ROBINSON & COLE LLP

KENNETH C. BALDWIN

280 Trumbull Street
Hartford, CT 06103-3597
Main (860) 275-8200
Fax (860) 275-8299
kbaldwin@rc.com
Direct (860) 275-8345

ORIGINAL

January 22, 2009

Michael Perrone
Siting Analyst
Connecticut Siting Council
10 Franklin Square
New Britain, CT 06051

Re: **Cellco Partnership d/b/a Verizon Wireless**
Exempt Modification Approval

Dear Mr. Perrone:

Enclosed you will find a letter from Richard Sambor, P.E. with URS, confirming that the Verizon Wireless antenna installation was completed in accordance with the requirements of the Structural Analysis submitted as a part of the referenced exempt modification filing. The attached letter relates specifically to the following Siting Council filing.

1. EM-VER-155-080729
West Hartford Center – 14-20 Isham Road, West Hartford, CT

If you have any questions regarding any of these materials, please do not hesitate to contact me or Rachel Mayo.

Sincerely,

Kenneth C. Baldwin

Enclosures
Copy to:
Sandy M. Carter
Brian Ragozzine
Mark Gauger

HART1-1523452-1

URS

January 21, 2009

Mark Gauger
Verizon Wireless
99 East River Drive
East Hartford, CT 06108

Reference: Wireless Communications Facility/Detailed Structural Analysis
14-20 Isham Road, West Hartford, CT
URS Project Number: VZ4 026 / 36931102

Dear Mr. Gauger,

URS Corporation (URS) has been retained by Verizon Wireless to design a telecommunications site at 14-20 Isham Road in West Hartford, Connecticut. The site will include an equipment shelter on the roof of the building with antennas to be located on an existing tower also on the roof of the building as shown on our Construction Documents dated 10-15-08.

Our review of the original building drawings as well as a field review of existing conditions has determined that the building can support the equipment shelter on the roof.

In addition URS Corporation (URS) performed a detailed structural analysis of the existing 100' guyed lattice tower located at 14-20 Isham Road in West Hartford, CT on May 23, 2008. In this analysis the mast shear was shown to increase from 1.6 kips to 1.65 kips which is an increase of 3% from the original calculations. The TIA/EIA-222-F Structural Standard permits a one-third increase in allowable stresses for towers and monopoles less than 700 feet tall; therefore the allowable shear force on the mast is 2.13 kips which is less than the applied loads. The mast is at 77.5% capacity for shear and is considered structurally adequate under the conditions shown in the analysis.

Should there be any questions, please do not hesitate to contact me at (860)529-8882.

Sincerely,

URS Corporation

Richard Sambor, P.E.
Manager Facilities Design

cc: ICA, MJE, CF/Book - URS

URS Corporation
500 Enterprise Drive, Suite 3B
Rocky Hill, CT 06067
Tel: 860.529.8882
Fax: 860.529.3991

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

September 16, 2008

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

RE: **EM-VER-155-080729** – Cellco Partnership d/b/a Verizon Wireless notice of intent to modify an existing telecommunications facility located at 14-20 Isham Road, West Hartford, Connecticut.

Dear Attorney Baldwin:

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

- A letter and/or plans sealed by a Professional Engineer duly licensed in the State of Connecticut shall be provided to the Council prior to the installation of the equipment shelter to certify that the building can support the equipment shelter on the roof.
- The applicant shall take steps to reduce the post-construction percent capacity (regarding the tower mast shear reaction) to not more than 100 percent; and
- A signed letter from a Professional Engineer duly licensed in the State of Connecticut shall be submitted to the Council to certify that a post-construction percent capacity (regarding the tower mast shear reaction) of not more than 100 percent have been achieved.

The proposed modifications are to be implemented as specified here and in your notice dated July 29, 2008, including the placement of all necessary equipment and shelters within the tower compound. The modifications are in compliance with the exception criteria in Section 16-50j-72 (b) of the Regulations of Connecticut State Agencies as changes to an existing facility site that would not increase tower height, extend the boundaries of the tower site, increase noise levels at the tower site boundary by six decibels, and increase the total radio frequencies electromagnetic radiation power density measured at the tower site boundary to or above the standard adopted by the State Department of Environmental Protection pursuant to General Statutes § 22a-162. This facility has also been carefully modeled to ensure that radio frequency emissions are conservatively below State and federal standards applicable to the frequencies now used on this tower.

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

Thank you for your attention and cooperation.

Very truly yours,

S. Derek Phelps
Executive Director

SDP/MP/jb

c: The Honorable Scott Slifka, Mayor, Town of West Hartford
Barry M. Feldman, Town Manager, Town of West Hartford
Mila Limson, Town Planner, Town of West Hartford
M&R Gassner Family II, LLC

ROBINSON & COLE

KENNETH C. BALDWIN

280 Trumbull Street
Hartford, CT 06103-3597
Main (860) 275-8200
Fax (860) 275-8299
kbaldwin@rc.com
Direct (860) 275-8345

EM-VER-155-080729

ORIGINAL

July 29, 2008

Via Hand Delivery

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

Re: **Notice of Exempt Modification**
14-20 Isham Road, West Hartford, Connecticut

Dear Mr. Phelps:

Cellco Partnership d/b/a Verizon Wireless ("Cellco") intends to install antennas on the existing 100-foot guyed lattice tower owned by M&R Gassner Family II, LLC ("Gassner") at 14-20 Isham Road in West Hartford, Connecticut. Please accept this letter as notification pursuant to R.C.S.A. § 16-50j-73, for construction that constitutes an exempt modification pursuant to R.C.S.A. § 16-50j-72(b)(2). In accordance with R.C.S.A. § 16-50j-73, a copy of this letter is being sent to James Francis, Town Manager of the Town of West Hartford. Please note that Gassner is the owner of the property on which the tower is located.

The facility consists of a 100-foot guyed lattice tower capable of supporting multiple carriers on the roof of an existing building at 14-20 Isham Road in West Hartford. The tower is currently shared by the owner with antennas at various levels and Nextel with antennas located at the 98-foot level on the tower. Cellco intends to install six (6) LPA-80063/4CF antennas and six (6) LPA 171063/8CF antennas at the 85-foot level on the tower. Cellco's equipment, including a propane fueled back-up generator, will be located in a 12' x 30' shelter on the roof of the existing building. Attached behind Tab 1 are Project Plans for the proposed Cellco facility.

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

1. The proposed modification will not increase the overall height of the existing tower. Cellco's antennas will be mounted with their centerline at the 85-foot level on the 100-foot tower.

2. The proposed installation of associated equipment within a roof-top shelter will not require an extension of the fenced compound or the lease area.

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

4. The operation of the antennas will not increase radio frequency (RF) power density levels at the facility to a level at or above the Federal Communications Commission (FCC) adopted safety standard. The RF power density calculations for Cellco antennas would be 16.46% of the FCC standard. A power density calculations table is included behind Tab 2.

Included behind Tab 3 is a Structural Analysis Report confirming that the tower can support the existing and Cellco antennas, and associated equipment.

For the foregoing reasons, Cellco respectfully submits that the proposed antenna installation at the facility constitutes an exempt modification under R.C.S.A. § 16-50j-72(b)(2).

Sincerely,

Kenneth C. Baldwin

Attachments
Copy to:
James Francis, West Hartford Town Manager
Sandy M. Carter
Michelle Kababik

CELLCO PARTNERSHIP
DBA

verizon wireless

WEST HARTFORD CENTER

14-20 ISHAM ROAD
WEST HARTFORD, CONNECTICUT 06107

GENERAL NOTES

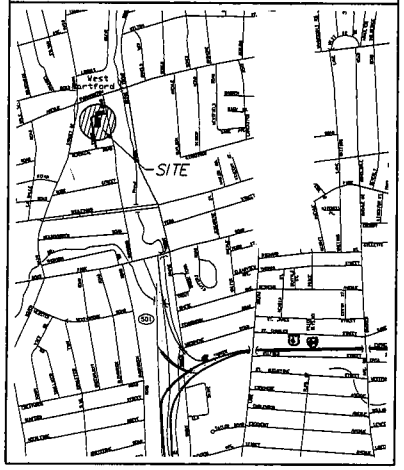
1. THE TYPE, DIMENSIONS, MOUNTING HARDWARE, AND POSITIONS OF ALL PROJECT OWNER'S EQUIPMENT ARE SHOWN IN ILLUSTRATIVE FASHION. THESE DRAWINGS ARE NOT INTENDED FOR CONSTRUCTION. ACTUAL HARDWARE DETAILS AND FINAL LOCATIONS MAY DIFFER SLIGHTLY FROM WHAT IS SHOWN.

2. THE PROJECT OWNER'S PCS FACILITY IS AN UNMANNED PRIVATE AND SECURED EQUIPMENT INSTALLATION. IT IS ONLY ACCESSED BY TRAINED TECHNICIANS FOR PERIODIC ROUTINE MAINTENANCE AND THEREFORE DOES NOT REQUIRE ANY WATER OR SANITARY SEWER SERVICE. THE FACILITY IS NOT GOVERNED BY REGULATIONS REQUIRING PUBLIC ACCESS PER ADA REQUIREMENTS.

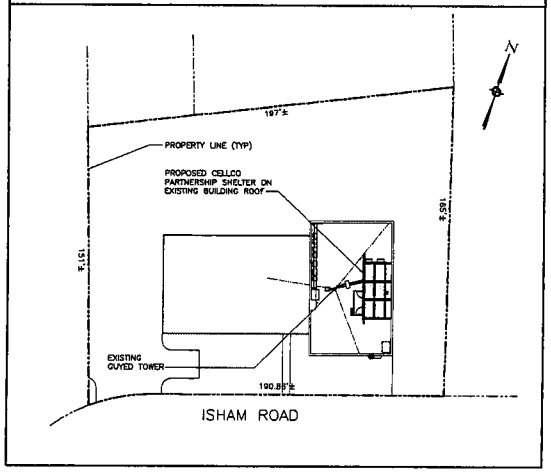
3. THE DESIGN OF THE ANTENNA MOUNTING HARDWARE WILL MEET THE ANSI/EIA/TIA-222-F STANDARDS FOR STRUCTURAL STEEL ANTENNA SUPPORTING STRUCTURES AND STATE BUILDING CODE REQUIREMENTS. DETAILED CONSTRUCTION DRAWINGS AND STRUCTURAL CALCULATIONS WILL BE PREPARED BY A REGISTERED PROFESSIONAL ENGINEER AND SUBMITTED WITH A BUILDING PERMIT APPLICATION FOR REVIEW AND APPROVAL BY THE LOCAL BUILDING CODE ENFORCEMENT OFFICIAL.

4. ONCE THE FACILITY BECOMES FULLY OPERATIONAL, NORMAL AND ROUTINE MAINTENANCE BY PROJECT OWNER'S TECHNICIANS WILL BE PERFORMED ON A MONTHLY BASIS. THEREFORE, THE ESTIMATED VEHICLE TRIP GENERATION RATE IS 2 TRIPS PER MONTH. THE AVERAGE DAILY TRIP GENERATION RATE (ADT) IS 0.07.

VICINITY MAP NO SCALE



PLOT PLAN SCALE: 1"=30'-0"



PROJECT SUMMARY

SITE NAME:	WEST HARTFORD CENTER
SITE ADDRESS:	14-20 ISHAM ROAD WEST HARTFORD, CONNECTICUT 06107
CONTACT PERSON:	VERIZON WIRELESS MARK CAUCER (203) 494-0023
TOWER OWNER:	MICHAEL GASSNER 14-20 ISHAM ROAD WEST HARTFORD, CONNECTICUT 06107
GOVERNING CODE:	CONNECTICUT BUILDING CODES CONNECTICUT LIFE SAFETY CODES
JURISDICTION:	CONNECTICUT SITING COUNCIL
APPLICANT:	VERIZON WIRELESS 99 EAST RIVER DRIVE EAST HARTFORD, CT. 06108
ARCHITECT:	URS CORPORATION A.E.S. 500 ENTERPRISE DRIVE, SUITE 3B ROCKY HILL, CT 06067
M/E/P ENGINEER:	URS CORPORATION A.E.S. 500 ENTERPRISE DRIVE, SUITE 3B ROCKY HILL, CT 06067
LATITUDE:	41° 45' 41" NAD 83
LONGITUDE:	72° 44' 25" NAD 83

LEGEND

SYMBOL	DESCRIPTION
E1 / S1	SECTION OR DETAIL NUMBER SHEET WHERE DETAIL/SECTION OCCURS
1 / E2 / S2	ELEVATION NUMBER SHEET WHERE ELEVATION OCCURS

ABBREVIATIONS

MIN.	MINIMUM
V.I.F.	VERIFY IN FIELD
O.C.	ON CENTER
PSF	POUND/SQUARE FOOT
TYP.	TYPICAL
TOC	TOP OF CONCRETE
TOW	TOP OF WALL
FT.	FEET
SQ.FT.	SQUARE FEET
N/A	NOT APPLICABLE

SHEET INDEX

SHT. NO.	DESCRIPTION
T-1	TITLE SHEET - GENERAL NOTES AND LEGENDS
SC-1	SITE PLAN
SC-2	PARTIAL SITE PLAN, ELEVATION AND ANTENNA ORIENTATION PLAN
SC-3	EQUIPMENT SHELTER PLAN, ELEVATIONS

CELLCO PARTNERSHIP
DBA
verizon wireless

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

A&E SEAL

SITE NAME: WEST HARTFORD CENTER
PROJECT ID: 2007220603
PROJECT TYPE: PCSCA
LOCATION CODE: 178105
SITE ADDRESS:
14-20 ISHAM ROAD
WEST HARTFORD, CONNECTICUT 06107

PROJECT NO: 36931102
JOB NO: VZ4-026
DRAWN BY: KAP
CHECKED BY: MJE

ISSUED FOR

A	07-21-08	REVIEW
0	07-24-08	SITING COUNCIL

WEST HARTFORD CENTER
14-20 ISHAM ROAD
WEST HARTFORD, CT
06107

SCALE: AS NOTED

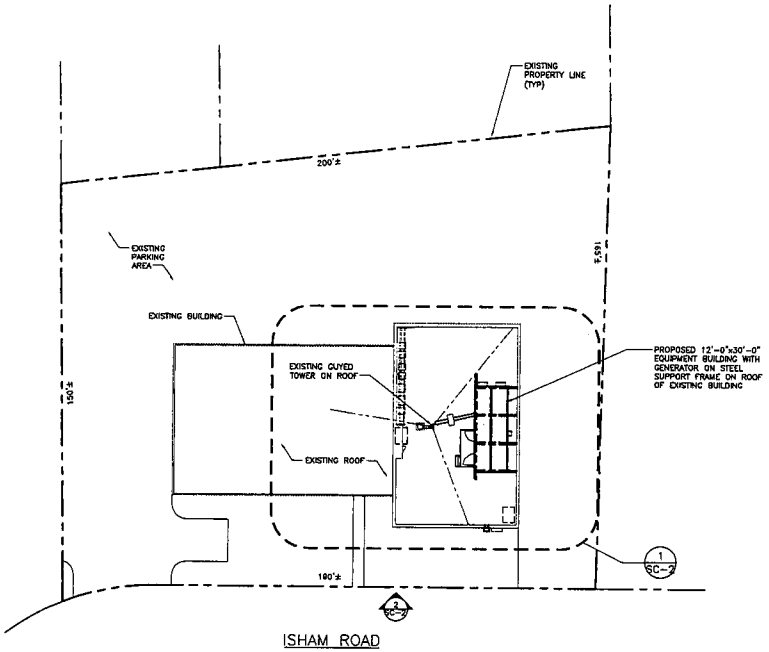
TITLE SHEET
GENERAL NOTES
AND LEGENDS

T-1

LEGEND		
DESCRIPTION	EXISTING	PROPOSED
PROPERTY LINE		
LEASE LINE		
CHAIN LINK FENCE		
CONTOUR LINES	133	
UNDERGROUND UTILITIES		E/T
UTILITY POLE		
TREE LINE		
SEDIMENTATION FENCE		
SPOT ELEVATION	x 124.5	
WOOD FENCE		

SITE PLAN INFORMATION

THIS SITE PLAN DRAWING WAS COMPILED FROM DATA COLLECTED IN THE FIELD AND FROM AVAILABLE EXISTING DRAWINGS OF THE SUBJECT AREA.



1 SC-1 SITE PLAN
SCALE: 1"=20'-0"

0 20 40 80

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BBS CORPORATION
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SUITE 3B
ROCKY HILL, CONNECTICUT
1-(860)-529-8882

A&E SEAL

SITE NAME: WEST HARTFORD CENTER
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A	07-21-08	REVIEW
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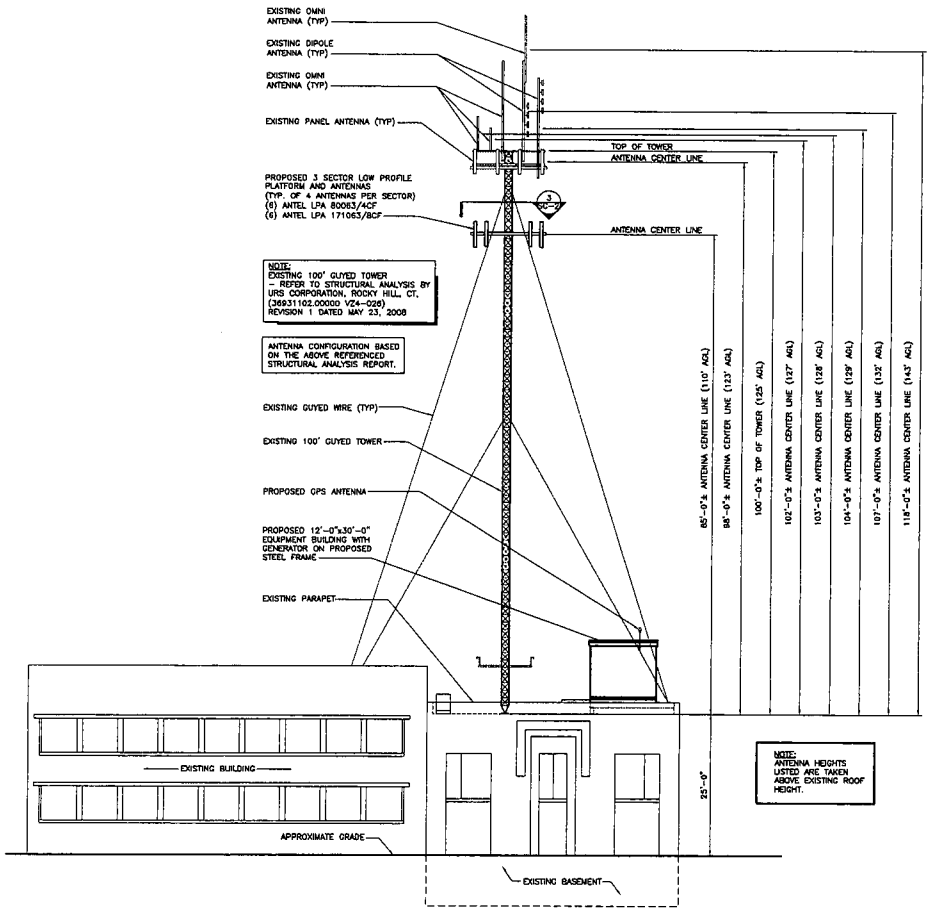
WEST HARTFORD CENTER

14-20 ISHAM ROAD
WEST HARTFORD, CT
06107

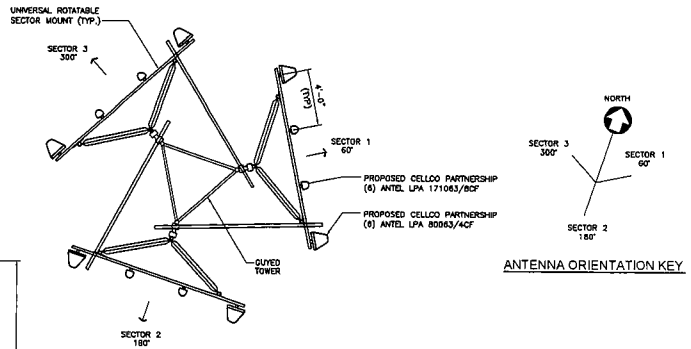
SCALE: AS NOTED

SITE PLAN

SC-1

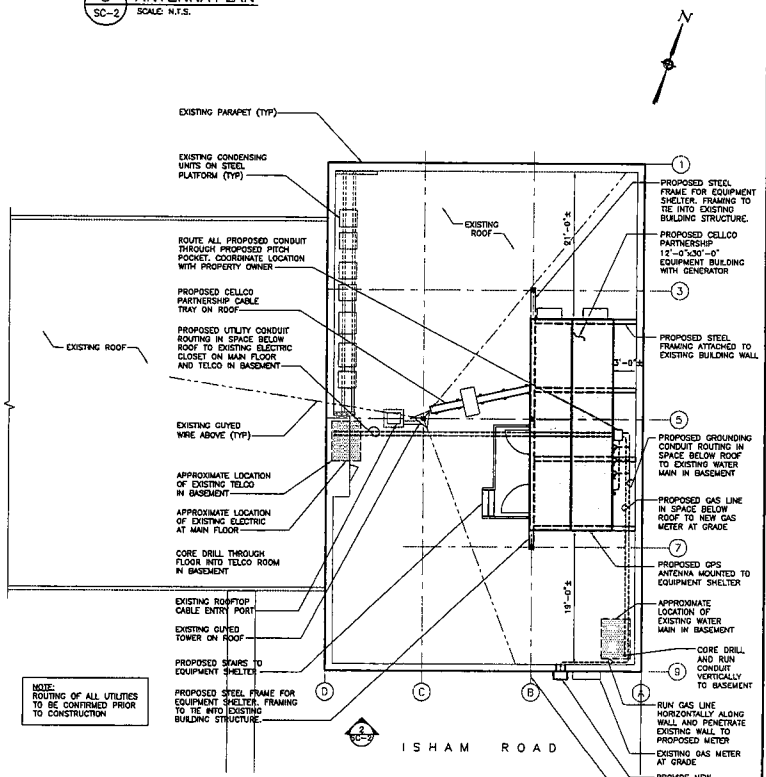


2 SC-2 GUYED TOWER ELEVATION
SCALE: 1" = 10'-0"



ANTENNA ORIENTATION KEY

3 SC-2 ANTENNA PLAN
SCALE: N.T.S.



1 SC-2 PARTIAL ROOF / BUILDING PLAN
SCALE: 1/8"=1'-0"

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URS CORPORATION
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SUITE 3B
ROCKY HILL, CONNECTICUT
1-(860)-529-8882

A&E SEAL

SITE NAME: WEST HARTFORD CENTER
PROJECT ID: 2007220603
PROJECT TYPE: PCSCA
LOCATION CODE: 178105
SITE ADDRESS:
14-20 ISHAM ROAD
WEST HARTFORD, CONNECTICUT 06107

PROJECT NO: 36931102
JOB NO: VZ4-026
DRAWN BY: KAP
CHECKED BY: MJE

ISSUED FOR

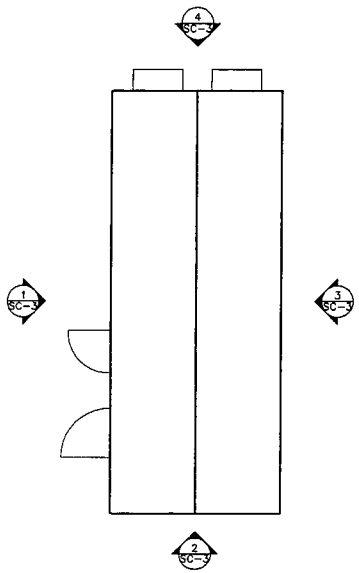
A	07-21-08	REVIEW
0	07-24-08	SITING COUNCIL

WEST HARTFORD CENTER
14-20 ISHAM ROAD
WEST HARTFORD, CT
06107

SCALE: AS NOTED

PARTIAL ROOF PLAN

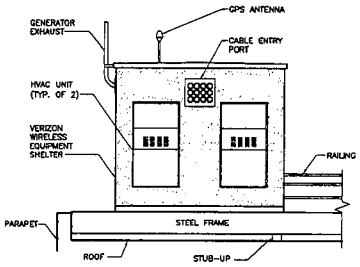
SC-2



5 SC-3 EQUIPMENT BUILDING KEY PLAN
SCALE: 1/4" = 1'-0"

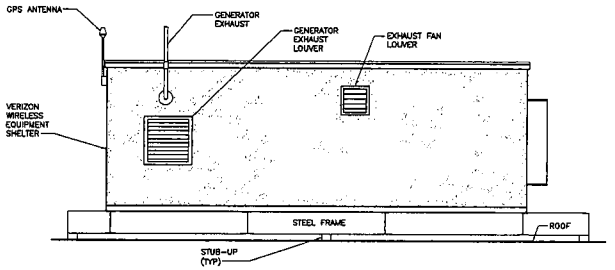
NORTH

0 1 2 4 8 12



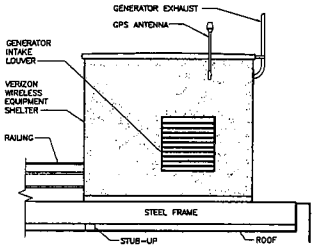
4 SC-3 EAST ELEVATION
SCALE: 1/4" = 1'-0"

0 1 2 4 8 12



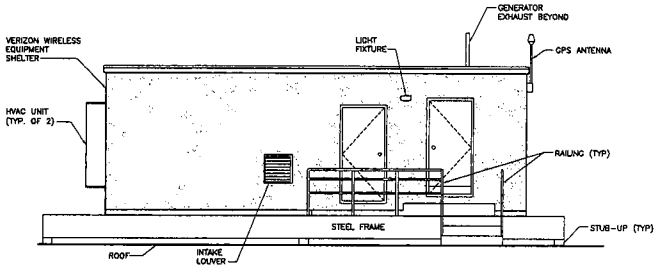
3 SC-3 SOUTH ELEVATION
SCALE: 1/4" = 1'-0"

0 1 2 4 8 12



2 SC-3 WEST ELEVATION
SCALE: 1/4" = 1'-0"

0 1 2 4 8 12



1 SC-3 NORTH ELEVATION
SCALE: 1/4" = 1'-0"

0 1 2 4 8 12

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500 ENTERPRISE DRIVE
SUITE 3B
ROCKY HILL, CONNECTICUT
1-(860)-529-8882

A&E SEAL

SITE NAME: WEST HARTFORD CENTER
PROJECT ID: 2007220603
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14-20 ISHAM ROAD
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06107

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A	07-21-08	REVIEW
0	07-24-08	SITING COUNCIL

WEST HARTFORD CENTER
14-20 ISHAM ROAD
WEST HARTFORD, CT
06107

SCALE: AS NOTED

EQUIPMENT SHELTER PLAN AND ELEVATIONS

SC-3

Site Name: West Hartford Center, 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 PCS	1970	3	380	1140	110	0.0339	1.0	3.39%
VZW	869	9	285	2565	110	0.0762	0.583	13.08%

Total Percentage of Maximum Permissible Exposure 16.46%

*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.

DETAILED STRUCTURAL ANALYSIS AND EVALUATION OF AN EXISTING 100' GUYED LATTICE TOWER FOR PROPOSED ANTENNA ARRANGEMENT

Site I.D: West Hartford Center
Address: 14-20 Isham Road
West Hartford, CT 06091
Issue No. Revision #1

prepared for

verizonwireless

Verizon Wireless
99 East River Drive
East Hartford, Connecticut 06108

prepared by

URS

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

36931102.00000
VZ4-026

Revision # 1 May 23, 2008

TABLE OF CONTENTS

1. EXECUTIVE SUMMARY

This report summarizes the structural analysis of the existing 100-ft roof top mounted guyed lattice tower located at 14-20 Isham Road in West Hartford, Connecticut. The analysis was conducted in accordance with the 2005 Connecticut State Building Code and the TIA/EIA-222-F standard for a wind velocity of 80 mph (fastest mile) and 69 mph (fastest mile) concurrent with 0.5" ice. The antenna loading considered in the analysis consists of all existing and proposed antennas, transmission lines and ancillary items as outlined in the Introduction of this report.

The proposed Verizon antenna installation is as listed below:

Proposed Antenna and Mount	Carrier	Antenna Centerline Elevation
Install: **(6) Antel LPA 80063/4CF antennas,** **(6) Antel LPA 171063/8CF antennas,** **(2) GPS antennas on** **(3) Valmont 13' Lightweight T-Frames** **(P/N 800945)** **(12) 1 5/8" dia coaxial cables (Face A-C)** **(2) 1/2" dia coaxial cables (Face A-C)** **(See Section 6 for Tower Feed Line Plan).**	**Verizon (Proposed)**	**@ 110' AGL (85' above existing rooftop)**

The results of the analysis indicate that the existing tower structure has the capacity to support the proposed loading conditions. **The tower structure is considered structurally adequate for the proposed antenna loading with the wind load classifications specified above.** Additionally a review of the existing tower mast and guy anchor attachment locations was found to be structurally adequate.

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 utilized in the preparation of this report were obtained from the following sources:
    - Manufacturer's original erection drawings for a 100' guyed tower, prepared by FWT, Inc., on behalf of General Tower Company, dated October 03, 1997
    - Design calculations prepared by Paul J. Ford and Company on behalf of FWT/ General Tower Company, prepared on October 14, 1997 and signed and sealed November 10, 1997.
3) Tower anchorage design drawing S-1, prepared by Cianci & Cianci Structural Engineers, dated October 22, 1997.
4) Site documentation and visual verification of existing appurtenances conducted from existing rooftop by URS during December 2007 and January 2008.
5) Antenna inventory as specified in section 2 and 6 of this report.
6) Coax cable orientation as specified in section 6 of this report.

1. EXECUTIVE SUMMARY - *continued*

This report is only valid as per the assumptions and data utilized in this report for antenna inventory, mounts and associated cables. The user of this report shall field verify the antenna and mount configuration used, as well as the physical condition of the tower members 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, AES

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

RAS/jrm

cc: DR, AA, IA, CF/Book – URS

2. INTRODUCTION

The subject tower is located at 14-20 Isham Road in West Hartford, Connecticut. The structure is a 100-ft three face, guyed lattice tower, designed and manufactured by FWT, Inc. in 1997.

The inventory is summarized in the table below:

Antenna Type	*Carrier*	*Mount*	*Antenna Centerline Elevation*	*Cable*
(1) 12'x3" Omni antenna (est)	Unknown (existing)	atop 4-Bay Dipole off Boom Gate	143' (118')	(2) 1 5/8" + (1) 7/8" + (2) 1/2" coax cables
(1) 18'x3" Omni antenna (est)	Unknown (reserved)	Boom Gate (same as above)	132' (107')	Included in coax above
(1) 4 Bay Dipole (at base of 12' Omni noted above)	Unknown (existing)	Boom Gate (same as above)	132' (107')	Included in coax above
(1) 4 Bay Dipole	Unknown (reserved)	Boom Gate (same as above)	129' (104')	Included in coax above
(1) 6'x3" Omni antenna (est)	Unknown (reserved)	Boom Gate (same as above)	128' (103')	Included in coax above
(1) 4'x3" Omni antenna (est)	Unknown (reserved)	Boom Gate (same as above)	127' (102')	Included in coax above
(12) Allgon ALP 9212 panel antennas	Sprint/Nextel (existing)	(3) Boom Gates	123' (98')	(12) 1 1/4" coax cables (1) re-located from A-B face to B-C face.
(6) Antel LPA 80063/4CF and (6) Antel LPA 171063/8CF panel antennas	**Verizon (proposed)**	**(3) Valmont 13' Lightweight T-frames, Valmont P/N 800945**	**110' (85')**	**(12) 1 5/8" coax cables (face A-C)**
((2) GPS antennas	**Verizon (proposed)**	**(same as above)**	**110' (85')**	**(2) 1/2" coax cables (face A-C)**
(4) GPS antennas	Unknown (existing)	Stand-off Mounts	35' (10')	(4) 1/2" coax cables

Notes:

I. **Refer to Section 6 Tower Feed Line Plan for all coax locations.**
II. **Equivalent antenna centerline height measured from roof top elevation shown in parenthesis.**
III. **Existing guyed tower approximately 25' above average grade at rooftop level.**

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. The 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 arrangement.

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, the Connecticut State Police Requirements, and the American Institute of Steel Construction (AISC) Manual of Steel Construction - Allowable Stress Design (ASD).

The analysis was conducted using RISA Tower 5.1.1. 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 one-third increase in allowable stresses for towers and monopoles less than 700 feet tall. For 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 the allowable stresses in accordance with AISC. The calculated stresses under the proposed loading were **BELOW** the allowable stresses (see table below). Detailed analysis and calculations for the proposed load condition are provided in section 6 of this report. Additionally a review of the existing tower mast and guy anchor attachment locations was found to be structurally adequate.

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

Proposed Tower Reactions vs. Original Design Reactions			
Component (kips)	**Original Design Reactions** (1)	**Proposed Reactions**	**Stress (% capacity)**
Mast Compression (V)	106	105.4	99.4%
Mast Shear (H)	1.6	1.65	103% (2)
Guy Anchor A @ 45ft radius (V)	45.1	40.7	90.4%
Guy Anchor A @ 45ft radius (H)	31.7	19.8	62.5%
Guy Anchor B @ 39ft radius (V)	51.6	47.2	91.5%
Guy Anchor B @ 39ft radius (H)	32.0	20.0	62.5%
Guy Anchor C @ 37.5ft radius (V)	47.8	45.7	95.6%
Guy Anchor C @ 37.5ft radius (H)	31.6	20.0	63.3%

NOTE:

(1) Original design reactions taken from Paul J. Ford calculations dated 11.10.97.
(2) Stress ratio deemed within allowable limits.

TABLE 2: Proposed Tower Component Stress vs. Capacity Summary

Component / (Section No.)	Controlling Component/ Elevation	Stress (% capacity)	Pass/Fail	Comments:
Tower Leg (T2)	Compression/85'-105'	88.2%	**Pass**	
Diagonal (T3)	Compression/65'-85'	55.8%	**Pass**	
Horizontal (T4)	Tension/45'-65'	33.0%	**Pass**	
Top Girt (T4)	Tension/45'-65'	39.4%	**Pass**	
Bottom Girt (T5)	Tension/29'-45'	25.2%	**Pass**	
Guy A (T1)	Tension	70.7%	**Pass**	
Guy B (T1)	Tension	77.5%	**Pass**	
Guy C (T1)	Tension	75.6%	**Pass**	
Top Guy Pull Off (T13)	Tension+Bending/65'-85'	17.6%	**Pass**	
Bolt Checks	Tension/85'	33.4%	**Pass**	

5. CONCLUSIONS AND RECOMMENDATIONS

The results of the analysis indicate that the existing tower structure has the capacity to support the proposed loading conditions. **The tower structure is considered structurally adequate for the proposed antenna loading with the wind load classifications specified above.** Additionally a review of the existing tower mast and guy anchor attachment locations was found to be structurally adequate.

Limitations/Assumptions:

This report is based on the following:

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

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

A. Adding antennas
B. Removing/replacing antennas
C. Adding coaxial cables

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

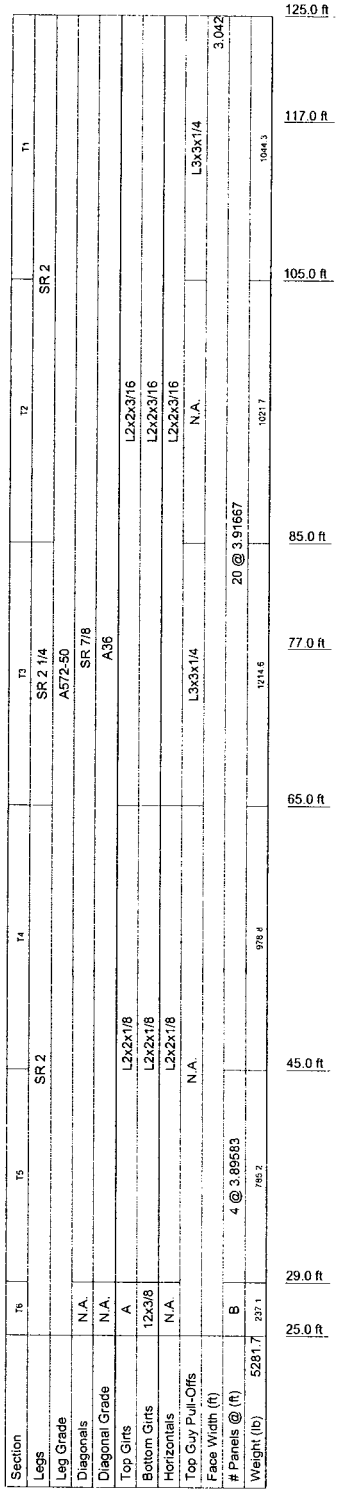
Ongoing and Periodic Inspection and Maintenance:

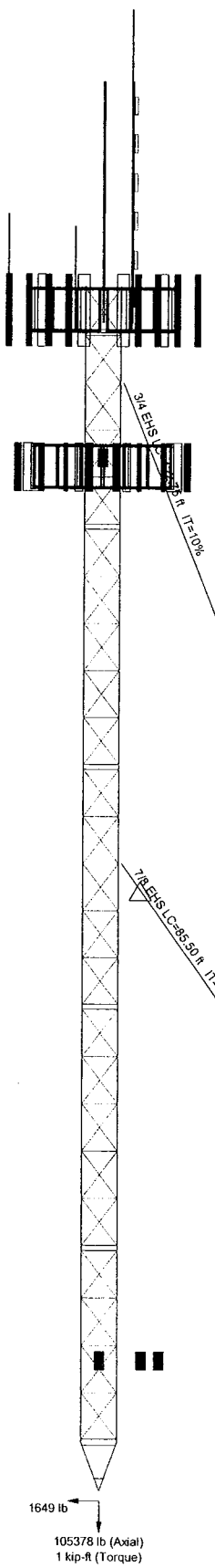
After the Contractor has successfully completed the installation and the work has been accepted, the owner will be responsible for the ongoing and periodic inspection and maintenance of the tower.

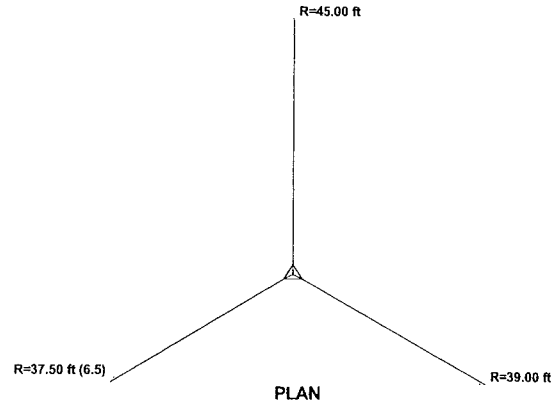
The owner shall refer to TIA/EIA-222-F for recommendations for maintenance and inspection. The frequency of the inspection and maintenance intervals is to be determined by the owner based upon actual site and environmental conditions. It is recommended that a complete and thorough inspection of the entire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

6. DRAWINGS AND DATA

RISA TOWER INPUT / OUTPUT SUMMARY







DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION	TYPE	ELEVATION
12' x 3" Dia Omni (est)	143	LPA-171063/8CF (Verizon - proposed)	110
18' x 3" Dia Omni (est)	132	LPA-171063/8CF (Verizon - proposed)	110
4 Bay Dipole	132	PiROD 13' Lightweight T-Frame (Verizon - proposed)	110
4 Bay Dipole	129	PiROD 13' Lightweight T-Frame (Verizon - proposed)	110
6' x 3" Dia Omni	128	PiROD 13' Lightweight T-Frame (Verizon - proposed)	110
4' x 3" DIA Omni (est)	127	LPA-80063/4CF (Verizon - proposed)	110
Boom Gate (1) (Sprint/Nextel)	123	LPA-80063/4CF (Verizon - proposed)	110
Boom Gate (1) (Sprint/Nextel)	123	LPA-80063/4CF (Verizon - proposed)	110
(4) ALP 9212 (est) (Sprint/Nextel)	123	(2) GPS (Verizon - proposed)	110
(4) ALP 9212 (est) (Sprint/Nextel)	123	GPS - mount	35
(4) ALP 9212 (est) (Sprint/Nextel)	123	GPS	35
Boom Gate (1) (Sprint/Nextel)	123	GPS - mount	35
LPA-80063/4CF (Verizon - proposed)	110	GPS	35
LPA-80063/4CF (Verizon - proposed)	110	GPS - mount	35
LPA-80063/4CF (Verizon - proposed)	110	GPS	35
LPA-171063/8CF (Verizon - proposed)	110	GPS - mount	35
LPA-171063/8CF (Verizon - proposed)	110	GPS	35
LPA-171063/8CF (Verizon - proposed)	110		
LPA-171063/8CF (Verizon - proposed)	110		

SYMBOL LIST

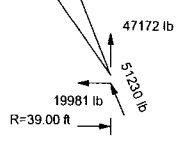
MARK	SIZE	MARK	SIZE
A	L3x3x3/8	B	1 @ 2.78842

MATERIAL STRENGTH

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

TOWER DESIGN NOTES

1. Tower is located in Hartford County, Connecticut.
2. Tower designed for a 80 mph basic wind in accordance with the TIA/EIA-222-F Standard.
3. Tower is also designed for a 69 mph basic wind with 0.50 in ice.
4. Deflections are based upon a 50 mph wind.
5. Tower located is roof top mounted and located approx 25' above mean grade level.
6. TOWER RATING: 88.2%



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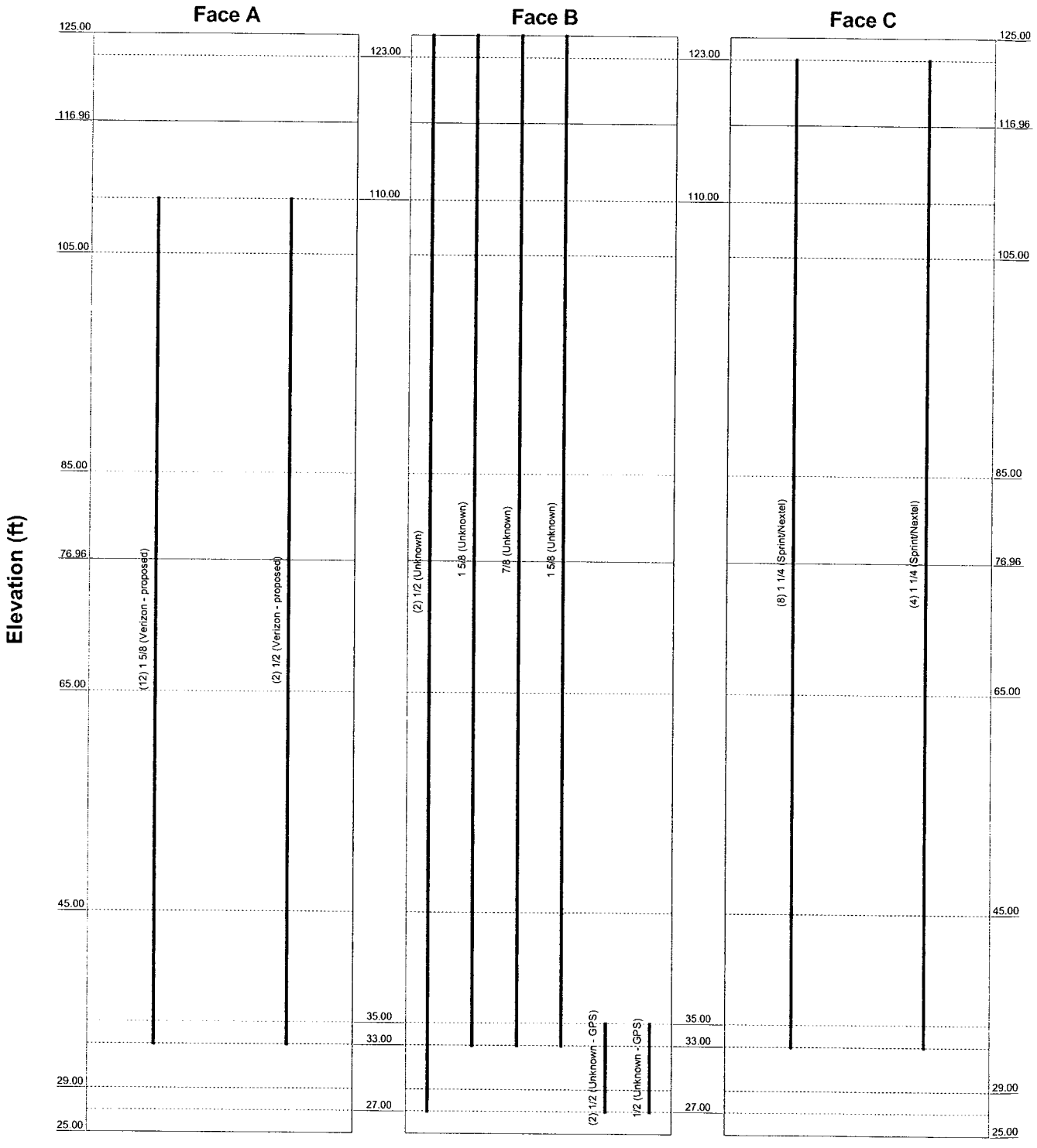
Job: *100' Guyed Tower*			
Project: *14-20 Isham Road - West Hartford, CT*			
Client: Verizon Wireless	Drawn by: Staff	App'd:	
Code: TIA/EIA-222-F	Date: 05/23/08	Scale: NTS	
Path: P:\08\Rev 1\ERI Files\Reduced Inventory per owner\100 FWT Guyed Twr West Hartford CT Rev 1.eri		Dwg No. E-1	

RISA TOWER FEEDLINE DISTRIBUTION CHART

Feedline Distribution Chart
25' - 125'

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



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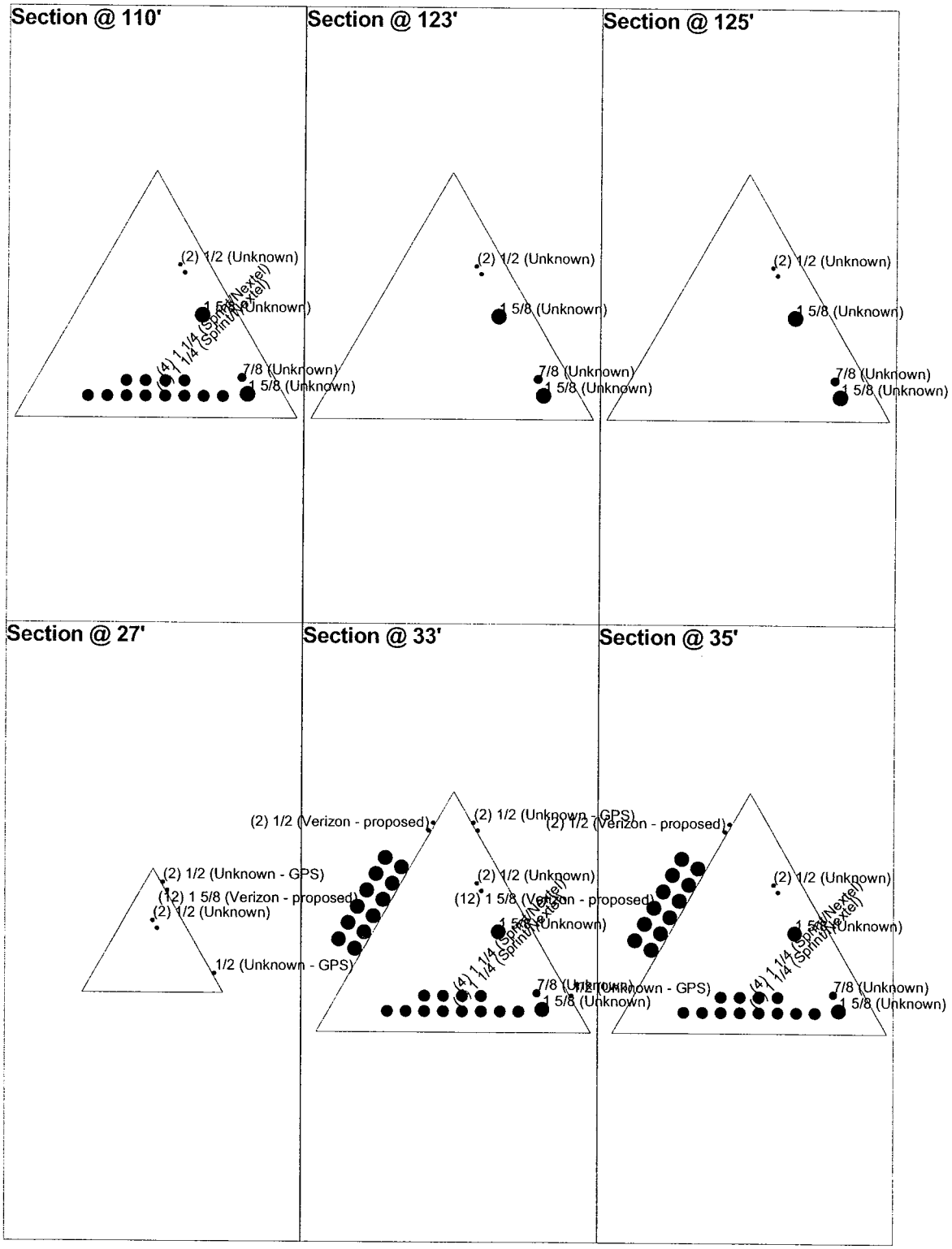
	Project: **14-20 Isham Road - West Hartford, CT**		
	Client: Verizon Wireless	Drawn by: Staff	App'd:
	Code: TIA/EIA-222-F	Date: 05/23/08	Scale: NTS
	Path: P:\08\Rev 1\ERI Files\Reduced Inventory per owner\100 FWT Guyed Tw West Hartford CT Rev 1.eri		Dwg No. E-7

RISA TOWER FEEDLINE PLAN

Feedline Plan
25' - 125'

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



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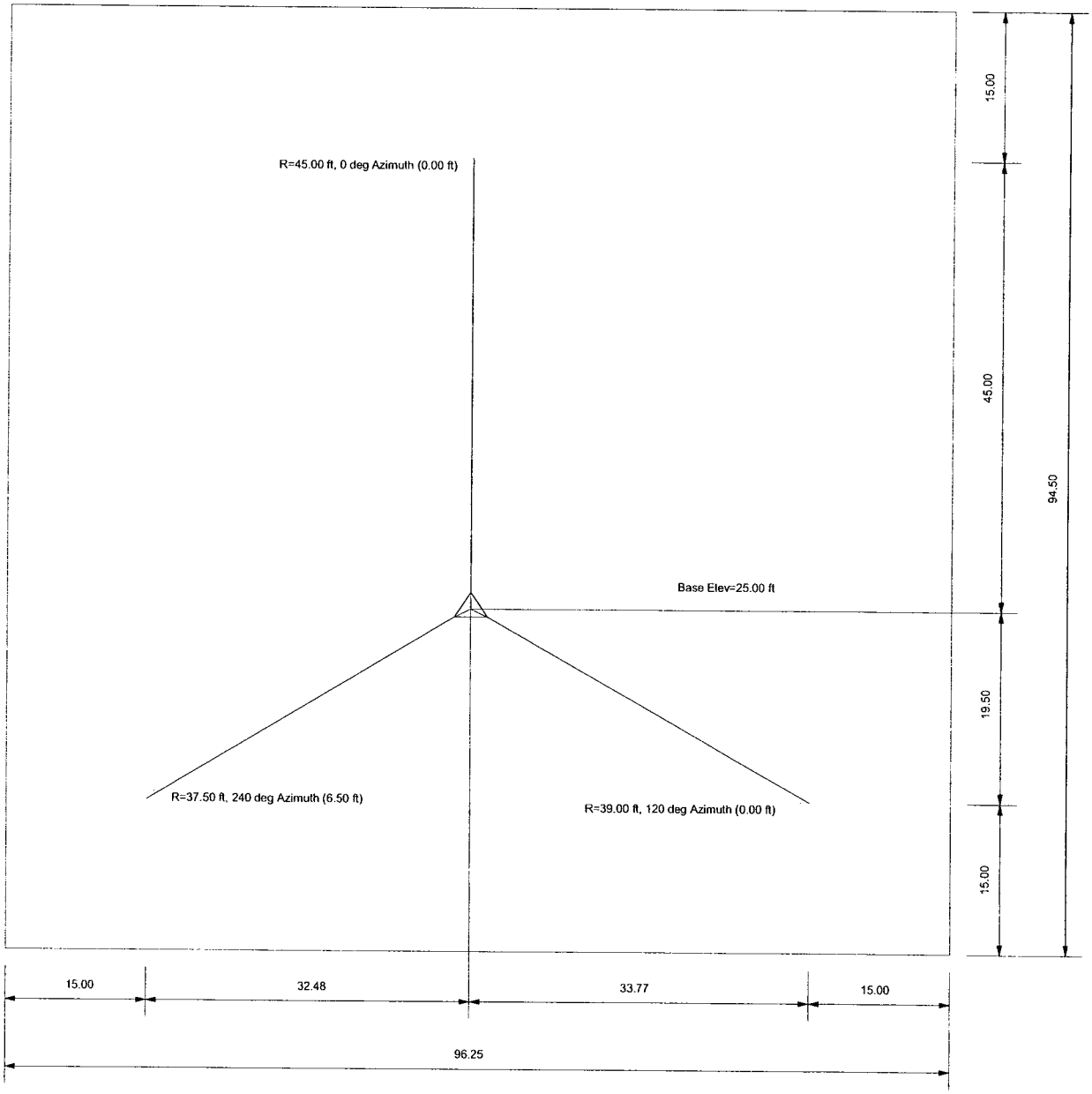
Job: ***100' Guyed Tower***		
Project: ***14-20 Isham Road - West Hartford, CT***		
Client: Verizon Wireless	Drawn by: Staff	App'd:
Code: TIA/EIA-222-F	Date: 05/23/08	Scale: NTS
Path: P:\08\Rev_1\ERI Files\Reduced Inventory per pwger\100 FWT Guyed Tw West Hartford CT Rev 1.dwg		Dwg No. E-7

RISA TOWER PLOT PLAN

Plot Plan
Total Area - 0.21 Acres



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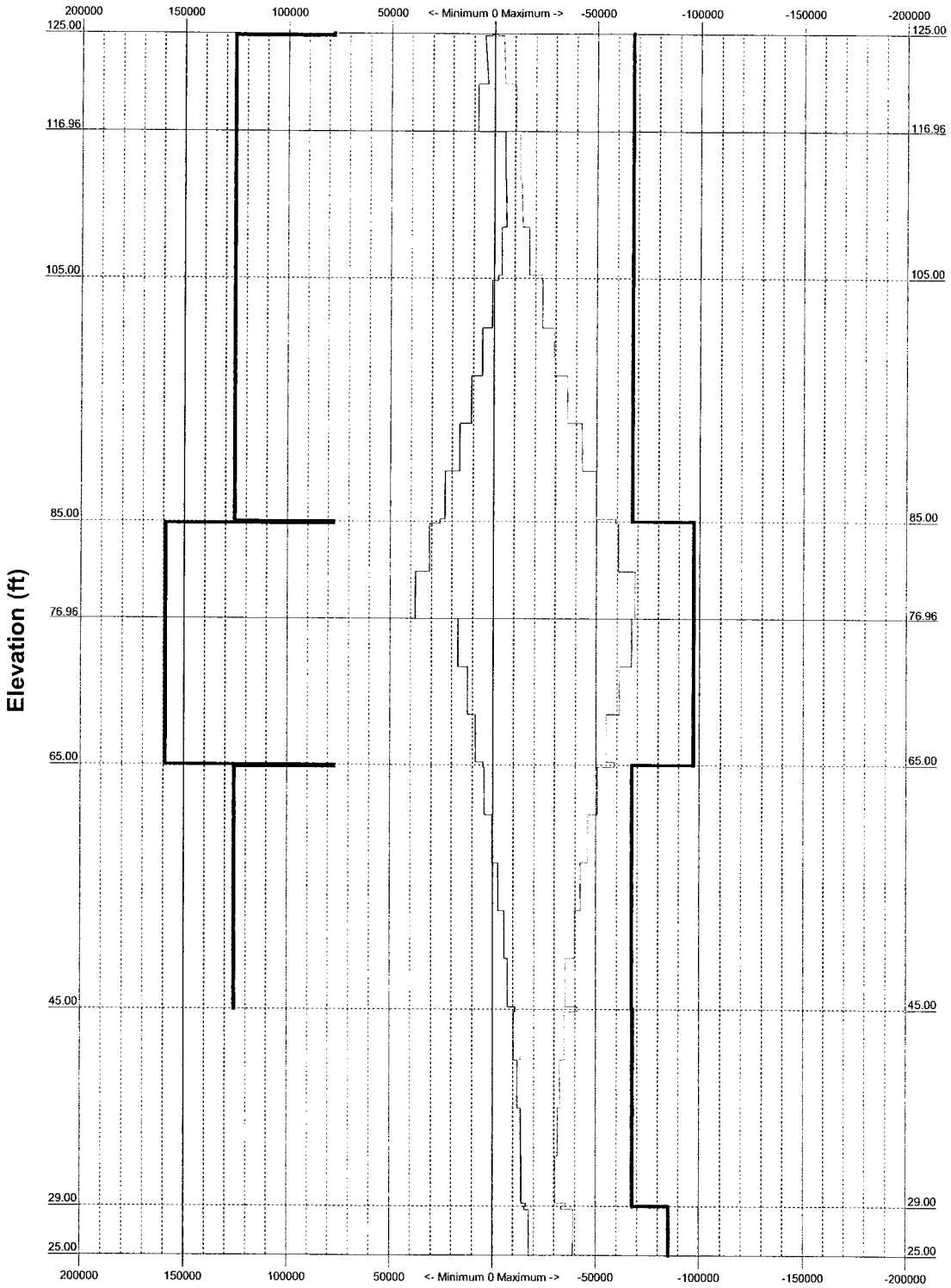
Project: ***14-20 Isham Road - West Hartford, CT***		
Client: Verizon Wireless	Drawn by: Staff	App'd:
Code: TIA/EIA-222-F	Date: 05/23/08	Scale: NTS
Path: P:\08\Rev_1\ERI Files\Reduced Inventory per owner\100 FWT Guyed Twr West Hartford CT Rev 1.dr		Dwg No. E-2

RISA TOWER LEG COMPRESSION DIAGRAM

TIA/EIA-222-F - 80 mph/69 mph 0.500 in Ice

Leg Capacity ——— **Leg Compression (lb)**



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Project: ***14-20 Isham Road - West Hartford, CT***		
Client: Verizon Wireless	Drawn by: Staff	App'd:
Code: TIA/EIA-222-F	Date: 05/23/08	Scale: NTS
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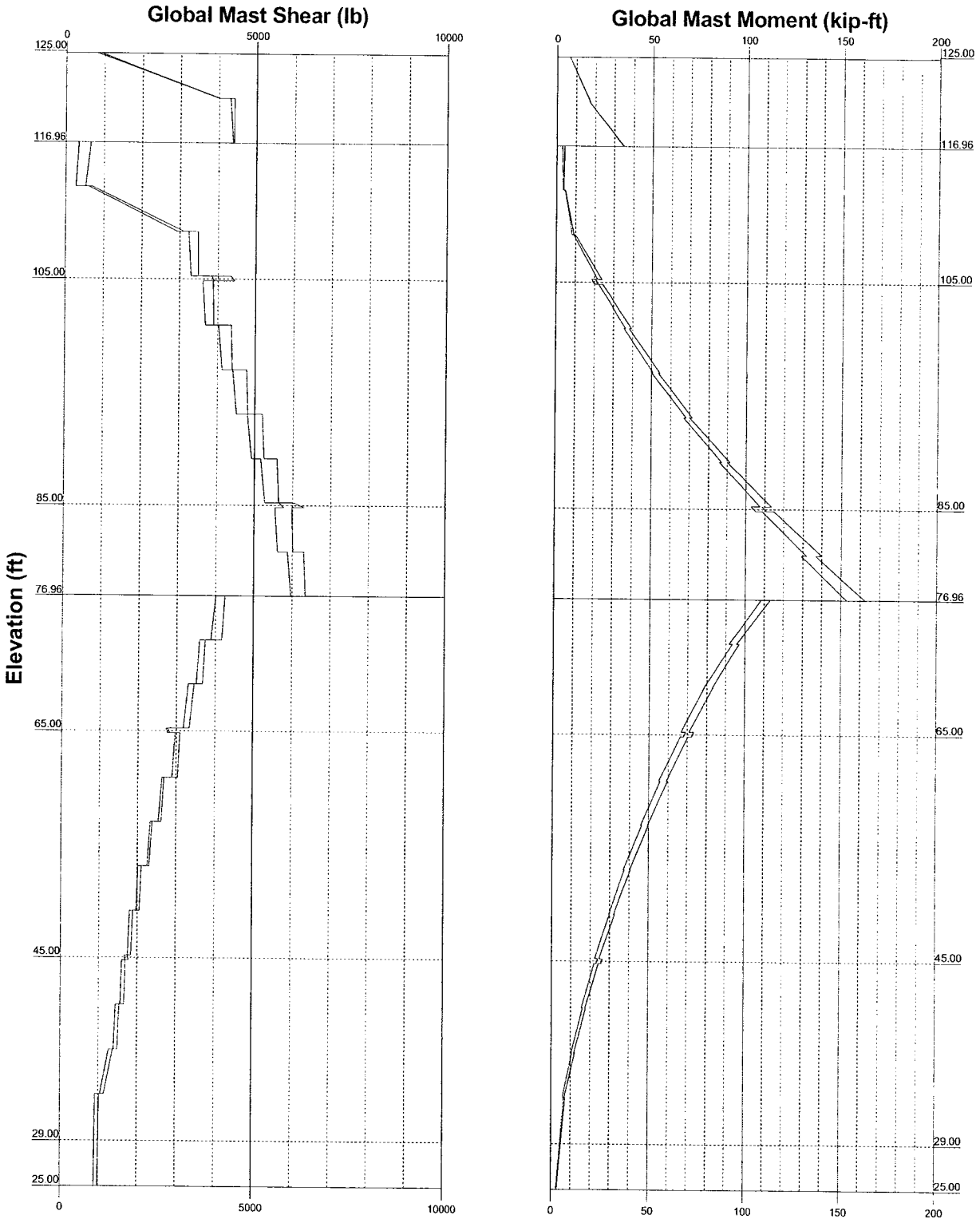
RISA GLOBAL MAST SHEAR AND MOMENT DIAGRAM

TIA/EIA-222-F - 80 mph/69 mph 0.500 in Ice

Vx Vz

Maximum Values

Mx Mz



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	Project: ***14-20 Isham Road - West Hartford, CT***		
	Client: Verizon Wireless	Drawn by: Staff	App'd:
	Code: TIA/EIA-222-F	Date: 05/23/08	Scale: NTS
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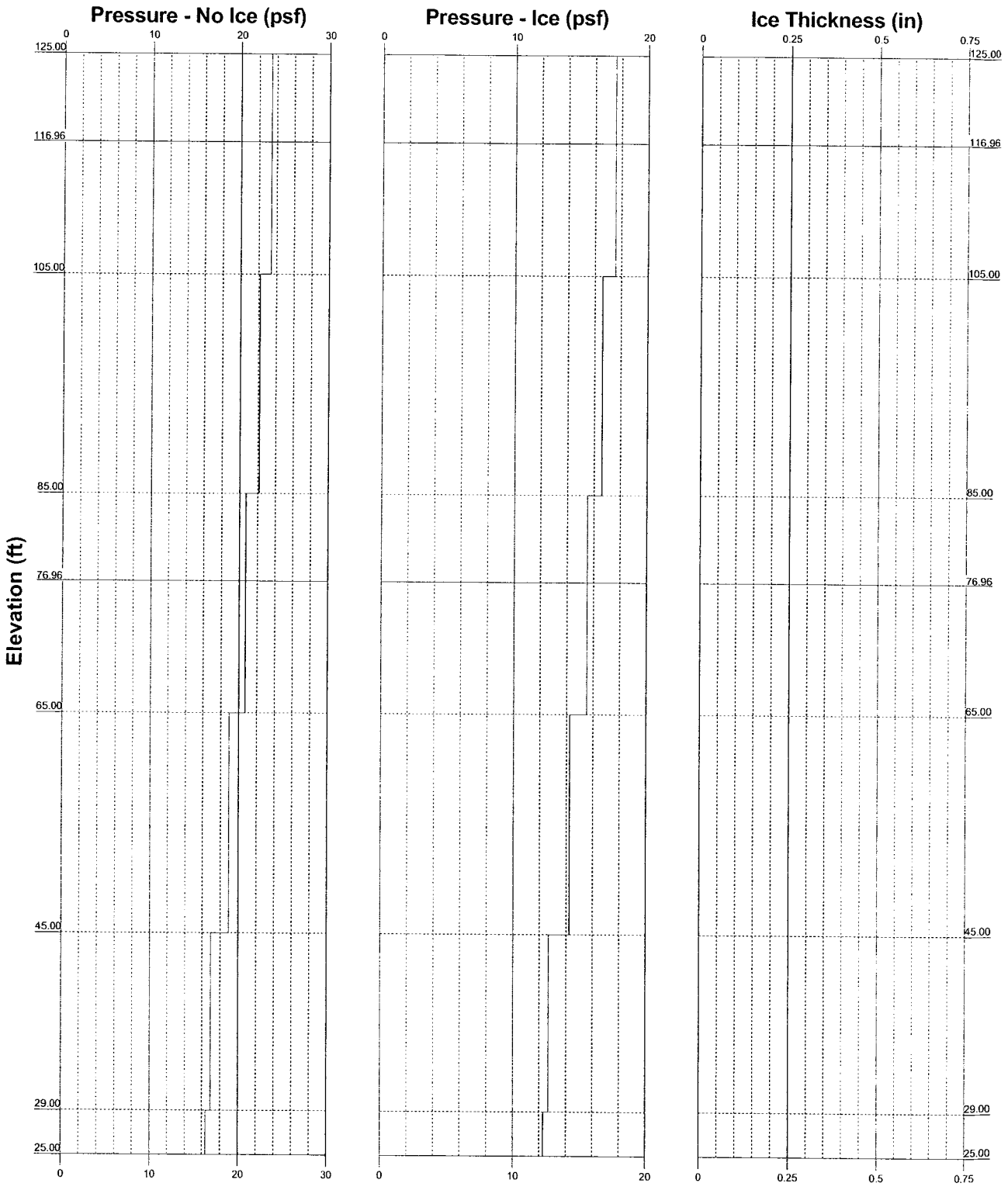
RISA TOWER WIND PRESSURE AND ICE THICKNESS DIAGRAMS

Wind Pressures and Ice Thickness

TIA/EIA-222-F - 80 mph/69 mph 0.500 in Ice



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	Project: ***14-20 Isham Road - West Hartford, CT***		
	Client: Verizon Wireless	Drawn by: Staff	App'd:
	Code: TIA/EIA-222-F	Date: 05/23/08	Scale: NTS
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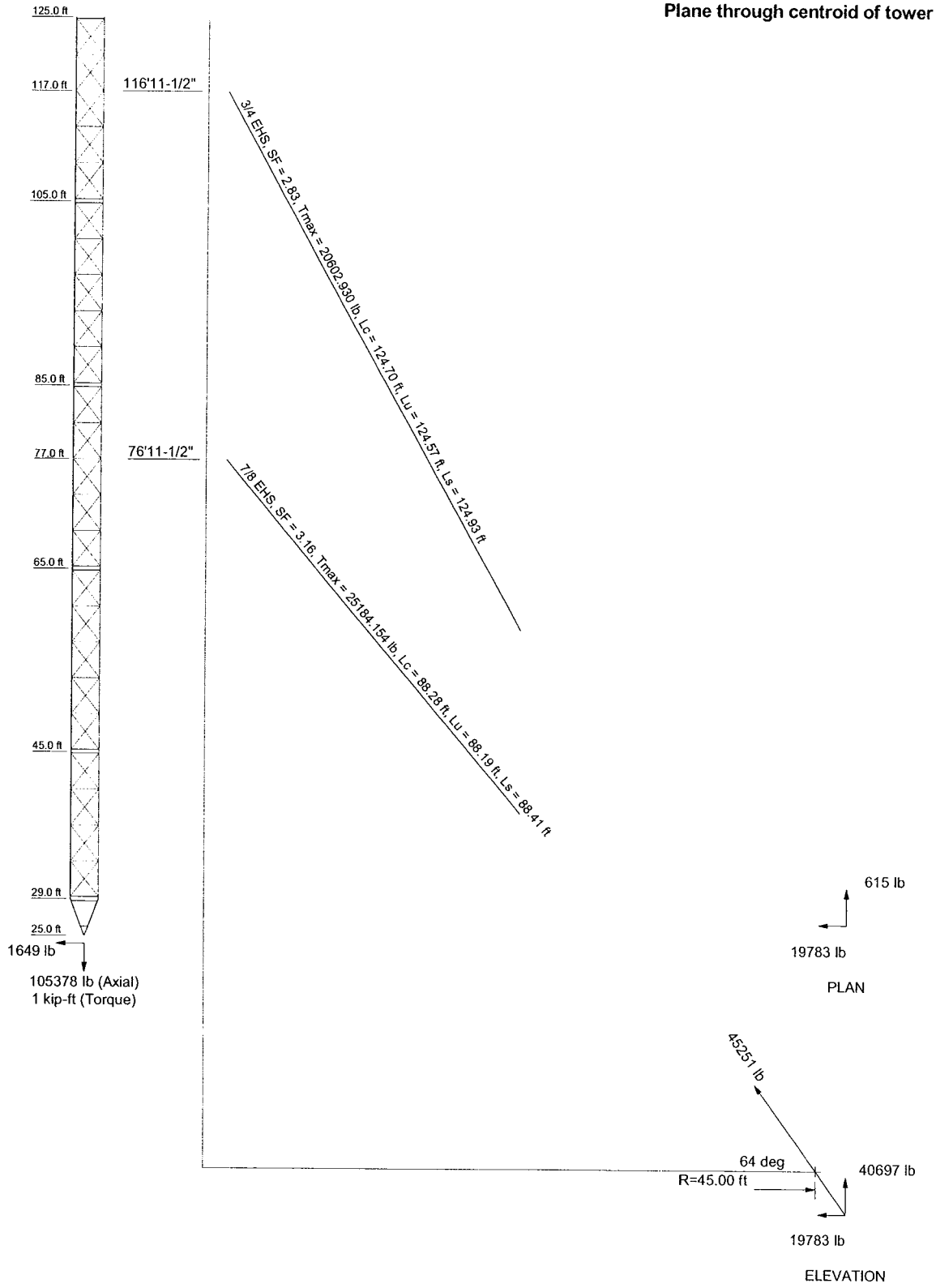
RISA TOWER GUY ANCHOR REACTION DIAGRAMS

Guy Tensions and Tower Reactions

TIA/EIA-222-F - 80 mph/69 mph 0.500 in Ice

Maximum Values
Anchor 'A'@45 ft Azimuth 0 deg Elev 0 ft
Plane through centroid of tower



URS Corporation	Job: ***100' Guyed Tower***		
500 Enterprise Drive, Suite 3B	Project: ***14-20 Isham Road - West Hartford, CT***		
Rocky Hill, CT 06067	Client: Verizon Wireless	Drawn by: Staff	App'd:
Phone: (860) 529-8882	Code: TIA/EIA-222-F	Date: 05/23/08	Scale: NTS
FAX: (860) 529-3991	Path: P:\08\Rev_WER\Files\Reduced Inventory per owner\100 FWT Guyed Twr West Hartford CT Rev 1.er		Dwg No. E-6

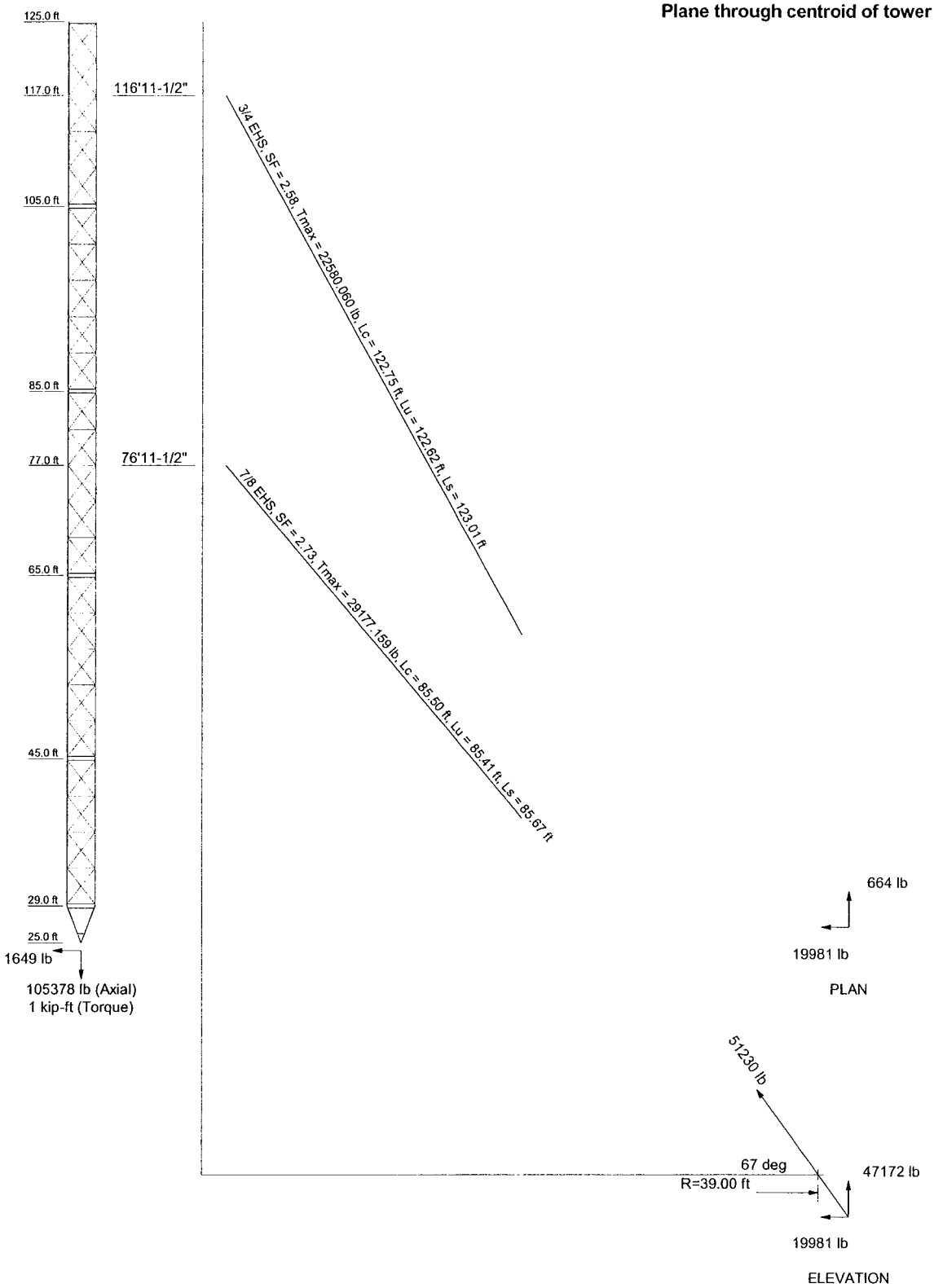
Guy Tensions and Tower Reactions

TIA/EIA-222-F - 80 mph/69 mph 0.500 in Ice

Maximum Values

Anchor 'B'@39 ft Azimuth 120 deg Elev 0 ft

Plane through centroid of tower



URS Corporation	Job: ***100' Guyed Tower***		
500 Enterprise Drive, Suite 3B	Project: ***14-20 Isham Road - West Hartford, CT***		
Rocky Hill, CT 06067	Client: Verizon Wireless	Drawn by: Staff	App'd:
Phone: (860) 529-8882	Code: TIA/EIA-222-F	Date: 05/23/08	Scale: NTS
FAX: (860) 529-3991	Path: P:\08\Rev_1\ERI\Files\Reduced Inventory per owner\100 FWT Guyed Twr West Hartford CT Rev 1.er		Dwg No. E-6

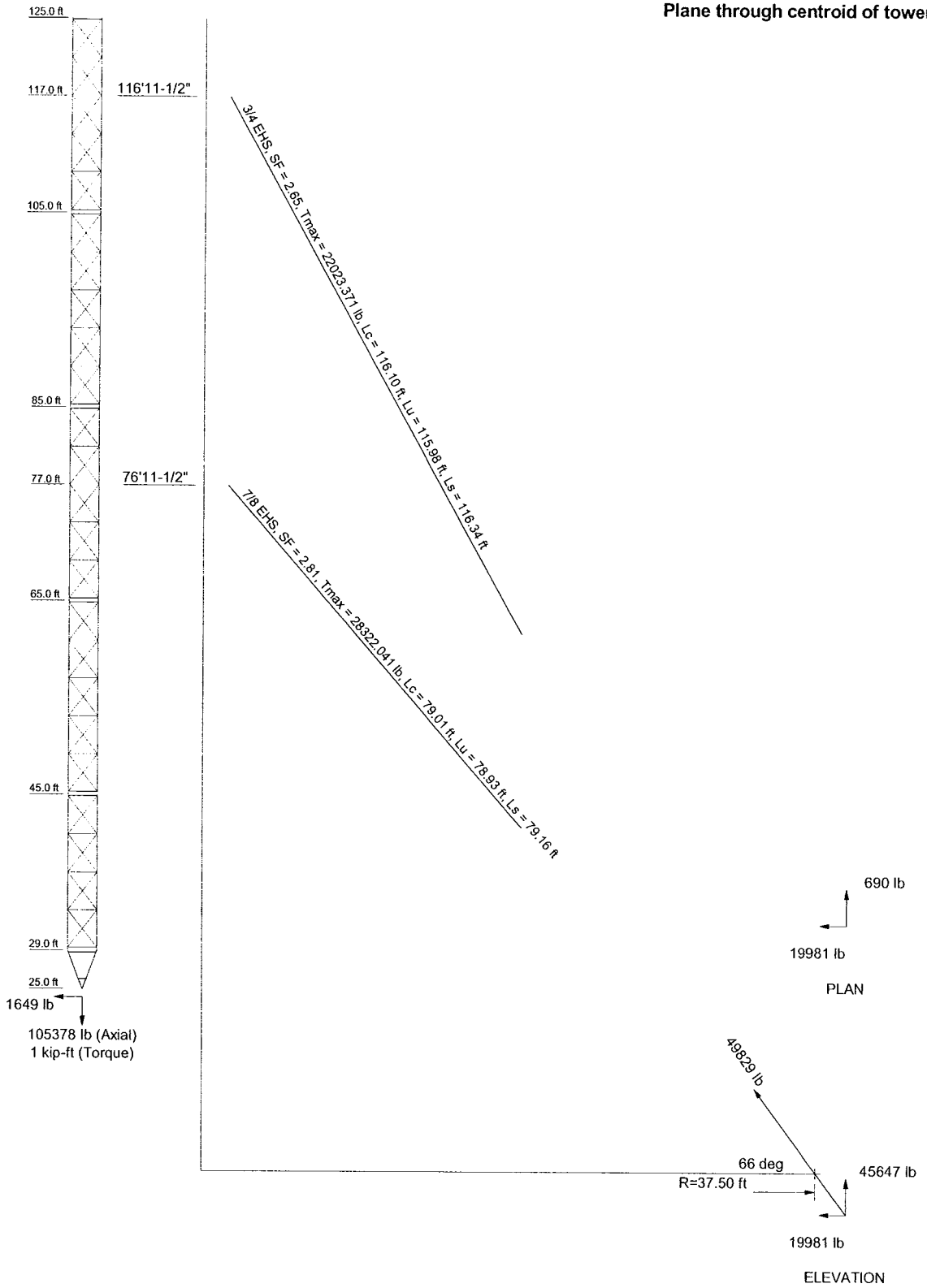
Guy Tensions and Tower Reactions

TIA/EIA-222-F - 80 mph/69 mph 0.500 in Ice

Maximum Values

Anchor 'C'@37.5 ft Azimuth 240 deg Elev 6.5 ft

Plane through centroid of tower

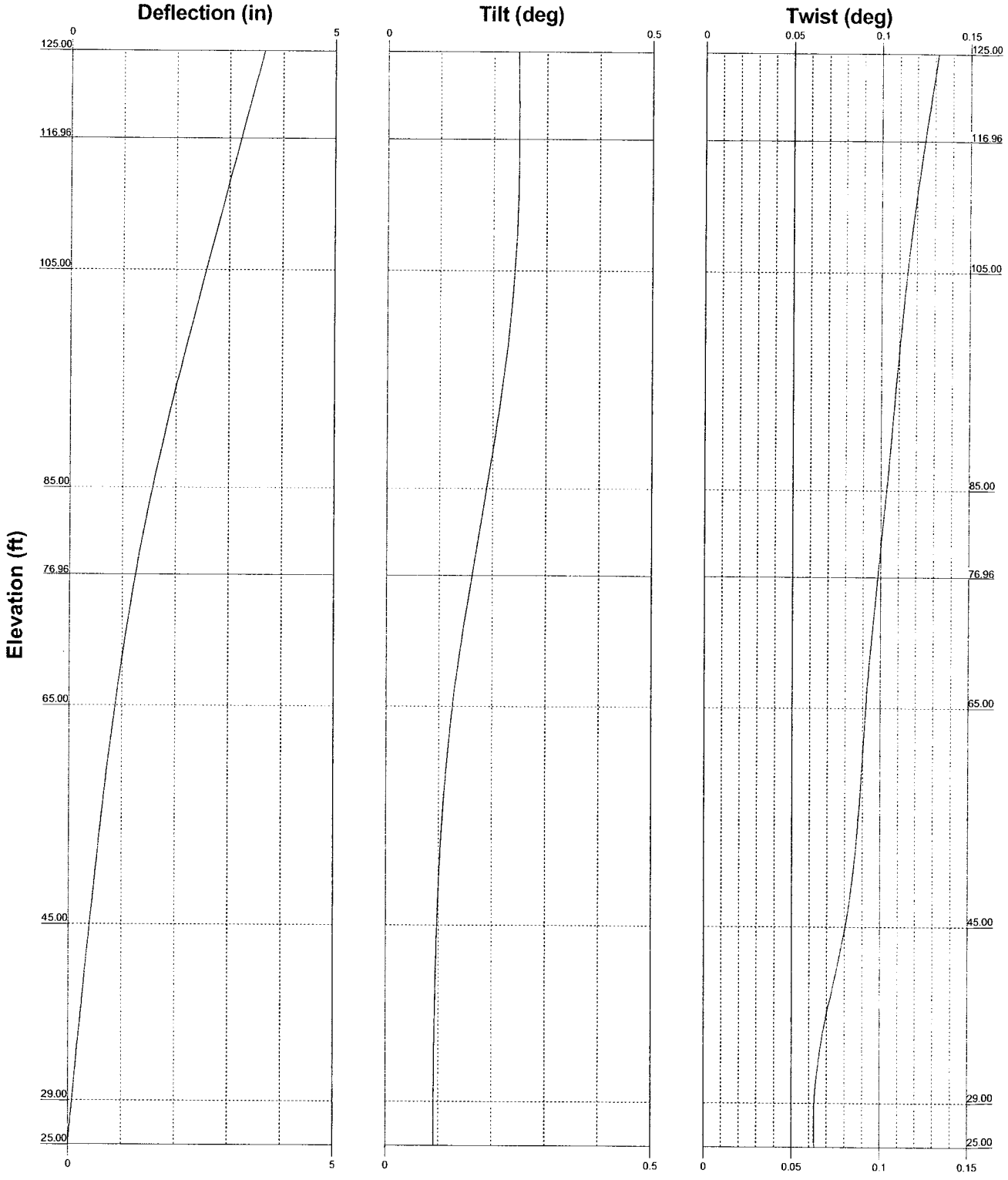


URS Corporation	Job: ***100' Guyed Tower***		
500 Enterprise Drive, Suite 3B	Project: ***14-20 Isham Road - West Hartford, CT***		
Rocky Hill, CT 06067	Client: Verizon Wireless	Drawn by: Staff	App'd:
Phone: (860) 529-8882	Code: TIA/EIA-222-F	Date: 05/23/08	Scale: NTS
FAX: (860) 529-3991	Path: P:\08\Rev_1\EB\Files\Reduced Inventory per owner\100_FWT_Guyed_Twr_West_Hartford_CT_Rev_1.en		Dwg No. E-6

RISA TOWER DEFLECTION, TWIST & TILT

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

Maximum Values



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Project: ***14-20 Isham Road - West Hartford, CT***		
Client: Verizon Wireless	Drawn by: Staff	App'd:
Code: TIA/EIA-222-F	Date: 05/23/08	Scale: NTS
Path: P:\08\Rev_1\ERI Files\Reduced_Inventory_per_owner\100 FWT Guyed Tw West Hartford CT Rev 1.er		Dwg No. E-5

RISA TOWER DETAILED OUTPUT

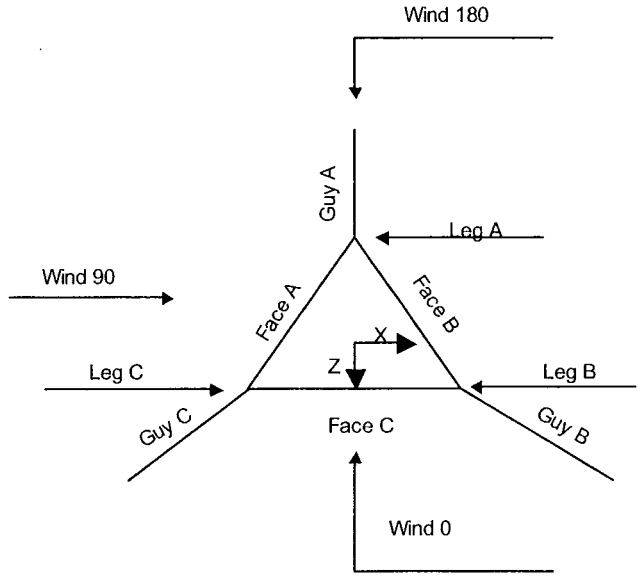
Tower Input Data

The main tower is a 3x guyed tower with an overall height of 125.00 ft above the ground line.
The base of the tower is set at an elevation of 25.00 ft above the ground line.
The face width of the tower is 3.04 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:

Tower is located in Hartford County, Connecticut.
Basic wind speed of 80 mph.
Nominal ice thickness of 0.500 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.
Tower located is roof top mounted and located approx 25' above mean grade level..
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

Tower Section Geometry

Tower Section	Tower Elevation	Assembly Database	Description	Section Width	Number of Sections	Section Length
	ft			ft		ft
T1	125.00-105.00			3.04	1	20.00
T2	105.00-85.00			3.04	1	20.00
T3	85.00-65.00			3.04	1	20.00
T4	65.00-45.00			3.04	1	20.00
T5	45.00-29.00			3.04	1	16.00
T6	29.00-25.00			3.04	1	4.00

Tower Section Geometry *(cont'd)*

Tower Section	Tower Elevation	Diagonal Spacing	Bracing Type	Has K Brace End Panels	Has Horizontals	Top Girt Offset	Bottom Girt Offset
	ft	ft				in	in
T1	125.00-105.00	3.92	X Brace	No	Yes	2.500	2.500
T2	105.00-85.00	3.92	X Brace	No	Yes	2.500	2.500
T3	85.00-65.00	3.92	X Brace	No	Yes	2.500	2.500
T4	65.00-45.00	3.92	X Brace	No	Yes	2.500	2.500

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
T5	45.00-29.00	3.90	X Brace	No	Yes	2.500	2.500
T6	29.00-25.00	2.79	X Brace	No	Yes	2.539	12.000

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Leg Type	Leg Size	Leg Grade	Diagonal Type	Diagonal Size	Diagonal Grade
T1 125.00-105.00	Solid Round	2	A572-50 (50 ksi)	Solid Round	7/8	A36 (36 ksi)
T2 105.00-85.00	Solid Round	2	A572-50 (50 ksi)	Solid Round	7/8	A36 (36 ksi)
T3 85.00-65.00	Solid Round	2 1/4	A572-50 (50 ksi)	Solid Round	7/8	A36 (36 ksi)
T4 65.00-45.00	Solid Round	2	A572-50 (50 ksi)	Solid Round	7/8	A36 (36 ksi)
T5 45.00-29.00	Solid Round	2	A572-50 (50 ksi)	Solid Round	7/8	A36 (36 ksi)
T6 29.00-25.00	Solid Round	2	A572-50 (50 ksi)	Flat Bar		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 125.00-105.00	Single Angle	L2x2x3/16	A36 (36 ksi)	Single Angle	L2x2x3/16	A36 (36 ksi)
T2 105.00-85.00	Single Angle	L2x2x3/16	A36 (36 ksi)	Single Angle	L2x2x3/16	A36 (36 ksi)
T3 85.00-65.00	Single Angle	L2x2x3/16	A36 (36 ksi)	Single Angle	L2x2x3/16	A36 (36 ksi)
T4 65.00-45.00	Single Angle	L2x2x1/8	A36 (36 ksi)	Single Angle	L2x2x1/8	A36 (36 ksi)
T5 45.00-29.00	Single Angle	L2x2x1/8	A36 (36 ksi)	Single Angle	L2x2x1/8	A36 (36 ksi)
T6 29.00-25.00	Equal Angle	L3x3x3/8	A36 (36 ksi)	Flat Bar	12x3/8	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
T1 125.00-105.00	None	Flat Bar		A36 (36 ksi)	Single Angle	L2x2x3/16	A36 (36 ksi)

Tower Elevation ft	No. of Mid Girts	Mid Girt Type	Mid Girt Size	Mid Girt Grade	Horizontal Type	Horizontal Size	Horizontal Grade
T2 105.00-85.00	None	Flat Bar		A36 (36 ksi)	Single Angle	L2x2x3/16	A36 (36 ksi)
T3 85.00-65.00	None	Flat Bar		A36 (36 ksi)	Single Angle	L2x2x3/16	A36 (36 ksi)
T4 65.00-45.00	None	Flat Bar		A36 (36 ksi)	Single Angle	L2x2x1/8	A36 (36 ksi)
T5 45.00-29.00	None	Flat Bar		A36 (36 ksi)	Single Angle	L2x2x1/8	A36 (36 ksi)
T6 29.00-25.00	1	Equal Angle	L2x2x1/4	A36 (36 ksi)	Single Angle		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 125.00-105.00	0.00	0.000	A36 (36 ksi)	1	1	1	36.000	36.000
T2 105.00-85.00	0.00	0.000	A36 (36 ksi)	1	1	1	36.000	36.000
T3 85.00-65.00	0.00	0.000	A36 (36 ksi)	1	1	1	36.000	36.000
T4 65.00-45.00	0.00	0.000	A36 (36 ksi)	1	1	1	36.000	36.000
T5 45.00-29.00	0.00	0.000	A36 (36 ksi)	1	1	1	36.000	36.000
T6 29.00-25.00	0.00	0.000	A36 (36 ksi)	1	1	1	36.000	36.000

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 125.00-105.00	Yes	Yes	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T2 105.00-85.00	Yes	Yes	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T3 85.00-65.00	Yes	Yes	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T4 65.00-45.00	Yes	Yes	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T5 45.00-29.00	Yes	Yes	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T6 29.00-25.00	Yes	Yes	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 125.00-105.00	0.000	1	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75
T2 105.00-85.00	0.000	1	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75
T3 85.00-65.00	0.000	1	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75
T4 65.00-45.00	0.000	1	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75
T5 45.00-29.00	0.000	1	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75
T6 29.00-25.00	0.000	1	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75

Tower Section Geometry *(cont'd)*

Tower Elevation	Connection Offsets							
	Diagonal				K-Bracing			
	Vert. Top	Horiz. Top	Vert. Bot.	Horiz. Bot.	Vert. Top	Horiz. Top	Vert. Bot.	Horiz. Bot.
ft	in	in	in	in	in	in	in	in
T1 125.00-105.00	8.000	0.000	0.000	8.000	0.000	0.000	0.000	0.000
T2 105.00-85.00	8.000	0.000	0.000	8.000	0.000	0.000	0.000	0.000
T3 85.00-65.00	8.000	0.000	0.000	8.000	0.000	0.000	0.000	0.000
T4 65.00-45.00	8.000	0.000	0.000	8.000	0.000	0.000	0.000	0.000
T5 45.00-29.00	8.000	0.000	0.000	8.000	0.000	0.000	0.000	0.000
T6 29.00-25.00	8.000	0.000	0.000	8.000	0.000	0.000	0.000	0.000

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 125.00-105.00	Flange	0.750 A325N	3	0.000 A325N	0	0.625 A325N	0	0.000 A325N	0	0.625 A325N	0	0.000 A325N	0	0.625 A325N	0
T2 105.00-85.00	Flange	0.750 A325N	3	0.000 A325N	0	0.625 A325N	0	0.000 A325N	0	0.625 A325N	0	0.000 A325N	0	0.625 A325N	0
T3 85.00-65.00	Flange	0.750 A325N	3	0.000 A325N	0	0.500 A325N	0	0.000 A325N	0	0.625 A325N	0	0.000 A325N	0	0.625 A325N	0

Tower Elevation ft	Leg Connection Type	Leg Bolt Size in	Leg No.	Diagonal Bolt Size in	Diagonal No.	Top Girt Bolt Size in	Top Girt No.	Bottom Girt Bolt Size in	Bottom Girt No.	Mid Girt Bolt Size in	Mid Girt No.	Long Horizontal Bolt Size in	Long Horizontal No.	Short Horizontal Bolt Size in	Short Horizontal No.
T4 65.00-45.00	Flange	0.750 A325N	3	0.000 A325N	0	0.625 A325N	0	0.000 A325N	0	0.625 A325N	0	0.000 A325N	0	0.625 A325N	0
T5 45.00-29.00	Flange	0.750 A325N	3	0.000 A325N	0	0.500 A325N	0	0.000 A325N	0	0.625 A325N	0	0.000 A325N	0	0.625 A325N	0
T6 29.00-25.00	Flange	0.750 A325N	3	0.000 A325N	0	0.500 A325N	0	0.000 A325N	0	0.625 A325N	0	0.000 A325N	0	0.625 A325N	0

Guy Data

Guy Elevation ft	Guy Grade		Guy Size	Initial Tension lb	%	Guy Modulus ksi	Guy Weight plf	L_u ft	Anchor Radius ft	Anchor Azimuth Adj. °	Anchor Elevation ft	End Fitting Efficiency %
116.958	EHS	A	3/4	5830.000	10%	19000	1.155	124.58	45.00	0.00	0.00	100%
		B	3/4	5830.000	10%	19000	1.155	122.63	39.00	0.00	0.00	100%
		C	3/4	5830.000	10%	19000	1.155	115.99	37.50	0.00	6.50	100%
76.9583	EHS	A	7/8	7970.000	10%	19000	1.581	88.19	45.00	0.00	0.00	100%
		B	7/8	7970.000	10%	19000	1.581	85.42	39.00	0.00	0.00	100%
		C	7/8	7970.000	10%	19000	1.581	78.93	37.50	0.00	6.50	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
116.958	Corner						
76.9583	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
116.96	A572-50 (50 ksi)	Solid Round			No	A36 (36 ksi)	Single Angle	L3x3x1/4
76.96	A572-50 (50 ksi)	Solid Round			No	A36 (36 ksi)	Single Angle	L3x3x1/4

Guy Data *(cont'd)*

Guy Elevation ft	Cable Weight A lb	Cable Weight B lb	Cable Weight C lb	Cable Weight D lb	Tower Intercept A ft	Tower Intercept B ft	Tower Intercept C ft	Tower Intercept D ft
116.958	143.892	141.640	133.969		1.52 2.1 sec/pulse	1.47 2.1 sec/pulse	1.32 2.0 sec/pulse	
76.9583	139.436	135.046	124.794		0.77 1.5 sec/pulse	0.72 1.5 sec/pulse	0.61 1.4 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
116.958	No	No			1	1	1	1
76.9583	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
116.958	0.000 A325N	0	0.000	1	0.625 A325N	0	0.000	0.75	0.625 A325N	0	0.000	0.75
76.9583	0.000 A325N	0	0.000	1	0.625 A325N	0	0.000	0.75	0.625 A325N	0	0.000	0.75

Guy Pressures

Guy Elevation ft	Guy Location	z ft	q_z psf	q_z Ice psf	Ice Thickness in
116.958	A	58.48	19	14	0.500
	B	58.48	19	14	0.500
	C	61.73	20	15	0.500
76.9583	A	38.48	17	13	0.500
	B	38.48	17	13	0.500
	C	41.73	18	13	0.500

Guy-Mast Forces (Excluding Wind) - No Ice

Guy Elevation ft	Guy Location	Chord Angle °	Guy Tension Top Bottom lb	F_x lb	F_y lb	F_z lb	M_x kip-ft	M_y kip-ft	M_z kip-ft
116.958	A	69.71	5964.962	0.000	5603.427	-2045.086	-9.84	0.00	0.00

Guy Elevation	Guy Location	Chord Angle	Guy Tension Top / Bottom	F_x	F_y	F_z	M_x	M_y	M_z
ft		°	lb	lb	lb	lb	kip-ft	kip-ft	kip-ft
			5830.000						
	B	72.34	5964.962	1549.617	5690.257	894.672	5.00	0.00	-8.65
			5830.000						
	C	72.07	5957.462	-1571.367	5674.424	907.229	4.98	0.00	8.63
			5830.000						
			Sum:	**-21.750**	16968.109	**-243.186**	**0.14**	0.00	**-0.02**
76.9583	A	60.67	8091.559	0.000	7070.877	-3933.958	-12.42	0.00	0.00
			7970.000						
	B	64.18	8091.559	3029.573	7296.272	1749.125	6.41	0.00	-11.10
			7970.000						
	C	63.10	8081.292	-3144.417	7219.705	1815.430	6.34	-0.00	10.98
			7970.000						
			Sum:	**-114.844**	21586.854	**-369.403**	**0.33**	0.00	**-0.12**

Guy-Mast Forces (Excluding Wind) - Ice

Guy Elevation	Guy Location	Chord Angle	Guy Tension Top / Bottom	F_x	F_y	F_z	M_x	M_y	M_z
ft		°	lb	lb	lb	lb	kip-ft	kip-ft	kip-ft
116.958	A	69.71	8094.128	0.000	7606.139	-2767.952	-13.36	0.00	0.00
			7869.942						
	B	72.34	8092.162	2096.798	7721.464	1210.587	6.78	0.00	-11.74
			7867.976						
	C	72.07	8081.474	-2126.402	7699.444	1227.679	6.76	0.00	11.71
			7869.747						
			Sum:	**-29.605**	23027.047	**-329.686**	**0.18**	0.00	**-0.03**
76.9583	A	60.67	10969.576	0.000	9588.802	-5327.894	-16.84	0.00	0.00
			10783.436						
	B	64.18	10967.485	4102.287	9891.784	2368.456	8.69	0.00	-15.05
			10781.345						
	C	63.10	10954.194	-4258.390	9788.558	2458.583	8.60	-0.00	14.89
			10783.776						
			Sum:	**-156.104**	29269.144	**-500.856**	**0.44**	0.00	**-0.16**

Guy-Mast Forces (Excluding Wind) - Service

Guy Elevation	Guy Location	Chord Angle	Guy Tension Top / Bottom	F_x	F_y	F_z	M_x	M_y	M_z
ft		°	lb	lb	lb	lb	kip-ft	kip-ft	kip-ft
116.958	A	69.71	5964.962	0.000	5603.427	-2045.086	-9.84	0.00	0.00
			5830.000						
	B	72.34	5964.962	1549.617	5690.257	894.672	5.00	0.00	-8.65
			5830.000						
	C	72.07	5957.462	-1571.367	5674.424	907.229	4.98	0.00	8.63
			5830.000						

Guy Elevation	Guy Location	Chord Angle	Guy Tension Top Bottom lb	F_x	F_y	F_z	M_x	M_y	M_z
ft		°		lb	lb	lb	kip-ft	kip-ft	kip-ft
			Sum:	**-21.750**	16968.109	**-243.186**	**0.14**	0.00	**-0.02**
76.9583	A	60.67	8091.559 7970.000	0.000	7070.877	-3933.958	-12.42	0.00	0.00
	B	64.18	8091.559 7970.000	3029.573	7296.272	1749.125	6.41	0.00	-11.10
	C	63.10	8081.292 7970.000	-3144.417	7219.705	1815.430	6.34	-0.00	10.98
			Sum:	**-114.844**	21586.854	**-369.403**	**0.33**	0.00	**-0.12**

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 1/4 (Sprint/Nextel)	C	Yes	Ar (CfAe)	123.00 - 33.00	-2.000	0	8	8	0.950 1.550	1.550		0.66
1 1/4 (Sprint/Nextel)	C	Yes	Ar (CfAe)	123.00 - 33.00	-4.000	0	4	4	0.950 1.550	1.550		0.66
1/2 (Unknown)	B	Yes	Ar (CfAe)	125.00 - 27.00	-3.000	-0.155	2	2	0.580	0.580		0.25
1 5/8 (Unknown)	B	Yes	Ar (CfAe)	125.00 - 33.00	-3.000	0.34	1	1	1.980	1.980		1.04
7/8 (Unknown)	B	Yes	Ar (CfAe)	125.00 - 33.00	-3.000	0.28	1	1	1.110	1.110		0.54
1 5/8 (Unknown)	B	Yes	Ar (CfAe)	125.00 - 33.00	-3.000	0.02	1	1	1.980	1.980		1.04
1/2 (Unknown - GPS)	B	Yes	Ar (CfAe)	35.00 - 27.00	0.000	-0.35	2	2	0.580	0.580		0.25
1/2 (Unknown - GPS)	B	Yes	Ar (CfAe)	35.00 - 27.00	0.000	0.35	1	1	0.580	0.580		0.25
1 5/8 (Verizon - proposed)	A	Yes	Ar (CfAe)	110.00 - 33.00	0.000	0	12	6	0.500	1.980		1.04
1/2 (Verizon - proposed)	A	Yes	Ar (CfAe)	110.00 - 33.00	0.000	0.35	2	2	0.580	0.580		0.25

Feed Line/Linear Appurtenances Section Areas

Tower Section	Tower Elevation ft	Face	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight lb
T1	125.00-105.00	A	5.433	0.000	0.000	0.000	64.900
		B	10.383	0.000	0.000	0.000	62.400
		C	27.900	0.000	0.000	0.000	142.560
T2	105.00-85.00	A	21.733	0.000	0.000	0.000	259.600

Tower Section	Tower Elevation ft	Face	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight lb
		B	10.383	0.000	0.000	0.000	62.400
		C	31.000	0.000	0.000	0.000	158.400
T3	85.00-65.00	A	21.733	0.000	0.000	0.000	259.600
		B	10.383	0.000	0.000	0.000	62.400
		C	31.000	0.000	0.000	0.000	158.400
T4	65.00-45.00	A	21.733	0.000	0.000	0.000	259.600
		B	10.383	0.000	0.000	0.000	62.400
		C	31.000	0.000	0.000	0.000	158.400
T5	45.00-29.00	A	13.040	0.000	0.000	0.000	155.760
		B	7.487	0.000	0.000	0.000	43.940
		C	18.600	0.000	0.000	0.000	95.040
T6	29.00-25.00	A	0.000	0.000	0.000	0.000	0.000
		B	0.483	0.000	0.000	0.000	2.500
		C	0.000	0.000	0.000	0.000	0.000

Feed Line/Linear Appurtenances Section Areas - With Ice

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight lb
T1	125.00-105.00	A	0.500	1.900	5.650	0.000	0.000	158.982
		B		16.083	1.933	0.000	0.000	168.063
		C		7.650	37.500	0.000	0.000	501.808
T2	105.00-85.00	A	0.500	7.600	22.600	0.000	0.000	635.929
		B		16.083	1.933	0.000	0.000	168.063
		C		8.500	41.667	0.000	0.000	557.564
T3	85.00-65.00	A	0.500	7.600	22.600	0.000	0.000	635.929
		B		16.083	1.933	0.000	0.000	168.063
		C		8.500	41.667	0.000	0.000	557.564
T4	65.00-45.00	A	0.500	7.600	22.600	0.000	0.000	635.929
		B		16.083	1.933	0.000	0.000	168.063
		C		8.500	41.667	0.000	0.000	557.564
T5	45.00-29.00	A	0.500	4.560	13.560	0.000	0.000	381.558
		B		11.757	2.127	0.000	0.000	123.993
		C		5.100	25.000	0.000	0.000	334.538
T6	29.00-25.00	A	0.500	0.000	0.000	0.000	0.000	0.000
		B		0.790	0.387	0.000	0.000	8.898
		C		0.000	0.000	0.000	0.000	0.000

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	125.00-105.00	A	0.323	1.150	0.294	0.409
		B	0.617	2.745	0.562	0.976
		C	1.658	6.879	1.511	2.446
T2	105.00-85.00	A	1.292	4.601	1.087	1.510
		B	0.617	2.745	0.519	0.901
		C	1.843	7.644	1.550	2.508
T3	85.00-65.00	A	1.292	4.601	1.177	1.636
		B	0.617	2.745	0.562	0.976
		C	1.843	7.644	1.679	2.717
T4	65.00-45.00	A	1.292	4.601	1.087	1.510

Section	Elevation	Face	A_R	A_R Ice	A_F	A_F Ice
	ft		ft^2	ft^2	ft^2	ft^2
		B	0.617	2.745	0.519	0.901
		C	1.843	7.644	1.550	2.508
T5	45.00-29.00	A	0.772	2.772	0.679	0.944
		B	0.444	2.124	0.390	0.723
		C	1.102	4.605	0.969	1.568
T6	29.00-25.00	A	0.000	0.000	0.000	0.000
		B	0.000	0.046	0.093	0.248
		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	125.00-105.00	0.349	1.934	0.522	1.681
T2	105.00-85.00	-1.315	0.676	-0.488	0.973
T3	85.00-65.00	-1.270	0.653	-0.474	0.951
T4	65.00-45.00	-1.315	0.676	-0.488	0.973
T5	45.00-29.00	-1.030	0.430	-0.296	0.793
T6	29.00-25.00	0.184	-0.296	0.222	-0.052

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft	Vert ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight lb
Boom Gate (1)	A	From Leg	2.00	0.00	123.00	No Ice		16.00	16.00	700.000
(Sprint/Nextel)			0.00			1/2" Ice		25.00	25.00	1100.000
			0.00							
Boom Gate (1)	B	From Leg	2.00	0.00	123.00	No Ice		16.00	16.00	700.000
(Sprint/Nextel)			0.00			1/2" Ice		25.00	25.00	1100.000
			0.00							
Boom Gate (1)	C	From Leg	2.00	0.00	123.00	No Ice		16.00	16.00	700.000
(Sprint/Nextel)			0.00			1/2" Ice		25.00	25.00	1100.000
			0.00							
(4) ALP 9212 (est)	A	From Leg	4.50	0.00	123.00	No Ice		5.46	5.46	17.200
(Sprint/Nextel)			0.00			1/2" Ice		6.09	6.09	50.000
			0.00							
(4) ALP 9212 (est)	B	From Leg	4.50	0.00	123.00	No Ice		5.46	5.46	17.200
(Sprint/Nextel)			0.00			1/2" Ice		6.09	6.09	50.000
			0.00							
(4) ALP 9212 (est)	C	From Leg	4.50	0.00	123.00	No Ice		5.46	5.46	17.200
(Sprint/Nextel)			0.00			1/2" Ice		6.09	6.09	50.000
			0.00							
PiROD 13' Lightweight T-Frame	A	From Leg	1.50	0.00	110.00	No Ice		10.60	10.60	255.000
(Verizon - proposed)			0.00			1/2" Ice		16.80	16.80	359.000
			0.00							
PiROD 13' Lightweight T-	B	From Leg	1.50	0.00	110.00	No Ice		10.60	10.60	255.000

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight lb
Frame			0.00			1/2" Ice	16.80	16.80	359.000
(Verizon - proposed)			0.00						
PiROD 13' Lightweight T-Frame	C	From Leg	1.50	0.00	110.00	No Ice	10.60	10.60	255.000
			0.00			1/2" Ice	16.80	16.80	359.000
(Verizon - proposed)			0.00						
LPA-80063/4CF	A	From Leg	3.00	0.00	110.00	No Ice	7.01	6.08	20.000
(Verizon - proposed)			6.00			1/2" Ice	7.42	6.48	72.634
			0.00						
LPA-80063/4CF	A	From Leg	3.00	0.00	110.00	No Ice	7.01	6.08	20.000
(Verizon - proposed)			-6.00			1/2" Ice	7.42	6.48	72.634
			0.00						
LPA-80063/4CF	B	From Leg	3.00	0.00	110.00	No Ice	7.01	6.08	20.000
(Verizon - proposed)			6.00			1/2" Ice	7.42	6.48	72.634
			0.00						
LPA-80063/4CF	B	From Leg	3.00	0.00	110.00	No Ice	7.01	6.08	20.000
(Verizon - proposed)			-6.00			1/2" Ice	7.42	6.48	72.634
			0.00						
LPA-80063/4CF	C	From Leg	3.00	0.00	110.00	No Ice	7.01	6.08	20.000
(Verizon - proposed)			6.00			1/2" Ice	7.42	6.48	72.634
			0.00						
LPA-80063/4CF	C	From Leg	3.00	0.00	110.00	No Ice	7.01	6.08	20.000
(Verizon - proposed)			-6.00			1/2" Ice	7.42	6.48	72.634
			0.00						
LPA-171063/8CF	A	From Leg	3.00	0.00	110.00	No Ice	3.69	3.69	11.500
(Verizon - proposed)			2.00			1/2" Ice	4.06	4.06	40.294
			0.00						
LPA-171063/8CF	A	From Leg	3.00	0.00	110.00	No Ice	3.69	3.69	11.500
(Verizon - proposed)			-2.00			1/2" Ice	4.06	4.06	40.294
			0.00						
LPA-171063/8CF	B	From Leg	3.00	0.00	110.00	No Ice	3.69	3.69	11.500
(Verizon - proposed)			2.00			1/2" Ice	4.06	4.06	40.294
			0.00						
LPA-171063/8CF	B	From Leg	3.00	0.00	110.00	No Ice	3.69	3.69	11.500
(Verizon - proposed)			-2.00			1/2" Ice	4.06	4.06	40.294
			0.00						
LPA-171063/8CF	C	From Leg	3.00	0.00	110.00	No Ice	3.69	3.69	11.500
(Verizon - proposed)			2.00			1/2" Ice	4.06	4.06	40.294
			0.00						
LPA-171063/8CF	C	From Leg	3.00	0.00	110.00	No Ice	3.69	3.69	11.500
(Verizon - proposed)			-2.00			1/2" Ice	4.06	4.06	40.294
			0.00						
18' x 3" Dia Omni (est)	A	From Leg	1.00	0.00	132.00	No Ice	5.40	5.40	50.000
			0.00			1/2" Ice	7.23	7.23	88.892
			0.00						
12' x 3" Dia Omni (est)	B	From Leg	1.00	0.00	143.00	No Ice	3.60	3.60	35.000
			0.00			1/2" Ice	4.83	4.83	61.064
			0.00						
6' x 3" Dia Omni	C	From Leg	4.00	0.00	128.00	No Ice	1.77	1.77	20.000
			6.00			1/2" Ice	2.13	2.13	33.235
			0.00						
4' x 3" DIA Omni (est)	C	From Leg	1.00	0.00	127.00	No Ice	1.00	1.00	15.000
			0.00			1/2" Ice	1.25	1.25	23.959
			0.00						
GPS	B	Stand-Off	4.00	0.00	35.00	No Ice	1.00	1.00	10.000
		Right	0.00			1/2" Ice	1.50	1.50	15.000
			0.00						
GPS - mount	B	Stand-Off	2.00	0.00	35.00	No Ice	1.33	1.33	25.280

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight lb
		Right	0.00			1/2" Ice	2.04	2.04	33.220
			0.00						
GPS	B	From Leg	4.00	0.00	35.00	No Ice	1.00	1.00	10.000
			0.00			1/2" Ice	1.50	1.50	15.000
			0.00						
GPS - mount	B	From Leg	2.00	0.00	35.00	No Ice	1.33	1.33	25.280
			0.00			1/2" Ice	2.04	2.04	33.220
			0.00						
GPS	A	Stand-Off Left	4.00	0.00	35.00	No Ice	1.00	1.00	10.000
			0.00			1/2" Ice	1.50	1.50	15.000
			0.00						
GPS - mount	A	Stand-Off Left	2.00	0.00	35.00	No Ice	1.33	1.33	25.280
			0.00			1/2" Ice	2.04	2.04	33.220
			0.00						
GPS	A	From Leg	4.00	0.00	35.00	No Ice	1.00	1.00	10.000
			0.00			1/2" Ice	1.50	1.50	15.000
			0.00						
GPS - mount	A	From Leg	2.00	0.00	35.00	No Ice	1.33	1.33	25.280
			0.00			1/2" Ice	2.04	2.04	33.220
			0.00						
4 Bay Dipole	A	From Leg	4.00	0.00	129.00	No Ice	3.15	3.15	0.032
			-4.00			1/2" Ice	5.67	5.67	0.042
			0.00						
4 Bay Dipole	B	From Leg	1.00	0.00	132.00	No Ice	3.16	3.16	36.000
			0.00			1/2" Ice	5.69	5.69	46.800
			0.00						
(2) GPS (Verizon - proposed)	A	From Leg	3.00	0.00	110.00	No Ice	1.00	1.00	10.000
			0.00			1/2" Ice	1.50	1.50	15.000
			0.00						

Tower Pressures - No Ice

$G_H = 1.162$

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 125.00-105.00	115.00	1.429	23	64.173	A	2.821	14.712	6.667	38.02	0.000	0.000
					B	2.553	19.368		30.41	0.000	0.000
					C	1.604	35.844		17.80	0.000	0.000
T2 105.00-85.00	95.00	1.353	22	64.173	A	1.789	30.044	6.667	20.94	0.000	0.000
					B	2.356	19.368		30.69	0.000	0.000
					C	1.325	38.759		16.63	0.000	0.000
T3 85.00-65.00	75.00	1.264	21	64.590	A	1.915	30.877	7.500	22.87	0.000	0.000
					B	2.530	20.201		32.99	0.000	0.000
					C	1.413	39.593		18.29	0.000	0.000
T4 65.00-45.00	55.00	1.157	19	64.173	A	1.789	30.044	6.667	20.94	0.000	0.000
					B	2.356	19.368		30.69	0.000	0.000
					C	1.325	38.759		16.63	0.000	0.000

Section Elevation	z	K_Z	q_z	A_G	Face	A_F	A_R	A_{leg}	Leg %	C_AA_A In Face	C_AA_A Out Face
ft	ft		psf	ft^2		ft^2	ft^2	ft^2		ft^2	ft^2
T5 45.00-29.00	37.00	1.033	17	51.339	A	1.717	19.939	5.333	24.63	0.000	0.000
					B	2.006	14.715		31.90	0.000	0.000
					C	1.427	25.170		20.05	0.000	0.000
T6 29.00-25.00	27.00	1	16	6.797	A	1.272	1.456	1.456	53.37	0.000	0.000
					B	1.179	1.940		46.69	0.000	0.000
					C	1.272	1.456		53.37	0.000	0.000

Tower Pressure - With Ice

$G_H = 1.162$

Section Elevation	z	K_Z	q_z	t_Z	A_G	Face	A_F	A_R	A_{leg}	Leg %	C_AA_A In Face	C_AA_A Out Face
ft	ft		psf	in	ft^2		ft^2	ft^2	ft^2		ft^2	ft^2
T1 125.00-105.00	115.00	1.429	18	0.500	65.840	A	8.356	18.477	10.000	37.27	0.000	0.000
						B	4.072	31.066		28.46	0.000	0.000
						C	38.169	18.498		17.65	0.000	0.000
T2 105.00-85.00	95.00	1.353	17	0.500	65.840	A	23.965	20.726	10.000	22.38	0.000	0.000
						B	3.908	31.066		28.59	0.000	0.000
						C	42.034	18.584		16.50	0.000	0.000
T3 85.00-65.00	75.00	1.264	16	0.500	66.257	A	24.057	21.549	10.833	23.75	0.000	0.000
						B	4.050	31.889		30.14	0.000	0.000
						C	42.042	19.407		17.63	0.000	0.000
T4 65.00-45.00	55.00	1.157	14	0.500	65.840	A	23.965	20.726	10.000	22.38	0.000	0.000
						B	3.908	31.066		28.59	0.000	0.000
						C	42.034	18.584		16.50	0.000	0.000
T5 45.00-29.00	37.00	1.033	13	0.500	52.672	A	15.012	15.997	8.000	25.80	0.000	0.000
						B	3.800	23.842		28.94	0.000	0.000
						C	25.828	14.704		19.74	0.000	0.000
T6 29.00-25.00	27.00	1	12	0.500	7.154	A	1.272	2.460	2.184	58.52	0.000	0.000
						B	1.411	3.204		47.33	0.000	0.000
						C	1.272	2.460		58.52	0.000	0.000

Tower Pressure - Service

$G_H = 1.162$

Section Elevation	z	K_Z	q_z	A_G	Face	A_F	A_R	A_{leg}	Leg %	C_AA_A In Face	C_AA_A Out Face
ft	ft		psf	ft^2		ft^2	ft^2	ft^2		ft^2	ft^2
T1 125.00-105.00	115.00	1.429	9	64.173	A	2.821	14.712	6.667	38.02	0.000	0.000
					B	2.553	19.368		30.41	0.000	0.000
					C	1.604	35.844		17.80	0.000	0.000
T2 105.00-85.00	95.00	1.353	9	64.173	A	1.789	30.044	6.667	20.94	0.000	0.000
					B	2.356	19.368		30.69	0.000	0.000
					C	1.325	38.759		16.63	0.000	0.000
T3 85.00-65.00	75.00	1.264	8	64.590	A	1.915	30.877	7.500	22.87	0.000	0.000
					B	2.530	20.201		32.99	0.000	0.000
					C	1.413	39.593		18.29	0.000	0.000
T4 65.00-45.00	55.00	1.157	7	64.173	A	1.789	30.044	6.667	20.94	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	2.356	19.368		30.69	0.000	0.000
					C	1.325	38.759		16.63	0.000	0.000
T5 45.00-29.00	37.00	1.033	7	51.339	A	1.717	19.939	5.333	24.63	0.000	0.000
					B	2.006	14.715		31.90	0.000	0.000
					C	1.427	25.170		20.05	0.000	0.000
T6 29.00-25.00	27.00	1	6	6.797	A	1.272	1.456	1.456	53.37	0.000	0.000
					B	1.179	1.940		46.69	0.000	0.000
					C	1.272	1.456		53.37	0.000	0.000

Tower Forces - No Ice - Wind Normal To Face

Section Elevation ft	Add Weight lb	Self Weight lb	Face	e	C_F	R_R	D_F	D_R	A_E ft²	F lb	w plf	Ctrl. Face
T1 125.00-105.00	269.860	1044.251	A	0.273	2.37	0.608	1	1	11.767	1395.234	69.76	C
			B	0.342	2.191	0.63	1	1	14.745			
			C	0.584	1.815	0.744	1	1	28.259			
T2 105.00-85.00	480.400	1021.737	A	0.496	1.905	0.695	1	1	22.683	1435.839	71.79	C
			B	0.339	2.199	0.628	1	1	14.528			
			C	0.625	1.791	0.769	1	1	31.131			
T3 85.00-65.00	480.400	1214.626	A	0.508	1.89	0.701	1	1	23.574	1381.394	69.07	C
			B	0.352	2.167	0.633	1	1	15.321			
			C	0.635	1.787	0.776	1	1	32.120			
T4 65.00-45.00	480.400	978.766	A	0.496	1.905	0.695	1	1	22.683	1228.254	61.41	C
			B	0.339	2.199	0.628	1	1	14.528			
			C	0.625	1.791	0.769	1	1	31.131			
T5 45.00-29.00	294.740	785.196	A	0.422	2.022	0.661	1	1	14.892	709.930	44.37	C
			B	0.326	2.23	0.624	1	1	11.190			
			C	0.518	1.878	0.707	1	1	19.220			
T6 29.00-25.00	2.500	237.096	A	0.401	2.061	0.652	1	1	2.222	93.004	23.25	B
			B	0.459	1.959	0.677	1	1	2.493			
			C	0.401	2.061	0.652	1	1	2.222			
Sum Weight:	2008.300	5281.672								6243.655		

Tower Forces - No Ice - Wind 45 To Face

Section Elevation ft	Add Weight lb	Self Weight lb	Face	e	C_F	R_R	D_F	D_R	A_E ft²	F lb	w plf	Ctrl. Face
T1 125.00-105.00	269.860	1044.251	A	0.273	2.37	0.608	0.825	1	11.273	1381.378	69.07	C
			B	0.342	2.191	0.63	0.825	1	14.298			
			C	0.584	1.815	0.744	0.825	1	27.979			
T2 105.00-85.00	480.400	1021.737	A	0.496	1.905	0.695	0.825	1	22.370	1425.142	71.26	C
			B	0.339	2.199	0.628	0.825	1	14.116			
			C	0.625	1.791	0.769	0.825	1	30.899			
T3 85.00-65.00	480.400	1214.626	A	0.508	1.89	0.701	0.825	1	23.239	1370.758	68.54	C
			B	0.352	2.167	0.633	0.825	1	14.878			
			C	0.635	1.787	0.776	0.825	1	31.872			
T4 65.00-45.00	480.400	978.766	A	0.496	1.905	0.695	0.825	1	22.370	1219.104	60.96	C
			B	0.339	2.199	0.628	0.825	1	14.116			
			C	0.625	1.791	0.769	0.825	1	30.899			

Section Elevation ft	Add Weight lb	Self Weight lb	Face	e	C_F	R_R	D_F	D_R	A_E ft²	F lb	w plf	Ctrl. Face
T5 45.00-29.00	294.740	785.196	A	0.422	2.022	0.661	0.825	1	14.591	700.703	43.79	C
			B	0.326	2.23	0.624	0.825	1	10.839			
			C	0.518	1.878	0.707	0.825	1	18.970			
T6 29.00-25.00	2.500	237.096	A	0.401	2.061	0.652	0.825	1	1.999	85.305	21.33	B
			B	0.459	1.959	0.677	0.825	1	2.287			
			C	0.401	2.061	0.652	0.825	1	1.999			
Sum Weight:	2008.300	5281.672								6182.389		

Tower Forces - No Ice - Wind 60 To Face

Section Elevation ft	Add Weight lb	Self Weight lb	Face	e	C_F	R_R	D_F	D_R	A_E ft²	F lb	w plf	Ctrl. Face
T1 125.00-105.00	269.860	1044.251	A	0.273	2.37	0.608	0.8	1	11.203	1379.398	68.97	C
			B	0.342	2.191	0.63	0.8	1	14.234			
			C	0.584	1.815	0.744	0.8	1	27.938			
T2 105.00-85.00	480.400	1021.737	A	0.496	1.905	0.695	0.8	1	22.326	1423.613	71.18	C
			B	0.339	2.199	0.628	0.8	1	14.057			
			C	0.625	1.791	0.769	0.8	1	30.866			
T3 85.00-65.00	480.400	1214.626	A	0.508	1.89	0.701	0.8	1	23.191	1369.238	68.46	C
			B	0.352	2.167	0.633	0.8	1	14.815			
			C	0.635	1.787	0.776	0.8	1	31.837			
T4 65.00-45.00	480.400	978.766	A	0.496	1.905	0.695	0.8	1	22.326	1217.796	60.89	C
			B	0.339	2.199	0.628	0.8	1	14.057			
			C	0.625	1.791	0.769	0.8	1	30.866			
T5 45.00-29.00	294.740	785.196	A	0.422	2.022	0.661	0.8	1	14.548	699.385	43.71	C
			B	0.326	2.23	0.624	0.8	1	10.789			
			C	0.518	1.878	0.707	0.8	1	18.934			
T6 29.00-25.00	2.500	237.096	A	0.401	2.061	0.652	0.8	1	1.968	84.205	21.05	B
			B	0.459	1.959	0.677	0.8	1	2.257			
			C	0.401	2.061	0.652	0.8	1	1.968			
Sum Weight:	2008.300	5281.672								6173.636		

Tower Forces - No Ice - Wind 90 To Face

Section Elevation ft	Add Weight lb	Self Weight lb	Face	e	C_F	R_R	D_F	D_R	A_E ft²	F lb	w plf	Ctrl. Face
T1 125.00-105.00	269.860	1044.251	A	0.273	2.37	0.608	0.85	1	11.344	1383.357	69.17	C
			B	0.342	2.191	0.63	0.85	1	14.362			
			C	0.584	1.815	0.744	0.85	1	28.019			
T2 105.00-85.00	480.400	1021.737	A	0.496	1.905	0.695	0.85	1	22.415	1426.670	71.33	C
			B	0.339	2.199	0.628	0.85	1	14.175			
			C	0.625	1.791	0.769	0.85	1	30.932			
T3 85.00-65.00	480.400	1214.626	A	0.508	1.89	0.701	0.85	1	23.287	1372.277	68.61	C
			B	0.352	2.167	0.633	0.85	1	14.941			
			C	0.635	1.787	0.776	0.85	1	31.908			
T4 65.00-45.00	480.400	978.766	A	0.496	1.905	0.695	0.85	1	22.415	1220.411	61.02	C
			B	0.339	2.199	0.628	0.85	1	14.175			

Section Elevation ft	Add Weight lb	Self Weight lb	Face	e	C_F	R_R	D_F	D_R	A_E ft²	F lb	w plf	Ctrl. Face
			C	0.625	1.791	0.769	0.85	1	30.932			
T5 45.00-29.00	294.740	785.196	A	0.422	2.022	0.661	0.85	1	14.634	702.021	43.88	C
			B	0.326	2.23	0.624	0.85	1	10.889			
			C	0.518	1.878	0.707	0.85	1	19.005			
T6 29.00-25.00	2.500	237.096	A	0.401	2.061	0.652	0.85	1	2.031	86.405	21.60	B
			B	0.459	1.959	0.677	0.85	1	2.316			
			C	0.401	2.061	0.652	0.85	1	2.031			
Sum Weight:	2008.300	5281.672								6191.141		

Tower Forces - With Ice - Wind Normal To Face

Section Elevation ft	Add Weight lb	Self Weight lb	Face	e	C_F	R_R	D_F	D_R	A_E ft²	F lb	w plf	Ctrl. Face
T1 125.00-105.00	828.852	1350.495	A	0.408	2.049	0.655	1	1	20.453	2128.863	106.44	C
			B	0.534	1.86	0.715	1	1	26.292			
			C	0.861	1.873	0.948	1	1	55.702			
T2 105.00-85.00	1361.556	1320.883	A	0.679	1.776	0.805	1	1	40.650	2288.961	114.45	C
			B	0.531	1.863	0.714	1	1	26.086			
			C	0.921	1.955	1	1	1	60.618			
T3 85.00-65.00	1361.556	1530.033	A	0.688	1.776	0.812	1	1	41.546	2180.659	109.03	C
			B	0.542	1.851	0.72	1	1	27.011			
			C	0.927	1.966	1	1	1	61.449			
T4 65.00-45.00	1361.556	1277.913	A	0.679	1.776	0.805	1	1	40.650	1958.037	97.90	C
			B	0.531	1.863	0.714	1	1	26.086			
			C	0.921	1.955	1	1	1	60.618			
T5 45.00-29.00	840.089	1027.711	A	0.589	1.811	0.747	1	1	26.958	1024.555	64.03	C
			B	0.525	1.87	0.71	1	1	20.738			
			C	0.77	1.797	0.872	1	1	38.651			
T6 29.00-25.00	8.898	292.255	A	0.522	1.873	0.709	1	1	3.016	99.733	24.93	B
			B	0.645	1.783	0.782	1	1	3.917			
			C	0.522	1.873	0.709	1	1	3.016			
Sum Weight:	5762.508	6799.290								9680.808		

Tower Forces - With Ice - Wind 45 To Face

Section Elevation ft	Add Weight lb	Self Weight lb	Face	e	C_F	R_R	D_F	D_R	A_E ft²	F lb	w plf	Ctrl. Face
T1 125.00-105.00	828.852	1350.495	A	0.408	2.049	0.655	0.825	1	18.991	1873.576	93.68	C
			B	0.534	1.86	0.715	0.825	1	25.580			
			C	0.861	1.873	0.948	0.825	1	49.022			
T2 105.00-85.00	1361.556	1320.883	A	0.679	1.776	0.805	0.825	1	36.456	2011.198	100.56	C
			B	0.531	1.863	0.714	0.825	1	25.402			
			C	0.921	1.955	1	0.825	1	53.262			
T3 85.00-65.00	1361.556	1530.033	A	0.688	1.776	0.812	0.825	1	37.336	1919.567	95.98	C
			B	0.542	1.851	0.72	0.825	1	26.302			
			C	0.927	1.966	1	0.825	1	54.091			
T4 65.00-	1361.556	1277.913	A	0.679	1.776	0.805	0.825	1	36.456	1720.431	86.02	C

Section Elevation ft	Add Weight lb	Self Weight lb	Face	e	C_F	R_R	D_F	D_R	A_E ft²	F lb	w plf	Ctrl. Face
45.00			B	0.531	1.863	0.714	0.825	1	25.402			
			C	0.921	1.955	1	0.825	1	53.262			
T5 45.00-29.00	840.089	1027.711	A	0.589	1.811	0.747	0.825	1	24.331	904.738	56.55	C
			B	0.525	1.87	0.71	0.825	1	20.073			
			C	0.77	1.797	0.872	0.825	1	34.131			
T6 29.00-25.00	8.898	292.255	A	0.522	1.873	0.709	0.825	1	2.793	93.446	23.36	B
			B	0.645	1.783	0.782	0.825	1	3.670			
			C	0.522	1.873	0.709	0.825	1	2.793			
Sum Weight:	5762.508	6799.290								8522.956		

Tower Forces - With Ice - Wind 60 To Face

Section Elevation ft	Add Weight lb	Self Weight lb	Face	e	C_F	R_R	D_F	D_R	A_E ft²	F lb	w plf	Ctrl. Face
T1 125.00-105.00	828.852	1350.495	A	0.408	2.049	0.655	0.8	1	18.782	1837.106	91.86	C
			B	0.534	1.86	0.715	0.8	1	25.478			
			C	0.861	1.873	0.948	0.8	1	48.068			
T2 105.00-85.00	1361.556	1320.883	A	0.679	1.776	0.805	0.8	1	35.856	1971.517	98.58	C
			B	0.531	1.863	0.714	0.8	1	25.304			
			C	0.921	1.955	1	0.8	1	52.211			
T3 85.00-65.00	1361.556	1530.033	A	0.688	1.776	0.812	0.8	1	36.735	1882.268	94.11	C
			B	0.542	1.851	0.72	0.8	1	26.201			
			C	0.927	1.966	1	0.8	1	53.040			
T4 65.00-45.00	1361.556	1277.913	A	0.679	1.776	0.805	0.8	1	35.856	1686.488	84.32	C
			B	0.531	1.863	0.714	0.8	1	25.304			
			C	0.921	1.955	1	0.8	1	52.211			
T5 45.00-29.00	840.089	1027.711	A	0.589	1.811	0.747	0.8	1	23.956	887.622	55.48	C
			B	0.525	1.87	0.71	0.8	1	19.978			
			C	0.77	1.797	0.872	0.8	1	33.485			
T6 29.00-25.00	8.898	292.255	A	0.522	1.873	0.709	0.8	1	2.762	92.548	23.14	B
			B	0.645	1.783	0.782	0.8	1	3.635			
			C	0.522	1.873	0.709	0.8	1	2.762			
Sum Weight:	5762.508	6799.290								8357.548		

Tower Forces - With Ice - Wind 90 To Face

Section Elevation ft	Add Weight lb	Self Weight lb	Face	e	C_F	R_R	D_F	D_R	A_E ft²	F lb	w plf	Ctrl. Face
T1 125.00-105.00	828.852	1350.495	A	0.408	2.049	0.655	0.85	1	19.200	1910.045	95.50	C
			B	0.534	1.86	0.715	0.85	1	25.682			
			C	0.861	1.873	0.948	0.85	1	49.977			
T2 105.00-85.00	1361.556	1320.883	A	0.679	1.776	0.805	0.85	1	37.055	2050.878	102.54	C
			B	0.531	1.863	0.714	0.85	1	25.500			
			C	0.921	1.955	1	0.85	1	54.313			
T3 85.00-65.00	1361.556	1530.033	A	0.688	1.776	0.812	0.85	1	37.938	1956.865	97.84	C
			B	0.542	1.851	0.72	0.85	1	26.404			
			C	0.927	1.966	1	0.85	1	55.142			

Section Elevation ft	Add Weight lb	Self Weight lb	Face	e	C_F	R_R	D_F	D_R	A_E ft²	F lb	w plf	Ctrl. Face
T4 65.00-45.00	1361.556	1277.913	A	0.679	1.776	0.805	0.85	1	37.055	1754.375	87.72	C
			B	0.531	1.863	0.714	0.85	1	25.500			
			C	0.921	1.955	1	0.85	1	54.313			
T5 45.00-29.00	840.089	1027.711	A	0.589	1.811	0.747	0.85	1	24.706	921.855	57.62	C
			B	0.525	1.87	0.71	0.85	1	20.168			
			C	0.77	1.797	0.872	0.85	1	34.776			
T6 29.00-25.00	8.898	292.255	A	0.522	1.873	0.709	0.85	1	2.825	94.344	23.59	B
			B	0.645	1.783	0.782	0.85	1	3.705			
			C	0.522	1.873	0.709	0.85	1	2.825			
Sum Weight:	5762.508	6799.290								8688.363		

Tower Forces - Service - Wind Normal To Face

Section Elevation ft	Add Weight lb	Self Weight lb	Face	e	C_F	R_R	D_F	D_R	A_E ft²	F lb	w plf	Ctrl. Face
T1 125.00-105.00	269.860	1044.251	A	0.273	2.37	0.608	1	1	11.767	545.013	27.25	C
			B	0.342	2.191	0.63	1	1	14.745			
			C	0.584	1.815	0.744	1	1	28.259			
T2 105.00-85.00	480.400	1021.737	A	0.496	1.905	0.695	1	1	22.683	560.875	28.04	C
			B	0.339	2.199	0.628	1	1	14.528			
			C	0.625	1.791	0.769	1	1	31.131			
T3 85.00-65.00	480.400	1214.626	A	0.508	1.89	0.701	1	1	23.574	539.607	26.98	C
			B	0.352	2.167	0.633	1	1	15.321			
			C	0.635	1.787	0.776	1	1	32.120			
T4 65.00-45.00	480.400	978.766	A	0.496	1.905	0.695	1	1	22.683	479.787	23.99	C
			B	0.339	2.199	0.628	1	1	14.528			
			C	0.625	1.791	0.769	1	1	31.131			
T5 45.00-29.00	294.740	785.196	A	0.422	2.022	0.661	1	1	14.892	277.316	17.33	C
			B	0.326	2.23	0.624	1	1	11.190			
			C	0.518	1.878	0.707	1	1	19.220			
T6 29.00-25.00	2.500	237.096	A	0.401	2.061	0.652	1	1	2.222	36.330	9.08	B
			B	0.459	1.959	0.677	1	1	2.493			
			C	0.401	2.061	0.652	1	1	2.222			
Sum Weight:	2008.300	5281.672								2438.928		

Tower Forces - Service - Wind 45 To Face

Section Elevation ft	Add Weight lb	Self Weight lb	Face	e	C_F	R_R	D_F	D_R	A_E ft²	F lb	w plf	Ctrl. Face
T1 125.00-105.00	269.860	1044.251	A	0.273	2.37	0.608	0.825	1	11.273	539.601	26.98	C
			B	0.342	2.191	0.63	0.825	1	14.298			
			C	0.584	1.815	0.744	0.825	1	27.979			
T2 105.00-85.00	480.400	1021.737	A	0.496	1.905	0.695	0.825	1	22.370	556.696	27.83	C
			B	0.339	2.199	0.628	0.825	1	14.116			
			C	0.625	1.791	0.769	0.825	1	30.899			
T3 85.00-65.00	480.400	1214.626	A	0.508	1.89	0.701	0.825	1	23.239	535.452	26.77	C
			B	0.352	2.167	0.633	0.825	1	14.878			

Section Elevation ft	Add Weight lb	Self Weight lb	Face	e	C_F	R_R	D_F	D_R	A_E ft²	F lb	w plf	Ctrl. Face
			C	0.635	1.787	0.776	0.825	1	31.872			
T4 65.00-45.00	480.400	978.766	A	0.496	1.905	0.695	0.825	1	22.370	476.212	23.81	C
			B	0.339	2.199	0.628	0.825	1	14.116			
			C	0.625	1.791	0.769	0.825	1	30.899			
T5 45.00-29.00	294.740	785.196	A	0.422	2.022	0.661	0.825	1	14.591	273.712	17.11	C
			B	0.326	2.23	0.624	0.825	1	10.839			
			C	0.518	1.878	0.707	0.825	1	18.970			
T6 29.00-25.00	2.500	237.096	A	0.401	2.061	0.652	0.825	1	1.999	33.322	8.33	B
			B	0.459	1.959	0.677	0.825	1	2.287			
			C	0.401	2.061	0.652	0.825	1	1.999			
Sum Weight:	2008.300	5281.672								2414.996		

Tower Forces - Service - Wind 60 To Face

Section Elevation ft	Add Weight lb	Self Weight lb	Face	e	C_F	R_R	D_F	D_R	A_E ft²	F lb	w plf	Ctrl. Face
T1 125.00-105.00	269.860	1044.251	A	0.273	2.37	0.608	0.8	1	11.203	538.827	26.94	C
			B	0.342	2.191	0.63	0.8	1	14.234			
			C	0.584	1.815	0.744	0.8	1	27.938			
T2 105.00-85.00	480.400	1021.737	A	0.496	1.905	0.695	0.8	1	22.326	556.099	27.80	C
			B	0.339	2.199	0.628	0.8	1	14.057			
			C	0.625	1.791	0.769	0.8	1	30.866			
T3 85.00-65.00	480.400	1214.626	A	0.508	1.89	0.701	0.8	1	23.191	534.859	26.74	C
			B	0.352	2.167	0.633	0.8	1	14.815			
			C	0.635	1.787	0.776	0.8	1	31.837			
T4 65.00-45.00	480.400	978.766	A	0.496	1.905	0.695	0.8	1	22.326	475.702	23.79	C
			B	0.339	2.199	0.628	0.8	1	14.057			
			C	0.625	1.791	0.769	0.8	1	30.866			
T5 45.00-29.00	294.740	785.196	A	0.422	2.022	0.661	0.8	1	14.548	273.197	17.07	C
			B	0.326	2.23	0.624	0.8	1	10.789			
			C	0.518	1.878	0.707	0.8	1	18.934			
T6 29.00-25.00	2.500	237.096	A	0.401	2.061	0.652	0.8	1	1.968	32.893	8.22	B
			B	0.459	1.959	0.677	0.8	1	2.257			
			C	0.401	2.061	0.652	0.8	1	1.968			
Sum Weight:	2008.300	5281.672								2411.577		

Tower Forces - Service - Wind 90 To Face

Section Elevation ft	Add Weight lb	Self Weight lb	Face	e	C_F	R_R	D_F	D_R	A_E ft²	F lb	w plf	Ctrl. Face
T1 125.00-105.00	269.860	1044.251	A	0.273	2.37	0.608	0.85	1	11.344	540.374	27.02	C
			B	0.342	2.191	0.63	0.85	1	14.362			
			C	0.584	1.815	0.744	0.85	1	28.019			
T2 105.00-85.00	480.400	1021.737	A	0.496	1.905	0.695	0.85	1	22.415	557.293	27.86	C
			B	0.339	2.199	0.628	0.85	1	14.175			
			C	0.625	1.791	0.769	0.85	1	30.932			
T3 85.00-	480.400	1214.626	A	0.508	1.89	0.701	0.85	1	23.287	536.046	26.80	C

Section Elevation ft	Add Weight lb	Self Weight lb	Face	e	C_F	R_R	D_F	D_R	A_E ft^2	F lb	w plf	Ctrl. Face
65.00			B	0.352	2.167	0.633	0.85	1	14.941			
			C	0.635	1.787	0.776	0.85	1	31.908			
T4 65.00-45.00	480.400	978.766	A	0.496	1.905	0.695	0.85	1	22.415	476.723	23.84	C
			B	0.339	2.199	0.628	0.85	1	14.175			
			C	0.625	1.791	0.769	0.85	1	30.932			
T5 45.00-29.00	294.740	785.196	A	0.422	2.022	0.661	0.85	1	14.634	274.227	17.14	C
			B	0.326	2.23	0.624	0.85	1	10.889			
			C	0.518	1.878	0.707	0.85	1	19.005			
T6 29.00-25.00	2.500	237.096	A	0.401	2.061	0.652	0.85	1	2.031	33.752	8.44	B
			B	0.459	1.959	0.677	0.85	1	2.316			
			C	0.401	2.061	0.652	0.85	1	2.031			
Sum Weight:	2008.300	5281.672								2418.415		

Force Totals (Does not include forces on guys)

Load Case	Vertical Forces lb	Sum of Forces X lb	Sum of Forces Z lb	Sum of Torques kip-ft
Leg Weight	3389.251			
Bracing Weight	1892.421			
Total Member Self-Weight	5281.672			
Guy Weight	818.778			
Total Weight	11686.301			
Wind 0 deg - No Ice		0.000	-12642.447	-0.63
Wind 30 deg - No Ice		6294.967	-10903.202	-0.71
Wind 45 deg - No Ice		8896.238	-8896.238	-0.68
Wind 60 deg - No Ice		10888.042	-6286.214	-0.60
Wind 90 deg - No Ice		12589.933	0.000	-0.33
Wind 120 deg - No Ice		10948.680	6321.224	0.04
Wind 135 deg - No Ice		8896.238	8896.238	0.21
Wind 150 deg - No Ice		6294.967	10903.202	0.38
Wind 180 deg - No Ice		0.000	12572.428	0.63
Wind 210 deg - No Ice		-6294.967	10903.202	0.71
Wind 225 deg - No Ice		-8896.238	8896.238	0.68
Wind 240 deg - No Ice		-10948.680	6321.224	0.60
Wind 270 deg - No Ice		-12589.933	0.000	0.33
Wind 300 deg - No Ice		-10888.042	-6286.214	-0.03
Wind 315 deg - No Ice		-8896.238	-8896.238	-0.21
Wind 330 deg - No Ice		-6294.967	-10903.202	-0.38
Member Ice	1517.619			
Guy Ice	489.460			
Total Weight Ice	20001.477			
Wind 0 deg - Ice		0.000	-15941.778	-0.34
Wind 30 deg - Ice		7474.667	-12946.502	-0.35
Wind 45 deg - Ice		10453.814	-10453.814	-0.34
Wind 60 deg - Ice		12660.008	-7309.259	-0.30
Wind 90 deg - Ice		14949.333	0.000	-0.14
Wind 120 deg - Ice		13805.984	7970.889	0.13
Wind 135 deg - Ice		10453.814	10453.814	0.12
Wind 150 deg - Ice		7474.667	12946.502	0.21
Wind 180 deg - Ice		0.000	14618.519	0.32
Wind 210 deg - Ice		-7474.667	12946.502	0.35
Wind 225 deg - Ice		-10453.814	10453.814	0.34
Wind 240 deg - Ice		-13805.984	7970.889	0.21
Wind 270 deg - Ice		-14949.333	0.000	0.14

Load Case	Vertical Forces lb	Sum of Forces X lb	Sum of Forces Z lb	Sum of Torques kip-ft
Wind 300 deg - Ice		-12660.008	-7309.259	-0.01
Wind 315 deg - Ice		-10453.814	-10453.814	-0.12
Wind 330 deg - Ice		-7474.667	-12946.502	-0.21
Total Weight	11686.301			
Wind 0 deg - Service		0.000	-4938.456	-0.25
Wind 30 deg - Service		2458.971	-4259.063	-0.28
Wind 45 deg - Service		3475.093	-3475.093	-0.26
Wind 60 deg - Service		4253.142	-2455.552	-0.23
Wind 90 deg - Service		4917.943	0.000	-0.13
Wind 120 deg - Service		4276.828	2469.228	0.01
Wind 135 deg - Service		3475.093	3475.093	0.08
Wind 150 deg - Service		2458.971	4259.063	0.15
Wind 180 deg - Service		0.000	4911.105	0.25
Wind 210 deg - Service		-2458.971	4259.063	0.28
Wind 225 deg - Service		-3475.093	3475.093	0.26
Wind 240 deg - Service		-4276.828	2469.228	0.23
Wind 270 deg - Service		-4917.943	0.000	0.13
Wind 300 deg - Service		-4253.142	-2455.552	-0.01
Wind 315 deg - Service		-3475.093	-3475.093	-0.08
Wind 330 deg - Service		-2458.971	-4259.063	-0.15

Load Combinations

Comb. No.	Description
1	Dead Only
2	Dead+Wind 0 deg - No Ice+Guy
3	Dead+Wind 30 deg - No Ice+Guy
4	Dead+Wind 45 deg - No Ice+Guy
5	Dead+Wind 60 deg - No Ice+Guy
6	Dead+Wind 90 deg - No Ice+Guy
7	Dead+Wind 120 deg - No Ice+Guy
8	Dead+Wind 135 deg - No Ice+Guy
9	Dead+Wind 150 deg - No Ice+Guy
10	Dead+Wind 180 deg - No Ice+Guy
11	Dead+Wind 210 deg - No Ice+Guy
12	Dead+Wind 225 deg - No Ice+Guy
13	Dead+Wind 240 deg - No Ice+Guy
14	Dead+Wind 270 deg - No Ice+Guy
15	Dead+Wind 300 deg - No Ice+Guy
16	Dead+Wind 315 deg - No Ice+Guy
17	Dead+Wind 330 deg - No Ice+Guy
18	Dead+Ice+Temp+Guy
19	Dead+Wind 0 deg+Ice+Temp+Guy
20	Dead+Wind 30 deg+Ice+Temp+Guy
21	Dead+Wind 45 deg+Ice+Temp+Guy
22	Dead+Wind 60 deg+Ice+Temp+Guy
23	Dead+Wind 90 deg+Ice+Temp+Guy
24	Dead+Wind 120 deg+Ice+Temp+Guy
25	Dead+Wind 135 deg+Ice+Temp+Guy
26	Dead+Wind 150 deg+Ice+Temp+Guy
27	Dead+Wind 180 deg+Ice+Temp+Guy
28	Dead+Wind 210 deg+Ice+Temp+Guy
29	Dead+Wind 225 deg+Ice+Temp+Guy

Comb. No.	Description
30	Dead+Wind 240 deg+Ice+Temp+Guy
31	Dead+Wind 270 deg+Ice+Temp+Guy
32	Dead+Wind 300 deg+Ice+Temp+Guy
33	Dead+Wind 315 deg+Ice+Temp+Guy
34	Dead+Wind 330 deg+Ice+Temp+Guy
35	Dead+Wind 0 deg - Service+Guy
36	Dead+Wind 30 deg - Service+Guy
37	Dead+Wind 45 deg - Service+Guy
38	Dead+Wind 60 deg - Service+Guy
39	Dead+Wind 90 deg - Service+Guy
40	Dead+Wind 120 deg - Service+Guy
41	Dead+Wind 135 deg - Service+Guy
42	Dead+Wind 150 deg - Service+Guy
43	Dead+Wind 180 deg - Service+Guy
44	Dead+Wind 210 deg - Service+Guy
45	Dead+Wind 225 deg - Service+Guy
46	Dead+Wind 240 deg - Service+Guy
47	Dead+Wind 270 deg - Service+Guy
48	Dead+Wind 300 deg - Service+Guy
49	Dead+Wind 315 deg - Service+Guy
50	Dead+Wind 330 deg - Service+Guy

Maximum Member Forces

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Force lb	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
T1	125 - 105	Leg	Max Tension	32	8092.452	0.13	-0.00
			Max. Compression	19	-22998.606	0.10	-1.64
			Max. Mx	24	-22425.395	2.27	1.41
			Max. My	19	-22996.937	0.15	-2.69
			Max. Vy	24	4403.974	1.35	0.86
			Max. Vx	19	-5045.590	0.10	-1.64
		Diagonal	Max Tension	3	2760.698	0.00	0.00
			Max. Compression	20	-4123.218	-0.00	0.00
			Max. Mx	19	13.847	-0.00	0.00
			Max. My	22	-1896.452	-0.00	-0.01
			Max. Vy	19	-3.117	-0.00	0.00
			Max. Vx	22	-3.404	0.00	0.00
		Horizontal	Max Tension	24	2513.069	0.00	0.00
			Max. Compression	2	-601.957	0.00	0.00
			Max. Mx	18	1992.621	-0.01	0.00
			Max. My	20	296.589	0.00	-0.00
			Max. Vy	18	6.647	0.00	0.00
			Max. Vx	20	0.000	0.00	0.00
		Top Girt	Max Tension	25	527.018	0.00	0.00
			Max. Compression	17	-350.710	0.00	0.00
			Max. Mx	18	332.297	-0.01	0.00
			Max. My	20	178.792	0.00	-0.00
			Max. Vy	18	6.647	0.00	0.00
			Max. Vx	20	0.000	0.00	0.00
		Bottom Girt	Max Tension	1	0.000	0.00	0.00
			Max. Compression	24	-687.193	0.00	0.00
			Max. Mx	18	-569.905	-0.01	0.00
			Max. My	20	-554.269	0.00	-0.00
			Max. Vy	18	6.647	0.00	0.00
			Max. Vx	20	0.000	0.00	0.00
		Guy A	Bottom Tension	26	20381.905		
			Top Tension	26	20602.930		

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Force lb	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Top Cable Vert	26	19347.201		
			Top Cable Norm	26	7082.758		
			Top Cable Tan	26	32.857		
			Bot Cable Vert	26	-19009.702		
			Bot Cable Norm	26	7349.161		
			Bot Cable Tan	26	207.692		
		Guy B	Bottom Tension	31	22359.719		
			Top Tension	31	22580.060		
			Top Cable Vert	31	21518.393		
			Top Cable Norm	31	6842.140		
			Top Cable Tan	31	54.699		
			Bot Cable Vert	31	-21195.956		
			Bot Cable Norm	31	7115.907		
			Bot Cable Tan	31	228.786		
		Guy C	Bottom Tension	23	21815.190		
			Top Tension	23	22023.371		
			Top Cable Vert	23	20957.818		
			Top Cable Norm	23	6767.274		
			Top Cable Tan	23	52.095		
			Bot Cable Vert	23	-20650.552		
			Bot Cable Norm	23	7029.170		
			Bot Cable Tan	23	219.134		
		Top Guy Pull-Off	Max Tension	30	4178.425	0.00	0.00
			Max. Compression	1	0.000	0.00	0.00
			Max. Mx	18	2436.777	-0.01	0.00
			Max. My	20	2821.438	0.00	-0.00
			Max. Vy	18	11.583	0.00	0.00
			Max. Vx	20	0.000	0.00	0.00
T2	105 - 85	Leg	Max Tension	5	25941.949	1.47	-1.07
			Max. Compression	19	-59313.071	0.12	-2.40
			Max. Mx	24	-57483.591	3.37	2.03
			Max. My	19	-59310.437	0.19	-3.97
			Max. Vy	24	6466.939	2.02	1.22
			Max. Vx	19	-7531.274	0.12	-2.40
		Diagonal	Max Tension	5	2456.894	-0.01	0.00
			Max. Compression	30	-6142.238	0.00	-0.01
			Max. Mx	19	-800.204	-0.01	0.00
			Max. My	22	-3704.782	-0.00	-0.03
			Max. Vy	19	5.060	-0.01	0.00
			Max. Vx	22	-13.221	0.00	0.00
		Horizontal	Max Tension	21	4080.293	0.00	0.00
			Max. Compression	2	-999.735	0.00	0.00
			Max. Mx	18	2075.099	-0.01	0.00
			Max. My	20	1632.935	0.00	-0.00
			Max. Vy	18	6.647	0.00	0.00
			Max. Vx	20	0.000	0.00	0.00
		Top Girt	Max Tension	28	2884.938	0.00	0.00
			Max. Compression	1	0.000	0.00	0.00
			Max. Mx	18	2539.865	-0.01	0.00
			Max. My	20	2524.405	0.00	-0.00
			Max. Vy	18	6.647	0.00	0.00
			Max. Vx	20	0.000	0.00	0.00
		Bottom Girt	Max Tension	1	0.000	0.00	0.00
			Max. Compression	28	-669.127	0.00	0.00
			Max. Mx	18	-516.955	-0.01	0.00
			Max. My	20	-513.894	0.00	-0.00
			Max. Vy	18	6.647	0.00	0.00
			Max. Vx	20	0.000	0.00	0.00
T3	85 - 65	Leg	Max Tension	22	37769.074	0.64	-0.43
			Max. Compression	19	-68688.564	-0.18	4.90
			Max. Mx	24	-66433.567	-4.19	-2.47

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Force lb	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. My	19	-68688.564	-0.18	4.90
			Max. Vy	24	6598.694	0.64	0.39
			Max. Vx	19	-7698.086	0.06	-0.80
		Diagonal	Max Tension	5	2895.673	0.00	0.00
			Max. Compression	19	-6379.139	0.00	0.00
			Max. Mx	20	-4215.352	0.01	-0.00
			Max. My	20	-2891.863	0.00	-0.04
			Max. Vy	19	5.170	-0.01	0.00
			Max. Vx	20	-22.370	0.00	0.00
		Horizontal	Max Tension	20	4836.633	0.00	0.00
			Max. Compression	2	-1621.154	0.00	0.00
			Max. Mx	18	2900.509	-0.01	0.00
			Max. My	20	1613.458	0.00	-0.00
			Max. Vy	18	6.647	0.00	0.00
			Max. Vx	20	0.000	0.00	0.00
		Top Girt	Max Tension	22	4446.878	0.00	0.00
			Max. Compression	2	-799.516	0.00	0.00
			Max. Mx	18	2526.482	-0.01	0.00
			Max. My	20	2766.705	0.00	-0.00
			Max. Vy	18	6.647	0.00	0.00
			Max. Vx	20	0.000	0.00	0.00
		Bottom Girt	Max Tension	1	0.000	0.00	0.00
			Max. Compression	19	-936.943	0.00	0.00
			Max. Mx	18	-501.464	-0.01	0.00
			Max. My	20	-672.374	0.00	-0.00
			Max. Vy	18	6.647	0.00	0.00
			Max. Vx	20	0.000	0.00	0.00
		Guy A	Bottom Tension	26	24999.299		
			Top Tension	26	25184.154		
			Top Cable Vert	26	21983.610		
			Top Cable Norm	26	12286.631		
			Top Cable Tan	26	35.175		
			Bot Cable Vert	26	-21687.483		
			Bot Cable Norm	26	12433.682		
			Bot Cable Tan	26	146.882		
		Guy B	Bottom Tension	34	28992.738		
			Top Tension	34	29177.159		
			Top Cable Vert	34	26262.866		
			Top Cable Norm	34	12710.722		
			Top Cable Tan	34	77.578		
			Bot Cable Vert	34	-25980.944		
			Bot Cable Norm	34	12866.001		
			Bot Cable Tan	34	188.225		
		Guy C	Bottom Tension	23	28153.090		
			Top Tension	23	28322.041		
			Top Cable Vert	23	25260.224		
			Top Cable Norm	23	12808.411		
			Top Cable Tan	23	60.986		
			Bot Cable Vert	23	-24996.498		
			Bot Cable Norm	23	12951.617		
			Bot Cable Tan	23	164.944		
		Top Guy Pull-Off	Max Tension	24	7013.484	0.00	0.00
			Max. Compression	1	0.000	0.00	0.00
			Max. Mx	18	4511.178	-0.01	0.00
			Max. My	20	6126.424	0.00	-0.00
			Max. Vy	18	11.583	0.00	0.00
			Max. Vx	20	0.000	0.00	0.00
T4	65 - 45	Leg	Max Tension	5	4825.373	-1.00	0.48
			Max. Compression	19	-58717.076	-0.02	1.87
			Max. Mx	19	-23623.310	2.59	-1.43
			Max. My	19	-39712.161	-0.06	3.04

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Force lb	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Vy	30	6085.932	2.19	0.90
			Max. Vx	30	-6790.130	0.11	-2.33
		Diagonal	Max Tension	5	652.783	0.00	0.00
			Max. Compression	19	-5444.026	-0.01	0.02
			Max. Mx	19	-5129.051	-0.01	0.00
			Max. My	19	-3273.841	0.00	-0.02
			Max. Vy	19	5.282	-0.01	0.00
			Max. Vx	19	-11.671	0.00	0.00
		Horizontal	Max Tension	19	4603.072	0.00	0.00
			Max. Compression	1	0.000	0.00	0.00
			Max. Mx	18	2991.282	-0.00	0.00
			Max. My	20	3048.541	0.00	-0.00
			Max. Vy	18	5.454	0.00	0.00
			Max. Vx	20	0.000	0.00	0.00
		Top Girt	Max Tension	20	5493.499	0.00	0.00
			Max. Compression	1	0.000	0.00	0.00
			Max. Mx	18	3307.947	-0.00	0.00
			Max. My	20	4353.471	0.00	-0.00
			Max. Vy	18	5.454	0.00	0.00
			Max. Vx	20	0.000	0.00	0.00
		Bottom Girt	Max Tension	1	0.000	0.00	0.00
			Max. Compression	19	-1033.453	0.00	0.00
			Max. Mx	18	-644.130	-0.00	0.00
			Max. My	20	-859.473	0.00	-0.00
			Max. Vy	18	5.454	0.00	0.00
			Max. Vx	20	0.000	0.00	0.00
T5	45 - 29	Leg	Max Tension	1	0.000	0.00	0.00
			Max. Compression	19	-40875.036	0.03	1.19
			Max. Mx	19	-28792.885	2.54	-1.37
			Max. My	19	-31593.975	-0.02	2.83
			Max. Vy	30	6122.640	0.93	0.26
			Max. Vx	30	-6826.331	0.09	-0.91
		Diagonal	Max Tension	1	0.000	0.00	0.00
			Max. Compression	19	-4238.673	0.00	0.00
			Max. Mx	19	-3947.841	-0.01	0.00
			Max. My	19	-3210.787	0.00	-0.00
			Max. Vy	19	4.310	-0.01	0.00
			Max. Vx	19	-1.406	0.00	0.00
		Horizontal	Max Tension	19	4082.140	0.00	0.00
			Max. Compression	1	0.000	0.00	0.00
			Max. Mx	18	2824.293	-0.00	0.00
			Max. My	20	3107.385	0.00	-0.00
			Max. Vy	18	5.454	0.00	0.00
			Max. Vx	20	0.000	0.00	0.00
		Top Girt	Max Tension	19	5450.428	0.00	0.00
			Max. Compression	1	0.000	0.00	0.00
			Max. Mx	18	3601.247	-0.00	0.00
			Max. My	20	4814.840	0.00	-0.00
			Max. Vy	18	5.454	0.00	0.00
			Max. Vx	20	0.000	0.00	0.00
		Bottom Girt	Max Tension	19	3509.275	0.00	0.00
			Max. Compression	1	0.000	0.00	0.00
			Max. Mx	18	2002.875	-0.00	0.00
			Max. My	20	3042.842	0.00	-0.00
			Max. Vy	18	5.454	0.00	0.00
			Max. Vx	20	0.000	0.00	0.00
T6	29 - 25	Leg	Max Tension	1	0.000	0.00	0.00
			Max. Compression	19	-39027.407	0.10	-0.07
			Max. Mx	19	-32416.350	2.15	0.19
			Max. My	3	-25888.575	-0.10	-0.23
			Max. Vy	19	12522.109	-0.92	0.06

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Force lb	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Vx	3	334.628	0.10	0.13
		Top Girt	Max Tension	19	8036.388	0.38	-0.31
			Max. Compression	1	0.000	0.00	0.00
			Max. Mx	19	8036.388	0.38	-0.31
			Max. My	19	8028.751	0.36	-0.39
			Max. Vy	3	-80.943	0.30	0.03
			Max. Vx	19	-138.155	0.37	-0.00
		Bottom Girt	Max Tension	1	0.000	0.00	0.00
			Max. Compression	19	-254.539	0.07	0.00
			Max. Mx	3	-168.270	-0.34	-0.01
			Max. My	4	-151.412	-0.31	-0.01
			Max. Vy	4	803.519	-0.32	-0.01
			Max. Vx	3	35.922	-0.32	-0.01

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical lb	Horizontal, X lb	Horizontal, Z lb
Mast	Max. Vert	19	105378.111	-18.420	-1649.200
	Max. H_x	7	76299.140	1231.900	605.398
	Max. H_z	12	74344.542	-1094.861	709.657
	Max. M_x	1	0.00	6.334	-2.045
	Max. M_z	1	0.00	6.334	-2.045
	Max. Torsion	4	0.51	456.582	-836.627
	Min. Vert	47	48913.933	-208.037	-0.520
	Min. H_x	30	101062.997	-1309.980	602.031
	Min. H_z	19	105378.111	-18.420	-1649.200
	Min. M_x	1	0.00	6.334	-2.045
	Min. M_z	1	0.00	6.334	-2.045
	Min. Torsion	11	-0.51	-794.372	705.168
Guy C @ 37.5 ft Elev 6.5 ft Azimuth 240 deg	Max. Vert	13	-677.828	-127.156	73.997
	Max. H_x	13	-677.828	-127.156	73.997
	Max. H_z	20	-45613.341	-17076.839	10360.195
	Min. Vert	23	-45647.050	-17495.908	9657.772
	Min. H_x	23	-45647.050	-17495.908	9657.772
	Min. H_z	12	-758.507	-179.223	57.889
Guy B @ 39 ft Elev 0 ft Azimuth 120 deg	Max. Vert	7	-806.760	159.492	92.455
	Max. H_x	31	-47106.369	17475.182	9624.704
	Max. H_z	34	-47172.457	17087.775	10364.986
	Min. Vert	34	-47172.457	17087.775	10364.986
	Min. H_x	7	-806.760	159.492	92.455
	Min. H_z	8	-894.594	214.804	75.646
Guy A @ 45 ft Elev 0 ft Azimuth 0 deg	Max. Vert	2	-584.509	0.175	-143.789
	Max. H_x	30	-37029.819	614.722	-18013.081
	Max. H_z	2	-584.509	0.175	-143.789
	Min. Vert	26	-40697.185	-354.574	-19782.843
	Min. H_x	24	-37023.757	-581.625	-18016.766
	Min. H_z	26	-40697.185	-354.574	-19782.843

Tower Mast Reaction Summary

Load Combination	Vertical lb	$Shear_x$ lb	$Shear_z$ lb	Overturning Moment, M_x kip-ft	Overturning Moment, M_z kip-ft	Torque kip-ft
Dead Only	49368.781	-6.334	2.045	0.00	0.00	0.00
Dead+Wind 0 deg - No Ice+Guy	80762.219	4.376	1558.331	0.00	0.00	-0.41
Dead+Wind 30 deg - No Ice+Guy	72107.427	-331.830	1201.114	0.00	0.00	-0.51
Dead+Wind 45 deg - No Ice+Guy	62962.144	-456.582	836.627	0.00	0.00	-0.51
Dead+Wind 60 deg - No Ice+Guy	56064.208	-646.260	387.017	0.00	0.00	-0.45
Dead+Wind 90 deg - No Ice+Guy	69552.894	-1149.577	-236.725	0.00	0.00	-0.21
Dead+Wind 120 deg - No Ice+Guy	76299.140	-1231.900	-605.398	0.00	0.00	0.03
Dead+Wind 135 deg - No Ice+Guy	73642.508	-1067.876	-698.732	0.00	0.00	0.14
Dead+Wind 150 deg - No Ice+Guy	67614.574	-779.367	-700.464	0.00	0.00	0.26
Dead+Wind 180 deg - No Ice+Guy	53864.663	0.017	-596.072	0.00	0.00	0.47
Dead+Wind 210 deg - No Ice+Guy	67954.472	794.372	-705.168	0.00	0.00	0.51
Dead+Wind 225 deg - No Ice+Guy	74344.542	1094.861	-709.657	0.00	0.00	0.46
Dead+Wind 240 deg - No Ice+Guy	77240.858	1268.331	-623.150	0.00	0.00	0.38
Dead+Wind 270 deg - No Ice+Guy	70447.471	1180.639	-262.325	0.00	0.00	0.19
Dead+Wind 300 deg - No Ice+Guy	55040.227	648.252	388.075	0.00	0.00	-0.02
Dead+Wind 315 deg - No Ice+Guy	63415.213	450.038	856.976	0.00	0.00	-0.12
Dead+Wind 330 deg - No Ice+Guy	72634.613	331.320	1224.673	0.00	0.00	-0.23
Dead+Ice+Temp+Guy	62132.134	1.884	2.264	0.00	0.00	-0.00
Dead+Wind 0 deg+Ice+Temp+Guy	105378.111	18.420	1649.200	0.00	0.00	-0.17
Dead+Wind 30 deg+Ice+Temp+Guy	91681.067	-208.263	1224.615	0.00	0.00	-0.22
Dead+Wind 45 deg+Ice+Temp+Guy	80812.277	-304.773	812.329	0.00	0.00	-0.24
Dead+Wind 60 deg+Ice+Temp+Guy	72537.438	-514.575	331.291	0.00	0.00	-0.20
Dead+Wind 90 deg+Ice+Temp+Guy	88633.794	-1073.918	-311.086	0.00	0.00	-0.05
Dead+Wind 120 deg+Ice+Temp+Guy	99771.085	-1221.639	-570.372	0.00	0.00	0.09
Dead+Wind 135 deg+Ice+Temp+Guy	92798.223	-1098.881	-629.023	0.00	0.00	0.06
Dead+Wind 150 deg+Ice+Temp+Guy	86387.701	-806.814	-556.577	0.00	0.00	0.11
Dead+Wind 180 deg+Ice+Temp+Guy	69650.300	6.449	-423.862	0.00	0.00	0.21
Dead+Wind 210 deg+Ice+Temp+Guy	86805.303	846.346	-564.649	0.00	0.00	0.22
Dead+Wind 225	93647.714	1159.280	-646.856	0.00	0.00	0.19

Load Combination	Vertical	$Shear_x$	$Shear_z$	Overturning Moment, M_x	Overturning Moment, M_z	Torque
	lb	lb	lb	kip-ft	kip-ft	kip-ft
deg+Ice+Temp+Guy Dead+Wind 240	101062.997	1309.980	-602.031	0.00	0.00	0.08
deg+Ice+Temp+Guy Dead+Wind 270	89729.828	1146.144	-345.801	0.00	0.00	0.03
deg+Ice+Temp+Guy Dead+Wind 300	71610.685	533.977	335.502	0.00	0.00	-0.01
deg+Ice+Temp+Guy Dead+Wind 315	81360.123	317.657	848.716	0.00	0.00	-0.03
deg+Ice+Temp+Guy Dead+Wind 330	92329.372	229.958	1265.834	0.00	0.00	-0.08
Dead+Wind 0 deg - Service+Guy	49274.360	-6.780	172.053	0.00	0.00	-0.19
Dead+Wind 30 deg - Service+Guy	49651.430	-113.174	159.461	0.00	0.00	-0.21
Dead+Wind 45 deg - Service+Guy	49814.132	-158.436	132.321	0.00	0.00	-0.20
Dead+Wind 60 deg - Service+Guy	49937.960	-194.005	95.146	0.00	0.00	-0.18
Dead+Wind 90 deg - Service+Guy	50079.193	-221.957	4.538	0.00	0.00	-0.10
Dead+Wind 120 deg - Service+Guy	50046.502	-186.891	-80.669	0.00	0.00	0.01
Dead+Wind 135 deg - Service+Guy	49995.454	-158.392	-121.013	0.00	0.00	0.07
Dead+Wind 150 deg - Service+Guy	49920.427	-113.447	-148.741	0.00	0.00	0.12
Dead+Wind 180 deg - Service+Guy	49662.730	-5.032	-174.344	0.00	0.00	0.19
Dead+Wind 210 deg - Service+Guy	49338.635	102.785	-149.398	0.00	0.00	0.21
Dead+Wind 225 deg - Service+Guy	49173.871	147.009	-122.376	0.00	0.00	0.20
Dead+Wind 240 deg - Service+Guy	49036.525	174.662	-82.992	0.00	0.00	0.18
Dead+Wind 270 deg - Service+Guy	48913.933	208.037	0.520	0.00	0.00	0.10
Dead+Wind 300 deg - Service+Guy	48931.587	179.281	91.171	0.00	0.00	-0.01
Dead+Wind 315 deg - Service+Guy	48990.705	143.954	129.146	0.00	0.00	-0.07
Dead+Wind 330 deg - Service+Guy	49070.931	99.148	157.422	0.00	0.00	-0.12

Solution Summary

Load Comb.	Sum of Applied Forces PX lb	PY lb	PZ lb	Sum of Reactions PX lb	PY lb	PZ lb	% Error
1	0.000	-11686.233	0.000	0.049	11690.299	0.013	0.035%
2	-0.123	-11679.376	-13575.399	0.110	11679.473	13575.964	0.003%
3	6768.525	-11672.164	-11712.332	-6768.620	11672.255	11712.793	0.003%
4	9567.468	-11668.457	-9557.854	-9567.572	11668.538	9558.192	0.002%
5	11711.842	-11668.781	-6754.721	-11712.030	11668.866	6754.760	0.001%
6	13543.085	-11683.290	0.056	-13543.507	11683.375	-0.231	0.003%
7	11772.582	-11698.579	6789.932	-11773.058	11698.677	-6790.180	0.003%
8	9567.610	-11699.840	9558.092	-9568.044	11699.933	-9558.349	0.003%
9	6768.712	-11697.358	11712.543	-6769.070	11697.439	-11712.774	0.002%

	Sum of Applied Forces			Sum of Reactions			
Load Comb.	PX lb	PY lb	PZ lb	PX lb	PY lb	PZ lb	% Error
10	0.123	-11693.089	13505.380	-0.196	11693.185	-13505.528	0.001%
11	-6768.525	-11700.301	11712.332	6768.847	11700.383	-11712.583	0.002%
12	-9567.468	-11704.009	9557.854	9567.903	11704.105	-9558.143	0.003%
13	-11772.480	-11703.685	6789.731	11772.991	11703.789	-6790.013	0.003%
14	-13543.085	-11689.175	-0.056	13543.553	11689.265	-0.129	0.003%
15	-11711.944	-11673.887	-6754.922	11712.079	11673.959	6755.034	0.001%
16	-9567.610	-11672.625	-9558.092	9567.686	11672.712	9558.534	0.003%
17	-6768.712	-11675.107	-11712.543	6768.776	11675.202	11713.086	0.003%
18	0.000	-20001.368	0.000	-0.018	20001.507	0.000	0.001%
19	-0.185	-19989.523	-17521.598	0.189	19989.651	17522.479	0.003%
20	8276.440	-19977.636	-14316.645	-8276.589	19977.752	14317.355	0.003%
21	11590.211	-19971.573	-11574.154	-11590.399	19971.681	11574.689	0.002%
22	14054.655	-19972.204	-8102.594	-14055.051	19972.344	8102.716	0.002%
23	16562.901	-19996.441	0.076	-16563.643	19996.569	-0.341	0.003%
24	15200.770	-20021.982	8764.518	-15201.512	20022.114	-8764.896	0.003%
25	11590.410	-20024.182	11574.508	-11591.023	20024.301	-11574.898	0.003%
26	8276.711	-20020.173	14316.962	-8277.306	20020.296	-14317.405	0.003%
27	0.185	-20013.213	16198.339	-0.309	20013.401	-16198.751	0.002%
28	-8276.440	-20025.100	14316.645	8276.934	20025.207	-14317.050	0.002%
29	-11590.211	-20031.163	11574.154	11590.868	20031.286	-11574.582	0.003%
30	-15200.631	-20030.532	8764.223	15201.459	20030.672	-8764.645	0.004%
31	-16562.901	-20006.295	-0.076	16563.625	20006.412	-0.156	0.003%
32	-14054.794	-19980.753	-8102.888	14055.118	19980.874	8103.121	0.002%
33	-11590.410	-19978.553	-11574.508	11590.568	19978.651	11575.079	0.002%
34	-8276.711	-19982.563	-14316.962	8276.855	19982.685	14317.761	0.003%
35	-0.048	-11683.554	-5302.890	0.031	11683.655	5302.913	0.001%
36	2643.955	-11680.737	-4575.130	-2643.986	11680.839	4575.149	0.001%
37	3737.292	-11679.289	-3733.537	-3737.328	11679.391	3733.551	0.001%
38	4574.938	-11679.415	-2638.563	-4574.984	11679.538	2638.573	0.001%
39	5290.267	-11685.083	0.022	-5290.305	11685.186	-0.024	0.001%
40	4598.665	-11691.055	2652.317	-4598.696	11691.158	-2652.329	0.001%
41	3737.348	-11691.548	3733.630	-3737.376	11691.650	-3733.646	0.001%
42	2644.028	-11690.579	4575.212	-2644.054	11690.681	-4575.233	0.001%
43	0.048	-11688.911	5275.539	-0.069	11689.033	-5275.569	0.001%
44	-2643.955	-11691.728	4575.130	2643.949	11691.829	-4575.154	0.001%
45	-3737.292	-11693.176	3733.537	3737.292	11693.277	-3733.558	0.001%
46	-4598.625	-11693.050	2652.239	4598.630	11693.150	-2652.255	0.001%
47	-5290.267	-11687.382	-0.022	5290.280	11687.482	0.019	0.001%
48	-4574.978	-11681.410	-2638.642	4574.988	11681.510	2638.654	0.001%
49	-3737.348	-11680.917	-3733.630	3737.354	11681.017	3733.649	0.001%
50	-2644.028	-11681.887	-4575.212	2644.027	11681.987	4575.236	0.001%

Non-Linear Convergence Results

Load Combination	Converged?	Number of Cycles	Displacement Tolerance	Force Tolerance
1	Yes	19	0.00000001	0.00000000
2	Yes	24	0.00000001	0.00086213
3	Yes	23	0.00000001	0.00093598
4	Yes	22	0.00000001	0.00097406
5	Yes	20	0.00000001	0.00000000
6	Yes	23	0.00000001	0.00088143
7	Yes	23	0.00000001	0.00093426
8	Yes	23	0.00000001	0.00092477
9	Yes	23	0.00000001	0.00088839
10	Yes	19	0.00000001	0.00000000

11	Yes	23	0.00000001	0.00091775
12	Yes	23	0.00000001	0.00096415
13	Yes	23	0.00000001	0.00097986
14	Yes	23	0.00000001	0.00092528
15	Yes	21	0.00000001	0.00000000
16	Yes	22	0.00000001	0.00099996
17	Yes	23	0.00000001	0.00095241
18	Yes	20	0.00000001	0.00000000
19	Yes	26	0.00008301	0.00000000
20	Yes	25	0.00009915	0.00000000
21	Yes	24	0.00000001	0.00000000
22	Yes	21	0.00000001	0.00000000
23	Yes	24	0.00011053	0.00000000
24	Yes	25	0.00009002	0.00000000
25	Yes	25	0.00009236	0.00000000
26	Yes	24	0.00011125	0.00000000
27	Yes	19	0.00000001	0.00000000
28	Yes	25	0.00009942	0.00000000
29	Yes	25	0.00009643	0.00000000
30	Yes	25	0.00009385	0.00000000
31	Yes	25	0.00009865	0.00000000
32	Yes	22	0.00000001	0.00000000
33	Yes	25	0.00000001	0.00000000
34	Yes	25	0.00009903	0.00000000
35	Yes	18	0.00000001	0.00000000
36	Yes	18	0.00000001	0.00000000
37	Yes	18	0.00000001	0.00000000
38	Yes	17	0.00000001	0.00000000
39	Yes	18	0.00000001	0.00000000
40	Yes	18	0.00000001	0.00000000
41	Yes	18	0.00000001	0.00000000
42	Yes	18	0.00000001	0.00000000
43	Yes	17	0.00000001	0.00000000
44	Yes	18	0.00000001	0.00000000
45	Yes	18	0.00000001	0.00000000
46	Yes	18	0.00000001	0.00000000
47	Yes	18	0.00000001	0.00000000
48	Yes	18	0.00000001	0.00000000
49	Yes	18	0.00000001	0.00000000
50	Yes	18	0.00000001	0.00000000

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T1	125 - 105	3.65	48	0.25	0.13
T2	105 - 85	2.57	48	0.24	0.12
T3	85 - 65	1.57	48	0.19	0.11
T4	65 - 45	0.87	48	0.13	0.09
T5	45 - 29	0.40	49	0.10	0.08
T6	29 - 25	0.08	49	0.09	0.07

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
143.00	12' x 3" Dia Omni (est)	48	3.65	0.25	0.13	653295
132.00	18' x 3" Dia Omni (est)	48	3.65	0.25	0.13	653295
129.00	4 Bay Dipole	48	3.65	0.25	0.13	653295
128.00	6' x 3" Dia Omni	48	3.65	0.25	0.13	653295
127.00	4' x 3" DIA Omni (est)	48	3.65	0.25	0.13	653295
123.00	Boom Gate (1)	48	3.54	0.25	0.13	653295
116.96	Guy	48	3.21	0.25	0.13	406193
110.00	PiROD 13' Lightweight T-Frame	48	2.84	0.24	0.12	217764
76.96	Guy	48	1.25	0.16	0.10	13967
35.00	GPS	49	0.19	0.09	0.07	84494

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T1	125 - 105	21.16	19	1.24	0.34
T2	105 - 85	15.69	19	1.21	0.31
T3	85 - 65	10.52	19	1.05	0.27
T4	65 - 45	6.43	19	0.82	0.24
T5	45 - 29	3.09	19	0.72	0.20
T6	29 - 25	0.59	19	0.70	0.16

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
143.00	12' x 3" Dia Omni (est)	19	21.16	1.24	0.34	110750
132.00	18' x 3" Dia Omni (est)	19	21.16	1.24	0.34	110750
129.00	4 Bay Dipole	19	21.16	1.24	0.34	110750
128.00	6' x 3" Dia Omni	19	21.16	1.24	0.34	110750
127.00	4' x 3" DIA Omni (est)	19	21.16	1.24	0.34	110750
123.00	Boom Gate (1)	19	20.61	1.24	0.34	110750
116.96	Guy	19	18.95	1.24	0.33	68860
110.00	PiROD 13' Lightweight T-Frame	19	17.05	1.23	0.32	36916
76.96	Guy	19	8.74	0.98	0.26	4177
35.00	GPS	19	1.50	1.03	0.22	13191

Bolt Design Data

Section No.	Elevation ft	Component Type	Bolt Grade	Bolt Size in	Number Of Bolts	Maximum Load per Bolt lb	Allowable Load lb	Ratio Load / Allowable	Allowable Ratio	Criteria
T1	125	Leg	A325N	0.750	3	553.901	19438.100	0.028 ✔	1.333	Bolt Tension
T2	105	Leg	A325N	0.750	3	0.000	19094.600	0.000 ✔	1.333	Bolt Tension

Section No.	Elevation ft	Component Type	Bolt Grade	Bolt Size in	Number Of Bolts	Maximum Load per Bolt lb	Allowable Load lb	Ratio Load / Allowable	Allowable Ratio	Criteria
T3	85	Leg	A325N	0.750	3	8647.390	19394.100	0.446 ✔	1.333	Bolt Tension
T4	65	Leg	A325N	0.750	3	1608.460	19336.801	0.083 ✔	1.333	Bolt Tension
T5	45	Leg	A325N	0.750	3	0.000	18806.301	0.000 ✔	1.333	Bolt Tension
T6	29	Leg	A325N	0.750	3	0.000	17360.000	0.000 ✔	1.333	Bolt Tension

Guy Design Data

Section No.	Elevation ft	Size	Initial Tension lb	Breaking Load lb	Actual T lb	Allowable T_a lb	Required S.F.	Actual S.F.
T1	116.96 (A) (258)	3/4 EHS	5830.000	58299.916	20602.900	29150.000	2.000	2.830 ✔
	116.96 (B) (257)	3/4 EHS	5830.000	58299.916	22580.100	29150.000	2.000	2.582 ✔
	116.96 (C) (256)	3/4 EHS	5830.000	58299.916	22023.400	29150.000	2.000	2.647 ✔
T3	76.96 (A) (261)	7/8 EHS	7970.000	79699.841	25184.199	39850.000	2.000	3.165 ✔
	76.96 (B) (260)	7/8 EHS	7970.000	79699.841	29177.199	39850.000	2.000	2.732 ✔
	76.96 (C) (259)	7/8 EHS	7970.000	79699.841	28322.000	39850.000	2.000	2.814 ✔

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 lb	Allow. P_a lb	Ratio P / P_a
T1	125 - 105	2	20.00	3.92	94.0 K=1.00	1.00	16.06	3.142	-22998.600	50468.602	0.456 ✔
T2	105 - 85	2	20.00	3.92	94.0 K=1.00	1.00	16.06	3.142	-59313.102	50468.602	1.175 ✔
T3	85 - 65	2 1/4	20.00	3.92	83.6 K=1.00	1.00	18.29	3.976	-68688.602	72731.203	0.944 ✔
T4	65 - 45	2	20.00	3.92	94.0 K=1.00	1.00	16.06	3.142	-58717.102	50468.602	1.163 ✔
T5	45 - 29	2	16.00	3.90	93.5 K=1.00	1.00	16.18	3.142	-40875.000	50815.898	0.804 ✔
T6	29 - 25	2	4.37	3.05	73.1 K=1.00	1.00	20.36	3.142	-39027.398	63958.699	0.610 ✔

Diagonal Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P lb	Allow. P_a lb	Ratio $\frac{P}{P_a}$
T1	125 - 105	7/8	4.03	2.01	89.4 K=0.81	14.27	0.601	-4123.220	8582.550	0.480 ✔
T2	105 - 85	7/8	4.03	2.01	89.4 K=0.81	14.27	0.601	-6142.240	8582.550	0.716 ✔
T3	85 - 65	7/8	4.03	2.01	89.4 K=0.81	14.27	0.601	-6379.140	8582.550	0.743 ✔
T4	65 - 45	7/8	4.03	2.01	89.4 K=0.81	14.27	0.601	-5444.030	8582.550	0.634 ✔
T5	45 - 29	7/8	4.01	2.00	89.4 K=0.81	14.28	0.601	-4238.670	8586.570	0.494 ✔

Horizontal Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P lb	Allow. P_a lb	Ratio $\frac{P}{P_a}$
T1	125 - 105	L2x2x3/16	3.04	2.88	103.8 K=1.19	12.49	0.715	-601.957	8932.320	0.067 ✔
T2	105 - 85	L2x2x3/16	3.04	2.88	103.8 K=1.19	12.49	0.715	-999.735	8932.320	0.112 ✔
T3	85 - 65	L2x2x3/16	3.04	2.85	103.5 K=1.19	12.53	0.715	-1621.150	8961.680	0.181 ✔

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 lb	Allow. P_a lb	Ratio $\frac{P}{P_a}$
T1	125 - 105	L2x2x3/16	3.04	2.88	103.8 K=1.19	12.49	0.715	-350.710	8932.320	0.039 ✔
T3	85 - 65	L2x2x3/16	3.04	2.85	103.5 K=1.19	12.53	0.715	-799.516	8961.680	0.089 ✔

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 lb	Allow. P_a lb	Ratio $\frac{P}{P_a}$
T1	125 - 105	L2x2x3/16	3.04	2.88	103.8 K=1.19	12.49	0.715	-569.905	8932.320	0.064

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P lb	Allow. P_a lb	Ratio $\frac{P}{P_a}$
T2	105 - 85	L2x2x3/16	3.04	2.88	103.8 K=1.19	12.49	0.715	-516.955	8932.320	0.058* ✓
T3	85 - 65	L2x2x3/16	3.04	2.85	103.5 K=1.19	12.53	0.715	-936.943	8961.680	0.105 ✓
T4	65 - 45	L2x2x1/8	3.04	2.88	103.4 K=1.19	12.34	0.484	-1033.450	5976.180	0.173 ✓
T6	29 - 25	12x3/8	0.76	0.59	65.8 K=1.00	16.86	4.500	-254.539	75855.602	0.003 ✓

* DL controls

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 lb	Allow. P_a lb	Ratio $\frac{P}{P_a}$
T1	125 - 105	L3x3x1/4	3.04	2.88	37.1 K=1.00	21.60	1.440	0.000	25334.500	0.000*
T3	85 - 65	L3x3x1/4	3.04	2.85	36.8 K=1.00	21.60	1.440	0.000	25392.000	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	125 - 105	L3x3x1/4	-0.01	-0.08	21.60	0.004	-0.01	-0.15	21.60	0.007
T3	85 - 65	L3x3x1/4	-0.01	-0.08	21.60	0.004	-0.01	-0.15	21.60	0.007

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	125 - 105	L3x3x1/4	0.000	0.004	0.007	0.011* ✓	1.000	H1-3 ✓
T3	85 - 65	L3x3x1/4	0.000	0.004	0.007	0.011* ✓	1.000	H1-3 ✓

* DL controls

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 lb	Allow. P_a lb	Ratio $\frac{P}{P_a}$
T1	125 - 105	2	20.00	3.92	94.0	30.00	3.142	8092.450	94247.797	0.086 ✔
T2	105 - 85	2	20.00	3.92	94.0	30.00	3.142	25941.900	94247.797	0.275 ✔
T3	85 - 65	2 1/4	20.00	3.92	83.6	30.00	3.976	37769.102	119282.000	0.317 ✔
T4	65 - 45	2	20.00	3.92	94.0	30.00	3.142	4825.370	94247.797	0.051 ✔

Diagonal Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P lb	Allow. P_a lb	Ratio $\frac{P}{P_a}$
T1	125 - 105	7/8	4.03	2.01	110.4	21.60	0.601	2760.700	12988.500	0.213 ✔
T2	105 - 85	7/8	4.03	2.01	110.4	21.60	0.601	2456.890	12988.500	0.189 ✔
T3	85 - 65	7/8	4.03	2.01	110.4	21.60	0.601	2895.670	12988.500	0.223 ✔
T4	65 - 45	7/8	4.03	2.01	110.4	21.60	0.601	652.783	12988.500	0.050 ✔

Horizontal Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P lb	Allow. P_a lb	Ratio $\frac{P}{P_a}$
T1	125 - 105	L2x2x3/16	3.04	2.88	55.9	21.60	0.715	1992.620	15444.000	0.129* ✔
T2	105 - 85	L2x2x3/16	3.04	2.88	55.9	21.60	0.715	4080.290	15444.000	0.264 ✔
T3	85 - 65	L2x2x3/16	3.04	2.85	55.5	21.60	0.715	4836.630	15444.000	0.313 ✔
T4	65 - 45	L2x2x1/8	3.04	2.88	55.1	21.60	0.484	4603.070	10462.500	0.440 ✔
T5	45 - 29	L2x2x1/8	3.04	2.88	55.1	21.60	0.484	4082.140	10462.500	0.390 ✔

* DL controls

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 lb	Allow. P_a lb	Ratio $\frac{P}{P_a}$
T1	125 - 105	L2x2x3/16	3.04	2.88	55.9	21.60	0.715	527.018	15444.000	0.034 ✓
T2	105 - 85	L2x2x3/16	3.04	2.88	55.9	21.60	0.715	2539.860	15444.000	0.164* ✓
T3	85 - 65	L2x2x3/16	3.04	2.85	55.5	21.60	0.715	4446.880	15444.000	0.288 ✓
T4	65 - 45	L2x2x1/8	3.04	2.88	55.1	21.60	0.484	5493.500	10462.500	0.525 ✓
T5	45 - 29	L2x2x1/8	3.04	2.88	55.1	21.60	0.484	5450.430	10462.500	0.521 ✓
T6	29 - 25	L3x3x3/8	2.88	2.71	35.7	21.60	2.110	8036.390	45576.000	0.176 ✓

* DL controls

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 lb	Allow. P_a lb	Ratio $\frac{P}{P_a}$
T5	45 - 29	L2x2x1/8	3.04	2.88	55.1	21.60	0.484	3509.280	10462.500	0.335 ✓

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 lb	Allow. P_a lb	Ratio $\frac{P}{P_a}$
T1	125 - 105	L3x3x1/4	3.04	2.88	37.1	21.60	1.440	4178.410	31104.000	0.134
T3	85 - 65	L3x3x1/4	3.04	2.85	36.8	21.60	1.440	7013.350	31104.000	0.225

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	125 - 105	L3x3x1/4	-0.01	0.08	23.76	0.003	-0.01	0.15	23.76	0.006
T3	85 - 65	L3x3x1/4	-0.01	0.08	23.76	0.003	-0.01	0.15	23.76	0.006

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	125 - 105	L3x3x1/4	0.134	0.003	0.006	0.144 ✔	1.333	H2-1 ✔
T3	85 - 65	L3x3x1/4	0.225	0.003	0.006	0.235 ✔	1.333	H2-1 ✔

Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P lb	$SF*P_{allow}$ lb	% Capacity	Pass Fail
T1	125 - 105	Leg	2	3	-22998.600	67274.643	34.2	Pass
T2	105 - 85	Leg	2	54	-59313.102	67274.643	88.2	Pass
T3	85 - 65	Leg	2 1/4	105	-68688.602	96950.690	70.8	Pass
T4	65 - 45	Leg	2	156	-58717.102	67274.643	87.3	Pass
T5	45 - 29	Leg	2	207	-40875.000	67737.590	60.3	Pass
T6	29 - 25	Leg	2	249	-39027.398	85256.943	45.8	Pass
T1	125 - 105	Diagonal	7/8	14	-4123.220	11440.538	36.0	Pass
T2	105 - 85	Diagonal	7/8	66	-6142.240	11440.538	53.7	Pass
T3	85 - 65	Diagonal	7/8	132	-6379.140	11440.538	55.8	Pass
T4	65 - 45	Diagonal	7/8	165	-5444.030	11440.538	47.6	Pass
T5	45 - 29	Diagonal	7/8	234	-4238.670	11445.898	37.0	Pass
T1	125 - 105	Horizontal	L2x2x3/16	16	1992.620	15444.000	12.9	Pass
T2	105 - 85	Horizontal	L2x2x3/16	68	4080.290	20586.851	19.8	Pass
T3	85 - 65	Horizontal	L2x2x3/16	119	4836.630	20586.851	23.5	Pass
T4	65 - 45	Horizontal	L2x2x1/8	170	4603.070	13946.512	33.0	Pass
T5	45 - 29	Horizontal	L2x2x1/8	220	4082.140	13946.512	29.3	Pass
T1	125 - 105	Top Girt	L2x2x3/16	6	-350.710	11906.782	2.9	Pass
T2	105 - 85	Top Girt	L2x2x3/16	55	2539.860	15444.000	16.4	Pass
T3	85 - 65	Top Girt	L2x2x3/16	107	4446.880	20586.851	21.6	Pass
T4	65 - 45	Top Girt	L2x2x1/8	158	5493.500	13946.512	39.4	Pass
T5	45 - 29	Top Girt	L2x2x1/8	209	5450.430	13946.512	39.1	Pass
T6	29 - 25	Top Girt	L3x3x3/8	251	8036.390	60752.805	13.2	Pass
T1	125 - 105	Bottom Girt	L2x2x3/16	7	-569.905	8932.320	6.4	Pass
T2	105 - 85	Bottom Girt	L2x2x3/16	58	-516.955	8932.320	5.8	Pass
T3	85 - 65	Bottom Girt	L2x2x3/16	110	-936.943	11945.919	7.8	Pass
T4	65 - 45	Bottom Girt	L2x2x1/8	161	-1033.450	7966.248	13.0	Pass
T5	45 - 29	Bottom Girt	L2x2x1/8	212	3509.280	13946.512	25.2	Pass
T6	29 - 25	Bottom Girt	12x3/8	254	-254.539	101115.513	0.9	Pass
T1	125 - 105	Guy A@116.958	3/4	258	20602.900	29150.000	70.7	Pass
T3	85 - 65	Guy A@76.9583	7/8	261	25184.199	39850.000	63.2	Pass
T1	125 - 105	Guy B@116.958	3/4	257	22580.100	29150.000	77.5	Pass
T3	85 - 65	Guy B@76.9583	7/8	260	29177.199	39850.000	73.2	Pass
T1	125 - 105	Guy C@116.958	3/4	256	22023.400	29150.000	75.6	Pass
T3	85 - 65	Guy C@76.9583	7/8	259	28322.000	39850.000	71.1	Pass
T1	125 - 105	Top Guy Pull-Off@116.958	L3x3x1/4	35	4178.410	41461.630	10.8	Pass
T3	85 - 65	Top Guy Pull-Off@76.9583	L3x3x1/4	137	7013.350	41461.630	17.6	Pass

Summary		
Leg (T2)	88.2	Pass
Diagonal (T3)	55.8	Pass
Horizontal (T4)	33.0	Pass

Section No.	Elevation ft	Component Type	Size	Critical Element	P lb	$SF*P_{allow}$ lb	% Capacity	Pass Fail
						Top Girt (T4)	39.4	Pass
						Bottom Girt (T5)	25.2	Pass
						Guy A (T1)	70.7	Pass
						Guy B (T1)	77.5	Pass
						Guy C (T1)	75.6	Pass
						Top Guy Pull-Off (T3)	17.6	Pass
						Bolt Checks	33.4	Pass
						RATING =	**88.2**	**Pass**

Town of Canaan
108 Main Street
P.O. Box 47
Falls Village, CT 06031-0047

"Liberty and Property"

AN EQUAL OPPORTUNITY EMPLOYER,
PROVIDER AND HOUSING ADVOCATE

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June 5th, 2008

ORIGINAL

STATE OF CONNECTICUT
CONNECTICUT SITING COUNCIL
Ten Franklin Square,
New Britain, CT 06051

Re: CELLCO Partnership / Verizon Wireless Application / Docket # 360

Dear Siting Council Members:

Upon receipt of the above-referenced application, the Town of Canaan (Falls Village) Inland Wetlands / Conservation Commission makes the following comments.

As Inland Wetlands Commission, we find no intrusion upon any watercourse or wetland by the project as presented. We anticipate that all due diligence will be taken during construction to not impact the intermittent watercourses on the property, as described by Mr. Gustafson on page 18 and in Attachment 12 of the above-referenced application.

We are, however, as the Conservation Commission, concerned with the environmental impacts of land use within our town. Consequently, we have a responsibility to express our strong reservations regarding the tower's close proximity to the Housatonic Valley Regional High School (about 1/2 mile). This changed land use for a new tower site will undoubtedly have an environmental impact, strongly suggested through numerous reports and studies in this country and especially abroad.

The German government, the European Union's environment branch, the UK, Spain, Italy, France, Sweden, and several other countries have recently warned their citizens to avoid unnecessary cell-phone use, to keep domestic phone lines wired, and to avoid wi-fi computer networks, especially in schools. Taiwan ordered the removal of 1500 cell towers near schools and resi-dences recently. Towers near schools are of particular concern, and US case law has backed schools wishing to avoid the uncertainties to their vulnerable population, despite the preemptions at the federal level. The Healthy Schools Network Amicus Brief is illustrative, noted as follows:

(continued)

(Title/Cover page with ***Question Presented Addressed By Amicus Curiae*** is attached; please access the full 33 page Brief at Healthy Schools Network, Inc. under Healthy Schools Guides: EMF's Precaution and Schools: US Supreme Court Amicus Brief. Thank You.)

We assert it is fallacious to not consider human health as an environmental issue. Understanding that the Siting Council is preempted by the FCC Telecommunications Act from taking into consideration human health as an environmental/biological impact--the FCC claiming purview over publichealth standards, while in fact it has no biological model for exposure standards--*we wish to go on record expressing our reservations regarding this additional subjection of teenage students (as well as adult personnel) to the ambient exposure of low-intensity, ultra-high frequency radiation in their learning environment for a minimum 7 hours per 5 weekdays for 9 months of the year for four years.* In good conscience, do any of us know the consequences or the long-term effects? Think: DDT, tobacco, mercury, lead, PCB's, etc.--all formerly regarded by government and corporations as benign!

In addition, we trust this tower is no higher than optimum height to provide the required communications, not only for Verizon but to facilitate co-location for other providers, in order to avoid additional towers in our town.

Sincerely,

Valery W. Sinclair, Chairman
Inland Wetlands / Conservation Commission

encl: 2

copies:

Falls Village Volunteer Fire Department
Housatonic Valley Regional High School, Region #1 Board of Education
Town of Canaan (Falls Village) Board of Selectmen
Town of Canaan (Falls Village) Planning and Zoning Commission

IN THE

Supreme Court of the United States

In Re MARIA GONZALEZ, individually and as mother and legal guardian of her daughters TARA GONZALEZ (age 14) and NICOLE GONZALEZ (age 8),

Petitioner.

ON PETITION FOR WRIT OF MANDAMUS TO THE UNITED STATES COURT OF APPEALS FOR THE SECOND CIRCUIT

BRIEF OF AMICUS CURIAE HEALTHY SCHOOLS NETWORK, INC. IN SUPPORT OF PETITION FOR WRIT OF MANDAMUS TO THE UNITED STATES COURT OF APPEALS SECOND CIRCUIT, AND HON. JOHN M. WALKER, JR., CHIEF JUDGE, AND HON. JOHN O. NEWMAN, AND HON. SONIA SOTOMAYOR, CIRCUIT JUDGES

DANIEL J. SULLIVAN
Counsel of Record
260 Madison Avenue, 18TH Floor
New York, New York 10017
(212) 763-1400
Attorney for Amicus Curiae Healthy Schools Network, Inc.

QUESTION PRESENTED ADDRESSED BY *AMICUS CURIAE*

Should the Federal Communications Commission ("FCC"), in launching a major new program that will risk biological harm to vulnerable children, be able to continue to ignore the National Environmental Policy Act ("NEPA") requirement that an environmental impact statement ("EIS") be prepared for all major governmental undertakings simply because scientific warnings of health hazards have not reached the stage of definitively establishing harm to humans?

Should the FCC be excused from performing an NEPA-mandated EIS just because a multitude of *ad hoc* licensing and site-specific reviews are available, as the so called "functional equivalent" of an EIS, which (a) impose new costs on local citizens and governments, (b) are dependant on challenges by potential victims who most often would not know of the risk, and (c) would be based on the scientifically questionable assumption that no biological harm is being caused by long term radio-frequency ("RF") radiation until the certainty of harm is definitively established?