Transcend Wireless

10 Industrial Ave,
Suite 3
Mahwah NJ 07430

Phone: 201.684.0055
Fax: 201.684.0066

September 17, 2018

Melanie Bachman
Executive Director
Connecticut Siting Council
10 Franklin Square
New Britain, CT 06051

Notice of Exempt Modification
37 Carmen Hill Road, Brookfield, CT 06804
Latitude- 41.493422400
Longitude- -73.4287345000

Dear Ms. Bachman,

T-Mobile currently maintains (6) existing antennas 280' level of the existing 455' guy tower at 37 Carmen Hill Road in Brookfield, CT. The tower is owned by Vertical Bridge. The property is owned by American Tower Corporation. T-Mobile now intends to replace (3) of its existing antennas with (3) new 600/700/1900/2100 MHz antennas. These antennas would be installed at the same 280' level of the tower. T-Mobile also intends to replace (3) remote radio heads and add (1) fiber cable. Per the enclosed structural analysis, with the new equipment the tower structurally passes at 104%. Included with this submission is a letter from Mr. Joseph Cassidy, State of Connecticut Building Inspector, who confirmed the tower complies with the structural requirements of the 2016 Connecticut State Building Code.

The tower was originally approved by the Town of Brookfield Zoning Commission on February 24, 1994 with Special Permit #SP94-1. The original decision did not come with conditions of approval.

Please accept this letter as notification pursuant to Regulations of Connecticut State Agencies 16-50j-73, for construction that constitutes an exempt modification pursuant to R.C.S.A. 16-50j-72(b)(2). In accordance with R.C.S.A. 16-50j-73, a copy of this letter is being sent to Stephen Dunn, First Selectman of the Town of Brookfield, Alice Dew, Land Use Director for the Town of Brookfield, as well as the tower owner and property owner.

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

1. The proposed modification will not result in an increase in the height of the existing structure

2. The proposed modifications will not require the extension of the site boundary.

3. The proposed modifications will not increase noise levels at the facility by six decibels or more, or to levels that exceed state and local criteria.

4. The operation of the replacement antennas will not increase radio frequency emissions at the facility to a level at or above the Federal Communications Commission safety standard.

5. The proposed modification will not cause a change or alteration in the physical or environmental characteristics of the site.

6. The existing structure and its foundation can support the proposed loading.

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

Sincerely,

Kyle Richers

Kyle Richers
Transcend Wireless
10 Industrial Ave., Suite 3
Mahwah, New Jersey 07430
908-447-4716
krichers@transcendwireless.com

cc: Stephen Dunn- as elected official
Alice Dew- as zoning official
Vertical Bridge- as tower owner
American Tower Corporation- as property owner

Town of Brookfield, CT

Property Listing Report

Map Block Lot **B05010** Account **02704000**

Property Information

Property Location	37 CARMEN HILL RD
Owner	AMERICAN TOWERS LLC
Co-Owner	C/O PROPERTY TAX DEPT
Mailing Address	PO BOX 723597 ATLANTA GA 31139
Land Use	435 Cell Site Vac Lnd
Land Class	I
Zoning Code	R100
Census Tract	205100010600

Neighborhood	
Acreage	4
Utilities	
Lot Setting/Desc	Level
Town Clerk Map # 1 Town Clerk Map # 2	

Photo

Sketch

Primary Construction Details

Year Built		Bedrooms		Exterior Walls	
Stories		Full Bathrooms		Interior Walls	
Building Style		Half Bathrooms		Heating Type	
Building Use		Bath Style		Heating Fuel	
Building Condition		Kitchen Style		AC Type	
Floors		Roof Style		Gross Bldg Area	
Total Rooms		Roof Cover		Total Living Area	

Report Created On **9/5/2018**

Town of Brookfield, CT

Property Listing Report | Map Block Lot **B05010** | Account **02704000**

Valuation Summary

(Assessed value = 70% of Appraised Value)

Item	Appraised	Assessed
Buildings	0	0
Extras	0	0
Improvements	16030	11220
Outbuildings	16030	11220
Land	490010	343010
Total	506040	354230

Outbuilding and Extra Items

Type	Description
Comm Shed	240.00 S.F.
Guyed Tower	80.00 L.F.

Sub Areas

Subarea Type	Gross Area (sq ft)	Living Area (sq ft)
Total Area		0

Sales History

Owner of Record	Book/ Page	Sale Date	Sale Price
CHARTER COMMUNICATIONS ENTERTAINMENT 1LP	313/ 836	11/1/1996	37800
FLORIDA TOWER PARTNERS LLC	683/ 643	4/10/2014	525000
AMERICAN TOWERS LLC	692/ 597	11/20/2014	352340

Report Created On **9/5/2018**

Town of Brookfield

Geographic Information System (GIS)

Date Printed: 9/17/2018

MAP DISCLAIMER - NOTICE OF LIABILITY

This map is for assessment purposes only. It is not for legal description or conveyances. All information is subject to verification by any user. The Town of Brookfield and its mapping contractors assume no legal responsibility for the information contained herein.

Approximate Scale: 1 inch = 75 feet

0 75 Feet

N W E S

EBI Consulting
environmental | engineering | due diligence

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

T-Mobile Existing Facility

Site ID: CT11196A

Brookfield/Junction Rd
37 Carmen Hill Road
Brookfield, CT 06804

September 13, 2018

EBI Project Number: 6218006146

Site Compliance Summary	
Compliance Status:	COMPLIANT
Site total MPE% of FCC general population allowable limit:	26.63 %

21 B Street · Burlington, MA 01803 · Tel: (781) 273.2500 · Fax: (781) 273.3311

EBI Consulting
environmental | engineering | due diligence

September 13, 2018

T-Mobile USA
Attn: Jason Overbey, RF Manager
35 Griffin Road South
Bloomfield, CT 06002

Emissions Analysis for Site: **CT11196A – Brookfield/Junction Rd**

EBI Consulting was directed to analyze the proposed T-Mobile facility located at **37 Carmen Hill Road, Brookfield, CT**, for the purpose of determining whether the emissions from the Proposed T-Mobile Antenna Installation located 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 $\mu W/cm^2$ 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 population 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 population 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 limits for the 600 MHz and 700 MHz frequency bands are approximately 400 $\mu W/cm^2$ and 467 $\mu W/cm^2$ respectively. The general population exposure limit for the 1900 MHz (PCS) and 2100 MHz (AWS) frequency bands 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 T-Mobile Wireless antenna facility located at **37 Carmen Hill Road, Brookfield, CT**, using the equipment information listed below. All calculations were performed per the specifications under FCC OET 65. Since T-Mobile is proposing highly focused directional panel antennas, which project most of the emitted energy out toward the horizon, all calculations were performed assuming a lobe representing the maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB for directional panel antennas, was focused at the base of the tower. 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 equipment was calculated using the following assumptions:

1) 1 GSM channels (PCS Band - 1900 MHz) was considered for each sector of the proposed installation. These Channels have a transmit power of 15 Watts per Channel.

2) 1 UMTS channel (AWS Band – 2100 MHz) was considered for each sector of the proposed installation. These Channels have a transmit power of 40 Watts per Channel.

3) 2 LTE channels (PCS Band - 1900 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 40 Watts per Channel.

4) 2 LTE channels (AWS Band – 2100 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 60 Watts per Channel.

5) 2 LTE channels (600 MHz Band) were considered for each sector of the proposed installation. These Channels have a transmit power of 40 Watts per Channel.

6) 2 LTE channels (700 MHz Band) were considered for each sector of the proposed installation. These Channels have a transmit power of 20 Watts per Channel.

7) 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.

8) For the following calculations the sample point was the top of a 6-foot person standing at the base of the tower. The maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB for directional panel antennas, was used in this direction. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.

9) The antennas used in this modeling are the **RFS APX16DWV-16DWVS-E-A20** & **RFS APXVAARR24_43-U-NA20** for 600 MHz, 700 MHz, 1900 MHz (PCS) and 2100 MHz (AWS) channels. This is based on feedback from the carrier with regard to anticipated antenna selection. All Antenna gain values and associated transmit power levels are shown in the Site Inventory and Power Data table below. The maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB for directional panel antennas, was used for all calculations. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.

10) The antenna mounting height centerline of the proposed antennas is **280 feet** above ground level (AGL).

11) 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.

12) All calculations were done with respect to uncontrolled / general population threshold limits.

T-Mobile Site Inventory and Power Data

Sector:	A	Sector:	B	Sector:	C
Antenna #:	**1**	Antenna #:	**1**	Antenna #:	**1**
Make / Model:	RFS APX16DWV-16DWVS-E-A20	Make / Model:	RFS APX16DWV-16DWVS-E-A20	Make / Model:	RFS APX16DWV-16DWVS-E-A20
Gain:	16.3 dBd	Gain:	16.3 dBd	Gain:	16.3 dBd
Height (AGL):	280 feet	Height (AGL):	280 feet	Height (AGL):	280 feet
Frequency Bands	1900 MHz (PCS) / 2100 MHz (AWS)	Frequency Bands	1900 MHz (PCS) / 2100 MHz (AWS)	Frequency Bands	1900 MHz (PCS) / 2100 MHz (AWS)
Channel Count	6	Channel Count	6	Channel Count	6
Total TX Power(W):	255	Total TX Power(W):	255	Total TX Power(W):	255
ERP (W):	10,877.78	ERP (W):	10,877.78	ERP (W):	10,877.78
Antenna A1 MPE%	**0.52**	Antenna B1 MPE%	**0.52**	Antenna C1 MPE%	**0.52**
Antenna #:	**2**	Antenna #:	**2**	Antenna #:	**2**
Make / Model:	RFS APXVAARR24_43-U-NA20	Make / Model:	RFS APXVAARR24_43-U-NA20	Make / Model:	RFS APXVAARR24_43-U-NA20
Gain:	12.95 / 13.35 dBd	Gain:	12.95 / 13.35 dBd	Gain:	12.95 / 13.35 dBd
Height (AGL):	280 feet	Height (AGL):	280 feet	Height (AGL):	280 feet
Frequency Bands	1900 MHz (PCS) / 2100 MHz (AWS)	Frequency Bands	1900 MHz (PCS) / 2100 MHz (AWS)	Frequency Bands	1900 MHz (PCS) / 2100 MHz (AWS)
Channel Count	4	Channel Count	4	Channel Count	4
Total TX Power(W):	120	Total TX Power(W):	120	Total TX Power(W):	120
ERP (W):	2,443.03	ERP (W):	2,443.03	ERP (W):	2,443.03
Antenna A2 MPE%	**0.28**	Antenna B2 MPE%	**0.28**	Antenna C2 MPE%	**0.28**

Site Composite MPE%	
Carrier	**MPE%**
T-Mobile (Per Sector Max)	**0.80 %**
Verizon Wireless	**21.43** %
WRKI FM radio	**2.65** %
WINE AM radio	**0.00** %
Town Fire Dept	**0.12** %
Town Police Dept	**0.21** %
Town PW Dept	**0.57** %
Sprint	**0.16** %
Clearwire	**0.07** %
AT&T	**0.62** %
Site Total MPE %:	**26.63 %**

T-Mobile Sector A Total:	0.80 %
T-Mobile Sector B Total:	0.80 %
T-Mobile Sector C Total:	0.80 %
Site Total:	26.63 %

T-Mobile Maximum MPE Power Values (Per Sector)

T-Mobile _Frequency Band / Technology (Per Sector)	# Channels	Watts ERP (Per Channel)	Height (feet)	Total Power Density ($\mu W/cm^2$)	Frequency (MHz)	Allowable MPE ($\mu W/cm^2$)	Calculated % MPE
T-Mobile PCS - 1900 MHz LTE	2	1,706.32	280	1.63	PCS - 1900 MHz	1000.00	0.16%
T-Mobile PCS - 1900 MHz GSM	1	639.87	280	0.31	PCS - 1900 MHz	1000.00	0.03%
T-Mobile AWS - 2100 MHz LTE	2	2,559.48	280	2.45	AWS - 2100 MHz	1000.00	0.25%
T-Mobile AWS - 2100 MHz UMTS	1	1,706.32	280	0.82	AWS - 2100 MHz	1000.00	0.08%
T-Mobile 600 MHz LTE	2	788.97	280	0.76	600 MHz	400.00	0.19%
T-Mobile 700 MHz LTE	2	432.54	280	0.41	700 MHz	467.00	0.09%
						Total:	**0.80%**

Summary

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

The anticipated maximum composite contributions from the T-Mobile facility as well as the site composite emissions value with regards to compliance with FCC's allowable limits for general population exposure to RF Emissions are shown here:

T-Mobile Sector	Power Density Value (%)
Sector A:	0.80 %
Sector B:	0.80 %
Sector C:	0.80 %
T-Mobile Maximum MPE % (Per Sector):	0.80 %
Site Total:	26.63 %
Site Compliance Status:	**COMPLIANT**

The anticipated composite MPE value for this site assuming all carriers present is **26.63%** of the allowable FCC established general population 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.

DEPARTMENT OF ADMINISTRATIVE SERVICES

September 14, 2018

Kyle Richers
Transcend Wireless
10 Industrial Ave., Suite 3
Mahwah, New Jersey 07430

Re: Structural Analysis Report for Site #CT11196A
Carmen Hill Road, Brookfield, CT

Mr. Richers,

Based on the Structural Analysis Report by Vertical Bridge Engineering, LLC, dated September 6, 2018, the proposed additions to this tower comply with the structural requirements of the 2016 Connecticut State Building Code.

If you have any questions you may contact me as 860-713-5900.

Sincerely,

Joseph V. Cassidy, P.E.
State Building Inspector

Structural Analysis Report

Structure	**:** 492 Foot Guyed Tower
VB Site Name	**:** WRKI-FM
VB Site Number	**:** US-CT-5009
Proposed Carrier	**:** T-Mobile
Carrier Site Name	**:** Brookfield/Junction Rd
Carrier Site Number	**:** CT11196A
Site Location	**:** 0.3 Mi. Sse of Intersection of Carmen Hill Rd. & Se Trail Brookfield, CT 06804 (Fairfield County) 41.4934, -73.4288
Date	**:** September 6, 2018
Max Member Stress Level	**:** 104%
Result	**: PASS**

09/06/2018

Prepared by:

VERTICAL BRIDGE ENGINEERING, LLC

750 Park of Commerce Drive Suite 200 | Boca Raton, FL 33487 | 561-948-6367
VerticalBridge.com

Table of Contents

Introduction

We have completed our structural analysis of the proposed equipment installation on the foregoing tower to determine its ability to support the new loads proposed by **T-Mobile**. The objective of the analysis was to determine if the tower meets the current structural codes and standards with the proposed equipment installation.

Existing Structural Information

The following documents for the existing structure were made available for our structural analysis.

Tower Information	Structural Components Tower Mapping Dated June 12, 2015.
Foundation Information	Structural Components Foundation Mapping Dated April 7, 2016.
Geotechnical Information	Delta Oaks Group Job No. GEO16-00237-03 dated April 11, 2016.
Existing Equipment Information	Vertical Bridge Collocation Application dated July 10, 2018.
Tower Reinforcement Information	Tower has not been reinforced.

Final Proposed Equipment Loading for T-Mobile

The following proposed loading was obtained from the Vertical Bridge Collocation Application:

Antenna/Equipment					Coax	
Mount (Ft.)	RAD (Ft.)	Qty.	Antenna	Type	Qty.	Size/Type
280.0	-	3	Sector Frames	Mount	18 **1**	1-5/8" Coax **1-5/8" Hybrid**
	280.0	3	RFS APX16DWV-16DWV-S-E-A20	Panel		
		3	Ericsson KRY 112144	TMA		
		3	Ericsson KRY 112 89-4	TMA		
		3	**RFS APXVAAR24-43-U-NA20**	Panel		
		3	**Ericsson RRU 4449 B71B12**	RRU		

Note: Proposed equipment shown in bold.
Note: Other existing loading can be found on the tower profile attached.
Note: (3) Andrew LNX-6515DS-A1M Panels and (3) Ericsson RRUS11B12 RRUs are to be removed.

Design Criteria

The tower was analyzed using tnxTower (Version 8.0.4.0) tower analysis software using the following design criteria.

State	Connecticut
City/County Building Code	Fairfield County (IBC 2012)
TIA/EIA Standard Code	TIA-222-G
Basic Wind Speed	90 MPH (V_{asd}) / 116 MPH (V_{ult})
Basic Wind Speed w/ Ice	40 MPH w/ 0.75" Ice
Steel Grade	50 ksi Legs / 36 ksi All Other Members / A325 Bolts
Exposure Category	B
Topographic Category (height)	5 (479.0 Ft.)
Structure Class	II

Analysis Results

Based on the foregoing information, our structural analysis determined that **the existing tower is structurally capable of supporting the proposed equipment loads without modification.** The existing tower base, inner, and outer anchor foundations have also been evaluated. The tower base, inner, and outer anchor foundations **are structurally capable of supporting the proposed equipment loads.**

Assumptions

The below assumptions are true, complete, and accurate.

1. The existing tower has been maintained to manufacturer's specifications and is in good condition.
2. Foundations are considered to have been properly designed for the original design loads.
3. All member connections are considered to have been designed to meet the load carrying capacity of the connected member.
4. Antenna mount loads have been estimated based on generally accepted industry standards.
5. The mounts for the proposed antennas have been analyzed and designed by others.
6. See additional assumptions contained in the report attached.
7. Tower is within acceptable engineering tolerance at 105%.
8. Foundations are within acceptable engineering tolerance at 110%.

Conclusions

The existing tower described above **does have sufficient capacity** to support the proposed loading based on the governing Building Code. The tower base, inner, and outer anchor foundations have also been evaluated and are acceptable**.**

We appreciate the opportunity of providing our continuing professional services to you. If you have any questions or need further assistance please call us anytime at 561-948-6367.

Sincerely,

Analysis by:

Jesse Wagner
Design Engineer

Reviewed by:

Michael T. De Boer, PE
Vice President of Structural Engineering 09/06/2018

Standard Conditions

All engineering services are performed on the basis that the information used is current and correct. This information may consist of, but not necessarily limited, to:

- Information supplied by the client regarding the structure itself, the antenna and transmission line loading on the structure and it components, or relevant information.

- Information from drawings in possession of Vertical Bridge Engineering, LLC, or generated by field inspections or measurements of the structure.

It is the responsibility of the client to ensure that the information provided to Vertical Bridge Engineering, LLC and used in the performance of our engineering services is correct and complete. In the absence of information contrary, we consider that all structures were constructed in accordance with the drawings and specifications and are in a un- corroded condition and have not deteriorated; and we, therefore consider that their capacity has not significantly changed from the original design condition.

All services will be performed to the codes and standards specified by the client, and we do not imply to meet any other code and standard requirements unless explicitly agreed to in writing. If wind and ice loads or other relevant parameters are to be different from the minimum values recommended by the codes and standards, the client shall specify the exact requirements. In the absence of information to the contrary, all work will be performed in accordance with the revision of ANSI/TIA/EIA-222-G requested.

All services are performed, results obtained and recommendations made in accordance with the generally accepted engineering principles and practices. Vertical Bridge Engineering LLC, is not responsible for the conclusions, opinions and recommendations made by others based on the information we supply.

Disclaimer of Warranties

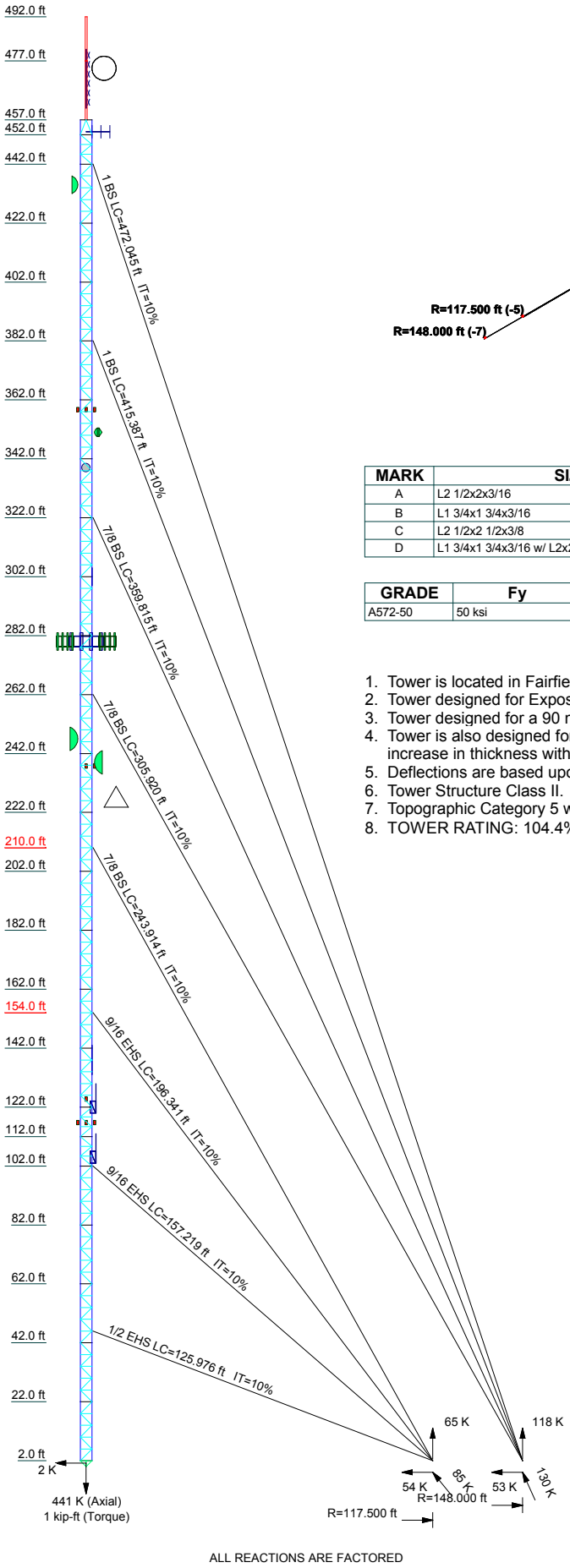
The engineering services by Vertical Bridge Engineering, LLC in connection with this Structural Analysis are limited to a computer analysis of the tower structure, size and capacity of its members. Vertical Bridge Engineering, LLC does not analyze the fabrication, including welding, except as may be expressly included in this report.

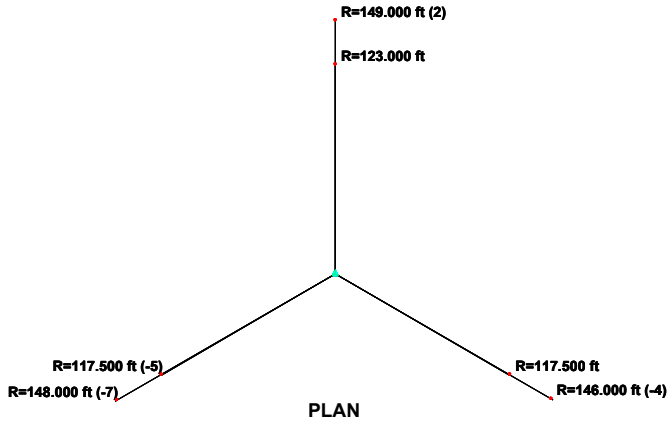
The purpose of this report is to assess the feasibility of adding appurtenances usually accompanied by transmission lines. Any mention of structural modifications are reasonable estimates and should not be used a precise construction document. Precise modification drawings are obtainable from Vertical Bridge Engineering, LLC but are beyond the scope of this report.

Vertical Bridge Engineering, LLC makes no warranties, express or implied, in connection with this report and disclaims any liability arising from material, fabrication and erection of this tower, or installation and compliance with legal and permitting requirements of the proposed equipment. Vertical Bridge Engineering, LLC will not be responsible whatsoever for or on account of, consequential or incidental damages sustained by any person, firm, or organization as a result of any data or conclusions contained in this report. The maximum liability of Vertical Bridge Engineering, LLC pursuant to this report will be limited to the total fee received for preparation of this report.

Attachment 1:
Calculations

Section	Legs	Leg Grade	Diagonals	Diagonal Grade	Top Girts	Bottom Girts	Horizontals	Face Width (ft)	# Panels @ (ft)	Weight (K)
L1	P8x.406	A53-B-35	N.A.	N.A.	N.A.	N.A.	N.A.	0.71875	N.A.	N.A.
L2									N.A.	0.7
T1	SR 3	A572-50	L1 3/4x1 3/4x3/16	A36	L2x2x3/16	L2x2x3/16	L2x2x3/16	4	6 @ 3.3333	37.5
T2									G	0.6
T3	SR 2 1/4								25 @ 4	1.2
T4										1.2
T5										1.2
T6										1.2
T7	SR 2 1/2									1.2
T8										1.2
T9										1.3
T10			L2x2x1/4						80 @ 4	1.4
T11	SR 2 3/4									1.9
T12			L2x2x1/4							1.6
T13										1.6
T14										2.1
T15										1.8
T16			L1 3/4x1 3/4x3/16							1.8
T17										1.8
T18										1.8
T19										0.9
T20										1.1
T21										1.8
T22										1.8
T23										1.8
T24										1.8
T25										1.8





PLAN

SYMBOL LIST

MARK	SIZE	MARK	SIZE
A	L2 1/2x2x3/16	E	C6x10.5
B	L1 3/4x1 3/4x3/16	F	1 @ 5
C	L2 1/2x2 1/2x3/8	G	3 @ 3.33333
D	L1 3/4x1 3/4x3/16 w/ L2x2x1/4		

MATERIAL STRENGTH

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

TOWER DESIGN NOTES

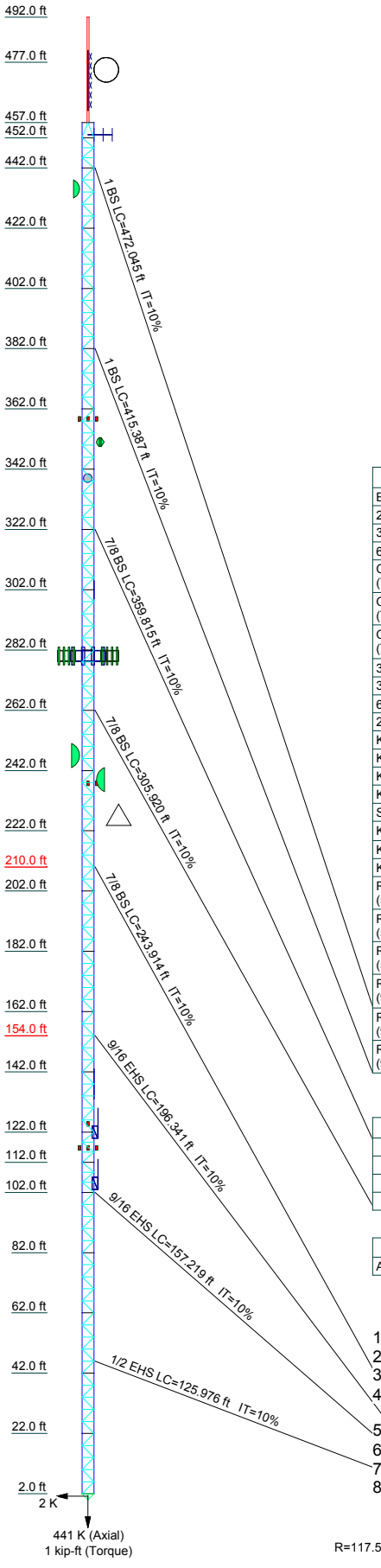
1. Tower is located in Fairfield County, Connecticut.
2. Tower designed for Exposure B to the TIA-222-G Standard.
3. Tower designed for a 90 mph basic wind in accordance with the TIA-222-G Standard.
4. Tower is also designed for a 40 mph basic wind with 0.75 in ice. Ice is considered to increase in thickness with height.
5. Deflections are based upon a 60 mph wind.
6. Tower Structure Class II.
7. Topographic Category 5 with Crest Height of 479.000 ft
8. TOWER RATING: 104.4%

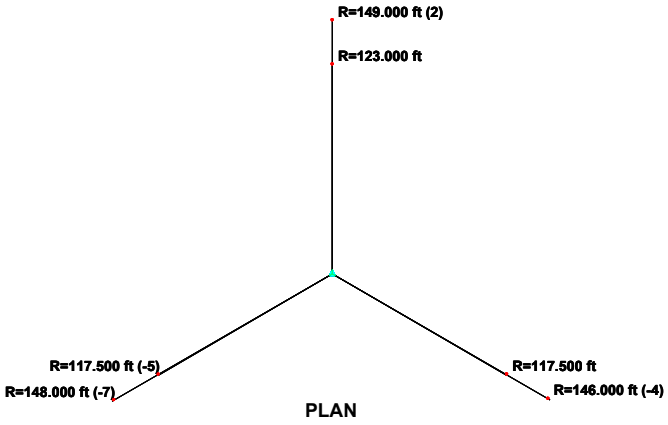
ALL REACTIONS ARE FACTORED

Vertical Bridge Engineering, LLC
750 Park of Commerce Dr. Suite 200
Boca Raton, FL 33487
Phone: 561-948-6367
FAX:

Job: ***US-CT-5009***		
Project: ***Guyed Tower Structural Analysis***		
Client:	Drawn by: Jesse Wagner	App'd:
Code: TIA-222-G	Date: 09/06/18	Scale: NTS
Path: C:\Users\jwagner.VBL\Desktop\VB\Operationals\US-CT-5009\US-CT-5009_SA_082918_TMOBILE.eri		Dwg No. E-1

Section	Legs	Leg Grade	Diagonals	Diagonal Grade	Top Girts	Bottom Girts	Horizontals	Face Width (ft)	# Panels @ (ft)	Weight (K)
T1	P8x.406	A53-B-35	N.A.	N.A.	N.A.	N.A.	N.A.	0.71875	N.A.	0.5
T2	SR 2 1/4	A572-50	L2x2x1/4	A36	L2x2x3/16	L2x2x3/16	L2x2x3/16	4	80 @ 4	0.7
T3										1.2
T4										1.2
T5										1.2
T6										1.2
T7										1.2
T8										1.2
T9	SR 2 1/2		A		E				G	0.6
T10										1.4
T11			B							1.3
T12	SR 2 3/4		L2x2x1/4						F	0.4
T13										1.6
T14			C							1.9
T15			L2x2x1/4							2.1
T16										1.6
T17										1.8
T18										1.8
T19	SR 3		L1 3/4x1 3/4x3/16						6 @ 3.33333	0.9
T20										1.1
T21			D							1.8
T22										1.8
T23									25 @ 4	1.8
T24			L1 3/4x1 3/4x3/16							1.8
T25						L2x2x3/16				1.8
										37.5





PLAN

DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION
Beacon (.075k 2.250CAAA) (Tower)	490
2 Bay FM Antenna	471
3' Yagi(.03k,2.08CAAA)	453
6' Grid Dish	435
Obstruction Light(.01k,.8CAAA) (Tower)	358
Obstruction Light(.01k,.8CAAA) (Tower)	358
Obstruction Light(.01k,.8CAAA) (Tower)	358
3' Dish w/ Radomes	351
3' Grid Dish	339
6' Omni	302
2' Side arm (25lbs 0.5CaAa)	302
Kathrein CA5-FM/CP/RM	300
KRY 112 89/4 (T-Mobile)	280
KRY 112 89/4 (T-Mobile)	280
KRY 112 89/4 (T-Mobile)	280
Sector Frames (T-Mobile)	280
KRY 112 144/1 (T-Mobile)	280
KRY 112 144/1 (T-Mobile)	280
KRY 112 144/1 (T-Mobile)	280
RFS APX16DWV-16DWV-S-E-A20 (55.9x13.3x3.15) (T-Mobile)	280
RFS APX16DWV-16DWV-S-E-A20 (55.9x13.3x3.15) (T-Mobile)	280
RFS APX16DWV-16DWV-S-E-A20 (55.9x13.3x3.15) (T-Mobile)	280
RFS APXVAA24_43-U-A20 (95.9x24x8.7) (T-Mobile)	280
RFS APXVAA24_43-U-A20 (95.9x24x8.7) (T-Mobile)	280
RFS APXVAA24_43-U-A20 (95.9x24x8.7) (T-Mobile)	280

TYPE	ELEVATION
Ericsson RRU 4449 B71B12 (14.9x13.2x10.4) (T-Mobile)	280
Ericsson RRU 4449 B71B12 (14.9x13.2x10.4) (T-Mobile)	280
Ericsson RRU 4449 B71B12 (14.9x13.2x10.4) (T-Mobile)	280
PCS 1900MHz 4x45W-65MHz (Sprint)	258
800 EXTERNAL NOTCH FILTER (Sprint)	258
SM-408-1 (Sprint)	258
RR65-18-02DPL2 w/Mount Pipe (Sprint)	258
APXVSPP18-C-A20 w/ Mount Pipe (Sprint)	258
8' Grid Dish (140lbs 20.1CaAa)	247
8' Grid Dish (140lbs 20.1CaAa)	239
Beacon (.075k 2.250CAAA) (Tower)	237
Beacon (.075k 2.250CAAA) (Tower)	237
3' Side Arm	138
10' Dipole	138
3' Side Arm	125
10' Dipole	125
Beacon (.075k 2.250CAAA) (Tower)	124
Obstruction Light(.01k,.8CAAA) (Tower)	116
Obstruction Light(.01k,.8CAAA) (Tower)	116
Obstruction Light(.01k,.8CAAA) (Tower)	116
3' Side Arm	108
10' Dipole	108

SYMBOL LIST

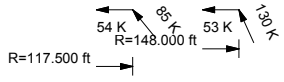
MARK	SIZE	MARK	SIZE
A	L2 1/2x2x3/16	E	C6x10.5
B	L1 3/4x1 3/4x3/16	F	1 @ 5
C	L2 1/2x2 1/2x3/8	G	3 @ 3.33333
D	L1 3/4x1 3/4x3/16 w/ L2x2x1/4		

MATERIAL STRENGTH

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

TOWER DESIGN NOTES

1. Tower is located in Fairfield County, Connecticut.
2. Tower designed for Exposure B to the TIA-222-G Standard.
3. Tower designed for a 90 mph basic wind in accordance with the TIA-222-G Standard.
4. Tower is also designed for a 40 mph basic wind with 0.75 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 5 with Crest Height of 479.000 ft
8. TOWER RATING: 104.4%



ALL REACTIONS ARE FACTORED

Vertical Bridge Engineering, LLC
750 Park of Commerce Dr. Suite 200
Boca Raton, FL 33487
Phone: 561-948-6367
FAX:

Job: ***US-CT-5009***		
Project: ***Guyed Tower Structural Analysis***		
Client:	Drawn by: Jesse Wagner	App'd:
Code: TIA-222-G	Date: 09/06/18	Scale: NTS
Path: C:\Users\jwagner.VBL\Desktop\VB\Operationals\US-CT-5009\US-CT-5009_SA_082918_TMOBILE.dri		Dwg No. E-1

Tower Input Data

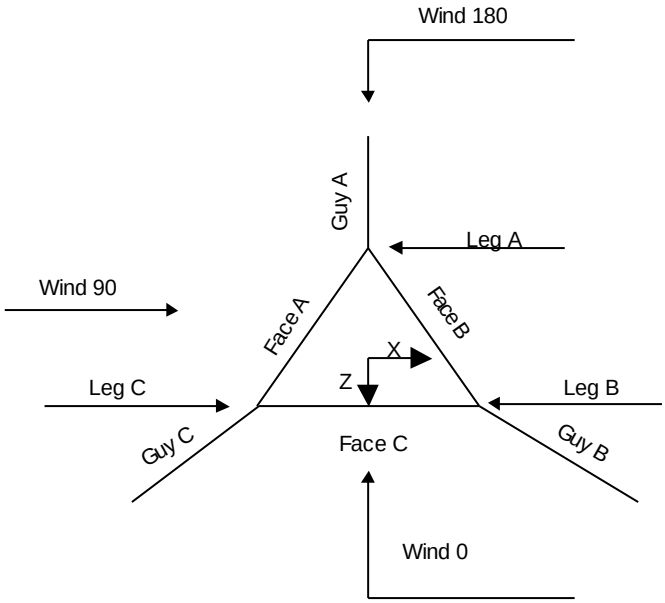
The main tower is a 3x guyed tower with an overall height of 492.000 ft above the ground line.
The base of the tower is set at an elevation of 0.000 ft above the ground line.
The face width of the tower is 4.000 ft at the top and 4.000 ft at the base.
An index plate is provided at the 3x guyed -tower connection.
There is a pole section.
This tower is designed using the TIA-222-G standard.
The following design criteria apply:

Tower is located in Fairfield County, Connecticut.
Basic wind speed of 90 mph.
Structure Class II.
Exposure Category B.
Topographic Category 5.
Crest Height 450.000 ft.
SEAW RSM-03 procedures for wind speed-up calculations are used.
Topographic Feature: Continuous Ridge.
Slope Distance L: 2954.000 ft.
Distance from Crest x: 807.000 ft.
Nominal ice thickness of 0.7500 in.
Ice thickness is considered to increase with height.
Ice density of 56.000 pcf.
A wind speed of 40 mph is used in combination with ice.
Temperature drop of 50.000 °F.
Deflections calculated using a wind speed of 60 mph.
I-Beam base is 2.000 ft above the pivot.
Pressures are calculated at each section.
Stress ratio used in pole design is 1.
Safety factor used in guy design is 1.
Stress ratio used in tower member design is 1.
Local bending stresses due to climbing loads, feed line supports, and appurtenance mounts are not considered.

Options

Consider Moments - Legs	Distribute Leg Loads As Uniform	Use ASCE 10 X-Brace Ly Rules
Consider Moments - Horizontals	Assume Legs Pinned	√ Calculate Redundant Bracing Forces
Consider Moments - Diagonals	√ Assume Rigid Index Plate	Ignore Redundant Members in FEA
Use Moment Magnification	√ Use Clear Spans For Wind Area	√ SR Leg Bolts Resist Compression
√ Use Code Stress Ratios	√ Use Clear Spans For KL/r	√ All Leg Panels Have Same Allowable
√ Use Code Safety Factors - Guys	√ Retension Guys To Initial Tension	Offset Girt At Foundation
Escalate Ice	Bypass Mast Stability Checks	√ Consider Feed Line Torque
Always Use Max Kz	√ Use Azimuth Dish Coefficients	Include Angle Block Shear Check
Use Special Wind Profile	√ Project Wind Area of Appurt.	Use TIA-222-G Bracing Resist. Exemption
Include Bolts In Member Capacity	√ Autocalc Torque Arm Areas	Use TIA-222-G Tension Splice Exemption
Leg Bolts Are At Top Of Section	Add IBC .6D+W Combination	Poles
Secondary Horizontal Braces Leg	√ Sort Capacity Reports By Component	Include Shear-Torsion Interaction
Use Diamond Inner Bracing (4 Sided)	Triangulate Diamond Inner Bracing	Always Use Sub-Critical Flow
√ SR Members Have Cut Ends	Treat Feed Line Bundles As Cylinder	Use Top Mounted Sockets
√ SR Members Are Concentric	Ignore KL/ry For 60 Deg. Angle Legs	Pole Without Linear Attachments
		Pole With Shroud Or No Appurtenances
		Outside and Inside Corner Radii Are

Known



Corner & Starmount Guyed Tower

Pole Section Geometry

Section	*Elevation* *ft*	*Section Length* *ft*	*Pole Size*	*Pole Grade*	*Socket Length* *ft*
L1	492.000-477.000	15.000	P8x.406	A53-B-35 (35 ksi)	
L2	477.000-457.000	20.000	P8x.406	A53-B-35 (35 ksi)	

Tower Elevation *ft*	*Gusset Area (per face)* *ft²*	*Gusset Thickness* *in*	*Gusset Grade*	*Adjust. Factor* A_f	*Adjust. Factor* A_r	*Weight Mult.*	*Double Angle Stitch Bolt Spacing Diagonals* *in*	*Double Angle Stitch Bolt Spacing Horizontals* *in*	*Double Angle Stitch Bolt Spacing Redundants* *in*
L1 492.000-477.000				1	1	1			
L2 477.000-457.000				1	1	1			

Tower Section Geometry

Tower Section	Tower Elevation ft	Assembly Database	Description	Section Width ft	Number of Sections	Section Length ft
T1	457.000-452.000			4.000	1	5.000
T2	452.000-442.000			4.000	1	10.000
T3	442.000-422.000			4.000	1	20.000
T4	422.000-402.000			4.000	1	20.000
T5	402.000-382.000			4.000	1	20.000
T6	382.000-362.000			4.000	1	20.000
T7	362.000-342.000			4.000	1	20.000
T8	342.000-322.000			4.000	1	20.000
T9	322.000-302.000			4.000	1	20.000
T10	302.000-282.000			4.000	1	20.000
T11	282.000-262.000			4.000	1	20.000
T12	262.000-242.000			4.000	1	20.000
T13	242.000-222.000			4.000	1	20.000
T14	222.000-202.000			4.000	1	20.000
T15	202.000-182.000			4.000	1	20.000
T16	182.000-162.000			4.000	1	20.000
T17	162.000-142.000			4.000	1	20.000
T18	142.000-122.000			4.000	1	20.000
T19	122.000-112.000			4.000	1	10.000
T20	112.000-102.000			4.000	1	10.000
T21	102.000-82.000			4.000	1	20.000
T22	82.000-62.000			4.000	1	20.000
T23	62.000-42.000			4.000	1	20.000
T24	42.000-22.000			4.000	1	20.000
T25	22.000-2.000			4.000	1	20.000

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	457.000-452.000	5.000	K Brace Down	No	Yes	0.0000	0.0000
T2	452.000-442.000	3.333	K Brace Right	No	Yes	0.0000	0.0000
T3	442.000-422.000	4.000	K Brace Left	No	Yes	0.0000	0.0000
T4	422.000-402.000	4.000	K Brace Right	No	Yes	0.0000	0.0000
T5	402.000-382.000	4.000	K Brace Left	No	Yes	0.0000	0.0000
T6	382.000-362.000	4.000	K Brace Right	No	Yes	0.0000	0.0000
T7	362.000-342.000	4.000	K Brace Left	No	Yes	0.0000	0.0000
T8	342.000-322.000	4.000	K Brace Right	No	Yes	0.0000	0.0000
T9	322.000-302.000	4.000	K Brace Left	No	Yes	0.0000	0.0000
T10	302.000-282.000	4.000	K Brace Right	No	Yes	0.0000	0.0000
T11	282.000-262.000	4.000	K Brace Left	No	Yes	0.0000	0.0000
T12	262.000-242.000	4.000	K Brace Right	No	Yes	0.0000	0.0000
T13	242.000-222.000	4.000	K Brace Left	No	Yes	0.0000	0.0000
T14	222.000-202.000	4.000	K Brace Right	No	Yes	0.0000	0.0000
T15	202.000-182.000	4.000	K Brace Left	No	Yes	0.0000	0.0000
T16	182.000-162.000	4.000	K Brace Right	No	Yes	0.0000	0.0000
T17	162.000-142.000	4.000	K Brace Left	No	Yes	0.0000	0.0000

Tower Section	Tower Elevation ft	Diagonal Spacing ft	Bracing Type	Has K Brace End Panels	Has Horizontals	Top Girt Offset in	Bottom Girt Offset in
T18	142.000-122.000	4.000	K Brace Right	No	Yes	0.0000	0.0000
T19	122.000-112.000	3.333	K Brace Left	No	Yes	0.0000	0.0000
T20	112.000-102.000	3.333	K Brace Right	No	Yes	0.0000	0.0000
T21	102.000-82.000	4.000	K Brace Left	No	Yes	0.0000	0.0000
T22	82.000-62.000	4.000	K Brace Right	No	Yes	0.0000	0.0000
T23	62.000-42.000	4.000	K Brace Left	No	Yes	0.0000	0.0000
T24	42.000-22.000	4.000	K Brace Right	No	Yes	0.0000	0.0000
T25	22.000-2.000	4.000	K Brace Left	No	Yes	0.0000	0.0000

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Leg Type	Leg Size	Leg Grade	Diagonal Type	Diagonal Size	Diagonal Grade
T1 457.000-452.000	Solid Round	2 1/4	A572-50 (50 ksi)	Single Angle	L2 1/2x2x3/16	A36 (36 ksi)
T2 452.000-442.000	Solid Round	2 1/4	A572-50 (50 ksi)	Single Angle	L2x2x1/4	A36 (36 ksi)
T3 442.000-422.000	Solid Round	2 1/4	A572-50 (50 ksi)	Single Angle	L2x2x1/4	A36 (36 ksi)
T4 422.000-402.000	Solid Round	2 1/4	A572-50 (50 ksi)	Single Angle	L2x2x1/4	A36 (36 ksi)
T5 402.000-382.000	Solid Round	2 1/4	A572-50 (50 ksi)	Single Angle	L2x2x1/4	A36 (36 ksi)
T6 382.000-362.000	Solid Round	2 1/4	A572-50 (50 ksi)	Single Angle	L2x2x1/4	A36 (36 ksi)
T7 362.000-342.000	Solid Round	2 1/4	A572-50 (50 ksi)	Single Angle	L2x2x1/4	A36 (36 ksi)
T8 342.000-322.000	Solid Round	2 1/4	A572-50 (50 ksi)	Single Angle	L2x2x1/4	A36 (36 ksi)
T9 322.000-302.000	Solid Round	2 1/2	A572-50 (50 ksi)	Single Angle	L1 3/4x1 3/4x3/16	A36 (36 ksi)
T10 302.000-282.000	Solid Round	2 1/2	A572-50 (50 ksi)	Single Angle	L2x2x1/4	A36 (36 ksi)
T11 282.000-262.000	Solid Round	2 3/4	A572-50 (50 ksi)	Single Angle	L2 1/2x2 1/2x3/8	A36 (36 ksi)
T12 262.000-242.000	Solid Round	2 3/4	A572-50 (50 ksi)	Single Angle	L2x2x1/4	A36 (36 ksi)
T13 242.000-222.000	Solid Round	2 3/4	A572-50 (50 ksi)	Single Angle	L2x2x1/4	A36 (36 ksi)
T14 222.000-202.000	Solid Round	3	A572-50 (50 ksi)	Single Angle	L2 1/2x2 1/2x3/8	A36 (36 ksi)
T15 202.000-182.000	Solid Round	3	A572-50 (50 ksi)	Single Angle	L1 3/4x1 3/4x3/16	A36 (36 ksi)
T16 182.000-162.000	Solid Round	3	A572-50 (50 ksi)	Single Angle	L1 3/4x1 3/4x3/16	A36 (36 ksi)
T17 162.000-142.000	Solid Round	3	A572-50 (50 ksi)	Single Angle	L1 3/4x1 3/4x3/16	A36 (36 ksi)
T18 142.000-122.000	Solid Round	3	A572-50 (50 ksi)	Single Angle	L1 3/4x1 3/4x3/16	A36 (36 ksi)
T19 122.000-112.000	Solid Round	3	A572-50 (50 ksi)	Single Angle	L1 3/4x1 3/4x3/16	A36 (36 ksi)
T20 112.000-102.000	Solid Round	3	A572-50 (50 ksi)	Arbitrary Shape	L1 3/4x1 3/4x3/16 w/ L2x2x1/4	A36 (36 ksi)
T21 102.000-82.000	Solid Round	3	A572-50 (50 ksi)	Single Angle	L1 3/4x1 3/4x3/16	A36 (36 ksi)
T22	Solid Round	3	A572-50	Single Angle	L1 3/4x1 3/4x3/16	A36

Tower Elevation ft	Leg Type	Leg Size	Leg Grade	Diagonal Type	Diagonal Size	Diagonal Grade
82.000-62.000			(50 ksi)			(36 ksi)
T23	Solid Round	3	A572-50	Single Angle	L1 3/4x1 3/4x3/16	A36
62.000-42.000			(50 ksi)			(36 ksi)
T24	Solid Round	3	A572-50	Single Angle	L1 3/4x1 3/4x3/16	A36
42.000-22.000			(50 ksi)			(36 ksi)
T25 22.000-2.000	Solid Round	3	A572-50	Single Angle	L1 3/4x1 3/4x3/16	A36
			(50 ksi)			(36 ksi)

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Top Girt Type	Top Girt Size	Top Girt Grade	Bottom Girt Type	Bottom Girt Size	Bottom Girt Grade
T1	Channel	C6x10.5	A36	Single Angle	L2x2x3/16	A36
457.000-452.000			(36 ksi)			(36 ksi)
T2	Single Angle	L2x2x3/16	A36	Single Angle	L2x2x3/16	A36
452.000-442.000			(36 ksi)			(36 ksi)
T3	Single Angle	L2x2x3/16	A36	Single Angle	L2x2x3/16	A36
442.000-422.000			(36 ksi)			(36 ksi)
T4	Single Angle	L2x2x3/16	A36	Single Angle	L2x2x3/16	A36
422.000-402.000			(36 ksi)			(36 ksi)
T5	Single Angle	L2x2x3/16	A36	Single Angle	L2x2x3/16	A36
402.000-382.000			(36 ksi)			(36 ksi)
T6	Single Angle	L2x2x3/16	A36	Single Angle	L2x2x3/16	A36
382.000-362.000			(36 ksi)			(36 ksi)
T7	Single Angle	L2x2x3/16	A36	Single Angle	L2x2x3/16	A36
362.000-342.000			(36 ksi)			(36 ksi)
T8	Single Angle	L2x2x3/16	A36	Single Angle	L2x2x3/16	A36
342.000-322.000			(36 ksi)			(36 ksi)
T9	Single Angle	L2x2x3/16	A36	Single Angle	L2x2x3/16	A36
322.000-302.000			(36 ksi)			(36 ksi)
T10	Single Angle	L2x2x3/16	A36	Single Angle	L2x2x3/16	A36
302.000-282.000			(36 ksi)			(36 ksi)
T11	Single Angle	L2x2x3/16	A36	Single Angle	L2x2x3/16	A36
282.000-262.000			(36 ksi)			(36 ksi)
T12	Single Angle	L2x2x3/16	A36	Single Angle	L2x2x3/16	A36
262.000-242.000			(36 ksi)			(36 ksi)
T13	Single Angle	L2x2x3/16	A36	Single Angle	L2x2x3/16	A36
242.000-222.000			(36 ksi)			(36 ksi)
T14	Single Angle	L2x2x3/16	A36	Single Angle	L2x2x3/16	A36
222.000-202.000			(36 ksi)			(36 ksi)
T15	Single Angle	L2x2x3/16	A36	Single Angle	L2x2x3/16	A36
202.000-182.000			(36 ksi)			(36 ksi)
T16	Single Angle	L2x2x3/16	A36	Single Angle	L2x2x3/16	A36
182.000-162.000			(36 ksi)			(36 ksi)
T17	Single Angle	L2x2x3/16	A36	Single Angle	L2x2x3/16	A36
162.000-142.000			(36 ksi)			(36 ksi)
T18	Single Angle	L2x2x3/16	A36	Single Angle	L2x2x3/16	A36
142.000-122.000			(36 ksi)			(36 ksi)
T19	Single Angle	L2x2x3/16	A36	Single Angle	L2x2x3/16	A36
122.000-112.000			(36 ksi)			(36 ksi)
T20	Single Angle	L2x2x3/16	A36	Single Angle	L2x2x3/16	A36
112.000-102.000			(36 ksi)			(36 ksi)
T21	Single Angle	L2x2x3/16	A36	Single Angle	L2x2x3/16	A36
102.000-82.000			(36 ksi)			(36 ksi)
T22	Single Angle	L2x2x3/16	A36	Single Angle	L2x2x3/16	A36

Tower Elevation ft	Top Girt Type	Top Girt Size	Top Girt Grade	Bottom Girt Type	Bottom Girt Size	Bottom Girt Grade
82.000-62.000			(36 ksi)			(36 ksi)
T23	Single Angle	L2x2x3/16	A36	Single Angle	L2x2x3/16	A36
62.000-42.000			(36 ksi)			(36 ksi)
T24	Single Angle	L2x2x3/16	A36	Single Angle	L2x2x3/16	A36
42.000-22.000			(36 ksi)			(36 ksi)
T25 22.000-2.000	Single Angle	L2x2x3/16	A36	Single Angle	L2x2x3/16	A36
			(36 ksi)			(36 ksi)

Tower Section Geometry *(cont'd)*

Tower Elevation ft	No. of Mid Girts	Mid Girt Type	Mid Girt Size	Mid Girt Grade	Horizontal Type	Horizontal Size	Horizontal Grade
T1	None	Solid Round		A572-50	Single Angle	L2x2x3/16	A36
457.000-452.000				(50 ksi)			(36 ksi)
T2	None	Solid Round		A572-50	Single Angle	L2x2x3/16	A36
452.000-442.000				(50 ksi)			(36 ksi)
T3	None	Solid Round		A572-50	Single Angle	L2x2x3/16	A36
442.000-422.000				(50 ksi)			(36 ksi)
T4	None	Solid Round		A572-50	Single Angle	L2x2x3/16	A36
422.000-402.000				(50 ksi)			(36 ksi)
T5	None	Solid Round		A572-50	Single Angle	L2x2x3/16	A36
402.000-382.000				(50 ksi)			(36 ksi)
T6	None	Solid Round		A572-50	Single Angle	L2x2x3/16	A36
382.000-362.000				(50 ksi)			(36 ksi)
T7	None	Solid Round		A572-50	Single Angle	L2x2x3/16	A36
362.000-342.000				(50 ksi)			(36 ksi)
T8	None	Solid Round		A572-50	Single Angle	L2x2x3/16	A36
342.000-322.000				(50 ksi)			(36 ksi)
T9	None	Solid Round		A572-50	Single Angle	L2x2x3/16	A36
322.000-302.000				(50 ksi)			(36 ksi)
T10	None	Solid Round		A572-50	Single Angle	L2x2x3/16	A36
302.000-282.000				(50 ksi)			(36 ksi)
T11	None	Solid Round		A572-50	Single Angle	L2x2x3/16	A36
282.000-262.000				(50 ksi)			(36 ksi)
T12	None	Solid Round		A572-50	Single Angle	L2x2x3/16	A36
262.000-242.000				(50 ksi)			(36 ksi)
T13	None	Solid Round		A572-50	Single Angle	L2x2x3/16	A36
242.000-222.000				(50 ksi)			(36 ksi)
T14	None	Solid Round		A572-50	Single Angle	L2x2x3/16	A36
222.000-202.000				(50 ksi)			(36 ksi)
T15	None	Solid Round		A572-50	Single Angle	L2x2x3/16	A36
202.000-182.000				(50 ksi)			(36 ksi)
T16	None	Solid Round		A572-50	Single Angle	L2x2x3/16	A36
182.000-162.000				(50 ksi)			(36 ksi)
T17	None	Solid Round		A572-50	Single Angle	L2x2x3/16	A36
162.000-142.000				(50 ksi)			(36 ksi)
T18	None	Solid Round		A572-50	Single Angle	L2x2x3/16	A36
142.000-122.000				(50 ksi)			(36 ksi)
T19	None	Solid Round		A572-50	Single Angle	L2x2x3/16	A36
122.000-112.000				(50 ksi)			(36 ksi)
T20	None	Solid Round		A572-50	Single Angle	L2x2x3/16	A36
112.000-102.000				(50 ksi)			(36 ksi)
T21	None	Solid Round		A572-50	Single Angle	L2x2x3/16	A36
102.000-82.000				(50 ksi)			(36 ksi)

Tower Elevation ft	No. of Mid Girts	Mid Girt Type	Mid Girt Size	Mid Girt Grade	Horizontal Type	Horizontal Size	Horizontal Grade
T22 82.000-62.000	None	Solid Round		A572-50 (50 ksi)	Single Angle	L2x2x3/16	A36 (36 ksi)
T23 62.000-42.000	None	Solid Round		A572-50 (50 ksi)	Single Angle	L2x2x3/16	A36 (36 ksi)
T24 42.000-22.000	None	Solid Round		A572-50 (50 ksi)	Single Angle	L2x2x3/16	A36 (36 ksi)
T25 22.000-2.000	None	Solid Round		A572-50 (50 ksi)	Single Angle	L2x2x3/16	A36 (36 ksi)

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Gusset Area (per face) ft^2	Gusset Thickness in	Gusset Grade	Adjust. Factor A_f	Adjust. Factor A_r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals in	Double Angle Stitch Bolt Spacing Horizontals in	Double Angle Stitch Bolt Spacing Redundants in
T1 457.000-452.000	0.000	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T2 452.000-442.000	0.000	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T3 442.000-422.000	0.000	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T4 422.000-402.000	0.000	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T5 402.000-382.000	0.000	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T6 382.000-362.000	0.000	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T7 362.000-342.000	0.000	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T8 342.000-322.000	0.000	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T9 322.000-302.000	0.000	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T10 302.000-282.000	0.000	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T11 282.000-262.000	0.000	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T12 262.000-242.000	0.000	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T13 242.000-222.000	0.000	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000

Tower Elevation ft	Gusset Area (per face) ft²	Gusset Thickness in	Gusset Grade	Adjust. Factor A_f	Adjust. Factor A_r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals in	Double Angle Stitch Bolt Spacing Horizontals in	Double Angle Stitch Bolt Spacing Redundants in
T14 222.000-202.000	0.000	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T15 202.000-182.000	0.000	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T16 182.000-162.000	0.000	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T17 162.000-142.000	0.000	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T18 142.000-122.000	0.000	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T19 122.000-112.000	0.000	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T20 112.000-102.000	0.000	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T21 102.000-82.000	0.000	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T22 82.000-62.000	0.000	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T23 62.000-42.000	0.000	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T24 42.000-22.000	0.000	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T25 22.000-2.000	0.000	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Calc K Single Angles	Calc K Solid Rounds	K Factors[1]: Legs	X Brace Diags X	X Brace Diags Y	K Factors[1]: Single Diags X	Single Diags Y	Girts X	Girts Y	Horiz. X	Horiz. Y	Sec. Horiz. X	Sec. Horiz. Y	Inner Brace X	Inner Brace Y
T1 457.000-452.000	Yes	Yes	1	1 1	1 1	1	1 1	1	1 1	1	1 1	1	1 1	1	1 1
T2 452.000-442.000	Yes	Yes	1	1 1	1 1	1	1 1	1	1 1	1	1 1	1	1 1	1	1 1
T3 442.000-422.000	Yes	Yes	1	1 1	1 1	1	1 1	1	1 1	1	1 1	1	1 1	1	1 1
T4 422.000-402.000	Yes	Yes	1	1 1	1 1	1	1 1	1	1 1	1	1 1	1	1 1	1	1 1
T5 402.000-382.0	Yes	Yes	1	1 1	1 1	1	1 1	1	1 1	1	1 1	1	1 1	1	1 1

Tower Elevation ft	Calc K Single Angles	Calc K Solid Rounds	K Factors[1] Legs	X Brace Diags X Y	K Brace Diags X Y	Single Diags X Y	Girts X Y	Horiz. X Y	Sec. Horiz. X Y	Inner Brace X Y
00										
T6	Yes	Yes	1	1	1	1	1	1	1	1
382.000-362.000				1	1	1	1	1	1	1
T7	Yes	Yes	1	1	1	1	1	1	1	1
362.000-342.000				1	1	1	1	1	1	1
T8	Yes	Yes	1	1	1	1	1	1	1	1
342.000-322.000				1	1	1	1	1	1	1
T9	Yes	Yes	1	1	1	1	1	1	1	1
322.000-302.000				1	1	1	1	1	1	1
T10	Yes	Yes	1	1	1	1	1	1	1	1
302.000-282.000				1	1	1	1	1	1	1
T11	Yes	Yes	1	1	1	1	1	1	1	1
282.000-262.000				1	1	1	1	1	1	1
T12	Yes	Yes	1	1	1	1	1	1	1	1
262.000-242.000				1	1	1	1	1	1	1
T13	Yes	Yes	1	1	1	1	1	1	1	1
242.000-222.000				1	1	1	1	1	1	1
T14	Yes	Yes	1	1	1	1	1	1	1	1
222.000-202.000				1	1	1	1	1	1	1
T15	Yes	Yes	1	1	1	1	1	1	1	1
202.000-182.000				1	1	1	1	1	1	1
T16	Yes	Yes	1	1	1	1	1	1	1	1
182.000-162.000				1	1	1	1	1	1	1
T17	Yes	Yes	1	1	1	1	1	1	1	1
162.000-142.000				1	1	1	1	1	1	1
T18	Yes	Yes	1	1	1	1	1	1	1	1
142.000-122.000				1	1	1	1	1	1	1
T19	Yes	Yes	1	1	1	1	1	1	1	1
122.000-112.000				1	1	1	1	1	1	1
T20	Yes	Yes	1	1	1	1	1	1	1	1
112.000-102.000				1	1	1	1	1	1	1
T21	Yes	Yes	1	1	1	1	1	1	1	1
102.000-82.000				1	1	1	1	1	1	1
T22	Yes	Yes	1	1	1	1	1	1	1	1
82.000-62.000				1	1	1	1	1	1	1
T23	Yes	Yes	1	1	1	1	1	1	1	1
62.000-42.000				1	1	1	1	1	1	1
T24	Yes	Yes	1	1	1	1	1	1	1	1
42.000-22.000				1	1	1	1	1	1	1
T25	Yes	Yes	1	1	1	1	1	1	1	1
22.000-2.000				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 457.000-452.000	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 452.000-442.000	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 442.000-422.000	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 422.000-402.000	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 402.000-382.000	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 382.000-362.000	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 362.000-342.000	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 342.000-322.000	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 322.000-302.000	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 302.000-282.000	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T11 282.000-262.000	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T12 262.000-242.000	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T13 242.000-222.000	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T14 222.000-202.000	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T15 202.000-182.000	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T16 182.000-162.000	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75

Tower Elevation ft	Leg		Diagonal		Top Girt		Bottom Girt		Mid Girt		Long Horizontal		Short Horizontal	
	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U
T17 162.000-142.000	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T18 142.000-122.000	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
T19 122.000-112.000	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
T20 112.000-102.000	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
T21 102.000-82.000	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
T22 82.000-62.000	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
T23 62.000-42.000	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
T24 42.000-22.000	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
T25 22.000-2.000	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75

Guy Data

Guy Elevation ft	Guy Grade		Guy Size	Initial Tension K	%	Guy Modulus ksi	Guy Weight plf	L_u ft	Anchor Radius ft	Anchor Azimuth Adj. °	Anchor Elevation ft	End Fitting Efficiency %
442	BS	A	1	12.200	10%	24000.000	2.100	463.412	149.000	0.0000	2.000	100%
		B	1	12.200	10%	24000.000	2.100	468.175	146.000	0.0000	-4.000	100%
		C	1	12.200	10%	24000.000	2.100	471.642	148.000	0.0000	-7.000	100%
382	BS	A	1	12.200	10%	24000.000	2.100	406.985	149.000	0.0000	2.000	100%
		B	1	12.200	10%	24000.000	2.100	411.527	146.000	0.0000	-4.000	100%
		C	1	12.200	10%	24000.000	2.100	415.034	148.000	0.0000	-7.000	100%
322	BS	A	7/8	9.200	10%	24000.000	1.610	351.727	149.000	0.0000	2.000	100%
		B	7/8	9.200	10%	24000.000	1.610	355.966	146.000	0.0000	-4.000	100%
		C	7/8	9.200	10%	24000.000	1.610	359.515	148.000	0.0000	-7.000	100%
262	BS	A	7/8	9.200	10%	24000.000	1.610	298.280	149.000	0.0000	2.000	100%
		B	7/8	9.200	10%	24000.000	1.610	302.079	146.000	0.0000	-4.000	100%
		C	7/8	9.200	10%	24000.000	1.610	305.666	148.000	0.0000	-7.000	100%
210	BS	A	7/8	9.200	10%	24000.000	1.610	242.010	123.000	0.0000	0.000	100%
		B	7/8	9.200	10%	24000.000	1.610	239.318	117.500	0.0000	0.000	100%
		C	7/8	9.200	10%	24000.000	1.610	243.710	117.500	0.0000	-5.000	100%
154	EHS	A	9/16	3.500	10%	21000.000	0.671	195.493	123.000	0.0000	0.000	100%
		B	9/16	3.500	10%	21000.000	0.671	192.151	117.500	0.0000	0.000	100%
		C	9/16	3.500	10%	21000.000	0.671	196.174	117.500	0.0000	-5.000	100%
102	EHS	A	9/16	3.500	10%	21000.000	0.671	157.886	123.000	0.0000	0.000	100%
		B	9/16	3.500	10%	21000.000	0.671	153.730	117.500	0.0000	0.000	100%
		C	9/16	3.500	10%	21000.000	0.671	157.086	117.500	0.0000	-5.000	100%

46	EHS	A	1/2	2.690	10%	21000.000	0.517	129.052	123.000	0.0000	0.000	100%
		B	1/2	2.690	10%	21000.000	0.517	123.932	117.500	0.0000	0.000	100%
		C	1/2	2.690	10%	21000.000	0.517	125.870	117.500	0.0000	-5.000	100%

Guy Data *(cont'd)*

Guy Elevation ft	Mount Type	Torque-Arm Spread ft	Torque-Arm Leg Angle °	Torque-Arm Style	Torque-Arm Grade	Torque-Arm Type	Torque-Arm Size
442	Corner						
382	Corner						
322	Corner						
262	Corner						
210	Corner						
154	Corner						
102	Corner						
46	Corner						

Guy Data *(cont'd)*

Guy Elevation ft	Diagonal Grade	Diagonal Type	Upper Diagonal Size	Lower Diagonal Size	Is Strap.	Pull-Off Grade	Pull-Off Type	Pull-Off Size
442.000	A572-50 (50 ksi)	Solid Round				A572-50 (50 ksi)	Flat Bar	
382.000	A572-50 (50 ksi)	Solid Round				A572-50 (50 ksi)	Flat Bar	
322.000	A572-50 (50 ksi)	Solid Round				A572-50 (50 ksi)	Flat Bar	
262.000	A572-50 (50 ksi)	Solid Round				A572-50 (50 ksi)	Flat Bar	
210.000	A572-50 (50 ksi)	Solid Round				A572-50 (50 ksi)	Flat Bar	
154.000	A572-50 (50 ksi)	Solid Round				A572-50 (50 ksi)	Flat Bar	
102.000	A572-50 (50 ksi)	Solid Round				A572-50 (50 ksi)	Flat Bar	
46.000	A572-50 (50 ksi)	Solid Round				A572-50 (50 ksi)	Flat Bar	

Guy Data *(cont'd)*

Guy Elevation ft	Cable Weight A K	Cable Weight B K	Cable Weight C K	Cable Weight D K	Tower Intercept A ft	Tower Intercept B ft	Tower Intercept C ft	Tower Intercept D ft
442	0.973	0.983	0.990		17.825 7.3 sec/pulse	18.185 7.4 sec/pulse	18.450 7.4 sec/pulse	
382	0.855	0.864	0.872		13.817	14.120	14.359	

Guy Elevation ft	Cable Weight A K	Cable Weight B K	Cable Weight C K	Cable Weight D K	Tower Intercept A ft	Tower Intercept B ft	Tower Intercept C ft	Tower Intercept D ft
					6.4 sec/pulse	6.5 sec/pulse	6.5 sec/pulse	
322	0.566	0.573	0.579		10.540	10.790	11.003	
					5.6 sec/pulse	5.7 sec/pulse	5.7 sec/pulse	
262	0.480	0.486	0.492		7.619	7.810	7.995	
					4.8 sec/pulse	4.8 sec/pulse	4.9 sec/pulse	
210	0.390	0.385	0.392		5.037	4.925	5.106	
					3.9 sec/pulse	3.8 sec/pulse	3.9 sec/pulse	
154	0.131	0.129	0.132		3.613	3.491	3.637	
					3.3 sec/pulse	3.2 sec/pulse	3.3 sec/pulse	
102	0.106	0.103	0.105		2.369	2.245	2.344	
					2.7 sec/pulse	2.6 sec/pulse	2.6 sec/pulse	
46	0.067	0.064	0.065		1.595	1.471	1.516	
					2.2 sec/pulse	2.1 sec/pulse	2.1 sec/pulse	

Guy Data *(cont'd)*

Guy Elevation ft	Calc K Single Angles	Calc K Solid Rounds	Torque Arm K_x	Torque Arm K_y	Pull Off K_x	Pull Off K_y	Diagonal K_x	Diagonal K_y
442	No	No			1	1	1	1
382	No	No			1	1	1	1
322	No	No			1	1	1	1
262	No	No			1	1	1	1
210	No	No			1	1	1	1
154	No	No			1	1	1	1
102	No	No			1	1	1	1
46	No	No			1	1	1	1

Guy Data *(cont'd)*

Guy Elevation ft	Torque-Arm Bolt Size in	Torque-Arm Number	Torque-Arm Net Width Deduct in	Torque-Arm U	Pull Off Bolt Size in	Pull Off Number	Pull Off Net Width Deduct in	Pull Off U	Diagonal Bolt Size in	Diagonal Number	Diagonal Net Width Deduct in	Diagonal U
442	0.0000 A325N	0	0.0000	1	0.6250 A325N	0	0.0000	0.75	0.6250 A325N	0	0.0000	0.75
382	0.0000 A325N	0	0.0000	1	0.6250 A325N	0	0.0000	0.75	0.6250 A325N	0	0.0000	0.75
322	0.0000 A325N	0	0.0000	1	0.6250 A325N	0	0.0000	0.75	0.6250 A325N	0	0.0000	0.75
262	0.0000 A325N	0	0.0000	1	0.6250 A325N	0	0.0000	0.75	0.6250 A325N	0	0.0000	0.75
210	0.0000 A325N	0	0.0000	1	0.6250 A325N	0	0.0000	0.75	0.6250 A325N	0	0.0000	0.75
154	0.0000 A325N	0	0.0000	1	0.6250 A325N	0	0.0000	0.75	0.6250 A325N	0	0.0000	0.75
102	0.0000 A325N	0	0.0000	1	0.6250 A325N	0	0.0000	0.75	0.6250 A325N	0	0.0000	0.75
46	0.0000 A325N	0	0.0000	1	0.6250 A325N	0	0.0000	0.75	0.6250 A325N	0	0.0000	0.75

Guy Pressures

Guy Elevation ft	Guy Location	z ft	q_z ksf	q_z Ice ksf	Ice Thickness in
442	A	222.000	0.029	0.006	2.0142
	B	219.000	0.029	0.006	2.0127
	C	217.500	0.029	0.006	2.0119
382	A	192.000	0.029	0.006	1.9972
	B	189.000	0.029	0.006	1.9953
	C	187.500	0.029	0.006	1.9944
322	A	162.000	0.028	0.006	1.9761
	B	159.000	0.028	0.005	1.9737
	C	157.500	0.028	0.005	1.9725
262	A	132.000	0.027	0.005	1.9491
	B	129.000	0.027	0.005	1.9460
	C	127.500	0.027	0.005	1.9444
210	A	105.000	0.026	0.005	1.9172
	B	105.000	0.026	0.005	1.9172
	C	102.500	0.025	0.005	1.9137
154	A	77.000	0.024	0.005	1.8715
	B	77.000	0.024	0.005	1.8715
	C	74.500	0.024	0.005	1.8665
102	A	51.000	0.022	0.004	1.8080
	B	51.000	0.022	0.004	1.8080
	C	48.500	0.021	0.004	1.8001
46	A	23.000	0.019	0.004	1.6822
	B	23.000	0.019	0.004	1.6822
	C	20.500	0.019	0.004	1.6641

Guy-Tensioning Information

				Temperature At Time Of Tensioning													
				0 F		20 F		40 F		60 F		80 F		100 F		120 F	
Guy Elevation ft		H ft	V ft	Initial Tension K	Intercept ft	Initial Tension K	Intercept ft	Initial Tension K	Intercept ft	Initial Tension K	Intercept ft	Initial Tension K	Intercept ft	Initial Tension K	Intercept ft	Initial Tension K	Intercept ft
442	A	146.69	440.00	12.735	17.10	12.556	17.33	12.378	17.58	12.200	17.83	12.023	18.08	11.846	18.34	11.670	18.61
	B	143.69	446.00	12.704	17.48	12.535	17.71	12.367	17.95	12.200	18.18	12.033	18.43	11.866	18.68	11.700	18.94
	C	145.69	449.00	12.709	17.73	12.539	17.96	12.369	18.20	12.200	18.45	12.031	18.70	11.862	18.96	11.694	19.22
382	A	146.69	380.00	12.893	13.09	12.662	13.33	12.430	13.57	12.200	13.82	11.970	14.08	11.741	14.34	11.513	14.62
	B	143.69	386.00	12.852	13.42	12.634	13.65	12.417	13.88	12.200	14.12	11.984	14.37	11.769	14.62	11.554	14.89
	C	145.69	389.00	12.858	13.64	12.638	13.87	12.419	14.11	12.200	14.36	11.982	14.61	11.765	14.88	11.548	15.15
322	A	146.69	320.00	9.909	9.80	9.672	10.04	9.435	10.28	9.200	10.54	8.966	10.81	8.733	11.09	8.501	11.39
	B	143.69	326.00	9.865	10.08	9.643	10.30	9.421	10.54	9.200	10.79	8.980	11.05	8.761	11.32	8.543	11.60
	C	145.69	329.00	9.869	10.27	9.645	10.51	9.422	10.75	9.200	11.00	8.979	11.27	8.758	11.54	8.539	11.83
262	A	146.69	260.00	10.187	6.89	9.856	7.12	9.527	7.36	9.200	7.62	8.875	7.89	8.552	8.18	8.232	8.50
	B	143.69	266.00	10.125	7.11	9.815	7.33	9.507	7.56	9.200	7.81	8.895	8.07	8.592	8.35	8.291	8.65
	C	145.69	269.00	10.127	7.28	9.817	7.50	9.507	7.74	9.200	7.99	8.894	8.26	8.591	8.55	8.289	8.85
210	A	120.69	210.00	10.231	4.54	9.886	4.69	9.542	4.86	9.200	5.04	8.859	5.23	8.520	5.43	8.184	5.65
	B	115.19	210.00	10.163	4.46	9.841	4.61	9.520	4.76	9.200	4.93	8.881	5.10	8.564	5.29	8.249	5.48
	C	115.19	215.00	10.129	4.64	9.818	4.79	9.508	4.94	9.200	5.11	8.893	5.28	8.587	5.46	8.282	5.66
154	A	120.69	154.00	4.083	3.10	3.887	3.26	3.693	3.43	3.500	3.61	3.308	3.82	3.119	4.05	2.931	4.30
	B	115.19	154.00	4.052	3.02	3.867	3.16	3.683	3.32	3.500	3.49	3.318	3.68	3.138	3.89	2.961	4.12
	C	115.19	159.00	4.029	3.16	3.852	3.31	3.675	3.47	3.500	3.64	3.326	3.83	3.153	4.03	2.981	4.26
102	A	120.69	102.00	4.397	1.89	4.096	2.03	3.796	2.18	3.500	2.37	3.207	2.58	2.919	2.84	2.638	3.13
	B	115.19	102.00	4.364	1.80	4.074	1.93	3.786	2.08	3.500	2.25	3.217	2.44	2.939	2.67	2.666	2.94
	C	115.19	107.00	4.328	1.90	4.050	2.03	3.774	2.17	3.500	2.34	3.229	2.54	2.962	2.76	2.700	3.03
46	A	120.69	46.00	3.729	1.15	3.379	1.27	3.033	1.42	2.690	1.59	2.354	1.82	2.027	2.11	1.717	2.49
	B	115.19	46.00	3.719	1.06	3.373	1.17	3.030	1.31	2.690	1.47	2.356	1.68	2.031	1.95	1.721	2.29
	C	115.19	51.00	3.687	1.11	3.352	1.22	3.019	1.35	2.690	1.52	2.366	1.72	2.051	1.99	1.749	2.33

Feed Line/Linear Appurtenances - Entered As Round Or Flat

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Face Offset in	Lateral Offset (Frac FW)	#	# Per Row	Clear Spacing in	Width or Diameter in	Perimeter in	Weight klf
3" Coax	B	No	No	Ar (CaAa)	435.000 - 8.000	-1.0000	-0.3	1	1	0.0000	3.0100		0.002
AVA5-50(7/8")	B	No	No	Ar (CaAa)	435.000 - 8.000	-1.0000	-0.2	1	1	0.0000	1.1020		0.000
LDF7-50A(1-5/8") (Sprint)	C	No	No	Ar (CaAa)	256.000 - 8.000	-1.0000	-0.35	1	1	0.0000	1.9800		0.001
1" Conduit (Tower)	C	No	No	Ar (CaAa)	435.000 - 8.000	-1.0000	-0.25	1	1	0.0000	1.1630		0.001
LDF4.5-50(5/8")	C	No	No	Ar (CaAa)	351.000 - 8.000	-1.0000	0	1	1	0.0000	0.8650		0.000
1 5/8" OD Conduit	C	No	No	Ar (CaAa)	430.000 - 8.000	-1.0000	0.4	1	1	0.0000	1.6250		0.001
LDF5-50A(7/8")	A	No	No	Ar (CaAa)	108.000 - 8.000	-1.0000	0.31	1	1	0.0000	1.0900		0.000
LDF5-50A(7/8")	A	No	No	Ar (CaAa)	124.000 - 8.000	-1.0000	0.38	1	1	0.0000	1.0900		0.000
LDF5-50A(7/8")	A	No	No	Ar (CaAa)	138.000 - 8.000	-1.0000	0.32	1	1	0.0000	1.0900		0.000
LDF5-50A(7/8")	A	No	No	Ar (CaAa)	239.000 - 8.000	-1.0000	0.33	1	1	0.0000	1.0900		0.000
LDF5-50A(7/8")	A	No	No	Ar (CaAa)	247.000 - 8.000	-1.0000	0.34	1	1	0.0000	1.0900		0.000
LDF5-50A(7/8")	A	No	No	Ar (CaAa)	339.000 - 8.000	-1.0000	0.37	1	1	0.0000	1.0900		0.000
LDF5-50A(7/8")	A	No	No	Ar (CaAa)	435.000 - 8.000	-1.0000	0.36	1	1	0.0000	1.0900		0.000
LDF5-50A(7/8")	A	No	No	Ar (CaAa)	435.000 - 8.000	-1.0000	0.35	1	1	0.0000	1.0900		0.000
LDF6-50A(1-1/4") (Berkshire)	A	No	No	Ar (CaAa)	302.000 - 8.000	0.0000	0.35	1	1	0.0000	1.5500		0.001
LDF2-50A(3/8") SC (Tower)	C	No	No	Ar (CaAa)	445.000 - 8.000	-5.0000	0.35	1	1	0.0000	0.4400		0.000
LDF4.5-50(5/8")	A	No	No	Ar (CaAa)	455.000 - 8.000	0.0000	0	1	1	0.0000	0.8650		0.000
LDF4-50A(1/2")	C	No	No	Ar (CaAa)	289.000 - 8.000	-1.0000	-0.35	1	1	0.0000	0.6300		0.000
LDF7-50A(1-5/8") (T-Mobile)	A	No	No	Ar (CaAa)	280.000 - 8.000	0.0000	0.25	6	6	0.0000	1.9800		0.001
LDF7-50A(1-5/8") (T-Mobile)	B	No	No	Ar (CaAa)	280.000 - 8.000	-1.0000	0	6	6	0.0000	1.9800		0.001
LDF7-50A(1-5/8") (T-Mobile)	A	No	No	Ar (CaAa)	280.000 - 8.000	0.0000	0.25	6	6	0.0000	1.9800		0.001
LDF7-50A(1-5/8") (t-mOBILE)	C	No	No	Ar (CaAa)	280.000 - 8.000	0.0000	0	1	1	0.0000	1.9800		0.001

Feed Line/Linear Appurtenances Section Areas

Tower Section	Tower Elevation ft	Face	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
L1	492.000-477.000	A	0.000	0.000	0.000	0.000	0.000
		B	0.000	0.000	0.000	0.000	0.000
		C	0.000	0.000	0.000	0.000	0.000
L2	477.000-457.000	A	0.000	0.000	0.000	0.000	0.000
		B	0.000	0.000	0.000	0.000	0.000
		C	0.000	0.000	0.000	0.000	0.000
T1	457.000-452.000	A	0.000	0.000	0.260	0.000	0.000
		B	0.000	0.000	0.000	0.000	0.000
		C	0.000	0.000	0.000	0.000	0.000
T2	452.000-442.000	A	0.000	0.000	0.865	0.000	0.002
		B	0.000	0.000	0.000	0.000	0.000
		C	0.000	0.000	0.132	0.000	0.000
T3	442.000-422.000	A	0.000	0.000	4.564	0.000	0.012
		B	0.000	0.000	5.346	0.000	0.027
		C	0.000	0.000	3.692	0.000	0.017
T4	422.000-402.000	A	0.000	0.000	6.090	0.000	0.016
		B	0.000	0.000	8.224	0.000	0.042
		C	0.000	0.000	6.456	0.000	0.031
T5	402.000-382.000	A	0.000	0.000	6.090	0.000	0.016
		B	0.000	0.000	8.224	0.000	0.042
		C	0.000	0.000	6.456	0.000	0.031
T6	382.000-362.000	A	0.000	0.000	6.090	0.000	0.016
		B	0.000	0.000	8.224	0.000	0.042
		C	0.000	0.000	6.456	0.000	0.031
T7	362.000-342.000	A	0.000	0.000	6.090	0.000	0.016
		B	0.000	0.000	8.224	0.000	0.042
		C	0.000	0.000	7.235	0.000	0.033
T8	342.000-322.000	A	0.000	0.000	7.943	0.000	0.022
		B	0.000	0.000	8.224	0.000	0.042
		C	0.000	0.000	8.186	0.000	0.034
T9	322.000-302.000	A	0.000	0.000	8.270	0.000	0.023
		B	0.000	0.000	8.224	0.000	0.042
		C	0.000	0.000	8.186	0.000	0.034
T10	302.000-282.000	A	0.000	0.000	11.370	0.000	0.036
		B	0.000	0.000	8.224	0.000	0.042
		C	0.000	0.000	8.627	0.000	0.035
T11	282.000-262.000	A	0.000	0.000	54.138	0.000	0.213
		B	0.000	0.000	29.608	0.000	0.130
		C	0.000	0.000	13.010	0.000	0.052
T12	262.000-242.000	A	0.000	0.000	59.435	0.000	0.234
		B	0.000	0.000	31.984	0.000	0.140
		C	0.000	0.000	16.178	0.000	0.065
T13	242.000-222.000	A	0.000	0.000	62.923	0.000	0.245
		B	0.000	0.000	31.984	0.000	0.140
		C	0.000	0.000	17.366	0.000	0.070
T14	222.000-202.000	A	0.000	0.000	63.250	0.000	0.246
		B	0.000	0.000	31.984	0.000	0.140
		C	0.000	0.000	17.366	0.000	0.070
T15	202.000-182.000	A	0.000	0.000	63.250	0.000	0.246
		B	0.000	0.000	31.984	0.000	0.140
		C	0.000	0.000	17.366	0.000	0.070
T16	182.000-162.000	A	0.000	0.000	63.250	0.000	0.246
		B	0.000	0.000	31.984	0.000	0.140
		C	0.000	0.000	17.366	0.000	0.070
T17	162.000-142.000	A	0.000	0.000	63.250	0.000	0.246
		B	0.000	0.000	31.984	0.000	0.140

Tower Section	Tower Elevation ft	Face	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
		C	0.000	0.000	17.366	0.000	0.070
T18	142.000-122.000	A	0.000	0.000	65.212	0.000	0.252
		B	0.000	0.000	31.984	0.000	0.140
		C	0.000	0.000	17.366	0.000	0.070
T19	122.000-112.000	A	0.000	0.000	33.805	0.000	0.130
		B	0.000	0.000	15.992	0.000	0.070
		C	0.000	0.000	8.683	0.000	0.035
T20	112.000-102.000	A	0.000	0.000	34.459	0.000	0.132
		B	0.000	0.000	15.992	0.000	0.070
		C	0.000	0.000	8.683	0.000	0.035
T21	102.000-82.000	A	0.000	0.000	69.790	0.000	0.266
		B	0.000	0.000	31.984	0.000	0.140
		C	0.000	0.000	17.366	0.000	0.070
T22	82.000-62.000	A	0.000	0.000	69.790	0.000	0.266
		B	0.000	0.000	31.984	0.000	0.140
		C	0.000	0.000	17.366	0.000	0.070
T23	62.000-42.000	A	0.000	0.000	69.790	0.000	0.266
		B	0.000	0.000	31.984	0.000	0.140
		C	0.000	0.000	17.366	0.000	0.070
T24	42.000-22.000	A	0.000	0.000	69.790	0.000	0.266
		B	0.000	0.000	31.984	0.000	0.140
		C	0.000	0.000	17.366	0.000	0.070
T25	22.000-2.000	A	0.000	0.000	48.853	0.000	0.186
		B	0.000	0.000	22.389	0.000	0.098
		C	0.000	0.000	12.156	0.000	0.049

Feed Line/Linear Appurtenances Section Areas - With Ice

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
L1	492.000-477.000	A	2.090	0.000	0.000	0.000	0.000	0.000
		B		0.000	0.000	0.000	0.000	0.000
		C		0.000	0.000	0.000	0.000	0.000
L2	477.000-457.000	A	2.087	0.000	0.000	0.000	0.000	0.000
		B		0.000	0.000	0.000	0.000	0.000
		C		0.000	0.000	0.000	0.000	0.000
T1	457.000-452.000	A	2.084	0.000	0.000	1.510	0.000	0.023
		B		0.000	0.000	0.000	0.000	0.000
		C		0.000	0.000	0.000	0.000	0.000
T2	452.000-442.000	A	2.083	0.000	0.000	5.031	0.000	0.077
		B		0.000	0.000	0.000	0.000	0.000
		C		0.000	0.000	1.382	0.000	0.020
T3	442.000-422.000	A	2.080	0.000	0.000	23.700	0.000	0.371
		B		0.000	0.000	16.162	0.000	0.300
		C		0.000	0.000	20.748	0.000	0.327
T4	422.000-402.000	A	2.076	0.000	0.000	31.000	0.000	0.487
		B		0.000	0.000	24.831	0.000	0.461
		C		0.000	0.000	31.366	0.000	0.511
T5	402.000-382.000	A	2.071	0.000	0.000	30.947	0.000	0.485
		B		0.000	0.000	24.795	0.000	0.459
		C		0.000	0.000	31.313	0.000	0.509
T6	382.000-362.000	A	2.067	0.000	0.000	30.891	0.000	0.483
		B		0.000	0.000	24.758	0.000	0.458
		C		0.000	0.000	31.257	0.000	0.508
T7	362.000-342.000	A	2.062	0.000	0.000	30.830	0.000	0.481
		B		0.000	0.000	24.717	0.000	0.456
		C		0.000	0.000	35.685	0.000	0.573

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
T8	342.000-322.000	A	2.056	0.000	0.000	39.607	0.000	0.619
		B		0.000	0.000	24.673	0.000	0.455
		C		0.000	0.000	41.084	0.000	0.653
T9	322.000-302.000	A	2.050	0.000	0.000	41.072	0.000	0.641
		B		0.000	0.000	24.625	0.000	0.453
		C		0.000	0.000	40.988	0.000	0.650
T10	302.000-282.000	A	2.044	0.000	0.000	52.241	0.000	0.830
		B		0.000	0.000	24.572	0.000	0.451
		C		0.000	0.000	44.185	0.000	0.695
T11	282.000-262.000	A	2.036	0.000	0.000	128.876	0.000	1.986
		B		0.000	0.000	62.904	0.000	1.029
		C		0.000	0.000	61.066	0.000	0.974
T12	262.000-242.000	A	2.028	0.000	0.000	139.714	0.000	2.145
		B		0.000	0.000	67.053	0.000	1.089
		C		0.000	0.000	70.534	0.000	1.140
T13	242.000-222.000	A	2.019	0.000	0.000	155.818	0.000	2.389
		B		0.000	0.000	66.922	0.000	1.083
		C		0.000	0.000	73.902	0.000	1.196
T14	222.000-202.000	A	2.009	0.000	0.000	156.938	0.000	2.398
		B		0.000	0.000	66.774	0.000	1.077
		C		0.000	0.000	73.616	0.000	1.187
T15	202.000-182.000	A	1.997	0.000	0.000	156.460	0.000	2.381
		B		0.000	0.000	66.606	0.000	1.070
		C		0.000	0.000	73.288	0.000	1.176
T16	182.000-162.000	A	1.984	0.000	0.000	155.908	0.000	2.361
		B		0.000	0.000	66.410	0.000	1.062
		C		0.000	0.000	72.910	0.000	1.164
T17	162.000-142.000	A	1.968	0.000	0.000	155.262	0.000	2.338
		B		0.000	0.000	66.182	0.000	1.053
		C		0.000	0.000	72.468	0.000	1.150
T18	142.000-122.000	A	1.949	0.000	0.000	163.473	0.000	2.447
		B		0.000	0.000	65.911	0.000	1.042
		C		0.000	0.000	71.941	0.000	1.134
T19	122.000-112.000	A	1.932	0.000	0.000	86.817	0.000	1.292
		B		0.000	0.000	32.836	0.000	0.516
		C		0.000	0.000	35.738	0.000	0.559
T20	112.000-102.000	A	1.920	0.000	0.000	89.466	0.000	1.326
		B		0.000	0.000	32.744	0.000	0.512
		C		0.000	0.000	35.561	0.000	0.554
T21	102.000-82.000	A	1.898	0.000	0.000	181.719	0.000	2.672
		B		0.000	0.000	65.173	0.000	1.012
		C		0.000	0.000	70.509	0.000	1.089
T22	82.000-62.000	A	1.861	0.000	0.000	179.781	0.000	2.607
		B		0.000	0.000	64.644	0.000	0.990
		C		0.000	0.000	69.482	0.000	1.058
T23	62.000-42.000	A	1.811	0.000	0.000	177.127	0.000	2.519
		B		0.000	0.000	63.920	0.000	0.962
		C		0.000	0.000	68.075	0.000	1.015
T24	42.000-22.000	A	1.734	0.000	0.000	173.084	0.000	2.387
		B		0.000	0.000	62.818	0.000	0.919
		C		0.000	0.000	65.930	0.000	0.953
T25	22.000-2.000	A	1.581	0.000	0.000	115.498	0.000	1.494
		B		0.000	0.000	42.430	0.000	0.584
		C		0.000	0.000	43.146	0.000	0.583

Feed Line Center of Pressure

Section	Elevation	CP_X	CP_Z	CP_X Ice	CP_Z Ice
	ft	in	in	in	in
L1	492.000-477.000	0.0000	0.0000	0.0000	0.0000
L2	477.000-457.000	0.0000	0.0000	0.0000	0.0000
T1	457.000-452.000	-0.1574	-0.1028	-0.3177	-0.1930
T2	452.000-442.000	-0.4381	-0.1893	-1.0730	-0.3117
T3	442.000-422.000	-0.4563	-1.9760	-1.3410	-2.2312
T4	422.000-402.000	-0.6950	-2.4662	-1.5000	-2.7565
T5	402.000-382.000	-0.6950	-2.4662	-1.5005	-2.7583
T6	382.000-362.000	-0.6950	-2.4662	-1.5010	-2.7602
T7	362.000-342.000	-0.6877	-2.2993	-1.4703	-2.4391
T8	342.000-322.000	-0.7055	-2.5987	-1.4477	-2.8305
T9	322.000-302.000	-0.7160	-2.6929	-1.4531	-2.9626
T10	302.000-282.000	-0.7384	-3.3136	-1.3180	-3.5947
T11	282.000-262.000	-0.6678	-7.1479	-0.8685	-5.2602
T12	262.000-242.000	-0.3214	-7.2530	-0.4650	-5.2464
T13	242.000-222.000	-0.2269	-7.3885	-0.3906	-5.7161
T14	222.000-202.000	-0.2243	-7.2074	-0.3892	-5.6369
T15	202.000-182.000	-0.2343	-7.4237	-0.4013	-5.7912
T16	182.000-162.000	-0.2343	-7.4237	-0.4014	-5.8024
T17	162.000-142.000	-0.2343	-7.4237	-0.4016	-5.8155
T18	142.000-122.000	-0.2729	-7.5707	-0.4621	-6.1488
T19	122.000-112.000	-0.2923	-7.6316	-0.4783	-6.3061
T20	112.000-102.000	-0.3150	-7.6392	-0.5275	-6.6385
T21	102.000-82.000	-0.3469	-7.9163	-0.5734	-6.9048
T22	82.000-62.000	-0.3469	-7.9163	-0.5736	-6.9318
T23	62.000-42.000	-0.3469	-7.9163	-0.5736	-6.9687
T24	42.000-22.000	-0.3469	-7.9163	-0.5734	-7.0244
T25	22.000-2.000	-0.2900	-6.9199	-0.4912	-6.2431

Note: For pole sections, center of pressure calculations do not consider feed line shielding.

Shielding Factor Ka

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T1	17	LDF4.5-50(5/8")	452.00 - 455.00	0.6000	0.3700
T2	16	LDF2-50A(3/8") SC	442.00 - 445.00	0.6000	0.4659
T2	17	LDF4.5-50(5/8")	442.00 - 452.00	0.6000	0.4659
T3	1	3" Coax	422.00 - 435.00	0.6000	0.5039
T3	2	AVA5-50(7/8")	422.00 - 435.00	0.6000	0.5039
T3	4	1" Conduit	422.00 - 435.00	0.6000	0.5039
T3	6	1 5/8" OD Conduit	422.00 - 430.00	0.6000	0.5039
T3	13	LDF5-50A(7/8")	422.00 - 435.00	0.6000	0.5039
T3	14	LDF5-50A(7/8")	422.00 - 435.00	0.6000	0.5039
T3	16	LDF2-50A(3/8") SC	422.00 - 442.00	0.6000	0.5039

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T3	17	LDF4.5-50(5/8")	422.00 - 442.00	0.6000	0.5039
T4	1	3" Coax	402.00 - 422.00	0.6000	0.5045
T4	2	AVA5-50(7/8")	402.00 - 422.00	0.6000	0.5045
T4	4	1" Conduit	402.00 - 422.00	0.6000	0.5045
T4	6	1 5/8" OD Conduit	402.00 - 422.00	0.6000	0.5045
T4	13	LDF5-50A(7/8")	402.00 - 422.00	0.6000	0.5045
T4	14	LDF5-50A(7/8")	402.00 - 422.00	0.6000	0.5045
T4	16	LDF2-50A(3/8") SC	402.00 - 422.00	0.6000	0.5045
T4	17	LDF4.5-50(5/8")	402.00 - 422.00	0.6000	0.5045
T5	1	3" Coax	382.00 - 402.00	0.6000	0.5051
T5	2	AVA5-50(7/8")	382.00 - 402.00	0.6000	0.5051
T5	4	1" Conduit	382.00 - 402.00	0.6000	0.5051
T5	6	1 5/8" OD Conduit	382.00 - 402.00	0.6000	0.5051
T5	13	LDF5-50A(7/8")	382.00 - 402.00	0.6000	0.5051
T5	14	LDF5-50A(7/8")	382.00 - 402.00	0.6000	0.5051
T5	16	LDF2-50A(3/8") SC	382.00 - 402.00	0.6000	0.5051
T5	17	LDF4.5-50(5/8")	382.00 - 402.00	0.6000	0.5051
T6	1	3" Coax	362.00 - 382.00	0.6000	0.5057
T6	2	AVA5-50(7/8")	362.00 - 382.00	0.6000	0.5057
T6	4	1" Conduit	362.00 - 382.00	0.6000	0.5057
T6	6	1 5/8" OD Conduit	362.00 - 382.00	0.6000	0.5057
T6	13	LDF5-50A(7/8")	362.00 - 382.00	0.6000	0.5057
T6	14	LDF5-50A(7/8")	362.00 - 382.00	0.6000	0.5057
T6	16	LDF2-50A(3/8") SC	362.00 - 382.00	0.6000	0.5057
T6	17	LDF4.5-50(5/8")	362.00 - 382.00	0.6000	0.5057
T7	1	3" Coax	342.00 - 362.00	0.6000	0.5064
T7	2	AVA5-50(7/8")	342.00 - 362.00	0.6000	0.5064
T7	4	1" Conduit	342.00 - 362.00	0.6000	0.5064
T7	5	LDF4.5-50(5/8")	342.00 - 351.00	0.6000	0.5064
T7	6	1 5/8" OD Conduit	342.00 - 362.00	0.6000	0.5064
T7	13	LDF5-50A(7/8")	342.00 - 362.00	0.6000	0.5064

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T7	14	LDF5-50A(7/8")	342.00 - 362.00	0.6000	0.5064
T7	16	LDF2-50A(3/8") SC	342.00 - 362.00	0.6000	0.5064
T7	17	LDF4.5-50(5/8")	342.00 - 362.00	0.6000	0.5064
T8	1	3" Coax	322.00 - 342.00	0.6000	0.5072
T8	2	AVA5-50(7/8")	322.00 - 342.00	0.6000	0.5072
T8	4	1" Conduit	322.00 - 342.00	0.6000	0.5072
T8	5	LDF4.5-50(5/8")	322.00 - 342.00	0.6000	0.5072
T8	6	1 5/8" OD Conduit	322.00 - 342.00	0.6000	0.5072
T8	12	LDF5-50A(7/8")	322.00 - 339.00	0.6000	0.5072
T8	13	LDF5-50A(7/8")	322.00 - 342.00	0.6000	0.5072
T8	14	LDF5-50A(7/8")	322.00 - 342.00	0.6000	0.5072
T8	16	LDF2-50A(3/8") SC	322.00 - 342.00	0.6000	0.5072
T8	17	LDF4.5-50(5/8")	322.00 - 342.00	0.6000	0.5072
T9	1	3" Coax	302.00 - 322.00	0.6000	0.5085
T9	2	AVA5-50(7/8")	302.00 - 322.00	0.6000	0.5085
T9	4	1" Conduit	302.00 - 322.00	0.6000	0.5085
T9	5	LDF4.5-50(5/8")	302.00 - 322.00	0.6000	0.5085
T9	6	1 5/8" OD Conduit	302.00 - 322.00	0.6000	0.5085
T9	12	LDF5-50A(7/8")	302.00 - 322.00	0.6000	0.5085
T9	13	LDF5-50A(7/8")	302.00 - 322.00	0.6000	0.5085
T9	14	LDF5-50A(7/8")	302.00 - 322.00	0.6000	0.5085
T9	16	LDF2-50A(3/8") SC	302.00 - 322.00	0.6000	0.5085
T9	17	LDF4.5-50(5/8")	302.00 - 322.00	0.6000	0.5085
T10	1	3" Coax	282.00 - 302.00	0.6000	0.5035
T10	2	AVA5-50(7/8")	282.00 - 302.00	0.6000	0.5035
T10	4	1" Conduit	282.00 - 302.00	0.6000	0.5035
T10	5	LDF4.5-50(5/8")	282.00 - 302.00	0.6000	0.5035
T10	6	1 5/8" OD Conduit	282.00 - 302.00	0.6000	0.5035
T10	12	LDF5-50A(7/8")	282.00 - 302.00	0.6000	0.5035
T10	13	LDF5-50A(7/8")	282.00 - 302.00	0.6000	0.5035
T10	14	LDF5-50A(7/8")	282.00 - 302.00	0.6000	0.5035

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T10	15	LDF6-50A(1-1/4")	282.00 - 302.00	0.6000	0.5035
T10	16	LDF2-50A(3/8") SC	282.00 - 302.00	0.6000	0.5035
T10	17	LDF4.5-50(5/8")	282.00 - 302.00	0.6000	0.5035
T10	18	LDF4-50A(1/2")	282.00 - 289.00	0.6000	0.5035
T11	1	3" Coax	262.00 - 282.00	0.6000	0.4866
T11	2	AVA5-50(7/8")	262.00 - 282.00	0.6000	0.4866
T11	4	1" Conduit	262.00 - 282.00	0.6000	0.4866
T11	5	LDF4.5-50(5/8")	262.00 - 282.00	0.6000	0.4866
T11	6	1 5/8" OD Conduit	262.00 - 282.00	0.6000	0.4866
T11	12	LDF5-50A(7/8")	262.00 - 282.00	0.6000	0.4866
T11	13	LDF5-50A(7/8")	262.00 - 282.00	0.6000	0.4866
T11	14	LDF5-50A(7/8")	262.00 - 282.00	0.6000	0.4866
T11	15	LDF6-50A(1-1/4")	262.00 - 282.00	0.6000	0.4866
T11	16	LDF2-50A(3/8") SC	262.00 - 282.00	0.6000	0.4866
T11	17	LDF4.5-50(5/8")	262.00 - 282.00	0.6000	0.4866
T11	18	LDF4-50A(1/2")	262.00 - 282.00	0.6000	0.4866
T11	22	LDF7-50A(1-5/8")	262.00 - 280.00	0.6000	0.4866
T11	23	LDF7-50A(1-5/8")	262.00 - 280.00	0.6000	0.4866
T11	24	LDF7-50A(1-5/8")	262.00 - 280.00	0.6000	0.4866
T11	25	LDF7-50A(1-5/8")	262.00 - 280.00	0.6000	0.4866
T12	1	3" Coax	242.00 - 262.00	0.6000	0.5001
T12	2	AVA5-50(7/8")	242.00 - 262.00	0.6000	0.5001
T12	3	LDF7-50A(1-5/8")	242.00 - 256.00	0.6000	0.5001
T12	4	1" Conduit	242.00 - 262.00	0.6000	0.5001
T12	5	LDF4.5-50(5/8")	242.00 - 262.00	0.6000	0.5001
T12	6	1 5/8" OD Conduit	242.00 - 262.00	0.6000	0.5001
T12	11	LDF5-50A(7/8")	242.00 - 247.00	0.6000	0.5001
T12	12	LDF5-50A(7/8")	242.00 - 262.00	0.6000	0.5001
T12	13	LDF5-50A(7/8")	242.00 - 262.00	0.6000	0.5001
T12	14	LDF5-50A(7/8")	242.00 - 262.00	0.6000	0.5001
T12	15	LDF6-50A(1-1/4")	242.00 - 262.00	0.6000	0.5001

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T12	16	LDF2-50A(3/8") SC	242.00 - 262.00	0.6000	0.5001
T12	17	LDF4.5-50(5/8")	242.00 - 262.00	0.6000	0.5001
T12	18	LDF4-50A(1/2")	242.00 - 262.00	0.6000	0.5001
T12	22	LDF7-50A(1-5/8")	242.00 - 262.00	0.6000	0.5001
T12	23	LDF7-50A(1-5/8")	242.00 - 262.00	0.6000	0.5001
T12	24	LDF7-50A(1-5/8")	242.00 - 262.00	0.6000	0.5001
T12	25	LDF7-50A(1-5/8")	242.00 - 262.00	0.6000	0.5001
T13	1	3" Coax	222.00 - 242.00	0.6000	0.5014
T13	2	AVA5-50(7/8")	222.00 - 242.00	0.6000	0.5014
T13	3	LDF7-50A(1-5/8")	222.00 - 242.00	0.6000	0.5014
T13	4	1" Conduit	222.00 - 242.00	0.6000	0.5014
T13	5	LDF4.5-50(5/8")	222.00 - 242.00	0.6000	0.5014
T13	6	1 5/8" OD Conduit	222.00 - 242.00	0.6000	0.5014
T13	10	LDF5-50A(7/8")	222.00 - 239.00	0.6000	0.5014
T13	11	LDF5-50A(7/8")	222.00 - 242.00	0.6000	0.5014
T13	12	LDF5-50A(7/8")	222.00 - 242.00	0.6000	0.5014
T13	13	LDF5-50A(7/8")	222.00 - 242.00	0.6000	0.5014
T13	14	LDF5-50A(7/8")	222.00 - 242.00	0.6000	0.5014
T13	15	LDF6-50A(1-1/4")	222.00 - 242.00	0.6000	0.5014
T13	16	LDF2-50A(3/8") SC	222.00 - 242.00	0.6000	0.5014
T13	17	LDF4.5-50(5/8")	222.00 - 242.00	0.6000	0.5014
T13	18	LDF4-50A(1/2")	222.00 - 242.00	0.6000	0.5014
T13	22	LDF7-50A(1-5/8")	222.00 - 242.00	0.6000	0.5014
T13	23	LDF7-50A(1-5/8")	222.00 - 242.00	0.6000	0.5014
T13	24	LDF7-50A(1-5/8")	222.00 - 242.00	0.6000	0.5014
T13	25	LDF7-50A(1-5/8")	222.00 - 242.00	0.6000	0.5014
T14	1	3" Coax	202.00 - 222.00	0.6000	0.4851
T14	2	AVA5-50(7/8")	202.00 - 222.00	0.6000	0.4851
T14	3	LDF7-50A(1-5/8")	202.00 - 222.00	0.6000	0.4851
T14	4	1" Conduit	202.00 - 222.00	0.6000	0.4851
T14	5	LDF4.5-50(5/8")	202.00 - 222.00	0.6000	0.4851

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T14	6	1 5/8" OD Conduit	202.00 - 222.00	0.6000	0.4851
T14	10	LDF5-50A(7/8")	202.00 - 222.00	0.6000	0.4851
T14	11	LDF5-50A(7/8")	202.00 - 222.00	0.6000	0.4851
T14	12	LDF5-50A(7/8")	202.00 - 222.00	0.6000	0.4851
T14	13	LDF5-50A(7/8")	202.00 - 222.00	0.6000	0.4851
T14	14	LDF5-50A(7/8")	202.00 - 222.00	0.6000	0.4851
T14	15	LDF6-50A(1-1/4")	202.00 - 222.00	0.6000	0.4851
T14	16	LDF2-50A(3/8") SC	202.00 - 222.00	0.6000	0.4851
T14	17	LDF4.5-50(5/8")	202.00 - 222.00	0.6000	0.4851
T14	18	LDF4-50A(1/2")	202.00 - 222.00	0.6000	0.4851
T14	22	LDF7-50A(1-5/8")	202.00 - 222.00	0.6000	0.4851
T14	23	LDF7-50A(1-5/8")	202.00 - 222.00	0.6000	0.4851
T14	24	LDF7-50A(1-5/8")	202.00 - 222.00	0.6000	0.4851
T14	25	LDF7-50A(1-5/8")	202.00 - 222.00	0.6000	0.4851
T15	1	3" Coax	182.00 - 202.00	0.6000	0.5050
T15	2	AVA5-50(7/8")	182.00 - 202.00	0.6000	0.5050
T15	3	LDF7-50A(1-5/8")	182.00 - 202.00	0.6000	0.5050
T15	4	1" Conduit	182.00 - 202.00	0.6000	0.5050
T15	5	LDF4.5-50(5/8")	182.00 - 202.00	0.6000	0.5050
T15	6	1 5/8" OD Conduit	182.00 - 202.00	0.6000	0.5050
T15	10	LDF5-50A(7/8")	182.00 - 202.00	0.6000	0.5050
T15	11	LDF5-50A(7/8")	182.00 - 202.00	0.6000	0.5050
T15	12	LDF5-50A(7/8")	182.00 - 202.00	0.6000	0.5050
T15	13	LDF5-50A(7/8")	182.00 - 202.00	0.6000	0.5050
T15	14	LDF5-50A(7/8")	182.00 - 202.00	0.6000	0.5050
T15	15	LDF6-50A(1-1/4")	182.00 - 202.00	0.6000	0.5050
T15	16	LDF2-50A(3/8") SC	182.00 - 202.00	0.6000	0.5050
T15	17	LDF4.5-50(5/8")	182.00 - 202.00	0.6000	0.5050
T15	18	LDF4-50A(1/2")	182.00 - 202.00	0.6000	0.5050
T15	22	LDF7-50A(1-5/8")	182.00 - 202.00	0.6000	0.5050
T15	23	LDF7-50A(1-5/8")	182.00 - 202.00	0.6000	0.5050

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T15	24	LDF7-50A(1-5/8")	182.00 - 202.00	0.6000	0.5050
T15	25	LDF7-50A(1-5/8")	182.00 - 202.00	0.6000	0.5050
T16	1	3" Coax	162.00 - 182.00	0.6000	0.5068
T16	2	AVA5-50(7/8")	162.00 - 182.00	0.6000	0.5068
T16	3	LDF7-50A(1-5/8")	162.00 - 182.00	0.6000	0.5068
T16	4	1" Conduit	162.00 - 182.00	0.6000	0.5068
T16	5	LDF4.5-50(5/8")	162.00 - 182.00	0.6000	0.5068
T16	6	1 5/8" OD Conduit	162.00 - 182.00	0.6000	0.5068
T16	10	LDF5-50A(7/8")	162.00 - 182.00	0.6000	0.5068
T16	11	LDF5-50A(7/8")	162.00 - 182.00	0.6000	0.5068
T16	12	LDF5-50A(7/8")	162.00 - 182.00	0.6000	0.5068
T16	13	LDF5-50A(7/8")	162.00 - 182.00	0.6000	0.5068
T16	14	LDF5-50A(7/8")	162.00 - 182.00	0.6000	0.5068
T16	15	LDF6-50A(1-1/4")	162.00 - 182.00	0.6000	0.5068
T16	16	LDF2-50A(3/8") SC	162.00 - 182.00	0.6000	0.5068
T16	17	LDF4.5-50(5/8")	162.00 - 182.00	0.6000	0.5068
T16	18	LDF4-50A(1/2")	162.00 - 182.00	0.6000	0.5068
T16	22	LDF7-50A(1-5/8")	162.00 - 182.00	0.6000	0.5068
T16	23	LDF7-50A(1-5/8")	162.00 - 182.00	0.6000	0.5068
T16	24	LDF7-50A(1-5/8")	162.00 - 182.00	0.6000	0.5068
T16	25	LDF7-50A(1-5/8")	162.00 - 182.00	0.6000	0.5068
T17	1	3" Coax	142.00 - 162.00	0.6000	0.5090
T17	2	AVA5-50(7/8")	142.00 - 162.00	0.6000	0.5090
T17	3	LDF7-50A(1-5/8")	142.00 - 162.00	0.6000	0.5090
T17	4	1" Conduit	142.00 - 162.00	0.6000	0.5090
T17	5	LDF4.5-50(5/8")	142.00 - 162.00	0.6000	0.5090
T17	6	1 5/8" OD Conduit	142.00 - 162.00	0.6000	0.5090
T17	10	LDF5-50A(7/8")	142.00 - 162.00	0.6000	0.5090
T17	11	LDF5-50A(7/8")	142.00 - 162.00	0.6000	0.5090
T17	12	LDF5-50A(7/8")	142.00 - 162.00	0.6000	0.5090
T17	13	LDF5-50A(7/8")	142.00 - 162.00	0.6000	0.5090

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T17	14	LDF5-50A(7/8")	142.00 - 162.00	0.6000	0.5090
T17	15	LDF6-50A(1-1/4")	142.00 - 162.00	0.6000	0.5090
T17	16	LDF2-50A(3/8") SC	142.00 - 162.00	0.6000	0.5090
T17	17	LDF4.5-50(5/8")	142.00 - 162.00	0.6000	0.5090
T17	18	LDF4-50A(1/2")	142.00 - 162.00	0.6000	0.5090
T17	22	LDF7-50A(1-5/8")	142.00 - 162.00	0.6000	0.5090
T17	23	LDF7-50A(1-5/8")	142.00 - 162.00	0.6000	0.5090
T17	24	LDF7-50A(1-5/8")	142.00 - 162.00	0.6000	0.5090
T17	25	LDF7-50A(1-5/8")	142.00 - 162.00	0.6000	0.5090
T18	1	3" Coax	122.00 - 142.00	0.6000	0.5116
T18	2	AVA5-50(7/8")	122.00 - 142.00	0.6000	0.5116
T18	3	LDF7-50A(1-5/8")	122.00 - 142.00	0.6000	0.5116
T18	4	1" Conduit	122.00 - 142.00	0.6000	0.5116
T18	5	LDF4.5-50(5/8")	122.00 - 142.00	0.6000	0.5116
T18	6	1 5/8" OD Conduit	122.00 - 142.00	0.6000	0.5116
T18	8	LDF5-50A(7/8")	122.00 - 124.00	0.6000	0.5116
T18	9	LDF5-50A(7/8")	122.00 - 138.00	0.6000	0.5116
T18	10	LDF5-50A(7/8")	122.00 - 142.00	0.6000	0.5116
T18	11	LDF5-50A(7/8")	122.00 - 142.00	0.6000	0.5116
T18	12	LDF5-50A(7/8")	122.00 - 142.00	0.6000	0.5116
T18	13	LDF5-50A(7/8")	122.00 - 142.00	0.6000	0.5116
T18	14	LDF5-50A(7/8")	122.00 - 142.00	0.6000	0.5116
T18	15	LDF6-50A(1-1/4")	122.00 - 142.00	0.6000	0.5116
T18	16	LDF2-50A(3/8") SC	122.00 - 142.00	0.6000	0.5116
T18	17	LDF4.5-50(5/8")	122.00 - 142.00	0.6000	0.5116
T18	18	LDF4-50A(1/2")	122.00 - 142.00	0.6000	0.5116
T18	22	LDF7-50A(1-5/8")	122.00 - 142.00	0.6000	0.5116
T18	23	LDF7-50A(1-5/8")	122.00 - 142.00	0.6000	0.5116
T18	24	LDF7-50A(1-5/8")	122.00 - 142.00	0.6000	0.5116
T18	25	LDF7-50A(1-5/8")	122.00 - 142.00	0.6000	0.5116
T19	1	3" Coax	112.00 - 122.00	0.6000	0.4796

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T19	2	AVA5-50(7/8")	112.00 - 122.00	0.6000	0.4796
T19	3	LDF7-50A(1-5/8")	112.00 - 122.00	0.6000	0.4796
T19	4	1" Conduit	112.00 - 122.00	0.6000	0.4796
T19	5	LDF4.5-50(5/8")	112.00 - 122.00	0.6000	0.4796
T19	6	1 5/8" OD Conduit	112.00 - 122.00	0.6000	0.4796
T19	8	LDF5-50A(7/8")	112.00 - 122.00	0.6000	0.4796
T19	9	LDF5-50A(7/8")	112.00 - 122.00	0.6000	0.4796
T19	10	LDF5-50A(7/8")	112.00 - 122.00	0.6000	0.4796
T19	11	LDF5-50A(7/8")	112.00 - 122.00	0.6000	0.4796
T19	12	LDF5-50A(7/8")	112.00 - 122.00	0.6000	0.4796
T19	13	LDF5-50A(7/8")	112.00 - 122.00	0.6000	0.4796
T19	14	LDF5-50A(7/8")	112.00 - 122.00	0.6000	0.4796
T19	15	LDF6-50A(1-1/4")	112.00 - 122.00	0.6000	0.4796
T19	16	LDF2-50A(3/8") SC	112.00 - 122.00	0.6000	0.4796
T19	17	LDF4.5-50(5/8")	112.00 - 122.00	0.6000	0.4796
T19	18	LDF4-50A(1/2")	112.00 - 122.00	0.6000	0.4796
T19	22	LDF7-50A(1-5/8")	112.00 - 122.00	0.6000	0.4796
T19	23	LDF7-50A(1-5/8")	112.00 - 122.00	0.6000	0.4796
T19	24	LDF7-50A(1-5/8")	112.00 - 122.00	0.6000	0.4796
T19	25	LDF7-50A(1-5/8")	112.00 - 122.00	0.6000	0.4796
T20	1	3" Coax	102.00 - 112.00	0.6000	0.5089
T20	2	AVA5-50(7/8")	102.00 - 112.00	0.6000	0.5089
T20	3	LDF7-50A(1-5/8")	102.00 - 112.00	0.6000	0.5089
T20	4	1" Conduit	102.00 - 112.00	0.6000	0.5089
T20	5	LDF4.5-50(5/8")	102.00 - 112.00	0.6000	0.5089
T20	6	1 5/8" OD Conduit	102.00 - 112.00	0.6000	0.5089
T20	7	LDF5-50A(7/8")	102.00 - 108.00	0.6000	0.5089
T20	8	LDF5-50A(7/8")	102.00 - 112.00	0.6000	0.5089
T20	9	LDF5-50A(7/8")	102.00 - 112.00	0.6000	0.5089
T20	10	LDF5-50A(7/8")	102.00 - 112.00	0.6000	0.5089
T20	11	LDF5-50A(7/8")	102.00 - 112.00	0.6000	0.5089

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T20	12	LDF5-50A(7/8")	102.00 - 112.00	0.6000	0.5089
T20	13	LDF5-50A(7/8")	102.00 - 112.00	0.6000	0.5089
T20	14	LDF5-50A(7/8")	102.00 - 112.00	0.6000	0.5089
T20	15	LDF6-50A(1-1/4")	102.00 - 112.00	0.6000	0.5089
T20	16	LDF2-50A(3/8") SC	102.00 - 112.00	0.6000	0.5089
T20	17	LDF4.5-50(5/8")	102.00 - 112.00	0.6000	0.5089
T20	18	LDF4-50A(1/2")	102.00 - 112.00	0.6000	0.5089
T20	22	LDF7-50A(1-5/8")	102.00 - 112.00	0.6000	0.5089
T20	23	LDF7-50A(1-5/8")	102.00 - 112.00	0.6000	0.5089
T20	24	LDF7-50A(1-5/8")	102.00 - 112.00	0.6000	0.5089
T20	25	LDF7-50A(1-5/8")	102.00 - 112.00	0.6000	0.5089
T21	1	3" Coax	82.00 - 102.00	0.6000	0.5186
T21	2	AVA5-50(7/8")	82.00 - 102.00	0.6000	0.5186
T21	3	LDF7-50A(1-5/8")	82.00 - 102.00	0.6000	0.5186
T21	4	1" Conduit	82.00 - 102.00	0.6000	0.5186
T21	5	LDF4.5-50(5/8")	82.00 - 102.00	0.6000	0.5186
T21	6	1 5/8" OD Conduit	82.00 - 102.00	0.6000	0.5186
T21	7	LDF5-50A(7/8")	82.00 - 102.00	0.6000	0.5186
T21	8	LDF5-50A(7/8")	82.00 - 102.00	0.6000	0.5186
T21	9	LDF5-50A(7/8")	82.00 - 102.00	0.6000	0.5186
T21	10	LDF5-50A(7/8")	82.00 - 102.00	0.6000	0.5186
T21	11	LDF5-50A(7/8")	82.00 - 102.00	0.6000	0.5186
T21	12	LDF5-50A(7/8")	82.00 - 102.00	0.6000	0.5186
T21	13	LDF5-50A(7/8")	82.00 - 102.00	0.6000	0.5186
T21	14	LDF5-50A(7/8")	82.00 - 102.00	0.6000	0.5186
T21	15	LDF6-50A(1-1/4")	82.00 - 102.00	0.6000	0.5186
T21	16	LDF2-50A(3/8") SC	82.00 - 102.00	0.6000	0.5186
T21	17	LDF4.5-50(5/8")	82.00 - 102.00	0.6000	0.5186
T21	18	LDF4-50A(1/2")	82.00 - 102.00	0.6000	0.5186
T21	22	LDF7-50A(1-5/8")	82.00 - 102.00	0.6000	0.5186
T21	23	LDF7-50A(1-5/8")	82.00 - 102.00	0.6000	0.5186
T21	24	LDF7-50A(1-5/8")	82.00 - 102.00	0.6000	0.5186
T21	25	LDF7-50A(1-5/8")	82.00 - 102.00	0.6000	0.5186
T22	1	3" Coax	62.00 - 82.00	0.6000	0.5237
T22	2	AVA5-50(7/8")	62.00 - 82.00	0.6000	0.5237
T22	3	LDF7-50A(1-5/8")	62.00 - 82.00	0.6000	0.5237
T22	4	1" Conduit	62.00 - 82.00	0.6000	0.5237
T22	5	LDF4.5-50(5/8")	62.00 - 82.00	0.6000	0.5237
T22	6	1 5/8" OD Conduit	62.00 - 82.00	0.6000	0.5237
T22	7	LDF5-50A(7/8")	62.00 - 82.00	0.6000	0.5237
T22	8	LDF5-50A(7/8")	62.00 - 82.00	0.6000	0.5237
T22	9	LDF5-50A(7/8")	62.00 - 82.00	0.6000	0.5237
T22	10	LDF5-50A(7/8")	62.00 - 82.00	0.6000	0.5237
T22	11	LDF5-50A(7/8")	62.00 - 82.00	0.6000	0.5237
T22	12	LDF5-50A(7/8")	62.00 - 82.00	0.6000	0.5237
T22	13	LDF5-50A(7/8")	62.00 - 82.00	0.6000	0.5237
T22	14	LDF5-50A(7/8")	62.00 - 82.00	0.6000	0.5237
T22	15	LDF6-50A(1-1/4")	62.00 - 82.00	0.6000	0.5237
T22	16	LDF2-50A(3/8") SC	62.00 - 82.00	0.6000	0.5237
T22	17	LDF4.5-50(5/8")	62.00 - 82.00	0.6000	0.5237
T22	18	LDF4-50A(1/2")	62.00 - 82.00	0.6000	0.5237

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T22	22	LDF7-50A(1-5/8")	62.00 - 82.00	0.6000	0.5237
T22	23	LDF7-50A(1-5/8")	62.00 - 82.00	0.6000	0.5237
T22	24	LDF7-50A(1-5/8")	62.00 - 82.00	0.6000	0.5237
T22	25	LDF7-50A(1-5/8")	62.00 - 82.00	0.6000	0.5237
T23	1	3" Coax	42.00 - 62.00	0.6000	0.5306
T23	2	AVA5-50(7/8")	42.00 - 62.00	0.6000	0.5306
T23	3	LDF7-50A(1-5/8")	42.00 - 62.00	0.6000	0.5306
T23	4	1" Conduit	42.00 - 62.00	0.6000	0.5306
T23	5	LDF4.5-50(5/8")	42.00 - 62.00	0.6000	0.5306
T23	6	1 5/8" OD Conduit	42.00 - 62.00	0.6000	0.5306
T23	7	LDF5-50A(7/8")	42.00 - 62.00	0.6000	0.5306
T23	8	LDF5-50A(7/8")	42.00 - 62.00	0.6000	0.5306
T23	9	LDF5-50A(7/8")	42.00 - 62.00	0.6000	0.5306
T23	10	LDF5-50A(7/8")	42.00 - 62.00	0.6000	0.5306
T23	11	LDF5-50A(7/8")	42.00 - 62.00	0.6000	0.5306
T23	12	LDF5-50A(7/8")	42.00 - 62.00	0.6000	0.5306
T23	13	LDF5-50A(7/8")	42.00 - 62.00	0.6000	0.5306
T23	14	LDF5-50A(7/8")	42.00 - 62.00	0.6000	0.5306
T23	15	LDF6-50A(1-1/4")	42.00 - 62.00	0.6000	0.5306
T23	16	LDF2-50A(3/8") SC	42.00 - 62.00	0.6000	0.5306
T23	17	LDF4.5-50(5/8")	42.00 - 62.00	0.6000	0.5306
T23	18	LDF4-50A(1/2")	42.00 - 62.00	0.6000	0.5306
T23	22	LDF7-50A(1-5/8")	42.00 - 62.00	0.6000	0.5306
T23	23	LDF7-50A(1-5/8")	42.00 - 62.00	0.6000	0.5306
T23	24	LDF7-50A(1-5/8")	42.00 - 62.00	0.6000	0.5306
T23	25	LDF7-50A(1-5/8")	42.00 - 62.00	0.6000	0.5306
T24	1	3" Coax	22.00 - 42.00	0.6000	0.5413
T24	2	AVA5-50(7/8")	22.00 - 42.00	0.6000	0.5413
T24	3	LDF7-50A(1-5/8")	22.00 - 42.00	0.6000	0.5413
T24	4	1" Conduit	22.00 - 42.00	0.6000	0.5413
T24	5	LDF4.5-50(5/8")	22.00 - 42.00	0.6000	0.5413
T24	6	1 5/8" OD Conduit	22.00 - 42.00	0.6000	0.5413
T24	7	LDF5-50A(7/8")	22.00 - 42.00	0.6000	0.5413
T24	8	LDF5-50A(7/8")	22.00 - 42.00	0.6000	0.5413
T24	9	LDF5-50A(7/8")	22.00 - 42.00	0.6000	0.5413
T24	10	LDF5-50A(7/8")	22.00 - 42.00	0.6000	0.5413
T24	11	LDF5-50A(7/8")	22.00 - 42.00	0.6000	0.5413
T24	12	LDF5-50A(7/8")	22.00 - 42.00	0.6000	0.5413
T24	13	LDF5-50A(7/8")	22.00 - 42.00	0.6000	0.5413
T24	14	LDF5-50A(7/8")	22.00 - 42.00	0.6000	0.5413
T24	15	LDF6-50A(1-1/4")	22.00 - 42.00	0.6000	0.5413
T24	16	LDF2-50A(3/8") SC	22.00 - 42.00	0.6000	0.5413
T24	17	LDF4.5-50(5/8")	22.00 - 42.00	0.6000	0.5413
T24	18	LDF4-50A(1/2")	22.00 - 42.00	0.6000	0.5413
T24	22	LDF7-50A(1-5/8")	22.00 - 42.00	0.6000	0.5413
T24	23	LDF7-50A(1-5/8")	22.00 - 42.00	0.6000	0.5413
T24	24	LDF7-50A(1-5/8")	22.00 - 42.00	0.6000	0.5413
T24	25	LDF7-50A(1-5/8")	22.00 - 42.00	0.6000	0.5413
T25	1	3" Coax	8.00 - 22.00	0.6000	0.5450
T25	2	AVA5-50(7/8")	8.00 - 22.00	0.6000	0.5450
T25	3	LDF7-50A(1-5/8")	8.00 - 22.00	0.6000	0.5450
T25	4	1" Conduit	8.00 - 22.00	0.6000	0.5450
T25	5	LDF4.5-50(5/8")	8.00 - 22.00	0.6000	0.5450
T25	6	1 5/8" OD Conduit	8.00 - 22.00	0.6000	0.5450
T25	7	LDF5-50A(7/8")	8.00 - 22.00	0.6000	0.5450
T25	8	LDF5-50A(7/8")	8.00 - 22.00	0.6000	0.5450
T25	9	LDF5-50A(7/8")	8.00 - 22.00	0.6000	0.5450
T25	10	LDF5-50A(7/8")	8.00 - 22.00	0.6000	0.5450
T25	11	LDF5-50A(7/8")	8.00 - 22.00	0.6000	0.5450
T25	12	LDF5-50A(7/8")	8.00 - 22.00	0.6000	0.5450
T25	13	LDF5-50A(7/8")	8.00 - 22.00	0.6000	0.5450
T25	14	LDF5-50A(7/8")	8.00 - 22.00	0.6000	0.5450

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T25	15	LDF6-50A(1-1/4")	8.00 - 22.00	0.6000	0.5450
T25	16	LDF2-50A(3/8") SC	8.00 - 22.00	0.6000	0.5450
T25	17	LDF4.5-50(5/8")	8.00 - 22.00	0.6000	0.5450
T25	18	LDF4-50A(1/2")	8.00 - 22.00	0.6000	0.5450
T25	22	LDF7-50A(1-5/8")	8.00 - 22.00	0.6000	0.5450
T25	23	LDF7-50A(1-5/8")	8.00 - 22.00	0.6000	0.5450
T25	24	LDF7-50A(1-5/8")	8.00 - 22.00	0.6000	0.5450
T25	25	LDF7-50A(1-5/8")	8.00 - 22.00	0.6000	0.5450

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 K
10' Dipole	B	From Face	1.500 0.000 0.000	0.0000	108.000	No Ice 1/2" Ice 1" Ice	3.000 4.000 5.000	3.000 4.000 5.000	0.030 0.055 0.080
10' Dipole	B	From Face	1.500 0.000 0.000	0.0000	125.000	No Ice 1/2" Ice 1" Ice	3.000 4.000 5.000	3.000 4.000 5.000	0.030 0.055 0.080
Obstruction Light(.01k,.8CAAA) (Tower)	A	From Leg	1.000 0.000 0.000	0.0000	116.000	No Ice 1/2" Ice 1" Ice	0.800 1.000 1.200	0.800 1.000 1.200	0.010 0.016 0.022
Obstruction Light(.01k,.8CAAA) (Tower)	B	From Leg	1.000 0.000 0.000	0.0000	116.000	No Ice 1/2" Ice 1" Ice	0.800 1.000 1.200	0.800 1.000 1.200	0.010 0.016 0.022
Obstruction Light(.01k,.8CAAA) (Tower)	C	From Leg	1.000 0.000 0.000	0.0000	116.000	No Ice 1/2" Ice 1" Ice	0.800 1.000 1.200	0.800 1.000 1.200	0.010 0.016 0.022
3' Side Arm	B	From Leg	1.500 0.000 0.000	0.0000	108.000	No Ice 1/2" Ice 1" Ice	0.450 0.570 0.690	2.750 3.860 4.970	0.040 0.060 0.080
3' Side Arm	B	From Leg	1.500 0.000 0.000	0.0000	125.000	No Ice 1/2" Ice 1" Ice	0.450 0.570 0.690	2.750 3.860 4.970	0.040 0.060 0.080
Beacon (.075k 2.250CAAA) (Tower)	A	From Leg	1.000 0.000 0.000	0.0000	124.000	No Ice 1/2" Ice 1" Ice	2.250 2.500 2.750	2.250 2.500 2.750	0.075 0.100 0.125
10' Dipole	A	From Leg	1.500 0.000 0.000	0.0000	138.000	No Ice 1/2" Ice 1" Ice	3.000 4.000 5.000	3.000 4.000 5.000	0.030 0.055 0.080
3' Side Arm	A	From Leg	1.500 0.000 0.000	0.0000	138.000	No Ice 1/2" Ice 1" Ice	0.450 0.570 0.690	2.750 3.860 4.970	0.040 0.060 0.080
Beacon (.075k 2.250CAAA) (Tower)	A	From Leg	1.000 0.000 0.000	0.0000	237.000	No Ice 1/2" Ice 1" Ice	2.250 2.500 2.750	2.250 2.500 2.750	0.075 0.100 0.125
Beacon (.075k 2.250CAAA) (Tower)	B	From Leg	1.000 0.000 0.000	0.0000	237.000	No Ice 1/2" Ice 1" Ice	2.250 2.500 2.750	2.250 2.500 2.750	0.075 0.100 0.125
RR65-18-02DPL2 w/Mount	A	From Leg	4.000	0.0000	258.000	No Ice	4.910	3.636	0.044

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft	Offsets: Vert ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
Pipe			0.000				1/2" Ice	5.502	4.703	0.084
(Sprint)			0.000				1" Ice	6.003	5.483	0.132
APXVSPP18-C-A20 w/ Mount Pipe	B	From Leg	4.000	0.000	0.0000	258.000	No Ice	8.262	6.946	0.083
(Sprint)			0.000				1/2" Ice	8.822	8.127	0.151
			0.000				1" Ice	9.346	9.021	0.227
PCS 1900MHz 4x45W-65MHz	B	From Leg	4.000	0.000	0.0000	258.000	No Ice	2.322	2.238	0.060
(Sprint)			0.000				1/2" Ice	2.527	2.441	0.083
			0.000				1" Ice	2.739	2.651	0.110
800 EXTERNAL NOTCH FILTER	A	From Leg	4.000	0.000	0.0000	258.000	No Ice	0.660	0.321	0.011
(Sprint)			0.000				1/2" Ice	0.763	0.398	0.017
			0.000				1" Ice	0.873	0.483	0.024
6' Omni	A	From Leg	2.000	0.000	0.0000	302.000	No Ice	2.250	2.250	0.010
			0.000				1/2" Ice	2.619	2.619	0.029
			0.000				1" Ice	2.998	2.998	0.052
2' Side arm (25lbs 0.5CaAa)	A	From Leg	1.000	0.000	0.0000	302.000	No Ice	0.500	0.500	0.025
			0.000				1/2" Ice	0.000	0.000	0.033
			0.000				1" Ice	0.000	0.000	0.040
3' Yagi(.03k,2.08CAAA)	A	From Leg	2.000	0.000	0.0000	453.000	No Ice	2.080	2.080	0.030
			0.000				1/2" Ice	3.790	3.790	0.050
			0.000				1" Ice	5.500	5.500	0.070
2 Bay FM Antenna	A	From Leg	2.000	0.000	0.0000	471.000	No Ice	5.000	5.000	0.050
			0.000				1/2" Ice	8.000	8.000	0.090
			0.000				1" Ice	11.000	11.000	0.130
Beacon (.075k 2.250CAAA)	C	None			0.0000	490.000	No Ice	2.250	2.250	0.075
(Tower)							1/2" Ice	2.500	2.500	0.100
							1" Ice	2.750	2.750	0.125
Obstruction Light(.01k,.8CAAA)	A	From Leg	1.000	0.000	0.0000	358.000	No Ice	0.800	0.800	0.010
(Tower)			0.000				1/2" Ice	1.000	1.000	0.016
			0.000				1" Ice	1.200	1.200	0.022
Obstruction Light(.01k,.8CAAA)	B	From Leg	1.000	0.000	0.0000	358.000	No Ice	0.800	0.800	0.010
(Tower)			0.000				1/2" Ice	1.000	1.000	0.016
			0.000				1" Ice	1.200	1.200	0.022
Obstruction Light(.01k,.8CAAA)	C	From Leg	1.000	0.000	0.0000	358.000	No Ice	0.800	0.800	0.010
(Tower)			0.000				1/2" Ice	1.000	1.000	0.016
			0.000				1" Ice	1.200	1.200	0.022
Kathrein CA5-FM/CP/RM	C	From Leg	1.500	0.000	0.0000	300.000	No Ice	4.500	3.500	0.018
			0.000				1/2" Ice	5.500	4.400	0.023
			0.000				1" Ice	6.500	5.300	0.029
SM-408-1	A	From Leg	2.000	0.000	0.0000	258.000	No Ice	11.700	8.250	0.340
(Sprint)			0.000				1/2" Ice	17.510	12.270	0.491
			0.000				1" Ice	23.320	16.290	0.642
KRY 112 89/4	A	From Leg	4.000	0.000	0.0000	280.000	No Ice	0.559	0.362	0.015
(T-Mobile)			0.000				1/2" Ice	0.658	0.445	0.020
			0.000				1" Ice	0.764	0.538	0.027
KRY 112 89/4	B	From Leg	4.000	0.000	0.0000	280.000	No Ice	0.559	0.362	0.015
(T-Mobile)			0.000				1/2" Ice	0.658	0.445	0.020
			0.000				1" Ice	0.764	0.538	0.027
KRY 112 89/4	C	From Leg	4.000	0.000	0.0000	280.000	No Ice	0.559	0.362	0.015
(T-Mobile)			0.000				1/2" Ice	0.658	0.445	0.020
			0.000				1" Ice	0.764	0.538	0.027
Sector Frames	C	None			0.0000	280.000	No Ice	25.000	25.000	1.000
(T-Mobile)							1/2" Ice	30.000	30.000	1.250
							1" Ice	35.000	35.000	1.500
KRY 112 144/1	A	From Leg	4.000	0.000	0.0000	280.000	No Ice	0.350	0.175	0.011
(T-Mobile)			0.000				1/2" Ice	0.426	0.234	0.014
			0.000				1" Ice	0.509	0.301	0.019
KRY 112 144/1	B	From Leg	4.000	0.000	0.0000	280.000	No Ice	0.350	0.175	0.011

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
(T-Mobile)			0.000			1/2" Ice	0.426	0.234	0.014
			0.000			1" Ice	0.509	0.301	0.019
KRY 112 144/1	C	From Leg	4.000	0.0000	280.000	No Ice	0.350	0.175	0.011
(T-Mobile)			0.000			1/2" Ice	0.426	0.234	0.014
			0.000			1" Ice	0.509	0.301	0.019
RFS	A	From Leg	4.000	0.0000	280.000	No Ice	6.586	2.150	0.041
APX16DWV-16DWV-S-E-A			0.000			1/2" Ice	6.962	2.490	0.074
20 (55.9x13.3x3.15)			0.000			1" Ice	7.344	2.837	0.113
(T-Mobile)									
RFS	B	From Leg	4.000	0.0000	280.000	No Ice	6.586	2.150	0.041
APX16DWV-16DWV-S-E-A			0.000			1/2" Ice	6.962	2.490	0.074
20 (55.9x13.3x3.15)			0.000			1" Ice	7.344	2.837	0.113
(T-Mobile)									
RFS	C	From Leg	4.000	0.0000	280.000	No Ice	6.586	2.150	0.041
APX16DWV-16DWV-S-E-A			0.000			1/2" Ice	6.962	2.490	0.074
20 (55.9x13.3x3.15)			0.000			1" Ice	7.344	2.837	0.113
(T-Mobile)									
RFS APXVAA24_43-U-A20	A	From Leg	4.000	0.0000	280.000	No Ice	20.267	8.744	0.101
(95.9x24x8.7)			0.000			1/2" Ice	20.915	9.342	0.213
(T-Mobile)			0.000			1" Ice	21.570	9.947	0.334
RFS APXVAA24_43-U-A20	B	From Leg	4.000	0.0000	280.000	No Ice	20.267	8.744	0.101
(95.9x24x8.7)			0.000			1/2" Ice	20.915	9.342	0.213
(T-Mobile)			0.000			1" Ice	21.570	9.947	0.334
RFS APXVAA24_43-U-A20	C	From Leg	4.000	0.0000	280.000	No Ice	20.267	8.744	0.101
(95.9x24x8.7)			0.000			1/2" Ice	20.915	9.342	0.213
(T-Mobile)			0.000			1" Ice	21.570	9.947	0.334
Ericsson RRU 4449 B71B12	A	From Leg	4.000	0.0000	280.000	No Ice	1.639	1.291	0.074
(14.9x13.2x10.4)			0.000			1/2" Ice	1.799	1.436	0.091
(T-Mobile)			0.000			1" Ice	1.966	1.587	0.111
Ericsson RRU 4449 B71B12	B	From Leg	4.000	0.0000	280.000	No Ice	1.639	1.291	0.074
(14.9x13.2x10.4)			0.000			1/2" Ice	1.799	1.436	0.091
(T-Mobile)			0.000			1" Ice	1.966	1.587	0.111
Ericsson RRU 4449 B71B12	C	From Leg	4.000	0.0000	280.000	No Ice	1.639	1.291	0.074
(14.9x13.2x10.4)			0.000			1/2" Ice	1.799	1.436	0.091
(T-Mobile)			0.000			1" Ice	1.966	1.587	0.111

Dishes

Description	Face or Leg	Dish Type	Offset Type	Offsets: Horz Lateral ft / Vert ft	Azimuth Adjustment °	3 dB Beam Width °	Elevation ft	Outside Diameter ft		Aperture Area ft^2	Weight K
8' Grid Dish (140lbs	B	Grid	From	1.000	0.0000		239.000	8.000	No Ice	20.106	0.140
20.1CaAa)			Leg	0.000					1/2" Ice	23.000	0.320
				0.000					1" Ice	25.894	0.590
8' Grid Dish (140lbs	C	Grid	From	1.000	0.0000		247.000	8.000	No Ice	20.106	0.140
20.1CaAa)			Leg	0.000					1/2" Ice	23.000	0.320
				0.000					1" Ice	25.894	0.590
3' Grid Dish	A	Grid	From	1.000	0.0000		339.000	3.000	No Ice	2.830	0.030
			Leg	0.000					1/2" Ice	7.467	0.068

Description	Face or Leg	Dish Type	Offset Type	Offsets: Horz Lateral Vert ft	Azimuth Adjustment °	3 dB Beam Width °	Elevation ft	Outside Diameter ft		Aperture Area ft²	Weight K
				0.000					1" Ice	12.103	0.107
3' Dish w/ Radomes	B	Paraboloid w/Radome	From Leg	1.000 0.000	0.0000		351.000	3.000	No Ice 1/2" Ice	7.069 7.467	0.035 0.073
				0.000					1" Ice	7.865	0.112
6' Grid Dish	C	Grid	From Leg	1.000 0.000	0.0000		435.000	6.000	No Ice 1/2" Ice	11.000 14.000	0.250 0.399
				0.000					1" Ice	18.000	0.548

Tower Pressures - No Ice

G_H = 0.850 (base tower), 1.350 (upper structure)

Section Elevation ft	z ft	K_Z	q_z ksf	A_G ft²	Face	A_F ft²	A_R ft²	A_{leg} ft²	Leg % %	C_AA_A In Face ft²	C_AA_A Out Face ft²
L1	484.500	1.551	0.033	10.781	A	0.000	10.781	10.781	100.00	0.000	0.000
492.000-477.0					B	0.000	10.781		100.00	0.000	0.000
00					C	0.000	10.781		100.00	0.000	0.000
L2	467.000	1.535	0.033	14.375	A	0.000	14.375	14.375	100.00	0.000	0.000
477.000-457.0					B	0.000	14.375		100.00	0.000	0.000
00					C	0.000	14.375		100.00	0.000	0.000
T1	454.500	1.523	0.032	20.938	A	4.045	1.875	1.875	31.67	0.260	0.000
457.000-452.0					B	4.045	1.875		31.67	0.000	0.000
00					C	4.045	1.875		31.67	0.000	0.000
T2	447.000	1.516	0.032	41.875	A	4.388	3.750	3.750	46.08	0.865	0.000
452.000-442.0					B	4.388	3.750		46.08	0.000	0.000
00					C	4.388	3.750		46.08	0.132	0.000
T3	432.000	1.501	0.032	83.750	A	7.670	7.500	7.500	49.44	4.564	0.000
442.000-422.0					B	7.670	7.500		49.44	5.346	0.000
00					C	7.670	7.500		49.44	3.692	0.000
T4	412.000	1.481	0.032	83.750	A	7.670	7.500	7.500	49.44	6.090	0.000
422.000-402.0					B	7.670	7.500		49.44	8.224	0.000
00					C	7.670	7.500		49.44	6.456	0.000
T5	392.000	1.46	0.032	83.750	A	7.670	7.500	7.500	49.44	6.090	0.000
402.000-382.0					B	7.670	7.500		49.44	8.224	0.000
00					C	7.670	7.500		49.44	6.456	0.000
T6	372.000	1.438	0.032	83.750	A	7.670	7.500	7.500	49.44	6.090	0.000
382.000-362.0					B	7.670	7.500		49.44	8.224	0.000
00					C	7.670	7.500		49.44	6.456	0.000
T7	352.000	1.416	0.031	83.750	A	7.670	7.500	7.500	49.44	6.090	0.000
362.000-342.0					B	7.670	7.500		49.44	8.224	0.000
00					C	7.670	7.500		49.44	7.235	0.000
T8	332.000	1.392	0.031	83.750	A	7.670	7.500	7.500	49.44	7.943	0.000
342.000-322.0					B	7.670	7.500		49.44	8.224	0.000
00					C	7.670	7.500		49.44	8.186	0.000
T9	312.000	1.368	0.031	84.167	A	7.075	8.333	8.333	54.08	8.270	0.000
322.000-302.0					B	7.075	8.333		54.08	8.224	0.000
00					C	7.075	8.333		54.08	8.186	0.000
T10	292.000	1.342	0.031	84.167	A	7.628	8.333	8.333	52.21	11.370	0.000
302.000-282.0					B	7.628	8.333		52.21	8.224	0.000
00					C	7.628	8.333		52.21	8.627	0.000
T11	272.000	1.315	0.030	84.583	A	8.704	9.167	9.167	51.29	54.138	0.000
282.000-262.0					B	8.704	9.167		51.29	29.608	0.000
00					C	8.704	9.167		51.29	13.010	0.000

Section Elevation ft	z ft	K_Z	q_z ksf	A_G ft²	Face	A_F ft²	A_R ft²	A_{leg} ft²	Leg %	C_AA_A In Face ft²	C_AA_A Out Face ft²
T12	252.000	1.287	0.030	84.583	A	7.586	9.167	9.167	54.72	59.435	0.000
262.000-242.0					B	7.586	9.167		54.72	31.984	0.000
00					C	7.586	9.167		54.72	16.178	0.000
T13	232.000	1.257	0.030	84.583	A	7.586	9.167	9.167	54.72	62.923	0.000
242.000-222.0					B	7.586	9.167		54.72	31.984	0.000
00					C	7.586	9.167		54.72	17.366	0.000
T14	212.000	1.225	0.029	85.000	A	8.656	10.000	10.000	53.60	63.250	0.000
222.000-202.0					B	8.656	10.000		53.60	31.984	0.000
00					C	8.656	10.000		53.60	17.366	0.000
T15	192.000	1.191	0.029	85.000	A	6.992	10.000	10.000	58.85	63.250	0.000
202.000-182.0					B	6.992	10.000		58.85	31.984	0.000
00					C	6.992	10.000		58.85	17.366	0.000
T16	172.000	1.154	0.028	85.000	A	6.992	10.000	10.000	58.85	63.250	0.000
182.000-162.0					B	6.992	10.000		58.85	31.984	0.000
00					C	6.992	10.000		58.85	17.366	0.000
T17	152.000	1.114	0.028	85.000	A	6.992	10.000	10.000	58.85	63.250	0.000
162.000-142.0					B	6.992	10.000		58.85	31.984	0.000
00					C	6.992	10.000		58.85	17.366	0.000
T18	132.000	1.07	0.027	85.000	A	6.992	10.000	10.000	58.85	65.212	0.000
142.000-122.0					B	6.992	10.000		58.85	31.984	0.000
00					C	6.992	10.000		58.85	17.366	0.000
T19	117.000	1.034	0.026	42.500	A	4.011	5.000	5.000	55.49	33.805	0.000
122.000-112.0					B	4.011	5.000		55.49	15.992	0.000
00					C	4.011	5.000		55.49	8.683	0.000
T20	107.000	1.008	0.026	42.500	A	4.319	5.000	5.000	53.65	34.459	0.000
112.000-102.0					B	4.319	5.000		53.65	15.992	0.000
00					C	4.319	5.000		53.65	8.683	0.000
T21	92.000	0.965	0.025	85.000	A	6.992	10.000	10.000	58.85	69.790	0.000
102.000-82.00					B	6.992	10.000		58.85	31.984	0.000
0					C	6.992	10.000		58.85	17.366	0.000
T22	72.000	0.9	0.024	85.000	A	6.992	10.000	10.000	58.85	69.790	0.000
82.000-62.000					B	6.992	10.000		58.85	31.984	0.000
					C	6.992	10.000		58.85	17.366	0.000
T23	52.000	0.82	0.022	85.000	A	6.992	10.000	10.000	58.85	69.790	0.000
62.000-42.000					B	6.992	10.000		58.85	31.984	0.000
					C	6.992	10.000		58.85	17.366	0.000
T24	32.000	0.714	0.019	85.000	A	6.992	10.000	10.000	58.85	69.790	0.000
42.000-22.000					B	6.992	10.000		58.85	31.984	0.000
					C	6.992	10.000		58.85	17.366	0.000
T25	12.000	0.7	0.019	85.000	A	7.617	10.000	10.000	56.76	48.853	0.000
22.000-2.000					B	7.617	10.000		56.76	22.389	0.000
					C	7.617	10.000		56.76	12.156	0.000

Tower Pressure - With Ice

G_H = 0.850 (base tower), 1.350 (upper structure)

Section Elevation ft	z ft	K_Z	q_z ksf	t_Z in	A_G ft²	Face	A_F ft²	A_R ft²	A_{leg} ft²	Leg %	C_AA_A In Face ft²	C_AA_A Out Face ft²
L1	484.500	1.551	0.006	2.0898	16.006	A	0.000	16.006	16.006	100.00	0.000	0.000
492.000-477.000						B	0.000	16.006		100.00	0.000	0.000
						C	0.000	16.006		100.00	0.000	0.000
L2	467.000	1.535	0.006	2.0867	21.331	A	0.000	21.331	21.331	100.00	0.000	0.000
477.000-457.000						B	0.000	21.331		100.00	0.000	0.000

Section Elevation ft	z ft	K_Z	q_z ksf	t_Z in	A_G ft²	Face	A_F ft²	A_R ft²	A_{leg} ft²	Leg %	C_AA_A In Face ft²	C_AA_A Out Face ft²
						C	0.000	21.331		100.00	0.000	0.000
T1	454.500	1.523	0.006	2.0844	22.674	A	4.045	10.240	5.349	37.45	1.510	0.000
457.000-452.000						B	4.045	10.240		37.45	0.000	0.000
						C	4.045	10.240		37.45	0.000	0.000
T2	447.000	1.516	0.006	2.0829	45.347	A	4.388	19.832	10.693	44.15	5.031	0.000
452.000-442.000						B	4.388	19.832		44.15	0.000	0.000
						C	4.388	19.832		44.15	1.382	0.000
T3	432.000	1.501	0.006	2.0800	90.683	A	7.670	37.321	21.367	47.49	23.700	0.000
442.000-422.000						B	7.670	37.321		47.49	16.162	0.000
						C	7.670	37.321		47.49	20.748	0.000
T4	412.000	1.481	0.006	2.0758	90.669	A	7.670	37.261	21.339	47.49	31.000	0.000
422.000-402.000						B	7.670	37.261		47.49	24.831	0.000
						C	7.670	37.261		47.49	31.366	0.000
T5	392.000	1.46	0.006	2.0714	90.655	A	7.670	37.198	21.310	47.49	30.947	0.000
402.000-382.000						B	7.670	37.198		47.49	24.795	0.000
						C	7.670	37.198		47.49	31.313	0.000
T6	372.000	1.438	0.006	2.0667	90.639	A	7.670	37.130	21.278	47.50	30.891	0.000
382.000-362.000						B	7.670	37.130		47.50	24.758	0.000
						C	7.670	37.130		47.50	31.257	0.000
T7	352.000	1.416	0.006	2.0616	90.622	A	7.670	37.057	21.244	47.50	30.830	0.000
362.000-342.000						B	7.670	37.057		47.50	24.717	0.000
						C	7.670	37.057		47.50	35.685	0.000
T8	332.000	1.392	0.006	2.0561	90.604	A	7.670	36.978	21.207	47.50	39.607	0.000
342.000-322.000						B	7.670	36.978		47.50	24.673	0.000
						C	7.670	36.978		47.50	41.084	0.000
T9	312.000	1.368	0.006	2.0501	91.000	A	7.075	37.652	22.001	49.19	41.072	0.000
322.000-302.000						B	7.075	37.652		49.19	24.625	0.000
						C	7.075	37.652		49.19	40.988	0.000
T10	292.000	1.342	0.006	2.0435	90.978	A	7.628	37.546	21.957	48.61	52.241	0.000
302.000-282.000						B	7.628	37.546		48.61	24.572	0.000
						C	7.628	37.546		48.61	44.185	0.000
T11	272.000	1.315	0.006	2.0363	91.371	A	8.704	38.202	22.742	48.48	128.876	0.000
282.000-262.000						B	8.704	38.202		48.48	62.904	0.000
						C	8.704	38.202		48.48	61.066	0.000
T12	252.000	1.287	0.006	2.0282	91.344	A	7.586	38.075	22.688	49.69	139.714	0.000
262.000-242.000						B	7.586	38.075		49.69	67.053	0.000
						C	7.586	38.075		49.69	70.534	0.000
T13	232.000	1.257	0.006	2.0192	91.314	A	7.586	37.946	22.628	49.70	155.818	0.000
242.000-222.000						B	7.586	37.946		49.70	66.922	0.000
						C	7.586	37.946		49.70	73.902	0.000
T14	212.000	1.225	0.006	2.0089	91.696	A	8.656	38.561	23.393	49.54	156.938	0.000
222.000-202.000						B	8.656	38.561		49.54	66.774	0.000
						C	8.656	38.561		49.54	73.616	0.000
T15	192.000	1.191	0.006	1.9972	91.657	A	6.992	38.383	23.315	51.38	156.460	0.000
202.000-182.000						B	6.992	38.383		51.38	66.606	0.000
						C	6.992	38.383		51.38	73.288	0.000
T16	172.000	1.154	0.006	1.9837	91.612	A	6.992	38.191	23.225	51.40	155.908	0.000
182.000-162.000						B	6.992	38.191		51.40	66.410	0.000
						C	6.992	38.191		51.40	72.910	0.000
T17	152.000	1.114	0.005	1.9679	91.560	A	6.992	37.966	23.119	51.42	155.262	0.000
162.000-142.000						B	6.992	37.966		51.42	66.182	0.000
						C	6.992	37.966		51.42	72.468	0.000
T18	132.000	1.07	0.005	1.9491	91.497	A	6.992	37.699	22.994	51.45	163.473	0.000
142.000-122.000						B	6.992	37.699		51.45	65.911	0.000
						C	6.992	37.699		51.45	71.941	0.000
T19	117.000	1.034	0.005	1.9325	45.721	A	4.011	19.782	11.442	48.09	86.817	0.000
122.000-112.000						B	4.011	19.782		48.09	32.836	0.000
						C	4.011	19.782		48.09	35.738	0.000
T20	107.000	1.008	0.005	1.9198	45.700	A	7.443	14.999	11.399	50.79	89.466	0.000
112.000-102.000						B	7.443	14.999		50.79	32.744	0.000

Section Elevation ft	z ft	K_Z	q_z ksf	t_Z in	A_G ft²	Face	A_F ft²	A_R ft²	A_{leg} ft²	Leg %	C_AA_A In Face ft²	C_AA_A Out Face ft²
						C	7.443	14.999		50.79	35.561	0.000
T21	92.000	0.965	0.005	1.8980	91.327	A	6.992	36.972	22.653	51.53	181.719	0.000
102.000-82.000						B	6.992	36.972		51.53	65.173	0.000
						C	6.992	36.972		51.53	70.509	0.000
T22	72.000	0.9	0.005	1.8613	91.204	A	6.992	36.451	22.409	51.58	179.781	0.000
82.000-62.000						B	6.992	36.451		51.58	64.644	0.000
						C	6.992	36.451		51.58	69.482	0.000
T23	52.000	0.82	0.004	1.8110	91.037	A	6.992	35.737	22.073	51.66	177.127	0.000
62.000-42.000						B	6.992	35.737		51.66	63.920	0.000
						C	6.992	35.737		51.66	68.075	0.000
T24	32.000	0.714	0.004	1.7344	90.781	A	6.992	34.648	21.563	51.78	173.084	0.000
42.000-22.000						B	6.992	34.648		51.78	62.818	0.000
						C	6.992	34.648		51.78	65.930	0.000
T25	12.000	0.7	0.004	1.5811	90.270	A	7.617	33.457	20.541	50.01	115.498	0.000
22.000-2.000						B	7.617	33.457		50.01	42.430	0.000
						C	7.617	33.457		50.01	43.146	0.000

Tower Pressure - Service

G_H = 0.850 (base tower), 1.350 (upper structure)

Section Elevation ft	z ft	K_Z	q_z ksf	A_G ft²	Face	A_F ft²	A_R ft²	A_{leg} ft²	Leg %	C_AA_A In Face ft²	C_AA_A Out Face ft²
L1	484.500	1.551	0.015	10.781	A	0.000	10.781	10.781	100.00	0.000	0.000
492.000-477.0					B	0.000	10.781		100.00	0.000	0.000
00					C	0.000	10.781		100.00	0.000	0.000
L2	467.000	1.535	0.014	14.375	A	0.000	14.375	14.375	100.00	0.000	0.000
477.000-457.0					B	0.000	14.375		100.00	0.000	0.000
00					C	0.000	14.375		100.00	0.000	0.000
T1	454.500	1.523	0.014	20.938	A	4.045	1.875	1.875	31.67	0.260	0.000
457.000-452.0					B	4.045	1.875		31.67	0.000	0.000
00					C	4.045	1.875		31.67	0.000	0.000
T2	447.000	1.516	0.014	41.875	A	4.388	3.750	3.750	46.08	0.865	0.000
452.000-442.0					B	4.388	3.750		46.08	0.000	0.000
00					C	4.388	3.750		46.08	0.132	0.000
T3	432.000	1.501	0.014	83.750	A	7.670	7.500	7.500	49.44	4.564	0.000
442.000-422.0					B	7.670	7.500		49.44	5.346	0.000
00					C	7.670	7.500		49.44	3.692	0.000
T4	412.000	1.481	0.014	83.750	A	7.670	7.500	7.500	49.44	6.090	0.000
422.000-402.0					B	7.670	7.500		49.44	8.224	0.000
00					C	7.670	7.500		49.44	6.456	0.000
T5	392.000	1.46	0.014	83.750	A	7.670	7.500	7.500	49.44	6.090	0.000
402.000-382.0					B	7.670	7.500		49.44	8.224	0.000
00					C	7.670	7.500		49.44	6.456	0.000
T6	372.000	1.438	0.014	83.750	A	7.670	7.500	7.500	49.44	6.090	0.000
382.000-362.0					B	7.670	7.500		49.44	8.224	0.000
00					C	7.670	7.500		49.44	6.456	0.000
T7	352.000	1.416	0.014	83.750	A	7.670	7.500	7.500	49.44	6.090	0.000
362.000-342.0					B	7.670	7.500		49.44	8.224	0.000
00					C	7.670	7.500		49.44	7.235	0.000
T8	332.000	1.392	0.014	83.750	A	7.670	7.500	7.500	49.44	7.943	0.000
342.000-322.0					B	7.670	7.500		49.44	8.224	0.000
00					C	7.670	7.500		49.44	8.186	0.000

Section Elevation ft	z ft	K_Z	q_z ksf	A_G ft²	Face	A_F ft²	A_R ft²	A_{leg} ft²	Leg %	C_AA_A In Face ft²	C_AA_A Out Face ft²
T9	312.000	1.368	0.014	84.167	A	7.075	8.333	8.333	54.08	8.270	0.000
322.000-302.0					B	7.075	8.333		54.08	8.224	0.000
00					C	7.075	8.333		54.08	8.186	0.000
T10	292.000	1.342	0.014	84.167	A	7.628	8.333	8.333	52.21	11.370	0.000
302.000-282.0					B	7.628	8.333		52.21	8.224	0.000
00					C	7.628	8.333		52.21	8.627	0.000
T11	272.000	1.315	0.014	84.583	A	8.704	9.167	9.167	51.29	54.138	0.000
282.000-262.0					B	8.704	9.167		51.29	29.608	0.000
00					C	8.704	9.167		51.29	13.010	0.000
T12	252.000	1.287	0.013	84.583	A	7.586	9.167	9.167	54.72	59.435	0.000
262.000-242.0					B	7.586	9.167		54.72	31.984	0.000
00					C	7.586	9.167		54.72	16.178	0.000
T13	232.000	1.257	0.013	84.583	A	7.586	9.167	9.167	54.72	62.923	0.000
242.000-222.0					B	7.586	9.167		54.72	31.984	0.000
00					C	7.586	9.167		54.72	17.366	0.000
T14	212.000	1.225	0.013	85.000	A	8.656	10.000	10.000	53.60	63.250	0.000
222.000-202.0					B	8.656	10.000		53.60	31.984	0.000
00					C	8.656	10.000		53.60	17.366	0.000
T15	192.000	1.191	0.013	85.000	A	6.992	10.000	10.000	58.85	63.250	0.000
202.000-182.0					B	6.992	10.000		58.85	31.984	0.000
00					C	6.992	10.000		58.85	17.366	0.000
T16	172.000	1.154	0.013	85.000	A	6.992	10.000	10.000	58.85	63.250	0.000
182.000-162.0					B	6.992	10.000		58.85	31.984	0.000
00					C	6.992	10.000		58.85	17.366	0.000
T17	152.000	1.114	0.012	85.000	A	6.992	10.000	10.000	58.85	63.250	0.000
162.000-142.0					B	6.992	10.000		58.85	31.984	0.000
00					C	6.992	10.000		58.85	17.366	0.000
T18	132.000	1.07	0.012	85.000	A	6.992	10.000	10.000	58.85	65.212	0.000
142.000-122.0					B	6.992	10.000		58.85	31.984	0.000
00					C	6.992	10.000		58.85	17.366	0.000
T19	117.000	1.034	0.012	42.500	A	4.011	5.000	5.000	55.49	33.805	0.000
122.000-112.0					B	4.011	5.000		55.49	15.992	0.000
00					C	4.011	5.000		55.49	8.683	0.000
T20	107.000	1.008	0.011	42.500	A	4.319	5.000	5.000	53.65	34.459	0.000
112.000-102.0					B	4.319	5.000		53.65	15.992	0.000
00					C	4.319	5.000		53.65	8.683	0.000
T21	92.000	0.965	0.011	85.000	A	6.992	10.000	10.000	58.85	69.790	0.000
102.000-82.00					B	6.992	10.000		58.85	31.984	0.000
0					C	6.992	10.000		58.85	17.366	0.000
T22	72.000	0.9	0.010	85.000	A	6.992	10.000	10.000	58.85	69.790	0.000
82.000-62.000					B	6.992	10.000		58.85	31.984	0.000
					C	6.992	10.000		58.85	17.366	0.000
T23	52.000	0.82	0.010	85.000	A	6.992	10.000	10.000	58.85	69.790	0.000
62.000-42.000					B	6.992	10.000		58.85	31.984	0.000
					C	6.992	10.000		58.85	17.366	0.000
T24	32.000	0.714	0.009	85.000	A	6.992	10.000	10.000	58.85	69.790	0.000
42.000-22.000					B	6.992	10.000		58.85	31.984	0.000
					C	6.992	10.000		58.85	17.366	0.000
T25	12.000	0.7	0.009	85.000	A	7.617	10.000	10.000	56.76	48.853	0.000
22.000-2.000					B	7.617	10.000		56.76	22.389	0.000
					C	7.617	10.000		56.76	12.156	0.000

Tower Forces - No Ice - Wind Normal To Face

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z ksf	D_F	D_R	A_E ft^2	F K	w klf	Ctrl. Face
L1	0.000	0.535	A	1	0.6	0.033	1	1	10.781	0.286	0.019	C
492.000-477.0			B	1	0.6		1	1	10.781			
00			C	1	0.6		1	1	10.781			
L2	0.000	0.713	A	1	0.6	0.033	1	1	14.375	0.379	0.019	C
477.000-457.0			B	1	0.6		1	1	14.375			
00			C	1	0.6		1	1	14.375			
T1	0.000	0.418	A	0.283	2.343	0.032	1	1	5.158	0.338	0.068	C
457.000-452.0			B	0.283	2.343		1	1	5.158			
00			C	0.283	2.343		1	1	5.158			
T2	0.002	0.643	A	0.194	2.615	0.032	1	1	6.538	0.488	0.049	C
452.000-442.0			B	0.194	2.615		1	1	6.538			
00			C	0.194	2.615		1	1	6.538			
T3	0.055	1.229	A	0.181	2.66	0.032	1	1	11.956	1.097	0.055	C
442.000-422.0			B	0.181	2.66		1	1	11.956			
00			C	0.181	2.66		1	1	11.956			
T4	0.089	1.229	A	0.181	2.66	0.032	1	1	11.956	1.208	0.060	C
422.000-402.0			B	0.181	2.66		1	1	11.956			
00			C	0.181	2.66		1	1	11.956			
T5	0.089	1.229	A	0.181	2.66	0.032	1	1	11.956	1.201	0.060	C
402.000-382.0			B	0.181	2.66		1	1	11.956			
00			C	0.181	2.66		1	1	11.956			
T6	0.089	1.229	A	0.181	2.66	0.032	1	1	11.956	1.193	0.060	C
382.000-362.0			B	0.181	2.66		1	1	11.956			
00			C	0.181	2.66		1	1	11.956			
T7	0.091	1.229	A	0.181	2.66	0.031	1	1	11.956	1.197	0.060	C
362.000-342.0			B	0.181	2.66		1	1	11.956			
00			C	0.181	2.66		1	1	11.956			
T8	0.098	1.229	A	0.181	2.66	0.031	1	1	11.956	1.233	0.062	C
342.000-322.0			B	0.181	2.66		1	1	11.956			
00			C	0.181	2.66		1	1	11.956			
T9	0.099	1.328	A	0.183	2.654	0.031	1	1	11.840	1.217	0.061	C
322.000-302.0			B	0.183	2.654		1	1	11.840			
00			C	0.183	2.654		1	1	11.840			
T10	0.113	1.419	A	0.19	2.631	0.031	1	1	12.401	1.293	0.065	C
302.000-282.0			B	0.19	2.631		1	1	12.401			
00			C	0.19	2.631		1	1	12.401			
T11	0.395	1.858	A	0.211	2.559	0.030	1	1	13.989	2.248	0.112	A
282.000-262.0			B	0.211	2.559		1	1	13.989			
00			C	0.211	2.559		1	1	13.989			
T12	0.440	1.629	A	0.198	2.602	0.030	1	1	12.849	2.309	0.115	A
262.000-242.0			B	0.198	2.602		1	1	12.849			
00			C	0.198	2.602		1	1	12.849			
T13	0.455	1.629	A	0.198	2.602	0.030	1	1	12.849	2.351	0.118	A
242.000-222.0			B	0.198	2.602		1	1	12.849			
00			C	0.198	2.602		1	1	12.849			
T14	0.456	2.089	A	0.219	2.532	0.029	1	1	14.437	2.399	0.120	A
222.000-202.0			B	0.219	2.532		1	1	14.437			
00			C	0.219	2.532		1	1	14.437			
T15	0.456	1.768	A	0.2	2.596	0.029	1	1	12.737	2.274	0.114	A
202.000-182.0			B	0.2	2.596		1	1	12.737			
00			C	0.2	2.596		1	1	12.737			
T16	0.456	1.768	A	0.2	2.596	0.028	1	1	12.737	2.231	0.112	A
182.000-162.0			B	0.2	2.596		1	1	12.737			
00			C	0.2	2.596		1	1	12.737			
T17	0.456	1.768	A	0.2	2.596	0.028	1	1	12.737	2.180	0.109	A
162.000-142.0			B	0.2	2.596		1	1	12.737			
00			C	0.2	2.596		1	1	12.737			
T18	0.462	1.768	A	0.2	2.596	0.027	1	1	12.737	2.148	0.107	A
142.000-122.0			B	0.2	2.596		1	1	12.737			
00			C	0.2	2.596		1	1	12.737			

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z ksf	D_F	D_R	A_E ft^2	F K	w klf	Ctrl. Face
T19	0.235	0.908	A	0.212	2.556	0.026	1	1	6.894	1.088	0.109	A
122.000-112.0			B	0.212	2.556		1	1	6.894			
00			C	0.212	2.556		1	1	6.894			
T20	0.237	1.060	A	0.219	2.533	0.026	1	1	7.210	1.091	0.109	A
112.000-102.0			B	0.219	2.533		1	1	7.210			
00			C	0.219	2.533		1	1	7.210			
T21	0.476	1.768	A	0.2	2.596	0.025	1	1	12.737	2.049	0.102	A
102.000-82.00			B	0.2	2.596		1	1	12.737			
0			C	0.2	2.596		1	1	12.737			
T22	0.476	1.768	A	0.2	2.596	0.024	1	1	12.737	1.938	0.097	A
82.000-62.000			B	0.2	2.596		1	1	12.737			
			C	0.2	2.596		1	1	12.737			
T23	0.476	1.768	A	0.2	2.596	0.022	1	1	12.737	1.792	0.090	A
62.000-42.000			B	0.2	2.596		1	1	12.737			
			C	0.2	2.596		1	1	12.737			
T24	0.476	1.768	A	0.2	2.596	0.019	1	1	12.737	1.584	0.079	A
42.000-22.000			B	0.2	2.596		1	1	12.737			
			C	0.2	2.596		1	1	12.737			
T25	0.333	1.798	A	0.207	2.572	0.019	1	1	13.375	1.288	0.064	A
22.000-2.000			B	0.207	2.572		1	1	13.375			
			C	0.207	2.572		1	1	13.375			
Sum Weight:	7.011	37.547								40.100		

Tower Forces - No Ice - Wind 60 To Face

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z ksf	D_F	D_R	A_E ft^2	F K	w klf	Ctrl. Face
L1	0.000	0.535	A	1	0.6	0.033	1	1	10.781	0.286	0.019	C
492.000-477.0			B	1	0.6		1	1	10.781			
00			C	1	0.6		1	1	10.781			
L2	0.000	0.713	A	1	0.6	0.033	1	1	14.375	0.379	0.019	C
477.000-457.0			B	1	0.6		1	1	14.375			
00			C	1	0.6		1	1	14.375			
T1	0.000	0.418	A	0.283	2.343	0.032	0.8	1	4.349	0.286	0.057	C
457.000-452.0			B	0.283	2.343		0.8	1	4.349			
00			C	0.283	2.343		0.8	1	4.349			
T2	0.002	0.643	A	0.194	2.615	0.032	0.8	1	5.661	0.424	0.042	C
452.000-442.0			B	0.194	2.615		0.8	1	5.661			
00			C	0.194	2.615		0.8	1	5.661			
T3	0.055	1.229	A	0.181	2.66	0.032	0.8	1	10.422	0.985	0.049	C
442.000-422.0			B	0.181	2.66		0.8	1	10.422			
00			C	0.181	2.66		0.8	1	10.422			
T4	0.089	1.229	A	0.181	2.66	0.032	0.8	1	10.422	1.097	0.055	C
422.000-402.0			B	0.181	2.66		0.8	1	10.422			
00			C	0.181	2.66		0.8	1	10.422			
T5	0.089	1.229	A	0.181	2.66	0.032	0.8	1	10.422	1.090	0.055	C
402.000-382.0			B	0.181	2.66		0.8	1	10.422			
00			C	0.181	2.66		0.8	1	10.422			
T6	0.089	1.229	A	0.181	2.66	0.032	0.8	1	10.422	1.083	0.054	C
382.000-362.0			B	0.181	2.66		0.8	1	10.422			
00			C	0.181	2.66		0.8	1	10.422			
T7	0.091	1.229	A	0.181	2.66	0.031	0.8	1	10.422	1.088	0.054	C

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z ksf	D_F	D_R	A_E ft^2	F K	w klf	Ctrl. Face
362.000-342.0			B	0.181	2.66		0.8	1	10.422			
00			C	0.181	2.66		0.8	1	10.422			
T8	0.098	1.229	A	0.181	2.66	0.031	0.8	1	10.422	1.124	0.056	C
342.000-322.0			B	0.181	2.66		0.8	1	10.422			
00			C	0.181	2.66		0.8	1	10.422			
T9	0.099	1.328	A	0.183	2.654	0.031	0.8	1	10.425	1.118	0.056	C
322.000-302.0			B	0.183	2.654		0.8	1	10.425			
00			C	0.183	2.654		0.8	1	10.425			
T10	0.113	1.419	A	0.19	2.631	0.031	0.8	1	10.875	1.188	0.059	C
302.000-282.0			B	0.19	2.631		0.8	1	10.875			
00			C	0.19	2.631		0.8	1	10.875			
T11	0.395	1.858	A	0.211	2.559	0.030	0.8	1	12.248	2.133	0.107	B
282.000-262.0			B	0.211	2.559		0.8	1	12.248			
00			C	0.211	2.559		0.8	1	12.248			
T12	0.440	1.629	A	0.198	2.602	0.030	0.8	1	11.332	2.209	0.110	B
262.000-242.0			B	0.198	2.602		0.8	1	11.332			
00			C	0.198	2.602		0.8	1	11.332			
T13	0.455	1.629	A	0.198	2.602	0.030	0.8	1	11.332	2.251	0.113	B
242.000-222.0			B	0.198	2.602		0.8	1	11.332			
00			C	0.198	2.602		0.8	1	11.332			
T14	0.456	2.089	A	0.219	2.532	0.029	0.8	1	12.706	2.290	0.115	B
222.000-202.0			B	0.219	2.532		0.8	1	12.706			
00			C	0.219	2.532		0.8	1	12.706			
T15	0.456	1.768	A	0.2	2.596	0.029	0.8	1	11.338	2.186	0.109	B
202.000-182.0			B	0.2	2.596		0.8	1	11.338			
00			C	0.2	2.596		0.8	1	11.338			
T16	0.456	1.768	A	0.2	2.596	0.028	0.8	1	11.338	2.144	0.107	B
182.000-162.0			B	0.2	2.596		0.8	1	11.338			
00			C	0.2	2.596		0.8	1	11.338			
T17	0.456	1.768	A	0.2	2.596	0.028	0.8	1	11.338	2.095	0.105	B
162.000-142.0			B	0.2	2.596		0.8	1	11.338			
00			C	0.2	2.596		0.8	1	11.338			
T18	0.462	1.768	A	0.2	2.596	0.027	0.8	1	11.338	2.065	0.103	B
142.000-122.0			B	0.2	2.596		0.8	1	11.338			
00			C	0.2	2.596		0.8	1	11.338			
T19	0.235	0.908	A	0.212	2.556	0.026	0.8	1	6.092	1.043	0.104	B
122.000-112.0			B	0.212	2.556		0.8	1	6.092			
00			C	0.212	2.556		0.8	1	6.092			
T20	0.237	1.060	A	0.219	2.533	0.026	0.8	1	6.346	1.043	0.104	B
112.000-102.0			B	0.219	2.533		0.8	1	6.346			
00			C	0.219	2.533		0.8	1	6.346			
T21	0.476	1.768	A	0.2	2.596	0.025	0.8	1	11.338	1.972	0.099	B
102.000-82.00			B	0.2	2.596		0.8	1	11.338			
0			C	0.2	2.596		0.8	1	11.338			
T22	0.476	1.768	A	0.2	2.596	0.024	0.8	1	11.338	1.865	0.093	B
82.000-62.000			B	0.2	2.596		0.8	1	11.338			
			C	0.2	2.596		0.8	1	11.338			
T23	0.476	1.768	A	0.2	2.596	0.022	0.8	1	11.338	1.725	0.086	B
62.000-42.000			B	0.2	2.596		0.8	1	11.338			
			C	0.2	2.596		0.8	1	11.338			
T24	0.476	1.768	A	0.2	2.596	0.019	0.8	1	11.338	1.525	0.076	B
42.000-22.000			B	0.2	2.596		0.8	1	11.338			
			C	0.2	2.596		0.8	1	11.338			
T25	0.333	1.798	A	0.207	2.572	0.019	0.8	1	11.851	1.224	0.061	B
22.000-2.000			B	0.207	2.572		0.8	1	11.851			
			C	0.207	2.572		0.8	1	11.851			
Sum Weight:	7.011	37.547								37.918		

Tower Forces - No Ice - Wind 90 To Face

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z ksf	D_F	D_R	A_E ft^2	F K	w klf	Ctrl. Face
L1	0.000	0.535	A	1	0.6	0.033	1	1	10.781	0.286	0.019	C
492.000-477.0			B	1	0.6		1	1	10.781			
00			C	1	0.6		1	1	10.781			
L2	0.000	0.713	A	1	0.6	0.033	1	1	14.375	0.379	0.019	C
477.000-457.0			B	1	0.6		1	1	14.375			
00			C	1	0.6		1	1	14.375			
T1	0.000	0.418	A	0.283	2.343	0.032	0.85	1	4.551	0.299	0.060	C
457.000-452.0			B	0.283	2.343		0.85	1	4.551			
00			C	0.283	2.343		0.85	1	4.551			
T2	0.002	0.643	A	0.194	2.615	0.032	0.85	1	5.880	0.440	0.044	C
452.000-442.0			B	0.194	2.615		0.85	1	5.880			
00			C	0.194	2.615		0.85	1	5.880			
T3	0.055	1.229	A	0.181	2.66	0.032	0.85	1	10.805	1.013	0.051	C
442.000-422.0			B	0.181	2.66		0.85	1	10.805			
00			C	0.181	2.66		0.85	1	10.805			
T4	0.089	1.229	A	0.181	2.66	0.032	0.85	1	10.805	1.125	0.056	C
422.000-402.0			B	0.181	2.66		0.85	1	10.805			
00			C	0.181	2.66		0.85	1	10.805			
T5	0.089	1.229	A	0.181	2.66	0.032	0.85	1	10.805	1.118	0.056	C
402.000-382.0			B	0.181	2.66		0.85	1	10.805			
00			C	0.181	2.66		0.85	1	10.805			
T6	0.089	1.229	A	0.181	2.66	0.032	0.85	1	10.805	1.110	0.056	C
382.000-362.0			B	0.181	2.66		0.85	1	10.805			
00			C	0.181	2.66		0.85	1	10.805			
T7	0.091	1.229	A	0.181	2.66	0.031	0.85	1	10.805	1.115	0.056	C
362.000-342.0			B	0.181	2.66		0.85	1	10.805			
00			C	0.181	2.66		0.85	1	10.805			
T8	0.098	1.229	A	0.181	2.66	0.031	0.85	1	10.805	1.151	0.058	C
342.000-322.0			B	0.181	2.66		0.85	1	10.805			
00			C	0.181	2.66		0.85	1	10.805			
T9	0.099	1.328	A	0.183	2.654	0.031	0.85	1	10.778	1.143	0.057	C
322.000-302.0			B	0.183	2.654		0.85	1	10.778			
00			C	0.183	2.654		0.85	1	10.778			
T10	0.113	1.419	A	0.19	2.631	0.031	0.85	1	11.257	1.215	0.061	C
302.000-282.0			B	0.19	2.631		0.85	1	11.257			
00			C	0.19	2.631		0.85	1	11.257			
T11	0.395	1.858	A	0.211	2.559	0.030	0.85	1	12.683	2.327	0.116	C
282.000-262.0			B	0.211	2.559		0.85	1	12.683			
00			C	0.211	2.559		0.85	1	12.683			
T12	0.440	1.629	A	0.198	2.602	0.030	0.85	1	11.711	2.416	0.121	C
262.000-242.0			B	0.198	2.602		0.85	1	11.711			
00			C	0.198	2.602		0.85	1	11.711			
T13	0.455	1.629	A	0.198	2.602	0.030	0.85	1	11.711	2.456	0.123	C
242.000-222.0			B	0.198	2.602		0.85	1	11.711			
00			C	0.198	2.602		0.85	1	11.711			
T14	0.456	2.089	A	0.219	2.532	0.029	0.85	1	13.139	2.495	0.125	C
222.000-202.0			B	0.219	2.532		0.85	1	13.139			
00			C	0.219	2.532		0.85	1	13.139			
T15	0.456	1.768	A	0.2	2.596	0.029	0.85	1	11.688	2.382	0.119	C
202.000-182.0			B	0.2	2.596		0.85	1	11.688			
00			C	0.2	2.596		0.85	1	11.688			
T16	0.456	1.768	A	0.2	2.596	0.028	0.85	1	11.688	2.336	0.117	C
182.000-162.0			B	0.2	2.596		0.85	1	11.688			
00			C	0.2	2.596		0.85	1	11.688			

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z ksf	D_F	D_R	A_E ft^2	F K	w klf	Ctrl. Face
T17	0.456	1.768	A	0.2	2.596	0.028	0.85	1	11.688	2.283	0.114	C
162.000-142.0			B	0.2	2.596		0.85	1	11.688			
00			C	0.2	2.596		0.85	1	11.688			
T18	0.462	1.768	A	0.2	2.596	0.027	0.85	1	11.688	2.248	0.112	C
142.000-122.0			B	0.2	2.596		0.85	1	11.688			
00			C	0.2	2.596		0.85	1	11.688			
T19	0.235	0.908	A	0.212	2.556	0.026	0.85	1	6.292	1.133	0.113	C
122.000-112.0			B	0.212	2.556		0.85	1	6.292			
00			C	0.212	2.556		0.85	1	6.292			
T20	0.237	1.060	A	0.219	2.533	0.026	0.85	1	6.562	1.133	0.113	C
112.000-102.0			B	0.219	2.533		0.85	1	6.562			
00			C	0.219	2.533		0.85	1	6.562			
T21	0.476	1.768	A	0.2	2.596	0.025	0.85	1	11.688	2.142	0.107	C
102.000-82.00			B	0.2	2.596		0.85	1	11.688			
0			C	0.2	2.596		0.85	1	11.688			
T22	0.476	1.768	A	0.2	2.596	0.024	0.85	1	11.688	2.026	0.101	C
82.000-62.000			B	0.2	2.596		0.85	1	11.688			
			C	0.2	2.596		0.85	1	11.688			
T23	0.476	1.768	A	0.2	2.596	0.022	0.85	1	11.688	1.873	0.094	C
62.000-42.000			B	0.2	2.596		0.85	1	11.688			
			C	0.2	2.596		0.85	1	11.688			
T24	0.476	1.768	A	0.2	2.596	0.019	0.85	1	11.688	1.656	0.083	C
42.000-22.000			B	0.2	2.596		0.85	1	11.688			
			C	0.2	2.596		0.85	1	11.688			
T25	0.333	1.798	A	0.207	2.572	0.019	0.85	1	12.232	1.321	0.066	C
22.000-2.000			B	0.207	2.572		0.85	1	12.232			
			C	0.207	2.572		0.85	1	12.232			
Sum Weight:	7.011	37.547								40.622		

Tower Forces - With Ice - Wind Normal To Face

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z ksf	D_F	D_R	A_E ft^2	F K	w klf	Ctrl. Face
L1	0.000	0.945	A	1	1.2	0.006	1	1	16.006	0.168	0.011	C
492.000-477.0			B	1	1.2		1	1	16.006			
00			C	1	1.2		1	1	16.006			
L2	0.000	1.260	A	1	1.2	0.006	1	1	21.331	0.222	0.011	C
477.000-457.0			B	1	1.2		1	1	21.331			
00			C	1	1.2		1	1	21.331			
T1	0.023	1.276	A	0.63	1.788	0.006	1	1	11.859	0.119	0.024	C
457.000-452.0			B	0.63	1.788		1	1	11.859			
00			C	0.63	1.788		1	1	11.859			
T2	0.096	2.009	A	0.534	1.86	0.006	1	1	18.349	0.202	0.020	C
452.000-442.0			B	0.534	1.86		1	1	18.349			
00			C	0.534	1.86		1	1	18.349			
T3	0.998	3.696	A	0.496	1.905	0.006	1	1	33.157	0.508	0.025	C
442.000-422.0			B	0.496	1.905		1	1	33.157			
00			C	0.496	1.905		1	1	33.157			
T4	1.458	3.689	A	0.496	1.906	0.006	1	1	33.105	0.577	0.029	C
422.000-402.0			B	0.496	1.906		1	1	33.105			
00			C	0.496	1.906		1	1	33.105			
T5	1.454	3.681	A	0.495	1.907	0.006	1	1	33.049	0.573	0.029	C

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z ksf	D_F	D_R	A_E ft^2	F K	w klf	Ctrl. Face
402.000-382.0			B	0.495	1.907		1	1	33.049			
00			C	0.495	1.907		1	1	33.049			
T6	1.449	3.673	A	0.494	1.908	0.006	1	1	32.990	0.569	0.028	C
382.000-362.0			B	0.494	1.908		1	1	32.990			
00			C	0.494	1.908		1	1	32.990			
T7	1.511	3.664	A	0.494	1.909	0.006	1	1	32.926	0.576	0.029	C
362.000-342.0			B	0.494	1.909		1	1	32.926			
00			C	0.494	1.909		1	1	32.926			
T8	1.727	3.655	A	0.493	1.91	0.006	1	1	32.857	0.609	0.030	C
342.000-322.0			B	0.493	1.91		1	1	32.857			
00			C	0.493	1.91		1	1	32.857			
T9	1.744	3.706	A	0.492	1.911	0.006	1	1	32.695	0.607	0.030	C
322.000-302.0			B	0.492	1.911		1	1	32.695			
00			C	0.492	1.911		1	1	32.695			
T10	1.976	3.862	A	0.497	1.905	0.006	1	1	33.277	0.641	0.032	C
302.000-282.0			B	0.497	1.905		1	1	33.277			
00			C	0.497	1.905		1	1	33.277			
T11	3.988	4.475	A	0.513	1.883	0.006	1	1	35.151	0.906	0.045	A
282.000-262.0			B	0.513	1.883		1	1	35.151			
00			C	0.513	1.883		1	1	35.151			
T12	4.373	4.083	A	0.5	1.9	0.006	1	1	33.665	0.955	0.048	A
262.000-242.0			B	0.5	1.9		1	1	33.665			
00			C	0.5	1.9		1	1	33.665			
T13	4.668	4.068	A	0.499	1.902	0.006	1	1	33.551	0.955*	0.048	A
242.000-222.0			B	0.499	1.902		1	1	33.551			
00			C	0.499	1.902		1	1	33.551			
T14	4.662	4.693	A	0.515	1.881	0.006	1	1	35.385	0.945*	0.047	A
222.000-202.0			B	0.515	1.881		1	1	35.385			
00			C	0.515	1.881		1	1	35.385			
T15	4.627	4.133	A	0.495	1.907	0.006	1	1	33.182	0.929*	0.046	A
202.000-182.0			B	0.495	1.907		1	1	33.182			
00			C	0.495	1.907		1	1	33.182			
T16	4.587	4.110	A	0.493	1.909	0.006	1	1	33.013	0.911*	0.046	A
182.000-162.0			B	0.493	1.909		1	1	33.013			
00			C	0.493	1.909		1	1	33.013			
T17	4.541	4.083	A	0.491	1.912	0.005	1	1	32.816	0.890*	0.044	A
162.000-142.0			B	0.491	1.912		1	1	32.816			
00			C	0.491	1.912		1	1	32.816			
T18	4.622	4.052	A	0.488	1.915	0.005	1	1	32.583	0.865*	0.043	B
142.000-122.0			B	0.488	1.915		1	1	32.583			
00			C	0.488	1.915		1	1	32.583			
T19	2.368	2.150	A	0.52	1.875	0.005	1	1	17.783	0.422*	0.042	B
122.000-112.0			B	0.52	1.875		1	1	17.783			
00			C	0.52	1.875		1	1	17.783			
T20	2.392	2.087	A	0.491	1.912	0.005	1	1	17.646	0.414*	0.041	C
112.000-102.0			B	0.491	1.912		1	1	17.646			
00			C	0.491	1.912		1	1	17.646			
T21	4.773	3.968	A	0.481	1.925	0.005	1	1	31.953	0.800*	0.040	C
102.000-82.00			B	0.481	1.925		1	1	31.953			
0			C	0.481	1.925		1	1	31.953			
T22	4.655	3.908	A	0.476	1.933	0.005	1	1	31.505	0.756*	0.038	C
82.000-62.000			B	0.476	1.933		1	1	31.505			
			C	0.476	1.933		1	1	31.505			
T23	4.496	3.828	A	0.469	1.943	0.004	1	1	30.897	0.698*	0.035	B
62.000-42.000			B	0.469	1.943		1	1	30.897			
			C	0.469	1.943		1	1	30.897			
T24	4.258	3.707	A	0.459	1.96	0.004	1	1	29.983	0.615*	0.031	B
42.000-22.000			B	0.459	1.96		1	1	29.983			
			C	0.459	1.96		1	1	29.983			
T25	2.662	3.607	A	0.455	1.965	0.004	1	1	29.757	0.510	0.025	A

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z ksf	D_F	D_R	A_E ft²	F K	w klf	Ctrl. Face
22.000-2.000			B	0.455	1.965		1	1	29.757			
			C	0.455	1.965		1	1	29.757			
Sum Weight:	74.107	92.067			*2.1A_g limit					16.942		

Tower Forces - With Ice - Wind 60 To Face

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z ksf	D_F	D_R	A_E ft²	F K	w klf	Ctrl. Face
L1	0.000	0.945	A	1	1.2	0.006	1	1	16.006	0.168	0.011	C
492.000-477.0			B	1	1.2		1	1	16.006			
00			C	1	1.2		1	1	16.006			
L2	0.000	1.260	A	1	1.2	0.006	1	1	21.331	0.222	0.011	C
477.000-457.0			B	1	1.2		1	1	21.331			
00			C	1	1.2		1	1	21.331			
T1	0.023	1.276	A	0.63	1.788	0.006	0.8	1	11.050	0.111	0.022	C
457.000-452.0			B	0.63	1.788		0.8	1	11.050			
00			C	0.63	1.788		0.8	1	11.050			
T2	0.096	2.009	A	0.534	1.86	0.006	0.8	1	17.472	0.193	0.019	C
452.000-442.0			B	0.534	1.86		0.8	1	17.472			
00			C	0.534	1.86		0.8	1	17.472			
T3	0.998	3.696	A	0.496	1.905	0.006	0.8	1	31.623	0.492	0.025	C
442.000-422.0			B	0.496	1.905		0.8	1	31.623			
00			C	0.496	1.905		0.8	1	31.623			
T4	1.458	3.689	A	0.496	1.906	0.006	0.8	1	31.571	0.561	0.028	C
422.000-402.0			B	0.496	1.906		0.8	1	31.571			
00			C	0.496	1.906		0.8	1	31.571			
T5	1.454	3.681	A	0.495	1.907	0.006	0.8	1	31.515	0.558	0.028	C
402.000-382.0			B	0.495	1.907		0.8	1	31.515			
00			C	0.495	1.907		0.8	1	31.515			
T6	1.449	3.673	A	0.494	1.908	0.006	0.8	1	31.456	0.553	0.028	C
382.000-362.0			B	0.494	1.908		0.8	1	31.456			
00			C	0.494	1.908		0.8	1	31.456			
T7	1.511	3.664	A	0.494	1.909	0.006	0.8	1	31.392	0.561	0.028	C
362.000-342.0			B	0.494	1.909		0.8	1	31.392			
00			C	0.494	1.909		0.8	1	31.392			
T8	1.727	3.655	A	0.493	1.91	0.006	0.8	1	31.323	0.594	0.030	C
342.000-322.0			B	0.493	1.91		0.8	1	31.323			
00			C	0.493	1.91		0.8	1	31.323			
T9	1.744	3.706	A	0.492	1.911	0.006	0.8	1	31.280	0.593	0.030	C
322.000-302.0			B	0.492	1.911		0.8	1	31.280			
00			C	0.492	1.911		0.8	1	31.280			
T10	1.976	3.862	A	0.497	1.905	0.006	0.8	1	31.751	0.626	0.031	C
302.000-282.0			B	0.497	1.905		0.8	1	31.751			
00			C	0.497	1.905		0.8	1	31.751			
T11	3.988	4.475	A	0.513	1.883	0.006	0.8	1	33.410	0.889	0.044	B
282.000-262.0			B	0.513	1.883		0.8	1	33.410			
00			C	0.513	1.883		0.8	1	33.410			
T12	4.373	4.083	A	0.5	1.9	0.006	0.8	1	32.148	0.940	0.047	B
262.000-242.0			B	0.5	1.9		0.8	1	32.148			
00			C	0.5	1.9		0.8	1	32.148			
T13	4.668	4.068	A	0.499	1.902	0.006	0.8	1	32.034	0.955*	0.048	B

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z ksf	D_F	D_R	A_E ft²	F K	w klf	Ctrl. Face
242.000-222.0			B	0.499	1.902		0.8	1	32.034			
00			C	0.499	1.902		0.8	1	32.034			
T14	4.662	4.693	A	0.515	1.881	0.006	0.8	1	33.654	0.945*	0.047	B
222.000-202.0			B	0.515	1.881		0.8	1	33.654			
00			C	0.515	1.881		0.8	1	33.654			
T15	4.627	4.133	A	0.495	1.907	0.006	0.8	1	31.784	0.929*	0.046	B
202.000-182.0			B	0.495	1.907		0.8	1	31.784			
00			C	0.495	1.907		0.8	1	31.784			
T16	4.587	4.110	A	0.493	1.909	0.006	0.8	1	31.615	0.911*	0.046	B
182.000-162.0			B	0.493	1.909		0.8	1	31.615			
00			C	0.493	1.909		0.8	1	31.615			
T17	4.541	4.083	A	0.491	1.912	0.005	0.8	1	31.418	0.890*	0.044	B
162.000-142.0			B	0.491	1.912		0.8	1	31.418			
00			C	0.491	1.912		0.8	1	31.418			
T18	4.622	4.052	A	0.488	1.915	0.005	0.8	1	31.185	0.865*	0.043	B
142.000-122.0			B	0.488	1.915		0.8	1	31.185			
00			C	0.488	1.915		0.8	1	31.185			
T19	2.368	2.150	A	0.52	1.875	0.005	0.8	1	16.981	0.422*	0.042	B
122.000-112.0			B	0.52	1.875		0.8	1	16.981			
00			C	0.52	1.875		0.8	1	16.981			
T20	2.392	2.087	A	0.491	1.912	0.005	0.8	1	16.157	0.414*	0.041	C
112.000-102.0			B	0.491	1.912		0.8	1	16.157			
00			C	0.491	1.912		0.8	1	16.157			
T21	4.773	3.968	A	0.481	1.925	0.005	0.8	1	30.555	0.800*	0.040	C
102.000-82.00			B	0.481	1.925		0.8	1	30.555			
0			C	0.481	1.925		0.8	1	30.555			
T22	4.655	3.908	A	0.476	1.933	0.005	0.8	1	30.107	0.756*	0.038	C
82.000-62.000			B	0.476	1.933		0.8	1	30.107			
			C	0.476	1.933		0.8	1	30.107			
T23	4.496	3.828	A	0.469	1.943	0.004	0.8	1	29.499	0.698*	0.035	C
62.000-42.000			B	0.469	1.943		0.8	1	29.499			
			C	0.469	1.943		0.8	1	29.499			
T24	4.258	3.707	A	0.459	1.96	0.004	0.8	1	28.585	0.615*	0.031	C
42.000-22.000			B	0.459	1.96		0.8	1	28.585			
			C	0.459	1.96		0.8	1	28.585			
T25	2.662	3.607	A	0.455	1.965	0.004	0.8	1	28.234	0.500	0.025	B
22.000-2.000			B	0.455	1.965		0.8	1	28.234			
			C	0.455	1.965		0.8	1	28.234			
Sum Weight:	74.107	92.067			*2.1A_g limit					16.762		

Tower Forces - With Ice - Wind 90 To Face

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z ksf	D_F	D_R	A_E ft²	F K	w klf	Ctrl. Face
L1	0.000	0.945	A	1	1.2	0.006	1	1	16.006	0.168	0.011	C
492.000-477.0			B	1	1.2		1	1	16.006			
00			C	1	1.2		1	1	16.006			
L2	0.000	1.260	A	1	1.2	0.006	1	1	21.331	0.222	0.011	C
477.000-457.0			B	1	1.2		1	1	21.331			
00			C	1	1.2		1	1	21.331			
T1	0.023	1.276	A	0.63	1.788	0.006	0.85	1	11.252	0.113	0.023	C

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z ksf	D_F	D_R	A_E ft^2	F K	w klf	Ctrl. Face
457.000-452.0			B	0.63	1.788		0.85	1	11.252			
00			C	0.63	1.788		0.85	1	11.252			
T2	0.096	2.009	A	0.534	1.86	0.006	0.85	1	17.691	0.195	0.020	C
452.000-442.0			B	0.534	1.86		0.85	1	17.691			
00			C	0.534	1.86		0.85	1	17.691			
T3	0.998	3.696	A	0.496	1.905	0.006	0.85	1	32.006	0.496	0.025	C
442.000-422.0			B	0.496	1.905		0.85	1	32.006			
00			C	0.496	1.905		0.85	1	32.006			
T4	1.458	3.689	A	0.496	1.906	0.006	0.85	1	31.954	0.565	0.028	C
422.000-402.0			B	0.496	1.906		0.85	1	31.954			
00			C	0.496	1.906		0.85	1	31.954			
T5	1.454	3.681	A	0.495	1.907	0.006	0.85	1	31.899	0.561	0.028	C
402.000-382.0			B	0.495	1.907		0.85	1	31.899			
00			C	0.495	1.907		0.85	1	31.899			
T6	1.449	3.673	A	0.494	1.908	0.006	0.85	1	31.839	0.557	0.028	C
382.000-362.0			B	0.494	1.908		0.85	1	31.839			
00			C	0.494	1.908		0.85	1	31.839			
T7	1.511	3.664	A	0.494	1.909	0.006	0.85	1	31.776	0.565	0.028	C
362.000-342.0			B	0.494	1.909		0.85	1	31.776			
00			C	0.494	1.909		0.85	1	31.776			
T8	1.727	3.655	A	0.493	1.91	0.006	0.85	1	31.707	0.598	0.030	C
342.000-322.0			B	0.493	1.91		0.85	1	31.707			
00			C	0.493	1.91		0.85	1	31.707			
T9	1.744	3.706	A	0.492	1.911	0.006	0.85	1	31.634	0.597	0.030	C
322.000-302.0			B	0.492	1.911		0.85	1	31.634			
00			C	0.492	1.911		0.85	1	31.634			
T10	1.976	3.862	A	0.497	1.905	0.006	0.85	1	32.133	0.629	0.031	C
302.000-282.0			B	0.497	1.905		0.85	1	32.133			
00			C	0.497	1.905		0.85	1	32.133			
T11	3.988	4.475	A	0.513	1.883	0.006	0.85	1	33.846	0.893	0.045	C
282.000-262.0			B	0.513	1.883		0.85	1	33.846			
00			C	0.513	1.883		0.85	1	33.846			
T12	4.373	4.083	A	0.5	1.9	0.006	0.85	1	32.527	0.944	0.047	C
262.000-242.0			B	0.5	1.9		0.85	1	32.527			
00			C	0.5	1.9		0.85	1	32.527			
T13	4.668	4.068	A	0.499	1.902	0.006	0.85	1	32.413	0.955*	0.048	C
242.000-222.0			B	0.499	1.902		0.85	1	32.413			
00			C	0.499	1.902		0.85	1	32.413			
T14	4.662	4.693	A	0.515	1.881	0.006	0.85	1	34.087	0.945*	0.047	C
222.000-202.0			B	0.515	1.881		0.85	1	34.087			
00			C	0.515	1.881		0.85	1	34.087			
T15	4.627	4.133	A	0.495	1.907	0.006	0.85	1	32.133	0.929*	0.046	C
202.000-182.0			B	0.495	1.907		0.85	1	32.133			
00			C	0.495	1.907		0.85	1	32.133			
T16	4.587	4.110	A	0.493	1.909	0.006	0.85	1	31.964	0.911*	0.046	C
182.000-162.0			B	0.493	1.909		0.85	1	31.964			
00			C	0.493	1.909		0.85	1	31.964			
T17	4.541	4.083	A	0.491	1.912	0.005	0.85	1	31.768	0.890*	0.044	C
162.000-142.0			B	0.491	1.912		0.85	1	31.768			
00			C	0.491	1.912		0.85	1	31.768			
T18	4.622	4.052	A	0.488	1.915	0.005	0.85	1	31.534	0.865*	0.043	C
142.000-122.0			B	0.488	1.915		0.85	1	31.534			
00			C	0.488	1.915		0.85	1	31.534			
T19	2.368	2.150	A	0.52	1.875	0.005	0.85	1	17.181	0.422*	0.042	C
122.000-112.0			B	0.52	1.875		0.85	1	17.181			
00			C	0.52	1.875		0.85	1	17.181			
T20	2.392	2.087	A	0.491	1.912	0.005	0.85	1	16.530	0.414*	0.041	C
112.000-102.0			B	0.491	1.912		0.85	1	16.530			
00			C	0.491	1.912		0.85	1	16.530			
T21	4.773	3.968	A	0.481	1.925	0.005	0.85	1	30.904	0.800*	0.040	C

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z ksf	D_F	D_R	A_E ft²	F K	w klf	Ctrl. Face
102.000-82.00			B	0.481	1.925		0.85	1	30.904			
0			C	0.481	1.925		0.85	1	30.904			
T22	4.655	3.908	A	0.476	1.933	0.005	0.85	1	30.456	0.756*	0.038	C
82.000-62.000			B	0.476	1.933		0.85	1	30.456			
			C	0.476	1.933		0.85	1	30.456			
T23	4.496	3.828	A	0.469	1.943	0.004	0.85	1	29.848	0.698*	0.035	C
62.000-42.000			B	0.469	1.943		0.85	1	29.848			
			C	0.469	1.943		0.85	1	29.848			
T24	4.258	3.707	A	0.459	1.96	0.004	0.85	1	28.934	0.615*	0.031	C
42.000-22.000			B	0.459	1.96		0.85	1	28.934			
			C	0.459	1.96		0.85	1	28.934			
T25	2.662	3.607	A	0.455	1.965	0.004	0.85	1	28.614	0.502	0.025	C
22.000-2.000			B	0.455	1.965		0.85	1	28.614			
			C	0.455	1.965		0.85	1	28.614			
Sum Weight:	74.107	92.067			*2.1A_g limit					16.807		

Tower Forces - Service - Wind Normal To Face

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z ksf	D_F	D_R	A_E ft²	F K	w klf	Ctrl. Face
L1	0.000	0.535	A	1	0.653	0.015	1	1	10.781	0.138	0.009	C
492.000-477.0			B	1	0.653		1	1	10.781			
00			C	1	0.653		1	1	10.781			
L2	0.000	0.713	A	1	0.655	0.014	1	1	14.375	0.184	0.009	C
477.000-457.0			B	1	0.655		1	1	14.375			
00			C	1	0.655		1	1	14.375			
T1	0.000	0.418	A	0.283	2.343	0.014	1	1	5.158	0.150	0.030	C
457.000-452.0			B	0.283	2.343		1	1	5.158			
00			C	0.283	2.343		1	1	5.158			
T2	0.002	0.643	A	0.194	2.615	0.014	1	1	6.538	0.217	0.022	C
452.000-442.0			B	0.194	2.615		1	1	6.538			
00			C	0.194	2.615		1	1	6.538			
T3	0.055	1.229	A	0.181	2.66	0.014	1	1	11.956	0.488	0.024	C
442.000-422.0			B	0.181	2.66		1	1	11.956			
00			C	0.181	2.66		1	1	11.956			
T4	0.089	1.229	A	0.181	2.66	0.014	1	1	11.956	0.537	0.027	C
422.000-402.0			B	0.181	2.66		1	1	11.956			
00			C	0.181	2.66		1	1	11.956			
T5	0.089	1.229	A	0.181	2.66	0.014	1	1	11.956	0.534	0.027	C
402.000-382.0			B	0.181	2.66		1	1	11.956			
00			C	0.181	2.66		1	1	11.956			
T6	0.089	1.229	A	0.181	2.66	0.014	1	1	11.956	0.530	0.027	C
382.000-362.0			B	0.181	2.66		1	1	11.956			
00			C	0.181	2.66		1	1	11.956			
T7	0.091	1.229	A	0.181	2.66	0.014	1	1	11.956	0.532	0.027	C
362.000-342.0			B	0.181	2.66		1	1	11.956			
00			C	0.181	2.66		1	1	11.956			
T8	0.098	1.229	A	0.181	2.66	0.014	1	1	11.956	0.548	0.027	C
342.000-322.0			B	0.181	2.66		1	1	11.956			
00			C	0.181	2.66		1	1	11.956			
T9	0.099	1.328	A	0.183	2.654	0.014	1	1	11.840	0.541	0.027	C

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z ksf	D_F	D_R	A_E ft^2	F K	w klf	Ctrl. Face
322.000-302.0			B	0.183	2.654		1	1	11.840			
00			C	0.183	2.654		1	1	11.840			
T10	0.113	1.419	A	0.19	2.631	0.014	1	1	12.401	0.575	0.029	C
302.000-282.0			B	0.19	2.631		1	1	12.401			
00			C	0.19	2.631		1	1	12.401			
T11	0.395	1.858	A	0.211	2.559	0.014	1	1	13.989	0.999	0.050	A
282.000-262.0			B	0.211	2.559		1	1	13.989			
00			C	0.211	2.559		1	1	13.989			
T12	0.440	1.629	A	0.198	2.602	0.013	1	1	12.849	1.026	0.051	A
262.000-242.0			B	0.198	2.602		1	1	12.849			
00			C	0.198	2.602		1	1	12.849			
T13	0.455	1.629	A	0.198	2.602	0.013	1	1	12.849	1.045	0.052	A
242.000-222.0			B	0.198	2.602		1	1	12.849			
00			C	0.198	2.602		1	1	12.849			
T14	0.456	2.089	A	0.219	2.532	0.013	1	1	14.437	1.066	0.053	A
222.000-202.0			B	0.219	2.532		1	1	14.437			
00			C	0.219	2.532		1	1	14.437			
T15	0.456	1.768	A	0.2	2.596	0.013	1	1	12.737	1.011	0.051	A
202.000-182.0			B	0.2	2.596		1	1	12.737			
00			C	0.2	2.596		1	1	12.737			
T16	0.456	1.768	A	0.2	2.596	0.013	1	1	12.737	0.991	0.050	A
182.000-162.0			B	0.2	2.596		1	1	12.737			
00			C	0.2	2.596		1	1	12.737			
T17	0.456	1.768	A	0.2	2.596	0.012	1	1	12.737	0.969	0.048	A
162.000-142.0			B	0.2	2.596		1	1	12.737			
00			C	0.2	2.596		1	1	12.737			
T18	0.462	1.768	A	0.2	2.596	0.012	1	1	12.737	0.955	0.048	A
142.000-122.0			B	0.2	2.596		1	1	12.737			
00			C	0.2	2.596		1	1	12.737			
T19	0.235	0.908	A	0.212	2.556	0.012	1	1	6.894	0.484	0.048	A
122.000-112.0			B	0.212	2.556		1	1	6.894			
00			C	0.212	2.556		1	1	6.894			
T20	0.237	1.060	A	0.219	2.533	0.011	1	1	7.210	0.485	0.048	A
112.000-102.0			B	0.219	2.533		1	1	7.210			
00			C	0.219	2.533		1	1	7.210			
T21	0.476	1.768	A	0.2	2.596	0.011	1	1	12.737	0.911	0.046	A
102.000-82.00			B	0.2	2.596		1	1	12.737			
0			C	0.2	2.596		1	1	12.737			
T22	0.476	1.768	A	0.2	2.596	0.010	1	1	12.737	0.861	0.043	A
82.000-62.000			B	0.2	2.596		1	1	12.737			
			C	0.2	2.596		1	1	12.737			
T23	0.476	1.768	A	0.2	2.596	0.010	1	1	12.737	0.796	0.040	A
62.000-42.000			B	0.2	2.596		1	1	12.737			
			C	0.2	2.596		1	1	12.737			
T24	0.476	1.768	A	0.2	2.596	0.009	1	1	12.737	0.704	0.035	A
42.000-22.000			B	0.2	2.596		1	1	12.737			
			C	0.2	2.596		1	1	12.737			
T25	0.333	1.798	A	0.207	2.572	0.009	1	1	13.375	0.572	0.029	A
22.000-2.000			B	0.207	2.572		1	1	13.375			
			C	0.207	2.572		1	1	13.375			
Sum Weight:	7.011	37.547								17.849		

Tower Forces - Service - Wind 60 To Face

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z ksf	D_F	D_R	A_E ft^2	F K	w klf	Ctrl. Face
L1	0.000	0.535	A	1	0.653	0.015	1	1	10.781	0.138	0.009	C
492.000-477.0			B	1	0.653		1	1	10.781			
00			C	1	0.653		1	1	10.781			
L2	0.000	0.713	A	1	0.655	0.014	1	1	14.375	0.184	0.009	C
477.000-457.0			B	1	0.655		1	1	14.375			
00			C	1	0.655		1	1	14.375			
T1	0.000	0.418	A	0.283	2.343	0.014	0.8	1	4.349	0.127	0.025	C
457.000-452.0			B	0.283	2.343		0.8	1	4.349			
00			C	0.283	2.343		0.8	1	4.349			
T2	0.002	0.643	A	0.194	2.615	0.014	0.8	1	5.661	0.189	0.019	C
452.000-442.0			B	0.194	2.615		0.8	1	5.661			
00			C	0.194	2.615		0.8	1	5.661			
T3	0.055	1.229	A	0.181	2.66	0.014	0.8	1	10.422	0.438	0.022	C
442.000-422.0			B	0.181	2.66		0.8	1	10.422			
00			C	0.181	2.66		0.8	1	10.422			
T4	0.089	1.229	A	0.181	2.66	0.014	0.8	1	10.422	0.487	0.024	C
422.000-402.0			B	0.181	2.66		0.8	1	10.422			
00			C	0.181	2.66		0.8	1	10.422			
T5	0.089	1.229	A	0.181	2.66	0.014	0.8	1	10.422	0.484	0.024	C
402.000-382.0			B	0.181	2.66		0.8	1	10.422			
00			C	0.181	2.66		0.8	1	10.422			
T6	0.089	1.229	A	0.181	2.66	0.014	0.8	1	10.422	0.481	0.024	C
382.000-362.0			B	0.181	2.66		0.8	1	10.422			
00			C	0.181	2.66		0.8	1	10.422			
T7	0.091	1.229	A	0.181	2.66	0.014	0.8	1	10.422	0.483	0.024	C
362.000-342.0			B	0.181	2.66		0.8	1	10.422			
00			C	0.181	2.66		0.8	1	10.422			
T8	0.098	1.229	A	0.181	2.66	0.014	0.8	1	10.422	0.500	0.025	C
342.000-322.0			B	0.181	2.66		0.8	1	10.422			
00			C	0.181	2.66		0.8	1	10.422			
T9	0.099	1.328	A	0.183	2.654	0.014	0.8	1	10.425	0.497	0.025	C
322.000-302.0			B	0.183	2.654		0.8	1	10.425			
00			C	0.183	2.654		0.8	1	10.425			
T10	0.113	1.419	A	0.19	2.631	0.014	0.8	1	10.875	0.528	0.026	C
302.000-282.0			B	0.19	2.631		0.8	1	10.875			
00			C	0.19	2.631		0.8	1	10.875			
T11	0.395	1.858	A	0.211	2.559	0.014	0.8	1	12.248	0.948	0.047	B
282.000-262.0			B	0.211	2.559		0.8	1	12.248			
00			C	0.211	2.559		0.8	1	12.248			
T12	0.440	1.629	A	0.198	2.602	0.013	0.8	1	11.332	0.982	0.049	B
262.000-242.0			B	0.198	2.602		0.8	1	11.332			
00			C	0.198	2.602		0.8	1	11.332			
T13	0.455	1.629	A	0.198	2.602	0.013	0.8	1	11.332	1.001	0.050	B
242.000-222.0			B	0.198	2.602		0.8	1	11.332			
00			C	0.198	2.602		0.8	1	11.332			
T14	0.456	2.089	A	0.219	2.532	0.013	0.8	1	12.706	1.018	0.051	B
222.000-202.0			B	0.219	2.532		0.8	1	12.706			
00			C	0.219	2.532		0.8	1	12.706			
T15	0.456	1.768	A	0.2	2.596	0.013	0.8	1	11.338	0.971	0.049	B
202.000-182.0			B	0.2	2.596		0.8	1	11.338			
00			C	0.2	2.596		0.8	1	11.338			
T16	0.456	1.768	A	0.2	2.596	0.013	0.8	1	11.338	0.953	0.048	B
182.000-162.0			B	0.2	2.596		0.8	1	11.338			
00			C	0.2	2.596		0.8	1	11.338			
T17	0.456	1.768	A	0.2	2.596	0.012	0.8	1	11.338	0.931	0.047	B
162.000-142.0			B	0.2	2.596		0.8	1	11.338			
00			C	0.2	2.596		0.8	1	11.338			
T18	0.462	1.768	A	0.2	2.596	0.012	0.8	1	11.338	0.918	0.046	B
142.000-122.0			B	0.2	2.596		0.8	1	11.338			
00			C	0.2	2.596		0.8	1	11.338			

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z ksf	D_F	D_R	A_E ft^2	F K	w klf	Ctrl. Face
T19	0.235	0.908	A	0.212	2.556	0.012	0.8	1	6.092	0.463	0.046	B
122.000-112.0			B	0.212	2.556		0.8	1	6.092			
00			C	0.212	2.556		0.8	1	6.092			
T20	0.237	1.060	A	0.219	2.533	0.011	0.8	1	6.346	0.463	0.046	B
112.000-102.0			B	0.219	2.533		0.8	1	6.346			
00			C	0.219	2.533		0.8	1	6.346			
T21	0.476	1.768	A	0.2	2.596	0.011	0.8	1	11.338	0.877	0.044	B
102.000-82.00			B	0.2	2.596		0.8	1	11.338			
0			C	0.2	2.596		0.8	1	11.338			
T22	0.476	1.768	A	0.2	2.596	0.010	0.8	1	11.338	0.829	0.041	B
82.000-62.000			B	0.2	2.596		0.8	1	11.338			
			C	0.2	2.596		0.8	1	11.338			
T23	0.476	1.768	A	0.2	2.596	0.010	0.8	1	11.338	0.767	0.038	B
62.000-42.000			B	0.2	2.596		0.8	1	11.338			
			C	0.2	2.596		0.8	1	11.338			
T24	0.476	1.768	A	0.2	2.596	0.009	0.8	1	11.338	0.678	0.034	B
42.000-22.000			B	0.2	2.596		0.8	1	11.338			
			C	0.2	2.596		0.8	1	11.338			
T25	0.333	1.798	A	0.207	2.572	0.009	0.8	1	11.851	0.544	0.027	B
22.000-2.000			B	0.207	2.572		0.8	1	11.851			
			C	0.207	2.572		0.8	1	11.851			
Sum Weight:	7.011	37.547								16.879		

Tower Forces - Service - Wind 90 To Face

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z ksf	D_F	D_R	A_E ft^2	F K	w klf	Ctrl. Face
L1	0.000	0.535	A	1	0.653	0.015	1	1	10.781	0.138	0.009	C
492.000-477.0			B	1	0.653		1	1	10.781			
00			C	1	0.653		1	1	10.781			
L2	0.000	0.713	A	1	0.655	0.014	1	1	14.375	0.184	0.009	C
477.000-457.0			B	1	0.655		1	1	14.375			
00			C	1	0.655		1	1	14.375			
T1	0.000	0.418	A	0.283	2.343	0.014	0.85	1	4.551	0.133	0.027	C
457.000-452.0			B	0.283	2.343		0.85	1	4.551			
00			C	0.283	2.343		0.85	1	4.551			
T2	0.002	0.643	A	0.194	2.615	0.014	0.85	1	5.880	0.196	0.020	C
452.000-442.0			B	0.194	2.615		0.85	1	5.880			
00			C	0.194	2.615		0.85	1	5.880			
T3	0.055	1.229	A	0.181	2.66	0.014	0.85	1	10.805	0.450	0.023	C
442.000-422.0			B	0.181	2.66		0.85	1	10.805			
00			C	0.181	2.66		0.85	1	10.805			
T4	0.089	1.229	A	0.181	2.66	0.014	0.85	1	10.805	0.500	0.025	C
422.000-402.0			B	0.181	2.66		0.85	1	10.805			
00			C	0.181	2.66		0.85	1	10.805			
T5	0.089	1.229	A	0.181	2.66	0.014	0.85	1	10.805	0.497	0.025	C
402.000-382.0			B	0.181	2.66		0.85	1	10.805			
00			C	0.181	2.66		0.85	1	10.805			
T6	0.089	1.229	A	0.181	2.66	0.014	0.85	1	10.805	0.494	0.025	C
382.000-362.0			B	0.181	2.66		0.85	1	10.805			
00			C	0.181	2.66		0.85	1	10.805			
T7	0.091	1.229	A	0.181	2.66	0.014	0.85	1	10.805	0.496	0.025	C

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z ksf	D_F	D_R	A_E ft^2	F K	w klf	Ctrl. Face
362.000-342.0			B	0.181	2.66		0.85	1	10.805			
00			C	0.181	2.66		0.85	1	10.805			
T8	0.098	1.229	A	0.181	2.66	0.014	0.85	1	10.805	0.512	0.026	C
342.000-322.0			B	0.181	2.66		0.85	1	10.805			
00			C	0.181	2.66		0.85	1	10.805			
T9	0.099	1.328	A	0.183	2.654	0.014	0.85	1	10.778	0.508	0.025	C
322.000-302.0			B	0.183	2.654		0.85	1	10.778			
00			C	0.183	2.654		0.85	1	10.778			
T10	0.113	1.419	A	0.19	2.631	0.014	0.85	1	11.257	0.540	0.027	C
302.000-282.0			B	0.19	2.631		0.85	1	11.257			
00			C	0.19	2.631		0.85	1	11.257			
T11	0.395	1.858	A	0.211	2.559	0.014	0.85	1	12.683	1.034	0.052	C
282.000-262.0			B	0.211	2.559		0.85	1	12.683			
00			C	0.211	2.559		0.85	1	12.683			
T12	0.440	1.629	A	0.198	2.602	0.013	0.85	1	11.711	1.074	0.054	C
262.000-242.0			B	0.198	2.602		0.85	1	11.711			
00			C	0.198	2.602		0.85	1	11.711			
T13	0.455	1.629	A	0.198	2.602	0.013	0.85	1	11.711	1.091	0.055	C
242.000-222.0			B	0.198	2.602		0.85	1	11.711			
00			C	0.198	2.602		0.85	1	11.711			
T14	0.456	2.089	A	0.219	2.532	0.013	0.85	1	13.139	1.109	0.055	C
222.000-202.0			B	0.219	2.532		0.85	1	13.139			
00			C	0.219	2.532		0.85	1	13.139			
T15	0.456	1.768	A	0.2	2.596	0.013	0.85	1	11.688	1.059	0.053	C
202.000-182.0			B	0.2	2.596		0.85	1	11.688			
00			C	0.2	2.596		0.85	1	11.688			
T16	0.456	1.768	A	0.2	2.596	0.013	0.85	1	11.688	1.038	0.052	C
182.000-162.0			B	0.2	2.596		0.85	1	11.688			
00			C	0.2	2.596		0.85	1	11.688			
T17	0.456	1.768	A	0.2	2.596	0.012	0.85	1	11.688	1.015	0.051	C
162.000-142.0			B	0.2	2.596		0.85	1	11.688			
00			C	0.2	2.596		0.85	1	11.688			
T18	0.462	1.768	A	0.2	2.596	0.012	0.85	1	11.688	0.999	0.050	C
142.000-122.0			B	0.2	2.596		0.85	1	11.688			
00			C	0.2	2.596		0.85	1	11.688			
T19	0.235	0.908	A	0.212	2.556	0.012	0.85	1	6.292	0.504	0.050	C
122.000-112.0			B	0.212	2.556		0.85	1	6.292			
00			C	0.212	2.556		0.85	1	6.292			
T20	0.237	1.060	A	0.219	2.533	0.011	0.85	1	6.562	0.503	0.050	C
112.000-102.0			B	0.219	2.533		0.85	1	6.562			
00			C	0.219	2.533		0.85	1	6.562			
T21	0.476	1.768	A	0.2	2.596	0.011	0.85	1	11.688	0.952	0.048	C
102.000-82.00			B	0.2	2.596		0.85	1	11.688			
0			C	0.2	2.596		0.85	1	11.688			
T22	0.476	1.768	A	0.2	2.596	0.010	0.85	1	11.688	0.900	0.045	C
82.000-62.000			B	0.2	2.596		0.85	1	11.688			
			C	0.2	2.596		0.85	1	11.688			
T23	0.476	1.768	A	0.2	2.596	0.010	0.85	1	11.688	0.833	0.042	C
62.000-42.000			B	0.2	2.596		0.85	1	11.688			
			C	0.2	2.596		0.85	1	11.688			
T24	0.476	1.768	A	0.2	2.596	0.009	0.85	1	11.688	0.736	0.037	C
42.000-22.000			B	0.2	2.596		0.85	1	11.688			
			C	0.2	2.596		0.85	1	11.688			
T25	0.333	1.798	A	0.207	2.572	0.009	0.85	1	12.232	0.587	0.029	C
22.000-2.000			B	0.207	2.572		0.85	1	12.232			
			C	0.207	2.572		0.85	1	12.232			
Sum Weight:	7.011	37.547								18.081		

Force Totals (Does not include forces on guys)

Load Case	Vertical Forces K	Sum of Forces X K	Sum of Forces Z K	Sum of Torques kip-ft
Leg Weight	28.245			
Bracing Weight	9.302			
Total Member Self-Weight	37.547			
Guy Weight	10.784			
Total Weight	58.904			
Wind 0 deg - No Ice		0.030	-39.658	0.229
Wind 90 deg - No Ice		44.841	-0.025	-21.701
Wind 180 deg - No Ice		-0.066	37.440	-0.230
Member Ice	54.520			
Guy Ice	44.936			
Total Weight Ice	235.179			
Wind 0 deg - Ice		0.158	-18.305	-0.423
Wind 90 deg - Ice		18.662	-0.223	-8.114
Wind 180 deg - Ice		-0.026	17.866	0.679
Total Weight	58.904			
Wind 0 deg - Service		0.013	-17.653	0.102
Wind 90 deg - Service		19.956	-0.011	-9.645
Wind 180 deg - Service		-0.029	16.667	-0.102

Load Combinations

Comb. No.	Description
1	Dead Only
2	1.2 Dead+1.6 Wind 0 deg - No Ice+1.0 Guy
3	1.2 Dead+1.6 Wind 90 deg - No Ice+1.0 Guy
4	1.2 Dead+1.6 Wind 180 deg - No Ice+1.0 Guy
5	1.2 Dead+1.0 Ice+1.0 Temp+Guy
6	1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp+1.0 Guy
7	1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp+1.0 Guy
8	1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp+1.0 Guy
9	Dead+Wind 0 deg - Service+Guy
10	Dead+Wind 90 deg - Service+Guy
11	Dead+Wind 180 deg - Service+Guy

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
Guy C @ 148 ft Elev -7 ft Azimuth 240 deg	Max. Vert	4	-33.439	-12.053	4.067
	Max. H_x	4	-33.439	-12.053	4.067
	Max. H_z	3	-116.689	-46.258	24.623
	Min. Vert	3	-116.689	-46.258	24.623

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
	Min. H_x	3	-116.689	-46.258	24.623
	Min. H_z	4	-33.439	-12.053	4.067
Guy B @ 146 ft Elev -4 ft Azimuth 120 deg	Max. Vert	3	-18.197	3.832	3.752
	Max. H_x	2	-100.307	36.316	24.514
	Max. H_z	2	-100.307	36.316	24.514
	Min. Vert	2	-100.307	36.316	24.514
	Min. H_x	3	-18.197	3.832	3.752
	Min. H_z	3	-18.197	3.832	3.752
Guy A @ 149 ft Elev 2 ft Azimuth 0 deg	Max. Vert	2	-13.624	0.000	-3.396
	Max. H_x	4	-110.670	0.007	-50.857
	Max. H_z	2	-13.624	0.000	-3.396
	Min. Vert	4	-110.670	0.007	-50.857
	Min. H_x	3	-64.689	-3.229	-28.429
	Min. H_z	4	-110.670	0.007	-50.857
Guy C @ 117.5 ft Elev -5 ft Azimuth 240 deg	Max. Vert	4	-7.593	-5.219	2.266
	Max. H_x	4	-7.593	-5.219	2.266
	Max. H_z	3	-64.114	-46.474	26.009
	Min. Vert	3	-64.114	-46.474	26.009
	Min. H_x	3	-64.114	-46.474	26.009
	Min. H_z	4	-7.593	-5.219	2.266
Guy B @ 117.5 ft Elev 0 ft Azimuth 120 deg	Max. Vert	3	-2.105	0.892	0.870
	Max. H_x	2	-44.059	31.782	19.464
	Max. H_z	2	-44.059	31.782	19.464
	Min. Vert	2	-44.059	31.782	19.464
	Min. H_x	3	-2.105	0.892	0.870
	Min. H_z	3	-2.105	0.892	0.870
Guy A @ 123 ft Elev 0 ft Azimuth 0 deg	Max. Vert	2	-1.520	-0.000	-0.792
	Max. H_x	4	-45.453	0.002	-40.076
	Max. H_z	2	-1.520	-0.000	-0.792
	Min. Vert	4	-45.453	0.002	-40.076
	Min. H_x	3	-31.141	-1.096	-27.732
	Min. H_z	4	-45.453	0.002	-40.076
Mast	Max. Vert	8	438.165	-0.003	0.021
	Max. H_x	3	365.485	2.143	0.986
	Max. H_z	3	365.485	2.143	0.986
	Max. M_x	1	0.000	0.002	-0.037
	Max. M_z	1	0.000	0.002	-0.037
	Max. Torsion	3	15.122	2.143	0.986
	Min. Vert	1	218.755	0.002	-0.037
	Min. H_x	10	222.848	-0.208	-0.050
	Min. H_z	2	373.684	0.099	-2.096
	Min. M_x	1	0.000	0.002	-0.037
	Min. M_z	1	0.000	0.002	-0.037
	Min. Torsion	2	-0.097	0.099	-2.096

Tower Mast Reaction Summary

Load Combination	Vertical	$Shear_x$	$Shear_z$	Overturning Moment, M_x	Overturning Moment, M_z	Torque
	K	K	K	kip-ft	kip-ft	kip-ft
Dead Only	218.755	-0.002	0.037	0.000	0.000	-0.033
1.2 Dead+1.6 Wind 0 deg - No Ice+1.0 Guy	373.684	-0.099	2.096	0.000	0.000	0.097
1.2 Dead+1.6 Wind 90 deg - No Ice+1.0 Guy	365.485	-2.143	-0.986	0.000	0.000	-15.122
1.2 Dead+1.6 Wind 180 deg - No Ice+1.0 Guy	306.658	0.026	0.077	0.000	0.000	-0.294
1.2 Dead+1.0 Ice+1.0 Temp+Guy	429.365	-0.005	0.253	0.000	0.000	-0.097
1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp+1.0 Guy	436.043	-0.016	0.637	0.000	0.000	-0.222
1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp+1.0 Guy	437.486	-0.383	0.242	0.000	0.000	-3.976
1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp+1.0 Guy	438.165	0.003	-0.021	0.000	0.000	0.078
Dead+Wind 0 deg - Service+Guy	221.475	-0.011	-0.218	0.000	0.000	0.041
Dead+Wind 90 deg - Service+Guy	222.848	0.208	0.050	0.000	0.000	-5.490
Dead+Wind 180 deg - Service+Guy	223.619	0.006	0.242	0.000	0.000	-0.106

Solution Summary

	Sum of Applied Forces			Sum of Reactions			
Load Comb.	PX	PY	PZ	PX	PY	PZ	% Error
	K	K	K	K	K	K	
1	0.000	-58.901	0.000	0.000	58.902	-0.012	0.020%
2	0.048	-68.738	-81.843	-0.048	68.736	81.768	0.071%
3	90.240	-68.551	-0.037	-90.189	68.550	0.077	0.057%
4	-0.105	-68.314	78.293	0.095	68.313	-78.255	0.038%
5	0.000	-244.790	0.000	-0.014	244.790	-0.035	0.015%
6	0.159	-244.952	-30.561	-0.159	244.952	30.569	0.003%
7	30.996	-244.807	-0.222	-30.989	244.807	0.211	0.005%
8	-0.028	-244.627	30.122	0.026	244.627	-30.110	0.005%
9	0.013	-58.960	-22.761	-0.014	58.960	22.753	0.013%
10	25.093	-58.909	-0.010	-25.085	58.909	0.008	0.014%
11	-0.029	-58.843	21.775	0.029	58.843	-21.767	0.013%

Non-Linear Convergence Results

Load Combination	Converged?	Number of Cycles	Displacement Tolerance	Force Tolerance
1	Yes	23	0.00020000	0.00001075
2	Yes	170	0.00019925	0.00007878
3	Yes	142	0.00019739	0.00006953
4	Yes	64	0.00019282	0.00006103
5	Yes	27	0.00020000	0.00001674
6	Yes	59	0.00019678	0.00001438
7	Yes	99	0.00019656	0.00001436
8	Yes	101	0.00019637	0.00001454
9	Yes	37	0.00019558	0.00001881
10	Yes	42	0.00019789	0.00002062

11	Yes	50	0.00019933	0.00001814

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	492 - 477	7.310	9	0.4058	0.0470
L2	477 - 457	6.059	9	0.3769	0.0470
T1	457 - 452	4.942	9	0.0904	1.2042
T2	452 - 442	4.858	10	0.0880	1.2018
T3	442 - 422	4.704	10	0.0793	1.2076
T4	422 - 402	4.435	10	0.0762	1.2309
T5	402 - 382	4.167	10	0.0711	1.2183
T6	382 - 362	3.939	10	0.0521	1.2350
T7	362 - 342	3.804	10	0.0448	1.2289
T8	342 - 322	3.684	10	0.0422	1.2970
T9	322 - 302	3.598	10	0.0295	1.2836
T10	302 - 282	3.588	10	0.0321	1.3729
T11	282 - 262	3.533	10	0.0425	1.3567
T12	262 - 242	3.428	10	0.0408	1.3941
T13	242 - 222	3.342	10	0.0422	1.3743
T14	222 - 202	3.199	10	0.0409	1.4229
T15	202 - 182	3.076	10	0.0305	1.3773
T16	182 - 162	2.966	10	0.0372	1.3933
T17	162 - 142	2.773	10	0.0505	1.2971
T18	142 - 122	2.544	10	0.0605	1.2643
T19	122 - 112	2.254	10	0.0750	1.1116
T20	112 - 102	2.079	10	0.0790	1.0746
T21	102 - 82	1.906	10	0.0782	1.0188
T22	82 - 62	1.595	10	0.0822	0.8999
T23	62 - 42	1.228	10	0.0906	0.6624
T24	42 - 22	0.828	10	0.0913	0.4950
T25	22 - 2	0.452	10	0.0942	0.2081

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
490.000	Beacon (.075k 2.250CAAA)	9	7.138	0.4108	1.2180	31864
471.000	2 Bay FM Antenna	9	5.619	0.2887	1.2146	5772
453.000	3' Yagi(.03k,2.08CAAA)	9	4.872	0.0872	1.2021	15022
442.000	Guy	10	4.704	0.0793	1.2076	49412
435.000	6' Grid Dish	10	4.604	0.0746	1.2177	62858
382.000	Guy	10	3.939	0.0521	1.2350	38942
358.000	Obstruction Light(.01k,.8CAAA)	10	3.780	0.0445	1.2407	164770
351.000	3' Dish w/ Radomes	10	3.737	0.0440	1.2700	292969
339.000	3' Grid Dish	10	3.667	0.0406	1.2976	127758
322.000	Guy	10	3.598	0.0295	1.2836	40853
302.000	6' Omni	10	3.588	0.0321	1.3729	62040
300.000	Kathrein CA5-FM/CP/RM	10	3.586	0.0332	1.3760	58278
280.000	KRY 112 89/4	10	3.524	0.0428	1.3580	82869
262.000	Guy	10	3.428	0.0408	1.3941	69162
258.000	RR65-18-02DPL2 w/Mount Pipe	10	3.411	0.0406	1.3923	94248
247.000	8' Grid Dish (140lbs 20.1CaAa)	10	3.367	0.0414	1.3750	70755

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
239.000	8' Grid Dish (140lbs 20.1CaAa)	10	3.324	0.0426	1.3794	53085
237.000	Beacon (.075k 2.250CAAA)	10	3.311	0.0428	1.3847	63969
210.000	Guy	10	3.120	0.0343	1.3951	77803
154.000	Guy	10	2.685	0.0543	1.2859	164727
138.000	10' Dipole	10	2.492	0.0633	1.2393	67118
125.000	10' Dipole	10	2.303	0.0730	1.1304	52689
124.000	Beacon (.075k 2.250CAAA)	10	2.287	0.0737	1.1235	52631
116.000	Obstruction Light(.01k,.8CAAA)	10	2.150	0.0780	1.0887	130303
108.000	10' Dipole	10	2.008	0.0789	1.0542	110240
102.000	Guy	10	1.906	0.0782	1.0188	54810
46.000	Guy	10	0.906	0.0913	0.5363	115794

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	492 - 477	54.111	2	1.6632	0.2240
L2	477 - 457	48.969	2	1.5649	0.2240
T1	457 - 452	43.958	2	0.5718	2.8242
T2	452 - 442	43.357	2	0.5636	2.8152
T3	442 - 422	42.185	2	0.5328	2.8133
T4	422 - 402	39.971	2	0.5307	2.8675
T5	402 - 382	37.741	2	0.5172	2.8657
T6	382 - 362	35.642	2	0.4447	2.8982
T7	362 - 342	33.871	2	0.4197	2.9373
T8	342 - 322	32.125	2	0.4077	3.0811
T9	322 - 302	30.461	2	0.3550	3.1000
T10	302 - 282	29.054	2	0.3596	3.3492
T11	282 - 262	27.484	2	0.3947	3.3882
T12	262 - 242	25.769	2	0.3878	3.4590
T13	242 - 222	24.581	3	0.3932	3.4876
T14	222 - 202	23.736	3	0.3890	3.5921
T15	202 - 182	22.850	3	0.3554	3.5331
T16	182 - 162	21.898	3	0.3762	3.6072
T17	162 - 142	20.488	3	0.4136	3.4328
T18	142 - 122	18.768	3	0.4516	3.3495
T19	122 - 112	16.655	3	0.5418	3.0203
T20	112 - 102	15.434	3	0.5729	2.8986
T21	102 - 82	14.185	3	0.5851	2.7829
T22	82 - 62	11.726	3	0.6241	2.4627
T23	62 - 42	8.978	3	0.6702	1.8850
T24	42 - 22	6.068	3	0.6781	1.3769
T25	22 - 2	3.246	3	0.6901	0.6396

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
490.000	Beacon (.075k 2.250CAAA)	2	53.407	1.6800	2.8728	9355
471.000	2 Bay FM Antenna	2	47.114	1.2593	2.8606	1724

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
453.000	3' Yagi(.03k,2.08CAAA)	2	43.468	0.5608	2.8167	4509
442.000	Guy	2	42.185	0.5328	2.8133	14838
435.000	6' Grid Dish	2	41.390	0.5185	2.8302	18827
382.000	Guy	2	35.642	0.4447	2.8982	9575
358.000	Obstruction Light(.01k,.8CAAA)	2	33.526	0.4193	2.9655	70348
351.000	3' Dish w/ Radomes	2	32.915	0.4177	3.0253	66726
339.000	3' Grid Dish	2	31.863	0.4010	3.0857	26543
322.000	Guy	2	30.461	0.3550	3.1000	10192
302.000	6' Omni	2	29.054	0.3596	3.3492	17760
300.000	Kathrein CA5-FM/CP/RM	2	28.909	0.3633	3.3641	16221
280.000	KRY 112 89/4	2	27.314	0.3957	3.3920	20981
262.000	Guy	2	25.769	0.3878	3.4590	18400
258.000	RR65-18-02DPL2 w/Mount Pipe	2	25.444	0.3871	3.4651	24155
247.000	8' Grid Dish (140lbs 20.1CaAa)	3	24.739	0.3906	3.4731	15133
239.000	8' Grid Dish (140lbs 20.1CaAa)	3	24.472	0.3945	3.5032	11603
237.000	Beacon (.075k 2.250CAAA)	3	24.395	0.3952	3.5157	13267
210.000	Guy	3	23.198	0.3663	3.5515	18512
154.000	Guy	3	19.836	0.4261	3.4040	16804
138.000	10' Dipole	3	18.381	0.4694	3.2991	11137
125.000	10' Dipole	3	17.002	0.5293	3.0690	9852
124.000	Beacon (.075k 2.250CAAA)	3	16.887	0.5336	3.0521	9875
116.000	Obstruction Light(.01k,.8CAAA)	3	15.931	0.5629	2.9430	18246
108.000	10' Dipole	3	14.932	0.5789	2.8534	36452
102.000	Guy	3	14.185	0.5851	2.7829	18317
46.000	Guy	3	6.644	0.6775	1.4946	31093

Guy Design Data

Section No.	Elevation ft	Size	Initial Tension K	Breaking Load K	Actual T_u K	Allowable ϕT_n K	Required S.F.	Actual S.F.
T3	442.000 (A) (776)	1 BS	12.200	122.000	34.382	73.200	1.000	2.129 ✔
	442.000 (B) (775)	1 BS	12.200	122.000	30.123	73.200	1.000	2.430 ✔
	442.000 (C) (774)	1 BS	12.200	122.000	33.377	73.200	1.000	2.193 ✔
T6	382.000 (A) (779)	1 BS	12.200	122.000	34.166	73.200	1.000	2.142 ✔
	382.000 (B) (778)	1 BS	12.200	122.000	30.605	73.200	1.000	2.392 ✔
	382.000 (C) (777)	1 BS	12.200	122.000	34.260	73.200	1.000	2.137 ✔
T9	322.000 (A) (782)	7/8 BS	9.200	92.000	27.099	55.200	1.000	2.037 ✔
	322.000 (B) (781)	7/8 BS	9.200	92.000	24.783	55.200	1.000	2.227 ✔
	322.000 (C) (780)	7/8 BS	9.200	92.000	28.881	55.200	1.000	1.911 ✔
T12	262.000 (A) (785)	7/8 BS	9.200	92.000	29.051	55.200	1.000	1.900 ✔
	262.000 (B) (784)	7/8 BS	9.200	92.000	26.841	55.200	1.000	2.057 ✔
	262.000 (C) (783)	7/8 BS	9.200	92.000	34.350	55.200	1.000	1.607 ✔
T14	210.000 (A)	7/8 BS	9.200	92.000	28.987	55.200	1.000	1.904 ✔

Section No.	Elevation ft	Size	Initial Tension K	Breaking Load K	Actual T_u K	Allowable ϕT_n K	Required S.F.	Actual S.F.
	(788)							
	210.000 (B)	7/8 BS	9.200	92.000	27.416	55.200	1.000	2.013 ✔
	(787)							
	210.000 (C)	7/8 BS	9.200	92.000	37.593	55.200	1.000	1.468 ✔
	(786)							
T17	154.000 (A)	9/16 EHS	3.500	35.000	12.535	21.000	1.000	1.675 ✔
	(791)							
	154.000 (B)	9/16 EHS	3.500	35.000	11.908	21.000	1.000	1.763 ✔
	(790)							
	154.000 (C)	9/16 EHS	3.500	35.000	17.552	21.000	1.000	1.196 ✔
	(789)							
T21	102.000 (A)	9/16 EHS	3.500	35.000	13.213	21.000	1.000	1.589 ✔
	(794)							
	102.000 (B)	9/16 EHS	3.500	35.000	12.669	21.000	1.000	1.658 ✔
	(793)							
	102.000 (C)	9/16 EHS	3.500	35.000	19.260	21.000	1.000	1.090 ✔
	(792)							
T23	46.000 (A)	1/2 EHS	2.690	26.900	7.987	16.140	1.000	2.021 ✔
	(797)							
	46.000 (B)	1/2 EHS	2.690	26.900	7.807	16.140	1.000	2.067 ✔
	(796)							
	46.000 (C)	1/2 EHS	2.690	26.900	11.572	16.140	1.000	1.395 ✔
	(795)							

Compression Checks

Pole Design Data

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
L1	492 - 477 (1)	P8x.406	15.000	35.000	144.4	10.4832	-0.719	113.643	0.006
L2	477 - 457 (2)	P8x.406	20.000	35.000	144.4	10.4832	-1.636	113.643	0.014

Pole Bending Design Data

Section No.	Elevation ft	Size	M_{ux} kip-ft	ϕM_{nx} kip-ft	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	M_{uy} kip-ft	ϕM_{ny} kip-ft	Ratio $\frac{M_{uy}}{\phi M_{ny}}$
L1	492 - 477 (1)	P8x.406	5.605	72.052	0.078	0.000	72.052	0.000
L2	477 - 457 (2)	P8x.406	28.887	72.052	0.401	0.000	72.052	0.000

Pole Shear Design Data

Section No.	Elevation ft	Size	Actual V_u K	ϕV_n K	Ratio $\frac{V_u}{\phi V_n}$	Actual T_u kip-ft	ϕT_n kip-ft	Ratio $\frac{T_u}{\phi T_n}$
L1	492 - 477 (1)	P8x.406	0.767	165.111	0.005	0.000	108.027	0.000
L2	477 - 457 (2)	P8x.406	1.622	165.111	0.010	0.812	108.027	0.008

Pole Interaction Design Data

Section No.	Elevation ft	Ratio $\frac{P_u}{\phi P_n}$	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	Ratio $\frac{M_{uy}}{\phi M_{ny}}$	Ratio $\frac{V_u}{\phi V_n}$	Ratio $\frac{T_u}{\phi T_n}$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
L1	492 - 477 (1)	0.006	0.078	0.000	0.005	0.000	0.084 ✔	1.000	4.8.2 ✔
L2	477 - 457 (2)	0.014	0.401	0.000	0.010	0.008	0.416 ✔	1.000	4.8.2 ✔

Leg Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	Mast Stability Index	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	457 - 452	2 1/4	5.000	5.000	106.7 K=1.00	3.9761	1.00	-8.286	77.870	0.106 [1]
T2	452 - 442	2 1/4	10.000	3.333	71.1 K=1.00	3.9761	1.00	-17.761	123.621	0.144 [1]
T3	442 - 422	2 1/4	20.000	4.000	85.3 K=1.00	3.9761	1.00	-24.342	105.060	0.232 [1]
T4	422 - 402	2 1/4	20.000	4.000	85.3 K=1.00	3.9761	1.00	-30.166	105.060	0.287 [1]
T5	402 - 382	2 1/4	20.000	4.000	85.3 K=1.00	3.9761	1.00	-48.272	105.060	0.459 [1]
T6	382 - 362	2 1/4	20.000	4.000	85.3 K=1.00	3.9761	1.00	-54.313	105.060	0.517 [1]
T7	362 - 342	2 1/4	20.000	4.000	85.3 K=1.00	3.9761	1.00	-50.752	105.060	0.483 [1]
T8	342 - 322	2 1/4	20.000	4.000	85.3 K=1.00	3.9761	1.00	-64.725	105.060	0.616 [1]
T9	322 - 302	2 1/2	20.000	4.000	76.8 K=1.00	4.9087	1.00	-67.141	143.512	0.468 [1]
T10	302 - 282	2 1/2	20.000	4.000	76.8 K=1.00	4.9087	1.00	-69.580	143.512	0.485 [1]
T11	282 - 262	2 3/4	20.000	4.000	69.8 K=1.00	5.9396	1.00	-79.202	187.145	0.423 [1]
T12	262 - 242	2 3/4	20.000	4.000	69.8 K=1.00	5.9396	1.00	-90.353	187.145	0.483 [1]
T13	242 - 222	2 3/4	20.000	4.000	69.8 K=1.00	5.9396	1.00	-91.731	187.145	0.490 [1]
T14	222 - 202	3	20.000	4.000	64.0 K=1.00	7.0686	1.00	-109.562	235.765	0.465 [1]
T15	202 - 182	3	20.000	4.000	64.0	7.0686	1.00	-123.933	235.765	0.526 [1]

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	Mast Stability Index	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T16	182 - 162	3	20.000	4.000	K=1.00 64.0	7.0686	1.00	-126.301	235.765	0.536 [1]
T17	162 - 142	3	20.000	4.000	K=1.00 64.0	7.0686	1.00	-133.406	235.765	0.566 [1]
T18	142 - 122	3	20.000	4.000	K=1.00 64.0	7.0686	1.00	-136.979	235.765	0.581 [1]
T19	122 - 112	3	10.000	3.333	K=1.00 53.3	7.0686	1.00	-127.573	258.358	0.494 [1]
T20	112 - 102	3	10.000	3.333	K=1.00 53.3	7.0686	1.00	-126.661	258.358	0.490 [1]
T21	102 - 82	3	20.000	4.000	K=1.00 64.0	7.0686	1.00	-137.556	235.765	0.583 [1]
T22	82 - 62	3	20.000	4.000	K=1.00 64.0	7.0686	1.00	-140.194	235.765	0.595 [1]
T23	62 - 42	3	20.000	4.000	K=1.00 64.0	7.0686	1.00	-141.636	235.765	0.601 [1]
T24	42 - 22	3	20.000	4.000	K=1.00 64.0	7.0686	1.00	-146.017	235.765	0.619 [1]
T25	22 - 2	3	20.000	4.000	K=1.00 64.0	7.0686	1.00	-146.470	235.765	0.621 [1]

[1] $P_u / \phi P_n$ controls

Leg Bending Design Data (Compression)

Section No.	Elevation ft	Size	M_{ux} kip-ft	ϕM_{nx} kip-ft	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	M_{uy} kip-ft	ϕM_{ny} kip-ft	Ratio $\frac{M_{uy}}{\phi M_{ny}}$
T1	457 - 452	2 1/4	0.000	7.119	0.000	0.000	7.119	0.000
T2	452 - 442	2 1/4	0.000	7.119	0.000	0.000	7.119	0.000
T3	442 - 422	2 1/4	0.000	7.119	0.000	0.000	7.119	0.000
T4	422 - 402	2 1/4	0.000	7.119	0.000	0.000	7.119	0.000
T5	402 - 382	2 1/4	0.000	7.119	0.000	0.000	7.119	0.000
T6	382 - 362	2 1/4	0.000	7.119	0.000	0.000	7.119	0.000
T7	362 - 342	2 1/4	0.000	7.119	0.000	0.000	7.119	0.000
T8	342 - 322	2 1/4	0.000	7.119	0.000	0.000	7.119	0.000
T9	322 - 302	2 1/2	0.000	9.766	0.000	0.000	9.766	0.000
T10	302 - 282	2 1/2	0.000	9.766	0.000	0.000	9.766	0.000
T11	282 - 262	2 3/4	0.000	12.998	0.000	0.000	12.998	0.000
T12	262 - 242	2 3/4	0.000	12.998	0.000	0.000	12.998	0.000
T13	242 - 222	2 3/4	0.000	12.998	0.000	0.000	12.998	0.000
T14	222 - 202	3	0.000	16.875	0.000	0.000	16.875	0.000
T15	202 - 182	3	0.000	16.875	0.000	0.000	16.875	0.000
T16	182 - 162	3	0.000	16.875	0.000	0.000	16.875	0.000
T17	162 - 142	3	0.000	16.875	0.000	0.000	16.875	0.000
T18	142 - 122	3	0.000	16.875	0.000	0.000	16.875	0.000
T19	122 - 112	3	0.000	16.875	0.000	0.000	16.875	0.000
T20	112 - 102	3	0.000	16.875	0.000	0.000	16.875	0.000
T21	102 - 82	3	0.000	16.875	0.000	0.000	16.875	0.000
T22	82 - 62	3	0.000	16.875	0.000	0.000	16.875	0.000
T23	62 - 42	3	0.000	16.875	0.000	0.000	16.875	0.000
T24	42 - 22	3	0.000	16.875	0.000	0.000	16.875	0.000
T25	22 - 2	3	0.000	16.875	0.000	0.000	16.875	0.000

Leg Interaction Design Data (Compression)

Section No.	Elevation ft	Size	Ratio $\frac{P_u}{\phi P_n}$	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	Ratio $\frac{M_{uy}}{\phi M_{ny}}$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
T1	457 - 452	2 1/4	0.106	0.000	0.000	0.106 [1] ✔	1.000	4.8.1 ✔
T2	452 - 442	2 1/4	0.144	0.000	0.000	0.144 [1] ✔	1.000	4.8.1 ✔
T3	442 - 422	2 1/4	0.232	0.000	0.000	0.232 [1] ✔	1.000	4.8.1 ✔
T4	422 - 402	2 1/4	0.287	0.000	0.000	0.287 [1] ✔	1.000	4.8.1 ✔
T5	402 - 382	2 1/4	0.459	0.000	0.000	0.459 [1] ✔	1.000	4.8.1 ✔
T6	382 - 362	2 1/4	0.517	0.000	0.000	0.517 [1] ✔	1.000	4.8.1 ✔
T7	362 - 342	2 1/4	0.483	0.000	0.000	0.483 [1] ✔	1.000	4.8.1 ✔
T8	342 - 322	2 1/4	0.616	0.000	0.000	0.616 [1] ✔	1.000	4.8.1 ✔
T9	322 - 302	2 1/2	0.468	0.000	0.000	0.468 [1] ✔	1.000	4.8.1 ✔
T10	302 - 282	2 1/2	0.485	0.000	0.000	0.485 [1] ✔	1.000	4.8.1 ✔
T11	282 - 262	2 3/4	0.423	0.000	0.000	0.423 [1] ✔	1.000	4.8.1 ✔
T12	262 - 242	2 3/4	0.483	0.000	0.000	0.483 [1] ✔	1.000	4.8.1 ✔
T13	242 - 222	2 3/4	0.490	0.000	0.000	0.490 [1] ✔	1.000	4.8.1 ✔
T14	222 - 202	3	0.465	0.000	0.000	0.465 [1] ✔	1.000	4.8.1 ✔
T15	202 - 182	3	0.526	0.000	0.000	0.526 [1] ✔	1.000	4.8.1 ✔
T16	182 - 162	3	0.536	0.000	0.000	0.536 [1] ✔	1.000	4.8.1 ✔
T17	162 - 142	3	0.566	0.000	0.000	0.566 [1] ✔	1.000	4.8.1 ✔
T18	142 - 122	3	0.581	0.000	0.000	0.581 [1] ✔	1.000	4.8.1 ✔
T19	122 - 112	3	0.494	0.000	0.000	0.494 [1] ✔	1.000	4.8.1 ✔
T20	112 - 102	3	0.490	0.000	0.000	0.490 [1] ✔	1.000	4.8.1 ✔
T21	102 - 82	3	0.583	0.000	0.000	0.583 [1] ✔	1.000	4.8.1 ✔
T22	82 - 62	3	0.595	0.000	0.000	0.595 [1] ✔	1.000	4.8.1 ✔
T23	62 - 42	3	0.601	0.000	0.000	0.601 [1] ✔	1.000	4.8.1 ✔
T24	42 - 22	3	0.619	0.000	0.000	0.619 [1] ✔	1.000	4.8.1 ✔

Section No.	Elevation ft	Size	Ratio $\frac{P_u}{\phi P_n}$	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	Ratio $\frac{M_{uy}}{\phi M_{ny}}$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
T25	22 - 2	3	0.621	0.000	0.000	0.621 [1] ✔	1.000	4.8.1 ✔

[1] $P_u / \phi P_n$ controls

Diagonal Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	457 - 452	L2 1/2x2x3/16	5.385	5.133	134.9 K=0.94	0.8090	-1.796	10.041	0.179 [1] ✔
T2	452 - 442	L2x2x1/4	5.207	4.963	139.9 K=0.92	0.9380	-2.127	10.832	0.196 [1] ✔
T3	442 - 422	L2x2x1/4	5.657	5.392	148.0 K=0.89	0.9380	-1.086	9.679	0.112 [1] ✔
T4	422 - 402	L2x2x1/4	5.657	5.392	148.0 K=0.89	0.9380	-2.642	9.679	0.273 [1] ✔
T5	402 - 382	L2x2x1/4	5.657	5.392	148.0 K=0.89	0.9380	-3.804	9.679	0.393 [1] ✔
T6	382 - 362	L2x2x1/4	5.657	5.392	148.0 K=0.89	0.9380	-2.238	9.679	0.231 [1] ✔
T7	362 - 342	L2x2x1/4	5.657	5.392	148.0 K=0.89	0.9380	-2.282	9.679	0.236 [1] ✔
T8	342 - 322	L2x2x1/4	5.657	5.392	148.0 K=0.89	0.9380	-3.930	9.679	0.406 [1] ✔
T9	322 - 302	L1 3/4x1 3/4x3/16	5.657	5.362	161.4 K=0.86	0.6211	-3.892	5.385	0.723 [1] ✔
T10	302 - 282	L2x2x1/4	5.657	5.362	147.4 K=0.90	0.9380	-2.884	9.752	0.296 [1] ✔
T11	282 - 262	L2 1/2x2 1/2x3/8	5.657	5.333	127.0 K=0.97	1.7300	-6.550	23.975	0.273 [1] ✔
T12	262 - 242	L2x2x1/4	5.657	5.333	146.9 K=0.90	0.9380	-4.609	9.826	0.469 [1] ✔
T13	242 - 222	L2x2x1/4	5.657	5.333	146.9 K=0.90	0.9380	-4.196	9.826	0.427 [1] ✔
T14	222 - 202	L2 1/2x2 1/2x3/8	5.657	5.303	126.6 K=0.97	1.7300	-6.328	24.118	0.262 [1] ✔
T15	202 - 182	L1 3/4x1 3/4x3/16	5.657	5.303	160.2 K=0.86	0.6211	-5.153	5.470	0.942 [1] ✔
T16	182 - 162	L1 3/4x1 3/4x3/16	5.657	5.303	160.2 K=0.86	0.6211	-3.174	5.470	0.580 [1] ✔
T17	162 - 142	L1 3/4x1 3/4x3/16	5.657	5.303	160.2 K=0.86	0.6211	-4.784	5.470	0.874 [1] ✔
T18	142 - 122	L1 3/4x1 3/4x3/16	5.657	5.303	160.2 K=0.86	0.6211	-4.497	5.470	0.822 [1] ✔
T19	122 - 112	L1 3/4x1 3/4x3/16	5.207	4.881	151.1 K=0.89	0.6211	-6.379	6.146	1.038 [1] ✘
T20	112 - 102	4.8.1 (1.04 CR) - 575 L1 3/4x1 3/4x3/16 w/	5.207	4.881	99.8	1.5710	-7.305	30.133	0.242 [1]

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
		L2x2x1/4			K=1.00				✓
T21	102 - 82	L1 3/4x1 3/4x3/16 4.8.1 (1.34 CR) - 639	5.657	5.303	160.2 K=0.86	0.6211	-7.329	5.470	1.340 [1] ✗
T22	82 - 62	L1 3/4x1 3/4x3/16 4.8.1 (1.25 CR) - 655	5.657	5.303	160.2 K=0.86	0.6211	-6.821	5.470	1.247 [1] ✗
T23	62 - 42	L1 3/4x1 3/4x3/16 4.8.1 (1.65 CR) - 681	5.657	5.303	160.2 K=0.86	0.6211	-9.030	5.470	1.651 [1] ✗
T24	42 - 22	L1 3/4x1 3/4x3/16 4.8.1 (1.57 CR) - 732	5.657	5.303	160.2 K=0.86	0.6211	-8.608	5.470	1.574 [1] ✗
T25	22 - 2	L1 3/4x1 3/4x3/16 4.8.1 (1.49 CR) - 760	5.657	5.303	160.2 K=0.86	0.6211	-8.161	5.470	1.492 [1] ✗

[1] P_u / ϕP_n controls

Horizontal Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T2	452 - 442	L2x2x3/16	4.000	3.813	118.1 K=1.02	0.7150	-0.308	11.122	0.028 [1] ✓
T3	442 - 422	L2x2x3/16	4.000	3.813	118.1 K=1.02	0.7150	-0.422	11.122	0.038 [1] ✓
T4	422 - 402	L2x2x3/16	4.000	3.813	118.1 K=1.02	0.7150	-0.522	11.122	0.047 [1] ✓
T5	402 - 382	L2x2x3/16	4.000	3.813	118.1 K=1.02	0.7150	-0.836	11.122	0.075 [1] ✓
T6	382 - 362	L2x2x3/16	4.000	3.813	118.1 K=1.02	0.7150	-0.941	11.122	0.085 [1] ✓
T7	362 - 342	L2x2x3/16	4.000	3.813	118.1 K=1.02	0.7150	-0.879	11.122	0.079 [1] ✓
T8	342 - 322	L2x2x3/16	4.000	3.813	118.1 K=1.02	0.7150	-1.121	11.122	0.101 [1] ✓
T9	322 - 302	L2x2x3/16	4.000	3.792	117.7 K=1.02	0.7150	-1.163	11.166	0.104 [1] ✓
T10	302 - 282	L2x2x3/16	4.000	3.792	117.7 K=1.02	0.7150	-1.205	11.166	0.108 [1] ✓
T11	282 - 262	L2x2x3/16	4.000	3.771	117.4 K=1.02	0.7150	-1.372	11.210	0.122 [1] ✓
T12	262 - 242	L2x2x3/16	4.000	3.771	117.4 K=1.02	0.7150	-1.565	11.210	0.140 [1] ✓
T13	242 - 222	L2x2x3/16	4.000	3.771	117.4 K=1.02	0.7150	-1.589	11.210	0.142 [1] ✓
T14	222 - 202	L2x2x3/16	4.000	3.750	117.1 K=1.03	0.7150	-1.898	11.254	0.169 [1] ✓
T15	202 - 182	L2x2x3/16	4.000	3.750	117.1	0.7150	-2.147	11.254	0.191 [1]

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
					K=1.03				✔
T16	182 - 162	L2x2x3/16	4.000	3.750	117.1	0.7150	-2.188	11.254	0.194 [1]
					K=1.03				✔
T17	162 - 142	L2x2x3/16	4.000	3.750	117.1	0.7150	-2.311	11.254	0.205 [1]
					K=1.03				✔
T18	142 - 122	L2x2x3/16	4.000	3.750	117.1	0.7150	-2.373	11.254	0.211 [1]
					K=1.03				✔
T19	122 - 112	L2x2x3/16	4.000	3.750	117.1	0.7150	-2.210	11.254	0.196 [1]
					K=1.03				✔
T20	112 - 102	L2x2x3/16	4.000	3.750	117.1	0.7150	-2.194	11.254	0.195 [1]
					K=1.03				✔
T21	102 - 82	L2x2x3/16	4.000	3.750	117.1	0.7150	-2.383	11.254	0.212 [1]
					K=1.03				✔
T22	82 - 62	L2x2x3/16	4.000	3.750	117.1	0.7150	-2.428	11.254	0.216 [1]
					K=1.03				✔
T23	62 - 42	L2x2x3/16	4.000	3.750	117.1	0.7150	-2.453	11.254	0.218 [1]
					K=1.03				✔
T24	42 - 22	L2x2x3/16	4.000	3.750	117.1	0.7150	-2.529	11.254	0.225 [1]
					K=1.03				✔
T25	22 - 2	L2x2x3/16	4.000	3.750	117.1	0.7150	-2.537	11.254	0.225 [1]
					K=1.03				✔

[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 K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	457 - 452	C6x10.5	4.000	2.859	64.9	3.0900	-0.000	80.226	0.000 [1]
					K=1.00				✔
T2	452 - 442	L2x2x3/16	4.000	3.813	118.1	0.7150	-0.647	11.122	0.058 [1]
					K=1.02				✔
T4	422 - 402	L2x2x3/16	4.000	3.813	118.1	0.7150	-0.023	11.122	0.002 [1]
					K=1.02				✔
T5	402 - 382	L2x2x3/16	4.000	3.813	118.1	0.7150	-0.016	11.122	0.001 [1]
					K=1.02				✔
T11	282 - 262	L2x2x3/16	4.000	3.792	117.7	0.7150	-0.421	11.166	0.038 [1]
					K=1.02				✔

[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 K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	457 - 452	2 1/4	5.000	5.000	106.7	3.9761	7.229	178.924	0.040 [1]
T2	452 - 442	2 1/4	10.000	3.333	71.1	3.9761	15.505	178.924	0.087 [1]
T5	402 - 382	2 1/4	20.000	4.000	85.3	3.9761	2.557	178.924	0.014 [1]

[1] P_u / ϕP_n controls

Leg Bending Design Data (Tension)

Section No.	Elevation ft	Size	M_{ux} kip-ft	ϕM_{nx} kip-ft	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	M_{uy} kip-ft	ϕM_{ny} kip-ft	Ratio $\frac{M_{uy}}{\phi M_{ny}}$
T1	457 - 452	2 1/4	0.000	7.119	0.000	0.000	7.119	0.000
T2	452 - 442	2 1/4	0.000	7.119	0.000	0.000	7.119	0.000
T5	402 - 382	2 1/4	0.000	7.119	0.000	0.000	7.119	0.000

Leg Interaction Design Data (Tension)

Section No.	Elevation ft	Size	Ratio $\frac{P_u}{\phi P_n}$	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	Ratio $\frac{M_{uy}}{\phi M_{ny}}$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
T1	457 - 452	2 1/4	0.040	0.000	0.000	0.040 [1] ✔	1.000	4.8.1 ✔
T2	452 - 442	2 1/4	0.087	0.000	0.000	0.087 [1] ✔	1.000	4.8.1 ✔
T5	402 - 382	2 1/4	0.014	0.000	0.000	0.014 [1] ✔	1.000	4.8.1 ✔

[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 K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	457 - 452	L2 1/2x2x3/16	5.385	5.133	102.7	0.8090	1.622	26.212	0.062 [1] ✔
T2	452 - 442	L2x2x1/4	5.207	4.963	97.8	0.9380	2.095	30.391	0.069 [1] ✔
T3	442 - 422	L2x2x1/4	5.657	5.392	106.2	0.9380	1.034	30.391	0.034 [1] ✔
T4	422 - 402	L2x2x1/4	5.657	5.392	106.2	0.9380	2.022	30.391	0.067 [1] ✔
T5	402 - 382	L2x2x1/4	5.657	5.392	106.2	0.9380	3.760	30.391	0.124 [1] ✔

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T6	382 - 362	L2x2x1/4	5.657	5.392	106.2	0.9380	1.928	30.391	0.063 [1]
T7	362 - 342	L2x2x1/4	5.657	5.392	106.2	0.9380	1.993	30.391	0.066 [1]
T8	342 - 322	L2x2x1/4	5.657	5.392	106.2	0.9380	3.171	30.391	0.104 [1]
T9	322 - 302	L1 3/4x1 3/4x3/16	5.657	5.362	119.8	0.6211	3.310	20.123	0.165 [1]
T10	302 - 282	L2x2x1/4	5.657	5.362	105.7	0.9380	1.742	30.391	0.057 [1]
T11	282 - 262	L2 1/2x2 1/2x3/8	5.657	5.333	85.0	1.7300	5.840	56.052	0.104 [1]
T12	262 - 242	L2x2x1/4	5.657	5.333	105.1	0.9380	2.797	30.391	0.092 [1]
T13	242 - 222	L2x2x1/4	5.657	5.333	105.1	0.9380	3.231	30.391	0.106 [1]
T14	222 - 202	L2 1/2x2 1/2x3/8	5.657	5.303	84.5	1.7300	4.347	56.052	0.078 [1]
T15	202 - 182	L1 3/4x1 3/4x3/16	5.657	5.303	118.5	0.6211	2.780	20.123	0.138 [1]
T16	182 - 162	L1 3/4x1 3/4x3/16	5.657	5.303	118.5	0.6211	1.768	20.123	0.088 [1]
T17	162 - 142	L1 3/4x1 3/4x3/16	5.657	5.303	118.5	0.6211	2.861	20.123	0.142 [1]
T18	142 - 122	L1 3/4x1 3/4x3/16	5.657	5.303	118.5	0.6211	3.217	20.123	0.160 [1]
T19	122 - 112	L1 3/4x1 3/4x3/16	5.207	4.881	109.1	0.6211	3.843	20.123	0.191 [1]
T20	112 - 102	L1 3/4x1 3/4x3/16 w/ L2x2x1/4	5.207	4.881	99.8	1.5710	5.477	50.900	0.108 [1]
T21	102 - 82	L1 3/4x1 3/4x3/16	5.657	5.303	118.5	0.6211	5.335	20.123	0.265 [1]
T22	82 - 62	L1 3/4x1 3/4x3/16	5.657	5.303	118.5	0.6211	5.193	20.123	0.258 [1]
T23	62 - 42	L1 3/4x1 3/4x3/16	5.657	5.303	118.5	0.6211	6.999	20.123	0.348 [1]
T24	42 - 22	L1 3/4x1 3/4x3/16	5.657	5.303	118.5	0.6211	6.894	20.123	0.343 [1]
T25	22 - 2	L1 3/4x1 3/4x3/16	5.657	5.303	118.5	0.6211	6.473	20.123	0.322 [1]

[1] $P_u / \phi P_n$ controls

Horizontal Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T2	452 - 442	L2x2x3/16	4.000	3.813	74.1	0.7150	0.308	23.166	0.013 [1]

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T3	442 - 422	L2x2x3/16	4.000	3.813	74.1	0.7150	0.422	23.166	0.018 [1]
T4	422 - 402	L2x2x3/16	4.000	3.813	74.1	0.7150	0.522	23.166	0.023 [1]
T5	402 - 382	L2x2x3/16	4.000	3.813	74.1	0.7150	0.836	23.166	0.036 [1]
T6	382 - 362	L2x2x3/16	4.000	3.813	74.1	0.7150	0.941	23.166	0.041 [1]
T7	362 - 342	L2x2x3/16	4.000	3.813	74.1	0.7150	0.879	23.166	0.038 [1]
T8	342 - 322	L2x2x3/16	4.000	3.813	74.1	0.7150	1.121	23.166	0.048 [1]
T9	322 - 302	L2x2x3/16	4.000	3.792	73.7	0.7150	1.163	23.166	0.050 [1]
T10	302 - 282	L2x2x3/16	4.000	3.792	73.7	0.7150	1.205	23.166	0.052 [1]
T11	282 - 262	L2x2x3/16	4.000	3.771	73.3	0.7150	1.372	23.166	0.059 [1]
T12	262 - 242	L2x2x3/16	4.000	3.771	73.3	0.7150	1.565	23.166	0.068 [1]
T13	242 - 222	L2x2x3/16	4.000	3.771	73.3	0.7150	1.589	23.166	0.069 [1]
T14	222 - 202	L2x2x3/16	4.000	3.750	72.9	0.7150	9.135	23.166	0.394 [1]
T15	202 - 182	L2x2x3/16	4.000	3.750	72.9	0.7150	2.147	23.166	0.093 [1]
T16	182 - 162	L2x2x3/16	4.000	3.750	72.9	0.7150	2.188	23.166	0.094 [1]
T17	162 - 142	L2x2x3/16	4.000	3.750	72.9	0.7150	5.529	23.166	0.239 [1]
T18	142 - 122	L2x2x3/16	4.000	3.750	72.9	0.7150	2.373	23.166	0.102 [1]
T19	122 - 112	L2x2x3/16	4.000	3.750	72.9	0.7150	2.210	23.166	0.095 [1]
T20	112 - 102	L2x2x3/16	4.000	3.750	72.9	0.7150	2.194	23.166	0.095 [1]
T21	102 - 82	L2x2x3/16	4.000	3.750	72.9	0.7150	2.383	23.166	0.103 [1]
T22	82 - 62	L2x2x3/16	4.000	3.750	72.9	0.7150	2.428	23.166	0.105 [1]
T23	62 - 42	L2x2x3/16	4.000	3.750	72.9	0.7150	6.203	23.166	0.268 [1]
T24	42 - 22	L2x2x3/16	4.000	3.750	72.9	0.7150	2.529	23.166	0.109 [1]
T25	22 - 2	L2x2x3/16	4.000	3.750	72.9	0.7150	2.537	23.166	0.110 [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 K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	457 - 452	C6x10.5	4.000	2.859	64.9	3.0900	0.000	100.116	0.000 [1] ✔
T2	452 - 442	L2x2x3/16	4.000	3.813	74.1	0.7150	0.728	23.166	0.031 [1] ✔
T3	442 - 422	L2x2x3/16	4.000	3.813	74.1	0.7150	5.835	23.166	0.252 [1] ✔
T4	422 - 402	L2x2x3/16	4.000	3.813	74.1	0.7150	0.237	23.166	0.010 [1] ✔
T5	402 - 382	L2x2x3/16	4.000	3.813	74.1	0.7150	0.239	23.166	0.010 [1] ✔
T6	382 - 362	L2x2x3/16	4.000	3.813	74.1	0.7150	7.409	23.166	0.320 [1] ✔
T7	362 - 342	L2x2x3/16	4.000	3.813	74.1	0.7150	0.324	23.166	0.014 [1] ✔
T8	342 - 322	L2x2x3/16	4.000	3.813	74.1	0.7150	0.329	23.166	0.014 [1] ✔
T9	322 - 302	L2x2x3/16	4.000	3.813	74.1	0.7150	6.326	23.166	0.273 [1] ✔
T10	302 - 282	L2x2x3/16	4.000	3.792	73.7	0.7150	0.578	23.166	0.025 [1] ✔
T11	282 - 262	L2x2x3/16	4.000	3.792	73.7	0.7150	1.187	23.166	0.051 [1] ✔
T12	262 - 242	L2x2x3/16	4.000	3.771	73.3	0.7150	10.453	23.166	0.451 [1] ✔
T13	242 - 222	L2x2x3/16	4.000	3.771	73.3	0.7150	0.884	23.166	0.038 [1] ✔
T14	222 - 202	L2x2x3/16	4.000	3.771	73.3	0.7150	0.778	23.166	0.034 [1] ✔
T15	202 - 182	L2x2x3/16	4.000	3.750	72.9	0.7150	1.100	23.166	0.047 [1] ✔
T16	182 - 162	L2x2x3/16	4.000	3.750	72.9	0.7150	0.857	23.166	0.037 [1] ✔
T17	162 - 142	L2x2x3/16	4.000	3.750	72.9	0.7150	1.071	23.166	0.046 [1] ✔
T18	142 - 122	L2x2x3/16	4.000	3.750	72.9	0.7150	0.902	23.166	0.039 [1] ✔
T19	122 - 112	L2x2x3/16	4.000	3.750	72.9	0.7150	1.202	23.166	0.052 [1] ✔
T20	112 - 102	L2x2x3/16	4.000	3.750	72.9	0.7150	1.080	23.166	0.047 [1] ✔
T21	102 - 82	L2x2x3/16	4.000	3.750	72.9	0.7150	7.656	23.166	0.331 [1] ✔
T22	82 - 62	L2x2x3/16	4.000	3.750	72.9	0.7150	0.948	23.166	0.041 [1] ✔
T23	62 - 42	L2x2x3/16	4.000	3.750	72.9	0.7150	1.081	23.166	0.047 [1] ✔
T24	42 - 22	L2x2x3/16	4.000	3.750	72.9	0.7150	0.921	23.166	0.040 [1] ✔
T25	22 - 2	L2x2x3/16	4.000	3.750	72.9	0.7150	1.020	23.166	0.044 [1] ✔

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$

[1] P_u / ϕP_n controls

Bottom Girt Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T25	22 - 2	L2x2x3/16	4.000	3.750	72.9	0.7150	3.120	23.166	0.135 [1] ✔

[1] P_u / ϕP_n controls

Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
L1	492 - 477	Pole	P8x.406	1	-0.719	113.643	8.4	Pass
L2	477 - 457	Pole	P8x.406	2	-1.636	113.643	41.6	Pass
T1	457 - 452	Leg	2 1/4	5	-8.286	77.870	10.6	Pass
T2	452 - 442	Leg	2 1/4	20	-17.761	123.621	14.4	Pass
T3	442 - 422	Leg	2 1/4	41	-24.342	105.060	23.2	Pass
T4	422 - 402	Leg	2 1/4	74	-30.166	105.060	28.7	Pass
T5	402 - 382	Leg	2 1/4	107	-48.272	105.060	45.9	Pass
T6	382 - 362	Leg	2 1/4	140	-54.313	105.060	51.7	Pass
T7	362 - 342	Leg	2 1/4	172	-50.752	105.060	48.3	Pass
T8	342 - 322	Leg	2 1/4	206	-64.725	105.060	61.6	Pass
T9	322 - 302	Leg	2 1/2	239	-67.141	143.512	46.8	Pass
T10	302 - 282	Leg	2 1/2	270	-69.580	143.512	48.5	Pass
T11	282 - 262	Leg	2 3/4	305	-79.202	187.145	42.3	Pass
T12	262 - 242	Leg	2 3/4	336	-90.353	187.145	48.3	Pass
T13	242 - 222	Leg	2 3/4	369	-91.731	187.145	49.0	Pass
T14	222 - 202	Leg	3	404	-109.562	235.765	46.5	Pass
T15	202 - 182	Leg	3	435	-123.933	235.765	52.6	Pass
T16	182 - 162	Leg	3	468	-126.301	235.765	53.6	Pass
T17	162 - 142	Leg	3	501	-133.406	235.765	56.6	Pass
T18	142 - 122	Leg	3	534	-136.979	235.765	58.1	Pass
T19	122 - 112	Leg	3	567	-127.573	258.358	49.4	Pass
T20	112 - 102	Leg	3	590	-126.661	258.358	49.0	Pass
T21	102 - 82	Leg	3	611	-137.556	235.765	58.3	Pass
T22	82 - 62	Leg	3	644	-140.194	235.765	59.5	Pass
T23	62 - 42	Leg	3	677	-141.636	235.765	60.1	Pass
T24	42 - 22	Leg	3	710	-146.017	235.765	61.9	Pass
T25	22 - 2	Leg	3	741	-146.470	235.765	62.1	Pass
T1	457 - 452	Diagonal	L2 1/2x2x3/16	16	-1.796	10.041	17.9	Pass
T2	452 - 442	Diagonal	L2x2x1/4	25	-2.127	10.832	19.6	Pass
T3	442 - 422	Diagonal	L2x2x1/4	70	-1.086	9.679	11.2	Pass
T4	422 - 402	Diagonal	L2x2x1/4	78	-2.642	9.679	27.3	Pass
T5	402 - 382	Diagonal	L2x2x1/4	117	-3.804	9.679	39.3	Pass
T6	382 - 362	Diagonal	L2x2x1/4	170	-2.238	9.679	23.1	Pass
T7	362 - 342	Diagonal	L2x2x1/4	183	-2.282	9.679	23.6	Pass

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
T8	342 - 322	Diagonal	L2x2x1/4	210	-3.930	9.679	40.6	Pass
T9	322 - 302	Diagonal	L1 3/4x1 3/4x3/16	262	-3.892	5.385	72.3	Pass
T10	302 - 282	Diagonal	L2x2x1/4	301	-2.884	9.752	29.6	Pass
T11	282 - 262	Diagonal	L2 1/2x2 1/2x3/8	315	-6.550	23.975	27.3	Pass
T12	262 - 242	Diagonal	L2x2x1/4	368	-4.609	9.826	46.9	Pass
T13	242 - 222	Diagonal	L2x2x1/4	381	-4.196	9.826	42.7	Pass
T14	222 - 202	Diagonal	L2 1/2x2 1/2x3/8	420	-6.328	24.118	26.2	Pass
T15	202 - 182	Diagonal	L1 3/4x1 3/4x3/16	465	-5.153	5.470	94.2	Pass
T16	182 - 162	Diagonal	L1 3/4x1 3/4x3/16	482	-3.174	5.470	58.0	Pass
T17	162 - 142	Diagonal	L1 3/4x1 3/4x3/16	519	-4.784	5.470	87.4	Pass
T18	142 - 122	Diagonal	L1 3/4x1 3/4x3/16	548	-4.497	5.470	82.2	Pass
T19	122 - 112	Diagonal	L1 3/4x1 3/4x3/16	575	-6.379	6.146	103.8	Fail
T20	112 - 102	Diagonal	L1 3/4x1 3/4x3/16 w/ L2x2x1/4	602	-7.305	30.133	24.2	Pass
T21	102 - 82	Diagonal	L1 3/4x1 3/4x3/16	639	-7.329	5.470	134.0	Fail
T22	82 - 62	Diagonal	L1 3/4x1 3/4x3/16	655	-6.821	5.470	124.7	Fail
T23	62 - 42	Diagonal	L1 3/4x1 3/4x3/16	681	-9.030	5.470	165.1	Fail
T24	42 - 22	Diagonal	L1 3/4x1 3/4x3/16	732	-8.608	5.470	157.4	Fail
T25	22 - 2	Diagonal	L1 3/4x1 3/4x3/16	760	-8.161	5.470	149.2	Fail
T2	452 - 442	Horizontal	L2x2x3/16	28	-0.308	11.122	2.8	Pass
T3	442 - 422	Horizontal	L2x2x3/16	49	-0.422	11.122	3.8	Pass
T4	422 - 402	Horizontal	L2x2x3/16	83	-0.522	11.122	4.7	Pass
T5	402 - 382	Horizontal	L2x2x3/16	115	-0.836	11.122	7.5	Pass
T6	382 - 362	Horizontal	L2x2x3/16	148	-0.941	11.122	8.5	Pass
T7	362 - 342	Horizontal	L2x2x3/16	181	-0.879	11.122	7.9	Pass
T8	342 - 322	Horizontal	L2x2x3/16	215	-1.121	11.122	10.1	Pass
T9	322 - 302	Horizontal	L2x2x3/16	247	-1.163	11.166	10.4	Pass
T10	302 - 282	Horizontal	L2x2x3/16	285	-1.205	11.166	10.8	Pass
T11	282 - 262	Horizontal	L2x2x3/16	313	-1.372	11.210	12.2	Pass
T12	262 - 242	Horizontal	L2x2x3/16	347	-1.565	11.210	14.0	Pass
T13	242 - 222	Horizontal	L2x2x3/16	380	-1.589	11.210	14.2	Pass
T14	222 - 202	Horizontal	L2x2x3/16	417	9.135	23.166	39.4	Pass
T15	202 - 182	Horizontal	L2x2x3/16	446	-2.147	11.254	19.1	Pass
T16	182 - 162	Horizontal	L2x2x3/16	477	-2.188	11.254	19.4	Pass
T17	162 - 142	Horizontal	L2x2x3/16	522	5.529	23.166	23.9	Pass
T18	142 - 122	Horizontal	L2x2x3/16	543	-2.373	11.254	21.1	Pass
T19	122 - 112	Horizontal	L2x2x3/16	578	-2.210	11.254	19.6	Pass
T20	112 - 102	Horizontal	L2x2x3/16	598	-2.194	11.254	19.5	Pass
T21	102 - 82	Horizontal	L2x2x3/16	619	-2.383	11.254	21.2	Pass
T22	82 - 62	Horizontal	L2x2x3/16	653	-2.428	11.254	21.6	Pass
T23	62 - 42	Horizontal	L2x2x3/16	684	6.203	23.166	26.8	Pass
T24	42 - 22	Horizontal	L2x2x3/16	724	-2.529	11.254	22.5	Pass
T25	22 - 2	Horizontal	L2x2x3/16	750	-2.537	11.254	22.5	Pass
T1	457 - 452	Top Girt	C6x10.5	7	-0.000	80.226	2.8	Pass
T2	452 - 442	Top Girt	L2x2x3/16	10	-0.647	11.122	5.8	Pass
T3	442 - 422	Top Girt	L2x2x3/16	21	5.835	23.166	25.2	Pass
T4	422 - 402	Top Girt	L2x2x3/16	44	0.237	23.166	1.0	Pass
T5	402 - 382	Top Girt	L2x2x3/16	77	0.239	23.166	1.0	Pass
T6	382 - 362	Top Girt	L2x2x3/16	110	7.409	23.166	32.0	Pass
T7	362 - 342	Top Girt	L2x2x3/16	143	0.324	23.166	1.4	Pass
T8	342 - 322	Top Girt	L2x2x3/16	176	0.329	23.166	1.4	Pass
T9	322 - 302	Top Girt	L2x2x3/16	207	6.326	23.166	27.3	Pass
T10	302 - 282	Top Girt	L2x2x3/16	242	0.578	23.166	2.5	Pass
T11	282 - 262	Top Girt	L2x2x3/16	275	1.187	23.166	5.1	Pass
T12	262 - 242	Top Girt	L2x2x3/16	308	10.453	23.166	45.1	Pass
T13	242 - 222	Top Girt	L2x2x3/16	341	0.884	23.166	3.8	Pass
T14	222 - 202	Top Girt	L2x2x3/16	372	0.778	23.166	3.4	Pass
T15	202 - 182	Top Girt	L2x2x3/16	407	1.100	23.166	4.7	Pass
T16	182 - 162	Top Girt	L2x2x3/16	438	0.857	23.166	3.7	Pass
T17	162 - 142	Top Girt	L2x2x3/16	473	1.071	23.166	4.6	Pass
T18	142 - 122	Top Girt	L2x2x3/16	504	0.902	23.166	3.9	Pass

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
T19	122 - 112	Top Girt	L2x2x3/16	539	1.202	23.166	5.2	Pass
T20	112 - 102	Top Girt	L2x2x3/16	572	1.080	23.166	4.7	Pass
T21	102 - 82	Top Girt	L2x2x3/16	591	7.656	23.166	33.1	Pass
T22	82 - 62	Top Girt	L2x2x3/16	614	0.948	23.166	4.1	Pass
T23	62 - 42	Top Girt	L2x2x3/16	647	1.081	23.166	4.7	Pass
T24	42 - 22	Top Girt	L2x2x3/16	680	0.921	23.166	4.0	Pass
T25	22 - 2	Top Girt	L2x2x3/16	713	1.020	23.166	4.4	Pass
T25	22 - 2	Bottom Girt	L2x2x3/16	746	3.120	23.166	13.5	Pass
T3	442 - 422	Guy A@442	1	776	34.382	73.200	47.0	Pass
T6	382 - 362	Guy A@382	1	779	34.166	73.200	46.7	Pass
T9	322 - 302	Guy A@322	7/8	782	27.099	55.200	49.1	Pass
T12	262 - 242	Guy A@262	7/8	785	29.051	55.200	52.6	Pass
T14	222 - 202	Guy A@210	7/8	788	28.987	55.200	52.5	Pass
T17	162 - 142	Guy A@154	9/16	791	12.535	21.000	59.7	Pass
T21	102 - 82	Guy A@102	9/16	794	13.213	21.000	62.9	Pass
T23	62 - 42	Guy A@46	1/2	797	7.987	16.140	49.5	Pass
T3	442 - 422	Guy B@442	1	775	30.123	73.200	41.2	Pass
T6	382 - 362	Guy B@382	1	778	30.605	73.200	41.8	Pass
T9	322 - 302	Guy B@322	7/8	781	24.783	55.200	44.9	Pass
T12	262 - 242	Guy B@262	7/8	784	26.841	55.200	48.6	Pass
T14	222 - 202	Guy B@210	7/8	787	27.416	55.200	49.7	Pass
T17	162 - 142	Guy B@154	9/16	790	11.908	21.000	56.7	Pass
T21	102 - 82	Guy B@102	9/16	793	12.669	21.000	60.3	Pass
T23	62 - 42	Guy B@46	1/2	796	7.807	16.140	48.4	Pass
T3	442 - 422	Guy C@442	1	774	33.377	73.200	45.6	Pass
T6	382 - 362	Guy C@382	1	777	34.260	73.200	46.8	Pass
T9	322 - 302	Guy C@322	7/8	780	28.881	55.200	52.3	Pass
T12	262 - 242	Guy C@262	7/8	783	34.350	55.200	62.2	Pass
T14	222 - 202	Guy C@210	7/8	786	37.593	55.200	68.1	Pass
T17	162 - 142	Guy C@154	9/16	789	17.552	21.000	83.6	Pass
T21	102 - 82	Guy C@102	9/16	792	19.260	21.000	91.7	Pass
T23	62 - 42	Guy C@46	1/2	795	11.572	16.140	71.7	Pass
							Summary	
						Pole (L2)	41.6	Pass
						Leg (T25)	62.1	Pass
						Diagonal (T23)	165.1	Fail ✗
						Horizontal (T14)	39.4	Pass
						Top Girt (T12)	45.1	Pass
						Bottom Girt (T25)	13.5	Pass
						Guy A (T21)	62.9	Pass
						Guy B (T21)	60.3	Pass
						Guy C (T21)	91.7	Pass
						RATING =	**165.1**	**Fail ✗**

PROJECT No:	**US-CT-5009**	**ENG:**	JW
PROJECT NAME:		**CHK:**	MD
	Vertical Bridge		
DATE:	**September 6, 2018**	**PAGE:**	**of**

TIA-222-G

TOWER BASE CHECKS - GUYED TOWER

Tower Reactions		*Factored Loads*			**Factored Resistance**			**% Capacity**	**Column Rebar**
◉ TIA-G	Download	**441.00** kips	Bearing Capacity		**2847.10** kips	pass		15.5%	**PCA COL**
○ EIA-F	Horizontal	**2.00** kips	Horizontal Capacity		**66.31** kips	pass		3.0%	**441.0 kips**
	Overturning Check (q_{max})	**3.70** ksf	Overturning Capacity		**14.53** ksf	pass		25.5%	[GOVERNS]
	Punching Shear Check	**268.73** kips	2-way Capacity		**2277.43** kips	pass		11.8%	
	Flexural Shear Check	**39.38** kips	1-way Capacity		**455.49** kips	pass		8.6%	**13.0 k-ft** Max. Pier Moment @ 6.5 ft
	Pier Rebar Required	(minimum only, use PCACOL for total quantity)			#N/A				
	Mat Rebar Required	(checked rebar for 6" min to 24" max spacing)			#N/A			**SF=7.84**	

Soil Parameters	**Soils Report**		**Foundation Geometry**	**FDN Dwgs**	
ϕ	**28**	°	B (width)	**14.00**	ft
water level	**8.00**	ft (2.44 m)	T (thickness)	**3.00**	ft
Soil Dry Density (γ_{dry})	**0.105**	kcf (16.5 kN/m^3)	L (length)	**14.00**	ft
Soil Sub Density (γ_{sub})	**0.050**	kcf (7.85 kN/m^3)	D (depth to bottom surface)	**9.00**	ft
Passive earth coefficient	**2.770**		ϕ (pier diameter)	**6.00**	ft
Allowable bearing pressure	**12.105**	ksf (579.6 kPa)	☑ **Check if Square Pier**		

Concrete parameters

f'c =	**3.000**	ksi (20.7 MPa)
Dry Density (γ_{dry})	0.150	kcf
Sub Density (γ_{sub})	0.087	kcf

Passive Earth pressure resistance

press. - top of concrete	1.74	--	ksf
press. - bottom of concr.	2.47	--	ksf
Total resistance =	**88.41**	--	kips
Horizontal resistance =	**66.31**	--	kips
	(x 0.75, Cl 9.4.1)		

Bearing capacity

contact area =	196.00	--	ft²
allowable net pressure =	12.105	--	ksf
Download resistance =	**2847.10**	--	kips
	(2 • 0.60, Cl 9.4)		

Overturning - Bearing

	Moment = Shear x Arm	14.000	--	k-ft
ORTHO	q_{max} = P/A + M/S *(S=b³/6)*	**3.692**	--	ksf
DIAG	q_{max} = P/A + M/S *(S=b³/6√2)*	**3.704**	--	ksf
		(not factored)		

Check for 2-Way Shear

d=33.000"

Shear Area (b_o x d) =	96.25	--	ft²
Factored bearing stress =	2.250	--	ksf
Factored shear force =	268.73	--	kips
Factored shear resistance	**2277.4**	--	kips
Check for 2-way shear	**Pass**	--	

Check for 1-Way Shear

d=33.000"

Shear Area (b x d) =	38.50	--	ft²
Factored bearing stress =	2.250	--	ksf
Factored shear force =	39.38	--	kips
Factored shear resistance	**455.5**	--	kips
Check for 2-way shear	**Pass**	--	

Volume of concrete

822.0 cuft (30.5 cuyd)

Mat	d (dry)	2.00	ft	392.00
	d (sub)	1.00	ft	196.00
Pier	d (above)	**0.50**	ft	18.00
	d (dry)	6.00	ft	216.00
	d (sub)	0.00	ft	0.00

Depth of Soil

d (overall)	6.00	2.D.Tanϕ	Area
d (dry)	6.00	6.381	415.37
d (submerged)	0.00	0.000	196.00
			196.00

Volume of Soil

Vol (total)	1577.4	ft^3
Vol (dry)	1577.4	ft^3
Vol (submerged)	0.0	ft^3

Frustum Volume Method

Concrete Reinforcing

(Already Factored Loads)

		PIER
f'c	3.00 ksi	
fy	60 ksi	
Steel (Metric/ASTM)	**ASTM**	**ASTM**
Bar size	**0** #	**0**
Bar area	#N/A in²	#N/A

Wgt of Rebar **#N/A lbs**

Slab Reinforcing	Download		
w	2.25	ksf	
lv	4.0	ft	
Mu = ½ wL•lv²	252	kip-ft	
Ku	16.5289		
ρ	0.00031	choose larger of ρ or ρ min	
ρ min ≥ 0.0018	0.00180		
4/3•ρ if $\rho < \rho$ min	0.00041		
As Required	9.9792	in²	
Number of bars	**#N/A**	bars	
spacing =	#N/A	in	

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	Vertical Bridge		
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TIA-222-G

GUY ANCHOR - DEADMAN CHECKS

Tower Reactions		*Factored Loads*			**Factored Resistance**		**% Capacity**	**SF=2.75**
(●) TIA-G	Uplift	**65.0**	kips	Uplift Capacity	**128.69** kips	pass	50.5%	
( ) EIA-F	Horizontal	**54.0**	kips	Horizontal Capacity	**74.25** kips	pass	72.7% [GOVERNS]	

Soil Parameters *From Soils Report*

	Depth (ft)	ϕ (°)	c (psf)	γ (pcf)
Layer 1	**4.0**	**28.0**	**0.0**	**105.0**
Layer 2	**6.0**	**0.0**	**1250.0**	**110.0**
Layer 3	**8.0**	**0.0**	**400.0**	**105.0**
Layer 4	**9.5**	**0.0**	**750.0**	**105.0**
Layer 5				

All. Top Friction	**138**	psf *(FS=2)*	
All. Side Friction	**138**	psf *(FS=2)*	
Frost Depth	**4.00**	ft	Depth is taken to bottom of layer
Ignored Depth	**0.00**	ft	

Dead-man geometry *From Fdn Dwgs*

B (width)	**4.50**	ft
T (thickness / height)	**2.50**	ft
L (length)	**15.00**	ft
D (depth to bottom surface)	**9.50**	ft
f'c (compressive strength)	**3.00**	ksi (20.7 MPa)
Water Table	**30.00**	ft (9.15 m)

Depth (ft)	Kp	½Cu (psf)	tan (⅔ϕ)	Ca (Kulhawy)	γ·d (psf)	Kp Pressure	Cu Pressure	Total Layer Pressure	Front of Block Area	½Cu Thickness	½Cu Area	½Cu Area
0.00	2.770	0.0	0.338	0.000	0.0	0.000	0.000	**0.000**	0.00	0.00	0.000	0.000
4.00					420.0	1.163	0.000	**1.163**				
4.00	1.000	625.0	0.000	0.582	420.0	0.420	2.500	**2.920**	0.00	2.00	78.000	48.750
6.00					640.0	0.640	2.500	**3.140**				
6.00	1.000	200.0	0.000	1.000	640.0	0.640	0.800	**1.440**	15.00	1.00	39.000	7.800
8.00					850.0	0.850	0.800	**1.650**				
8.00	1.000	375.0	0.000	0.763	850.0	0.850	1.500	**2.350**	22.50	0.00	0.000	0.000
9.50					1007.5	1.008	1.500	**2.508**				
9.50												

Uplift Resistance

		Factored		
Weight of concrete		**25.31** (x 0.90, Cl 2.3.2)	--	kips
Weight of soil (all layers)		**69.92** (x 0.75, Cl 9.4.1)	--	kips
½Cu Resistance		**56.55** (x 0.75, Cl 9.4.1)	--	kips
Total Side Friction	(2 x BT)	**4.39** (x 0.75, Cl 9.4.1)	--	kips
Total Front Friction	(T x L)	**10.35** (x 0.75, Cl 9.4.1)	--	kips
Total Uplift Resistance		**166.52**	--	kips
Factored Uplift Resistance		**128.69**	--	kips

Horizontal Pressure Resistance

Total Front Pressure	(P x L)	**75.98**	--	kips
Total Side Friction	(2 x BT)	**4.39**	--	kips
Total Top Friction	(B x L)	**18.63**	--	kips
Total Horiz Resistance		**99.01**	--	kips
Factored Horiz Resistance		**74.25** (x 0.75, Cl 9.4.1)	--	kips

Concrete Parameters

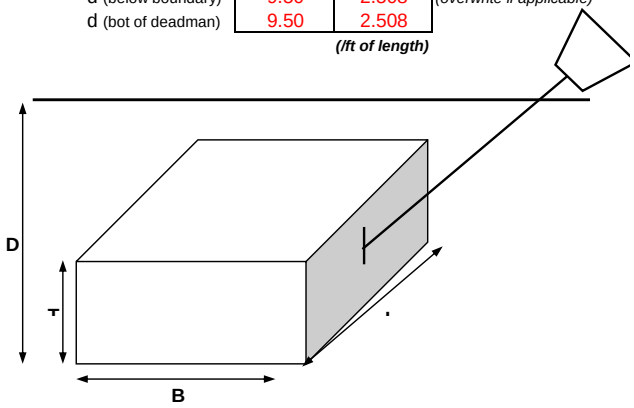
		Depth	Weight	Volume
Dry Density (γ_{dry})	**0.150**	2.50	25.31	168.75
Sub Density (γ_{sub})	**0.087**	0.00	0.00	0.00
			168.8 cuft (6.3 cuyd)	

Depth of Soil

		2·D·Tan ϕ	Area	Volume
d (top of layer 1)	0.00	4.254	168.54	456.9
d (top of layer 2)	4.00	0.000	67.50	135.0
d (top of layer 3)	6.00	0.000	67.50	67.5
d (top of layer 4)		0.000	0.00	0.0
d (top of layer 5)		0.000	0.00	0.0
d (top of deadman)	7.00		67.50	**659.4**
			Frustum Volume Method	

Depth of Deadman

	Depth	Pressure	
d (top of deadman)	7.00	1.545	
d (above boundary)	7.00	1.545	*(overwrite if applicable)*
d (below boundary)	9.50	2.508	*(overwrite if applicable)*
d (bot of deadman)	9.50	2.508	
		(/ft of length)	



PROJECT No:	US-CT-5009	**ENG:**	JW
PROJECT NAME:		**CHK:**	MD
	Vertical Bridge		
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TIA-222-G

GUY ANCHOR - DEADMAN CHECKS

Tower Reactions		*Factored Loads*			**Factored Resistance**		**% Capacity**	**SF=8.69**
(●) TIA-G	Uplift	**118.0**	kips	Uplift Capacity	**512.45** kips	**pass**	**23.0%**	**[GOVERNS]**
( ) EIA-F	Horizontal	**53.0**	kips	Horizontal Capacity	**279.65** kips	**pass**	**19.0%**	

Soil Parameters *From Soils Report*

	Depth (ft)	ϕ (°)	c (psf)	γ (pcf)
Layer 1	**4.0**	**28.0**	**0.0**	**105.0**
Layer 2	**6.0**	**0.0**	**1250.0**	**110.0**
Layer 3	**8.0**	**0.0**	**400.0**	**105.0**
Layer 4	**11.5**	**0.0**	**750.0**	**105.0**
Layer 5				

All. Top Friction	**138**	psf *(FS=2)*	
All. Side Friction	**138**	psf *(FS=2)*	
Frost Depth	**3.33**	ft	Depth is taken to bottom of layer
Ignored Depth	**0.00**	ft	

Dead-man geometry *From Fdn Dwgs*

B (width)	**11.00**	ft
T (thickness / height)	**4.50**	ft
L (length)	**28.00**	ft
D (depth to bottom surface)	**11.50**	ft
f'c (compressive strength)	**3.00**	ksi (20.7 MPa)
Water Table	**30.00**	ft (9.15 m)

Depth (ft)	Kp	½Cu (psf)	tan (⅔ϕ)	Ca (Kulhawy)	γ·d (psf)	Kp Pressure	Cu Pressure	Total Layer Pressure	Front of Block Area	½Cu Thickness	½Cu Area	½Cu Area
0.00	2.770	0.0	0.338	0.000	0.0	0.000	0.000	**0.000**	0.00	0.67	52.260	0.000
4.00					420.0	1.163	0.000	**1.163**				
4.00	1.000	625.0	0.000	0.582	420.0	0.420	2.500	**2.920**	0.00	2.00	156.000	97.500
6.00					640.0	0.640	2.500	**3.140**				
6.00	1.000	200.0	0.000	1.000	640.0	0.640	0.800	**1.440**	28.00	1.00	78.000	15.600
8.00					850.0	0.850	0.800	**1.650**				
8.00	1.000	375.0	0.000	0.763	850.0	0.850	1.500	**2.350**	98.00	0.00	0.000	0.000
11.50					1217.5	1.218	1.500	**2.718**				
11.50												

Uplift Resistance

		Factored		
Weight of concrete		**207.90** (x 0.90, Cl 2.3.2)	--	kips
Weight of soil (all layers)		**266.60** (x 0.75, Cl 9.4.1)	--	kips
½Cu Resistance		**113.10** (x 0.75, Cl 9.4.1)	--	kips
Total Side Friction	(2 x BT)	**19.32** (x 0.75, Cl 9.4.1)	--	kips
Total Front Friction	(T x L)	**34.78** (x 0.75, Cl 9.4.1)	--	kips
Total Uplift Resistance		**641.69**	--	kips
Factored Uplift Resistance		**512.45**	--	kips

Horizontal Pressure Resistance

Total Front Pressure	(P x L)	**268.54**	--	kips
Total Side Friction	(2 x BT)	**19.32**	--	kips
Total Top Friction	(B x L)	**85.01**	--	kips
Total Horiz Resistance		**372.87**	--	kips
Factored Horiz Resistance		**279.65** (x 0.75, Cl 9.4.1)	--	kips

Concrete Parameters

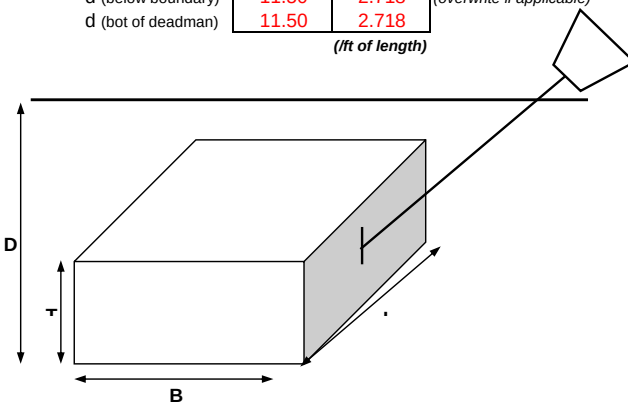
		Depth	*Weight*	*Volume*
Dry Density (γ_{dry})	**0.150**	4.50	207.90	1386.00
Sub Density (γ_{sub})	**0.087**	0.00	0.00	0.00
			1386.0 cuft (51.4 cuyd)	

Depth of Soil

		2·D·Tan ϕ	*Area*	*Volume*
d (top of layer 1)	0.00	4.254	491.99	1585.7
d (top of layer 2)	4.00	0.000	308.00	616.0
d (top of layer 3)	6.00	0.000	308.00	308.0
d (top of layer 4)		0.000	0.00	0.0
d (top of layer 5)		0.000	0.00	0.0
d (top of deadman)	7.00		308.00	**2509.7**
			Frustum Volume Method	

Depth of Deadman

	Depth	*Pressure*	
d (top of deadman)	7.00	1.545	
d (above boundary)	7.00	1.545	*(overwrite if applicable)*
d (below boundary)	11.50	2.718	*(overwrite if applicable)*
d (bot of deadman)	11.50	2.718	
		(/ft of length)	



Attachment 2:
Collocation Application

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***Please DO NOT Lock Colo Form**

NEW LEASE		TENANT PROVIDED MOUNT ANALYSIS		INTERNAL USE ONLY	
BTS ANCHOR TENANT		If Tenant has not provided "MA" then:		APP VERSION #	
AMENDMENT TO EXISTING LEASE	✔	MOUNT ANALYSIS TO BE RUN		LEASE #	4846
RECONTRACT		MOUNT MAPPING		AMENDMENT #	3

PLEASE RETURN THIS APPLICATION VIA EMAIL TO:		VB Site Number:	CT-5009
Vertical Bridge		VB Site Name:	WRKI-FM
750 Park of Commerce Drive, Ste 200	Email:	Application Date:	7/10/2018
Boca Raton, FL 33487		Revision Dates:	
Attn: Regional Leasing Manager			
	Phone:	**RSM Approval:**	

APPLICANT / CARRIER			
Carrier Name:	T-Mobile	**Contact Name:**	Kyle Richers
Carrier Site Number:	CT11196A	**Contact Number:**	908-447-4716
Carrier Site Name:	Brookfield/Junction Rd	**Contact Fax:**	
Carrier Legal Entity Name:	T-Mobile Northeast LLC	**Contact Address:**	10 Industrial Ave., Suite 3 Mahwah, NJ 07430
State of registration:	DE		
Type of entity (LP, LLC, Corp) d/b/a (If applicable)	LLC		
Notice Address for Lease:		**Contact E-mail:**	krichers@transcendwireless.com
With copies to:		**Additional E-mail:**	
Carrier Invoice Address:		**Other:**	
Carrier Invoice Contact - Name, Title, Phone No.		**Carrier NOC#**	

ADDITIONAL CONTACT INFORMATION	
Leasing Contact Name/Number:	Kyle Richers/ 908-447-4716
RF Contact Name/Number:	
Construction Contact Name/Number:	
Emergency Contact Name/Number:	

SITE INFORMATION – This information can be found and should match the information on www.verticalbridge.com

Latitude:	41.493432240	**N**	**Existing Structure Type:**	Guyed Tower	
Longitude:	-73.428734500	**W**	**Existing Structure Height:**	455'	
Site Address:	37 Carmen Hill Road, Brookfield, CT				

FREQUENCY/TECHNOLOGY INFORMATION	
Type of Technology for all equipment (i.e., 3G, LTE, CMDA, MW, WiFi, TV, etc.)	GSM, UMTS, LTE
TX Frequency (MHz)	1935-1945, 2140-2155, 698-734
RX Frequency (MHz)	1855-1865, 2140-2155-1740-1755, 698-734
Tenants using an unlicensed band must provide exact Frequency Channels and Call Sign(s) to be utilized. (Providing the band range only will not be accepted.)	

PLEASE PROVIDE A GENERAL SCOPE OF WORK

Remove and replace (3) existing antennas with (3) new antennas. Replacement of (3) RRUs and (3) new RRUs. Addition of (1) Hybrid Cable.

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EXISTING EQUIPMENT Applicant's Existing Equipment Configuration and Specifications **Current Leased Rights**										
Equipment Type (ex: panel, TMA, RRU)	**RAD (feet)**	**Mount Height (feet)**	**Mount Type**	**Equip Qty.**	**Equipment Manufacturer**	**Equipment Model #**	**Equip Dim (HxWxD) (ft. or in)**	**Equip Weight (lbs.)**	**Az**	**Remain**
Panel		280'	Pipe	03	RFS	APX16DWV-16DWV-S-E-A20	55.9" X 13.3" X 3	40.7	10/130/	Yes
Panel		280'	Pipe	03	Andrew	LNX-6515DS-A1M	96.6" X 11.9" X 7	43.7	10/130/	No
TMA		280'	Pipe	03	Ericsson	KRY 112144	6.1" X 6.9" X 2.8'	11.2	10/130/	Yes
RRU		280'	Pipe	03	Ericsson	RRUS11B12	19.6" X 16.9" X 7	50.7	10/130/	No
TMA		280'	Pipe	03	Ericsson	KRY 112 89-4	11.02" X 6.1" X 3	15.43	10/130/	Yes

EXISTING LINES Applicant's Existing Lines and Specifications					
Line Type	**Line Size (Inches)**	**Total # of Lines**	**Coax interior or exterior (for monopoles)**	**Remain**	**Comments:**
Coax	1-5/8"	18		Yes	

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PROPOSED EQUIPMENT Applicant's Proposed Equipment Configuration and Specifications **Proposed Leased Rights** DO NOT include existing leased rights in this section**									
Equipment Type (ex: panel, TMA, RRU, ice shields)	**RAD (feet)**	**Mount Height (feet)**	**Mount Type**	**Equip Qty.**	**Equipment Manufacturer**	**Equipment Model #**	**Equip Dim (HxWxD) (ft. or in)**	**Equip Weight (lbs.)**	**Azimuth**
Panel	280'	280'	Pipe	03	RFS	APXVAAR24-43-U-NA20	95.9" X 24" X 8.7"	153	10/130/250
RRU	280'	280'	Pipe	03	Ericsson	RRU 4449 B71B12	14.9" X 13.2" X 10.4"	74	10/130/250

PROPOSED LINES Applicant's Proposed Lines and Specifications				
Line Type	**Line Size (Inches)**	**Total # of Lines**	**Coax interior or exterior (for monopoles)**	**Comments:**
Hybrid	1-5/8"	1	Outside	

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TOTAL FINAL CONFIGURATION TOTALS (Leased Rights) Remaining Existing + Proposed	
EQUIPMENT TYPE	TOTAL
Panel Antennas	6
Omni/Whip Antennas	
RRU	3
TMA	6
Diplexer / Triplexer	
Bias T	
Surge Suppressor	
MW Dish	
Ice Shield	
ODU	
Filter	
Combiner	
Junction Box	
RET	
Equipment Cabinets	
Other (Please specify)	
Other (Please specify)	
Other (Please specify)	
Other (Please specify)	
Other (Please specify)	

TOTAL FINAL CONFIGURATION TOTALS (Leased Rights) Remaining Existing + Proposed	
LINE TYPE	TOTAL
Coax	18
Hybrid	1
CAT5	
DC/Power	
RET	
Fiber	

ADDITIONAL EQUIPMENT INFORMATION

- RRUs, TMAs and ODUs are required to be installed directly behind the antennas / MW dish. Otherwise there will be an additional charge.
- All equipment lines are required to be installed inside the tower when space is available. Carriers will be charged an additional $25.00 per line per month if equipment lines are installed on the outside of the tower even though there is available space inside the tower. Vertical Bridge must approve any installation of lines on the outside of the tower.
- All tenant equipment located on tower installations must be installed within one continuous 10 ft. vertical envelope. Exceeding this vertical space will be subject to additional rent.

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GROUND / INTERIOR SPACE REQUIREMENTS						
Total Ground / Interior Area Dimensions: **L' x W' = Total Square Feet Required**	10' X 16'	(Including all Equipment (i.e., Shelter, Equipment Platform or Pad, Generator Pad, Generator Fuel Tank Pad, Antenna Sleds, etc. – provide details below)				
Cabinet Area Dimensions (Pad/Platform)	10' X 16'	Cabinet Installation Type	Ground Pad			
Shelter Pad Dimensions	X	Shelter Manufacturer				
Rooftop Antenna Total Area Required	X	Antenna Sled Dimensions (per sector)	X	Antenna Wall Mount Dimensions (per sector)	X	

EQUIPMENT CABINET REQUIREMENTS (Required for Rooftops or Vertical Bridge interior space)					
Number of Cabinets Required	2	Cabinet Dimensions (L' x W' x H')		Manufacturer:	
Number of Cabinets Required		Cabinet Dimensions (L' x W' x H')		Manufacturer:	
Number of Cabinets Required		Cabinet Dimensions (L' x W' x H')		Manufacturer:	
Equipment Cabinet Comments	Not expanding existing leased space.				

GENERATOR REQUIREMENTS					
Generator Required?		Generator Fuel Type		Generator Size	
Generator Pad Dimensions		Generator Manufacturer			
Generator Fuel Tank Pad Dimensions		Fuel Tank Manufacturer			

AC POWER REQUIREMENTS			
Meter Type		Estimated Monthly Utility Usage Amount	
Voltage		Total Amperage	

FIBER / BACKHAUL					
Fiber Installation Status		Fiber Provider			
Cable Type		Number of Points of Entry		Conduit/Riser Size (in inches)	

STRUCTURAL ANALYSIS DETAILS			
Structural Hardcopies Required?	If yes, how many?	If wet seals required, please provide address:	

ADDITIONAL COMMENTS

T-Mobile

WIRELESS COMMUNICATIONS FACILITY

BROOKFIELD/JUNCTION RD

SITE ID: CT11196A

37 CARMEN HILL ROAD

BROOKFIELD, CT 06804

GENERAL NOTES

1. ALL WORK SHALL BE IN ACCORDANCE WITH THE 2012 INTERNATIONAL BUILDING CODE AS MODIFIED BY THE 2016 CONNECTICUT SUPPLEMENT, INCLUDING THE TIA/EIA-222 REVISION "G" "STRUCTURAL STANDARDS FOR STEEL ANTENNA TOWERS AND SUPPORTING STRUCTURES." 2016 CONNECTICUT FIRE SAFETY CODE, NATIONAL ELECTRICAL CODE AND LOCAL CODES.
2. CONTRACTOR SHALL REVIEW ALL DRAWINGS AND SPECIFICATIONS IN THE CONTRACT DOCUMENT SET. CONTRACTOR SHALL COORDINATE ALL WORK SHOWN IN THE SET OF DRAWINGS. THE CONTRACTOR SHALL PROVIDE A COMPLETE SET OF DRAWINGS TO ALL SUBCONTRACTORS AND ALL RELATED PARTIES. THE SUBCONTRACTORS SHALL EXAMINE ALL THE DRAWINGS AND SPECIFICATIONS FOR THE INFORMATION THAT AFFECTS THEIR WORK.
3. CONTRACTOR SHALL PROVIDE A COMPLETE BUILD-OUT WITH ALL FINISHES, STRUCTURAL, MECHANICAL, AND ELECTRICAL COMPONENTS AND PROVIDE ALL ITEMS AS SHOWN OR INDICATED ON THE DRAWINGS OR IN THE WRITTEN SPECIFICATIONS.
4. CONTRACTOR SHALL FURNISH ALL MATERIAL, LABOR AND EQUIPMENT TO COMPLETE THE WORK AND FURNISH A COMPLETED JOB ALL IN ACCORDANCE WITH LOCAL AND STATE GOVERNING AUTHORITIES AND OTHER AUTHORITIES HAVING LAWFUL JURISDICTION OVER THE WORK.
5. CONTRACTOR SHALL SECURE AND PAY FOR ALL PERMITS AND ALL INSPECTIONS REQUIRED AND SHALL ALSO PAY FEES REQUIRED FOR THE GENERAL CONSTRUCTION, PLUMBING, ELECTRICAL AND HVAC. PERMITS SHALL BE PAID FOR BY THE RESPECTIVE SUBCONTRACTORS.
6. CONTRACTOR SHALL MAINTAIN A CURRENT SET OF DRAWINGS AND SPECIFICATIONS ON SITE AT ALL TIMES AND INSURE DISTRIBUTION OF NEW DRAWINGS TO SUBCONTRACTORS AND OTHER RELEVANT PARTIES AS SOON AS THEY ARE MADE AVAILABLE. ALL OLD DRAWINGS SHALL BE MARKED VOID AND REMOVED FROM THE CONTRACT AREA. THE CONTRACTOR SHALL FURNISH AN 'AS-BUILT' SET OF DRAWINGS TO OWNER UPON COMPLETION OF PROJECT.
7. LOCATION OF EQUIPMENT, AND WORK SUPPLIED BY OTHERS THAT IS DIAGRAMMATICALLY INDICATED ON THE DRAWINGS SHALL BE DETERMINED BY THE CONTRACTOR. THE CONTRACTOR SHALL DETERMINE LOCATIONS AND DIMENSIONS SUBJECT TO STRUCTURAL CONDITIONS AND WORK OF THE SUBCONTRACTORS.
8. THE CONTRACTOR IS SOLELY RESPONSIBLE TO DETERMINE CONSTRUCTION PROCEDURE AND SEQUENCE, AND TO ENSURE THE SAFETY OF THE EXISTING STRUCTURES AND ITS COMPONENT PARTS DURING CONSTRUCTION. THIS INCLUDES THE ADDITION OF WHATEVER SHORING, BRACING, UNDERPINNING, ETC. THAT MAY BE NECESSARY.
9. DRAWINGS INDICATE THE MINIMUM STANDARDS, BUT IF ANY WORK SHOULD BE INDICATED TO BE SUBSTANDARD TO ANY ORDINANCES, LAWS, CODES, RULES, OR REGULATIONS BEARING ON THE WORK, THE CONTRACTOR SHALL INCLUDE IN HIS WORK AND SHALL EXECUTE THE WORK CORRECTLY IN ACCORDANCE WITH SUCH ORDINANCES, LAWS, CODES, RULES OR REGULATIONS WITH NO INCREASE IN COSTS.
10. ALL UTILITY WORK SHALL BE IN ACCORDANCE WITH LOCAL UTILITY COMPANY REQUIREMENTS AND SPECIFICATIONS.
11. ALL EQUIPMENT AND PRODUCTS PURCHASED ARE TO BE REVIEWED BY CONTRACTOR AND ALL APPLICABLE SUBCONTRACTORS FOR ANY CONDITION PER MFR.'S RECOMMENDATIONS. CONTRACTOR TO SUPPLY THESE ITEMS AT NO COST TO OWNER OR CONSTRUCTION MANAGER.
12. ANY AND ALL ERRORS, DISCREPANCIES, AND 'MISSED" ITEMS ARE TO BE BROUGHT TO THE ATTENTION OF THE T-MOBILE CONSTRUCTION MANAGER DURING THE BIDDING PROCESS BY THE CONTRACTOR. ALL THESE ITEMS ARE TO BE INCLUDED IN THE BID. NO 'EXTRA' WILL BE ALLOWED FOR MISSED ITEMS.
13. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL ON-SITE SAFETY FROM THE TIME THE JOB IS AWARDED UNTIL ALL WORK IS COMPLETE AND ACCEPTED BY THE OWNER.
14. CONTRACTOR TO REVIEW ALL SHOP DRAWINGS AND SUBMIT COPY TO ENGINEER FOR APPROVAL. DRAWINGS MUST BEAR THE CHECKER'S INITIALS BEFORE SUBMITTING TO THE CONSTRUCTION MANAGER FOR REVIEW.
15. THE CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS, ELEVATIONS, ANGLES, AND EXISTING CONDITIONS AT THE SITE, PRIOR TO FABRICATION AND/OR INSTALLATION OF ANY WORK IN THE CONTRACT AREA.
16. COORDINATION, LAYOUT, FURNISHING AND INSTALLATION OF CONDUIT AND ALL APPURTENANCES REQUIRED FOR PROPER INSTALLATION OF ELECTRICAL AND TELECOMMUNICATION SERVICE SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
17. ALL DAMAGE CAUSED TO ANY EXISTING STRUCTURE SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR WILL BE HELD LIABLE FOR ALL REPAIRS REQUIRED FOR EXISTING STRUCTURES IF DAMAGED DURING CONSTRUCTION ACTIVITIES.
18. THE CONTRACTOR SHALL CONTACT "CALL BEFORE YOU DIG" AT LEAST 48 HOURS PRIOR TO ANY EXCAVATIONS AT 1-800-922-4455. ALL UTILITIES SHALL BE IDENTIFIED AND CLEARLY MARKED. CONTRACTOR SHALL MAINTAIN AND PROTECT MARKED UTILITIES THROUGHOUT PROJECT COMPLETION.
19. CONTRACTOR SHALL COMPLY WITH OWNERS ENVIRONMENTAL ENGINEER ON ALL METHODS AND PROVISIONS FOR ALL EXCAVATION ACTIVITIES INCLUDING SOIL DISPOSAL. ALL BACKFILL MATERIALS TO BE PROVIDED BY THE CONTRACTOR.

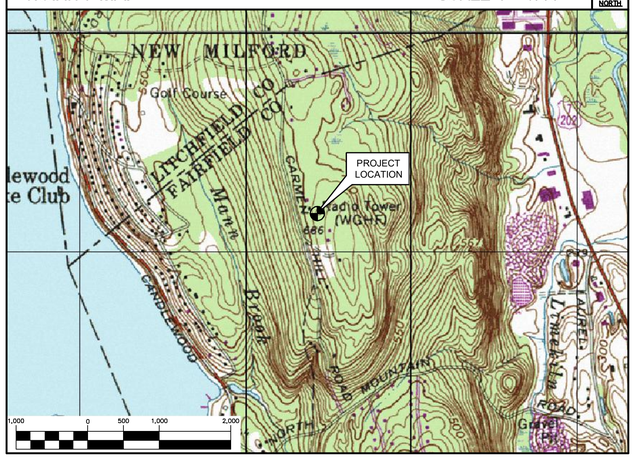
SITE DIRECTIONS

FROM: 35 GRIFFIN ROAD SOUTH, BLOOMFIELD, CT 06002 **TO:** 37 CARMEN HILL RD, BROOKFIELD, CT 06804

1.	HEAD NORTHEAST ON GRIFFIN ROAD S. TOWARD NEWBERRY RD.	0.6 MI.
2.	TURN RIGHT ONTO DAY HILL RD.	3.6 MI.
3.	USE THE RIGHT LANE TO MERGE ONTO I-91 S VIA THE RAMP TO HARTFORD.	0.4 MI.
4.	MERGE ONTO I-91 S.	6.9 MI.
5.	TAKE EXIT 32A-32B FOR I-84 W TOWARD WATERBURY.	50.5 MI.
6.	TAKE EXIT 9 FOR CT-25 TOWARD BROOKFIELD.	0.3 MI.
7.	TURN RIGHT ONTO CT-25 N.	5.2 MI.
8.	CONTINUE STRAIGHT ONTO STATION RD.	0.2 MI.
9.	TURN RIGHT ONTO LAUREL HILL RD.	0.2 MI.
10.	SLIGHT LEFT ONTO N MOUNTAIN RD.	0.8 MI.
11.	TURN RIGHT ONTO CARMEN HILL RD.	0.4 MI.
12.	TURN RIGHT ONTO GRANITE DR.	0.3 MI.

VICINITY MAP

SCALE: 1" = 1000'



T-MOBILE RF CONFIGURATION

67D04B_1QP+1OP

PROJECT SUMMARY

1. THE PROPOSED SCOPE OF WORK CONSISTS OF A MODIFICATION TO THE EXISTING UNMANNED TELECOMMUNICATIONS FACILITY INCLUDING THE FOLLOWING:
   - A. REMOVE AND REPLACE EXISTING POSITION TWO (2) ANTENNA, TYPICAL OF (3)/(1) PER SECTOR, WITH (3) NEW RFS ANTENNAS.
   - B. REMOVE EXISTING (3) RRUS-11 B12 RRUs MOUNTED ON RACK AT GRADE.
   - C. INSTALL (3) ERICSSON RADIO 4449 B71 B12 RRUs ON TOWER MOUNTS.
   - D. INSTALL (1) 6X12 HYBRID CABLE FROM CABINET TO ANTENNAS.

PROJECT INFORMATION

SITE NAME:	BROOKFIELD/JUNCTION RD
SITE ID:	CT11196A
SITE ADDRESS:	37 CARMEN HILL RD BROOKFIELD, CT 06804
APPLICANT:	T-MOBILE NORTHEAST, LLC 35 GRIFFIN ROAD SOUTH BLOOMFIELD, CT 06002
CONTACT PERSON:	DAN REID (PROJECT MANAGER) TRANSCEND WIRELESS, LLC (203) 592-8291
ENGINEER:	CENTEK ENGINEERING, INC. 63-2 NORTH BRANFORD RD. BRANFORD, CT 06405
PROJECT COORDINATES:	LATITUDE: 41°-29'-36.35" N LONGITUDE: 73°-25'-43.43" W GROUND ELEVATION: 722'± AMSL SITE COORDINATES AND GROUND ELEVATION REFERENCED FROM GOOGLE EARTH.

SHEET INDEX

SHT. NO.	DESCRIPTION	REV.
T-1	TITLE SHEET	0
N-1	DESIGN BASIS AND SITE NOTES	0
C-1	SITE LOCATION PLAN	0
C-2	COMPOUND PLAN, ELEVATION AND ANTENNA MOUNTING CONFIG.	0
E-1	TYPICAL ELECTRICAL DETAILS	0

REV.	DATE	DRAWN BY	CHK'D BY	DESCRIPTION
1	07/10/18	LGL	TJL	ISSUED FOR CONSTRUCTION
0	07/9/18	LGL	TJL	ISSUED FOR CONSTRUCTION

PROFESSIONAL ENGINEER SEAL

STATE OF CONNECTICUT — THOMAS J. LYNCH, JR. — LICENSED PROFESSIONAL ENGINEER

T-Mobile

Transcend Wireless

CENTEK engineering
Centered on Solutions℠
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T-MOBILE NORTHEAST LLC
WIRELESS COMMUNICATIONS FACILITY
BROOKFIELD/JUNCTION RD
SITE ID: CT11196A
37 CARMEN HILL RD
BROOKFIELD, CT 06804

DATE: 06/07/18
SCALE: AS NOTED
JOB NO. 18058.42

TITLE SHEET

T-1

Sheet No. 1 of 5

DESIGN BASIS:

GOVERNING CODE: 2012 INTERNATIONAL BUILDING (IBC) AS MODIFIED BY THE 2016 CT STATE BUILDING CODE AND AMENDMENTS.

1. DESIGN CRITERIA:

- RISK CATEGORY: II (BASED ON IBC TABLE 1604.5)
- NOMINAL DESIGN SPEED (OTHER STRUCTURE): 93 MPH (Vasd) (EXPOSURE C/IMPORTANCE FACTOR 1.0 BASED ON ASCE 7-10) PER 2012 INTERNATIONAL BUILDING CODE (IBC) AS MODIFIED BY THE 2016 CONNECTICUT STATE BUILDING CODE.
- SEISMIC LOAD (DOES NOT CONTROL): PER ASCE 7-10 MINIMUM DESIGN LOADS FOR BUILDING AND OTHER STRUCTURES.

GENERAL NOTES:

1. ALL CONSTRUCTION SHALL BE IN COMPLIANCE WITH THE GOVERNING BUILDING CODE.
2. DRAWINGS INDICATE THE MINIMUM STANDARDS, BUT IF ANY WORK SHOULD BE INDICATED TO BE SUBSTANDARD TO ANY ORDINANCES, LAWS, CODES, RULES, OR REGULATIONS BEARING ON THE WORK, THE CONTRACTOR SHALL INCLUDE IN HIS WORK AND SHALL EXECUTE THE WORK CORRECTLY IN ACCORDANCE WITH SUCH ORDINANCES, LAWS, CODES, RULES OR REGULATIONS WITH NO INCREASE IN COSTS.
3. BEFORE BEGINNING THE WORK, THE CONTRACTOR IS RESPONSIBLE FOR MAKING SUCH INVESTIGATIONS CONCERNING PHYSICAL CONDITIONS (SURFACE AND SUBSURFACE) AT OR CONTIGUOUS TO THE SITE WHICH MAY AFFECT PERFORMANCE AND COST OF THE WORK.
4. DIMENSIONS AND DETAILS SHALL BE CHECKED AGAINST EXISTING FIELD CONDITIONS.
5. THE CONTRACTOR SHALL VERIFY AND COORDINATE THE SIZE AND LOCATION OF ALL OPENINGS, SLEEVES AND ANCHOR BOLTS AS REQUIRED BY ALL TRADES.
6. ALL DIMENSIONS, ELEVATIONS, AND OTHER REFERENCES TO EXISTING STRUCTURES, SURFACE, AND SUBSURFACE CONDITIONS ARE APPROXIMATE. NO GUARANTEE IS MADE FOR THE ACCURACY OR COMPLETENESS OF THE INFORMATION SHOWN. THE CONTRACTOR SHALL VERIFY AND COORDINATE ALL DIMENSIONS, ELEVATIONS, ANGLES WITH EXISTING CONDITIONS AND WITH ARCHITECTURAL AND SITE DRAWINGS BEFORE PROCEEDING WITH ANY WORK.
7. AS THE WORK PROGRESSES, THE CONTRACTOR SHALL NOTIFY THE OWNER OF ANY CONDITIONS WHICH ARE IN CONFLICT OR OTHERWISE NOT CONSISTENT WITH THE CONSTRUCTION DOCUMENTS AND SHALL NOT PROCEED WITH SUCH WORK UNTIL THE CONFLICT IS SATISFACTORILY RESOLVED.
8. THE CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE SAFETY CODES AND REGULATIONS DURING ALL PHASES OF CONSTRUCTION. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR PROVIDING AND MAINTAINING ADEQUATE SHORING, BRACING, AND BARRICADES AS MAY BE REQUIRED FOR THE PROTECTION OF EXISTING PROPERTY, CONSTRUCTION WORKERS, AND FOR PUBLIC SAFETY.
9. THE CONTRACTOR IS SOLELY RESPONSIBLE TO DETERMINE CONSTRUCTION PROCEDURE AND SEQUENCE, AND TO ENSURE THE SAFETY OF THE EXISTING STRUCTURES AND ITS COMPONENT PARTS DURING CONSTRUCTION. THIS INCLUDES THE ADDITION OF WHATEVER SHORING, BRACING, UNDERPINNING, ETC. THAT MAY BE NECESSARY. MAINTAIN EXISTING SITE OPERATIONS, COORDINATE WORK WITH NORTHEAST UTILITIES
10. THE STRUCTURE IS DESIGNED TO BE SELF-SUPPORTING AND STABLE AFTER FOUNDATION REMEDIATION WORK IS COMPLETE. IT IS THE CONTRACTOR'S SOLE RESPONSIBILITY TO DETERMINE ERECTION PROCEDURE AND SEQUENCE AND TO ENSURE THE SAFETY OF THE STRUCTURE AND ITS COMPONENT PARTS DURING ERECTION. THIS INCLUDES THE ADDITION OF WHATEVER SHORING, TEMPORARY BRACING, GUYS OR TIEDOWNS, WHICH MIGHT BE NECESSARY.
11. ALL DAMAGE CAUSED TO ANY EXISTING STRUCTURE SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR WILL BE HELD LIABLE FOR ALL REPAIRS REQUIRED FOR EXISTING STRUCTURES IF DAMAGED DURING CONSTRUCTION ACTIVITIES.
12. SHOP DRAWINGS, CONCRETE MIX DESIGNS, TEST REPORTS, AND OTHER SUBMITTALS PERTAINING TO STRUCTURAL WORK SHALL BE FORWARDED TO THE OWNER FOR REVIEW BEFORE FABRICATION AND/OR INSTALLATION IS MADE. SHOP DRAWINGS SHALL INCLUDE ERECTION DRAWINGS AND COMPLETE DETAILS OF CONNECTIONS AS WELL AS MANUFACTURER'S SPECIFICATION DATA WHERE APPROPRIATE. SHOP DRAWINGS SHALL BE CHECKED BY THE CONTRACTOR AND BEAR THE CHECKER'S INITIALS BEFORE BEING SUBMITTED FOR REVIEW.
13. NO DRILLING WELDING OR TAPING ON EVERSOURCE OWNED EQUIPMENT.
14. REFER TO DRAWING T1 FOR ADDITIONAL NOTES AND REQUIREMENTS.

STRUCTURAL STEEL

1. ALL STRUCTURAL STEEL IS DESIGNED BY ALLOWABLE STRESS DESIGN (ASD)

   A. STRUCTURAL STEEL (W SHAPES)---ASTM A992 (FY = 50 KSI)
   B. STRUCTURAL STEEL (OTHER SHAPES)---ASTM A36 (FY = 36 KSI)
   C. STRUCTURAL HSS (RECTANGULAR SHAPES)---ASTM A500 GRADE B, (FY = 46 KSI)
   D. STRUCTURAL HSS (ROUND SHAPES)---ASTM A500 GRADE B, (FY = 42 KSI)
   E. PIPE---ASTM A53 (FY = 35 KSI)
   F. CONNECTION BOLTS---ASTM A325-N
   G. U-BOLTS---ASTM A36
   H. ANCHOR RODS---ASTM F 1554
   I. WELDING ELECTRODE---ASTM E 70XX

2. CONTRACTOR TO REVIEW ALL SHOP DRAWINGS AND SUBMIT COPY TO ENGINEER FOR APPROVAL. DRAWINGS MUST BEAR THE CHECKER'S INITIALS BEFORE SUBMITTING TO THE ENGINEER FOR REVIEW. SHOP DRAWINGS SHALL INCLUDE THE FOLLOWING: SECTION PROFILES, SIZES, CONNECTION ATTACHMENTS, REINFORCING, ANCHORAGE, SIZE AND TYPE OF FASTENERS AND ACCESSORIES. INCLUDE ERECTION DRAWINGS, ELEVATIONS AND DETAILS.
3. STRUCTURAL STEEL SHALL BE DETAILED, FABRICATED AND ERECTED IN ACCORDANCE WITH THE LATEST PROVISIONS OF AISC MANUAL OF STEEL CONSTRUCTION.
4. PROVIDE ALL PLATES, CLIP ANGLES, CLOSURE PIECES, STRAP ANCHORS, MISCELLANEOUS PIECES AND HOLES REQUIRED TO COMPLETE THE STRUCTURE.
5. FIT AND SHOP ASSEMBLE FABRICATIONS IN THE LARGEST PRACTICAL SECTIONS FOR DELIVERY TO SITE.
6. INSTALL FABRICATIONS PLUMB AND LEVEL, ACCURATELY FITTED, AND FREE FROM DISTORTIONS OR DEFECTS.
7. AFTER ERECTION OF STRUCTURES, TOUCHUP ALL WELDS, ABRASIONS AND NON-GALVANIZED SURFACES WITH A 95% ORGANIC ZINC RICH PAINT IN ACCORDANCE WITH ASTM 780.
8. ALL STEEL MATERIAL (EXPOSED TO WEATHER) SHALL BE GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH ASTM A123 "ZINC (HOT DIPPED GALVANIZED) COATINGS" ON IRONS AND STEEL PRODUCTS.
9. ALL BOLTS, ANCHORS AND MISCELLANEOUS HARDWARE SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A153 "ZINC COATING (HOT-DIP) ON IRON AND STEEL HARDWARE".
10. THE ENGINEER SHALL BE NOTIFIED OF ANY INCORRECTLY FABRICATED, DAMAGED OR OTHERWISE MISFITTING OR NON CONFORMING MATERIALS OR CONDITIONS TO REMEDIAL OR CORRECTIVE ACTION. ANY SUCH ACTION SHALL REQUIRE ENGINEER REVIEW.
11. CONNECTION ANGLES SHALL HAVE A MINIMUM THICKNESS OF 1/4 INCHES.
12. STRUCTURAL CONNECTION BOLTS SHALL CONFORM TO ASTM A325. ALL BOLTS SHALL BE 3/4" DIAMETER MINIMUM AND SHALL HAVE A MINIMUM OF TWO BOLTS, UNLESS OTHERWISE ON THE DRAWINGS.
13. LOCK WASHER ARE NOT PERMITTED FOR A325 STEEL ASSEMBLIES.
14. SHOP CONNECTIONS SHALL BE WELDED OR HIGH STRENGTH BOLTED.
15. MILL BEARING ENDS OF COLUMNS, STIFFENERS, AND OTHER BEARING SURFACES TO TRANSFER LOAD OVER ENTIRE CROSS SECTION.
16. FABRICATE BEAMS WITH MILL CAMBER UP.
17. LEVEL AND PLUMB INDIVIDUAL MEMBERS OF THE STRUCTURE TO AN ACCURACY OF 1:500, BUT NOT TO EXCEED 1/4" IN THE FULL HEIGHT OF THE COLUMN.
18. COMMENCEMENT OF STRUCTURAL STEEL WORK WITHOUT NOTIFYING THE ENGINEER OF ANY DISCREPANCIES WILL BE CONSIDERED ACCEPTANCE OF PRECEDING WORK.
19. INSPECTION AND TESTING OF ALL WELDING AND HIGH STRENGTH BOLTING SHALL BE PERFORMED BY AN INDEPENDENT TESTING LABORATORY.
20. FOUR COPIES OF ALL INSPECTION TEST REPORTS SHALL BE SUBMITTED TO THE ENGINEER WITHIN TEN (10) WORKING DAYS OF THE DATE OF INSPECTION.

REV.	DATE	DRAWN BY	CHK'D BY	DESCRIPTION
0	07/9/18	LGL	TJL	ISSUED FOR CONSTRUCTION
1	07/10/18	LGL	TJL	ISSUED FOR CONSTRUCTION

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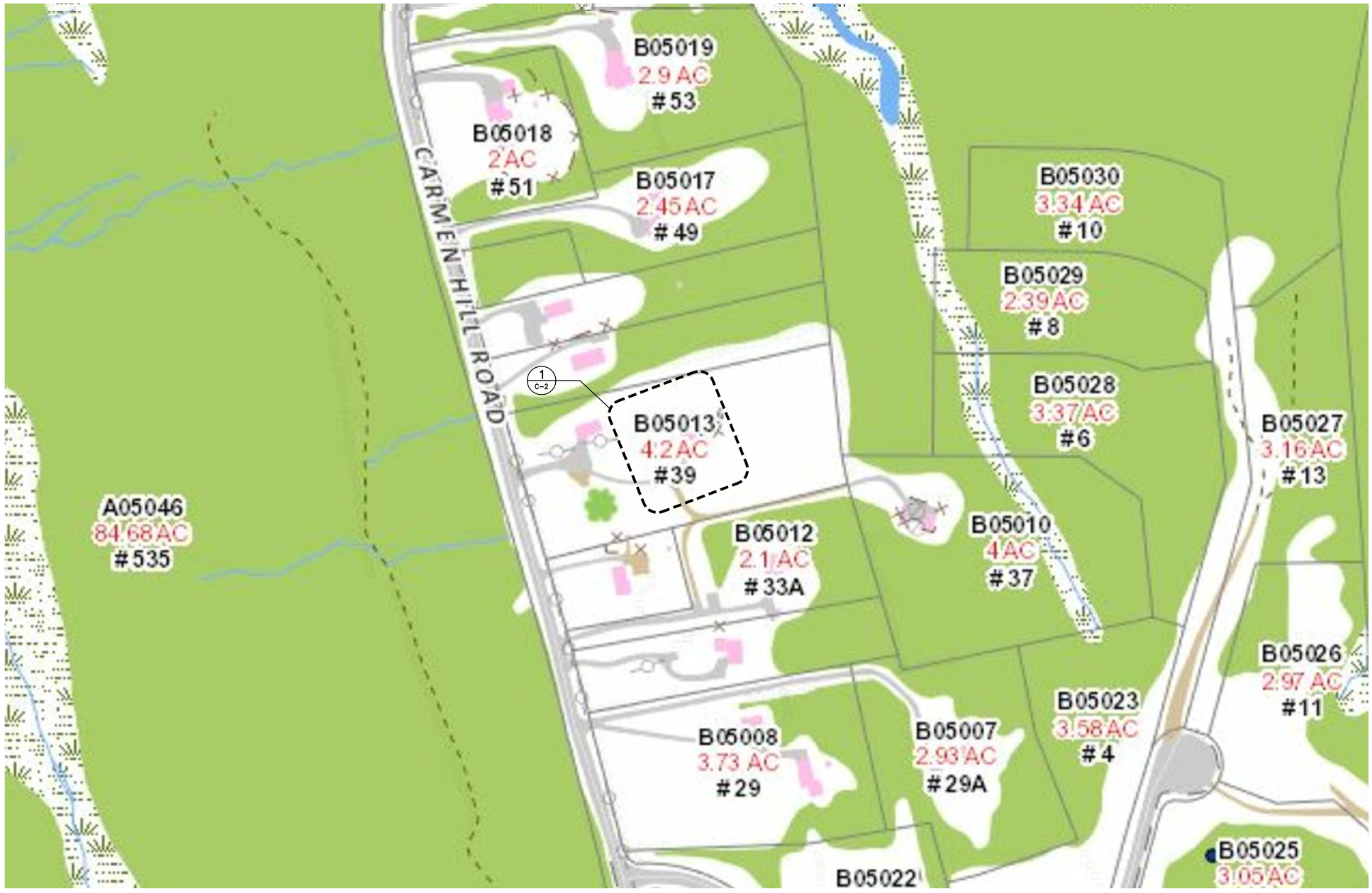
DATE:	06/07/18
SCALE:	AS NOTED
JOB NO.	18058.42

DESIGN BASIS AND SITE NOTES

N-1



1 / C-1 SITE LOCATION PLAN
SCALE: 1" = 100'

APPROX. NORTH

GRAPHIC SCALE
100 0 50 100 200 400
(IN FEET)
1 inch = 100 ft.

REV.	DATE	DRAWN BY	CHK'D BY	DESCRIPTION
1	07/10/18	LGL	TJL	ISSUED FOR CONSTRUCTION
0	07/9/18	LGL	TJL	ISSUED FOR CONSTRUCTION

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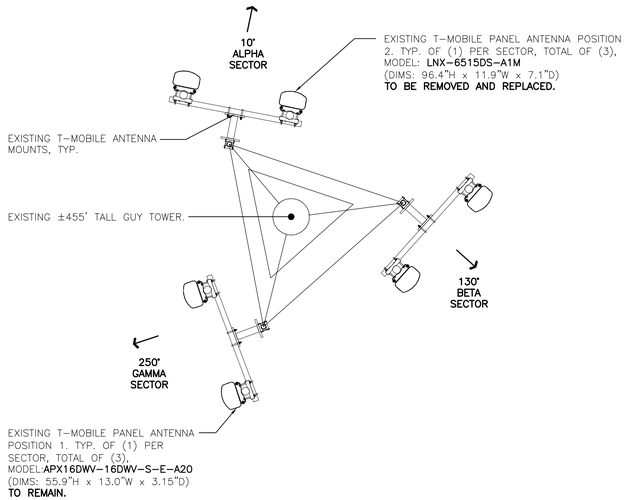
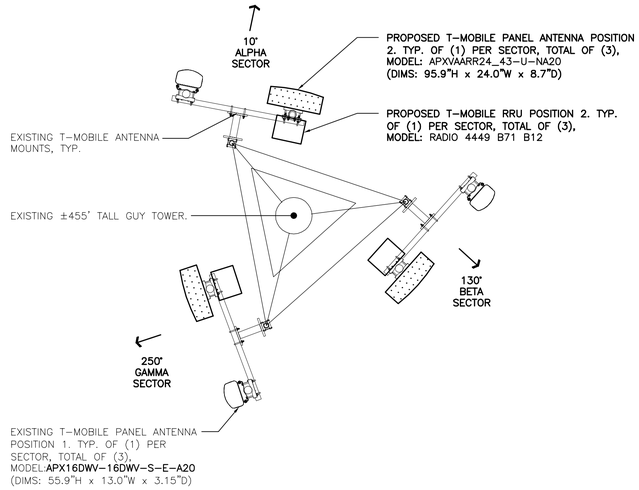
SITE LOCATION PLAN

C-1

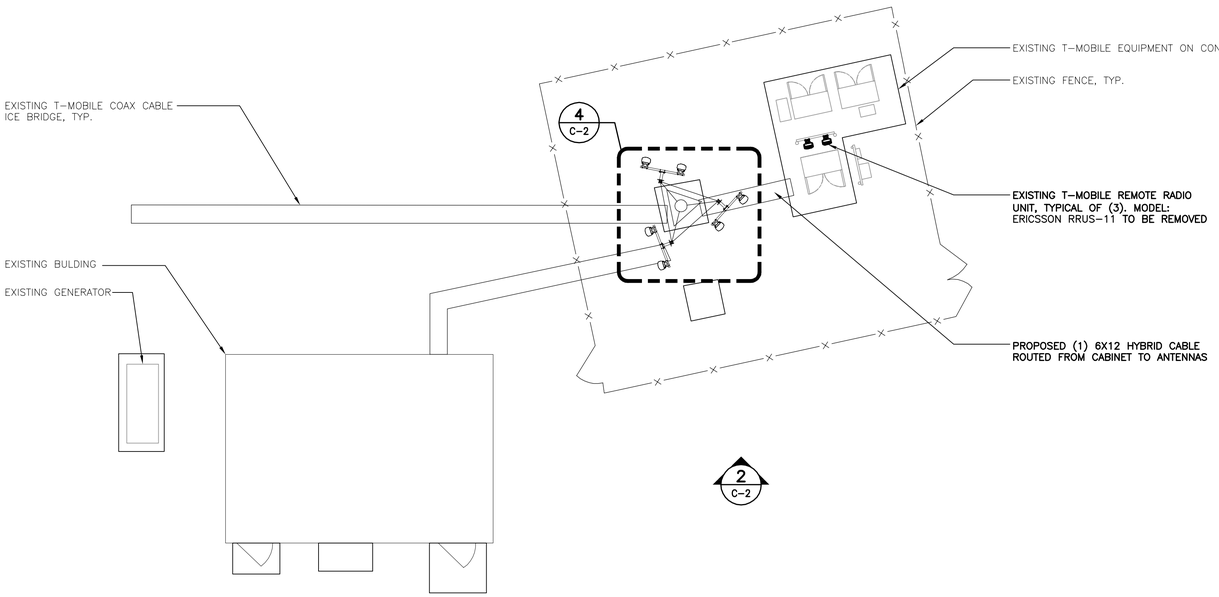
Sheet No. 3 of 5



3 C-2 **EXISTING ANTENNA MOUNTING CONFIGURATION**
SCALE: 3/8" = 1' **280' ELEVATION** TRUE NORTH

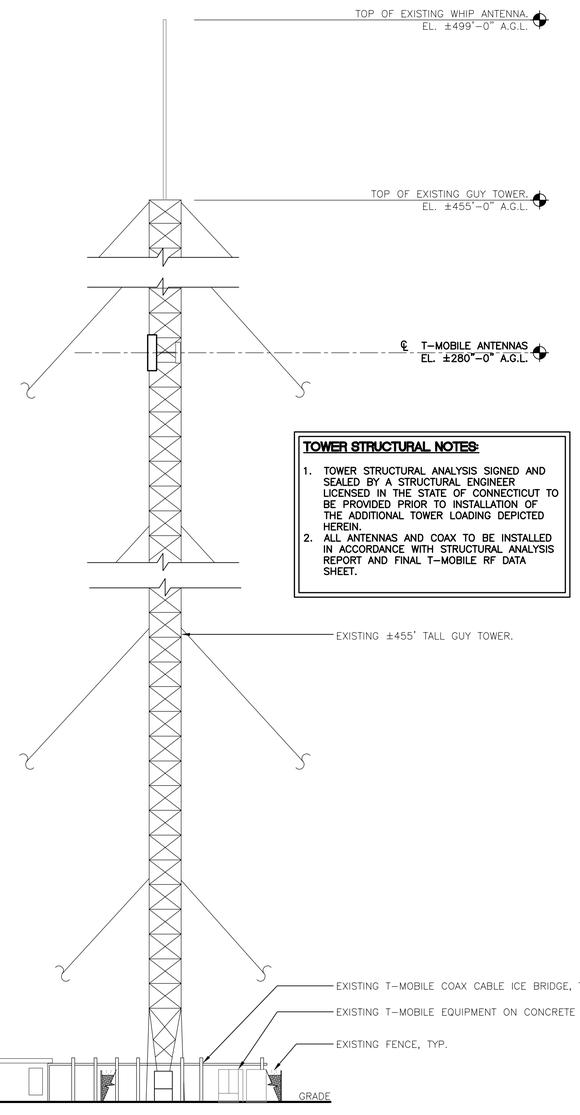


4 C-2 **PROPOSED ANTENNA MOUNTING CONFIGURATION**
SCALE: 3/8" = 1' **240' ELEVATION** TRUE NORTH



1 C-2 **COMPOUND PLAN**
SCALE: 1" = 10' TRUE NORTH

GRAPHIC SCALE
10 0 5 10 20 40
(IN FEET)
1 inch = 10 ft.



TOWER STRUCTURAL NOTES:

1. TOWER STRUCTURAL ANALYSIS SIGNED AND SEALED BY A STRUCTURAL ENGINEER LICENSED IN THE STATE OF CONNECTICUT TO BE PROVIDED PRIOR TO INSTALLATION OF THE ADDITIONAL TOWER LOADING DEPICTED HEREIN.
2. ALL ANTENNAS AND COAX TO BE INSTALLED IN ACCORDANCE WITH STRUCTURAL ANALYSIS REPORT AND FINAL T-MOBILE RF DATA SHEET.

2 C-2 **TOWER ELEVATION**
SCALE: 1" = 10'

GRAPHIC SCALE
10 0 5 10 20 40
(IN FEET)
1 inch = 10 ft.

REV.	DATE	DRAWN BY	CHK'D BY	DESCRIPTION
0	07/9/18	LGL	TJL	ISSUED FOR CONSTRUCTION
1	07/10/18	LGL	TJL	ISSUED FOR CONSTRUCTION

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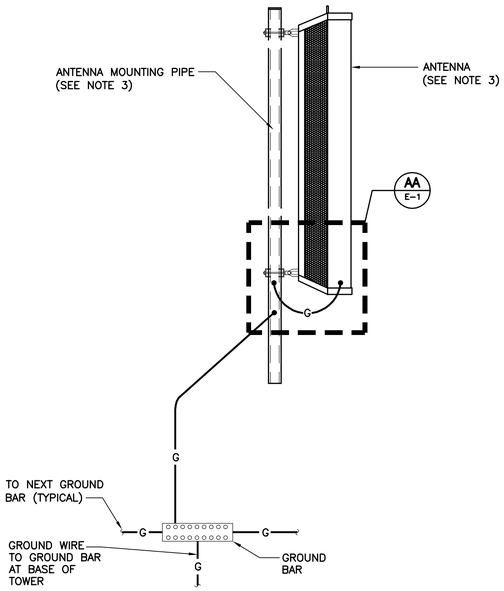
DATE:	06/07/18
SCALE:	AS NOTED
JOB NO.	18058.42

COMPOUND PLAN, ELEVATION AND ANTENNA MOUNTING CONFIG.

C-2

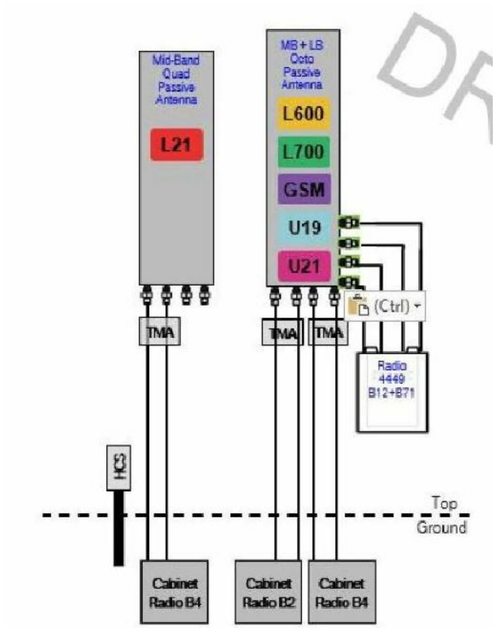
Sheet No. 4 of 5



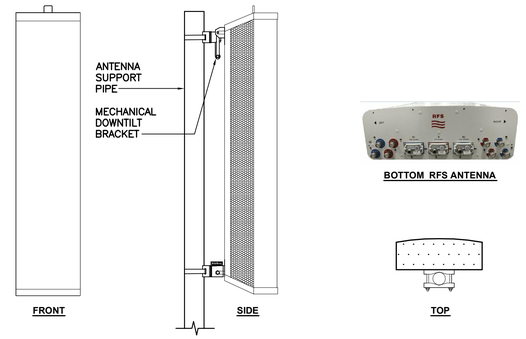
NOTES:

1. BOND COAXIAL CABLE GROUND KITS TO EACH OWNER'S GROUND BAR ALONG ENTIRE COAX RUN FROM ANTENNA TO SHELTER.
2. BOND ALL EQUIPMENT TO GROUND PER NEC AND MANUFACTURERS SPECIFICATIONS.
3. DETAIL IS TYPICAL FOR ALL ANTENNA SECTORS, INCLUDING GPS ANTENNA.

1 / E-1 **TYPICAL ANTENNA GROUNDING DETAIL**
SCALE: NONE

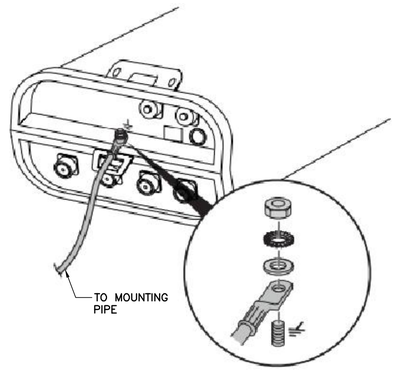


2 / E-1 **PROPOSED PLUMBING DIAGRAM**
SCALE: NONE

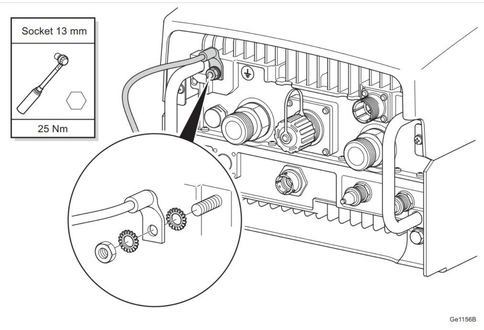


ALPHA/BETA/GAMMA ANTENNA		
EQUIPMENT	DIMENSIONS	WEIGHT
MAKE: RFS MODEL: APXVAARR24_43-U-NA20	95.9"L x 24.0"W x 8.7"D	153 LBS.

3 / E-1 **PROPOSED ANTENNA DETAIL**
SCALE: NONE



AA / E-1 **TYPICAL ANTENNA GROUNDING DETAIL**
SCALE: NONE



4 / E-1 **TYPICAL RRU GROUNDING DETAIL**
NOT TO SCALE

ISOMETRIC VIEW

RRU (REMOTE RADIO UNIT)			
EQUIPMENT	DIMENSIONS	WEIGHT	CLEARANCES
MAKE: ERICSSON MODEL: RADIO 4449 B71B12	14.9"L x 13.2"W x 10.4"D	74 LBS.	ABOVE: 16" MIN. BELOW: 12" MIN. FRONT: 36" MIN.

NOTES:
1. CONTRACTOR TO COORDINATE FINAL EQUIPMENT MODEL SELECTION WITH T-MOBILE CONSTRUCTION MANAGER PRIOR TO ORDERING.

5 / E-1 **PROPOSED RRU DETAIL**
SCALE: NONE

REV.	DATE	DRAWN BY	CHK'D BY	DESCRIPTION
1	07/10/18	LGL	TJL	ISSUED FOR CONSTRUCTION
0	07/9/18	LGL	TJL	ISSUED FOR CONSTRUCTION

PROFESSIONAL ENGINEER SEAL

T-Mobile
Transcend Wireless

CENTEK engineering
Centered on Solutions℠
(203) 488-0580
(203) 488-8587 Fax
63-2 North Branford Road
Branford, CT 06405
www.CentekEng.com

T-MOBILE NORTHEAST LLC
WIRELESS COMMUNICATIONS FACILITY
BROOKFIELD/JUNCTION RD
SITE ID: CT11196A
37 CARMEN HILL RD
BROOKFIELD, CT 06804

DATE: 06/07/18
SCALE: AS NOTED
JOB NO. 18058.42

TYPICAL ELECTRICAL DETAILS

E-1

Sheet No. 5 of 5

Kyle Richers

From: UPS Quantum View <pkginfo@ups.com>
Sent: Monday, September 24, 2018 10:12 AM
To: krichers@transcendwireless.com
Subject: UPS Delivery Notification, Reference Number 1: CT11196A tower owner

Your package has been delivered.

Delivery Date: Monday, 09/24/2018
Delivery Time: 10:05 AM

At the request of TRANSCEND WIRELESS this notice alerts you that the status of the shipment listed below has changed.

Shipment Detail

Tracking Number:	1ZV257424295132528
Ship To:	Vertical Bridge Holdings 750 PARK OF COMMERCE DR ROOM 200 BOCA RATON, FL 33487 US
UPS Service:	UPS GROUND
Number of Packages:	1
Weight:	1.0 LBS
Delivery Location:	MAIL ROOM DAMEUS
Signature Required:	A signature is required for package delivery
Reference Number 1:	CT11196A tower owner

Download the UPS mobile app

Kyle Richers

From: UPS Quantum View <pkginfo@ups.com>
Sent: Friday, September 21, 2018 11:12 AM
To: krichers@transcendwireless.com
Subject: UPS Delivery Notification, Reference Number 1: CT11196A prop owner

Your package has been delivered.

Delivery Date: Friday, 09/21/2018
Delivery Time: 11:04 AM

At the request of TRANSCEND WIRELESS this notice alerts you that the status of the shipment listed below has changed.

Shipment Detail

Tracking Number:	1ZV257424295082510
Ship To:	American Tower Corporation 10 PRESIDENTIAL WAY WOBURN, MA 01801 US
UPS Service:	UPS GROUND
Number of Packages:	1
Weight:	1.0 LBS
Delivery Location:	RECEIVER ANCRI
Signature Required:	A signature is required for package delivery
Reference Number 1:	CT11196A prop owner

Download the UPS mobile app

Kyle Richers

From: UPS Quantum View <pkginfo@ups.com>
Sent: Friday, September 21, 2018 9:27 AM
To: krichers@transcendwireless.com
Subject: UPS Delivery Notification, Reference Number 1: CT11196A to ZO

Your package has been delivered.

Delivery Date: Friday, 09/21/2018
Delivery Time: 09:24 AM

At the request of TRANSCEND WIRELESS this notice alerts you that the status of the shipment listed below has changed.

Shipment Detail

Tracking Number:	1ZV257424295292543
Ship To:	Alice Dew Town of Brookfield 100 POCONO RD BROOKFIELD, CT 06804 US
UPS Service:	UPS GROUND
Number of Packages:	1
Weight:	1.0 LBS
Delivery Location:	FRONT DESK TERRI
Signature Required:	A signature is required for package delivery
Reference Number 1:	CT11196A to ZO

Download the UPS mobile app

Kyle Richers

From: UPS Quantum View <pkginfo@ups.com>
Sent: Friday, September 21, 2018 9:27 AM
To: krichers@transcendwireless.com
Subject: UPS Delivery Notification, Reference Number 1: CT11196A to FS

Your package has been delivered.

Delivery Date: Friday, 09/21/2018
Delivery Time: 09:24 AM

At the request of TRANSCEND WIRELESS this notice alerts you that the status of the shipment listed below has changed.

Shipment Detail

Tracking Number:	1ZV257424295202532
Ship To:	Stephen Dunn Town of Brookfield 100 POCONO RD BROOKFIELD, CT 06804 US
UPS Service:	UPS GROUND
Number of Packages:	1
Weight:	1.0 LBS
Delivery Location:	FRONT DESK TERRI
Signature Required:	A signature is required for package delivery
Reference Number 1:	CT11196A to FS

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