68	7.69	A	0.254	2.426	0.603	0.85	1	84.676	7.38	369.00	B
			B	0.285	2.336	0.611	0.85	1	99.656			
			C	0.247	2.447	0.601	0.85	1	83.679			
T12 100.00-80.00	2.82	7.91	A	0.238	2.475	0.599	0.85	1	85.913	7.69	384.52	B
			B	0.287	2.331	0.612	0.85	1	110.247			
			C	0.232	2.494	0.597	0.85	1	85.434			
T13 80.00-60.00	2.83	9.27	A	0.236	2.482	0.598	0.85	1	92.884	7.68	383.81	B
			B	0.282	2.345	0.611	0.85	1	117.484			
			C	0.227	2.51	0.596	0.85	1	90.914			
T14 60.00-30.00	4.25	14.28	A	0.215	2.546	0.594	0.85	1	138.339	10.47	348.97	B
			B	0.261	2.405	0.605	0.85	1	177.288			
			C	0.215	2.547	0.594	0.85	1	141.161			
T15 30.00-0.00	4.25	16.66	A	0.204	2.583	0.591	0.85	1	144.389	10.04	334.79	B
			B	0.245	2.454	0.601	0.85	1	182.132			
			C	0.202	2.589	0.591	0.85	1	145.725			
Sum Weight:	30.44	114.60						OTM	16264.98 kip-ft	108.46		

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 plf	Ctrl. Face
T1 320.00-300.00	0.08	1.79	A	0.208	2.571	0.592	1	1	22.637	3.39	169.39	B
			B	0.315	2.258	0.62	1	1	35.202			
			C	0.208	2.571	0.592	1	1	22.637			
T2 300.00-280.00	0.10	2.50	A	0.207	2.573	0.592	1	1	25.689	3.76	187.98	B
			B	0.314	2.259	0.62	1	1	39.810			
			C	0.207	2.573	0.592	1	1	25.689			
T3 280.00-260.00	0.19	3.48	A	0.2	2.595	0.59	1	1	30.944	4.81	240.57	B
			B	0.348	2.176	0.632	1	1	53.959			
			C	0.2	2.595	0.59	1	1	30.944			
T4 260.00-240.00	0.21	3.83	A	0.189	2.634	0.588	1	1	36.382	5.40	270.09	B
			B	0.32	2.243	0.622	1	1	60.084			
			C	0.189	2.634	0.588	1	1	36.382			
T5 240.00-220.00	0.22	4.90	A	0.197	2.605	0.59	1	1	46.567	6.23	311.58	B
			B	0.316	2.254	0.621	1	1	70.638			
			C	0.197	2.605	0.59	1	1	46.567			
T6 220.00-200.00	0.47	4.82	A	0.157	2.744	0.583	1	1	40.915	5.98	298.83	B
			B	0.266	2.391	0.606	1	1	65.565			
			C	0.266	2.39	0.606	1	1	62.481			

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	R_R	D_F	D_R	A_E ft²	F K	w plf	Ctrl. Face
T7 200.00-180.00	0.97	5.71	A	0.259	2.41	0.604	1	1	68.956	6.43	321.72	B
			B	0.259	2.41	0.604	1	1	72.054			
			C	0.259	2.41	0.604	1	1	68.956			
T8 180.00-160.00	0.98	5.93	A	0.24	2.469	0.599	1	1	71.095	6.58	329.02	B
			B	0.239	2.47	0.599	1	1	74.233			
			C	0.244	2.456	0.6	1	1	72.996			
T9 160.00-140.00	0.98	6.89	A	0.24	2.469	0.599	1	1	80.649	7.17	358.33	B
			B	0.239	2.47	0.599	1	1	83.788			
			C	0.245	2.454	0.601	1	1	83.129			
T10 140.00-120.00	1.02	7.17	A	0.226	2.51	0.596	1	1	83.628	7.45	372.51	B
			B	0.24	2.469	0.599	1	1	90.774			
			C	0.231	2.495	0.597	1	1	86.099			
T11 120.00-100.00	1.04	6.34	A	0.196	2.609	0.59	1	1	63.742	5.78	289.19	B
			B	0.206	2.578	0.592	1	1	70.791			
			C	0.191	2.628	0.589	1	1	63.762			
T12 100.00-80.00	1.09	6.51	A	0.183	2.653	0.587	1	1	64.759	5.98	298.78	B
			B	0.204	2.583	0.591	1	1	77.284			
			C	0.179	2.669	0.586	1	1	65.219			
T13 80.00-60.00	1.09	7.71	A	0.185	2.648	0.587	1	1	71.267	6.03	301.26	B
			B	0.203	2.585	0.591	1	1	83.660			
			C	0.177	2.674	0.586	1	1	70.379			
T14 60.00-30.00	1.64	11.86	A	0.168	2.706	0.584	1	1	106.267	8.22	273.89	B
			B	0.189	2.634	0.588	1	1	127.024			
			C	0.168	2.705	0.584	1	1	109.678			
T15 30.00-0.00	1.64	14.02	A	0.16	2.734	0.583	1	1	111.674	7.90	263.46	B
			B	0.178	2.671	0.586	1	1	131.655			
			C	0.159	2.74	0.583	1	1	113.776			
Sum Weight:	11.72	93.46						OTM	13947.19 kip-ft	91.11		

Tower Forces - Service - Wind 45 To Face

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	R_R	D_F	D_R	A_E ft²	F K	w plf	Ctrl. Face
T1 320.00-300.00	0.08	1.79	A	0.208	2.571	0.592	0.825	1	20.596	3.09	154.27	B
			B	0.315	2.258	0.62	0.825	1	32.059			
			C	0.208	2.571	0.592	0.825	1	20.596			
T2 300.00-280.00	0.10	2.50	A	0.207	2.573	0.592	0.825	1	23.485	3.45	172.49	B
			B	0.314	2.259	0.62	0.825	1	36.530			
			C	0.207	2.573	0.592	0.825	1	23.485			
T3 280.00-260.00	0.19	3.48	A	0.2	2.595	0.59	0.825	1	28.505	4.51	225.56	B
			B	0.348	2.176	0.632	0.825	1	50.591			
			C	0.2	2.595	0.59	0.825	1	28.505			
T4 260.00-240.00	0.21	3.83	A	0.189	2.634	0.588	0.825	1	32.980	5.02	251.08	B
			B	0.32	2.243	0.622	0.825	1	55.856			
			C	0.189	2.634	0.588	0.825	1	32.980			
T5 240.00-220.00	0.22	4.90	A	0.197	2.605	0.59	0.825	1	41.390	5.72	286.05	B
			B	0.316	2.254	0.621	0.825	1	64.850			
			C	0.197	2.605	0.59	0.825	1	41.390			
T6 220.00-200.00	0.47	4.82	A	0.157	2.744	0.583	0.825	1	36.691	5.52	275.78	B
			B	0.266	2.391	0.606	0.825	1	60.508			
			C	0.266	2.39	0.606	0.825	1	58.802			
T7 200.00-180.00	0.97	5.71	A	0.259	2.41	0.604	0.825	1	64.873	5.95	297.34	B
			B	0.259	2.41	0.604	0.825	1	66.594			

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	R_R	D_F	D_R	A_E ft²	F K	w plf	Ctrl. Face
			C	0.259	2.41	0.604	0.825	1	64.873			
T8 180.00-160.00	0.98	5.93	A	0.24	2.469	0.599	0.825	1	66.571	6.06	302.86	B
			B	0.239	2.47	0.599	0.825	1	68.331			
			C	0.244	2.456	0.6	0.825	1	68.154			
T9 160.00-140.00	0.98	6.89	A	0.24	2.469	0.599	0.825	1	74.452	6.52	325.93	B
			B	0.239	2.47	0.599	0.825	1	76.213			
			C	0.245	2.454	0.601	0.825	1	76.515			
T10 140.00-120.00	1.02	7.17	A	0.226	2.51	0.596	0.825	1	76.871	6.79	339.60	B
			B	0.24	2.469	0.599	0.825	1	82.755			
			C	0.231	2.495	0.597	0.825	1	78.924			
T11 120.00-100.00	1.04	6.34	A	0.196	2.609	0.59	0.825	1	63.742	5.65	282.68	B
			B	0.206	2.578	0.592	0.825	1	69.196			
			C	0.191	2.628	0.589	0.825	1	62.958			
T12 100.00-80.00	1.09	6.51	A	0.183	2.653	0.587	0.825	1	64.759	5.82	291.01	B
			B	0.204	2.583	0.591	0.825	1	75.276			
			C	0.179	2.669	0.586	0.825	1	64.301			
T13 80.00-60.00	1.09	7.71	A	0.185	2.648	0.587	0.825	1	71.267	5.88	294.03	B
			B	0.203	2.585	0.591	0.825	1	81.651			
			C	0.177	2.674	0.586	0.825	1	69.460			
T14 60.00-30.00	1.64	11.86	A	0.168	2.706	0.584	0.825	1	106.267	8.02	267.39	B
			B	0.189	2.634	0.588	0.825	1	124.011			
			C	0.168	2.705	0.584	0.825	1	108.301			
T15 30.00-0.00	1.64	14.02	A	0.16	2.734	0.583	0.825	1	111.674	7.72	257.43	B
			B	0.178	2.671	0.586	0.825	1	128.642			
			C	0.159	2.74	0.583	0.825	1	112.398			
Sum Weight:	11.72	93.46						OTM	12959.01 kip-ft	85.72		

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 plf	Ctrl. Face
T1 320.00-300.00	0.08	1.79	A	0.208	2.571	0.592	0.8	1	20.305	3.04	152.11	B
			B	0.315	2.258	0.62	0.8	1	31.610			
			C	0.208	2.571	0.592	0.8	1	20.305			
T2 300.00-280.00	0.10	2.50	A	0.207	2.573	0.592	0.8	1	23.170	3.41	170.28	B
			B	0.314	2.259	0.62	0.8	1	36.062			
			C	0.207	2.573	0.592	0.8	1	23.170			
T3 280.00-260.00	0.19	3.48	A	0.2	2.595	0.59	0.8	1	28.157	4.47	223.41	B
			B	0.348	2.176	0.632	0.8	1	50.110			
			C	0.2	2.595	0.59	0.8	1	28.157			
T4 260.00-240.00	0.21	3.83	A	0.189	2.634	0.588	0.8	1	32.494	4.97	248.37	B
			B	0.32	2.243	0.622	0.8	1	55.252			
			C	0.189	2.634	0.588	0.8	1	32.494			
T5 240.00-220.00	0.22	4.90	A	0.197	2.605	0.59	0.8	1	40.651	5.65	282.40	B
			B	0.316	2.254	0.621	0.8	1	64.023			
			C	0.197	2.605	0.59	0.8	1	40.651			
T6 220.00-200.00	0.47	4.82	A	0.157	2.744	0.583	0.8	1	36.088	5.45	272.49	B
			B	0.266	2.391	0.606	0.8	1	59.785			
			C	0.266	2.39	0.606	0.8	1	58.276			
T7 200.00-180.00	0.97	5.71	A	0.259	2.41	0.604	0.8	1	64.290	5.88	293.85	B
			B	0.259	2.41	0.604	0.8	1	65.813			
			C	0.259	2.41	0.604	0.8	1	64.290			
T8 180.00-	0.98	5.93	A	0.24	2.469	0.599	0.8	1	65.924	5.98	299.13	B

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	R_R	D_F	D_R	A_E ft²	F K	w plf	Ctrl. Face
160.00			B	0.239	2.47	0.599	0.8	1	67.488			
			C	0.244	2.456	0.6	0.8	1	67.462			
T9 160.00-	0.98	6.89	A	0.24	2.469	0.599	0.8	1	73.567	6.43	321.31	B
140.00			B	0.239	2.47	0.599	0.8	1	75.131			
			C	0.245	2.454	0.601	0.8	1	75.570			
T10 140.00-	1.02	7.17	A	0.226	2.51	0.596	0.8	1	75.905	6.70	334.90	B
120.00			B	0.24	2.469	0.599	0.8	1	81.610			
			C	0.231	2.495	0.597	0.8	1	77.898			
T11 120.00-	1.04	6.34	A	0.196	2.609	0.59	0.8	1	63.742	5.63	281.74	B
100.00			B	0.206	2.578	0.592	0.8	1	68.968			
			C	0.191	2.628	0.589	0.8	1	62.844			
T12 100.00-	1.09	6.51	A	0.183	2.653	0.587	0.8	1	64.759	5.80	289.91	B
80.00			B	0.204	2.583	0.591	0.8	1	74.989			
			C	0.179	2.669	0.586	0.8	1	64.170			
T13 80.00-	1.09	7.71	A	0.185	2.648	0.587	0.8	1	71.267	5.86	292.99	B
60.00			B	0.203	2.585	0.591	0.8	1	81.364			
			C	0.177	2.674	0.586	0.8	1	69.329			
T14 60.00-	1.64	11.86	A	0.168	2.706	0.584	0.8	1	106.267	7.99	266.46	B
30.00			B	0.189	2.634	0.588	0.8	1	123.581			
			C	0.168	2.705	0.584	0.8	1	108.104			
T15 30.00-	1.64	14.02	A	0.16	2.734	0.583	0.8	1	111.674	7.70	256.57	B
0.00			B	0.178	2.671	0.586	0.8	1	128.212			
			C	0.159	2.74	0.583	0.8	1	112.201			
Sum Weight:	11.72	93.46						OTM	12817.84 kip-ft	84.95		

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 plf	Ctrl. Face
T1 320.00-	0.08	1.79	A	0.208	2.571	0.592	0.85	1	20.888	3.13	156.43	B
300.00			B	0.315	2.258	0.62	0.85	1	32.508			
			C	0.208	2.571	0.592	0.85	1	20.888			
T2 300.00-	0.10	2.50	A	0.207	2.573	0.592	0.85	1	23.800	3.49	174.71	B
280.00			B	0.314	2.259	0.62	0.85	1	36.999			
			C	0.207	2.573	0.592	0.85	1	23.800			
T3 280.00-	0.19	3.48	A	0.2	2.595	0.59	0.85	1	28.854	4.55	227.70	B
260.00			B	0.348	2.176	0.632	0.85	1	51.072			
			C	0.2	2.595	0.59	0.85	1	28.854			
T4 260.00-	0.21	3.83	A	0.189	2.634	0.588	0.85	1	33.466	5.08	253.80	B
240.00			B	0.32	2.243	0.622	0.85	1	56.460			
			C	0.189	2.634	0.588	0.85	1	33.466			
T5 240.00-	0.22	4.90	A	0.197	2.605	0.59	0.85	1	42.130	5.79	289.70	B
220.00			B	0.316	2.254	0.621	0.85	1	65.677			
			C	0.197	2.605	0.59	0.85	1	42.130			
T6 220.00-	0.47	4.82	A	0.157	2.744	0.583	0.85	1	37.294	5.58	279.07	B
200.00			B	0.266	2.391	0.606	0.85	1	61.230			
			C	0.266	2.39	0.606	0.85	1	59.327			
T7 200.00-	0.97	5.71	A	0.259	2.41	0.604	0.85	1	65.457	6.02	300.82	B
180.00			B	0.259	2.41	0.604	0.85	1	67.374			
			C	0.259	2.41	0.604	0.85	1	65.457			
T8 180.00-	0.98	5.93	A	0.24	2.469	0.599	0.85	1	67.217	6.13	306.60	B
160.00			B	0.239	2.47	0.599	0.85	1	69.174			
			C	0.244	2.456	0.6	0.85	1	68.845			

ERITower	Job	Page
	320' Rohn SSVMW	30 of 55
URS Corporation 500 Enterprise Drive, Suite 3B Rocky Hill, CT 06067 Phone: (860) 529-8882 FAX: (860) 529-3991	**Project** CSP Tower - Colchester, CT	**Date** 12:49:15 10/12/06
	Client Verizon Wireless	**Designed by** Staff

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	R_R	D_F	D_R	A_E ft²	F K	w plf	Ctrl. Face
T9 160.00-140.00	0.98	6.89	A	0.24	2.469	0.599	0.85	1	75.337	6.61	330.56	B
			B	0.239	2.47	0.599	0.85	1	77.295			
			C	0.245	2.454	0.601	0.85	1	77.460			
T10 140.00-120.00	1.02	7.17	A	0.226	2.51	0.596	0.85	1	77.836	6.89	344.31	B
			B	0.24	2.469	0.599	0.85	1	83.901			
			C	0.231	2.495	0.597	0.85	1	79.949			
T11 120.00-100.00	1.04	6.34	A	0.196	2.609	0.59	0.85	1	63.742	5.67	283.61	B
			B	0.206	2.578	0.592	0.85	1	69.424			
			C	0.191	2.628	0.589	0.85	1	63.073			
T12 100.00-80.00	1.09	6.51	A	0.183	2.653	0.587	0.85	1	64.759	5.84	292.12	B
			B	0.204	2.583	0.591	0.85	1	75.563			
			C	0.179	2.669	0.586	0.85	1	64.432			
T13 80.00-60.00	1.09	7.71	A	0.185	2.648	0.587	0.85	1	71.267	5.90	295.06	B
			B	0.203	2.585	0.591	0.85	1	81.938			
			C	0.177	2.674	0.586	0.85	1	69.592			
T14 60.00-30.00	1.64	11.86	A	0.168	2.706	0.584	0.85	1	106.267	8.05	268.32	B
			B	0.189	2.634	0.588	0.85	1	124.441			
			C	0.168	2.705	0.584	0.85	1	108.497			
T15 30.00-0.00	1.64	14.02	A	0.16	2.734	0.583	0.85	1	111.674	7.75	258.29	B
			B	0.178	2.671	0.586	0.85	1	129.072			
			C	0.159	2.74	0.583	0.85	1	112.595			
Sum Weight:	11.72	93.46						OTM	13100.18 kip-ft	86.49		

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	50.33					
Bracing Weight	43.13					
Total Member Self-Weight	93.46			67.25	-5.07	
Total Weight	112.48			67.25	-5.07	
Wind 0 deg - No Ice		0.00	-112.12	-18679.55	-5.07	140.35
Wind 30 deg - No Ice		53.75	-93.10	-15434.43	-8954.97	177.85
Wind 45 deg - No Ice		75.47	-75.47	-12490.00	-12562.32	180.39
Wind 60 deg - No Ice		91.77	-52.98	-8741.48	-15262.24	170.58
Wind 90 deg - No Ice		107.50	0.00	67.25	-17904.86	122.56
Wind 120 deg - No Ice		97.10	56.06	9440.65	-16240.28	41.69
Wind 135 deg - No Ice		75.47	75.47	12624.49	-12562.32	-8.63
Wind 150 deg - No Ice		53.75	93.10	15568.92	-8954.97	-55.30
Wind 180 deg - No Ice		0.00	105.96	17684.70	-5.07	-132.70
Wind 210 deg - No Ice		-53.75	93.10	15568.92	8944.82	-177.85
Wind 225 deg - No Ice		-75.47	75.47	12624.49	12552.17	-180.39
Wind 240 deg - No Ice		-97.10	56.06	9440.65	16230.13	-182.03
Wind 270 deg - No Ice		-107.50	0.00	67.25	17894.72	-122.56
Wind 300 deg - No Ice		-91.77	-52.98	-8741.48	15252.09	-37.88
Wind 315 deg - No Ice		-75.47	-75.47	-12490.00	12552.17	8.63
Wind 330 deg - No Ice		-53.75	-93.10	-15434.43	8944.82	55.30
Member Ice	21.14					
Total Weight Ice	156.52			176.65	-37.88	
Wind 0 deg - Ice		0.00	-138.25	-22647.11	-37.88	221.13
Wind 30 deg - Ice		66.59	-115.34	-18800.37	-10994.27	281.42
Wind 45 deg - Ice		93.58	-93.58	-15210.66	-15425.19	285.76
Wind 60 deg - Ice		113.88	-65.75	-10627.91	-18751.92	270.60

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 90 deg - Ice		133.19	0.00	176.65	-21950.66	194.14
Wind 120 deg - Ice		119.73	69.13	11588.53	-19803.84	65.32
Wind 135 deg - Ice		93.58	93.58	15563.96	-15425.19	-13.32
Wind 150 deg - Ice		66.59	115.34	19153.67	-10994.27	-87.28
Wind 180 deg - Ice		0.00	131.50	21785.77	-37.88	-210.11
Wind 210 deg - Ice		-66.59	115.34	19153.67	10918.51	-281.42
Wind 225 deg - Ice		-93.58	93.58	15563.96	15349.44	-285.76
Wind 240 deg - Ice		-119.73	69.13	11588.53	19728.08	-286.45
Wind 270 deg - Ice		-133.19	0.00	176.65	21874.90	-194.14
Wind 300 deg - Ice		-113.88	-65.75	-10627.91	18676.17	-60.49
Wind 315 deg - Ice		-93.58	-93.58	-15210.66	15349.44	13.32
Wind 330 deg - Ice		-66.59	-115.34	-18800.37	10918.51	87.28
Total Weight	112.48			67.25	-5.07	
Wind 0 deg - Service		0.00	-112.12	-18752.35	3.74	140.35
Wind 30 deg - Service		53.75	-93.10	-15507.22	-8946.16	177.85
Wind 45 deg - Service		75.47	-75.47	-12562.79	-12553.51	180.39
Wind 60 deg - Service		91.77	-52.98	-8814.28	-15253.43	170.58
Wind 90 deg - Service		107.50	0.00	-5.55	-17896.05	122.56
Wind 120 deg - Service		97.10	56.06	9367.85	-16231.47	41.69
Wind 135 deg - Service		75.47	75.47	12551.69	-12553.51	-8.63
Wind 150 deg - Service		53.75	93.10	15496.12	-8946.16	-55.30
Wind 180 deg - Service		0.00	105.96	17611.91	3.74	-132.70
Wind 210 deg - Service		-53.75	93.10	15496.12	8953.63	-177.85
Wind 225 deg - Service		-75.47	75.47	12551.69	12560.98	-180.39
Wind 240 deg - Service		-97.10	56.06	9367.85	16238.94	-182.03
Wind 270 deg - Service		-107.50	0.00	-5.55	17903.53	-122.56
Wind 300 deg - Service		-91.77	-52.98	-8814.28	15260.90	-37.88
Wind 315 deg - Service		-75.47	-75.47	-12562.79	12560.98	8.63
Wind 330 deg - Service		-53.75	-93.10	-15507.22	8953.63	55.30

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 45 deg - No Ice
5	Dead+Wind 60 deg - No Ice
6	Dead+Wind 90 deg - No Ice
7	Dead+Wind 120 deg - No Ice
8	Dead+Wind 135 deg - No Ice
9	Dead+Wind 150 deg - No Ice
10	Dead+Wind 180 deg - No Ice
11	Dead+Wind 210 deg - No Ice
12	Dead+Wind 225 deg - No Ice
13	Dead+Wind 240 deg - No Ice
14	Dead+Wind 270 deg - No Ice
15	Dead+Wind 300 deg - No Ice
16	Dead+Wind 315 deg - No Ice
17	Dead+Wind 330 deg - No Ice
18	Dead+Ice+Temp
19	Dead+Wind 0 deg+Ice+Temp
20	Dead+Wind 30 deg+Ice+Temp
21	Dead+Wind 45 deg+Ice+Temp
22	Dead+Wind 60 deg+Ice+Temp

Comb. No.	Description
23	Dead+Wind 90 deg+Ice+Temp
24	Dead+Wind 120 deg+Ice+Temp
25	Dead+Wind 135 deg+Ice+Temp
26	Dead+Wind 150 deg+Ice+Temp
27	Dead+Wind 180 deg+Ice+Temp
28	Dead+Wind 210 deg+Ice+Temp
29	Dead+Wind 225 deg+Ice+Temp
30	Dead+Wind 240 deg+Ice+Temp
31	Dead+Wind 270 deg+Ice+Temp
32	Dead+Wind 300 deg+Ice+Temp
33	Dead+Wind 315 deg+Ice+Temp
34	Dead+Wind 330 deg+Ice+Temp
35	Dead+Wind 0 deg - Service
36	Dead+Wind 30 deg - Service
37	Dead+Wind 45 deg - Service
38	Dead+Wind 60 deg - Service
39	Dead+Wind 90 deg - Service
40	Dead+Wind 120 deg - Service
41	Dead+Wind 135 deg - Service
42	Dead+Wind 150 deg - Service
43	Dead+Wind 180 deg - Service
44	Dead+Wind 210 deg - Service
45	Dead+Wind 225 deg - Service
46	Dead+Wind 240 deg - Service
47	Dead+Wind 270 deg - Service
48	Dead+Wind 300 deg - Service
49	Dead+Wind 315 deg - Service
50	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	320 - 300	Leg	Max Tension	27	22.23	0.05	0.02
			Max. Compression	24	-26.22	-0.71	-0.39
			Max. Mx	30	-25.52	0.97	0.07
			Max. My	19	9.81	-0.16	0.99
			Max. Vy	31	1.51	0.00	0.00
			Max. Vx	19	1.53	0.00	0.00
		Diagonal	Max Tension	31	4.35	0.00	0.00
			Max. Compression	31	-4.39	0.00	0.00
			Max. Mx	24	3.41	0.01	-0.00
			Max. My	21	-3.58	0.01	-0.00
			Max. Vy	24	-0.01	0.01	-0.00
			Max. Vx	21	-0.00	0.00	0.00
		Top Girt	Max Tension	24	0.58	0.00	0.00
			Max. Compression	22	-0.60	0.00	0.00
			Max. Mx	18	-0.01	-0.02	0.00
			Max. Vy	18	-0.01	0.00	0.00
T2	300 - 280	Leg	Max Tension	27	49.70	-0.14	-0.01
			Max. Compression	24	-57.65	0.87	0.07
			Max. Mx	24	-57.65	0.87	0.07
			Max. My	28	-2.29	0.03	1.06
			Max. Vy	24	-0.27	0.49	0.02
			Max. Vx	31	-0.45	-0.01	-0.11
		Diagonal	Max Tension	34	4.89	0.00	0.00
			Max. Compression	34	-4.91	0.00	0.00
			Max. Mx	27	3.06	0.02	0.00

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Force K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. My	29	-4.05	0.01	0.01
			Max. Vy	27	0.02	0.02	0.00
			Max. Vx	21	0.00	0.00	0.00
		Top Girt	Max Tension	24	0.14	0.00	0.00
			Max. Compression	27	-0.16	0.00	0.00
			Max. Mx	18	-0.01	-0.03	0.00
			Max. My	18	-0.01	0.00	0.00
			Max. Vy	18	0.02	0.00	0.00
			Max. Vx	18	-0.00	0.00	0.00
T3	280 - 260	Leg	Max Tension	22	77.68	-0.63	-0.01
			Max. Compression	24	-90.51	1.08	0.05
			Max. Mx	19	-89.74	1.08	-0.06
			Max. My	20	-5.34	-0.02	-1.08
			Max. Vy	27	0.31	-0.72	0.00
			Max. Vx	23	-0.51	-0.02	0.69
		Diagonal	Max Tension	34	6.58	0.00	0.00
			Max. Compression	34	-6.61	0.00	0.00
			Max. Mx	27	3.93	0.04	0.01
			Max. My	19	-6.24	0.02	-0.01
			Max. Vy	27	0.02	0.04	0.01
			Max. Vx	19	0.00	0.00	0.00
T4	260 - 240	Leg	Max Tension	22	108.92	-0.69	0.01
			Max. Compression	24	-127.44	1.98	0.07
			Max. Mx	19	-126.29	1.99	-0.28
			Max. My	20	-7.47	0.03	-1.81
			Max. Vy	19	-0.37	1.99	-0.28
			Max. Vx	28	-0.39	0.03	1.81
		Diagonal	Max Tension	34	8.02	0.00	0.00
			Max. Compression	34	-8.08	0.00	0.00
			Max. Mx	27	4.83	0.06	0.01
			Max. My	19	-7.59	0.02	-0.01
			Max. Vy	27	0.03	0.06	0.01
			Max. Vx	19	0.00	0.00	0.00
T5	240 - 220	Leg	Max Tension	22	142.01	-0.91	-0.02
			Max. Compression	24	-167.42	1.74	0.03
			Max. Mx	19	-138.79	1.99	-0.28
			Max. My	20	-7.78	0.03	-1.81
			Max. Vy	30	-0.30	1.02	0.02
			Max. Vx	28	0.29	0.03	1.81
		Diagonal	Max Tension	34	9.92	0.00	0.00
			Max. Compression	34	-9.92	0.00	0.00
			Max. Mx	22	6.49	0.14	-0.02
			Max. My	19	-9.71	0.03	-0.02
			Max. Vy	22	0.06	0.14	-0.02
			Max. Vx	19	0.00	0.00	0.00
T6	220 - 200	Leg	Max Tension	22	177.02	-0.88	-0.24
			Max. Compression	24	-211.01	1.95	-0.03
			Max. Mx	19	-208.70	1.96	-0.22
			Max. My	20	-12.11	-0.11	-2.73
			Max. Vy	32	-1.58	-1.64	-0.04
			Max. Vx	28	1.45	0.01	0.85
		Diagonal	Max Tension	34	13.61	0.00	0.00
			Max. Compression	34	-13.69	0.00	0.00
			Max. Mx	24	10.17	0.23	0.03
			Max. My	19	-12.81	0.03	-0.04
			Max. Vy	21	0.08	0.21	-0.04
			Max. Vx	19	0.01	0.00	0.00
T7	200 - 180	Leg	Max Tension	27	218.42	-1.98	0.02
			Max. Compression	24	-262.38	2.48	-0.06
			Max. Mx	19	-259.40	2.49	-0.23
			Max. My	26	-14.47	-0.11	-2.85

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Force K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Vy	32	-1.72	-1.75	0.03
			Max. Vx	20	-1.56	0.05	-0.50
		Diagonal	Max Tension	34	15.59	0.00	0.00
			Max. Compression	34	-15.64	0.00	0.00
			Max. Mx	27	9.83	0.23	0.03
			Max. My	19	-15.19	0.08	-0.04
			Max. Vy	27	0.08	0.23	0.03
			Max. Vx	19	0.01	0.00	0.00
T8	180 - 160	Leg	Max Tension	27	261.36	-2.40	0.22
			Max. Compression	24	-314.36	3.14	-0.08
			Max. Mx	24	-314.36	3.14	-0.08
			Max. My	28	-21.20	0.10	2.78
			Max. Vy	32	0.38	-2.41	0.07
			Max. Vx	20	0.65	-0.10	-2.52
		Diagonal	Max Tension	31	17.24	0.00	0.00
			Max. Compression	31	-17.40	0.00	0.00
			Max. Mx	27	10.62	0.27	0.04
			Max. My	28	-10.51	0.20	0.04
			Max. Vy	27	0.09	0.27	0.04
			Max. Vx	28	-0.01	0.00	0.00
T9	160 - 140	Leg	Max Tension	27	305.23	-1.99	0.04
			Max. Compression	24	-367.82	3.80	-0.11
			Max. Mx	24	-367.82	3.80	-0.11
			Max. My	28	-23.07	-0.23	3.57
			Max. Vy	19	-0.40	3.78	-0.17
			Max. Vx	28	0.61	-0.23	3.57
		Diagonal	Max Tension	31	19.56	0.00	0.00
			Max. Compression	30	-20.23	0.00	0.00
			Max. Mx	24	14.71	0.44	-0.04
			Max. My	28	13.87	0.41	0.06
			Max. Vy	21	0.13	0.41	-0.06
			Max. Vx	28	-0.01	0.00	0.00
T10	140 - 120	Leg	Max Tension	27	347.16	-2.63	0.06
			Max. Compression	24	-420.61	-3.76	0.10
			Max. Mx	24	-394.54	3.80	-0.11
			Max. My	28	-29.04	-0.89	6.17
			Max. Vy	19	0.79	2.50	-0.04
			Max. Vx	28	-0.76	-0.13	4.96
		Diagonal	Max Tension	31	20.23	0.00	0.00
			Max. Compression	30	-20.76	0.00	0.00
			Max. Mx	25	11.36	0.51	0.06
			Max. My	28	13.91	0.46	0.09
			Max. Vy	25	-0.14	0.51	0.06
			Max. Vx	28	-0.01	0.00	0.00
T11	120 - 100	Leg	Max Tension	27	353.38	1.89	0.14
			Max. Compression	24	-430.44	-14.84	-0.08
			Max. Mx	24	-429.58	18.61	0.37
			Max. My	28	-31.29	-2.18	11.68
			Max. Vy	24	3.60	18.61	0.37
			Max. Vx	28	-2.10	-2.18	11.68
		Diagonal	Max Tension	31	30.71	-0.22	-0.05
			Max. Compression	30	-33.08	0.00	0.00
			Max. Mx	27	20.76	-0.28	0.08
			Max. My	31	-32.06	-0.01	-0.16
			Max. Vy	27	-0.07	-0.28	0.08
			Max. Vx	31	0.01	-0.01	-0.16
		Horizontal	Max Tension	31	17.23	-0.21	0.00
			Max. Compression	30	-17.33	-0.26	-0.02
			Max. Mx	27	-3.17	-0.31	-0.03
			Max. My	19	3.37	-0.12	0.04
			Max. Vy	27	0.09	-0.31	-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	19	-0.00	0.00	0.00
		Redund Horz 1 Bracing	Max Tension	24	6.48	0.00	0.00
			Max. Compression	24	-6.48	0.00	0.00
			Max. Mx	18	0.47	0.02	0.00
			Max. Vy	18	0.01	0.00	0.00
		Redund Diag 1 Bracing	Max Tension	24	5.88	0.00	0.00
			Max. Compression	24	-5.88	0.00	0.00
			Max. Mx	18	0.35	0.04	0.00
			Max. Vy	18	-0.02	0.00	0.00
		Redund Hip 1 Bracing	Max Tension	31	0.02	0.00	0.00
			Max. Compression	23	-0.04	0.00	0.00
			Max. Mx	18	-0.01	0.02	0.00
			Max. Vy	18	-0.01	0.00	0.00
		Redund Hip Diagonal Bracing	Max Tension	19	0.09	0.00	0.00
			Max. Compression	27	-0.09	0.00	0.00
			Max. Mx	18	0.04	0.17	0.00
			Max. Vy	18	0.04	0.00	0.00
		Inner Bracing	Max Tension	30	0.30	0.00	0.00
			Max. Compression	30	-0.31	0.00	0.00
			Max. Mx	18	-0.01	0.20	0.00
			Max. Vy	18	-0.06	0.00	0.00
T12	100 - 80	Leg	Max Tension	27	386.21	10.16	1.39
			Max. Compression	24	-473.15	-15.81	-0.39
			Max. Mx	24	-472.26	20.23	0.38
			Max. My	28	-35.03	-2.41	12.26
			Max. Vy	24	3.84	20.23	0.38
			Max. Vx	28	2.39	-2.18	11.68
		Diagonal	Max Tension	31	32.43	-0.22	-0.04
			Max. Compression	30	-35.00	0.00	0.00
			Max. Mx	27	19.62	-0.28	0.08
			Max. My	31	-34.04	-0.04	-0.15
			Max. Vy	27	0.07	-0.28	0.08
			Max. Vx	31	-0.01	0.00	0.00
		Horizontal	Max Tension	31	19.21	-0.25	0.00
			Max. Compression	30	-19.74	-0.30	-0.02
			Max. Mx	27	0.76	-0.33	-0.04
			Max. My	19	4.57	-0.17	0.04
			Max. Vy	27	-0.09	-0.33	-0.04
			Max. Vx	19	-0.00	0.00	0.00
		Redund Horz 1 Bracing	Max Tension	24	7.12	0.00	0.00
			Max. Compression	24	-7.12	0.00	0.00
			Max. Mx	18	0.53	0.03	0.00
			Max. Vy	18	-0.01	0.00	0.00
		Redund Diag 1 Bracing	Max Tension	24	6.04	0.00	0.00
			Max. Compression	24	-6.04	0.00	0.00
			Max. Mx	18	0.37	0.05	0.00
			Max. Vy	18	-0.02	0.00	0.00
		Redund Hip 1 Bracing	Max Tension	31	0.02	0.00	0.00
			Max. Compression	23	-0.04	0.00	0.00
			Max. Mx	18	-0.01	0.03	0.00
			Max. Vy	18	-0.01	0.00	0.00
		Redund Hip Diagonal Bracing	Max Tension	19	0.08	0.00	0.00
			Max. Compression	27	-0.09	0.00	0.00

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Force K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Mx	18	0.04	0.20	0.00
			Max. Vy	18	-0.05	0.00	0.00
		Inner Bracing	Max Tension	30	0.34	0.00	0.00
			Max. Compression	30	-0.35	0.00	0.00
			Max. Mx	18	0.00	0.25	0.00
			Max. Vy	18	-0.07	0.00	0.00
T13	80 - 60	Leg	Max Tension	27	421.92	10.69	1.64
			Max. Compression	24	-518.76	-15.83	-0.52
			Max. Mx	24	-517.76	24.10	0.39
			Max. My	28	-39.15	-3.22	20.24
			Max. Vy	24	4.10	24.10	0.39
			Max. Vx	28	-3.01	-3.22	20.24
		Diagonal	Max Tension	31	30.56	-0.22	-0.03
			Max. Compression	30	-33.80	0.00	0.00
			Max. Mx	27	21.66	-0.27	0.06
			Max. My	31	-30.87	-0.09	-0.13
			Max. Vy	27	-0.07	-0.27	0.06
			Max. Vx	31	-0.01	0.00	0.00
		Horizontal	Max Tension	31	19.32	-0.38	0.00
			Max. Compression	30	-20.03	-0.42	-0.02
			Max. Mx	27	-4.69	-0.45	-0.03
			Max. My	19	4.65	-0.30	0.04
			Max. Vy	27	0.13	-0.45	-0.03
			Max. Vx	19	-0.00	0.00	0.00
		Redund Horz 1 Bracing	Max Tension	24	7.82	0.00	0.00
			Max. Compression	24	-7.80	0.00	0.00
			Max. Mx	18	0.52	0.04	0.00
			Max. Vy	18	-0.02	0.00	0.00
		Redund Diag 1 Bracing	Max Tension	24	6.24	0.00	0.00
			Max. Compression	24	-6.25	0.00	0.00
			Max. Mx	18	0.39	0.06	0.00
			Max. Vy	18	-0.02	0.00	0.00
		Redund Hip 1 Bracing	Max Tension	31	0.01	0.00	0.00
			Max. Compression	23	-0.03	0.00	0.00
			Max. Mx	18	-0.01	0.03	0.00
			Max. Vy	18	-0.02	0.00	0.00
		Redund Hip Diagonal Bracing	Max Tension	19	0.08	0.00	0.00
			Max. Compression	27	-0.09	0.00	0.00
			Max. Mx	18	0.05	0.29	0.00
			Max. Vy	18	-0.07	0.00	0.00
		Inner Bracing	Max Tension	30	0.35	0.00	0.00
			Max. Compression	30	-0.36	0.00	0.00
			Max. Mx	18	0.00	0.29	0.00
			Max. Vy	18	0.08	0.00	0.00
T14	60 - 30	Leg	Max Tension	27	456.04	9.18	2.23
			Max. Compression	24	-563.60	4.37	0.37
			Max. Mx	24	-555.29	31.19	0.50
			Max. My	28	-44.80	-1.94	25.35
			Max. Vy	24	5.81	31.19	0.50
			Max. Vx	20	3.53	-1.93	-25.34
		Diagonal	Max Tension	31	45.16	-0.34	-0.08
			Max. Compression	30	-49.28	0.00	0.00
			Max. Mx	27	33.43	-0.42	0.24
			Max. My	31	-44.58	0.22	-0.41
			Max. Vy	30	-0.09	-0.18	0.19
			Max. Vx	30	0.05	-0.18	0.19
		Horizontal	Max Tension	31	22.99	-0.55	0.00

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Force K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Compression	31	-22.87	-0.55	0.00
			Max. Mx	27	-3.45	-0.72	-0.04
			Max. My	19	-2.25	-0.37	0.05
			Max. Vy	27	0.17	-0.72	-0.04
			Max. Vx	19	-0.00	0.00	0.00
		Redund Horz 1 Bracing	Max Tension	24	8.50	0.00	0.00
			Max. Compression	24	-8.68	0.00	0.00
			Max. Mx	18	0.67	0.02	0.00
			Max. Vy	18	-0.01	0.00	0.00
		Redund Horz 2 Bracing	Max Tension	24	8.50	0.00	0.00
			Max. Compression	24	-8.56	0.00	0.00
			Max. Mx	18	0.67	0.10	0.00
			Max. Vy	18	0.04	0.00	0.00
		Redund Diag 1 Bracing	Max Tension	24	8.76	0.00	0.00
			Max. Compression	24	-8.57	0.00	0.00
			Max. Mx	18	0.76	0.04	0.00
			Max. Vy	18	-0.01	0.00	0.00
		Redund Diag 2 Bracing	Max Tension	24	5.62	0.00	0.00
			Max. Compression	24	-5.56	0.00	0.00
			Max. Mx	18	0.43	0.15	0.00
			Max. Vy	18	-0.04	0.00	0.00
		Redund Hip 1 Bracing	Max Tension	30	0.09	0.00	0.00
			Max. Compression	23	-0.10	0.00	0.00
			Max. Mx	18	-0.01	0.02	0.00
			Max. Vy	18	-0.01	0.00	0.00
		Redund Hip 2 Bracing	Max Tension	31	0.03	0.00	0.00
			Max. Compression	23	-0.05	0.00	0.00
			Max. Mx	18	-0.01	0.08	0.00
			Max. Vy	18	-0.03	0.00	0.00
		Redund Hip Diagonal Bracing	Max Tension	23	0.20	0.00	0.00
			Max. Compression	31	-0.21	0.00	0.00
			Max. Mx	18	0.02	0.18	0.00
			Max. Vy	18	-0.04	0.00	0.00
		Inner Bracing	Max Tension	31	0.39	0.00	0.00
			Max. Compression	31	-0.41	0.00	0.00
			Max. Mx	18	-0.01	0.34	0.00
			Max. Vy	18	-0.08	0.00	0.00
T15	30 - 0	Leg	Max Tension	27	507.99	21.53	3.50
			Max. Compression	24	-631.44	5.69	0.48
			Max. Mx	24	-628.12	27.35	0.73
			Max. My	28	-49.05	-1.94	25.35
			Max. Vy	24	-3.24	5.69	0.48
			Max. Vx	20	-3.45	-1.92	-25.34
		Diagonal	Max Tension	31	42.76	-0.32	-0.08
			Max. Compression	30	-45.25	0.00	0.00
			Max. Mx	27	28.55	-0.41	0.20
			Max. My	31	-44.77	0.15	-0.36
			Max. Vy	30	-0.09	-0.23	0.18
			Max. Vx	30	0.04	-0.23	0.18
		Horizontal	Max Tension	22	23.14	0.00	0.00
			Max. Compression	30	-24.88	-0.63	-0.03
			Max. Mx	27	-0.75	-0.70	-0.06
			Max. My	19	6.90	-0.41	0.07
			Max. Vy	27	-0.17	-0.70	-0.06

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Force K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Vx	19	0.00	-0.41	0.07
		Redund Horz 1 Bracing	Max Tension	24	9.57	0.00	0.00
			Max. Compression	24	-9.53	0.00	0.00
			Max. Mx	18	0.83	0.02	0.00
			Max. Vy	18	-0.01	0.00	0.00
		Redund Horz 2 Bracing	Max Tension	24	9.53	0.00	0.00
			Max. Compression	24	-9.73	0.00	0.00
			Max. Mx	18	0.80	0.18	0.00
			Max. Vy	18	-0.06	0.00	0.00
		Redund Diag 1 Bracing	Max Tension	24	8.86	0.00	0.00
			Max. Compression	24	-8.90	0.00	0.00
			Max. Mx	18	0.61	0.06	0.00
			Max. Vy	18	-0.02	0.00	0.00
		Redund Diag 2 Bracing	Max Tension	24	6.12	0.00	0.00
			Max. Compression	24	-5.96	0.00	0.00
			Max. Mx	18	0.58	0.18	0.00
			Max. Vy	18	0.05	0.00	0.00
		Redund Hip 1 Bracing	Max Tension	30	0.08	0.00	0.00
			Max. Compression	23	-0.09	0.00	0.00
			Max. Mx	18	-0.01	0.02	0.00
			Max. Vy	18	-0.01	0.00	0.00
		Redund Hip 2 Bracing	Max Tension	31	0.01	0.00	0.00
			Max. Compression	23	-0.05	0.00	0.00
			Max. Mx	18	-0.02	0.10	0.00
			Max. Vy	18	-0.03	0.00	0.00
		Redund Hip Diagonal Bracing	Max Tension	23	0.17	0.00	0.00
			Max. Compression	31	-0.19	0.00	0.00
			Max. Mx	18	0.03	0.31	0.00
			Max. Vy	18	-0.06	0.00	0.00
		Inner Bracing	Max Tension	30	0.44	0.00	0.00
			Max. Compression	30	-0.44	0.00	0.00
			Max. Mx	18	0.01	0.42	0.00
			Max. Vy	18	0.09	0.00	0.00

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
Leg C	Max. Vert	30	689.65	75.48	-38.79
	Max. H_x	30	689.65	75.48	-38.79
	Max. H_z	21	-531.64	-60.80	33.95
	Min. Vert	22	-548.02	-64.01	32.62
	Min. H_x	22	-548.02	-64.01	32.62
	Min. H_z	30	689.65	75.48	-38.79
Leg B	Max. Vert	24	691.52	-73.93	-41.54
	Max. H_x	32	-546.16	62.50	35.17
	Max. H_z	33	-529.77	58.66	37.59
	Min. Vert	32	-546.16	62.50	35.17
	Min. H_x	24	691.52	-73.93	-41.54

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
Leg A	Min. H_z	25	640.99	-66.58	-42.01
	Max. Vert	19	683.06	3.15	84.65
	Max. H_x	32	348.04	9.05	42.51
	Max. H_z	19	683.06	3.15	84.65
	Min. Vert	27	-554.61	-2.96	-71.86
	Min. H_x	24	-270.79	-9.37	-35.74
	Min. H_z	27	-554.61	-2.96	-71.86

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	112.48	0.00	0.00	67.25	-5.07	0.00
Dead+Wind 0 deg - No Ice	112.48	-0.00	-112.12	-18389.25	-5.07	140.35
Dead+Wind 30 deg - No Ice	112.48	53.75	-93.10	-15188.12	-8812.76	177.86
Dead+Wind 45 deg - No Ice	112.48	75.47	-75.47	-12289.58	-12361.90	180.39
Dead+Wind 60 deg - No Ice	112.48	91.77	-52.98	-8600.26	-15017.63	170.58
Dead+Wind 90 deg - No Ice	112.48	107.50	-0.00	67.25	-17620.45	122.56
Dead+Wind 120 deg - No Ice	112.48	97.10	56.06	9295.50	-15988.87	41.69
Dead+Wind 135 deg - No Ice	112.48	75.47	75.47	12424.08	-12361.90	-8.62
Dead+Wind 150 deg - No Ice	112.48	53.75	93.10	15322.62	-8812.76	-55.29
Dead+Wind 180 deg - No Ice	112.48	0.00	105.96	17402.26	-5.07	-132.70
Dead+Wind 210 deg - No Ice	112.48	-53.75	93.10	15322.62	8802.62	-177.86
Dead+Wind 225 deg - No Ice	112.48	-75.47	75.47	12424.08	12351.76	-180.39
Dead+Wind 240 deg - No Ice	112.48	-97.10	56.06	9295.50	15978.72	-182.04
Dead+Wind 270 deg - No Ice	112.48	-107.50	0.00	67.25	17610.31	-122.56
Dead+Wind 300 deg - No Ice	112.48	-91.77	-52.98	-8600.26	15007.49	-37.89
Dead+Wind 315 deg - No Ice	112.48	-75.47	-75.47	-12289.58	12351.76	8.62
Dead+Wind 330 deg - No Ice	112.48	-53.75	-93.10	-15188.12	8802.62	55.29
Dead+Ice+Temp	156.52	0.00	0.00	176.65	-37.88	0.00
Dead+Wind 0 deg+Ice+Temp	156.52	-0.00	-138.25	-22231.76	-37.88	221.13
Dead+Wind 30 deg+Ice+Temp	156.52	66.59	-115.34	-18448.23	-10790.96	281.42
Dead+Wind 45 deg+Ice+Temp	156.52	93.58	-93.58	-14924.17	-15138.70	285.77
Dead+Wind 60 deg+Ice+Temp	156.52	113.88	-65.75	-10426.06	-18402.31	270.60
Dead+Wind 90 deg+Ice+Temp	156.52	133.19	0.00	176.65	-21544.04	194.14
Dead+Wind 120 deg+Ice+Temp	156.52	119.73	69.13	11380.86	-19444.13	65.33
Dead+Wind 135 deg+Ice+Temp	156.52	93.58	93.58	15277.48	-15138.70	-13.32
Dead+Wind 150 deg+Ice+Temp	156.52	66.59	115.34	18801.54	-10790.96	-87.27
Dead+Wind 180 deg+Ice+Temp	156.52	0.00	131.50	21382.07	-37.88	-210.11
Dead+Wind 210 deg+Ice+Temp	156.52	-66.59	115.34	18801.54	10715.21	-281.42
Dead+Wind 225 deg+Ice+Temp	156.52	-93.58	93.58	15277.48	15062.95	-285.77
Dead+Wind 240 deg+Ice+Temp	156.52	-119.73	69.13	11380.86	19368.37	-286.46
Dead+Wind 270 deg+Ice+Temp	156.52	-133.19	0.00	176.65	21468.29	-194.14
Dead+Wind 300 deg+Ice+Temp	156.52	-113.88	-65.75	-10426.06	18326.55	-60.49
Dead+Wind 315 deg+Ice+Temp	156.52	-93.58	-93.58	-14924.17	15062.95	13.32
Dead+Wind 330 deg+Ice+Temp	156.52	-66.59	-115.34	-18448.23	10715.21	87.27
Dead+Wind 0 deg - Service	112.48	-0.00	-112.12	-18389.25	-5.07	140.35
Dead+Wind 30 deg - Service	112.48	53.75	-93.10	-15188.12	-8812.76	177.86
Dead+Wind 45 deg - Service	112.48	75.47	-75.47	-12289.58	-12361.90	180.39
Dead+Wind 60 deg - Service	112.48	91.77	-52.98	-8600.26	-15017.63	170.58
Dead+Wind 90 deg - Service	112.48	107.50	-0.00	67.25	-17620.45	122.56
Dead+Wind 120 deg - Service	112.48	97.10	56.06	9295.50	-15988.87	41.69
Dead+Wind 135 deg - Service	112.48	75.47	75.47	12424.08	-12361.90	-8.62
Dead+Wind 150 deg - Service	112.48	53.75	93.10	15322.62	-8812.76	-55.29
Dead+Wind 180 deg - Service	112.48	0.00	105.96	17402.26	-5.07	-132.70
Dead+Wind 210 deg - Service	112.48	-53.75	93.10	15322.62	8802.62	-177.86

Load Combination	Vertical	$Shear_x$	$Shear_z$	Overturning Moment, M_x	Overturning Moment, M_z	Torque
	K	K	K	kip-ft	kip-ft	kip-ft
Dead+Wind 225 deg - Service	112.48	-75.47	75.47	12424.08	12351.76	-180.39
Dead+Wind 240 deg - Service	112.48	-97.10	56.06	9295.50	15978.72	-182.04
Dead+Wind 270 deg - Service	112.48	-107.50	0.00	67.25	17610.31	-122.56
Dead+Wind 300 deg - Service	112.48	-91.77	-52.98	-8600.26	15007.49	-37.89
Dead+Wind 315 deg - Service	112.48	-75.47	-75.47	-12289.58	12351.76	8.62
Dead+Wind 330 deg - Service	112.48	-53.75	-93.10	-15188.12	8802.62	55.29

Solution Summary

	Sum of Applied Forces			Sum of Reactions			
Load Comb.	PX K	PY K	PZ K	PX K	PY K	PZ K	% Error
1	0.00	-112.48	0.00	-0.00	112.48	-0.00	0.000%
2	0.00	-112.48	-112.12	0.00	112.48	112.12	0.000%
3	53.75	-112.48	-93.10	-53.75	112.48	93.10	0.000%
4	75.47	-112.48	-75.47	-75.47	112.48	75.47	0.000%
5	91.77	-112.48	-52.98	-91.77	112.48	52.98	0.000%
6	107.50	-112.48	0.00	-107.50	112.48	0.00	0.000%
7	97.10	-112.48	56.06	-97.10	112.48	-56.06	0.000%
8	75.47	-112.48	75.47	-75.47	112.48	-75.47	0.000%
9	53.75	-112.48	93.10	-53.75	112.48	-93.10	0.000%
10	-0.00	-112.48	105.96	-0.00	112.48	-105.96	0.000%
11	-53.75	-112.48	93.10	53.75	112.48	-93.10	0.000%
12	-75.47	-112.48	75.47	75.47	112.48	-75.47	0.000%
13	-97.10	-112.48	56.06	97.10	112.48	-56.06	0.000%
14	-107.50	-112.48	0.00	107.50	112.48	-0.00	0.000%
15	-91.77	-112.48	-52.98	91.77	112.48	52.98	0.000%
16	-75.47	-112.48	-75.47	75.47	112.48	75.47	0.000%
17	-53.75	-112.48	-93.10	53.75	112.48	93.10	0.000%
18	0.00	-156.52	0.00	-0.00	156.52	-0.00	0.000%
19	0.00	-156.52	-138.25	0.00	156.52	138.25	0.000%
20	66.59	-156.52	-115.34	-66.59	156.52	115.34	0.000%
21	93.58	-156.52	-93.58	-93.58	156.52	93.58	0.000%
22	113.88	-156.52	-65.75	-113.88	156.52	65.75	0.000%
23	133.19	-156.52	0.00	-133.19	156.52	-0.00	0.000%
24	119.73	-156.52	69.13	-119.73	156.52	-69.13	0.000%
25	93.58	-156.52	93.58	-93.58	156.52	-93.58	0.000%
26	66.59	-156.52	115.34	-66.59	156.52	-115.34	0.000%
27	-0.00	-156.52	131.50	-0.00	156.52	-131.50	0.000%
28	-66.59	-156.52	115.34	66.59	156.52	-115.34	0.000%
29	-93.58	-156.52	93.58	93.58	156.52	-93.58	0.000%
30	-119.73	-156.52	69.13	119.73	156.52	-69.13	0.000%
31	-133.19	-156.52	0.00	133.19	156.52	-0.00	0.000%
32	-113.88	-156.52	-65.75	113.88	156.52	65.75	0.000%
33	-93.58	-156.52	-93.58	93.58	156.52	93.58	0.000%
34	-66.59	-156.52	-115.34	66.59	156.52	115.34	0.000%
35	0.00	-112.48	-112.12	0.00	112.48	112.12	0.000%
36	53.75	-112.48	-93.10	-53.75	112.48	93.10	0.000%
37	75.47	-112.48	-75.47	-75.47	112.48	75.47	0.000%
38	91.77	-112.48	-52.98	-91.77	112.48	52.98	0.000%
39	107.50	-112.48	0.00	-107.50	112.48	0.00	0.000%
40	97.10	-112.48	56.06	-97.10	112.48	-56.06	0.000%
41	75.47	-112.48	75.47	-75.47	112.48	-75.47	0.000%
42	53.75	-112.48	93.10	-53.75	112.48	-93.10	0.000%
43	-0.00	-112.48	105.96	-0.00	112.48	-105.96	0.000%
44	-53.75	-112.48	93.10	53.75	112.48	-93.10	0.000%
45	-75.47	-112.48	75.47	75.47	112.48	-75.47	0.000%
46	-97.10	-112.48	56.06	97.10	112.48	-56.06	0.000%

Load Comb.	Sum of Applied Forces PX K	PY K	PZ K	Sum of Reactions PX K	PY K	PZ K	% Error
47	-107.50	-112.48	0.00	107.50	112.48	-0.00	0.000%
48	-91.77	-112.48	-52.98	91.77	112.48	52.98	0.000%
49	-75.47	-112.48	-75.47	75.47	112.48	75.47	0.000%
50	-53.75	-112.48	-93.10	53.75	112.48	93.10	0.000%

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T1	320 - 300	24.889	40	0.6707	0.2638
T2	300 - 280	22.017	40	0.6528	0.2140
T3	280 - 260	19.282	40	0.6180	0.1761
T4	260 - 240	16.686	40	0.5872	0.1572
T5	240 - 220	14.227	40	0.5495	0.1409
T6	220 - 200	11.954	40	0.5054	0.1303
T7	200 - 180	9.876	40	0.4555	0.1213
T8	180 - 160	7.976	40	0.4124	0.1112
T9	160 - 140	6.252	40	0.3656	0.0993
T10	140 - 120	4.737	40	0.3151	0.0893
T11	120 - 100	3.435	40	0.2620	0.0789
T12	100 - 80	2.384	40	0.2105	0.0621
T13	80 - 60	1.534	40	0.1590	0.0485
T14	60 - 30	0.885	35	0.1157	0.0365
T15	30 - 0	0.274	35	0.0519	0.0182

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
320.00	6 FT DISH	40	24.889	0.6707	0.2638	111605
318.00	PD128	40	24.599	0.6694	0.2587	111605
315.00	8 FT DISH	40	24.164	0.6674	0.2509	111605
294.00	DB224	40	21.180	0.6434	0.2007	29726
292.00	PD320	40	20.904	0.6398	0.1966	30388
285.00	(2) DB809	40	19.951	0.6270	0.1837	32959
275.00	(2) OGT9	40	18.621	0.6099	0.1701	36205
257.00	PD440	40	16.308	0.5821	0.1548	36341
243.00	PD128	40	14.585	0.5557	0.1431	25582
227.00	PD320	40	12.727	0.5218	0.1336	24216
220.00	DB844	40	11.954	0.5054	0.1303	24408
200.00	PiROD 12' Lightweight T-Frame	40	9.876	0.4555	0.1213	26860
175.00	6 FT DISH	40	7.528	0.4012	0.1083	27069
140.00	PD688S-4	40	4.737	0.3151	0.0893	24466
138.00	PD156S	40	4.597	0.3099	0.0884	23848
115.00	6 FT DISH	40	3.150	0.2491	0.0751	18636
112.00	4 FT DISH	40	2.987	0.2414	0.0726	19866
105.00	6 FT DISH	40	2.626	0.2235	0.0664	23482
100.00	PD458	40	2.384	0.2105	0.0621	26144
97.00	6 FT DISH	40	2.244	0.2026	0.0597	26239
90.00	4 FT DISH	40	1.935	0.1841	0.0547	24812

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T1	320 - 300	30.157	24	0.8074	0.3437
T2	300 - 280	26.706	24	0.7872	0.2925
T3	280 - 260	23.406	24	0.7475	0.2520
T4	260 - 240	20.264	24	0.7116	0.2313
T5	240 - 220	17.281	24	0.6669	0.2105
T6	220 - 200	14.521	24	0.6139	0.1960
T7	200 - 180	11.996	24	0.5535	0.1830
T8	180 - 160	9.688	24	0.5011	0.1685
T9	160 - 140	7.593	24	0.4443	0.1516
T10	140 - 120	5.754	24	0.3829	0.1375
T11	120 - 100	4.173	24	0.3183	0.1229
T12	100 - 80	2.901	24	0.2557	0.0980
T13	80 - 60	1.870	24	0.1931	0.0767
T14	60 - 30	1.084	19	0.1405	0.0578
T15	30 - 0	0.341	19	0.0631	0.0288

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
320.00	6 FT DISH	24	30.157	0.8074	0.3437	102157
318.00	PD128	24	29.809	0.8059	0.3384	102157
315.00	8 FT DISH	24	29.287	0.8036	0.3306	102157
294.00	DB224	24	25.698	0.7765	0.2785	26984
292.00	PD320	24	25.366	0.7725	0.2741	27502
285.00	(2) DB809	24	24.215	0.7578	0.2602	29486
275.00	(2) OGT9	24	22.607	0.7382	0.2456	31828
257.00	PD440	24	19.805	0.7057	0.2283	30908
243.00	PD128	24	17.715	0.6742	0.2134	21370
227.00	PD320	24	15.459	0.6336	0.2004	20006
220.00	DB844	24	14.521	0.6139	0.1960	20090
200.00	PiROD 12' Lightweight T-Frame	24	11.996	0.5535	0.1830	22297
175.00	6 FT DISH	24	9.143	0.4876	0.1643	22165
140.00	PD688S-4	24	5.754	0.3829	0.1375	20232
138.00	PD156S	24	5.584	0.3765	0.1363	19684
115.00	6 FT DISH	24	3.828	0.3026	0.1173	15158
112.00	4 FT DISH	24	3.630	0.2932	0.1136	16217
105.00	6 FT DISH	24	3.193	0.2714	0.1045	19378
100.00	PD458	24	2.901	0.2557	0.0980	21764
97.00	6 FT DISH	24	2.731	0.2461	0.0944	21882
90.00	4 FT DISH	24	2.356	0.2236	0.0867	20682

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	320	Leg	A325N	1.0000	6	3.71	34.56	0.107 ✓	1.333	Bolt Tension
		Diagonal	A325X	0.6250	1	4.35	6.80	0.640 ✓	1.333	Member Bearing
T2	300	Leg	A325N	1.0000	8	6.20	34.56	0.179 ✓	1.333	Bolt Tension
		Diagonal	A325X	0.6250	1	4.89	9.06	0.539 ✓	1.333	Member Bearing
T3	280	Leg	A325N	1.0000	8	9.71	34.56	0.281 ✓	1.333	Bolt Tension
		Diagonal	A325X	0.7500	1	6.58	10.88	0.605 ✓	1.333	Member Bearing
T4	260	Leg	A325N	1.0000	8	13.62	34.56	0.394 ✓	1.333	Bolt Tension
		Diagonal	A325X	0.7500	1	8.02	12.19	0.658 ✓	1.333	Member Bearing
T5	240	Leg	A325N	1.0000	8	17.75	34.56	0.514 ✓	1.333	Bolt Tension
		Diagonal	A325X	0.7500	1	9.92	13.25	0.749 ✓	1.333	Bolt Shear
T6	220	Leg	A325N	1.0000	12	14.75	34.56	0.427 ✓	1.333	Bolt Tension
		Diagonal	A325X	0.7500	1	13.69	13.25	1.033 ✓	1.333	Bolt Shear
T7	200	Leg	A325N	1.0000	12	18.20	34.56	0.527 ✓	1.333	Bolt Tension
		Diagonal	A325X	0.8750	1	15.64	18.04	0.867 ✓	1.333	Bolt Shear
T8	180	Leg	A325N	1.0000	12	21.78	34.56	0.630 ✓	1.333	Bolt Tension
		Diagonal	A325X	0.8750	1	17.40	18.04	0.964 ✓	1.333	Bolt Shear
T9	160	Leg	A325N	1.0000	12	25.44	34.56	0.736 ✓	1.333	Bolt Tension
		Diagonal	A325X	0.8750	1	20.23	18.04	1.121 ✓	1.333	Bolt Shear
T10	140	Leg	A325N	1.0000	12	28.93	34.56	0.837 ✓	1.333	Bolt Tension
		Diagonal	A325X	0.8750	1	20.76	18.04	1.151 ✓	1.333	Bolt Shear
T11	120	Leg	A325N	1.0000	12	29.37	34.55	0.850 ✓	1.333	Bolt Tension
		Diagonal	A325X	0.7500	3	11.03	13.25	0.832 ✓	1.333	Bolt Shear
		Horizontal	A325X	0.7500	2	8.66	13.25	0.654 ✓	1.333	Bolt Shear
T12	100	Leg	A325N	1.0000	16	24.07	34.56	0.697 ✓	1.333	Bolt Tension
		Diagonal	A325X	0.7500	3	11.67	13.25	0.880 ✓	1.333	Bolt Shear
		Horizontal	A325X	0.7500	2	9.87	13.25	0.745 ✓	1.333	Bolt Shear
T13	80	Leg	A325N	1.0000	16	26.32	34.56	0.762 ✓	1.333	Bolt Tension
		Diagonal	A325X	0.7500	3	11.27	13.25	0.850 ✓	1.333	Bolt Shear
		Horizontal	A325X	0.7500	2	10.02	13.25	0.756 ✓	1.333	Bolt Shear
T14	60	Leg	A325N	1.0000	16	27.93	34.55	0.808 ✓	1.333	Bolt Tension
		Diagonal	A325X	0.8750	3	16.43	18.04	0.911 ✓	1.333	Bolt Shear
		Horizontal	A325X	0.7500	2	11.50	13.25	0.867 ✓	1.333	Bolt Shear
T15	30	Leg	A325N	1.0000	24	20.92	34.56	0.605 ✓	1.333	Bolt Tension
		Diagonal	A325X	0.8750	3	15.08	18.04	0.836 ✓	1.333	Bolt Shear
		Horizontal	A325X	0.7500	2	12.44	13.25	0.939 ✓	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	320 - 300	ROHN 5 EH	20.00	4.00	26.1 K=1.00	27.622	6.1120	-26.22	168.82	0.155 ✓
T2	300 - 280	ROHN 6 EH	20.03	5.01	27.4 K=1.00	27.470	8.4049	-57.65	230.89	0.250 ✓
T3	280 - 260	ROHN 8 EH	20.04	6.68	27.9 K=1.00	27.414	12.7627	-90.51	349.88	0.259 ✓
T4	260 - 240	ROHN 8 EH	20.03	6.68	27.8 K=1.00	27.415	12.7627	-127.44	349.89	0.364 ✓
T5	240 - 220	ROHN 8 EH	20.03	6.68	27.8 K=1.00	27.415	12.7627	-167.42	349.89	0.478 ✓
T6	220 - 200	ROHN 8 EH	20.03	10.02	41.8 K=1.00	25.582	12.7627	-211.01	326.50	0.646 ✓
T7	200 - 180	ROHN 10 EH	20.04	10.02	33.1 K=1.00	26.757	16.1007	-262.38	430.80	0.609 ✓
T8	180 - 160	ROHN 10 EH	20.04	10.02	33.1 K=1.00	26.757	16.1007	-314.36	430.81	0.730 ✓
T9	160 - 140	ROHN 10 EH	20.03	10.02	33.1 K=1.00	26.758	16.1007	-367.82	430.82	0.854 ✓
T10	140 - 120	ROHN 10 EH	20.04	10.02	33.1 K=1.00	26.756	16.1007	-420.61	430.79	0.976 ✓
T11	120 - 100	ROHN 10 EH	20.06	10.03	33.2 K=1.00	26.753	16.1007	-430.44	430.74	0.999 ✓
T12	100 - 80	ROHN 10 EH	20.05	10.03	33.2 K=1.00	26.753	16.1007	-473.15	430.75	1.098 ✓
T13	80 - 60	ROHN 12 EH	20.06	10.03	27.8 K=1.00	27.425	19.2423	-518.76	527.71	0.983 ✓
T14	60 - 30	ROHN 12 EH	30.07	10.02	27.8 K=1.00	27.426	19.2423	-563.60	527.74	1.068 ✓
T15	30 - 0	ROHN 12 EHS	30.08	10.03	28.0 K=1.00	27.392	23.8074	-631.44	652.14	0.968 ✓

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	320 - 300	L1 3/4x1 3/4x3/16	7.90	3.51	122.8 K=1.00	9.884	0.6211	-4.39	6.14	0.715 ✓
T2	300 - 280	L2x2x1/4	9.94	4.63	142.2 K=1.00	7.383	0.9380	-4.91	6.93	0.709 ✓
T3	280 - 260	L2 1/2x2 1/2x1/4	12.59	5.92	144.6 K=1.00	7.137	1.1900	-6.61	8.49	0.778 ✓
T4	260 - 240	L3x3x1/4	14.38	6.81	138.0 K=1.00	7.837	1.4400	-8.08	11.29	0.716 ✓
T5	240 - 220	L4x4x5/16	16.19	7.72	117.8	10.756	2.4000	-9.92	25.82	0.384

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P K	Allow. P_a K	Ratio P / P_a
					K=1.01					✓
T6	220 - 200	L4x4x3/8	19.37	9.39	143.0 K=1.00	7.300	2.8600	-13.69	20.88	0.656 ✓
T7	200 - 180	L4x4x3/8	21.20	10.23	155.7 K=1.00	6.158	2.8600	-15.64	17.61	0.888 ✓
T8	180 - 160	L4x4x3/8	23.06	11.16	169.9 K=1.00	5.174	2.8600	-17.40	14.80	1.176 ✓
T9	160 - 140	L5x5x3/8	24.84	12.02	145.7 K=1.00	7.031	3.6100	-20.23	25.38	0.797 ✓
T10	140 - 120	L5x5x3/8	26.78	13.04	158.0 K=1.00	5.981	3.6100	-20.76	21.59	0.962 ✓
T11	120 - 100	ROHN 3 EH	24.42	12.21	122.5 K=0.95	9.956	3.0159	-33.08	30.03	1.102 ✓
T12	100 - 80	ROHN 3 EH	25.15	12.58	126.2 K=0.95	9.381	3.0159	-35.00	28.29	1.237 ✓
T13	80 - 60	ROHN 3 EH	25.98	12.99	130.3 K=0.95	8.790	3.0159	-33.80	26.51	1.275 ✓
T14	60 - 30	ROHN 3.5 EH	35.21	11.74	107.8 K=1.00	12.854	3.6784	-49.28	47.28	1.042 ✓
T15	30 - 0	ROHN 3.5 EH	36.27	12.09	111.0 K=1.00	12.116	3.6784	-45.25	44.57	1.015 ✓

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 P / P_a
T11	120 - 100	ROHN 3 STD	25.39	12.25	126.3 K=1.00	9.361	2.2285	-17.33	20.86	0.831 ✓
T12	100 - 80	ROHN 3 STD	27.97	13.54	139.6 K=1.00	7.662	2.2285	-19.74	17.07	1.156 ✓
T13	80 - 60	ROHN 3 EH	30.47	14.79	156.2 K=1.00	6.124	3.0159	-20.03	18.47	1.085 ✓
T14	60 - 30	ROHN 3.5 EH	33.14	16.04	147.3 K=1.00	6.883	3.6784	-22.87	25.32	0.903 ✓
T15	30 - 0	ROHN 4 STD	36.80	17.87	142.0 K=1.00	7.401	3.1741	-24.88	23.49	1.059 ✓

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 P / P_a
T1	320 - 300	L1 3/4x1 3/4x3/16	6.81	6.35	182.6 K=0.82	4.480	0.6211	-0.60	2.78	0.217 ✓
T2	300 - 280	L2x2x1/4	6.81	6.35	166.0 K=0.85	5.420	0.9380	-0.16	5.08	0.031 ✓

ERITower	Job	Page
	320' Rohn SSVMW	46 of 55
URS Corporation 500 Enterprise Drive, Suite 3B Rocky Hill, CT 06067 Phone: (860) 529-8882 FAX: (860) 529-3991	**Project** CSP Tower - Colchester, CT	**Date** 12:49:15 10/12/06
	Client Verizon Wireless	**Designed by** Staff

Section No.	Elevation	Size	L	L_u	Kl/r	F_a	A	Actual P	Allow. P_a	Ratio $\frac{P}{P_a}$
	ft		ft	ft		ksi	in^2	K	K	

Redundant Horizontal (1) Design Data (Compression)

Section No.	Elevation	Size	L	L_u	Kl/r	F_a	A	Actual P	Allow. P_a	Ratio $\frac{P}{P_a}$
	ft		ft	ft		ksi	in^2	K	K	
T11	120 - 100	ROHN 1.5 STD	6.35	5.90	113.7 K=1.00	11.550	0.7995	-6.48	9.23	0.701 ✓
T12	100 - 80	ROHN 1.5 STD	6.99	6.54	126.1 K=1.00	9.385	0.7995	-7.12	7.50	0.949 ✓
T13	80 - 60	ROHN 2 STD	7.62	7.09	108.0 K=1.00	12.795	1.0745	-7.80	13.75	0.567 ✓
T14	60 - 30	ROHN 1.5 STD	5.52	4.99	96.2 K=1.00	15.570	0.7995	-8.68	12.45	0.698 ✓
T15	30 - 0	ROHN 1.5 STD	6.13	5.60	108.0 K=1.00	12.809	0.7995	-9.53	10.24	0.931 ✓

Redundant Horizontal (2) Design Data (Compression)

Section No.	Elevation	Size	L	L_u	Kl/r	F_a	A	Actual P	Allow. P_a	Ratio $\frac{P}{P_a}$
	ft		ft	ft		ksi	in^2	K	K	
T14	60 - 30	ROHN 2 EH	11.05	10.52	164.2 K=1.00	5.535	1.4807	-8.56	8.20	1.045 ✓
T15	30 - 0	ROHN 2.5 EH	12.27	11.74	152.4 K=1.00	6.430	2.2535	-9.73	14.49	0.671 ✓

Redundant Diagonal (1) Design Data (Compression)

Section No.	Elevation	Size	L	L_u	Kl/r	F_a	A	Actual P	Allow. P_a	Ratio $\frac{P}{P_a}$
	ft		ft	ft		ksi	in^2	K	K	
T11	120 - 100	ROHN 2 STD	11.52	10.61	161.8 K=1.00	5.702	1.0745	-5.88	6.13	0.959 ✓
T12	100 - 80	ROHN 2 STD	11.86	11.03	168.1 K=1.00	5.283	1.0745	-6.04	5.68	1.063 ✓
T13	80 - 60	ROHN 2 STD	12.18	11.40	173.8 K=1.00	4.944	1.0745	-6.25	5.31	1.176 ✓
T14	60 - 30	ROHN 2 STD	11.15	9.95	151.6 K=1.00	6.496	1.0745	-8.57	6.98	1.228 ✓
T15	30 - 0	ROHN 2.5 STD	11.41	10.31	130.6 K=1.00	8.759	1.7040	-8.90	14.93	0.596 ✓

ERITower	Job: 320' Rohn SSVMW	Page: 47 of 55
URS Corporation 500 Enterprise Drive, Suite 3B Rocky Hill, CT 06067 Phone: (860) 529-8882 FAX: (860) 529-3991	Project: CSP Tower - Colchester, CT	Date: 12:49:15 10/12/06
	Client: Verizon Wireless	Designed by: Staff

Redundant Diagonal (2) 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 $\frac{P}{P_a}$
T14	60 - 30	ROHN 2.5 STD	14.46	13.72	173.8 K=1.00	4.943	1.7040	-5.56	8.42	0.660 ✓
T15	30 - 0	ROHN 2.5 STD	15.33	14.63	185.3 K=1.00	4.347	1.7040	-5.96	7.41	0.804 ✓

Redundant Hip (1) 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 $\frac{P}{P_a}$
T11	120 - 100	ROHN 1.5 STD	6.35	6.35	122.3 K=1.00	9.977	0.7995	-0.04	7.98	0.005 ✓
T12	100 - 80	ROHN 1.5 STD	6.99	6.99	134.8 K=1.00	8.221	0.7995	-0.04	6.57	0.006 ✓
T13	80 - 60	ROHN 1.5 STD	7.62	7.62	146.8 K=1.00	6.928	0.7995	-0.03	5.54	0.006 ✓
T14	60 - 30	ROHN 1.5 STD	5.52	5.52	106.5 K=1.00	13.175	0.7995	-0.10	10.53	0.010 ✓
T15	30 - 0	ROHN 1.5 STD	6.13	6.13	118.2 K=1.00	10.686	0.7995	-0.09	8.54	0.011 ✓

Redundant Hip (2) 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 $\frac{P}{P_a}$
T14	60 - 30	ROHN 2 STD	11.05	11.05	168.4 K=1.00	5.265	1.0745	-0.05	5.66	0.009 ✓
T15	30 - 0	ROHN 2 STD	12.27	12.27	187.0 K=1.00	4.270	1.0745	-0.05	4.59	0.010 ✓

Redundant Hip 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 $\frac{P}{P_a}$
T11	120 - 100	ROHN 2.5 STD	15.15	15.15	191.9 K=1.00	4.054	1.7040	-0.09	6.91	0.013 ✓
T12	100 - 80	ROHN 2.5 STD	16.00	16.00	202.6 K=1.00	3.637	1.7040	-0.09	6.20	0.014 ✓
T13	80 - 60	ROHN 3 STD	16.88	16.88	174.1	4.929	2.2285	-0.09	10.98	0.008

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 $\frac{P}{P_a}$
					K=1.00					✓
T14	60 - 30	ROHN 2 STD	14.10	14.10	214.9	3.233	1.0745	-0.21	3.47	0.059
					K=1.00					✓
T15	30 - 0	ROHN 2.5 STD	14.88	14.88	188.4	4.205	1.7040	-0.19	7.17	0.026
					K=1.00					✓

Inner Bracing 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 $\frac{P}{P_a}$
T11	120 - 100	ROHN 3 STD	12.69	12.69	130.9	8.712	2.2285	-0.31	19.41	0.016
					K=1.00					✓
T12	100 - 80	ROHN 3 STD	13.99	13.99	144.2	7.179	2.2285	-0.35	16.00	0.022
					K=1.00					✓
T13	80 - 60	ROHN 3 STD	15.24	15.24	157.1	6.049	2.2285	-0.36	13.48	0.027
					K=1.00					✓
T14	60 - 30	ROHN 3 STD	16.57	16.57	170.9	5.114	2.2285	-0.41	11.40	0.036
					K=1.00					✓
T15	30 - 0	ROHN 3 STD	18.40	18.40	189.8	4.147	2.2285	-0.44	9.24	0.048
					K=1.00					✓

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	320 - 300	ROHN 5 EH	20.00	4.00	26.1	30.000	6.1120	22.23	183.36	0.121
										✓
T2	300 - 280	ROHN 6 EH	20.03	5.01	27.4	30.000	8.4049	49.57	252.15	0.197
										✓
T3	280 - 260	ROHN 8 EH	20.04	6.68	27.9	30.000	12.7627	77.68	382.88	0.203
										✓
T4	260 - 240	ROHN 8 EH	20.03	6.68	27.8	30.000	12.7627	108.92	382.88	0.284
										✓
T5	240 - 220	ROHN 8 EH	20.03	6.68	27.8	30.000	12.7627	142.01	382.88	0.371
										✓
T6	220 - 200	ROHN 8 EH	20.03	10.02	41.8	30.000	12.7627	177.02	382.88	0.462
										✓
T7	200 - 180	ROHN 10 EH	20.04	10.02	33.1	30.000	16.1007	218.42	483.02	0.452
										✓
T8	180 - 160	ROHN 10 EH	20.04	10.02	33.1	30.000	16.1007	261.36	483.02	0.541
										✓

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P K	Allow. P_a K	Ratio P / P_a
T9	160 - 140	ROHN 10 EH	20.03	10.02	33.1	30.000	16.1007	305.23	483.02	0.632 ✓
T10	140 - 120	ROHN 10 EH	20.04	10.02	33.1	30.000	16.1007	347.16	483.02	0.719 ✓
T11	120 - 100	ROHN 10 EH	20.06	10.03	33.2	30.000	16.1007	353.38	483.02	0.732 ✓
T12	100 - 80	ROHN 10 EH	20.05	10.03	33.2	30.000	16.1007	386.21	483.02	0.800 ✓
T13	80 - 60	ROHN 12 EH	20.06	10.03	27.8	30.000	19.2423	421.92	577.27	0.731 ✓
T14	60 - 30	ROHN 12 EH	30.07	10.02	27.8	30.000	19.2423	456.04	577.27	0.790 ✓
T15	30 - 0	ROHN 12 EHS	30.08	10.03	28.0	30.000	23.8074	507.99	714.22	0.711 ✓

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 P / P_a
T1	320 - 300	L1 3/4x1 3/4x3/16	7.90	3.51	82.2	29.000	0.3604	4.35	10.45	0.416 ✓
T2	300 - 280	L2x2x1/4	9.94	4.63	94.6	29.000	0.5629	4.89	16.32	0.299 ✓
T3	280 - 260	L2 1/2x2 1/2x1/4	12.59	5.92	95.0	29.000	0.7284	6.58	21.12	0.312 ✓
T4	260 - 240	L3x3x1/4	14.38	6.81	90.0	32.500	0.9159	8.02	29.77	0.269 ✓
T5	240 - 220	L4x4x5/16	16.19	7.72	76.3	32.500	1.5949	9.92	51.84	0.191 ✓
T6	220 - 200	L4x4x3/8	19.37	9.39	93.3	32.500	1.8989	13.61	61.71	0.221 ✓
T7	200 - 180	L4x4x3/8	21.20	10.23	101.4	32.500	1.8637	15.59	60.57	0.257 ✓
T8	180 - 160	L4x4x3/8	23.06	11.16	110.5	32.500	1.8637	17.24	60.57	0.285 ✓
T9	160 - 140	L5x5x3/8	24.84	12.02	93.8	32.500	2.4262	19.56	78.85	0.248 ✓
T10	140 - 120	L5x5x3/8	26.78	13.04	101.6	32.500	2.4262	20.23	78.85	0.257 ✓
T11	120 - 100	ROHN 3 EH	24.42	12.21	128.9	30.000	3.0159	30.71	90.48	0.339 ✓
T12	100 - 80	ROHN 3 EH	25.15	12.58	132.8	30.000	3.0159	32.43	90.48	0.358 ✓
T13	80 - 60	ROHN 3 EH	25.98	12.99	137.2	30.000	3.0159	30.56	90.48	0.338 ✓
T14	60 - 30	ROHN 3.5 EH	35.21	11.74	107.8	30.000	3.6784	45.16	110.35	0.409 ✓
T15	30 - 0	ROHN 3.5 EH	36.27	12.09	111.0	30.000	3.6784	42.76	110.35	0.387 ✓

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 $\frac{P}{P_a}$

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 $\frac{P}{P_a}$
T11	120 - 100	ROHN 3 STD	25.39	12.25	126.3	30.000	2.2285	17.23	66.85	0.258 ✔
T12	100 - 80	ROHN 3 STD	27.97	13.54	139.6	30.000	2.2285	19.21	66.85	0.287 ✔
T13	80 - 60	ROHN 3 EH	30.47	14.79	156.2	30.000	3.0159	19.32	90.48	0.214 ✔
T14	60 - 30	ROHN 3.5 EH	33.14	16.04	147.3	30.000	3.6784	22.99	110.35	0.208 ✔
T15	30 - 0	ROHN 4 STD	36.80	17.87	142.0	30.000	3.1741	23.14	95.22	0.243 ✔

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	320 - 300	L1 3/4x1 3/4x3/16	6.81	6.35	141.8	21.600	0.6211	0.58	13.42	0.044 ✔
T2	300 - 280	L2x2x1/4	6.81	6.35	125.1	21.600	0.9380	0.14	20.26	0.007 ✔

Redundant Horizontal (1) 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 $\frac{P}{P_a}$
T11	120 - 100	ROHN 1.5 STD	6.35	5.90	113.7	30.000	0.7995	6.48	23.98	0.270 ✔
T12	100 - 80	ROHN 1.5 STD	6.99	6.54	126.1	30.000	0.7995	7.12	23.98	0.297 ✔
T13	80 - 60	ROHN 2 STD	7.62	7.09	108.0	30.000	1.0745	7.82	32.24	0.243 ✔
T14	60 - 30	ROHN 1.5 STD	5.52	4.99	96.2	30.000	0.7995	8.50	23.98	0.354 ✔
T15	30 - 0	ROHN 1.5 STD	6.13	5.60	108.0	30.000	0.7995	9.57	23.98	0.399 ✔

Redundant Horizontal (2) 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 $\frac{P}{P_a}$
T14	60 - 30	ROHN 2 EH	11.05	10.52	164.2	30.000	1.4807	8.50	44.42	0.191 ✔
T15	30 - 0	ROHN 2.5 EH	12.27	11.74	152.4	30.000	2.2535	9.53	67.61	0.141 ✔

Redundant Diagonal (1) 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 $\frac{P}{P_a}$
T11	120 - 100	ROHN 2 STD	11.52	10.61	161.8	30.000	1.0745	5.88	32.24	0.182 ✔
T12	100 - 80	ROHN 2 STD	11.86	11.03	168.1	30.000	1.0745	6.04	32.24	0.187 ✔
T13	80 - 60	ROHN 2 STD	12.18	11.40	173.8	30.000	1.0745	6.24	32.24	0.194 ✔
T14	60 - 30	ROHN 2 STD	11.15	9.95	151.6	30.000	1.0745	8.76	32.24	0.272 ✔
T15	30 - 0	ROHN 2.5 STD	11.41	10.31	130.6	30.000	1.7040	8.86	51.12	0.173 ✔

Redundant Diagonal (2) 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 $\frac{P}{P_a}$
T14	60 - 30	ROHN 2.5 STD	14.46	13.72	173.8	30.000	1.7040	5.62	51.12	0.110 ✔
T15	30 - 0	ROHN 2.5 STD	15.33	14.63	185.3	30.000	1.7040	6.12	51.12	0.120 ✔

Redundant Hip (1) 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 $\frac{P}{P_a}$
T11	120 - 100	ROHN 1.5 STD	6.35	6.35	122.3	30.000	0.7995	0.02	23.98	0.001 ✔
T12	100 - 80	ROHN 1.5 STD	6.99	6.99	134.8	30.000	0.7995	0.02	23.98	0.001 ✔
T13	80 - 60	ROHN 1.5 STD	7.62	7.62	146.8	30.000	0.7995	0.01	23.98	0.000

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 $\frac{P}{P_a}$
T14	60 - 30	ROHN 1.5 STD	5.52	5.52	106.5	30.000	0.7995	0.09	23.98	0.004 ✓
T15	30 - 0	ROHN 1.5 STD	6.13	6.13	118.2	30.000	0.7995	0.08	23.98	0.003 ✓

Redundant Hip (2) 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 $\frac{P}{P_a}$
T14	60 - 30	ROHN 2 STD	11.05	11.05	168.4	30.000	1.0745	0.03	32.24	0.001 ✓
T15	30 - 0	ROHN 2 STD	12.27	12.27	187.0	30.000	1.0745	0.01	32.24	0.000 ✓

Redundant Hip 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 $\frac{P}{P_a}$
T11	120 - 100	ROHN 2.5 STD	15.15	15.15	191.9	30.000	1.7040	0.09	51.12	0.002 ✓
T12	100 - 80	ROHN 2.5 STD	16.00	16.00	202.6	30.000	1.7040	0.08	51.12	0.002 ✓
T13	80 - 60	ROHN 3 STD	16.88	16.88	174.1	30.000	2.2285	0.08	66.85	0.001 ✓
T14	60 - 30	ROHN 2 STD	14.10	14.10	214.9	30.000	1.0745	0.20	32.24	0.006 ✓
T15	30 - 0	ROHN 2.5 STD	14.88	14.88	188.4	30.000	1.7040	0.17	51.12	0.003 ✓

Inner Bracing 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 $\frac{P}{P_a}$
T11	120 - 100	ROHN 3 STD	12.69	12.69	130.9	30.000	2.2285	0.30	66.85	0.004 ✓
T12	100 - 80	ROHN 3 STD	13.99	13.99	144.2	30.000	2.2285	0.34	66.85	0.005 ✓
T13	80 - 60	ROHN 3 STD	15.24	15.24	157.1	30.000	2.2285	0.35	66.85	0.005 ✓
T14	60 - 30	ROHN 3 STD	16.57	16.57	170.9	30.000	2.2285	0.39	66.85	0.006

ERITower	Job: 320' Rohn SSVMW	Page: 53 of 55
URS Corporation 500 Enterprise Drive, Suite 3B Rocky Hill, CT 06067 Phone: (860) 529-8882 FAX: (860) 529-3991	Project: CSP Tower - Colchester, CT	Date: 12:49:15 10/12/06
	Client: Verizon Wireless	Designed by: Staff

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 $\frac{P}{P_a}$
T15	30 - 0	ROHN 3 STD	18.40	18.40	189.8	30.000	2.2285	0.44	66.85	0.007

Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	$SF*P_{allow}$ K	% Capacity	Pass Fail
T1	320 - 300	Leg	ROHN 5 EH	2	-26.22	225.04	11.7	Pass
T2	300 - 280	Leg	ROHN 6 EH	38	-57.65	307.77	18.7	Pass
T3	280 - 260	Leg	ROHN 8 EH	68	-90.51	466.39	19.4	Pass
							21.1 (b)	
T4	260 - 240	Leg	ROHN 8 EH	89	-127.44	466.41	27.3	Pass
							29.6 (b)	
T5	240 - 220	Leg	ROHN 8 EH	110	-167.42	466.41	35.9	Pass
							38.5 (b)	
T6	220 - 200	Leg	ROHN 8 EH	131	-211.01	435.22	48.5	Pass
T7	200 - 180	Leg	ROHN 10 EH	146	-262.38	574.26	45.7	Pass
T8	180 - 160	Leg	ROHN 10 EH	161	-314.36	574.26	54.7	Pass
T9	160 - 140	Leg	ROHN 10 EH	176	-367.82	574.29	64.0	Pass
T10	140 - 120	Leg	ROHN 10 EH	191	-420.61	574.25	73.2	Pass
T11	120 - 100	Leg	ROHN 10 EH	206	-430.44	574.17	75.0	Pass
T12	100 - 80	Leg	ROHN 10 EH	239	-473.15	574.19	82.4	Pass
T13	80 - 60	Leg	ROHN 12 EH	272	-518.76	703.44	73.7	Pass
T14	60 - 30	Leg	ROHN 12 EH	305	-563.60	703.48	80.1	Pass
T15	30 - 0	Leg	ROHN 12 EHS	356	-631.44	869.31	72.6	Pass
T1	320 - 300	Diagonal	L1 3/4x1 3/4x3/16	7	-4.39	8.18	53.7	Pass
T2	300 - 280	Diagonal	L2x2x1/4	46	-4.91	9.23	53.2	Pass
T3	280 - 260	Diagonal	L2 1/2x2 1/2x1/4	73	-6.61	11.32	58.4	Pass
T4	260 - 240	Diagonal	L3x3x1/4	94	-8.08	15.04	53.7	Pass
T5	240 - 220	Diagonal	L4x4x5/16	115	-9.92	34.41	28.8	Pass
							56.2 (b)	
T6	220 - 200	Diagonal	L4x4x3/8	136	-13.69	27.83	49.2	Pass
							77.5 (b)	
T7	200 - 180	Diagonal	L4x4x3/8	151	-15.64	23.48	66.6	Pass
T8	180 - 160	Diagonal	L4x4x3/8	163	-17.40	19.72	88.2	Pass
T9	160 - 140	Diagonal	L5x5x3/8	178	-20.23	33.84	59.8	Pass
							84.1 (b)	
T10	140 - 120	Diagonal	L5x5x3/8	193	-20.76	28.78	72.1	Pass
							86.3 (b)	
T11	120 - 100	Diagonal	ROHN 3 EH	209	-33.08	40.02	82.6	Pass
T12	100 - 80	Diagonal	ROHN 3 EH	242	-35.00	37.72	92.8	Pass
T13	80 - 60	Diagonal	ROHN 3 EH	275	-33.80	35.34	95.6	Pass
T14	60 - 30	Diagonal	ROHN 3.5 EH	308	-49.28	63.03	78.2	Pass
T15	30 - 0	Diagonal	ROHN 3.5 EH	359	-45.25	59.41	76.2	Pass
T11	120 - 100	Horizontal	ROHN 3 STD	208	-17.33	27.81	62.3	Pass
T12	100 - 80	Horizontal	ROHN 3 STD	241	-19.74	22.76	86.7	Pass
T13	80 - 60	Horizontal	ROHN 3 EH	274	-20.03	24.62	81.4	Pass
T14	60 - 30	Horizontal	ROHN 3.5 EH	307	-22.87	33.75	67.8	Pass
T15	30 - 0	Horizontal	ROHN 4 STD	358	-24.88	31.31	79.5	Pass
T1	320 - 300	Top Girt	L1 3/4x1 3/4x3/16	5	-0.60	3.71	16.3	Pass
T2	300 - 280	Top Girt	L2x2x1/4	40	-0.16	6.78	2.3	Pass
T11	120 - 100	Redund Horz 1 Bracing	ROHN 1.5 STD	213	-6.48	12.31	52.6	Pass
T12	100 - 80	Redund Horz 1 Bracing	ROHN 1.5 STD	250	-7.12	10.00	71.2	Pass

ERITower	Job: 320' Rohn SSVMW	Page: 54 of 55
URS Corporation 500 Enterprise Drive, Suite 3B Rocky Hill, CT 06067 Phone: (860) 529-8882 FAX: (860) 529-3991	Project: CSP Tower - Colchester, CT	Date: 12:49:15 10/12/06
	Client: Verizon Wireless	Designed by: Staff

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	SF*P_{allow} K	% Capacity	Pass Fail
T13	80 - 60	Redund Horz 1 Bracing	ROHN 2 STD	279	-7.80	18.33	42.6	Pass
T14	60 - 30	Redund Horz 1 Bracing	ROHN 1.5 STD	314	-8.68	16.59	52.3	Pass
T15	30 - 0	Redund Horz 1 Bracing	ROHN 1.5 STD	371	-9.53	13.65	69.8	Pass
T14	60 - 30	Redund Horz 2 Bracing	ROHN 2 EH	321	-8.56	10.93	78.4	Pass
T15	30 - 0	Redund Horz 2 Bracing	ROHN 2.5 EH	372	-9.73	19.31	50.4	Pass
T11	120 - 100	Redund Diag 1 Bracing	ROHN 2 STD	214	-5.88	8.17	71.9	Pass
T12	100 - 80	Redund Diag 1 Bracing	ROHN 2 STD	247	-6.04	7.57	79.8	Pass
T13	80 - 60	Redund Diag 1 Bracing	ROHN 2 STD	284	-6.25	7.08	88.2	Pass
T14	60 - 30	Redund Diag 1 Bracing	ROHN 2 STD	316	-8.57	9.30	92.1	Pass
T15	30 - 0	Redund Diag 1 Bracing	ROHN 2.5 STD	367	-8.90	19.90	44.7	Pass
T14	60 - 30	Redund Diag 2 Bracing	ROHN 2.5 STD	323	-5.56	11.23	49.5	Pass
T15	30 - 0	Redund Diag 2 Bracing	ROHN 2.5 STD	374	-5.96	9.87	60.3	Pass
T11	120 - 100	Redund Hip 1 Bracing	ROHN 1.5 STD	233	-0.04	10.63	0.4	Pass
T12	100 - 80	Redund Hip 1 Bracing	ROHN 1.5 STD	266	-0.04	8.76	0.4	Pass
T13	80 - 60	Redund Hip 1 Bracing	ROHN 1.5 STD	299	-0.03	7.38	0.4	Pass
T14	60 - 30	Redund Hip 1 Bracing	ROHN 1.5 STD	348	-0.10	14.04	0.7	Pass
T15	30 - 0	Redund Hip 1 Bracing	ROHN 1.5 STD	399	-0.09	11.39	0.8	Pass
T14	60 - 30	Redund Hip 2 Bracing	ROHN 2 STD	349	-0.05	7.54	0.7	Pass
T15	30 - 0	Redund Hip 2 Bracing	ROHN 2 STD	400	-0.05	6.12	0.7	Pass
T11	120 - 100	Redund Hip Diagonal Bracing	ROHN 2.5 STD	223	-0.09	9.21	1.0	Pass
T12	100 - 80	Redund Hip Diagonal Bracing	ROHN 2.5 STD	256	-0.09	8.26	1.0	Pass
T13	80 - 60	Redund Hip Diagonal Bracing	ROHN 3 STD	289	-0.09	14.64	0.6	Pass
T14	60 - 30	Redund Hip Diagonal Bracing	ROHN 2 STD	350	-0.21	4.63	4.5	Pass
T15	30 - 0	Redund Hip Diagonal Bracing	ROHN 2.5 STD	401	-0.19	9.55	1.9	Pass
T11	120 - 100	Inner Bracing	ROHN 3 STD	235	-0.31	25.88	1.2	Pass
T12	100 - 80	Inner Bracing	ROHN 3 STD	268	-0.35	21.33	1.6	Pass
T13	80 - 60	Inner Bracing	ROHN 3 STD	301	-0.36	17.97	2.0	Pass
T14	60 - 30	Inner Bracing	ROHN 3 STD	352	-0.41	15.19	2.7	Pass
T15	30 - 0	Inner Bracing	ROHN 3 STD	403	-0.44	12.32	3.6	Pass
							Summary	
						Leg (T12)	82.4	Pass
						Diagonal (T13)	95.6	Pass
						Horizontal (T12)	86.7	Pass
						Top Girt (T1)	16.3	Pass

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	$SF*P_{allow}$ K	% Capacity	Pass Fail
						Redund Horz 1 Bracing (T12)	71.2	Pass
						Redund Horz 2 Bracing (T14)	78.4	Pass
						Redund Diag 1 Bracing (T14)	92.1	Pass
						Redund Diag 2 Bracing (T15)	60.3	Pass
						Redund Hip 1 Bracing (T15)	0.8	Pass
						Redund Hip 2 Bracing (T15)	0.7	Pass
						Redund Hip Diagonal Bracing (T14)	4.5	Pass
						Inner Bracing (T15)	3.6	Pass
						Bolt Checks	86.3	Pass
						RATING =	**95.6**	**Pass**

ERI TOWER DETAILED OUTPUT FOR DEFLECTION

ERITower	Job	Page
	320' Rohn SSVMW	1 of 1
URS Corporation 500 Enterprise Drive, Suite 3B Rocky Hill, CT 06067 Phone: (860) 529-8882 FAX: (860) 529-3991	**Project** CSP Tower - Colchester, CT	**Date** 13:11:25 10/12/06
	Client Verizon Wireless	**Designed by** Staff

Tower Input Data

The main tower is a 3x free standing tower with an overall height of 320.00 ft above the ground line.
The base of the tower is set at an elevation of 0.00 ft above the ground line.
The face width of the tower is 6.81 ft at the top and 40.69 ft at the base.
This tower is designed using the TIA/EIA-222-F standard.
The following design criteria apply:

Basic wind speed of 78 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.
Temperature drop of 50 °F.
Deflections calculated using a wind speed of 78 mph.
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		

ERITower	Job	Page
	320' Rohn SSVMW	2 of 2
URS Corporation 500 Enterprise Drive, Suite 3B Rocky Hill, CT 06067 Phone: (860) 529-8882 FAX: (860) 529-3991	**Project** CSP Tower - Colchester, CT	**Date** 13:11:25 10/12/06
	Client Verizon Wireless	**Designed by** Staff

Tower Section Geometry

Tower Section	Tower Elevation	Assembly Database	Description	Section Width	Number of Sections	Section Length
	ft			ft		ft
T1	320.00-300.00			6.81	1	20.00
T2	300.00-280.00			6.81	1	20.00
T3	280.00-260.00			8.85	1	20.00
T4	260.00-240.00			11.04	1	20.00
T5	240.00-220.00			13.08	1	20.00
T6	220.00-200.00			15.09	1	20.00
T7	200.00-180.00			17.09	1	20.00
T8	180.00-160.00			19.22	1	20.00
T9	160.00-140.00			21.30	1	20.00
T10	140.00-120.00			23.21	1	20.00
T11	120.00-100.00			25.39	1	20.00
T12	100.00-80.00			27.97	1	20.00
T13	80.00-60.00			30.47	1	20.00
T14	60.00-30.00			33.14	1	30.00
T15	30.00-0.00			36.80	1	30.00

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

ERITower	Job	Page
	320' Rohn SSVMW	3 of 3
URS Corporation 500 Enterprise Drive, Suite 3B Rocky Hill, CT 06067 Phone: (860) 529-8882 FAX: (860) 529-3991	**Project** CSP Tower - Colchester, CT	**Date** 13:11:25 10/12/06
	Client Verizon Wireless	**Designed by** Staff

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	320.00-300.00	4.00	X Brace	No	No	0.0000	0.0000
T2	300.00-280.00	5.00	X Brace	No	No	0.0000	0.0000
T3	280.00-260.00	6.67	X Brace	No	No	0.0000	0.0000
T4	260.00-240.00	6.67	X Brace	No	No	0.0000	0.0000
T5	240.00-220.00	6.67	X Brace	No	No	0.0000	0.0000
T6	220.00-200.00	10.00	X Brace	No	No	0.0000	0.0000
T7	200.00-180.00	10.00	X Brace	No	No	0.0000	0.0000
T8	180.00-160.00	10.00	X Brace	No	No	0.0000	0.0000
T9	160.00-140.00	10.00	X Brace	No	No	0.0000	0.0000
T10	140.00-120.00	10.00	X Brace	No	No	0.0000	0.0000
T11	120.00-100.00	20.00	K1 Down	No	Yes	0.0000	0.0000
T12	100.00-80.00	20.00	K1 Down	No	Yes	0.0000	0.0000
T13	80.00-60.00	20.00	K1 Down	No	Yes	0.0000	0.0000
T14	60.00-30.00	30.00	K2 Down	No	Yes	0.0000	0.0000
T15	30.00-0.00	30.00	K2 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 320.00-300.00	Pipe	ROHN 5 EH	A572-50 (50 ksi)	Equal Angle	L1 3/4x1 3/4x3/16	A36 (36 ksi)
T2 300.00-280.00	Pipe	ROHN 6 EH	A572-50 (50 ksi)	Equal Angle	L2x2x1/4	A36 (36 ksi)
T3 280.00-260.00	Pipe	ROHN 8 EH	A572-50 (50 ksi)	Equal Angle	L2 1/2x2 1/2x1/4	A36 (36 ksi)
T4 260.00-240.00	Pipe	ROHN 8 EH	A572-50 (50 ksi)	Equal Angle	L3x3x1/4	A572-50 (50 ksi)
T5 240.00-220.00	Pipe	ROHN 8 EH	A572-50 (50 ksi)	Equal Angle	L4x4x5/16	A572-50 (50 ksi)
T6 220.00-200.00	Pipe	ROHN 8 EH	A572-50 (50 ksi)	Equal Angle	L4x4x3/8	A572-50 (50 ksi)
T7 200.00-180.00	Pipe	ROHN 10 EH	A572-50 (50 ksi)	Equal Angle	L4x4x3/8	A572-50 (50 ksi)
T8 180.00-160.00	Pipe	ROHN 10 EH	A572-50 (50 ksi)	Equal Angle	L4x4x3/8	A572-50 (50 ksi)
T9 160.00-140.00	Pipe	ROHN 10 EH	A572-50 (50 ksi)	Equal Angle	L5x5x3/8	A572-50 (50 ksi)
T10 140.00-120.00	Pipe	ROHN 10 EH	A572-50 (50 ksi)	Equal Angle	L5x5x3/8	A572-50 (50 ksi)
T11 120.00-100.00	Pipe	ROHN 10 EH	A572-50 (50 ksi)	Pipe	ROHN 3 EH	A572-50 (50 ksi)
T12 100.00-80.00	Pipe	ROHN 10 EH	A572-50 (50 ksi)	Pipe	ROHN 3 EH	A572-50 (50 ksi)
T13 80.00-60.00	Pipe	ROHN 12 EH	A572-50 (50 ksi)	Pipe	ROHN 3 EH	A572-50 (50 ksi)
T14 60.00-30.00	Pipe	ROHN 12 EH	A572-50 (50 ksi)	Pipe	ROHN 3.5 EH	A572-50 (50 ksi)
T15 30.00-0.00	Pipe	ROHN 12 EHS	A572-50 (50 ksi)	Pipe	ROHN 3.5 EH	A572-50 (50 ksi)

ERITower	Job	Page
URS Corporation 500 Enterprise Drive, Suite 3B Rocky Hill, CT 06067 Phone: (860) 529-8882 FAX: (860) 529-3991	320' Rohn SSVMW	4 of 4
	Project CSP Tower - Colchester, CT	Date 13:11:25 10/12/06
	Client Verizon Wireless	Designed by Staff

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 320.00-300.00	Equal Angle	L1 3/4x1 3/4x3/16	A36 (36 ksi)	Solid Round		A36 (36 ksi)
T2 300.00-280.00	Equal Angle	L2x2x1/4	A36 (36 ksi)	Solid Round		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*
T11 120.00-100.00	None	Flat Bar		A36 (36 ksi)	Pipe	ROHN 3 STD	A572-50 (50 ksi)
T12 100.00-80.00	None	Flat Bar		A36 (36 ksi)	Pipe	ROHN 3 STD	A572-50 (50 ksi)
T13 80.00-60.00	None	Flat Bar		A36 (36 ksi)	Pipe	ROHN 3 EH	A572-50 (50 ksi)
T14 60.00-30.00	None	Flat Bar		A36 (36 ksi)	Pipe	ROHN 3.5 EH	A572-50 (50 ksi)
T15 30.00-0.00	None	Flat Bar		A36 (36 ksi)	Pipe	ROHN 4 STD	A572-50 (50 ksi)

Tower Section Geometry *(cont'd)*

Tower Elevation ft	*Secondary Horizontal Type*	*Secondary Horizontal Size*	*Secondary Horizontal Grade*	*Inner Bracing Type*	*Inner Bracing Size*	*Inner Bracing Grade*
T11 120.00-100.00	Pipe		A572-50 (50 ksi)	Pipe	ROHN 3 STD	A572-50 (50 ksi)
T12 100.00-80.00	Pipe		A572-50 (50 ksi)	Pipe	ROHN 3 STD	A572-50 (50 ksi)
T13 80.00-60.00	Pipe		A572-50 (50 ksi)	Pipe	ROHN 3 STD	A572-50 (50 ksi)
T14 60.00-30.00	Pipe		A572-50 (50 ksi)	Pipe	ROHN 3 STD	A572-50 (50 ksi)
T15 30.00-0.00	Pipe		A572-50 (50 ksi)	Pipe	ROHN 3 STD	A572-50 (50 ksi)

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Redundant Bracing Grade		Redundant Type	Redundant Size	K Factor
T11 120.00-100.00	A572-50 (50 ksi)	Horizontal (1)	Pipe	ROHN 1.5 STD	1
		Diagonal (1)	Pipe	ROHN 2 STD	1
		Hip (1)	Pipe	ROHN 1.5 STD	1
		Hip Diagonal		ROHN 2.5 STD	1
T12 100.00-80.00	A572-50 (50 ksi)	Horizontal (1)	Pipe	ROHN 1.5 STD	1
		Diagonal (1)	Pipe	ROHN 2 STD	1
		Hip (1)	Pipe	ROHN 1.5 STD	1
		Hip Diagonal		ROHN 2.5 STD	1
T13 80.00-60.00	A572-50 (50 ksi)	Horizontal (1)	Pipe	ROHN 2 STD	1
		Diagonal (1)	Pipe	ROHN 2 STD	1
		Hip (1)	Pipe	ROHN 1.5 STD	1
		Hip Diagonal		ROHN 3 STD	1
T14 60.00-30.00	A572-50 (50 ksi)	Horizontal (1)	Pipe	ROHN 1.5 STD	1
		Horizontal (2)		ROHN 2 EH	
		Diagonal (1)	Pipe	ROHN 2 STD	1
		Diagonal (2)		ROHN 2.5 STD	
		Hip (1)	Pipe	ROHN 1.5 STD	1
		Hip (2)		ROHN 2 STD	
		Hip Diagonal		ROHN 2 STD	1
T15 30.00-0.00	A572-50 (50 ksi)	Horizontal (1)	Pipe	ROHN 1.5 STD	1
		Horizontal (2)		ROHN 2.5 EH	
		Diagonal (1)	Pipe	ROHN 2.5 STD	1
		Diagonal (2)		ROHN 2.5 STD	
		Hip (1)	Pipe	ROHN 1.5 STD	1
		Hip (2)		ROHN 2 STD	
		Hip Diagonal		ROHN 2.5 STD	1

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 320.00-300.00	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000
T2 300.00-280.00	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000
T3 280.00-260.00	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000
T4 260.00-240.00	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000
T5 240.00-220.00	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000
T6 220.00-200.00	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000
T7 200.00-180.00	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000
T8 180.00-160.00	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000
T9 160.00-140.00	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000
T10 140.00-120.00	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000
T11 120.00-100.00	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000
T12 100.00-	0.00	0.0000	A36	1	1	1	36.0000	36.0000

Tower Elevation ft	Gusset Area (per face) ft²	Gusset Thickness in	Gusset Grade	Adjust. Factor A_f	Adjust. Factor A_r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals in	Double Angle Stitch Bolt Spacing Horizontals in
80.00			(36 ksi)					
T13 80.00-60.00	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000
T14 60.00-30.00	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000
T15 30.00-0.00	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Calc K Single Angles	Calc K Solid Rounds	K Factors[1] Legs	X Brace Diags X Y	K Brace Diags X Y	Single Diags X Y	Girts X Y	Horiz. X Y	Sec. Horiz. X Y	Inner Brace X Y
T1 320.00-300.00	Yes	No	1	1	1	1	1	1	1	1
				1	1	1	1	1	1	1
T2 300.00-280.00	Yes	No	1	1	1	1	1	1	1	1
				1	1	1	1	1	1	1
T3 280.00-260.00	Yes	No	1	1	1	1	1	1	1	1
				1	1	1	1	1	1	1
T4 260.00-240.00	Yes	No	1	1	1	1	1	1	1	1
				1	1	1	1	1	1	1
T5 240.00-220.00	Yes	No	1	1	1	1	1	1	1	1
				1	1	1	1	1	1	1
T6 220.00-200.00	Yes	No	1	1	1	1	1	1	1	1
				1	1	1	1	1	1	1
T7 200.00-180.00	Yes	No	1	1	1	1	1	1	1	1
				1	1	1	1	1	1	1
T8 180.00-160.00	Yes	No	1	1	1	1	1	1	1	1
				1	1	1	1	1	1	1
T9 160.00-140.00	Yes	No	1	1	1	1	1	1	1	1
				1	1	1	1	1	1	1
T10 140.00-120.00	Yes	No	1	1	1	1	1	1	1	1
				1	1	1	1	1	1	1
T11 120.00-100.00	No	No	1	1	0.95	1	1	1	1	1
				1	0.95	1	1	1	1	1
T12 100.00-80.00	No	No	1	1	0.95	1	1	1	1	1
				1	0.95	1	1	1	1	1
T13 80.00-60.00	No	No	1	1	0.95	1	1	1	1	1
				1	0.95	1	1	1	1	1
T14 60.00-30.00	No	No	1	1	1	1	1	1	1	1
				1	1	1	1	1	1	1
T15 30.00-0.00	No	No	1	1	1	1	1	1	1	1
				1	1	1	1	1	1	1

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

Tower Section Geometry *(cont'd)*

ERITower	Job: 320' Rohn SSVMW	Page: 7 of 7
URS Corporation 500 Enterprise Drive, Suite 3B Rocky Hill, CT 06067 Phone: (860) 529-8882 FAX: (860) 529-3991	Project: CSP Tower - Colchester, CT	Date: 13:11:25 10/12/06
	Client: Verizon Wireless	Designed by: Staff

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 320.00-300.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T2 300.00-280.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T3 280.00-260.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T4 260.00-240.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T5 240.00-220.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T6 220.00-200.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T7 200.00-180.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T8 180.00-160.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T9 160.00-140.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T10 140.00-120.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T11 120.00-100.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T12 100.00-80.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T13 80.00-60.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T14 60.00-30.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T15 30.00-0.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Leg Connection Type	Leg		Diagonal		Top Girt		Bottom Girt		Mid Girt		Long Horizontal		Short Horizontal	
		Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.
T1 320.00-300.00	Flange	1.0000 A325N	6	0.6250 A325X	1	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T2 300.00-280.00	Flange	1.0000 A325N	8	0.6250 A325X	1	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T3 280.00-260.00	Flange	1.0000 A325N	8	0.7500 A325X	1	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T4 260.00-240.00	Flange	1.0000 A325N	8	0.7500 A325X	1	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T5 240.00-220.00	Flange	1.0000 A325N	8	0.7500 A325X	1	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T6 220.00-200.00	Flange	1.0000 A325N	12	0.7500 A325X	1	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T7 200.00-180.00	Flange	1.0000 A325N	12	0.8750 A325X	1	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0

ERITower	Job	Page
	320' Rohn SSVMW	8 of 8
URS Corporation 500 Enterprise Drive, Suite 3B Rocky Hill, CT 06067 Phone: (860) 529-8882 FAX: (860) 529-3991	**Project** CSP Tower - Colchester, CT	**Date** 13:11:25 10/12/06
	Client Verizon Wireless	**Designed by** Staff

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.
T8 180.00-160.00	Flange	1.0000 A325N	12	0.8750 A325X	1	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T9 160.00-140.00	Flange	1.0000 A325N	12	0.8750 A325X	1	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T10 140.00-120.00	Flange	1.0000 A325N	12	0.8750 A325X	1	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T11 120.00-100.00	Flange	1.0000 A325N	12	0.7500 A325X	3	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.7500 A325X	2	0.6250 A325N	0
T12 100.00-80.00	Flange	1.0000 A325N	16	0.7500 A325X	3	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.7500 A325X	2	0.6250 A325N	0
T13 80.00-60.00	Flange	1.0000 A325N	16	0.7500 A325X	3	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.7500 A325X	2	0.6250 A325N	0
T14 60.00-30.00	Flange	1.0000 A325N	16	0.8750 A325X	3	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.7500 A325X	2	0.6250 A325N	0
T15 30.00-0.00	Flange	1.0000 A325N	24	0.8750 A325X	3	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.7500 A325X	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 plf
1 5/8 (Verizon)	C	Yes	Ar (CfAe)	220.00 - 0.00	0.0000	-0.4	12	12	1.9800	1.9800		1.04
3/4 Electrical	B	Yes	Ar (CfAe)	320.00 - 0.00	0.0000	0.48	2	2	1.1100	1.1100		0.54
7/8	B	Yes	Ar (CfAe)	320.00 - 0.00	0.0000	0.46	3	3	1.1100	1.1100		0.54
EW63	B	Yes	Af (CfAe)	320.00 - 0.00	0.0000	0.44	3	3	1.5742	1.5742	5.0668	0.51
7/8	B	Yes	Ar (CfAe)	294.00 - 0.00	0.0000	0.42	2	2	1.1100	1.1100		0.54
1 5/8	B	Yes	Ar (CfAe)	280.00 - 0.00	0.0000	0.4	4	4	1.9800	1.9800		1.04
7/8	B	Yes	Ar (CfAe)	250.00 - 0.00	0.0000	0.38	3	3	1.1100	1.1100		0.54
7/8	B	Yes	Ar (CfAe)	140.00 - 0.00	0.0000	0.36	4	4	1.1100	1.1100		0.54
EW108	B	Yes	Af (CfAe)	112.00 - 0.00	0.0000	0.34	1	1	0.5899	0.5899	2.0063	0.15
EW65	B	Yes	Af (CfAe)	105.00 - 0.00	0.0000	0.32	1	1	1.5742	1.5742	5.0668	0.51
7/8	B	Yes	Ar (CfAe)	105.00 - 0.00	0.0000	0.3	2	2	1.1100	1.1100		0.54
7/8	B	Yes	Ar (CfAe)	95.00 - 0.00	0.0000	0.28	2	2	1.1100	1.1100		0.54
EW63 (Verizon)	C	Yes	Af (CfAe)	175.00 - 0.00	0.0000	-0.45	1	1	1.5742	1.5742	5.0668	0.51
EW63 (Verizon)	C	Yes	Af (CfAe)	115.00 - 0.00	0.0000	-0.47	1	1	1.5742	1.5742	5.0668	0.51
1 5/8 (Cingular)	A	Yes	Ar (CfAe)	200.00 - 0.00	0.0000	-0.42	24	12	1.9800	1.9800		1.04

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	320.00-300.00	A	0.000	0.000	0.000	0.000	0.00
		B	9.250	7.871	0.000	0.000	0.08
		C	0.000	0.000	0.000	0.000	0.00

ERITower	Job	Page
	320' Rohn SSVMW	9 of 9
URS Corporation 500 Enterprise Drive, Suite 3B Rocky Hill, CT 06067 Phone: (860) 529-8882 FAX: (860) 529-3991	**Project** CSP Tower - Colchester, CT	**Date** 13:11:25 10/12/06
	Client Verizon Wireless	**Designed by** Staff

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
T2	300.00-280.00	A	0.000	0.000	0.000	0.000	0.00
		B	11.840	7.871	0.000	0.000	0.10
		C	0.000	0.000	0.000	0.000	0.00
T3	280.00-260.00	A	0.000	0.000	0.000	0.000	0.00
		B	26.150	7.871	0.000	0.000	0.19
		C	0.000	0.000	0.000	0.000	0.00
T4	260.00-240.00	A	0.000	0.000	0.000	0.000	0.00
		B	28.925	7.871	0.000	0.000	0.21
		C	0.000	0.000	0.000	0.000	0.00
T5	240.00-220.00	A	0.000	0.000	0.000	0.000	0.00
		B	31.700	7.871	0.000	0.000	0.22
		C	0.000	0.000	0.000	0.000	0.00
T6	220.00-200.00	A	0.000	0.000	0.000	0.000	0.00
		B	31.700	7.871	0.000	0.000	0.22
		C	39.600	0.000	0.000	0.000	0.25
T7	200.00-180.00	A	39.600	0.000	0.000	0.000	0.50
		B	31.700	7.871	0.000	0.000	0.22
		C	39.600	0.000	0.000	0.000	0.25
T8	180.00-160.00	A	39.600	0.000	0.000	0.000	0.50
		B	31.700	7.871	0.000	0.000	0.22
		C	39.600	1.968	0.000	0.000	0.26
T9	160.00-140.00	A	39.600	0.000	0.000	0.000	0.50
		B	31.700	7.871	0.000	0.000	0.22
		C	39.600	2.624	0.000	0.000	0.26
T10	140.00-120.00	A	39.600	0.000	0.000	0.000	0.50
		B	39.100	7.871	0.000	0.000	0.27
		C	39.600	2.624	0.000	0.000	0.26
T11	120.00-100.00	A	39.600	0.000	0.000	0.000	0.50
		B	40.025	9.117	0.000	0.000	0.27
		C	39.600	4.591	0.000	0.000	0.27
T12	100.00-80.00	A	39.600	0.000	0.000	0.000	0.50
		B	45.575	11.478	0.000	0.000	0.32
		C	39.600	5.247	0.000	0.000	0.27
T13	80.00-60.00	A	39.600	0.000	0.000	0.000	0.50
		B	46.500	11.478	0.000	0.000	0.32
		C	39.600	5.247	0.000	0.000	0.27
T14	60.00-30.00	A	59.400	0.000	0.000	0.000	0.75
		B	69.750	17.217	0.000	0.000	0.48
		C	59.400	7.871	0.000	0.000	0.41
T15	30.00-0.00	A	59.400	0.000	0.000	0.000	0.75
		B	69.750	17.217	0.000	0.000	0.48
		C	59.400	7.871	0.000	0.000	0.41

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	320.00-300.00	A	0.500	0.000	0.000	0.000	0.000	0.00
		B		17.583	11.204	0.000	0.000	0.26
		C		0.000	0.000	0.000	0.000	0.00
T2	300.00-280.00	A	0.500	0.000	0.000	0.000	0.000	0.00
		B		22.507	11.204	0.000	0.000	0.31
		C		0.000	0.000	0.000	0.000	0.00
T3	280.00-260.00	A	0.500	0.000	0.000	0.000	0.000	0.00
		B		44.483	11.204	0.000	0.000	0.53
		C		0.000	0.000	0.000	0.000	0.00
T4	260.00-240.00	A	0.500	0.000	0.000	0.000	0.000	0.00

ERITower	Job	Page
	320' Rohn SSVMW	10 of 10
URS Corporation 500 Enterprise Drive, Suite 3B Rocky Hill, CT 06067 Phone: (860) 529-8882 FAX: (860) 529-3991	**Project** CSP Tower - Colchester, CT	**Date** 13:11:25 10/12/06
	Client Verizon Wireless	**Designed by** Staff

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		49.758	11.204	0.000	0.000	0.58
		C		0.000	0.000	0.000	0.000	0.00
T5	240.00-220.00	A	0.500	0.000	0.000	0.000	0.000	0.00
		B		55.033	11.204	0.000	0.000	0.62
		C		0.000	0.000	0.000	0.000	0.00
T6	220.00-200.00	A	0.500	0.000	0.000	0.000	0.000	0.00
		B		55.033	11.204	0.000	0.000	0.62
		C		59.600	0.000	0.000	0.000	0.61
T7	200.00-180.00	A	0.500	59.600	0.000	0.000	0.000	1.23
		B		55.033	11.204	0.000	0.000	0.62
		C		59.600	0.000	0.000	0.000	0.61
T8	180.00-160.00	A	0.500	59.600	0.000	0.000	0.000	1.23
		B		55.033	11.204	0.000	0.000	0.62
		C		59.600	2.801	0.000	0.000	0.64
T9	160.00-140.00	A	0.500	59.600	0.000	0.000	0.000	1.23
		B		55.033	11.204	0.000	0.000	0.62
		C		59.600	3.735	0.000	0.000	0.65
T10	140.00-120.00	A	0.500	59.600	0.000	0.000	0.000	1.23
		B		69.100	11.204	0.000	0.000	0.74
		C		59.600	3.735	0.000	0.000	0.65
T11	120.00-100.00	A	0.500	59.600	0.000	0.000	0.000	1.23
		B		70.858	13.395	0.000	0.000	0.78
		C		59.600	6.536	0.000	0.000	0.68
T12	100.00-80.00	A	0.500	59.600	0.000	0.000	0.000	1.23
		B		81.408	17.033	0.000	0.000	0.90
		C		59.600	7.470	0.000	0.000	0.69
T13	80.00-60.00	A	0.500	59.600	0.000	0.000	0.000	1.23
		B		83.167	17.033	0.000	0.000	0.92
		C		59.600	7.470	0.000	0.000	0.69
T14	60.00-30.00	A	0.500	89.400	0.000	0.000	0.000	1.84
		B		124.750	25.550	0.000	0.000	1.38
		C		89.400	11.204	0.000	0.000	1.03
T15	30.00-0.00	A	0.500	89.400	0.000	0.000	0.000	1.84
		B		124.750	25.550	0.000	0.000	1.38
		C		89.400	11.204	0.000	0.000	1.03

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	320.00-300.00	A	0.000	0.000	0.000	0.000
		B	0.000	0.000	1.573	3.863
		C	0.000	0.000	0.000	0.000
T2	300.00-280.00	A	0.000	0.000	0.000	0.000
		B	0.000	0.000	1.727	4.132
		C	0.000	0.000	0.000	0.000
T3	280.00-260.00	A	0.000	0.000	0.000	0.000
		B	0.000	0.000	2.564	5.474
		C	0.000	0.000	0.000	0.000
T4	260.00-240.00	A	0.000	0.000	0.000	0.000
		B	0.000	0.000	3.155	6.564
		C	0.000	0.000	0.000	0.000
T5	240.00-220.00	A	0.000	0.000	0.000	0.000
		B	0.000	0.000	4.380	8.768
		C	0.000	0.000	0.000	0.000
T6	220.00-200.00	A	0.000	0.000	0.000	0.000

Section	Elevation	Face	A_R	A_R Ice	A_F	A_F Ice
	ft		ft^2	ft^2	ft^2	ft^2
		B	0.000	0.000	3.107	6.220
		C	0.000	0.000	3.109	5.460
T7	200.00-180.00	A	0.000	0.000	3.015	5.294
		B	0.000	0.000	3.013	6.031
		C	0.000	0.000	3.015	5.294
T8	180.00-160.00	A	0.000	0.000	2.945	5.170
		B	0.000	0.000	2.942	5.891
		C	0.000	0.000	3.091	5.449
T9	160.00-140.00	A	0.000	0.000	3.618	6.172
		B	0.000	0.000	3.616	7.032
		C	0.000	0.000	3.858	6.616
T10	140.00-120.00	A	0.000	0.000	3.569	6.087
		B	0.000	0.000	4.233	8.372
		C	0.000	0.000	3.805	6.526
T11	120.00-100.00	A	2.688	5.475	0.000	0.000
		B	3.335	7.936	0.000	0.000
		C	2.999	6.165	0.000	0.000
T12	100.00-80.00	A	2.572	5.239	0.000	0.000
		B	3.706	8.898	0.000	0.000
		C	2.913	5.993	0.000	0.000
T13	80.00-60.00	A	2.560	5.173	0.000	0.000
		B	3.748	8.938	0.000	0.000
		C	2.899	5.918	0.000	0.000
T14	60.00-30.00	A	4.171	8.402	0.000	0.000
		B	6.106	14.518	0.000	0.000
		C	4.723	9.612	0.000	0.000
T15	30.00-0.00	A	4.315	8.525	0.000	0.000
		B	6.318	14.730	0.000	0.000
		C	4.887	9.752	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	320.00-300.00	5.7821	2.9520	7.1025	3.6441
T2	300.00-280.00	6.6750	3.3779	8.5933	4.3612
T3	280.00-260.00	11.0518	5.2903	14.1421	6.8116
T4	260.00-240.00	12.7911	6.0842	16.6398	7.9470
T5	240.00-220.00	13.1492	6.2185	17.5579	8.3243
T6	220.00-200.00	26.2723	15.6197	32.4306	19.0842
T7	200.00-180.00	10.5398	19.5179	13.8444	23.4557
T8	180.00-160.00	12.1105	21.5914	15.7775	25.9400
T9	160.00-140.00	12.1464	21.3930	16.0555	26.1545
T10	140.00-120.00	15.0912	23.2372	20.2284	28.4681
T11	120.00-100.00	19.9795	28.9268	24.9235	33.1525
T12	100.00-80.00	24.3917	31.5250	30.3482	36.0111
T13	80.00-60.00	24.7156	31.5797	31.3068	36.6933
T14	60.00-30.00	26.5159	33.8668	33.5485	39.3179
T15	30.00-0.00	28.0485	35.8107	35.7092	41.8405

Discrete Tower Loads

ERITower	Job: 320' Rohn SSVMW	Page: 12 of 12
URS Corporation 500 Enterprise Drive, Suite 3B Rocky Hill, CT 06067 Phone: (860) 529-8882 FAX: (860) 529-3991	Project: CSP Tower - Colchester, CT	Date: 13:11:25 10/12/06
	Client: Verizon Wireless	Designed by: Staff

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
Dual Lights	C	None		0.0000	320.00	No Ice	4.00	4.00	0.25
						1/2" Ice	4.80	4.80	0.40
5'3"x4" Pipe Mount	A	From Leg	0.50	0.0000	320.00	No Ice	1.88	1.88	0.06
(CSP future)			0.00			1/2" Ice	2.21	2.21	0.07
			0.00						
5'3"x4" Pipe Mount	B	From Leg	0.50	0.0000	320.00	No Ice	1.88	1.88	0.06
(CSP future)			0.00			1/2" Ice	2.21	2.21	0.07
			0.00						
5'3"x4" Pipe Mount	C	From Leg	0.50	0.0000	320.00	No Ice	1.88	1.88	0.06
(CSP future)			0.00			1/2" Ice	2.21	2.21	0.07
			0.00						
PD128	C	From Leg	6.00	0.0000	320.00	No Ice	1.00	1.00	0.01
(CSP)			0.00			1/2" Ice	1.80	1.80	0.02
			0.00						
6' Side Mount Standoff	C	None		0.0000	320.00	No Ice	6.50	6.50	0.10
						1/2" Ice	8.50	8.50	0.17
PD128	C	From Leg	6.00	0.0000	318.00	No Ice	1.00	1.00	0.01
(CSP)			0.00			1/2" Ice	1.80	1.80	0.02
			0.00						
6' Side Mount Standoff	C	None		0.0000	318.00	No Ice	6.50	6.50	0.10
						1/2" Ice	8.50	8.50	0.17
6'8"x4" Pipe Mount	C	From Leg	0.50	0.0000	315.00	No Ice	2.60	2.60	0.07
(CSP)			0.00			1/2" Ice	3.01	3.01	0.09
			0.00						
DB224	A	From Leg	6.00	0.0000	294.00	No Ice	3.15	3.15	0.03
(SHF)			0.00			1/2" Ice	5.67	5.67	0.04
			0.00						
6' Side Mount Standoff	A	None		0.0000	294.00	No Ice	6.50	6.50	0.10
						1/2" Ice	8.50	8.50	0.17
PD320	C	From Leg	6.00	0.0000	292.00	No Ice	2.25	2.25	0.03
(DEP)			0.00			1/2" Ice	4.05	4.05	0.04
			0.00						
6' Side Mount Standoff	C	None		0.0000	292.00	No Ice	6.50	6.50	0.10
						1/2" Ice	8.50	8.50	0.17
(2) DB809	A	From Leg	6.00	0.0000	285.00	No Ice	3.39	3.39	0.03
(CSP)			0.00			1/2" Ice	4.55	4.55	0.06
			0.00						
6' Side Mount Standoff	A	None		0.0000	285.00	No Ice	6.50	6.50	0.10
						1/2" Ice	8.50	8.50	0.17
(2) OGT9	A	From Leg	6.00	0.0000	275.00	No Ice	3.15	3.15	0.03
(CSP)			0.00			1/2" Ice	5.67	5.67	0.04
			0.00						
6' Side Mount Standoff	A	None		0.0000	275.00	No Ice	6.50	6.50	0.10
						1/2" Ice	8.50	8.50	0.17
PD440	B	From Leg	6.00	0.0000	257.00	No Ice	1.38	1.38	0.02
(OEM)			0.00			1/2" Ice	2.48	2.48	0.02
			0.00						
6' Side Mount Standoff	B	None		0.0000	257.00	No Ice	6.50	6.50	0.10
						1/2" Ice	8.50	8.50	0.17
PD128	C	From Leg	6.00	0.0000	243.00	No Ice	1.00	1.00	0.01
(OEM)			0.00			1/2" Ice	1.80	1.80	0.02
			0.00						
6' Side Mount Standoff	C	None		0.0000	243.00	No Ice	6.50	6.50	0.10
						1/2" Ice	8.50	8.50	0.17
PD320	A	From Leg	6.00	0.0000	227.00	No Ice	2.25	2.25	0.03
(CSP)			0.00			1/2" Ice	4.05	4.05	0.04

ERITower	Job	Page
	320' Rohn SSVMW	13 of 13
URS Corporation 500 Enterprise Drive, Suite 3B Rocky Hill, CT 06067 Phone: (860) 529-8882 FAX: (860) 529-3991	**Project** CSP Tower - Colchester, CT	**Date** 13:11:25 10/12/06
	Client Verizon Wireless	**Designed by** Staff

Description	*Face or Leg*	*Offset Type*	*Offsets: Horz Lateral Vert* *ft* *ft* *ft*	*Azimuth Adjustment* °	*Placement* *ft*		*C_AA_A Front* *ft²*	*C_AA_A Side* *ft²*	*Weight* *K*
			0.00						
6' Side Mount Standoff	A	None		0.0000	227.00	No Ice	6.50	6.50	0.10
						1/2" Ice	8.50	8.50	0.17
DB844	A	From Leg	5.00	0.0000	220.00	No Ice	3.06	3.73	0.01
(Verizon)			6.00			1/2" Ice	3.39	4.10	0.04
			0.00						
DB844	A	From Leg	5.00	0.0000	220.00	No Ice	3.06	3.73	0.01
(Verizon)			-6.00			1/2" Ice	3.39	4.10	0.04
			0.00						
DB948F85T2E-M	A	From Leg	5.00	0.0000	220.00	No Ice	1.92	3.26	0.01
(Verizon)			4.00			1/2" Ice	2.22	3.62	0.03
			0.00						
DB948F85T2E-M	A	From Leg	5.00	0.0000	220.00	No Ice	1.92	3.26	0.01
(Verizon)			-4.00			1/2" Ice	2.22	3.62	0.03
			0.00						
DB844	B	From Leg	5.00	0.0000	220.00	No Ice	3.06	3.73	0.01
(Verizon)			6.00			1/2" Ice	3.39	4.10	0.04
			0.00						
DB844	B	From Leg	5.00	0.0000	220.00	No Ice	3.06	3.73	0.01
(Verizon)			-6.00			1/2" Ice	3.39	4.10	0.04
			0.00						
DB948F85T2E-M	B	From Leg	5.00	0.0000	220.00	No Ice	1.92	3.26	0.01
(Verizon)			4.00			1/2" Ice	2.22	3.62	0.03
			0.00						
DB948F85T2E-M	B	From Leg	5.00	0.0000	220.00	No Ice	1.92	3.26	0.01
(Verizon)			-4.00			1/2" Ice	2.22	3.62	0.03
			0.00						
DB844	C	From Leg	5.00	0.0000	220.00	No Ice	3.06	3.73	0.01
(Verizon)			6.00			1/2" Ice	3.39	4.10	0.04
			0.00						
DB844	C	From Leg	5.00	0.0000	220.00	No Ice	3.06	3.73	0.01
(Verizon)			-6.00			1/2" Ice	3.39	4.10	0.04
			0.00						
DB948F85T2E-M	C	From Leg	5.00	0.0000	220.00	No Ice	1.92	3.26	0.01
(Verizon)			4.00			1/2" Ice	2.22	3.62	0.03
			0.00						
DB948F85T2E-M	C	From Leg	5.00	0.0000	220.00	No Ice	1.92	3.26	0.01
(Verizon)			-4.00			1/2" Ice	2.22	3.62	0.03
			0.00						
Mounting Frame	A	From Leg	5.00	0.0000	220.00	No Ice	17.00	17.00	0.56
(Verizon)			0.00			1/2" Ice	20.00	20.00	0.70
			0.00						
Mounting Frame	B	From Leg	5.00	0.0000	220.00	No Ice	17.00	17.00	0.56
(Verizon)			0.00			1/2" Ice	20.00	20.00	0.70
			0.00						
Mounting Frame	C	From Leg	5.00	0.0000	220.00	No Ice	17.00	17.00	0.56
(Verizon)			0.00			1/2" Ice	20.00	20.00	0.70
			0.00						
PiROD 12' Lightweight T-Frame	A	None		0.0000	200.00	No Ice	10.20	10.20	0.25
(Cingular)						1/2" Ice	16.20	16.20	0.35
PiROD 12' Lightweight T-Frame	B	None		0.0000	200.00	No Ice	10.20	10.20	0.25
(Cingular)						1/2" Ice	16.20	16.20	0.35
PiROD 12' Lightweight T-Frame	C	None		0.0000	200.00	No Ice	10.20	10.20	0.25
(Cingular)						1/2" Ice	16.20	16.20	0.35

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
(4) 7770.00	A	From Leg	3.00	0.0000	200.00	No Ice	5.88	2.93	0.04
(Cingular)			0.00			1/2" Ice	6.31	3.27	0.07
			0.00						
(4) 7770.00	B	From Leg	3.00	0.0000	200.00	No Ice	5.88	2.93	0.04
(Cingular)			0.00			1/2" Ice	6.31	3.27	0.07
			0.00						
(4) 7770.00	C	From Leg	3.00	0.0000	200.00	No Ice	5.88	2.93	0.04
(Cingular)			0.00			1/2" Ice	6.31	3.27	0.07
			0.00						
(4) LPG21401 TMA	A	From Leg	3.00	0.0000	200.00	No Ice	0.95	0.37	0.02
(Cingular)			0.00			1/2" Ice	1.09	0.48	0.02
			0.00						
(4) LPG21401 TMA	B	From Leg	3.00	0.0000	200.00	No Ice	0.95	0.37	0.02
(Cingular)			0.00			1/2" Ice	1.09	0.48	0.02
			0.00						
(4) LPG21401 TMA	C	From Leg	3.00	0.0000	200.00	No Ice	0.95	0.37	0.02
(Cingular)			0.00			1/2" Ice	1.09	0.48	0.02
			0.00						
(4) LPG13519 Diplexer	A	From Leg	3.00	0.0000	200.00	No Ice	0.27	0.18	0.01
(Cingular)			0.00			1/2" Ice	0.34	0.25	0.01
			0.00						
(4) LPG13519 Diplexer	B	From Leg	3.00	0.0000	200.00	No Ice	0.27	0.18	0.01
(Cingular)			0.00			1/2" Ice	0.34	0.25	0.01
			0.00						
(4) LPG13519 Diplexer	C	From Leg	3.00	0.0000	200.00	No Ice	0.27	0.18	0.01
(Cingular)			0.00			1/2" Ice	0.34	0.25	0.01
			0.00						
5'3"x4" Pipe Mount	B	From Leg	0.50	0.0000	175.00	No Ice	1.88	1.88	0.06
(Verizon)			0.00			1/2" Ice	2.21	2.21	0.07
			0.00						
PD688S-4	A	From Leg	6.00	0.0000	140.00	No Ice	0.35	0.35	0.00
(NEU)			0.00			1/2" Ice	0.63	0.63	0.00
			0.00						
DB212-1	B	None		0.0000	140.00	No Ice	4.40	4.40	0.03
(NEU)						1/2" Ice	8.42	8.42	0.07
6' Side Mount Standoff	B	None		0.0000	140.00	No Ice	6.50	6.50	0.10
						1/2" Ice	8.50	8.50	0.17
BA1012-0	A	From Leg	6.00	0.0000	140.00	No Ice	0.47	0.47	0.00
(OEM)			0.00			1/2" Ice	0.96	0.96	0.01
			0.00						
6' Side Mount Standoff	A	None		0.0000	140.00	No Ice	6.50	6.50	0.10
						1/2" Ice	8.50	8.50	0.17
PD156S	C	From Leg	1.00	0.0000	138.00	No Ice	0.44	0.44	0.01
(DEP)			0.00			1/2" Ice	0.79	0.79	0.01
			0.00						
3'4"x4" Pipe Mount	C	From Leg	0.50	0.0000	138.00	No Ice	1.05	1.05	0.04
(DEP)			0.00			1/2" Ice	1.27	1.27	0.05
			0.00						
5'3"x4" Pipe Mount	A	From Leg	0.50	0.0000	115.00	No Ice	1.88	1.88	0.06
(Verizon)			0.00			1/2" Ice	2.21	2.21	0.07
			0.00						
3'4"x4" Pipe Mount	C	From Leg	0.50	0.0000	112.00	No Ice	1.05	1.05	0.04
(CSP)			0.00			1/2" Ice	1.27	1.27	0.05
			0.00						
5'3"x4" Pipe Mount	A	From Leg	0.50	0.0000	105.00	No Ice	1.88	1.88	0.06
(CSP)			0.00			1/2" Ice	2.21	2.21	0.07
			0.00						

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
PD458	B	From Leg	6.00	0.0000	100.00	No Ice	2.88	2.88	0.02
(CTT)			0.00			1/2" Ice	4.34	4.34	0.05
			0.00						
DB437	B	From Leg	6.00	0.0000	100.00	No Ice	0.45	0.45	0.01
(FBI)			0.00			1/2" Ice	0.81	0.81	0.01
			0.00						
6' Side Mount Standoff	B	None		0.0000	100.00	No Ice	6.50	6.50	0.10
						1/2" Ice	8.50	8.50	0.17
5'3"x4" Pipe Mount	A	From Leg	0.50	0.0000	97.00	No Ice	1.88	1.88	0.06
(CSP)			0.00			1/2" Ice	2.21	2.21	0.07
			0.00						
3'4"x4" Pipe Mount	C	From Leg	0.50	0.0000	90.00	No Ice	1.05	1.05	0.04
(CSP)			0.00			1/2" Ice	1.27	1.27	0.05
			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
8 FT DISH	B	Paraboloid	From	1.00	Worst		315.00	8.00	No Ice	50.30	0.25
		w/Radome	Leg	0.00					1/2" Ice	51.29	0.51
				0.00							
6 FT DISH	A	Paraboloid	From	1.00	Worst		320.00	6.00	No Ice	28.27	0.14
		w/Radome	Leg	0.00					1/2" Ice	29.05	0.29
				0.00							
6 FT DISH	B	Paraboloid	From	1.00	Worst		320.00	6.00	No Ice	28.27	0.14
		w/Radome	Leg	0.00					1/2" Ice	29.05	0.29
				0.00							
6 FT DISH	C	Paraboloid	From	1.00	Worst		320.00	6.00	No Ice	28.27	0.14
		w/Radome	Leg	0.00					1/2" Ice	29.05	0.29
				0.00							
4 FT DISH	C	Paraboloid	From	1.00	Worst		112.00	4.00	No Ice	12.56	0.17
		w/Radome	Leg	0.00					1/2" Ice	13.09	0.24
				0.00							
6 FT DISH	A	Paraboloid	From	1.00	Worst		105.00	6.00	No Ice	28.27	0.14
		w/Radome	Leg	0.00					1/2" Ice	29.05	0.29
				0.00							
6 FT DISH	A	Paraboloid	From	1.00	Worst		97.00	6.00	No Ice	28.27	0.14
		w/Radome	Leg	0.00					1/2" Ice	29.05	0.29
				0.00							
4 FT DISH	C	Paraboloid	From	1.00	Worst		90.00	4.00	No Ice	12.56	0.17
		w/Radome	Leg	0.00					1/2" Ice	13.09	0.24
				0.00							
6 FT DISH	B	Paraboloid	From	1.00	Worst		175.00	6.00	No Ice	28.27	0.14
(Verizon)		w/Radome	Leg	0.00					1/2" Ice	29.05	0.29
				0.00							
6 FT DISH	A	Paraboloid	From	1.00	Worst		115.00	6.00	No Ice	28.27	0.14
(Verizon)		w/Radome	Leg	0.00					1/2" Ice	29.05	0.29

Description	Face or Leg	Dish Type	Offset Type	Offsets: Horz Lateral Vert	Azimuth Adjustment	3 dB Beam Width	Elevation	Outside Diameter	Aperture Area	Weight
				ft	°	°	ft	ft	ft^2	K
				0.00						

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

Comb. No.	Description
50	Dead+Wind 330 deg - Service

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T1	320 - 300	18.709	40	0.5043	0.1982
T2	300 - 280	16.549	40	0.4908	0.1607
T3	280 - 260	14.493	40	0.4646	0.1323
T4	260 - 240	12.542	40	0.4414	0.1181
T5	240 - 220	10.694	40	0.4132	0.1059
T6	220 - 200	8.985	40	0.3800	0.0979
T7	200 - 180	7.423	40	0.3425	0.0911
T8	180 - 160	5.995	40	0.3100	0.0836
T9	160 - 140	4.698	40	0.2749	0.0746
T10	140 - 120	3.560	40	0.2369	0.0671
T11	120 - 100	2.581	40	0.1969	0.0593
T12	100 - 80	1.791	40	0.1582	0.0467
T13	80 - 60	1.152	40	0.1195	0.0364
T14	60 - 30	0.665	35	0.0870	0.0274
T15	30 - 0	0.206	35	0.0390	0.0137

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
320.00	6 FT DISH	40	18.709	0.5043	0.1982	148070
318.00	PD128	40	18.491	0.5033	0.1943	148070
315.00	8 FT DISH	40	18.164	0.5018	0.1885	148070
294.00	DB224	40	15.920	0.4837	0.1508	39468
292.00	PD320	40	15.713	0.4810	0.1477	40359
285.00	(2) DB809	40	14.997	0.4714	0.1380	43821
275.00	(2) OGT9	40	13.996	0.4585	0.1278	48169
257.00	PD440	40	12.258	0.4377	0.1162	48324
243.00	PD128	40	10.963	0.4177	0.1075	34030
227.00	PD320	40	9.566	0.3923	0.1003	32211
220.00	DB844	40	8.985	0.3800	0.0979	32463
200.00	PiROD 12' Lightweight T-Frame	40	7.423	0.3425	0.0911	35712
175.00	6 FT DISH	40	5.657	0.3016	0.0814	35996
140.00	PD688S-4	40	3.560	0.2369	0.0671	32543
138.00	PD156S	40	3.454	0.2329	0.0664	31719
115.00	6 FT DISH	40	2.367	0.1872	0.0564	24776
112.00	4 FT DISH	40	2.244	0.1814	0.0545	26416
105.00	6 FT DISH	40	1.973	0.1680	0.0499	31238
100.00	PD458	40	1.791	0.1582	0.0467	34789
97.00	6 FT DISH	40	1.686	0.1523	0.0449	34916
90.00	4 FT DISH	40	1.454	0.1384	0.0411	33017

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T1	320 - 300	22.696	24	0.6080	0.2581
T2	300 - 280	20.098	24	0.5927	0.2197
T3	280 - 260	17.614	24	0.5628	0.1893
T4	260 - 240	15.248	24	0.5357	0.1737
T5	240 - 220	13.003	24	0.5021	0.1581
T6	220 - 200	10.925	24	0.4621	0.1472
T7	200 - 180	9.025	24	0.4167	0.1375
T8	180 - 160	7.288	24	0.3772	0.1265
T9	160 - 140	5.711	24	0.3345	0.1139
T10	140 - 120	4.327	24	0.2882	0.1033
T11	120 - 100	3.138	24	0.2396	0.0923
T12	100 - 80	2.180	24	0.1925	0.0736
T13	80 - 60	1.405	24	0.1453	0.0576
T14	60 - 30	0.814	19	0.1058	0.0434
T15	30 - 0	0.257	19	0.0475	0.0216

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
320.00	6 FT DISH	24	22.696	0.6080	0.2581	134951
318.00	PD128	24	22.434	0.6069	0.2542	134951
315.00	8 FT DISH	24	22.041	0.6051	0.2483	134951
294.00	DB224	24	19.339	0.5846	0.2092	35699
292.00	PD320	24	19.088	0.5816	0.2059	36404
285.00	(2) DB809	24	18.223	0.5705	0.1954	39109
275.00	(2) OGT9	24	17.012	0.5558	0.1845	42272
257.00	PD440	24	14.903	0.5313	0.1715	41022
243.00	PD128	24	13.330	0.5076	0.1603	28392
227.00	PD320	24	11.632	0.4770	0.1506	26575
220.00	DB844	24	10.925	0.4621	0.1472	26682
200.00	PiROD 12' Lightweight T-Frame	24	9.025	0.4167	0.1375	29592
175.00	6 FT DISH	24	6.878	0.3670	0.1234	29430
140.00	PD688S-4	24	4.327	0.2882	0.1033	26881
138.00	PD156S	24	4.199	0.2834	0.1024	26149
115.00	6 FT DISH	24	2.878	0.2278	0.0881	20111
112.00	4 FT DISH	24	2.729	0.2207	0.0853	21523
105.00	6 FT DISH	24	2.400	0.2043	0.0785	25740
100.00	PD458	24	2.180	0.1925	0.0736	28930
97.00	6 FT DISH	24	2.053	0.1852	0.0709	29090
90.00	4 FT DISH	24	1.771	0.1683	0.0651	27490

ANCHOR BOLT ANALYSIS

URS

				Page	of
Job	320' Rohn SSVMW - Colchester, CT	Project No.	VZ1-166	Sheet 1	of 3
Description	Anchor Bolt Analysis	Computed by	JEK	Date	10/12/06
		Checked by		Date	

ANCHOR BOLT ANALYSIS

Input Data

Max Pier Reactions:

Uplift:	Uplift := 555·kips	*user input*	
Shear:	Shear := 85·kips	*user input*	
Compression:	Compression := 692·kips	*user input*	

Anchor Bolt Data:

Use ASTM A354 Grade BC

Number of Anchor Bolts = N	N := 24	*user input*	
Bolt Ultimate Strength:	F_u := 125·ksi	*user input*	
Bolt Yield Strength:	Fy := 60·ksi	*user input*	
Bolt Modulus:	E := 29000·ksi	*user input*	
Thickness of Anchor Bolts	D := 1in	*user input*	
Threads per Inch:	n := 8	*user input*	
Coefficient of Friction:	μ := 0.55	*user input*	(for baseplate with grout ASCE 10-97)

Anchor Bolt Area:

Gross Area of Bolt:

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

Net Area of Bolt:

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

Check Tensile Forces:

Maximum Tensile Force (Gross Area):

$$AllowableTension := 1.33\cdot\left(0.33\cdot A_g\cdot F_u\right) \qquad AllowableTension = 43.1\,kips$$

Note: 1.33 increase allowed per TIA/EIA

Maximum Tensile Force (Net Area):

$$F_{net.area} := 1.33\cdot\left(0.60\cdot A_n\cdot Fy\right) \qquad F_{net.area} = 29.0\,kips$$

Note: 1.33 increase allowed per TIA/EIA

Applied Tension:

$$MaxTension := \frac{Uplift}{N} \qquad MaxTension = 23.1\,kips$$

Check Stresses:

$$\frac{MaxTension}{F_{net.area}} = 0.80$$

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

Condition1 = "OK"

Check Anchor Bolt Area:

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

Required Area:

$$A_{s1} := \frac{Uplift}{Fy} + \frac{Shear}{\mu \cdot 0.85 \cdot Fy} \qquad A_{s1} = 12.3\,in^2$$

$$A_{s2} := \left| \frac{Shear - (0.3 \cdot Compression)}{\mu \cdot 0.85 \cdot Fy} \right| \qquad A_{s2} = 4.4\,in^2$$

Provided Area:

$$A_{sprovided} := A_n \cdot N \qquad A_{sprovided} = 14.5\,in^2$$

$$Condition2 := if\left(\frac{A_{s1}}{A_{sprovided}} \le 1.00, "OK", "Overstressed"\right) \qquad \frac{A_{s1}}{A_{sprovided}} = 0.84$$

Condition2 = "OK"

$$Condition3 := if\left(\frac{A_{s2}}{A_{sprovided}} \le 1.00, "OK", "Overstressed"\right) \qquad \frac{A_{s2}}{A_{sprovided}} = 0.30$$

Condition3 = "OK"

FOUNDATION ANALYSIS

URS

				Page	of
Job	320' Rohn SSVMW - Colchester, CT	Project No.	VZ1-166	Sheet 1	of 2
Description	Evaluation of Drilled Pier Caisson	Computed by	JEK	Date	10/12/06
		Checked by		Date	

Compression:	DownLoad := 692·kips	γc := 150pcf	Concrete unit weight
Uplift:	uplift := 555kips	γw := 62.4pcf	Water unit weight
Depth Neglected for Skin Friction at the top	Depthunbond := 4·ft	γs := 120pcf	Soil unit weight
Drill Caisson length	CasissonLength := 35·ft	Pierϕ := 7.5·ft	Pier diameter
Water Table Below grade:	Wd := 10·ft	hg := 0.5·ft	Height of Pier Above grade
Ave allowable Shear at Depth of 4' to 10'	f1 := 380psf Per BL Companies	SoilBearingCapaciy := 6.7ksf	
Ave allowable Shear at Depth of 10' to 35'	f2 := 700psf Report 9.13.2000	Allowable Bearing Pressure at Depth 35'	

Loading:

$$\text{TotalDownLoad} := \text{DownLoad} + \pi \cdot \frac{\text{Pier}\phi^2}{4} \cdot \left[\text{hg} \cdot \gamma c + \left[(\gamma c - \gamma s) \cdot (\text{CasissonLength} - \text{hg})\right]\right]$$

$$\text{TotalDownLoad} = 741.7\,\text{kips}$$

$$\text{Pierweight} := \pi \cdot \frac{\text{Pier}\phi^2}{4} \cdot \left[(\text{Wd} + \text{hg}) \cdot \gamma c + (\text{CasissonLength} - \text{Wd} - \text{hg}) \cdot (\gamma c - \gamma w)\right]$$

$$\text{Pierweight} = 166.33\,\text{kips}$$

$$\text{Soilshear} := \pi \cdot \text{Pier}\phi \cdot [f1 \cdot (\text{Wd} - \text{Depthunbond}) + f2 \cdot (\text{CasissonLength} - \text{Wd} - \text{hg})]$$

$$\text{Soilshear} = 466.06\,\text{kips}$$

Compression Capacity:

$$\text{TotalDownLoadCapacity} := \text{Soilshear} + \text{SoilBearingCapaciy} \cdot \left(\pi \cdot \frac{\text{Pier}\phi^2}{4}\right)$$

$$\text{TotalDownLoadCapacity} = 762.05\,\text{kips}$$

$$\text{CheckDownLoadCapacity} := \text{if}(\text{TotalDownLoad} < \text{TotalDownLoadCapacity}, \text{"Okay"}, \text{"No Good"})$$

$$\text{CheckDownLoadCapacity} = \text{"Okay"}$$

Tension Capacity:

TotalUpLiftCapacity := Soilshear + Pierweight

TotalUpLiftCapacity = 632.39 kips

CkeckUpLiftCapacity := if(uplift < TotalUpLiftCapacity, "Okay", "No Good")

CkeckUpLiftCapacity = "Okay"

Check Cone Failure

$$ConeFailureCapacity := \frac{\left[(CasissonLength - hg)\cdot\tan(30\cdot deg)\cdot 2 + Pier\phi\right]^2\cdot\pi}{4}\cdot\frac{CasissonLength - hg}{3}\cdot\gamma s$$

ConeFailureCapacity = 2524.37 kips

CheckConeFailureCapacity := if(uplift < ConeFailureCapacity, "Okay", "No Good")

CheckConeFailureCapacity = "Okay"

Site Name: Colchester, CT
Cumulative Power Density

Operator	Operating Frequency	Number of Trans.	ERP Per Trans.	Total ERP	Distance to Target	Calculated Power Density	Maximum Permissable Exposure*	Fraction of MPE
	(MHz)		(watts)	(watts)	(feet)	(mW/cm^2)	(mW/cm^2)	(%)
VZW	875	9	200	1800	220	0.0134	0.583	2.29%
VZW PCS	1970	3	485	1455	220	0.0108	1.0	1.08%
VZW Microwave	6004.5	1	4265.8	4265.8	115	0.1160	1.0	11.60%
VZW Microwave	6093.45	1	4265.8	4265.8	175	0.0501	1.0	5.01%

Total Percentage of Maximum Permissible Exposure 19.98%

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

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

Absolute worst case maximum values used.