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

October 25, 2013

Melanie Howlett
HPC Wireless Services
22 Shelter Rock Lane, Building C
Danbury, CT 06811

RE: **EM-SPRINT-047-131008** – Sprint Spectrum L.P. notice of intent to modify an existing telecommunications facility located at 232 South Main Street, East Windsor, Connecticut.

Dear Ms. Howlett:

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:

- Any deviation from the proposed modification as specified in this notice and supporting materials with the Council shall render this acknowledgement invalid;
- Any material changes to this modification as proposed shall require the filing of a new notice with the Council;
- Within 45 days after completion of construction, the Council shall be notified in writing that construction has been completed;
- The validity of this action shall expire one year from the date of this letter;
- The applicant may file a request for an extension of time beyond the one year deadline provided that such request is submitted to the Council not less than 60 days prior to the expiration;
- Prior to antenna installation, the structural modifications depicted in the *Structural Assessment 188-Foot Self-Support Tower* prepared by Ramaker & Associates dated June 3, 2013, and stamped by James Skowronski, shall be implemented; and
- Within 45 days following completion of the antenna installation, Sprint shall provide documentation certified by a professional engineer that its installation complied with the requirements of the structural analysis.

The proposed modifications including the placement of all necessary equipment and shelters within the tower compound are to be implemented as specified here and in your notice dated October 4, 2013. 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. Thank you for your attention and cooperation.

Very truly yours,

Melanie A. Bachman
Acting Executive Director

MAB/CDM/cm

c: The Honorable Denise Sabotka Menard, First Selectman, Town of East Windsor
Laurie Whitten, Town Planner, Town of East Windsor
Balch Bridge Street Corporation

EM-SPRINT-047-131008

HPC Wireless Services
22 Shelter Rock Lane.
Building C
Danbury, CT, 06810
P.: 203.797.1112

HPC WIRELESS SERVICES

ORIGINAL

RECEIVED
OCT - 8 2013
CONNECTICUT
SITING COUNCIL

October 4, 2013

VIA OVERNIGHT COURIER

Connecticut Siting Council
10 Franklin Square
New Britain, Connecticut 06051
Attn: Ms. Melanie Bachman, Acting Executive Director

Re: Sprint Spectrum, L.P. – Exempt Modification
232 South Main Street (aka 236 South Main Street), East Windsor, Connecticut

Dear Ms. Bachman:

This letter and attachments are submitted on behalf of Sprint Spectrum, L.P. ("Sprint"). Sprint is undertaking modifications to certain existing sites in its Connecticut system in order to implement updated technology. Please accept this letter and attachments as notification, pursuant to R.C.S.A. Section 16-50j-73, of construction that constitutes an exempt modification pursuant to R.C.S.A. Section 16-50j-72(b)(2). In compliance with R.C.S.A. Section 16-50j-73, a copy of this letter and attachments is being sent to the First Selectman of the Town of East Windsor.

Sprint plans to modify the existing wireless communications facility owned by the Balch Bridge Street Corporation and located at 232 South Main Street (aka 236 South Main Street), East Windsor, (coordinates 41°-52'-37.8" N, 72°-36'-38.8" W). Attached are plan and elevation drawings depicting the planned changes, and documentation of the structural sufficiency of the structure to accommodate the revised antenna configuration, subject to modifications detailed in the attached structural documentation. Also included is a power density report reflecting the modification to Sprint's operations at the site.

The changes to the facility do not constitute a modification as defined in Connecticut General Statutes ("C.G.S.") Section 16-50i(d) because the general physical characteristics of the facility will not be significantly changed. Rather, the planned changes to the facility fall squarely within those activities explicitly provided for in R.C.S.A. Section 16-50j-72(b)(2).

1. Sprint will remove the existing six (6) CMDA antennas and add three (3) dual-band panel LTE antennas on new pipe masts, on the existing T-frames at a centerline height of approximately 123'. Sprint will also install six (6) RRHs (remote radio heads) on new RRH pipes next to the antennas, also at a centerline height of approximately 123'.

During an interim period of up to one year, the six (6) existing CDMA antennas will remain. Sprint will also install three (3) hybriflex cables along the existing coaxial cable run, and will remove the coaxial cable at the end of the interim period. The proposed modifications will not extend the height of the approximately 188' structure.

2. Sprint will replace the two (2) existing cabinets with three (3) similar cabinets, all on the existing Concrete Pad. Sprint will also add a new surge suppressor, and place a new fiber/power junction box on new posts on a proposed H-frame on the existing platform, all on the existing Concrete Pad. The existing GPS antenna, on the existing Ice Bridge, will be replaced by another GPS antenna. These changes will have no effect on the site boundaries.

3. The proposed changes will not increase the noise level at the existing facility by six decibels or more. The incremental effect of the proposed changes will be negligible.

4. The changes to the facility will not increase the calculated "worst case" power density for the combined operations at the site to a level at or above the applicable standard for uncontrolled environments as calculated for a mixed frequency site. As indicated on the attached report prepared by EBI Consulting, Sprint's operations at the site will result in a power density of approximately 18.507%; the combined site operations will result in a total power density of approximately 56.537%.

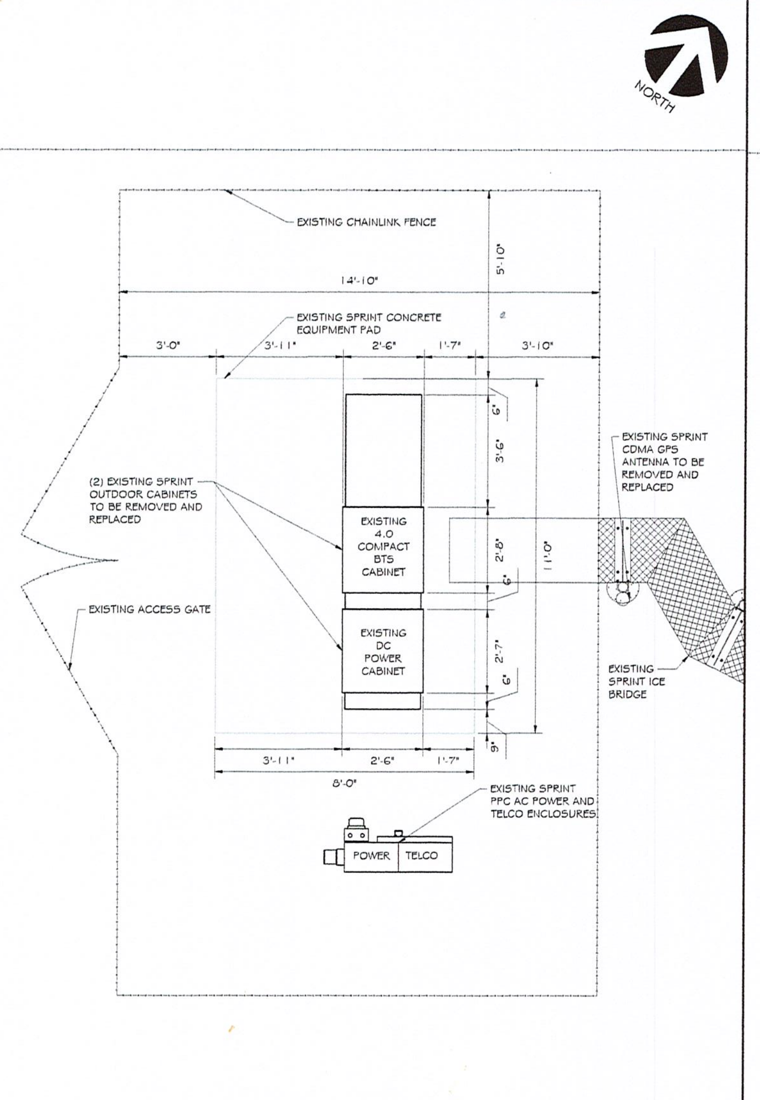
Please contact me by phone at (203) 610-1071 or by e-mail at mjhowlett@optonline.net with questions concerning this matter. Thank you for your consideration.

Respectfully yours,

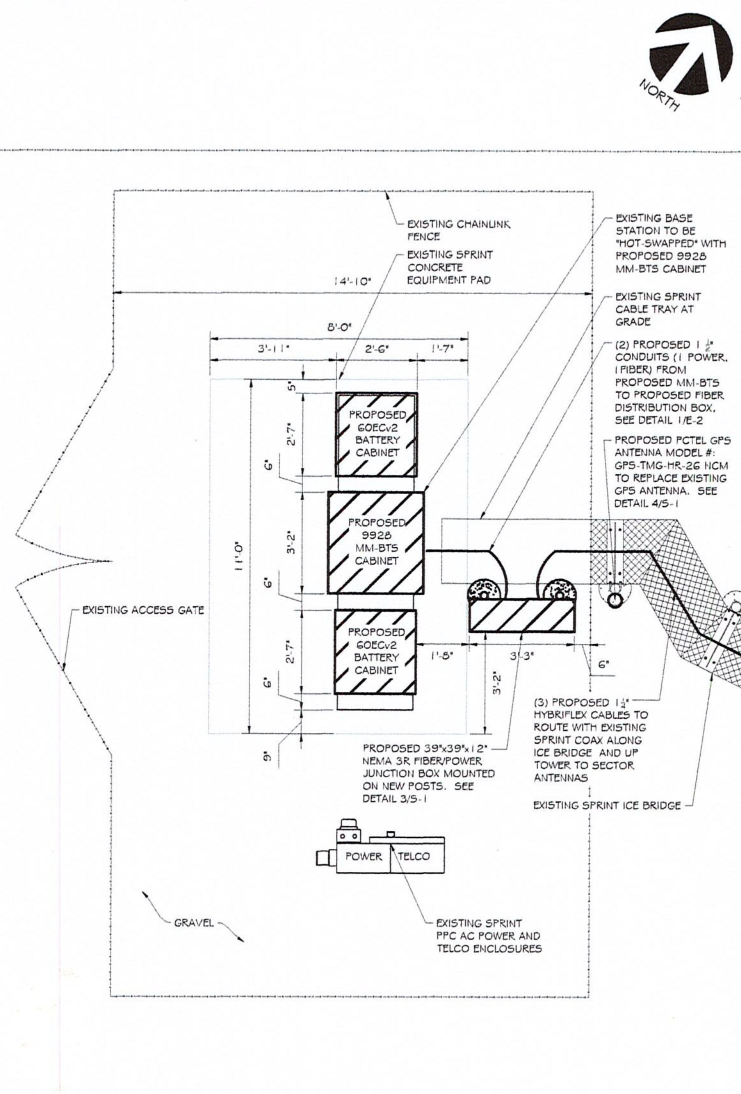
Melanie J. Howlett

Attachments

cc: Honorable Denise Menard, First Selectman, Town of East Windsor
Balch Bridge Street Corporation (underlying property owner)



EXISTING EQUIPMENT PLAN (1)
SCALE: 1" = 3.75'



PROPOSED EQUIPMENT PLAN (2)
SCALE: 1" = 3.75'

Sprint
6391 Sprint Parkway
Overland Park, KS 66251

Alcatel·Lucent

RAMAKER & ASSOCIATES, INC.
1120 Dallas Street, Sauk City, WI 53583
Phone: 608-643-4100 Fax: 608-643-7999
www.Ramaker.com

NETWORK VISION
MMBTS LAUNCH
NORTHERN CT MARKET

Certification & Seal:
I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Connecticut.

STATE OF CONNECTICUT ★ JAMES R. SKOWRONSKI No. 26266 LICENSED PROFESSIONAL ENGINEER

Signature: [signature] Date: 7/02/2013

MARK	DATE	DESCRIPTION
F	7/02/13	RF REVISIONS, PRELIMINARY PERMIT CDS
E	5/30/13	TOWER MODS, PRELIMINARY PERMIT CDS
D	5/20/13	HOT SWAP SCENARIO, PRELIMINARY PERMIT CDS
C	4/03/13	PRELIMINARY PERMIT CDS
B	10/29/12	FINAL PRELIMINARY CDS
A	10/03/12	90% CD REVIEW

ISSUE PHASE: PRELIM PERMIT DATE ISSUED: 07/02/2013

PROJECT TITLE:
BALCH TOWER
SITE #: CT03XC090

PROJECT INFORMATION:
236 SOUTH MAIN STREET
EAST WINDSOR, CT 06088
HARTFORD COUNTY

SHEET TITLE:
EQUIPMENT PLAN

0 1.875' 3.75' 7.5'
11" x 17" - 1" = 3.75'
22" x 34" - 1" = 1.875'

PROJECT NUMBER: 22997
SHEET NUMBER: A-1

NOTES:

I. SCOPE

A. THIS SECTION COVERS THE SPECIFICATIONS FOR ANTENNA AND COAXIAL CABLE INSTALLATION OF: ANTENNAS, COAXIAL, CONNECTIONS, AND ICE BRIDGE.

B. REFERENCE SPRINT STANDARD CONSTRUCTION SPECIFICATIONS FOR WIRELESS SITES FOR GENERAL REQUIREMENTS.

II. ANTENNAS:

A. ANTENNAS SHALL BE PLUMB AND INSTALLED SO THAT THE ENTIRE WHIP EXTENDS ABOVE VERTICAL PIPE MOUNT. DIRECTIONAL ANTENNAS SHALL BE ORIENTED TO PROPER AZIMUTH, PROVIDED ON THE RF SPECIFICATION SHEET. NOTE: THE ANTENNA MAY BE ORIENTED USING THE REFLECTOR AS THE REFERENCE, ADJUSTING ITS AZIMUTH 180 DEGREES FROM MAXIMUM ANTENNA RADIATION.

B. MICROWAVE ANTENNAS (DISHES) SHALL BE ASSEMBLED PER MANUFACTURER'S DRAWINGS. STIFF ARMS AND RADOMES SHALL BE INSTALLED WITH POLARIZATION PROVIDED BY RF SPECIFICATION SHEET. IF PATH IS NOT READY TO ALIGN, DISH SHOULD BE POINTED TOWARD CALCULATED AZIMUTH, OR DIRECTION OF FIELD STAKE DENOTING OPPOSITE END. 2 STIFF ARMS SHALL BE PROVIDED FOR MICROWAVE DISHES 6'-0" IN DIAMETER OR GREATER.

C. A TRANSIT SHALL BE USED TO PROPERLY ALIGN CELLULAR AND MICROWAVE ANTENNAS.

III. COAXIAL CABLE:

A. COAXIAL CABLE SHALL BE SUPPORTED WITH SNAP-IN HANGERS. SNAP-IN HANGERS SHOULD BE USED EVERY 3 FEET THE ENTIRE HEIGHT OF THE TOWER. ANGLE ADAPTERS OR ROUND MEMBER ADAPTERS WITH BUTTERFLY CLAMPS SHALL BE USED ELSEWHERE. I.E. SIDEARMS, PLATFORMS, AND MICROWAVE MOUNTS.

B. COAXIAL CABLE SHALL ALSO BE SUPPORTED WITH HOISTING GRIPS, INSTALLED AT MAXIMUM INTERVALS OF 200 FEET. HOISTING GRIPS SHALL BE ATTACHED WITH SHACKLES, BOLTED IN THE 7/16" HOLE OF WAVEGUIDE LADDER.

C. ALL JUMPERS USED BETWEEN COAXIAL CABLE AND ANTENNA SHALL BE SUPPORTED WITHIN 18 INCHES OF ANTENNA, USING BUTTERFLY CLAMPS WITH ANGLE ADAPTERS OR ROUND MEMBER ADAPTERS AROUND PIPES. CELLULAR ANTENNAS TYPICALLY USE 6' JUMPERS; MICROWAVE DISHES USE 3' JUMPERS.

D. COAXIAL CABLE SHALL BE NEATLY BENT WHEN REQUIRED, USING A MINIMUM BENDING RADIUS OF 10 TIMES THE DIAMETER OF THE COAXIAL CABLE. DRIP LOOPS SHOULD BEGIN AT THE ICE BRIDGE. THE END IN THE COAXIAL CABLE SHOULD BE AT A LOWER HEIGHT THAN THE ENTRY PORT.

E. COAXIAL CABLE SHALL BE SUPPORTED WITH SNAP-IN HANGERS ON THE WAVEGUIDE LADDER UNDER ICE BRIDGE. COAXIAL CABLE SHOULD BE NEATLY CUT 16" INSIDE BUILDING AND TERMINATED AT THE QUARTER WAVE SHORTS.

F. CONNECTORS WILL NORMALLY BE PROVIDED FIRST OFF REEL FROM FACTORY. CONNECTORS TERMINATED IN BUILDING SHALL BE NEATLY INSTALLED PER MANUFACTURER'S SPECIFICATIONS.

G. COAXIAL CABLES SHOULD BE LABELED WITH TAGS INSIDE THE BUILDING.

H. USE 2" WIDE COLORED TAPE TO INDICATE SECTORS. CONTRACTOR TO USE SECTOR COLOR CODING AS INDICATED IN THESE DRAWINGS OR AS PROVIDED BY SPRINT.

I. ALL EXCEPTIONS NEED TO BE VERIFIED WITH THE PROJECT MANAGER.

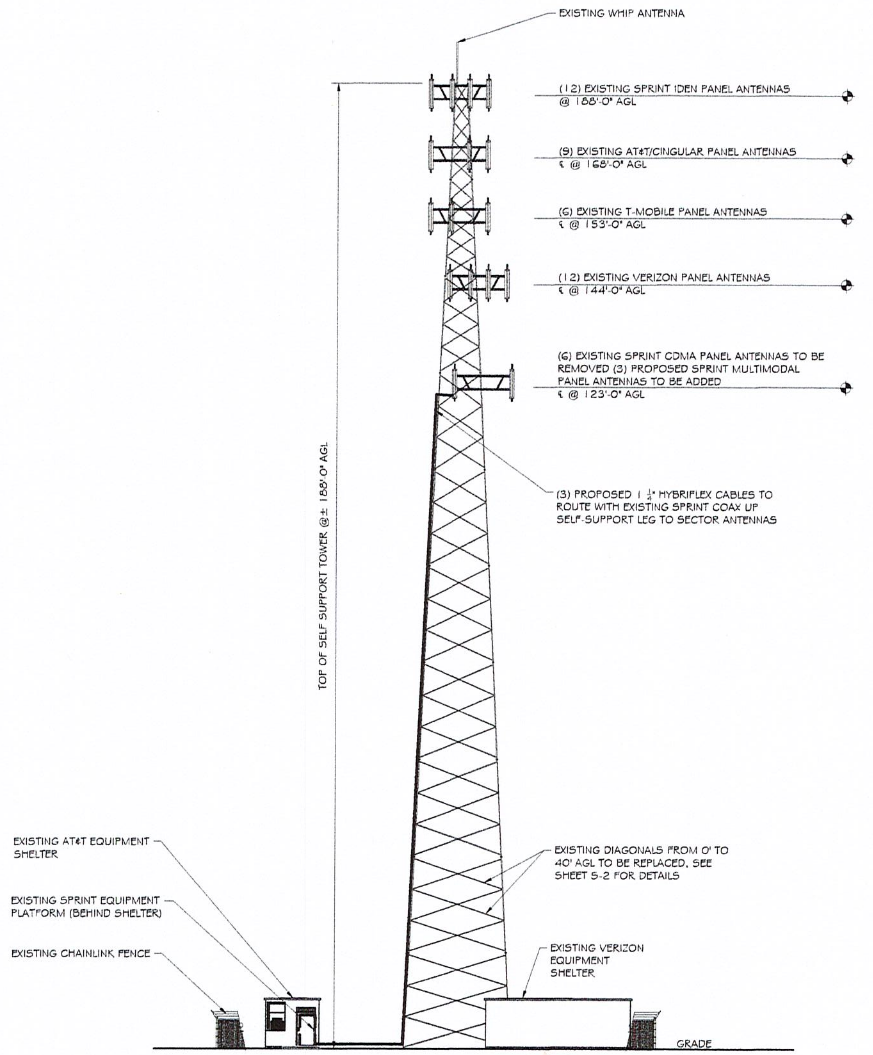
IV. CONNECTORS:

A. ALL CONNECTIONS AND GROUNDING KITS SHALL BE WEATHERPROOFED USING COLD SHRINK OR ANDREW APPROVED WEATHER STRIPPING. NOTE: NO PORTION OF CONNECTOR SHALL BE EXPOSED TO THE ELEMENTS.

B. COAXIAL CABLE SHALL BE GROUNDED USING GROUNDING KITS AT THE TOP (BELOW THE BEND), BOTTOM (ABOVE THE BEND ON TOWER GROUND BAR), AND ON BUILDING GROUND BAR BEFORE ENTRY INTO WAVEGUIDE PORTS. 4" CABLE BOOTS SHALL BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS.

C. GROUNDING KITS SHALL BE NEATLY INSTALLED SO THAT THE JUMPER RUNS IN THE SAME DIRECTION AS THE COAXIAL AND GROUND BAR. JUMPER WIRE SHOULD RUN IN A DIRECT PATH TO THE GROUND BAR/ TOWER LADDER, BUT HAVE ADEQUATE SLACK FOR EXPANSION, CONTRACTION, AND REPAIR. NON-OXIDE GREASE SHOULD BE APPLIED BETWEEN LUG AND BAR/TOWER.

D. TOWER GROUND BAR SHALL BE INSTALLED ON THE ANGLE BEHIND THE FIRST DIAGONAL WAVEGUIDE LADDER RUNG, ABOVE 8'-6". GROUND BAR SHALL BE ISOLATED FROM ANGLE USING NEWTON BUSHINGS PROVIDED.



ELEVATION
SCALE: 1"= 25'-0"
1

Sprint
6391 Sprint Parkway
Overland Park, KS 66251

Alcatel·Lucent

RAMAKER & ASSOCIATES, INC.
1120 Dallas Street, Sauk City, WI 53583
Phone: 608-643-4100 Fax: 608-643-7999
www.Ramaker.com

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NORTHERN CT MARKET

Certification & Seal:
I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Connecticut.

STATE OF CONNECTICUT ★ JAMES R. SKOWRONSKI ★ No. 26266 LICENSED PROFESSIONAL ENGINEER

Signature: [signature] Date: 7/02/2013

MARK	DATE	DESCRIPTION
F	7/02/13	RF REVISIONS, PRELIMINARY PERMIT CD'S
E	5/30/13	TOWER MODS, PRELIMINARY PERMIT CD'S
D	5/20/13	HOT SWAP SCENARIO, PRELIMINARY PERMIT CD'S
C	4/03/13	PRELIMINARY PERMIT CD'S
B	10/29/12	FINAL PRELIMINARY CD'S
A	10/03/12	90% CD REVIEW

ISSUE PHASE: PRELIM PERMIT DATE ISSUED: 07/02/2013

PROJECT TITLE:
BALCH TOWER
SITE #: CT03XC090

PROJECT INFORMATION:
236 SOUTH MAIN STREET
EAST WINDSOR, CT 06088
HARTFORD COUNTY

SHEET TITLE:
SITE ELEVATION & NOTES

0 12.5' 25' 50'
11" x 17" - 1" = 25'
22" x 34" - 1" = 12.5'

PROJECT NUMBER: 22997
SHEET NUMBER: A-2

DRAWN BY: KJG CHECKED BY: KAB

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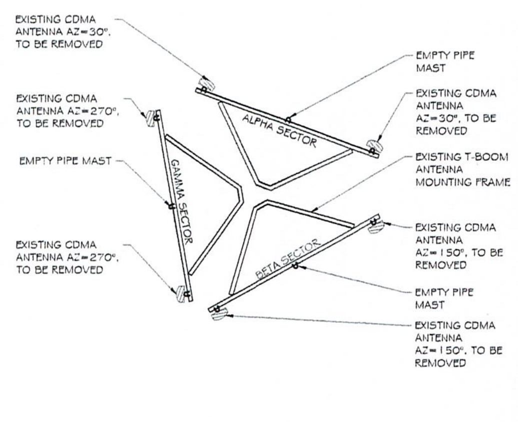
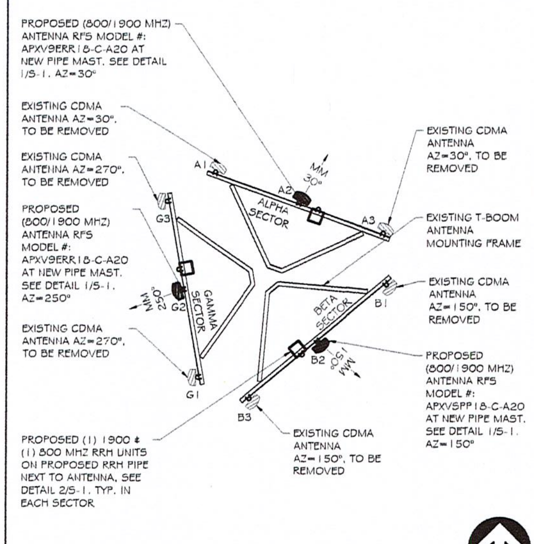
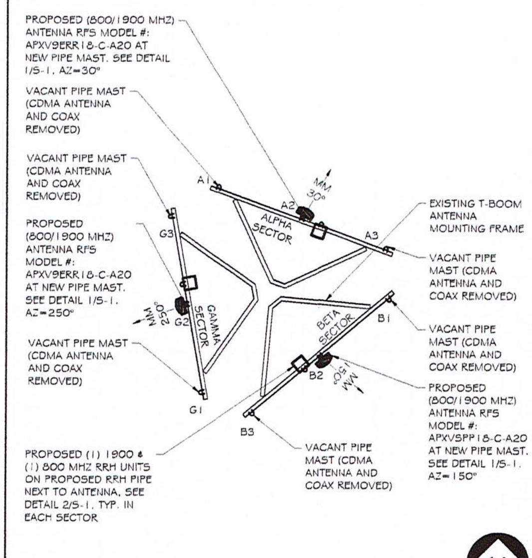


EXISTING ANTENNA LAYOUT (1)
SCALE: NTS



INTERIM ANTENNA LAYOUT (2)
SCALE: NTS



FINAL ANTENNA LAYOUT (3)
SCALE: NTS

ANTENNA AND COAXIAL CABLE SCHEDULE

SECTOR	POS.	AZIMUTH	ANTENNA CENTERLINE	ANTENNA STATUS	TECH.	ANTENNA MAKE/ MODEL	MECH. DOWNTILT (°)	ELEC. DOWNTILT (°)	RRHs	CABLE SIZE	CABLE LENGTH
ALPHA	A-1	30°	123'-0"	EX. TO BE REMOVED	CDMA	-	-	-	-	EX. TO BE REMOVED	-
	A-2	30°	123'-0"	PROPOSED	MULTIMODAL	RFS/APXV9ERR18-C-A20	1900(-3), 800(-3)	1900(0), 800(-3)	1900(1), 800(1)	(1) 1 1/4" HYBRIFLEX RFS MODEL #: HB114-1-08U4-M5J	±185'-0"
	A-3	30°	123'-0"	EX. TO BE REMOVED	CDMA	-	-	-	-	EX. TO BE REMOVED	-
BETA	B-1	150°	123'-0"	EX. TO BE REMOVED	CDMA	-	-	-	-	EX. TO BE REMOVED	-
	B-2	150°	123'-0"	PROPOSED	MULTIMODAL	RFS/APXVSPP18-C-A20	1900(0), 800(0)	1900(-1), 800(-8)	1900(1), 800(1)	(1) 1 1/4" HYBRIFLEX RFS MODEL #: HB114-1-08U4-M5J	±185'-0"
	B-3	150°	123'-0"	EX. TO BE REMOVED	CDMA	-	-	-	-	EX. TO BE REMOVED	-
GAMMA	G-1	270°	123'-0"	EX. TO BE REMOVED	CDMA	-	-	-	-	EX. TO BE REMOVED	-
	G-2	250°	123'-0"	PROPOSED	MULTIMODAL	RFS/APXV9ERR18-C-A20	1900(0), 800(0)	1900(0), 800(0)	1900(1), 800(1)	(1) 1 1/4" HYBRIFLEX RFS MODEL #: HB114-1-08U4-M5J	±185'-0"
	G-3	270°	123'-0"	EX. TO BE REMOVED	CDMA	-	-	-	-	EX. TO BE REMOVED	-

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STATE OF CONNECTICUT ★ JAMES R. SKOWRONSKI No. 26266 LICENSED PROFESSIONAL ENGINEER

Signature: [signature] Date: 7/02/2013

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BALCH TOWER
SITE #: CT03XC090

PROJECT INFORMATION:
236 SOUTH MAIN STREET
EAST WINDSOR, CT 06088
HARTFORD COUNTY

SHEET TITLE:
ANTENNA DETAILS & COAX SCHEDULE

SCALE: NONE

PROJECT NUMBER: 22997
SHEET NUMBER: A-3

DRAWN BY: KJG CHECKED BY: KAB

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RAMAKER
& ASSOCIATES, INC.

BALCH TOWER (CT03XC090)

PREPARED FOR:
ALCATEL-LUCENT ON BEHALF OF SPRINT

PREPARED BY:
RAMAKER & ASSOCIATES, INC.
JOB NUMBER: 22997

STRUCTURAL ASSESSMENT
188-FOOT SELF-SUPPORT TOWER

1120 Dallas Street, Sauk City, WI 53583
Phone: 608-643-4100 ▲ Fax: 608-643-7999
www.ramaker.com

SITE:	Balch Tower (CT03XC090) 236 South Main Street East Windsor, Hartford County, CT 06088
CONTACT PERSON:	John Szilezy Alcatel-Lucent Site Acquisition Manager 600 Mountain Avenue, Murray Hill, NJ 07974 Email: john.szilezy@alcatel-lucent.com
PREPARED BY:	Ramaker & Associates, Inc. 1120 Dallas Street Sauk City, Wisconsin 53583 Telephone: (608) 643-4100 Facsimile: (608) 643-7999
RAMAKER JOB NUMBER:	22997
DATE OF REPORT ISSUANCE:	June 3, 2013

Adam Kraus
Engineering Technician

06/03/13
Date

James R. Skowronski, P.E.
Supervising Engineer

06/03/13
Date

STATE OF CONNECTICUT
JAMES R. SKOWRONSKI
No. 26266
LICENSED
PROFESSIONAL ENGINEER

TABLE OF CONTENTS

LIST OF APPENDICES

SECTION 1
EXECUTIVE SUMMARY

This report summarizes the structural analysis conducted by Ramaker & Associates, Inc. (Ramaker & Associates) for Alcatel-Lucent on behalf of Sprint, who intends to install additional equipment on an existing 188-foot self-support tower.

Alcatel-Lucent is proposing to install two (2) RFS APXV9ERR18-C-A20 panel antennas, one (1) RFS APXVSPP18-C-A20 panel antenna, and six (6) Alcatel-Lucent RRHs on the three (3) existing T-frames at a centerline elevation of 123 feet AGL. The proposed equipment shall be fed with three (3) 1-1/4-inch fiber/power hybrid cables that were assumed to routed up the existing Sprint feedline ladder. The six (6) existing Sprint CDMA panel antennas and their associated coax at 123 feet AGL shall remain for the proposed interim phase, and then be removed for the final antenna configuration.

The existing tower diagonals from 0'-40' could become overstressed under proposed loading conditions. These tower members shall be replaced per the associated construction drawings prior to any equipment installation.

Results of our analysis show that the tower will be stressed to a maximum of 92.9 percent of capacity under proposed loading conditions ***after all required structural modifications have been completed.***

All proposed model foundation reactions were found to be less than the modified original design reactions. The foundation was also analyzed using the geotechnical report by Ramaker & Associates, job number 22997, dated February 19, 2013 and it was determined to provide adequate strength under proposed loading conditions.

Results of our mount assessment show that by engineering calculation and inspection, the antenna and RRH mounting structure is capable of supporting the existing and proposed Sprint Network Vision equipment deployment without causing an overstress condition in the antenna and RRH mounting structure.

In summary, the tower will pass and the mounting structure will pass the TIA-222-G code requirements under proposed loading conditions ***after all required structural modifications have been completed.***

SECTION 2
INTRODUCTION

2.1 PROJECT INFORMATION

This report summarizes the structural analysis conducted by Ramaker & Associates, Inc. (Ramaker & Associates) for Alcatel-Lucent on behalf of Sprint, who intends to install additional equipment on an existing tower.

2.2 PURPOSE OF REPORT

The analysis activities of this report were conducted for the purposes of creating and analyzing a model of the subject structure under the required loading conditions. Base reactions from the resulting model were also determined for tower foundation and support development. Recommendations regarding the analysis results, loading configuration, and structural modifications are also provided.

2.3 SCOPE OF SERVICES

Ramaker & Associates developed a finite element model (FEM) of the tower, using tnxTower, for member force, joint deflection, and structure reaction determinations. Subsequently, this report was drafted to provide our engineering recommendations. All information contained herein is valid only for the described structure configuration and loading conditions. Ramaker & Associates reserves the right to modify our recommendations should alterations to the tower loading occur.

SECTION 3
MODEL DEVELOPMENT

3.1 INTRODUCTION

Ramaker & Associates developed a FEM of the tower superstructure using the tower drawings and site photos. Required static loads consisting of the antenna configuration, wind forces, ice loads, and linear appurtenances (including cable loads) were then applied to the FEM. As a result, all member forces, allowable capacities, and base reactions were computed.

3.2 EXISTING STRUCTURE INFORMATION

Tower information was gathered from the original tower drawings by Rohn, file number 34769PH, dated September 27, 1996.

3.3 EXISTING TOWER LOADS

Ramaker & Associates understands that the existing antenna, cable, and appurtenance configurations are as shown in the following chart:

Elevation	Appurtenance	Mount	Coax
188	10' Omni	Platform	1-5/8
	(12) Decibel DB844H90E-XY		(12) 1-5/8
176	(3) 6' x 1' Panel Antennas	Leg Mounted	(6) 1-5/8
168	(6) CSS DU01417-8686	(3) T-Frames	(12) 1-5/8
	(3) Powerwave 7770.00		
	(3) Powerwave LGP186nn		
155	(6) Allgon 7250.03	(3) T-Frames	(9) 1-5/8
	(3) 5' x 1.5' Panel Antennas		
141	(6) Decibel DB844H90E-XY	(3) T-Frames	(15) 1-5/8
	(3) 4' x 1' Panel Antennas		
	(3) 5' x 8" Panel Antennas		
123	** (6) Decibel DB980H90E-M **	(3) T-Frames	** (6) 1-5/8 **

** The six (6) existing Sprint CDMA panel antennas and their associated coax at 123 feet AGL shall remain for the proposed interim phase, and then be removed for the final antenna configuration.

3.4 PROPOSED TOWER LOADS

Ramaker & Associates understands that the total antenna loading for the tower will consist of the aforementioned existing antennas and the following proposed antennas:

Elevation	Appurtenance	Mount	Coax
123	(2) RFS APXV9ERR18-C	Existing (3) T-Frames	(3) 1-1/4 Hybrid Cables
	(1) RFS APXVSPP18-C		
	(3) ALU 1900MHz 4x40W RRH		
	(3) ALU 800MHz 2x50W RRH		

Proposed hybrid cables were assumed to be routed up the existing Sprint feedline ladder.

Details regarding the antenna and RRH mounting structure and proposed equipment modifications can be found in the construction drawings by Ramaker & Associates, Inc., project number 22997, dated May 30, 2013.

3.5 PROPOSED TOWER MODIFICATIONS

The existing tower diagonals from 0'-40' could become overstressed under proposed loading conditions. These tower members shall be replaced per the associated construction drawings prior to any equipment installation.

Elevation	Member	Existing Member Size	Proposed Member Size
40'-20'	Diagonal	L4x4x5/16	L5x5x5/16
20'-0'	Diagonal	L4x4x3/8	L5x5x5/16

3.6 WIND AND ICE LOAD

Wind forces used in model development are in compliance with the TIA-222-G Standard. These guidelines, in accordance with the ATC website, call for an analysis to be performed, which assumes a basic wind speed (3-second gust) of 98 miles-per-hour (mph) without ice in Hartford County. The tower is also designed for a 50 mph basic wind speed with 1.0-inch of radial ice. The tower was analyzed using the following parameters: Structure Class II, Topographic Category 1, and Exposure Category C.

SECTION 4
ANALYSIS RESULTS

4.1 ANALYSIS RESULTS

The *modified* tower superstructure was analyzed with the combined existing and proposed antenna loading with and without radial ice. The computed maximum tower member stress capacities are as follows:

Component Type	Percent Capacity
Legs	84.2
Diagonals	92.9
Bolts	87.8
RATING =	**92.9**

4.2 BASE REACTIONS

The computed maximum factored reactions correlated to maximum moment are as follows:

Load Type	Original Design	Original Design * 1.35	Proposed Model
Total Axial (k)	---	---	72.8
Total Shear (k)	63.8	86.1	85.7
Total Moment (k-ft)	6790.7	9167.5	8616.7
Leg Uplift (k)	292.0	394.2	362.6
Leg Compression (k)	379.0	511.7	421.6
Leg Shear (k)	42.7	57.6	51.8

The TIA-222-G code in Section 15.5.1 specifies to multiply original ASD reactions by 1.35 when comparing them with reactions determined using the TIA-222-G code. All proposed model foundation reactions were found to be less than the modified original design reactions. The foundation was also analyzed using the geotechnical report by Ramaker & Associates, job number 22997, dated February 19, 2013 and it was determined to provide adequate strength under proposed loading conditions.

4.3 MOUNTING STRUCTURE ASSESSMENT

The antenna and RRH mounting structure is capable of supporting the existing and proposed Sprint Network Vision equipment deployment without causing an overstress condition in the antenna and RRH mounting structure.

This assessment is inclusive of the entire antenna and RRH mounting structure, including tower platforms, arms, and all other aspects of the mounting structure that will support the Sprint Network Vision equipment deployment.

SECTION 5
LIMITATIONS

The recommendations contained within this report were developed using general project information provided by the owner, tower manufacturer, general field observations, reference information and laboratory testing data, as applicable. All recommendations pertain only to the proposed tower construction, location, and loading as described in this report. Ramaker & Associates assumes no responsibility for failures caused by factors beyond our control. These include but are not limited to the following:

1. Missing, corroding, and/or deteriorating members
2. Improper manufacturing and/or construction
3. Improper maintenance

Ramaker & Associates assumes no responsibility for modifications completed prior to or hereafter in which Ramaker & Associates was not directly involved. These modifications include but are not limited to the following:

1. Replacing or strengthening bracing members
2. Reinforcing or extending vertical members
3. Installing or removing antenna mounting gates or side arms
4. Changing loading configurations

Furthermore, Ramaker & Associates 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 on the information contained and set forth herein. If you are aware of any information contrary to that contained herein, or if you are aware of any defects arising from the original design, material, fabrication and erection deficiencies, you should disregard this report and immediately contact Ramaker & Associates. Ramaker & Associates isn't liable for any representation, recommendation or conclusion not expressly stated herein.

The tower owner is responsible for verifying that the existing loading on the tower is consistent with the loading applied to the tower within this report.

SECTION 6
REFERENCES

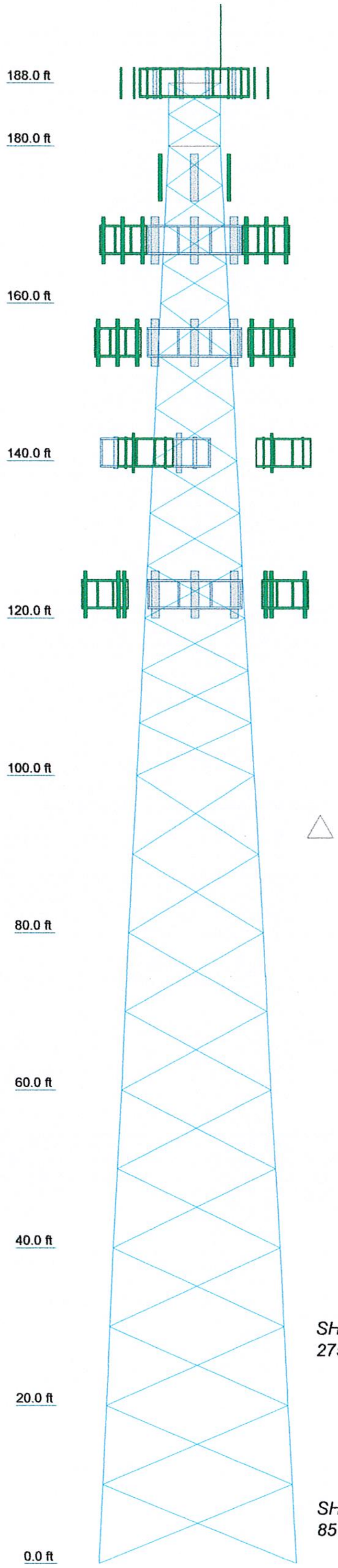
1. 2009 International Building Code.

2. Telecommunications Industries Association, Structural Standard for Antenna Supporting Structures and Antennas, TIA Standard ANSI/TIA-222-G 2005, Washington, D.C.

APPENDIX A

TOWER FIGURES

Section	Legs	Leg Grade	Diagonals	Diagonal Grade	Top Girts	Face Width (ft)	# Panels @ (ft)	Weight (lb)
T1	ROHN 2.5 STD	A572-50	L1 3/4x1 3/4x3/16	A36	L1 3/4x1 3/4x3/16	6.58	2 @ 4	395.0
T2	ROHN 2.5 STD	A572-50	L1 3/4x1 3/4x3/16	A36	L1 3/4x1 3/4x3/16		4 @ 5	892.8
T3	ROHN 3 EH	A572-50	L2 1/2x2 1/2x1/4	A36	N.A.	8.54	9 @ 6.66667	1541.1
T4	ROHN 4 EH	A572-50	L3x3x1/4	A572-50	N.A.	10.61	9 @ 6.66667	2192.1
T5	ROHN 5 EH	A572-50	L3x3x1/4	A572-50	N.A.	12.74	9 @ 6.66667	2731.0
T6	ROHN 6 EHS	A572-50	L3 1/2x3 1/2x1/4	A572-50	N.A.	14.83	10 @ 10	2801.6
T7	ROHN 6 EH	A572-50	L4x4x5/16	A572-50	N.A.	16.92	10 @ 10	3914.9
T8	ROHN 8 EHS	A572-50	L4x4x5/16	A572-50	N.A.	18.88	10 @ 10	4389.7
T9	ROHN 8 EH	A572-50	L5x5x5/16	A572-50	N.A.	21.13	10 @ 10	5890.0
T10	ROHN 8 EH	A572-50	L5x5x5/16	A572-50	N.A.	23.04	10 @ 10	6123.4
						25.04		30871.6



DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION	TYPE	ELEVATION
10' Omni	188	(2) DB844H90E-XY w/Mount Pipe	141
(4) DB844H90E-XY w/Mount Pipe (Sprint)	188	(2) DB844H90E-XY w/Mount Pipe	141
(4) DB844H90E-XY w/Mount Pipe (Sprint)	188	(2) DB844H90E-XY w/Mount Pipe	141
(4) DB844H90E-XY w/Mount Pipe (Sprint)	188	4' x 1' Panel Antenna w/Mount Pipe	141
Rohn 14' Rotable Platform (Sprint)	188	4' x 1' Panel Antenna w/Mount Pipe	141
6' x 1' Panel Antenna w/Mount Pipe	176	4' x 1' Panel Antenna w/Mount Pipe	141
6' x 1' Panel Antenna w/Mount Pipe	176	5' x 8" Panel Antenna w/Mount Pipe	141
6' x 1' Panel Antenna w/Mount Pipe	176	5' x 8" Panel Antenna w/Mount Pipe	141
(2) DUO1417-8686 w/Mount Pipe (ATT)	168	5' x 8" Panel Antenna w/Mount Pipe	141
(2) DUO1417-8686 w/Mount Pipe (ATT)	168	Rohn 14' Boom Gate	141
(2) DUO1417-8686 w/Mount Pipe (ATT)	168	Rohn 14' Boom Gate	141
7770.00 w/Mount Pipe (ATT)	168	Rohn 14' Boom Gate	141
7770.00 w/Mount Pipe (ATT)	168	(2) DB980H90E-M w/Mount Pipe (Sprint)	123
7770.00 w/Mount Pipe (ATT)	168	(2) DB980H90E-M w/Mount Pipe (Sprint)	123
LGP186nn (ATT)	168	(2) DB980H90E-M w/Mount Pipe (Sprint)	123
LGP186nn (ATT)	168	Rohn 12' Boom Gate (3) (Sprint)	123
LGP186nn (ATT)	168	APXV9ERR18-C w/Mount Pipe (Sprint)	123
Rohn 12' Boom Gate (3) (ATT)	168	APXVSPP18-C w/Mount Pipe (Sprint)	123
(2) 7250.03 w/Mount Pipe	155	APXV9ERR18-C w/Mount Pipe (Sprint)	123
(2) 7250.03 w/Mount Pipe	155	1900MHz 4x40W RRH (Sprint)	123
(2) 7250.03 w/Mount Pipe	155	1900MHz 4x40W RRH (Sprint)	123
5' x 1.5' Panel Antenna w/Mount Pipe	155	1900MHz 4x40W RRH (Sprint)	123
5' x 1.5' Panel Antenna w/Mount Pipe	155	800MHz 2x50W RRH (Sprint)	123
5' x 1.5' Panel Antenna w/Mount Pipe	155	800MHz 2x50W RRH (Sprint)	123
Pirod 12' Knockdown T-Frames (3)	155	800MHz 2x50W RRH (Sprint)	123

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 Exposure C to the TIA-222-G Standard.
3. Tower designed for a 98 mph basic wind in accordance with the TIA-222-G Standard.
4. Tower is also designed for a 50 mph basic wind with 1.00 in ice. Ice is considered to increase in thickness with height.
5. Deflections are based upon a 60 mph wind.
6. Tower Structure Class II.
7. Topographic Category 1 with Crest Height of 0.00 ft
8. TOWER RATING: 92.9%

ALL REACTIONS ARE FACTORED

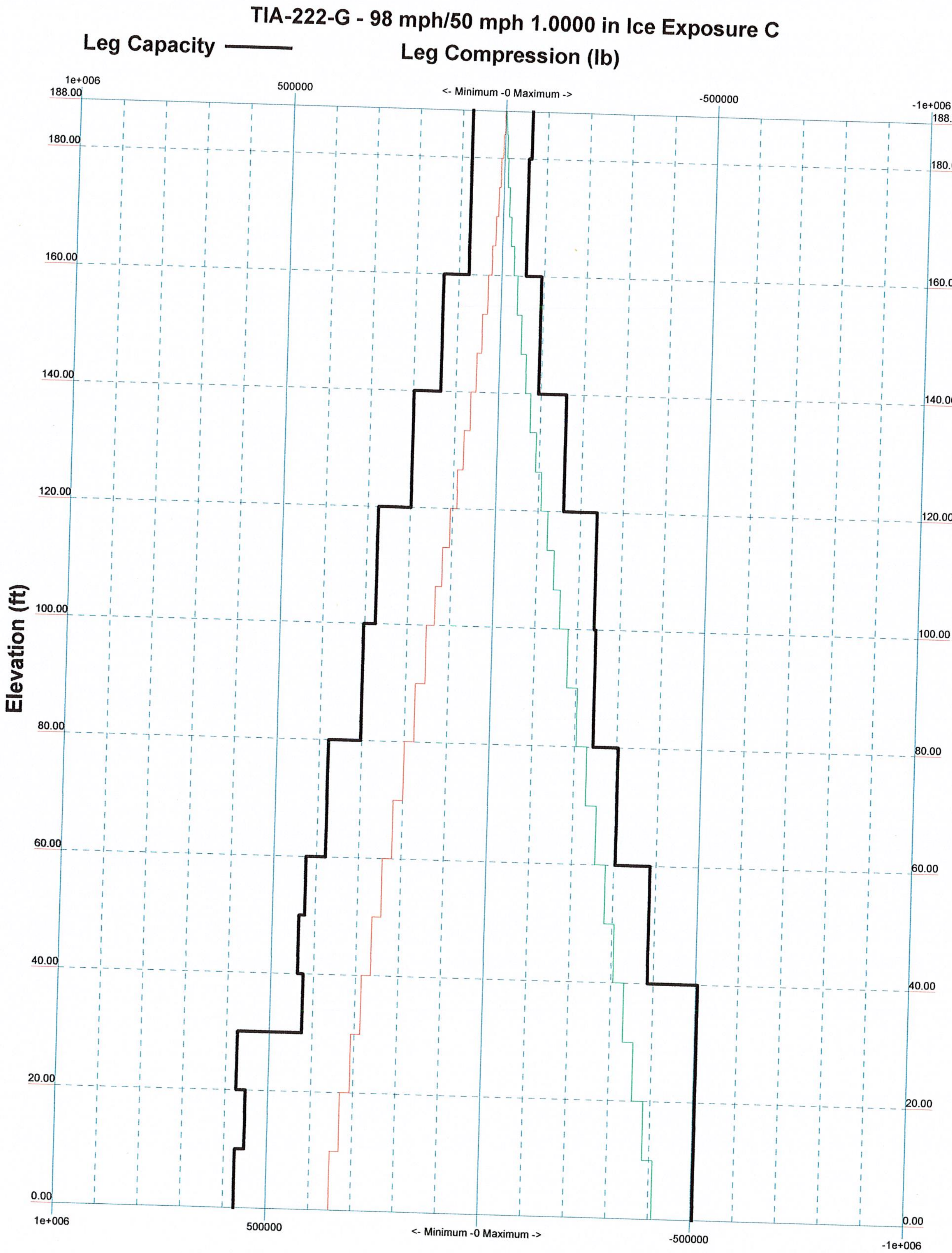
MAX. CORNER REACTIONS AT BASE:
DOWN: 421622 lb
UPLIFT: -362630 lb
SHEAR: 51777 lb

AXIAL 262403 lb
SHEAR 27592 lb
MOMENT 3050798 lb-ft
TORQUE 5416 lb-ft
50 mph WIND - 1.0000 in ICE

AXIAL 72804 lb
SHEAR 85714 lb
MOMENT 8616732 lb-ft
TORQUE 15463 lb-ft
REACTIONS - 98 mph WIND

Ramaker & Associates
1120 Dallas St.
Sauk City, WI 53583
Phone: (608) 643-4100
FAX: (608) 643-7999

Job: **Balch Tower (CT03XC090)**			
Project: **22997**			
Client: Sprint	Drawn by: A. Kraus	App'd:	
Code: TIA-222-G	Date: 05/29/13	Scale: NTS	
Path: I:\22900\22997\Structural\Risa\22997 rev4.eri		Dwg No. E-1	



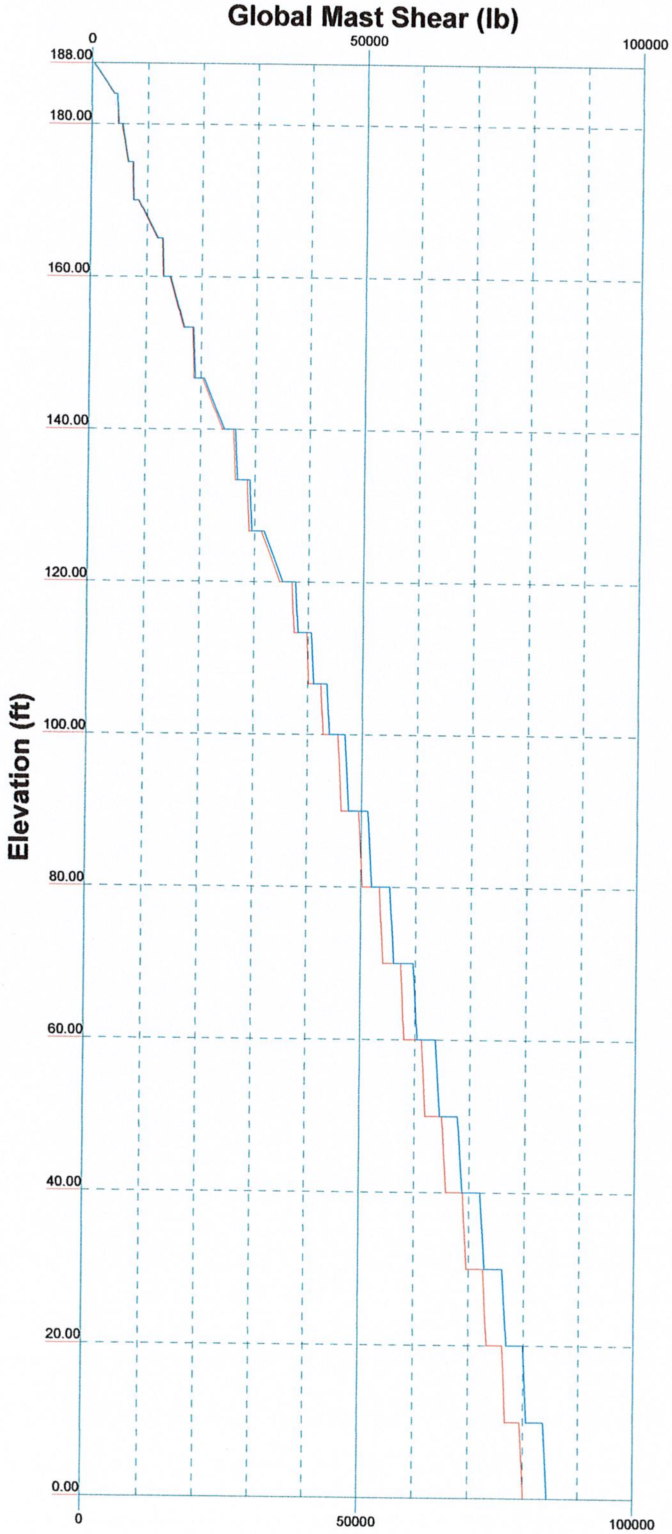
Ramaker & Associates	Job: Balch Tower (CT03XC090)		
1120 Dallas St.	Project: 22997		
Sauk City, WI 53583	Client: Sprint	Drawn by: A. Kraus	App'd:
Phone: (608) 643-4100	Code: TIA-222-G	Date: 05/29/13	Scale: NTS
FAX: (608) 643-7999	Path: I:\22900\22997\Structural\Risa\22997 rev4.eri		Dwg No. E-3

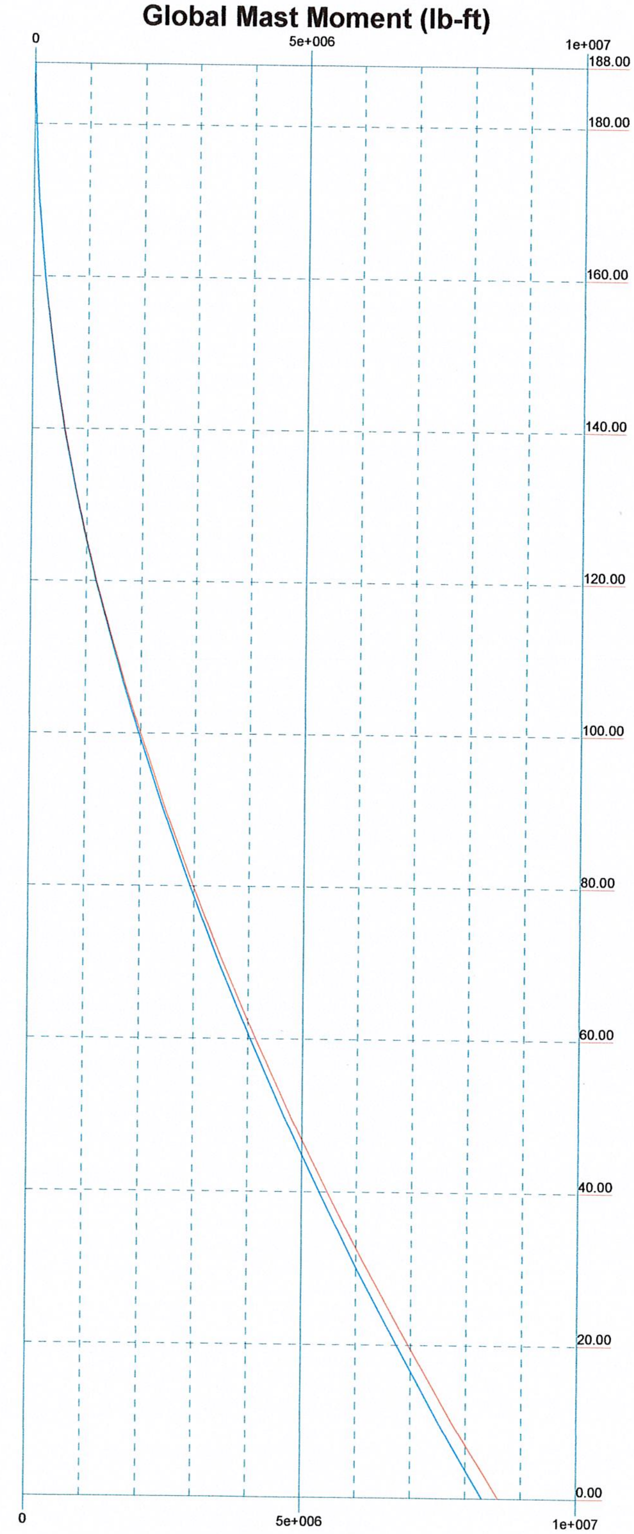
TIA-222-G - 98 mph/50 mph 1.0000 in Ice Exposure C

Vx — Vz

Maximum Values

Mx — Mz

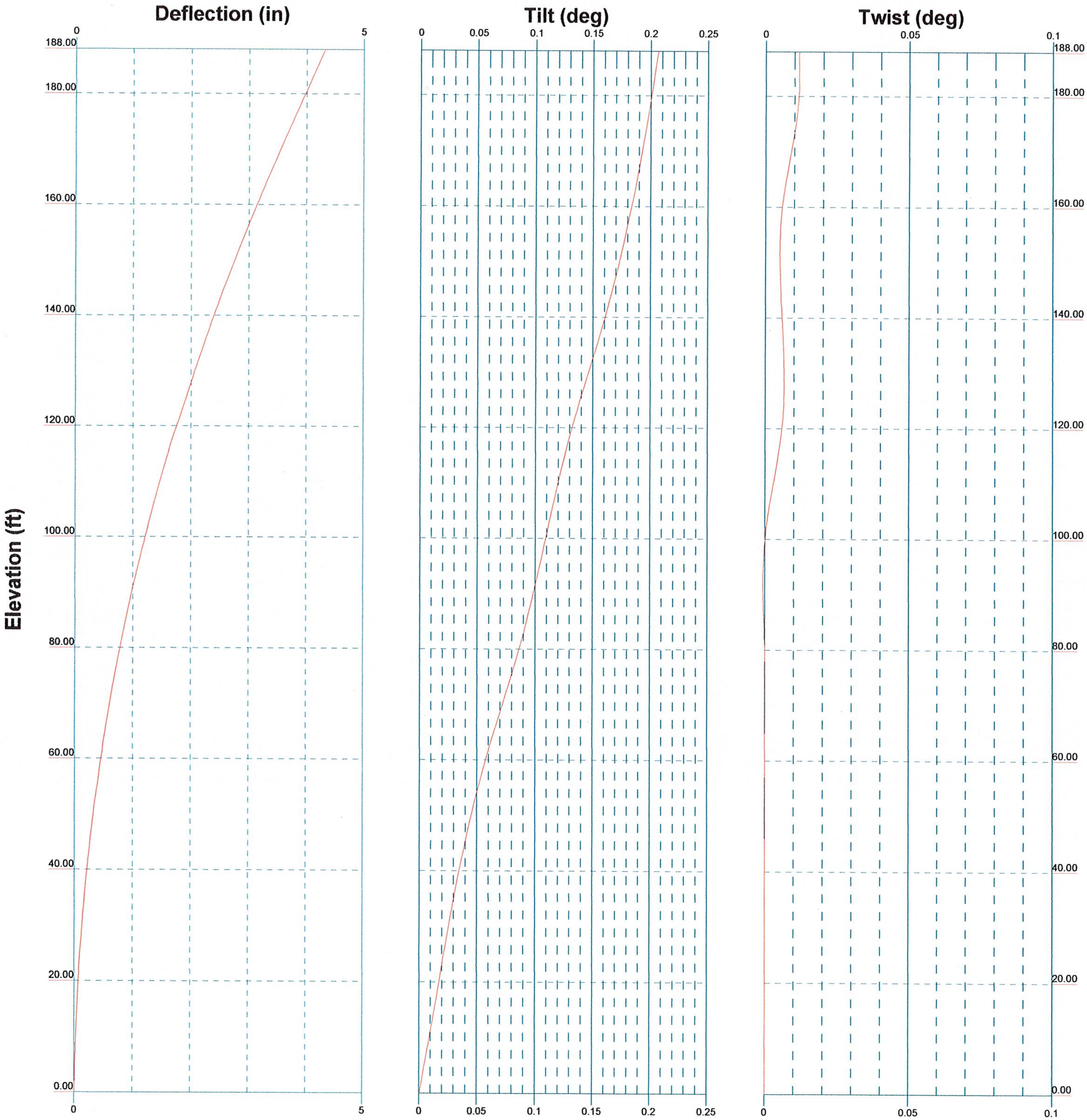




Ramaker & Associates 1120 Dallas St. Sauk City, WI 53583 Phone: (608) 643-4100 FAX: (608) 643-7999	Job: ***Balch Tower (CT03XC090)***		
	Project: ***22997***		
	Client: Sprint	Drawn by: A. Kraus	App'd:
	Code: TIA-222-G	Date: 05/29/13	Scale: NTS
	Path: I:\22900\22997\Structural\Risa\22997 rev4.eri		Dwg No. E-4

TIA-222-G - Service - 60 mph

Maximum Values

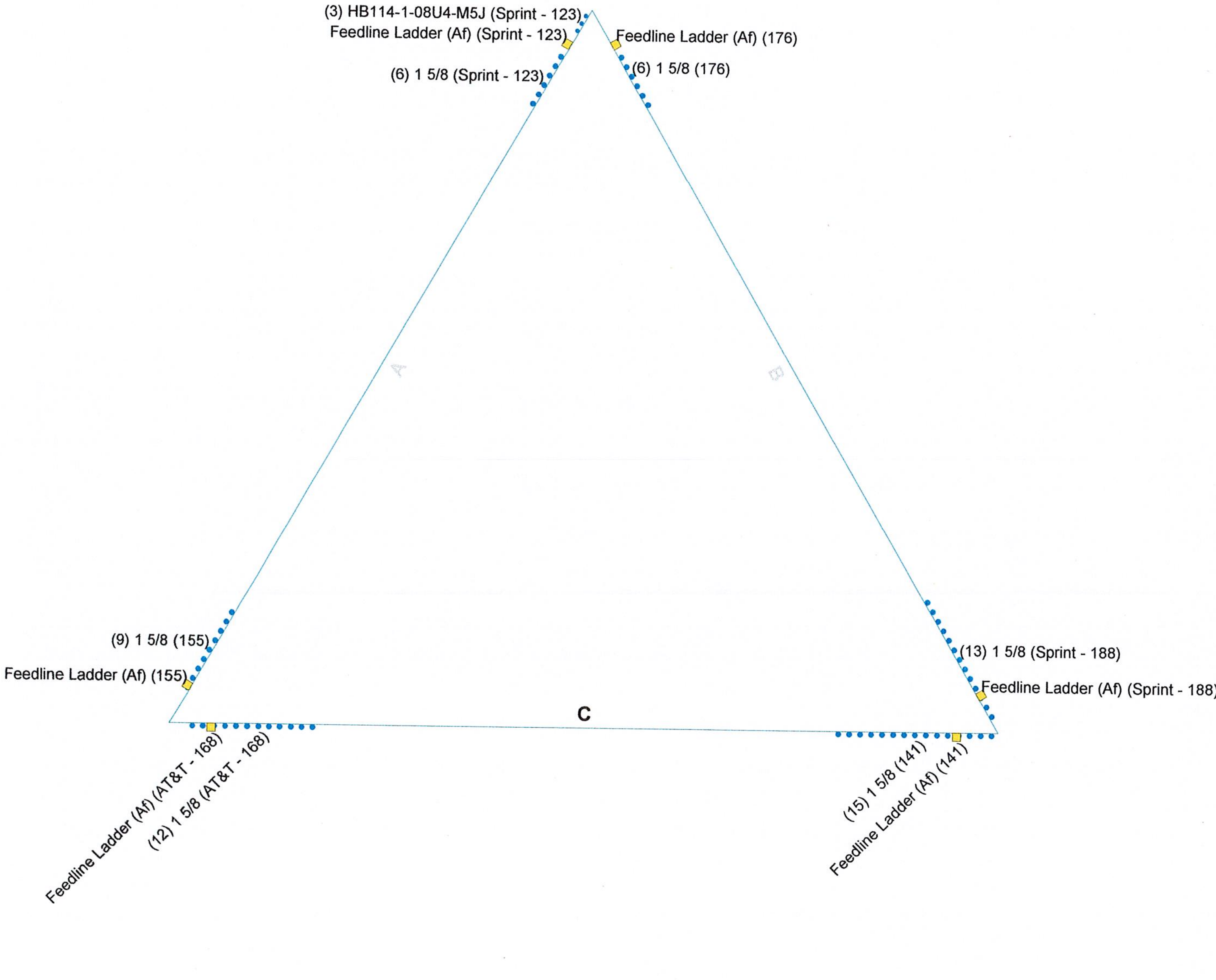


Ramaker & Associates
1120 Dallas St.
Sauk City, WI 53583
Phone: (608) 643-4100
FAX: (608) 643-7999

Job: Balch Tower (CT03XC090)		
Project: 22997		
Client: Sprint	Drawn by: A. Kraus	App'd:
Code: TIA-222-G	Date: 05/29/13	Scale: NTS
Path: I:\22900\22997\Structural\Risa\22997 rev4.eri		Dwg No. E-5

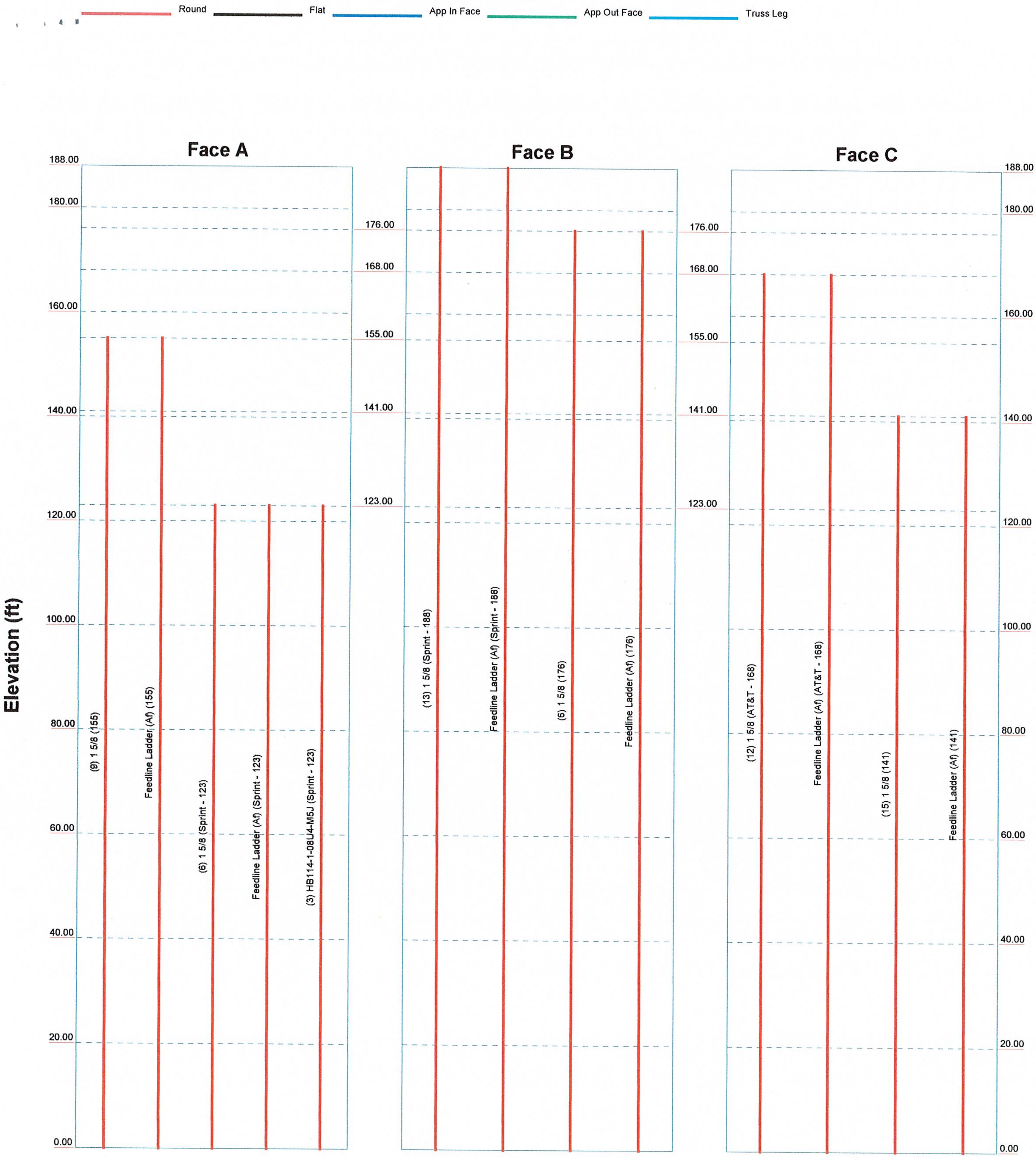
Feedline Plan

Round Flat App In Face App Out Face



Ramaker & Associates 1120 Dallas St. Sauk City, WI 53583 Phone: (608) 643-4100 FAX: (608) 643-7999	Job: **Balch Tower (CT03XC090)**		
	Project: **22997**		
	Client: Sprint	Drawn by: A. Kraus	App'd:
	Code: TIA-222-G	Date: 05/29/13	Scale: NTS
	Path: I:\22900\22997\Structural\Risa\22997 rev4.eri		Dwg No. E-7

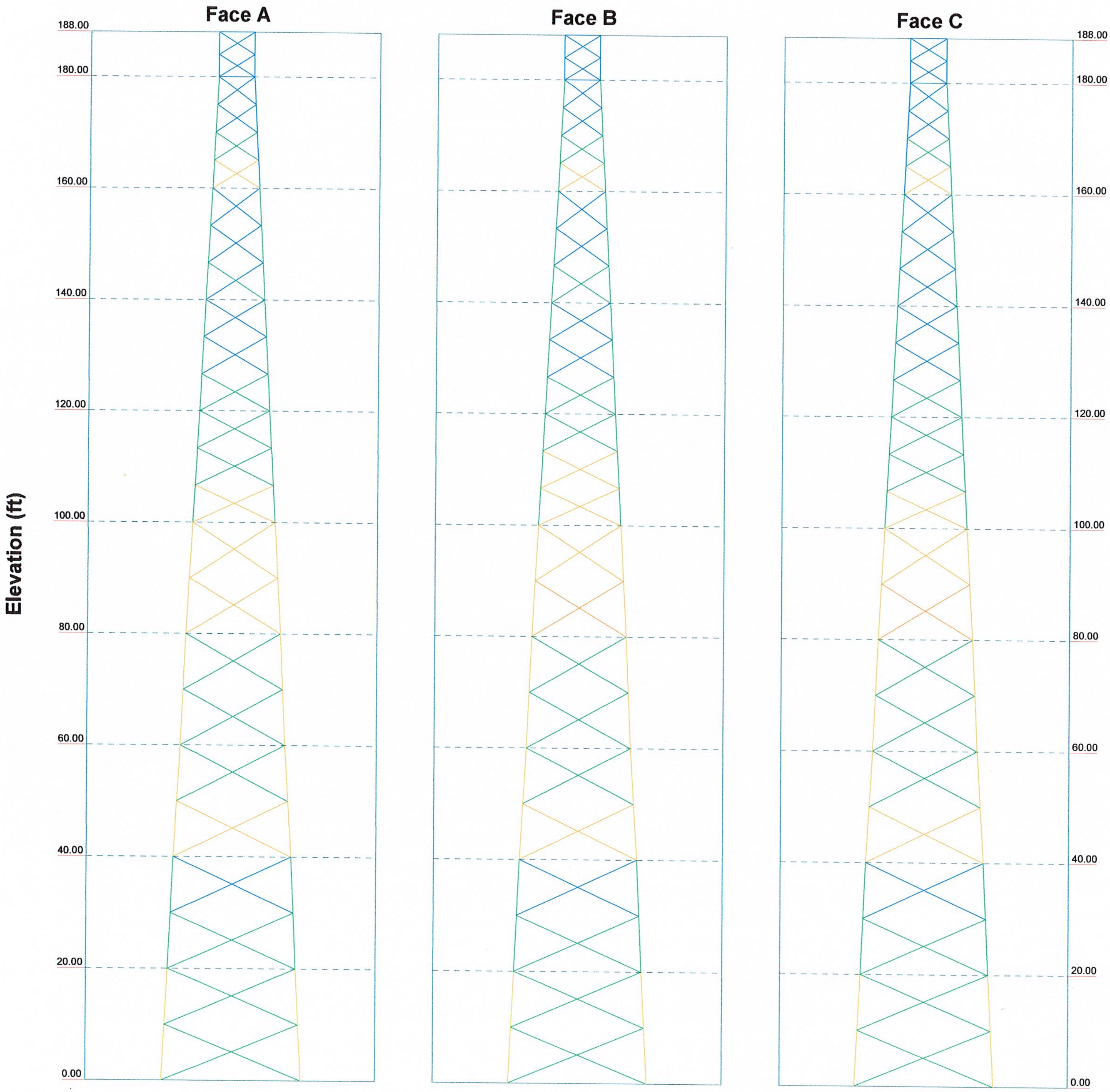
Feedline Distribution Chart
0' - 188'



Ramaker & Associates 1120 Dallas St. Sauk City, WI 53583 Phone: (608) 643-4100 FAX: (608) 643-7999	Job: **Balch Tower (CT03XC090)**		
	Project: **22997**		
	Client: Sprint	Drawn by: A. Kraus	App'd:
	Code: TIA-222-G	Date: 05/29/13	Scale: NTS
	Path: I:\22900\22997\Structural\Risa\22997 rev4.eri		Dwg No. E-7

Stress Distribution Chart
0' - 188'

> 100% | 90%-100% | 75%-90% | 50%-75% | < 50% Overstress



Ramaker & Associates 1120 Dallas St. Sauk City, WI 53583 Phone: (608) 643-4100 FAX: (608) 643-7999	Job: ***Balch Tower (CT03XC090)***		
	Project: ***22997***		
	Client: Sprint	Drawn by: A. Kraus	App'd:
	Code: TIA-222-G	Date: 05/29/13	Scale: NTS
	Path: I:\22900\22997\Structural\Risa\22997 rev4.eri		Dwg No. E-8

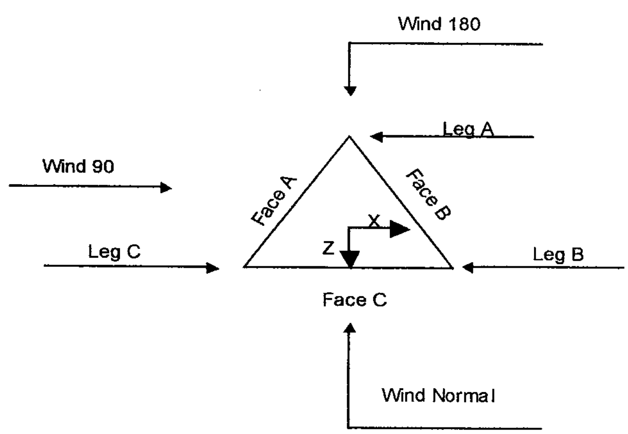
APPENDIX B

TOWER CALCULATIONS

Tower Input Data

The main tower is a 3x free standing tower with an overall height of 188.00 ft above the ground line.
The base of the tower is set at an elevation of 0.00 ft above the ground line.
The face width of the tower is 6.58 ft at the top and 25.04 ft at the base.
This tower is designed using the TIA-222-G standard.
The following design criteria apply:

- Tower is located in Hartford County, Connecticut.
- Basic wind speed of 98 mph.
- Structure Class II.
- Exposure Category C.
- Topographic Category 1.
- Crest Height 0.00 ft.
- Nominal ice thickness of 1.0000 in.
- Ice thickness is considered to increase with height.
- Ice density of 56 pcf.
- A wind speed of 50 mph is used in combination with ice.
- Temperature drop of 50 °F.
- Deflections calculated using a wind speed of 60 mph.
- A non-linear (P-delta) analysis was used.
- Pressures are calculated at each section.
- Stress ratio used in tower member design is 1.
- Local bending stresses due to climbing loads, feedline supports, and appurtenance mounts are not considered.



Triangular Tower

Tower Section Geometry

Tower Section	*Tower Elevation* *ft*	*Assembly Database*	*Description*	*Section Width* *ft*	*Number of Sections*	*Section Length* *ft*
T1	188.00-180.00			6.58	1	8.00
T2	180.00-160.00			6.58	1	20.00
T3	160.00-140.00			8.54	1	20.00
T4	140.00-120.00			10.61	1	20.00
T5	120.00-100.00			12.74	1	20.00
T6	100.00-80.00			14.83	1	20.00
T7	80.00-60.00			16.92	1	20.00
T8	60.00-40.00			18.88	1	20.00
T9	40.00-20.00			21.13	1	20.00
T10	20.00-0.00			23.04	1	20.00

Tower Section Geometry *(cont'd)*

Tower Section	*Tower Elevation* *ft*	*Diagonal Spacing* *ft*	*Bracing Type*	*Has K Brace End Panels*	*Has Horizontals*	*Top Girt Offset* *in*	*Bottom Girt Offset* *in*
T1	188.00-180.00	4.00	X Brace	No	No	0.0000	0.0000
T2	180.00-160.00	5.00	X Brace	No	No	0.0000	0.0000
T3	160.00-140.00	6.67	X Brace	No	No	0.0000	0.0000
T4	140.00-120.00	6.67	X Brace	No	No	0.0000	0.0000
T5	120.00-100.00	6.67	X Brace	No	No	0.0000	0.0000
T6	100.00-80.00	10.00	X Brace	No	No	0.0000	0.0000
T7	80.00-60.00	10.00	X Brace	No	No	0.0000	0.0000
T8	60.00-40.00	10.00	X Brace	No	No	0.0000	0.0000
T9	40.00-20.00	10.00	X Brace	No	No	0.0000	0.0000
T10	20.00-0.00	10.00	X Brace	No	No	0.0000	0.0000

Tower Section Geometry *(cont'd)*

Tower Elevation *ft*	*Leg Type*	*Leg Size*	*Leg Grade*	*Diagonal Type*	*Diagonal Size*	*Diagonal Grade*
T1 188.00-180.00	Pipe	ROHN 2.5 STD	A572-50 (50 ksi)	Equal Angle	L1 3/4x1 3/4x3/16	A36 (36 ksi)
T2 180.00-160.00	Pipe	ROHN 2.5 STD	A572-50 (50 ksi)	Equal Angle	L1 3/4x1 3/4x3/16	A36 (36 ksi)
T3 160.00-140.00	Pipe	ROHN 3 EH	A572-50 (50 ksi)	Equal Angle	L2 1/2x2 1/2x1/4	A36 (36 ksi)
T4 140.00-120.00	Pipe	ROHN 4 EH	A572-50 (50 ksi)	Equal Angle	L3x3x1/4	A572-50 (50 ksi)
T5 120.00-100.00	Pipe	ROHN 5 EH	A572-50 (50 ksi)	Equal Angle	L3x3x1/4	A572-50 (50 ksi)
T6 100.00-80.00	Pipe	ROHN 6 EHS	A572-50 (50 ksi)	Equal Angle	L3 1/2x3 1/2x1/4	A572-50 (50 ksi)
T7 80.00-60.00	Pipe	ROHN 6 EH	A572-50 (50 ksi)	Equal Angle	L4x4x5/16	A572-50 (50 ksi)

Tower Elevation ft	*Leg Type*	*Leg Size*	*Leg Grade*	*Diagonal Type*	*Diagonal Size*	*Diagonal Grade*
T8 60.00-40.00	Pipe	ROHN 8 EHS	A572-50 (50 ksi)	Equal Angle	L4x4x5/16	A572-50 (50 ksi)
T9 40.00-20.00	Pipe	ROHN 8 EH	A572-50 (50 ksi)	Equal Angle	L5x5x5/16	A572-50 (50 ksi)
T10 20.00-0.00	Pipe	ROHN 8 EH	A572-50 (50 ksi)	Equal Angle	L5x5x5/16	A572-50 (50 ksi)

Tower Section Geometry *(cont'd)*

Tower Elevation ft	*Top Girt Type*	*Top Girt Size*	*Top Girt Grade*	*Bottom Girt Type*	*Bottom Girt Size*	*Bottom Girt Grade*
T1 188.00-180.00	Equal Angle	L1 3/4x1 3/4x3/16	A36 (36 ksi)	Solid Round		A36 (36 ksi)
T2 180.00-160.00	Equal Angle	L1 3/4x1 3/4x3/16	A36 (36 ksi)	Solid Round		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 188.00-180.00	0.00	0.0000	A36 (36 ksi)	1	1	1.05	36.0000	36.0000
T2 180.00-160.00	0.00	0.0000	A36 (36 ksi)	1	1	1.05	36.0000	36.0000
T3 160.00-140.00	0.00	0.0000	A36 (36 ksi)	1	1	1.05	36.0000	36.0000
T4 140.00-120.00	0.00	0.0000	A36 (36 ksi)	1	1	1.05	36.0000	36.0000
T5 120.00-100.00	0.00	0.0000	A36 (36 ksi)	1	1	1.05	36.0000	36.0000
T6 100.00-80.00	0.00	0.0000	A36 (36 ksi)	1	1	1.05	36.0000	36.0000
T7 80.00-60.00	0.00	0.0000	A36 (36 ksi)	1	1	1.05	36.0000	36.0000
T8 60.00-40.00	0.00	0.0000	A36 (36 ksi)	1	1	1.05	36.0000	36.0000
T9 40.00-20.00	0.00	0.0000	A36 (36 ksi)	1	1	1.05	36.0000	36.0000
T10 20.00-0.00	0.00	0.0000	A36 (36 ksi)	1	1	1.05	36.0000	36.0000

Tower Section Geometry *(cont'd)*

K Factors[1]

Tower Elevation *ft*	*Calc K Single Angles*	*Calc K Solid Rounds*	*Legs*	*X Brace Diags* *X* *Y*	*K Brace Diags* *X* *Y*	*Single Diags* *X* *Y*	*Girts* *X* *Y*	*Horiz.* *X* *Y*	*Sec. Horiz.* *X* *Y*	*Inner Brace* *X* *Y*
T1 188.00-180.00	Yes	Yes	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T2 180.00-160.00	Yes	Yes	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T3 160.00-140.00	Yes	Yes	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T4 140.00-120.00	Yes	Yes	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T5 120.00-100.00	Yes	Yes	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T6 100.00-80.00	Yes	Yes	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T7 80.00-60.00	Yes	Yes	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T8 60.00-40.00	Yes	Yes	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T9 40.00-20.00	Yes	Yes	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T10 20.00-0.00	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 188.00-180.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T2 180.00-160.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T3 160.00-140.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T4 140.00-120.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T5 120.00-100.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T6 100.00-80.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T7 80.00-60.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T8 60.00-40.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T9 40.00-20.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T10 20.00-0.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Leg Connection Type	Leg		Diagonal		Top Girt		Bottom Girt		Mid Girt		Long Horizontal		Short Horizontal	
		Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.
T1 188.00-180.00	Flange	0.6250 A325N	4	0.6250 A325N	1	0.6250 A325N	1	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T2 180.00-160.00	Flange	0.7500 A325N	4	0.6250 A325N	1	0.6250 A325N	1	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T3 160.00-140.00	Flange	0.8750 A325N	4	0.6250 A325N	1	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T4 140.00-120.00	Flange	1.0000 A325N	4	0.6250 A325N	1	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T5 120.00-100.00	Flange	1.0000 A325N	6	0.7500 A325N	1	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T6 100.00-80.00	Flange	1.0000 A325N	6	0.7500 A325N	1	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T7 80.00-60.00	Flange	1.0000 A325N	8	0.7500 A325N	1	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T8 60.00-40.00	Flange	1.0000 A325N	8	0.7500 A325N	1	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T9 40.00-20.00	Flange	1.0000 A325N	8	0.7500 A325X	1	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T10 20.00-0.00	Flange	1.0000 A354-BC	10	0.7500 A325X	1	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0

Feed Line/Linear Appurtenances - Entered As Round Or Flat

Description	Face or Leg	Allow Shield	Component Type	Placement ft	Face Offset in	Lateral Offset (Frac FW)	#	# Per Row	Clear Spacing in	Width or Diameter in	Perimeter in	Weight plf
1 5/8 (Sprint - 188)	B	No	Ar (CaAa)	188.00 - 0.00	0.0000	0.4	13	13	1.9800	1.9800		1.04
Feedline Ladder (Af) (Sprint - 188)	B	No	Af (CaAa)	188.00 - 0.00	0.0000	0.45	1	1	3.0000	3.0000		8.40
**************												
1 5/8 (176)	B	No	Ar (CaAa)	176.00 - 0.00	0.0000	-0.4	6	6	1.9800	1.9800		1.04
Feedline Ladder (Af) (176)	B	No	Af (CaAa)	176.00 - 0.00	0.0000	-0.45	1	1	3.0000	3.0000		8.40
**************												
1 5/8 (AT&T - 168)	C	No	Ar (CaAa)	168.00 - 0.00	0.0000	0.4	12	12	1.9800	1.9800		1.04
Feedline Ladder (Af) (AT&T - 168)	C	No	Af (CaAa)	168.00 - 0.00	0.0000	0.45	1	1	3.0000	3.0000		8.40
**************												
1 5/8 (155)	A	No	Ar (CaAa)	155.00 - 0.00	0.0000	-0.4	9	9	1.9800	1.9800		1.04
Feedline Ladder (Af) (155)	A	No	Af (CaAa)	155.00 - 0.00	0.0000	-0.45	1	1	3.0000	3.0000		8.40
**************												
1 5/8 (141)	C	No	Ar (CaAa)	141.00 - 0.00	0.0000	-0.4	15	15	1.9800	1.9800		1.04
Feedline Ladder (Af)	C	No	Af (CaAa)	141.00 - 0.00	0.0000	-0.45	1	1	3.0000	3.0000		8.40

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
(141) **************												
1 5/8 (Sprint - 123)	A	No	Ar (CaAa)	123.00 - 0.00	0.0000	0.4	6	6	1.9800	1.9800		1.04
Feedline Ladder (Af) (Sprint - 123)	A	No	Af (CaAa)	123.00 - 0.00	0.0000	0.45	1	1	3.0000	3.0000		8.40
HB114-1-08U4-M5J (Sprint - 123)	A	No	Ar (CaAa)	123.00 - 0.00	0.0000	0.48	3	3	1.5400	1.5400		1.08

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	188.00-180.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	24.592	0.000	175.36
		C	0.000	0.000	0.000	0.000	0.00
T2	180.00-160.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	88.488	0.000	672.64
		C	0.000	0.000	23.008	0.000	167.04
T3	160.00-140.00	A	0.000	0.000	34.230	0.000	266.40
		B	0.000	0.000	95.240	0.000	731.20
		C	0.000	0.000	60.990	0.000	441.60
T4	140.00-120.00	A	0.000	0.000	52.090	0.000	408.84
		B	0.000	0.000	95.240	0.000	731.20
		C	0.000	0.000	126.920	0.000	897.60
T5	120.00-100.00	A	0.000	0.000	88.640	0.000	712.80
		B	0.000	0.000	95.240	0.000	731.20
		C	0.000	0.000	126.920	0.000	897.60
T6	100.00-80.00	A	0.000	0.000	88.640	0.000	712.80
		B	0.000	0.000	95.240	0.000	731.20
		C	0.000	0.000	126.920	0.000	897.60
T7	80.00-60.00	A	0.000	0.000	88.640	0.000	712.80
		B	0.000	0.000	95.240	0.000	731.20
		C	0.000	0.000	126.920	0.000	897.60
T8	60.00-40.00	A	0.000	0.000	88.640	0.000	712.80
		B	0.000	0.000	95.240	0.000	731.20
		C	0.000	0.000	126.920	0.000	897.60
T9	40.00-20.00	A	0.000	0.000	88.640	0.000	712.80
		B	0.000	0.000	95.240	0.000	731.20
		C	0.000	0.000	126.920	0.000	897.60
T10	20.00-0.00	A	0.000	0.000	88.640	0.000	712.80
		B	0.000	0.000	95.240	0.000	731.20
		C	0.000	0.000	126.920	0.000	897.60

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	188.00-180.00	A	2.375	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	62.466	0.000	1311.55
		C		0.000	0.000	0.000	0.000	0.00

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft²	A_F ft²	C_AA_A In Face ft²	C_AA_A Out Face ft²	Weight lb
T2	180.00-160.00	A	2.356	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	226.175	0.000	4727.01
		C		0.000	0.000	58.466	0.000	1221.85
T3	160.00-140.00	A	2.327	0.000	0.000	87.388	0.000	1814.77
		B		0.000	0.000	243.147	0.000	5040.57
		C		0.000	0.000	154.653	0.000	3204.56
T4	140.00-120.00	A	2.294	0.000	0.000	134.410	0.000	2741.09
		B		0.000	0.000	242.497	0.000	4980.11
		C		0.000	0.000	320.628	0.000	6573.23
T5	120.00-100.00	A	2.256	0.000	0.000	236.623	0.000	4658.73
		B		0.000	0.000	241.752	0.000	4910.92
		C		0.000	0.000	319.902	0.000	6485.30
T6	100.00-80.00	A	2.211	0.000	0.000	235.435	0.000	4577.69
		B		0.000	0.000	240.873	0.000	4829.71
		C		0.000	0.000	319.047	0.000	6382.01
T7	80.00-60.00	A	2.156	0.000	0.000	233.982	0.000	4479.19
		B		0.000	0.000	239.798	0.000	4730.87
		C		0.000	0.000	318.000	0.000	6256.12
T8	60.00-40.00	A	2.085	0.000	0.000	232.095	0.000	4352.32
		B		0.000	0.000	238.402	0.000	4603.33
		C		0.000	0.000	316.640	0.000	6093.43
T9	40.00-20.00	A	1.981	0.000	0.000	229.354	0.000	4170.10
		B		0.000	0.000	236.374	0.000	4419.69
		C		0.000	0.000	314.664	0.000	5858.63
T10	20.00-0.00	A	1.775	0.000	0.000	223.931	0.000	3816.79
		B		0.000	0.000	232.359	0.000	4062.02
		C		0.000	0.000	310.750	0.000	5399.39

Feed Line Center of Pressure

Section	Elevation ft	CP_X in	CP_Z in	CP_X Ice in	CP_Z Ice in
T1	188.00-180.00	6.2903	2.7320	5.4519	2.3959
T2	180.00-160.00	3.2810	0.9573	3.0345	0.9132
T3	160.00-140.00	-1.0451	2.7021	-1.0236	2.6536
T4	140.00-120.00	1.4743	4.2981	1.4700	4.3063
T5	120.00-100.00	1.3525	2.3078	1.3670	2.5235
T6	100.00-80.00	1.5435	2.6314	1.5879	2.9291
T7	80.00-60.00	1.7085	2.9107	1.7791	3.2801
T8	60.00-40.00	1.8527	3.1546	1.9693	3.6292
T9	40.00-20.00	1.9786	3.3674	2.1566	3.9731
T10	20.00-0.00	2.1330	3.6289	2.3769	4.3777

Shielding Factor Ka

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T1	1	1 5/8	180.00 - 188.00	0.6000	0.4859
T1	2	Feedline Ladder (Af)	180.00 - 188.00	0.6000	0.4859
T2	1	1 5/8	160.00 - 180.00	0.6000	0.5937

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T2	2	Feedline Ladder (Af)	160.00 - 180.00	0.6000	0.5937
T2	4	1 5/8	160.00 - 176.00	0.6000	0.5937
T2	5	Feedline Ladder (Af)	160.00 - 176.00	0.6000	0.5937
T2	7	1 5/8	160.00 - 168.00	0.6000	0.5937
T2	8	Feedline Ladder (Af)	160.00 - 168.00	0.6000	0.5937
T3	1	1 5/8	140.00 - 160.00	0.6000	0.6000
T3	2	Feedline Ladder (Af)	140.00 - 160.00	0.6000	0.6000
T3	4	1 5/8	140.00 - 160.00	0.6000	0.6000
T3	5	Feedline Ladder (Af)	140.00 - 160.00	0.6000	0.6000
T3	7	1 5/8	140.00 - 160.00	0.6000	0.6000
T3	8	Feedline Ladder (Af)	140.00 - 160.00	0.6000	0.6000
T3	10	1 5/8	140.00 - 155.00	0.6000	0.6000
T3	11	Feedline Ladder (Af)	140.00 - 155.00	0.6000	0.6000
T3	13	1 5/8	140.00 - 141.00	0.6000	0.6000
T3	14	Feedline Ladder (Af)	140.00 - 141.00	0.6000	0.6000
T4	1	1 5/8	120.00 - 140.00	0.6000	0.6000
T4	2	Feedline Ladder (Af)	120.00 - 140.00	0.6000	0.6000
T4	4	1 5/8	120.00 - 140.00	0.6000	0.6000
T4	5	Feedline Ladder (Af)	120.00 - 140.00	0.6000	0.6000
T4	7	1 5/8	120.00 - 140.00	0.6000	0.6000
T4	8	Feedline Ladder (Af)	120.00 - 140.00	0.6000	0.6000
T4	10	1 5/8	120.00 - 140.00	0.6000	0.6000
T4	11	Feedline Ladder (Af)	120.00 - 140.00	0.6000	0.6000
T4	13	1 5/8	120.00 - 140.00	0.6000	0.6000
T4	14	Feedline Ladder (Af)	120.00 - 140.00	0.6000	0.6000
T4	16	1 5/8	120.00 - 123.00	0.6000	0.6000
T4	17	Feedline Ladder (Af)	120.00 - 123.00	0.6000	0.6000
T4	18	HB114-1-08U4-M5J	120.00 - 123.00	0.6000	0.6000
T5	1	1 5/8	100.00 - 120.00	0.6000	0.6000
T5	2	Feedline Ladder (Af)	100.00 - 120.00	0.6000	0.6000
T5	4	1 5/8	100.00 - 120.00	0.6000	0.6000
T5	5	Feedline Ladder (Af)	100.00 - 120.00	0.6000	0.6000
T5	7	1 5/8	100.00 - 120.00	0.6000	0.6000
T5	8	Feedline Ladder (Af)	100.00 - 120.00	0.6000	0.6000
T5	10	1 5/8	100.00 - 120.00	0.6000	0.6000
T5	11	Feedline Ladder (Af)	100.00 - 120.00	0.6000	0.6000
T5	13	1 5/8	100.00 - 120.00	0.6000	0.6000
T5	14	Feedline Ladder (Af)	100.00 - 120.00	0.6000	0.6000
T5	16	1 5/8	100.00 - 120.00	0.6000	0.6000
T5	17	Feedline Ladder (Af)	100.00 - 120.00	0.6000	0.6000
T5	18	HB114-1-08U4-M5J	100.00 - 120.00	0.6000	0.6000
T6	1	1 5/8	80.00 - 100.00	0.6000	0.6000
T6	2	Feedline Ladder (Af)	80.00 - 100.00	0.6000	0.6000
T6	4	1 5/8	80.00 - 100.00	0.6000	0.6000
T6	5	Feedline Ladder (Af)	80.00 - 100.00	0.6000	0.6000
T6	7	1 5/8	80.00 - 100.00	0.6000	0.6000
T6	8	Feedline Ladder (Af)	80.00 - 100.00	0.6000	0.6000
T6	10	1 5/8	80.00 - 100.00	0.6000	0.6000
T6	11	Feedline Ladder (Af)	80.00 - 100.00	0.6000	0.6000
T6	13	1 5/8	80.00 - 100.00	0.6000	0.6000
T6	14	Feedline Ladder (Af)	80.00 - 100.00	0.6000	0.6000
T6	16	1 5/8	80.00 - 100.00	0.6000	0.6000
T6	17	Feedline Ladder (Af)	80.00 - 100.00	0.6000	0.6000
T6	18	HB114-1-08U4-M5J	80.00 - 100.00	0.6000	0.6000
T7	1	1 5/8	60.00 - 80.00	0.6000	0.6000
T7	2	Feedline Ladder (Af)	60.00 - 80.00	0.6000	0.6000
T7	4	1 5/8	60.00 - 80.00	0.6000	0.6000
T7	5	Feedline Ladder (Af)	60.00 - 80.00	0.6000	0.6000
T7	7	1 5/8	60.00 - 80.00	0.6000	0.6000
T7	8	Feedline Ladder (Af)	60.00 - 80.00	0.6000	0.6000
T7	10	1 5/8	60.00 - 80.00	0.6000	0.6000
T7	11	Feedline Ladder (Af)	60.00 - 80.00	0.6000	0.6000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T7	13	1 5/8	60.00 - 80.00	0.6000	0.6000
T7	14	Feedline Ladder (Af)	60.00 - 80.00	0.6000	0.6000
T7	16	1 5/8	60.00 - 80.00	0.6000	0.6000
T7	17	Feedline Ladder (Af)	60.00 - 80.00	0.6000	0.6000
T7	18	HB114-1-08U4-M5J	60.00 - 80.00	0.6000	0.6000
T8	1	1 5/8	40.00 - 60.00	0.6000	0.6000
T8	2	Feedline Ladder (Af)	40.00 - 60.00	0.6000	0.6000
T8	4	1 5/8	40.00 - 60.00	0.6000	0.6000
T8	5	Feedline Ladder (Af)	40.00 - 60.00	0.6000	0.6000
T8	7	1 5/8	40.00 - 60.00	0.6000	0.6000
T8	8	Feedline Ladder (Af)	40.00 - 60.00	0.6000	0.6000
T8	10	1 5/8	40.00 - 60.00	0.6000	0.6000
T8	11	Feedline Ladder (Af)	40.00 - 60.00	0.6000	0.6000
T8	13	1 5/8	40.00 - 60.00	0.6000	0.6000
T8	14	Feedline Ladder (Af)	40.00 - 60.00	0.6000	0.6000
T8	16	1 5/8	40.00 - 60.00	0.6000	0.6000
T8	17	Feedline Ladder (Af)	40.00 - 60.00	0.6000	0.6000
T8	18	HB114-1-08U4-M5J	40.00 - 60.00	0.6000	0.6000
T9	1	1 5/8	20.00 - 40.00	0.6000	0.6000
T9	2	Feedline Ladder (Af)	20.00 - 40.00	0.6000	0.6000
T9	4	1 5/8	20.00 - 40.00	0.6000	0.6000
T9	5	Feedline Ladder (Af)	20.00 - 40.00	0.6000	0.6000
T9	7	1 5/8	20.00 - 40.00	0.6000	0.6000
T9	8	Feedline Ladder (Af)	20.00 - 40.00	0.6000	0.6000
T9	10	1 5/8	20.00 - 40.00	0.6000	0.6000
T9	11	Feedline Ladder (Af)	20.00 - 40.00	0.6000	0.6000
T9	13	1 5/8	20.00 - 40.00	0.6000	0.6000
T9	14	Feedline Ladder (Af)	20.00 - 40.00	0.6000	0.6000
T9	16	1 5/8	20.00 - 40.00	0.6000	0.6000
T9	17	Feedline Ladder (Af)	20.00 - 40.00	0.6000	0.6000
T9	18	HB114-1-08U4-M5J	20.00 - 40.00	0.6000	0.6000
T10	1	1 5/8	0.00 - 20.00	0.6000	0.6000
T10	2	Feedline Ladder (Af)	0.00 - 20.00	0.6000	0.6000
T10	4	1 5/8	0.00 - 20.00	0.6000	0.6000
T10	5	Feedline Ladder (Af)	0.00 - 20.00	0.6000	0.6000
T10	7	1 5/8	0.00 - 20.00	0.6000	0.6000
T10	8	Feedline Ladder (Af)	0.00 - 20.00	0.6000	0.6000
T10	10	1 5/8	0.00 - 20.00	0.6000	0.6000
T10	11	Feedline Ladder (Af)	0.00 - 20.00	0.6000	0.6000
T10	13	1 5/8	0.00 - 20.00	0.6000	0.6000
T10	14	Feedline Ladder (Af)	0.00 - 20.00	0.6000	0.6000
T10	16	1 5/8	0.00 - 20.00	0.6000	0.6000
T10	17	Feedline Ladder (Af)	0.00 - 20.00	0.6000	0.6000
T10	18	HB114-1-08U4-M5J	0.00 - 20.00	0.6000	0.6000

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert (ft, ft, ft)	Azimuth Adjustment (°)	Placement (ft)		C_AA_A Front (ft^2)	C_AA_A Side (ft^2)	Weight (lb)
10' Omni	B	From Leg	0.00	0.0000	188.00	No Ice	2.50	2.50	30.00

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft²	C_AA_A Side ft²	Weight lb
			0.00			1/2" Ice	3.53	3.53	48.64
			5.00			1" Ice	4.58	4.58	73.79
*************									
(4) DB844H90E-XY w/Mount Pipe (Sprint)	A	From Leg	4.00 0.00 0.00	0.0000	188.00	No Ice 1/2" Ice 1" Ice	3.58 4.20 4.73	5.40 6.49 7.30	35.55 76.59 127.74
(4) DB844H90E-XY w/Mount Pipe (Sprint)	B	From Leg	4.00 0.00 0.00	0.0000	188.00	No Ice 1/2" Ice 1" Ice	3.58 4.20 4.73	5.40 6.49 7.30	35.55 76.59 127.74
(4) DB844H90E-XY w/Mount Pipe (Sprint)	C	From Leg	4.00 0.00 0.00	0.0000	188.00	No Ice 1/2" Ice 1" Ice	3.58 4.20 4.73	5.40 6.49 7.30	35.55 76.59 127.74
Rohn 14' Rotable Platform (Sprint)	C	None		0.0000	188.00	No Ice 1/2" Ice 1" Ice	41.00 56.00 71.00	41.00 56.00 71.00	2500.00 3000.00 3500.00
*************									
6' x 1' Panel Antenna w/Mount Pipe	A	From Leg	1.00 0.00 0.00	0.0000	176.00	No Ice 1/2" Ice 1" Ice	8.40 8.95 9.51	6.13 7.07 7.90	61.90 122.64 194.54
6' x 1' Panel Antenna w/Mount Pipe	B	From Leg	1.00 0.00 0.00	0.0000	176.00	No Ice 1/2" Ice 1" Ice	8.40 8.95 9.51	6.13 7.07 7.90	61.90 122.64 194.54
6' x 1' Panel Antenna w/Mount Pipe	C	From Leg	1.00 0.00 0.00	0.0000	176.00	No Ice 1/2" Ice 1" Ice	8.40 8.95 9.51	6.13 7.07 7.90	61.90 122.64 194.54
*************									
(2) DUO1417-8686 w/Mount Pipe (AT&T)	A	From Leg	4.00 -4.00 0.00	0.0000	168.00	No Ice 1/2" Ice 1" Ice	7.25 7.96 8.57	5.86 6.96 7.78	45.85 103.71 172.26
(2) DUO1417-8686 w/Mount Pipe (AT&T)	B	From Leg	4.00 -4.00 0.00	0.0000	168.00	No Ice 1/2" Ice 1" Ice	7.25 7.96 8.57	5.86 6.96 7.78	45.85 103.71 172.26
(2) DUO1417-8686 w/Mount Pipe (AT&T)	C	From Leg	4.00 -4.00 0.00	0.0000	168.00	No Ice 1/2" Ice 1" Ice	7.25 7.96 8.57	5.86 6.96 7.78	45.85 103.71 172.26
7770.00 w/Mount Pipe (AT&T)	A	From Leg	4.00 -4.00 0.00	0.0000	168.00	No Ice 1/2" Ice 1" Ice	6.98 7.87 8.77	5.06 6.33 7.63	59.85 112.68 177.76
7770.00 w/Mount Pipe (AT&T)	B	From Leg	4.00 -4.00 0.00	0.0000	168.00	No Ice 1/2" Ice 1" Ice	6.98 7.87 8.77	5.06 6.33 7.63	59.85 112.68 177.76
7770.00 w/Mount Pipe (AT&T)	C	From Leg	4.00 -4.00 0.00	0.0000	168.00	No Ice 1/2" Ice 1" Ice	6.98 7.87 8.77	5.06 6.33 7.63	59.85 112.68 177.76
LGP186nn (AT&T)	A	From Leg	2.00 -4.00 0.00	0.0000	168.00	No Ice 1/2" Ice 1" Ice	0.70 0.81 0.94	0.28 0.37 0.47	9.90 14.43 20.46
LGP186nn (AT&T)	B	From Leg	2.00 -4.00 0.00	0.0000	168.00	No Ice 1/2" Ice 1" Ice	0.70 0.81 0.94	0.28 0.37 0.47	9.90 14.43 20.46
LGP186nn (AT&T)	C	From Leg	2.00 -4.00 0.00	0.0000	168.00	No Ice 1/2" Ice 1" Ice	0.70 0.81 0.94	0.28 0.37 0.47	9.90 14.43 20.46
Rohn 12' Boom Gate (3) (AT&T)	C	None		0.0000	168.00	No Ice 1/2" Ice 1" Ice	33.02 47.36 61.70	33.02 47.36 61.70	1670.00 2220.00 2770.00
*************									

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert (ft ft ft)	Azimuth Adjustment (°)	Placement (ft)		C_AA_A Front (ft^2)	C_AA_A Side (ft^2)	Weight (lb)
(2) 7250.03 w/Mount Pipe	A	From Leg	4.00	0.0000	155.00	No Ice	4.45	3.54	40.95
			4.00			1/2" Ice	5.03	4.72	76.25
			0.00			1" Ice	5.55	5.53	122.16
(2) 7250.03 w/Mount Pipe	B	From Leg	4.00	0.0000	155.00	No Ice	4.45	3.54	40.95
			4.00			1/2" Ice	5.03	4.72	76.25
			0.00			1" Ice	5.55	5.53	122.16
(2) 7250.03 w/Mount Pipe	C	From Leg	4.00	0.0000	155.00	No Ice	4.45	3.54	40.95
			4.00			1/2" Ice	5.03	4.72	76.25
			0.00			1" Ice	5.55	5.53	122.16
5' x 1.5' Panel Antenna w/Mount Pipe	A	From Leg	4.00	0.0000	155.00	No Ice	10.74	4.69	56.90
			4.00			1/2" Ice	11.33	5.56	120.72
			0.00			1" Ice	11.91	6.31	195.24
5' x 1.5' Panel Antenna w/Mount Pipe	B	From Leg	4.00	0.0000	155.00	No Ice	10.74	4.69	56.90
			4.00			1/2" Ice	11.33	5.56	120.72
			0.00			1" Ice	11.91	6.31	195.24
5' x 1.5' Panel Antenna w/Mount Pipe	C	From Leg	4.00	0.0000	155.00	No Ice	10.74	4.69	56.90
			4.00			1/2" Ice	11.33	5.56	120.72
			0.00			1" Ice	11.91	6.31	195.24
Pirod 12' Knockdown T-Frames (3)	A	From Leg	4.00	0.0000	155.00	No Ice	18.91	18.91	850.00
			4.00			1/2" Ice	26.78	26.78	1260.00
			0.00			1" Ice	34.65	34.65	1620.00
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(2) DB844H90E-XY w/Mount Pipe	A	From Leg	4.00	0.0000	141.00	No Ice	3.58	5.40	35.55
			-5.00			1/2" Ice	4.20	6.49	76.59
			0.00			1" Ice	4.73	7.30	127.74
(2) DB844H90E-XY w/Mount Pipe	B	From Leg	4.00	0.0000	141.00	No Ice	3.58	5.40	35.55
			-5.00			1/2" Ice	4.20	6.49	76.59
			0.00			1" Ice	4.73	7.30	127.74
(2) DB844H90E-XY w/Mount Pipe	C	From Leg	4.00	0.0000	141.00	No Ice	3.58	5.40	35.55
			-5.00			1/2" Ice	4.20	6.49	76.59
			0.00			1" Ice	4.73	7.30	127.74
4' x 1' Panel Antenna w/Mount Pipe	A	From Leg	4.00	0.0000	141.00	No Ice	5.84	4.05	53.25
			-5.00			1/2" Ice	6.29	4.67	97.01
			0.00			1" Ice	6.76	5.32	149.59
4' x 1' Panel Antenna w/Mount Pipe	B	From Leg	4.00	0.0000	141.00	No Ice	5.84	4.05	53.25
			-5.00			1/2" Ice	6.29	4.67	97.01
			0.00			1" Ice	6.76	5.32	149.59
4' x 1' Panel Antenna w/Mount Pipe	C	From Leg	4.00	0.0000	141.00	No Ice	5.84	4.05	53.25
			-5.00			1/2" Ice	6.29	4.67	97.01
			0.00			1" Ice	6.76	5.32	149.59
5' x 8" Panel Antenna w/Mount Pipe	A	From Leg	4.00	0.0000	141.00	No Ice	4.72	3.97	48.25
			-2.00			1/2" Ice	5.11	4.64	86.24
			0.00			1" Ice	5.57	5.33	133.44
5' x 8" Panel Antenna w/Mount Pipe	B	From Leg	4.00	0.0000	141.00	No Ice	4.72	3.97	48.25
			-2.00			1/2" Ice	5.11	4.64	86.24
			0.00			1" Ice	5.57	5.33	133.44
5' x 8" Panel Antenna w/Mount Pipe	C	From Leg	4.00	0.0000	141.00	No Ice	4.72	3.97	48.25
			-2.00			1/2" Ice	5.11	4.64	86.24
			0.00			1" Ice	5.57	5.33	133.44
Rohn 14' Boom Gate	A	From Leg	4.00	0.0000	141.00	No Ice	16.44	14.00	569.00
			-5.00			1/2" Ice	22.73	20.81	762.00
			0.00			1" Ice	29.02	27.62	954.00
Rohn 14' Boom Gate	B	From Leg	4.00	0.0000	141.00	No Ice	16.44	14.00	569.00
			-5.00			1/2" Ice	22.73	20.81	762.00
			0.00			1" Ice	29.02	27.62	954.00
Rohn 14' Boom Gate	C	From Leg	4.00	0.0000	141.00	No Ice	16.44	14.00	569.00
			-5.00			1/2" Ice	22.73	20.81	762.00

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft²	C_AA_A Side ft²	Weight lb
			0.00			1" Ice	29.02	27.62	954.00
*************									
(2) DB980H90E-M w/Mount Pipe (Sprint)	A	From Face	4.00 -6.00 0.00	0.0000	123.00	No Ice 1/2" Ice 1" Ice	4.27 4.86 5.37	3.86 4.95 5.75	34.05 69.84 116.19
(2) DB980H90E-M w/Mount Pipe (Sprint)	B	From Face	4.00 -6.00 0.00	0.0000	123.00	No Ice 1/2" Ice 1" Ice	4.27 4.86 5.37	3.86 4.95 5.75	34.05 69.84 116.19
(2) DB980H90E-M w/Mount Pipe (Sprint)	C	From Face	4.00 -6.00 0.00	0.0000	123.00	No Ice 1/2" Ice 1" Ice	4.27 4.86 5.37	3.86 4.95 5.75	34.05 69.84 116.19
Rohn 12' Boom Gate (3) (Sprint)	C	None		0.0000	123.00	No Ice 1/2" Ice 1" Ice	33.02 47.36 61.70	33.02 47.36 61.70	1670.00 2220.00 2770.00
*************									
APXV9ERR18-C w/Mount Pipe (Sprint)	A	From Leg	4.00 0.00 0.00	0.0000	123.00	No Ice 1/2" Ice 1" Ice	8.26 8.81 9.36	6.71 7.66 8.49	71.90 134.88 209.06
APXVSPP18-C w/Mount Pipe (Sprint)	B	From Leg	4.00 0.00 0.00	0.0000	123.00	No Ice 1/2" Ice 1" Ice	8.26 8.81 9.36	6.71 7.66 8.49	78.90 141.88 216.06
APXV9ERR18-C w/Mount Pipe (Sprint)	C	From Leg	4.00 0.00 0.00	0.0000	123.00	No Ice 1/2" Ice 1" Ice	8.26 8.81 9.36	6.71 7.66 8.49	71.90 134.88 209.06
1900MHz 4x40W RRH (Sprint)	A	From Leg	2.00 0.00 0.00	0.0000	123.00	No Ice 1/2" Ice 1" Ice	2.71 2.95 3.20	2.61 2.84 3.09	60.00 83.12 109.48
1900MHz 4x40W RRH (Sprint)	B	From Leg	2.00 0.00 0.00	0.0000	123.00	No Ice 1/2" Ice 1" Ice	2.71 2.95 3.20	2.61 2.84 3.09	60.00 83.12 109.48
1900MHz 4x40W RRH (Sprint)	C	From Leg	2.00 0.00 0.00	0.0000	123.00	No Ice 1/2" Ice 1" Ice	2.71 2.95 3.20	2.61 2.84 3.09	60.00 83.12 109.48
800MHz 2x50W RRH (Sprint)	A	From Leg	2.00 0.00 0.00	0.0000	123.00	No Ice 1/2" Ice 1" Ice	2.40 2.61 2.83	2.25 2.46 2.68	64.00 86.12 111.30
800MHz 2x50W RRH (Sprint)	B	From Leg	2.00 0.00 0.00	0.0000	123.00	No Ice 1/2" Ice 1" Ice	2.40 2.61 2.83	2.25 2.46 2.68	64.00 86.12 111.30
800MHz 2x50W RRH (Sprint)	C	From Leg	2.00 0.00 0.00	0.0000	123.00	No Ice 1/2" Ice 1" Ice	2.40 2.61 2.83	2.25 2.46 2.68	64.00 86.12 111.30

Force Totals

Load Case	Vertical Forces lb	Sum of Forces X lb	Sum of Forces Z lb	Sum of Overturning Moments, M_x lb-ft	Sum of Overturning Moments, M_z lb-ft	Sum of Torques lb-ft
Leg Weight	14234.18					
Bracing Weight	16637.44					

Load Case	Vertical Forces lb	Sum of Forces X lb	Sum of Forces Z lb	Sum of Overturning Moments, M_x lb-ft	Sum of Overturning Moments, M_z lb-ft	Sum of Torques lb-ft
Total Member Self-Weight	30871.62			7898.40	-12365.83	
Total Weight	60669.95			7898.40	-12365.83	
Wind 0 deg - No Ice		0.00	-53127.68	-5270923.41	-12365.83	7966.72
Wind 30 deg - No Ice		25424.08	-44035.80	-4458798.69	-2591214.60	9592.73
Wind 60 deg - No Ice		43267.97	-24980.77	-2525042.08	-4399547.43	8666.46
Wind 90 deg - No Ice		46393.58	0.00	7898.40	-4768807.07	4727.90
Wind 120 deg - No Ice		44545.00	25718.07	2571917.64	-4453377.43	1379.27
Wind 150 deg - No Ice		23915.80	41423.38	4120502.27	-2386778.78	-3588.50
Wind 180 deg - No Ice		0.00	50526.30	5075138.61	-12365.83	-7585.20
Wind 210 deg - No Ice		-25424.08	44035.80	4474595.49	2566482.93	-9592.73
Wind 240 deg - No Ice		-45520.83	26281.46	2646629.68	4558050.81	-9422.05
Wind 270 deg - No Ice		-46393.58	0.00	7898.40	4744075.41	-4727.90
Wind 300 deg - No Ice		-42292.14	-24417.38	-2450330.04	4245410.73	-1005.21
Wind 330 deg - No Ice		-23915.80	-41423.38	-4104705.47	2362047.12	3588.50
Member Ice	56906.02					
Total Weight Ice	250269.20			115192.73	-89823.73	
Wind 0 deg - Ice		0.00	-26992.46	-2649639.28	-89823.73	4531.41
Wind 30 deg - Ice		13404.33	-23216.98	-2307516.41	-1488575.50	5133.91
Wind 60 deg - Ice		22265.36	-12854.91	-1245667.66	-2446903.06	4007.40
Wind 90 deg - Ice		24652.29	0.00	115192.73	-2691957.22	1839.46
Wind 120 deg - Ice		21508.69	12418.05	1399923.71	-2315043.06	-422.45
Wind 150 deg - Ice		12682.44	21966.63	2367476.11	-1390180.14	-2649.60
Wind 180 deg - Ice		0.00	26422.42	2835492.84	-89823.73	-4445.46
Wind 210 deg - Ice		-13404.33	23216.98	2537901.87	1308928.05	-5133.91
Wind 240 deg - Ice		-22759.03	13139.93	1498319.07	2305821.37	-4189.53
Wind 270 deg - Ice		-24652.29	0.00	115192.73	2512309.77	-1839.46
Wind 300 deg - Ice		-21015.01	-12133.02	-1147272.30	2096829.85	518.64
Wind 330 deg - Ice		-12682.44	-21966.63	-2137090.65	1210532.69	2649.60
Total Weight	60669.95			7898.40	-12365.83	
Wind 0 deg - Service		0.00	-19914.58	-1986482.57	-3566.42	2986.28
Wind 30 deg - Service		9530.06	-16506.55	-1682062.64	-970231.93	3595.78
Wind 60 deg - Service		16218.73	-9363.89	-957205.94	-1648074.31	3248.57
Wind 90 deg - Service		17390.35	0.00	-7748.86	-1786489.00	1772.22
Wind 120 deg - Service		16697.42	9640.26	953357.89	-1668252.15	517.01
Wind 150 deg - Service		8964.69	15527.30	1533835.26	-893600.43	-1345.13
Wind 180 deg - Service		0.00	18939.47	1891674.79	-3566.42	-2843.26
Wind 210 deg - Service		-9530.06	16506.55	1666564.91	963099.09	-3595.78
Wind 240 deg - Service		-17063.20	9851.44	981363.24	1709625.99	-3531.80
Wind 270 deg - Service		-17390.35	0.00	-7748.86	1779356.16	-1772.22
Wind 300 deg - Service		-15852.95	-9152.70	-929200.59	1592434.79	-376.80
Wind 330 deg - Service		-8964.69	-15527.30	-1549332.99	886467.59	1345.13

Load Combinations

Comb. No.	Description
1	Dead Only
2	1.2 Dead+1.6 Wind 0 deg - No Ice
3	0.9 Dead+1.6 Wind 0 deg - No Ice
4	1.2 Dead+1.6 Wind 30 deg - No Ice
5	0.9 Dead+1.6 Wind 30 deg - No Ice
6	1.2 Dead+1.6 Wind 60 deg - No Ice
7	0.9 Dead+1.6 Wind 60 deg - No Ice
8	1.2 Dead+1.6 Wind 90 deg - No Ice
9	0.9 Dead+1.6 Wind 90 deg - No Ice
10	1.2 Dead+1.6 Wind 120 deg - No Ice

Comb. No.	Description
11	0.9 Dead+1.6 Wind 120 deg - No Ice
12	1.2 Dead+1.6 Wind 150 deg - No Ice
13	0.9 Dead+1.6 Wind 150 deg - No Ice
14	1.2 Dead+1.6 Wind 180 deg - No Ice
15	0.9 Dead+1.6 Wind 180 deg - No Ice
16	1.2 Dead+1.6 Wind 210 deg - No Ice
17	0.9 Dead+1.6 Wind 210 deg - No Ice
18	1.2 Dead+1.6 Wind 240 deg - No Ice
19	0.9 Dead+1.6 Wind 240 deg - No Ice
20	1.2 Dead+1.6 Wind 270 deg - No Ice
21	0.9 Dead+1.6 Wind 270 deg - No Ice
22	1.2 Dead+1.6 Wind 300 deg - No Ice
23	0.9 Dead+1.6 Wind 300 deg - No Ice
24	1.2 Dead+1.6 Wind 330 deg - No Ice
25	0.9 Dead+1.6 Wind 330 deg - No Ice
26	1.2 Dead+1.0 Ice+1.0 Temp
27	1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp
28	1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp
29	1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp
30	1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp
31	1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp
32	1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp
33	1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp
34	1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp
35	1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp
36	1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp
37	1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp
38	1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp
39	Dead+Wind 0 deg - Service
40	Dead+Wind 30 deg - Service
41	Dead+Wind 60 deg - Service
42	Dead+Wind 90 deg - Service
43	Dead+Wind 120 deg - Service
44	Dead+Wind 150 deg - Service
45	Dead+Wind 180 deg - Service
46	Dead+Wind 210 deg - Service
47	Dead+Wind 240 deg - Service
48	Dead+Wind 270 deg - Service
49	Dead+Wind 300 deg - Service
50	Dead+Wind 330 deg - Service

Maximum Member Forces

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial lb	Major Axis Moment lb-ft	Minor Axis Moment lb-ft
T1	188 - 180	Leg	Max Tension	7	3452.20	-112.90	55.45
			Max. Compression	31	-6735.39	-43.79	-27.38
			Max. Mx	20	-5081.36	127.62	-14.88
			Max. My	2	-5730.46	12.22	137.86
			Max. Vy	8	-1244.22	0.00	0.00
			Max. Vx	2	1264.22	0.00	-0.00
		Diagonal	Max Tension	8	1816.49	0.00	0.00
			Max. Compression	20	-1832.58	0.00	0.00
			Max. Mx	31	599.54	30.11	0.28
			Max. My	6	-1310.74	4.14	-1.21
			Max. Vy	31	-35.44	30.11	-0.24
			Max. Vx	6	-0.32	0.00	0.00
		Top Girt	Max Tension	11	653.47	0.00	0.00

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial lb	Major Axis Moment lb-ft	Minor Axis Moment lb-ft
			Max. Compression	6	-677.46	0.00	0.00
			Max. Mx	26	-69.23	-90.57	0.00
			Max. My	32	-78.63	0.00	-0.00
			Max. Vy	26	55.06	0.00	0.00
			Max. Vx	32	0.00	0.00	0.00
T2	180 - 160	Leg	Max Tension	7	23122.22	-89.91	45.10
			Max. Compression	10	-29047.45	106.82	86.29
			Max. Mx	22	15813.33	942.00	-7.89
			Max. My	4	-2032.45	-17.43	927.18
			Max. Vy	22	-728.35	-489.49	-7.89
			Max. Vx	4	-727.22	-17.43	-493.87
		Diagonal	Max Tension	20	4307.07	0.00	0.00
			Max. Compression	20	-4306.13	0.00	0.00
			Max. Mx	30	1591.85	44.77	4.94
			Max. My	28	-680.35	40.56	-7.02
			Max. Vy	29	44.35	44.32	5.51
			Max. Vx	28	2.63	0.00	0.00
		Top Girt	Max Tension	19	100.01	0.00	0.00
			Max. Compression	22	-119.47	0.00	0.00
			Max. Mx	31	5.33	-89.64	0.00
			Max. My	33	-18.21	0.00	2.54
			Max. Vy	31	54.49	0.00	0.00
			Max. Vx	33	-1.54	0.00	0.00
T3	160 - 140	Leg	Max Tension	7	53271.90	-81.88	-45.43
			Max. Compression	2	-63678.27	904.77	-10.95
			Max. Mx	6	51596.36	-947.84	-0.01
			Max. My	20	-4714.89	-44.18	1076.29
			Max. Vy	6	1216.28	-947.84	-0.01
			Max. Vx	16	-1079.53	-20.94	602.81
		Diagonal	Max Tension	12	6639.07	0.00	0.00
			Max. Compression	12	-6738.15	0.00	0.00
			Max. Mx	28	1043.27	107.28	11.67
			Max. My	24	-6417.37	-3.10	-18.96
			Max. Vy	28	72.89	95.00	-14.90
			Max. Vx	37	4.87	0.00	0.00
T4	140 - 120	Leg	Max Tension	7	91355.02	-792.71	-23.48
			Max. Compression	2	-107243.70	972.54	-4.98
			Max. Mx	22	87919.03	-1055.67	10.43
			Max. My	4	-8288.00	-57.06	-1078.34
			Max. Vy	22	711.42	-1055.67	10.43
			Max. Vx	4	722.08	-57.06	-1078.34
		Diagonal	Max Tension	12	9241.79	0.00	0.00
			Max. Compression	12	-9412.07	0.00	0.00
			Max. Mx	31	2280.64	156.63	18.06
			Max. My	31	170.48	131.19	22.10
			Max. Vy	29	98.24	145.68	19.67
			Max. Vx	31	-5.87	0.00	0.00
T5	120 - 100	Leg	Max Tension	7	135991.26	-419.51	-9.45
			Max. Compression	10	-157930.13	888.06	-4.50
			Max. Mx	22	102995.50	-1055.68	10.44
			Max. My	4	-8837.03	-57.08	-1078.35
			Max. Vy	22	-200.35	-1055.68	10.44
			Max. Vx	4	-196.95	-57.08	-1078.35
		Diagonal	Max Tension	24	11067.36	0.00	0.00
			Max. Compression	24	-11149.75	0.00	0.00
			Max. Mx	31	3630.00	182.36	-20.38
			Max. My	31	221.38	164.80	26.35
			Max. Vy	33	111.53	181.01	24.15
			Max. Vx	31	6.26	0.00	0.00
T6	100 - 80	Leg	Max Tension	7	177085.40	-669.42	-28.38
			Max. Compression	10	-204007.82	1261.84	-9.56

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial lb	Major Axis Moment lb-ft	Minor Axis Moment lb-ft
			Max. Mx	2	-203509.39	1266.72	-25.33
			Max. My	4	-11406.67	-79.06	-1144.46
			Max. Vy	2	-192.45	1266.72	-25.33
			Max. Vx	4	177.61	-79.06	-1144.46
		Diagonal	Max Tension	24	13051.08	0.00	0.00
			Max. Compression	24	-13311.96	0.00	0.00
			Max. Mx	31	3854.65	296.62	36.32
			Max. My	32	2379.20	262.69	40.80
			Max. Vy	33	141.59	287.63	-38.77
			Max. Vx	31	8.20	0.00	0.00
T7	80 - 60	Leg	Max Tension	7	222334.31	-697.27	-26.96
			Max. Compression	10	-255612.93	1405.48	-13.16
			Max. Mx	2	-254900.21	1409.05	-15.55
			Max. My	4	-13713.27	-91.68	-1081.83
			Max. Vy	2	-203.78	1409.05	-15.55
			Max. Vx	4	166.40	-91.68	-1081.83
		Diagonal	Max Tension	24	14531.38	0.00	0.00
			Max. Compression	24	-14849.34	0.00	0.00
			Max. Mx	31	4256.47	418.95	47.35
			Max. My	32	2784.78	370.69	51.49
			Max. Vy	33	182.98	399.75	-49.44
			Max. Vx	32	9.56	0.00	0.00
T8	60 - 40	Leg	Max Tension	7	265053.34	-1552.92	-21.89
			Max. Compression	10	-305313.49	1715.47	-11.73
			Max. Mx	37	25991.46	-2357.14	10.72
			Max. My	4	-17798.20	52.60	-1740.67
			Max. Vy	37	342.16	-2357.14	10.72
			Max. Vx	4	229.28	-110.38	-1714.86
		Diagonal	Max Tension	24	14418.47	0.00	0.00
			Max. Compression	24	-14677.98	0.00	0.00
			Max. Mx	33	4211.78	456.93	-61.66
			Max. My	34	-2091.32	421.30	64.62
			Max. Vy	33	197.41	456.93	-61.66
			Max. Vx	34	11.28	0.00	0.00
T9	40 - 20	Leg	Max Tension	7	308689.74	-1514.26	-21.39
			Max. Compression	10	-356826.86	2019.78	-10.47
			Max. Mx	29	37516.13	-4958.11	-22.26
			Max. My	4	-18823.39	52.60	-1740.70
			Max. Vy	37	811.77	-4947.09	8.59
			Max. Vx	16	232.45	-123.48	1609.16
		Diagonal	Max Tension	24	17070.39	0.00	0.00
			Max. Compression	24	-17471.23	0.00	0.00
			Max. Mx	31	4401.58	683.77	69.45
			Max. My	27	-475.43	596.65	-74.42
			Max. Vy	33	247.02	661.40	-71.92
			Max. Vx	27	-12.02	0.00	0.00
T10	20 - 0	Leg	Max Tension	7	352075.62	-1575.97	-26.58
			Max. Compression	10	-408727.65	0.00	0.19
			Max. Mx	27	-196670.04	5224.40	34.64
			Max. My	16	-23863.94	-201.34	3380.32
			Max. Vy	37	-972.34	-4947.09	8.60
			Max. Vx	16	459.15	-201.34	3380.32
		Diagonal	Max Tension	20	17665.13	0.00	0.00
			Max. Compression	20	-18205.89	0.00	0.00
			Max. Mx	31	2732.47	788.94	-80.79
			Max. My	33	-7991.23	710.89	92.11
			Max. Vy	33	253.54	787.07	84.38
			Max. Vx	33	-13.15	0.00	0.00

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical lb	Horizontal, X lb	Horizontal, Z lb
Leg C	Max. Vert	18	420430.19	44999.04	-25570.32
	Max. H_x	18	420430.19	44999.04	-25570.32
	Max. H_z	7	-362584.86	-40161.27	22821.19
	Min. Vert	7	-362584.86	-40161.27	22821.19
	Min. H_x	7	-362584.86	-40161.27	22821.19
	Min. H_z	18	420430.19	44999.04	-25570.32
Leg B	Max. Vert	10	421621.99	-44864.56	-25845.82
	Max. H_x	23	-361692.47	40006.91	23055.99
	Max. H_z	23	-361692.47	40006.91	23055.99
	Min. Vert	23	-361692.47	40006.91	23055.99
	Min. H_x	10	421621.99	-44864.56	-25845.82
	Min. H_z	10	421621.99	-44864.56	-25845.82
Leg A	Max. Vert	2	420370.33	303.08	51754.38
	Max. H_x	21	17873.19	6606.51	1474.87
	Max. H_z	2	420370.33	303.08	51754.38
	Min. Vert	15	-362630.45	-277.67	-46192.13
	Min. H_x	9	17873.07	-6587.90	1474.43
	Min. H_z	15	-362630.45	-277.67	-46192.13

Tower Mast Reaction Summary

Load Combination	Vertical lb	$Shear_x$ lb	$Shear_z$ lb	Overturning Moment, M_x lb-ft	Overturning Moment, M_z lb-ft	Torque lb-ft
Dead Only	60669.95	0.00	0.00	7900.78	-12365.01	-0.08
1.2 Dead+1.6 Wind 0 deg - No Ice	72803.94	-0.00	-85713.74	-8589588.97	-14973.80	12865.92
0.9 Dead+1.6 Wind 0 deg - No Ice	54602.95	-0.00	-85713.99	-8583587.18	-11228.30	12835.77
1.2 Dead+1.6 Wind 30 deg - No Ice	72803.94	40678.01	-70456.50	-7165109.17	-4157227.82	15462.87
0.9 Dead+1.6 Wind 30 deg - No Ice	54602.95	40678.14	-70456.71	-7160427.73	-4149404.22	15428.19
1.2 Dead+1.6 Wind 60 deg - No Ice	72803.94	70625.64	-40775.73	-4120196.85	-7167784.13	13923.03
0.9 Dead+1.6 Wind 60 deg - No Ice	54602.95	70625.85	-40775.85	-4118528.36	-7157044.02	13909.14
1.2 Dead+1.6 Wind 90 deg - No Ice	72803.94	81356.12	0.06	9473.86	-8299452.02	7548.71
0.9 Dead+1.6 Wind 90 deg - No Ice	54602.95	81356.37	0.05	7110.92	-8287559.47	7560.85
1.2 Dead+1.6 Wind 120 deg - No Ice	72803.94	74230.28	42856.87	4308993.47	-7461945.97	2147.67
0.9 Dead+1.6 Wind 120 deg - No Ice	54602.95	74230.49	42857.00	4302438.10	-7450949.90	2163.15
1.2 Dead+1.6 Wind 150 deg - No Ice	72803.94	40678.11	70456.44	7184074.77	-4157222.45	-5826.30
0.9 Dead+1.6 Wind 150 deg - No Ice	54602.95	40678.23	70456.66	7174646.63	-4149408.58	-5811.94
1.2 Dead+1.6 Wind 180 deg - No Ice	72803.94	-0.00	81551.47	8268880.87	-14973.67	-12250.11
0.9 Dead+1.6 Wind 180 deg - No Ice	54602.95	-0.00	81551.71	8258434.73	-11227.09	-12221.18
1.2 Dead+1.6 Wind 210 deg - No Ice	72803.94	-40678.11	70456.44	7184119.52	4127300.06	-15462.82
0.9 Dead+1.6 Wind 210 deg - No Ice	54602.95	-40678.23	70456.66	7174692.50	4126978.94	-15428.15
1.2 Dead+1.6 Wind 240 deg - No Ice	72803.94	-74230.28	42856.87	4309041.34	7432075.70	-15135.30
0.9 Dead+1.6 Wind 240 deg - No Ice	54602.95	-74230.50	42857.00	4302486.16	7428571.68	-15120.63

Load Combination	Vertical lb	Shear$_x$ lb	Shear$_z$ lb	Overturning Moment, M_x lb-ft	Overturning Moment, M_z lb-ft	Torque lb-ft
1.2 Dead+1.6 Wind 270 deg - No Ice	72803.94	-81356.13	0.05	9470.32	8269612.78	-7548.82
0.9 Dead+1.6 Wind 270 deg - No Ice	54602.95	-81356.37	0.05	7108.27	8265211.47	-7560.97
1.2 Dead+1.6 Wind 300 deg - No Ice	72803.94	-70625.64	-40775.73	-4120245.30	7137920.33	-1551.26
0.9 Dead+1.6 Wind 300 deg - No Ice	54602.95	-70625.85	-40775.85	-4118575.89	7134671.21	-1566.29
1.2 Dead+1.6 Wind 330 deg - No Ice	72803.94	-40678.02	-70456.50	-7165156.02	4127313.04	5826.34
0.9 Dead+1.6 Wind 330 deg - No Ice	54602.95	-40678.14	-70456.71	-7160473.43	4126979.26	5811.99
1.2 Dead+1.0 Ice+1.0 Temp	262403.19	-0.30	-0.21	118137.59	-93968.44	1.91
1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp	262403.19	-0.02	-27592.47	-2791420.88	-94074.75	4755.69
1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp	262403.19	13404.16	-23216.72	-2341871.67	-1514446.95	5416.37
1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp	262403.19	23402.09	-13511.22	-1314019.37	-2574900.46	4278.90
1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp	262403.19	26808.34	-0.01	118270.90	-2934804.92	2023.58
1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp	262403.19	23895.76	13796.22	1573118.53	-2613936.80	-370.77
1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp	262403.19	13404.16	23216.70	2578423.72	-1514435.15	-2745.86
1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp	262403.19	-0.01	27022.41	2982888.52	-94078.24	-4666.00
1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp	262403.19	-13404.19	23216.70	2578426.33	1326297.52	-5416.24
1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp	262403.19	-23895.79	13796.22	1573117.16	2425805.06	-4465.22
1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp	262403.19	-26808.37	-0.01	118260.89	2746675.26	-2023.57
1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp	262403.19	-23402.12	-13511.22	-1314036.77	2386753.00	467.90
1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp	262403.19	-13404.19	-23216.72	-2341882.77	1326301.55	2746.21
Dead+Wind 0 deg - Service	60669.95	-0.00	-20080.82	-2005403.38	-12425.10	3009.46
Dead+Wind 30 deg - Service	60669.95	9529.96	-16506.39	-1671884.22	-982249.84	3605.64
Dead+Wind 60 deg - Service	60669.95	16546.03	-9552.86	-958982.39	-1687115.04	3259.69
Dead+Wind 90 deg - Service	60669.95	19059.94	0.00	7899.47	-1952072.13	1782.14
Dead+Wind 120 deg - Service	60669.95	17390.50	10040.41	1014550.35	-1755995.13	505.56
Dead+Wind 150 deg - Service	60669.95	9529.97	16506.39	1687684.41	-982249.19	-1374.54
Dead+Wind 180 deg - Service	60669.95	-0.00	19105.71	1941666.85	-12425.83	-2865.58
Dead+Wind 210 deg - Service	60669.95	-9529.97	16506.39	1687686.63	957398.86	-3605.64
Dead+Wind 240 deg - Service	60669.95	-17390.50	10040.41	1014552.45	1731147.86	-3543.61
Dead+Wind 270 deg - Service	60669.95	-19059.94	0.00	7898.80	1927226.68	-1782.21
Dead+Wind 300 deg - Service	60669.95	-16546.03	-9552.86	-958985.24	1662268.61	-365.69
Dead+Wind 330 deg - Service	60669.95	-9529.97	-16506.39	-1671886.81	957400.91	1374.61

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	0.00	-60669.95	-0.00	-0.00	60669.95	-0.00	0.000%
2	0.00	-72803.94	-85714.65	0.00	72803.94	85713.74	0.001%
3	0.00	-54602.96	-85714.65	0.00	54602.95	85713.99	0.001%

Load Comb.	Sum of Applied Forces PX lb	PY lb	PZ lb	Sum of Reactions PX lb	PY lb	PZ lb	% Error
4	40678.53	-72803.94	-70457.29	-40678.01	72803.94	70456.50	0.001%
5	40678.53	-54602.96	-70457.29	-40678.14	54602.95	70456.71	0.001%
6	70626.50	-72803.94	-40776.23	-70625.64	72803.94	40775.73	0.001%
7	70626.50	-54602.96	-40776.23	-70625.85	54602.95	40775.85	0.001%
8	81357.07	-72803.94	-0.00	-81356.12	72803.94	-0.06	0.001%
9	81357.07	-54602.96	0.00	-81356.37	54602.95	-0.05	0.001%
10	74231.06	-72803.94	42857.32	-74230.28	72803.94	-42856.87	0.001%
11	74231.06	-54602.96	42857.32	-74230.49	54602.95	-42857.00	0.001%
12	40678.53	-72803.94	70457.29	-40678.11	72803.94	-70456.44	0.001%
13	40678.53	-54602.96	70457.29	-40678.23	54602.95	-70456.66	0.001%
14	-0.00	-72803.94	81552.45	0.00	72803.94	-81551.47	0.001%
15	-0.00	-54602.96	81552.45	0.00	54602.95	-81551.71	0.001%
16	-40678.53	-72803.94	70457.29	40678.11	72803.94	-70456.44	0.001%
17	-40678.53	-54602.96	70457.29	40678.23	54602.95	-70456.66	0.001%
18	-74231.06	-72803.94	42857.32	74230.28	72803.94	-42856.87	0.001%
19	-74231.06	-54602.96	42857.32	74230.50	54602.95	-42857.00	0.001%
20	-81357.07	-72803.94	-0.00	81356.13	72803.94	-0.05	0.001%
21	-81357.07	-54602.96	0.00	81356.37	54602.95	-0.05	0.001%
22	-70626.50	-72803.94	-40776.23	70625.64	72803.94	40775.73	0.001%
23	-70626.50	-54602.96	-40776.23	70625.85	54602.95	40775.85	0.001%
24	-40678.53	-72803.94	-70457.29	40678.02	72803.94	70456.50	0.001%
25	-40678.53	-54602.96	-70457.29	40678.14	54602.95	70456.71	0.001%
26	-0.00	-262403.19	-0.00	0.30	262403.19	0.21	0.000%
27	-0.00	-262403.19	-27592.78	0.02	262403.19	27592.47	0.000%
28	13404.33	-262403.19	-23216.98	-13404.16	262403.19	23216.72	0.000%
29	23402.37	-262403.19	-13511.37	-23402.09	262403.19	13511.22	0.000%
30	26808.66	-262403.19	-0.00	-26808.34	262403.19	0.01	0.000%
31	23896.04	-262403.19	13796.39	-23895.76	262403.19	-13796.22	0.000%
32	13404.33	-262403.19	23216.98	-13404.16	262403.19	-23216.70	0.000%
33	0.00	-262403.19	27022.73	0.01	262403.19	-27022.41	0.000%
34	-13404.33	-262403.19	23216.98	13404.19	262403.19	-23216.70	0.000%
35	-23896.04	-262403.19	13796.39	23895.79	262403.19	-13796.22	0.000%
36	-26808.66	-262403.19	-0.00	26808.37	262403.19	0.01	0.000%
37	-23402.37	-262403.19	-13511.37	23402.12	262403.19	13511.22	0.000%
38	-13404.33	-262403.19	-23216.98	13404.19	262403.19	23216.72	0.000%
39	0.00	-60669.95	-20081.00	0.00	60669.95	20080.82	0.000%
40	9530.06	-60669.95	-16506.55	-9529.96	60669.95	16506.39	0.000%
41	16546.19	-60669.95	-9552.95	-16546.03	60669.95	9552.86	0.000%
42	19060.12	-60669.95	0.00	-19059.94	60669.95	-0.00	0.000%
43	17390.66	-60669.95	10040.50	-17390.50	60669.95	-10040.41	0.000%
44	9530.06	-60669.95	16506.55	-9529.97	60669.95	-16506.39	0.000%
45	-0.00	-60669.95	19105.90	0.00	60669.95	-19105.71	0.000%
46	-9530.06	-60669.95	16506.55	9529.97	60669.95	-16506.39	0.000%
47	-17390.66	-60669.95	10040.50	17390.50	60669.95	-10040.41	0.000%
48	-19060.12	-60669.95	0.00	19059.94	60669.95	-0.00	0.000%
49	-16546.19	-60669.95	-9552.95	16546.03	60669.95	9552.86	0.000%
50	-9530.06	-60669.95	-16506.55	9529.97	60669.95	16506.39	0.000%

Non-Linear Convergence Results

Load Combination	Converged?	Number of Cycles	Displacement Tolerance	Force Tolerance
1	Yes	6	0.00000001	0.00000001
2	Yes	9	0.00000001	0.00006685
3	Yes	9	0.00000001	0.00004864
4	Yes	9	0.00000001	0.00007186

5	Yes	9	0.00000001	0.00005351
6	Yes	9	0.00000001	0.00007596
7	Yes	9	0.00000001	0.00005752
8	Yes	9	0.00000001	0.00007182
9	Yes	9	0.00000001	0.00005348
10	Yes	9	0.00000001	0.00006680
11	Yes	9	0.00000001	0.00004862
12	Yes	9	0.00000001	0.00007171
13	Yes	9	0.00000001	0.00005342
14	Yes	9	0.00000001	0.00007581
15	Yes	9	0.00000001	0.00005743
16	Yes	9	0.00000001	0.00007170
17	Yes	9	0.00000001	0.00005342
18	Yes	9	0.00000001	0.00006672
19	Yes	9	0.00000001	0.00004857
20	Yes	9	0.00000001	0.00007171
21	Yes	9	0.00000001	0.00005342
22	Yes	9	0.00000001	0.00007586
23	Yes	9	0.00000001	0.00005746
24	Yes	9	0.00000001	0.00007177
25	Yes	9	0.00000001	0.00005345
26	Yes	8	0.00000001	0.00006402
27	Yes	10	0.00000001	0.00005623
28	Yes	10	0.00000001	0.00005700
29	Yes	10	0.00000001	0.00005849
30	Yes	10	0.00000001	0.00005831
31	Yes	10	0.00000001	0.00005861
32	Yes	10	0.00000001	0.00005822
33	Yes	10	0.00000001	0.00005833
34	Yes	10	0.00000001	0.00005682
35	Yes	10	0.00000001	0.00005607
36	Yes	10	0.00000001	0.00005514
37	Yes	10	0.00000001	0.00005564
38	Yes	10	0.00000001	0.00005522
39	Yes	9	0.00000001	0.00005596
40	Yes	9	0.00000001	0.00005715
41	Yes	9	0.00000001	0.00005796
42	Yes	9	0.00000001	0.00005708
43	Yes	9	0.00000001	0.00005586
44	Yes	9	0.00000001	0.00005681
45	Yes	9	0.00000001	0.00005751
46	Yes	9	0.00000001	0.00005665
47	Yes	9	0.00000001	0.00005553
48	Yes	9	0.00000001	0.00005669
49	Yes	9	0.00000001	0.00005761
50	Yes	9	0.00000001	0.00005692

Maximum Tower Deflections - Service Wind

Section No.	*Elevation* ft	*Horz. Deflection* in	*Gov. Load Comb.*	*Tilt* °	*Twist* °
T1	188 - 180	4.324	43	0.2048	0.0094
T2	180 - 160	3.978	43	0.2030	0.0089
T3	160 - 140	3.139	43	0.1836	0.0069
T4	140 - 120	2.400	43	0.1589	0.0051
T5	120 - 100	1.758	43	0.1333	0.0038
T6	100 - 80	1.211	43	0.1094	0.0027
T7	80 - 60	0.774	43	0.0831	0.0020
T8	60 - 40	0.448	43	0.0592	0.0015

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T9	40 - 20	0.217	43	0.0370	0.0009
T10	20 - 0	0.071	43	0.0190	0.0005

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
188.00	10' Omni	43	4.324	0.2048	0.0094	450272
176.00	6' x 1' Panel Antenna w/Mount Pipe	43	3.805	0.2006	0.0086	126826
168.00	(2) DUO1417-8686 w/Mount Pipe	43	3.465	0.1930	0.0078	60072
155.00	(2) 7250.03 w/Mount Pipe	43	2.944	0.1775	0.0064	41244
141.00	(2) DB844H90E-XY w/Mount Pipe	43	2.434	0.1601	0.0052	47337
123.00	(2) DB980H90E-M w/Mount Pipe	43	1.849	0.1371	0.0040	53137

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T1	188 - 180	18.353	10	0.8660	0.0403
T2	180 - 160	16.886	10	0.8587	0.0382
T3	160 - 140	13.331	10	0.7783	0.0296
T4	140 - 120	10.194	10	0.6742	0.0219
T5	120 - 100	7.471	10	0.5659	0.0164
T6	100 - 80	5.148	10	0.4644	0.0117
T7	80 - 60	3.292	10	0.3529	0.0086
T8	60 - 40	1.907	10	0.2516	0.0063
T9	40 - 20	0.925	10	0.1571	0.0039
T10	20 - 0	0.302	10	0.0807	0.0020

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
188.00	10' Omni	10	18.353	0.8660	0.0403	126933
176.00	6' x 1' Panel Antenna w/Mount Pipe	10	16.156	0.8489	0.0368	32082
168.00	(2) DUO1417-8686 w/Mount Pipe	10	14.717	0.8177	0.0334	14540
155.00	(2) 7250.03 w/Mount Pipe	10	12.503	0.7527	0.0274	9911
141.00	(2) DB844H90E-XY w/Mount Pipe	10	10.340	0.6796	0.0222	11562
123.00	(2) DB980H90E-M w/Mount Pipe	10	7.855	0.5817	0.0172	12602

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	188	Leg	A325N	0.6250	4	863.05	20708.70	0.042 ✔	1	Bolt Tension
		Diagonal	A325N	0.6250	1	1816.49	6475.78	0.281 ✔	1	Member Block Shear
		Top Girt	A325N	0.6250	1	653.47	6475.78	0.101 ✔	1	Member Block Shear
T2	180	Leg	A325N	0.7500	4	5780.55	29820.60	0.194 ✔	1	Bolt Tension
		Diagonal	A325N	0.6250	1	4307.07	6475.78	0.665 ✔	1	Member Block Shear
		Top Girt	A325N	0.6250	1	100.01	6475.78	0.015 ✔	1	Member Block Shear
T3	160	Leg	A325N	0.8750	4	13318.00	40589.10	0.328 ✔	1	Bolt Tension
		Diagonal	A325N	0.6250	1	6738.15	12425.20	0.542 ✔	1	Bolt Shear
T4	140	Leg	A325N	1.0000	4	22838.80	53014.40	0.431 ✔	1	Bolt Tension
		Diagonal	A325N	0.6250	1	9412.07	12425.20	0.757 ✔	1	Bolt Shear
T5	120	Leg	A325N	1.0000	6	22665.20	53014.40	0.428 ✔	1	Bolt Tension
		Diagonal	A325N	0.7500	1	11067.40	15843.80	0.699 ✔	1	Member Block Shear
T6	100	Leg	A325N	1.0000	6	29514.20	53014.40	0.557 ✔	1	Bolt Tension
		Diagonal	A325N	0.7500	1	13051.10	16087.50	0.811 ✔	1	Member Bearing
T7	80	Leg	A325N	1.0000	8	27791.80	53014.40	0.524 ✔	1	Bolt Tension
		Diagonal	A325N	0.7500	1	14849.30	17892.40	0.830 ✔	1	Bolt Shear
T8	60	Leg	A325N	1.0000	8	33131.70	53014.40	0.625 ✔	1	Bolt Tension
		Diagonal	A325N	0.7500	1	14678.00	17892.40	0.820 ✔	1	Bolt Shear
T9	40	Leg	A325N	1.0000	8	38586.20	53014.40	0.728 ✔	1	Bolt Tension
		Diagonal	A325X	0.7500	1	17070.40	20109.40	0.849 ✔	1	Member Bearing
T10	20	Leg	A354-BC	1.0000	10	35207.60	55223.30	0.638 ✔	1	Bolt Tension
		Diagonal	A325X	0.7500	1	17665.10	20109.40	0.878 ✔	1	Member Bearing

Compression Checks

Leg Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u lb	ϕP_n lb	Ratio $\frac{P_u}{\phi P_n}$
T1	188 - 180	ROHN 2.5 STD	8.00	4.00	50.7 K=1.00	1.7040	-6735.39	63560.30	0.106 [1] ✔
T2	180 - 160	ROHN 2.5 STD	20.03	5.01	63.4 K=1.00	1.7040	-29047.40	57138.60	0.508 [1] ✔
T3	160 - 140	ROHN 3 EH	20.04	6.68	70.5 K=1.00	3.0159	-63678.30	94337.20	0.675 [1] ✔
T4	140 - 120	ROHN 4 EH	20.04	6.68	54.3	4.4074	-107244.00	159899.00	0.671 [1]

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u lb	ϕP_n lb	Ratio $\frac{P_u}{\phi P_n}$
T5	120 - 100	ROHN 5 EH	20.04	6.68	43.6 K=1.00	6.1120	-157930.00	239378.00	0.660 [1]
T6	100 - 80	ROHN 6 EHS	20.04	10.02	54.0 K=1.00	6.7133	-204008.00	244047.00	0.836 [1]
T7	80 - 60	ROHN 6 EH	20.03	10.02	54.8 K=1.00	8.4049	-255613.00	303757.00	0.842 [1]
T8	60 - 40	ROHN 8 EHS	20.04	10.02	41.2 K=1.00	9.7193	-305314.00	386354.00	0.790 [1]
T9	40 - 20	ROHN 8 EH	20.03	10.02	41.8 K=1.00	12.7627	-356827.00	505573.00	0.706 [1]
T10	20 - 0	ROHN 8 EH	20.03	10.02	41.8 K=1.00	12.7627	-408728.00	505555.00	0.808 [1]

[1] P_u / ϕP_n controls

Diagonal Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u lb	ϕP_n lb	Ratio $\frac{P_u}{\phi P_n}$
T1	188 - 180	L1 3/4x1 3/4x3/16	7.70	3.57	124.9 K=1.00	0.6211	-1832.58	8852.42	0.207 [1]
T2	180 - 160	L1 3/4x1 3/4x3/16	9.69	4.71	164.6 K=1.00	0.6211	-4306.13	5178.87	0.831 [1]
T3	160 - 140	L2 1/2x2 1/2x1/4	12.24	6.02	147.1 K=1.00	1.1900	-6738.15	12430.90	0.542 [1]
T4	140 - 120	L3x3x1/4	14.07	6.89	139.6 K=1.00	1.4400	-9412.07	16694.30	0.564 [1]
T5	120 - 100	L3x3x1/4	15.94	7.76	157.4 K=1.00	1.4400	-11149.80	13139.10	0.849 [1]
T6	100 - 80	L3 1/2x3 1/2x1/4	19.21	9.44	163.2 K=1.00	1.6900	-13312.00	14326.20	0.929 [1]
T7	80 - 60	L4x4x5/16	20.93	10.29	156.1 K=1.00	2.4000	-14849.30	22264.80	0.667 [1]
T8	60 - 40	L4x4x5/16	22.87	11.20	170.0 K=1.00	2.4000	-14678.00	18769.30	0.782 [1]
T9	40 - 20	L5x5x5/16	24.68	12.06	145.6 K=1.00	3.0300	-17471.20	32278.00	0.541 [1]
T10	20 - 0	L5x5x5/16	26.50	12.99	156.8 K=1.00	3.0300	-18205.90	27848.90	0.654 [1]

[1] P_u / ϕP_n controls

Top Girt Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u lb	ϕP_n lb	Ratio $\frac{P_u}{\phi P_n}$
T1	188 - 180	L1 3/4x1 3/4x3/16 KL/R > 200 (C) - 5	6.58	6.07	212.1 K=1.00	0.6211	-677.46	3119.90	0.217 [1] ✔
T2	180 - 160	L1 3/4x1 3/4x3/16 KL/R > 200 (C) - 24	6.58	6.07	212.1 K=1.00	0.6211	-119.47	3119.90	0.038 [1] ✔

[1] P_u / ϕP_n controls

Tension Checks

Leg Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u lb	ϕP_n lb	Ratio $\frac{P_u}{\phi P_n}$
T1	188 - 180	ROHN 2.5 STD	8.00	4.00	50.7	1.7040	3452.20	76682.30	0.045 [1] ✔
T2	180 - 160	ROHN 2.5 STD	20.03	5.01	63.4	1.7040	23122.20	76682.30	0.302 [1] ✔
T3	160 - 140	ROHN 3 EH	20.04	6.68	70.5	3.0159	53271.90	135717.00	0.393 [1] ✔
T4	140 - 120	ROHN 4 EH	20.04	6.68	54.3	4.4074	91355.00	198335.00	0.461 [1] ✔
T5	120 - 100	ROHN 5 EH	20.04	6.68	43.6	6.1120	135991.00	275039.00	0.494 [1] ✔
T6	100 - 80	ROHN 6 EHS	20.04	10.02	54.0	6.7133	177085.00	302097.00	0.586 [1] ✔
T7	80 - 60	ROHN 6 EH	20.03	10.02	54.8	8.4049	222334.00	378222.00	0.588 [1] ✔
T8	60 - 40	ROHN 8 EHS	20.04	10.02	41.2	9.7193	265053.00	437369.00	0.606 [1] ✔
T9	40 - 20	ROHN 8 EH	20.03	10.02	41.8	12.7627	308690.00	574322.00	0.537 [1] ✔
T10	20 - 0	ROHN 8 EH	20.03	10.02	41.8	12.7627	352076.00	574322.00	0.613 [1] ✔

[1] P_u / ϕP_n controls

Diagonal Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u lb	ϕP_n lb	Ratio $\frac{P_u}{\phi P_n}$
T1	188 - 180	L1 3/4x1 3/4x3/16	7.70	3.57	82.9	0.3604	1816.49	15675.30	0.116 [1]

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u lb	ϕP_n lb	Ratio $\frac{P_u}{\phi P_n}$
T2	180 - 160	L1 3/4x1 3/4x3/16	9.69	4.71	108.3	0.3604	4307.07	15675.30	0.275 [1] ✔
T3	160 - 140	L2 1/2x2 1/2x1/4	12.24	6.02	96.0	0.7519	6639.07	32706.60	0.203 [1] ✔
T4	140 - 120	L3x3x1/4	14.07	6.89	90.6	0.9394	9241.79	45794.50	0.202 [1] ✔
T5	120 - 100	L3x3x1/4	15.94	7.76	102.0	0.9159	11067.40	44652.00	0.248 [1] ✔
T6	100 - 80	L3 1/2x3 1/2x1/4	19.21	9.44	105.5	1.1034	13051.10	53792.60	0.243 [1] ✔
T7	80 - 60	L4x4x5/16	20.93	10.29	101.0	1.5949	14531.40	77752.40	0.187 [1] ✔
T8	60 - 40	L4x4x5/16	22.87	11.20	109.8	1.5949	14418.50	77752.40	0.185 [1] ✔
T9	40 - 20	L5x5x5/16	24.68	12.06	93.3	2.0674	17070.40	100787.00	0.169 [1] ✔
T10	20 - 0	L5x5x5/16	26.50	12.99	100.4	2.0674	17665.10	100787.00	0.175 [1] ✔

[1] P_u / ϕP_n controls

Top Girt Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u lb	ϕP_n lb	Ratio $\frac{P_u}{\phi P_n}$
T1	188 - 180	L1 3/4x1 3/4x3/16	6.58	6.07	141.7	0.3604	653.47	15675.30	0.042 [1] ✔
T2	180 - 160	L1 3/4x1 3/4x3/16	6.58	6.07	141.7	0.3604	100.01	15675.30	0.006 [1] ✔

[1] P_u / ϕP_n controls

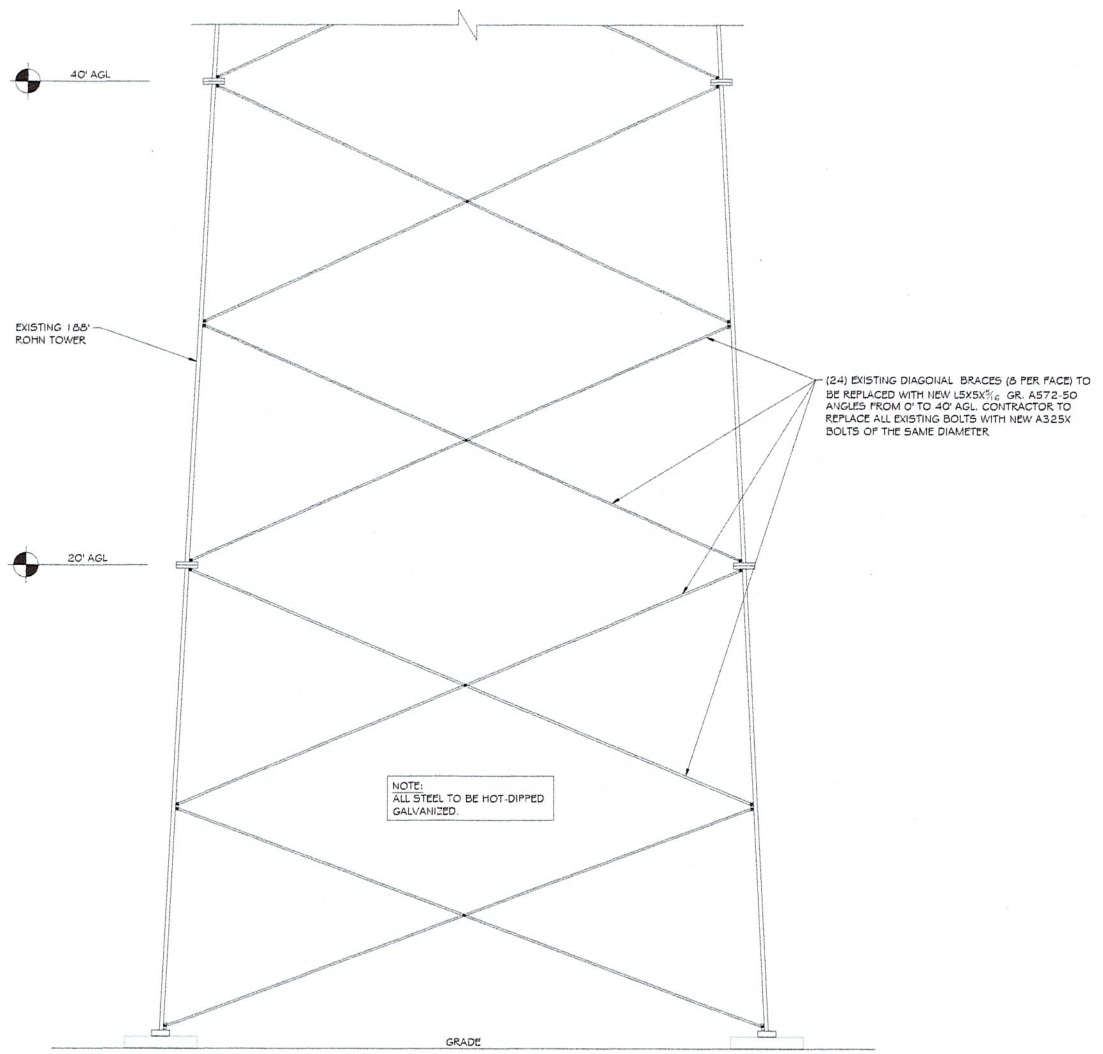
Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P lb	ϕP_{allow} lb	% Capacity	Pass Fail
T1	188 - 180	Leg	ROHN 2.5 STD	2	-6735.39	63560.30	10.6	Pass
T2	180 - 160	Leg	ROHN 2.5 STD	20	-29047.40	57138.60	50.8	Pass
T3	160 - 140	Leg	ROHN 3 EH	51	-63678.30	94337.20	67.5	Pass
T4	140 - 120	Leg	ROHN 4 EH	72	-107244.00	159899.00	67.1	Pass
T5	120 - 100	Leg	ROHN 5 EH	92	-157930.00	239378.00	66.0	Pass
T6	100 - 80	Leg	ROHN 6 EHS	113	-204008.00	244047.00	83.6	Pass
T7	80 - 60	Leg	ROHN 6 EH	128	-255613.00	303757.00	84.2	Pass
T8	60 - 40	Leg	ROHN 8 EHS	143	-305314.00	386354.00	79.0	Pass
T9	40 - 20	Leg	ROHN 8 EH	158	-356827.00	505573.00	70.6	Pass
T10	20 - 0	Leg	ROHN 8 EH	173	-408728.00	505555.00	80.8	Pass

Section No.	Elevation ft	Component Type	Size	Critical Element	P lb	$øP_{allow}$ lb	% Capacity	Pass Fail
T1	188 - 180	Diagonal	L1 3/4x1 3/4x3/16	7	-1832.58	8852.42	20.7	Pass
T2	180 - 160	Diagonal	L1 3/4x1 3/4x3/16	25	-4306.13	5178.87	83.1	Pass
T3	160 - 140	Diagonal	L2 1/2x2 1/2x1/4	54	-6738.15	12430.90	54.2	Pass
T4	140 - 120	Diagonal	L3x3x1/4	75	-9412.07	16694.30	56.4	Pass
T5	120 - 100	Diagonal	L3x3x1/4	97	-11149.80	13139.10	84.9	Pass
T6	100 - 80	Diagonal	L3 1/2x3 1/2x1/4	118	-13312.00	14326.20	92.9	Pass
T7	80 - 60	Diagonal	L4x4x5/16	133	-14849.30	22264.80	66.7	Pass
T8	60 - 40	Diagonal	L4x4x5/16	148	-14678.00	18769.30	78.2	Pass
T9	40 - 20	Diagonal	L5x5x5/16	163	-17471.20	32278.00	54.1	Pass
T10	20 - 0	Diagonal	L5x5x5/16	175	-18205.90	27848.90	65.4	Pass
T1	188 - 180	Top Girt	L1 3/4x1 3/4x3/16	5	-677.46	3119.90	21.7	Pass
T2	180 - 160	Top Girt	L1 3/4x1 3/4x3/16	24	-119.47	3119.90	3.8	Pass
							Summary	
						Leg (T7)	84.2	Pass
						Diagonal (T6)	92.9	Pass
						Top Girt (T1)	21.7	Pass
						Bolt Checks	87.8	Pass
						RATING =	**92.9**	**Pass**

APPENDIX C

TOWER MODIFICATION DETAILS



TOWER MODIFICATION DETAIL (1)
SCALE: 1" = 5'-0"

Sprint
6391 Sprint Parkway
Overland Park, KS 66251

Alcatel·Lucent

RAMAKER & ASSOCIATES, INC.
1120 Dallas Street, Sauk City, WI 53583
Phone: 608-643-4100 Fax: 608-643-7999
www.Ramaker.com

NETWORK VISION
MMBTS LAUNCH
NORTHERN CT MARKET

Certification & Seal:
I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Connecticut.

STATE OF CONNECTICUT ★ JAMES R. SKOWRONSKI ★ No. 26266 LICENSED PROFESSIONAL ENGINEER

Signature: [signature] Date: 5/30/2013

MARK	DATE	DESCRIPTION
E	5/30/13	TOWER MODS, PRELIMINARY PERMIT CDS
D	5/20/13	HOT SWAP SCENARIO, PRELIMINARY PERMIT CDS
C	4/03/13	PRELIMINARY PERMIT CDS
B	10/29/12	FINAL PRELIMINARY CDS
A	10/03/12	90% CD REVIEW

ISSUE PHASE: PRELIM PERMIT DATE ISSUED: 05/30/2013

PROJECT TITLE:
BALCH TOWER
SITE #: CT03XC090

PROJECT INFORMATION:
236 SOUTH MAIN STREET
EAST WINDSOR, CT 06088
HARTFORD COUNTY

SHEET TITLE:
STRUCTURAL DETAILS

0 2.5' 5' 10'
11" x 17" - 1" = 5'
22" x 34" - 1" = 2.5'

PROJECT NUMBER: 22997
SHEET NUMBER: S-2

DRAWN BY: KJG CHECKED BY: KAB
I:\22900\22997\CAD\Telecom\Working\22997 Vision Project-CT.dwg Printed by: tnelson on May 30, 2013 - 8:44am

EBI Consulting

environmental | engineering | due diligence

RADIO FREQUENCY EMISSIONS ANALYSIS REPORT EVALUATION OF HUMAN EXPOSURE POTENTIAL TO NON-IONIZING EMISSIONS

Sprint Existing Facility

Site ID: CT03XC090

Balch Tower
236 South Main Street
East Windsor, CT 06088

September 27, 2013

EBI Project Number: 69130121

September 27, 2013

Sprint
Attn: RF Engineering Manager
1 International Boulevard, Suite 800
Mahwah, NJ 07495

Re: Emissions Values for Site: **CT03XC090 – Balch Tower**

EBI Consulting was directed to analyze the proposed upgrades to the existing Sprint facility located at 236 South Main Street, East Windsor, CT, for the purpose of determining whether the emissions from the proposed Sprint equipment upgrades on this property are within specified federal limits.

All information used in this report was analyzed as a percentage of current Maximum Permissible Exposure (% MPE) as listed in the FCC OET Bulletin 65 Edition 97-01and ANSI/IEEE Std C95.1. The FCC regulates Maximum Permissible Exposure in units of microwatts per square centimeter (μW/cm2). The number of μW/cm2 calculated at each sample point is called the power density. The exposure limit for power density varies depending upon the frequencies being utilized. Wireless Carriers and Paging Services use different frequency bands each with different exposure limits, therefore it is necessary to report results and limits in terms of percent MPE rather than power density.

All results were compared to the FCC (Federal Communications Commission) radio frequency exposure rules, 47 CFR 1.1307(b)(1) – (b)(3), to determine compliance with the Maximum Permissible Exposure (MPE) limits for General Population/Uncontrolled environments as defined below.

General population/uncontrolled exposure limits apply to situations in which the general public may be exposed or in which persons who are exposed as a consequence of their employment may not be made fully aware of the potential for exposure or cannot exercise control over their exposure. Therefore, members of the general public would always be considered under this category when exposure is not employment related, for example, in the case of a telecommunications tower that exposes persons in a nearby residential area.

Public exposure to radio frequencies is regulated and enforced in units of microwatts per square centimeter ($\mu W/cm^2$). The general population exposure limit for the cellular band is approximately 567 $\mu W/cm^2$, and the general population exposure limit for the PCS band is 1000 $\mu W/cm^2$. Because each carrier will be using different frequency bands, and each frequency band has different exposure limits, it is necessary to report percent of MPE rather than power density.

Occupational/controlled exposure limits apply to situations in which persons are exposed as a consequence of their employment and in which those persons who are exposed have been made fully aware of the potential for exposure and can exercise control over their exposure. Occupational/controlled exposure limits also apply where exposure is of a transient nature as a result of incidental passage through a location where exposure levels may be above general population/uncontrolled limits (see below), as long as the exposed person has been made fully aware of the potential for exposure and can exercise control over his or her exposure by leaving the area or by some other appropriate means.

Additional details can be found in FCC OET 65.

CALCULATIONS

Calculations were done for the proposed upgrades to the existing Sprint Wireless antenna facility located at 236 South Main Street, East Windsor, CT, using the equipment information listed below. All calculations were performed per the specifications under FCC OET 65. All calculations were performed assuming the main lobe of the antenna was focused at the base of the tower to present a worst case scenario. Actual values seen from this site will be dramatically less than those shown in this report. For this report the sample point is the top of a 6 foot person standing at the base of the tower.

For all calculations, all emissions were calculated using the following assumptions:

1) 3 CDMA Carriers (1900 MHz) were considered for each sector of the proposed installation.
2) 1 CDMA Carrier (850 MHz) was considered for each sector of the proposed installation
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6) The antenna mounting height centerline of the proposed antennas is **123 feet** above ground level (AGL)
7) Emissions values for additional carriers were taken from the Connecticut Siting Council active database. Values in this database are provided by the individual carriers themselves.

All calculation were done with respect to uncontrolled / general public threshold limits

Site ID	CT03XC090 - Balch Tower
Site Addresss	236 South Main Street, East Windsor, CT, 06088
Site Type	Self Support Tower

Sector 1

Antenna Number	Antenna Make	Antenna Model	Radio Type	Frequency Band	Technology	Power Out Per Channel (Watts)	Number of Channels	Composite Power	Antenna Gain in direction of sample point (dBd)	Antenna Height (ft)	analysis height	Cable Size	Cable Loss (dB)	Additional Loss	ERP	Power Density Value	Power Density Percentage
1a	RFS	APXV9ERR18-C	RRH	1900 MHz	CDMA / LTE	20	3	60	14.9	123	117	1/2 "	0.5	0	1652.5372	43.39958	4.33996%
1a	RFS	APXV9ERR18-C	RRH	850 MHz	CDMA / LTE	20	1	20	11.9	123	117	1/2 "	0.5	0	276.07685	7.250438	1.27874%
												Sector total Power Density Value:			5.619%		

Sector 2

Antenna Number	Antenna Make	Antenna Model	Radio Type	Frequency Band	Technology	Power Out Per Channel (Watts)	Number of Channels	Composite Power	Antenna Gain in direction of sample point (dBd)	Antenna Height (ft)	analysis height	Cable Size	Cable Loss (dB)	Additional Loss	ERP	Power Density Value	Power Density Percentage
2a	RFS	APXVSPP18-C-A20	RRH	1900 MHz	CDMA / LTE	20	3	60	15.9	123	117	1/2 "	0.5	0	2080.4211	54.63683	5.46368%
2a	RFS	APXVSPP18-C-A20	RRH	850 MHz	CDMA / LTE	20	1	20	13.4	123	117	1/2 "	0.5	0	389.96892	10.24152	1.80626%
												Sector total Power Density Value:			7.270%		

Sector 3

Antenna Number	Antenna Make	Antenna Model	Radio Type	Frequency Band	Technology	Power Out Per Channel (Watts)	Number of Channels	Composite Power	Antenna Gain in direction of sample point (dBd)	Antenna Height (ft)	analysis height	Cable Size	Cable Loss (dB)	Additional Loss	ERP	Power Density Value	Power Density Percentage
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												Sector total Power Density Value:			5.619%		

Site Composite MPE %	
Carrier	MPE %
Sprint	18.507%
Nextel	2.270%
Town	1.680%
T-Mobile	3.640%
MetroPCS	3.880%
Verizon Wireless	11.360%
AT&T	15.200%
Total Site MPE %	**56.537%**

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Summary

All calculations performed for this analysis yielded results that were well within the allowable limits for general public exposure to RF Emissions.

The anticipated Maximum Composite contributions from the Sprint facility are **18.507% (5.619% each from sectors 1 and 3 and 7.270% from sector 3)** of the allowable FCC established general public limit considering all three sectors simultaneously sampled at the ground level.

The anticipated composite MPE value for this site assuming all carriers present is **56.537%** of the allowable FCC established general public limit sampled at the ground level. This is based upon values listed in the Connecticut Siting Council database for existing carrier emissions

FCC guidelines state that if a site is found to be out of compliance (over allowable thresholds), that carriers over a 5% contribution to the composite value will require measures to bring the site into compliance. For this facility, the composite values calculated were well within the allowable 100% threshold standard per the federal government.

Scott Heffernan
RF Engineering Director

EBI Consulting
21 B Street
Burlington, MA 01803

EBI Consulting
environmental | engineering | due diligence

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Scott Heffernan
RF Engineering Director

EBI Consulting
21 B Street
Burlington, MA 01803

Site ID	CT03XC090 - Balch Tower
Site Addresss	236 South Main Street, East Windsor, CT, 06088
Site Type	Self Support Tower

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Antenna Number	Antenna Make	Antenna Model	Radio Type	Frequency Band	Technology	Power Out Per Channel (Watts)	Number of Channels	Composite Power	Antenna Gain in direction of sample point (dBd)	Antenna Height (ft)	analysis height	Cable Size	Cable Loss (dB)	Additional Loss	ERP	Power Density Value	Power Density Percentage
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Sector total Power Density Value: 5.619%

Sector 2

Antenna Number	Antenna Make	Antenna Model	Radio Type	Frequency Band	Technology	Power Out Per Channel (Watts)	Number of Channels	Composite Power	Antenna Gain in direction of sample point (dBd)	Antenna Height (ft)	analysis height	Cable Size	Cable Loss (dB)	Additional Loss	ERP	Power Density Value	Power Density Percentage
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Sector total Power Density Value: 7.270%

Sector 3

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Sector total Power Density Value: 5.619%

Site Composite MPE %

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All calculation were done with respect to uncontrolled / general public threshold limits

Occupational/controlled exposure limits apply to situations in which persons are exposed as a consequence of their employment and in which those persons who are exposed have been made fully aware of the potential for exposure and can exercise control over their exposure. Occupational/controlled exposure limits also apply where exposure is of a transient nature as a result of incidental passage through a location where exposure levels may be above general population/uncontrolled limits (see below), as long as the exposed person has been made fully aware of the potential for exposure and can exercise control over his or her exposure by leaving the area or by some other appropriate means.

Additional details can be found in FCC OET 65.

CALCULATIONS

Calculations were done for the proposed upgrades to the existing Sprint Wireless antenna facility located at 236 South Main Street, East Windsor, CT, using the equipment information listed below. All calculations were performed per the specifications under FCC OET 65. All calculations were performed assuming the main lobe of the antenna was focused at the base of the tower to present a worst case scenario. Actual values seen from this site will be dramatically less than those shown in this report. For this report the sample point is the top of a 6 foot person standing at the base of the tower.

For all calculations, all emissions were calculated using the following assumptions:

1) 3 CDMA Carriers (1900 MHz) were considered for each sector of the proposed installation.
2) 1 CDMA Carrier (850 MHz) was considered for each sector of the proposed installation
3) All radios at the proposed installation were considered to be running at full power and were uncombined in their RF transmissions paths per carrier prescribed configuration. Per FCC OET Bulletin No. 65 - Edition 97-01 recommendations to achieve the maximum anticipated value at each sample point, all power levels emitting from the proposed antenna installation are increased by a factor of 2.56 to account for possible in-phase reflections from the surrounding environment. This is rarely the case, and if so, is never continuous.
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September 27, 2013

Sprint
Attn: RF Engineering Manager
1 International Boulevard, Suite 800
Mahwah, NJ 07495

Re: Emissions Values for Site: **CT03XC090 – Balch Tower**

EBI Consulting was directed to analyze the proposed upgrades to the existing Sprint facility located at 236 South Main Street, East Windsor, CT, for the purpose of determining whether the emissions from the proposed Sprint equipment upgrades on this property are within specified federal limits.

All information used in this report was analyzed as a percentage of current Maximum Permissible Exposure (% MPE) as listed in the FCC OET Bulletin 65 Edition 97-01and ANSI/IEEE Std C95.1. The FCC regulates Maximum Permissible Exposure in units of microwatts per square centimeter (μW/cm2). The number of μW/cm2 calculated at each sample point is called the power density. The exposure limit for power density varies depending upon the frequencies being utilized. Wireless Carriers and Paging Services use different frequency bands each with different exposure limits, therefore it is necessary to report results and limits in terms of percent MPE rather than power density.

All results were compared to the FCC (Federal Communications Commission) radio frequency exposure rules, 47 CFR 1.1307(b)(1) – (b)(3), to determine compliance with the Maximum Permissible Exposure (MPE) limits for General Population/Uncontrolled environments as defined below.

General population/uncontrolled exposure limits apply to situations in which the general public may be exposed or in which persons who are exposed as a consequence of their employment may not be made fully aware of the potential for exposure or cannot exercise control over their exposure. Therefore, members of the general public would always be considered under this category when exposure is not employment related, for example, in the case of a telecommunications tower that exposes persons in a nearby residential area.

Public exposure to radio frequencies is regulated and enforced in units of microwatts per square centimeter ($\mu W/cm^2$). The general population exposure limit for the cellular band is approximately 567 $\mu W/cm^2$, and the general population exposure limit for the PCS band is 1000 $\mu W/cm^2$. Because each carrier will be using different frequency bands, and each frequency band has different exposure limits, it is necessary to report percent of MPE rather than power density.

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

August 10, 2015

Camille M. Mulligan
Alcatel-Lucent
1 Robbins Road
Westford, MA 01886

RE: **Compliance Extension Request**

EM-SPRINT-008-130130	93 Old Amity Road	Bethany
EM-SPRINT-009-131008	8 Sky Edge Drive	Bethel
EM-SPRINT-017-131008	371 Terryville Avenue	Bristol
EM-SPRINT-018-130322	39 Carmen Hill Road	Brookfield
EM-SPRINT-033-130920	179 Shunpike Road	Cromwell
EM-SPRINT-034-130920	41 Padanaram Road	Danbury
EM-SPRINT-069-130409	246 East Franklin Street	Danielson
EM-SPRINT-035-130322	126 Ledge Road	Darien
EM-SPRINT-043-130311	310 Prestige Park Road	East Hartford
EM-SPRINT-047-131008	232 South Main Street	East Windsor
EM-SPRINT-051-130606	280 Morehouse Drive	Fairfield
EM-SPRINT-052-130606	45 Maple Ridge Road	Farmington
EM-SPRINT-057-120122	363 Riversville Road	Greenwich
EM-SPRINT-057-131127	9 Sound Shore Dr., a/k/a 12 Sound Shore Drive	Greenwich
EM-SPRINT-059-130819	99 Briar Road	Groton
EM-SPRINT-062-130509	Talmadge Road	Hamden
EM-SPRINT-068-121226	136 Bulls Bridge Road	Kent
EM-SPRINT-076-130819	135 New Road	Madison
EM-SPRINT-077-130828	Olcott Street a/k/a 250 Olcott Street	Manchester
EM-SPRINT-080-131024	21 West Peak Drive	Meriden
EM-SPRINT-081-130716	1 Service Road	Middlebury
EM-SPRINT-084-130124	528 Wheeler's Farm Rd.	Milford
EM-SPRINT-091-130606	302 Ball Pond Road	New Fairfield
EM-SPRINT-095-131008	26 Washinton Street	New London
EM-SPRINT-097-131008	8 Ferris Road	Newtown
EM-SPRINT-097-131129	201 South Main St.	Newtown
EM-SPRINT-103-121226	173/177 West Rocks Road	Norwalk
EM-SPRINT-104-131112	2 Hinkley Hill Road	Norwich
EM-SPRINT-108-130215	20 Great Oak Road	Oxford
EM-SPRINT-108-130401	133 Coppermine Road	Oxford
EM-SPRINT-108-130712	338 Oxford Road	Oxford
EM-SPRINT-119-130314	47 Inwood Road	Rocky Hill

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EM-SPRINT-119-130819	52 New Britain Avenue	Rocky Hill
EM-SPRINT-120-130828	Lower County Road a/k/a 35 Lower County Road	Roxbury
EM-SPRINT-126-130325	219 Nells Rock Road	Shelton
EM-SPRINT-126-130515	70 Platt Road	Shelton
EM-SPRINT-128-131112	22 Wintonbury Road (aka 49a and 53 Wintonbury Road)	Simsbury
EM-SPRINT-130-130531	1432 Old Waterbury Road	Southbury
EM-SPRINT-135-130128	69 Guinea Road	Stamford
EM-SPRINT-135-131112	366 Old Long Ridge Road	Stamford
EM-SPRINT-143-130712	350 Burr Mountain Road	Torrington
EM-SPRINT-151-131209	184 Garden Circle	Waterbury
EM-SPRINT-155-130828	345 North Main Street a/k/a 333 North Main Street	West Hartford
EM-SPRINT-157-130701	56 Norfield Road	Weston
EM-SPRINT-164-130920	Windsor Avenue a/k/a 494 Windsor Avenue	Windsor
EM-SPRINT-NEXTEL-166-130116	164 County Road	Wolcott

Dear Ms. Mulligan:

The Connecticut Siting Council (Council) is in receipt of your letter dated August 10, 2015, submitted on behalf of Sprint, requesting an extension of time to submit notices of completion of construction and associated post modification inspection reports for the above-referenced exempt modifications that were approved in 2013.

Please be advised that Council approval of these exempt modifications has expired. Therefore, any additional changes to these facilities will require explicit notice to the Council pursuant to Regulations of Connecticut State Agencies Section 16-50j-73 and a filing fee.

Thank you for your attention to this matter.

Sincerely,

Melanie A. Bachman
Acting Executive Director

MAB/cm

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