EMPIRE telecom
A QualTek Company

September 26, 2016

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

RE: AT&T Wireless NOTICE OF EXEMPT MODIFICATION
695 Old Colchester Road, Montville, CT 06382

Dear Ms. Bachman:

Enclosed please find and original and two (2) copies of a Notice of Exempt Modification including drawings and a check in the amount of six hundred twenty five ($625.00) for the filing fee. In addition, I have included a single copy of each notification letter mailed this day to the municipality, and to the owner of both the property and the tower.

I will submit copies of the Narrative, the Structural Analysis and the RF table to you via e mail within 72 hours of mailing this package.

Please feel free to contact me with any questions or comments. Thank you for your kind cooperation in this matter.

Respectfully submitted,

Jack Andrews
Zoning Manager, Empire Telecom
o/b/o AT&T Wireless
10130 Donleigh Drive
Columbia, MD 21046
443-677-0144
jandrews@empiretelecomm.com

Enclosures

EMPIRE telecom
A QualiTek Company

Jack Andrews
Zoning Manager, Empire Telecom
o/b/o AT&T Wireless
10130 Donleigh Drive
Columbia, MD 21046
443-677-0144
jandrews@empiretelecomm.com

September 26, 2016

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

NOTICE OF EXEMPT MODIFICATION

695 Old Colchester Road, Montville, CT 06382

Lat: 41-27-11.07 (41.453075)
Long. 72-09-14.48 (-72.15402222)

Dear Ms. Bachman:

AT&T Wireless currently maintains nine (9) antennas at the 240 foot level of an existing 370 foot tall lattice tower located at 695 Old Colchester Road, in Montville, CT. The tower is owned by Atlantic Broadband, LLC. The property is likewise owned by the Atlantic Broadband, LLC. AT&T Wireless now seeks to replace three (3) existing antennas; and install three (3) new RRUS-32+B2 ("RRU") remote radio units, one (1) RRU per sector, to the 240 foot level of the tower, to be mounted adjacent to the antennas at 240 feet.

The facility was approved by the Connecticut Siting Council in EM-CING-086-121221 on January 4, 2013. Seven (7) conditions were enumerated in the Council's decision: 1) Prior to Installation, the tower reinforcements identified in the Detailed Structural Analysis and Reinforcement Report prepared by URS Corporation dated December 5, 2012, and stamped by Richard Sambor shall be implemented; 2) not more than 45 days following completion of the antenna installation, a signed letter from a Professional Engineer duly licensed in the State of Connecticut shall be submitted to the Council to certify that the recommended modifications have been completed and that the tower does not exceed 100 percent of the post construction structural rating; 3)) any deviation from the modification as specified in the Notice and supporting documentation shall render the acknowledgement invalid; 4) any material changes to the modification as proposed shall require the filing of a new Notice with the Council; 5) No more than 45 days after the completion of construction the Council shall be notified in writing that the construction has been completed; 6) the validity of the action shall expire one year from the date of the letter; and 7) the applicant may request an extension of time beyond the one year deadline provided that such a request is submitted to the Council not less than 60 days prior to the expiration.

EMPIRE telecom
A QualTek Company

Please accept this letter as notification pursuant to Regulations of Connecticut State Agencies section 16-50j-73 for construction that constitutes an exempt modification pursuant to RCSA section 16-50j-72(b)(2). In accordance with RCSA section 16-50j-73, a copy of this letter and attachments is being sent to the Honorable Ronald K. McDaniel, Mayor of Montville, as well as Atlantic Broadband, LLC, the property owner and the tower owner.

The planned modifications to the facility fall squarely within those activities expressly provided for in RCSA section 50j-72(b)(2).

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

2. The proposed modifications will not require an 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 will exceed state and local limits.

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 modifications 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, AT&T Wireless respectfully submits that the proposed modifications to the above referenced telecommunications facility constitute an exempt modification under RCSA section 16-50j-72(b)(2).

Respectfully submitted,

Jack Andrews
Zoning Manager, Empire Telecom
o/b/o AT&T Wireless
10130 Donleigh Drive
Columbia, MD 21046
443-677-0144
jandrews@empiretelecomm.com

Enclosures

cc: The Honorable Ronald K. McDaniel, Mayor of Montville
Atlantic Broadband, LLC as Tower Owner and Property Owner

EMPIRE telecom
A QualTek Company

September 26, 2016

The Honorable Ronald K. McDaniel, Mayor of Montville
Montville Town Hall, 2nd Floor
310 Norwich-New London Tpke.
Uncasville, CT 06382

RE: AT&T Wireless Modifications to Telecommunication Facility –
695 Old Colchester Road, Montville, CT 06382

Dear Mr. McDaniel:

In order to accommodate technological changes, implement the Uniform Mobile Telecommunications System and enhance system performance in the State of Connecticut, AT&T Wireless ("AT&T") will be changing its equipment configuration at the above referenced telecommunications facility. AT&T Wireless currently maintains nine (9) antennas at the 240 foot level of an existing 370 foot tall lattice tower located at 695 Old Colchester Road, in Montville, CT. The tower is owned by Atlantic Broadband, LLC. The property is likewise owned by the Atlantic Broadband, LLC.

AT&T Wireless now seeks to replace three (3) existing antennas; and install three (3) new RRUS-32+B2 ("RRU") remote radio units, one (1) RRU per sector, to the 240 foot level of the tower, to be mounted adjacent to the antennas at 240 feet.

This letter is intended to serve as the required notice to the municipality. As required by the Regulations of Connecticut State Agencies ("RCSA") section 16-50j-73, the Connecticut Siting Council ("CSC") has been notified of the proposed changes and will review AT&T's proposal. Please accept this letter as notification under RCSA section 16-50j-73 of construction which constitutes an exempt modification pursuant to RCSA section 16-50j-72(b)(2).

1150 First Ave
Suite 600
King of Prussia, PA 19406

EMPIRE telecom
A QualTek Company

The enclosed letter to the CSC fully describes AT&T's proposal for the above referenced site. However, if you have any questions or require any additional information concerning our plans or the CSC procedures, please contact me at 443-677-0144 or contact Melanie Bachman, Acting Executive Director of the CSC at 860-872-2935.

Respectfully submitted,

Jack Andrews
Zoning Manager, Empire Telecom
o/b/o AT&T Wireless
10130 Donleigh Drive
Columbia, MD 21046
443-677-0144
jandrews@empiretelecomm.com

Enclosures

cc: Melanie Bachman, Connecticut Siting Council

EMPIRE telecom
A QualTek Company

Jack Andrews
Zoning Manager, Empire Telecom
o/b/o AT&T Wireless
10130 Donleigh Drive
Columbia, MD 21046
443-677-0144
jandrews@empiretelecomm.com

September 26, 2016

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

NOTICE OF EXEMPT MODIFICATION

695 Old Colchester Road, Montville, CT 06382

Lat: 41-27-11.07 (41.453075)
Long. 72-09-14.48 (-72.15402222)

Dear Ms. Bachman:

AT&T Wireless currently maintains nine (9) antennas at the 240 foot level of an existing 370 foot tall lattice tower located at 695 Old Colchester Road, in Montville, CT. The tower is owned by Atlantic Broadband, LLC. The property is likewise owned by the Atlantic Broadband, LLC. AT&T Wireless now seeks to replace three (3) existing antennas; and install three (3) new RRUS-32+B2 ("RRU") remote radio units, one (1) RRU per sector, to the 240 foot level of the tower, to be mounted adjacent to the antennas at 240 feet.

The facility was approved by the Connecticut Siting Council in EM-CING-086-121221 on January 4, 2013. Seven (7) conditions were enumerated in the Council's decision: 1) Prior to Installation, the tower reinforcements identified in the Detailed Structural Analysis and Reinforcement Report prepared by URS Corporation dated December 5, 2012, and stamped by Richard Sambor shall be implemented; 2) not more than 45 days following completion of the antenna installation, a signed letter from a Professional Engineer duly licensed in the State of Connecticut shall be submitted to the Council to certify that the recommended modifications have been completed and that the tower does not exceed 100 percent of the post construction structural rating; 3)) any deviation from the modification as specified in the Notice and supporting documentation shall render the acknowledgement invalid; 4) any material changes to the modification as proposed shall require the filing of a new Notice with the Council; 5) No more than 45 days after the completion of construction the Council shall be notified in writing that the construction has been completed; 6) the validity of the action shall expire one year from the date of the letter; and 7) the applicant may request an extension of time beyond the one year deadline provided that such a request is submitted to the Council not less than 60 days prior to the expiration.

EMPIRE telecom
A QualTek Company

Please accept this letter as notification pursuant to Regulations of Connecticut State Agencies section 16-50j-73 for construction that constitutes an exempt modification pursuant to RCSA section 16-50j-72(b)(2). In accordance with RCSA section 16-50j-73, a copy of this letter and attachments is being sent to the Honorable Ronald K. McDaniel, Mayor of Montville, as well as Atlantic Broadband, LLC, the property owner and the tower owner.

The planned modifications to the facility fall squarely within those activities expressly provided for in RCSA section 50j-72(b)(2).

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

2. The proposed modifications will not require an 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 will exceed state and local limits.

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 modifications 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, AT&T Wireless respectfully submits that the proposed modifications to the above referenced telecommunications facility constitute an exempt modification under RCSA section 16-50j-72(b)(2).

Respectfully submitted,

Jack Andrews
Zoning Manager, Empire Telecom
o/b/o AT&T Wireless
10130 Donleigh Drive
Columbia, MD 21046
443-677-0144
jandrews@empiretelecomm.com

Enclosures

cc: The Honorable Ronald K. McDaniel, Mayor of Montville
Atlantic Broadband, LLC as Tower Owner and Property Owner

EMPIRE telecom
A QualTek Company

September 26, 2016

Atlantic Broadband, LLC
2 Batterymarch Park, Suite 205
Quincy, MA 02169

RE: AT&T Wireless Modifications to Telecommunication Facility –
695 Old Colchester Road, Montville, CT 06382
FA#10035001 (CT2049)
New Cingular Wireless PCS, LLC; AT&T Mobility (AT&T)

Dear Sir or Madam:

In order to accommodate technological changes, implement the Uniform Mobile Telecommunications System and enhance system performance in the State of Connecticut, AT&T Wireless ("AT&T") will be changing its equipment configuration at the above referenced telecommunications facility. AT&T Wireless currently maintains nine (9) antennas at the 240 foot level of an existing 370 foot tall lattice tower located at 695 Old Colchester Road, in Montville, CT. The property and the tower are owned by Atlantic Broadband, LLC.

AT&T Wireless now seeks to replace three (3) existing antennas; and install three (3) new RRUS-32+B2 ("RRU") remote radio units, one (1) RRU per sector, to the 240 foot level of the tower, to be mounted adjacent to the antennas at 240 feet.

This letter is intended to serve as the required notice to both the tower owner and the property owner. As required by the Regulations of Connecticut State Agencies ("RCSA") section 16-50j-73, the Connecticut Siting Council ("CSC") has been notified of the proposed changes and will review AT&T's proposal. Please accept this letter as notification under RCSA section 16-50j-73 of construction which constitutes an exempt modification pursuant to RCSA section 16-50j-72(b)(2).

EMPIRE telecom
A QualTek Company

The enclosed letter to the CSC fully describes AT&T's proposal for the above referenced site. However, if you have any questions or require any additional information concerning our plans or the CSC procedures, please contact me at 443-677-0144 or contact Melanie Bachman, Acting Executive Director of the CSC at 860-872-2935.

Respectfully submitted,

Jack Andrews
Zoning Manager, Empire Telecom
o/b/o AT&T Wireless
10130 Donleigh Drive
Columbia, MD 21046
443-677-0144
jandrews@empiretelecomm.com

Enclosures

cc: Melanie Bachman, Connecticut Siting Council

EBI Consulting
environmental | engineering | due diligence

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

AT&T Existing Facility

Site ID: CT2049

Montville
695 Old Colchester Road
Montville, CT 06382

September 22, 2016

EBI Project Number: 6216004285

Site Compliance Summary	
Compliance Status:	COMPLIANT
Site total MPE% of FCC general public allowable limit:	1.34 %

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

EBI Consulting
environmental | engineering | due diligence

September 22, 2016

AT&T Mobility – New England
Attn: Cameron Syme, RF Manager
550 Cochituate Road
Suite 550 – 13&14
Framingham, MA 06040

Emissions Analysis for Site: **CT2049 – Montville**

EBI Consulting was directed to analyze the proposed AT&T facility located at **695 Old Colchester Road, Montville, CT**, for the purpose of determining whether the emissions from the Proposed AT&T 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 public may be exposed or in which persons who are exposed as a consequence of their employment may not be made fully aware of the potential for exposure or cannot exercise control over their exposure. Therefore, members of the general public would always be considered under this category when exposure is not employment related, for example, in the case of a telecommunications tower that exposes persons in a nearby residential area.

Public exposure to radio frequencies is regulated and enforced in units of microwatts per square centimeter ($\mu W/cm^2$). The general population exposure limits for the 700 and 850 MHz Bands are approximately 467 $\mu W/cm^2$ and 567 $\mu W/cm^2$ respectively. The general population exposure limit for the 1900 MHz (PCS), 2100 MHz (AWS) and 2300 MHz (WCS) 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 AT&T Wireless antenna facility located at **695 Old Colchester Road, Montville, CT**, using the equipment information listed below. All calculations were performed per the specifications under FCC OET 65. Since AT&T 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, 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) 2 LTE channels (700 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 60 Watts per Channel.

2) 2 LTE channels (1900 MHz (PCS)) were considered for each sector of the proposed installation. These Channels have a transmit power of 60 Watts per Channel.

3) 2 UMTS channels (850 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.

4) 2 UMTS channels (1900 MHz (PCS)) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.

5) 2 GSM channels (850 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.

6) 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.

7) 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 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.

8) The antennas used in this modeling are the **CCI HPA-65R-BUU-H6, CCI HPA-65R-BUU-H8 and the Powerwave 7770** for transmission in the 700 MHz, 850 MHz and 1900 MHz (PCS) frequency bands. This is based on feedback from the carrier with regards to anticipated antenna selection. Maximum gain values for all antennas are listed in the Inventory and Power Data table below. The maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB, 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.

9) The antenna mounting height centerlines of the proposed antennas are **240 feet** above ground level (AGL) for **Sector A**, **240 feet** above ground level (AGL) for **Sector B** and **240 feet** above ground level (AGL) for Sector C.

10) Emissions values for additional carriers were taken from the Connecticut Siting Council active database. Values in this database are provided by the individual carriers themselves.

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

AT&T Site Inventory and Power Data by Antenna

Sector:	A	Sector:	B	Sector:	C
Antenna #:	**1**	Antenna #:	**1**	Antenna #:	**1**
Make / Model:	CCI HPA-65R-BUU-H6	Make / Model:	CCI HPA-65R-BUU-H8	Make / Model:	CCI HPA-65R-BUU-H8
Gain:	11.95 / 14.75 dBd	Gain:	13.15 / 14.95 dBd	Gain:	13.15 / 14.95 dBd
Height (AGL):	**240 feet**	Height (AGL):	**240 feet**	Height (AGL):	**240 feet**
Frequency Bands	700 MHz / 1900 MHz (PCS)	Frequency Bands	700 MHz / 1900 MHz (PCS)	Frequency Bands	700 MHz / 1900 MHz (PCS)
Channel Count	4	Channel Count	4	Channel Count	4
Total TX Power(W):	240 Watts	Total TX Power(W):	240 Watts	Total TX Power(W):	240 Watts
ERP (W):	5,462.56	ERP (W):	6,229.75	ERP (W):	6,229.75
Antenna A1 MPE%	**0.50 %**	Antenna B1 MPE%	**0.59 %**	Antenna C1 MPE%	**0.59 %**
Antenna #:	**2**	Antenna #:	**2**	Antenna #:	**2**
Make / Model:	Powerwave 7770	Make / Model:	Powerwave 7770	Make / Model:	Powerwave 7770
Gain:	11.4 / 13.4 dBd	Gain:	11.4 / 13.4 dBd	Gain:	11.4 / 13.4 dBd
Height (AGL):	**240 feet**	Height (AGL):	**240 feet**	Height (AGL):	**240 feet**
Frequency Bands	850 MHz / 1900 MHz (PCS)	Frequency Bands	850 MHz / 1900 MHz (PCS)	Frequency Bands	850 MHz / 1900 MHz (PCS)
Channel Count	4	Channel Count	4	Channel Count	4
Total TX Power(W):	120 Watts	Total TX Power(W):	120 Watts	Total TX Power(W):	120 Watts
ERP (W):	2,140.89	ERP (W):	2,140.89	ERP (W):	2,140.89
Antenna A2 MPE%	**0.18 %**	Antenna B2 MPE%	**0.18 %**	Antenna C2 MPE%	**0.18 %**
Antenna #:	**3**	Antenna #:	**3**	Antenna #:	**3**
Make / Model:	Powerwave 7770	Make / Model:	Powerwave 7770	Make / Model:	Powerwave 7770
Gain:	11.4 dBd	Gain:	11.4 dBd	Gain:	11.4 dBd
Height (AGL):	**240 feet**	Height (AGL):	**240 feet**	Height (AGL):	**240 feet**
Frequency Bands	850 MHz	Frequency Bands	850 MHz	Frequency Bands	850 MHz
Channel Count	2	Channel Count	2	Channel Count	2
Total TX Power(W):	60 Watts	Total TX Power(W):	60 Watts	Total TX Power(W):	60 Watts
ERP (W):	828.23	ERP (W):	828.23	ERP (W):	828.23
Antenna A3 MPE%	**0.10 %**	Antenna B3 MPE%	**0.10 %**	Antenna C3 MPE%	**0.10 %**

Site Composite MPE%	
Carrier	**MPE%**
AT&T – Max per sector	**0.87 %**
Verizon Wireless	0.47 %
Site Total MPE %:	**1.34 %**

AT&T Sector A Total:	0.78 %
AT&T Sector B Total:	0.87 %
AT&T Sector C Total:	0.87 %
Site Total:	1.34 %

AT&T _ 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
AT&T 700 MHz LTE	2	940.05	240	1.23	700 MHz	467	0.26%
AT&T 1900 MHz (PCS) LTE	2	1,791.23	240	2.35	1900 MHz (PCS)	1000	0.24%
AT&T 850 MHz UMTS	2	414.12	240	0.54	850 MHz	567	0.10%
AT&T 1900 MHz (PCS) UMTS	2	656.33	240	0.86	1900 MHz (PCS)	1000	0.09%
AT&T 850 MHz GSM	2	414.12	240	0.54	850 MHz	567	0.10%
						Total:	0.78%

Summary

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

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

AT&T Sector	Power Density Value (%)
Sector A:	0.78 %
Sector B:	0.87 %
Sector C:	0.87 %
AT&T Maximum Total (per sector):	0.87 %
Site Total:	1.34 %
Site Compliance Status:	**COMPLIANT**

The anticipated composite MPE value for this site assuming all carriers present is **1.34 %** of the allowable FCC established general public limit sampled at the ground level. This is based upon values listed in the Connecticut Siting Council database for existing carrier emissions.

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

CENTEK engineering

Centered on Solutions℠

Structural Analysis Report

370-ft Existing Guyed Lattice Tower

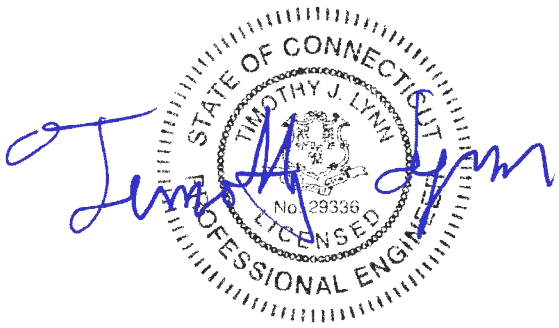
Proposed AT&T Mobility
Antenna Upgrade

AT&T Site Ref: CT2049

689 Old Colchester Road
Montville, CT

Centek Project No. 16071.44

Date: September 9, 2016



Prepared for:

AT&T Mobility
500 Enterprise Drive, Suite 3A
Rocky Hill, CT 06067

Table of Contents

Introduction

The purpose of this report is to summarize the results of the non-linear, P-Δ structural analysis of the antenna upgrade proposed by AT&T on the existing guyed lattice tower located in Montville, Connecticut.

The host tower is a 370-ft, three face, guyed steel lattice tower originally designed and manufactured by PiROD. The original design documents were unavailable for use in this report. The tower geometry, structure member sizes, reinforcement information and foundation information were obtained from a previous structural analysis prepared by Centek. Job No. 15001.08 dated June 3, 2015.

Antenna and appurtenance inventory were taken from the aforementioned structural report and a AT&T RF data sheet.

The tower consists of fifteen (15) vertical sections constructed of solid round pipe legs conforming to ASTM A36. Diagonal and horizontal lateral support bracing consists of a combination of steel angle and solid round pipe construction conforming to ASTM A36. The vertical tower sections are connected by bolted flange plates with the diagonal and horizontal bracing to pipe legs consisting of bolted connections. The width of the tower face is 5-ft at throughout its length.

AT&T proposes the removal of three (3) panel antennas and the installation of three (3) panel antennas and three (3) remote radio heads mounted on three (3) existing T-Frames. Refer to the Antenna and Appurtenance Summary below for a detailed description of the proposed antenna and appurtenance configuration.

Antenna and Appurtenance Summary

The existing tower supports several communication antennas. The existing and proposed loads considered in the analysis consist of the following:

- WGBH (Existing):
  Antenna: One (1) Search Antenna leg mounted with an elevation of ±370-ft above grade level.
  Coax Cable: One (1) 7/8” coax cable running on a leg/face of the existing tower as specified in Section 3 of this report.
- UNKNOWN (Existing):
  Antenna: One (1) 8-ft microwave dish pipe mounted with an elevation of ±355-ft above the tower base.
  Coax Cable: One (1) 7/8” coax cable running on a leg/face of the existing tower as specified in Section 3 of this report.
- UNKNOWN (Existing):
  Antenna: One (1) 20’ by 3” ∅ Omni-directional (whip) antenna pipe mounted with an elevation of ±350-ft above the tower base.
  Coax Cable: Two (2) 7/8” coax cables running on a leg/face of the existing tower as specified in Section 3 of this report.

- UNKNOWN (Existing):
  Antenna: One (1) 10' by 3" ∅ Omni-directional (whip) antenna mounted on a 3-ft side arm with an elevation of ±325-ft above the tower base.
  Coax Cable: One (1) 1-5/8" coax cables running on a leg/face of the existing tower as specified in Section 3 of this report.
- VERIZON (Existing to Remain):
  Antennas: Six (6) Andrew LNX-6514DS panel antennas, six (6) Andrew HBXX-6517DS panel antennas, three (3) Alcatel-Lucent RRH2x60-AWS Remote Radio Heads, three (3) Alcatel-Lucent RRH2x60-PCS Remote Radio Heads, two (2) RFS DB-T1-6Z-8AB-0Z main distribution boxes and six (6) RFS FD9R6004/2C-3L diplexers mounted on three (3) boom gates with a RAD center elevation of ±305-ft above the existing tower base.
  Coax Cables: Twelve (12) 1-5/8" ∅ coax cables and two (2) 1-5/8" ∅ Hybriflex fiber lines running on the face of the existing tower as specified in Section 3 of this report.
- Secret Service (Existing):
  Antenna: One (1) 20' by 3" ∅ Omni-directional (whip) antenna pipe mounted with an elevation of ±250-ft above the tower base.
  Coax Cable: None
- UNKNOWN (Existing):
  Antenna: One (1) 4' yagi antenna leg mounted with an elevation of ±200-ft above the tower base.
  Coax Cable: One (1) 7/8" coax cables running on a leg/face of the existing tower as specified in Section 3 of this report.
- UNKNOWN (Existing):
  Antenna: Four (4) 5' yagi antennas mounted on two (2) pipe mounts with an elevation of ±180-ft above the tower base.
  Coax Cable: One (1) 7/8" coax cables running on a leg/face of the existing tower as specified in Section 3 of this report.
- UNKNOWN (Existing):
  Antenna: One (1) 5' yagi antenna leg mounted with an elevation of ±148-ft above the tower base.
  Coax Cable: One (1) 1/2" coax cables running on a leg/face of the existing tower as specified in Section 3 of this report.
- UNKNOWN (Existing):
  Antenna: One (1) 8' yagi antenna leg mounted with an elevation of ±140-ft above the tower base.
  Coax Cable: One (1) 7/8" coax cables running on a leg/face of the existing tower as specified in Section 3 of this report.
- UNKNOWN (Existing):
  Antenna: One (1) 4' yagi antenna leg mounted with an elevation of ±125-ft above the tower base.
  Coax Cable: One (1) 1/2" coax cables running on a leg/face of the existing tower as specified in Section 3 of this report.

- UNKNOWN (Existing):
  Antenna: Four (4) antennas leg mounted with an elevation of ±88-ft above the tower base.
  Coax Cable: One (1) 7/8" coax cables running on a leg/face of the existing tower as specified in Section 3 of this report.
- UNKNOWN (Existing):
  Antenna: One (1) 6' yagi antenna leg mounted with an elevation of ±62-ft above the tower base.
  Coax Cable: One (1) 7/8" coax cables running on a leg/face of the existing tower as specified in Section 3 of this report.
- UNKNOWN (Existing):
  Antenna: One (1) 5' yagi antenna leg mounted with an elevation of ±40-ft above the tower base.
  Coax Cable: One (1) 7/8" coax cables running on a leg/face of the existing tower as specified in Section 3 of this report.
- AT&T (Existing to Remain):
  Antennas: Six (6) Powerwave 7770 panel antennas, six (6) TMA's, six (6) diplexers, three (3) Ericsson RRUS-11 remote radio heads and one (1) DC6-48-60-18-8F Surge Arrestor mounted on three (3) 12-ft T-frames with a RAD center elevation of ±242.5-ft above the existing tower base.
  Coax Cables: Twelve (12) 1-5/8" ∅ coax cables, one (1) fiber line, and two (2) DC power cables running on a leg/face of the existing tower as specified in Section 3 of this report.
- AT&T (Existing to Remove):
  Antennas: One (1) SBNH-1D6565C, one (1) AM-X-CD-16-65-00T and one (1) P65-17-XLH-RR panel antennas mounted on three (3) 12-ft T-frames with a RAD center elevation of ±242.5-ft above the existing tower base.
- **AT&T (Proposed):**
  Antennas: One (1) CCI HPA-65R-BUU-H6 panel antenna, two (2) CCI HPA-65R-BUU-H8 panel antennas and three (3) Ericsson RRUS-32 remote radio heads mounted on three (3) 12-ft T-frames with a RAD center elevation of ±242.5-ft above the existing tower base.

Primary Assumptions Used in the Analysis

- The tower structure's theoretical capacity not including any assessment of the condition of the tower.
- The tower carries the horizontal and vertical loads due to the weight of antennas, ice load and wind.
- Tower is properly installed and maintained.
- Tower is in plumb condition.
- Tower loading for antennas and mounts as listed in this report.
- All bolts are appropriately tightened providing the necessary connection continuity.
- All welds are fabricated with ER-70S-6 electrodes.
- All members are assumed to be as specified in the original tower design documents.
- All members are "hot dipped" galvanized in accordance with ASTM A123 and ASTM A153 Standards.
- All member protective coatings are in good condition.
- All tower members were properly designed, detailed, fabricated, installed and have been properly maintained since erection.
- Any deviation from the analyzed antenna loading will require a new analysis for verification of structural adequacy.
- All previous reinforcements per the aforementioned URS report dated July 24, 2013 are complete as detailed.

Analysis

The existing tower was analyzed using a comprehensive computer program entitled tnxTower. The program analyzes the tower, considering the worst case loading condition. The tower is considered as loaded by concentric forces along the tower shaft, and the model assumes that the shaft members are subjected to bending, axial, and shear forces.

The existing tower was analyzed for the controlling basic wind speed (fastest mile) with no ice and a 75% reduction of wind force with ½ inch accumulative ice to determine stresses in members as per guidelines of TIA/EIA-222-F-96 entitled "Structural Standards for Steel Antenna Towers and Antenna Supporting Structures", the American Institute of Steel Construction (AISC) and the Manual of Steel Construction; Allowable Stress Design (ASD).

The controlling wind speed is determined by evaluating the local available wind speed data as provided in Appendix K of the CSBC[1] and the wind speed data available in the TIA/EIA-222-F-96 Standard. The higher of the two wind speeds is utilized in preparation of the tower analysis.

Tower Loading

Tower loading was determined by the basic wind speed as applied to projected surface areas with modification factors per TIA/EIA-222-F, gravity loads of the tower structure and its components, and the application of ½" radial ice on the tower structure and its components.

Basic Wind Speed:	New London; v = 85 mph (fastest mile)	*[Section 16 of TIA/EIA-222-F-96]*
	Montville; v = 115 mph (3 second gust) equivalent to v = 95 mph (fastest mile)	*[Appendix K of the 2005 CT Building Code Supplement]*
	Appendix-K wind speed controls.	
Load Cases:	Load Case 1; 95 mph wind speed w/ no ice plus gravity load – used in calculation of tower stresses.	*[Section 2.3.16 of TIA/EIA-222-F-96]*
	Load Case 2; 82 mph wind speed w/ ½" radial ice plus gravity load – used in calculation of tower stresses. The 82 mph wind speed velocity represents 75% of the wind pressure generated by the 95 mph wind speed.	*[Section 2.3.16 of TIA/EIA-222-F-96]*
	Load Case 3; Seismic – not checked	*[Section 1614.5 of State Bldg. Code 2005] does not control in the design of this structure type*

[1] The 2005 Connecticut State Building Code as amended by the 2009 CT State Supplement. (CSBC)

Tower Capacity

Tower stresses were calculated utilizing the structural analysis software tnxTower. Allowable stresses were determined based on Table 5 of the TIA/EIA code with a 1/3 increase per Section 3.1.1.1 of the same code.

- Calculated stresses were found to be within allowable limits. In Load Case 2, per tnxTower "Section Capacity Table", this tower was found to be at **98.5%** of its total capacity.

Tower Section	Elevation	Stress Ratio (percentage of capacity)	Result
Leg (27)	200' - 206.25'	95.9%	**PASS**
Diagonal (T22)	231.25' - 237.5'	98.5%	**PASS**
Guy B @ 193.65' radius (T31)	162.5'-0"	84.1%	**PASS**

Foundations and Anchorage

The existing tower base foundation consists of a 3.0-ft square x 3-ft long reinforced concrete pedestal with a 7.0-ft square x 2.0-ft thick reinforced concrete pad bearing directly on the existing sub grade. Additionally, guy wire loading is transferred to twelve (12) existing concrete anchor support blocks. The sub-grade conditions used as the basis for the foundation analysis were derived from the aforementioned URS report.

- The worst case tower base and guy anchor reactions developed from the governing Load Case 2 were used in the verification of the anchorage foundations:

Tower Guy Reactions				
Vector	**Inner**	**Mid-Inner**	**Mid-Outer**	**Outer**
Horizontal (In Plane of GW)	12 kips	43 kips	66 kips	30 kips
Horizontal (Out of Plane of GW)	0 kips	1 kips	4 kips	3 kips
Vertical	6 kips	28 kips	74 kips	39 kips
Resultant Force at end of Guy Wire	13 kips	51 kips	99 kips	49 kips

Tower Base Reactions	
Vector	**Proposed Reaction**
Horizontal Shear	1.0 kips
Axial Compression	353.0 kips

Note 2: Obtained from tnxTower Analysis Load Case No. 2

Foundation	Design Limit	IBC 2003/2005 CT State Building Code Section 3108.4.2 (FS)[3]	Proposed Loading (FS)[3]	Result
Reinf. Conc. Anchor Block (C) at 114.41-ft radius.	Uplift	2.0	8.08	**PASS**
	Sliding	2.0	6.10	**PASS**
Reinf. Conc. Anchor Block (B) at 193.65-ft radius.	Uplift	2.0	3.46	**PASS**
	Sliding	2.0	3.40	**PASS**
Reinf. Conc. Anchor Block (A) at 224.79-ft radius.	Uplift	2.0	2.58	**PASS**
	Sliding	2.0	3.60	**PASS**
Reinf. Conc. Anchor Block (A) at 247.15-ft radius.	Uplift	2.0	3.18	**PASS**
	Sliding	2.0	4.80	**PASS**
		Allowable	**Proposed**	
Base Foundation	Bearing	8.0 ksf	7.59 ksf	**PASS**

Note 3: FS denotes 'Factor of Safety'.

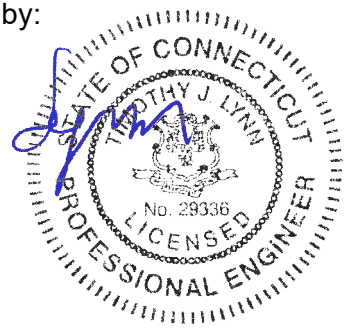
Conclusion

This analysis shows that the subject tower **is adequate** to support the proposed modified antenna configuration.

The analysis is based, in part, on the information provided to this office by AT&T. If the existing conditions are different than the information in this report, Centek Engineering, Inc. must be contacted for resolution of any potential issues.

Please feel free to call with any questions or comments.

Respectfully Submitted by:



Timothy J. Lynn, PE
Structural Engineer

Standard Conditions for Furnishing of Professional Engineering Services on Existing Structures

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

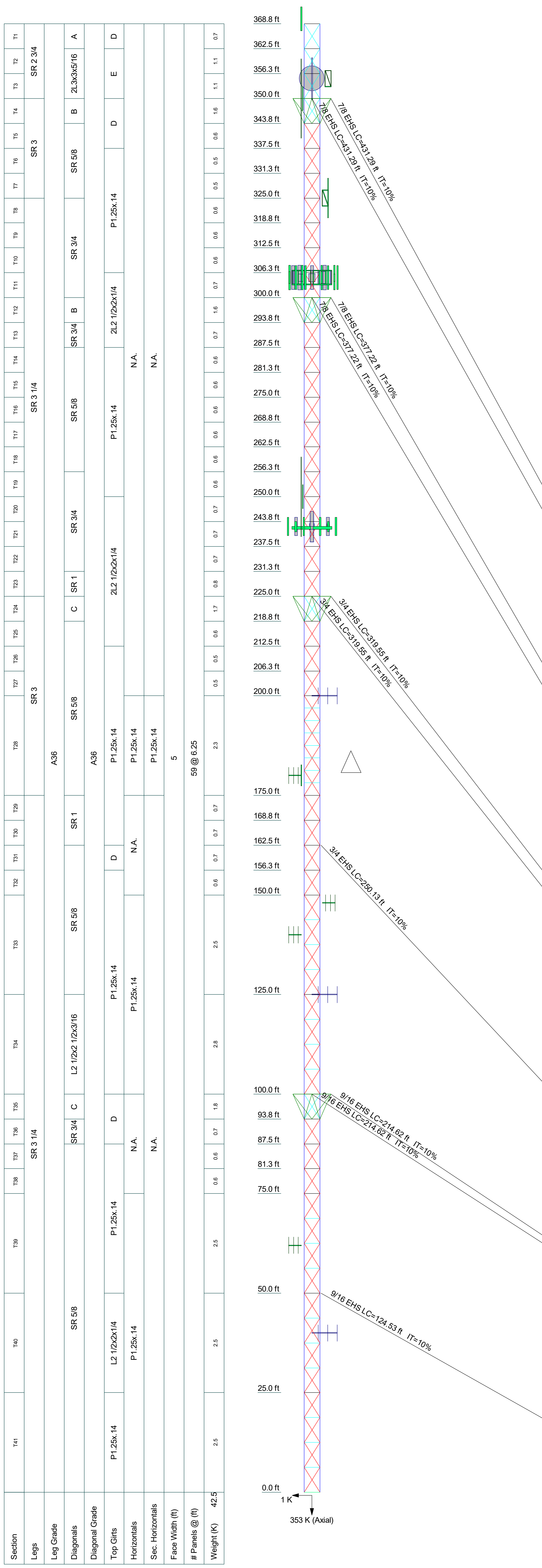
- Information supplied by the client regarding the structure itself, its foundations, the soil conditions, the antenna and feed line loading on the structure and its components, or other relevant information.
- Information from the field and/or drawings in the possession of Centek Engineering, Inc. or generated by field inspections or measurements of the structure.
- It is the responsibility of the client to ensure that the information provided to Centek Engineering, Inc. and used in the performance of our engineering services is correct and complete. In the absence of information to the contrary, we assume that all structures were constructed in accordance with the drawings and specifications and are in an un-corroded condition and have not deteriorated. It is therefore assumed that its capacity has not significantly changed from the “as new” condition.
- All services will be performed to the codes specified by the client, and we do not imply to meet any other codes or requirements unless explicitly agreed in writing. If wind and ice loads or other relevant parameters are to be different from the minimum values recommended by the codes, the client shall specify the exact requirement. In the absence of information to the contrary, all work will be performed in accordance with the latest revision of ANSI/ASCE10 & ANSI/EIA-222
- All services performed, results obtained, and recommendations made are in accordance with generally accepted engineering principles and practices. Centek Engineering, Inc. is not responsible for the conclusions, opinions and recommendations made by others based on the information we supply.

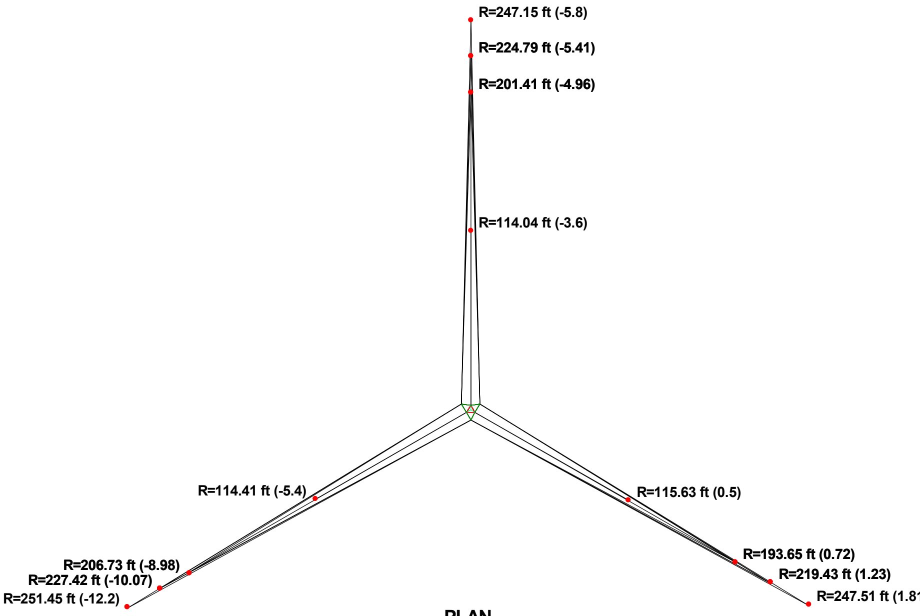
GENERAL DESCRIPTION OF STRUCTURAL ANALYSIS PROGRAM

tnxTower, is an integrated structural analysis and design software package for Designed specifically for the telecommunications industry, tnxTower, formerly ERITower and RISATower, automates much of the tower analysis and design required by the TIA/EIA 222 Standard.

tnxTower Features:

- tnxTower can analyze and design 3- and 4-sided guyed towers, 3- and 4-sided self-supporting towers and either round or tapered ground mounted poles with or without guys.
- The program analyzes towers using the TIA-222-G (2005) standard or any of the previous TIA/EIA standards back to RS-222 (1959). Steel design is checked using the AISC ASD 9th Edition or the AISC LRFD specifications.
- Linear and non-linear (P-delta) analyses can be used in determining displacements and forces in the structure. Wind pressures and forces are automatically calculated.
- Extensive graphics plots include material take-off, shear-moment, leg compression, displacement, twist, feed line, guy anchor and stress plots.
- tnxTower contains unique features such as True Cable behavior, hog rod take-up, foundation stiffness and much more.





PLAN

DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION	TYPE	ELEVATION
Search Antenna	370	20' x 3" Dia Omni	250
10'6"x4" Pipe Mount	355	RRUS-32 (ATT - Proposed)	242.5
Rohn 6' Side-Arm(1)	355	RRUS-32 (ATT - Proposed)	242.5
8' Dish	355	DC6-48-60-18-8F Surge Arrestor (ATT)	242.5
6'x4" Pipe Mount	350	Pirod 12' T-Frame Sector Mount (1) (ATT)	242.5
20' x 3" Dia Omni	350	Pirod 12' T-Frame Sector Mount (1) (ATT)	242.5
ROHN 3-ft Side Arm	325	Pirod 12' T-Frame Sector Mount (1) (ATT)	242.5
10' x 3" Dia Omni	325	RRUS-11 (ATT)	242.5
LNX-6514DS-T4M (Verizon Existing)	305	(2) 7770.00 (ATT)	242.5
HBXX-6517DS (Verizon Existing)	305	(2) 7770.00 (ATT)	242.5
LNX-6514DS-T4M (Verizon Existing)	305	(2) 7770.00 (ATT)	242.5
HBXX-6517DS (Verizon Existing)	305	HPA-65R-BUU-H6 (ATT - Proposed)	242.5
LNX-6514DS-T4M (Verizon Existing)	305	HPA-65R-BUU-H8 (ATT - Proposed)	242.5
HBXX-6517DS (Verizon Existing)	305	HPA-65R-BUU-H8 (ATT - Proposed)	242.5
LNX-6514DS-T4M (Verizon Existing)	305	(2) LPG21401 TMA (ATT)	242.5
HBXX-6517DS (Verizon Existing)	305	(2) LPG21401 TMA (ATT)	242.5
LNX-6514DS-T4M (Verizon Existing)	305	(2) LPG21401 TMA (ATT)	242.5
HBXX-6517DS (Verizon Existing)	305	(2) LGP21901 Diplexer (ATT)	242.5
LNX-6514DS-T4M (Verizon Existing)	305	(2) LGP21901 Diplexer (ATT)	242.5
HBXX-6517DS (Verizon Existing)	305	(2) LGP21901 Diplexer (ATT)	242.5
RRH2x60-AWS (Verizon Existing)	305	RRUS-11 (ATT)	242.5
RRH2x60-AWS (Verizon Existing)	305	RRUS-11 (ATT)	242.5
RRH2x60-AWS (Verizon Existing)	305	RRUS-32 (ATT - Proposed)	242.5
RRH2x60-PCS (Verizon Existing)	305	Yagi	200
RRH2x60-PCS (Verizon Existing)	305	(4) Yagi	180
RRH2x60-PCS (Verizon Existing)	305	(2) 5'3"x4" Pipe Mount	180
DB-T1-6Z-8AB-0Z (Verizon Existing)	305	Yagi	148
DB-T1-6Z-8AB-0Z (Verizon Existing)	305	Yagi	140
(2) FD9R6004/2C-3L Diplexer (Verizon Existing)	305	Yagi	125
(2) FD9R6004/2C-3L Diplexer (Verizon Existing)	305	X-Style	88
(2) FD9R6004/2C-3L Diplexer (Verizon Existing)	305	X-Style	88
Rohn 6' x 12' Boom Gate (1) (Verizon Existing)	305	(2) X-Style	88
Rohn 6' x 12' Boom Gate (1) (Verizon Existing)	305	Yagi	62
Rohn 6' x 12' Boom Gate (1) (Verizon Existing)	305	Yagi	40
6'x4" Pipe Mount	250		

SYMBOL LIST

MARK	SIZE	MARK	SIZE
A	L2 1/2x2 1/2x1/4	D	2L2 1/2x2x1/4
B	L3x2 1/2x1/4	E	2L2 1/2x3x1/4
C	2L2 1/2x2 1/2x1/4		

MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A36	36 ksi	58 ksi			

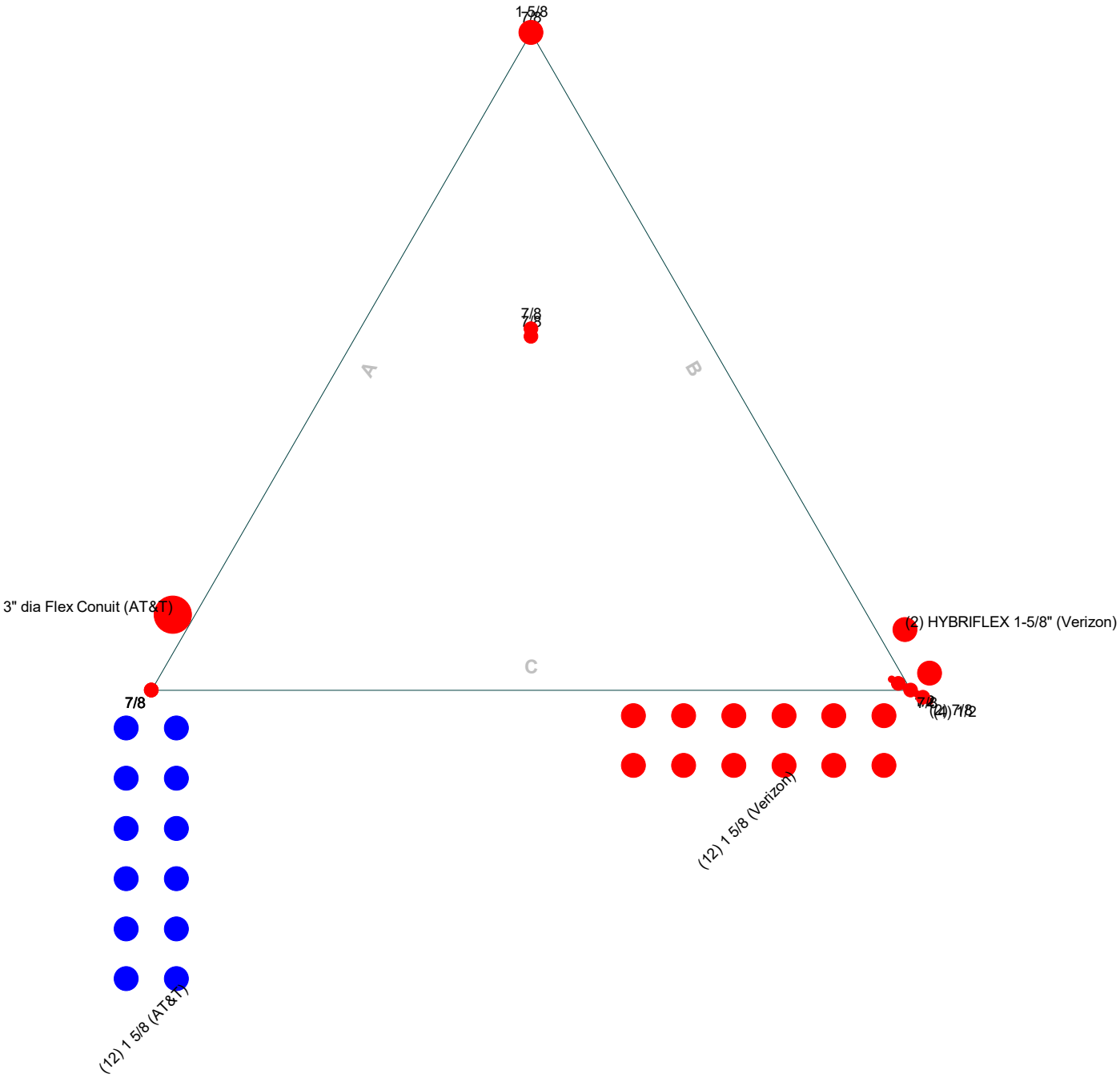
TOWER DESIGN NOTES

1. Tower designed for a 95 mph basic wind in accordance with the TIA/EIA-222-F Standard.
2. Tower is also designed for a 82 mph basic wind with 0.50 in ice.
3. Deflections are based upon a 50 mph wind.
4. TOWER RATING: 98.5%

Centek Engineering Inc. 63-2 North Branford Rd. Branford, CT 06405 Phone: (203) 488-0580 FAX: (203) 488-8587	Job: **16071.44 - Montville**		
	Project: **370' Guyed Tower - 689 Old Colchester Road, Montville, CT**		
	Client: Verizon Wireless	Drawn by: TJL	App'd:
	Code: TIA/EIA-222-F	Date: 09/09/16	Scale: NTS
	Path: J:\Jobs\1607100.WI\44_Montville CT2049\04_Structural\Backup Documentation\Calcs\tnxTower Files\370' Guyed Rohn Tower.eri		Dwg No. E-1

Feed Line Plan

Round Flat App In Face App Out Face

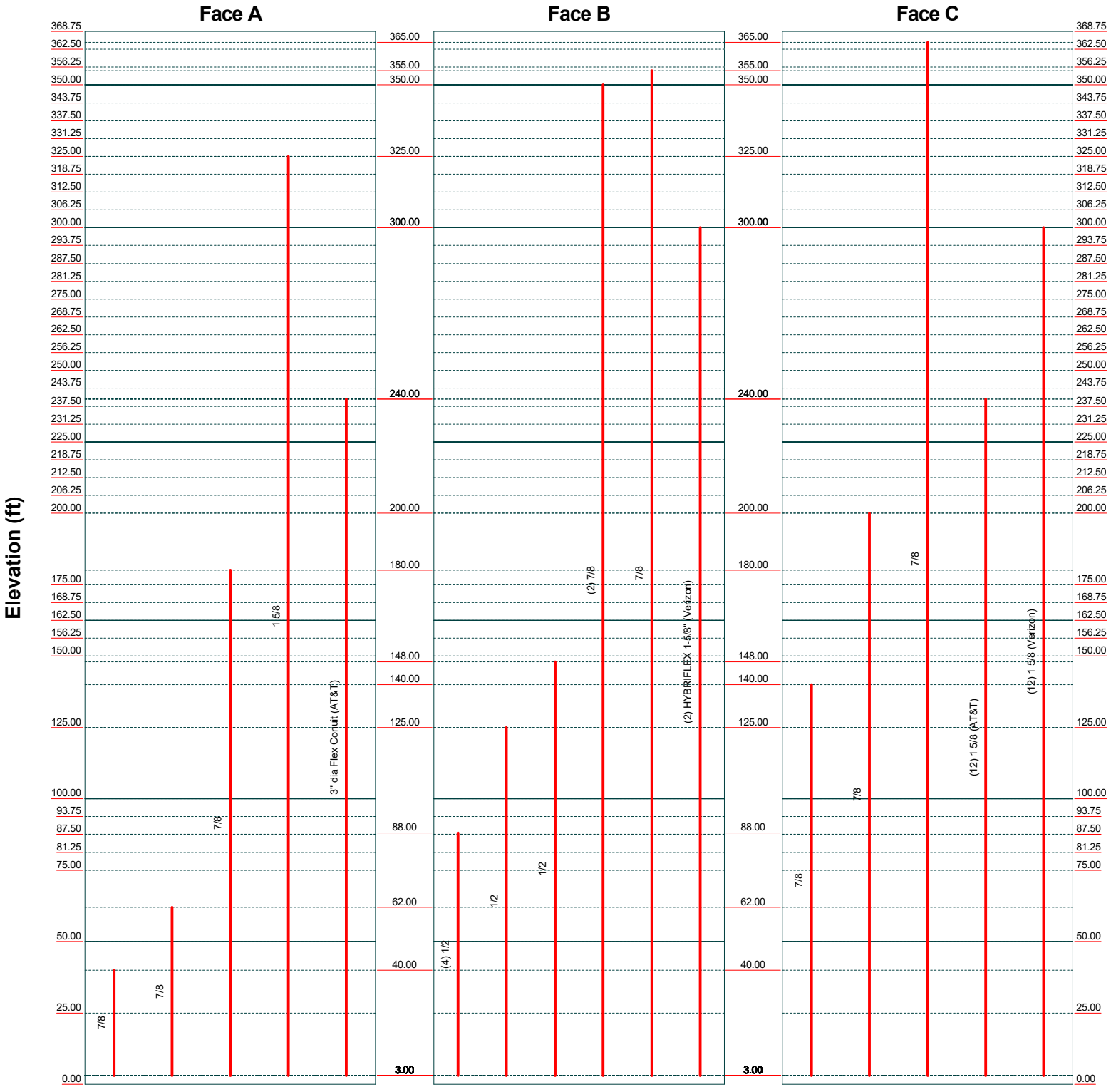


Centek Engineering Inc.
63-2 North Branford Rd.
Branford, CT 06405
Phone: (203) 488-0580
FAX: (203) 488-8587

Job: **16071.44 - Montville**			
Project: ***370' Guyed Tower - 689 Old Colchester Road, Montville, CT***			
Client: Verizon Wireless	Drawn by: TJL	App'd:	
Code: TIA/EIA-222-F	Date: 09/09/16	Scale: NTS	
Path: J:\Jobs\1607100.WI\44_Montville CT2049\04_Structural\Backup Documentation\Calcs\tnxTower Files\370' Guyed Rohn Tower.eri		Dwg No. E-7	

Feed Line Distribution Chart
0' - 368'9"

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

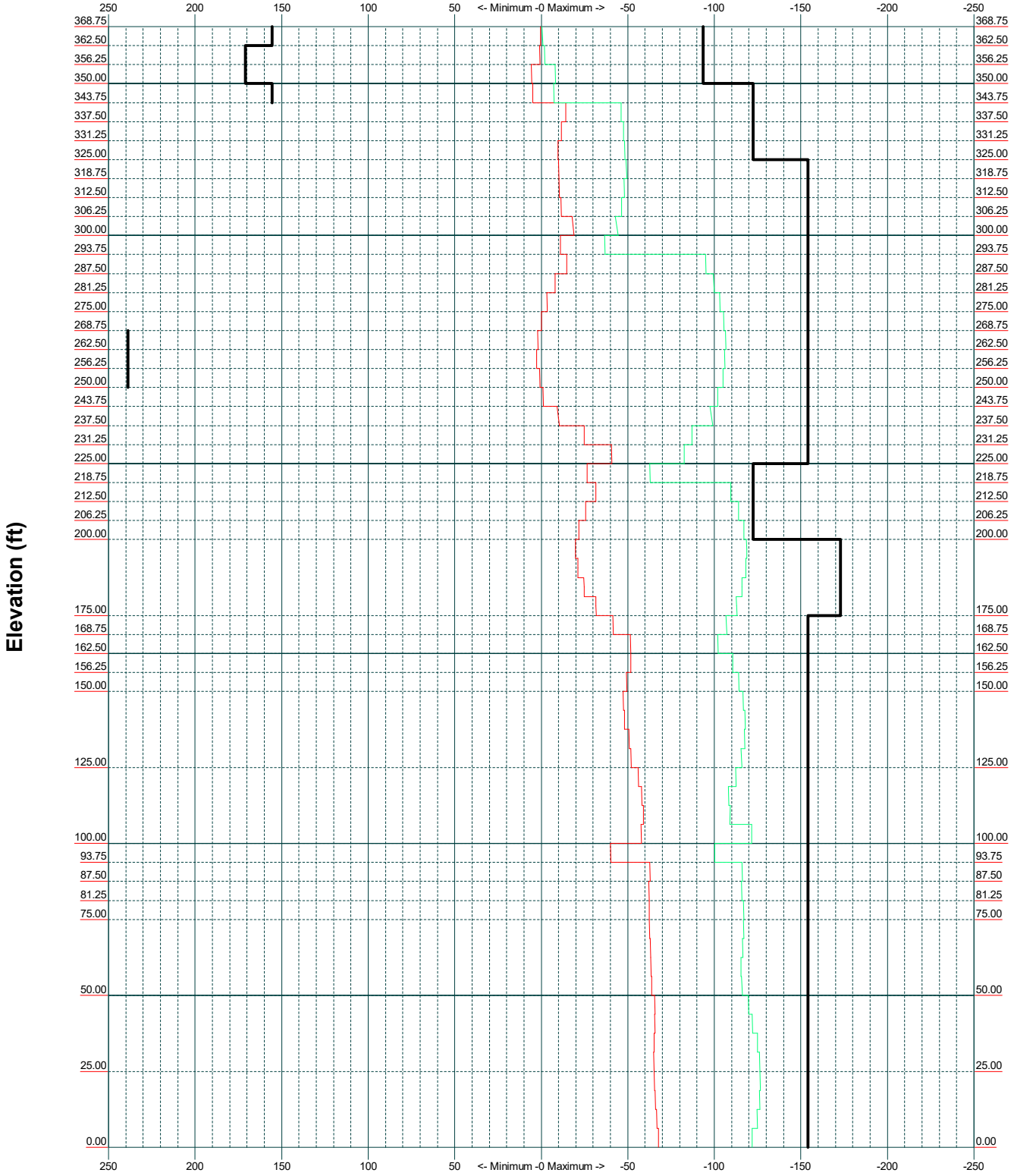


Centek Engineering Inc.
63-2 North Branford Rd.
Branford, CT 06405
Phone: (203) 488-0580
FAX: (203) 488-8587

Job: **16071.44 - Montville**		
Project: ***370' Guyed Tower - 689 Old Colchester Road, Montville, CT***		
Client: Verizon Wireless	Drawn by: TJL	App'd:
Code: TIA/EIA-222-F	Date: 09/09/16	Scale: NTS
Path: J:\Jobs\1607100.WI\44_Montville CT\2049\04_Structural\Backup Documentation\CalcsItnx\Tower Files\370' Guyed Rohn Tower.eri		Dwg No. E-7

TIA/EIA-222-F - 95 mph/82 mph 0.5000 in Ice

Leg Capacity ——— **Leg Compression (K)**



Centek Engineering Inc.
63-2 North Branford Rd.
Branford, CT 06405
Phone: (203) 488-0580
FAX: (203) 488-8587

Job: ***16071.44 - Montville***			
Project: ***370' Guyed Tower - 689 Old Colchester Road, Montville, CT***			
Client: Verizon Wireless	Drawn by: TJL	App'd:	
Code: TIA/EIA-222-F	Date: 09/09/16	Scale: NTS	
Path: J:\Jobs\1607100.WI\44_Montville CT2049\04_Structural\Backup Documentation\CalcsItnx\Tower Files\370' Guyed Rohn Tower.eri		Dwg No. E-3	

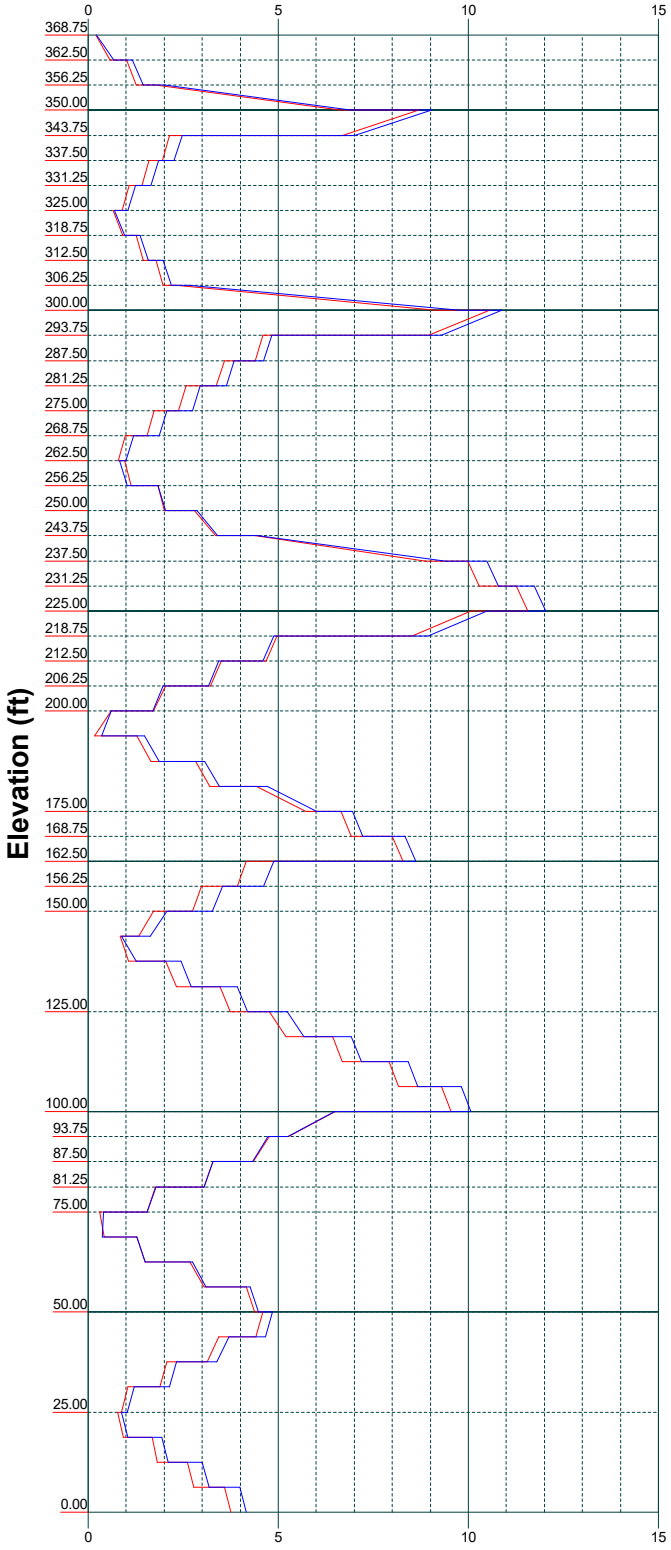
TIA/EIA-222-F - 95 mph/82 mph 0.5000 in Ice

Vx Vz

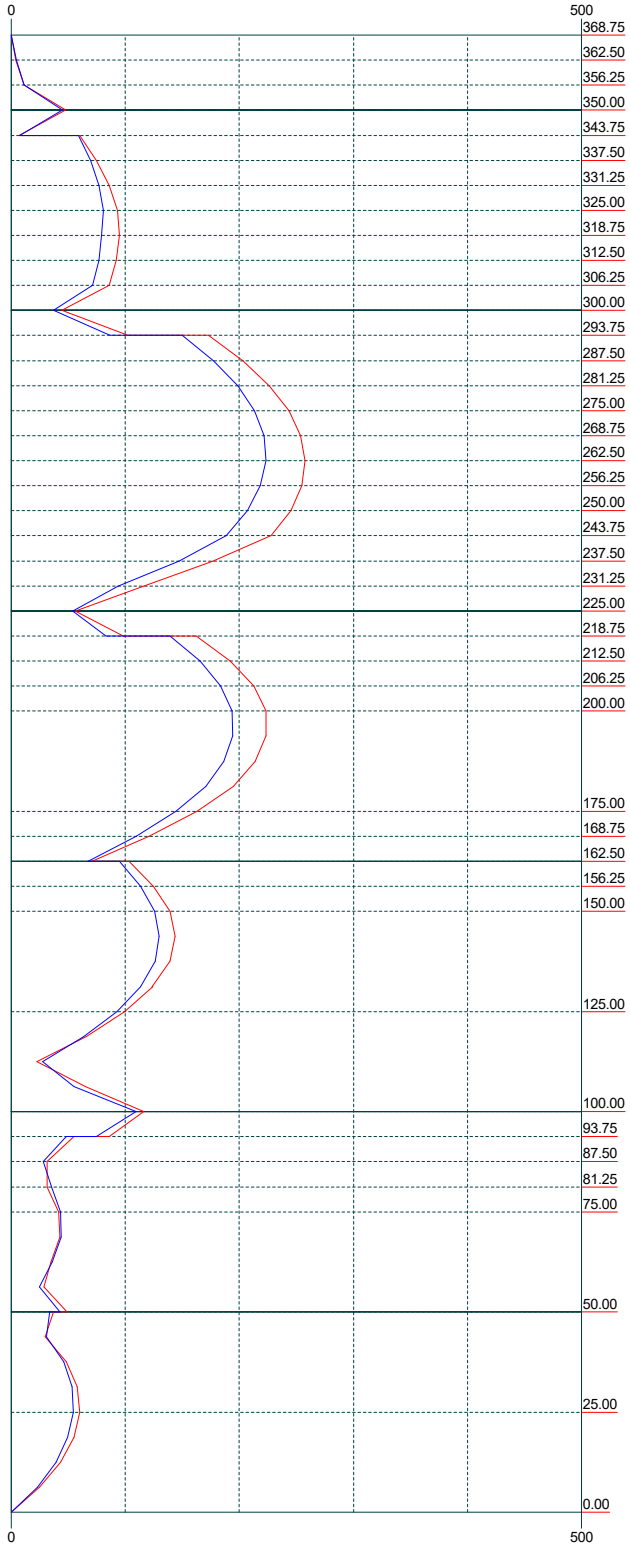
Maximum Values

Mx Mz

Global Mast Shear (K)



Global Mast Moment (kip-ft)

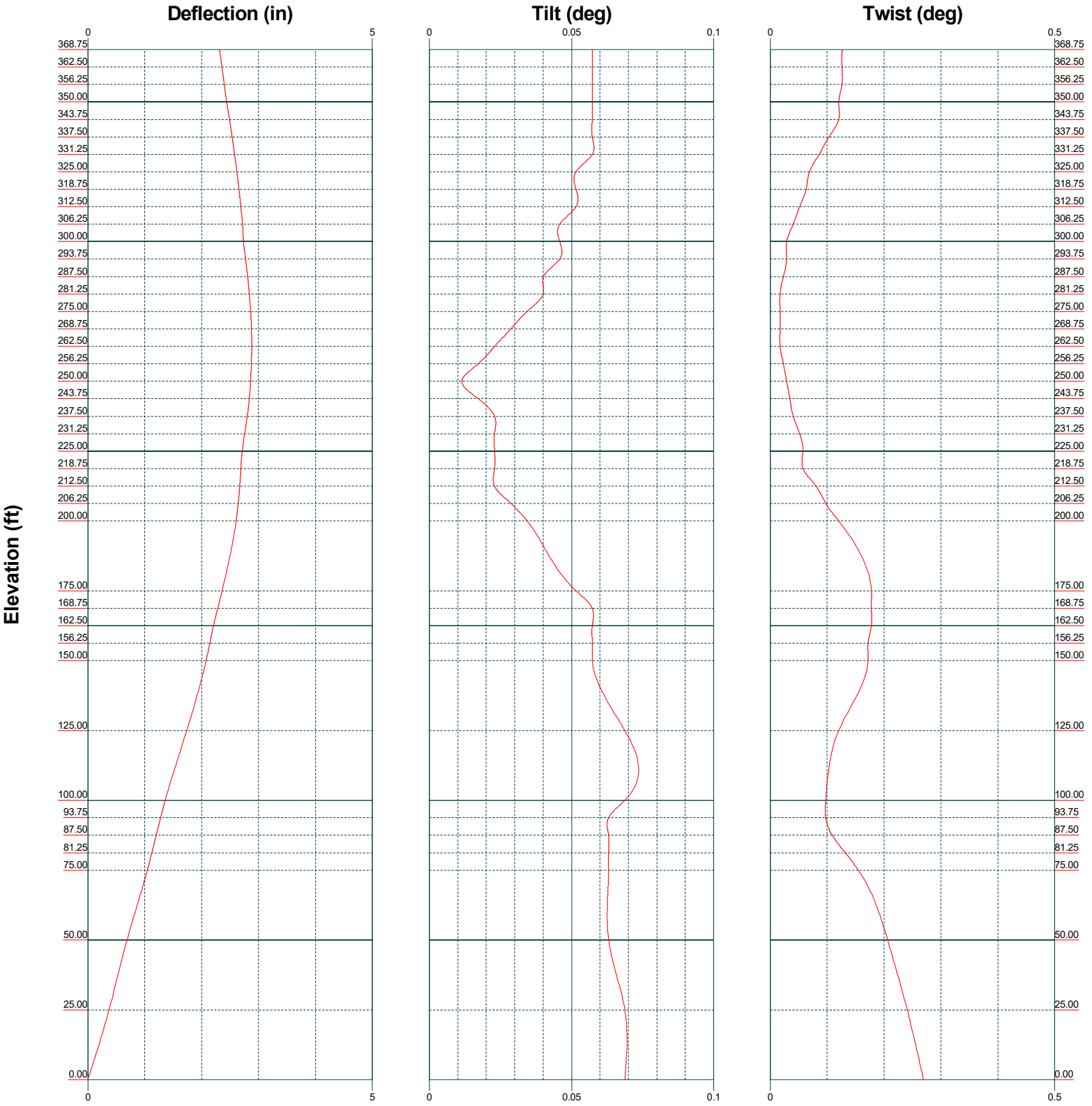


Centek Engineering Inc.
63-2 North Branford Rd.
Branford, CT 06405
Phone: (203) 488-0580
FAX: (203) 488-8587

Job: ***16071.44 - Montville***		
Project: ***370' Guyed Tower - 689 Old Colchester Road, Montville, CT***		
Client: Verizon Wireless	Drawn by: TJL	App'd:
Code: TIA/EIA-222-F	Date: 09/09/16	Scale: NTS
Path: J:\Jobs\1607100.WI\44_Montville CT\2049\04_Structural\Backup Documentation\Calcs\tnxTower Files\370' Guyed Rohn Tower.eri		Dwg No. E-4

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

Maximum Values

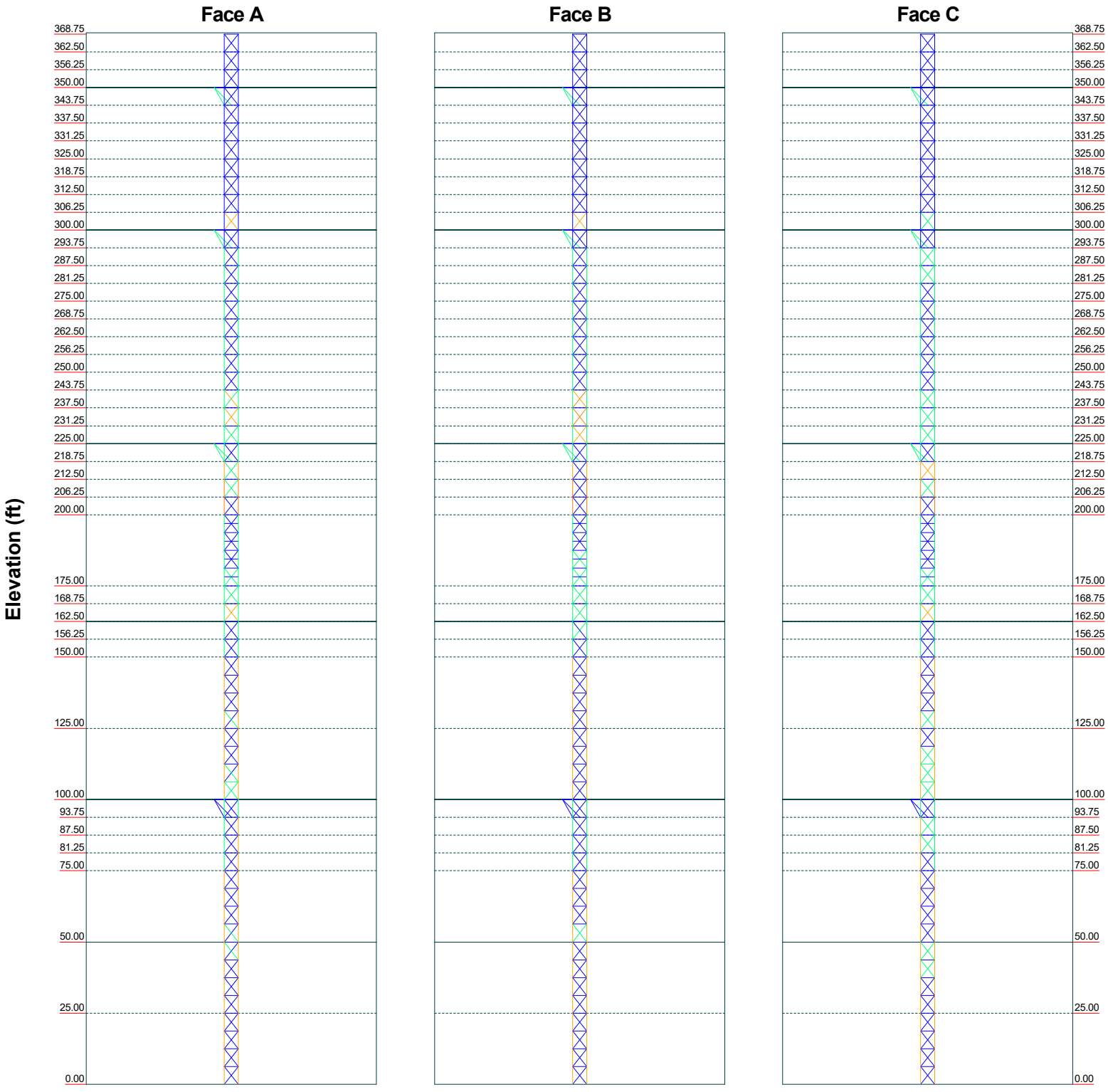


Centek Engineering Inc.
63-2 North Branford Rd.
Branford, CT 06405
Phone: (203) 488-0580
FAX: (203) 488-8587

Job: ***16071.44 - Montville***		
Project: ***370' Guyed Tower - 689 Old Colchester Road, Montville, CT***		
Client: Verizon Wireless	Drawn by: TJL	App'd:
Code: TIA/EIA-222-F	Date: 09/09/16	Scale: NTS
Path: J:\Jobs\1607100.WI\44_Montville CT\2049\04_Structural\Backup Documentation\Calcs\tnxTower Files\370' Guyed Rohn Tower.eri		Dwg No. E-5

Stress Distribution Chart
0' - 368'9"

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

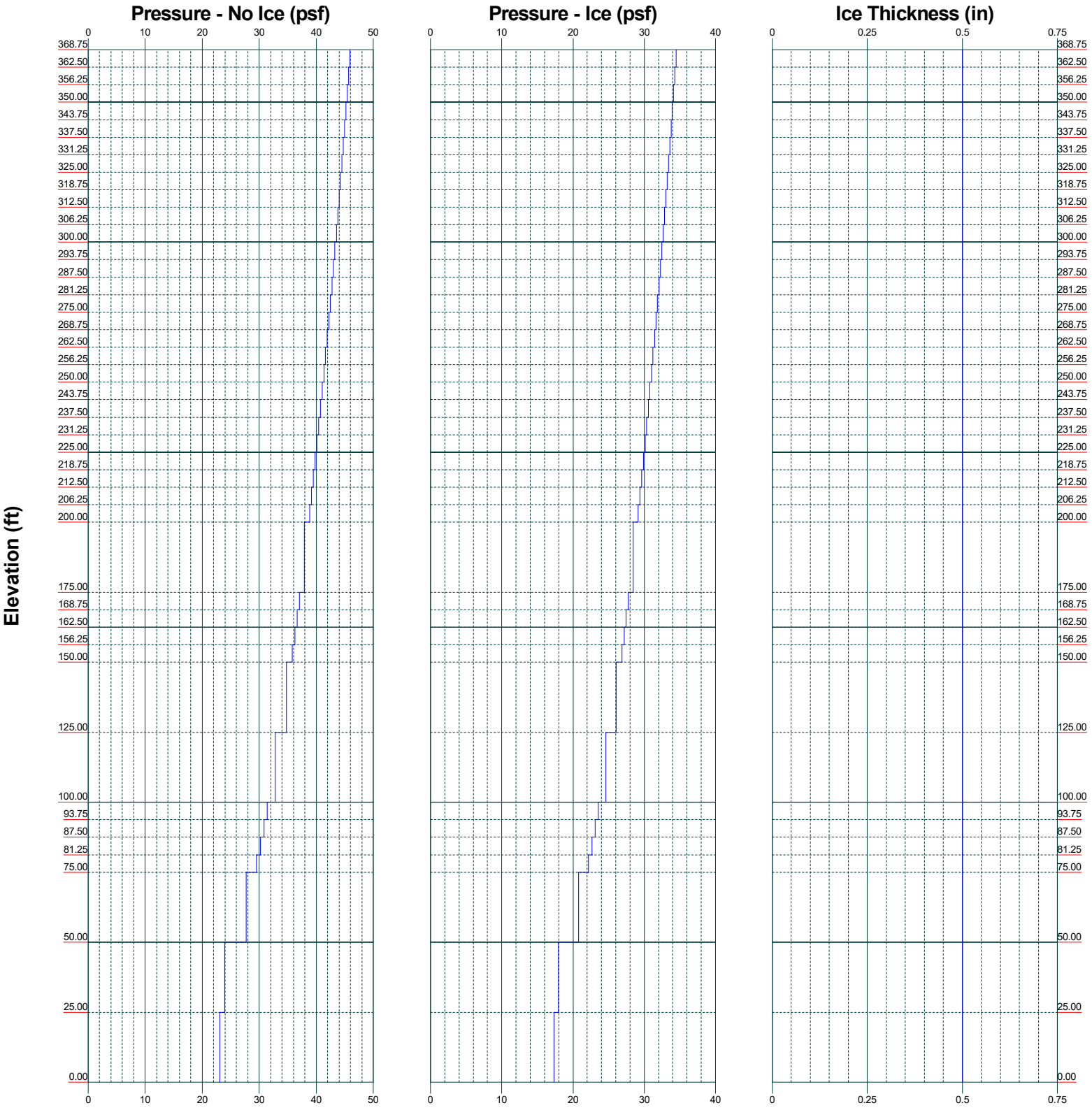


Centek Engineering Inc.
63-2 North Branford Rd.
Branford, CT 06405
Phone: (203) 488-0580
FAX: (203) 488-8587

Job: ***16071.44 - Montville***			
Project: ***370' Guyed Tower - 689 Old Colchester Road, Montville, CT***			
Client: Verizon Wireless	Drawn by: TJL	App'd:	
Code: TIA/EIA-222-F	Date: 09/09/16	Scale: NTS	
Path: J:\Jobs\1607100.WI\44_Montville CT2049\04_Structural\Backup Documentation\Calcs\tnxTower Files\370' Guyed Rohn Tower.eri		Dwg No. E-8	

Wind Pressures and Ice Thickness

TIA/EIA-222-F - 95 mph/82 mph 0.5000 in Ice



Centek Engineering Inc.
63-2 North Branford Rd.
Branford, CT 06405
Phone: (203) 488-0580
FAX: (203) 488-8587

Job: ***16071.44 - Montville***		
Project: ***370' Guyed Tower - 689 Old Colchester Road, Montville, CT***		
Client: Verizon Wireless	Drawn by: TJL	App'd:
Code: TIA/EIA-222-F	Date: 09/09/16	Scale: NTS
Path: J:\Jobs\1607100.WI\44_Montville CT\2049\04_Structural\Backup Documentation\Calcs\tnxTower Files\370' Guyed Rohn Tower.eri		Dwg No. E-9

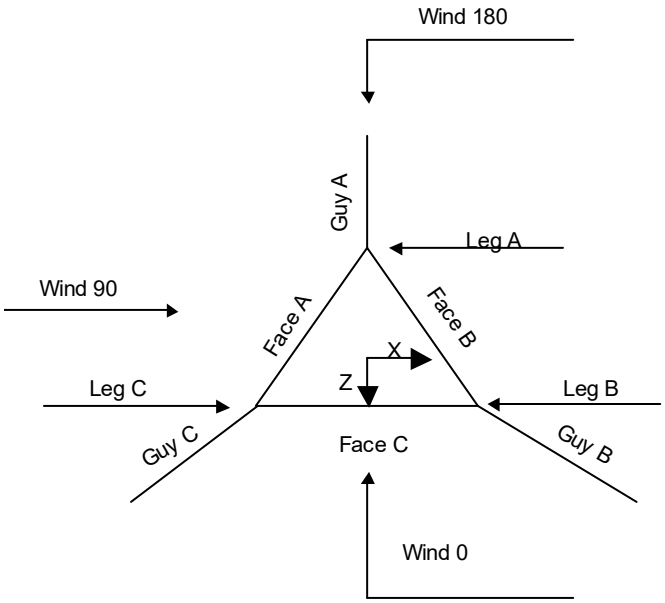
Tower Input Data

The main tower is a 3x guyed tower with an overall height of 368.75 ft above the ground line.
The base of the tower is set at an elevation of 0.00 ft above the ground line.
The face width of the tower is 5.00 ft at the top and 5.00 ft at the base.
This tower is designed using the TIA/EIA-222-F standard.
The following design criteria apply:

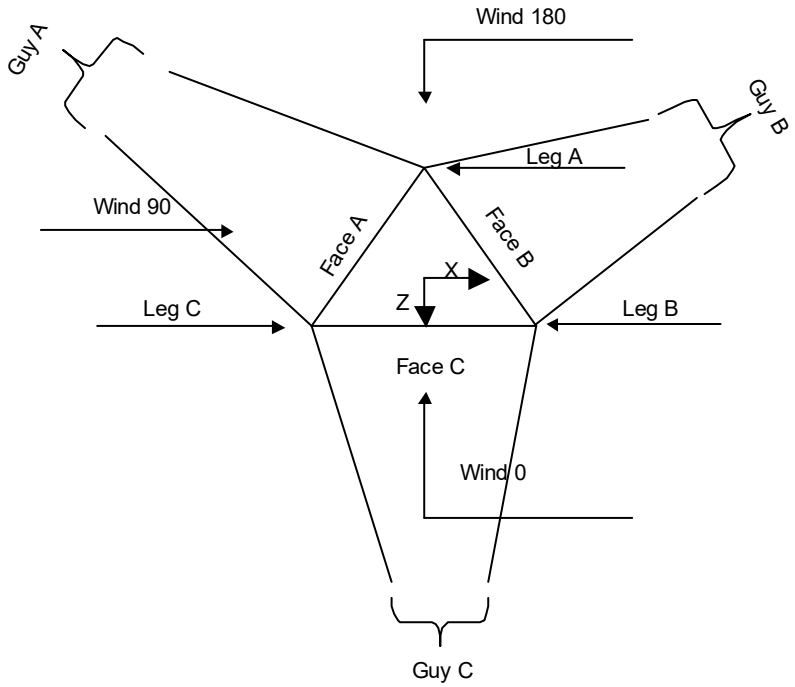
Basic wind speed of 95 mph.
Nominal ice thickness of 0.5000 in.
Ice density of 56 pcf.
A wind speed of 82 mph is used in combination with ice.
Temperature drop of 50 °F.
Deflections calculated using a wind speed of 50 mph.
Tension only take-up is 0.0313 in.
Pressures are calculated at each section.
Safety factor used in guy design is 2.
Stress ratio used in tower member design is 1.333.
Local bending stresses due to climbing loads, 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				



Corner & Starmount Guyed Tower



Face Guyed

Tower Section Geometry

Tower Section	Tower Elevation ft	Assembly Database	Description	Section Width ft	Number of Sections	Section Length ft
T1	368.75-362.50			5.00	1	6.25
T2	362.50-356.25			5.00	1	6.25
T3	356.25-350.00			5.00	1	6.25
T4	350.00-343.75			5.00	1	6.25
T5	343.75-337.50			5.00	1	6.25
T6	337.50-331.25			5.00	1	6.25
T7	331.25-325.00			5.00	1	6.25
T8	325.00-318.75			5.00	1	6.25
T9	318.75-312.50			5.00	1	6.25
T10	312.50-306.25			5.00	1	6.25
T11	306.25-300.00			5.00	1	6.25
T12	300.00-293.75			5.00	1	6.25
T13	293.75-287.50			5.00	1	6.25
T14	287.50-281.25			5.00	1	6.25
T15	281.25-275.00			5.00	1	6.25
T16	275.00-268.75			5.00	1	6.25

Tower Section	Tower Elevation ft	Assembly Database	Description	Section Width ft	Number of Sections	Section Length ft
T17	268.75-262.50			5.00	1	6.25
T18	262.50-256.25			5.00	1	6.25
T19	256.25-250.00			5.00	1	6.25
T20	250.00-243.75			5.00	1	6.25
T21	243.75-237.50			5.00	1	6.25
T22	237.50-231.25			5.00	1	6.25
T23	231.25-225.00			5.00	1	6.25
T24	225.00-218.75			5.00	1	6.25
T25	218.75-212.50			5.00	1	6.25
T26	212.50-206.25			5.00	1	6.25
T27	206.25-200.00			5.00	1	6.25
T28	200.00-175.00			5.00	1	25.00
T29	175.00-168.75			5.00	1	6.25
T30	168.75-162.50			5.00	1	6.25
T31	162.50-156.25			5.00	1	6.25
T32	156.25-150.00			5.00	1	6.25
T33	150.00-125.00			5.00	1	25.00
T34	125.00-100.00			5.00	1	25.00
T35	100.00-93.75			5.00	1	6.25
T36	93.75-87.50			5.00	1	6.25
T37	87.50-81.25			5.00	1	6.25
T38	81.25-75.00			5.00	1	6.25
T39	75.00-50.00			5.00	1	25.00
T40	50.00-25.00			5.00	1	25.00
T41	25.00-0.00			5.00	1	25.00

Tower Section Geometry *(cont'd)*

Tower Section	Tower Elevation ft	Diagonal Spacing ft	Bracing Type	Has K Brace End Panels	Has Horizontals	Top Girt Offset in	Bottom Girt Offset in
T1	368.75-362.50	6.25	X Brace	No	No	0.0000	0.0000
T2	362.50-356.25	6.25	X Brace	No	No	0.0000	0.0000
T3	356.25-350.00	6.25	X Brace	No	No	0.0000	0.0000
T4	350.00-343.75	6.25	X Brace	No	Yes	0.0000	0.0000
T5	343.75-337.50	6.25	TX Brace	No	Yes	0.0000	0.0000
T6	337.50-331.25	6.25	TX Brace	No	Yes	0.0000	0.0000
T7	331.25-325.00	6.25	TX Brace	No	Yes	0.0000	0.0000
T8	325.00-318.75	6.25	TX Brace	No	Yes	0.0000	0.0000
T9	318.75-312.50	6.25	TX Brace	No	Yes	0.0000	0.0000
T10	312.50-306.25	6.25	TX Brace	No	Yes	0.0000	0.0000
T11	306.25-300.00	6.25	TX Brace	No	Yes	0.0000	0.0000
T12	300.00-293.75	6.25	X Brace	No	Yes	0.0000	0.0000
T13	293.75-287.50	6.25	TX Brace	No	Yes	0.0000	0.0000
T14	287.50-281.25	6.25	TX Brace	No	Yes	0.0000	0.0000
T15	281.25-275.00	6.25	TX Brace	No	Yes	0.0000	0.0000
T16	275.00-268.75	6.25	TX Brace	No	Yes	0.0000	0.0000
T17	268.75-262.50	6.25	TX Brace	No	Yes	0.0000	0.0000
T18	262.50-256.25	6.25	TX Brace	No	Yes	0.0000	0.0000
T19	256.25-250.00	6.25	TX Brace	No	Yes	0.0000	0.0000
T20	250.00-243.75	6.25	TX Brace	No	Yes	0.0000	0.0000
T21	243.75-237.50	6.25	TX Brace	No	Yes	0.0000	0.0000
T22	237.50-231.25	6.25	TX Brace	No	Yes	0.0000	0.0000
T23	231.25-225.00	6.25	TX Brace	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
T24	225.00-218.75	6.25	X Brace	No	Yes	0.0000	0.0000
T25	218.75-212.50	6.25	TX Brace	No	Yes	0.0000	0.0000
T26	212.50-206.25	6.25	TX Brace	No	Yes	0.0000	0.0000
T27	206.25-200.00	6.25	TX Brace	No	Yes	0.0000	0.0000
T28	200.00-175.00	6.25	TX Brace	No	Yes	0.0000	0.0000
T29	175.00-168.75	6.25	TX Brace	No	Yes	0.0000	0.0000
T30	168.75-162.50	6.25	TX Brace	No	Yes	0.0000	0.0000
T31	162.50-156.25	6.25	TX Brace	No	Yes	0.0000	0.0000
T32	156.25-150.00	6.25	TX Brace	No	Yes	0.0000	0.0000
T33	150.00-125.00	6.25	TX Brace	No	Yes	0.0000	0.0000
T34	125.00-100.00	6.25	TX Brace	No	Yes	0.0000	0.0000
T35	100.00-93.75	6.25	X Brace	No	Yes	0.0000	0.0000
T36	93.75-87.50	6.25	TX Brace	No	Yes	0.0000	0.0000
T37	87.50-81.25	6.25	TX Brace	No	Yes	0.0000	0.0000
T38	81.25-75.00	6.25	TX Brace	No	Yes	0.0000	0.0000
T39	75.00-50.00	6.25	TX Brace	No	Yes	0.0000	0.0000
T40	50.00-25.00	6.25	TX Brace	No	Yes	0.0000	0.0000
T41	25.00-0.00	6.25	TX Brace	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 368.75-362.50	Solid Round	2 3/4	A36 (36 ksi)	Single Angle	L2 1/2x2 1/2x1/4	A36 (36 ksi)
T2 362.50-356.25	Solid Round	2 3/4	A36 (36 ksi)	Double Angle	2L3x3x5/16	A36 (36 ksi)
T3 356.25-350.00	Solid Round	2 3/4	A36 (36 ksi)	Double Angle	2L3x3x5/16	A36 (36 ksi)
T4 350.00-343.75	Solid Round	3	A36 (36 ksi)	Single Angle	L3x2 1/2x1/4	A36 (36 ksi)
T5 343.75-337.50	Solid Round	3	A36 (36 ksi)	Solid Round	5/8	A36 (36 ksi)
T6 337.50-331.25	Solid Round	3	A36 (36 ksi)	Solid Round	5/8	A36 (36 ksi)
T7 331.25-325.00	Solid Round	3	A36 (36 ksi)	Solid Round	5/8	A36 (36 ksi)
T8 325.00-318.75	Solid Round	3 1/4	A36 (36 ksi)	Solid Round	3/4	A36 (36 ksi)
T9 318.75-312.50	Solid Round	3 1/4	A36 (36 ksi)	Solid Round	3/4	A36 (36 ksi)
T10 312.50-306.25	Solid Round	3 1/4	A36 (36 ksi)	Solid Round	3/4	A36 (36 ksi)
T11 306.25-300.00	Solid Round	3 1/4	A36 (36 ksi)	Solid Round	3/4	A36 (36 ksi)
T12 300.00-293.75	Solid Round	3 1/4	A36 (36 ksi)	Single Angle	L3x2 1/2x1/4	A36 (36 ksi)
T13 293.75-287.50	Solid Round	3 1/4	A36 (36 ksi)	Solid Round	3/4	A36 (36 ksi)
T14 287.50-281.25	Solid Round	3 1/4	A36 (36 ksi)	Solid Round	5/8	A36 (36 ksi)
T15 281.25-275.00	Solid Round	3 1/4	A36 (36 ksi)	Solid Round	5/8	A36 (36 ksi)
T16 275.00-268.75	Solid Round	3 1/4	A36 (36 ksi)	Solid Round	5/8	A36 (36 ksi)
T17	Solid Round	3 1/4	A36	Solid Round	5/8	A36

Tower Elevation ft	Leg Type	Leg Size	Leg Grade	Diagonal Type	Diagonal Size	Diagonal Grade
268.75-262.50			(36 ksi)			(36 ksi)
T18	Solid Round	3 1/4	A36	Solid Round	5/8	A36
262.50-256.25			(36 ksi)			(36 ksi)
T19	Solid Round	3 1/4	A36	Solid Round	3/4	A36
256.25-250.00			(36 ksi)			(36 ksi)
T20	Solid Round	3 1/4	A36	Solid Round	3/4	A36
250.00-243.75			(36 ksi)			(36 ksi)
T21	Solid Round	3 1/4	A36	Solid Round	3/4	A36
243.75-237.50			(36 ksi)			(36 ksi)
T22	Solid Round	3 1/4	A36	Solid Round	3/4	A36
237.50-231.25			(36 ksi)			(36 ksi)
T23	Solid Round	3 1/4	A36	Solid Round	1	A36
231.25-225.00			(36 ksi)			(36 ksi)
T24	Solid Round	3	A36	Double Angle	2L2 1/2x2 1/2x1/4	A36
225.00-218.75			(36 ksi)			(36 ksi)
T25	Solid Round	3	A36	Solid Round	5/8	A36
218.75-212.50			(36 ksi)			(36 ksi)
T26	Solid Round	3	A36	Solid Round	5/8	A36
212.50-206.25			(36 ksi)			(36 ksi)
T27	Solid Round	3	A36	Solid Round	5/8	A36
206.25-200.00			(36 ksi)			(36 ksi)
T28	Solid Round	3	A36	Solid Round	5/8	A36
200.00-175.00			(36 ksi)			(36 ksi)
T29	Solid Round	3 1/4	A36	Solid Round	1	A36
175.00-168.75			(36 ksi)			(36 ksi)
T30	Solid Round	3 1/4	A36	Solid Round	1	A36
168.75-162.50			(36 ksi)			(36 ksi)
T31	Solid Round	3 1/4	A36	Solid Round	5/8	A36
162.50-156.25			(36 ksi)			(36 ksi)
T32	Solid Round	3 1/4	A36	Solid Round	5/8	A36
156.25-150.00			(36 ksi)			(36 ksi)
T33	Solid Round	3 1/4	A36	Solid Round	5/8	A36
150.00-125.00			(36 ksi)			(36 ksi)
T34	Solid Round	3 1/4	A36	Single Angle	L2 1/2x2 1/2x3/16	A36
125.00-100.00			(36 ksi)			(36 ksi)
T35 100.00-93.75	Solid Round	3 1/4	A36	Double Angle	2L2 1/2x2 1/2x1/4	A36
			(36 ksi)			(36 ksi)
T36 93.75-87.50	Solid Round	3 1/4	A36	Solid Round	3/4	A36
			(36 ksi)			(36 ksi)
T37 87.50-81.25	Solid Round	3 1/4	A36	Solid Round	5/8	A36
			(36 ksi)			(36 ksi)
T38 81.25-75.00	Solid Round	3 1/4	A36	Solid Round	5/8	A36
			(36 ksi)			(36 ksi)
T39 75.00-50.00	Solid Round	3 1/4	A36	Solid Round	5/8	A36
			(36 ksi)			(36 ksi)
T40 50.00-25.00	Solid Round	3 1/4	A36	Solid Round	5/8	A36
			(36 ksi)			(36 ksi)
T41 25.00-0.00	Solid Round	3 1/4	A36	Solid Round	5/8	A36
			(36 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 368.75-362.50	Double Angle	2L2 1/2x2x1/4	A36	Pipe		A36

Tower Elevation ft	Top Girt Type	Top Girt Size	Top Girt Grade	Bottom Girt Type	Bottom Girt Size	Bottom Girt Grade
			(36 ksi)			(36 ksi)
T2 362.50-356.25	Double Angle	2L2 1/2x3x1/4	A36	Pipe		A36
			(36 ksi)			(36 ksi)
T3 356.25-350.00	Double Angle	2L2 1/2x3x1/4	A36	Pipe		A36
			(36 ksi)			(36 ksi)
T4 350.00-343.75	Double Angle	2L2 1/2x2x1/4	A36	Pipe		A36
			(36 ksi)			(36 ksi)
T5 343.75-337.50	Double Angle	2L2 1/2x2x1/4	A36	Pipe		A36
			(36 ksi)			(36 ksi)
T6 337.50-331.25	Pipe	P1.25x.14	A36	Pipe		A36
			(36 ksi)			(36 ksi)
T7 331.25-325.00	Pipe	P1.25x.14	A36	Pipe		A36
			(36 ksi)			(36 ksi)
T8 325.00-318.75	Pipe	P1.25x.14	A36	Pipe		A36
			(36 ksi)			(36 ksi)
T9 318.75-312.50	Pipe	P1.25x.14	A36	Pipe		A36
			(36 ksi)			(36 ksi)
T10	Pipe	P1.25x.14	A36	Pipe		A36
312.50-306.25			(36 ksi)			(36 ksi)
T11	Double Angle	2L2 1/2x2x1/4	A36	Pipe		A36
306.25-300.00			(36 ksi)			(36 ksi)
T12	Double Angle	2L2 1/2x2x1/4	A36	Pipe		A36
300.00-293.75			(36 ksi)			(36 ksi)
T13	Double Angle	2L2 1/2x2x1/4	A36	Pipe		A36
293.75-287.50			(36 ksi)			(36 ksi)
T14	Pipe	P1.25x.14	A36	Pipe		A36
287.50-281.25			(36 ksi)			(36 ksi)
T15	Pipe	P1.25x.14	A36	Pipe		A36
281.25-275.00			(36 ksi)			(36 ksi)
T16	Pipe	P1.25x.14	A36	Pipe		A36
275.00-268.75			(36 ksi)			(36 ksi)
T17	Pipe	P1.25x.14	A36	Pipe		A36
268.75-262.50			(36 ksi)			(36 ksi)
T18	Pipe	P1.25x.14	A36	Pipe		A36
262.50-256.25			(36 ksi)			(36 ksi)
T19	Pipe	P1.25x.14	A36	Pipe		A36
256.25-250.00			(36 ksi)			(36 ksi)
T20	Double Angle	2L2 1/2x2x1/4	A36	Pipe		A36
250.00-243.75			(36 ksi)			(36 ksi)
T21	Double Angle	2L2 1/2x2x1/4	A36	Pipe		A36
243.75-237.50			(36 ksi)			(36 ksi)
T22	Double Angle	2L2 1/2x2x1/4	A36	Pipe		A36
237.50-231.25			(36 ksi)			(36 ksi)
T23	Double Angle	2L2 1/2x2x1/4	A36	Pipe		A36
231.25-225.00			(36 ksi)			(36 ksi)
T24	Double Angle	2L2 1/2x2x1/4	A36	Pipe		A36
225.00-218.75			(36 ksi)			(36 ksi)
T25	Double Angle	2L2 1/2x2x1/4	A36	Pipe		A36
218.75-212.50			(36 ksi)			(36 ksi)
T26	Pipe	P1.25x.14	A36	Pipe		A36
212.50-206.25			(36 ksi)			(36 ksi)
T27	Pipe	P1.25x.14	A36	Pipe		A36
206.25-200.00			(36 ksi)			(36 ksi)
T28	Pipe	P1.25x.14	A36	Pipe		A36
200.00-175.00			(36 ksi)			(36 ksi)
T29	Pipe	P1.25x.14	A36	Pipe		A36
175.00-168.75			(36 ksi)			(36 ksi)
T30	Pipe	P1.25x.14	A36	Pipe		A36
168.75-162.50			(36 ksi)			(36 ksi)
T31	Double Angle	2L2 1/2x2x1/4	A36	Pipe		A36
162.50-156.25			(36 ksi)			(36 ksi)

Tower Elevation ft	Top Girt Type	Top Girt Size	Top Girt Grade	Bottom Girt Type	Bottom Girt Size	Bottom Girt Grade
T32 156.25-150.00	Pipe	P1.25x.14	A36 (36 ksi)	Pipe		A36 (36 ksi)
T33 150.00-125.00	Pipe	P1.25x.14	A36 (36 ksi)	Pipe		A36 (36 ksi)
T34 125.00-100.00	Pipe	P1.25x.14	A36 (36 ksi)	Pipe		A36 (36 ksi)
T35 100.00-93.75	Double Angle	2L2 1/2x2x1/4	A36 (36 ksi)	Pipe		A36 (36 ksi)
T36 93.75-87.50	Double Angle	2L2 1/2x2x1/4	A36 (36 ksi)	Pipe		A36 (36 ksi)
T37 87.50-81.25	Pipe	P1.25x.14	A36 (36 ksi)	Pipe		A36 (36 ksi)
T38 81.25-75.00	Pipe	P1.25x.14	A36 (36 ksi)	Pipe		A36 (36 ksi)
T39 75.00-50.00	Pipe	P1.25x.14	A36 (36 ksi)	Pipe		A36 (36 ksi)
T40 50.00-25.00	Single Angle	L2 1/2x2x1/4	A36 (36 ksi)	Pipe		A36 (36 ksi)
T41 25.00-0.00	Pipe	P1.25x.14	A36 (36 ksi)	Pipe		A36 (36 ksi)

Tower Section Geometry *(cont'd)*

Tower Elevation ft	No. of Mid Girts	Mid Girt Type	Mid Girt Size	Mid Girt Grade	Horizontal Type	Horizontal Size	Horizontal Grade
T4 350.00-343.75	None	Flat Bar		A36 (36 ksi)	Pipe	P1.25x.14	A36 (36 ksi)
T5 343.75-337.50	None	Flat Bar		A36 (36 ksi)	Pipe	P1.25x.14	A36 (36 ksi)
T6 337.50-331.25	None	Flat Bar		A36 (36 ksi)	Pipe	P1.25x.14	A36 (36 ksi)
T7 331.25-325.00	None	Flat Bar		A36 (36 ksi)	Pipe	P1.25x.14	A36 (36 ksi)
T8 325.00-318.75	None	Flat Bar		A36 (36 ksi)	Pipe	P1.25x.14	A36 (36 ksi)
T9 318.75-312.50	None	Flat Bar		A36 (36 ksi)	Pipe	P1.25x.14	A36 (36 ksi)
T10 312.50-306.25	None	Flat Bar		A36 (36 ksi)	Pipe	P1.25x.14	A36 (36 ksi)
T11 306.25-300.00	None	Flat Bar		A36 (36 ksi)	Pipe	P1.25x.14	A36 (36 ksi)
T12 300.00-293.75	None	Flat Bar		A36 (36 ksi)	Pipe	P1.25x.14	A36 (36 ksi)
T13 293.75-287.50	None	Flat Bar		A36 (36 ksi)	Pipe	P1.25x.14	A36 (36 ksi)
T14 287.50-281.25	None	Flat Bar		A36 (36 ksi)	Pipe	P1.25x.14	A36 (36 ksi)
T15 281.25-275.00	None	Flat Bar		A36 (36 ksi)	Pipe	P1.25x.14	A36 (36 ksi)
T16 275.00-268.75	None	Flat Bar		A36 (36 ksi)	Pipe	P1.25x.14	A36 (36 ksi)
T17 268.75-262.50	None	Flat Bar		A36 (36 ksi)	Pipe	P1.25x.14	A36 (36 ksi)
T18	None	Flat Bar		A36	Pipe	P1.25x.14	A36

Tower Elevation ft	No. of Mid Girts	Mid Girt Type	Mid Girt Size	Mid Girt Grade	Horizontal Type	Horizontal Size	Horizontal Grade
262.50-256.25				(36 ksi)			(36 ksi)
T19	None	Flat Bar		A36	Pipe	P1.25x.14	A36
256.25-250.00				(36 ksi)			(36 ksi)
T20	None	Flat Bar		A36	Pipe	P1.25x.14	A36
250.00-243.75				(36 ksi)			(36 ksi)
T21	None	Flat Bar		A36	Pipe	P1.25x.14	A36
243.75-237.50				(36 ksi)			(36 ksi)
T22	None	Flat Bar		A36	Pipe	P1.25x.14	A36
237.50-231.25				(36 ksi)			(36 ksi)
T23	None	Flat Bar		A36	Pipe	P1.25x.14	A36
231.25-225.00				(36 ksi)			(36 ksi)
T24	None	Flat Bar		A36	Pipe	P1.25x.14	A36
225.00-218.75				(36 ksi)			(36 ksi)
T25	None	Flat Bar		A36	Pipe	P1.25x.14	A36
218.75-212.50				(36 ksi)			(36 ksi)
T26	None	Flat Bar		A36	Pipe	P1.25x.14	A36
212.50-206.25				(36 ksi)			(36 ksi)
T27	None	Flat Bar		A36	Pipe	P1.25x.14	A36
206.25-200.00				(36 ksi)			(36 ksi)
T28	None	Flat Bar		A36	Pipe	P1.25x.14	A36
200.00-175.00				(36 ksi)			(36 ksi)
T29	None	Single Angle		A36	Pipe	P1.25x.14	A36
175.00-168.75				(36 ksi)			(36 ksi)
T30	None	Single Angle		A36	Pipe	P1.25x.14	A36
168.75-162.50				(36 ksi)			(36 ksi)
T31	None	Single Angle		A36	Pipe	P1.25x.14	A36
162.50-156.25				(36 ksi)			(36 ksi)
T32	None	Single Angle		A36	Pipe	P1.25x.14	A36
156.25-150.00				(36 ksi)			(36 ksi)
T33	None	Single Angle		A36	Pipe	P1.25x.14	A36
150.00-125.00				(36 ksi)			(36 ksi)
T34	None	Single Angle		A36	Pipe	P1.25x.14	A36
125.00-100.00				(36 ksi)			(36 ksi)
T35 100.00-93.75	None	Single Angle		A36	Pipe	P1.25x.14	A36
				(36 ksi)			(36 ksi)
T36 93.75-87.50	None	Single Angle		A36	Pipe	P1.25x.14	A36
				(36 ksi)			(36 ksi)
T37 87.50-81.25	None	Single Angle		A36	Pipe	P1.25x.14	A36
				(36 ksi)			(36 ksi)
T38 81.25-75.00	None	Single Angle		A36	Pipe	P1.25x.14	A36
				(36 ksi)			(36 ksi)
T39 75.00-50.00	None	Single Angle		A36	Pipe	P1.25x.14	A36
				(36 ksi)			(36 ksi)
T40 50.00-25.00	None	Single Angle		A36	Pipe	P1.25x.14	A36
				(36 ksi)			(36 ksi)
T41 25.00-0.00	None	Single Angle		A36	Pipe	P1.25x.14	A36
				(36 ksi)			(36 ksi)

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Secondary Horizontal Type	Secondary Horizontal Size	Secondary Horizontal Grade	Inner Bracing Type	Inner Bracing Size	Inner Bracing Grade
T28	Pipe	P1.25x.14	A36	Solid Round		A572-50

Tower Elevation ft	Secondary Horizontal Type	Secondary Horizontal Size	Secondary Horizontal Grade	Inner Bracing Type	Inner Bracing Size	Inner Bracing Grade
200.00-175.00			(36 ksi)			(50 ksi)

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Gusset Area (per face) ft²	Gusset Thickness in	Gusset Grade	Adjust. Factor A_f	Adjust. Factor A_r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals in	Double Angle Stitch Bolt Spacing Horizontals in	Double Angle Stitch Bolt Spacing Redundants in
T1 368.75-362.50	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T2 362.50-356.25	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T3 356.25-350.00	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T4 350.00-343.75	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T5 343.75-337.50	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T6 337.50-331.25	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T7 331.25-325.00	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T8 325.00-318.75	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T9 318.75-312.50	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T10 312.50-306.25	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T11 306.25-300.00	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T12 300.00-293.75	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T13 293.75-287.50	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T14 287.50-281.25	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T15 281.25-275.00	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T16 275.00-268.75	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T17 268.75-262.50	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T18 262.50-256.25	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T19 256.25-250.00	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T20 250.00-243.75	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T21 243.75-237.50	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T22 237.50-231.25	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T23 231.25-225.00	0.00	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
T24 225.00-218.75	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T25 218.75-212.50	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T26 212.50-206.25	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T27 206.25-200.00	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T28 200.00-175.00	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T29 175.00-168.75	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T30 168.75-162.50	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T31 162.50-156.25	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T32 156.25-150.00	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T33 150.00-125.00	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T34 125.00-100.00	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T35 100.00-93.75	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T36 93.75-87.50	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T37 87.50-81.25	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T38 81.25-75.00	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T39 75.00-50.00	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T40 50.00-25.00	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T41 25.00-0.00	0.00	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 Y	K Brace Diags X Y	Single Diags X Y	Girts X Y	Horiz. X Y	Sec. Horiz. X Y	Inner Brace X Y
T1 368.75-362.50	Yes	Yes	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T2 362.50-356.25	Yes	Yes	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T3 356.25-350.00	Yes	Yes	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T4 350.00-343.75	Yes	Yes	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T5 343.75-337.50	Yes	Yes	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
T6	Yes	Yes	1	1	1	1	1	1	1	1
337.50-331.25				1	1	1	1	1	1	1
T7	Yes	Yes	1	1	1	1	1	1	1	1
331.25-325.00				1	1	1	1	1	1	1
T8	Yes	Yes	1	1	1	1	1	1	1	1
325.00-318.75				1	1	1	1	1	1	1
T9	Yes	Yes	1	1	1	1	1	1	1	1
318.75-312.50				1	1	1	1	1	1	1
T10	Yes	Yes	1	1	1	1	1	1	1	1
312.50-306.25				1	1	1	1	1	1	1
T11	Yes	Yes	1	1	1	1	1	1	1	1
306.25-300.00				1	1	1	1	1	1	1
T12	Yes	Yes	1	1	1	1	1	1	1	1
300.00-293.75				1	1	1	1	1	1	1
T13	Yes	Yes	1	1	1	1	1	1	1	1
293.75-287.50				1	1	1	1	1	1	1
T14	Yes	Yes	1	1	1	1	1	1	1	1
287.50-281.25				1	1	1	1	1	1	1
T15	Yes	Yes	1	1	1	1	1	1	1	1
281.25-275.00				1	1	1	1	1	1	1
T16	Yes	Yes	1	1	1	1	1	1	1	1
275.00-268.75				1	1	1	1	1	1	1
T17	Yes	Yes	1	1	1	1	1	1	1	1
268.75-262.50				1	1	1	1	1	1	1
T18	Yes	Yes	1	1	1	1	1	1	1	1
262.50-256.25				1	1	1	1	1	1	1
T19	Yes	Yes	1	1	1	1	1	1	1	1
256.25-250.00				1	1	1	1	1	1	1
T20	Yes	Yes	1	1	1	1	1	1	1	1
250.00-243.75				1	1	1	1	1	1	1
T21	Yes	Yes	1	1	1	1	1	1	1	1
243.75-237.50				1	1	1	1	1	1	1
T22	Yes	Yes	1	1	1	1	1	1	1	1
237.50-231.25				1	1	1	1	1	1	1
T23	Yes	Yes	1	1	1	1	1	1	1	1
231.25-225.00				1	1	1	1	1	1	1
T24	Yes	Yes	1	1	1	1	1	1	1	1
225.00-218.75				1	1	1	1	1	1	1
T25	Yes	Yes	1	1	1	1	1	1	1	1
218.75-212.50				1	1	1	1	1	1	1
T26	Yes	Yes	1	1	1	1	1	1	1	1
212.50-206.25				1	1	1	1	1	1	1
T27	Yes	Yes	1	1	1	1	1	1	1	1
206.25-200.00				1	1	1	1	1	1	1
T28	Yes	Yes	1	1	1	1	1	1	1	1
200.00-175.00				1	1	1	1	1	1	1
T29	Yes	Yes	1	1	1	1	1	1	1	1
175.00-168.75				1	1	1	1	1	1	1
T30	Yes	Yes	1	1	1	1	1	1	1	1
168.75-162.50				1	1	1	1	1	1	1
T31	Yes	Yes	1	1	1	1	1	1	1	1
162.50-156.25				1	1	1	1	1	1	1
T32	Yes	Yes	1	1	1	1	1	1	1	1
156.25-150.00				1	1	1	1	1	1	1
T33	Yes	Yes	1	1	1	1	1	1	1	1
150.00-125.00				1	1	1	1	1	1	1
T34	Yes	Yes	1	1	1	1	1	1	1	1
125.00-100.00				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
T35	Yes	Yes	1	1	1	1	1	1	1	1
100.00-93.75				1	1	1	1	1	1	1
T36	Yes	Yes	1	1	1	1	1	1	1	1
93.75-87.50				1	1	1	1	1	1	1
T37	Yes	Yes	1	1	1	1	1	1	1	1
87.50-81.25				1	1	1	1	1	1	1
T38	Yes	Yes	1	1	1	1	1	1	1	1
81.25-75.00				1	1	1	1	1	1	1
T39	Yes	Yes	1	1	1	1	1	1	1	1
75.00-50.00				1	1	1	1	1	1	1
T40	Yes	Yes	1	1	1	1	1	1	1	1
50.00-25.00				1	1	1	1	1	1	1
T41	Yes	Yes	1	1	1	1	1	1	1	1
25.00-0.00				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 Net Width Deduct in	Leg U	Diagonal Net Width Deduct in	Diagonal U	Top Girt Net Width Deduct in	Top Girt U	Bottom Girt Net Width Deduct in	Bottom Girt U	Mid Girt Net Width Deduct in	Mid Girt U	Long Horizontal Net Width Deduct in	Long Horizontal U	Short Horizontal Net Width Deduct in	Short Horizontal U
T1	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
368.75-362.50														
T2	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
362.50-356.25														
T3	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
356.25-350.00														
T4	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
350.00-343.75														
T5	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
343.75-337.50														
T6	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
337.50-331.25														
T7	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
331.25-325.00														
T8	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
325.00-318.75														
T9	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
318.75-312.50														
T10	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
312.50-306.25														
T11	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
306.25-300.00														
T12	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
300.00-293.75														
T13	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
293.75-287.50														
T14	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
287.50-281.25														

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
T15 281.25-275.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T16 275.00-268.75	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T17 268.75-262.50	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 262.50-256.25	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 256.25-250.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T20 250.00-243.75	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T21 243.75-237.50	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 237.50-231.25	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 231.25-225.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T24 225.00-218.75	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T25 218.75-212.50	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
T26 212.50-206.25	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
T27 206.25-200.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T28 200.00-175.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T29 175.00-168.75	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T30 168.75-162.50	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
T31 162.50-156.25	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
T32 156.25-150.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T33 150.00-125.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T34 125.00-100.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T35 100.00-93.75	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T36 93.75-87.50	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
T37 87.50-81.25	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
T38 81.25-75.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T39 75.00-50.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T40 50.00-25.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T41 25.00-0.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Leg Connection Type	Leg		Diagonal		Top Girt		Bottom Girt		Mid Girt		Long Horizontal		Short Horizontal	
		Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.
T1	Flange	0.7500	6	0.5000	2	0.6250	2	0.6250	0	0.6250	0	0.6250	2	0.6250	0
368.75-362.50		A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T2	Flange	0.7500	0	0.5000	2	0.5000	2	0.6250	0	0.6250	0	0.6250	2	0.6250	0
362.50-356.25		A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T3	Flange	0.7500	0	0.5000	2	0.5000	2	0.6250	0	0.6250	0	0.6250	2	0.6250	0
356.25-350.00		A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T4	Flange	0.7500	6	0.6250	2	0.6250	2	0.0000	0	0.6250	0	0.6250	2	0.6250	0
350.00-343.75		A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T5	Flange	0.7500	0	0.5000	2	0.6250	2	0.0000	0	0.6250	0	0.6250	2	0.6250	0
343.75-337.50		A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T6	Flange	0.7500	0	0.5000	2	0.5000	2	0.0000	0	0.6250	0	0.6250	2	0.6250	0
337.50-331.25		A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T7	Flange	0.7500	0	0.5000	2	0.5000	2	0.5000	0	0.6250	0	0.6250	2	0.6250	0
331.25-325.00		A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T8	Flange	0.7500	6	0.5000	2	0.5000	2	0.0000	0	0.6250	0	0.6250	2	0.6250	1
325.00-318.75		A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T9	Flange	0.7500	0	0.5000	2	0.5000	2	0.0000	0	0.6250	0	0.6250	2	0.6250	1
318.75-312.50		A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T10	Flange	0.7500	0	0.5000	2	0.5000	2	0.0000	0	0.6250	0	0.6250	2	0.6250	1
312.50-306.25		A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T11	Flange	0.7500	0	0.5000	2	0.6250	2	0.6250	0	0.6250	0	0.6250	2	0.6250	1
306.25-300.00		A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T12	Flange	0.7500	6	0.6250	2	0.6250	2	0.0000	0	0.6250	0	0.6250	2	0.6250	0
300.00-293.75		A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T13	Flange	0.7500	0	0.5000	2	0.6250	2	0.0000	0	0.6250	0	0.6250	2	0.6250	0
293.75-287.50		A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T14	Flange	0.7500	0	0.5000	2	0.5000	2	0.0000	0	0.6250	0	0.6250	2	0.6250	0
287.50-281.25		A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T15	Flange	0.7500	0	0.5000	2	0.6250	2	0.5000	0	0.6250	0	0.6250	2	0.6250	0
281.25-275.00		A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T16	Flange	0.7500	6	0.5000	2	0.5000	2	0.0000	0	0.6250	0	0.6250	2	0.6250	0
275.00-268.75		A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T17	Flange	0.7500	0	0.5000	2	0.5000	2	0.0000	0	0.6250	0	0.6250	2	0.6250	0
268.75-262.50		A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T18	Flange	0.7500	0	0.5000	2	0.5000	2	0.0000	0	0.6250	0	0.6250	2	0.6250	0
262.50-256.25		A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T19	Flange	0.7500	0	0.5000	2	0.5000	2	0.5000	0	0.6250	0	0.6250	2	0.6250	0
256.25-250.00		A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T20	Flange	0.7500	6	0.5000	2	0.5000	2	0.0000	0	0.6250	0	0.6250	2	0.6250	0
250.00-243.75		A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T21	Flange	0.7500	0	0.5000	2	0.6250	2	0.0000	0	0.6250	0	0.6250	2	0.6250	0
243.75-237.50		A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T22	Flange	0.7500	0	0.5000	2	0.6250	2	0.0000	0	0.6250	0	0.6250	2	0.6250	0
237.50-231.25		A325N		A325X		A325N		A325N		A325N		A325N		A325N	
T23	Flange	0.7500	0	0.5000	2	0.6250	2	0.5000	0	0.6250	0	0.6250	2	0.6250	0
231.25-225.00		A325N		A325X		A325N		A325N		A325N		A325N		A325N	
T24	Flange	0.7500	6	0.6250	2	0.6250	2	0.0000	0	0.6250	0	0.6250	2	0.6250	0
225.00-218.75		A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T25	Flange	0.7500	0	0.5000	2	0.6250	2	0.0000	0	0.6250	0	0.6250	2	0.6250	0
218.75-212.50		A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T26	Flange	0.7500	0	0.5000	2	0.5000	2	0.0000	0	0.6250	0	0.6250	2	0.6250	0
212.50-206.25		A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T27	Flange	0.7500	0	0.5000	2	0.5000	2	0.5000	0	0.6250	0	0.6250	2	0.6250	0
206.25-200.00		A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T28	Flange	0.7500	6	0.5000	2	0.5000	2	0.6250	0	0.6250	0	0.6250	2	0.6250	0
200.00-175.00		A325N		A325N		A325N		A490X		A325N		A325N		A325N	

Tower Elevation ft	Leg Connection Type	Leg Bolt Size in	Leg No.	Diagonal Bolt Size in	Diagonal No.	Top Girt Bolt Size in	Top Girt No.	Bottom Girt Bolt Size in	Bottom Girt No.	Mid Girt Bolt Size in	Mid Girt No.	Long Horizontal Bolt Size in	Long Horizontal No.	Short Horizontal Bolt Size in	Short Horizontal No.
T29	Flange	0.7500	6	0.5000	2	0.5000	2	0.0000	0	0.6250	0	0.6250	2	0.6250	0
175.00-168.75		A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T30	Flange	0.7500	0	0.5000	2	0.5000	2	0.0000	0	0.6250	0	0.6250	2	0.6250	0
168.75-162.50		A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T31	Flange	0.7500	0	0.5000	2	0.5000	2	0.0000	0	0.6250	0	0.6250	2	0.6250	0
162.50-156.25		A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T32	Flange	0.7500	0	0.5000	2	0.5000	2	0.5000	0	0.6250	0	0.6250	2	0.6250	0
156.25-150.00		A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T33	Flange	0.7500	6	0.5000	2	0.5000	2	0.5000	0	0.6250	0	0.6250	2	0.6250	0
150.00-125.00		A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T34	Flange	0.7500	6	0.6250	2	0.6250	2	0.5000	0	0.6250	0	0.6250	2	0.6250	0
125.00-100.00		A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T35	Flange	0.7500	6	0.6250	2	0.6250	2	0.0000	0	0.6250	0	0.6250	2	0.6250	0
100.00-93.75		A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T36	Flange	0.7500	0	0.5000	2	0.5000	2	0.0000	0	0.6250	0	0.6250	2	0.6250	0
93.75-87.50		A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T37	Flange	0.7500	0	0.5000	2	0.5000	2	0.0000	0	0.6250	0	0.6250	2	0.6250	0
87.50-81.25		A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T38	Flange	0.7500	0	0.5000	2	0.5000	2	0.0000	0	0.6250	0	0.6250	2	0.6250	0
81.25-75.00		A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T39	Flange	0.7500	6	0.5000	2	0.5000	2	0.0000	0	0.6250	0	0.6250	2	0.6250	0
75.00-50.00		A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T40	Flange	0.7500	6	0.5000	2	0.5000	2	0.5000	0	0.6250	0	0.6250	2	0.6250	0
50.00-25.00		A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T41 25.00-0.00	Flange	0.7500	6	0.5000	2	0.5000	2	0.5000	0	0.6250	0	0.6250	2	0.6250	0
		A325N		A325N		A325N		A325N		A325N		A325N		A325N	

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 %
350	EHS	A	7/8	7.97	10%	19000	1.581	430.92	247.15	0.0000	-5.80	100%
		B	7/8	7.97	10%	19000	1.581	424.88	247.51	0.0000	1.81	100%
		C	7/8	7.97	10%	19000	1.581	438.63	251.45	0.0000	-12.20	100%
300	EHS	A	7/8	7.97	10%	19000	1.581	376.90	224.79	0.0000	-5.41	100%
		B	7/8	7.97	10%	19000	1.581	368.38	219.43	0.0000	1.23	100%
		C	7/8	7.97	10%	19000	1.581	382.21	227.42	0.0000	-10.07	100%
225	EHS	A	3/4	5.83	10%	19000	1.155	319.27	224.79	0.0000	-5.41	100%
		B	3/4	5.83	10%	19000	1.155	310.78	219.43	0.0000	1.23	100%
		C	3/4	5.83	10%	19000	1.155	324.45	227.42	0.0000	-10.07	100%
162.5	EHS	A	3/4	5.83	10%	19000	1.155	259.49	201.41	0.0000	-4.96	100%
		B	3/4	5.83	10%	19000	1.155	249.91	193.65	0.0000	0.72	100%
		C	3/4	5.83	10%	19000	1.155	266.15	206.73	0.0000	-8.98	100%
100	EHS	A	9/16	3.50	10%	21000	0.671	223.95	201.41	0.0000	-4.96	100%
		B	9/16	3.50	10%	21000	0.671	214.45	193.65	0.0000	0.72	100%
		C	9/16	3.50	10%	21000	0.671	230.53	206.73	0.0000	-8.98	100%
50	EHS	A	9/16	3.50	10%	21000	0.671	123.30	114.04	0.0000	-3.60	100%
		B	9/16	3.50	10%	21000	0.671	123.03	115.63	0.0000	0.50	100%
		C	9/16	3.50	10%	21000	0.671	124.42	114.41	0.0000	-5.40	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
350	Torque Arm	12.00	49.0000	Bat Ear	A36 (36 ksi)	Double Angle	2L3x2 1/2x1/4
300	Torque Arm	12.00	49.0000	Bat Ear	A36 (36 ksi)	Double Angle	2L3x2 1/2x1/4
225	Torque Arm	12.00	49.0000	Bat Ear	A36 (36 ksi)	Double Angle	2L3x2 1/2x1/4
162.5	Corner						
100	Torque Arm	12.00	49.0000	Bat Ear	A36 (36 ksi)	Double Angle	2L3x2 1/2x1/4
50	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
350.00	A572-50 (50 ksi)	Solid Round				A36 (36 ksi)	Channel	
300.00	A572-50 (50 ksi)	Solid Round				A36 (36 ksi)	Channel	
225.00	A572-50 (50 ksi)	Solid Round				A36 (36 ksi)	Channel	
162.50	A572-50 (50 ksi)	Solid Round				A36 (36 ksi)	Channel	
100.00	A572-50 (50 ksi)	Solid Round				A36 (36 ksi)	Channel	
50.00	A572-50 (50 ksi)	Solid Round				A36 (36 ksi)	Channel	

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
350	0.68	0.67	0.69		17.81 7.3 sec/pulse	17.33 7.2 sec/pulse	18.44 7.4 sec/pulse	
300	0.60	0.58	0.60		13.69 6.4 sec/pulse	13.09 6.2 sec/pulse	14.07 6.5 sec/pulse	
225	0.37	0.36	0.37		9.88 5.4 sec/pulse	9.37 5.3 sec/pulse	10.20 5.5 sec/pulse	
162.5	0.30	0.29	0.31		6.57 4.4 sec/pulse	6.10 4.3 sec/pulse	6.91 4.5 sec/pulse	
100	0.15	0.14	0.15		4.76 3.8 sec/pulse	4.37 3.6 sec/pulse	5.05 3.9 sec/pulse	
50	0.08	0.08	0.08		1.45	1.45	1.48	

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
					2.1 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
350	No	No	1	1	1	1	1	1
300	No	No	1	1	1	1	1	1
225	No	No	1	1	1	1	1	1
162.5	No	No			1	1	1	1
100	No	No	1	1	1	1	1	1
50	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
350	0.8750 A325N	0	0.0000	1	0.6250 A325N	0	0.0000	0.75	0.6250 A325N	0	0.0000	0.75
300	0.8750 A325N	0	0.0000	1	0.6250 A325N	0	0.0000	0.75	0.6250 A325N	0	0.0000	0.75
225	0.8750 A325N	0	0.0000	1	0.6250 A325N	0	0.0000	0.75	0.6250 A325N	0	0.0000	0.75
162.5	0.8750 A325N	0	0.0000	1	0.6250 A325N	0	0.0000	0.75	0.6250 A325N	0	0.0000	0.75
100	0.8750 A325N	0	0.0000	1	0.6250 A325N	0	0.0000	0.75	0.6250 A325N	0	0.0000	0.75
50	0.6250 A325N	0	0.0000	0.75	0.6250 A325N	0	0.0000	0.75	0.6250 A325N	0	0.0000	0.75

Guy Pressures

Guy Elevation ft	Guy Location	z ft	q_z psf	q_z Ice psf	Ice Thickness in
350	A	172.10	37	28	0.5000
	B	175.91	37	28	0.5000
	C	168.90	37	28	0.5000
300	A	147.30	35	27	0.5000
	B	150.62	36	27	0.5000
	C	144.97	35	26	0.5000
225	A	109.80	33	24	0.5000
	B	113.12	33	25	0.5000
	C	107.47	32	24	0.5000

Guy Elevation ft	Guy Location	z ft	q_z psf	q_z Ice psf	Ice Thickness in
162.5	A	78.77	30	22	0.5000
	B	81.61	30	22	0.5000
	C	76.76	29	22	0.5000
100	A	47.52	26	19	0.5000
	B	50.36	26	20	0.5000
	C	45.51	25	19	0.5000
50	A	23.20	23	17	0.5000
	B	25.25	23	17	0.5000
	C	22.30	23	17	0.5000

Guy-Mast Forces (Excluding Wind) - No Ice

Guy Elevation ft	Guy Location	Chord Angle °	Guy Tension Top / Bottom K	F_x K	F_y K	F_z K	M_x kip-ft	M_y kip-ft	M_z kip-ft
350	A	55.5848	8.53 / 7.97	-0.11	7.15	-4.66	-24.76	28.35	-42.88
	A	55.5848	8.53 / 7.97	0.11	7.15	-4.66	-24.76	-28.35	42.88
	B	54.9653	8.52 / 7.97	4.15	7.09	2.26	49.10	28.78	0.00
	B	54.9653	8.52 / 7.97	4.04	7.09	2.47	-24.55	-28.78	-42.52
	C	55.5941	8.54 / 7.97	-3.98	7.16	2.43	-24.80	28.35	42.95
	C	55.5941	8.54 / 7.97	-4.09	7.16	2.23	49.59	-28.35	0.00
			Sum:	**0.12**	42.78	**0.07**	**-0.17**	0.00	**0.43**
300	A	54.0597	8.45 / 7.97	-0.13	6.95	-4.82	-24.06	29.34	-41.67
	A	54.0597	8.45 / 7.97	0.13	6.95	-4.82	-24.06	-29.34	41.67
	B	54.1282	8.44 / 7.97	4.23	6.94	2.29	48.08	29.29	0.00
	B	54.1282	8.44 / 7.97	4.09	6.94	2.52	-24.04	-29.29	-41.64
	C	54.1506	8.46 / 7.97	-4.10	6.96	2.51	-24.11	29.29	41.76
	C	54.1506	8.46 / 7.97	-4.23	6.96	2.29	48.22	-29.29	0.00
			Sum:	**-0.00**	41.69	**-0.02**	**0.03**	0.00	**0.12**
225	A	46.1415	6.10 / 5.83	-0.11	4.48	-4.13	-15.53	25.16	-26.90
	A	46.1415	6.10 / 5.83	0.11	4.48	-4.13	-15.53	-25.16	26.90
	B	46.0057	6.09 / 5.83	3.64	4.47	1.97	30.94	25.21	0.00
	B	46.0057	6.09 / 5.83	3.52	4.47	2.17	-15.47	-25.21	-26.80
	C	46.3767	6.10 / 5.83	-3.51	4.51	2.15	-15.61	25.06	27.03
	C	46.3767	6.10 / 5.83	-3.62	4.51	1.96	31.21	-25.06	0.00
			Sum:	**0.04**	26.91	**-0.01**	**0.02**	0.00	**0.24**
162.5	A	40.1486	6.02 / 5.83	0.00	3.97	-4.53	-11.46	0.00	0.00

Guy Elevation	Guy Location	Chord Angle	Guy Tension Top Bottom K	F_x	F_y	F_z	M_x	M_y	M_z
ft		°		K	K	K	kip-ft	kip-ft	kip-ft
	B	40.3002	6.02 5.83	3.91	3.98	2.26	5.74	0.00	-9.94
	C	40.0717	6.03 5.83	-3.93	3.97	2.27	5.73	-0.00	9.93
			Sum:	**-0.02**	11.92	**-0.00**	**0.01**	0.00	**-0.01**
100	A	27.9237	3.57 3.50	-0.09	1.73	-3.12	-5.99	19.06	-10.38
	A	27.9237	3.57 3.50	0.09	1.73	-3.12	-5.99	-19.06	10.38
	B	27.5536	3.57 3.50	2.76	1.71	1.48	11.82	19.12	0.00
	B	27.5536	3.57 3.50	2.66	1.71	1.65	-5.91	-19.12	-10.24
	C	28.1874	3.57 3.50	-2.65	1.75	1.64	-6.05	19.01	10.49
	C	28.1874	3.57 3.50	-2.74	1.75	1.48	12.11	-19.01	0.00
			Sum:	**0.03**	10.37	**0.00**	**-0.02**	0.00	**0.25**
50	A	25.7442	3.54 3.50	0.00	1.57	-3.17	-4.53	0.00	0.00
	B	23.7039	3.53 3.50	2.79	1.45	1.61	2.10	0.00	-3.64
	C	26.4162	3.54 3.50	-2.73	1.61	1.58	2.32	-0.00	4.02
			Sum:	**0.06**	4.63	**0.02**	**-0.11**	0.00	**0.38**

Guy-Mast Forces (Excluding Wind) - Ice

Guy Elevation	Guy Location	Chord Angle	Guy Tension Top Bottom K	F_x	F_y	F_z	M_x	M_y	M_z
ft		°		K	K	K	kip-ft	kip-ft	kip-ft
350	A	55.5848	11.72 10.86	-0.16	9.83	-6.37	-34.07	38.79	-59.01
	A	55.5848	11.72 10.86	0.16	9.83	-6.37	-34.07	-38.79	59.01
	B	54.9653	11.71 10.86	5.68	9.75	3.10	67.57	39.38	0.00
	B	54.9653	11.71 10.86	5.52	9.75	3.37	-33.79	-39.38	-58.52
	C	55.5941	11.74 10.86	-5.45	9.85	3.32	-34.14	38.81	59.13
	C	55.5941	11.74 10.86	-5.60	9.85	3.06	68.27	-38.81	0.00
			Sum:	**0.16**	58.89	**0.10**	**-0.21**	0.00	**0.61**
300	A	54.0597	11.59 10.85	-0.18	9.54	-6.58	-33.04	40.09	-57.23
	A	54.0597	11.59 10.85	0.18	9.54	-6.58	-33.04	-40.09	57.23
	B	54.1282	11.57 10.85	5.77	9.53	3.12	66.00	39.99	0.00
	B	54.1282	11.57 10.85	5.59	9.53	3.44	-33.00	-39.99	-57.16

Guy Elevation	Guy Location	Chord Angle	Guy Tension Top / Bottom K	F_x	F_y	F_z	M_x	M_y	M_z
ft		°		K	K	K	kip-ft	kip-ft	kip-ft
	C	54.1506	11.60 10.85	-5.60	9.56	3.44	-33.12	40.02	57.37
	C	54.1506	11.60 10.85	-5.78	9.56	3.13	66.25	-40.02	0.00
			Sum:	**-0.01**	57.25	**-0.03**	**0.04**	0.00	**0.21**
225	A	46.1415	8.48 8.04	-0.15	6.26	-5.72	-21.68	34.83	-37.55
	A	46.1415	8.48 8.04	0.15	6.26	-5.72	-21.68	-34.83	37.55
	B	46.0057	8.46 8.03	5.03	6.23	2.72	43.15	34.88	0.00
	B	46.0057	8.46 8.03	4.88	6.23	3.00	-21.58	-34.88	-37.37
	C	46.3767	8.49 8.04	-4.86	6.29	2.98	-21.80	34.70	37.76
	C	46.3767	8.49 8.04	-5.01	6.29	2.72	43.60	-34.70	0.00
			Sum:	**0.04**	37.56	**-0.01**	**0.01**	0.00	**0.38**
162.5	A	40.1486	8.34 8.02	0.00	5.52	-6.25	-15.94	0.00	0.00
	B	40.3002	8.32 8.01	5.39	5.52	3.11	7.97	0.00	-13.80
	C	40.0717	8.36 8.03	-5.43	5.53	3.13	7.98	-0.00	13.82
			Sum:	**-0.04**	16.57	**-0.01**	**0.00**	0.00	**0.02**
100	A	27.9237	5.14 5.00	-0.14	2.52	-4.48	-8.74	27.33	-15.13
	A	27.9237	5.14 5.00	0.14	2.52	-4.48	-8.74	-27.33	15.13
	B	27.5536	5.12 4.99	3.95	2.48	2.12	17.17	27.35	0.00
	B	27.5536	5.12 4.99	3.81	2.48	2.36	-8.59	-27.35	-14.87
	C	28.1874	5.15 5.01	-3.81	2.55	2.35	-8.84	27.31	15.31
	C	28.1874	5.15 5.01	-3.94	2.55	2.12	17.68	-27.31	0.00
			Sum:	**0.00**	15.11	-0.00	**-0.04**	0.00	**0.44**
50	A	25.7442	4.96 4.89	0.00	2.22	-4.43	-6.40	0.00	0.00
	B	23.7039	4.95 4.89	3.90	2.06	2.25	2.97	0.00	-5.15
	C	26.4162	4.96 4.89	-3.82	2.27	2.20	3.28	-0.00	5.68
			Sum:	**0.09**	6.55	**0.02**	**-0.15**	0.00	**0.53**

Guy-Mast Forces (Excluding Wind) - Service

Guy Elevation	Guy Location	Chord Angle	Guy Tension Top / Bottom K	F_x	F_y	F_z	M_x	M_y	M_z
ft		°		K	K	K	kip-ft	kip-ft	kip-ft
350	A	55.5848	8.53	-0.11	7.15	-4.66	-24.76	28.35	-42.88

Guy Elevation	Guy Location	Chord Angle	Guy Tension Top Bottom K	F_x	F_y	F_z	M_x	M_y	M_z
ft		°		K	K	K	kip-ft	kip-ft	kip-ft
			7.97						
	A	55.5848	8.53	0.11	7.15	-4.66	-24.76	-28.35	42.88
			7.97						
	B	54.9653	8.52	4.15	7.09	2.26	49.10	28.78	0.00
			7.97						
	B	54.9653	8.52	4.04	7.09	2.47	-24.55	-28.78	-42.52
			7.97						
	C	55.5941	8.54	-3.98	7.16	2.43	-24.80	28.35	42.95
			7.97						
	C	55.5941	8.54	-4.09	7.16	2.23	49.59	-28.35	0.00
			7.97						
			Sum:	**0.12**	42.78	**0.07**	**-0.17**	0.00	**0.43**
300	A	54.0597	8.45	-0.13	6.95	-4.82	-24.06	29.34	-41.67
			7.97						
	A	54.0597	8.45	0.13	6.95	-4.82	-24.06	-29.34	41.67
			7.97						
	B	54.1282	8.44	4.23	6.94	2.29	48.08	29.29	0.00
			7.97						
	B	54.1282	8.44	4.09	6.94	2.52	-24.04	-29.29	-41.64
			7.97						
	C	54.1506	8.46	-4.10	6.96	2.51	-24.11	29.29	41.76
			7.97						
	C	54.1506	8.46	-4.23	6.96	2.29	48.22	-29.29	0.00
			7.97						
			Sum:	**-0.00**	41.69	**-0.02**	**0.03**	0.00	**0.12**
225	A	46.1415	6.10	-0.11	4.48	-4.13	-15.53	25.16	-26.90
			5.83						
	A	46.1415	6.10	0.11	4.48	-4.13	-15.53	-25.16	26.90
			5.83						
	B	46.0057	6.09	3.64	4.47	1.97	30.94	25.21	0.00
			5.83						
	B	46.0057	6.09	3.52	4.47	2.17	-15.47	-25.21	-26.80
			5.83						
	C	46.3767	6.10	-3.51	4.51	2.15	-15.61	25.06	27.03
			5.83						
	C	46.3767	6.10	-3.62	4.51	1.96	31.21	-25.06	0.00
			5.83						
			Sum:	**0.04**	26.91	**-0.01**	**0.02**	0.00	**0.24**
162.5	A	40.1486	6.02	0.00	3.97	-4.53	-11.46	0.00	0.00
			5.83						
	B	40.3002	6.02	3.91	3.98	2.26	5.74	0.00	-9.94
			5.83						
	C	40.0717	6.03	-3.93	3.97	2.27	5.73	-0.00	9.93
			5.83						
			Sum:	**-0.02**	11.92	**-0.00**	**0.01**	0.00	**-0.01**
100	A	27.9237	3.57	-0.09	1.73	-3.12	-5.99	19.06	-10.38
			3.50						
	A	27.9237	3.57	0.09	1.73	-3.12	-5.99	-19.06	10.38
			3.50						
	B	27.5536	3.57	2.76	1.71	1.48	11.82	19.12	0.00
			3.50						
	B	27.5536	3.57	2.66	1.71	1.65	-5.91	-19.12	-10.24
			3.50						
	C	28.1874	3.57	-2.65	1.75	1.64	-6.05	19.01	10.49
			3.50						
	C	28.1874	3.57	-2.74	1.75	1.48	12.11	-19.01	0.00
			3.50						
			Sum:	**0.03**	10.37	**0.00**	**-0.02**	0.00	**0.25**
50	A	25.7442	3.54	0.00	1.57	-3.17	-4.53	0.00	0.00

Guy Elevation	Guy Location	Chord Angle	Guy Tension Top Bottom K	F_x	F_y	F_z	M_x	M_y	M_z
ft		°		K	K	K	kip-ft	kip-ft	kip-ft
			3.50						
	B	23.7039	3.53	2.79	1.45	1.61	2.10	0.00	-3.64
			3.50						
	C	26.4162	3.54	-2.73	1.61	1.58	2.32	-0.00	4.02
			3.50						
			Sum:	**0.06**	4.63	**0.02**	**-0.11**	0.00	**0.38**

Guy-Tensioning Information

Guy Elevation		H	V	Temperature At Time Of Tensioning 0 F Initial Tension	0 F Intercept	20 F Initial Tension	20 F Intercept	40 F Initial Tension	40 F Intercept	60 F Initial Tension	60 F Intercept	80 F Initial Tension	80 F Intercept	100 F Initial Tension	100 F Intercept	120 F Initial Tension	120 F Intercept
ft		ft	ft	K	ft	K	ft	K	ft	K	ft	K	ft	K	ft	K	ft
350	A	243.76	355.80	8.905	15.99	8.589	16.56	8.277	17.17	7.970	17.81	7.669	18.49	7.374	19.20	7.085	19.96
	B	244.12	348.19	8.934	15.51	8.608	16.08	8.286	16.68	7.970	17.33	7.660	18.01	7.356	18.73	7.059	19.49
	C	248.06	362.20	8.900	16.57	8.585	17.16	8.275	17.78	7.970	18.44	7.671	19.14	7.377	19.87	7.091	20.65
300	A	221.41	305.41	9.004	12.15	8.654	12.63	8.310	13.14	7.970	13.69	7.636	14.27	7.309	14.89	6.989	15.55
	B	216.05	298.77	9.006	11.61	8.656	12.07	8.311	12.56	7.970	13.09	7.635	13.65	7.307	14.24	6.985	14.88
	C	224.04	310.07	8.997	12.50	8.650	12.99	8.307	13.52	7.970	14.07	7.639	14.67	7.314	15.30	6.997	15.97
225	A	221.41	230.41	6.891	8.39	6.531	8.84	6.177	9.34	5.830	9.88	5.492	10.48	5.163	11.13	4.846	11.84
	B	216.05	223.77	6.902	7.94	6.538	8.37	6.181	8.85	5.830	9.37	5.488	9.94	5.155	10.57	4.834	11.26
	C	224.04	235.07	6.878	8.67	6.522	9.14	6.173	9.65	5.830	10.20	5.496	10.81	5.171	11.47	4.858	12.19
162.5	A	198.52	167.46	7.154	5.37	6.705	5.72	6.263	6.12	5.830	6.57	5.408	7.07	5.000	7.64	4.609	8.28
	B	190.76	161.78	7.157	4.98	6.707	5.31	6.264	5.68	5.830	6.10	5.406	6.57	4.995	7.10	4.600	7.70
	C	203.84	171.48	7.150	5.65	6.702	6.02	6.261	6.44	5.830	6.91	5.410	7.43	5.005	8.03	4.616	8.69
100	A	198.04	104.96	4.641	3.60	4.252	3.93	3.871	4.31	3.500	4.76	3.143	5.30	2.804	5.94	2.488	6.68
	B	190.28	99.28	4.656	3.29	4.263	3.59	3.877	3.95	3.500	4.37	3.137	4.87	2.791	5.47	2.469	6.18
	C	203.35	108.98	4.630	3.82	4.245	4.17	3.867	4.57	3.500	5.05	3.147	5.61	2.812	6.27	2.501	7.04
50	A	111.15	53.60	4.758	1.07	4.335	1.17	3.916	1.30	3.500	1.45	3.091	1.64	2.690	1.89	2.305	2.20
	B	112.74	49.50	4.799	1.05	4.363	1.16	3.929	1.29	3.500	1.45	3.078	1.64	2.665	1.90	2.270	2.22
	C	111.52	55.40	4.743	1.09	4.326	1.20	3.911	1.32	3.500	1.48	3.095	1.67	2.700	1.91	2.319	2.23

Feed Line/Linear Appurtenances - Entered As Round Or Flat

Description	Face or Leg	Allow Shield	Component Type	Placement ft	Face Offset in	Lateral Offset (Frac FW)	#	# Per Row	Clear Spacing in	Width or Diameter in	Perimeter in	Weight plf
7/8	A	No	Ar (Leg)	40.00 - 3.00	0.0000	0.4	1	1	1.1100	1.1100		0.54
7/8	A	No	Ar (Leg)	62.00 - 3.00	0.0000	0.39	1	1	1.1100	1.1100		0.54
1/2	B	No	Ar (Leg)	88.00 - 3.00	0.0000	0	4	4	0.5800	0.5800		0.25
1/2	B	No	Ar (Leg)	125.00 - 3.00	0.0000	0	1	1	0.5800	0.5800		0.25
7/8	C	No	Ar (Leg)	140.00 - 3.00	0.0000	0	1	1	1.1100	1.1100		0.54
1/2	B	No	Ar (Leg)	148.00 - 3.00	0.0000	0	1	1	0.5800	0.5800		0.25
7/8	A	No	Ar (Leg)	180.00 - 3.00	0.0000	0	1	1	1.1100	1.1100		0.54
7/8	C	No	Ar (Leg)	200.00 - 3.00	0.0000	0	1	1	1.1100	1.1100		0.54
1 5/8	A	No	Ar (Leg)	325.00 - 3.00	0.0000	0	1	1	1.9800	1.9800		1.04
7/8	B	No	Ar (Leg)	350.00 - 3.00	0.0000	0	2	2	1.1100	1.1100		0.54
7/8	B	No	Ar (Leg)	355.00 - 3.00	0.0000	0	1	1	1.1100	1.1100		0.54
7/8	C	No	Ar (Leg)	365.00 - 3.00	0.0000	0	1	1	1.1100	1.1100		0.54
3" dia Flex Conuit (AT&T)	A	Yes	Ar (CfAe)	240.00 - 3.00	0.0000	-0.4	1	1	3.0000	3.0000		5.00
1 5/8 (AT&T)	C	Yes	Ar (CaAa)	240.00 - 3.00	2.0000	0.5	12	2	1.9800	1.9800		1.04

Description	Face or Leg	Allow Shield	Component Type	Placement ft	Face Offset in	Lateral Offset (Frac FW)	#	# Per Row	Clear Spacing in	Width or Diameter in	Perimeter in	Weight plf
1 5/8 (Verizon)	C	Yes	Ar (CfAe)	300.00 - 3.00	1.0000	-0.3	12	6	1.9800	1.9800		1.04
HYBRIFLEX 1-5/8" (Verizon)	B	Yes	Ar (CfAe)	300.00 - 3.00	1.0000	0.46	2	2	1.9800	1.9800		1.90

Feed Line/Linear Appurtenances Section Areas

Tower Section	Tower Elevation ft	Face	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
T1	368.75-362.50	A	0.231	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.231	0.000	0.000	0.000	0.00
T2	362.50-356.25	A	0.578	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.578	0.000	0.000	0.000	0.00
T3	356.25-350.00	A	0.578	0.000	0.000	0.000	0.00
		B	0.463	0.000	0.000	0.000	0.00
		C	1.041	0.000	0.000	0.000	0.00
T4	350.00-343.75	A	0.578	0.000	0.000	0.000	0.00
		B	1.734	0.000	0.000	0.000	0.01
		C	2.313	0.000	0.000	0.000	0.00
T5	343.75-337.50	A	0.578	0.000	0.000	0.000	0.00
		B	1.734	0.000	0.000	0.000	0.01
		C	2.313	0.000	0.000	0.000	0.00
T6	337.50-331.25	A	0.578	0.000	0.000	0.000	0.00
		B	1.734	0.000	0.000	0.000	0.01
		C	2.313	0.000	0.000	0.000	0.00
T7	331.25-325.00	A	0.578	0.000	0.000	0.000	0.00
		B	1.734	0.000	0.000	0.000	0.01
		C	2.313	0.000	0.000	0.000	0.00
T8	325.00-318.75	A	1.609	0.000	0.000	0.000	0.01
		B	2.766	0.000	0.000	0.000	0.01
		C	2.313	0.000	0.000	0.000	0.00
T9	318.75-312.50	A	1.609	0.000	0.000	0.000	0.01
		B	2.766	0.000	0.000	0.000	0.01
		C	2.313	0.000	0.000	0.000	0.00
T10	312.50-306.25	A	1.609	0.000	0.000	0.000	0.01
		B	2.766	0.000	0.000	0.000	0.01
		C	2.313	0.000	0.000	0.000	0.00
T11	306.25-300.00	A	1.609	0.000	0.000	0.000	0.01
		B	2.766	0.000	0.000	0.000	0.01
		C	2.313	0.000	0.000	0.000	0.00
T12	300.00-293.75	A	1.609	0.000	0.000	0.000	0.01
		B	4.828	0.000	0.000	0.000	0.03
		C	8.500	0.000	0.000	0.000	0.08
T13	293.75-287.50	A	1.609	0.000	0.000	0.000	0.01
		B	4.828	0.000	0.000	0.000	0.03
		C	8.500	0.000	0.000	0.000	0.08
T14	287.50-281.25	A	1.609	0.000	0.000	0.000	0.01
		B	4.828	0.000	0.000	0.000	0.03
		C	8.500	0.000	0.000	0.000	0.08
T15	281.25-275.00	A	1.609	0.000	0.000	0.000	0.01
		B	4.828	0.000	0.000	0.000	0.03
		C	8.500	0.000	0.000	0.000	0.08
T16	275.00-268.75	A	1.609	0.000	0.000	0.000	0.01

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
		B	4.828	0.000	0.000	0.000	0.03
		C	8.500	0.000	0.000	0.000	0.08
T17	268.75-262.50	A	1.609	0.000	0.000	0.000	0.01
		B	4.828	0.000	0.000	0.000	0.03
		C	8.500	0.000	0.000	0.000	0.08
T18	262.50-256.25	A	1.609	0.000	0.000	0.000	0.01
		B	4.828	0.000	0.000	0.000	0.03
		C	8.500	0.000	0.000	0.000	0.08
T19	256.25-250.00	A	1.609	0.000	0.000	0.000	0.01
		B	4.828	0.000	0.000	0.000	0.03
		C	8.500	0.000	0.000	0.000	0.08
T20	250.00-243.75	A	1.609	0.000	0.000	0.000	0.01
		B	4.828	0.000	0.000	0.000	0.03
		C	8.500	0.000	0.000	0.000	0.08
T21	243.75-237.50	A	2.234	0.000	0.000	0.000	0.02
		B	4.828	0.000	0.000	0.000	0.03
		C	8.500	0.000	5.543	0.000	0.11
T22	237.50-231.25	A	3.172	0.000	0.000	0.000	0.04
		B	4.828	0.000	0.000	0.000	0.03
		C	8.500	0.000	13.858	0.000	0.16
T23	231.25-225.00	A	3.172	0.000	0.000	0.000	0.04
		B	4.828	0.000	0.000	0.000	0.03
		C	8.500	0.000	13.858	0.000	0.16
T24	225.00-218.75	A	3.172	0.000	0.000	0.000	0.04
		B	4.828	0.000	0.000	0.000	0.03
		C	8.500	0.000	13.858	0.000	0.16
T25	218.75-212.50	A	3.172	0.000	0.000	0.000	0.04
		B	4.828	0.000	0.000	0.000	0.03
		C	8.500	0.000	13.858	0.000	0.16
T26	212.50-206.25	A	3.172	0.000	0.000	0.000	0.04
		B	4.828	0.000	0.000	0.000	0.03
		C	8.500	0.000	13.858	0.000	0.16
T27	206.25-200.00	A	3.172	0.000	0.000	0.000	0.04
		B	4.828	0.000	0.000	0.000	0.03
		C	8.500	0.000	13.858	0.000	0.16
T28	200.00-175.00	A	15.463	0.000	0.000	0.000	0.15
		B	19.775	0.000	0.000	0.000	0.14
		C	36.313	0.000	55.430	0.000	0.65
T29	175.00-168.75	A	4.328	0.000	0.000	0.000	0.04
		B	5.406	0.000	0.000	0.000	0.03
		C	9.078	0.000	13.858	0.000	0.16
T30	168.75-162.50	A	4.328	0.000	0.000	0.000	0.04
		B	5.406	0.000	0.000	0.000	0.03
		C	9.078	0.000	13.858	0.000	0.16
T31	162.50-156.25	A	4.328	0.000	0.000	0.000	0.04
		B	5.406	0.000	0.000	0.000	0.03
		C	9.078	0.000	13.858	0.000	0.16
T32	156.25-150.00	A	4.328	0.000	0.000	0.000	0.04
		B	5.406	0.000	0.000	0.000	0.03
		C	9.078	0.000	13.858	0.000	0.16
T33	150.00-125.00	A	18.700	0.000	0.000	0.000	0.16
		B	22.737	0.000	0.000	0.000	0.14
		C	38.812	0.000	55.430	0.000	0.66
T34	125.00-100.00	A	19.625	0.000	0.000	0.000	0.16
		B	24.042	0.000	0.000	0.000	0.15
		C	41.042	0.000	55.430	0.000	0.66
T35	100.00-93.75	A	4.906	0.000	0.000	0.000	0.04
		B	6.010	0.000	0.000	0.000	0.04
		C	10.260	0.000	13.858	0.000	0.17
T36	93.75-87.50	A	4.906	0.000	0.000	0.000	0.04
		B	6.107	0.000	0.000	0.000	0.04

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	10.357	0.000	13.858	0.000	0.17
T37	87.50-81.25	A	4.906	0.000	0.000	0.000	0.04
		B	7.219	0.000	0.000	0.000	0.04
		C	11.469	0.000	13.858	0.000	0.17
T38	81.25-75.00	A	4.906	0.000	0.000	0.000	0.04
		B	7.219	0.000	0.000	0.000	0.04
		C	11.469	0.000	13.858	0.000	0.17
T39	75.00-50.00	A	20.735	0.000	0.000	0.000	0.17
		B	29.985	0.000	0.000	0.000	0.17
		C	45.875	0.000	55.430	0.000	0.66
T40	50.00-25.00	A	23.325	0.000	0.000	0.000	0.19
		B	32.575	0.000	0.000	0.000	0.17
		C	45.875	0.000	55.430	0.000	0.66
T41	25.00-0.00	A	21.340	0.000	0.000	0.000	0.17
		B	29.480	0.000	0.000	0.000	0.15
		C	40.370	0.000	48.779	0.000	0.58

Feed Line/Linear Appurtenances Section Areas - With Ice

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
T1	368.75-362.50	A	0.500	0.440	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.440	0.000	0.000	0.000	0.00
T2	362.50-356.25	A	0.500	1.099	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		1.099	0.000	0.000	0.000	0.01
T3	356.25-350.00	A	0.500	1.099	0.000	0.000	0.000	0.00
		B		0.879	0.000	0.000	0.000	0.01
		C		1.978	0.000	0.000	0.000	0.01
T4	350.00-343.75	A	0.500	1.099	0.000	0.000	0.000	0.00
		B		3.297	0.000	0.000	0.000	0.03
		C		4.396	0.000	0.000	0.000	0.01
T5	343.75-337.50	A	0.500	1.099	0.000	0.000	0.000	0.00
		B		3.297	0.000	0.000	0.000	0.03
		C		4.396	0.000	0.000	0.000	0.01
T6	337.50-331.25	A	0.500	1.099	0.000	0.000	0.000	0.00
		B		3.297	0.000	0.000	0.000	0.03
		C		4.396	0.000	0.000	0.000	0.01
T7	331.25-325.00	A	0.500	1.099	0.000	0.000	0.000	0.00
		B		3.297	0.000	0.000	0.000	0.03
		C		4.396	0.000	0.000	0.000	0.01
T8	325.00-318.75	A	0.500	2.651	0.000	0.000	0.000	0.02
		B		4.849	0.000	0.000	0.000	0.03
		C		4.396	0.000	0.000	0.000	0.01
T9	318.75-312.50	A	0.500	2.651	0.000	0.000	0.000	0.02
		B		4.849	0.000	0.000	0.000	0.03
		C		4.396	0.000	0.000	0.000	0.01
T10	312.50-306.25	A	0.500	2.651	0.000	0.000	0.000	0.02
		B		4.849	0.000	0.000	0.000	0.03
		C		4.396	0.000	0.000	0.000	0.01
T11	306.25-300.00	A	0.500	2.651	0.000	0.000	0.000	0.02
		B		4.849	0.000	0.000	0.000	0.03
		C		4.396	0.000	0.000	0.000	0.01
T12	300.00-293.75	A	0.500	2.651	0.000	0.000	0.000	0.02
		B		7.953	0.000	0.000	0.000	0.07
		C		13.708	0.000	0.000	0.000	0.20

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
T13	293.75-287.50	A	0.500	2.651	0.000	0.000	0.000	0.02
		B		7.953	0.000	0.000	0.000	0.07
		C		13.708	0.000	0.000	0.000	0.20
T14	287.50-281.25	A	0.500	2.651	0.000	0.000	0.000	0.02
		B		7.953	0.000	0.000	0.000	0.07
		C		13.708	0.000	0.000	0.000	0.20
T15	281.25-275.00	A	0.500	2.651	0.000	0.000	0.000	0.02
		B		7.953	0.000	0.000	0.000	0.07
		C		13.708	0.000	0.000	0.000	0.20
T16	275.00-268.75	A	0.500	2.651	0.000	0.000	0.000	0.02
		B		7.953	0.000	0.000	0.000	0.07
		C		13.708	0.000	0.000	0.000	0.20
T17	268.75-262.50	A	0.500	2.651	0.000	0.000	0.000	0.02
		B		7.953	0.000	0.000	0.000	0.07
		C		13.708	0.000	0.000	0.000	0.20
T18	262.50-256.25	A	0.500	2.651	0.000	0.000	0.000	0.02
		B		7.953	0.000	0.000	0.000	0.07
		C		13.708	0.000	0.000	0.000	0.20
T19	256.25-250.00	A	0.500	2.651	0.000	0.000	0.000	0.02
		B		7.953	0.000	0.000	0.000	0.07
		C		13.708	0.000	0.000	0.000	0.20
T20	250.00-243.75	A	0.500	2.651	0.000	0.000	0.000	0.02
		B		7.953	0.000	0.000	0.000	0.07
		C		13.708	0.000	0.000	0.000	0.20
T21	243.75-237.50	A	0.500	3.484	0.000	0.000	0.000	0.03
		B		7.953	0.000	0.000	0.000	0.07
		C		13.708	0.000	5.793	0.000	0.28
T22	237.50-231.25	A	0.500	4.734	0.000	0.000	0.000	0.06
		B		7.953	0.000	0.000	0.000	0.07
		C		13.708	0.000	14.483	0.000	0.39
T23	231.25-225.00	A	0.500	4.734	0.000	0.000	0.000	0.06
		B		7.953	0.000	0.000	0.000	0.07
		C		13.708	0.000	14.483	0.000	0.39
T24	225.00-218.75	A	0.500	4.734	0.000	0.000	0.000	0.06
		B		7.953	0.000	0.000	0.000	0.07
		C		13.708	0.000	14.483	0.000	0.39
T25	218.75-212.50	A	0.500	4.734	0.000	0.000	0.000	0.06
		B		7.953	0.000	0.000	0.000	0.07
		C		13.708	0.000	14.483	0.000	0.39
T26	212.50-206.25	A	0.500	4.734	0.000	0.000	0.000	0.06
		B		7.953	0.000	0.000	0.000	0.07
		C		13.708	0.000	14.483	0.000	0.39
T27	206.25-200.00	A	0.500	4.734	0.000	0.000	0.000	0.06
		B		7.953	0.000	0.000	0.000	0.07
		C		13.708	0.000	14.483	0.000	0.39
T28	200.00-175.00	A	0.500	24.212	0.000	0.000	0.000	0.25
		B		32.692	0.000	0.000	0.000	0.29
		C		59.229	0.000	57.930	0.000	1.61
T29	175.00-168.75	A	0.500	6.932	0.000	0.000	0.000	0.07
		B		9.052	0.000	0.000	0.000	0.07
		C		14.807	0.000	14.483	0.000	0.40
T30	168.75-162.50	A	0.500	6.932	0.000	0.000	0.000	0.07
		B		9.052	0.000	0.000	0.000	0.07
		C		14.807	0.000	14.483	0.000	0.40
T31	162.50-156.25	A	0.500	6.932	0.000	0.000	0.000	0.07
		B		9.052	0.000	0.000	0.000	0.07
		C		14.807	0.000	14.483	0.000	0.40
T32	156.25-150.00	A	0.500	6.932	0.000	0.000	0.000	0.07
		B		9.052	0.000	0.000	0.000	0.07
		C		14.807	0.000	14.483	0.000	0.40
T33	150.00-125.00	A	0.500	30.367	0.000	0.000	0.000	0.28

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
		B		39.237	0.000	0.000	0.000	0.31
		C		64.895	0.000	57.930	0.000	1.63
T34	125.00-100.00	A	0.500	32.125	0.000	0.000	0.000	0.28
		B		42.792	0.000	0.000	0.000	0.33
		C		70.208	0.000	57.930	0.000	1.65
T35	100.00-93.75	A	0.500	8.031	0.000	0.000	0.000	0.07
		B		10.698	0.000	0.000	0.000	0.08
		C		17.552	0.000	14.483	0.000	0.41
T36	93.75-87.50	A	0.500	8.031	0.000	0.000	0.000	0.07
		B		10.764	0.145	0.000	0.000	0.08
		C		17.618	0.145	14.483	0.000	0.41
T37	87.50-81.25	A	0.500	8.031	0.000	0.000	0.000	0.07
		B		11.521	1.813	0.000	0.000	0.10
		C		18.375	1.813	14.483	0.000	0.41
T38	81.25-75.00	A	0.500	8.031	0.000	0.000	0.000	0.07
		B		11.521	1.813	0.000	0.000	0.10
		C		18.375	1.813	14.483	0.000	0.41
T39	75.00-50.00	A	0.500	34.235	0.000	0.000	0.000	0.30
		B		48.193	7.250	0.000	0.000	0.42
		C		73.500	7.250	57.930	0.000	1.65
T40	50.00-25.00	A	0.500	39.158	0.000	0.000	0.000	0.34
		B		53.117	7.250	0.000	0.000	0.42
		C		73.500	7.250	57.930	0.000	1.65
T41	25.00-0.00	A	0.500	36.007	0.000	0.000	0.000	0.31
		B		48.290	6.380	0.000	0.000	0.37
		C		64.680	6.380	50.979	0.000	1.45

Feed Line Shielding

Section	Elevation ft	Face	A_R ft^2	A_R Ice ft^2	A_F ft^2	A_F Ice ft^2
T1	368.75-362.50	A	0.000	0.000	0.000	0.000
		B	0.000	0.000	0.000	0.000
		C	0.000	0.000	0.000	0.000
T2	362.50-356.25	A	0.000	0.000	0.000	0.000
		B	0.000	0.000	0.000	0.000
		C	0.000	0.000	0.000	0.000
T3	356.25-350.00	A	0.000	0.000	0.000	0.000
		B	0.000	0.000	0.000	0.000
		C	0.000	0.000	0.000	0.000
T4	350.00-343.75	A	0.000	0.000	0.000	0.000
		B	0.000	0.000	0.000	0.000
		C	0.000	0.000	0.000	0.000
T5	343.75-337.50	A	0.000	0.000	0.000	0.000
		B	0.000	0.000	0.000	0.000
		C	0.000	0.000	0.000	0.000
T6	337.50-331.25	A	0.000	0.000	0.000	0.000
		B	0.000	0.000	0.000	0.000
		C	0.000	0.000	0.000	0.000
T7	331.25-325.00	A	0.000	0.000	0.000	0.000
		B	0.000	0.000	0.000	0.000
		C	0.000	0.000	0.000	0.000
T8	325.00-318.75	A	0.000	0.000	0.000	0.000
		B	0.000	0.000	0.000	0.000
		C	0.000	0.000	0.000	0.000
T9	318.75-312.50	A	0.000	0.000	0.000	0.000

Section	Elevation ft	Face	A_R ft^2	A_R Ice ft^2	A_F ft^2	A_F Ice ft^2
		B	0.000	0.000	0.000	0.000
		C	0.000	0.000	0.000	0.000
T10	312.50-306.25	A	0.000	0.000	0.000	0.000
		B	0.000	0.000	0.000	0.000
		C	0.000	0.000	0.000	0.000
T11	306.25-300.00	A	0.000	0.000	0.000	0.000
		B	0.000	0.000	0.000	0.000
		C	0.000	0.000	0.000	0.000
T12	300.00-293.75	A	0.000	0.000	0.000	0.000
		B	0.000	0.174	0.333	0.501
		C	0.000	0.522	0.999	1.503
T13	293.75-287.50	A	0.000	0.000	0.000	0.000
		B	0.066	0.273	0.069	0.103
		C	0.198	0.820	0.206	0.310
T14	287.50-281.25	A	0.000	0.000	0.000	0.000
		B	0.101	0.325	0.000	0.000
		C	0.302	0.976	0.000	0.000
T15	281.25-275.00	A	0.000	0.000	0.000	0.000
		B	0.101	0.325	0.000	0.000
		C	0.302	0.976	0.000	0.000
T16	275.00-268.75	A	0.000	0.000	0.000	0.000
		B	0.101	0.325	0.000	0.000
		C	0.302	0.976	0.000	0.000
T17	268.75-262.50	A	0.000	0.000	0.000	0.000
		B	0.101	0.325	0.000	0.000
		C	0.302	0.976	0.000	0.000
T18	262.50-256.25	A	0.000	0.000	0.000	0.000
		B	0.101	0.325	0.000	0.000
		C	0.302	0.976	0.000	0.000
T19	256.25-250.00	A	0.000	0.000	0.000	0.000
		B	0.112	0.342	0.000	0.000
		C	0.335	1.026	0.000	0.000
T20	250.00-243.75	A	0.000	0.000	0.000	0.000
		B	0.066	0.273	0.069	0.103
		C	0.198	0.820	0.206	0.310
T21	243.75-237.50	A	0.020	0.073	0.021	0.028
		B	0.066	0.273	0.069	0.103
		C	0.225	0.929	0.234	0.352
T22	237.50-231.25	A	0.050	0.183	0.052	0.069
		B	0.066	0.273	0.069	0.103
		C	0.264	1.093	0.275	0.414
T23	231.25-225.00	A	0.067	0.206	0.052	0.069
		B	0.088	0.306	0.069	0.103
		C	0.352	1.226	0.275	0.414
T24	225.00-218.75	A	0.000	0.117	0.219	0.292
		B	0.000	0.174	0.289	0.435
		C	0.000	0.696	1.155	1.739
T25	218.75-212.50	A	0.042	0.172	0.052	0.069
		B	0.055	0.257	0.069	0.103
		C	0.220	1.027	0.275	0.414
T26	212.50-206.25	A	0.076	0.218	0.000	0.000
		B	0.101	0.325	0.000	0.000
		C	0.403	1.302	0.000	0.000
T27	206.25-200.00	A	0.076	0.218	0.000	0.000
		B	0.101	0.325	0.000	0.000
		C	0.403	1.302	0.000	0.000
T28	200.00-175.00	A	0.443	1.169	0.000	0.000
		B	0.585	1.742	0.000	0.000
		C	2.341	6.968	0.000	0.000
T29	175.00-168.75	A	0.101	0.252	0.000	0.000
		B	0.134	0.375	0.000	0.000

Section	Elevation ft	Face	A_R ft^2	A_R Ice ft^2	A_F ft^2	A_F Ice ft^2
		C	0.535	1.500	0.000	0.000
T30	168.75-162.50	A	0.101	0.252	0.000	0.000
		B	0.134	0.375	0.000	0.000
		C	0.535	1.500	0.000	0.000
T31	162.50-156.25	A	0.042	0.172	0.052	0.069
		B	0.055	0.257	0.069	0.103
		C	0.220	1.027	0.275	0.414
T32	156.25-150.00	A	0.076	0.218	0.000	0.000
		B	0.101	0.325	0.000	0.000
		C	0.403	1.302	0.000	0.000
T33	150.00-125.00	A	0.305	0.874	0.000	0.000
		B	0.403	1.302	0.000	0.000
		C	1.611	5.207	0.000	0.000
T34	125.00-100.00	A	0.138	0.651	0.667	0.889
		B	0.183	0.970	0.880	1.325
		C	0.730	3.882	3.522	5.300
T35	100.00-93.75	A	0.000	0.117	0.219	0.292
		B	0.000	0.174	0.289	0.435
		C	0.000	0.696	1.155	1.739
T36	93.75-87.50	A	0.050	0.183	0.052	0.069
		B	0.066	0.273	0.069	0.103
		C	0.264	1.093	0.275	0.414
T37	87.50-81.25	A	0.076	0.218	0.000	0.000
		B	0.101	0.325	0.000	0.000
		C	0.403	1.302	0.000	0.000
T38	81.25-75.00	A	0.076	0.218	0.000	0.000
		B	0.101	0.325	0.000	0.000
		C	0.403	1.302	0.000	0.000
T39	75.00-50.00	A	0.305	0.874	0.000	0.000
		B	0.403	1.302	0.000	0.000
		C	1.611	5.207	0.000	0.000
T40	50.00-25.00	A	0.270	0.828	0.052	0.069
		B	0.357	1.233	0.069	0.103
		C	1.428	4.932	0.275	0.414
T41	25.00-0.00	A	0.268	0.769	0.000	0.000
		B	0.354	1.145	0.000	0.000
		C	1.418	4.582	0.000	0.000

Feed Line Center of Pressure

Section	Elevation ft	CP_X in	CP_Z in	CP_X Ice in	CP_Z Ice in
T1	368.75-362.50	-0.3214	0.1856	-0.4376	0.2526
T2	362.50-356.25	-0.7171	0.4140	-0.9881	0.5705
T3	356.25-350.00	-0.1381	0.7177	-0.1877	0.9755
T4	350.00-343.75	1.2209	1.4097	1.6198	1.8704
T5	343.75-337.50	1.7931	2.0705	2.0849	2.4075
T6	337.50-331.25	1.8906	2.1831	2.1528	2.4859
T7	331.25-325.00	1.8906	2.1831	2.1528	2.4859
T8	325.00-318.75	1.6014	0.1999	1.8853	0.6397
T9	318.75-312.50	1.6025	0.2000	1.8868	0.6402
T10	312.50-306.25	1.6025	0.2000	1.8868	0.6402
T11	306.25-300.00	1.5322	0.1913	1.8347	0.6225
T12	300.00-293.75	4.7508	3.6625	5.0074	3.9160
T13	293.75-287.50	6.5117	5.1046	6.3282	5.0254
T14	287.50-281.25	6.9094	5.4303	6.5984	5.2524

Section	Elevation	CP_X	CP_Z	CP_X Ice	CP_Z Ice
	ft	in	in	in	in
T15	281.25-275.00	6.9094	5.4303	6.5984	5.2524
T16	275.00-268.75	6.9094	5.4303	6.5984	5.2524
T17	268.75-262.50	6.9094	5.4303	6.5984	5.2524
T18	262.50-256.25	6.9094	5.4303	6.5984	5.2524
T19	256.25-250.00	6.7772	5.3220	6.5096	5.1778
T20	250.00-243.75	6.5117	5.1046	6.3282	5.0254
T21	243.75-237.50	0.3095	6.1712	1.5081	5.8669
T22	237.50-231.25	-2.9319	6.7287	-1.6803	6.4236
T23	231.25-225.00	-2.9129	6.6367	-1.6794	6.3422
T24	225.00-218.75	-2.8288	6.1694	-1.6856	5.9167
T25	218.75-212.50	-2.9675	6.8351	-1.6926	6.5100
T26	212.50-206.25	-2.9887	6.9363	-1.6937	6.5986
T27	206.25-200.00	-2.9887	6.9363	-1.6937	6.5986
T28	200.00-175.00	-3.0976	6.7003	-1.9506	6.2746
T29	175.00-168.75	-3.0505	6.4458	-1.9112	5.9984
T30	168.75-162.50	-3.0511	6.4470	-1.9117	6.0001
T31	162.50-156.25	-3.0600	6.4868	-1.9128	6.0344
T32	156.25-150.00	-3.0812	6.5808	-1.9154	6.1151
T33	150.00-125.00	-3.0613	6.6098	-1.8410	6.1793
T34	125.00-100.00	-2.8583	6.0134	-1.6751	5.7037
T35	100.00-93.75	-2.8409	5.9327	-1.6743	5.6331
T36	93.75-87.50	-2.9252	6.5044	-1.6365	6.1217
T37	87.50-81.25	-2.5242	6.6878	-1.1552	6.2243
T38	81.25-75.00	-2.5242	6.6878	-1.1552	6.2243
T39	75.00-50.00	-2.5092	6.6147	-1.1452	6.1213
T40	50.00-25.00	-2.4713	6.4280	-1.1231	5.8733
T41	25.00-0.00	-2.4129	6.2627	-1.0876	5.6716

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
Search Antenna	C	From Leg	1.00 0.00 0.00	0.0000	370.00	No Ice 1/2" Ice	1.28 3.73	3.73 4.39	0.30 0.45
10'6"x4" Pipe Mount	A	From Leg	0.50 0.00 0.00	0.0000	355.00	No Ice 1/2" Ice	4.72 5.62	4.72 5.62	0.11 0.15
Rohn 6' Side-Arm(1)	B	From Leg	3.00 0.00 0.00	0.0000	355.00	No Ice 1/2" Ice	6.00 8.50	6.00 8.50	0.14 0.21
20' x 3" Dia Omni	C	From Leg	1.00 0.00 0.00	0.0000	350.00	No Ice 1/2" Ice	6.00 8.03	6.00 8.03	0.05 0.09
6'x4" Pipe Mount	C	From Leg	0.50 0.00 0.00	0.0000	350.00	No Ice 1/2" Ice	2.09 2.46	2.09 2.46	0.05 0.07
10' x 3" Dia Omni	B	From Leg	3.00 0.00 0.00	0.0000	325.00	No Ice 1/2" Ice	3.00 4.03	3.00 4.03	0.03 0.05
ROHN 3-ft Side Arm	B	From Leg	2.00	0.0000	325.00	No Ice	3.10	3.10	0.07

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
			0.00 0.00			1/2" Ice	5.00	5.00	0.10
20' x 3" Dia Omni	C	From Leg	1.00 0.00 0.00	0.0000	250.00	No Ice 1/2" Ice	6.00 8.03	6.00 8.03	0.05 0.09
6'x4" Pipe Mount	C	From Leg	0.50 0.00 0.00	0.0000	250.00	No Ice 1/2" Ice	2.09 2.46	2.09 2.46	0.05 0.07
Yagi	A	From Leg	1.00 0.00 0.00	0.0000	200.00	No Ice 1/2" Ice	5.00 6.50	5.00 6.50	0.04 0.06
(4) Yagi	C	From Leg	1.00 0.00 0.00	0.0000	180.00	No Ice 1/2" Ice	5.00 6.50	5.00 6.50	0.04 0.06
(2) 5'3"x4" Pipe Mount	C	From Leg	1.00 0.00 0.00	0.0000	180.00	No Ice 1/2" Ice	1.88 2.21	1.88 2.21	0.06 0.07
Yagi	B	From Leg	1.00 0.00 0.00	0.0000	148.00	No Ice 1/2" Ice	5.00 6.50	5.00 6.50	0.04 0.06
Yagi	C	From Leg	1.00 0.00 0.00	0.0000	140.00	No Ice 1/2" Ice	5.00 6.50	5.00 6.50	0.04 0.06
Yagi	A	From Leg	1.00 0.00 0.00	0.0000	125.00	No Ice 1/2" Ice	5.00 6.50	5.00 6.50	0.04 0.06
X-Style	A	From Leg	1.00 0.00 0.00	0.0000	88.00	No Ice 1/2" Ice	1.50 1.50	2.00 2.00	0.02 0.03
(2) X-Style	B	From Leg	1.00 0.00 0.00	0.0000	88.00	No Ice 1/2" Ice	1.50 1.50	2.00 2.00	0.02 0.03
X-Style	A	From Leg	1.00 0.00 0.00	0.0000	88.00	No Ice 1/2" Ice	1.50 1.50	2.00 2.00	0.02 0.03
Yagi	C	From Leg	1.00 0.00 0.00	0.0000	62.00	No Ice 1/2" Ice	5.00 6.50	5.00 6.50	0.04 0.06
Yagi	A	From Leg	1.00 0.00 0.00	0.0000	40.00	No Ice 1/2" Ice	5.00 6.50	5.00 6.50	0.04 0.06
(2) 7770.00 (AT&T)	A	From Leg	3.00 0.00 0.00	0.0000	242.50	No Ice 1/2" Ice	5.88 6.31	2.93 3.27	0.04 0.07
(2) 7770.00 (AT&T)	B	From Leg	3.00 0.00 0.00	0.0000	242.50	No Ice 1/2" Ice	5.88 6.31	2.93 3.27	0.04 0.07
(2) 7770.00 (AT&T)	C	From Leg	3.00 0.00 0.00	0.0000	242.50	No Ice 1/2" Ice	5.88 6.31	2.93 3.27	0.04 0.07
HPA-65R-BUU-H6 (AT&T - Proposed)	A	From Leg	3.00 0.00 0.00	0.0000	242.50	No Ice 1/2" Ice	10.36 10.93	6.45 6.91	0.05 0.11
HPA-65R-BUU-H8 (AT&T - Proposed)	A	From Leg	3.00 0.00 0.00	0.0000	242.50	No Ice 1/2" Ice	13.30 13.99	7.52 8.09	0.07 0.14
HPA-65R-BUU-H8	A	From Leg	3.00	0.0000	242.50	No Ice	13.30	7.52	0.07

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
(AT&T - Proposed)			0.00			1/2" Ice	13.99	8.09	0.14
			0.00						
(2) LPG21401 TMA	A	From Leg	3.00	0.0000	242.50	No Ice	0.00	0.37	0.02
(AT&T)			0.00			1/2" Ice	0.00	0.48	0.02
			0.00						
(2) LPG21401 TMA	B	From Leg	3.00	0.0000	242.50	No Ice	0.00	0.37	0.02
(AT&T)			0.00			1/2" Ice	0.00	0.48	0.02
			0.00						
(2) LPG21401 TMA	C	From Leg	3.00	0.0000	242.50	No Ice	0.00	0.37	0.02
(AT&T)			0.00			1/2" Ice	0.00	0.48	0.02
			0.00						
(2) LGP21901 Diplexer	A	From Leg	3.00	0.0000	242.50	No Ice	0.00	0.12	0.01
(AT&T)			0.00			1/2" Ice	0.00	0.17	0.01
			0.00						
(2) LGP21901 Diplexer	B	From Leg	3.00	0.0000	242.50	No Ice	0.00	0.12	0.01
(AT&T)			0.00			1/2" Ice	0.00	0.17	0.01
			0.00						
(2) LGP21901 Diplexer	C	From Leg	3.00	0.0000	242.50	No Ice	0.00	0.12	0.01
(AT&T)			0.00			1/2" Ice	0.00	0.17	0.01
			0.00						
RRUS-11	A	From Leg	3.00	0.0000	242.50	No Ice	2.99	1.25	0.05
(AT&T)			0.00			1/2" Ice	3.23	1.41	0.07
			0.00						
RRUS-11	B	From Leg	3.00	0.0000	242.50	No Ice	2.99	1.25	0.05
(AT&T)			0.00			1/2" Ice	3.23	1.41	0.07
			0.00						
RRUS-11	C	From Leg	3.00	0.0000	242.50	No Ice	2.99	1.25	0.05
(AT&T)			0.00			1/2" Ice	3.23	1.41	0.07
			0.00						
RRUS-32	A	From Leg	3.00	0.0000	242.50	No Ice	3.87	2.76	0.08
(AT&T - Proposed)			0.00			1/2" Ice	4.15	3.02	0.10
			0.00						
RRUS-32	B	From Leg	3.00	0.0000	242.50	No Ice	3.87	2.76	0.08
(AT&T - Proposed)			0.00			1/2" Ice	4.15	3.02	0.10
			0.00						
RRUS-32	C	From Leg	3.00	0.0000	242.50	No Ice	3.87	2.76	0.08
(AT&T - Proposed)			0.00			1/2" Ice	4.15	3.02	0.10
			0.00						
DC6-48-60-18-8F Surge	A	From Leg	3.00	0.0000	242.50	No Ice	0.00	2.23	0.02
Arrestor			0.00			1/2" Ice	0.00	2.45	0.04
(AT&T)			0.00						
Pirod 12' T-Frame Sector	A	From Leg	1.00	0.0000	242.50	No Ice	13.60	13.60	0.47
Mount (1)			0.00			1/2" Ice	18.40	18.40	0.60
(AT&T)			0.00						
Pirod 12' T-Frame Sector	B	From Leg	1.00	0.0000	242.50	No Ice	13.60	13.60	0.47
Mount (1)			0.00			1/2" Ice	18.40	18.40	0.60
(AT&T)			0.00						
Pirod 12' T-Frame Sector	C	From Leg	1.00	0.0000	242.50	No Ice	13.60	13.60	0.47
Mount (1)			0.00			1/2" Ice	18.40	18.40	0.60
(AT&T)			0.00						
LNX-6514DS-T4M	A	From Leg	3.00	0.0000	305.00	No Ice	8.41	5.41	0.04
(Verizon Existing)			-6.00			1/2" Ice	8.96	5.86	0.09
			0.00						
HBXX-6517DS	A	From Leg	3.00	0.0000	305.00	No Ice	8.74	5.24	0.05
(Verizon Existing)			-4.00			1/2" Ice	9.31	5.71	0.10
			0.00						
LNX-6514DS-T4M	A	From Leg	3.00	0.0000	305.00	No Ice	8.41	5.41	0.04

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
(Verizon Existing)			0.00			1/2" Ice	8.96	5.86	0.09
			0.00						
HBXX-6517DS	A	From Leg	3.00	0.0000	305.00	No Ice	8.74	5.24	0.05
(Verizon Existing)			4.00			1/2" Ice	9.31	5.71	0.10
			0.00						
LNX-6514DS-T4M	B	From Leg	3.00	0.0000	305.00	No Ice	8.41	5.41	0.04
(Verizon Existing)			-6.00			1/2" Ice	8.96	5.86	0.09
			0.00						
HBXX-6517DS	B	From Leg	3.00	0.0000	305.00	No Ice	8.74	5.24	0.05
(Verizon Existing)			-4.00			1/2" Ice	9.31	5.71	0.10
			0.00						
LNX-6514DS-T4M	B	From Leg	3.00	0.0000	305.00	No Ice	8.41	5.41	0.04
(Verizon Existing)			0.00			1/2" Ice	8.96	5.86	0.09
			0.00						
HBXX-6517DS	B	From Leg	3.00	0.0000	305.00	No Ice	8.74	5.24	0.05
(Verizon Existing)			4.00			1/2" Ice	9.31	5.71	0.10
			0.00						
LNX-6514DS-T4M	C	From Leg	3.00	0.0000	305.00	No Ice	8.41	5.41	0.04
(Verizon Existing)			-6.00			1/2" Ice	8.96	5.86	0.09
			0.00						
HBXX-6517DS	C	From Leg	3.00	0.0000	305.00	No Ice	8.74	5.24	0.05
(Verizon Existing)			-4.00			1/2" Ice	9.31	5.71	0.10
			0.00						
LNX-6514DS-T4M	C	From Leg	3.00	0.0000	305.00	No Ice	8.41	5.41	0.04
(Verizon Existing)			0.00			1/2" Ice	8.96	5.86	0.09
			0.00						
HBXX-6517DS	C	From Leg	3.00	0.0000	305.00	No Ice	8.74	5.24	0.05
(Verizon Existing)			4.00			1/2" Ice	9.31	5.71	0.10
			0.00						
RRH2x60-AWS	A	From Leg	3.00	0.0000	305.00	No Ice	3.78	2.07	0.06
(Verizon Existing)			4.00			1/2" Ice	4.09	2.35	0.08
			0.00						
RRH2x60-AWS	B	From Leg	3.00	0.0000	305.00	No Ice	3.78	2.07	0.06
(Verizon Existing)			4.00			1/2" Ice	4.09	2.35	0.08
			0.00						
RRH2x60-AWS	C	From Leg	3.00	0.0000	305.00	No Ice	3.78	2.07	0.06
(Verizon Existing)			4.00			1/2" Ice	4.09	2.35	0.08
			0.00						
RRH2x60-PCS	A	From Leg	3.00	0.0000	305.00	No Ice	2.51	1.55	0.06
(Verizon Existing)			-4.00			1/2" Ice	2.73	1.74	0.07
			0.00						
RRH2x60-PCS	B	From Leg	3.00	0.0000	305.00	No Ice	2.51	1.55	0.06
(Verizon Existing)			-4.00			1/2" Ice	2.73	1.74	0.07
			0.00						
RRH2x60-PCS	C	From Leg	3.00	0.0000	305.00	No Ice	2.51	1.55	0.06
(Verizon Existing)			-4.00			1/2" Ice	2.73	1.74	0.07
			0.00						
DB-T1-6Z-8AB-0Z	A	From Leg	3.00	0.0000	305.00	No Ice	5.60	2.33	0.04
(Verizon Existing)			0.00			1/2" Ice	5.92	2.56	0.08
			0.00						
DB-T1-6Z-8AB-0Z	B	From Leg	3.00	0.0000	305.00	No Ice	0.00	2.33	0.04
(Verizon Existing)			0.00			1/2" Ice	0.00	2.56	0.08
			0.00						
(2) FD9R6004/2C-3L	A	From Leg	3.00	0.0000	305.00	No Ice	0.00	0.08	0.00
Diplexer			0.00			1/2" Ice	0.00	0.14	0.01
(Verizon Existing)			0.00						
(2) FD9R6004/2C-3L	B	From Leg	3.00	0.0000	305.00	No Ice	0.00	0.08	0.00

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
Diplexer			0.00			1/2" Ice	0.00	0.14	0.01
(Verizon Existing)			0.00						
(2) FD9R6004/2C-3L	C	From Leg	3.00	0.0000	305.00	No Ice	0.00	0.08	0.00
Diplexer			0.00			1/2" Ice	0.00	0.14	0.01
(Verizon Existing)			0.00						
Rohn 6' x 12' Boom Gate (1)	A	From Leg	1.00	0.0000	305.00	No Ice	16.60	16.60	0.56
(Verizon Existing)			0.00			1/2" Ice	19.80	19.80	0.70
			0.00						
Rohn 6' x 12' Boom Gate (1)	B	From Leg	1.00	0.0000	305.00	No Ice	16.60	16.60	0.56
(Verizon Existing)			0.00			1/2" Ice	19.80	19.80	0.70
			0.00						
Rohn 6' x 12' Boom Gate (1)	C	From Leg	1.00	0.0000	305.00	No Ice	16.60	16.60	0.56
(Verizon Existing)			0.00			1/2" Ice	19.80	19.80	0.70
			0.00						

Dishes

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 ft^2	Weight K
8' Dish	A	Paraboloid w/o Radome	From Leg	1.00 0.00 0.00	Worst		355.00	8.00	No Ice 1/2" Ice	50.27 51.32	0.10 0.26

Tower Pressures - No Ice

$G_H = 1.075$

Section Elevation ft	z ft	K_Z	q_z psf	A_G ft^2	Face	A_F ft^2	A_R ft^2	A_{leg} ft^2	Leg % %	C_AA_A In Face ft^2	C_AA_A Out Face ft^2
T1	365.63	1.988	46	32.682	A	4.176	3.096	2.865	39.39	0.000	0.000
368.75-362.50					B	4.176	2.865		40.69	0.000	0.000
					C	4.176	3.096		39.39	0.000	0.000
T2	359.38	1.978	46	32.682	A	4.812	3.443	2.865	34.70	0.000	0.000
362.50-356.25					B	4.812	2.865		37.31	0.000	0.000
					C	4.812	3.443		34.70	0.000	0.000
T3	353.13	1.968	45	32.682	A	4.812	3.443	2.865	34.70	0.000	0.000
356.25-350.00					B	4.812	3.327		35.19	0.000	0.000
					C	4.812	3.905		32.86	0.000	0.000
T4	346.88	1.958	45	32.813	A	4.804	3.703	3.125	36.73	0.000	0.000
350.00-343.75					B	4.804	4.859		32.34	0.000	0.000
					C	4.804	5.438		30.51	0.000	0.000
T5	340.63	1.948	45	32.813	A	0.990	4.495	3.125	56.98	0.000	0.000

Section Elevation ft	z ft	K_Z	q_z psf	A_G ft²	Face	A_F ft²	A_R ft²	A_{leg} ft²	Leg %	C_AA_A In Face ft²	C_AA_A Out Face ft²
343.75-337.50					B	0.990	5.651		47.06	0.000	0.000
					C	0.990	6.230		43.29	0.000	0.000
T6	334.38	1.938	45	32.813	A	0.000	5.152	3.125	60.65	0.000	0.000
337.50-331.25					B	0.000	6.309		49.54	0.000	0.000
					C	0.000	6.887		45.38	0.000	0.000
T7	328.13	1.928	45	32.813	A	0.000	5.152	3.125	60.65	0.000	0.000
331.25-325.00					B	0.000	6.309		49.54	0.000	0.000
					C	0.000	6.887		45.38	0.000	0.000
T8	321.88	1.917	44	32.943	A	0.000	6.600	3.385	51.29	0.000	0.000
325.00-318.75					B	0.000	7.757		43.65	0.000	0.000
					C	0.000	7.303		46.35	0.000	0.000
T9	315.63	1.906	44	32.943	A	0.000	6.595	3.385	51.33	0.000	0.000
318.75-312.50					B	0.000	7.752		43.67	0.000	0.000
					C	0.000	7.298		46.39	0.000	0.000
T10	309.38	1.895	44	32.943	A	0.000	6.595	3.385	51.33	0.000	0.000
312.50-306.25					B	0.000	7.752		43.67	0.000	0.000
					C	0.000	7.298		46.39	0.000	0.000
T11	303.13	1.884	44	32.943	A	0.985	5.941	3.385	48.88	0.000	0.000
306.25-300.00					B	0.985	7.097		41.89	0.000	0.000
					C	0.985	6.644		44.37	0.000	0.000
T12	296.88	1.873	43	32.943	A	4.770	4.995	3.385	34.67	0.000	0.000
300.00-293.75					B	4.438	8.214		26.76	0.000	0.000
					C	3.772	11.885		21.62	0.000	0.000
T13	290.63	1.862	43	32.943	A	0.985	5.941	3.385	48.88	0.000	0.000
293.75-287.50					B	0.916	9.094		33.82	0.000	0.000
					C	0.779	12.634		25.24	0.000	0.000
T14	284.38	1.85	43	32.943	A	0.000	6.438	3.385	52.59	0.000	0.000
287.50-281.25					B	0.000	9.556		35.43	0.000	0.000
					C	0.000	13.026		25.99	0.000	0.000
T15	278.13	1.839	42	32.943	A	0.000	6.438	3.385	52.59	0.000	0.000
281.25-275.00					B	0.000	9.556		35.43	0.000	0.000
					C	0.000	13.026		25.99	0.000	0.000
T16	271.88	1.827	42	32.943	A	0.000	6.438	3.385	52.59	0.000	0.000
275.00-268.75					B	0.000	9.556		35.43	0.000	0.000
					C	0.000	13.026		25.99	0.000	0.000
T17	265.63	1.815	42	32.943	A	0.000	6.438	3.385	52.59	0.000	0.000
268.75-262.50					B	0.000	9.556		35.43	0.000	0.000
					C	0.000	13.026		25.99	0.000	0.000
T18	259.38	1.802	42	32.943	A	0.000	6.438	3.385	52.59	0.000	0.000
262.50-256.25					B	0.000	9.556		35.43	0.000	0.000
					C	0.000	13.026		25.99	0.000	0.000
T19	253.13	1.79	41	32.943	A	0.000	6.595	3.385	51.33	0.000	0.000
256.25-250.00					B	0.000	9.702		34.89	0.000	0.000
					C	0.000	13.151		25.74	0.000	0.000
T20	246.88	1.777	41	32.943	A	0.985	5.941	3.385	48.88	0.000	0.000
250.00-243.75					B	0.916	9.094		33.82	0.000	0.000
					C	0.779	12.634		25.24	0.000	0.000
T21	240.63	1.764	41	32.943	A	0.964	6.546	3.385	45.08	0.000	0.000
243.75-237.50					B	0.916	9.094		33.82	0.000	0.000
					C	0.751	12.607		25.34	5.543	0.000
T22	234.38	1.751	40	32.943	A	0.933	7.454	3.385	40.37	0.000	0.000
237.50-231.25					B	0.916	9.094		33.82	0.000	0.000
					C	0.710	12.568		25.50	13.858	0.000
T23	228.13	1.737	40	32.943	A	0.933	7.752	3.385	38.98	0.000	0.000
231.25-225.00					B	0.916	9.387		32.86	0.000	0.000
					C	0.710	12.795		25.07	13.858	0.000
T24	221.88	1.724	40	32.813	A	3.928	6.297	3.125	30.56	0.000	0.000
225.00-218.75					B	3.858	7.953		26.46	0.000	0.000
					C	2.991	11.625		21.38	13.858	0.000
T25	215.63	1.71	40	32.813	A	0.938	7.047	3.125	39.14	0.000	0.000

Section Elevation ft	z ft	K_Z	q_z psf	A_G ft²	Face	A_F ft²	A_R ft²	A_{leg} ft²	Leg %	C_AA_A In Face ft²	C_AA_A Out Face ft²
218.75-212.50					B	0.921	8.690		32.51	0.000	0.000
					C	0.715	12.197		24.20	13.858	0.000
T26	209.38	1.695	39	32.813	A	0.000	7.670	3.125	40.74	0.000	0.000
212.50-206.25					B	0.000	9.302		33.60	0.000	0.000
					C	0.000	12.671		24.66	13.858	0.000
T27	203.13	1.681	39	32.813	A	0.000	7.670	3.125	40.74	0.000	0.000
206.25-200.00					B	0.000	9.302		33.60	0.000	0.000
					C	0.000	12.671		24.66	13.858	0.000
T28	187.50	1.643	38	131.250	A	0.000	35.944	12.500	34.78	0.000	0.000
200.00-175.00					B	0.000	40.115		31.16	0.000	0.000
					C	0.000	54.896		22.77	55.430	0.000
T29	171.88	1.602	37	32.943	A	0.000	9.534	3.385	35.51	0.000	0.000
175.00-168.75					B	0.000	10.580		32.00	0.000	0.000
					C	0.000	13.850		24.44	13.858	0.000
T30	165.63	1.586	37	32.943	A	0.000	9.528	3.385	35.53	0.000	0.000
168.75-162.50					B	0.000	10.574		32.02	0.000	0.000
					C	0.000	13.845		24.45	13.858	0.000
T31	159.38	1.568	36	32.943	A	0.933	8.460	3.385	36.04	0.000	0.000
162.50-156.25					B	0.916	9.525		32.42	0.000	0.000
					C	0.710	13.032		24.64	13.858	0.000
T32	153.13	1.55	36	32.943	A	0.000	9.080	3.385	37.28	0.000	0.000
156.25-150.00					B	0.000	10.134		33.41	0.000	0.000
					C	0.000	13.504		25.07	13.858	0.000
T33	137.50	1.503	35	131.771	A	0.000	37.708	13.542	35.91	0.000	0.000
150.00-125.00					B	0.000	41.647		32.52	0.000	0.000
					C	0.000	56.514		23.96	55.430	0.000
T34	112.50	1.42	33	131.771	A	11.950	35.645	13.542	28.45	0.000	0.000
125.00-100.00					B	11.737	40.018		26.17	0.000	0.000
					C	9.096	56.470		20.65	55.430	0.000
T35	96.88	1.36	31	32.943	A	3.921	8.292	3.385	27.72	0.000	0.000
100.00-93.75					B	3.851	9.396		25.56	0.000	0.000
					C	2.984	13.646		20.36	13.858	0.000
T36	90.63	1.335	31	32.943	A	0.933	9.188	3.385	33.45	0.000	0.000
93.75-87.50					B	0.916	10.373		29.99	0.000	0.000
					C	0.710	14.425		22.37	13.858	0.000
T37	84.38	1.308	30	32.943	A	0.000	9.658	3.385	35.05	0.000	0.000
87.50-81.25					B	0.000	11.946		28.34	0.000	0.000
					C	0.000	15.894		21.30	13.858	0.000
T38	78.13	1.279	30	32.943	A	0.000	9.658	3.385	35.05	0.000	0.000
81.25-75.00					B	0.000	11.946		28.34	0.000	0.000
					C	0.000	15.894		21.30	13.858	0.000
T39	62.50	1.2	28	131.771	A	0.000	39.743	13.542	34.07	0.000	0.000
75.00-50.00					B	0.000	48.895		27.70	0.000	0.000
					C	0.000	63.577		21.30	55.430	0.000
T40	37.50	1.037	24	131.771	A	0.933	41.713	13.542	31.75	0.000	0.000
50.00-25.00					B	0.916	50.877		26.15	0.000	0.000
					C	0.710	63.105		21.22	55.430	0.000
T41 25.00-0.00	12.50	1	23	131.771	A	0.000	40.384	13.542	33.53	0.000	0.000
					B	0.000	48.438		27.96	0.000	0.000
					C	0.000	58.265		23.24	48.779	0.000

Tower Pressure - With Ice

$G_H = 1.075$

Section Elevation ft	z ft	K_Z	q_z psf	t_Z in	A_G ft²	Face	A_F ft²	A_R ft²	A_{leg} ft²	Leg %	C_AA_A In Face ft²	C_AA_A Out Face ft²
T1	365.63	1.988	34	0.5000	33.203	A	4.176	6.016	3.906	38.33	0.000	0.000
368.75-362.50						B	4.176	5.577		40.05	0.000	0.000
						C	4.176	6.016		38.33	0.000	0.000
T2	359.38	1.978	34	0.5000	33.203	A	4.812	6.676	3.906	34.00	0.000	0.000
362.50-356.25						B	4.812	5.577		37.60	0.000	0.000
						C	4.812	6.676		34.00	0.000	0.000
T3	353.13	1.968	34	0.5000	33.203	A	4.812	6.676	3.906	34.00	0.000	0.000
356.25-350.00						B	4.812	6.456		34.67	0.000	0.000
						C	4.812	7.555		31.59	0.000	0.000
T4	346.88	1.958	34	0.5000	33.333	A	4.804	6.933	4.167	35.50	0.000	0.000
350.00-343.75						B	4.804	9.131		29.90	0.000	0.000
						C	4.804	10.230		27.71	0.000	0.000
T5	340.63	1.948	34	0.5000	33.333	A	0.990	7.721	4.167	47.84	0.000	0.000
343.75-337.50						B	0.990	9.919		38.20	0.000	0.000
						C	0.990	11.018		34.70	0.000	0.000
T6	334.38	1.938	34	0.5000	33.333	A	0.000	8.378	4.167	49.73	0.000	0.000
337.50-331.25						B	0.000	10.576		39.40	0.000	0.000
						C	0.000	11.675		35.69	0.000	0.000
T7	328.13	1.928	33	0.5000	33.333	A	0.000	8.378	4.167	49.73	0.000	0.000
331.25-325.00						B	0.000	10.576		39.40	0.000	0.000
						C	0.000	11.675		35.69	0.000	0.000
T8	321.88	1.917	33	0.5000	33.464	A	0.000	10.344	4.427	42.80	0.000	0.000
325.00-318.75						B	0.000	12.542		35.30	0.000	0.000
						C	0.000	12.089		36.62	0.000	0.000
T9	315.63	1.906	33	0.5000	33.464	A	0.000	10.334	4.427	42.84	0.000	0.000
318.75-312.50						B	0.000	12.532		35.33	0.000	0.000
						C	0.000	12.079		36.65	0.000	0.000
T10	309.38	1.895	33	0.5000	33.464	A	0.000	10.334	4.427	42.84	0.000	0.000
312.50-306.25						B	0.000	12.532		35.33	0.000	0.000
						C	0.000	12.079		36.65	0.000	0.000
T11	303.13	1.884	33	0.5000	33.464	A	0.985	9.680	4.427	41.51	0.000	0.000
306.25-300.00						B	0.985	11.878		34.42	0.000	0.000
						C	0.985	11.425		35.67	0.000	0.000
T12	296.88	1.873	32	0.5000	33.464	A	4.770	8.734	4.427	32.78	0.000	0.000
300.00-293.75						B	4.269	13.862		24.42	0.000	0.000
						C	3.267	19.270		19.64	0.000	0.000
T13	290.63	1.862	32	0.5000	33.464	A	0.985	9.680	4.427	41.51	0.000	0.000
293.75-287.50						B	0.882	14.709		28.40	0.000	0.000
						C	0.675	19.918		21.50	0.000	0.000
T14	284.38	1.85	32	0.5000	33.464	A	0.000	10.177	4.427	43.50	0.000	0.000
287.50-281.25						B	0.000	15.153		29.22	0.000	0.000
						C	0.000	20.258		21.85	0.000	0.000
T15	278.13	1.839	32	0.5000	33.464	A	0.000	10.177	4.427	43.50	0.000	0.000
281.25-275.00						B	0.000	15.153		29.22	0.000	0.000
						C	0.000	20.258		21.85	0.000	0.000
T16	271.88	1.827	32	0.5000	33.464	A	0.000	10.177	4.427	43.50	0.000	0.000
275.00-268.75						B	0.000	15.153		29.22	0.000	0.000
						C	0.000	20.258		21.85	0.000	0.000
T17	265.63	1.815	31	0.5000	33.464	A	0.000	10.177	4.427	43.50	0.000	0.000
268.75-262.50						B	0.000	15.153		29.22	0.000	0.000
						C	0.000	20.258		21.85	0.000	0.000
T18	259.38	1.802	31	0.5000	33.464	A	0.000	10.177	4.427	43.50	0.000	0.000
262.50-256.25						B	0.000	15.153		29.22	0.000	0.000
						C	0.000	20.258		21.85	0.000	0.000
T19	253.13	1.79	31	0.5000	33.464	A	0.000	10.334	4.427	42.84	0.000	0.000
256.25-250.00						B	0.000	15.295		28.95	0.000	0.000
						C	0.000	20.366		21.74	0.000	0.000
T20	246.88	1.777	31	0.5000	33.464	A	0.985	9.680	4.427	41.51	0.000	0.000
250.00-243.75						B	0.882	14.709		28.40	0.000	0.000
						C	0.675	19.918		21.50	0.000	0.000

Section Elevation ft	z ft	K_Z	q_z psf	t_Z in	A_G ft²	Face	A_F ft²	A_R ft²	A_{leg} ft²	Leg %	C_AA_A In Face ft²	C_AA_A Out Face ft²
T21	240.63	1.764	31	0.5000	33.464	A	0.957	10.440	4.427	38.84	0.000	0.000
243.75-237.50						B	0.882	14.709		28.40	0.000	0.000
						C	0.633	19.808		21.66	5.793	0.000
T22	234.38	1.751	30	0.5000	33.464	A	0.916	11.580	4.427	35.43	0.000	0.000
237.50-231.25						B	0.882	14.709		28.40	0.000	0.000
						C	0.571	19.644		21.90	14.483	0.000
T23	228.13	1.737	30	0.5000	33.464	A	0.916	11.873	4.427	34.62	0.000	0.000
231.25-225.00						B	0.882	14.991		27.89	0.000	0.000
						C	0.571	19.827		21.70	14.483	0.000
T24	221.88	1.724	30	0.5000	33.333	A	3.855	10.443	4.167	29.14	0.000	0.000
225.00-218.75						B	3.712	13.604		24.06	0.000	0.000
						C	2.408	18.838		19.61	14.483	0.000
T25	215.63	1.71	30	0.5000	33.333	A	0.920	11.184	4.167	34.42	0.000	0.000
218.75-212.50						B	0.886	14.318		27.40	0.000	0.000
						C	0.576	19.303		20.96	14.483	0.000
T26	209.38	1.695	29	0.5000	33.333	A	0.000	11.795	4.167	35.33	0.000	0.000
212.50-206.25						B	0.000	14.907		27.95	0.000	0.000
						C	0.000	19.686		21.17	14.483	0.000
T27	203.13	1.681	29	0.5000	33.333	A	0.000	11.795	4.167	35.33	0.000	0.000
206.25-200.00						B	0.000	14.907		27.95	0.000	0.000
						C	0.000	19.686		21.17	14.483	0.000
T28	187.50	1.643	28	0.5000	133.333	A	0.000	56.371	16.667	29.57	0.000	0.000
200.00-175.00						B	0.000	64.277		25.93	0.000	0.000
						C	0.000	85.588		19.47	57.930	0.000
T29	171.88	1.602	28	0.5000	33.464	A	0.000	14.690	4.427	30.14	0.000	0.000
175.00-168.75						B	0.000	16.686		26.53	0.000	0.000
						C	0.000	21.316		20.77	14.483	0.000
T30	165.63	1.586	27	0.5000	33.464	A	0.000	14.679	4.427	30.16	0.000	0.000
168.75-162.50						B	0.000	16.676		26.55	0.000	0.000
						C	0.000	21.306		20.78	14.483	0.000
T31	159.38	1.568	27	0.5000	33.464	A	0.916	13.631	4.427	30.43	0.000	0.000
162.50-156.25						B	0.882	15.667		26.75	0.000	0.000
						C	0.571	20.652		20.86	14.483	0.000
T32	153.13	1.55	27	0.5000	33.464	A	0.000	14.240	4.427	31.09	0.000	0.000
156.25-150.00						B	0.000	16.252		27.24	0.000	0.000
						C	0.000	21.031		21.05	14.483	0.000
T33	137.50	1.503	26	0.5000	133.854	A	0.000	59.596	17.708	29.71	0.000	0.000
150.00-125.00						B	0.000	68.038		26.03	0.000	0.000
						C	0.000	89.791		19.72	57.930	0.000
T34	112.50	1.42	25	0.5000	133.854	A	11.728	58.422	17.708	25.24	0.000	0.000
125.00-100.00						B	11.292	68.770		22.12	0.000	0.000
						C	7.317	93.275		17.60	57.930	0.000
T35	96.88	1.36	24	0.5000	33.464	A	3.848	13.997	4.427	24.81	0.000	0.000
100.00-93.75						B	3.705	16.607		21.80	0.000	0.000
						C	2.401	22.939		17.47	14.483	0.000
T36 93.75-87.50	90.63	1.335	23	0.5000	33.464	A	0.916	14.877	4.427	28.03	0.000	0.000
						B	1.027	17.520		23.87	0.000	0.000
						C	0.716	23.554		18.24	14.483	0.000
T37 87.50-81.25	84.38	1.308	23	0.5000	33.464	A	0.000	15.339	4.427	28.86	0.000	0.000
						B	1.813	18.721		21.56	0.000	0.000
						C	1.813	24.599		16.76	14.483	0.000
T38 81.25-75.00	78.13	1.279	22	0.5000	33.464	A	0.000	15.339	4.427	28.86	0.000	0.000
						B	1.813	18.721		21.56	0.000	0.000
						C	1.813	24.599		16.76	14.483	0.000
T39 75.00-50.00	62.50	1.2	21	0.5000	133.854	A	0.000	63.464	17.708	27.90	0.000	0.000
						B	7.250	76.994		21.02	0.000	0.000
						C	7.250	98.396		16.76	57.930	0.000
T40 50.00-25.00	37.50	1.037	18	0.5000	133.854	A	0.916	67.779	17.708	25.78	0.000	0.000
						B	8.132	81.332		19.79	0.000	0.000
						C	7.821	98.017		16.73	57.930	0.000

Section Elevation ft	z ft	K_Z	q_z psf	t_Z in	A_G ft²	Face	A_F ft²	A_R ft²	A_{leg} ft²	Leg %	C_AA_A In Face ft²	C_AA_A Out Face ft²
T41 25.00-0.00	12.50	1	17	0.5000	133.854	A	0.000	65.341	17.708	27.10	0.000	0.000
						B	6.380	77.247		21.18	0.000	0.000
						C	6.380	90.201		18.34	50.979	0.000

Tower Pressure - Service

$G_H = 1.075$

Section Elevation ft	z ft	K_Z	q_z psf	A_G ft²	Face	A_F ft²	A_R ft²	A_{leg} ft²	Leg %	C_AA_A In Face ft²	C_AA_A Out Face ft²
T1	365.63	1.988	13	32.682	A	4.176	3.096	2.865	39.39	0.000	0.000
368.75-362.50					B	4.176	2.865		40.69	0.000	0.000
					C	4.176	3.096		39.39	0.000	0.000
T2	359.38	1.978	13	32.682	A	4.812	3.443	2.865	34.70	0.000	0.000
362.50-356.25					B	4.812	2.865		37.31	0.000	0.000
					C	4.812	3.443		34.70	0.000	0.000
T3	353.13	1.968	13	32.682	A	4.812	3.443	2.865	34.70	0.000	0.000
356.25-350.00					B	4.812	3.327		35.19	0.000	0.000
					C	4.812	3.905		32.86	0.000	0.000
T4	346.88	1.958	13	32.813	A	4.804	3.703	3.125	36.73	0.000	0.000
350.00-343.75					B	4.804	4.859		32.34	0.000	0.000
					C	4.804	5.438		30.51	0.000	0.000
T5	340.63	1.948	12	32.813	A	0.990	4.495	3.125	56.98	0.000	0.000
343.75-337.50					B	0.990	5.651		47.06	0.000	0.000
					C	0.990	6.230		43.29	0.000	0.000
T6	334.38	1.938	12	32.813	A	0.000	5.152	3.125	60.65	0.000	0.000
337.50-331.25					B	0.000	6.309		49.54	0.000	0.000
					C	0.000	6.887		45.38	0.000	0.000
T7	328.13	1.928	12	32.813	A	0.000	5.152	3.125	60.65	0.000	0.000
331.25-325.00					B	0.000	6.309		49.54	0.000	0.000
					C	0.000	6.887		45.38	0.000	0.000
T8	321.88	1.917	12	32.943	A	0.000	6.600	3.385	51.29	0.000	0.000
325.00-318.75					B	0.000	7.757		43.65	0.000	0.000
					C	0.000	7.303		46.35	0.000	0.000
T9	315.63	1.906	12	32.943	A	0.000	6.595	3.385	51.33	0.000	0.000
318.75-312.50					B	0.000	7.752		43.67	0.000	0.000
					C	0.000	7.298		46.39	0.000	0.000
T10	309.38	1.895	12	32.943	A	0.000	6.595	3.385	51.33	0.000	0.000
312.50-306.25					B	0.000	7.752		43.67	0.000	0.000
					C	0.000	7.298		46.39	0.000	0.000
T11	303.13	1.884	12	32.943	A	0.985	5.941	3.385	48.88	0.000	0.000
306.25-300.00					B	0.985	7.097		41.89	0.000	0.000
					C	0.985	6.644		44.37	0.000	0.000
T12	296.88	1.873	12	32.943	A	4.770	4.995	3.385	34.67	0.000	0.000
300.00-293.75					B	4.438	8.214		26.76	0.000	0.000
					C	3.772	11.885		21.62	0.000	0.000
T13	290.63	1.862	12	32.943	A	0.985	5.941	3.385	48.88	0.000	0.000
293.75-287.50					B	0.916	9.094		33.82	0.000	0.000
					C	0.779	12.634		25.24	0.000	0.000
T14	284.38	1.85	12	32.943	A	0.000	6.438	3.385	52.59	0.000	0.000
287.50-281.25					B	0.000	9.556		35.43	0.000	0.000
					C	0.000	13.026		25.99	0.000	0.000
T15	278.13	1.839	12	32.943	A	0.000	6.438	3.385	52.59	0.000	0.000

Section Elevation ft	z ft	K_Z	q_z psf	A_G ft²	Face	A_F ft²	A_R ft²	A_{leg} ft²	Leg %	C_AA_A In Face ft²	C_AA_A Out Face ft²
281.25-275.00					B	0.000	9.556		35.43	0.000	0.000
					C	0.000	13.026		25.99	0.000	0.000
T16	271.88	1.827	12	32.943	A	0.000	6.438	3.385	52.59	0.000	0.000
275.00-268.75					B	0.000	9.556		35.43	0.000	0.000
					C	0.000	13.026		25.99	0.000	0.000
T17	265.63	1.815	12	32.943	A	0.000	6.438	3.385	52.59	0.000	0.000
268.75-262.50					B	0.000	9.556		35.43	0.000	0.000
					C	0.000	13.026		25.99	0.000	0.000
T18	259.38	1.802	12	32.943	A	0.000	6.438	3.385	52.59	0.000	0.000
262.50-256.25					B	0.000	9.556		35.43	0.000	0.000
					C	0.000	13.026		25.99	0.000	0.000
T19	253.13	1.79	11	32.943	A	0.000	6.595	3.385	51.33	0.000	0.000
256.25-250.00					B	0.000	9.702		34.89	0.000	0.000
					C	0.000	13.151		25.74	0.000	0.000
T20	246.88	1.777	11	32.943	A	0.985	5.941	3.385	48.88	0.000	0.000
250.00-243.75					B	0.916	9.094		33.82	0.000	0.000
					C	0.779	12.634		25.24	0.000	0.000
T21	240.63	1.764	11	32.943	A	0.964	6.546	3.385	45.08	0.000	0.000
243.75-237.50					B	0.916	9.094		33.82	0.000	0.000
					C	0.751	12.607		25.34	5.543	0.000
T22	234.38	1.751	11	32.943	A	0.933	7.454	3.385	40.37	0.000	0.000
237.50-231.25					B	0.916	9.094		33.82	0.000	0.000
					C	0.710	12.568		25.50	13.858	0.000
T23	228.13	1.737	11	32.943	A	0.933	7.752	3.385	38.98	0.000	0.000
231.25-225.00					B	0.916	9.387		32.86	0.000	0.000
					C	0.710	12.795		25.07	13.858	0.000
T24	221.88	1.724	11	32.813	A	3.928	6.297	3.125	30.56	0.000	0.000
225.00-218.75					B	3.858	7.953		26.46	0.000	0.000
					C	2.991	11.625		21.38	13.858	0.000
T25	215.63	1.71	11	32.813	A	0.938	7.047	3.125	39.14	0.000	0.000
218.75-212.50					B	0.921	8.690		32.51	0.000	0.000
					C	0.715	12.197		24.20	13.858	0.000
T26	209.38	1.695	11	32.813	A	0.000	7.670	3.125	40.74	0.000	0.000
212.50-206.25					B	0.000	9.302		33.60	0.000	0.000
					C	0.000	12.671		24.66	13.858	0.000
T27	203.13	1.681	11	32.813	A	0.000	7.670	3.125	40.74	0.000	0.000
206.25-200.00					B	0.000	9.302		33.60	0.000	0.000
					C	0.000	12.671		24.66	13.858	0.000
T28	187.50	1.643	11	131.250	A	0.000	35.944	12.500	34.78	0.000	0.000
200.00-175.00					B	0.000	40.115		31.16	0.000	0.000
					C	0.000	54.896		22.77	55.430	0.000
T29	171.88	1.602	10	32.943	A	0.000	9.534	3.385	35.51	0.000	0.000
175.00-168.75					B	0.000	10.580		32.00	0.000	0.000
					C	0.000	13.850		24.44	13.858	0.000
T30	165.63	1.586	10	32.943	A	0.000	9.528	3.385	35.53	0.000	0.000
168.75-162.50					B	0.000	10.574		32.02	0.000	0.000
					C	0.000	13.845		24.45	13.858	0.000
T31	159.38	1.568	10	32.943	A	0.933	8.460	3.385	36.04	0.000	0.000
162.50-156.25					B	0.916	9.525		32.42	0.000	0.000
					C	0.710	13.032		24.64	13.858	0.000
T32	153.13	1.55	10	32.943	A	0.000	9.080	3.385	37.28	0.000	0.000
156.25-150.00					B	0.000	10.134		33.41	0.000	0.000
					C	0.000	13.504		25.07	13.858	0.000
T33	137.50	1.503	10	131.771	A	0.000	37.708	13.542	35.91	0.000	0.000
150.00-125.00					B	0.000	41.647		32.52	0.000	0.000
					C	0.000	56.514		23.96	55.430	0.000
T34	112.50	1.42	9	131.771	A	11.950	35.645	13.542	28.45	0.000	0.000
125.00-100.00					B	11.737	40.018		26.17	0.000	0.000
					C	9.096	56.470		20.65	55.430	0.000
T35	96.88	1.36	9	32.943	A	3.921	8.292	3.385	27.72	0.000	0.000

Section Elevation ft	z ft	K_Z	q_z psf	A_G ft²	Face	A_F ft²	A_R ft²	A_{leg} ft²	Leg %	C_AA_A In Face ft²	C_AA_A Out Face ft²
100.00-93.75					B	3.851	9.396		25.56	0.000	0.000
					C	2.984	13.646		20.36	13.858	0.000
T36	90.63	1.335	9	32.943	A	0.933	9.188	3.385	33.45	0.000	0.000
93.75-87.50					B	0.916	10.373		29.99	0.000	0.000
					C	0.710	14.425		22.37	13.858	0.000
T37	84.38	1.308	8	32.943	A	0.000	9.658	3.385	35.05	0.000	0.000
87.50-81.25					B	0.000	11.946		28.34	0.000	0.000
					C	0.000	15.894		21.30	13.858	0.000
T38	78.13	1.279	8	32.943	A	0.000	9.658	3.385	35.05	0.000	0.000
81.25-75.00					B	0.000	11.946		28.34	0.000	0.000
					C	0.000	15.894		21.30	13.858	0.000
T39	62.50	1.2	8	131.771	A	0.000	39.743	13.542	34.07	0.000	0.000
75.00-50.00					B	0.000	48.895		27.70	0.000	0.000
					C	0.000	63.577		21.30	55.430	0.000
T40	37.50	1.037	7	131.771	A	0.933	41.713	13.542	31.75	0.000	0.000
50.00-25.00					B	0.916	50.877		26.15	0.000	0.000
					C	0.710	63.105		21.22	55.430	0.000
T41 25.00-0.00	12.50	1	6	131.771	A	0.000	40.384	13.542	33.53	0.000	0.000
					B	0.000	48.438		27.96	0.000	0.000
					C	0.000	58.265		23.24	48.779	0.000

Tower Forces - No Ice - Wind Normal To Face

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	R_R	D_F	D_R	A_E ft²	F K	w plf	Ctrl. Face
T1	0.00	0.68	A	0.223	2.523	0.595	1	1	6.019	0.75	119.95	C
368.75-362.50			B	0.215	2.545	0.594	1	1	5.877			
			C	0.223	2.523	0.595	1	1	6.019			
T2	0.00	1.09	A	0.253	2.43	0.603	1	1	6.887	0.82	131.55	C
362.50-356.25			B	0.235	2.484	0.598	1	1	6.526			
			C	0.253	2.43	0.603	1	1	6.887			
T3	0.01	1.09	A	0.253	2.43	0.603	1	1	6.887	0.84	134.14	C
356.25-350.00			B	0.249	2.44	0.602	1	1	6.814			
			C	0.267	2.388	0.606	1	1	7.180			
T4	0.01	0.77	A	0.259	2.41	0.604	1	1	7.042	0.90	144.03	C
350.00-343.75		TA 0.79	B	0.295	2.311	0.614	1	1	7.789			
			C	0.312	2.264	0.62	1	1	8.174			
T5	0.01	0.61	A	0.167	2.709	0.584	1	1	3.616	0.57	91.97	C
343.75-337.50			B	0.202	2.588	0.591	1	1	4.329			
			C	0.22	2.531	0.595	1	1	4.694			
T6	0.01	0.54	A	0.157	2.746	0.583	1	1	3.002	0.50	80.55	C
337.50-331.25			B	0.192	2.622	0.589	1	1	3.715			
			C	0.21	2.563	0.592	1	1	4.080			
T7	0.01	0.54	A	0.157	2.746	0.583	1	1	3.002	0.50	80.11	C
331.25-325.00			B	0.192	2.622	0.589	1	1	3.715			
			C	0.21	2.563	0.592	1	1	4.080			
T8	0.02	0.64	A	0.2	2.595	0.59	1	1	3.897	0.55	87.74	B
325.00-318.75			B	0.235	2.482	0.598	1	1	4.641			
			C	0.222	2.525	0.595	1	1	4.346			
T9	0.02	0.64	A	0.2	2.595	0.59	1	1	3.894	0.55	87.20	B
318.75-312.50			B	0.235	2.482	0.598	1	1	4.637			
			C	0.222	2.526	0.595	1	1	4.343			
T10	0.02	0.64	A	0.2	2.595	0.59	1	1	3.894	0.54	86.71	B
312.50-306.25			B	0.235	2.482	0.598	1	1	4.637			
			C	0.222	2.526	0.595	1	1	4.343			

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	R_R	D_F	D_R	A_E ft²	F K	w plf	Ctrl. Face
T11	0.02	0.71	A	0.21	2.562	0.593	1	1	4.506	0.60	96.36	B
306.25-300.00			B	0.245	2.452	0.601	1	1	5.249			
			C	0.232	2.494	0.597	1	1	4.954			
T12	0.12	0.85	A	0.296	2.306	0.615	1	1	7.841	1.07	171.57	C
300.00-293.75		TA 0.79	B	0.384	2.096	0.645	1	1	9.737			
			C	0.475	1.934	0.685	1	1	11.916			
T13	0.12	0.71	A	0.21	2.562	0.593	1	1	4.506	0.86	137.24	C
293.75-287.50			B	0.304	2.286	0.617	1	1	6.528			
			C	0.407	2.05	0.655	1	1	9.048			
T14	0.12	0.61	A	0.195	2.611	0.589	1	1	3.795	0.81	129.02	C
287.50-281.25			B	0.29	2.323	0.613	1	1	5.857			
			C	0.395	2.073	0.65	1	1	8.464			
T15	0.12	0.61	A	0.195	2.611	0.589	1	1	3.795	0.80	128.20	C
281.25-275.00			B	0.29	2.323	0.613	1	1	5.857			
			C	0.395	2.073	0.65	1	1	8.464			
T16	0.12	0.61	A	0.195	2.611	0.589	1	1	3.795	0.80	127.37	C
275.00-268.75			B	0.29	2.323	0.613	1	1	5.857			
			C	0.395	2.073	0.65	1	1	8.464			
T17	0.12	0.61	A	0.195	2.611	0.589	1	1	3.795	0.79	126.53	C
268.75-262.50			B	0.29	2.323	0.613	1	1	5.857			
			C	0.395	2.073	0.65	1	1	8.464			
T18	0.12	0.61	A	0.195	2.611	0.589	1	1	3.795	0.79	125.67	C
262.50-256.25			B	0.29	2.323	0.613	1	1	5.857			
			C	0.395	2.073	0.65	1	1	8.464			
T19	0.12	0.64	A	0.2	2.595	0.59	1	1	3.894	0.79	125.83	C
256.25-250.00			B	0.295	2.311	0.614	1	1	5.960			
			C	0.399	2.066	0.651	1	1	8.565			
T20	0.12	0.71	A	0.21	2.562	0.593	1	1	4.506	0.82	130.99	C
250.00-243.75			B	0.304	2.286	0.617	1	1	6.528			
			C	0.407	2.05	0.655	1	1	9.048			
T21	0.17	0.71	A	0.228	2.505	0.597	1	1	4.869	1.05	168.33	C
243.75-237.50			B	0.304	2.286	0.617	1	1	6.528			
			C	0.406	2.053	0.654	1	1	8.995			
T22	0.23	0.71	A	0.255	2.424	0.603	1	1	5.428	1.40	224.08	C
237.50-231.25			B	0.304	2.286	0.617	1	1	6.528			
			C	0.403	2.058	0.653	1	1	8.915			
T23	0.23	0.77	A	0.264	2.397	0.605	1	1	5.627	1.40	224.14	C
231.25-225.00			B	0.313	2.263	0.62	1	1	6.736			
			C	0.41	2.045	0.656	1	1	9.100			
T24	0.23	0.95	A	0.312	2.266	0.62	1	1	7.829	1.51	241.39	C
225.00-218.75		TA 0.79	B	0.36	2.149	0.636	1	1	8.916			
			C	0.445	1.981	0.671	1	1	10.794			
T25	0.23	0.61	A	0.243	2.458	0.6	1	1	5.167	1.35	215.93	C
218.75-212.50			B	0.293	2.315	0.614	1	1	6.254			
			C	0.393	2.077	0.649	1	1	8.630			
T26	0.23	0.54	A	0.234	2.487	0.598	1	1	4.585	1.30	208.75	C
212.50-206.25			B	0.283	2.341	0.611	1	1	5.683			
			C	0.386	2.092	0.646	1	1	8.186			
T27	0.23	0.54	A	0.234	2.487	0.598	1	1	4.585	1.29	206.95	C
206.25-200.00			B	0.283	2.341	0.611	1	1	5.683			
			C	0.386	2.092	0.646	1	1	8.186			
T28	0.94	2.28	A	0.274	2.368	0.608	1	1	21.863	5.26	210.30	C
200.00-175.00			B	0.306	2.281	0.618	1	1	24.776			
			C	0.418	2.029	0.659	1	1	36.189			
T29	0.24	0.69	A	0.289	2.325	0.613	1	1	5.842	1.29	206.14	C
175.00-168.75			B	0.321	2.241	0.623	1	1	6.587			
			C	0.42	2.025	0.66	1	1	9.143			
T30	0.24	0.69	A	0.289	2.325	0.613	1	1	5.838	1.27	203.93	C
168.75-162.50			B	0.321	2.242	0.623	1	1	6.583			
			C	0.42	2.025	0.66	1	1	9.139			

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	R_R	D_F	D_R	A_E ft²	F K	w plf	Ctrl. Face
T31	0.24	0.69	A	0.285	2.336	0.611	1	1	6.106	1.28	204.01	C
162.50-156.25			B	0.317	2.252	0.621	1	1	6.834			
			C	0.417	2.031	0.659	1	1	9.295			
T32	0.24	0.61	A	0.276	2.363	0.609	1	1	5.527	1.23	196.92	C
156.25-150.00			B	0.308	2.276	0.618	1	1	6.265			
			C	0.41	2.045	0.656	1	1	8.854			
T33	0.96	2.45	A	0.286	2.333	0.612	1	1	23.068	4.88	195.40	C
150.00-125.00			B	0.316	2.254	0.621	1	1	25.860			
			C	0.429	2.01	0.664	1	1	37.514			
T34	0.98	2.84	A	0.361	2.146	0.637	1	1	34.640	5.20	208.13	C
125.00-100.00			B	0.393	2.079	0.649	1	1	37.695			
			C	0.498	1.903	0.696	1	1	48.413			
T35	0.24	1.03	A	0.371	2.125	0.64	1	1	9.228	1.27	203.24	C
100.00-93.75		TA 0.79	B	0.402	2.06	0.652	1	1	9.981			
			C	0.505	1.894	0.7	1	1	12.536			
T36	0.24	0.71	A	0.307	2.277	0.618	1	1	6.613	1.14	182.40	C
93.75-87.50			B	0.343	2.189	0.63	1	1	7.450			
			C	0.459	1.958	0.678	1	1	10.485			
T37	0.25	0.61	A	0.293	2.314	0.614	1	1	5.929	1.13	181.45	C
87.50-81.25			B	0.363	2.143	0.637	1	1	7.611			
			C	0.482	1.924	0.689	1	1	10.947			
T38	0.25	0.61	A	0.293	2.314	0.614	1	1	5.929	1.11	177.50	C
81.25-75.00			B	0.363	2.143	0.637	1	1	7.611			
			C	0.482	1.924	0.689	1	1	10.947			
T39	1.01	2.45	A	0.302	2.292	0.616	1	1	24.497	4.16	166.54	C
75.00-50.00			B	0.371	2.124	0.64	1	1	31.304			
			C	0.482	1.924	0.689	1	1	43.787			
T40	1.02	2.47	A	0.324	2.235	0.623	1	1	26.938	3.62	144.68	C
50.00-25.00			B	0.393	2.078	0.649	1	1	33.925			
			C	0.484	1.921	0.69	1	1	44.229			
T41	0.91	2.45	A	0.306	2.279	0.618	1	1	24.954	3.14	125.47	C
25.00-0.00			B	0.368	2.132	0.639	1	1	30.948			
			C	0.442	1.987	0.67	1	1	39.021			
Sum Weight:	10.55	42.50								59.94		

Tower Forces - No Ice - Wind 60 To Face

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	R_R	D_F	D_R	A_E ft²	F K	w plf	Ctrl. Face
T1	0.00	0.68	A	0.223	2.523	0.595	0.8	1	5.184	0.65	103.31	C
368.75-362.50			B	0.215	2.545	0.594	0.8	1	5.041			
			C	0.223	2.523	0.595	0.8	1	5.184			
T2	0.00	1.09	A	0.253	2.43	0.603	0.8	1	5.924	0.71	113.17	C
362.50-356.25			B	0.235	2.484	0.598	0.8	1	5.563			
			C	0.253	2.43	0.603	0.8	1	5.924			
T3	0.01	1.09	A	0.253	2.43	0.603	0.8	1	5.924	0.73	116.16	C
356.25-350.00			B	0.249	2.44	0.602	0.8	1	5.852			
			C	0.267	2.388	0.606	0.8	1	6.218			
T4	0.01	0.77	A	0.259	2.41	0.604	0.8	1	6.081	0.79	127.10	C
350.00-343.75		TA 0.79	B	0.295	2.311	0.614	0.8	1	6.828			
			C	0.312	2.264	0.62	0.8	1	7.213			
T5	0.01	0.61	A	0.167	2.709	0.584	0.8	1	3.418	0.55	88.09	C
343.75-337.50			B	0.202	2.588	0.591	0.8	1	4.131			
			C	0.22	2.531	0.595	0.8	1	4.496			

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	R_R	D_F	D_R	A_E ft^2	F K	w plf	Ctrl. Face
T6	0.01	0.54	A	0.157	2.746	0.583	0.8	1	3.002	0.50	80.55	C
337.50-331.25			B	0.192	2.622	0.589	0.8	1	3.715			
			C	0.21	2.563	0.592	0.8	1	4.080			
T7	0.01	0.54	A	0.157	2.746	0.583	0.8	1	3.002	0.50	80.11	C
331.25-325.00			B	0.192	2.622	0.589	0.8	1	3.715			
			C	0.21	2.563	0.592	0.8	1	4.080			
T8	0.02	0.64	A	0.2	2.595	0.59	0.8	1	3.897	0.55	87.74	B
325.00-318.75			B	0.235	2.482	0.598	0.8	1	4.641			
			C	0.222	2.525	0.595	0.8	1	4.346			
T9	0.02	0.64	A	0.2	2.595	0.59	0.8	1	3.894	0.55	87.20	B
318.75-312.50			B	0.235	2.482	0.598	0.8	1	4.637			
			C	0.222	2.526	0.595	0.8	1	4.343			
T10	0.02	0.64	A	0.2	2.595	0.59	0.8	1	3.894	0.54	86.71	B
312.50-306.25			B	0.235	2.482	0.598	0.8	1	4.637			
			C	0.222	2.526	0.595	0.8	1	4.343			
T11	0.02	0.71	A	0.21	2.562	0.593	0.8	1	4.309	0.58	92.74	B
306.25-300.00			B	0.245	2.452	0.601	0.8	1	5.052			
			C	0.232	2.494	0.597	0.8	1	4.757			
T12	0.12	0.85	A	0.296	2.306	0.615	0.8	1	6.887	1.00	160.71	C
300.00-293.75		TA 0.79	B	0.384	2.096	0.645	0.8	1	8.850			
			C	0.475	1.934	0.685	0.8	1	11.161			
T13	0.12	0.71	A	0.21	2.562	0.593	0.8	1	4.309	0.84	134.88	C
293.75-287.50			B	0.304	2.286	0.617	0.8	1	6.345			
			C	0.407	2.05	0.655	0.8	1	8.892			
T14	0.12	0.61	A	0.195	2.611	0.589	0.8	1	3.795	0.81	129.02	C
287.50-281.25			B	0.29	2.323	0.613	0.8	1	5.857			
			C	0.395	2.073	0.65	0.8	1	8.464			
T15	0.12	0.61	A	0.195	2.611	0.589	0.8	1	3.795	0.80	128.20	C
281.25-275.00			B	0.29	2.323	0.613	0.8	1	5.857			
			C	0.395	2.073	0.65	0.8	1	8.464			
T16	0.12	0.61	A	0.195	2.611	0.589	0.8	1	3.795	0.80	127.37	C
275.00-268.75			B	0.29	2.323	0.613	0.8	1	5.857			
			C	0.395	2.073	0.65	0.8	1	8.464			
T17	0.12	0.61	A	0.195	2.611	0.589	0.8	1	3.795	0.79	126.53	C
268.75-262.50			B	0.29	2.323	0.613	0.8	1	5.857			
			C	0.395	2.073	0.65	0.8	1	8.464			
T18	0.12	0.61	A	0.195	2.611	0.589	0.8	1	3.795	0.79	125.67	C
262.50-256.25			B	0.29	2.323	0.613	0.8	1	5.857			
			C	0.395	2.073	0.65	0.8	1	8.464			
T19	0.12	0.64	A	0.2	2.595	0.59	0.8	1	3.894	0.79	125.83	C
256.25-250.00			B	0.295	2.311	0.614	0.8	1	5.960			
			C	0.399	2.066	0.651	0.8	1	8.565			
T20	0.12	0.71	A	0.21	2.562	0.593	0.8	1	4.309	0.80	128.74	C
250.00-243.75			B	0.304	2.286	0.617	0.8	1	6.345			
			C	0.407	2.05	0.655	0.8	1	8.892			
T21	0.17	0.71	A	0.228	2.505	0.597	0.8	1	4.676	1.04	166.17	C
243.75-237.50			B	0.304	2.286	0.617	0.8	1	6.345			
			C	0.406	2.053	0.654	0.8	1	8.845			
T22	0.23	0.71	A	0.255	2.424	0.603	0.8	1	5.241	1.39	222.04	C
237.50-231.25			B	0.304	2.286	0.617	0.8	1	6.345			
			C	0.403	2.058	0.653	0.8	1	8.773			
T23	0.23	0.77	A	0.264	2.397	0.605	0.8	1	5.440	1.39	222.14	C
231.25-225.00			B	0.313	2.263	0.62	0.8	1	6.552			
			C	0.41	2.045	0.656	0.8	1	8.958			
T24	0.23	0.95	A	0.312	2.266	0.62	0.8	1	7.043	1.46	233.27	C
225.00-218.75		TA 0.79	B	0.36	2.149	0.636	0.8	1	8.145			
			C	0.445	1.981	0.671	0.8	1	10.195			
T25	0.23	0.61	A	0.243	2.458	0.6	0.8	1	4.980	1.34	213.92	C
218.75-212.50			B	0.293	2.315	0.614	0.8	1	6.070			
			C	0.393	2.077	0.649	0.8	1	8.487			

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	R_R	D_F	D_R	A_E ft^2	F K	w plf	Ctrl. Face
T26	0.23	0.54	A	0.234	2.487	0.598	0.8	1	4.585	1.30	208.75	C
212.50-206.25			B	0.283	2.341	0.611	0.8	1	5.683			
			C	0.386	2.092	0.646	0.8	1	8.186			
T27	0.23	0.54	A	0.234	2.487	0.598	0.8	1	4.585	1.29	206.95	C
206.25-200.00			B	0.283	2.341	0.611	0.8	1	5.683			
			C	0.386	2.092	0.646	0.8	1	8.186			
T28	0.94	2.28	A	0.274	2.368	0.608	0.8	1	21.863	5.26	210.30	C
200.00-175.00			B	0.306	2.281	0.618	0.8	1	24.776			
			C	0.418	2.029	0.659	0.8	1	36.189			
T29	0.24	0.69	A	0.289	2.325	0.613	0.8	1	5.842	1.29	206.14	C
175.00-168.75			B	0.321	2.241	0.623	0.8	1	6.587			
			C	0.42	2.025	0.66	0.8	1	9.143			
T30	0.24	0.69	A	0.289	2.325	0.613	0.8	1	5.838	1.27	203.93	C
168.75-162.50			B	0.321	2.242	0.623	0.8	1	6.583			
			C	0.42	2.025	0.66	0.8	1	9.139			
T31	0.24	0.69	A	0.285	2.336	0.611	0.8	1	5.920	1.26	202.21	C
162.50-156.25			B	0.317	2.252	0.621	0.8	1	6.651			
			C	0.417	2.031	0.659	0.8	1	9.153			
T32	0.24	0.61	A	0.276	2.363	0.609	0.8	1	5.527	1.23	196.92	C
156.25-150.00			B	0.308	2.276	0.618	0.8	1	6.265			
			C	0.41	2.045	0.656	0.8	1	8.854			
T33	0.96	2.45	A	0.286	2.333	0.612	0.8	1	23.068	4.88	195.40	C
150.00-125.00			B	0.316	2.254	0.621	0.8	1	25.860			
			C	0.429	2.01	0.664	0.8	1	37.514			
T34	0.98	2.84	A	0.361	2.146	0.637	0.8	1	32.250	5.08	203.25	C
125.00-100.00			B	0.393	2.079	0.649	0.8	1	35.348			
			C	0.498	1.903	0.696	0.8	1	46.594			
T35	0.24	1.03	A	0.371	2.125	0.64	0.8	1	8.444	1.23	197.13	C
100.00-93.75		TA 0.79	B	0.402	2.06	0.652	0.8	1	9.211			
			C	0.505	1.894	0.7	0.8	1	11.939			
T36	0.24	0.71	A	0.307	2.277	0.618	0.8	1	6.426	1.13	180.92	C
93.75-87.50			B	0.343	2.189	0.63	0.8	1	7.267			
			C	0.459	1.958	0.678	0.8	1	10.343			
T37	0.25	0.61	A	0.293	2.314	0.614	0.8	1	5.929	1.13	181.45	C
87.50-81.25			B	0.363	2.143	0.637	0.8	1	7.611			
			C	0.482	1.924	0.689	0.8	1	10.947			
T38	0.25	0.61	A	0.293	2.314	0.614	0.8	1	5.929	1.11	177.50	C
81.25-75.00			B	0.363	2.143	0.637	0.8	1	7.611			
			C	0.482	1.924	0.689	0.8	1	10.947			
T39	1.01	2.45	A	0.302	2.292	0.616	0.8	1	24.497	4.16	166.54	C
75.00-50.00			B	0.371	2.124	0.64	0.8	1	31.304			
			C	0.482	1.924	0.689	0.8	1	43.787			
T40	1.02	2.47	A	0.324	2.235	0.623	0.8	1	26.751	3.61	144.40	C
50.00-25.00			B	0.393	2.078	0.649	0.8	1	33.741			
			C	0.484	1.921	0.69	0.8	1	44.087			
T41	0.91	2.45	A	0.306	2.279	0.618	0.8	1	24.954	3.14	125.47	C
25.00-0.00			B	0.368	2.132	0.639	0.8	1	30.948			
			C	0.442	1.987	0.67	0.8	1	39.021			
Sum Weight:	10.55	42.50								59.07		

Tower Forces - No Ice - Wind 90 To Face

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	R_R	D_F	D_R	A_E ft^2	F K	w plf	Ctrl. Face

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	R_R	D_F	D_R	A_E ft²	F K	w plf	Ctrl. Face
T1	0.00	0.68	A	0.223	2.523	0.595	0.85	1	5.392	0.67	107.47	C
368.75-362.50			B	0.215	2.545	0.594	0.85	1	5.250			
			C	0.223	2.523	0.595	0.85	1	5.392			
T2	0.00	1.09	A	0.253	2.43	0.603	0.85	1	6.165	0.74	117.76	C
362.50-356.25			B	0.235	2.484	0.598	0.85	1	5.804			
			C	0.253	2.43	0.603	0.85	1	6.165			
T3	0.01	1.09	A	0.253	2.43	0.603	0.85	1	6.165	0.75	120.65	C
356.25-350.00			B	0.249	2.44	0.602	0.85	1	6.092			
			C	0.267	2.388	0.606	0.85	1	6.458			
T4	0.01	0.77	A	0.259	2.41	0.604	0.85	1	6.321	0.82	131.34	C
350.00-343.75		TA 0.79	B	0.295	2.311	0.614	0.85	1	7.068			
			C	0.312	2.264	0.62	0.85	1	7.453			
T5	0.01	0.61	A	0.167	2.709	0.584	0.85	1	3.467	0.56	89.06	C
343.75-337.50			B	0.202	2.588	0.591	0.85	1	4.181			
			C	0.22	2.531	0.595	0.85	1	4.546			
T6	0.01	0.54	A	0.157	2.746	0.583	0.85	1	3.002	0.50	80.55	C
337.50-331.25			B	0.192	2.622	0.589	0.85	1	3.715			
			C	0.21	2.563	0.592	0.85	1	4.080			
T7	0.01	0.54	A	0.157	2.746	0.583	0.85	1	3.002	0.50	80.11	C
331.25-325.00			B	0.192	2.622	0.589	0.85	1	3.715			
			C	0.21	2.563	0.592	0.85	1	4.080			
T8	0.02	0.64	A	0.2	2.595	0.59	0.85	1	3.897	0.55	87.74	B
325.00-318.75			B	0.235	2.482	0.598	0.85	1	4.641			
			C	0.222	2.525	0.595	0.85	1	4.346			
T9	0.02	0.64	A	0.2	2.595	0.59	0.85	1	3.894	0.55	87.20	B
318.75-312.50			B	0.235	2.482	0.598	0.85	1	4.637			
			C	0.222	2.526	0.595	0.85	1	4.343			
T10	0.02	0.64	A	0.2	2.595	0.59	0.85	1	3.894	0.54	86.71	B
312.50-306.25			B	0.235	2.482	0.598	0.85	1	4.637			
			C	0.222	2.526	0.595	0.85	1	4.343			
T11	0.02	0.71	A	0.21	2.562	0.593	0.85	1	4.358	0.59	93.64	B
306.25-300.00			B	0.245	2.452	0.601	0.85	1	5.101			
			C	0.232	2.494	0.597	0.85	1	4.806			
T12	0.12	0.85	A	0.296	2.306	0.615	0.85	1	7.126	1.02	163.42	C
300.00-293.75		TA 0.79	B	0.384	2.096	0.645	0.85	1	9.071			
			C	0.475	1.934	0.685	0.85	1	11.350			
T13	0.12	0.71	A	0.21	2.562	0.593	0.85	1	4.358	0.85	135.47	C
293.75-287.50			B	0.304	2.286	0.617	0.85	1	6.391			
			C	0.407	2.05	0.655	0.85	1	8.931			
T14	0.12	0.61	A	0.195	2.611	0.589	0.85	1	3.795	0.81	129.02	C
287.50-281.25			B	0.29	2.323	0.613	0.85	1	5.857			
			C	0.395	2.073	0.65	0.85	1	8.464			
T15	0.12	0.61	A	0.195	2.611	0.589	0.85	1	3.795	0.80	128.20	C
281.25-275.00			B	0.29	2.323	0.613	0.85	1	5.857			
			C	0.395	2.073	0.65	0.85	1	8.464			
T16	0.12	0.61	A	0.195	2.611	0.589	0.85	1	3.795	0.80	127.37	C
275.00-268.75			B	0.29	2.323	0.613	0.85	1	5.857			
			C	0.395	2.073	0.65	0.85	1	8.464			
T17	0.12	0.61	A	0.195	2.611	0.589	0.85	1	3.795	0.79	126.53	C
268.75-262.50			B	0.29	2.323	0.613	0.85	1	5.857			
			C	0.395	2.073	0.65	0.85	1	8.464			
T18	0.12	0.61	A	0.195	2.611	0.589	0.85	1	3.795	0.79	125.67	C
262.50-256.25			B	0.29	2.323	0.613	0.85	1	5.857			
			C	0.395	2.073	0.65	0.85	1	8.464			
T19	0.12	0.64	A	0.2	2.595	0.59	0.85	1	3.894	0.79	125.83	C
256.25-250.00			B	0.295	2.311	0.614	0.85	1	5.960			
			C	0.399	2.066	0.651	0.85	1	8.565			
T20	0.12	0.71	A	0.21	2.562	0.593	0.85	1	4.358	0.81	129.30	C
250.00-243.75			B	0.304	2.286	0.617	0.85	1	6.391			
			C	0.407	2.05	0.655	0.85	1	8.931			

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	R_R	D_F	D_R	A_E ft²	F K	w plf	Ctrl. Face
T21	0.17	0.71	A	0.228	2.505	0.597	0.85	1	4.725	1.04	166.71	C
243.75-237.50			B	0.304	2.286	0.617	0.85	1	6.391			
			C	0.406	2.053	0.654	0.85	1	8.882			
T22	0.23	0.71	A	0.255	2.424	0.603	0.85	1	5.288	1.39	222.55	C
237.50-231.25			B	0.304	2.286	0.617	0.85	1	6.391			
			C	0.403	2.058	0.653	0.85	1	8.808			
T23	0.23	0.77	A	0.264	2.397	0.605	0.85	1	5.487	1.39	222.64	C
231.25-225.00			B	0.313	2.263	0.62	0.85	1	6.598			
			C	0.41	2.045	0.656	0.85	1	8.994			
T24	0.23	0.95	A	0.312	2.266	0.62	0.85	1	7.240	1.47	235.30	C
225.00-218.75		TA 0.79	B	0.36	2.149	0.636	0.85	1	8.338			
			C	0.445	1.981	0.671	0.85	1	10.345			
T25	0.23	0.61	A	0.243	2.458	0.6	0.85	1	5.027	1.34	214.42	C
218.75-212.50			B	0.293	2.315	0.614	0.85	1	6.116			
			C	0.393	2.077	0.649	0.85	1	8.523			
T26	0.23	0.54	A	0.234	2.487	0.598	0.85	1	4.585	1.30	208.75	C
212.50-206.25			B	0.283	2.341	0.611	0.85	1	5.683			
			C	0.386	2.092	0.646	0.85	1	8.186			
T27	0.23	0.54	A	0.234	2.487	0.598	0.85	1	4.585	1.29	206.95	C
206.25-200.00			B	0.283	2.341	0.611	0.85	1	5.683			
			C	0.386	2.092	0.646	0.85	1	8.186			
T28	0.94	2.28	A	0.274	2.368	0.608	0.85	1	21.863	5.26	210.30	C
200.00-175.00			B	0.306	2.281	0.618	0.85	1	24.776			
			C	0.418	2.029	0.659	0.85	1	36.189			
T29	0.24	0.69	A	0.289	2.325	0.613	0.85	1	5.842	1.29	206.14	C
175.00-168.75			B	0.321	2.241	0.623	0.85	1	6.587			
			C	0.42	2.025	0.66	0.85	1	9.143			
T30	0.24	0.69	A	0.289	2.325	0.613	0.85	1	5.838	1.27	203.93	C
168.75-162.50			B	0.321	2.242	0.623	0.85	1	6.583			
			C	0.42	2.025	0.66	0.85	1	9.139			
T31	0.24	0.69	A	0.285	2.336	0.611	0.85	1	5.966	1.27	202.66	C
162.50-156.25			B	0.317	2.252	0.621	0.85	1	6.696			
			C	0.417	2.031	0.659	0.85	1	9.189			
T32	0.24	0.61	A	0.276	2.363	0.609	0.85	1	5.527	1.23	196.92	C
156.25-150.00			B	0.308	2.276	0.618	0.85	1	6.265			
			C	0.41	2.045	0.656	0.85	1	8.854			
T33	0.96	2.45	A	0.286	2.333	0.612	0.85	1	23.068	4.88	195.40	C
150.00-125.00			B	0.316	2.254	0.621	0.85	1	25.860			
			C	0.429	2.01	0.664	0.85	1	37.514			
T34	0.98	2.84	A	0.361	2.146	0.637	0.85	1	32.847	5.11	204.47	C
125.00-100.00			B	0.393	2.079	0.649	0.85	1	35.935			
			C	0.498	1.903	0.696	0.85	1	47.049			
T35	0.24	1.03	A	0.371	2.125	0.64	0.85	1	8.640	1.24	198.66	C
100.00-93.75		TA 0.79	B	0.402	2.06	0.652	0.85	1	9.404			
			C	0.505	1.894	0.7	0.85	1	12.088			
T36	0.24	0.71	A	0.307	2.277	0.618	0.85	1	6.473	1.13	181.29	C
93.75-87.50			B	0.343	2.189	0.63	0.85	1	7.313			
			C	0.459	1.958	0.678	0.85	1	10.379			
T37	0.25	0.61	A	0.293	2.314	0.614	0.85	1	5.929	1.13	181.45	C
87.50-81.25			B	0.363	2.143	0.637	0.85	1	7.611			
			C	0.482	1.924	0.689	0.85	1	10.947			
T38	0.25	0.61	A	0.293	2.314	0.614	0.85	1	5.929	1.11	177.50	C
81.25-75.00			B	0.363	2.143	0.637	0.85	1	7.611			
			C	0.482	1.924	0.689	0.85	1	10.947			
T39	1.01	2.45	A	0.302	2.292	0.616	0.85	1	24.497	4.16	166.54	C
75.00-50.00			B	0.371	2.124	0.64	0.85	1	31.304			
			C	0.482	1.924	0.689	0.85	1	43.787			
T40	1.02	2.47	A	0.324	2.235	0.623	0.85	1	26.798	3.61	144.47	C
50.00-25.00			B	0.393	2.078	0.649	0.85	1	33.787			
			C	0.484	1.921	0.69	0.85	1	44.122			

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	R_R	D_F	D_R	A_E ft^2	F K	w plf	Ctrl. Face
T41	0.91	2.45	A	0.306	2.279	0.618	0.85	1	24.954	3.14	125.47	C
25.00-0.00			B	0.368	2.132	0.639	0.85	1	30.948			
			C	0.442	1.987	0.67	0.85	1	39.021			
Sum Weight:	10.55	42.50								59.28		

Tower Forces - With Ice - Wind Normal To Face

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	R_R	D_F	D_R	A_E ft^2	F K	w plf	Ctrl. Face
T1	0.00	0.88	A	0.307	2.278	0.618	1	1	7.894	0.67	106.54	C
368.75-362.50			B	0.294	2.313	0.614	1	1	7.600			
			C	0.307	2.278	0.618	1	1	7.894			
T2	0.01	1.38	A	0.346	2.181	0.631	1	1	9.025	0.73	116.05	C
362.50-356.25			B	0.313	2.262	0.62	1	1	8.270			
			C	0.346	2.181	0.631	1	1	9.025			
T3	0.02	1.38	A	0.346	2.181	0.631	1	1	9.025	0.75	120.12	C
356.25-350.00			B	0.339	2.197	0.629	1	1	8.871			
			C	0.372	2.121	0.641	1	1	9.653			
T4	0.04	0.98	A	0.352	2.167	0.633	1	1	9.194	0.84	134.62	C
350.00-343.75		TA 1.10	B	0.418	2.029	0.659	1	1	10.823			
			C	0.451	1.972	0.674	1	1	11.697			
T5	0.04	0.73	A	0.261	2.404	0.605	1	1	5.659	0.62	99.77	C
343.75-337.50			B	0.327	2.226	0.625	1	1	7.185			
			C	0.36	2.148	0.636	1	1	7.999			
T6	0.04	0.63	A	0.251	2.433	0.602	1	1	5.045	0.58	92.60	C
337.50-331.25			B	0.317	2.251	0.621	1	1	6.571			
			C	0.35	2.171	0.633	1	1	7.385			
T7	0.04	0.63	A	0.251	2.433	0.602	1	1	5.045	0.58	92.11	C
331.25-325.00			B	0.317	2.251	0.621	1	1	6.571			
			C	0.35	2.171	0.633	1	1	7.385			
T8	0.05	0.74	A	0.309	2.272	0.619	1	1	6.400	0.61	97.29	B
325.00-318.75			B	0.375	2.116	0.642	1	1	8.047			
			C	0.361	2.146	0.637	1	1	7.695			
T9	0.05	0.74	A	0.309	2.273	0.619	1	1	6.393	0.60	96.69	B
318.75-312.50			B	0.375	2.117	0.642	1	1	8.040			
			C	0.361	2.146	0.636	1	1	7.688			
T10	0.05	0.74	A	0.309	2.273	0.619	1	1	6.393	0.60	96.14	B
312.50-306.25			B	0.375	2.117	0.642	1	1	8.040			
			C	0.361	2.146	0.636	1	1	7.688			
T11	0.05	0.83	A	0.319	2.247	0.622	1	1	7.004	0.64	101.82	B
306.25-300.00			B	0.384	2.096	0.645	1	1	8.651			
			C	0.371	2.125	0.64	1	1	8.299			
T12	0.29	1.06	A	0.404	2.057	0.653	1	1	10.474	1.16	185.59	C
300.00-293.75		TA 1.10	B	0.542	1.852	0.72	1	1	14.246			
			C	0.673	1.777	0.801	1	1	18.709			
T13	0.29	0.83	A	0.319	2.247	0.622	1	1	7.004	0.99	158.15	C
293.75-287.50			B	0.466	1.948	0.681	1	1	10.894			
			C	0.615	1.795	0.763	1	1	15.875			
T14	0.29	0.71	A	0.304	2.285	0.617	1	1	6.281	0.95	152.27	C
287.50-281.25			B	0.453	1.969	0.675	1	1	10.222			
			C	0.605	1.801	0.757	1	1	15.333			
T15	0.29	0.71	A	0.304	2.285	0.617	1	1	6.281	0.95	151.31	C
281.25-275.00			B	0.453	1.969	0.675	1	1	10.222			
			C	0.605	1.801	0.757	1	1	15.333			

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	R_R	D_F	D_R	A_E ft^2	F K	w plf	Ctrl. Face
T16	0.29	0.71	A	0.304	2.285	0.617	1	1	6.281	0.94	150.33	C
275.00-268.75			B	0.453	1.969	0.675	1	1	10.222			
			C	0.605	1.801	0.757	1	1	15.333			
T17	0.29	0.71	A	0.304	2.285	0.617	1	1	6.281	0.93	149.33	C
268.75-262.50			B	0.453	1.969	0.675	1	1	10.222			
			C	0.605	1.801	0.757	1	1	15.333			
T18	0.29	0.71	A	0.304	2.285	0.617	1	1	6.281	0.93	148.32	C
262.50-256.25			B	0.453	1.969	0.675	1	1	10.222			
			C	0.605	1.801	0.757	1	1	15.333			
T19	0.29	0.74	A	0.309	2.273	0.619	1	1	6.393	0.93	148.32	C
256.25-250.00			B	0.457	1.962	0.677	1	1	10.347			
			C	0.609	1.799	0.759	1	1	15.456			
T20	0.29	0.83	A	0.319	2.247	0.622	1	1	7.004	0.94	150.95	C
250.00-243.75			B	0.466	1.948	0.681	1	1	10.894			
			C	0.615	1.795	0.763	1	1	15.875			
T21	0.38	0.83	A	0.341	2.194	0.629	1	1	7.526	1.12	178.79	C
243.75-237.50			B	0.466	1.948	0.681	1	1	10.894			
			C	0.611	1.798	0.76	1	1	15.694			
T22	0.52	0.83	A	0.373	2.119	0.641	1	1	8.340	1.38	220.59	C
237.50-231.25			B	0.466	1.948	0.681	1	1	10.894			
			C	0.604	1.802	0.756	1	1	15.425			
T23	0.52	0.90	A	0.382	2.1	0.644	1	1	8.568	1.38	220.55	C
231.25-225.00			B	0.474	1.936	0.685	1	1	11.147			
			C	0.61	1.798	0.76	1	1	15.630			
T24	0.52	1.20	A	0.429	2.01	0.664	1	1	10.787	1.44	230.79	C
225.00-218.75		TA 1.10	B	0.519	1.876	0.708	1	1	13.339			
			C	0.637	1.786	0.777	1	1	17.048			
T25	0.52	0.73	A	0.363	2.142	0.637	1	1	8.047	1.33	212.59	C
218.75-212.50			B	0.456	1.964	0.676	1	1	10.567			
			C	0.596	1.806	0.751	1	1	15.080			
T26	0.52	0.63	A	0.354	2.163	0.634	1	1	7.476	1.30	207.84	C
212.50-206.25			B	0.447	1.978	0.672	1	1	10.017			
			C	0.591	1.81	0.748	1	1	14.722			
T27	0.52	0.63	A	0.354	2.163	0.634	1	1	7.476	1.29	206.05	C
206.25-200.00			B	0.447	1.978	0.672	1	1	10.017			
			C	0.591	1.81	0.748	1	1	14.722			
T28	2.14	2.73	A	0.423	2.021	0.661	1	1	37.270	5.42	216.71	C
200.00-175.00			B	0.482	1.924	0.689	1	1	44.256			
			C	0.642	1.784	0.78	1	1	66.771			
T29	0.54	0.80	A	0.439	1.992	0.668	1	1	9.817	1.32	210.41	C
175.00-168.75			B	0.499	1.902	0.697	1	1	11.627			
			C	0.637	1.786	0.777	1	1	16.561			
T30	0.54	0.80	A	0.439	1.993	0.668	1	1	9.808	1.30	208.10	C
168.75-162.50			B	0.498	1.902	0.697	1	1	11.617			
			C	0.637	1.786	0.777	1	1	16.549			
T31	0.54	0.81	A	0.435	1.999	0.666	1	1	10.000	1.29	206.15	C
162.50-156.25			B	0.495	1.907	0.695	1	1	11.766			
			C	0.634	1.787	0.775	1	1	16.579			
T32	0.54	0.71	A	0.426	2.016	0.662	1	1	9.432	1.26	201.05	C
156.25-150.00			B	0.486	1.919	0.69	1	1	11.219			
			C	0.628	1.789	0.771	1	1	16.225			
T33	2.22	2.84	A	0.445	1.981	0.671	1	1	39.995	5.20	207.81	C
150.00-125.00			B	0.508	1.889	0.702	1	1	47.747			
			C	0.671	1.777	0.799	1	1	71.787			
T34	2.26	3.54	A	0.524	1.871	0.71	1	1	53.212	5.66	226.50	C
125.00-100.00			B	0.598	1.805	0.752	1	1	63.038			
			C	0.752	1.788	0.858	1	1	87.349			
T35	0.56	1.28	A	0.533	1.861	0.715	1	1	13.856	1.37	219.76	C
100.00-93.75		TA 1.10	B	0.607	1.8	0.758	1	1	16.291			
			C	0.757	1.791	0.862	1	1	22.184			

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	R_R	D_F	D_R	A_E ft²	F K	w plf	Ctrl. Face
T36	0.57	0.83	A	0.472	1.939	0.684	1	1	11.086	1.27	202.45	C
93.75-87.50			B	0.554	1.84	0.727	1	1	13.758			
			C	0.725	1.78	0.838	1	1	20.461			
T37	0.59	0.71	A	0.458	1.96	0.677	1	1	10.386	1.39	223.12	C
87.50-81.25			B	0.614	1.796	0.762	1	1	16.078			
			C	0.789	1.808	0.888	1	1	23.649			
T38	0.59	0.71	A	0.458	1.96	0.677	1	1	10.386	1.36	218.27	C
81.25-75.00			B	0.614	1.796	0.762	1	1	16.078			
			C	0.789	1.808	0.888	1	1	23.649			
T39	2.36	2.84	A	0.474	1.936	0.685	1	1	43.451	5.12	204.79	C
75.00-50.00			B	0.629	1.789	0.772	1	1	66.691			
			C	0.789	1.808	0.888	1	1	94.596			
T40	2.41	2.87	A	0.513	1.883	0.704	1	1	48.655	4.44	177.54	C
50.00-25.00			B	0.668	1.778	0.798	1	1	73.021			
			C	0.791	1.809	0.889	1	1	94.944			
T41	2.13	2.84	A	0.488	1.916	0.692	1	1	45.185	3.66	146.33	C
25.00-0.00			B	0.625	1.791	0.769	1	1	65.788			
			C	0.722	1.779	0.836	1	1	81.744			
Sum Weight:	24.52	51.11								65.21		

Tower Forces - With Ice - Wind 60 To Face

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	R_R	D_F	D_R	A_E ft²	F K	w plf	Ctrl. Face
T1	0.00	0.88	A	0.307	2.278	0.618	0.8	1	7.059	0.60	95.27	C
368.75-362.50			B	0.294	2.313	0.614	0.8	1	6.765			
			C	0.307	2.278	0.618	0.8	1	7.059			
T2	0.01	1.38	A	0.346	2.181	0.631	0.8	1	8.063	0.65	103.68	C
362.50-356.25			B	0.313	2.262	0.62	0.8	1	7.307			
			C	0.346	2.181	0.631	0.8	1	8.063			
T3	0.02	1.38	A	0.346	2.181	0.631	0.8	1	8.063	0.68	108.15	C
356.25-350.00			B	0.339	2.197	0.629	0.8	1	7.909			
			C	0.372	2.121	0.641	0.8	1	8.691			
T4	0.04	0.98	A	0.352	2.167	0.633	0.8	1	8.234	0.77	123.56	C
350.00-343.75		TA 1.10	B	0.418	2.029	0.659	0.8	1	9.862			
			C	0.451	1.972	0.674	0.8	1	10.736			
T5	0.04	0.73	A	0.261	2.404	0.605	0.8	1	5.461	0.61	97.31	C
343.75-337.50			B	0.327	2.226	0.625	0.8	1	6.987			
			C	0.36	2.148	0.636	0.8	1	7.801			
T6	0.04	0.63	A	0.251	2.433	0.602	0.8	1	5.045	0.58	92.60	C
337.50-331.25			B	0.317	2.251	0.621	0.8	1	6.571			
			C	0.35	2.171	0.633	0.8	1	7.385			
T7	0.04	0.63	A	0.251	2.433	0.602	0.8	1	5.045	0.58	92.11	C
331.25-325.00			B	0.317	2.251	0.621	0.8	1	6.571			
			C	0.35	2.171	0.633	0.8	1	7.385			
T8	0.05	0.74	A	0.309	2.272	0.619	0.8	1	6.400	0.61	97.29	B
325.00-318.75			B	0.375	2.116	0.642	0.8	1	8.047			
			C	0.361	2.146	0.637	0.8	1	7.695			
T9	0.05	0.74	A	0.309	2.273	0.619	0.8	1	6.393	0.60	96.69	B
318.75-312.50			B	0.375	2.117	0.642	0.8	1	8.040			
			C	0.361	2.146	0.636	0.8	1	7.688			
T10	0.05	0.74	A	0.309	2.273	0.619	0.8	1	6.393	0.60	96.14	B
312.50-306.25			B	0.375	2.117	0.642	0.8	1	8.040			
			C	0.361	2.146	0.636	0.8	1	7.688			

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	R_R	D_F	D_R	A_E ft²	F K	w plf	Ctrl. Face
T11	0.05	0.83	A	0.319	2.247	0.622	0.8	1	6.807	0.62	99.51	B
306.25-300.00			B	0.384	2.096	0.645	0.8	1	8.454			
			C	0.371	2.125	0.64	0.8	1	8.102			
T12	0.29	1.06	A	0.404	2.057	0.653	0.8	1	9.520	1.12	179.11	C
300.00-293.75		TA 1.10	B	0.542	1.852	0.72	0.8	1	13.392			
			C	0.673	1.777	0.801	0.8	1	18.055			
T13	0.29	0.83	A	0.319	2.247	0.622	0.8	1	6.807	0.98	156.80	C
293.75-287.50			B	0.466	1.948	0.681	0.8	1	10.718			
			C	0.615	1.795	0.763	0.8	1	15.740			
T14	0.29	0.71	A	0.304	2.285	0.617	0.8	1	6.281	0.95	152.27	C
287.50-281.25			B	0.453	1.969	0.675	0.8	1	10.222			
			C	0.605	1.801	0.757	0.8	1	15.333			
T15	0.29	0.71	A	0.304	2.285	0.617	0.8	1	6.281	0.95	151.31	C
281.25-275.00			B	0.453	1.969	0.675	0.8	1	10.222			
			C	0.605	1.801	0.757	0.8	1	15.333			
T16	0.29	0.71	A	0.304	2.285	0.617	0.8	1	6.281	0.94	150.33	C
275.00-268.75			B	0.453	1.969	0.675	0.8	1	10.222			
			C	0.605	1.801	0.757	0.8	1	15.333			
T17	0.29	0.71	A	0.304	2.285	0.617	0.8	1	6.281	0.93	149.33	C
268.75-262.50			B	0.453	1.969	0.675	0.8	1	10.222			
			C	0.605	1.801	0.757	0.8	1	15.333			
T18	0.29	0.71	A	0.304	2.285	0.617	0.8	1	6.281	0.93	148.32	C
262.50-256.25			B	0.453	1.969	0.675	0.8	1	10.222			
			C	0.605	1.801	0.757	0.8	1	15.333			
T19	0.29	0.74	A	0.309	2.273	0.619	0.8	1	6.393	0.93	148.32	C
256.25-250.00			B	0.457	1.962	0.677	0.8	1	10.347			
			C	0.609	1.799	0.759	0.8	1	15.456			
T20	0.29	0.83	A	0.319	2.247	0.622	0.8	1	6.807	0.94	149.66	C
250.00-243.75			B	0.466	1.948	0.681	0.8	1	10.718			
			C	0.615	1.795	0.763	0.8	1	15.740			
T21	0.38	0.83	A	0.341	2.194	0.629	0.8	1	7.335	1.11	177.60	C
243.75-237.50			B	0.466	1.948	0.681	0.8	1	10.718			
			C	0.611	1.798	0.76	0.8	1	15.567			
T22	0.52	0.83	A	0.373	2.119	0.641	0.8	1	8.157	1.37	219.51	C
237.50-231.25			B	0.466	1.948	0.681	0.8	1	10.718			
			C	0.604	1.802	0.756	0.8	1	15.311			
T23	0.52	0.90	A	0.382	2.1	0.644	0.8	1	8.385	1.37	219.49	C
231.25-225.00			B	0.474	1.936	0.685	0.8	1	10.971			
			C	0.61	1.798	0.76	0.8	1	15.516			
T24	0.52	1.20	A	0.429	2.01	0.664	0.8	1	10.016	1.41	226.37	C
225.00-218.75		TA 1.10	B	0.519	1.876	0.708	0.8	1	12.596			
			C	0.637	1.786	0.777	0.8	1	16.567			
T25	0.52	0.73	A	0.363	2.142	0.637	0.8	1	7.863	1.32	211.53	C
218.75-212.50			B	0.456	1.964	0.676	0.8	1	10.390			
			C	0.596	1.806	0.751	0.8	1	14.965			
T26	0.52	0.63	A	0.354	2.163	0.634	0.8	1	7.476	1.30	207.84	C
212.50-206.25			B	0.447	1.978	0.672	0.8	1	10.017			
			C	0.591	1.81	0.748	0.8	1	14.722			
T27	0.52	0.63	A	0.354	2.163	0.634	0.8	1	7.476	1.29	206.05	C
206.25-200.00			B	0.447	1.978	0.672	0.8	1	10.017			
			C	0.591	1.81	0.748	0.8	1	14.722			
T28	2.14	2.73	A	0.423	2.021	0.661	0.8	1	37.270	5.42	216.71	C
200.00-175.00			B	0.482	1.924	0.689	0.8	1	44.256			
			C	0.642	1.784	0.78	0.8	1	66.771			
T29	0.54	0.80	A	0.439	1.992	0.668	0.8	1	9.817	1.32	210.41	C
175.00-168.75			B	0.499	1.902	0.697	0.8	1	11.627			
			C	0.637	1.786	0.777	0.8	1	16.561			
T30	0.54	0.80	A	0.439	1.993	0.668	0.8	1	9.808	1.30	208.10	C
168.75-162.50			B	0.498	1.902	0.697	0.8	1	11.617			
			C	0.637	1.786	0.777	0.8	1	16.549			

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	R_R	D_F	D_R	A_E ft²	F K	w plf	Ctrl. Face
T31	0.54	0.81	A	0.435	1.999	0.666	0.8	1	9.816	1.28	205.20	C
162.50-156.25			B	0.495	1.907	0.695	0.8	1	11.590			
			C	0.634	1.787	0.775	0.8	1	16.465			
T32	0.54	0.71	A	0.426	2.016	0.662	0.8	1	9.432	1.26	201.05	C
156.25-150.00			B	0.486	1.919	0.69	0.8	1	11.219			
			C	0.628	1.789	0.771	0.8	1	16.225			
T33	2.22	2.84	A	0.445	1.981	0.671	0.8	1	39.995	5.20	207.81	C
150.00-125.00			B	0.508	1.889	0.702	0.8	1	47.747			
			C	0.671	1.777	0.799	0.8	1	71.787			
T34	2.26	3.54	A	0.524	1.871	0.71	0.8	1	50.867	5.59	223.73	C
125.00-100.00			B	0.598	1.805	0.752	0.8	1	60.780			
			C	0.752	1.788	0.858	0.8	1	85.886			
T35	0.56	1.28	A	0.533	1.861	0.715	0.8	1	13.087	1.35	216.28	C
100.00-93.75		TA 1.10	B	0.607	1.8	0.758	0.8	1	15.550			
			C	0.757	1.791	0.862	0.8	1	21.704			
T36	0.57	0.83	A	0.472	1.939	0.684	0.8	1	10.902	1.26	201.44	C
93.75-87.50			B	0.554	1.84	0.727	0.8	1	13.552			
			C	0.725	1.78	0.838	0.8	1	20.318			
T37	0.59	0.71	A	0.458	1.96	0.677	0.8	1	10.386	1.38	220.57	C
87.50-81.25			B	0.614	1.796	0.762	0.8	1	15.716			
			C	0.789	1.808	0.888	0.8	1	23.286			
T38	0.59	0.71	A	0.458	1.96	0.677	0.8	1	10.386	1.35	215.77	C
81.25-75.00			B	0.614	1.796	0.762	0.8	1	15.716			
			C	0.789	1.808	0.888	0.8	1	23.286			
T39	2.36	2.84	A	0.474	1.936	0.685	0.8	1	43.451	5.06	202.45	C
75.00-50.00			B	0.629	1.789	0.772	0.8	1	65.241			
			C	0.789	1.808	0.888	0.8	1	93.146			
T40	2.41	2.87	A	0.513	1.883	0.704	0.8	1	48.471	4.38	175.35	C
50.00-25.00			B	0.668	1.778	0.798	0.8	1	71.394			
			C	0.791	1.809	0.889	0.8	1	93.379			
T41	2.13	2.84	A	0.488	1.916	0.692	0.8	1	45.185	3.62	144.64	C
25.00-0.00			B	0.625	1.791	0.769	0.8	1	64.512			
			C	0.722	1.779	0.836	0.8	1	80.468			
Sum Weight:	24.52	51.11								64.49		

Tower Forces - With Ice - Wind 90 To Face

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	R_R	D_F	D_R	A_E ft²	F K	w plf	Ctrl. Face
T1	0.00	0.88	A	0.307	2.278	0.618	0.85	1	7.268	0.61	98.09	C
368.75-362.50			B	0.294	2.313	0.614	0.85	1	6.974			
			C	0.307	2.278	0.618	0.85	1	7.268			
T2	0.01	1.38	A	0.346	2.181	0.631	0.85	1	8.303	0.67	106.77	C
362.50-356.25			B	0.313	2.262	0.62	0.85	1	7.548			
			C	0.346	2.181	0.631	0.85	1	8.303			
T3	0.02	1.38	A	0.346	2.181	0.631	0.85	1	8.303	0.69	111.14	C
356.25-350.00			B	0.339	2.197	0.629	0.85	1	8.150			
			C	0.372	2.121	0.641	0.85	1	8.931			
T4	0.04	0.98	A	0.352	2.167	0.633	0.85	1	8.474	0.79	126.33	C
350.00-343.75		TA 1.10	B	0.418	2.029	0.659	0.85	1	10.102			
			C	0.451	1.972	0.674	0.85	1	10.976			
T5	0.04	0.73	A	0.261	2.404	0.605	0.85	1	5.511	0.61	97.92	C
343.75-337.50			B	0.327	2.226	0.625	0.85	1	7.037			
			C	0.36	2.148	0.636	0.85	1	7.850			

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	R_R	D_F	D_R	A_E ft²	F K	w plf	Ctrl. Face
T6	0.04	0.63	A	0.251	2.433	0.602	0.85	1	5.045	0.58	92.60	C
337.50-331.25			B	0.317	2.251	0.621	0.85	1	6.571			
			C	0.35	2.171	0.633	0.85	1	7.385			
T7	0.04	0.63	A	0.251	2.433	0.602	0.85	1	5.045	0.58	92.11	C
331.25-325.00			B	0.317	2.251	0.621	0.85	1	6.571			
			C	0.35	2.171	0.633	0.85	1	7.385			
T8	0.05	0.74	A	0.309	2.272	0.619	0.85	1	6.400	0.61	97.29	B
325.00-318.75			B	0.375	2.116	0.642	0.85	1	8.047			
			C	0.361	2.146	0.637	0.85	1	7.695			
T9	0.05	0.74	A	0.309	2.273	0.619	0.85	1	6.393	0.60	96.69	B
318.75-312.50			B	0.375	2.117	0.642	0.85	1	8.040			
			C	0.361	2.146	0.636	0.85	1	7.688			
T10	0.05	0.74	A	0.309	2.273	0.619	0.85	1	6.393	0.60	96.14	B
312.50-306.25			B	0.375	2.117	0.642	0.85	1	8.040			
			C	0.361	2.146	0.636	0.85	1	7.688			
T11	0.05	0.83	A	0.319	2.247	0.622	0.85	1	6.857	0.63	100.08	B
306.25-300.00			B	0.384	2.096	0.645	0.85	1	8.503			
			C	0.371	2.125	0.64	0.85	1	8.151			
T12	0.29	1.06	A	0.404	2.057	0.653	0.85	1	9.759	1.13	180.73	C
300.00-293.75		TA 1.10	B	0.542	1.852	0.72	0.85	1	13.606			
			C	0.673	1.777	0.801	0.85	1	18.218			
T13	0.29	0.83	A	0.319	2.247	0.622	0.85	1	6.857	0.98	157.14	C
293.75-287.50			B	0.466	1.948	0.681	0.85	1	10.762			
			C	0.615	1.795	0.763	0.85	1	15.773			
T14	0.29	0.71	A	0.304	2.285	0.617	0.85	1	6.281	0.95	152.27	C
287.50-281.25			B	0.453	1.969	0.675	0.85	1	10.222			
			C	0.605	1.801	0.757	0.85	1	15.333			
T15	0.29	0.71	A	0.304	2.285	0.617	0.85	1	6.281	0.95	151.31	C
281.25-275.00			B	0.453	1.969	0.675	0.85	1	10.222			
			C	0.605	1.801	0.757	0.85	1	15.333			
T16	0.29	0.71	A	0.304	2.285	0.617	0.85	1	6.281	0.94	150.33	C
275.00-268.75			B	0.453	1.969	0.675	0.85	1	10.222			
			C	0.605	1.801	0.757	0.85	1	15.333			
T17	0.29	0.71	A	0.304	2.285	0.617	0.85	1	6.281	0.93	149.33	C
268.75-262.50			B	0.453	1.969	0.675	0.85	1	10.222			
			C	0.605	1.801	0.757	0.85	1	15.333			
T18	0.29	0.71	A	0.304	2.285	0.617	0.85	1	6.281	0.93	148.32	C
262.50-256.25			B	0.453	1.969	0.675	0.85	1	10.222			
			C	0.605	1.801	0.757	0.85	1	15.333			
T19	0.29	0.74	A	0.309	2.273	0.619	0.85	1	6.393	0.93	148.32	C
256.25-250.00			B	0.457	1.962	0.677	0.85	1	10.347			
			C	0.609	1.799	0.759	0.85	1	15.456			
T20	0.29	0.83	A	0.319	2.247	0.622	0.85	1	6.857	0.94	149.98	C
250.00-243.75			B	0.466	1.948	0.681	0.85	1	10.762			
			C	0.615	1.795	0.763	0.85	1	15.773			
T21	0.38	0.83	A	0.341	2.194	0.629	0.85	1	7.382	1.11	177.90	C
243.75-237.50			B	0.466	1.948	0.681	0.85	1	10.762			
			C	0.611	1.798	0.76	0.85	1	15.599			
T22	0.52	0.83	A	0.373	2.119	0.641	0.85	1	8.203	1.37	219.78	C
237.50-231.25			B	0.466	1.948	0.681	0.85	1	10.762			
			C	0.604	1.802	0.756	0.85	1	15.339			
T23	0.52	0.90	A	0.382	2.1	0.644	0.85	1	8.431	1.37	219.75	C
231.25-225.00			B	0.474	1.936	0.685	0.85	1	11.015			
			C	0.61	1.798	0.76	0.85	1	15.545			
T24	0.52	1.20	A	0.429	2.01	0.664	0.85	1	10.209	1.42	227.47	C
225.00-218.75		TA 1.10	B	0.519	1.876	0.708	0.85	1	12.782			
			C	0.637	1.786	0.777	0.85	1	16.687			
T25	0.52	0.73	A	0.363	2.142	0.637	0.85	1	7.909	1.32	211.80	C
218.75-212.50			B	0.456	1.964	0.676	0.85	1	10.434			
			C	0.596	1.806	0.751	0.85	1	14.994			

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	R_R	D_F	D_R	A_E ft²	F K	w plf	Ctrl. Face
T26	0.52	0.63	A	0.354	2.163	0.634	0.85	1	7.476	1.30	207.84	C
212.50-206.25			B	0.447	1.978	0.672	0.85	1	10.017			
			C	0.591	1.81	0.748	0.85	1	14.722			
T27	0.52	0.63	A	0.354	2.163	0.634	0.85	1	7.476	1.29	206.05	C
206.25-200.00			B	0.447	1.978	0.672	0.85	1	10.017			
			C	0.591	1.81	0.748	0.85	1	14.722			
T28	2.14	2.73	A	0.423	2.021	0.661	0.85	1	37.270	5.42	216.71	C
200.00-175.00			B	0.482	1.924	0.689	0.85	1	44.256			
			C	0.642	1.784	0.78	0.85	1	66.771			
T29	0.54	0.80	A	0.439	1.992	0.668	0.85	1	9.817	1.32	210.41	C
175.00-168.75			B	0.499	1.902	0.697	0.85	1	11.627			
			C	0.637	1.786	0.777	0.85	1	16.561			
T30	0.54	0.80	A	0.439	1.993	0.668	0.85	1	9.808	1.30	208.10	C
168.75-162.50			B	0.498	1.902	0.697	0.85	1	11.617			
			C	0.637	1.786	0.777	0.85	1	16.549			
T31	0.54	0.81	A	0.435	1.999	0.666	0.85	1	9.862	1.28	205.44	C
162.50-156.25			B	0.495	1.907	0.695	0.85	1	11.634			
			C	0.634	1.787	0.775	0.85	1	16.494			
T32	0.54	0.71	A	0.426	2.016	0.662	0.85	1	9.432	1.26	201.05	C
156.25-150.00			B	0.486	1.919	0.69	0.85	1	11.219			
			C	0.628	1.789	0.771	0.85	1	16.225			
T33	2.22	2.84	A	0.445	1.981	0.671	0.85	1	39.995	5.20	207.81	C
150.00-125.00			B	0.508	1.889	0.702	0.85	1	47.747			
			C	0.671	1.777	0.799	0.85	1	71.787			
T34	2.26	3.54	A	0.524	1.871	0.71	0.85	1	51.453	5.61	224.42	C
125.00-100.00			B	0.598	1.805	0.752	0.85	1	61.345			
			C	0.752	1.788	0.858	0.85	1	86.252			
T35	0.56	1.28	A	0.533	1.861	0.715	0.85	1	13.279	1.36	217.15	C
100.00-93.75		TA 1.10	B	0.607	1.8	0.758	0.85	1	15.735			
			C	0.757	1.791	0.862	0.85	1	21.824			
T36	0.57	0.83	A	0.472	1.939	0.684	0.85	1	10.948	1.26	201.69	C
93.75-87.50			B	0.554	1.84	0.727	0.85	1	13.604			
			C	0.725	1.78	0.838	0.85	1	20.354			
T37	0.59	0.71	A	0.458	1.96	0.677	0.85	1	10.386	1.38	221.21	C
87.50-81.25			B	0.614	1.796	0.762	0.85	1	15.807			
			C	0.789	1.808	0.888	0.85	1	23.377			
T38	0.59	0.71	A	0.458	1.96	0.677	0.85	1	10.386	1.35	216.40	C
81.25-75.00			B	0.614	1.796	0.762	0.85	1	15.807			
			C	0.789	1.808	0.888	0.85	1	23.377			
T39	2.36	2.84	A	0.474	1.936	0.685	0.85	1	43.451	5.08	203.03	C
75.00-50.00			B	0.629	1.789	0.772	0.85	1	65.604			
			C	0.789	1.808	0.888	0.85	1	93.508			
T40	2.41	2.87	A	0.513	1.883	0.704	0.85	1	48.517	4.40	175.90	C
50.00-25.00			B	0.668	1.778	0.798	0.85	1	71.801			
			C	0.791	1.809	0.889	0.85	1	93.770			
T41	2.13	2.84	A	0.488	1.916	0.692	0.85	1	45.185	3.63	145.07	C
25.00-0.00			B	0.625	1.791	0.769	0.85	1	64.831			
			C	0.722	1.779	0.836	0.85	1	80.787			
Sum Weight:	24.52	51.11								64.67		

Tower Forces - Service - Wind Normal To Face

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

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	R_R	D_F	D_R	A_E ft²	F K	w plf	Ctrl. Face
T1	0.00	0.68	A	0.223	2.523	0.595	1	1	6.019	0.21	33.23	C
368.75-362.50			B	0.215	2.545	0.594	1	1	5.877			
			C	0.223	2.523	0.595	1	1	6.019			
T2	0.00	1.09	A	0.253	2.43	0.603	1	1	6.887	0.23	36.44	C
362.50-356.25			B	0.235	2.484	0.598	1	1	6.526			
			C	0.253	2.43	0.603	1	1	6.887			
T3	0.01	1.09	A	0.253	2.43	0.603	1	1	6.887	0.23	37.16	C
356.25-350.00			B	0.249	2.44	0.602	1	1	6.814			
			C	0.267	2.388	0.606	1	1	7.180			
T4	0.01	0.77	A	0.259	2.41	0.604	1	1	7.042	0.25	39.90	C
350.00-343.75		TA 0.79	B	0.295	2.311	0.614	1	1	7.789			
			C	0.312	2.264	0.62	1	1	8.174			
T5	0.01	0.61	A	0.167	2.709	0.584	1	1	3.616	0.16	25.48	C
343.75-337.50			B	0.202	2.588	0.591	1	1	4.329			
			C	0.22	2.531	0.595	1	1	4.694			
T6	0.01	0.54	A	0.157	2.746	0.583	1	1	3.002	0.14	22.31	C
337.50-331.25			B	0.192	2.622	0.589	1	1	3.715			
			C	0.21	2.563	0.592	1	1	4.080			
T7	0.01	0.54	A	0.157	2.746	0.583	1	1	3.002	0.14	22.19	C
331.25-325.00			B	0.192	2.622	0.589	1	1	3.715			
			C	0.21	2.563	0.592	1	1	4.080			
T8	0.02	0.64	A	0.2	2.595	0.59	1	1	3.897	0.15	24.30	B
325.00-318.75			B	0.235	2.482	0.598	1	1	4.641			
			C	0.222	2.525	0.595	1	1	4.346			
T9	0.02	0.64	A	0.2	2.595	0.59	1	1	3.894	0.15	24.16	B
318.75-312.50			B	0.235	2.482	0.598	1	1	4.637			
			C	0.222	2.526	0.595	1	1	4.343			
T10	0.02	0.64	A	0.2	2.595	0.59	1	1	3.894	0.15	24.02	B
312.50-306.25			B	0.235	2.482	0.598	1	1	4.637			
			C	0.222	2.526	0.595	1	1	4.343			
T11	0.02	0.71	A	0.21	2.562	0.593	1	1	4.506	0.17	26.69	B
306.25-300.00			B	0.245	2.452	0.601	1	1	5.249			
			C	0.232	2.494	0.597	1	1	4.954			
T12	0.12	0.85	A	0.296	2.306	0.615	1	1	7.841	0.30	47.53	C
300.00-293.75		TA 0.79	B	0.384	2.096	0.645	1	1	9.737			
			C	0.475	1.934	0.685	1	1	11.916			
T13	0.12	0.71	A	0.21	2.562	0.593	1	1	4.506	0.24	38.02	C
293.75-287.50			B	0.304	2.286	0.617	1	1	6.528			
			C	0.407	2.05	0.655	1	1	9.048			
T14	0.12	0.61	A	0.195	2.611	0.589	1	1	3.795	0.22	35.74	C
287.50-281.25			B	0.29	2.323	0.613	1	1	5.857			
			C	0.395	2.073	0.65	1	1	8.464			
T15	0.12	0.61	A	0.195	2.611	0.589	1	1	3.795	0.22	35.51	C
281.25-275.00			B	0.29	2.323	0.613	1	1	5.857			
			C	0.395	2.073	0.65	1	1	8.464			
T16	0.12	0.61	A	0.195	2.611	0.589	1	1	3.795	0.22	35.28	C
275.00-268.75			B	0.29	2.323	0.613	1	1	5.857			
			C	0.395	2.073	0.65	1	1	8.464			
T17	0.12	0.61	A	0.195	2.611	0.589	1	1	3.795	0.22	35.05	C
268.75-262.50			B	0.29	2.323	0.613	1	1	5.857			
			C	0.395	2.073	0.65	1	1	8.464			
T18	0.12	0.61	A	0.195	2.611	0.589	1	1	3.795	0.22	34.81	C
262.50-256.25			B	0.29	2.323	0.613	1	1	5.857			
			C	0.395	2.073	0.65	1	1	8.464			
T19	0.12	0.64	A	0.2	2.595	0.59	1	1	3.894	0.22	34.86	C
256.25-250.00			B	0.295	2.311	0.614	1	1	5.960			
			C	0.399	2.066	0.651	1	1	8.565			
T20	0.12	0.71	A	0.21	2.562	0.593	1	1	4.506	0.23	36.29	C
250.00-243.75			B	0.304	2.286	0.617	1	1	6.528			
			C	0.407	2.05	0.655	1	1	9.048			

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	R_R	D_F	D_R	A_E ft^2	F K	w plf	Ctrl. Face
T21	0.17	0.71	A	0.228	2.505	0.597	1	1	4.869	0.29	46.63	C
243.75-237.50			B	0.304	2.286	0.617	1	1	6.528			
			C	0.406	2.053	0.654	1	1	8.995			
T22	0.23	0.71	A	0.255	2.424	0.603	1	1	5.428	0.39	62.07	C
237.50-231.25			B	0.304	2.286	0.617	1	1	6.528			
			C	0.403	2.058	0.653	1	1	8.915			
T23	0.23	0.77	A	0.264	2.397	0.605	1	1	5.627	0.39	62.09	C
231.25-225.00			B	0.313	2.263	0.62	1	1	6.736			
			C	0.41	2.045	0.656	1	1	9.100			
T24	0.23	0.95	A	0.312	2.266	0.62	1	1	7.829	0.42	66.87	C
225.00-218.75		TA 0.79	B	0.36	2.149	0.636	1	1	8.916			
			C	0.445	1.981	0.671	1	1	10.794			
T25	0.23	0.61	A	0.243	2.458	0.6	1	1	5.167	0.37	59.82	C
218.75-212.50			B	0.293	2.315	0.614	1	1	6.254			
			C	0.393	2.077	0.649	1	1	8.630			
T26	0.23	0.54	A	0.234	2.487	0.598	1	1	4.585	0.36	57.82	C
212.50-206.25			B	0.283	2.341	0.611	1	1	5.683			
			C	0.386	2.092	0.646	1	1	8.186			
T27	0.23	0.54	A	0.234	2.487	0.598	1	1	4.585	0.36	57.33	C
206.25-200.00			B	0.283	2.341	0.611	1	1	5.683			
			C	0.386	2.092	0.646	1	1	8.186			
T28	0.94	2.28	A	0.274	2.368	0.608	1	1	21.863	1.46	58.25	C
200.00-175.00			B	0.306	2.281	0.618	1	1	24.776			
			C	0.418	2.029	0.659	1	1	36.189			
T29	0.24	0.69	A	0.289	2.325	0.613	1	1	5.842	0.36	57.10	C
175.00-168.75			B	0.321	2.241	0.623	1	1	6.587			
			C	0.42	2.025	0.66	1	1	9.143			
T30	0.24	0.69	A	0.289	2.325	0.613	1	1	5.838	0.35	56.49	C
168.75-162.50			B	0.321	2.242	0.623	1	1	6.583			
			C	0.42	2.025	0.66	1	1	9.139			
T31	0.24	0.69	A	0.285	2.336	0.611	1	1	6.106	0.35	56.51	C
162.50-156.25			B	0.317	2.252	0.621	1	1	6.834			
			C	0.417	2.031	0.659	1	1	9.295			
T32	0.24	0.61	A	0.276	2.363	0.609	1	1	5.527	0.34	54.55	C
156.25-150.00			B	0.308	2.276	0.618	1	1	6.265			
			C	0.41	2.045	0.656	1	1	8.854			
T33	0.96	2.45	A	0.286	2.333	0.612	1	1	23.068	1.35	54.13	C
150.00-125.00			B	0.316	2.254	0.621	1	1	25.860			
			C	0.429	2.01	0.664	1	1	37.514			
T34	0.98	2.84	A	0.361	2.146	0.637	1	1	34.640	1.44	57.65	C
125.00-100.00			B	0.393	2.079	0.649	1	1	37.695			
			C	0.498	1.903	0.696	1	1	48.413			
T35	0.24	1.03	A	0.371	2.125	0.64	1	1	9.228	0.35	56.30	C
100.00-93.75		TA 0.79	B	0.402	2.06	0.652	1	1	9.981			
			C	0.505	1.894	0.7	1	1	12.536			
T36	0.24	0.71	A	0.307	2.277	0.618	1	1	6.613	0.32	50.53	C
93.75-87.50			B	0.343	2.189	0.63	1	1	7.450			
			C	0.459	1.958	0.678	1	1	10.485			
T37	0.25	0.61	A	0.293	2.314	0.614	1	1	5.929	0.31	50.26	C
87.50-81.25			B	0.363	2.143	0.637	1	1	7.611			
			C	0.482	1.924	0.689	1	1	10.947			
T38	0.25	0.61	A	0.293	2.314	0.614	1	1	5.929	0.31	49.17	C
81.25-75.00			B	0.363	2.143	0.637	1	1	7.611			
			C	0.482	1.924	0.689	1	1	10.947			
T39	1.01	2.45	A	0.302	2.292	0.616	1	1	24.497	1.15	46.13	C
75.00-50.00			B	0.371	2.124	0.64	1	1	31.304			
			C	0.482	1.924	0.689	1	1	43.787			
T40	1.02	2.47	A	0.324	2.235	0.623	1	1	26.938	1.00	40.08	C
50.00-25.00			B	0.393	2.078	0.649	1	1	33.925			
			C	0.484	1.921	0.69	1	1	44.229			

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	R_R	D_F	D_R	A_E ft^2	F K	w plf	Ctrl. Face
T41	0.91	2.45	A	0.306	2.279	0.618	1	1	24.954	0.87	34.76	C
25.00-0.00			B	0.368	2.132	0.639	1	1	30.948			
			C	0.442	1.987	0.67	1	1	39.021			
Sum Weight:	10.55	42.50								16.60		

Tower Forces - Service - Wind 60 To Face

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	R_R	D_F	D_R	A_E ft^2	F K	w plf	Ctrl. Face
T1	0.00	0.68	A	0.223	2.523	0.595	0.8	1	5.184	0.18	28.62	C
368.75-362.50			B	0.215	2.545	0.594	0.8	1	5.041			
			C	0.223	2.523	0.595	0.8	1	5.184			
T2	0.00	1.09	A	0.253	2.43	0.603	0.8	1	5.924	0.20	31.35	C
362.50-356.25			B	0.235	2.484	0.598	0.8	1	5.563			
			C	0.253	2.43	0.603	0.8	1	5.924			
T3	0.01	1.09	A	0.253	2.43	0.603	0.8	1	5.924	0.20	32.18	C
356.25-350.00			B	0.249	2.44	0.602	0.8	1	5.852			
			C	0.267	2.388	0.606	0.8	1	6.218			
T4	0.01	0.77	A	0.259	2.41	0.604	0.8	1	6.081	0.22	35.21	C
350.00-343.75		TA 0.79	B	0.295	2.311	0.614	0.8	1	6.828			
			C	0.312	2.264	0.62	0.8	1	7.213			
T5	0.01	0.61	A	0.167	2.709	0.584	0.8	1	3.418	0.15	24.40	C
343.75-337.50			B	0.202	2.588	0.591	0.8	1	4.131			
			C	0.22	2.531	0.595	0.8	1	4.496			
T6	0.01	0.54	A	0.157	2.746	0.583	0.8	1	3.002	0.14	22.31	C
337.50-331.25			B	0.192	2.622	0.589	0.8	1	3.715			
			C	0.21	2.563	0.592	0.8	1	4.080			
T7	0.01	0.54	A	0.157	2.746	0.583	0.8	1	3.002	0.14	22.19	C
331.25-325.00			B	0.192	2.622	0.589	0.8	1	3.715			
			C	0.21	2.563	0.592	0.8	1	4.080			
T8	0.02	0.64	A	0.2	2.595	0.59	0.8	1	3.897	0.15	24.30	B
325.00-318.75			B	0.235	2.482	0.598	0.8	1	4.641			
			C	0.222	2.525	0.595	0.8	1	4.346			
T9	0.02	0.64	A	0.2	2.595	0.59	0.8	1	3.894	0.15	24.16	B
318.75-312.50			B	0.235	2.482	0.598	0.8	1	4.637			
			C	0.222	2.526	0.595	0.8	1	4.343			
T10	0.02	0.64	A	0.2	2.595	0.59	0.8	1	3.894	0.15	24.02	B
312.50-306.25			B	0.235	2.482	0.598	0.8	1	4.637			
			C	0.222	2.526	0.595	0.8	1	4.343			
T11	0.02	0.71	A	0.21	2.562	0.593	0.8	1	4.309	0.16	25.69	B
306.25-300.00			B	0.245	2.452	0.601	0.8	1	5.052			
			C	0.232	2.494	0.597	0.8	1	4.757			
T12	0.12	0.85	A	0.296	2.306	0.615	0.8	1	6.887	0.28	44.52	C
300.00-293.75		TA 0.79	B	0.384	2.096	0.645	0.8	1	8.850			
			C	0.475	1.934	0.685	0.8	1	11.161			
T13	0.12	0.71	A	0.21	2.562	0.593	0.8	1	4.309	0.23	37.36	C
293.75-287.50			B	0.304	2.286	0.617	0.8	1	6.345			
			C	0.407	2.05	0.655	0.8	1	8.892			
T14	0.12	0.61	A	0.195	2.611	0.589	0.8	1	3.795	0.22	35.74	C
287.50-281.25			B	0.29	2.323	0.613	0.8	1	5.857			
			C	0.395	2.073	0.65	0.8	1	8.464			
T15	0.12	0.61	A	0.195	2.611	0.589	0.8	1	3.795	0.22	35.51	C
281.25-275.00			B	0.29	2.323	0.613	0.8	1	5.857			
			C	0.395	2.073	0.65	0.8	1	8.464			

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	R_R	D_F	D_R	A_E ft^2	F K	w plf	Ctrl. Face
T16	0.12	0.61	A	0.195	2.611	0.589	0.8	1	3.795	0.22	35.28	C
275.00-268.75			B	0.29	2.323	0.613	0.8	1	5.857			
			C	0.395	2.073	0.65	0.8	1	8.464			
T17	0.12	0.61	A	0.195	2.611	0.589	0.8	1	3.795	0.22	35.05	C
268.75-262.50			B	0.29	2.323	0.613	0.8	1	5.857			
			C	0.395	2.073	0.65	0.8	1	8.464			
T18	0.12	0.61	A	0.195	2.611	0.589	0.8	1	3.795	0.22	34.81	C
262.50-256.25			B	0.29	2.323	0.613	0.8	1	5.857			
			C	0.395	2.073	0.65	0.8	1	8.464			
T19	0.12	0.64	A	0.2	2.595	0.59	0.8	1	3.894	0.22	34.86	C
256.25-250.00			B	0.295	2.311	0.614	0.8	1	5.960			
			C	0.399	2.066	0.651	0.8	1	8.565			
T20	0.12	0.71	A	0.21	2.562	0.593	0.8	1	4.309	0.22	35.66	C
250.00-243.75			B	0.304	2.286	0.617	0.8	1	6.345			
			C	0.407	2.05	0.655	0.8	1	8.892			
T21	0.17	0.71	A	0.228	2.505	0.597	0.8	1	4.676	0.29	46.03	C
243.75-237.50			B	0.304	2.286	0.617	0.8	1	6.345			
			C	0.406	2.053	0.654	0.8	1	8.845			
T22	0.23	0.71	A	0.255	2.424	0.603	0.8	1	5.241	0.38	61.51	C
237.50-231.25			B	0.304	2.286	0.617	0.8	1	6.345			
			C	0.403	2.058	0.653	0.8	1	8.773			
T23	0.23	0.77	A	0.264	2.397	0.605	0.8	1	5.440	0.38	61.53	C
231.25-225.00			B	0.313	2.263	0.62	0.8	1	6.552			
			C	0.41	2.045	0.656	0.8	1	8.958			
T24	0.23	0.95	A	0.312	2.266	0.62	0.8	1	7.043	0.40	64.62	C
225.00-218.75		TA 0.79	B	0.36	2.149	0.636	0.8	1	8.145			
			C	0.445	1.981	0.671	0.8	1	10.195			
T25	0.23	0.61	A	0.243	2.458	0.6	0.8	1	4.980	0.37	59.26	C
218.75-212.50			B	0.293	2.315	0.614	0.8	1	6.070			
			C	0.393	2.077	0.649	0.8	1	8.487			
T26	0.23	0.54	A	0.234	2.487	0.598	0.8	1	4.585	0.36	57.82	C
212.50-206.25			B	0.283	2.341	0.611	0.8	1	5.683			
			C	0.386	2.092	0.646	0.8	1	8.186			
T27	0.23	0.54	A	0.234	2.487	0.598	0.8	1	4.585	0.36	57.33	C
206.25-200.00			B	0.283	2.341	0.611	0.8	1	5.683			
			C	0.386	2.092	0.646	0.8	1	8.186			
T28	0.94	2.28	A	0.274	2.368	0.608	0.8	1	21.863	1.46	58.25	C
200.00-175.00			B	0.306	2.281	0.618	0.8	1	24.776			
			C	0.418	2.029	0.659	0.8	1	36.189			
T29	0.24	0.69	A	0.289	2.325	0.613	0.8	1	5.842	0.36	57.10	C
175.00-168.75			B	0.321	2.241	0.623	0.8	1	6.587			
			C	0.42	2.025	0.66	0.8	1	9.143			
T30	0.24	0.69	A	0.289	2.325	0.613	0.8	1	5.838	0.35	56.49	C
168.75-162.50			B	0.321	2.242	0.623	0.8	1	6.583			
			C	0.42	2.025	0.66	0.8	1	9.139			
T31	0.24	0.69	A	0.285	2.336	0.611	0.8	1	5.920	0.35	56.01	C
162.50-156.25			B	0.317	2.252	0.621	0.8	1	6.651			
			C	0.417	2.031	0.659	0.8	1	9.153			
T32	0.24	0.61	A	0.276	2.363	0.609	0.8	1	5.527	0.34	54.55	C
156.25-150.00			B	0.308	2.276	0.618	0.8	1	6.265			
			C	0.41	2.045	0.656	0.8	1	8.854			
T33	0.96	2.45	A	0.286	2.333	0.612	0.8	1	23.068	1.35	54.13	C
150.00-125.00			B	0.316	2.254	0.621	0.8	1	25.860			
			C	0.429	2.01	0.664	0.8	1	37.514			
T34	0.98	2.84	A	0.361	2.146	0.637	0.8	1	32.250	1.41	56.30	C
125.00-100.00			B	0.393	2.079	0.649	0.8	1	35.348			
			C	0.498	1.903	0.696	0.8	1	46.594			
T35	0.24	1.03	A	0.371	2.125	0.64	0.8	1	8.444	0.34	54.61	C
100.00-93.75		TA 0.79	B	0.402	2.06	0.652	0.8	1	9.211			
			C	0.505	1.894	0.7	0.8	1	11.939			

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	R_R	D_F	D_R	A_E ft²	F K	w plf	Ctrl. Face
T36	0.24	0.71	A	0.307	2.277	0.618	0.8	1	6.426	0.31	50.12	C
93.75-87.50			B	0.343	2.189	0.63	0.8	1	7.267			
			C	0.459	1.958	0.678	0.8	1	10.343			
T37	0.25	0.61	A	0.293	2.314	0.614	0.8	1	5.929	0.31	50.26	C
87.50-81.25			B	0.363	2.143	0.637	0.8	1	7.611			
			C	0.482	1.924	0.689	0.8	1	10.947			
T38	0.25	0.61	A	0.293	2.314	0.614	0.8	1	5.929	0.31	49.17	C
81.25-75.00			B	0.363	2.143	0.637	0.8	1	7.611			
			C	0.482	1.924	0.689	0.8	1	10.947			
T39	1.01	2.45	A	0.302	2.292	0.616	0.8	1	24.497	1.15	46.13	C
75.00-50.00			B	0.371	2.124	0.64	0.8	1	31.304			
			C	0.482	1.924	0.689	0.8	1	43.787			
T40	1.02	2.47	A	0.324	2.235	0.623	0.8	1	26.751	1.00	40.00	C
50.00-25.00			B	0.393	2.078	0.649	0.8	1	33.741			
			C	0.484	1.921	0.69	0.8	1	44.087			
T41	0.91	2.45	A	0.306	2.279	0.618	0.8	1	24.954	0.87	34.76	C
25.00-0.00			B	0.368	2.132	0.639	0.8	1	30.948			
			C	0.442	1.987	0.67	0.8	1	39.021			
Sum Weight:	10.55	42.50								16.36		

Tower Forces - Service - Wind 90 To Face

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	R_R	D_F	D_R	A_E ft²	F K	w plf	Ctrl. Face
T1	0.00	0.68	A	0.223	2.523	0.595	0.85	1	5.392	0.19	29.77	C
368.75-362.50			B	0.215	2.545	0.594	0.85	1	5.250			
			C	0.223	2.523	0.595	0.85	1	5.392			
T2	0.00	1.09	A	0.253	2.43	0.603	0.85	1	6.165	0.20	32.62	C
362.50-356.25			B	0.235	2.484	0.598	0.85	1	5.804			
			C	0.253	2.43	0.603	0.85	1	6.165			
T3	0.01	1.09	A	0.253	2.43	0.603	0.85	1	6.165	0.21	33.42	C
356.25-350.00			B	0.249	2.44	0.602	0.85	1	6.092			
			C	0.267	2.388	0.606	0.85	1	6.458			
T4	0.01	0.77	A	0.259	2.41	0.604	0.85	1	6.321	0.23	36.38	C
350.00-343.75		TA 0.79	B	0.295	2.311	0.614	0.85	1	7.068			
			C	0.312	2.264	0.62	0.85	1	7.453			
T5	0.01	0.61	A	0.167	2.709	0.584	0.85	1	3.467	0.15	24.67	C
343.75-337.50			B	0.202	2.588	0.591	0.85	1	4.181			
			C	0.22	2.531	0.595	0.85	1	4.546			
T6	0.01	0.54	A	0.157	2.746	0.583	0.85	1	3.002	0.14	22.31	C
337.50-331.25			B	0.192	2.622	0.589	0.85	1	3.715			
			C	0.21	2.563	0.592	0.85	1	4.080			
T7	0.01	0.54	A	0.157	2.746	0.583	0.85	1	3.002	0.14	22.19	C
331.25-325.00			B	0.192	2.622	0.589	0.85	1	3.715			
			C	0.21	2.563	0.592	0.85	1	4.080			
T8	0.02	0.64	A	0.2	2.595	0.59	0.85	1	3.897	0.15	24.30	B
325.00-318.75			B	0.235	2.482	0.598	0.85	1	4.641			
			C	0.222	2.525	0.595	0.85	1	4.346			
T9	0.02	0.64	A	0.2	2.595	0.59	0.85	1	3.894	0.15	24.16	B
318.75-312.50			B	0.235	2.482	0.598	0.85	1	4.637			
			C	0.222	2.526	0.595	0.85	1	4.343			
T10	0.02	0.64	A	0.2	2.595	0.59	0.85	1	3.894	0.15	24.02	B
312.50-306.25			B	0.235	2.482	0.598	0.85	1	4.637			
			C	0.222	2.526	0.595	0.85	1	4.343			

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	R_R	D_F	D_R	A_E ft^2	F K	w plf	Ctrl. Face
T11	0.02	0.71	A	0.21	2.562	0.593	0.85	1	4.358	0.16	25.94	B
306.25-300.00			B	0.245	2.452	0.601	0.85	1	5.101			
			C	0.232	2.494	0.597	0.85	1	4.806			
T12	0.12	0.85	A	0.296	2.306	0.615	0.85	1	7.126	0.28	45.27	C
300.00-293.75		TA 0.79	B	0.384	2.096	0.645	0.85	1	9.071			
			C	0.475	1.934	0.685	0.85	1	11.350			
T13	0.12	0.71	A	0.21	2.562	0.593	0.85	1	4.358	0.23	37.53	C
293.75-287.50			B	0.304	2.286	0.617	0.85	1	6.391			
			C	0.407	2.05	0.655	0.85	1	8.931			
T14	0.12	0.61	A	0.195	2.611	0.589	0.85	1	3.795	0.22	35.74	C
287.50-281.25			B	0.29	2.323	0.613	0.85	1	5.857			
			C	0.395	2.073	0.65	0.85	1	8.464			
T15	0.12	0.61	A	0.195	2.611	0.589	0.85	1	3.795	0.22	35.51	C
281.25-275.00			B	0.29	2.323	0.613	0.85	1	5.857			
			C	0.395	2.073	0.65	0.85	1	8.464			
T16	0.12	0.61	A	0.195	2.611	0.589	0.85	1	3.795	0.22	35.28	C
275.00-268.75			B	0.29	2.323	0.613	0.85	1	5.857			
			C	0.395	2.073	0.65	0.85	1	8.464			
T17	0.12	0.61	A	0.195	2.611	0.589	0.85	1	3.795	0.22	35.05	C
268.75-262.50			B	0.29	2.323	0.613	0.85	1	5.857			
			C	0.395	2.073	0.65	0.85	1	8.464			
T18	0.12	0.61	A	0.195	2.611	0.589	0.85	1	3.795	0.22	34.81	C
262.50-256.25			B	0.29	2.323	0.613	0.85	1	5.857			
			C	0.395	2.073	0.65	0.85	1	8.464			
T19	0.12	0.64	A	0.2	2.595	0.59	0.85	1	3.894	0.22	34.86	C
256.25-250.00			B	0.295	2.311	0.614	0.85	1	5.960			
			C	0.399	2.066	0.651	0.85	1	8.565			
T20	0.12	0.71	A	0.21	2.562	0.593	0.85	1	4.358	0.22	35.82	C
250.00-243.75			B	0.304	2.286	0.617	0.85	1	6.391			
			C	0.407	2.05	0.655	0.85	1	8.931			
T21	0.17	0.71	A	0.228	2.505	0.597	0.85	1	4.725	0.29	46.18	C
243.75-237.50			B	0.304	2.286	0.617	0.85	1	6.391			
			C	0.406	2.053	0.654	0.85	1	8.882			
T22	0.23	0.71	A	0.255	2.424	0.603	0.85	1	5.288	0.39	61.65	C
237.50-231.25			B	0.304	2.286	0.617	0.85	1	6.391			
			C	0.403	2.058	0.653	0.85	1	8.808			
T23	0.23	0.77	A	0.264	2.397	0.605	0.85	1	5.487	0.39	61.67	C
231.25-225.00			B	0.313	2.263	0.62	0.85	1	6.598			
			C	0.41	2.045	0.656	0.85	1	8.994			
T24	0.23	0.95	A	0.312	2.266	0.62	0.85	1	7.240	0.41	65.18	C
225.00-218.75		TA 0.79	B	0.36	2.149	0.636	0.85	1	8.338			
			C	0.445	1.981	0.671	0.85	1	10.345			
T25	0.23	0.61	A	0.243	2.458	0.6	0.85	1	5.027	0.37	59.40	C
218.75-212.50			B	0.293	2.315	0.614	0.85	1	6.116			
			C	0.393	2.077	0.649	0.85	1	8.523			
T26	0.23	0.54	A	0.234	2.487	0.598	0.85	1	4.585	0.36	57.82	C
212.50-206.25			B	0.283	2.341	0.611	0.85	1	5.683			
			C	0.386	2.092	0.646	0.85	1	8.186			
T27	0.23	0.54	A	0.234	2.487	0.598	0.85	1	4.585	0.36	57.33	C
206.25-200.00			B	0.283	2.341	0.611	0.85	1	5.683			
			C	0.386	2.092	0.646	0.85	1	8.186			
T28	0.94	2.28	A	0.274	2.368	0.608	0.85	1	21.863	1.46	58.25	C
200.00-175.00			B	0.306	2.281	0.618	0.85	1	24.776			
			C	0.418	2.029	0.659	0.85	1	36.189			
T29	0.24	0.69	A	0.289	2.325	0.613	0.85	1	5.842	0.36	57.10	C
175.00-168.75			B	0.321	2.241	0.623	0.85	1	6.587			
			C	0.42	2.025	0.66	0.85	1	9.143			
T30	0.24	0.69	A	0.289	2.325	0.613	0.85	1	5.838	0.35	56.49	C
168.75-162.50			B	0.321	2.242	0.623	0.85	1	6.583			
			C	0.42	2.025	0.66	0.85	1	9.139			

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	R_R	D_F	D_R	A_E ft^2	F K	w plf	Ctrl. Face
T31	0.24	0.69	A	0.285	2.336	0.611	0.85	1	5.966	0.35	56.14	C
162.50-156.25			B	0.317	2.252	0.621	0.85	1	6.696			
			C	0.417	2.031	0.659	0.85	1	9.189			
T32	0.24	0.61	A	0.276	2.363	0.609	0.85	1	5.527	0.34	54.55	C
156.25-150.00			B	0.308	2.276	0.618	0.85	1	6.265			
			C	0.41	2.045	0.656	0.85	1	8.854			
T33	0.96	2.45	A	0.286	2.333	0.612	0.85	1	23.068	1.35	54.13	C
150.00-125.00			B	0.316	2.254	0.621	0.85	1	25.860			
			C	0.429	2.01	0.664	0.85	1	37.514			
T34	0.98	2.84	A	0.361	2.146	0.637	0.85	1	32.847	1.42	56.64	C
125.00-100.00			B	0.393	2.079	0.649	0.85	1	35.935			
			C	0.498	1.903	0.696	0.85	1	47.049			
T35	0.24	1.03	A	0.371	2.125	0.64	0.85	1	8.640	0.34	55.03	C
100.00-93.75		TA 0.79	B	0.402	2.06	0.652	0.85	1	9.404			
			C	0.505	1.894	0.7	0.85	1	12.088			
T36	0.24	0.71	A	0.307	2.277	0.618	0.85	1	6.473	0.31	50.22	C
93.75-87.50			B	0.343	2.189	0.63	0.85	1	7.313			
			C	0.459	1.958	0.678	0.85	1	10.379			
T37	0.25	0.61	A	0.293	2.314	0.614	0.85	1	5.929	0.31	50.26	C
87.50-81.25			B	0.363	2.143	0.637	0.85	1	7.611			
			C	0.482	1.924	0.689	0.85	1	10.947			
T38	0.25	0.61	A	0.293	2.314	0.614	0.85	1	5.929	0.31	49.17	C
81.25-75.00			B	0.363	2.143	0.637	0.85	1	7.611			
			C	0.482	1.924	0.689	0.85	1	10.947			
T39	1.01	2.45	A	0.302	2.292	0.616	0.85	1	24.497	1.15	46.13	C
75.00-50.00			B	0.371	2.124	0.64	0.85	1	31.304			
			C	0.482	1.924	0.689	0.85	1	43.787			
T40	1.02	2.47	A	0.324	2.235	0.623	0.85	1	26.798	1.00	40.02	C
50.00-25.00			B	0.393	2.078	0.649	0.85	1	33.787			
			C	0.484	1.921	0.69	0.85	1	44.122			
T41	0.91	2.45	A	0.306	2.279	0.618	0.85	1	24.954	0.87	34.76	C
25.00-0.00			B	0.368	2.132	0.639	0.85	1	30.948			
			C	0.442	1.987	0.67	0.85	1	39.021			
Sum Weight:	10.55	42.50								16.42		

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	29.84			
Bracing Weight	12.66			
Total Member Self-Weight	42.50			
Guy Weight	11.91			
Total Weight	71.57			
Wind 0 deg - No Ice		0.01	-86.35	-8.73
Wind 30 deg - No Ice		42.44	-74.22	-3.10
Wind 60 deg - No Ice		73.31	-42.75	3.31
Wind 90 deg - No Ice		84.86	-0.01	8.91
Wind 120 deg - No Ice		74.05	43.17	12.22
Wind 150 deg - No Ice		42.42	74.21	12.01
Wind 180 deg - No Ice		-0.01	85.48	8.72
Wind 210 deg - No Ice		-42.44	74.22	3.10
Wind 240 deg - No Ice		-74.06	43.18	-3.48
Wind 270 deg - No Ice		-84.86	0.01	-8.91

Load Case	Vertical Forces K	Sum of Forces X K	Sum of Forces Z K	Sum of Torques kip-ft
Wind 300 deg - No Ice		-73.30	-42.73	-12.03
Wind 330 deg - No Ice		-42.42	-74.21	-12.01
Member Ice	8.61			
Guy Ice	7.23			
Total Weight Ice	104.42			
Wind 0 deg - Ice		0.04	-88.04	-3.49
Wind 30 deg - Ice		43.48	-75.80	4.54
Wind 60 deg - Ice		75.12	-43.69	11.30
Wind 90 deg - Ice		86.90	-0.04	15.11
Wind 120 deg - Ice		75.71	43.99	14.97
Wind 150 deg - Ice		43.41	75.76	10.57
Wind 180 deg - Ice		-0.04	87.32	3.48
Wind 210 deg - Ice		-43.48	75.80	-4.54
Wind 240 deg - Ice		-75.74	44.06	-11.48
Wind 270 deg - Ice		-86.90	0.04	-15.11
Wind 300 deg - Ice		-75.08	-43.63	-14.78
Wind 330 deg - Ice		-43.41	-75.76	-10.57
Total Weight	71.57			
Wind 0 deg - Service		0.00	-23.92	-2.42
Wind 30 deg - Service		11.76	-20.56	-0.86
Wind 60 deg - Service		20.31	-11.84	0.92
Wind 90 deg - Service		23.51	-0.00	2.47
Wind 120 deg - Service		20.51	11.96	3.38
Wind 150 deg - Service		11.75	20.56	3.33
Wind 180 deg - Service		-0.00	23.68	2.41
Wind 210 deg - Service		-11.76	20.56	0.86
Wind 240 deg - Service		-20.52	11.96	-0.97
Wind 270 deg - Service		-23.51	0.00	-2.47
Wind 300 deg - Service		-20.30	-11.84	-3.33
Wind 330 deg - Service		-11.75	-20.56	-3.33

Load Combinations

Comb. No.	Description
1	Dead Only
2	Dead+Wind 0 deg - No Ice+Guy
3	Dead+Wind 30 deg - No Ice+Guy
4	Dead+Wind 60 deg - No Ice+Guy
5	Dead+Wind 90 deg - No Ice+Guy
6	Dead+Wind 120 deg - No Ice+Guy
7	Dead+Wind 150 deg - No Ice+Guy
8	Dead+Wind 180 deg - No Ice+Guy
9	Dead+Wind 210 deg - No Ice+Guy
10	Dead+Wind 240 deg - No Ice+Guy
11	Dead+Wind 270 deg - No Ice+Guy
12	Dead+Wind 300 deg - No Ice+Guy
13	Dead+Wind 330 deg - No Ice+Guy
14	Dead+Ice+Temp+Guy
15	Dead+Wind 0 deg+Ice+Temp+Guy
16	Dead+Wind 30 deg+Ice+Temp+Guy
17	Dead+Wind 60 deg+Ice+Temp+Guy
18	Dead+Wind 90 deg+Ice+Temp+Guy
19	Dead+Wind 120 deg+Ice+Temp+Guy

Comb. No.	Description
20	Dead+Wind 150 deg+Ice+Temp+Guy
21	Dead+Wind 180 deg+Ice+Temp+Guy
22	Dead+Wind 210 deg+Ice+Temp+Guy
23	Dead+Wind 240 deg+Ice+Temp+Guy
24	Dead+Wind 270 deg+Ice+Temp+Guy
25	Dead+Wind 300 deg+Ice+Temp+Guy
26	Dead+Wind 330 deg+Ice+Temp+Guy
27	Dead+Wind 0 deg - Service+Guy
28	Dead+Wind 30 deg - Service+Guy
29	Dead+Wind 60 deg - Service+Guy
30	Dead+Wind 90 deg - Service+Guy
31	Dead+Wind 120 deg - Service+Guy
32	Dead+Wind 150 deg - Service+Guy
33	Dead+Wind 180 deg - Service+Guy
34	Dead+Wind 210 deg - Service+Guy
35	Dead+Wind 240 deg - Service+Guy
36	Dead+Wind 270 deg - Service+Guy
37	Dead+Wind 300 deg - Service+Guy
38	Dead+Wind 330 deg - Service+Guy

Maximum Member Forces

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Force K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
T1	368.75 - 362.5	Leg	Max Tension	12	0.32	0.00	-0.00
			Max. Compression	23	-1.12	0.01	0.12
			Max. Mx	5	-0.09	0.26	0.00
			Max. My	12	0.27	0.01	-0.19
			Max. Vy	6	-0.11	-0.00	0.00
			Max. Vx	2	0.17	-0.00	-0.00
		Diagonal	Max Tension	8	0.34	0.00	0.00
			Max. Compression	2	-0.41	0.00	0.00
			Max. Mx	24	0.25	0.01	0.00
			Max. My	2	-0.39	0.00	0.00
			Max. Vy	24	-0.01	0.01	0.00
			Max. Vx	15	0.00	0.00	0.00
		Top Girt	Max Tension	2	0.10	0.00	0.00
			Max. Compression	17	-0.09	0.00	0.00
			Max. Mx	14	-0.01	0.03	0.00
			Max. My	18	-0.08	0.00	-0.00
			Max. Vy	14	0.03	0.00	0.00
			Max. Vx	18	-0.00	0.00	0.00
T2	362.5 - 356.25	Leg	Max Tension	12	0.87	0.01	-0.19
			Max. Compression	23	-2.00	0.19	-0.63
			Max. Mx	11	-0.43	1.30	-0.02
			Max. My	6	-1.49	-0.18	-0.89
			Max. Vy	11	-0.29	1.30	-0.02
			Max. Vx	7	0.20	-0.09	-0.89
		Diagonal	Max Tension	12	0.86	0.00	0.00
			Max. Compression	6	-1.21	0.00	0.00
			Max. Mx	24	-0.53	-0.03	-0.01
			Max. My	6	-0.18	-0.01	0.01
			Max. Vy	24	0.03	-0.03	-0.01
			Max. Vx	6	0.00	0.00	0.00
		Top Girt	Max Tension	21	0.30	0.00	0.00
			Max. Compression	10	-0.16	0.00	0.00
			Max. Mx	14	0.04	0.04	0.00
			Max. My	18	0.20	0.00	-0.00

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Force K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Vy	14	0.03	0.00	0.00
			Max. Vx	18	-0.00	0.00	0.00
T3	356.25 - 350	Leg	Max Tension	8	5.78	-0.06	-0.61
			Max. Compression	6	-8.41	-0.36	-0.74
			Max. Mx	5	-0.70	2.12	-0.02
			Max. My	7	-6.87	-0.09	1.41
			Max. Vy	11	2.74	1.30	-0.02
			Max. Vx	7	-1.85	-0.09	-0.89
		Diagonal	Max Tension	6	5.34	0.00	0.00
			Max. Compression	12	-5.01	0.00	0.00
			Max. Mx	26	-0.49	-0.05	0.01
			Max. My	6	-4.09	0.00	-0.08
			Max. Vy	26	-0.03	-0.05	0.01
			Max. Vx	6	0.02	0.00	-0.08
		Top Girt	Max Tension	6	1.22	0.00	0.00
			Max. Compression	4	-1.21	0.00	0.00
			Max. Mx	14	0.05	0.04	0.00
			Max. My	18	-0.91	0.00	-0.00
			Max. Vy	14	0.03	0.00	0.00
			Max. Vx	18	-0.00	0.00	0.00
T4	350 - 343.75	Leg	Max Tension	12	4.98	0.40	0.72
			Max. Compression	6	-7.31	-0.23	0.10
			Max. Mx	5	-1.26	-1.24	-0.03
			Max. My	7	-6.12	-0.16	-0.86
			Max. Vy	5	-0.68	-1.24	-0.03
			Max. Vx	2	0.77	0.01	0.71
		Diagonal	Max Tension	18	3.76	0.00	0.00
			Max. Compression	18	-4.13	0.00	0.00
			Max. Mx	24	-1.79	0.03	0.00
			Max. My	5	-3.74	0.02	0.01
			Max. Vy	24	-0.02	0.03	0.00
			Max. Vx	5	-0.00	0.02	0.01
		Top Girt	Max Tension	8	9.14	0.00	0.00
			Max. Compression	6	-6.33	0.00	0.00
			Max. Mx	14	1.38	0.03	0.00
			Max. My	18	8.15	0.00	-0.00
			Max. Vy	14	0.03	0.00	0.00
			Max. Vx	18	-0.00	0.00	0.00
		Guy A	Bottom Tension	21	24.72		
			Top Tension	21	25.57		
			Top Cable Vert	21	21.67		
			Top Cable Norm	21	13.57		
			Top Cable Tan	21	0.02		
			Bot Cable Vert	21	-19.70		
			Bot Cable Norm	21	14.93		
			Bot Cable Tan	21	0.03		
		Guy B	Bottom Tension	25	24.80		
			Top Tension	25	25.63		
			Top Cable Vert	25	21.57		
			Top Cable Norm	25	13.86		
			Top Cable Tan	25	0.02		
			Bot Cable Vert	25	-19.62		
			Bot Cable Norm	25	15.17		
			Bot Cable Tan	25	0.03		
		Guy C	Bottom Tension	17	24.80		
			Top Tension	17	25.67		
			Top Cable Vert	17	21.76		
			Top Cable Norm	17	13.61		
			Top Cable Tan	17	0.02		
			Bot Cable Vert	17	-19.76		
			Bot Cable Norm	17	14.98		

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Force K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Bot Cable Tan	17	0.02		
		Torque Arm Top	Max Tension	25	23.60	0.00	0.00
			Max. Compression	1	0.00	0.00	0.00
			Max. Mx	23	19.22	0.06	0.00
			Max. My	18	23.37	0.00	-0.00
			Max. Vy	23	0.04	0.00	0.00
			Max. Vx	18	0.00	0.00	0.00
		Torque Arm Bottom	Max Tension	1	0.00	0.00	0.00
			Max. Compression	17	-27.38	0.00	0.00
			Max. Mx	15	-23.69	0.08	0.00
			Max. My	18	-11.40	0.00	0.00
			Max. Vy	15	-0.04	0.00	0.00
			Max. Vx	18	-0.00	0.00	0.00
T5	343.75 - 337.5	Leg	Max Tension	1	0.00	0.00	0.00
			Max. Compression	17	-46.21	0.04	0.02
			Max. Mx	11	-15.85	0.26	0.19
			Max. My	10	-31.73	0.22	-0.22
			Max. Vy	11	0.09	0.25	-0.20
			Max. Vx	3	0.08	-0.09	0.20
		Diagonal	Max Tension	11	4.20	0.00	0.00
		Top Girt	Max Tension	1	0.00	0.00	0.00
			Max. Compression	17	-4.23	0.00	0.00
			Max. Mx	14	-2.04	0.03	0.00
			Max. My	18	-3.88	0.00	-0.00
			Max. Vy	14	0.03	0.00	0.00
			Max. Vx	18	0.00	0.00	0.00
T6	337.5 - 331.25	Leg	Max Tension	1	0.00	0.00	0.00
			Max. Compression	17	-47.58	-0.03	-0.01
			Max. Mx	24	-44.86	-0.08	0.04
			Max. My	15	-40.65	0.00	-0.06
			Max. Vy	5	0.05	-0.04	-0.02
			Max. Vx	3	-0.05	-0.02	0.04
		Diagonal	Max Tension	11	3.87	0.00	0.00
		Top Girt	Max Tension	1	0.00	0.00	0.00
			Max. Compression	29	-2.57	0.00	0.00
			Max. Mx	14	-2.44	0.01	0.00
			Max. My	18	-2.40	0.00	-0.00
			Max. Vy	14	-0.01	0.00	0.00
			Max. Vx	18	0.00	0.00	0.00
T7	331.25 - 325	Leg	Max Tension	1	0.00	0.00	0.00
			Max. Compression	17	-48.27	0.03	0.04
			Max. Mx	24	-15.54	-0.07	-0.03
			Max. My	15	-41.98	0.01	-0.08
			Max. Vy	5	-0.05	-0.04	-0.02
			Max. Vx	2	0.05	0.00	0.03
		Diagonal	Max Tension	10	3.43	0.00	0.00
		Top Girt	Max Tension	1	0.00	0.00	0.00
			Max. Compression	4	-2.47	0.00	0.00
			Max. Mx	14	-2.33	0.01	0.00
			Max. My	18	-2.33	0.00	-0.00
			Max. Vy	14	-0.01	0.00	0.00
			Max. Vx	18	0.00	0.00	0.00
T8	325 - 318.75	Leg	Max Tension	1	0.00	0.00	0.00
			Max. Compression	25	-49.41	0.04	0.01
			Max. Mx	23	-12.38	-0.06	-0.03
			Max. My	15	-43.79	0.01	-0.08
			Max. Vy	17	-0.21	0.03	-0.05
			Max. Vx	22	-0.29	-0.04	0.04
		Diagonal	Max Tension	5	3.72	0.00	0.00
		Top Girt	Max Tension	1	0.00	0.00	0.00
			Max. Compression	4	-2.98	0.00	0.00

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Force K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Mx	14	-2.78	0.01	0.00
			Max. My	18	-2.83	0.00	-0.00
			Max. Vy	14	-0.01	0.00	0.00
			Max. Vx	18	0.00	0.00	0.00
T9	318.75 - 312.5	Leg	Max Tension	1	0.00	0.00	0.00
			Max. Compression	25	-48.08	-0.14	-0.05
			Max. Mx	11	-38.74	-0.18	0.01
			Max. My	2	-37.03	0.03	-0.17
			Max. Vy	11	0.08	0.06	-0.00
			Max. Vx	2	0.08	0.00	0.06
		Diagonal	Max Tension	12	3.82	0.00	0.00
		Top Girt	Max Tension	1	0.00	0.00	0.00
			Max. Compression	4	-3.38	0.00	0.00
			Max. Mx	14	-3.22	0.01	0.00
			Max. My	18	-3.22	0.00	-0.00
			Max. Vy	14	-0.01	0.00	0.00
			Max. Vx	18	0.00	0.00	0.00
T10	312.5 - 306.25	Leg	Max Tension	1	0.00	0.00	0.00
			Max. Compression	25	-46.53	0.53	0.20
			Max. Mx	5	-37.62	-0.74	-0.02
			Max. My	2	-11.51	0.01	0.76
			Max. Vy	5	0.19	-0.74	-0.02
			Max. Vx	2	-0.19	0.01	0.76
		Diagonal	Max Tension	12	4.12	0.00	0.00
		Top Girt	Max Tension	1	0.00	0.00	0.00
			Max. Compression	37	-3.45	0.00	0.00
			Max. Mx	14	-3.32	0.01	0.00
			Max. My	18	-3.21	0.00	-0.00
			Max. Vy	14	-0.01	0.00	0.00
			Max. Vx	18	0.00	0.00	0.00
T11	306.25 - 300	Leg	Max Tension	1	0.00	0.00	0.00
			Max. Compression	15	-44.46	-0.06	1.06
			Max. Mx	5	-36.48	1.69	0.01
			Max. My	8	-31.13	0.11	1.75
			Max. Vy	5	-1.87	-0.74	-0.02
			Max. Vx	2	1.96	0.03	0.71
		Diagonal	Max Tension	7	9.09	0.00	0.00
		Top Girt	Max Tension	1	0.00	0.00	0.00
			Max. Compression	8	-5.10	0.00	0.00
			Max. Mx	14	-3.72	0.03	0.00
			Max. My	18	-4.60	0.00	-0.00
			Max. Vy	14	0.03	0.00	0.00
			Max. Vx	18	-0.00	0.00	0.00
T12	300 - 293.75	Leg	Max Tension	1	0.00	0.00	0.00
			Max. Compression	15	-36.87	0.02	-0.01
			Max. Mx	5	-28.17	-1.35	0.01
			Max. My	8	-22.41	0.11	-1.31
			Max. Vy	5	-0.62	-1.35	0.01
			Max. Vx	8	-0.63	0.11	-1.31
		Diagonal	Max Tension	18	2.49	0.00	0.00
			Max. Compression	21	-7.72	0.00	0.00
			Max. Mx	16	0.90	0.05	0.00
			Max. My	18	-7.35	0.01	0.01
			Max. Vy	16	-0.02	0.05	0.00
			Max. Vx	18	-0.00	0.01	0.01
		Top Girt	Max Tension	21	12.05	0.00	0.00
			Max. Compression	6	-8.38	0.00	0.00
			Max. Mx	14	0.46	0.03	0.00
			Max. My	16	10.40	0.00	-0.00
			Max. Vy	14	0.03	0.00	0.00
			Max. Vx	16	-0.00	0.00	0.00

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Force K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
		Guy A	Bottom Tension	21	26.94		
			Top Tension	21	27.68		
			Top Cable Vert	21	22.89		
			Top Cable Norm	21	15.55		
			Top Cable Tan	21	0.02		
			Bot Cable Vert	21	-21.20		
			Bot Cable Norm	21	16.62		
			Bot Cable Tan	21	0.03		
		Guy B	Bottom Tension	25	26.69		
			Top Tension	25	27.40		
			Top Cable Vert	25	22.68		
			Top Cable Norm	25	15.38		
			Top Cable Tan	25	0.02		
			Bot Cable Vert	25	-21.03		
			Bot Cable Norm	25	16.43		
			Bot Cable Tan	25	0.03		
		Guy C	Bottom Tension	17	26.66		
			Top Tension	17	27.40		
			Top Cable Vert	17	22.70		
			Top Cable Norm	17	15.34		
			Top Cable Tan	17	0.02		
			Bot Cable Vert	17	-20.99		
			Bot Cable Norm	17	16.43		
			Bot Cable Tan	17	0.03		
		Torque Arm Top	Max Tension	21	24.24	0.00	0.00
			Max. Compression	1	0.00	0.00	0.00
			Max. Mx	23	18.75	0.06	0.00
			Max. My	16	19.04	0.00	0.00
			Max. Vy	23	0.04	0.00	0.00
			Max. Vx	16	-0.00	0.00	0.00
		Torque Arm Bottom	Max Tension	1	0.00	0.00	0.00
			Max. Compression	17	-29.78	0.00	0.00
			Max. Mx	19	-23.34	0.08	0.00
			Max. My	16	-8.74	0.00	-0.00
			Max. Vy	19	-0.04	0.00	0.00
			Max. Vx	16	0.00	0.00	0.00
T13	293.75 - 287.5	Leg	Max Tension	1	0.00	0.00	0.00
			Max. Compression	25	-95.32	-0.00	-0.03
			Max. Mx	4	-36.52	0.19	-0.02
			Max. My	17	-93.95	-0.10	-0.13
			Max. Vy	18	-0.06	-0.11	-0.10
			Max. Vx	8	0.08	0.00	-0.05
		Diagonal	Max Tension	18	6.04	0.00	0.00
		Top Girt	Max Tension	15	0.61	0.00	0.00
			Max. Compression	4	-2.64	0.00	0.00
			Max. Mx	14	-1.15	0.03	0.00
			Max. My	16	-2.32	0.00	-0.00
			Max. Vy	14	0.03	0.00	0.00
			Max. Vx	16	-0.00	0.00	0.00
T14	287.5 - 281.25	Leg	Max Tension	1	0.00	0.00	0.00
			Max. Compression	25	-99.87	-0.08	-0.00
			Max. Mx	24	-96.06	-0.13	0.03
			Max. My	15	-86.11	-0.01	-0.13
			Max. Vy	18	-0.07	-0.06	0.05
			Max. Vx	21	-0.08	0.01	-0.06
		Diagonal	Max Tension	18	4.78	0.00	0.00
		Top Girt	Max Tension	1	0.00	0.00	0.00
			Max. Compression	18	-3.37	0.00	0.00
			Max. Mx	14	-2.46	0.01	0.00
			Max. My	16	-2.50	0.00	-0.00
			Max. Vy	14	-0.01	0.00	0.00

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Force K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Vx	16	0.00	0.00	0.00
T15	281.25 - 275	Leg	Max Tension	1	0.00	0.00	0.00
			Max. Compression	25	-103.44	-0.06	-0.02
			Max. Mx	18	-17.26	0.17	0.01
			Max. My	15	-88.27	-0.01	-0.16
			Max. Vy	23	-0.06	-0.04	0.07
			Max. Vx	21	0.07	0.01	0.02
		Diagonal	Max Tension	5	3.64	0.00	0.00
		Top Girt	Max Tension	1	0.00	0.00	0.00
			Max. Compression	18	-2.64	0.00	0.00
			Max. Mx	14	-1.96	0.01	0.00
			Max. My	16	-2.06	0.00	-0.00
			Max. Vy	14	-0.01	0.00	0.00
			Max. Vx	16	0.00	0.00	0.00
T16	275 - 268.75	Leg	Max Tension	2	0.02	0.02	-0.06
			Max. Compression	25	-105.65	-0.04	-0.03
			Max. Mx	18	-14.65	0.14	0.02
			Max. My	15	-90.50	-0.01	-0.15
			Max. Vy	18	0.05	0.05	0.03
			Max. Vx	22	-0.06	-0.03	0.02
		Diagonal	Max Tension	6	2.95	0.00	0.00
		Top Girt	Max Tension	1	0.00	0.00	0.00
			Max. Compression	8	-2.35	0.00	0.00
			Max. Mx	14	-1.97	0.01	0.00
			Max. My	16	-2.12	0.00	-0.00
			Max. Vy	14	-0.01	0.00	0.00
			Max. Vx	16	0.00	0.00	0.00
T17	268.75 - 262.5	Leg	Max Tension	2	2.01	0.02	-0.06
			Max. Compression	25	-106.59	-0.05	-0.03
			Max. Mx	24	-13.85	-0.14	0.04
			Max. My	15	-91.63	-0.01	-0.16
			Max. Vy	17	-0.05	0.03	-0.00
			Max. Vx	22	-0.06	-0.03	0.03
		Diagonal	Max Tension	13	2.55	0.00	0.00
		Top Girt	Max Tension	1	0.00	0.00	0.00
			Max. Compression	8	-2.36	0.00	0.00
			Max. Mx	14	-1.96	0.01	0.00
			Max. My	16	-2.13	0.00	-0.00
			Max. Vy	14	-0.01	0.00	0.00
			Max. Vx	16	0.00	0.00	0.00
T18	262.5 - 256.25	Leg	Max Tension	2	2.82	0.01	-0.09
			Max. Compression	21	-106.12	-0.04	0.01
			Max. Mx	24	-101.55	-0.12	0.00
			Max. My	15	-91.67	-0.01	-0.14
			Max. Vy	17	0.06	-0.02	0.01
			Max. Vx	21	0.07	-0.00	-0.03
		Diagonal	Max Tension	13	2.31	0.00	0.00
		Top Girt	Max Tension	1	0.00	0.00	0.00
			Max. Compression	8	-2.34	0.00	0.00
			Max. Mx	14	-1.93	0.01	0.00
			Max. My	22	-0.79	0.00	0.00
			Max. Vy	14	-0.01	0.00	0.00
			Max. Vx	22	-0.00	0.00	0.00
T19	256.25 - 250	Leg	Max Tension	2	0.98	0.03	-0.01
			Max. Compression	21	-105.02	-0.04	0.16
			Max. Mx	5	-62.75	0.23	0.01
			Max. My	2	-79.85	-0.03	-0.25
			Max. Vy	11	0.07	0.01	0.01
			Max. Vx	21	-0.09	-0.00	-0.03
		Diagonal	Max Tension	15	3.43	0.00	0.00
		Top Girt	Max Tension	1	0.00	0.00	0.00

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Force K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Compression	8	-2.86	0.00	0.00
			Max. Mx	14	-2.37	0.01	0.00
			Max. My	17	-1.44	0.00	0.00
			Max. Vy	14	-0.01	0.00	0.00
			Max. Vx	17	-0.00	0.00	0.00
T20	250 - 243.75	Leg	Max Tension	1	0.00	0.00	0.00
			Max. Compression	21	-102.00	0.02	-0.43
			Max. Mx	5	-63.80	-0.65	-0.02
			Max. My	2	-1.24	-0.03	0.56
			Max. Vy	5	0.16	-0.65	-0.02
			Max. Vx	2	-0.17	-0.00	0.53
		Diagonal	Max Tension	23	3.88	0.00	0.00
		Top Girt	Max Tension	1	0.00	0.00	0.00
			Max. Compression	8	-3.45	0.00	0.00
			Max. Mx	14	-2.95	0.03	0.00
			Max. My	17	-1.96	0.00	0.00
			Max. Vy	14	0.03	0.00	0.00
			Max. Vx	17	-0.00	0.00	0.00
T21	243.75 - 237.5	Leg	Max Tension	1	0.00	0.00	0.00
			Max. Compression	21	-99.11	-0.00	-0.25
			Max. Mx	11	-66.01	-1.72	-0.02
			Max. My	7	-17.52	-0.21	1.44
			Max. Vy	5	-1.90	-0.65	-0.02
			Max. Vx	7	-1.56	-0.21	-0.50
		Diagonal	Max Tension	26	9.96	0.00	0.00
		Top Girt	Max Tension	1	0.00	0.00	0.00
			Max. Compression	6	-4.74	0.00	0.00
			Max. Mx	14	-3.01	0.03	0.00
			Max. My	17	-2.81	0.00	0.00
			Max. Vy	14	0.03	0.00	0.00
			Max. Vx	17	-0.00	0.00	0.00
T22	237.5 - 231.25	Leg	Max Tension	1	0.00	0.00	0.00
			Max. Compression	21	-87.22	-0.00	-0.25
			Max. Mx	11	-69.05	0.35	0.02
			Max. My	8	-47.02	-0.03	-0.32
			Max. Vy	5	-0.11	-0.20	0.10
			Max. Vx	13	0.14	0.13	0.26
		Diagonal	Max Tension	26	12.53	0.00	0.00
		Top Girt	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-7.05	0.00	0.00
			Max. Mx	14	-2.95	0.03	0.00
			Max. My	25	-4.25	0.00	0.00
			Max. Vy	14	0.03	0.00	0.00
			Max. Vx	25	-0.00	0.00	0.00
T23	231.25 - 225	Leg	Max Tension	1	0.00	0.00	0.00
			Max. Compression	16	-82.70	-0.27	0.44
			Max. Mx	12	-60.55	0.57	0.22
			Max. My	8	-60.89	0.08	-0.59
			Max. Vy	11	-0.14	0.41	0.03
			Max. Vx	13	-0.16	0.24	0.41
		Diagonal	Max Tension	26	13.26	0.00	0.00
		Top Girt	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-8.02	0.00	0.00
			Max. Mx	14	-4.14	0.03	0.00
			Max. My	25	-5.41	0.00	0.00
			Max. Vy	14	0.03	0.00	0.00
			Max. Vx	25	-0.00	0.00	0.00
T24	225 - 218.75	Leg	Max Tension	1	0.00	0.00	0.00
			Max. Compression	16	-63.01	-0.13	0.18
			Max. Mx	12	-42.71	0.57	0.22
			Max. My	8	-43.29	0.08	-0.59

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Force K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Vy	5	-0.43	-0.56	0.00
			Max. Vx	8	-0.44	0.08	-0.59
		Diagonal	Max Tension	1	0.00	0.00	0.00
			Max. Compression	17	-14.47	0.00	0.00
			Max. Mx	26	-4.36	-0.09	0.01
			Max. My	18	-13.16	0.02	-0.03
			Max. Vy	26	0.04	-0.09	0.01
			Max. Vx	18	-0.01	0.00	0.00
		Top Girt	Max Tension	21	16.92	0.00	0.00
			Max. Compression	2	-6.55	0.00	0.00
			Max. Mx	14	2.06	0.03	0.00
			Max. My	20	2.06	0.00	-0.00
			Max. Vy	14	0.03	0.00	0.00
			Max. Vx	20	-0.00	0.00	0.00
		Guy A	Bottom Tension	21	23.13		
			Top Tension	21	23.57		
			Top Cable Vert	21	17.35		
			Top Cable Norm	21	15.95		
			Top Cable Tan	21	0.02		
			Bot Cable Vert	21	-16.21		
			Bot Cable Norm	21	16.50		
			Bot Cable Tan	21	0.01		
		Guy B	Bottom Tension	25	23.29		
			Top Tension	25	23.71		
			Top Cable Vert	25	17.41		
			Top Cable Norm	25	16.10		
			Top Cable Tan	25	0.01		
			Bot Cable Vert	25	-16.30		
			Bot Cable Norm	25	16.64		
			Bot Cable Tan	25	0.02		
		Guy C	Bottom Tension	17	22.99		
			Top Tension	17	23.44		
			Top Cable Vert	17	17.33		
			Top Cable Norm	17	15.78		
			Top Cable Tan	17	0.01		
			Bot Cable Vert	17	-16.17		
			Bot Cable Norm	17	16.34		
			Bot Cable Tan	17	0.02		
		Torque Arm Top	Max Tension	21	22.15	0.00	0.00
			Max. Compression	1	0.00	0.00	0.00
			Max. Mx	19	16.80	0.06	0.00
			Max. My	20	5.93	0.00	0.00
			Max. Vy	19	0.04	0.00	0.00
			Max. Vx	20	-0.00	0.00	0.00
		Torque Arm Bottom	Max Tension	1	0.00	0.00	0.00
			Max. Compression	25	-23.70	0.00	0.00
			Max. Mx	21	-6.82	0.08	0.00
			Max. My	20	-22.40	0.00	-0.00
			Max. Vy	21	-0.04	0.00	0.00
			Max. Vx	20	0.00	0.00	0.00
T25	218.75 - 212.5	Leg	Max Tension	1	0.00	0.00	0.00
			Max. Compression	22	-109.54	0.11	-0.30
			Max. Mx	12	-89.82	0.51	-0.18
			Max. My	7	-83.37	-0.24	-0.49
			Max. Vy	5	-0.18	-0.50	-0.23
			Max. Vx	7	-0.17	-0.24	-0.49
		Diagonal	Max Tension	5	7.47	0.00	0.00
		Top Girt	Max Tension	15	5.83	0.00	0.00
			Max. Compression	1	0.00	0.00	0.00
			Max. Mx	14	2.49	0.03	0.00
			Max. My	20	3.31	0.00	-0.00

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Force K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Vy	14	0.03	0.00	0.00
			Max. Vx	20	-0.00	0.00	0.00
T26	212.5 - 206.25	Leg	Max Tension	1	0.00	0.00	0.00
			Max. Compression	21	-114.05	-0.03	0.13
			Max. Mx	5	-97.59	0.20	0.04
			Max. My	2	-95.13	0.03	-0.20
			Max. Vy	5	0.10	0.01	0.00
			Max. Vx	13	-0.09	-0.01	-0.02
		Diagonal	Max Tension	12	6.06	0.00	0.00
		Top Girt	Max Tension	1	0.00	0.00	0.00
			Max. Compression	6	-4.23	0.00	0.00
			Max. Mx	14	-1.47	0.01	0.00
			Max. My	20	-1.34	0.00	-0.00
			Max. Vy	14	-0.01	0.00	0.00
			Max. Vx	20	0.00	0.00	0.00
T27	206.25 - 200	Leg	Max Tension	1	0.00	0.00	0.00
			Max. Compression	25	-117.22	-0.04	-0.08
			Max. Mx	5	-100.67	0.15	-0.03
			Max. My	2	-96.62	0.02	-0.16
			Max. Vy	5	-0.08	0.01	0.00
			Max. Vx	7	0.08	0.06	-0.00
		Diagonal	Max Tension	12	4.32	0.00	0.00
		Top Girt	Max Tension	1	0.00	0.00	0.00
			Max. Compression	6	-3.33	0.00	0.00
			Max. Mx	14	-1.36	0.01	0.00
			Max. My	20	-0.86	0.00	-0.00
			Max. Vy	14	-0.01	0.00	0.00
			Max. Vx	20	0.00	0.00	0.00
T28	200 - 175	Leg	Max Tension	1	0.00	0.00	0.00
			Max. Compression	25	-118.88	-0.06	-0.09
			Max. Mx	19	-46.64	0.47	0.01
			Max. My	2	-93.80	-0.14	-0.63
			Max. Vy	6	-0.53	-0.23	-0.03
			Max. Vx	7	-0.60	-0.02	-0.15
		Diagonal	Max Tension	16	5.99	0.00	0.00
		Horizontal	Max Tension	25	2.06	0.00	0.00
			Max. Compression	26	-3.14	0.00	0.00
			Max. Mx	14	1.06	0.01	0.00
			Max. My	20	2.05	0.00	-0.00
			Max. Vy	14	-0.01	0.00	0.00
			Max. Vx	20	0.00	0.00	0.00
		Secondary Horizontal	Max Tension	25	2.06	0.00	0.00
			Max. Compression	25	-2.06	0.00	0.00
			Max. Mx	14	1.06	0.01	0.00
			Max. My	20	2.05	0.00	-0.00
			Max. Vy	14	-0.01	0.00	0.00
			Max. Vx	20	0.00	0.00	0.00
		Top Girt	Max Tension	16	0.01	0.00	0.00
			Max. Compression	6	-2.24	0.00	0.00
			Max. Mx	14	-1.33	0.01	0.00
			Max. My	20	-0.90	0.00	-0.00
			Max. Vy	14	-0.01	0.00	0.00
			Max. Vx	20	0.00	0.00	0.00
T29	175 - 168.75	Leg	Max Tension	1	0.00	0.00	0.00
			Max. Compression	16	-107.18	0.08	-0.20
			Max. Mx	24	-64.60	0.42	0.03
			Max. My	21	-83.12	-0.04	-0.50
			Max. Vy	24	0.15	0.42	0.03
			Max. Vx	8	-0.16	-0.02	-0.48
		Diagonal	Max Tension	16	8.11	0.00	0.00

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Force K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
		Top Girt	Max Tension	1	0.00	0.00	0.00
			Max. Compression	16	-4.32	0.00	0.00
			Max. Mx	14	-2.14	0.01	0.00
			Max. My	20	-3.78	0.00	-0.00
			Max. Vy	14	-0.01	0.00	0.00
			Max. Vx	20	0.00	0.00	0.00
T30	168.75 - 162.5	Leg	Max Tension	1	0.00	0.00	0.00
			Max. Compression	20	-102.26	-0.18	-0.35
			Max. Mx	24	-97.56	0.58	-0.06
			Max. My	21	-94.59	-0.01	-0.61
			Max. Vy	18	0.19	-0.58	-0.06
			Max. Vx	21	0.17	-0.01	-0.61
		Diagonal	Max Tension	16	8.86	0.00	0.00
		Top Girt	Max Tension	1	0.00	0.00	0.00
			Max. Compression	16	-5.31	0.00	0.00
			Max. Mx	14	-3.38	0.01	0.00
			Max. My	20	-4.54	0.00	-0.00
			Max. Vy	14	-0.01	0.00	0.00
			Max. Vx	20	0.00	0.00	0.00
T31	162.5 - 156.25	Leg	Max Tension	1	0.00	0.00	0.00
			Max. Compression	19	-110.48	-0.32	-0.30
			Max. Mx	24	-108.55	0.58	-0.06
			Max. My	21	-106.33	-0.01	-0.61
			Max. Vy	18	-0.19	-0.58	-0.06
			Max. Vx	21	-0.17	-0.01	-0.61
		Diagonal	Max Tension	20	4.65	0.00	0.00
		Top Girt	Max Tension	15	7.44	0.00	0.00
			Max. Compression	4	-1.31	0.00	0.00
			Max. Mx	14	0.59	0.03	0.00
			Max. My	20	1.52	0.00	-0.00
			Max. Vy	14	0.03	0.00	0.00
			Max. Vx	20	0.00	0.00	0.00
		Guy A	Bottom Tension	21	24.13		
			Top Tension	21	24.45		
			Top Cable Vert	21	16.03		
			Top Cable Norm	21	18.46		
			Top Cable Tan	21	0.01		
			Bot Cable Vert	21	-15.19		
			Bot Cable Norm	21	18.75		
			Bot Cable Tan	21	0.01		
		Guy B	Bottom Tension	25	24.22		
			Top Tension	25	24.52		
			Top Cable Vert	25	16.12		
			Top Cable Norm	25	18.48		
			Top Cable Tan	25	0.01		
			Bot Cable Vert	25	-15.30		
			Bot Cable Norm	25	18.77		
			Bot Cable Tan	25	0.01		
		Guy C	Bottom Tension	17	23.95		
			Top Tension	17	24.28		
			Top Cable Vert	17	15.90		
			Top Cable Norm	17	18.34		
			Top Cable Tan	17	0.00		
			Bot Cable Vert	17	-15.04		
			Bot Cable Norm	17	18.64		
			Bot Cable Tan	17	0.00		
T32	156.25 - 150	Leg	Max Tension	1	0.00	0.00	0.00
			Max. Compression	16	-114.38	-0.01	-0.05
			Max. Mx	18	-113.43	0.21	0.02
			Max. My	15	-111.85	0.04	-0.19
			Max. Vy	5	0.10	-0.05	-0.03

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Force K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Vx	13	-0.09	0.02	0.02
		Diagonal	Max Tension	20	3.78	0.00	0.00
		Top Girt	Max Tension	1	0.00	0.00	0.00
			Max. Compression	20	-2.63	0.00	0.00
			Max. Mx	14	-1.47	0.01	0.00
			Max. My	20	-2.63	0.00	-0.00
			Max. Vy	14	-0.01	0.00	0.00
			Max. Vx	20	0.00	0.00	0.00
T33	150 - 125	Leg	Max Tension	1	0.00	0.00	0.00
			Max. Compression	16	-117.90	-0.01	-0.03
			Max. Mx	11	-62.02	0.26	0.14
			Max. My	13	-88.03	0.18	0.33
			Max. Vy	11	-0.13	0.26	0.14
			Max. Vx	13	-0.14	0.18	0.33
		Diagonal	Max Tension	19	5.36	0.00	0.00
		Horizontal	Max Tension	16	2.04	0.00	0.00
			Max. Compression	6	-3.06	0.00	0.00
			Max. Mx	14	1.20	0.01	0.00
			Max. My	19	1.98	0.00	-0.00
			Max. Vy	14	-0.01	0.00	0.00
			Max. Vx	19	0.00	0.00	0.00
		Top Girt	Max Tension	1	0.00	0.00	0.00
			Max. Compression	20	-1.86	0.00	0.00
			Max. Mx	14	-1.39	0.01	0.00
			Max. My	19	-1.63	0.00	-0.00
			Max. Vy	14	-0.01	0.00	0.00
			Max. Vx	19	0.00	0.00	0.00
T34	125 - 100	Leg	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-121.54	-0.07	0.07
			Max. Mx	24	-89.45	0.55	-0.19
			Max. My	15	-98.60	0.05	0.59
			Max. Vy	18	0.16	-0.54	-0.19
			Max. Vx	2	-0.17	0.05	0.59
		Diagonal	Max Tension	24	11.98	0.00	0.00
		Horizontal	Max Tension	26	2.11	0.00	0.00
			Max. Compression	24	-7.03	0.00	0.00
			Max. Mx	14	1.29	0.01	0.00
			Max. My	18	2.06	0.00	0.00
			Max. Vy	14	-0.01	0.00	0.00
			Max. Vx	18	-0.00	0.00	0.00
		Top Girt	Max Tension	1	0.00	0.00	0.00
			Max. Compression	19	-4.03	0.00	0.00
			Max. Mx	14	-2.15	0.01	0.00
			Max. My	18	-3.80	0.00	0.00
			Max. Vy	14	-0.01	0.00	0.00
			Max. Vx	18	-0.00	0.00	0.00
T35	100 - 93.75	Leg	Max Tension	1	0.00	0.00	0.00
			Max. Compression	24	-100.35	0.39	0.13
			Max. Mx	24	-63.26	0.55	-0.19
			Max. My	15	-73.95	0.05	0.59
			Max. Vy	5	-0.35	-0.54	-0.16
			Max. Vx	2	0.37	0.05	0.59
		Diagonal	Max Tension	1	0.00	0.00	0.00
			Max. Compression	24	-15.32	0.00	0.00
			Max. Mx	24	-12.47	-0.09	-0.01
			Max. My	24	-15.28	0.01	0.02
			Max. Vy	24	0.04	-0.09	-0.01
			Max. Vx	18	-0.01	0.00	0.00
		Top Girt	Max Tension	25	16.45	0.00	0.00
			Max. Compression	2	-3.93	0.00	0.00
			Max. Mx	14	3.78	0.03	0.00

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Force K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. My	19	11.12	0.00	-0.00
			Max. Vy	14	0.03	0.00	0.00
			Max. Vx	19	-0.00	0.00	0.00
		Guy A	Bottom Tension	21	13.77		
			Top Tension	21	13.91		
			Top Cable Vert	21	6.68		
			Top Cable Norm	21	12.20		
			Top Cable Tan	21	0.01		
			Bot Cable Vert	21	-6.24		
			Bot Cable Norm	21	12.27		
			Bot Cable Tan	21	0.00		
		Guy B	Bottom Tension	25	14.40		
			Top Tension	25	14.53		
			Top Cable Vert	25	6.88		
			Top Cable Norm	25	12.80		
			Top Cable Tan	25	0.01		
			Bot Cable Vert	25	-6.46		
			Bot Cable Norm	25	12.87		
			Bot Cable Tan	25	0.00		
		Guy C	Bottom Tension	17	13.95		
			Top Tension	17	14.09		
			Top Cable Vert	17	6.83		
			Top Cable Norm	17	12.33		
			Top Cable Tan	17	0.00		
			Bot Cable Vert	17	-6.38		
			Bot Cable Norm	17	12.41		
			Bot Cable Tan	17	0.01		
		Torque Arm Top	Max Tension	25	14.85	0.00	0.00
			Max. Compression	11	-1.11	0.00	0.00
			Max. Mx	14	4.62	0.06	0.00
			Max. My	19	11.05	0.00	-0.00
			Max. Vy	14	0.04	0.00	0.00
			Max. Vx	19	-0.00	0.00	0.00
		Torque Arm Bottom	Max Tension	6	1.31	0.00	0.00
			Max. Compression	18	-11.28	0.00	0.00
			Max. Mx	16	-6.16	0.08	0.00
			Max. My	19	1.23	0.00	-0.00
			Max. Vy	16	-0.04	0.00	0.00
			Max. Vx	19	0.00	0.00	0.00
T36	93.75 - 87.5	Leg	Max Tension	1	0.00	0.00	0.00
			Max. Compression	24	-116.30	0.14	0.09
			Max. Mx	24	-107.16	0.43	-0.17
			Max. My	20	-113.21	-0.19	-0.32
			Max. Vy	24	0.12	0.43	-0.17
			Max. Vx	8	0.12	-0.03	-0.03
		Diagonal	Max Tension	24	7.52	0.00	0.00
		Top Girt	Max Tension	21	7.01	0.00	0.00
			Max. Compression	1	0.00	0.00	0.00
			Max. Mx	14	3.93	0.03	0.00
			Max. My	19	6.24	0.00	-0.00
			Max. Vy	14	0.03	0.00	0.00
			Max. Vx	19	-0.00	0.00	0.00
T37	87.5 - 81.25	Leg	Max Tension	1	0.00	0.00	0.00
			Max. Compression	19	-115.89	0.04	0.04
			Max. Mx	25	-112.37	0.14	0.13
			Max. My	7	-92.49	-0.03	-0.16
			Max. Vy	24	0.09	0.14	0.09
			Max. Vx	7	-0.09	-0.03	-0.16
		Diagonal	Max Tension	24	5.99	0.00	0.00
		Top Girt	Max Tension	1	0.00	0.00	0.00
			Max. Compression	24	-4.21	0.00	0.00

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Force K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Mx	14	-1.55	0.01	0.00
			Max. My	19	-0.86	0.00	-0.00
			Max. Vy	14	-0.01	0.00	0.00
			Max. Vx	19	0.00	0.00	0.00
T38	81.25 - 75	Leg	Max Tension	1	0.00	0.00	0.00
			Max. Compression	19	-117.15	0.04	0.01
			Max. Mx	18	-105.08	0.14	0.00
			Max. My	20	-112.80	0.02	0.13
			Max. Vy	24	-0.07	-0.03	0.02
			Max. Vx	7	0.07	0.01	0.00
		Diagonal	Max Tension	24	4.18	0.00	0.00
		Top Girt	Max Tension	1	0.00	0.00	0.00
			Max. Compression	24	-3.18	0.00	0.00
			Max. Mx	14	-1.15	0.01	0.00
			Max. My	19	-0.59	0.00	-0.00
			Max. Vy	14	-0.01	0.00	0.00
			Max. Vx	19	0.00	0.00	0.00
T39	75 - 50	Leg	Max Tension	1	0.00	0.00	0.00
			Max. Compression	19	-117.25	0.04	0.02
			Max. Mx	24	-110.33	0.71	-0.11
			Max. My	21	-107.44	0.04	-0.67
			Max. Vy	24	-0.20	0.71	-0.11
			Max. Vx	21	0.17	0.04	-0.67
		Diagonal	Max Tension	26	4.97	0.00	0.00
		Horizontal	Max Tension	19	2.03	0.00	0.00
			Max. Compression	26	-2.84	0.00	0.00
			Max. Mx	14	1.39	0.01	0.00
			Max. My	19	2.01	0.00	-0.00
			Max. Vy	14	-0.01	0.00	0.00
			Max. Vx	19	0.00	0.00	0.00
		Top Girt	Max Tension	1	0.00	0.00	0.00
			Max. Compression	19	-2.03	0.00	0.00
			Max. Mx	14	-1.15	0.01	0.00
			Max. My	19	-0.96	0.00	-0.00
			Max. Vy	14	-0.01	0.00	0.00
			Max. Vx	19	0.00	0.00	0.00
T40	50 - 25	Leg	Max Tension	1	0.00	0.00	0.00
			Max. Compression	16	-126.19	-0.00	-0.01
			Max. Mx	24	-116.24	0.71	-0.11
			Max. My	21	-114.66	0.04	-0.67
			Max. Vy	24	0.19	0.71	-0.11
			Max. Vx	21	-0.16	0.04	-0.67
		Diagonal	Max Tension	24	5.81	0.00	0.00
		Horizontal	Max Tension	16	2.19	0.00	0.00
			Max. Compression	24	-3.32	0.00	0.00
			Max. Mx	14	1.45	0.01	0.00
			Max. My	19	2.14	0.00	-0.00
			Max. Vy	14	-0.01	0.00	0.00
			Max. Vx	19	0.00	0.00	0.00
		Top Girt	Max Tension	15	5.23	0.00	0.00
			Max. Compression	4	-0.44	0.00	0.00
			Max. Mx	14	1.16	-0.02	0.00
			Max. My	19	0.41	0.00	0.00
			Max. Vy	14	0.01	0.00	0.00
			Max. Vx	19	-0.00	0.00	0.00
		Guy A	Bottom Tension	21	13.10		
			Top Tension	21	13.17		
			Top Cable Vert	21	5.80		
			Top Cable Norm	21	11.83		
			Top Cable Tan	21	0.00		
			Bot Cable Vert	21	-5.58		

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Force K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Bot Cable Norm	21	11.86		
			Bot Cable Tan	21	0.00		
		Guy B	Bottom Tension	25	12.97		
			Top Tension	25	13.04		
			Top Cable Vert	25	5.32		
			Top Cable Norm	25	11.90		
			Top Cable Tan	25	0.01		
			Bot Cable Vert	25	-5.11		
			Bot Cable Norm	25	11.92		
			Bot Cable Tan	25	0.01		
		Guy C	Bottom Tension	17	13.22		
			Top Tension	17	13.29		
			Top Cable Vert	17	5.99		
			Top Cable Norm	17	11.86		
			Top Cable Tan	17	0.00		
			Bot Cable Vert	17	-5.77		
			Bot Cable Norm	17	11.89		
			Bot Cable Tan	17	0.00		
T41	25 - 0	Leg	Max Tension	1	0.00	0.00	0.00
			Max. Compression	16	-126.75	0.04	-0.06
			Max. Mx	18	-121.51	-1.82	0.59
			Max. My	20	-121.40	-0.23	-1.97
			Max. Vy	18	0.41	-1.82	0.59
			Max. Vx	20	0.42	-0.23	-1.97
		Diagonal	Max Tension	16	3.68	0.00	0.00
		Horizontal	Max Tension	16	2.20	0.00	0.00
			Max. Compression	16	-2.20	0.00	0.00
			Max. Mx	14	1.48	0.01	0.00
			Max. My	19	2.14	0.00	-0.00
			Max. Vy	14	-0.01	0.00	0.00
			Max. Vx	19	0.00	0.00	0.00
		Top Girt	Max Tension	15	0.06	0.00	0.00
			Max. Compression	29	-1.46	0.00	0.00
			Max. Mx	14	-1.03	0.01	0.00
			Max. My	19	-0.70	0.00	-0.00
			Max. Vy	14	-0.01	0.00	0.00
			Max. Vx	19	0.00	0.00	0.00
		Base Beam	Max Tension	19	0.06	-336.75	0.00
			Max. Compression	17	-3.43	1.97	0.00
			Max. Mx	22	-118.08	-338.92	-1.81
			Max. My	15	-117.78	-338.23	3.35
			Max. Vy	22	-118.08	-338.92	-1.81
			Max. Vx	15	1.16	-338.23	3.35

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
Guy C @ 251.45 ft Elev -12.2 ft Azimuth 240 deg	Max. Vert	10	-6.00	-2.88	1.66
	Max. H_x	10	-6.00	-2.88	1.66
	Max. H_z	16	-36.95	-23.67	14.98
	Min. Vert	17	-39.09	-25.68	14.84
	Min. H_x	17	-39.09	-25.68	14.84

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
	Min. H_z	10	-6.00	-2.88	1.66
Guy B @ 247.51 ft Elev 1.81 ft Azimuth 120 deg	Max. Vert	6	-5.54	2.72	1.57
	Max. H_x	25	-38.68	25.93	14.98
	Max. H_z	26	-36.44	23.85	15.05
	Min. Vert	25	-38.68	25.93	14.98
	Min. H_x	6	-5.54	2.72	1.57
	Min. H_z	6	-5.54	2.72	1.57
Guy A @ 247.15 ft Elev -5.8 ft Azimuth 0 deg	Max. Vert	2	-5.85	-0.00	-3.23
	Max. H_x	24	-25.38	2.50	-18.11
	Max. H_z	2	-5.85	-0.00	-3.23
	Min. Vert	21	-39.30	0.00	-29.77
	Min. H_x	18	-25.05	-2.50	-17.87
	Min. H_z	21	-39.30	0.00	-29.77
Guy C @ 227.42 ft Elev -10.07 ft Azimuth 240 deg	Max. Vert	10	-4.86	-2.53	1.46
	Max. H_x	10	-4.86	-2.53	1.46
	Max. H_z	17	-74.03	-56.49	32.61
	Min. Vert	17	-74.03	-56.49	32.61
	Min. H_x	17	-74.03	-56.49	32.61
	Min. H_z	10	-4.86	-2.53	1.46
Guy B @ 219.43 ft Elev 1.23 ft Azimuth 120 deg	Max. Vert	6	-4.60	2.38	1.37
	Max. H_x	25	-73.99	56.75	32.75
	Max. H_z	25	-73.99	56.75	32.75
	Min. Vert	25	-73.99	56.75	32.75
	Min. H_x	6	-4.60	2.38	1.37
	Min. H_z	6	-4.60	2.38	1.37
Guy A @ 224.79 ft Elev -5.41 ft Azimuth 0 deg	Max. Vert	2	-4.68	-0.00	-2.80
	Max. H_x	24	-40.97	3.69	-35.01
	Max. H_z	2	-4.68	-0.00	-2.80
	Min. Vert	21	-74.47	0.01	-65.91
	Min. H_x	18	-40.36	-3.69	-34.50
	Min. H_z	21	-74.47	0.01	-65.91
Guy C @ 206.73 ft Elev -8.98 ft Azimuth 240 deg	Max. Vert	10	-0.19	-0.37	0.22
	Max. H_x	10	-0.19	-0.37	0.22
	Max. H_z	17	-27.32	-36.85	21.24
	Min. Vert	17	-27.32	-36.85	21.24
	Min. H_x	17	-27.32	-36.85	21.24
	Min. H_z	10	-0.19	-0.37	0.22
Guy B @ 193.65 ft Elev 0.72 ft Azimuth 120 deg	Max. Vert	6	-0.18	0.35	0.20
	Max. H_x	25	-27.51	37.35	21.50
	Max. H_z	25	-27.51	37.35	21.50

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
	Min. Vert	25	-27.51	37.35	21.50
	Min. H_x	6	-0.18	0.35	0.20
	Min. H_z	6	-0.18	0.35	0.20
Guy A @ 201.41 ft Elev -4.96 ft Azimuth 0 deg	Max. Vert	2	-0.18	-0.00	-0.42
	Max. H_x	24	-14.30	1.33	-22.63
	Max. H_z	2	-0.18	-0.00	-0.42
	Min. Vert	21	-27.44	0.02	-42.83
	Min. H_x	18	-14.07	-1.33	-22.30
	Min. H_z	21	-27.44	0.02	-42.83
Guy C @ 114.41 ft Elev -5.4 ft Azimuth 240 deg	Max. Vert	10	-0.06	-0.14	0.08
	Max. H_x	10	-0.06	-0.14	0.08
	Max. H_z	17	-5.77	-10.30	5.94
	Min. Vert	17	-5.77	-10.30	5.94
	Min. H_x	17	-5.77	-10.30	5.94
	Min. H_z	10	-0.06	-0.14	0.08
Guy B @ 115.63 ft Elev 0.5 ft Azimuth 120 deg	Max. Vert	6	-0.06	0.16	0.09
	Max. H_x	25	-5.11	10.33	5.96
	Max. H_z	25	-5.11	10.33	5.96
	Min. Vert	25	-5.11	10.33	5.96
	Min. H_x	6	-0.06	0.16	0.09
	Min. H_z	6	-0.06	0.16	0.09
Guy A @ 114.04 ft Elev -3.6 ft Azimuth 0 deg	Max. Vert	2	-0.06	-0.00	-0.16
	Max. H_x	24	-2.79	0.19	-5.97
	Max. H_z	2	-0.06	-0.00	-0.16
	Min. Vert	21	-5.58	0.00	-11.86
	Min. H_x	18	-2.75	-0.19	-5.88
	Min. H_z	21	-5.58	0.00	-11.86
Mast	Max. Vert	22	353.33	0.26	-1.05
	Max. H_x	25	350.49	1.20	0.83
	Max. H_z	15	352.77	-0.03	1.34
	Max. M_x	1	0.00	-0.04	0.05
	Max. M_z	1	0.00	-0.04	0.05
	Max. Torsion	1	0.00	-0.04	0.05
	Min. Vert	1	197.89	-0.04	0.05
	Min. H_x	17	348.47	-1.29	0.73
	Min. H_z	21	349.90	-0.14	-1.25
	Min. M_x	1	0.00	-0.04	0.05
	Min. M_z	1	0.00	-0.04	0.05
	Min. Torsion	1	0.00	-0.04	0.05

Tower Mast Reaction Summary

Load Combination	Vertical K	$Shear_x$ K	$Shear_z$ K	Overturning Moment, M_x kip-ft	Overturning Moment, M_z kip-ft	Torque kip-ft

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	197.89	0.04	-0.05	0.00	0.00	0.00
Dead+Wind 0 deg - No Ice+Guy	288.62	-0.01	-0.80	0.00	0.00	0.00
Dead+Wind 30 deg - No Ice+Guy	281.26	0.83	-0.67	0.00	0.00	0.00
Dead+Wind 60 deg - No Ice+Guy	267.56	1.19	-0.64	0.00	0.00	0.00
Dead+Wind 90 deg - No Ice+Guy	279.79	1.04	-0.38	0.00	0.00	0.00
Dead+Wind 120 deg - No Ice+Guy	287.59	0.70	0.34	0.00	0.00	0.00
Dead+Wind 150 deg - No Ice+Guy	280.49	0.22	0.99	0.00	0.00	0.00
Dead+Wind 180 deg - No Ice+Guy	268.83	0.08	1.24	0.00	0.00	0.00
Dead+Wind 210 deg - No Ice+Guy	281.37	-0.14	0.98	0.00	0.00	0.00
Dead+Wind 240 deg - No Ice+Guy	287.74	-0.68	0.34	0.00	0.00	0.00
Dead+Wind 270 deg - No Ice+Guy	280.72	-1.02	-0.42	0.00	0.00	0.00
Dead+Wind 300 deg - No Ice+Guy	269.22	-1.15	-0.71	0.00	0.00	0.00
Dead+Wind 330 deg - No Ice+Guy	281.28	-0.83	-0.71	0.00	0.00	0.00
Dead+Ice+Temp+Guy	252.62	0.07	-0.13	0.00	0.00	0.00
Dead+Wind 0 deg+Ice+Temp+Guy	352.77	0.03	-1.34	0.00	0.00	0.00
Dead+Wind 30 deg+Ice+Temp+Guy	352.54	0.90	-0.97	0.00	0.00	0.00
Dead+Wind 60 deg+Ice+Temp+Guy	348.47	1.29	-0.73	0.00	0.00	0.00
Dead+Wind 90 deg+Ice+Temp+Guy	351.44	1.25	-0.35	0.00	0.00	0.00
Dead+Wind 120 deg+Ice+Temp+Guy	352.14	1.08	0.50	0.00	0.00	0.00
Dead+Wind 150 deg+Ice+Temp+Guy	352.12	0.43	1.06	0.00	0.00	0.00
Dead+Wind 180 deg+Ice+Temp+Guy	349.90	0.14	1.25	0.00	0.00	0.00
Dead+Wind 210 deg+Ice+Temp+Guy	353.33	-0.26	1.05	0.00	0.00	0.00
Dead+Wind 240 deg+Ice+Temp+Guy	352.69	-1.01	0.49	0.00	0.00	0.00
Dead+Wind 270 deg+Ice+Temp+Guy	352.99	-1.18	-0.40	0.00	0.00	0.00
Dead+Wind 300 deg+Ice+Temp+Guy	350.49	-1.20	-0.83	0.00	0.00	0.00
Dead+Wind 330 deg+Ice+Temp+Guy	352.87	-0.84	-1.05	0.00	0.00	0.00
Dead+Wind 0 deg - Service+Guy	201.36	0.03	-0.65	0.00	0.00	0.00
Dead+Wind 30 deg - Service+Guy	201.43	0.31	-0.56	0.00	0.00	0.00
Dead+Wind 60 deg - Service+Guy	201.72	0.52	-0.33	0.00	0.00	0.00
Dead+Wind 90 deg - Service+Guy	201.28	0.62	-0.02	0.00	0.00	0.00
Dead+Wind 120 deg - Service+Guy	201.05	0.56	0.25	0.00	0.00	0.00
Dead+Wind 150 deg -	201.52	0.36	0.44	0.00	0.00	0.00

Load Combination	Vertical K	$Shear_x$ K	$Shear_z$ K	Overturning Moment, M_x kip-ft	Overturning Moment, M_z kip-ft	Torque kip-ft
Service+Guy						
Dead+Wind 180 deg - Service+Guy	202.07	0.04	0.50	0.00	0.00	0.00
Dead+Wind 210 deg - Service+Guy	201.74	-0.27	0.44	0.00	0.00	0.00
Dead+Wind 240 deg - Service+Guy	201.56	-0.48	0.24	0.00	0.00	0.00
Dead+Wind 270 deg - Service+Guy	202.01	-0.55	-0.04	0.00	0.00	0.00
Dead+Wind 300 deg - Service+Guy	202.47	-0.46	-0.34	0.00	0.00	0.00
Dead+Wind 330 deg - Service+Guy	201.93	-0.24	-0.57	0.00	0.00	0.00

Solution Summary

	Sum of Applied Forces			Sum of Reactions			
Load Comb.	PX K	PY K	PZ K	PX K	PY K	PZ K	% Error
1	0.00	-71.57	0.00	0.01	71.57	0.00	0.008%
2	-0.01	-72.35	-104.90	0.01	72.35	104.89	0.002%
3	51.68	-71.61	-90.24	-51.68	71.61	90.24	0.002%
4	89.35	-70.86	-52.00	-89.35	70.86	51.99	0.004%
5	103.39	-71.66	0.01	-103.38	71.66	-0.01	0.002%
6	90.13	-72.43	52.47	-90.13	72.43	-52.46	0.003%
7	51.71	-71.62	90.28	-51.71	71.62	-90.27	0.002%
8	0.01	-70.80	104.03	-0.02	70.80	-104.03	0.002%
9	-51.68	-71.54	90.24	51.68	71.54	-90.24	0.001%
10	-90.10	-72.29	52.43	90.10	72.29	-52.43	0.002%
11	-103.39	-71.49	-0.01	103.38	71.49	0.01	0.001%
12	-89.38	-70.72	-52.03	89.38	70.72	52.03	0.002%
13	-51.71	-71.53	-90.28	51.71	71.53	90.27	0.002%
14	0.00	-104.41	0.00	0.00	104.41	0.00	0.003%
15	-0.00	-105.77	-119.13	0.00	105.77	119.13	0.002%
16	58.96	-104.48	-102.65	-58.96	104.48	102.65	0.002%
17	102.00	-103.17	-59.19	-102.00	103.17	59.19	0.003%
18	117.94	-104.56	0.00	-117.94	104.56	-0.00	0.002%
19	102.66	-105.91	59.58	-102.66	105.91	-59.58	0.003%
20	58.98	-104.49	102.68	-58.98	104.49	-102.68	0.002%
21	0.00	-103.06	118.41	-0.01	103.06	-118.41	0.003%
22	-58.96	-104.35	102.65	58.96	104.35	-102.65	0.001%
23	-102.63	-105.66	59.56	102.63	105.66	-59.55	0.002%
24	-117.94	-104.27	-0.00	117.94	104.27	0.00	0.001%
25	-102.04	-102.92	-59.22	102.03	102.92	59.22	0.001%
26	-58.98	-104.33	-102.68	58.98	104.33	102.68	0.002%
27	-0.00	-71.79	-29.06	0.00	71.79	29.06	0.002%
28	14.31	-71.58	-25.00	-14.31	71.58	25.00	0.002%
29	24.75	-71.38	-14.40	-24.75	71.38	14.40	0.005%
30	28.64	-71.60	0.00	-28.64	71.60	-0.00	0.001%
31	24.97	-71.81	14.53	-24.97	71.81	-14.53	0.002%
32	14.32	-71.59	25.01	-14.32	71.59	-25.01	0.001%
33	0.00	-71.36	28.82	-0.00	71.36	-28.81	0.005%
34	-14.31	-71.56	25.00	14.31	71.56	-25.00	0.002%
35	-24.96	-71.77	14.52	24.96	71.77	-14.52	0.002%
36	-28.64	-71.55	-0.00	28.64	71.55	0.00	0.002%
37	-24.76	-71.34	-14.41	24.76	71.34	14.41	0.004%
38	-14.32	-71.56	-25.01	14.32	71.56	25.01	0.002%

Non-Linear Convergence Results

Load Combination	Converged?	Number of Cycles	Displacement Tolerance	Force Tolerance
1	Yes	7	0.00000001	0.00004471
2	Yes	14	0.00000001	0.00005781
3	Yes	14	0.00000001	0.00003952
4	Yes	10	0.00007772	0.00009341
5	Yes	14	0.00000001	0.00004454
6	Yes	14	0.00004690	0.00006403
7	Yes	14	0.00000001	0.00004561
8	Yes	10	0.00000001	0.00008837
9	Yes	14	0.00000001	0.00003547
10	Yes	14	0.00000001	0.00005211
11	Yes	14	0.00000001	0.00003467
12	Yes	10	0.00000001	0.00004520
13	Yes	14	0.00000001	0.00003960
14	Yes	6	0.00000001	0.00004148
15	Yes	14	0.00004901	0.00007000
16	Yes	14	0.00000001	0.00005078
17	Yes	10	0.00006249	0.00008700
18	Yes	14	0.00000001	0.00005778
19	Yes	14	0.00005542	0.00007829
20	Yes	14	0.00000001	0.00006017
21	Yes	10	0.00006659	0.00009144
22	Yes	14	0.00000001	0.00004595
23	Yes	14	0.00000001	0.00006262
24	Yes	14	0.00000001	0.00004461
25	Yes	10	0.00000001	0.00004965
26	Yes	14	0.00000001	0.00005139
27	Yes	9	0.00000001	0.00007289
28	Yes	9	0.00000001	0.00005502
29	Yes	8	0.00000001	0.00005746
30	Yes	9	0.00000001	0.00004714
31	Yes	9	0.00000001	0.00006700
32	Yes	9	0.00000001	0.00004721
33	Yes	8	0.00000001	0.00005475
34	Yes	9	0.00000001	0.00005421
35	Yes	9	0.00000001	0.00007361
36	Yes	9	0.00000001	0.00005274
37	Yes	8	0.00000001	0.00005050
38	Yes	9	0.00000001	0.00005166

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T1	368.75 - 362.5	2.314	33	0.0573	0.1256
T2	362.5 - 356.25	2.356	33	0.0573	0.1257
T3	356.25 - 350	2.397	33	0.0574	0.1261
T4	350 - 343.75	2.439	33	0.0588	0.1229
T5	343.75 - 337.5	2.488	33	0.0599	0.1221
T6	337.5 - 331.25	2.535	33	0.0580	0.1055

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T7	331.25 - 325	2.579	33	0.0559	0.0877
T8	325 - 318.75	2.619	33	0.0537	0.0708
T9	318.75 - 312.5	2.655	33	0.0517	0.0604
T10	312.5 - 306.25	2.688	33	0.0498	0.0503
T11	306.25 - 300	2.718	33	0.0483	0.0401
T12	300 - 293.75	2.735	33	0.0476	0.0297
T13	293.75 - 287.5	2.772	33	0.0470	0.0294
T14	287.5 - 281.25	2.807	33	0.0430	0.0233
T15	281.25 - 275	2.838	33	0.0382	0.0192
T16	275 - 268.75	2.860	33	0.0330	0.0193
T17	268.75 - 262.5	2.874	33	0.0274	0.0177
T18	262.5 - 256.25	2.878	33	0.0216	0.0174
T19	256.25 - 250	2.873	33	0.0158	0.0249
T20	250 - 243.75	2.860	33	0.0117	0.0307
T21	243.75 - 237.5	2.838	33	0.0163	0.0337
T22	237.5 - 231.25	2.801	33	0.0203	0.0423
T23	231.25 - 225	2.755	33	0.0224	0.0513
T24	225 - 218.75	2.713	33	0.0223	0.0552
T25	218.75 - 212.5	2.688	33	0.0217	0.0558
T26	212.5 - 206.25	2.669	33	0.0253	0.0777
T27	206.25 - 200	2.642	33	0.0297	0.0985
T28	200 - 175	2.605	33	0.0348	0.1190
T29	175 - 168.75	2.359	29	0.0537	0.1776
T30	168.75 - 162.5	2.284	29	0.0558	0.1777
T31	162.5 - 156.25	2.207	29	0.0565	0.1770
T32	156.25 - 150	2.144	29	0.0578	0.1743
T33	150 - 125	2.077	29	0.0599	0.1693
T34	125 - 100	1.737	29	0.0693	0.1226
T35	100 - 93.75	1.358	35	0.0675	0.0965
T36	93.75 - 87.5	1.276	35	0.0646	0.0968
T37	87.5 - 81.25	1.200	35	0.0637	0.1117
T38	81.25 - 75	1.123	35	0.0634	0.1327
T39	75 - 50	1.043	35	0.0637	0.1519
T40	50 - 25	0.687	35	0.0643	0.2069
T41	25 - 0	0.371	35	0.0664	0.2387

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
370.00	Search Antenna	33	2.314	0.0573	0.1256	264246
355.00	8' Dish	33	2.405	0.0576	0.1255	554817
350.00	Guy	33	2.439	0.0588	0.1229	49760
325.00	10' x 3" Dia Omni	33	2.619	0.0537	0.0708	104444
305.00	LNX-6514DS-T4M	33	2.722	0.0481	0.0376	38576
300.00	Guy	33	2.735	0.0476	0.0297	19341
250.00	20' x 3" Dia Omni	33	2.860	0.0117	0.0307	62252
242.50	(2) 7770.00	33	2.832	0.0172	0.0350	26884
225.00	Guy	33	2.713	0.0223	0.0552	26683
200.00	Yagi	33	2.605	0.0348	0.1190	33431
180.00	(4) Yagi	29	2.416	0.0509	0.1728	78199
162.50	Guy	29	2.207	0.0565	0.1770	25253
148.00	Yagi	29	2.053	0.0606	0.1669	55555
140.00	Yagi	29	1.953	0.0639	0.1531	63940
125.00	Yagi	29	1.737	0.0693	0.1226	90617
100.00	Guy	35	1.358	0.0675	0.0965	57879

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
88.00	X-Style	35	1.206	0.0638	0.1101	581412
62.00	Yagi	35	0.858	0.0642	0.1844	804148
50.00	Guy	35	0.687	0.0643	0.2069	71648
40.00	Yagi	35	0.559	0.0649	0.2210	255619

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T1	368.75 - 362.5	15.354	21	0.2493	0.6048
T2	362.5 - 356.25	15.424	21	0.2494	0.6051
T3	356.25 - 350	15.496	17	0.2501	0.6065
T4	350 - 343.75	15.599	2	0.2546	0.5952
T5	343.75 - 337.5	15.885	2	0.2569	0.5921
T6	337.5 - 331.25	16.172	2	0.2476	0.5207
T7	331.25 - 325	16.443	2	0.2364	0.4454
T8	325 - 318.75	16.697	2	0.2240	0.3754
T9	318.75 - 312.5	16.930	2	0.2131	0.3318
T10	312.5 - 306.25	17.146	2	0.2024	0.2892
T11	306.25 - 300	17.351	2	0.1923	0.2459
T12	300 - 293.75	17.499	2	0.1850	0.1952
T13	293.75 - 287.5	17.709	2	0.1772	0.1938
T14	287.5 - 281.25	17.912	2	0.1556	0.1906
T15	281.25 - 275	18.095	2	0.1310	0.1917
T16	275 - 268.75	18.237	2	0.1039	0.1914
T17	268.75 - 262.5	18.337	2	0.0809	0.1854
T18	262.5 - 256.25	18.394	2	0.0889	0.1721
T19	256.25 - 250	18.406	2	0.1109	0.1519
T20	250 - 243.75	18.375	2	0.1318	0.1331
T21	243.75 - 237.5	18.303	2	0.1507	0.1121
T22	237.5 - 231.25	18.145	2	0.1662	0.1720
T23	231.25 - 225	17.927	2	0.1750	0.2476
T24	225 - 218.75	17.741	2	0.1748	0.2819
T25	218.75 - 212.5	17.603	2	0.1721	0.2836
T26	212.5 - 206.25	17.491	2	0.1857	0.4147
T27	206.25 - 200	17.329	2	0.2025	0.5519
T28	200 - 175	17.121	6	0.2212	0.6591
T29	175 - 168.75	15.675	6	0.3154	0.9712
T30	168.75 - 162.5	15.228	6	0.3318	0.9634
T31	162.5 - 156.25	14.760	6	0.3429	0.9527
T32	156.25 - 150	14.349	6	0.3564	0.9341
T33	150 - 125	13.904	6	0.3718	0.9037
T34	125 - 100	11.744	19	0.4318	0.6695
T35	100 - 93.75	9.315	19	0.4393	0.4953
T36	93.75 - 87.5	8.774	19	0.4318	0.4963
T37	87.5 - 81.25	8.281	19	0.4313	0.5766
T38	81.25 - 75	7.792	19	0.4329	0.7153
T39	75 - 50	7.273	19	0.4356	0.8509
T40	50 - 25	4.856	19	0.4412	1.2184
T41	25 - 0	2.653	19	0.4629	1.4690

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
370.00	Search Antenna	21	15.354	0.2493	0.6048	88449
355.00	8' Dish	17	15.510	0.2507	0.6043	167241
350.00	Guy	2	15.599	0.2546	0.5952	13687
325.00	10' x 3" Dia Omni	2	16.697	0.2240	0.3754	19159
305.00	LNX-6514DS-T4M	2	17.382	0.1905	0.2342	8522
300.00	Guy	2	17.499	0.1850	0.1952	4483
250.00	20' x 3" Dia Omni	2	18.375	0.1318	0.1331	12027
242.50	(2) 7770.00	2	18.279	0.1542	0.1185	4718
225.00	Guy	2	17.741	0.1748	0.2819	5468
200.00	Yagi	6	17.121	0.2212	0.6591	5550
180.00	(4) Yagi	6	16.018	0.2973	0.9484	16938
162.50	Guy	6	14.760	0.3429	0.9527	3739
148.00	Yagi	6	13.751	0.3769	0.8891	9722
140.00	Yagi	6	13.097	0.3981	0.8155	11505
125.00	Yagi	19	11.744	0.4318	0.6695	17686
100.00	Guy	19	9.315	0.4393	0.4953	9967
88.00	X-Style	19	8.319	0.4311	0.5675	34810
62.00	Yagi	19	6.032	0.4385	1.0678	71523
50.00	Guy	19	4.856	0.4412	1.2184	8969
40.00	Yagi	19	3.972	0.4491	1.3238	31287

Bolt Design Data

Section No.	Elevation ft	Component Type	Bolt Grade	Bolt Size in	Number Of Bolts	Maximum Load per Bolt K	Allowable Load K	Ratio Load / Allowable	Allowable Ratio	Criteria
T1	368.75	Leg	A325N	0.7500	6	0.05	19.44	0.003 ✔	1.333	Bolt Tension
		Diagonal	A325N	0.5000	2	0.20	4.12	0.050 ✔	1.333	Bolt Shear
		Top Girt	A325N	0.6250	2	0.05	12.89	0.004 ✔	1.333	Bolt Shear
T2	362.5	Diagonal	A325N	0.5000	2	0.60	8.25	0.073 ✔	1.333	Bolt Shear
		Top Girt	A325N	0.5000	2	0.15	8.25	0.018 ✔	1.333	Bolt Shear
T3	356.25	Diagonal	A325N	0.5000	2	2.67	8.25	0.324 ✔	1.333	Bolt Shear
		Top Girt	A325N	0.5000	2	0.61	8.25	0.074 ✔	1.333	Bolt Shear
T4	350	Leg	A325N	0.7500	6	0.83	19.44	0.043 ✔	1.333	Bolt Tension
		Diagonal	A325N	0.6250	2	2.06	6.44	0.320 ✔	1.333	Bolt Shear
		Top Girt	A325N	0.6250	2	4.57	12.89	0.355 ✔	1.333	Bolt Shear
T5	343.75	Diagonal	A325N	0.5000	2	2.10	4.12	0.510 ✔	1.333	Bolt Shear
		Top Girt	A325N	0.6250	2	2.12	12.89	0.164 ✔	1.333	Bolt Shear
T6	337.5	Diagonal	A325N	0.5000	2	1.93	4.12	0.469 ✔	1.333	Bolt Shear
		Top Girt	A325N	0.5000	2	1.26	4.12	0.306 ✔	1	Bolt Shear
T7	331.25	Diagonal	A325N	0.5000	2	1.72	4.12	0.416 ✔	1.333	Bolt Shear
		Top Girt	A325N	0.5000	2	1.20	4.12	0.292 ✔	1	Bolt Shear
T8	325	Leg	A325N	0.7500	6	0.00	19.44	0.000 ✔	1.333	Bolt Tension
		Diagonal	A325N	0.5000	2	1.86	4.12	0.452 ✔	1.333	Bolt Shear
		Top Girt	A325N	0.5000	2	1.44	4.12	0.348 ✔	1	Bolt Shear

Section No.	Elevation ft	Component Type	Bolt Grade	Bolt Size in	Number Of Bolts	Maximum Load per Bolt K	Allowable Load K	Ratio Load / Allowable	Allowable Ratio	Criteria
T9	318.75	Diagonal	A325N	0.5000	2	1.91	4.12	0.463 ✓	1.333	Bolt Shear
		Top Girt	A325N	0.5000	2	1.66	4.12	0.403 ✓	1	Bolt Shear
T10	312.5	Diagonal	A325N	0.5000	2	2.06	4.12	0.499 ✓	1.333	Bolt Shear
		Top Girt	A325N	0.5000	2	1.71	4.12	0.415 ✓	1	Bolt Shear
T11	306.25	Diagonal	A325N	0.5000	2	4.55	4.12	1.103 ✓	1.333	Bolt Shear
		Top Girt	A325N	0.6250	2	2.55	12.89	0.198 ✓	1.333	Bolt Shear
T12	300	Leg	A325N	0.7500	6	0.00	19.44	0.000 ✓	1.333	Bolt Tension
		Diagonal	A325N	0.6250	2	3.86	6.44	0.599 ✓	1.333	Bolt Shear
		Top Girt	A325N	0.6250	2	6.03	12.89	0.468 ✓	1.333	Bolt Shear
T13	293.75	Diagonal	A325N	0.5000	2	3.02	4.12	0.732 ✓	1.333	Bolt Shear
		Top Girt	A325N	0.6250	2	1.32	12.89	0.102 ✓	1.333	Bolt Shear
T14	287.5	Diagonal	A325N	0.5000	2	2.39	4.12	0.580 ✓	1.333	Bolt Shear
		Top Girt	A325N	0.5000	2	1.32	4.12	0.320 ✓	1	Bolt Shear
T15	281.25	Diagonal	A325N	0.5000	2	1.82	4.12	0.441 ✓	1.333	Bolt Shear
		Top Girt	A325N	0.6250	2	1.05	6.44	0.164 ✓	1	Bolt Shear
T16	275	Leg	A325N	0.7500	6	0.00	19.44	0.000 ✓	1.333	Bolt Tension
		Diagonal	A325N	0.5000	2	1.48	4.12	0.358 ✓	1.333	Bolt Shear
		Top Girt	A325N	0.5000	2	1.06	4.12	0.258 ✓	1	Bolt Shear
T17	268.75	Diagonal	A325N	0.5000	2	1.28	4.12	0.310 ✓	1.333	Bolt Shear
		Top Girt	A325N	0.5000	2	1.06	4.12	0.257 ✓	1	Bolt Shear
T18	262.5	Diagonal	A325N	0.5000	2	1.16	4.12	0.280 ✓	1.333	Bolt Shear
		Top Girt	A325N	0.5000	2	1.05	4.12	0.254 ✓	1	Bolt Shear
T19	256.25	Diagonal	A325N	0.5000	2	1.72	4.12	0.416 ✓	1.333	Bolt Shear
		Top Girt	A325N	0.5000	2	1.28	4.12	0.311 ✓	1	Bolt Shear
T20	250	Leg	A325N	0.7500	6	0.00	19.44	0.000 ✓	1.333	Bolt Tension
		Diagonal	A325N	0.5000	2	1.94	4.12	0.471 ✓	1.333	Bolt Shear
		Top Girt	A325N	0.5000	2	1.60	8.25	0.194 ✓	1	Bolt Shear
T21	243.75	Diagonal	A325N	0.5000	2	4.98	4.12	1.208 ✓	1.333	Bolt Shear
		Top Girt	A325N	0.6250	2	2.37	12.89	0.184 ✓	1.333	Bolt Shear
T22	237.5	Diagonal	A325X	0.5000	2	6.26	5.89	1.063 ✓	1.333	Bolt Shear
		Top Girt	A325N	0.6250	2	3.52	12.89	0.273 ✓	1.333	Bolt Shear
T23	231.25	Diagonal	A325X	0.5000	2	6.63	5.89	1.126 ✓	1.333	Bolt Shear
		Top Girt	A325N	0.6250	2	4.01	12.89	0.311 ✓	1.333	Bolt Shear
T24	225	Leg	A325N	0.7500	6	0.00	19.44	0.000 ✓	1.333	Bolt Tension
		Diagonal	A325N	0.6250	2	7.24	12.89	0.562 ✓	1.333	Bolt Shear
		Top Girt	A325N	0.6250	2	8.46	12.89	0.656 ✓	1.333	Bolt Shear
T25	218.75	Diagonal	A325N	0.5000	2	3.73	4.12	0.906 ✓	1.333	Bolt Shear
		Top Girt	A325N	0.6250	2	2.92	12.89	0.226 ✓	1.333	Bolt Shear
T26	212.5	Diagonal	A325N	0.5000	2	3.03	4.12	0.735 ✓	1.333	Bolt Shear
		Top Girt	A325N	0.5000	2	2.11	4.12	0.513 ✓	1.333	Bolt Shear

Section No.	Elevation ft	Component Type	Bolt Grade	Bolt Size in	Number Of Bolts	Maximum Load per Bolt K	Allowable Load K	Ratio Load / Allowable	Allowable Ratio	Criteria
T27	206.25	Diagonal	A325N	0.5000	2	2.16	4.12	0.523 ✔	1.333	Bolt Shear
		Top Girt	A325N	0.5000	2	1.67	4.12	0.404 ✔	1.333	Bolt Shear
T28	200	Leg	A325N	0.7500	6	0.00	19.44	0.000 ✔	1.333	Bolt Tension
		Diagonal	A325N	0.5000	2	3.00	4.12	0.727 ✔	1.333	Bolt Shear
		Horizontal	A325N	0.6250	2	1.57	6.44	0.244 ✔	1.333	Bolt Shear
		Top Girt	A325N	0.5000	2	1.12	4.12	0.272 ✔	1.333	Bolt Shear
T29	175	Leg	A325N	0.7500	6	0.00	19.44	0.000 ✔	1.333	Bolt Tension
		Diagonal	A325N	0.5000	2	4.06	4.12	0.984 ✔	1.333	Bolt Shear
		Top Girt	A325N	0.5000	2	2.16	4.12	0.524 ✔	1.333	Bolt Shear
T30	168.75	Diagonal	A325N	0.5000	2	4.43	4.12	1.075 ✔	1.333	Bolt Shear
		Top Girt	A325N	0.5000	2	2.65	4.12	0.644 ✔	1.333	Bolt Shear
T31	162.5	Diagonal	A325N	0.5000	2	2.33	4.12	0.564 ✔	1.333	Bolt Shear
		Top Girt	A325N	0.5000	2	3.72	8.25	0.451 ✔	1.333	Bolt Shear
T32	156.25	Diagonal	A325N	0.5000	2	1.89	4.12	0.459 ✔	1.333	Bolt Shear
		Top Girt	A325N	0.5000	2	1.31	4.12	0.319 ✔	1.333	Bolt Shear
T33	150	Leg	A325N	0.7500	6	0.00	19.44	0.000 ✔	1.333	Bolt Tension
		Diagonal	A325N	0.5000	2	2.68	4.12	0.650 ✔	1.333	Bolt Shear
		Horizontal	A325N	0.6250	2	1.53	6.44	0.237 ✔	1.333	Bolt Shear
		Top Girt	A325N	0.5000	2	0.84	4.12	0.203 ✔	1	Bolt Shear
T34	125	Leg	A325N	0.7500	6	0.00	19.44	0.000 ✔	1.333	Bolt Tension
		Diagonal	A325N	0.6250	2	5.99	6.44	0.930 ✔	1.333	Bolt Shear
		Horizontal	A325N	0.6250	2	3.52	6.44	0.546 ✔	1.333	Bolt Shear
		Top Girt	A325N	0.6250	2	2.02	6.44	0.313 ✔	1.333	Bolt Shear
T35	100	Leg	A325N	0.7500	6	0.00	19.44	0.000 ✔	1.333	Bolt Tension
		Diagonal	A325N	0.6250	2	7.66	12.89	0.594 ✔	1.333	Bolt Shear
		Top Girt	A325N	0.6250	2	8.22	12.89	0.638 ✔	1.333	Bolt Shear
T36	93.75	Diagonal	A325N	0.5000	2	3.76	4.12	0.912 ✔	1.333	Bolt Shear
		Top Girt	A325N	0.5000	2	3.51	8.25	0.425 ✔	1.333	Bolt Shear
T37	87.5	Diagonal	A325N	0.5000	2	3.00	4.12	0.726 ✔	1.333	Bolt Shear
		Top Girt	A325N	0.5000	2	2.10	4.12	0.510 ✔	1.333	Bolt Shear
T38	81.25	Diagonal	A325N	0.5000	2	2.09	4.12	0.507 ✔	1.333	Bolt Shear
		Top Girt	A325N	0.5000	2	1.59	4.12	0.386 ✔	1.333	Bolt Shear
T39	75	Leg	A325N	0.7500	6	0.00	19.44	0.000 ✔	1.333	Bolt Tension
		Diagonal	A325N	0.5000	2	2.49	4.12	0.603 ✔	1.333	Bolt Shear
		Horizontal	A325N	0.6250	2	1.42	6.44	0.220 ✔	1.333	Bolt Shear
		Top Girt	A325N	0.5000	2	1.01	4.12	0.246 ✔	1.333	Bolt Shear
T40	50	Leg	A325N	0.7500	6	0.00	19.44	0.000 ✔	1.333	Bolt Tension
		Diagonal	A325N	0.5000	2	2.90	4.12	0.704 ✔	1.333	Bolt Shear
		Horizontal	A325N	0.6250	2	1.66	6.44	0.257 ✔	1.333	Bolt Shear
		Top Girt	A325N	0.5000	2	2.61	4.12	0.634 ✔	1.333	Bolt Shear

Section No.	Elevation ft	Component Type	Bolt Grade	Bolt Size in	Number Of Bolts	Maximum Load per Bolt K	Allowable Load K	Ratio Load / Allowable	Allowable Ratio	Criteria
T41	25	Leg	A325N	0.7500	6	0.00	19.44	0.000 ✔	1.333	Bolt Tension
		Diagonal	A325N	0.5000	2	1.84	4.12	0.446 ✔	1.333	Bolt Shear
		Horizontal	A325N	0.6250	2	1.10	6.44	0.170 ✔	1.333	Bolt Shear
		Top Girt	A325N	0.5000	2	0.71	4.12	0.173 ✔	1	Bolt Shear

Guy Design Data

Section No.	Elevation ft	Size	Initial Tension K	Breaking Load K	Actual T K	Allowable T_a K	Required S.F.	Actual S.F.
T4	350.00 (A) (679)	7/8 EHS	7.97	79.70	25.57	39.85	2.000	3.117 ✔
	350.00 (A) (680)	7/8 EHS	7.97	79.70	25.45	39.85	2.000	3.132 ✔
	350.00 (B) (673)	7/8 EHS	7.97	79.70	24.96	39.85	2.000	3.193 ✔
	350.00 (B) (674)	7/8 EHS	7.97	79.70	25.63	39.85	2.000	3.109 ✔
	350.00 (C) (667)	7/8 EHS	7.97	79.70	25.67	39.85	2.000	3.105 ✔
	350.00 (C) (668)	7/8 EHS	7.97	79.70	25.14	39.85	2.000	3.170 ✔
T12	300.00 (A) (697)	7/8 EHS	7.97	79.70	27.68	39.85	2.000	2.880 ✔
	300.00 (A) (698)	7/8 EHS	7.97	79.70	27.44	39.85	2.000	2.904 ✔
	300.00 (B) (691)	7/8 EHS	7.97	79.70	27.19	39.85	2.000	2.932 ✔
	300.00 (B) (692)	7/8 EHS	7.97	79.70	27.40	39.85	2.000	2.908 ✔
	300.00 (C) (685)	7/8 EHS	7.97	79.70	27.38	39.85	2.000	2.910 ✔
	300.00 (C) (686)	7/8 EHS	7.97	79.70	27.40	39.85	2.000	2.909 ✔
T24	225.00 (A) (715)	3/4 EHS	5.83	58.30	23.32	29.15	2.000	2.500 ✔
	225.00 (A) (716)	3/4 EHS	5.83	58.30	23.57	29.15	2.000	2.474 ✔
	225.00 (B) (709)	3/4 EHS	5.83	58.30	23.71	29.15	2.000	2.458 ✔
	225.00 (B) (710)	3/4 EHS	5.83	58.30	23.05	29.15	2.000	2.530 ✔
	225.00 (C) (703)	3/4 EHS	5.83	58.30	23.03	29.15	2.000	2.532 ✔
	225.00 (C) (704)	3/4 EHS	5.83	58.30	23.44	29.15	2.000	2.487 ✔
T31	162.50 (A) (723)	3/4 EHS	5.83	58.30	24.45	29.15	2.000	2.384 ✔
	162.50 (B) (722)	3/4 EHS	5.83	58.30	24.52	29.15	2.000	2.377 ✔
	162.50 (C) (721)	3/4 EHS	5.83	58.30	24.28	29.15	2.000	2.401 ✔

Section No.	Elevation ft	Size	Initial Tension K	Breaking Load K	Actual T K	Allowable T_a K	Required S.F.	Actual S.F.
T35	100.00 (A) (736)	9/16 EHS	3.50	35.00	13.50	17.50	2.000	2.593 ✔
	100.00 (A) (737)	9/16 EHS	3.50	35.00	13.91	17.50	2.000	2.517 ✔
	100.00 (B) (730)	9/16 EHS	3.50	35.00	14.53	17.50	2.000	2.408 ✔
	100.00 (B) (731)	9/16 EHS	3.50	35.00	12.96	17.50	2.000	2.701 ✔
	100.00 (C) (724)	9/16 EHS	3.50	35.00	13.06	17.50	2.000	2.679 ✔
	100.00 (C) (725)	9/16 EHS	3.50	35.00	14.09	17.50	2.000	2.483 ✔
T40	50.00 (A) (744)	9/16 EHS	3.50	35.00	13.17	17.50	2.000	2.657 ✔
	50.00 (B) (743)	9/16 EHS	3.50	35.00	13.04	17.50	2.000	2.685 ✔
	50.00 (C) (742)	9/16 EHS	3.50	35.00	13.29	17.50	2.000	2.634 ✔

Compression Checks

Leg Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	Mast Stability Index	F_a ksi	A in^2	Actual P K	Allow. P_a K	Ratio $\frac{P}{P_a}$
T1	368.75 - 362.5	2 3/4	6.25	6.25	109.1 K=1.00	1.00	11.794	5.9396	-1.12	70.05	0.016 ✔
T2	362.5 - 356.25	2 3/4	6.25	6.25	109.1 K=1.00	1.00	11.794	5.9396	-2.00	70.05	0.028 ✔
T3	356.25 - 350	2 3/4	6.25	6.25	109.1 K=1.00	1.00	11.794	5.9396	-8.41	70.05	0.120 ✔
T4	350 - 343.75	3	6.25	6.25	100.0 K=1.00	1.00	12.978	7.0686	-7.31	91.73	0.080 ✔
T5	343.75 - 337.5	3	6.25	6.25	100.0 K=1.00	1.00	12.978	7.0686	-46.21	91.73	0.504 ✔
T6	337.5 - 331.25	3	6.25	6.25	100.0 K=1.00	1.00	12.978	7.0686	-47.58	91.73	0.519 ✔
T7	331.25 - 325	3	6.25	6.25	100.0 K=1.00	1.00	12.978	7.0686	-48.27	91.73	0.526 ✔
T8	325 - 318.75	3 1/4	6.25	6.25	92.3 K=1.00	1.00	13.928	8.2958	-49.41	115.55	0.428 ✔
T9	318.75 - 312.5	3 1/4	6.25	6.25	92.3 K=1.00	1.00	13.928	8.2958	-48.08	115.55	0.416 ✔
T10	312.5 - 306.25	3 1/4	6.25	6.25	92.3 K=1.00	1.00	13.928	8.2958	-46.53	115.55	0.403 ✔
T11	306.25 - 300	3 1/4	6.25	6.25	92.3 K=1.00	1.00	13.928	8.2958	-44.46	115.55	0.385 ✔
T12	300 - 293.75	3 1/4	6.25	6.25	92.3 K=1.00	1.00	13.928	8.2958	-36.87	115.55	0.319 ✔
T13	293.75 - 287.5	3 1/4	6.25	6.25	92.3	1.00	13.928	8.2958	-95.32	115.55	0.825

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	Mast Stability Index	F_a ksi	A in^2	Actual P K	Allow. P_a K	Ratio $\frac{P}{P_a}$
					K=1.00						✔
T14	287.5 - 281.25	3 1/4	6.25	6.25	92.3	1.00	13.928	8.2958	-99.87	115.55	0.864
					K=1.00						✔
T15	281.25 - 275	3 1/4	6.25	6.25	92.3	1.00	13.928	8.2958	-103.44	115.55	0.895
					K=1.00						✔
T16	275 - 268.75	3 1/4	6.25	6.25	92.3	1.00	13.928	8.2958	-105.65	115.55	0.914
					K=1.00						✔
T17	268.75 - 262.5	3 1/4	6.25	6.25	92.3	1.00	13.928	8.2958	-106.59	115.55	0.923
					K=1.00						✔
T18	262.5 - 256.25	3 1/4	6.25	6.25	92.3	1.00	13.928	8.2958	-106.12	115.55	0.918
					K=1.00						✔
T19	256.25 - 250	3 1/4	6.25	6.25	92.3	1.00	13.928	8.2958	-105.02	115.55	0.909
					K=1.00						✔
T20	250 - 243.75	3 1/4	6.25	6.25	92.3	1.00	13.928	8.2958	-102.00	115.55	0.883
					K=1.00						✔
T21	243.75 - 237.5	3 1/4	6.25	6.25	92.3	1.00	13.928	8.2958	-99.11	115.55	0.858
					K=1.00						✔
T22	237.5 - 231.25	3 1/4	6.25	6.25	92.3	1.00	13.928	8.2958	-87.22	115.55	0.755
					K=1.00						✔
T23	231.25 - 225	3 1/4	6.25	6.25	92.3	1.00	13.928	8.2958	-82.70	115.55	0.716
					K=1.00						✔
T24	225 - 218.75	3	6.25	6.25	100.0	1.00	12.978	7.0686	-63.01	91.73	0.687
					K=1.00						✔
T25	218.75 - 212.5	3	6.25	6.25	100.0	1.00	12.978	7.0686	-109.54	91.73	1.194
					K=1.00						✔
T26	212.5 - 206.25	3	6.25	6.25	100.0	1.00	12.978	7.0686	-114.05	91.73	1.243
					K=1.00						✔
T27	206.25 - 200	3	6.25	6.25	100.0	1.00	12.978	7.0686	-117.22	91.73	1.278
					K=1.00						✔
T28	200 - 175	3	25.00	3.13	50.0	1.00	18.351	7.0686	-118.88	129.71	0.916
					K=1.00						✔
T29	175 - 168.75	3 1/4	6.25	6.25	92.3	1.00	13.928	8.2958	-107.18	115.55	0.928
					K=1.00						✔
T30	168.75 - 162.5	3 1/4	6.25	6.25	92.3	1.00	13.928	8.2958	-102.26	115.55	0.885
					K=1.00						✔
T31	162.5 - 156.25	3 1/4	6.25	6.25	92.3	1.00	13.928	8.2958	-110.48	115.55	0.956
					K=1.00						✔
T32	156.25 - 150	3 1/4	6.25	6.25	92.3	1.00	13.928	8.2958	-114.38	115.55	0.990
					K=1.00						✔
T33	150 - 125	3 1/4	25.00	6.25	92.3	1.00	13.928	8.2958	-117.91	115.55	1.020
					K=1.00						✔
T34	125 - 100	3 1/4	25.00	6.25	92.3	1.00	13.928	8.2958	-121.54	115.55	1.052
					K=1.00						✔
T35	100 - 93.75	3 1/4	6.25	6.25	92.3	1.00	13.928	8.2958	-100.35	115.55	0.868
					K=1.00						✔
T36	93.75 - 87.5	3 1/4	6.25	6.25	92.3	1.00	13.928	8.2958	-116.30	115.55	1.007
					K=1.00						✔
T37	87.5 - 81.25	3 1/4	6.25	6.25	92.3	1.00	13.928	8.2958	-115.89	115.55	1.003
					K=1.00						✔
T38	81.25 - 75	3 1/4	6.25	6.25	92.3	1.00	13.928	8.2958	-117.15	115.55	1.014
					K=1.00						✔
T39	75 - 50	3 1/4	25.00	6.25	92.3	1.00	13.928	8.2958	-117.25	115.55	1.015

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	Mast Stability Index	F_a ksi	A in^2	Actual P K	Allow. P_a K	Ratio $\frac{P}{P_a}$
T40	50 - 25	3 1/4	25.00	6.25	K=1.00 92.3	1.00	13.928	8.2958	-126.19	115.55	✔ 1.092
T41	25 - 0	3 1/4	25.00	6.25	K=1.00 92.3	1.00	13.928	8.2958	-126.75	115.55	✔ 1.097
					K=1.00						✔

Diagonal Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P K	Allow. P_a K	Ratio $\frac{P}{P_a}$
T1	368.75 - 362.5	L2 1/2x2 1/2x1/4	8.00	3.65	96.9 K=1.09	13.362	1.1900	-0.41	15.90	0.026 ✔
T2	362.5 - 356.25	2L3x3x5/16	8.00	3.65	47.5 K=1.00	18.566	3.5500	-1.21	65.91	0.018 ✔
T3	356.25 - 350	2L3x3x5/16	8.00	3.65	47.5 K=1.00	18.566	3.5500	-5.01	65.91	0.076 ✔
T4	350 - 343.75	L3x2 1/2x1/4	8.00	3.62	91.7 K=1.11	14.000	1.3100	-4.13	18.34	0.225 ✔
T12	300 - 293.75	L3x2 1/2x1/4	8.00	3.59	91.1 K=1.12	14.068	1.3100	-7.72	18.43	0.419 ✔
T24	225 - 218.75	2L2 1/2x2 1/2x1/4	8.00	3.60	56.2 K=1.00	17.785	2.3800	-14.47	42.33	0.342 ✔
T35	100 - 93.75	2L2 1/2x2 1/2x1/4	8.00	3.59	56.0 K=1.00	17.810	2.3800	-15.32	42.39	0.361 ✔

Horizontal Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P K	Allow. P_a K	Ratio $\frac{P}{P_a}$
T28	200 - 175	P1.25x.14	5.00	4.75	105.6 K=1.00	12.254	0.6685	-3.14	8.19	0.383 ✔
T33	150 - 125	P1.25x.14	5.00	4.73	105.2 K=1.00	12.315	0.6685	-3.06	8.23	0.372 ✔
T34	125 - 100	P1.25x.14	5.00	4.73	105.2 K=1.00	12.315	0.6685	-7.03	8.23	0.854 ✔
T39	75 - 50	P1.25x.14	5.00	4.73	105.2 K=1.00	12.315	0.6685	-2.84	8.23	0.345 ✔
T40	50 - 25	P1.25x.14	5.00	4.73	105.2 K=1.00	12.315	0.6685	-3.32	8.23	0.403 ✔
T41	25 - 0	P1.25x.14	5.00	4.73	105.2 K=1.00	12.315	0.6685	-2.20	8.23	0.267 ✔

Secondary Horizontal Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P K	Allow. P_a K	Ratio $\frac{P}{P_a}$
T28	200 - 175	P1.25x.14	5.00	4.75	105.6 K=1.00	12.254	0.6685	-2.06	8.19	0.251 ✔

Top Girt Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P K	Allow. P_a K	Ratio $\frac{P}{P_a}$
T1	368.75 - 362.5	2L2 1/2x2x1/4	5.00	4.38	67.0 K=1.00	16.742	2.1300	-0.09	35.66	0.002 ✔
T2	362.5 - 356.25	2L2 1/2x3x1/4	5.00	4.44	70.7 K=1.00	16.356	2.6300	-0.16	43.02	0.004 ✔
T3	356.25 - 350	2L2 1/2x3x1/4	5.00	4.44	70.7 K=1.00	16.356	2.6300	-1.21	43.02	0.028 ✔
T4	350 - 343.75	2L2 1/2x2x1/4	5.00	4.38	67.0 K=1.00	16.742	2.1300	-6.33	35.66	0.177 ✔
T5	343.75 - 337.5	2L2 1/2x2x1/4	5.00	4.35	66.6 K=1.00	16.774	2.1300	-4.23	35.73	0.119 ✔
T6	337.5 - 331.25	P1.25x.14	5.00	4.75	105.6 K=1.00	12.254	0.6685	-2.53	8.19	0.308* ✔
T7	331.25 - 325	P1.25x.14	5.00	4.75	105.6 K=1.00	12.254	0.6685	-2.41	8.19	0.294* ✔
T8	325 - 318.75	P1.25x.14	5.00	4.75	105.6 K=1.00	12.254	0.6685	-2.87	8.19	0.351* ✔
T9	318.75 - 312.5	P1.25x.14	5.00	4.73	105.2 K=1.00	12.315	0.6685	-3.32	8.23	0.403* ✔
T10	312.5 - 306.25	P1.25x.14	5.00	4.73	105.2 K=1.00	12.315	0.6685	-3.43	8.23	0.416* ✔
T11	306.25 - 300	2L2 1/2x2x1/4	5.00	4.33	66.3 K=1.00	16.807	2.1300	-3.84	35.80	0.107* ✔
T12	300 - 293.75	2L2 1/2x2x1/4	5.00	4.33	66.3 K=1.00	16.807	2.1300	-8.38	35.80	0.234 ✔
T13	293.75 - 287.5	2L2 1/2x2x1/4	5.00	4.33	66.3 K=1.00	16.807	2.1300	-2.64	35.80	0.074 ✔
T14	287.5 - 281.25	P1.25x.14	5.00	4.73	105.2 K=1.00	12.315	0.6685	-2.64	8.23	0.321* ✔
T15	281.25 - 275	P1.25x.14	5.00	4.73	105.2 K=1.00	12.315	0.6685	-2.11	8.23	0.256* ✔
T16	275 - 268.75	P1.25x.14	5.00	4.73	105.2 K=1.00	12.315	0.6685	-2.12	8.23	0.258* ✔
T17	268.75 - 262.5	P1.25x.14	5.00	4.73	105.2 K=1.00	12.315	0.6685	-2.12	8.23	0.257* ✔
T18	262.5 - 256.25	P1.25x.14	5.00	4.73	105.2 K=1.00	12.315	0.6685	-2.09	8.23	0.254* ✔
T19	256.25 - 250	P1.25x.14	5.00	4.73	105.2 K=1.00	12.315	0.6685	-2.57	8.23	0.312* ✔

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P K	Allow. P_a K	Ratio $\frac{P}{P_a}$
T20	250 - 243.75	2L2 1/2x2x1/4	5.00	4.40	67.3 K=1.00	16.710	2.1300	-3.20	35.59	0.090*
T21	243.75 - 237.5	2L2 1/2x2x1/4	5.00	4.33	66.3 K=1.00	16.807	2.1300	-4.74	35.80	0.132
T22	237.5 - 231.25	2L2 1/2x2x1/4	5.00	4.33	66.3 K=1.00	16.807	2.1300	-7.05	35.80	0.197
T23	231.25 - 225	2L2 1/2x2x1/4	5.00	4.33	66.3 K=1.00	16.807	2.1300	-8.02	35.80	0.224
T24	225 - 218.75	2L2 1/2x2x1/4	5.00	4.33	66.3 K=1.00	16.807	2.1300	-6.55	35.80	0.183
T26	212.5 - 206.25	P1.25x.14	5.00	4.75	105.6 K=1.00	12.254	0.6685	-4.23	8.19	0.516
T27	206.25 - 200	P1.25x.14	5.00	4.75	105.6 K=1.00	12.254	0.6685	-3.33	8.19	0.407
T28	200 - 175	P1.25x.14	5.00	4.75	105.6 K=1.00	12.254	0.6685	-2.24	8.19	0.274
T29	175 - 168.75	P1.25x.14	5.00	4.75	105.6 K=1.00	12.254	0.6685	-4.32	8.19	0.528
T30	168.75 - 162.5	P1.25x.14	5.00	4.73	105.2 K=1.00	12.315	0.6685	-5.31	8.23	0.645
T31	162.5 - 156.25	2L2 1/2x2x1/4	5.00	4.40	67.3 K=1.00	16.710	2.1300	-1.31	35.59	0.037
T32	156.25 - 150	P1.25x.14	5.00	4.73	105.2 K=1.00	12.315	0.6685	-2.63	8.23	0.319
T33	150 - 125	P1.25x.14	5.00	4.73	105.2 K=1.00	12.315	0.6685	-1.68	8.23	0.204*
T34	125 - 100	P1.25x.14	5.00	4.73	105.2 K=1.00	12.315	0.6685	-4.03	8.23	0.490
T35	100 - 93.75	2L2 1/2x2x1/4	5.00	4.33	66.3 K=1.00	16.807	2.1300	-3.93	35.80	0.110
T37	87.5 - 81.25	P1.25x.14	5.00	4.73	105.2 K=1.00	12.315	0.6685	-4.21	8.23	0.511
T38	81.25 - 75	P1.25x.14	5.00	4.73	105.2 K=1.00	12.315	0.6685	-3.18	8.23	0.387
T39	75 - 50	P1.25x.14	5.00	4.73	105.2 K=1.00	12.315	0.6685	-2.03	8.23	0.246
T40	50 - 25	L2 1/2x2x1/4	5.00	4.40	122.7 K=0.99	9.890	1.0600	-0.44	10.48	0.042
T41	25 - 0	P1.25x.14	5.00	4.73	105.2 K=1.00	12.315	0.6685	-1.43	8.23	0.173*

* DL controls

Torque-Arm Top Design Data

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P K	Allow. P_a K	Ratio $\frac{P}{P_a}$
T35	100 - 93.75 (726)	2L3x2 1/2x1/4	6.03	5.89	74.8 K=1.00	15.921	2.6300	-0.99	41.87	0.024

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P K	Allow. P_a K	Ratio $\frac{P}{P_a}$
T35	100 - 93.75 (727)	2L3x2 1/2x1/4	6.03	5.89	74.8 K=1.00	15.921	2.6300	-1.01	41.87	0.024 ✔
T35	100 - 93.75 (732)	2L3x2 1/2x1/4	6.03	5.89	74.8 K=1.00	15.921	2.6300	-0.99	41.87	0.024 ✔
T35	100 - 93.75 (733)	2L3x2 1/2x1/4	6.03	5.89	74.8 K=1.00	15.921	2.6300	-1.11	41.87	0.027 ✔
T35	100 - 93.75 (738)	2L3x2 1/2x1/4	6.03	5.89	74.8 K=1.00	15.921	2.6300	-1.03	41.87	0.025 ✔
T35	100 - 93.75 (739)	2L3x2 1/2x1/4	6.03	5.89	74.8 K=1.00	15.921	2.6300	-0.95	41.87	0.023 ✔

Torque-Arm Bottom Design Data

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P K	Allow. P_a K	Ratio $\frac{P}{P_a}$
T4	350 - 343.75 (671)	2L3x2 1/2x1/4	8.68	8.50	108.0 K=1.00	11.943	2.6300	-26.75	31.41	0.852 ✔
T4	350 - 343.75 (672)	2L3x2 1/2x1/4	8.68	8.50	108.0 K=1.00	11.943	2.6300	-27.09	31.41	0.863 ✔
T4	350 - 343.75 (677)	2L3x2 1/2x1/4	8.68	8.50	108.0 K=1.00	11.943	2.6300	-27.38	31.41	0.872 ✔
T4	350 - 343.75 (678)	2L3x2 1/2x1/4	8.68	8.50	108.0 K=1.00	11.943	2.6300	-27.21	31.41	0.866 ✔
T4	350 - 343.75 (683)	2L3x2 1/2x1/4	8.68	8.50	108.0 K=1.00	11.943	2.6300	-26.76	31.41	0.852 ✔
T4	350 - 343.75 (684)	2L3x2 1/2x1/4	8.68	8.50	108.0 K=1.00	11.943	2.6300	-27.25	31.41	0.868 ✔
T12	300 - 293.75 (689)	2L3x2 1/2x1/4	8.68	8.49	107.8 K=1.00	11.968	2.6300	-29.21	31.48	0.928 ✔
T12	300 - 293.75 (690)	2L3x2 1/2x1/4	8.68	8.49	107.8 K=1.00	11.968	2.6300	-29.62	31.48	0.941 ✔
T12	300 - 293.75 (695)	2L3x2 1/2x1/4	8.68	8.49	107.8 K=1.00	11.968	2.6300	-29.78	31.48	0.946 ✔
T12	300 - 293.75 (696)	2L3x2 1/2x1/4	8.68	8.49	107.8 K=1.00	11.968	2.6300	-29.65	31.48	0.942 ✔
T12	300 - 293.75 (701)	2L3x2 1/2x1/4	8.68	8.49	107.8 K=1.00	11.968	2.6300	-29.23	31.48	0.928 ✔
T12	300 - 293.75 (702)	2L3x2 1/2x1/4	8.68	8.49	107.8 K=1.00	11.968	2.6300	-29.76	31.48	0.945 ✔
T24	225 - 218.75 (707)	2L3x2 1/2x1/4	8.68	8.50	108.0 K=1.00	11.943	2.6300	-22.39	31.41	0.713 ✔
T24	225 - 218.75 (708)	2L3x2 1/2x1/4	8.68	8.50	108.0 K=1.00	11.943	2.6300	-23.40	31.41	0.745 ✔
T24	225 - 218.75 (713)	2L3x2 1/2x1/4	8.68	8.50	108.0 K=1.00	11.943	2.6300	-23.17	31.41	0.738 ✔
T24	225 - 218.75 (714)	2L3x2 1/2x1/4	8.68	8.50	108.0 K=1.00	11.943	2.6300	-23.70	31.41	0.755 ✔
T24	225 - 218.75 (719)	2L3x2 1/2x1/4	8.68	8.50	108.0 K=1.00	11.943	2.6300	-22.13	31.41	0.704 ✔

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P K	Allow. P_a K	Ratio $\frac{P}{P_a}$
T24	225 - 218.75 (720)	2L3x2 1/2x1/4	8.68	8.50	108.0 K=1.00	11.943	2.6300	-22.59	31.41	0.719 ✔
T35	100 - 93.75 (728)	2L3x2 1/2x1/4	8.68	8.49	107.8 K=1.00	11.968	2.6300	-10.29	31.48	0.327 ✔
T35	100 - 93.75 (729)	2L3x2 1/2x1/4	8.68	8.49	107.8 K=1.00	11.968	2.6300	-10.70	31.48	0.340 ✔
T35	100 - 93.75 (734)	2L3x2 1/2x1/4	8.68	8.49	107.8 K=1.00	11.968	2.6300	-11.28	31.48	0.359 ✔
T35	100 - 93.75 (735)	2L3x2 1/2x1/4	8.68	8.49	107.8 K=1.00	11.968	2.6300	-11.28	31.48	0.358 ✔
T35	100 - 93.75 (740)	2L3x2 1/2x1/4	8.68	8.49	107.8 K=1.00	11.968	2.6300	-9.81	31.48	0.312 ✔
T35	100 - 93.75 (741)	2L3x2 1/2x1/4	8.68	8.49	107.8 K=1.00	11.968	2.6300	-10.32	31.48	0.328 ✔

Tension Checks

Leg Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P K	Allow. P_a K	Ratio $\frac{P}{P_a}$
T1	368.75 - 362.5	2 3/4	6.25	6.25	109.1	21.600	5.9396	0.32	128.29	0.002 ✔
T2	362.5 - 356.25	2 3/4	6.25	6.25	109.1	21.600	5.9396	0.87	128.29	0.007 ✔
T3	356.25 - 350	2 3/4	6.25	6.25	109.1	21.600	5.9396	5.78	128.29	0.045 ✔
T4	350 - 343.75	3	6.25	6.25	100.0	21.600	7.0686	4.98	152.68	0.033 ✔
T16	275 - 268.75	3 1/4	6.25	6.25	92.3	21.600	8.2958	0.02	179.19	0.000 ✔
T17	268.75 - 262.5	3 1/4	6.25	6.25	92.3	21.600	8.2958	2.01	179.19	0.011 ✔
T18	262.5 - 256.25	3 1/4	6.25	6.25	92.3	21.600	8.2958	2.82	179.19	0.016 ✔
T19	256.25 - 250	3 1/4	6.25	6.25	92.3	21.600	8.2958	0.98	179.19	0.005 ✔

Diagonal Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P K	Allow. P_a K	Ratio $\frac{P}{P_a}$
T1	368.75 - 362.5	L2 1/2x2 1/2x1/4	8.00	3.65	59.6	29.000	0.7753	0.34	22.48	0.015

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P K	Allow. P_a K	Ratio $\frac{P}{P_a}$
T2	362.5 - 356.25	2L3x3x5/16	8.00	3.65	49.7	29.000	2.3695	0.86	68.72	0.012 ✔
T3	356.25 - 350	2L3x3x5/16	8.00	3.65	49.7	29.000	2.3695	5.34	68.72	0.078 ✔
T4	350 - 343.75	L3x2 1/2x1/4	8.00	3.62	61.0	29.000	0.8419	3.76	24.41	0.154 ✔
T5	343.75 - 337.5	5/8	8.00	7.60	584.0	21.600	0.3068	4.20	6.63	0.634 ✔
T6	337.5 - 331.25	5/8	8.00	7.60	584.0	21.600	0.3068	3.87	6.63	0.584 ✔
T7	331.25 - 325	5/8	8.00	7.60	584.0	21.600	0.3068	3.43	6.63	0.518 ✔
T8	325 - 318.75	3/4	8.00	7.59	485.6	21.600	0.4418	3.72	9.54	0.390 ✔
T9	318.75 - 312.5	3/4	8.00	7.57	484.5	21.600	0.4418	3.82	9.54	0.400 ✔
T10	312.5 - 306.25	3/4	8.00	7.57	484.5	21.600	0.4418	4.12	9.54	0.431 ✔
T11	306.25 - 300	3/4	8.00	7.57	484.5	21.600	0.4418	9.09	9.54	0.953 ✔
T12	300 - 293.75	L3x2 1/2x1/4	8.00	3.59	60.4	29.000	0.8419	2.49	24.41	0.102 ✔
T13	293.75 - 287.5	3/4	8.00	7.57	484.5	21.600	0.4418	6.04	9.54	0.633 ✔
T14	287.5 - 281.25	5/8	8.00	7.57	581.4	21.600	0.3068	4.78	6.63	0.722 ✔
T15	281.25 - 275	5/8	8.00	7.57	581.4	21.600	0.3068	3.64	6.63	0.549 ✔
T16	275 - 268.75	5/8	8.00	7.57	581.4	21.600	0.3068	2.95	6.63	0.446 ✔
T17	268.75 - 262.5	5/8	8.00	7.57	581.4	21.600	0.3068	2.55	6.63	0.385 ✔
T18	262.5 - 256.25	5/8	8.00	7.57	581.4	21.600	0.3068	2.31	6.63	0.349 ✔
T19	256.25 - 250	3/4	8.00	7.57	484.5	21.600	0.4418	3.43	9.54	0.360 ✔
T20	250 - 243.75	3/4	8.00	7.57	484.5	21.600	0.4418	3.88	9.54	0.407 ✔
T21	243.75 - 237.5	3/4	8.00	7.57	484.5	21.600	0.4418	9.96	9.54	1.044 ✔
T22	237.5 - 231.25	3/4	8.00	7.57	484.5	21.600	0.4418	12.53	9.54	1.313 ✔
T23	231.25 - 225	1	8.00	7.57	363.4	21.600	0.7854	13.26	16.96	0.782 ✔
T25	218.75 - 212.5	5/8	8.00	7.60	584.0	21.600	0.3068	7.47	6.63	1.127 ✔
T26	212.5 - 206.25	5/8	8.00	7.60	584.0	21.600	0.3068	6.06	6.63	0.914 ✔
T27	206.25 - 200	5/8	8.00	7.60	584.0	21.600	0.3068	4.32	6.63	0.651 ✔
T28	200 - 175	5/8	8.00	7.60	584.0	21.600	0.3068	5.99	6.63	0.904 ✔

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P K	Allow. P_a K	Ratio $\frac{P}{P_a}$
T29	175 - 168.75	1	8.00	7.59	364.2	21.600	0.7854	8.11	16.96	0.478 ✔
T30	168.75 - 162.5	1	8.00	7.57	363.4	21.600	0.7854	8.86	16.96	0.522 ✔
T31	162.5 - 156.25	5/8	8.00	7.57	581.4	21.600	0.3068	4.65	6.63	0.702 ✔
T32	156.25 - 150	5/8	8.00	7.57	581.4	21.600	0.3068	3.78	6.63	0.571 ✔
T33	150 - 125	5/8	8.00	7.57	581.4	21.600	0.3068	5.36	6.63	0.809 ✔
T34	125 - 100	L2 1/2x2 1/2x3/16	8.00	7.17	116.8	29.000	0.5710	11.98	16.56	0.724 ✔
T36	93.75 - 87.5	3/4	8.00	7.57	484.5	21.600	0.4418	7.52	9.54	0.788 ✔
T37	87.5 - 81.25	5/8	8.00	7.57	581.4	21.600	0.3068	5.99	6.63	0.904 ✔
T38	81.25 - 75	5/8	8.00	7.57	581.4	21.600	0.3068	4.18	6.63	0.631 ✔
T39	75 - 50	5/8	8.00	7.57	581.4	21.600	0.3068	4.97	6.63	0.751 ✔
T40	50 - 25	5/8	8.00	7.57	581.4	21.600	0.3068	5.81	6.63	0.876 ✔
T41	25 - 0	5/8	8.00	7.57	581.4	21.600	0.3068	3.68	6.63	0.555 ✔

Horizontal Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P K	Allow. P_a K	Ratio $\frac{P}{P_a}$
T28	200 - 175	P1.25x.14	5.00	4.75	105.6	21.600	0.6685	2.06	14.44	0.143 ✔
T33	150 - 125	P1.25x.14	5.00	4.73	105.2	21.600	0.6685	2.04	14.44	0.141 ✔
T34	125 - 100	P1.25x.14	5.00	4.73	105.2	21.600	0.6685	2.11	14.44	0.146 ✔
T39	75 - 50	P1.25x.14	5.00	4.73	105.2	21.600	0.6685	2.03	14.44	0.141 ✔
T40	50 - 25	P1.25x.14	5.00	4.73	105.2	21.600	0.6685	2.19	14.44	0.151 ✔
T41	25 - 0	P1.25x.14	5.00	4.73	105.2	21.600	0.6685	2.20	14.44	0.152 ✔

Secondary Horizontal Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P K	Allow. P_a K	Ratio $\frac{P}{P_a}$
T28	200 - 175	P1.25x.14	5.00	4.75	105.6	21.600	0.6685	2.06	14.44	0.143 ✔

Top Girt Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P K	Allow. P_a K	Ratio $\frac{P}{P_a}$
T1	368.75 - 362.5	2L2 1/2x2x1/4	5.00	4.38	73.0	29.000	1.3162	0.10	38.17	0.003 ✔
T2	362.5 - 356.25	2L2 1/2x3x1/4	5.00	4.44	76.0	29.000	1.7381	0.30	50.41	0.006 ✔
T3	356.25 - 350	2L2 1/2x3x1/4	5.00	4.44	76.0	29.000	1.7381	1.22	50.41	0.024 ✔
T4	350 - 343.75	2L2 1/2x2x1/4	5.00	4.38	73.0	29.000	1.3162	9.14	38.17	0.239 ✔
T12	300 - 293.75	2L2 1/2x2x1/4	5.00	4.33	72.4	29.000	1.3162	12.05	38.17	0.316 ✔
T13	293.75 - 287.5	2L2 1/2x2x1/4	5.00	4.33	72.4	29.000	1.3162	0.61	38.17	0.016 ✔
T24	225 - 218.75	2L2 1/2x2x1/4	5.00	4.33	72.4	29.000	1.3162	16.92	38.17	0.443 ✔
T25	218.75 - 212.5	2L2 1/2x2x1/4	5.00	4.35	72.7	29.000	1.3162	5.83	38.17	0.153 ✔
T28	200 - 175	P1.25x.14	5.00	4.75	105.6	21.600	0.6685	0.01	14.44	0.001 ✔
T31	162.5 - 156.25	2L2 1/2x2x1/4	5.00	4.40	72.4	29.000	1.3631	7.44	39.53	0.188 ✔
T35	100 - 93.75	2L2 1/2x2x1/4	5.00	4.33	72.4	29.000	1.3162	16.45	38.17	0.431 ✔
T36	93.75 - 87.5	2L2 1/2x2x1/4	5.00	4.40	72.4	29.000	1.3631	7.01	39.53	0.177 ✔
T40	50 - 25	L2 1/2x2x1/4	5.00	4.40	95.8	29.000	0.6778	5.23	19.66	0.266 ✔
T41	25 - 0	P1.25x.14	5.00	4.73	105.2	21.600	0.6685	0.06	14.44	0.004 ✔

Torque-Arm Top Design Data

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P K	Allow. P_a K	Ratio $\frac{P}{P_a}$
T4	350 - 343.75 (669)	2L3x2 1/2x1/4	6.03	5.91	75.1	21.600	2.6300	22.87	56.81	0.403 ✔
T4	350 - 343.75 (670)	2L3x2 1/2x1/4	6.03	5.91	75.1	21.600	2.6300	23.41	56.81	0.412 ✔
T4	350 - 343.75	2L3x2 1/2x1/4	6.03	5.91	75.1	21.600	2.6300	22.41	56.81	0.394

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P K	Allow. P_a K	Ratio $\frac{P}{P_a}$
	(675)									✔
T4	350 - 343.75 (676)	2L3x2 1/2x1/4	6.03	5.91	75.1	21.600	2.6300	22.20	56.81	0.391 ✔
T4	350 - 343.75 (681)	2L3x2 1/2x1/4	6.03	5.91	75.1	21.600	2.6300	22.77	56.81	0.401 ✔
T4	350 - 343.75 (682)	2L3x2 1/2x1/4	6.03	5.91	75.1	21.600	2.6300	23.60	56.81	0.415 ✔
T12	300 - 293.75 (687)	2L3x2 1/2x1/4	6.03	5.89	74.8	21.600	2.6300	23.99	56.81	0.422 ✔
T12	300 - 293.75 (688)	2L3x2 1/2x1/4	6.03	5.89	74.8	21.600	2.6300	24.17	56.81	0.426 ✔
T12	300 - 293.75 (693)	2L3x2 1/2x1/4	6.03	5.89	74.8	21.600	2.6300	23.65	56.81	0.416 ✔
T12	300 - 293.75 (694)	2L3x2 1/2x1/4	6.03	5.89	74.8	21.600	2.6300	24.00	56.81	0.422 ✔
T12	300 - 293.75 (699)	2L3x2 1/2x1/4	6.03	5.89	74.8	21.600	2.6300	24.24	56.81	0.427 ✔
T12	300 - 293.75 (700)	2L3x2 1/2x1/4	6.03	5.89	74.8	21.600	2.6300	24.22	56.81	0.426 ✔
T24	225 - 218.75 (705)	2L3x2 1/2x1/4	6.03	5.89	74.8	21.600	2.6300	22.04	56.81	0.388 ✔
T24	225 - 218.75 (706)	2L3x2 1/2x1/4	6.03	5.89	74.8	21.600	2.6300	21.78	56.81	0.383 ✔
T24	225 - 218.75 (711)	2L3x2 1/2x1/4	6.03	5.89	74.8	21.600	2.6300	22.12	56.81	0.389 ✔
T24	225 - 218.75 (712)	2L3x2 1/2x1/4	6.03	5.89	74.8	21.600	2.6300	21.92	56.81	0.386 ✔
T24	225 - 218.75 (717)	2L3x2 1/2x1/4	6.03	5.89	74.8	21.600	2.6300	22.15	56.81	0.390 ✔
T24	225 - 218.75 (718)	2L3x2 1/2x1/4	6.03	5.89	74.8	21.600	2.6300	22.08	56.81	0.389 ✔
T35	100 - 93.75 (726)	2L3x2 1/2x1/4	6.03	5.89	74.8	21.600	2.6300	14.23	56.81	0.250 ✔
T35	100 - 93.75 (727)	2L3x2 1/2x1/4	6.03	5.89	74.8	21.600	2.6300	13.75	56.81	0.242 ✔
T35	100 - 93.75 (732)	2L3x2 1/2x1/4	6.03	5.89	74.8	21.600	2.6300	14.85	56.81	0.261 ✔
T35	100 - 93.75 (733)	2L3x2 1/2x1/4	6.03	5.89	74.8	21.600	2.6300	14.33	56.81	0.252 ✔
T35	100 - 93.75 (738)	2L3x2 1/2x1/4	6.03	5.89	74.8	21.600	2.6300	13.56	56.81	0.239 ✔
T35	100 - 93.75 (739)	2L3x2 1/2x1/4	6.03	5.89	74.8	21.600	2.6300	13.37	56.81	0.235 ✔

Torque-Arm Bottom Design Data

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P K	Allow. P_a K	Ratio $\frac{P}{P_a}$
T35	100 - 93.75	2L3x2 1/2x1/4	8.68	8.49	107.8	21.600	2.6300	0.76	56.81	0.013

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P K	Allow. P_a K	Ratio $\frac{P}{P_a}$
	(728)									✔
T35	100 - 93.75 (729)	2L3x2 1/2x1/4	8.68	8.49	107.8	21.600	2.6300	1.00	56.81	0.018 ✔
T35	100 - 93.75 (734)	2L3x2 1/2x1/4	8.68	8.49	107.8	21.600	2.6300	1.17	56.81	0.021 ✔
T35	100 - 93.75 (735)	2L3x2 1/2x1/4	8.68	8.49	107.8	21.600	2.6300	1.31	56.81	0.023 ✔
T35	100 - 93.75 (740)	2L3x2 1/2x1/4	8.68	8.49	107.8	21.600	2.6300	0.63	56.81	0.011 ✔
T35	100 - 93.75 (741)	2L3x2 1/2x1/4	8.68	8.49	107.8	21.600	2.6300	0.81	56.81	0.014 ✔

Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	$SF*P_{allow}$ K	% Capacity	Pass Fail
T1	368.75 - 362.5	Leg	2 3/4	1	-1.12	93.38	1.2	Pass
T2	362.5 - 356.25	Leg	2 3/4	13	-2.00	93.38	2.1	Pass
T3	356.25 - 350	Leg	2 3/4	26	-8.41	93.38	9.0	Pass
T4	350 - 343.75	Leg	3	38	-7.31	122.28	6.0	Pass
T5	343.75 - 337.5	Leg	3	49	-46.21	122.28	37.8	Pass
T6	337.5 - 331.25	Leg	3	61	-47.58	122.28	38.9	Pass
T7	331.25 - 325	Leg	3	73	-48.27	122.28	39.5	Pass
T8	325 - 318.75	Leg	3 1/4	86	-49.41	154.02	32.1	Pass
T9	318.75 - 312.5	Leg	3 1/4	98	-48.08	154.02	31.2	Pass
T10	312.5 - 306.25	Leg	3 1/4	110	-46.53	154.02	30.2	Pass
T11	306.25 - 300	Leg	3 1/4	122	-44.46	154.02	28.9	Pass
T12	300 - 293.75	Leg	3 1/4	134	-36.87	154.02	23.9	Pass
T13	293.75 - 287.5	Leg	3 1/4	146	-95.32	154.02	61.9	Pass
T14	287.5 - 281.25	Leg	3 1/4	158	-99.87	154.02	64.8	Pass
T15	281.25 - 275	Leg	3 1/4	170	-103.44	154.02	67.2	Pass
T16	275 - 268.75	Leg	3 1/4	182	-105.65	154.02	68.6	Pass
T17	268.75 - 262.5	Leg	3 1/4	194	-106.59	154.02	69.2	Pass
T18	262.5 - 256.25	Leg	3 1/4	207	-106.12	154.02	68.9	Pass
T19	256.25 - 250	Leg	3 1/4	219	-105.02	154.02	68.2	Pass
T20	250 - 243.75	Leg	3 1/4	231	-102.00	154.02	66.2	Pass
T21	243.75 - 237.5	Leg	3 1/4	243	-99.11	154.02	64.3	Pass
T22	237.5 - 231.25	Leg	3 1/4	255	-87.22	154.02	56.6	Pass
T23	231.25 - 225	Leg	3 1/4	266	-82.70	154.02	53.7	Pass
T24	225 - 218.75	Leg	3	278	-63.01	122.28	51.5	Pass
T25	218.75 - 212.5	Leg	3	291	-109.54	122.28	89.6	Pass
T26	212.5 - 206.25	Leg	3	303	-114.05	122.28	93.3	Pass
T27	206.25 - 200	Leg	3	314	-117.22	122.28	95.9	Pass
T28	200 - 175	Leg	3	326	-118.88	172.91	68.8	Pass
T29	175 - 168.75	Leg	3 1/4	376	-107.18	154.02	69.6	Pass
T30	168.75 - 162.5	Leg	3 1/4	388	-102.26	154.02	66.4	Pass
T31	162.5 - 156.25	Leg	3 1/4	402	-110.48	154.02	71.7	Pass
T32	156.25 - 150	Leg	3 1/4	412	-114.38	154.02	74.3	Pass
T33	150 - 125	Leg	3 1/4	424	-117.91	154.02	76.5	Pass
T34	125 - 100	Leg	3 1/4	465	-121.54	154.02	78.9	Pass
T35	100 - 93.75	Leg	3 1/4	502	-100.35	154.02	65.2	Pass
T36	93.75 - 87.5	Leg	3 1/4	514	-116.30	154.02	75.5	Pass
T37	87.5 - 81.25	Leg	3 1/4	526	-115.89	154.02	75.2	Pass
T38	81.25 - 75	Leg	3 1/4	538	-117.15	154.02	76.1	Pass
T39	75 - 50	Leg	3 1/4	550	-117.25	154.02	76.1	Pass

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	$SF*P_{allow}$ K	% Capacity	Pass Fail
T40	50 - 25	Leg	3 1/4	589	-126.19	154.02	81.9	Pass
T41	25 - 0	Leg	3 1/4	628	-126.75	154.02	82.3	Pass
T1	368.75 - 362.5	Diagonal	L2 1/2x2 1/2x1/4	11	-0.41	21.20	1.9	Pass
							3.7 (b)	
T2	362.5 - 356.25	Diagonal	2L3x3x5/16	20	-1.21	87.86	1.4	Pass
							5.5 (b)	
T3	356.25 - 350	Diagonal	2L3x3x5/16	34	5.34	91.60	5.8	Pass
							24.3 (b)	
T4	350 - 343.75	Diagonal	L3x2 1/2x1/4	43	-4.13	24.45	16.9	Pass
							24.0 (b)	
T5	343.75 - 337.5	Diagonal	5/8	55	4.20	8.83	47.6	Pass
T6	337.5 - 331.25	Diagonal	5/8	67	3.87	8.83	43.8	Pass
T7	331.25 - 325	Diagonal	5/8	79	3.43	8.83	38.8	Pass
T8	325 - 318.75	Diagonal	3/4	96	3.72	12.72	29.3	Pass
							33.9 (b)	
T9	318.75 - 312.5	Diagonal	3/4	105	3.82	12.72	30.0	Pass
							34.7 (b)	
T10	312.5 - 306.25	Diagonal	3/4	117	4.12	12.72	32.4	Pass
							37.5 (b)	
T11	306.25 - 300	Diagonal	3/4	130	9.09	12.72	71.5	Pass
							82.7 (b)	
T12	300 - 293.75	Diagonal	L3x2 1/2x1/4	142	-7.72	24.57	31.4	Pass
							45.0 (b)	
T13	293.75 - 287.5	Diagonal	3/4	152	6.04	12.72	47.5	Pass
							54.9 (b)	
T14	287.5 - 281.25	Diagonal	5/8	164	4.78	8.83	54.2	Pass
T15	281.25 - 275	Diagonal	5/8	176	3.64	8.83	41.2	Pass
T16	275 - 268.75	Diagonal	5/8	188	2.95	8.83	33.4	Pass
T17	268.75 - 262.5	Diagonal	5/8	203	2.55	8.83	28.9	Pass
T18	262.5 - 256.25	Diagonal	5/8	215	2.31	8.83	26.2	Pass
T19	256.25 - 250	Diagonal	3/4	225	3.43	12.72	27.0	Pass
							31.2 (b)	
T20	250 - 243.75	Diagonal	3/4	236	3.88	12.72	30.5	Pass
							35.3 (b)	
T21	243.75 - 237.5	Diagonal	3/4	249	9.96	12.72	78.3	Pass
							90.6 (b)	
T22	237.5 - 231.25	Diagonal	3/4	261	12.53	12.72	98.5	Pass
T23	231.25 - 225	Diagonal	1	273	13.26	22.61	58.7	Pass
							84.5 (b)	
T24	225 - 218.75	Diagonal	2L2 1/2x2 1/2x1/4	283	-14.47	56.43	25.6	Pass
							42.1 (b)	
T25	218.75 - 212.5	Diagonal	5/8	296	7.47	8.83	84.6	Pass
T26	212.5 - 206.25	Diagonal	5/8	307	6.06	8.83	68.6	Pass
T27	206.25 - 200	Diagonal	5/8	319	4.32	8.83	48.9	Pass
T28	200 - 175	Diagonal	5/8	336	5.99	8.83	67.8	Pass
T29	175 - 168.75	Diagonal	1	387	8.11	22.61	35.9	Pass
							73.8 (b)	
T30	168.75 - 162.5	Diagonal	1	399	8.86	22.61	39.2	Pass
							80.6 (b)	
T31	162.5 - 156.25	Diagonal	5/8	408	4.65	8.83	52.7	Pass
T32	156.25 - 150	Diagonal	5/8	420	3.78	8.83	42.8	Pass
T33	150 - 125	Diagonal	5/8	430	5.36	8.83	60.7	Pass
T34	125 - 100	Diagonal	L2 1/2x2 1/2x3/16	470	11.98	22.07	54.3	Pass
							69.8 (b)	
T35	100 - 93.75	Diagonal	2L2 1/2x2 1/2x1/4	509	-15.32	56.50	27.1	Pass
							44.6 (b)	
T36	93.75 - 87.5	Diagonal	3/4	520	7.52	12.72	59.1	Pass
							68.4 (b)	
T37	87.5 - 81.25	Diagonal	5/8	532	5.99	8.83	67.8	Pass
T38	81.25 - 75	Diagonal	5/8	544	4.18	8.83	47.3	Pass
T39	75 - 50	Diagonal	5/8	558	4.97	8.83	56.3	Pass

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	SF*P_{allow} K	% Capacity	Pass Fail
T40	50 - 25	Diagonal	5/8	622	5.81	8.83	65.7	Pass
T41	25 - 0	Diagonal	5/8	639	3.68	8.83	41.6	Pass
T28	200 - 175	Horizontal	P1.25x.14	338	-3.14	10.92	28.8	Pass
T33	150 - 125	Horizontal	P1.25x.14	436	-3.06	10.97	27.9	Pass
T34	125 - 100	Horizontal	P1.25x.14	475	-7.03	10.97	64.1	Pass
T39	75 - 50	Horizontal	P1.25x.14	563	-2.84	10.97	25.9	Pass
T40	50 - 25	Horizontal	P1.25x.14	619	-3.32	10.97	30.2	Pass
T41	25 - 0	Horizontal	P1.25x.14	651	-2.20	10.97	20.0	Pass
T28	200 - 175	Secondary Horizontal	P1.25x.14	341	-2.06	10.92	18.9	Pass
T1	368.75 - 362.5	Top Girt	2L2 1/2x2x1/4	4	0.10	50.88	0.2	Pass
							0.3 (b)	
T2	362.5 - 356.25	Top Girt	2L2 1/2x3x1/4	16	0.30	67.19	0.4	Pass
							1.4 (b)	
T3	356.25 - 350	Top Girt	2L2 1/2x3x1/4	29	-1.21	57.34	2.1	Pass
							5.5 (b)	
T4	350 - 343.75	Top Girt	2L2 1/2x2x1/4	40	9.14	50.88	18.0	Pass
							26.6 (b)	
T5	343.75 - 337.5	Top Girt	2L2 1/2x2x1/4	53	-4.23	47.63	8.9	Pass
							12.3 (b)	
T6	337.5 - 331.25	Top Girt	P1.25x.14	65	-2.53	8.19	30.8	Pass
T7	331.25 - 325	Top Girt	P1.25x.14	77	-2.41	8.19	29.4	Pass
T8	325 - 318.75	Top Girt	P1.25x.14	89	-2.87	8.19	35.1	Pass
T9	318.75 - 312.5	Top Girt	P1.25x.14	102	-3.32	8.23	40.3	Pass
T10	312.5 - 306.25	Top Girt	P1.25x.14	114	-3.43	8.23	41.6	Pass
T11	306.25 - 300	Top Girt	2L2 1/2x2x1/4	126	-3.84	35.80	10.7	Pass
							14.9 (b)	
T12	300 - 293.75	Top Girt	2L2 1/2x2x1/4	136	12.05	50.88	23.7	Pass
							35.1 (b)	
T13	293.75 - 287.5	Top Girt	2L2 1/2x2x1/4	149	-2.64	47.72	5.5	Pass
							7.7 (b)	
T14	287.5 - 281.25	Top Girt	P1.25x.14	162	-2.64	8.23	32.1	Pass
T15	281.25 - 275	Top Girt	P1.25x.14	174	-2.11	8.23	25.6	Pass
T16	275 - 268.75	Top Girt	P1.25x.14	186	-2.12	8.23	25.8	Pass
T17	268.75 - 262.5	Top Girt	P1.25x.14	198	-2.12	8.23	25.7	Pass
T18	262.5 - 256.25	Top Girt	P1.25x.14	210	-2.09	8.23	25.4	Pass
T19	256.25 - 250	Top Girt	P1.25x.14	222	-2.57	8.23	31.2	Pass
T20	250 - 243.75	Top Girt	2L2 1/2x2x1/4	234	-3.20	35.59	9.0	Pass
							14.6 (b)	
T21	243.75 - 237.5	Top Girt	2L2 1/2x2x1/4	245	-4.74	47.72	9.9	Pass
							13.8 (b)	
T22	237.5 - 231.25	Top Girt	2L2 1/2x2x1/4	257	-7.05	47.72	14.8	Pass
							20.5 (b)	
T23	231.25 - 225	Top Girt	2L2 1/2x2x1/4	269	-8.02	47.72	16.8	Pass
							23.3 (b)	
T24	225 - 218.75	Top Girt	2L2 1/2x2x1/4	280	16.92	50.88	33.2	Pass
							49.2 (b)	
T25	218.75 - 212.5	Top Girt	2L2 1/2x2x1/4	292	5.83	50.88	11.5	Pass
							17.0 (b)	
T26	212.5 - 206.25	Top Girt	P1.25x.14	304	-4.23	10.92	38.7	Pass
T27	206.25 - 200	Top Girt	P1.25x.14	316	-3.33	10.92	30.5	Pass
T28	200 - 175	Top Girt	P1.25x.14	328	-2.24	10.92	20.6	Pass
T29	175 - 168.75	Top Girt	P1.25x.14	381	-4.32	10.92	39.6	Pass
T30	168.75 - 162.5	Top Girt	P1.25x.14	393	-5.31	10.97	48.4	Pass
T31	162.5 - 156.25	Top Girt	2L2 1/2x2x1/4	403	7.44	52.69	14.1	Pass
							33.9 (b)	
T32	156.25 - 150	Top Girt	P1.25x.14	416	-2.63	10.97	23.9	Pass
T33	150 - 125	Top Girt	P1.25x.14	429	-1.68	8.23	20.4	Pass
T34	125 - 100	Top Girt	P1.25x.14	466	-4.03	10.97	36.7	Pass
T35	100 - 93.75	Top Girt	2L2 1/2x2x1/4	507	16.45	50.88	32.3	Pass
							47.9 (b)	
T36	93.75 - 87.5	Top Girt	2L2 1/2x2x1/4	517	7.01	52.69	13.3	Pass

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	$SF*P_{allow}$ K	% Capacity	Pass Fail
							31.9 (b)	
T37	87.5 - 81.25	Top Girt	P1.25x.14	529	-4.21	10.97	38.3	Pass
T38	81.25 - 75	Top Girt	P1.25x.14	541	-3.18	10.97	29.0	Pass
T39	75 - 50	Top Girt	P1.25x.14	553	-2.03	10.97	18.5	Pass
T40	50 - 25	Top Girt	L2 1/2x2x1/4	592	5.23	26.20	19.9	Pass
							47.5 (b)	
T41	25 - 0	Top Girt	P1.25x.14	632	-1.43	8.23	17.3	Pass
T4	350 - 343.75	Guy A@350	7/8	679	25.57	39.85	64.2	Pass
T12	300 - 293.75	Guy A@300	7/8	697	27.68	39.85	69.5	Pass
T24	225 - 218.75	Guy A@225	3/4	716	23.57	29.15	80.8	Pass
T31	162.5 - 156.25	Guy A@162.5	3/4	723	24.45	29.15	83.9	Pass
T35	100 - 93.75	Guy A@100	9/16	737	13.91	17.50	79.5	Pass
T40	50 - 25	Guy A@50	9/16	744	13.17	17.50	75.3	Pass
T4	350 - 343.75	Guy B@350	7/8	674	25.63	39.85	64.3	Pass
T12	300 - 293.75	Guy B@300	7/8	692	27.40	39.85	68.8	Pass
T24	225 - 218.75	Guy B@225	3/4	709	23.71	29.15	81.4	Pass
T31	162.5 - 156.25	Guy B@162.5	3/4	722	24.52	29.15	84.1	Pass
T35	100 - 93.75	Guy B@100	9/16	730	14.53	17.50	83.0	Pass
T40	50 - 25	Guy B@50	9/16	743	13.04	17.50	74.5	Pass
T4	350 - 343.75	Guy C@350	7/8	667	25.67	39.85	64.4	Pass
T12	300 - 293.75	Guy C@300	7/8	686	27.40	39.85	68.8	Pass
T24	225 - 218.75	Guy C@225	3/4	704	23.44	29.15	80.4	Pass
T31	162.5 - 156.25	Guy C@162.5	3/4	721	24.28	29.15	83.3	Pass
T35	100 - 93.75	Guy C@100	9/16	725	14.09	17.50	80.5	Pass
T40	50 - 25	Guy C@50	9/16	742	13.29	17.50	75.9	Pass
T4	350 - 343.75	Torque Arm Top@350	2L3x2 1/2x1/4	682	23.60	75.73	31.2	Pass
T12	300 - 293.75	Torque Arm Top@300	2L3x2 1/2x1/4	699	24.24	75.73	32.0	Pass
T24	225 - 218.75	Torque Arm Top@225	2L3x2 1/2x1/4	717	22.15	75.73	29.3	Pass
T35	100 - 93.75	Torque Arm Top@100	2L3x2 1/2x1/4	732	14.85	75.73	19.6	Pass
T4	350 - 343.75	Torque Arm Bottom@350	2L3x2 1/2x1/4	677	-27.38	41.87	65.4	Pass
T12	300 - 293.75	Torque Arm Bottom@300	2L3x2 1/2x1/4	695	-29.78	41.96	71.0	Pass
T24	225 - 218.75	Torque Arm Bottom@225	2L3x2 1/2x1/4	714	-23.70	41.87	56.6	Pass
T35	100 - 93.75	Torque Arm Bottom@100	2L3x2 1/2x1/4	734	-11.28	41.96	26.9	Pass

Summary		
Leg (T27)	95.9	Pass
Diagonal (T22)	98.5	Pass
Horizontal (T34)	64.1	Pass
Secondary Horizontal (T28)	18.9	Pass
Top Girt (T24)	49.2	Pass
Guy A (T31)	83.9	Pass
Guy B (T31)	84.1	Pass
Guy C (T31)	83.3	Pass
Torque Arm Top (T12)	32.0	Pass
Torque Arm Bottom (T12)	71.0	Pass
Bolt Checks	90.6	Pass

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	$SF*P_{allow}$ K	% Capacity	Pass Fail
						RATING =	**98.5**	**Pass**

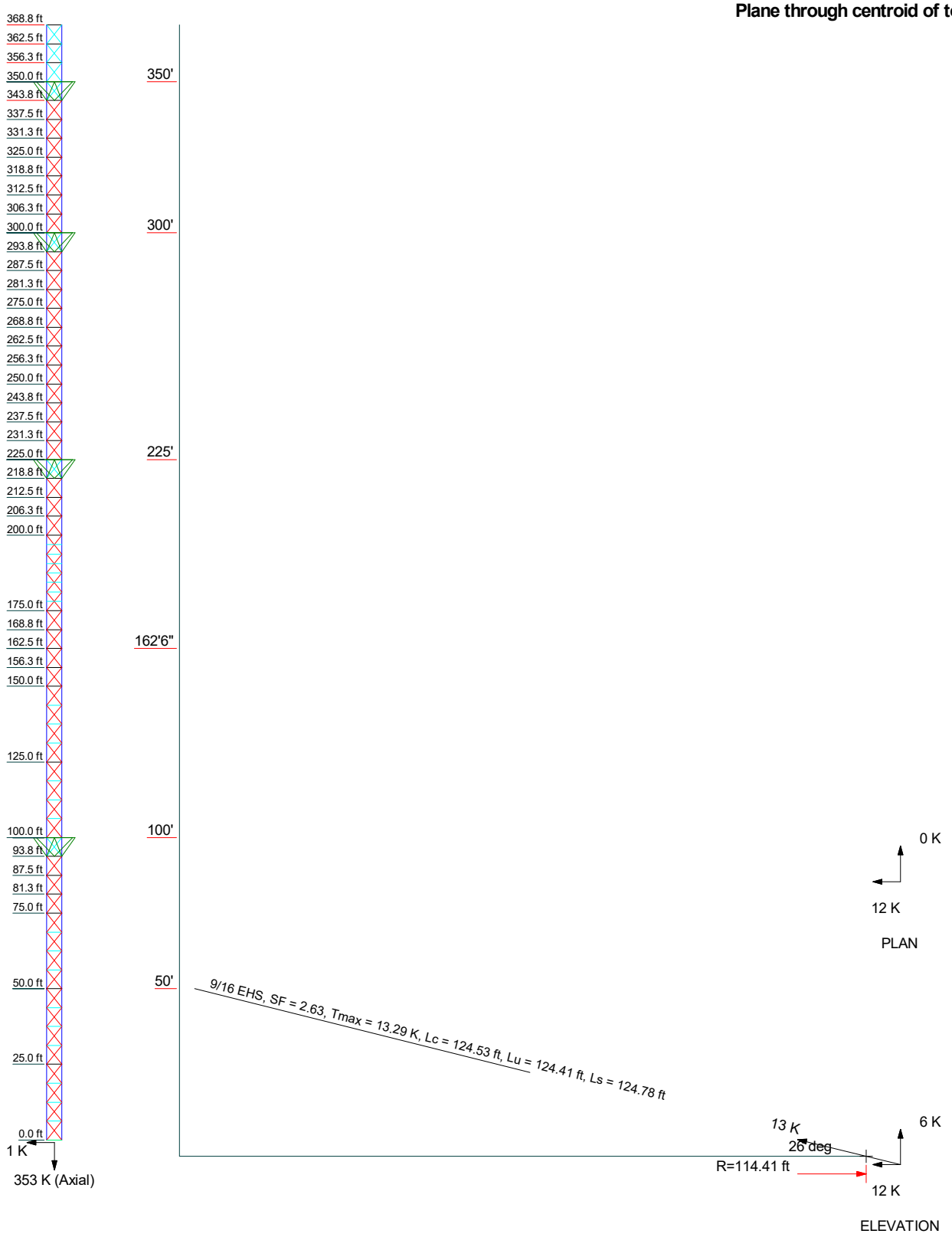
Guy Tensions and Tower Reactions

TIA/EIA-222-F - 95 mph/82 mph 0.5000 in Ice

Maximum Values

Anchor 'C'@114.41 ft Azimuth 240 deg Elev -5.4 ft

Plane through centroid of tower



Centek Engineering Inc.
63-2 North Branford Rd.
Branford, CT 06405
Phone: (203) 488-0580
FAX: (203) 488-8587

Job: ***16071.44 - Montville***		
Project: ***370' Guyed Tower - 689 Old Colchester Road, Montville, CT***		
Client: Verizon Wireless	Drawn by: TJL	App'd:
Code: TIA/EIA-222-F	Date: 09/09/16	Scale: NTS
Path: J:\Jobs\1607100.WI\44_Montville CT2049\04_Structural\Backup Documentation\Calcs\tnxTower Files\370' Guyed Rohn Tower.eri		Dwg No. E-6

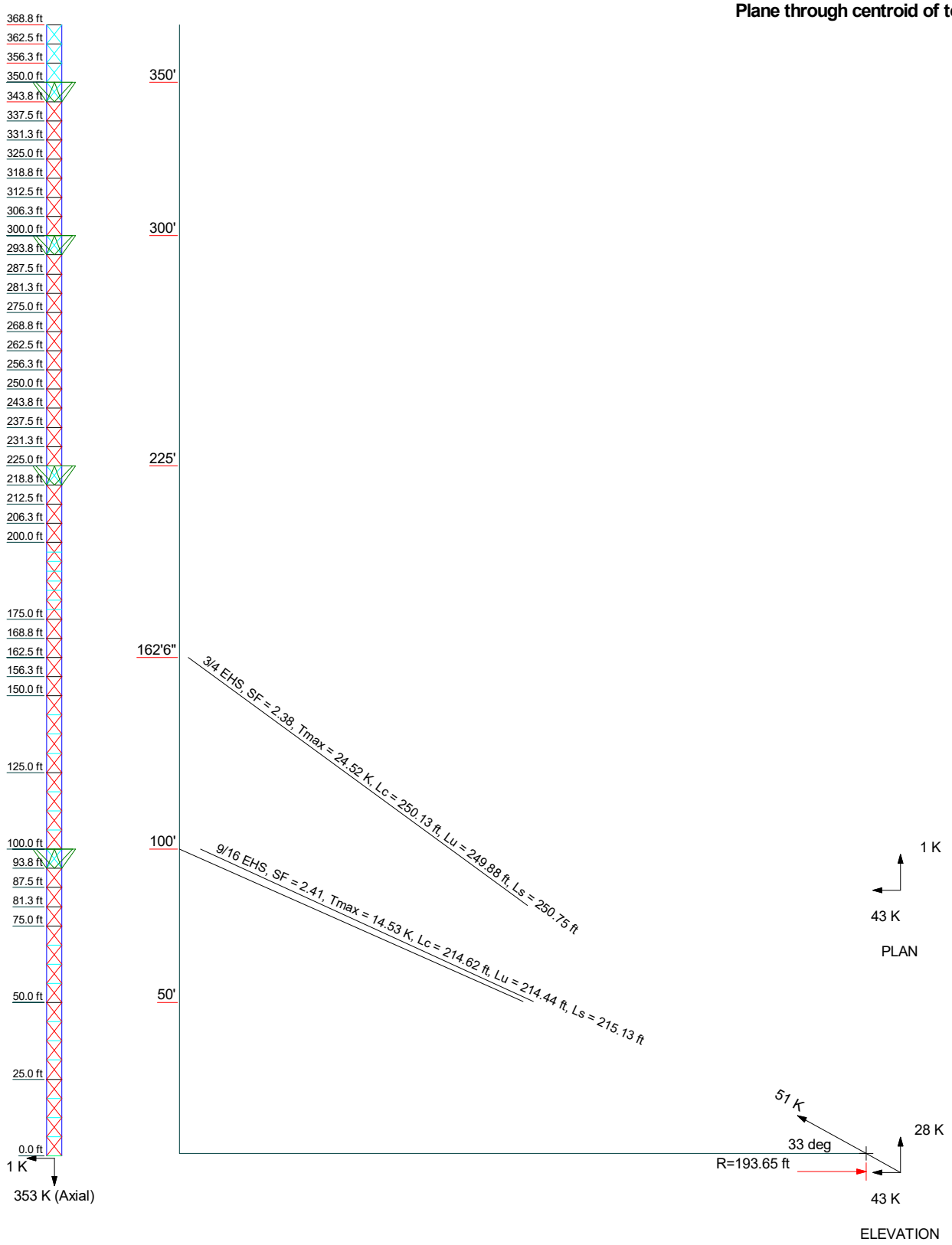
Guy Tensions and Tower Reactions

TIA/EIA-222-F - 95 mph/82 mph 0.5000 in Ice

Maximum Values

Anchor 'B'@193.65 ft Azimuth 120 deg Elev 0.72 ft

Plane through centroid of tower



Centek Engineering Inc. 63-2 North Branford Rd. Branford, CT 06405 Phone: (203) 488-0580 FAX: (203) 488-8587	Job: ***16071.44 - Montville***		
	Project: ***370' Guyed Tower - 689 Old Colchester Road, Montville, CT***		
	Client: Verizon Wireless	Drawn by: TJL	App'd:
	Code: TIA/EIA-222-F	Date: 09/09/16	Scale: NTS
	Path: J:\Jobs\1607100.WI\44_Montville CT2049\04_Structural\Backup Documentation\Calcs\tnxTower Files\370' Guyed Rohn Tower.eri		Dwg No. E-6

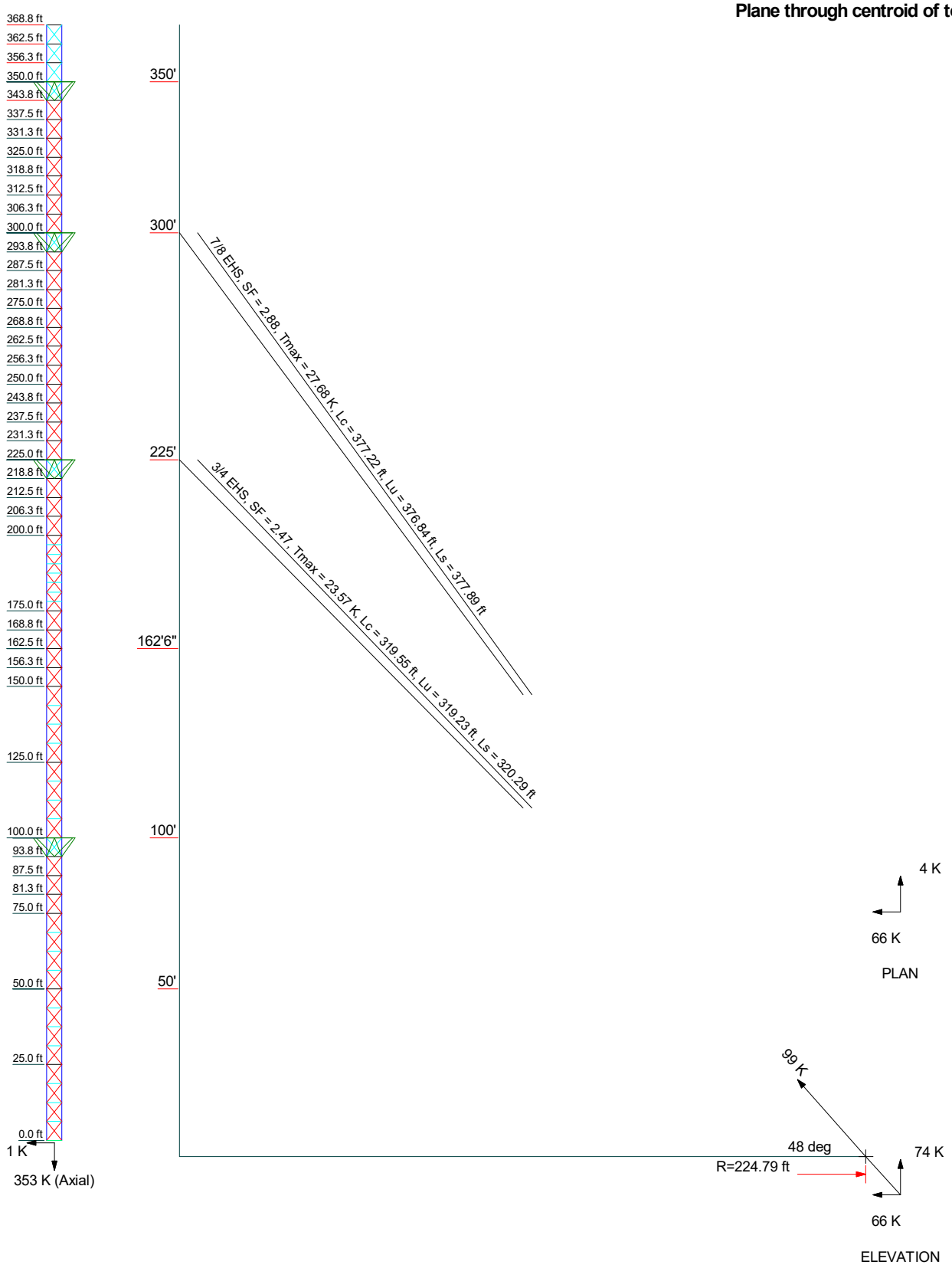
Guy Tensions and Tower Reactions

TIA/EIA-222-F - 95 mph/82 mph 0.5000 in Ice

Maximum Values

Anchor 'A'@224.79 ft Azimuth 0 deg Elev -5.41 ft

Plane through centroid of tower



Centek Engineering Inc.
63-2 North Branford Rd.
Branford, CT 06405
Phone: (203) 488-0580
FAX: (203) 488-8587

Job: ***16071.44 - Montville***		
Project: ***370' Guyed Tower - 689 Old Colchester Road, Montville, CT***		
Client: Verizon Wireless	Drawn by: TJL	App'd:
Code: TIA/EIA-222-F	Date: 09/09/16	Scale: NTS
Path: J:\Jobs\1607100.WI\44_Montville CT2049\04_Structural\Backup Documentation\CalcsItnx\Tower Files\370' Guyed Rohn Tower.eri		Dwg No. E-6

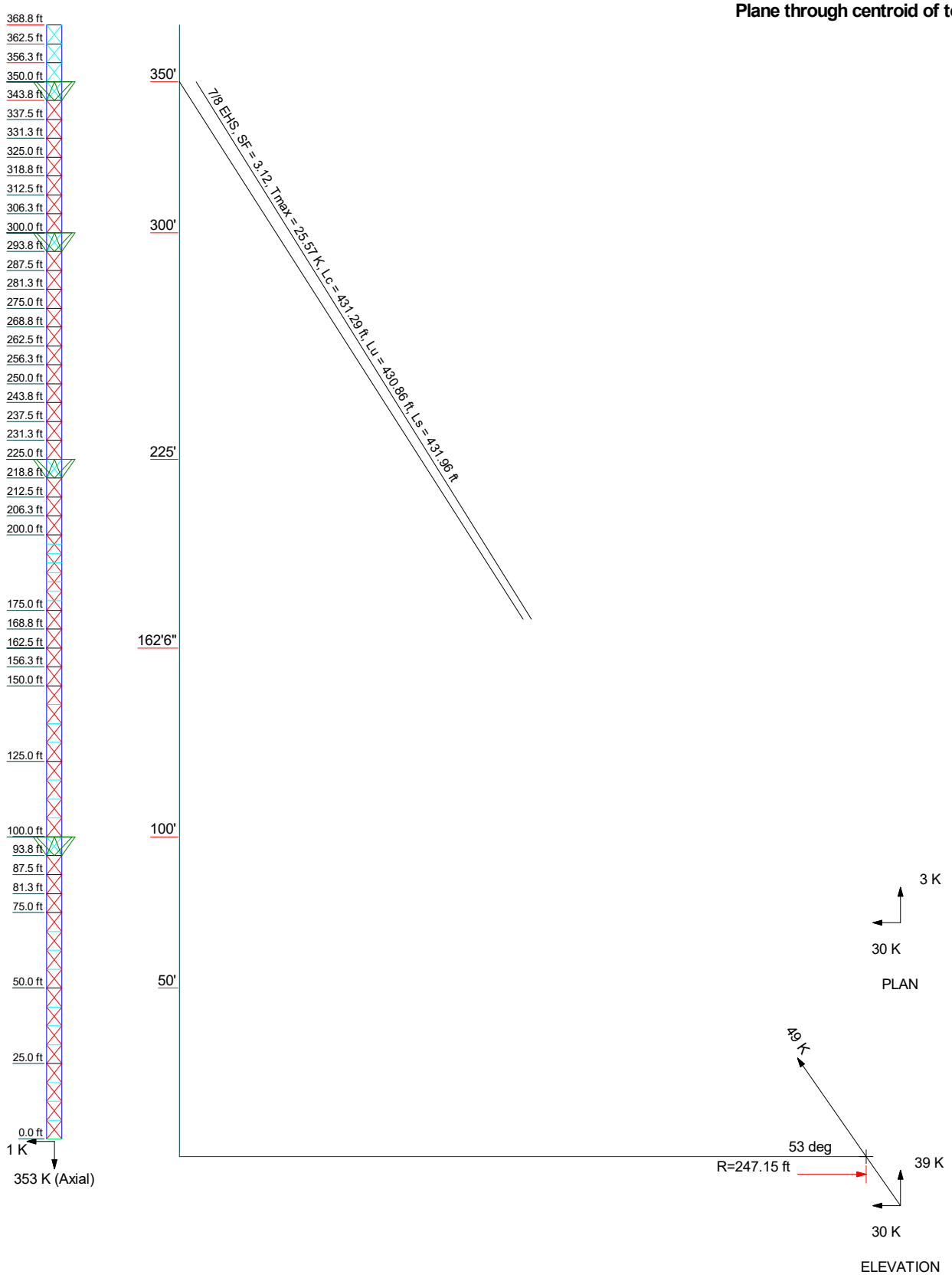
Guy Tensions and Tower Reactions

TIA/EIA-222-F - 95 mph/82 mph 0.5000 in Ice

Maximum Values

Anchor 'A'@247.15 ft Azimuth 0 deg Elev -5.8 ft

Plane through centroid of tower



Centek Engineering Inc. 63-2 North Branford Rd. Branford, CT 06405 Phone: (203) 488-0580 FAX: (203) 488-8587	Job: ***16071.44 - Montville***		
	Project: ***370' Guyed Tower - 689 Old Colchester Road, Montville, CT***		
	Client: Verizon Wireless	Drawn by: TJL	App'd:
	Code: TIA/EIA-222-F	Date: 09/09/16	Scale: NTS
	Path: J:\Jobs\1607100.WI\44_Montville CT2049\04_Structural\Backup Documentation\CalcsItnx\Tower Files\370' Guyed Rohn Tower.eri		Dwg No. E-6

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

Subject:	Base Foundation Analysis
Location:	370-ft Guyed Lattice Tower Montville, CT
Rev. 0: 9/9/16	Prepared by: T.J.L. Checked by: C.F.C. Job No. 16071.44

Guyed Tower Base Foundation:

Input Data:

Tower Data

Shear Force =	Shear := 1·kip	(User Input from tnxTower)	
Axial Force =	Axial := 353·kip	(User Input from tnxTower)	
Tower Height =	$H_t := 370 \cdot ft$	(User Input)	

Footing Data:

Overall Depth of Footing =	$D_f := 3.5 \cdot ft$	(User Input)	
Length of Pier =	$L_p := 3.0 \cdot ft$	(User Input)	
Extension of Pier Above Grade =	$L_{pag} := 1.50 \cdot ft$	(User Input)	
Width of Pier =	$W_p := 3.0 \cdot ft$	(User Input)	
Thickness of Footing =	$T_f := 2.0 \cdot ft$	(User Input)	
Width of Footing =	$W_{f1} := 7 \cdot ft$	(User Input)	
Length of Footing =	$W_{f2} := 7 \cdot ft$	(User Input)	

Material Properties:

Concrete Compressive Strength =	$f_c := 3000 \cdot psi$	(User Input)	
Steel Reinforcment Yield Strength =	$f_y := 60000 \cdot psi$	(User Input)	
Internal Friction Angle of Soil =	$\Phi_s := 30 \cdot deg$	(User Input)	
Allowable Soil Bearing Capacity =	$q_s := 8000 \cdot psf$	(User Input)	
Unit Weight of Soil =	$\gamma_{soil} := 120 \cdot pcf$	(User Input)	
Unit Weight of Concrete =	$\gamma_{conc} := 150 \cdot pcf$	(User Input)	
Foundation Bouyancy =	Bouyancy := 0	(User Input)	(Yes=1 / No=0)
Depth to Neglect =	$n := 0 \cdot ft$	(User Input)	
Cohesion of Clay Type Soil =	$c := 0 \cdot ksf$	(User Input)	(Use 0 for Sandy Soil)
Seismic Zone Factor =	Z := 2	(User Input)	
Coefficient of Friction Between Concrete =	$\mu := 0.45$	(User Input)	

Calculated Factors:

Coefficient of Lateral Soil Pressure =

$$K_p := \frac{1 + \sin(\Phi_s)}{1 - \sin(\Phi_s)} = 3$$

Load Factor =

$$LF := \begin{cases} 1.333 & \text{if } H_t \le 700 \cdot ft \\ 1.7 & \text{if } H_t \ge 1200 \cdot ft \\ 1.333 + \left(\frac{H_t - 700ft}{1200ft - 700ft}\right) \cdot 0.4 & \text{otherwise} \end{cases} = 1.333$$

Stability of Footing:

Adjusted Concrete Unit Weight = $\gamma_c := if(Bouyancy = 1, \gamma_{conc} - 62.4pcf, \gamma_{conc}) = 150 \cdot pcf$

Adjusted Soil Unit Weight = $\gamma_s := if(Bouyancy = 1, \gamma_{soil} - 62.4pcf, \gamma_{soil}) = 120 \cdot pcf$

Passive Pressure = $P_{pn} := K_p \cdot \gamma_s \cdot n + c \cdot 2 \cdot \sqrt{K_p} = 0 \cdot ksf$

$P_{pt} := K_p \cdot \gamma_s \cdot (D_f - T_f) + c \cdot 2 \cdot \sqrt{K_p} = 0.54 \cdot ksf$

$P_{top} := if[n < (D_f - T_f), P_{pt}, P_{pn}] = 0.54 \cdot ksf$

$P_{bot} := K_p \cdot \gamma_s \cdot D_f + c \cdot 2 \cdot \sqrt{K_p} = 1.26 \cdot ksf$

$P_{ave} := \frac{P_{top} + P_{bot}}{2} = 0.9 \cdot ksf$

$T_p := if[n < (D_f - T_f), T_f, (D_f - n)] = 2$

$A_p := W_{f1} \cdot T_p = 14$

Soil Shear Resistance = $Sl_1 := P_{ave} \cdot A_p = 12.6 \cdot kip$

Weight of Concrete = $WT_c := \left[(W_{f1} \cdot W_{f2} \cdot T_f) + W_p{}^2 L_p\right] \cdot \gamma_c = 18.75 \cdot kip$

Total Weight = $WT_{tot} := WT_c + Axial = 371.75 \cdot kip$

Soil/Concrete Friction Resistance = $Sl_2 := \mu \cdot WT_{tot} = 167.29 \cdot kips$

Total Sliding Resistance = $Sl_{tot} := Sl_1 + Sl_2 = 179.89 \cdot kips$

Sliding Resistance Ratio = $Sliding\_Resistance_{ratio} := \frac{Shear \cdot 2.0}{Sl_{tot}} = 0.01$

$Sliding\_Resistance\_Check := if\left[\left(\frac{Shear \cdot 2.0}{Sl_{tot}} < 1.0\right), "Okay", "No Good"\right]$

Sliding_Resistance_Check = "Okay"

Bearing Pressure Caused by Footing:

Area of the Mat = $A_{mat} := W_{f1} \cdot W_{f2} = 49$

Maximum Pressure in Mat = $P_{max} := \frac{WT_{tot}}{A_{mat}} = 7.59 \cdot ksf$

$Max\_Pressure\_Check := if(P_{max} < q_s, "Okay", "No Good")$

Max_Pressure_Check = "Okay"

CENTEK engineering
Centered on Solutions™ www.centekeng.com
63-2 North Branford Road P: (203) 488-0580
Branford, CT 06405 F: (203) 488-8587

Job :	AT&T ~ CT2049: 370-ft Guyed Lattice Tower	**Project No.**	16071.44	**Sheet**	1	of	2
Address:	689 Old Colchester Rd., Madison, CT	**Computed by**	TJL	**Date**		9/9/16	
Description:	Guy Anchor Evaluation - 2005 CSBC 3108.4.2/TIA Req	**Checked by**	CFC	**Date**			

CHECK UPLIFT RESISTANCE

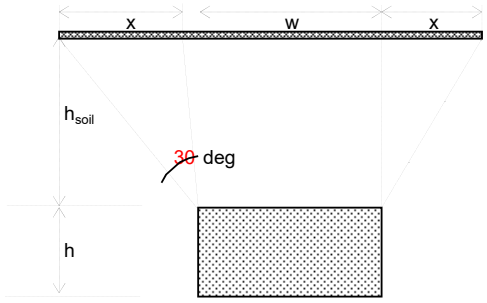
ANCHOR (C) AT 114.41ft RADIUS

RESULTS FROM COMPUTER ANALYSIS:

Uplift =	6	kips
Sliding =	12	kips

CONCRETE PARAMETERS:

γ_{conc} =	150	pcf
w =	4	ft
h =	3	ft
d =	10	ft
Vol. =	*120.00*	ft^3
Wc =	*18.00*	kips



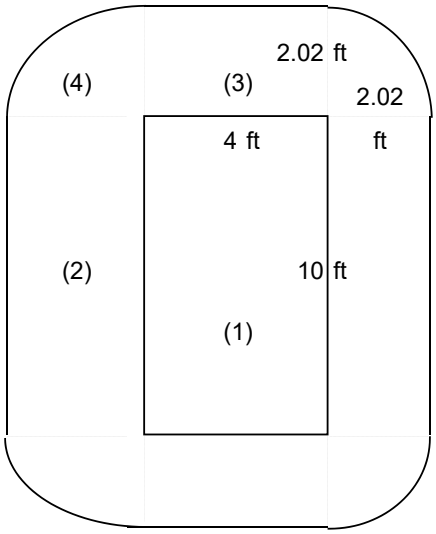
Foundation Section

SOIL PARAMETERS:

γ_{soil} =	120	pcf
h_{soil} =	3.5	ft
x =	*2.02*	ft

Soil Weight (Wr):

(1) =	16.80	kips
(2) =	8.49	kips
(3) =	3.39	kips
(4) =	1.80	kips
*(5) Anchor Reinf. =	0	kips
Total =	30.48	kips



Foundation Plan View

CHECK UPLIFT (PER EIA/TIA-222-F STANDARD AND 2005 CT BUILDING CODE):

(Wr + Wc) / 2.0 > UPLIFT

24.24 **>** *6* ***OK*** ***FOS =*** *8.08*

→ ***GUY ANCHORS AGAINST UPLIFT ARE ADEQUATE***

CENTEK engineering
Centered on Solutions™ www.centekeng.com
63-2 North Branford Road P: (203) 488-0580
Branford, CT 06405 F: (203) 488-8587

Job :	Verizon ~ Montville: 370-ft Guyed Lattice Tower	**Project No.**	15001.008	**Sheet**	2	of	2
Address:	689 Old Colchester Rd., Madison, CT	**Computed by**	TJL	**Date**		9/9/16	
Description:	Guy Anchor Evaluation - 2005 CSBC 3108.4.2/TIA Req	**Checked by**	CFC	**Date**			

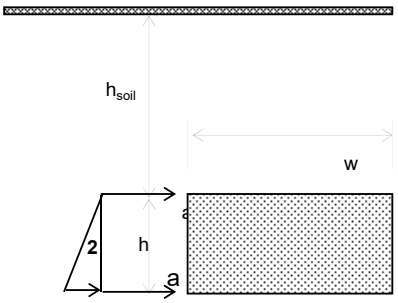
CHECK SLIDING RESISTANCE

SOIL PARAMETERS

γ soil =	120	pcf
h_{soil} =	3.5	ft
h =	3	ft
ϕ =	30	degrees

ANCHOR PARAMETERS

w =	4.0	ft
h =	3.0	ft
d =	10.0	ft



Foundation Elevation View

K_p = 3.00

HORIZONTAL FORCES

1 =	37.80	k
2 =	16.20	k
RESIST TO SLIDING =	54.00	k

SOIL & CONCRETE WEIGHT =	Wr + Wc =	48.48	k
UPLIFT REACTIONS =		-6	k
SUM =		42.48	k

COEF. OF FRICTION, (0.45) =	19.12	k
RESIST TO SLIDING =	54.00	k
SUM =	73.12	k

SF AGAINST SLIDING

SF = 6.1 > 2 OK

→ ***GUY ANCHORS AGAINST SLIDING ARE ADEQUATE***

CENTEK engineering
Centered on Solutions™ www.centekeng.com
63-2 North Branford Road P: (203) 488-0580
Branford, CT 06405 F: (203) 488-8587

Job :	AT&T ~ CT2049: 370-ft Guyed Lattice Tower	**Project No.**	16071.44	**Sheet**	1	of	2
Address:	689 Old Colchester Rd., Madison, CT	**Computed by**	TJL	**Date**		9/9/16	
Description:	Guy Anchor Evaluation - 2005 CSBC 3108.4.2/TIA Req	**Checked by**	CFC	**Date**			

CHECK UPLIFT RESISTANCE

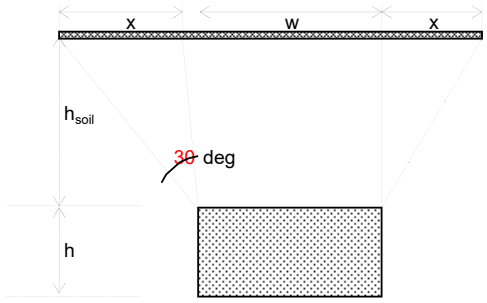
ANCHOR (B) AT 193.65ft RADIUS

RESULTS FROM COMPUTER ANALYSIS:

Uplift =	28	kips
Sliding =	43	kips

CONCRETE PARAMETERS:

γ_{conc} =	150	pcf
w =	4	ft
h =	4	ft
d =	10	ft
Vol. =	*160.00*	ft^3
Wc =	*24.00*	kips



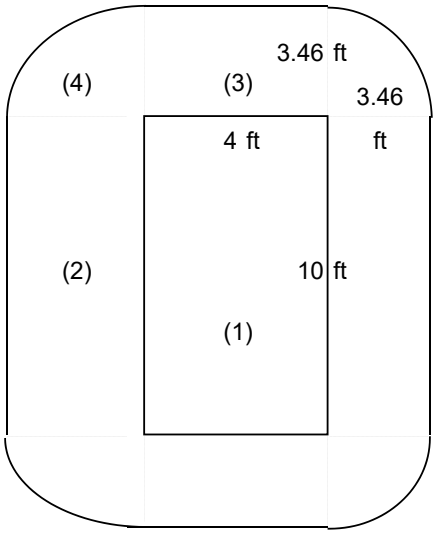
Foundation Section

SOIL PARAMETERS:

γ_{soil} =	120	pcf
h_{soil} =	6	ft
x =	*3.46*	ft

Soil Weight (Wr):

(1) =	28.80	kips
(2) =	24.94	kips
(3) =	9.98	kips
(4) =	9.05	kips
*(5) Anchor Reinf. =	0	kips
Total =	72.77	kips



Foundation Plan View

CHECK UPLIFT (PER EIA/TIA-222-F STANDARD AND 2005 CT BUILDING CODE):

(Wr + Wc) / 2.0 > UPLIFT

48.38 **>** *28* ***OK*** ***FOS =*** *3.46*

→ ***GUY ANCHORS AGAINST UPLIFT ARE ADEQUATE***

CENTEK engineering
Centered on Solutions™ www.centekeng.com
63-2 North Branford Road P: (203) 488-0580
Branford, CT 06405 F: (203) 488-8587

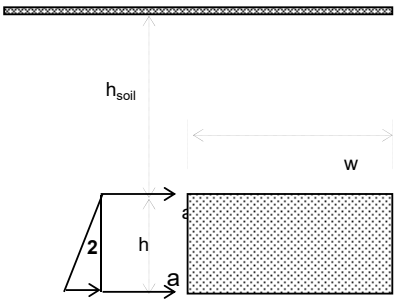
CHECK SLIDING RESISTANCE

SOIL PARAMETERS

γ *soil* =	120	pcf
h_{soil} =	6	ft
h =	4	ft
ϕ =	30	degrees

ANCHOR PARAMETERS

w =	4.0	ft
h =	4.0	ft
d =	10.0	ft



Foundation Elevation View

K_p = 3.00

HORIZONTAL FORCES

1 =	86.40	k
2 =	28.80	k
RESIST TO SLIDING =	115.20	k

SOIL & CONCRETE WEIGHT =	Wr + Wc =	96.77	k
UPLIFT REACTIONS =		-28	k
SUM =		68.77	k

COEF. OF FRICTION, (0.45) =	30.94	k
RESIST TO SLIDING =	115.20	k
SUM =	146.14	k

SF AGAINST SLIDING

SF = 3.4 > 2 OK

→ ***GUY ANCHORS AGAINST SLIDING ARE ADEQUATE***

CENTEK engineering
Centered on Solutions™ www.centekeng.com
63-2 North Branford Road P: (203) 488-0580
Branford, CT 06405 F: (203) 488-8587

Job :	AT&T ~ CT2049: 370-ft Guyed Lattice Tower	**Project No.**	16071.44	**Sheet**	1	of	2
Address:	689 Old Colchester Rd., Madison, CT	**Computed by**	TJL	**Date**		9/9/16	
Description:	Guy Anchor Evaluation - 2005 CSBC 3108.4.2/TIA Req	**Checked by**	CFC	**Date**			

CHECK UPLIFT RESISTANCE

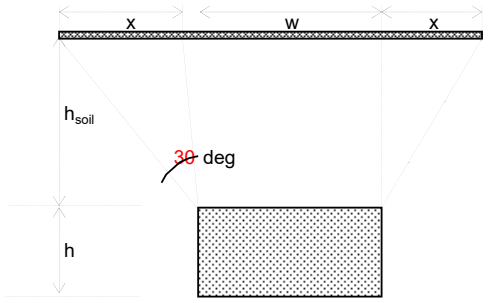
ANCHOR (A) AT 224.79ft RADIUS

RESULTS FROM COMPUTER ANALYSIS:

Uplift =	74	kips
Sliding =	66	kips

CONCRETE PARAMETERS:

γ_{conc} =	150	pcf
w =	6	ft
h =	4	ft
d =	16	ft
Vol. =	*384.00*	ft^3
Wc =	*57.60*	kips



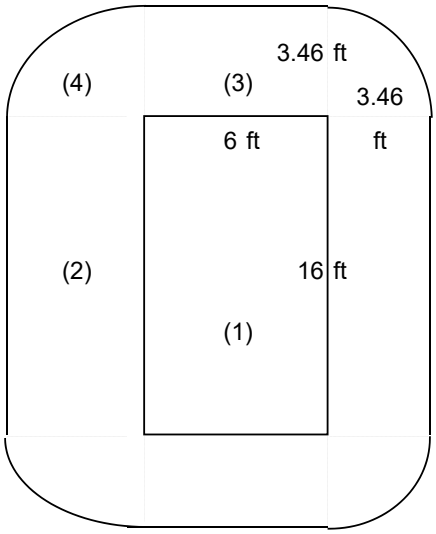
Foundation Section

SOIL PARAMETERS:

γ_{soil} =	120	pcf
h_{soil} =	6	ft
x =	*3.46*	ft

Soil Weight (Wr):

(1) =	69.12	kips
(2) =	39.91	kips
(3) =	14.96	kips
(4) =	9.05	kips
*(5) Anchor Reinf. =	0	kips
Total =	133.04	kips



Foundation Plan View

CHECK UPLIFT (PER EIA/TIA-222-F STANDARD AND 2005 CT BUILDING CODE):

(Wr + Wc) / 2.0 > UPLIFT

95.32 **>** *74* ***OK*** ***FOS =*** *2.58*

→ ***GUY ANCHORS AGAINST UPLIFT ARE ADEQUATE***

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

Job :	Verizon ~ Montville: 370-ft Guyed Lattice Tower	**Project No.**	15001.008	**Sheet**	2	of	2
Address:	689 Old Colchester Rd., Madison, CT	**Computed by**	TJL	**Date**		9/9/16	
Description:	Guy Anchor Evaluation - 2005 CSBC 3108.4.2/TIA Req	**Checked by**	CFC	**Date**			

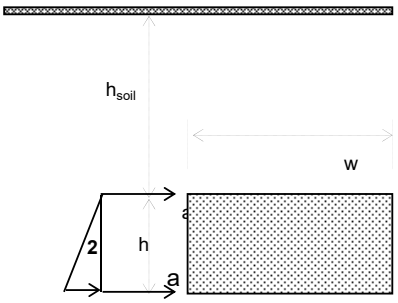
CHECK SLIDING RESISTANCE

SOIL PARAMETERS

γ *soil* =	120	pcf
h_{soil} =	6	ft
h =	4	ft
ϕ =	30	degrees

ANCHOR PARAMETERS

w =	6.0	ft
h =	4.0	ft
d =	16.0	ft



Foundation Elevation View

κ_p = 3.00

HORIZONTAL FORCES

1 =	138.24	k
2 =	46.08	k
RESIST TO SLIDING =	184.32	k

SOIL & CONCRETE WEIGHT =	Wr + Wc =	190.64	k
UPLIFT REACTIONS =		-74	k
SUM =		116.64	k

COEF. OF FRICTION, (0.45) =	52.49	k
RESIST TO SLIDING =	184.32	k
SUM =	236.81	k

SF AGAINST SLIDING

SF = 3.6 > 2 OK

→ ***GUY ANCHORS AGAINST SLIDING ARE ADEQUATE***

CENTEK engineering
Centered on Solutions™ www.centekeng.com
63-2 North Branford Road P: (203) 488-0580
Branford, CT 06405 F: (203) 488-8587

Job :	AT&T ~ CT2049: 370-ft Guyed Lattice Tower	**Project No.**	16071.44	**Sheet**	1	of	2
Address:	689 Old Colchester Rd., Madison, CT	**Computed by**	TJL	**Date**		9/9/16	
Description:	Guy Anchor Evaluation - 2005 CSBC 3108.4.2/TIA Req	**Checked by**	CFC	**Date**			

CHECK UPLIFT RESISTANCE

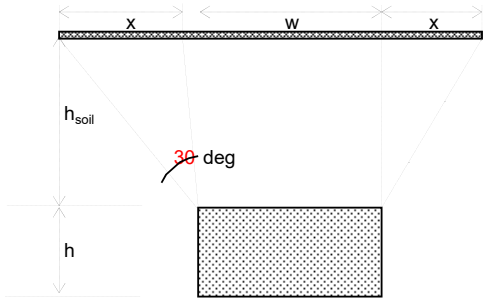
ANCHOR (A) AT 247.15ft RADIUS

RESULTS FROM COMPUTER ANALYSIS:

Uplift =	39	kips
Sliding =	30	kips

CONCRETE PARAMETERS:

γ_{conc} =	150	pcf
w =	4	ft
h =	3	ft
d =	12	ft
Vol. =	*144.00*	ft^3
Wc =	*21.60*	kips



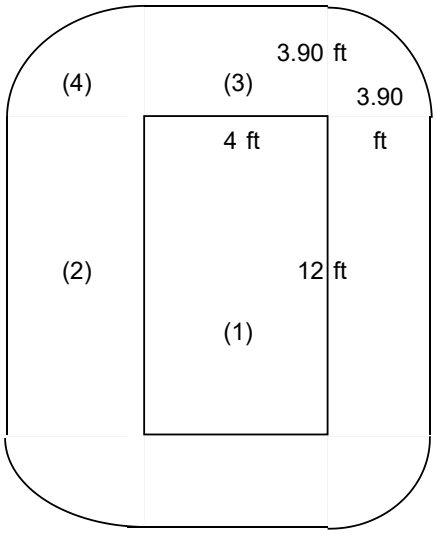
Foundation Section

SOIL PARAMETERS:

γ_{soil} =	120	pcf
h_{soil} =	6.75	ft
x =	*3.90*	ft

Soil Weight (Wr):

(1) =	38.88	kips
(2) =	37.88	kips
(3) =	12.63	kips
(4) =	12.88	kips
*(5) Anchor Reinf. =	0	kips
Total =	102.27	kips



Foundation Plan View

CHECK UPLIFT (PER EIA/TIA-222-F STANDARD AND 2005 CT BUILDING CODE):

(Wr + Wc) / 2.0 > UPLIFT

61.93 **>** *39* ***OK*** ***FOS =*** *3.18*

→ ***GUY ANCHORS AGAINST UPLIFT ARE ADEQUATE***

CENTEK engineering
Centered on Solutions™ www.centekeng.com
63-2 North Branford Road P: (203) 488-0580
Branford, CT 06405 F: (203) 488-8587

Job :	Verizon ~ Montville: 370-ft Guyed Lattice Tower	**Project No.**	15001.008	**Sheet**	2	of	2
Address:	689 Old Colchester Rd., Madison, CT	**Computed by**	TJL	**Date**		9/9/16	
Description:	Guy Anchor Evaluation - 2005 CSBC 3108.4.2/TIA Req	**Checked by**	CFC	**Date**			

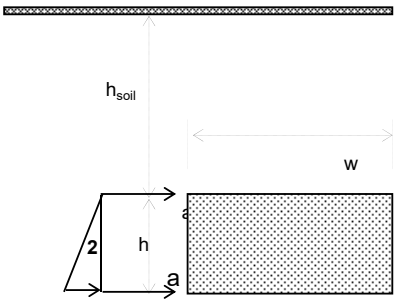
CHECK SLIDING RESISTANCE

SOIL PARAMETERS

γ soil =	120	pcf
h_{soil} =	6.75	ft
h =	3	ft
ϕ =	30	degrees

ANCHOR PARAMETERS

w =	4.0	ft
h =	3.0	ft
d =	12.0	ft



Foundation Elevation View

K_p = 3.00

HORIZONTAL FORCES

1 =	87.48 k
2 =	19.44 k
RESIST TO SLIDING =	106.92 k

SOIL & CONCRETE WEIGHT =	Wr + Wc =	123.87 k
UPLIFT REACTIONS =		-39 k
SUM =		84.87 k

COEF. OF FRICTION, (0.45) =	38.19 k
RESIST TO SLIDING =	106.92 k
SUM =	145.11 k

SF AGAINST SLIDING

SF = 4.8 > 2 OK

→ ***GUY ANCHORS AGAINST SLIDING ARE ADEQUATE***

Section 1 - RFDS GENERAL INFORMATION

RFDS NAME:	CT2049	DATE:	07/13/2016	RF DESIGN ENG:	Parminder Singh
ISSUE:	Bronze Standard	Approved? (Y/N):	Yes	RF DESIGN PHONE:	(860) 513-7598
REVISION:	Preliminary	RF MANAGER:	Deepak Rathore	RF DESIGN EMAIL:	sp656b@att.com
INITIATIVE /PROJECT:	LTE 2C 1900				

RF PERF ENG:		RFDS PROGRAM TYPE:	2017 LTE Next Carrier
RF PERF PHONE:		RFDS TECHNOLOGY:	LTE 2C
RF PERF EMAIL:		State:	Final
TRIDENT:	N/A	Status:	Approved
GSM FREQUENCY:	850, 850/1900	RFDS ID:	1313484
UMTS FREQUENCY:	850, 1900	RFDS Version:	2.00
LTE FREQUENCY:	700, 1900	Created By:	sp656b
		Date Created:	7/13/2016 8:23:16 AM
		Date Updated:	8/23/2016 2:40:52 PM
		Updated By:	om636a
I-PLAN JOB # 1:	NER-RCTB-16-02206	IPLAN PRD GRP || SUB GRP #1:	LTE Next Carrier || LTE 2C
I-PLAN JOB # 2:		IPLAN PRD GRP || SUB GRP #2:	
I-PLAN JOB # 3:		IPLAN PRD GRP || SUB GRP #3:	
I-PLAN JOB # 4:		IPLAN PRD GRP || SUB GRP #4:	

Section 2 - LOCATION INFORMATION

USID:	65064	FA LOCATION CODE:	10035001	LOCATION NAME:	MONTVILLE-OLD COLCHESTER RD
REGION:	NORTHEAST	MARKET CLUSTER:	NEW ENGLAND	MARKET:	CONNECTICUT
ADDRESS:	695 OLD COLCHESTER ROAD	CITY:	MONTVILLE	STATE:	CT
ZIP CODE:	06353	COUNTY:	NEW LONDON	MSA / RSA:	TBD
LATITUDE (D-M-S):	41d 27m10.97316s	LONGITUDE (D-M-S):	-72d -9m-14.69484s	LAT (DEC. DEG.):	41.4530481
DIRECTIONS, ACCESS AND EQUIPMENT LOCATION:	CT-2049MONTVILLE I 395N TO EXIT 79 TURN RIGHT ONTO RT 163 APPROX 1 1 MILES JUST PASSED PAPERBOARD FACTORY TURN LEFT ON BRIDGE ST TURN RIGHT AT END MAPLE AVE TAKE 1ST LEFT ONTO SHARP HILL ROAD TO END TURN RIGHT ON OLD COLECHESTER ROAD ACCESS ROAD APPROX 3 MILES ON RIGHT. FOLLOW ACCESS ROAD AROUND SITE COMPOUND TO FAR RIGHT HAND CORNER NEAR THE REAR OF COMPOUND. ACCESS:24/7 COMBO 0043.BSC 07 MASTER-BCF 6 (ALPHA&BETA) SLAVE-BCF 7 (GAMMA)T-1 INFGSM-ET-85 DHXV 238725ET-39 DHXV 238724POWER METER # 89 173 120				

ORACLE PTN # 1:		PACE JOB # 1:	MRCTB019360
ORACLE PTN # 2:		PACE JOB # 2:	
ORACLE PTN # 3:		PACE JOB # 3:	
ORACLE PTN # 4:		PACE JOB # 4:	
SEARCH RING NAME:	N/A		
SEARCH RING ID:	N/A	CASPR INITIATIVE # 1:	
BTA:	TBD	CASPR INITIATIVE # 2:	
LONG (DEC. DEG.):	-72.1540819	CASPR INITIATIVE # 3:	
BORDER CELL WITH CONTOUR COORD:	TBD	CASPR INITIATIVE # 4:	
AM STUDY REQ'D (Y/N):	No		
FREQ COORD:	TBD		

Section 3 - LICENSE COVERAGE/FILING INFORMATION

CGSA - NO FILING TRIGGERED (Yes/No):	Yes	CGSA LOSS:	TBD	PCS REDUCED - UPS ZIP:	TBD
CGSA - MINOR FILING NEEDED (Yes/No)::	No	CGSA EXT AGMT NEEDED:	TBD	PCS POPS REDUCED:	TBD
CGSA - MAJOR FILING NEEDED (Yes/No):	No	CGSA SCORECARD UPDATED:	TBD		

CGSA CALL SIGNS:	

Section 4 - TOWER/REGULATORY INFORMATION

STRUCTURE AT&T OWNED?:	Yes	GROUND ELEVATION (ft):	0	STRUCTURE TYPE:	SELF SUPPORT
ADDITIONAL REGULATORY?:	Yes	HEIGHT OVERALL (ft):		FCC ASR NUMBER:	NR
SUB-LEASE RIGHTS?:	Yes	STRUCTURE HEIGHT (ft):	372.00		
LIGHTING TYPE:	PAINT AND RED LIGHT				

MARKET LOCATION 700 MHz Band:	
MARKET LOCATION 850 MHz Band:	TBD
MARKET LOCATION 1900 MHz Band:	TBD
MARKET LOCATION AWS Band:	
MARKET LOCATION WCS Band:	
MARKET LOCATION Future Band:	

Section 5 - E-911 INFORMATION - existing

	PSAP NAME:	PSAP ID:	E911 PHASE:	MPC SVC PROVIDER:	LMU REQUIRED:	ESRN:	DATE LIVE PH1:	DATE LIVE PH2:
SECTOR A E-911	CONNECTICUT STATE POLICE-E TROOP	1318		INTRADO_MIAMI		0		
SECTOR B	CONNECTICUT STATE POLICE-E TROOP	1318		INTRADO_MIAMI		0		
SECTOR C	CONNECTICUT STATE POLICE-E TROOP	1318		INTRADO_MIAMI		0		
SECTOR D								
SECTOR E								
SECTOR F								
OMNI								

Section 5 - E-911 INFORMATION - final

	PSAP NAME:	PSAP ID:	E911 PHASE:	MPC SVC PROVIDER:	LMU REQUIRED:	ESRN:	DATE LIVE PH1:	DATE LIVE PH2:
SECTOR A E-911	CONNECTICUT STATE POLICE-E TROOP	1318		INTRADO_MIAMI		0		
SECTOR B	CONNECTICUT STATE POLICE-E TROOP	1318		INTRADO_MIAMI		0		
SECTOR C	CONNECTICUT STATE POLICE-E TROOP	1318		INTRADO_MIAMI		0		
SECTOR D								
SECTOR E								
SECTOR F								
OMNI								

Section 6 - RBS GENERAL INFORMATION - existing

	UMTS 1ST RBS	UMTS 2ND RBS	LTE 1ST RBS									
RBS ID:	218824	246968	418626									
CTS COMMON ID:	CTV2049	CTU2049	CTL02049									
CELL ID / BCF:	CTV2049	CTV2049	CTL02049									
BTA/TID:	319U	319V	319L									
4-DIGIT SITE ID:	2049	2049	02049									
COW OR TOY?:	No	No	No									
CELL SITE TYPE:	SECTORIZED	SECTORIZED	SECTORIZED									
SITE TYPE:	MACRO-CONVENTIONAL	MACRO-CONVENTIONAL	MACRO-CONVENTIONAL									
BTS LOCATION ID:	INTERNAL	INTERNAL	INTERNAL									
ORIGINATING CO:	CINGULAR	CINGULAR	CINGULAR									
CELLULAR NETWORK:	GOLD	GOLD	GOLD									
OPS DISTRICT:	CT-NORTH	CT-NORTH	CT-NORTH									
RF DISTRICT:	MIDDLETOWN	MIDDLETOWN	NPO Triage									
OPS ZONE:	NE_CT_S_NWLN_NE_CS	NE_CT_S_NWLN_NE_CS	NE_CT_S_NWLN_NE_CS									
RF ZONE:	BCT07	BCT07	Hotseat									
BASE STATION TYPE:	BASE	OVERLAY	BASE									
EQUIPMENT NAME:	MONTVILLE-OLD COLCHESTER RD	MONTVILLE	MONTVILLE LTE									
DISASTER PRIORITY:	0	0	0									

Section 6 - RBS GENERAL INFORMATION - final

	UMTS 1ST RBS	UMTS 2ND RBS	LTE 1ST RBS									
RBS ID:	218824	246968	418626									
CTS COMMON ID:	CTV2049	CTU2049	CTL02049									
CELL ID / BCF:	CTV2049	CTV2049	CTL02049									
BTA/TID:	319U	319V	319L									
4-DIGIT SITE ID:	2049	2049	02049									
COW OR TOY?:	No	No	No									
CELL SITE TYPE:	SECTORIZED	SECTORIZED	SECTORIZED									
SITE TYPE:	MACRO-CONVENTIONAL	MACRO-CONVENTIONAL	MACRO-CONVENTIONAL									
BTS LOCATION ID:	INTERNAL	INTERNAL	INTERNAL									
ORIGINATING CO:	CINGULAR	CINGULAR	CINGULAR									
CELLULAR NETWORK:	GOLD	GOLD	GOLD									
OPS DISTRICT:	CT-North	CT-North	CT-North									
RF DISTRICT:	Middletown	Middletown	NPO Triage									
OPS ZONE:	NE_CT_S_NWLN_NE_CS	NE_CT_S_NWLN_NE_CS	NE_CT_S_NWLN_NE_CS									
RF ZONE:	BCT07	BCT07	Hotseat									
BASE STATION TYPE:	BASE	OVERLAY	BASE									
EQUIPMENT NAME:	MONTVILLE-OLD COLCHESTER RD	MONTVILLE	MONTVILLE LTE									
DISASTER PRIORITY:	0	0	0									

Section 7 - RBS SPECIFIC INFORMATION - existing

	UMTS 1ST RBS	UMTS 2ND RBS	LTE 1ST RBS									
MSC:												
BSC/RNC/MME POOL ID:	MIDDLETOWN RNC05	MIDDLETOWN RNC05	FF01									
LAC:	05990	05990										
RAC:												
EQUIPMENT VENDOR:	ERICSSON	ERICSSON	ERICSSON									
EQUIPMENT TYPE:	3206 INDOOR	3206 INDOOR	6601 INDOOR MU									
BASEBAND CONFIGURATION:												
LOCATION:												
CABINET LOCATION:												
MARKET STATE CODE:			CT									
AGPS:	Yes	Yes	Yes									
NODE B NUMBER:	0	0	2049									
PARENT NAME:	MIDDLETOWN RNC05	MIDDLETOWN RNC05	FF01									

Section 7 - RBS SPECIFIC INFORMATION - final

	UMTS 1ST RBS	UMTS 2ND RBS	LTE 1ST RBS									
MSC:												
BSC/RNC/MME POOL ID:	MDTWCTNICRBR05	MDTWCTNICRBR05	FF01									
LAC:	05990	05990										
RAC:												
EQUIPMENT VENDOR:	ERICSSON	ERICSSON	ERICSSON									
EQUIPMENT TYPE:	3206 INDOOR	3206 INDOOR	6601 INDOOR MU									
BASEBAND CONFIGURATION:												
LOCATION:												
CABINET LOCATION:												
MARKET STATE CODE:			CT									
AGPS:	Yes	Yes	Yes									
NODE B NUMBER:	0	0	2049									
PARENT NAME:	MIDDLETOWN RNC05	MIDDLETOWN RNC05										

Section 8 - RBS/SECTOR ASSOCIATION - existing

	UMTS 1ST RBS	UMTS 2ND RBS	LTE 1ST RBS																			
CTS Common ID	CTV2049	CTU2049	CTL02049																			
Soft Sector IDs	CTV20491	CTU20497	CTL02049_7A_1																			
	CTV20492	CTU20498	CTL02049_7B_1																			
	CTV20493	CTU20499	CTL02049_7C_1																			

Section 8 - RBS/SECTOR ASSOCIATION - final

	UMTS 1ST RBS	UMTS 2ND RBS	LTE 1ST RBS																			
CTS Common ID	CTV2049	CTU2049	CTL02049																			
Soft Sector IDs	CTV20491	CTU20497	CTL02049_7A_1																			
	CTV20492	CTU20498	CTL02049_7B_1																			
	CTV20493	CTU20499	CTL02049_7C_1																			
			CTL02049_9A_1																			
			CTL02049_9B_1																			
			CTL02049_9C_1																			

Section 9 - SOFT SECTOR ID - existing

	UMTS 1ST 850	UMTS 1ST 1900	LTE 1ST 700	LTE 1ST 1900																					
USEID (excluding Hard Sector)	65064.850.3G.1	65064.1900.3G.1																							
SECTOR A SOFT SECTOR ID	CTV20491	CTU20497	CTL02049_7A_1																						
SECTOR B	CTV20492	CTU20498	CTL02049_7B_1																						
SECTOR C	CTV20493	CTU20499	CTL02049_7C_1																						
SECTOR D																									
SECTOR E																									
SECTOR F																									
OMNI																									

Section 9 - SOFT SECTOR ID - final

	UMTS 1ST 850	UMTS 1ST 1900	LTE 1ST 700	LTE 1ST 1900																					
USEID (excluding Hard Sector)	65064.850.3G.1	65064.1900.3G.1																							
SECTOR A SOFT SECTOR ID	CTV20491	CTU20497	CTL02049_7A_1	CTL02049_9A_1																					
SECTOR B	CTV20492	CTU20498	CTL02049_7B_1	CTL02049_9B_1																					
SECTOR C	CTV20493	CTU20499	CTL02049_7C_1	CTL02049_9C_1																					
SECTOR D																									
SECTOR E																									
SECTOR F																									
OMNI																									

Section 9 - Cell Number - existing

	UMTS 1ST 850	UMTS 1ST 1900	LTE 1ST 700	LTE 1ST 1900																					
USEID (excluding Hard Sector)	65064.850.3G.1	65064.1900.3G.1																							
SECTOR A CELL NUMBER			15																						
SECTOR B			16																						
SECTOR C			17																						
SECTOR D																									
SECTOR E																									
SECTOR F																									
OMNI																									

Section 9 - Cell Number - final

	UMTS 1ST 850	UMTS 1ST 1900	LTE 1ST 700	LTE 1ST 1900																					
USEID (excluding Hard Sector)	65064.850.3G.1	65064.1900.3G.1																							
SECTOR A CELL NUMBER			15	8																					
SECTOR B			16	9																					
SECTOR C			17	10																					
SECTOR D																									
SECTOR E																									
SECTOR F																									
OMNI																									

Section 10 - CID/SAC - existing

		UMTS 1ST 850	UMTS 1ST 1900	LTE 1ST 700	LTE 1ST 1900																						
SECTOR A	CID/SAC	20491	20497																								
SECTOR B		20492	20498																								
SECTOR C		20493	20499																								
SECTOR D																											
SECTOR E																											
SECTOR F																											
OMNI																											

Section 10 - CID/SAC - final

		UMTS 1ST 850	UMTS 1ST 1900	LTE 1ST 700	LTE 1ST 1900																						
SECTOR A	CID/SAC	20491	20497																								
SECTOR B		20492	20498																								
SECTOR C		20493	20499																								
SECTOR D																											
SECTOR E																											
SECTOR F																											
OMNI																											

Section 11 - CURRENT RADIO COUNTS existing

		GSM 1ST 850	GSM 1ST 1900	UMTS 1ST 850	UMTS 1ST 1900	UMTS 2ND 850	UMTS 2ND 1900	UMTS 3RD 850	UMTS 3RD 1900	UMTS 4TH 850	UMTS 4TH 1900	LTE 1ST 700	LTE 1ST AWS														
SECTOR A	RADIO COUNTS	3	2	TBD	TBD	TBD	TBD	N/A	N/A	N/A	N/A	N/A	N/A														
SECTOR B		2	2	TBD	TBD	TBD	TBD	N/A	N/A	N/A	N/A	N/A	N/A														
SECTOR C		2	2	TBD	TBD	TBD	TBD	N/A	N/A	N/A	N/A	N/A	N/A														
SECTOR D																											
SECTOR E																											
SECTOR F																											
OMNI																											

Section 13 - NEW/PROPOSED RADIO COUNTS

	GSM 1ST 850	GSM 1ST 1900	UMTS 1ST 850	UMTS 1ST 1900	UMTS 2ND 850	UMTS 2ND 1900	UMTS 3RD 850	UMTS 3RD 1900	UMTS 4TH 850	UMTS 4TH 1900	LTE 1ST 700	LTE 1ST AWS														
SECTOR A RADIO COUNTS	3	2	TBD	TBD	TBD	TBD	N/A	N/A	N/A	N/A	N/A	N/A														
SECTOR B	2	2	TBD	TBD	TBD	TBD	N/A	N/A	N/A	N/A	N/A	N/A														
SECTOR C	2	2	TBD	TBD	TBD	TBD	N/A	N/A	N/A	N/A	N/A	N/A														
SECTOR D																										
SECTOR E																										
SECTOR F																										
OMNI																										

Section 15A - CURRENT SECTOR/CELL INFORMATION - SECTOR A (OR OMNI)

ANTENNA COMMON FIELDS	ANTENNA POSITION 1	ANTENNA POSITION 2	ANTENNA POSITION 3	ANTENNA POSITION 4	ANTENNA POSITION 5	ANTENNA POSITION 6	ANTENNA POSITION 7
ANTENNA MAKE - MODEL	AM-X-CD-16-65-00T-RET		7770	7770			
ANTENNA VENDOR	KMW		Powerwave	Powerwave			
ANTENNA SIZE (H x W x D)	72.0X12.0X6.0		55X11X5	55X11X5			
ANTENNA WEIGHT	64		35	35			
AZIMUTH	70		143	143			
MAGNETIC DECLINATION							
RADIATION CENTER (feet)	240		240	240			
ANTENNA TIP HEIGHT							
MECHANICAL DOWNTILT	0		0	0			
FEEDER AMOUNT			2	2			
VERTICAL SEPARATION from ANTENNA ABOVE (TIP to TIP)							
VERTICAL SEPARATION from ANTENNA BELOW (TIP to TIP)							
HORIZONTAL SEPARATION from CLOSEST ANTENNA to LEFT (CENTERLINE to CENTERLINE)							
HORIZONTAL SEPARATION from CLOSEST ANTENNA to RIGHT (CENTERLINE to CENTERLINE)							
HORIZONTAL SEPARATION from ANOTHER ANTENNA (which antenna # / # of inches)							
Antenna RET Motor (QTY/MODEL)	Internal		2 Powerwave 7020	2 Powerwave 7020			
SURGE ARRESTOR (QTY/MODEL)	1 DC/Fiber Squid			1 POLYPHASER 1000860			
DIPLEXER (QTY/MODEL)			2 Powerwave / LGP 13519	4 Powerwave / LGP 13519			
DUPLEXER (QTY/MODEL)							
Antenna RET CONTROL UNIT (QTY/MODEL)	LTE RRH			1 Powerwave 7070			
DC BLOCK (QTY/MODEL)							
TMA/LNA (QTY/MODEL)			2 Powerwave / LGP 21401 (Dual Band - 850 Bypass)				
CURRENT INJECTORS FOR TMA (QTY/MODEL)			2 POLYPHASER 1000860				
PDU FOR TMAS (QTY/MODEL)			1 LGP 12104 (1900 AND 850 Bypass TMA)				
FILTER (QTY/MODEL)							
SQUID (QTY/MODEL)							
FIBER TRUNK (QTY/MODEL)							
DC TRUNK (QTY/MODEL)							
RRH - 700 band (QTY/MODEL)	1 RRUS-11						
RRH - 850 band (QTY/MODEL)							
RRH - 1900 band (QTY/MODEL)							
RRH - AWS band (QTY/MODEL)							
RRH - WCS band (QTY/MODEL)							
Additional RRH #1 - any band (QTY/MODEL)							
Additional RRH #2 - any band (QTY/MODEL)							
Additional Component 1 (QTY/MODEL)				2 Pwav 1001983 (1) & 1001940 (1)			
Additional Component 2 (QTY/MODEL)							
Additional Component 3 (QTY/MODEL)							
Local Market Note 1							
Local Market Note 2							
Local Market Note 3							

PORT SPECIFIC FIELDS	PORT NUMBER	USEID (CSSng)	USEID (Atoll)	ATOLL TXID	ATOLL CELL ID	TX/RX ?	TECHNOLOGY/FREQUENCY	ANTENNA ATOLL	ANTENNA GAIN	ELECTRICAL AZIMUTH	ELECTRICAL TILT	RRH LOCATION (Top/Bottom/Integrated/None)	FEEDERS TYPE	FEEDER LENGTH (feet)	RXAIT KIT MODULE?	TRIPLEXER or LLC (QTY)	TRIPLEXER or LLC (MODEL)	SCPA/MCPA MODULE?	HATCHPLATE POWER (Watts)	ERP (Watts)	Antenna RET Name	CABLE NUMBER	CABLE ID (CSSNG)
ANTENNA POSITION 1	PORT 1		65064.A.700.4G.1	CTL02049_7A_1	CTL02049_7A_1		LTE 700	AM-X-CD-16-65-00T-RET_725MHz_06DT	15.6		6	Top	Fiber	0									
ANTENNA POSITION 3	PORT 1		65064.A.850.3G.1	CTV20491	CTV20491		UMTS 850	7770.00.850.04	13.5		4	None	Andrew 1-5/8 (850)	295									
	PORT 3		65064.A.1900.3G.1	CTU20497	CTU20497		UMTS 1900	7770.00.1900.00	15.5		0	None	Andrew 1-5/8 (1900)	295									
ANTENNA POSITION 4	PORT 1		65064.A.850.25G.1	319G20491	319G20491		GSM 850	7770.00.850.04	13.5		4	None	Andrew 1-5/8 (850)	295									

Section 15B - CURRENT SECTOR/CELL INFORMATION - SECTOR B

ANTENNA COMMON FIELDS	ANTENNA POSITION 1	ANTENNA POSITION 2	ANTENNA POSITION 3	ANTENNA POSITION 4	ANTENNA POSITION 5	ANTENNA POSITION 6	ANTENNA POSITION 7
ANTENNA MAKE - MODEL	SBNH-1D6565C		7770	7770			
ANTENNA VENDOR	Andrew		Powerwave	Powerwave			
ANTENNA SIZE (H x W x D)	96.4X11.9X7.1		55X11X5	55X11X5			
ANTENNA WEIGHT	60.8		35	35			
AZIMUTH	190		263	263			
MAGNETIC DECLINATION							
RADIATION CENTER (feet)	240		240	240			
ANTENNA TIP HEIGHT							
MECHANICAL DOWNTILT	0		2	2			
FEEDER AMOUNT			2	2			
VERTICAL SEPARATION from ANTENNA ABOVE (TIP to TIP)							
VERTICAL SEPARATION from ANTENNA BELOW (TIP to TIP)							
HORIZONTAL SEPARATION from CLOSEST ANTENNA to LEFT (CENTERLINE to CENTERLINE)							
HORIZONTAL SEPARATION from CLOSEST ANTENNA to RIGHT (CENTERLINE to CENTERLINE)							
HORIZONTAL SEPARATION from ANOTHER ANTENNA (which antenna # / # of inches)							
Antenna RET Motor (QTY/MODEL)	Internal		2 Powerwave 7020	2 Powerwave 7020			
SURGE ARRESTOR (QTY/MODEL)				1 POLYPHASER 1000860			
DIPLEXER (QTY/MODEL)			2 Powerwave / LGP 13519	4 Powerwave / LGP 13519			
DUPLEXER (QTY/MODEL)							
Antenna RET CONTROL UNIT (QTY/MODEL)	LTE RRH						
DC BLOCK (QTY/MODEL)							
TMA/LNA (QTY/MODEL)			2 Powerwave / LGP 21401 (Dual Band - 850 Bypass)				
CURRENT INJECTORS FOR TMA (QTY/MODEL)			2 POLYPHASER 1000860				
PDU FOR TMAS (QTY/MODEL)							
FILTER (QTY/MODEL)							
SQUID (QTY/MODEL)							
FIBER TRUNK (QTY/MODEL)							
DC TRUNK (QTY/MODEL)							
RRH - 700 band (QTY/MODEL)	1 RRUS-11						
RRH - 850 band (QTY/MODEL)							
RRH - 1900 band (QTY/MODEL)							
RRH - AWS band (QTY/MODEL)							
RRH - WCS band (QTY/MODEL)							
Additional RRH #1 - any band (QTY/MODEL)							
Additional RRH #2 - any band (QTY/MODEL)							
Additional Component 1 (QTY/MODEL)				2 Pwav 1001983 (1) & 1001940 (1)			
Additional Component 2 (QTY/MODEL)							
Additional Component 3 (QTY/MODEL)							
Local Market Note 1							
Local Market Note 2							
Local Market Note 3							

PORT SPECIFIC FIELDS	PORT NUMBER	USEID (CSSng)	USEID (Atoll)	ATOLL TXID	ATOLL CELL ID	TX/RX ?	TECHNOLOGY/FREQUENCY	ANTENNA ATOLL	ANTENNA GAIN	ELECTRICAL AZIMUTH	ELECTRICAL TILT	RRH LOCATION (Top/Bottom/Integrated/None)	FEEDERS TYPE	FEEDER LENGTH (feet)	RXAIT KIT MODULE?	TRIPLEXER or LLC (QTY)	TRIPLEXER or LLC (MODEL)	SCPA/MCPA MODULE?	HATCHPLATE POWER (Watts)	ERP (Watts)	Antenna RET Name	CABLE NUMBER	CABLE ID (CSSNG)
ANTENNA POSITION 1	PORT 1		65064.B.700.4G.1	CTL02049_7B_1	CTL02049_7B_1		LTE 700	SBNH-1D6565C_725MHz_06DT	15.6		6	Top	Fiber	0									
ANTENNA POSITION 3	PORT 1		65064.B.850.3G.1	CTV20492	CTV20492		UMTS 850	7770.00.850.04	13.5		4	None	Andrew 1-5/8 (850)	295									
	PORT 3		65064.B.1900.3G.1	CTU20498	CTU20498		UMTS 1900	7770.00.1900.00	15.5		0	None	Andrew 1-5/8 (1900)	295									
ANTENNA POSITION 4	PORT 1		65064.B.850.25G.1	319G20492	319G20492		GSM 850	7770.00.850.04	13.5		4	None	Andrew 1-5/8 (850)	295									

Section 15C - CURRENT SECTOR/CELL INFORMATION - SECTOR C

ANTENNA COMMON FIELDS	ANTENNA POSITION 1	ANTENNA POSITION 2	ANTENNA POSITION 3	ANTENNA POSITION 4	ANTENNA POSITION 5	ANTENNA POSITION 6	ANTENNA POSITION 7
ANTENNA MAKE - MODEL	AM-X-CD-17-65-00T-RET		7770	7770			
ANTENNA VENDOR	KMW		Powerwave	Powerwave			
ANTENNA SIZE (H x W x D)	96X11.8X6		55X11X5	55X11X5			
ANTENNA WEIGHT	59.5		35	35			
AZIMUTH	310		23	23			
MAGNETIC DECLINATION							
RADIATION CENTER (feet)	240		240	240			
ANTENNA TIP HEIGHT							
MECHANICAL DOWNTILT	0		2	2			
FEEDER AMOUNT			2	2			
VERTICAL SEPARATION from ANTENNA ABOVE (TIP to TIP)							
VERTICAL SEPARATION from ANTENNA BELOW (TIP to TIP)							
HORIZONTAL SEPARATION from CLOSEST ANTENNA to LEFT (CENTERLINE to CENTERLINE)							
HORIZONTAL SEPARATION from CLOSEST ANTENNA to RIGHT (CENTERLINE to CENTERLINE)							
HORIZONTAL SEPARATION from ANOTHER ANTENNA (which antenna # / # of inches)							
Antenna RET Motor (QTY/MODEL)	Internal		2 Powerwave 7020	2 Powerwave 7020			
SURGE ARRESTOR (QTY/MODEL)				1 POLYPHASER 1000860			
DIPLEXER (QTY/MODEL)			2 Powerwave / LGP 13519	4 Powerwave / LGP 13519			
DUPLEXER (QTY/MODEL)							
Antenna RET CONTROL UNIT (QTY/MODEL)	LTE RRH						
DC BLOCK (QTY/MODEL)							
TMA/LNA (QTY/MODEL)			2 Powerwave / LGP 21401 (Dual Band - 850 Bypass)				
CURRENT INJECTORS FOR TMA (QTY/MODEL)			2 POLYPHASER 1000860				
PDU FOR TMAS (QTY/MODEL)							
FILTER (QTY/MODEL)							
SQUID (QTY/MODEL)							
FIBER TRUNK (QTY/MODEL)							
DC TRUNK (QTY/MODEL)							
RRH - 700 band (QTY/MODEL)	1 RRUS-11						
RRH - 850 band (QTY/MODEL)							
RRH - 1900 band (QTY/MODEL)							
RRH - AWS band (QTY/MODEL)							
RRH - WCS band (QTY/MODEL)							
Additional RRH #1 - any band (QTY/MODEL)							
Additional RRH #2 - any band (QTY/MODEL)							
Additional Component 1 (QTY/MODEL)				2 Pwav 1001983 (1) & 1001940 (1)			
Additional Component 2 (QTY/MODEL)							
Additional Component 3 (QTY/MODEL)							
Local Market Note 1							
Local Market Note 2							
Local Market Note 3							

PORT SPECIFIC FIELDS	PORT NUMBER	USEID (CSSng)	USEID (Atoll)	ATOLL TXID	ATOLL CELL ID	TX/RX ?	TECHNOLOGY/FREQUENCY	ANTENNA ATOLL	ANTENNA GAIN	ELECTRICAL AZIMUTH	ELECTRICAL TILT	RRH LOCATION (Top/Bottom/Integrated/None)	FEEDERS TYPE	FEEDER LENGTH (feet)	RXAIT KIT MODULE?	TRIPLEXER or LLC (QTY)	TRIPLEXER or LLC (MODEL)	SCPA/MCPA MODULE?	HATCHPLATE POWER (Watts)	ERP (Watts)	Antenna RET Name	CABLE NUMBER	CABLE ID (CSSNG)
ANTENNA POSITION 1	PORT 1		65064.C.700.4G.1	CTL02049_7C_1	CTL02049_7C_1		LTE 700	AM-X-CD-17-65-00T-RET_725MHz_06DT	16.8		6	Top	Fiber	0									
ANTENNA POSITION 3	PORT 1		65064.C.850.3G.1	CTV20493	CTV20493		UMTS 850	7770.00.850.04	13.5		4	None	Andrew 1-5/8 (850)	295									
	PORT 3		65064.C.1900.3G.1	CTU20499	CTU20499		UMTS 1900	7770.00.1900.00	15.5		0	None	Andrew 1-5/8 (1900)	295									
ANTENNA POSITION 4	PORT 1		65064.C.850.25G.1	319G20493	319G20493		GSM 850	7770.00.850.04	13.5		4	None	Andrew 1-5/8 (850)	295									

Section 16A - NEW/PROPOSED SECTOR/CELL INFORMATION - SECTOR A (OR OMNI)

ANTENNA COMMON FIELDS	ANTENNA POSITION 1	ANTENNA POSITION 2	ANTENNA POSITION 3	ANTENNA POSITION 4	ANTENNA POSITION 5	ANTENNA POSITION 6	ANTENNA POSITION 7
Existing Antenna?							
ANTENNA MAKE - MODEL	HPA-65R-BUU-H6						
ANTENNA VENDOR	CCI Products						
ANTENNA SIZE (H x W x D)	72X14.8X9						
ANTENNA WEIGHT	51						
AZIMUTH	70						
MAGNETIC DECLINATION							
RADIATION CENTER (feet)	240						
ANTENNA TIP HEIGHT	243						
MECHANICAL DOWNTILT	0						
FEEDER AMOUNT							
VERTICAL SEPARATION from ANTENNA ABOVE (TIP to TIP)							
VERTICAL SEPARATION from ANTENNA BELOW (TIP to TIP)							
HORIZONTAL SEPARATION from CLOSEST ANTENNA to LEFT (CENTERLINE to CENTERLINE)							
HORIZONTAL SEPARATION from CLOSEST ANTENNA to RIGHT (CENTERLINE to CENTERLINE)							
HORIZONTAL SEPARATION from ANOTHER ANTENNA (which antenna # / # of inches)							
Antenna RET Motor (QTY/MODEL)	Internal						
SURGE ARRESTOR (QTY/MODEL)							
DIPLEXER (QTY/MODEL)							
DUPLEXER (QTY/MODEL)							
Antenna RET CONTROL UNIT (QTY/MODEL)							
DC BLOCK (QTY/MODEL)							
TMA/LNA (QTY/MODEL)							
CURRENT INJECTORS FOR TMA (QTY/MODEL)							
PDU FOR TMAS (QTY/MODEL)							
FILTER (QTY/MODEL)							
SQUID (QTY/MODEL)							
FIBER TRUNK (QTY/MODEL)							
DC TRUNK (QTY/MODEL)							
RRH - 700 band (QTY/MODEL)							
RRH - 850 band (QTY/MODEL)							
RRH - 1900 band (QTY/MODEL)	1 RRUS-32 B2						
RRH - AWS band (QTY/MODEL)							
RRH - WCS band (QTY/MODEL)							
Additional RRH #1 - any band (QTY/MODEL)							
Additional RRH #2 - any band (QTY/MODEL)							
Additional Component 1 (QTY/MODEL)							
Additional Component 2 (QTY/MODEL)							
Additional Component 3 (QTY/MODEL)							
Local Market Note 1	Bronze Standard- Replace existing LTE BB Antenna with Hex Port Antenna, no position change- Add RRUS-32 B2- DUL to DUS upgrade- Add XMU						
Local Market Note 2							
Local Market Note 3	Baseband Config - 1 DUS + XMU DUS-1 - 7A:7B:7C:X1P1:X1P2:_ XMU-1 - PB:PA2B:PA:PA2A:PC:PA2C:_:_:_:_:_:_:_:_:D1E:D1D						

PORT SPECIFIC FIELDS	PORT NUMBER	USEID (CSSng)	USEID (Atoll)	ATOLL TXID	ATOLL CELL ID	TX/RX ?	TECHNOLOGY/FREQUENCY	ANTENNA ATOLL	ANTENNA GAIN	ELECTRICAL AZIMUTH	ELECTRICAL TILT	RRH LOCATION (Top/Bottom/Integrated/None)	FEEDERS TYPE	FEEDER LENGTH (feet)	RXAIT KIT MODULE?	TRIPLEXER or LLC (QTY)	TRIPLEXER or LLC (MODEL)	SCPA/MCPA MODULE?	HATCHPLATE POWER (Watts)	ERP (Watts)	Antenna RET Name	CABLE NUMBER	CABLE ID (CSSNG)
ANTENNA POSITION 1	PORT 3		65064.A.1900.4G.1	CTL02049_9A_1	CTL02049_9A_1		LTE 1900	HPA-65R-BUU-H6_1930MHz_06DT	17.18	70	6	Top	Fiber	0						2421.029		1	

Section 16B - NEW/PROPOSED SECTOR/CELL INFORMATION - SECTOR B

ANTENNA COMMON FIELDS	ANTENNA POSITION 1	ANTENNA POSITION 2	ANTENNA POSITION 3	ANTENNA POSITION 4	ANTENNA POSITION 5	ANTENNA POSITION 6	ANTENNA POSITION 7
Existing Antenna?							
ANTENNA MAKE - MODEL	HPA-65R-BUU-H8						
ANTENNA VENDOR	CCI Products						
ANTENNA SIZE (H x W x D)	92.4X14.8X7.4						
ANTENNA WEIGHT	68						
AZIMUTH	190						
MAGNETIC DECLINATION							
RADIATION CENTER (feet)	240						
ANTENNA TIP HEIGHT	248						
MECHANICAL DOWNTILT	0						
FEEDER AMOUNT							
VERTICAL SEPARATION from ANTENNA ABOVE (TIP to TIP)							
VERTICAL SEPARATION from ANTENNA BELOW (TIP to TIP)							
HORIZONTAL SEPARATION from CLOSEST ANTENNA to LEFT (CENTERLINE to CENTERLINE)							
HORIZONTAL SEPARATION from CLOSEST ANTENNA to RIGHT (CENTERLINE to CENTERLINE)							
HORIZONTAL SEPARATION from ANOTHER ANTENNA (which antenna # / # of inches)							
Antenna RET Motor (QTY/MODEL)	Internal						
SURGE ARRESTOR (QTY/MODEL)							
DIPLEXER (QTY/MODEL)							
DUPLEXER (QTY/MODEL)							
Antenna RET CONTROL UNIT (QTY/MODEL)							
DC BLOCK (QTY/MODEL)							
TMA/LNA (QTY/MODEL)							
CURRENT INJECTORS FOR TMA (QTY/MODEL)							
PDU FOR TMAS (QTY/MODEL)							
FILTER (QTY/MODEL)							
SQUID (QTY/MODEL)							
FIBER TRUNK (QTY/MODEL)							
DC TRUNK (QTY/MODEL)							
RRH - 700 band (QTY/MODEL)							
RRH - 850 band (QTY/MODEL)							
RRH - 1900 band (QTY/MODEL)	1 RRUS-32 B2						
RRH - AWS band (QTY/MODEL)							
RRH - WCS band (QTY/MODEL)							
Additional RRH #1 - any band (QTY/MODEL)							
Additional RRH #2 - any band (QTY/MODEL)							
Additional Component 1 (QTY/MODEL)							
Additional Component 2 (QTY/MODEL)							
Additional Component 3 (QTY/MODEL)							
Local Market Note 1	Bronze Standard- Replace existing LTE BB Antenna with Hex Port Antenna, no position change- Add RRUS-32 B2- DUL to DUS upgrade- Add XMU						
Local Market Note 2							
Local Market Note 3	Baseband Config - 1 DUS + XMU DUS-1 - 7A:7B:7C:X1P1:X1P2:_ XMU-1 - PB:PA2B:PA:PA2A:PC:PA2C:_:_:_:_:_:_:_:_:D1E:D1D						

PORT SPECIFIC FIELDS	PORT NUMBER	USEID (CSSng)	USEID (Atoll)	ATOLL TXID	ATOLL CELL ID	TX/RX ?	TECHNOLOGY/FREQUENCY	ANTENNA ATOLL	ANTENNA GAIN	ELECTRICAL AZIMUTH	ELECTRICAL TILT	RRH LOCATION (Top/Bottom/Integrated/None)	FEEDERS TYPE	FEEDER LENGTH (feet)	RXAIT KIT MODULE?	TRIPLEXER or LLC (QTY)	TRIPLEXER or LLC (MODEL)	SCPA/MCPA MODULE?	HATCHPLATE POWER (Watts)	ERP (Watts)	Antenna RET Name	CABLE NUMBER	CABLE ID (CSSNG)
ANTENNA POSITION 1	PORT 3		65064.B.1900.4G.1	CTL02049_9B_1	CTL02049_9B_1		LTE 1900	HPA-65R-BUU-H8_1930MHz_06DT	17.4	190	6	Top	Fiber	0						2421.029		9	

Section 16C - NEW/PROPOSED SECTOR/CELL INFORMATION - SECTOR C

ANTENNA COMMON FIELDS	ANTENNA POSITION 1	ANTENNA POSITION 2	ANTENNA POSITION 3	ANTENNA POSITION 4	ANTENNA POSITION 5	ANTENNA POSITION 6	ANTENNA POSITION 7
Existing Antenna?							
ANTENNA MAKE - MODEL	HPA-65R-BUU-H8						
ANTENNA VENDOR	CCI Products						
ANTENNA SIZE (H x W x D)	92.4X14.8X7.4						
ANTENNA WEIGHT	68						
AZIMUTH	310						
MAGNETIC DECLINATION							
RADIATION CENTER (feet)	240						
ANTENNA TIP HEIGHT	248						
MECHANICAL DOWNTILT	0						
FEEDER AMOUNT							
VERTICAL SEPARATION from ANTENNA ABOVE (TIP to TIP)							
VERTICAL SEPARATION from ANTENNA BELOW (TIP to TIP)							
HORIZONTAL SEPARATION from CLOSEST ANTENNA to LEFT (CENTERLINE to CENTERLINE)							
HORIZONTAL SEPARATION from CLOSEST ANTENNA to RIGHT (CENTERLINE to CENTERLINE)							
HORIZONTAL SEPARATION from ANOTHER ANTENNA (which antenna # / # of inches)							
Antenna RET Motor (QTY/MODEL)	Internal						
SURGE ARRESTOR (QTY/MODEL)							
DIPLEXER (QTY/MODEL)							
DUPLEXER (QTY/MODEL)							
Antenna RET CONTROL UNIT (QTY/MODEL)							
DC BLOCK (QTY/MODEL)							
TMA/LNA (QTY/MODEL)							
CURRENT INJECTORS FOR TMA (QTY/MODEL)							
PDU FOR TMAS (QTY/MODEL)							
FILTER (QTY/MODEL)							
SQUID (QTY/MODEL)							
FIBER TRUNK (QTY/MODEL)							
DC TRUNK (QTY/MODEL)							
RRH - 700 band (QTY/MODEL)							
RRH - 850 band (QTY/MODEL)							
RRH - 1900 band (QTY/MODEL)	1 RRUS-32 B2						
RRH - AWS band (QTY/MODEL)							
RRH - WCS band (QTY/MODEL)							
Additional RRH #1 - any band (QTY/MODEL)							
Additional RRH #2 - any band (QTY/MODEL)							
Additional Component 1 (QTY/MODEL)							
Additional Component 2 (QTY/MODEL)							
Additional Component 3 (QTY/MODEL)							
Local Market Note 1	Bronze Standard- Replace existing LTE BB Antenna with Hex Port Antenna, no position change- Add RRUS-32 B2- DUL to DUS upgrade- Add XMU						
Local Market Note 2							
Local Market Note 3	Baseband Config - 1 DUS + XMU DUS-1 - 7A:7B:7C:X1P1:X1P2:_ XMU-1 - PB:PA2B:PA:PA2A:PC:PA2C:_:_:_:_:_:_:_:_:D1E:D1D						

PORT SPECIFIC FIELDS	PORT NUMBER	USEID (CSSng)	USEID (Atoll)	ATOLL TXID	ATOLL CELL ID	TX/RX ?	TECHNOLOGY/FREQUENCY	ANTENNA ATOLL	ANTENNA GAIN	ELECTRICAL AZIMUTH	ELECTRICAL TILT	RRH LOCATION (Top/Bottom/Integrated/None)	FEEDERS TYPE	FEEDER LENGTH (feet)	RXAIT KIT MODULE?	TRIPLEXER or LLC (QTY)	TRIPLEXER or LLC (MODEL)	SCPA/MCPA MODULE?	HATCHPLATE POWER (Watts)	ERP (Watts)	Antenna RET Name	CABLE NUMBER	CABLE ID (CSSNG)
ANTENNA POSITION 1	PORT 3		65064.C.1900.4G.1	CTL02049_9C_1	CTL02049_9C_1		LTE 1900	HPA-65R-BUU-H8_1930MHz_03DT	17.1	310	3	Top	Fiber	0						2421.029		17	

Section 17A - FINAL SECTOR/CELL INFORMATION - SECTOR A (OR OMNI)

ANTENNA COMMON FIELDS	ANTENNA POSITION 1	ANTENNA POSITION 2	ANTENNA POSITION 3	ANTENNA POSITION 4	ANTENNA POSITION 5	ANTENNA POSITION 6	ANTENNA POSITION 7
ANTENNA MAKE - MODEL	HPA-65R-BUU-H6		7770	7770			
ANTENNA VENDOR	CCI Products		Powerwave	Powerwave			
ANTENNA SIZE (H x W x D)	72X14.8X9		55X11X5	55X11X5			
ANTENNA WEIGHT	51		35	35			
AZIMUTH	70		143	143			
MAGNETIC DECLINATION							
RADIATION CENTER (feet)	240		240	240			
ANTENNA TIP HEIGHT	243		242	242			
MECHANICAL DOWNTILT	0		0	0			
FEEDER AMOUNT			2	2			
VERTICAL SEPARATION from ANTENNA ABOVE (TIP to TIP)							
VERTICAL SEPARATION from ANTENNA BELOW (TIP to TIP)							
HORIZONTAL SEPARATION from CLOSEST ANTENNA to LEFT (CENTERLINE to CENTERLINE)							
HORIZONTAL SEPARATION from CLOSEST ANTENNA to RIGHT (CENTERLINE to CENTERLINE)							
HORIZONTAL SEPARATION from ANOTHER ANTENNA (which antenna # / # of inches)							
Antenna RET Motor (QTY/MODEL)	Internal		2 Powerwave 7020	2 Powerwave 7020			
SURGE ARRESTOR (QTY/MODEL)	1 DC/Fiber Squid			1 POLYPHASER 1000860			
DIPLEXER (QTY/MODEL)			2 Powerwave / LGP 13519	4 Powerwave / LGP 13519			
DUPLEXER (QTY/MODEL)							
Antenna RET CONTROL UNIT (QTY/MODEL)	LTE RRH			1 Powerwave 7070			
DC BLOCK (QTY/MODEL)							
TMA/LNA (QTY/MODEL)			2 Powerwave / LGP 21401 (Dual Band - 850 Bypass)				
CURRENT INJECTORS FOR TMA (QTY/MODEL)			2 POLYPHASER 1000860				
PDU FOR TMAS (QTY/MODEL)			1 LGP 12104 (1900 AND 850 Bypass TMA)				
FILTER (QTY/MODEL)							
SQUID (QTY/MODEL)							
FIBER TRUNK (QTY/MODEL)							
DC TRUNK (QTY/MODEL)							
RRH - 700 band (QTY/MODEL)	1 RRUS-11						
RRH - 850 band (QTY/MODEL)							
RRH - 1900 band (QTY/MODEL)	1 RRUS-32 B2						
RRH - AWS band (QTY/MODEL)							
RRH - WCS band (QTY/MODEL)							
Additional RRH #1 - any band (QTY/MODEL)							
Additional RRH #2 - any band (QTY/MODEL)							
Additional Component 1 (QTY/MODEL)				2 Pwav 1001983 (1) & 1001940 (1)			
Additional Component 2 (QTY/MODEL)							
Additional Component 3 (QTY/MODEL)							
Local Market Note 1	Bronze Standard- Replace existing LTE BB Antenna with Hex Port Antenna, no position change- Add RRUS-32 B2- DUL to DUS upgrade- Add XMU						
Local Market Note 2							
Local Market Note 3	Baseband Config - 1 DUS + XMU DUS-1 - 7A:7B:7C:X1P1:X1P2:_ XMU-1 - PB:PA2B:PA:PA2A:PC:PA2C:_:_:_:_:_:_:_:_:D1E:D1D						

PORT SPECIFIC FIELDS	PORT NUMBER	USEID (CSSng)	USEID (Atoll)	ATOLL TXID	ATOLL CELL ID	TX/RX ?	TECHNOLOGY/FREQUENCY	ANTENNA ATOLL	ANTENNA GAIN	ELECTRICAL AZIMUTH	ELECTRICAL TILT	RRH LOCATION (Top/Bottom/Integrated/None)	FEEDERS TYPE	FEEDER LENGTH (feet)	RXAIT KIT MODULE?	TRIPLEXER or LLC (QTY)	TRIPLEXER or LLC (MODEL)	SCPA/MCPA MODULE?	HATCHPLATE POWER (Watts)	ERP (Watts)	Antenna RET Name	CABLE NUMBER	CABLE ID (CSSNG)
ANTENNA POSITION 1	PORT 1	65064.A.700.4G.1	65064.A.700.4G.1	CTL02049_7A_1	CTL02049_7A_1		LTE 700	HPA-65R-BUU-H6_719MHz_06DT	14.08	70	6	Top	Fiber	0						1475.7065		1	
	PORT 3	65064.A.1900.4G.tmp1	65064.A.1900.4G.1	CTL02049_9A_1	CTL02049_9A_1		LTE 1900	HPA-65R-BUU-H6_1930MHz_06DT	17.18	70	6	Top	Fiber	0						2421.029		1	
ANTENNA POSITION 3	PORT 1	65064.A.850.3G.1	65064.A.850.3G.1	CTV20491	CTV20491		UMTS 850	7770.00.850.04	13.5	143	4	None	Andrew 1-5/8 (850)	295						225.94		5	
	PORT 3	65064.A.1900.3G.1	65064.A.1900.3G.1	CTU20497	CTU20497		UMTS 1900	7770.00.1900.00	15.5	143	0	None	Andrew 1-5/8 (1900)	295						269.15		6	
ANTENNA POSITION 4	PORT 1		65064.A.850.25G.1	319G20491	319G20491		GSM 850	7770.00.850.04	13.5	143	4	None	Andrew 1-5/8 (850)	295						225.94		7	

Section 17B - FINAL SECTOR/CELL INFORMATION - SECTOR B

ANTENNA COMMON FIELDS	ANTENNA POSITION 1	ANTENNA POSITION 2	ANTENNA POSITION 3	ANTENNA POSITION 4	ANTENNA POSITION 5	ANTENNA POSITION 6	ANTENNA POSITION 7
ANTENNA MAKE - MODEL	HPA-65R-BUU-H8		7770	7770			
ANTENNA VENDOR	CCI Products		Powerwave	Powerwave			
ANTENNA SIZE (H x W x D)	92.4X14.8X7.4		55X11X5	55X11X5			
ANTENNA WEIGHT	68		35	35			
AZIMUTH	190		263	263			
MAGNETIC DECLINATION							
RADIATION CENTER (feet)	240		240	240			
ANTENNA TIP HEIGHT	248		242	242			
MECHANICAL DOWNTILT	0		2	2			
FEEDER AMOUNT			2	2			
VERTICAL SEPARATION from ANTENNA ABOVE (TIP to TIP)							
VERTICAL SEPARATION from ANTENNA BELOW (TIP to TIP)							
HORIZONTAL SEPARATION from CLOSEST ANTENNA to LEFT (CENTERLINE to CENTERLINE)							
HORIZONTAL SEPARATION from CLOSEST ANTENNA to RIGHT (CENTERLINE to CENTERLINE)							
HORIZONTAL SEPARATION from ANOTHER ANTENNA (which antenna # / # of inches)							
Antenna RET Motor (QTY/MODEL)	Internal		2 Powerwave 7020	2 Powerwave 7020			
SURGE ARRESTOR (QTY/MODEL)				1 POLYPHASER 1000860			
DIPLEXER (QTY/MODEL)			2 Powerwave / LGP 13519	4 Powerwave / LGP 13519			
DUPLEXER (QTY/MODEL)							
Antenna RET CONTROL UNIT (QTY/MODEL)	LTE RRH						
DC BLOCK (QTY/MODEL)							
TMA/LNA (QTY/MODEL)			2 Powerwave / LGP 21401 (Dual Band - 850 Bypass)				
CURRENT INJECTORS FOR TMA (QTY/MODEL)			2 POLYPHASER 1000860				
PDU FOR TMAS (QTY/MODEL)							
FILTER (QTY/MODEL)							
SQUID (QTY/MODEL)							
FIBER TRUNK (QTY/MODEL)							
DC TRUNK (QTY/MODEL)							
RRH - 700 band (QTY/MODEL)	1 RRUS-11						
RRH - 850 band (QTY/MODEL)							
RRH - 1900 band (QTY/MODEL)	1 RRUS-32 B2						
RRH - AWS band (QTY/MODEL)							
RRH - WCS band (QTY/MODEL)							
Additional RRH #1 - any band (QTY/MODEL)							
Additional RRH #2 - any band (QTY/MODEL)							
Additional Component 1 (QTY/MODEL)				2 Pwav 1001983 (1) & 1001940 (1)			
Additional Component 2 (QTY/MODEL)							
Additional Component 3 (QTY/MODEL)							
Local Market Note 1	Bronze Standard- Replace existing LTE BB Antenna with Hex Port Antenna, no position change- Add RRUS-32 B2- DUL to DUS upgrade- Add XMU						
Local Market Note 2							
Local Market Note 3	Baseband Config - 1 DUS + XMU DUS-1 - 7A:7B:7C:X1P1:X1P2:_ XMU-1 - PB:PA2B:PA:PA2A:PC:PA2C:_:_:_:_:_:_:_:_:D1E:D1D						

PORT SPECIFIC FIELDS	PORT NUMBER	USEID (CSSng)	USEID (Atoll)	ATOLL TXID	ATOLL CELL ID	TX/RX ?	TECHNOLOGY/FREQUENCY	ANTENNA ATOLL	ANTENNA GAIN	ELECTRICAL AZIMUTH	ELECTRICAL TILT	RRH LOCATION (Top/Bottom/Integrated/None)	FEEDERS TYPE	FEEDER LENGTH (feet)	RXAIT KIT MODULE?	TRIPLEXER or LLC (QTY)	TRIPLEXER or LLC (MODEL)	SCPA/MCPA MODULE?	HATCHPLATE POWER (Watts)	ERP (Watts)	Antenna RET Name	CABLE NUMBER	CABLE ID (CSSNG)
ANTENNA POSITION 1	PORT 1	65064.B.700.4G.1	65064.B.700.4G.1	CTL02049_7B_1	CTL02049_7B_1		LTE 700	HPA-65R-BUU-H8_719MHz_06DT	15	190	6	Top	Fiber	0						1475.7065		9	
	PORT 3	65064.B.1900.4G.tmp1	65064.B.1900.4G.1	CTL02049_9B_1	CTL02049_9B_1		LTE 1900	HPA-65R-BUU-H8_1930MHz_06DT	17.4	190	6	Top	Fiber	0						2421.029		9	
ANTENNA POSITION 3	PORT 1	65064.B.850.3G.1	65064.B.850.3G.1	CTV20492	CTV20492		UMTS 850	7770.00.850.04	13.5	263	4	None	Andrew 1-5/8 (850)	295						225.94		13	
	PORT 3	65064.B.1900.3G.1	65064.B.1900.3G.1	CTU20498	CTU20498		UMTS 1900	7770.00.1900.00	15.5	263	0	None	Andrew 1-5/8 (1900)	295						269.15		14	
ANTENNA POSITION 4	PORT 1		65064.B.850.25G.1	319G20492	319G20492		GSM 850	7770.00.850.04	13.5	263	4	None	Andrew 1-5/8 (850)	295						225.94		15	

Section 17C - FINAL SECTOR/CELL INFORMATION - SECTOR C

ANTENNA COMMON FIELDS	ANTENNA POSITION 1	ANTENNA POSITION 2	ANTENNA POSITION 3	ANTENNA POSITION 4	ANTENNA POSITION 5	ANTENNA POSITION 6	ANTENNA POSITION 7
ANTENNA MAKE - MODEL	HPA-65R-BUU-H8		7770	7770			
ANTENNA VENDOR	CCI Products		Powerwave	Powerwave			
ANTENNA SIZE (H x W x D)	92.4X14.8X7.4		55X11X5	55X11X5			
ANTENNA WEIGHT	68		35	35			
AZIMUTH	310		23	23			
MAGNETIC DECLINATION							
RADIATION CENTER (feet)	240		240	240			
ANTENNA TIP HEIGHT	248		242	242			
MECHANICAL DOWNTILT	0		2	2			
FEEDER AMOUNT			2	2			
VERTICAL SEPARATION from ANTENNA ABOVE (TIP to TIP)							
VERTICAL SEPARATION from ANTENNA BELOW (TIP to TIP)							
HORIZONTAL SEPARATION from CLOSEST ANTENNA to LEFT (CENTERLINE to CENTERLINE)							
HORIZONTAL SEPARATION from CLOSEST ANTENNA to RIGHT (CENTERLINE to CENTERLINE)							
HORIZONTAL SEPARATION from ANOTHER ANTENNA (which antenna # / # of inches)							
Antenna RET Motor (QTY/MODEL)	Internal		2 Powerwave 7020	2 Powerwave 7020			
SURGE ARRESTOR (QTY/MODEL)				1 POLYPHASER 1000860			
DIPLEXER (QTY/MODEL)			2 Powerwave / LGP 13519	4 Powerwave / LGP 13519			
DUPLEXER (QTY/MODEL)							
Antenna RET CONTROL UNIT (QTY/MODEL)	LTE RRH						
DC BLOCK (QTY/MODEL)							
TMA/LNA (QTY/MODEL)			2 Powerwave / LGP 21401 (Dual Band - 850 Bypass)				
CURRENT INJECTORS FOR TMA (QTY/MODEL)			2 POLYPHASER 1000860				
PDU FOR TMAS (QTY/MODEL)							
FILTER (QTY/MODEL)							
SQUID (QTY/MODEL)							
FIBER TRUNK (QTY/MODEL)							
DC TRUNK (QTY/MODEL)							
RRH - 700 band (QTY/MODEL)	1 RRUS-11						
RRH - 850 band (QTY/MODEL)							
RRH - 1900 band (QTY/MODEL)	1 RRUS-32 B2						
RRH - AWS band (QTY/MODEL)							
RRH - WCS band (QTY/MODEL)							
Additional RRH #1 - any band (QTY/MODEL)							
Additional RRH #2 - any band (QTY/MODEL)							
Additional Component 1 (QTY/MODEL)				2 Pwav 1001983 (1) & 1001940 (1)			
Additional Component 2 (QTY/MODEL)							
Additional Component 3 (QTY/MODEL)							
Local Market Note 1	Bronze Standard- Replace existing LTE BB Antenna with Hex Port Antenna, no position change- Add RRUS-32 B2- DUL to DUS upgrade- Add XMU						
Local Market Note 2							
Local Market Note 3	Baseband Config - 1 DUS + XMU DUS-1 - 7A:7B:7C:X1P1:X1P2:_ XMU-1 - PB:PA2B:PA:PA2A:PC:PA2C:_:_:_:_:_:_:_:_:D1E:D1D						

PORT SPECIFIC FIELDS	PORT NUMBER	USEID (CSSng)	USEID (Atoll)	ATOLL TXID	ATOLL CELL ID	TX/RX ?	TECHNOLOGY/FREQUENCY	ANTENNA ATOLL	ANTENNA GAIN	ELECTRICAL AZIMUTH	ELECTRICAL TILT	RRH LOCATION (Top/Bottom/Integrated/None)	FEEDERS TYPE	FEEDER LENGTH (feet)	RXAIT KIT MODULE?	TRIPLEXER or LLC (QTY)	TRIPLEXER or LLC (MODEL)	SCPA/MCPA MODULE?	HATCHPLATE POWER (Watts)	ERP (Watts)	Antenna RET Name	CABLE NUMBER	CABLE ID (CSSNG)
ANTENNA POSITION 1	PORT 1	65064.C.700.4G.1	65064.C.700.4G.1	CTL02049_7C_1	CTL02049_7C_1		LTE 700	HPA-65R-BUU-H8_719MHz_06DT	15	310	6	Top	Fiber	0						1475.7065		17	
	PORT 3	65064.C.1900.4G.tmp1	65064.C.1900.4G.1	CTL02049_9C_1	CTL02049_9C_1		LTE 1900	HPA-65R-BUU-H8_1930MHz_03DT	17.1	310	3	Top	Fiber	0						2421.029		17	
ANTENNA POSITION 3	PORT 1	65064.C.850.3G.1	65064.C.850.3G.1	CTV20493	CTV20493		UMTS 850	7770.00.850.04	13.5	23	4	None	Andrew 1-5/8 (850)	295						225.94		21	
	PORT 3	65064.C.1900.3G.1	65064.C.1900.3G.1	CTU20499	CTU20499		UMTS 1900	7770.00.1900.00	15.5	23	0	None	Andrew 1-5/8 (1900)	295						269.15		22	
ANTENNA POSITION 4	PORT 1		65064.C.850.25G.1	319G20493	319G20493		GSM 850	7770.00.850.04	13.5	23	4	None	Andrew 1-5/8 (850)	295						225.94		23	

Diagram - Sector	A	Diagram File Name - CT2049_ABC.vsd					
Atoll Site Name -	CT2049	Location Name -	MONTVILLE-OLD COLCHESTER RD	Market -	CONNECTICUT	Market Cluster -	NEW ENGLAND
Comments:							

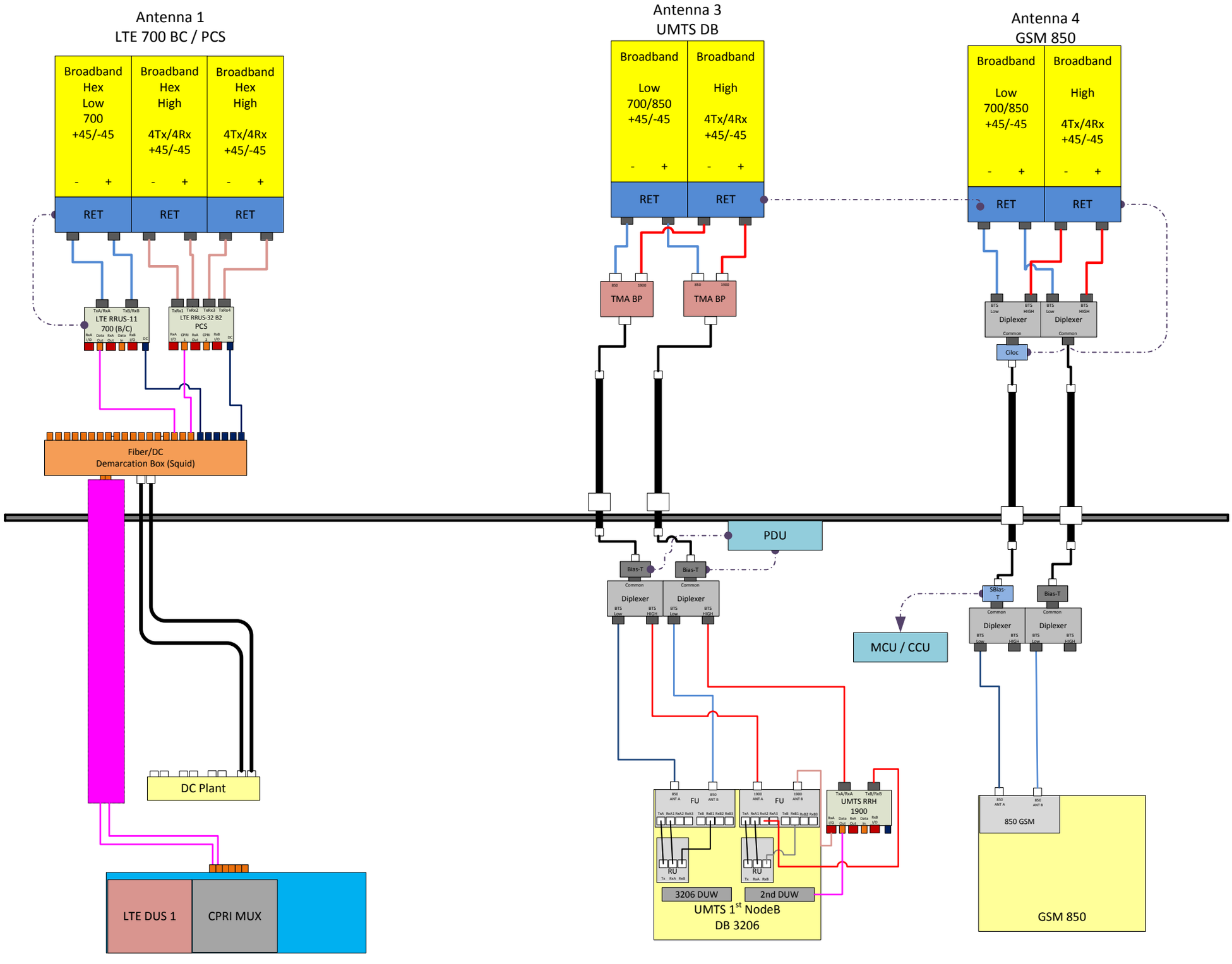


Diagram - Sector	B	Diagram File Name - CT2049_ABC.vsd					
Atoll Site Name -	CT2049	Location Name -	MONTVILLE-OLD COLCHESTER RD	Market -	CONNECTICUT	Market Cluster -	NEW ENGLAND
Comments:							

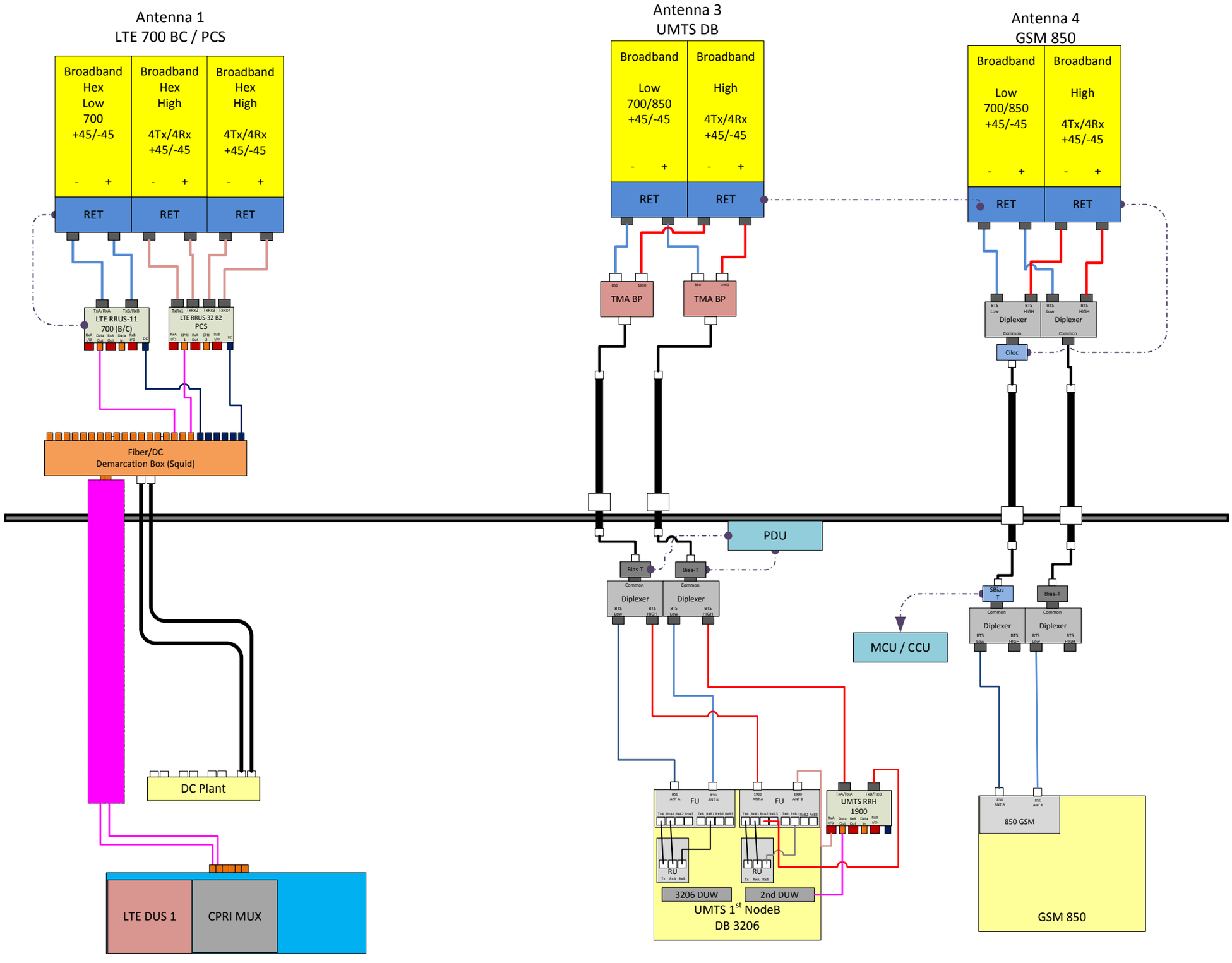
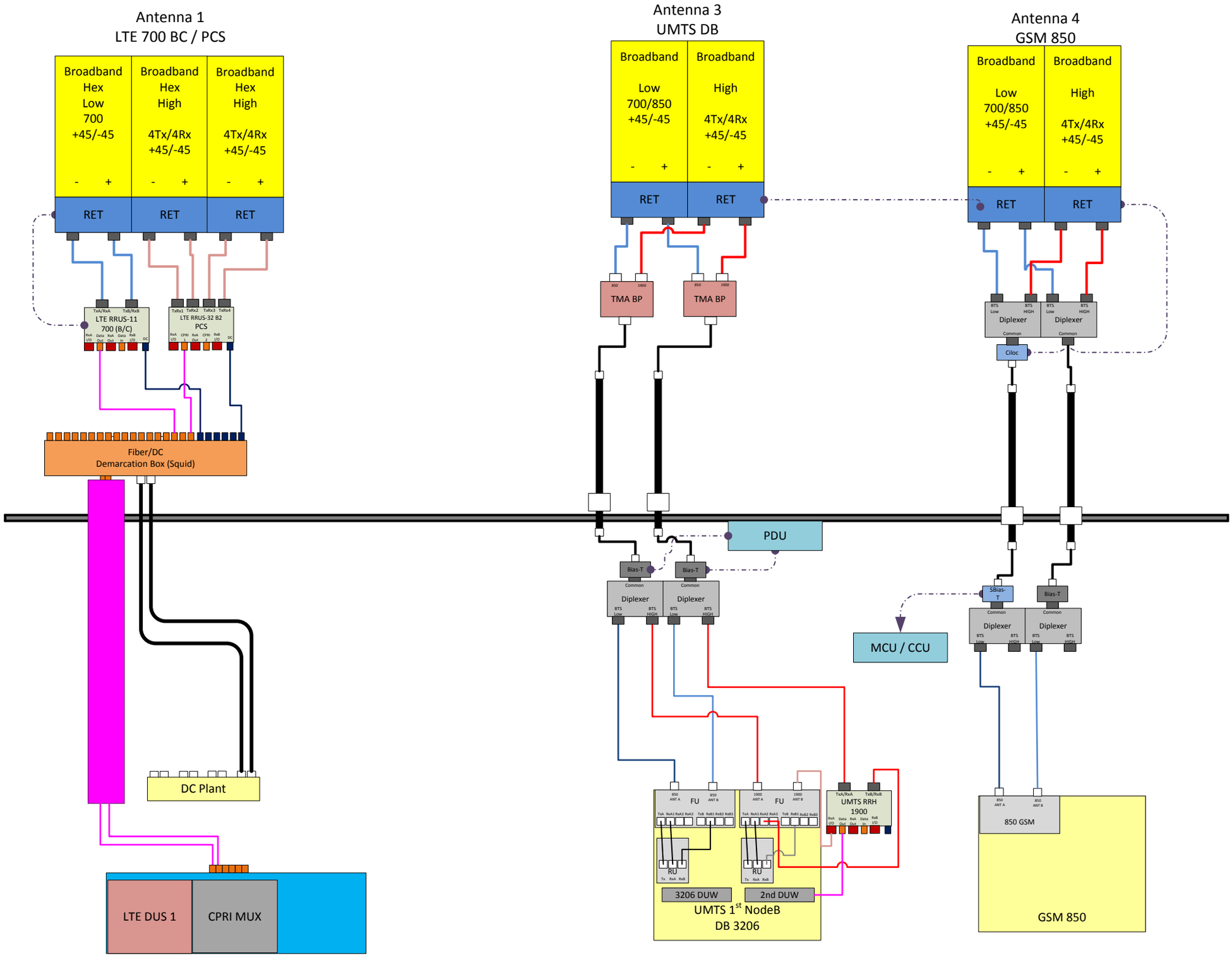


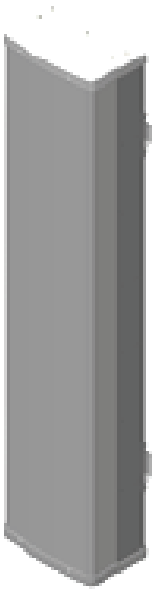
Diagram - Sector	C	Diagram File Name - CT2049_ABC.vsd					
Atoll Site Name -	CT2049	Location Name -	MONTVILLE-OLD COLCHESTER RD	Market -	CONNECTICUT	Market Cluster -	NEW ENGLAND
Comments:							



WORKFLOW SUMMARY						
Date	FROM State / Status	FROM ATTUID	TO State / Status	TO ATTUID	Operation	Comments
07/14/2016	Preliminary / In Progress	sp656b	Preliminary / Submitted for Approval	AB014M	Promote	
08/10/2016	Preliminary / Submitted for Approval	AB014M	Preliminary / Approved	BG144B	Promote	
08/23/2016	Preliminary / Approved	BG144B	Final / RF Approval	OM636A	Promote	Needs Final
08/23/2016	Final / RF Approval	OM636A	Final / Approved	BG144B	Promote	LTE Final RFDS

HexPort Multi-Band Antenna

Model HPA-65R-BUU-H6



The CCI Hexport Multi-Band Antenna Array is an industry first 6-port antenna with full WCS Band Coverage. With four high band ports and two low band ports, our hexport antenna is ready for 4X4 high band MIMO.

Modern networks demand high performance, consequently CCI has incorporated several new and innovative design techniques to provide an antenna with excellent side-lobe performance, sharp elevation beams, and high front to back ratio.

Multiple networks can now be connected to a single antenna, reducing tower loading and leasing expense, while decreasing deployment time and installation cost.

Full band capability for 700 MHz , Cellular 850 MHz, PCS 1900 MHz, AWS 1710/2170 MHz and WCS 2300 MHz coverage in a single enclosure.

Hexport Multi-Band Antenna Array

Benefits

- **Includes WCS Band**
- **Reduces tower loading**
- **Frees up space for tower mounted E-nodes**
- **Single radome with six ports**
- **All Band design simplifies radio assignments**
- **Sharp elevation beam eases network planning**

Features

- High Band Ports include WCS Band
- Four High Band ports with two Low Band ports in one antenna
- Sharp elevation beam
- Excellent elevation side-lobe performance
- Excellent MIMO performance due to array spacing
- Excellent PIM Performance
- A multi-network solution in one radome

Applications

- 4x4 MIMO on High Band and 2x2 MIMO on Low Band
- Adding additional capacity without adding additional antennas
- Adding WCS Band without increasing antenna count

ISO 9001:2008
Quality Management Systems
Système de Qualité
www.ca.sgs.com

HexPort Multi-Band Antenna

Model HPA-65R-BUU-H6

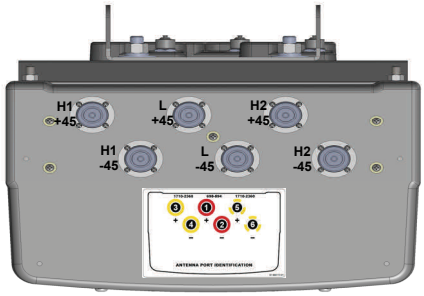
HPA-65R Multi-Band Antenna

Electrical Specifications

Frequency Range	2 X Low Band Ports which cover the full range from 698-894 MHz		4 X High Band Ports which cover the full range from 1710-2360 MHz			
	698-806 MHz	824-894 MHz	1850-1990 MHz	1710-1755/2110-2170 MHz	2305-2360 MHz	
Gain	14.1 dBi	14.8 dBi	16.9 dBi	16.3 dBi	17.2 dBi	17.4 dBi
Azimuth Beamwidth (-3dB)	66°	65°	61°	66°	62°	57°
Elevation Beamwidth (-3dB)	12.5°	10.5°	5.7°	6.3°	5.1°	4.5°
Electrical Downtilt	0° to 10°	0° to 10°	0° to 8°	0° to 8°	0° to 8°	0° to 8°
Elevation Sidelobes (1st Upper)	< -17 dB	< -19 dB	< -19 dB	< -18 dB	< -18 dB	< -17 dB
Front-to-Back Ratio @180°	> 30 dB	> 30 dB	> 30 dB	> 30 dB	> 30 dB	> 30 dB
Front-to-Back Ratio over ± 20°	> 30 dB	> 30 dB	> 30 dB	> 30 dB	> 30 dB	> 30 dB
Cross-Polar Discrimination (at Peak)	> 25 dB	> 20 dB	> 25 dB	> 25 dB	> 25 dB	> 25 dB
Cross-Polar Discrimination (at ± 60°)	> 17 dB	> 14 dB	> 17 dB	> 17 dB	> 17 dB	> 17 dB
Cross-Polar Port-to-Port Isolation	> 25 dB	> 25 dB	> 26 dB	> 25 dB	> 26 dB	> 26 dB
VSWR	< 1.5:1	< 1.5:1	< 1.5:1	< 1.5:1	< 1.5:1	< 1.5:1
Passive Intermodulation (2x20W)	≤ -150dBc	≤ -150dBc	≤ -150dBc	≤ -150dBc	≤ -150dBc	≤ -150dBc
Input Power	500 Watts CW	500 Watts CW	300 Watts CW	300 Watts CW	300 Watts CW	300 Watts CW
Polarization	Dual Pol 45°	Dual Pol 45°	Dual Pol 45°	Dual Pol 45°	Dual Pol 45°	Dual Pol 45°
Input Impedance	50 Ohms	50 Ohms	50 Ohms	50 Ohms	50 Ohms	50 Ohms
Lightning Protection	DC Ground	DC Ground	DC Ground	DC Ground	DC Ground	DC Ground

Mechanical Specifications

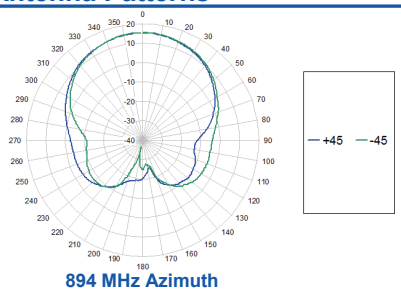
Dimensions (LxWxD)	72.0 x 14.8 x 9.0 inches (1828 x 376 x 229 mm)
Survival Wind Speed	> 150 mph
Front Wind Load	247 lbs (1099 N) @ 100 mph (161 kph)
Side Wind Load	165 lbs (735 N) @ 100 mph (161 kph)
Equivalent Flat Plate Area	9.7 ft^2 (0.90 m^2)
Weight (without Mounting)	51 lbs (23 kg)
RET System Weight	5.0 lbs (2.3 kg)
Connector	6; 7-16 DIN female long neck
Mounting Pole	2-5 inches (5-12 cm)



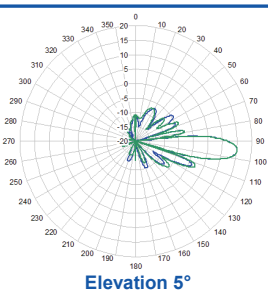
Bottom View

Rear View

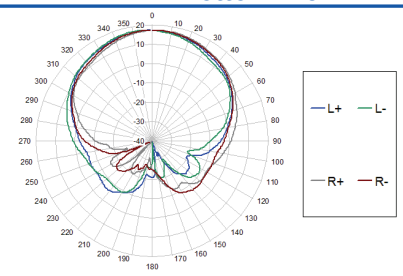
Antenna Patterns*



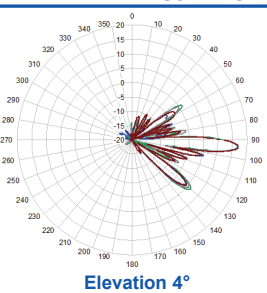
894 MHz Azimuth



Elevation 5°



1920 MHz Azimuth



Elevation 4°

*Typical antenna patterns. For detail information on antenna pattern, please contact us at info@cciproducts.com. All specifications are subject to change without notice.

HexPort Multi-Band Antenna

Model HPA-65R-BUU-H8

Hexport Multi-Band Antenna Array

The CCI Hexport Multi-Band Antenna Array is an industry first 6-port antenna with full WCS Band Coverage. With four high band ports and two low band ports, our hexport antenna is ready for 4X4 high band MIMO.

Modern networks demand high performance, consequently CCI has incorporated several new and innovative design techniques to provide an antenna with excellent side-lobe performance, sharp elevation beams, and high front to back ratio.

Multiple networks can now be connected to a single antenna, reducing tower loading and leasing expense, while decreasing deployment time and installation cost.

Full band capability for 700 MHz , Cellular 850 MHz, PCS 1900 MHz, AWS 1710/2170 MHz and WCS 2300 MHz coverage in a single enclosure.

Benefits

- **Includes WCS Band**
- **Reduces tower loading**
- **Frees up space for tower mounted E-nodes**
- **Single radome with six ports**
- **All Band design simplifies radio assignments**
- **Sharp elevation beam eases network planning**

Features

- High Band Ports include WCS Band
- Four High Band ports with two Low Band ports in one antenna
- Sharp elevation beam
- Excellent elevation side-lobe performance
- Excellent MIMO performance due to array spacing
- Excellent PIM Performance
- A multi-network solution in one radome

Applications

- 4x4 MIMO on High Band and 2x2 MIMO on Low Band
- Adding additional capacity without adding additional antennas
- Adding WCS Band without increasing antenna count

ISO 9001:2008
Quality Management Systems
Système de Qualité
www.ca.sgs.com

HexPort Multi-Band Antenna

Model HPA-65R-BUU-H8

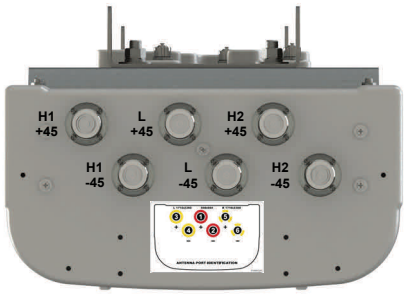
HPA-65R Multi-Band Antenna

Electrical Specifications

Frequency Range	2 X Low Band Ports which cover the full range from 698-894 MHz		4 X High Band Ports which cover the full range from 1710-2360 MHz			
	698-806 MHz	824-894 MHz	1850-1990 MHz	1710-1755/2110-2170 MHz	2305-2360 MHz	
Gain	15.3 dBi	16.2 dBi	17.1 dBi	16.3 dBi	17.4 dBi	17.7 dBi
Azimuth Beamwidth (-3dB)	65°	61°	62°	68°	64°	60°
Elevation Beamwidth (-3dB)	10.1°	8.4°	5.6°	6.2°	5.0°	4.5°
Electrical Downtilt	2° to 10°	2° to 10°	0° to 8°	0° to 8°	0° to 8°	0° to 8°
Elevation Sidelobes (1st Upper)	< -17 dB	< -17 dB	< -19 dB	< -18 dB	< -18 dB	< -17 dB
Front-to-Back Ratio @180°	> 29 dB	> 28 dB	> 35 dB	> 35 dB	> 35 dB	> 35 dB
Front-to-Back Ratio over ± 20°	> 28 dB	> 27 dB	> 28 dB	> 27 dB	> 28 dB	> 28 dB
Cross-Polar Discrimination (at Peak)	> 24 dB	> 20 dB	> 25 dB	> 25 dB	> 25 dB	> 25 dB
Cross-Polar Discrimination (at ± 60°)	> 16 dB	> 14 dB	> 18 dB	> 18 dB	> 18 dB	> 18 dB
Cross-Polar Port-to-Port Isolation	> 25 dB	> 25 dB	> 25 dB	> 25 dB	> 25 dB	> 25 dB
VSWR	< 1.5:1	< 1.5:1	< 1.5:1	< 1.5:1	< 1.5:1	< 1.5:1
Passive Intermodulation (2x20W)	≤ -150dBc	≤ -150dBc	≤ -150dBc	≤ -150dBc	≤ -150dBc	≤ -150dBc
Input Power	500 Watts CW	500 Watts CW	300 Watts CW	300 Watts CW	300 Watts CW	300 Watts CW
Polarization	Dual Pol 45°	Dual Pol 45°	Dual Pol 45°	Dual Pol 45°	Dual Pol 45°	Dual Pol 45°
Input Impedance	50 Ohms	50 Ohms	50 Ohms	50 Ohms	50 Ohms	50 Ohms
Lightning Protection	DC Ground	DC Ground	DC Ground	DC Ground	DC Ground	DC Ground

Mechanical Specifications

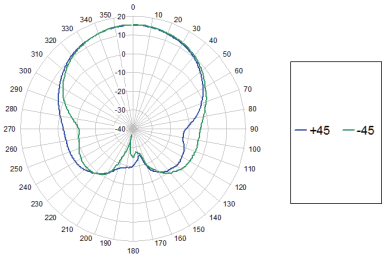
Dimensions (LxWxD)	92.4 x 14.8 x 7.4 inches (2348 x 376 x 189 mm)
Survival Wind Speed	> 150 mph
Front Wind Load	332 lbs (1479 N) @ 100 mph (161 kph)
Side Wind Load	193 lbs (860 N) @ 100 mph (161 kph)
Equivalent Flat Plate Area	13.0 ft^2 (1.2 m^2)
Weight (without Mounting)	68 lbs (31 kg)
RET System Weight	5.0 lbs (2.25 kg)
Connector	6; 7-16 DIN female long neck
Mounting Pole	2-5 inches (5-12 cm)



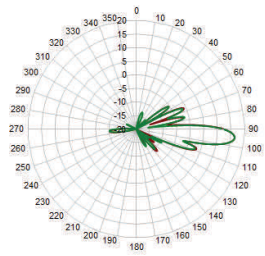
Bottom View

Rear View

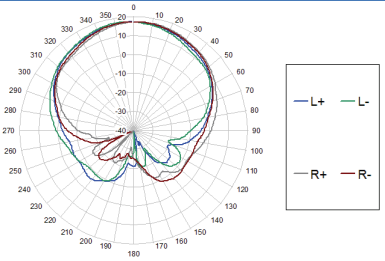
Antenna Patterns*



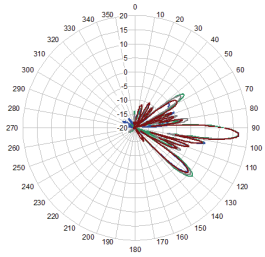
894 MHz Azimuth



Elevation 5°



1920 MHz Azimuth



Elevation 4°

*Typical antenna patterns. For detail information on antenna pattern, please contact us at info@cciproducts.com. All specifications are subject to change without notice.

CENTEK engineering

Centered on Solutions℠

September 20, 2016

Ms. Lauren Groppi
Site Acquisition Manager
Empire Telecom USA, LLC
16 Esquire Road
Billerica, MA 01862

Re: Structural Letter ~ Antenna Mount
AT&T – Site Ref: CT2049 Montville
695 Old Colchester Road
Montville, CT 06382

Centek Project No. 16071.44

Dear Ms. Groppi,

Centek Engineering, Inc. has reviewed the AT&T Mobility antenna installation at the above referenced site. The purpose of the review is to determine the structural adequacy of the existing mount, consisting of three (3) tower stand-off sector frames ("T-Frames") with stiff arm assembly brace from the pipe mounts to the existing tower supporting the proposed/existing equipment configuration. The review considered the effects of wind load, dead load and ice load in accordance with the 2012 International Building Code as modified by the 2016 State of Connecticut Supplement including ASCE7-10 and TIA/EIA-222-G *Structural Standards for Steel Antenna Towers and Supporting Structures*.

The AT&T Mobility loads considered in this analysis consist of the following:

- **AT&T Mobility:**
  Tower Stand-off Sector Frames: Six (6) Powerwave 7770 panel antennas, two (2) CCI HPA-65R-BUU-H8 panel antennas, one (1) CCI HPA-65R-BUU-H6 panel antenna, six (6) Powerwave LGP 21401 tower mounted amplifiers (TMAs), three (3) Ericsson RRUS-11 remote radio units, three (3) Ericsson RRUS-32 and one (1) Raycap DC6-48-60-18-8F surge arrestor mounted with a RAD center elevation of ±240-ft AGL.

The antenna mount was analyzed per the requirements of the 2012 International Building Code as modified by the 2016 State of Connecticut Supplement considering a nominal design wind speed of 105 mph for Montville as required in *Appendix N* of the 2016 Connecticut state supplement. Antenna mount sizes, lengths and geometry were obtained from a mount mapping provided by Construction Services of Branford (CSB) personnel on September 13, 2016.

For the structural analysis of tower and foundation, please refer to structural analysis report performed by Centek Engineering, Inc., project number 16071.44 dated September 9, 2016 (REV 0).

Based on our review and analysis of the proposed installation, it is our opinion that the **subject antenna mount has adequate capacity** to support the aforementioned antenna configuration. If there are any questions regarding this matter, please feel free to call.

Respectfully Submitted by:

STATE OF CONNECTICUT
CAMILO A. GAVIRIA
27517
LICENSED
PROFESSIONAL ENGINEER

Camilo A. Gaviria, PE
Structural Engineer

WIRELESS COMMUNICATIONS FACILITY
CT2049 - LTE 2C
MONTVILLE
695 OLD COLCHESTER ROAD
MONTVILLE, CT 06382

GENERAL NOTES

1. ALL WORK SHALL BE IN ACCORDANCE WITH THE 2003 INTERNATIONAL BUILDING CODE AS MODIFIED BY THE 2005 CONNECTICUT SUPPLEMENT AND 2009 AMENDMENTS, INCLUDING THE TIA/EIA-222 REVISION "F" "STRUCTURAL STANDARDS FOR STEEL ANTENNA TOWERS AND SUPPORTING STRUCTURES." 2005 CONNECTICUT FIRE SAFETY CODE AND 2009 AMENDMENTS, NATIONAL ELECTRICAL CODE AND LOCAL CODES.
2. THE COMPOUND, TOWER, PRIMARY GROUND RING, ELECTRICAL SERVICE TO THE METER BANK AND TELEPHONE SERVICE TO THE DEMARCATION POINT ARE PROVIDED BY SITE OWNER. AS BUILT FIELD CONDITIONS REGARDING THESE ITEMS SHALL BE CONFIRMED BY THE CONTRACTOR. SHOULD ANY FIELD CONDITIONS PRECLUDE COMPLIANCE WITH THE DRAWINGS, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER AND SHALL NOT PROCEED WITH ANY AFFECTED WORK.
3. 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.
4. 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.
5. 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.
6. 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.
7. 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.
8. 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.
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 BUILDING'S/PROPERTY'S OPERATIONS, COORDINATE WORK WITH BUILDING/PROPERTY OWNER.
10. 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.
11. ALL UTILITY WORK SHALL BE IN ACCORDANCE WITH LOCAL UTILITY COMPANY REQUIREMENTS AND SPECIFICATIONS.
12. 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.
13. ANY AND ALL ERRORS, DISCREPANCIES, AND 'MISSED" ITEMS ARE TO BE BROUGHT TO THE ATTENTION OF THE AT&T 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.
14. 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.
15. 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.
16. 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.
17. 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.
18. ALL EQUIPMENT AND PRODUCTS PURCHASED ARE TO BE REVIEWED BY CONTRACTOR AND ALL APPLICABLE SUB-CONTRACTORS FOR ANY CONDITION PER THE MANUFACTURER'S RECOMMENDATIONS. CONTRACTOR TO SUPPLY THESE ITEMS AT NO COST TO OWNER OR CONSTRUCTION MANAGER.
19. 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.
20. 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 PRIOR TO ANY EXCAVATION WORK. CONTRACTOR SHALL MAINTAIN AND PROTECT MARKED UTILITIES THROUGHOUT PROJECT COMPLETION.
21. 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.

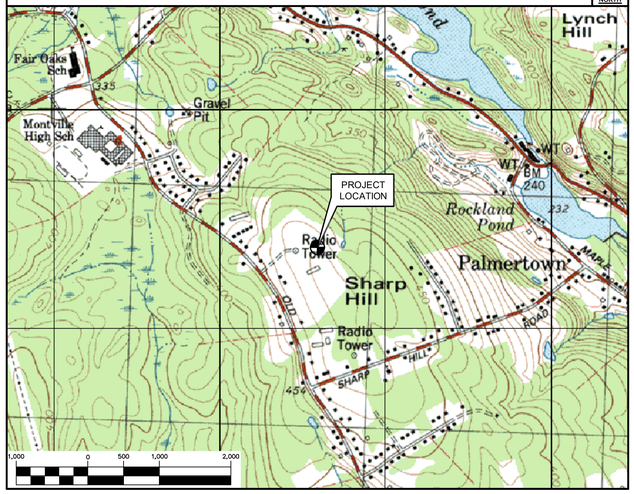
SITE DIRECTIONS

FROM: 500 ENTERPRISE DRIVE, ROCKY HILL, CONNECTICUT
TO: OLD COLCHESTER ROAD, MONTVILLE, CONNECTICUT

1.	HEAD NORTHEAST ON ENTERPRISE DR TOWARD CAPITAL BLVD	0.3 MI
2.	TURN LEFT ONTO CAPITAL BLVD	0.2 MI
3.	TURN LEFT ONTO STATE HWY 411	0.2 MI
4.	TURN LEFT TO MERGE ONTO I-91 N	0.4 MI
5.	MERGE ONTO I-91 N	4.1 MI
6.	TAKE EXIT 25-26 TO MERGE ONTO CT-3 N TOWARD GLASTONBURY	2.3 MI
7.	TAKE THE EXIT ONTO CT-2 E TOWARD NORWICH	20.0 MI
8.	CONTINUE ON CT-11 S AND FOLLOW SIGNS FOR NEW LONDON	0.3 MI
9.	TAKE EXIT 6 FOR LAKE HAYWARD RD TOWARD CT-85/CT-354	0.3 MI
10.	TURN LEFT ONTO LAKE HAYWARD RD	0.5 MI
11.	TURN RIGHT ONTO CT-354 E	6.9 MI
12.	TURN RIGHT ONTO CT-82 W	66 FT
13.	TURN LEFT ONTO OLD COLCHESTER RD	5.1 MI

VICINITY MAP

SCALE: 1" = 1000'



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 (3) EXISTING ANTENNAS FOR PROPOSED LTE HEXPORT ANTENNAS (POSITION 4), (1) PER SECTOR.
   B. INSTALL (3) NEW RRUS-32+B2'S ON EXISTING TOWER MOUNT

PROJECT INFORMATION

AT&T SITE NUMBER:	CT2049
AT&T SITE NAME:	MONTVILLE
SITE ADDRESS:	695 OLD COLCHESTER RD MONTVILLE, CT 06382
LESSEE/APPLICANT:	AT&T MOBILITY 500 ENTERPRISE DRIVE, SUITE 3A ROCKY HILL, CT 06067
ENGINEER:	CENTEK ENGINEERING, INC. 63-2 NORTH BRANFORD RD. BRANFORD, CT 06405
PROJECT COORDINATES:	LATITUDE: 41°-27'-11.11" N LONGITUDE: 72°-09'-14.46" W GROUND ELEVATION: ±470' AMSL SITE COORDINATES AND GROUND ELEVATION REFERENCED FROM GOOGLE EARTH.

SHEET INDEX

REV.	DATE	DRAWN BY	CHK'D BY	DESCRIPTION
0	09/19/16	KAWJR	CAG	CONSTRUCTION DOCUMENTS - ISSUED FOR CONSTRUCTION

PROFESSIONAL ENGINEER SEAL

at&t

EMPIRE telecom

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

AT&T MOBILITY

WIRELESS COMMUNICATIONS FACILITY

MONTVILLE

CT2049 - LTE 2C

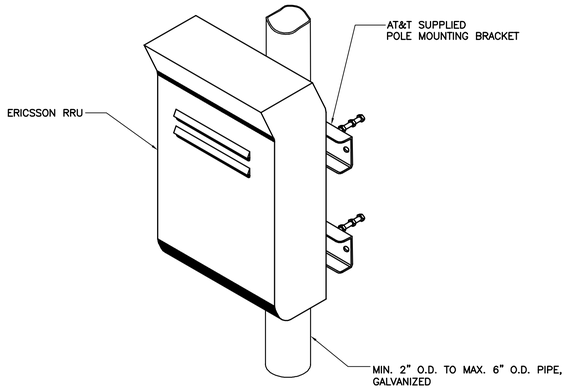
695 OLD COLCHESTER ROAD
MONTVILLE, CT 06382

DATE: 09/14/16
SCALE: AS NOTED
JOB NO. 16071.44

TITLE SHEET

T-1

Sheet No. 1 of 7



ISOMETRIC VIEW

NOTES:

1. AT&T SHALL SUPPLY RRU, AND RRU POLE-MOUNTING BRACKET. CONTRACTOR SHALL SUPPLY POLE/PIPE AND INSTALL ALL MOUNTING HARDWARE INCLUDING ERICSSON RRU POLE-MOUNTING BRACKET. CONTRACTOR SHALL INSTALLS RRU AND MAKES CABLE TERMINATIONS.
2. NO PAINTING OF THE RRU OR SOLAR SHIELD IS ALLOWED.

1 / N-1 **TYPICAL RRUS MOUNTING DETAILS**
SCALE: NTS

NOTES AND SPECIFICATIONS

DESIGN BASIS:

GOVERNING CODE: 2003 INTERNATIONAL BUILDING (IBC) AS MODIFIED BY THE 2005 CT STATE BUILDING CODE AND 2009 AMENDMENTS.

1. DESIGN CRITERIA:
   - WIND LOAD: PER EIA/TIA 222 F-96 (ANTENNA MOUNTS): 85 MPH (FASTEST MILE), EQUIVALENT TO 105 MPH (3 SECOND GUST)
   - BUILDING CLASSIFICATION: II (BASED ON IBC TABLE 1604.5)
   - BASIC WIND SPEED (OTHER STRUCTURE): 115 MPH (3 SECOND GUST) (EXPOSURE B/IMPORTANCE FACTOR 1.0 BASED ON ASCE 7-02) PER 2003 INTERNATIONAL BUILDING CODE (IBC) AS MODIFIED BY THE 2005 CONNECTICUT SUPPLEMENT AND 2009 AMENDMENT.
   - SEISMIC LOAD (DOES NOT CONTROL): PER ASCE 7-02 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.

PAINT NOTES

PAINTING SCHEDULE:

1. ANTENNA PANELS:
   - A. SHERWIN WILLIAMS POLANE-B
   - B. COLOR TO BE MATCHED WITH EXISTING TOWER STRUCTURE.
2. COAXIAL CABLES:
   - A. ONE COAT OF DTM BONDING PRIMER (2-5 MILS. DRY FINISH)
   - B. TWO COATS OF DTM ACRYLIC PRIMER/FINISH (2.5-5 MILS. DRY FINISH)
   - C. COLOR TO BE FIELD MATCHED WITH EXISTING STRUCTURE.

EXAMINATION AND PREPARATION:

1. DO NOT APPLY PAINT IN SNOW, RAIN, FOG OR MIST OR WHEN RELATIVE HUMIDITY EXCEEDS 85%. DO NOT APPLY PAINT TO DAMP OR WET SURFACES.
2. VERIFY THAT SUBSTRATE CONDITIONS ARE READY TO RECEIVE WORK. EXAMINE SURFACE SCHEDULED TO BE FINISHED PRIOR TO COMMENCEMENT OF WORK. REPORT ANY CONDITION THAT MAY POTENTIALLY AFFECT PROPER APPLICATION.
3. TEST SHOP APPLIED PRIMER FOR COMPATIBILITY WITH SUBSEQUENT COVER MATERIALS.
4. PERFORM PREPARATION AND CLEANING PROCEDURE IN STRICT ACCORDANCE WITH COATING MANUFACTURER'S INSTRUCTIONS FOR EACH SUBSTRATE CONDITION.
5. CORRECT DEFECTS AND CLEAN SURFACES WHICH AFFECT WORK OF THIS SECTION. REMOVE EXISTING COATINGS THAT EXHIBIT LOOSE SURFACE DEFECTS.
6. IMPERVIOUS SURFACE: REMOVE MILDEW BY SCRUBBING WITH SOLUTION OF TRI-SODIUM PHOSPHATE AND BLEACH. RINSE WITH CLEAN WATER AND ALLOW SURFACE TO DRY.
7. ALUMINUM SURFACE SCHEDULED FOR PAINT FINISH: REMOVE SURFACE CONTAMINATION BY STEAM OR HIGH-PRESSURE WATER. REMOVE OXIDATION WITH ACID ETCH AND SOLVENT WASHING. APPLY ETCHING PRIMER IMMEDIATELY FOLLOWING CLEANING.
8. FERROUS METALS: CLEAN UNGALVANIZED FERROUS METAL SURFACES THAT HAVE NOT BEEN SHOP COATED; REMOVE OIL, GREASE, DIRT, LOOSE MILL SCALE, AND OTHER FOREIGN SUBSTANCES. USE SOLVENT OR MECHANICAL CLEANING METHODS THAT COMPLY WITH THE STEEL STRUCTURES PAINTING COUNCIL'S (SSPC) RECOMMENDATIONS. TOUCH UP BARE AREAS AND SHOP APPLIED PRIME COATS THAT HAVE BEEN DAMAGED. WIRE BRUSH, CLEAN WITH SOLVENTS RECOMMENDED BY PAINT MANUFACTURER, AND TOUCH UP WITH THE SAME PRIMER AS THE SHOP COAT.
9. GALVANIZED SURFACES: CLEAN GALVANIZED SURFACES WITH NON-PETROLEUM-BASED SOLVENTS SO SURFACE IS FREE OF OIL AND SURFACE CONTAMINANTS. REMOVE PRETREATMENT FROM GALVANIZED SHEET METAL FABRICATED FROM COIL STOCK BY MECHANICAL METHODS.
10. ANTENNA PANELS: REMOVE ALL OIL, DUST, GREASE, DIRT, AND OTHER FOREIGN MATERIAL TO ENSURE ADEQUATE ADHESION. PANELS MUST BE WIPED WITH METHYL ETHYL KETONE (MEK).
11. COAXIAL CABLES: REMOVE ALL OIL, DUST, GREASE. DIRT, AND OTHER FOREIGN MATERIAL TO ENSURE ADEQUATE ADHESION.

CLEANING:

1. COLLECT WASTE MATERIAL, WHICH MAY CONSTITUTE A FIRE HAZARD, PLACE IN CLOSED METAL CONTAINERS AND REMOVE DAILY FROM SITE.

APPLICATION:

1. APPLY PRODUCTS IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
2. DO NOT APPLY FINISHES TO SURFACES THAT ARE NOT DRY.
3. APPLY EACH COAT TO UNIFORM FINISH.
4. APPLY EACH COAT OF PAINT SLIGHTLY DARKER THAN PRECEDING COAT UNLESS OTHERWISE APPROVED.
5. SAND METAL LIGHTLY BETWEEN COATS TO ACHIEVE REQUIRED FINISH.
6. VACUUM CLEAN SURFACES FREE OF LOOSE PARTICLES. USE TACK CLOTH JUST PRIOR TO APPLYING NEXT COAT.
7. ALLOW APPLIED COAT TO DRY BEFORE NEXT COAT IS APPLIED.

COMPLETED WORK:

1. SAMPLES: PREPARE 24" X 24" SAMPLE AREA FOR REVIEW.
2. MATCH APPROVED SAMPLES FOR COLOR, TEXTURE AND COVERAGE. REMOVE REFINISH OR REPAINT WORK NOT IN COMPLIANCE WITH SPECIFIED REQUIREMENTS.

REV.	DATE	DRAWN BY	CHK'D BY	DESCRIPTION
0	09/19/16	KAWJR	CAG	CONSTRUCTION DOCUMENTS - ISSUED FOR CONSTRUCTION

PROFESSIONAL ENGINEER SEAL

at&t

EMPIRE telecom

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

AT&T MOBILITY

WIRELESS COMMUNICATIONS FACILITY

MONTVILLE

CT2049 - LTE 2C

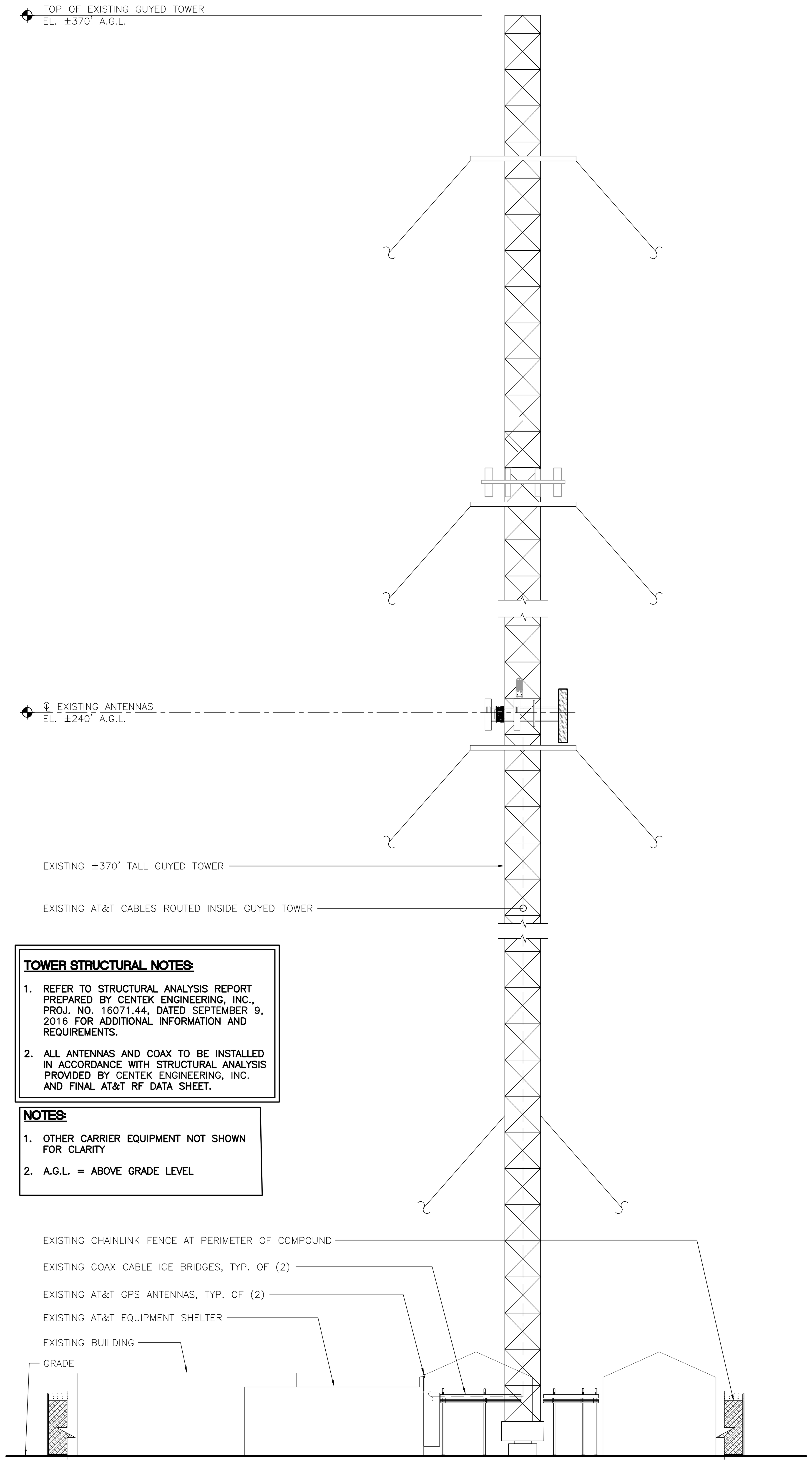
695 OLD COLCHESTER ROAD
MONTVILLE, CT 06382

DATE: 09/14/16
SCALE: AS NOTED
JOB NO. 16071.44

NOTES, SPECIFICATIONS AND DETAILS

N-1

Sheet No. 2 of 7



TOWER STRUCTURAL NOTES:

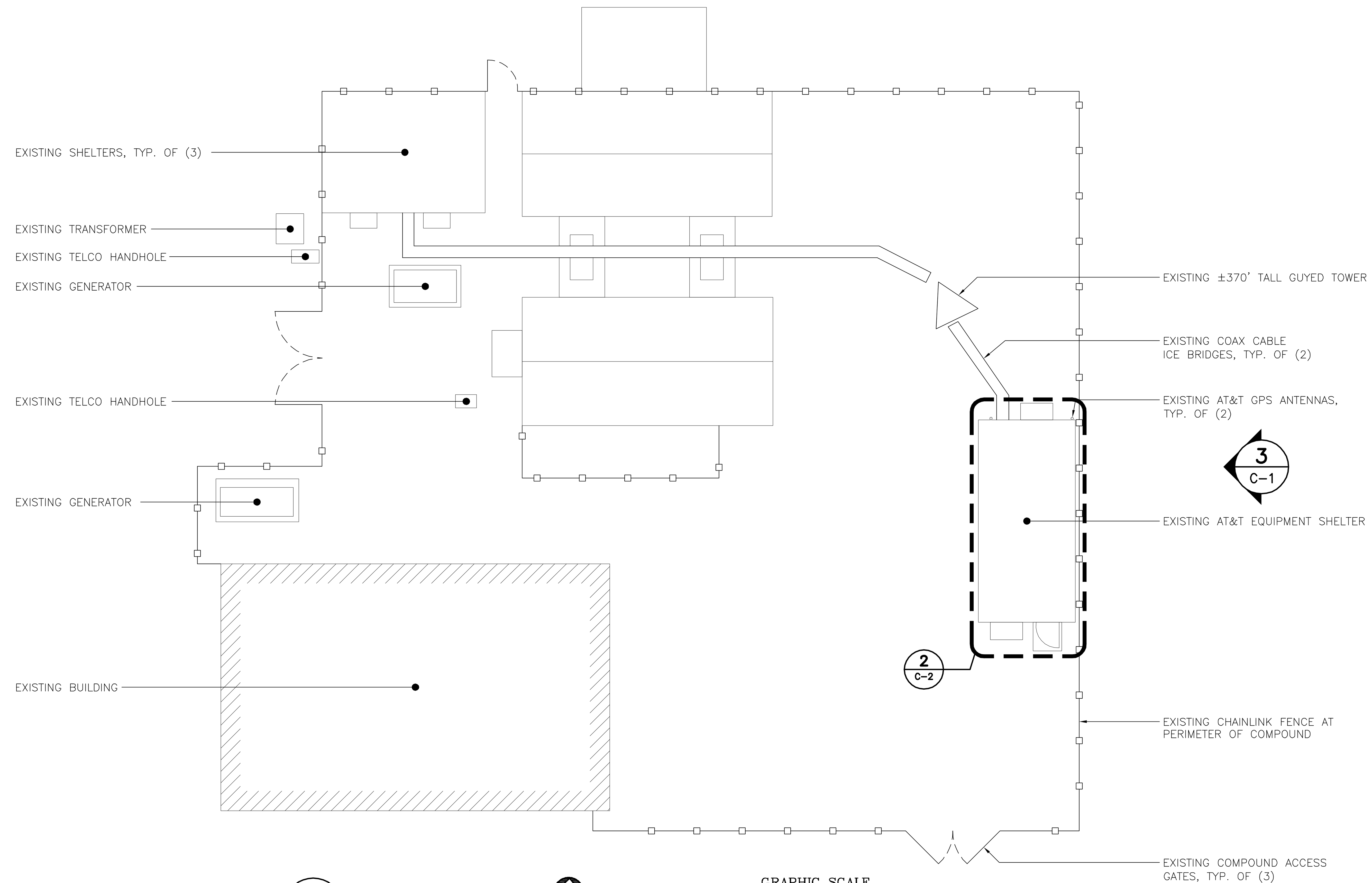
1. REFER TO STRUCTURAL ANALYSIS REPORT PREPARED BY CENTEK ENGINEERING, INC., PROJ. NO. 16071.44, DATED SEPTEMBER 9, 2016 FOR ADDITIONAL INFORMATION AND REQUIREMENTS.
2. ALL ANTENNAS AND COAX TO BE INSTALLED IN ACCORDANCE WITH STRUCTURAL ANALYSIS PROVIDED BY CENTEK ENGINEERING, INC. AND FINAL AT&T RF DATA SHEET.

NOTES:

1. OTHER CARRIER EQUIPMENT NOT SHOWN FOR CLARITY
2. A.G.L. = ABOVE GRADE LEVEL

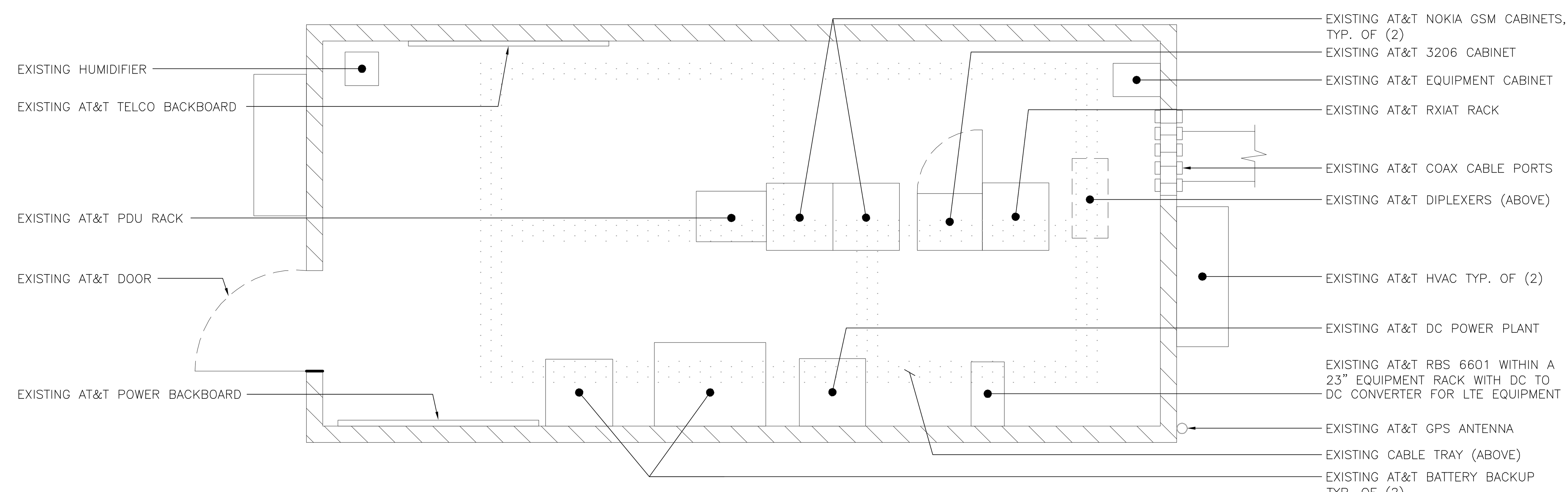
3 / C-1 **WEST TOWER ELEVATION**
SCALE: 1" = 10'-0"

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



1 / C-1 **COMPOUND PLAN**
SCALE: 1" = 10'-0"
TRUE NORTH

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



2 / C-1 **EQUIPMENT ROOM PLAN**
SCALE: 3/8" = 1'-0"
TRUE NORTH

REV.	DATE	DRAWN BY	CHK'D BY	DESCRIPTION
0	09/19/16	KAWJR	CAG	CONSTRUCTION DOCUMENTS – ISSUED FOR CONSTRUCTION

PROFESSIONAL ENGINEER SEAL

STATE OF CONNECTICUT ★ CARLO F. GAMBERINI ★ 27517 LICENSED PROFESSIONAL ENGINEER

at&t

EMPIRE telecom

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

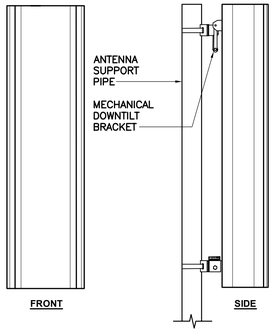
AT&T MOBILITY
WIRELESS COMMUNICATIONS FACILITY
MONTVILLE
CT2049 – LTE 2C
695 OLD COLCHESTER ROAD
MONTVILLE, CT 06382

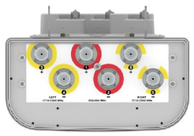
DATE:	09/14/16
SCALE:	AS NOTED
JOB NO.	16071.44

PLANS AND ELEVATION

C-1

Sheet No. 3 of 7





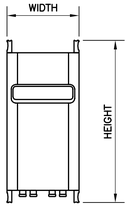
CCI-H6 BOTTOM

CCI-H8 BOTTOM

ALPHA/BETA/GAMMA ANTENNA		
EQUIPMENT	DIMENSIONS	WEIGHT
MAKE: CCI MODEL: HPA-65R-BUU-H6	72.3"L x 14.4"W x 7.3"D	42.9 LBS.
MAKE: CCI MODEL: HPA-65R-BUU-H8	92.4"L x 14.8"W x 7.4"D	68 LBS.

5 C-2 PROPOSED ANTENNA DETAIL

SCALE: 1/2" = 1'-0"



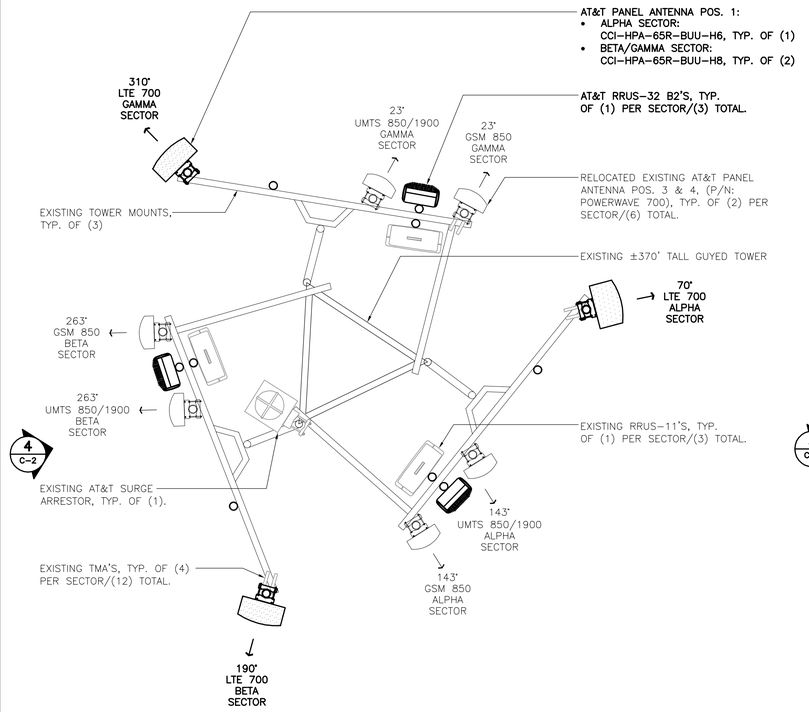
FRONT VIEW BOTTOM VIEW

RRU (REMOTE RADIO UNIT)			
EQUIPMENT	DIMENSIONS	WEIGHT	CLEARANCES
MAKE: ERICSSON MODEL: RRUS 32	27.17"H x 12.05"W x 7.01"D	52.91 LBS.	ABOVE: 16" MIN. BELOW: 12" MIN. FRONT: 36" MIN.

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

6 C-2 ERICSSON RRUS 32 B2 DETAIL

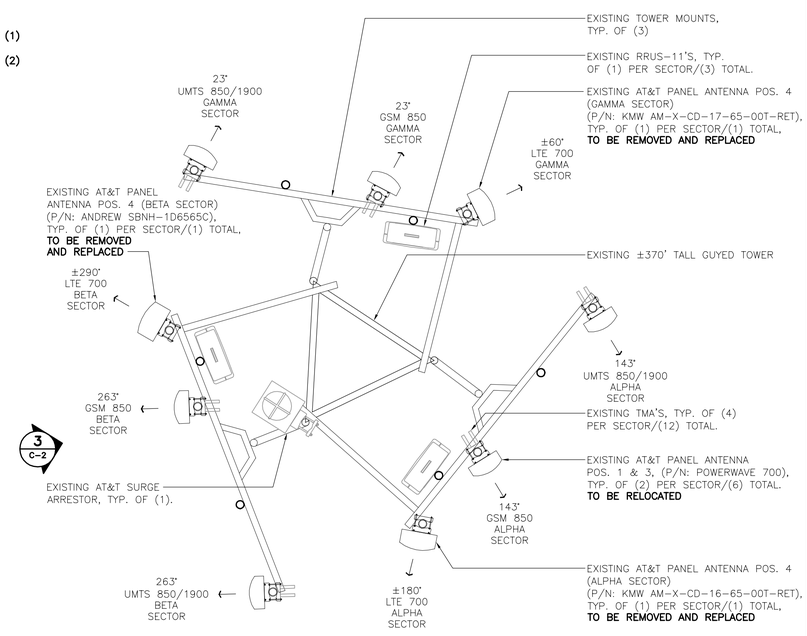
SCALE: 1" = 1'-0"



2 C-2 PROPOSED ANTENNA PLAN

SCALE: 1/2" = 1'-0"

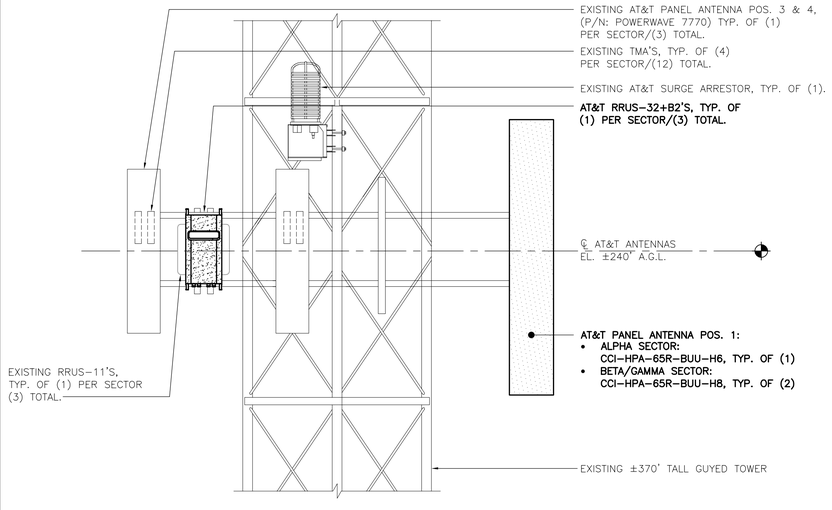
NORTH



1 C-2 EXISTING ANTENNA PLAN

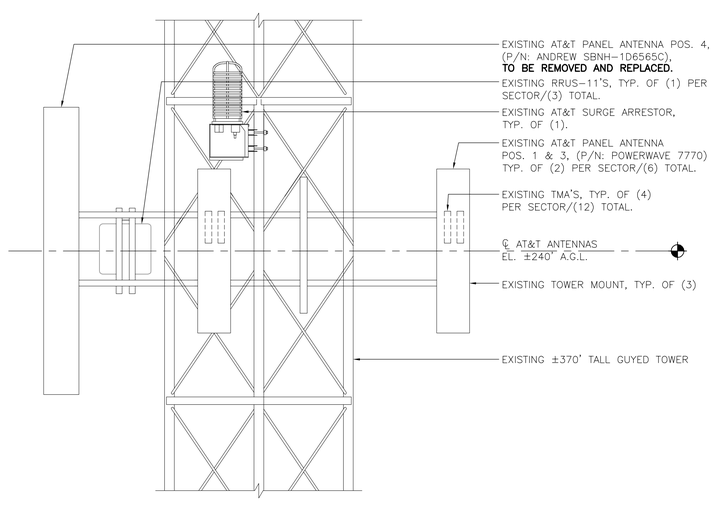
SCALE: 1/2" = 1'-0"

NORTH



4 C-2 PROPOSED ANTENNA ELEVATION

SCALE: 1/2" = 1'-0"

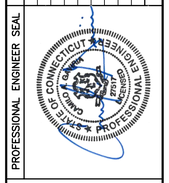


3 C-2 EXISTING ANTENNA ELEVATION

SCALE: 1/2" = 1'-0"

REV.	DATE	DRAWN BY	CHK'D	BY	DESCRIPTION
0	09/19/16	KAWJR	CAG		CONSTRUCTION DOCUMENTS – ISSUED FOR CONSTRUCTION

PROFESSIONAL ENGINEER SEAL



at&t

EMPIRE telecom

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

AT&T MOBILITY

WIRELESS COMMUNICATIONS FACILITY

MONTVILLE

CT2049 - LTE 2C

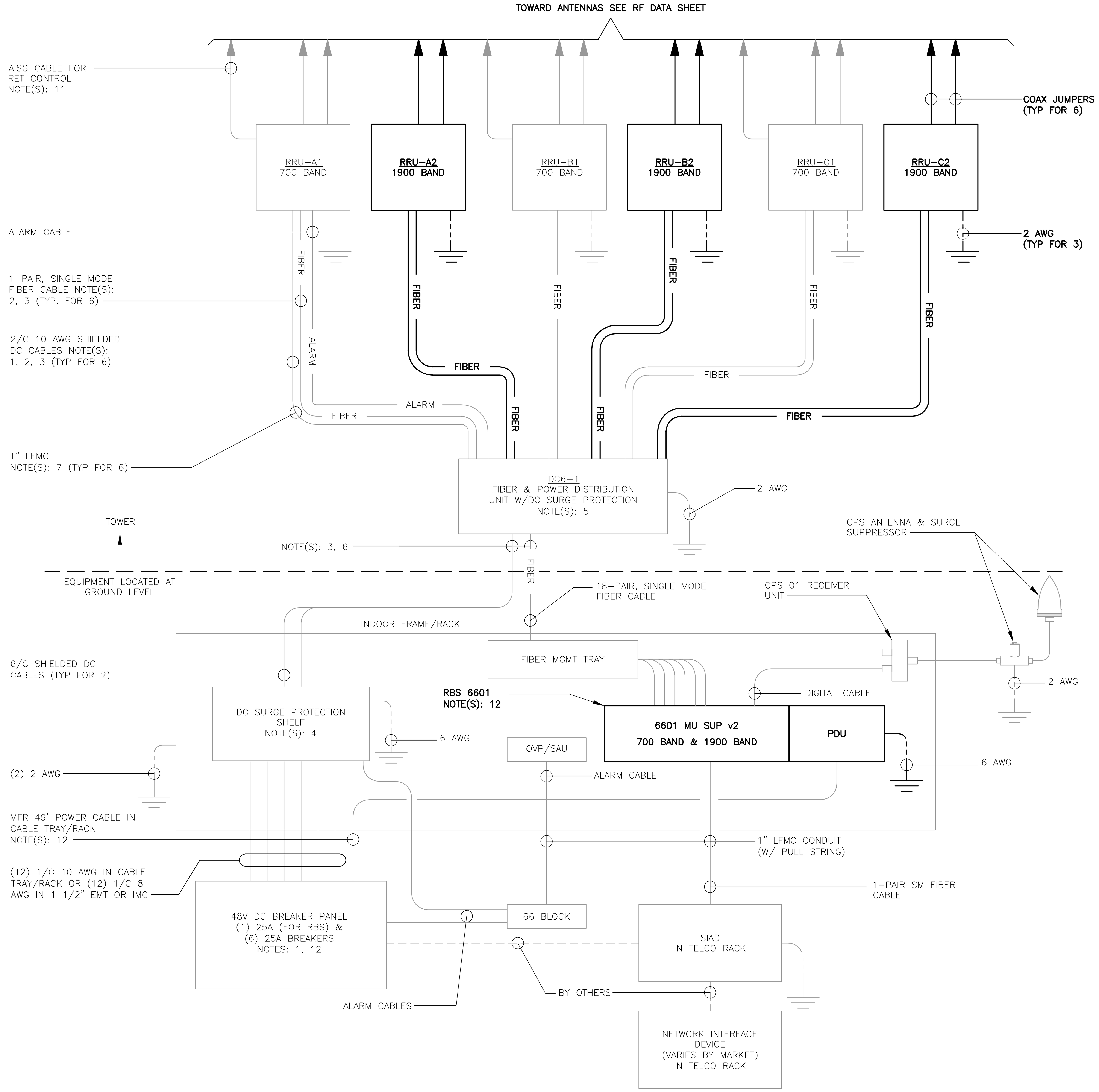
695 OLD COLCHESTER ROAD
MONTVILLE, CT 06382

DATE: 09/14/16
SCALE: AS NOTED
JOB NO. 16071.44

LTE 2C EQUIPMENT DETAILS

C-2

Sheet No. 4 of 7



1 / E–1

LTE SCHEMATIC DIAGRAM

NOT TO SCALE

LTE SCHEMATIC DIAGRAM NOTES:

1. BREAKERS TO BE TAGGED AND LOCKED OUT. A 20A (MIN.) OR 30A (MAX.) BREAKER FOR RRUs MAY BE SUBSTITUTED FOR THE RECOMMENDED 25A BREAKER. SIZE 12 CONDUCTORS MAY BE USED ONLY WITH 20A BREAKERS.
2. LEAVE COILED AND PROTECTED UNTIL TERMINATED.
3. DC AND FIBER CABLE SHALL BE ROUTED WITH THE EXISTING COAX CABLE.
4. DC SURGE PROTECTION SHELF SHALL BE RAYCAP DCx–48–60–RM.
5. FIBER & DC DISTRIBUTION BOX W/DC SURGE PROTECTION SHALL BE RAYCAP DC6–48–60–18–8F.
6. SUPPORT FIBER & DC POWER CABLES WITH SNAP–IN HANGERS SPACED NO GREATER THAN 3 FEET APART ON TOWER. SUPPORT FIBER AND DC POWER CABLES INSIDE MONOPOLE WITH CABLE HOISTING GRIPS AT 250 FT MAXIMUM INTERVALS. DRESS CABLES TO PREVENT CONTACT WITH ENTRANCE AND EXIT OPENINGS.
7. CONDUIT TO BE USED ON A TOWER IF THE RRU IS MORE THAN 10' FROM THE DISTRIBUTION UNITS. MAX CABLE LENGTH IS 16 FEET.
8. SINGLE–CONDUCTOR DC POWER CABLES SHALL BE TELCOFLEX® OR KS24194™, COPPER, UL LISTED RHH NON–HALOGEN, LOW SMOKE WITH BRAIDED COVER, TYPE TC (1/0 AND LARGER). UNLESS OTHERWISE NOTED, STRANDING SHALL BE CLASS B (TYPE III) FOR CABLES SIZES 14, 12 & 10 AWG AND CLASS I (TYPE IV) FOR SIZES 8 AWG AND LARGER. CABLES SHALL BE COLOR CODED RED FOR +24V, BLUE FOR –48V AND GRAY FOR 24V AND 48V RETURN CONDUCTORS. MULTI–CONDUCTOR DC POWER CABLES SHALL BE COPPER, CLASS B STRANDING WITH FLAME RETARDANT PVC JACKET, TYPE TC, UL LISTED FOR 90°C DRY/ 75°C WET INSTALLATION.
9. GROUNDING WIRES SHALL BE COPPER, GREEN THHN/THWN UL LISTED FOR 90°C DRY/75°C WET INSTALLATION. MINIMUM SIZE IS 6 AWG UNLESS NOTED OTHERWISE.
10. FIBER OPTIC CABLES SHALL BE INSTALLED IN FLEXIBLE CONDUIT AS SCOPED BY MARKET.
11. RET CONTROL FROM THE RRU IS AN OPTIONAL METHOD OF CONNECTION. REFER TO RF DATA SHEET FOR APPLICABILITY.
12. RBS 6601 VARIANT 2 REQUIRES A 25A BREAKER AND 10 AWG (MIN.) CONDUCTORS. REPLACE EXISTING 15A OR 20A BREAKERS AND 12 AWG CONDUCTORS WHEN UPGRADING AN EXISTING RBS 6601 VARIANT 1.

ELECTRICAL NOTES

1. PRIOR TO START OF CONSTRUCTION CONTRACTOR SHALL COORDINATE WITH OWNER FOR ALL CONSTRUCTION STANDARDS AND SPECIFICATIONS, AND ALL MANUFACTURER DOCUMENTATION FOR ALL EQUIPMENT TO BE INSTALLED.
2. INSTALL ALL EQUIPMENT IN ACCORDANCE WITH LOCAL BUILDING CODE, NATIONAL ELECTRIC CODE, OWNER AND MANUFACTURER'S SPECIFICATIONS.
3. CONNECT ALL NEW EQUIPMENT TO EXISTING TELCO AS REQUIRED BY MANUFACTURER.
4. MAINTAIN ALL CLEARANCES REQUIRED BY NEC AND EQUIPMENT MANUFACTURER.
5. PRIOR TO INSTALLATION CONTRACTOR SHALL MEASURE EXISTING ELECTRICAL LOAD AND VERIFY EXISTING AVAILABLE CAPACITY FOR PROPOSED INSTALLATION. IF INADEQUATE CAPACITY IS AVAILABLE, CONTRACTOR SHALL COORDINATE WITH LOCAL ELECTRIC UTILITY COMPANY TO UPGRADE EXISTING ELECTRIC SERVICE.
6. CONTRACTOR SHALL INSPECT EXISTING GROUNDING AND LIGHTNING PROTECTION SYSTEM AND ENSURE THAT IT IS IN COMPLIANCE WITH NEC, AND SITE OWNER'S SPECIFICATIONS. THE RESULTS OF THIS INSPECTION SHALL BE PRESENTED TO OWNERS REPRESENTATIVE, AND ANY DEFICIENCIES SHALL BE CORRECTED.
7. ALL TRANSMISSION TOWER SITES CONTAIN AN EXTENSIVE BURIED GROUNDING SYSTEM. ALL GROUNDING WORK MUST BE COORDINATED WITH, AND APPROVED BY, THE TOWER OWNER'S SITE REPRESENTATIVE. ALL OF THE TOWER OWNER'S SPECIFICATIONS MUST BE STRICTLY FOLLOWED.
8. PROVIDE AND INSTALL GROUND KITS FOR ALL NEW COAXIAL CABLES AND BOND TO EXISTING OWNERS GROUNDING SYSTEM PER OWNERS SPECIFICATIONS AND NEC.
9. ALL CONDUCTORS SHALL BE TYPE THWN (INT. APPLICATION) AND XHHW (EXT. APPLICATION), 75 DEGREE C, 600 VOLT INSULATION, SOFT ANNEALED STRANDED COPPER. #10 AWG AND SMALLER SHALL BE SPLICED USING ACCEPTABLE SOLDERLESS PRESSURE CONNECTORS. #8 AWG AND LARGER SHALL BE SPLICED USING COMPRESSION SPLIT–BOLT TYPE CONNECTORS, #12 AWG SHALL BE THE MINIMUM SIZE CONDUCTOR FOR LINE VOLTAGE BRANCH CIRCUITS. REFER TO PANEL SCHEDULE FOR BRANCH CIRCUIT CONDUCTOR SIZE(S). CONDUCTORS SHALL BE COLOR CODED FOR CONSISTENT PHASE IDENTIFICATION:
10. MINIMUM BENDING RADIUS FOR CONDUCTORS SHALL BE 12 TIMES THE LARGEST DIAMETER OF BRANCH CIRCUIT CONDUCTOR.
11. THE ENTIRE ELECTRICAL INSTALLATION SHALL BE MADE IN STRICT ACCORDANCE WITH ALL LOCAL, STATE AND NATIONAL CODES AND REGULATIONS WHICH MAY APPLY AND NOTHING IN THE DRAWINGS OR SPECIFICATIONS SHALL BE INTERPRETED AS AN INFRINGEMENT OF SUCH CODES OR REGULATIONS.
12. THE ELECTRICAL CONTRACTOR IS TO BE RESPONSIBLE FOR THE COMPLETE INSTALLATION AND COORDINATION OF THE ENTIRE ELECTRICAL SERVICE. ALL ACTIVITIES TO BE COORDINATED THROUGH OWNER'S REPRESENTATIVE, DESIGN ENGINEER AND OTHER AUTHORITIES HAVING JURISDICTION OF TRADES.
13. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL PERMITS AND PAY ALL FEES AS MAY BE REQUIRED FOR THE ELECTRICAL WORK AND FOR SCHEDULING OF ALL INSPECTIONS AS MAY BE REQUIRED BY THE LOCAL AUTHORITY.
14. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION WITH THE SITE AND/OR BUILDING OWNER FOR NEW AND/OR DEMOLITION WORK INVOLVED.
15. THE CONTRACTOR SHALL GUARANTEE ALL NEW WORK FOR A PERIOD OF ONE YEAR FROM THE ACCEPTANCE DATE BY THE OWNER. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING WARRANTIES FROM ALL EQUIPMENT MANUFACTURERS FOR SUBMISSION TO THE OWNER.
16. DRAWINGS INDICATE GENERAL ARRANGEMENT OF WORK INCLUDED IN CONTRACT. CONTRACTOR SHALL WITHOUT EXTRA CHARGE, MAKE MODIFICATIONS TO THE LAYOUT OF THE WORK TO PREVENT CONFLICT WITH WORK OF OTHER TRADES AND FOR THE PROPER INSTALLATION OF WORK. CHECK ALL DRAWINGS AND VISIT JOB SITE TO VERIFY SPACE AND TYPE OF EXISTING CONDITIONS IN WHICH WORK WILL BE DONE, PRIOR TO SUBMITTAL OF BID.
17. ALL NON–CURRENT CARRYING PARTS OF THE ELECTRICAL AND TELEPHONE CONDUIT SYSTEMS SHALL BE MECHANICALLY AND ELECTRICALLY CONNECTED TO PROVIDE AN INDEPENDENT RETURN PATH TO THE EQUIPMENT GROUNDING SOURCES.
18. GROUNDING SYSTEM WILL BE IN ACCORDANCE WITH THE LATEST ACCEPTABLE EDITION OF THE NATIONAL ELECTRICAL CODE AND REQUIREMENTS PER LOCAL INSPECTOR HAVING JURISDICTION.
19. EACH EQUIPMENT GROUND CONDUCTOR SHALL BE SIZED IN ACCORDANCE WITH THE N.E.C. ARTICLE 250–122. (MIN. #12 AWG).
20. CONTRACTOR SHALL PROVIDE A CELLULAR GROUNDING SYSTEM WITH THE MAXIMUM AC RESISTANCE TO GROUND OF 5 OHM BETWEEN ANY POINT ON THE GROUNDING SYSTEM AS MEASURED BY 3–POINT GROUNDING TEST. (REFER TO SECTION 16960).

TESTS BY INDEPENDENT ELECTRICAL TESTING FIRM

A. CONTRACTOR SHALL RETAIN THE SERVICES OF A LOCAL INDEPENDENT ELECTRICAL TESTING FIRM (WITH MINIMUM 5 YEARS COMMERCIAL EXPERIENCE IN THE ELECTRICAL TESTING INDUSTRY) AS SPECIFIED BY OWNER TO PERFORM:

   TEST 1: RESISTANCE TO GROUND TEST ON THE CELLULAR GROUNDING SYSTEM.

   THE TESTING FIRM SHALL INCLUDE THE FOLLOWING INFORMATION WITH THE REPORT:

   1. TESTING PROCEDURE INCLUDING THE MAKE AND MODEL OF TEST EQUIPMENT.
   2. CERTIFICATION OF TESTING EQUIPMENT CALIBRATION WITHIN SIX (6) MONTHS OF DATE OF TESTING. INCLUDE CERTIFICATION LAB ADDRESS AND TELEPHONE NUMBER.
   3. GRAPHICAL DESCRIPTION OF TESTING METHOD ACTUALLY IMPLEMENTED.

B. TESTING SHALL BE PERFORMED IN THE PRESENCE AND TO THE SATISFACTION OF OWNERS CONSTRUCTION REPRESENTATIVE. TESTING DATA SHALL BE INITIALED AND DATED BY THE CONSTRUCTION AND INCLUDED WITH THE WRITTEN REPORT/ANALYSIS.

C. THE CONTRACTOR SHALL FORWARD SIX (6) COPIES OF THE INDEPENDENT ELECTRICAL TESTING FIRM REPORT/ANALYSIS TO ENGINEER A MINIMUM OF TEN (10) WORKING DAYS PRIOR TO THE JOB TURNOVER.

D. CONTRACTOR TO PROVIDE A MINIMUM OF ONE (1) WEEK NOTICE TO OWNER AND ENGINEER FOR ALL TESTS REQUIRING WITNESSING.

REV.	DATE	DRAWN BY	CHK'D BY	DESCRIPTION
0	09/19/16	KAWJR	CAG	CONSTRUCTION DOCUMENTS – ISSUED FOR CONSTRUCTION

PROFESSIONAL ENGINEER SEAL

at&t

EMPIRE telecom

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

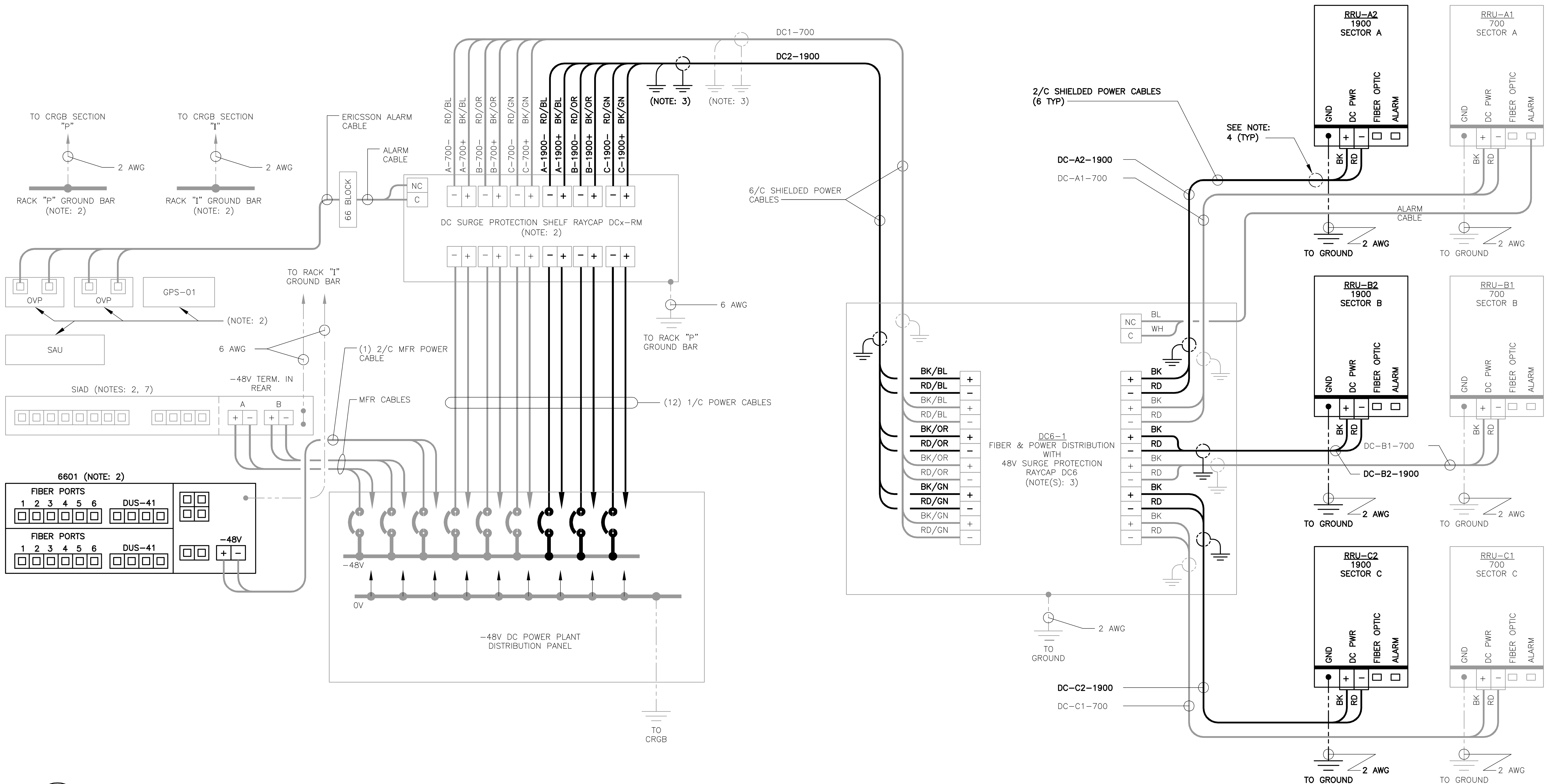
AT&T MOBILITY
WIRELESS COMMUNICATIONS FACILITY
MONTVILLE
CT2049 – LTE 2C
695 OLD COLCHESTER ROAD
MONTVILLE, CT 06382

DATE: 09/14/16
SCALE: AS NOTED
JOB NO. 16071.44

LTE SCHEMATIC DIAGRAM AND NOTES

E–1

Sheet No. 5 of 7



LTE WIRING DIAGRAM

1 / E-2

NOT TO SCALE

LTE WIRING DIAGRAM NOTES:

1. LABEL THE DC POWER CABLES AT BOTH ENDS OF EVERY WIRE AND IN ANY PULL BOX IF USED. LABEL SHALL BE DURABLE, SELF ADHESIVE, WRAPPED LONGITUDINALLY ALONG THE CABLE AND STATE THE SECTOR, FREQUENCY BAND AND POLARITY; I.E. "A–1900+". CABLE AND WIRE LABELS SHOWN ARE REPRESENTATIVE AND MAY BE MODIFIED AS DIRECTED BY AT&T.
2. INSTALL ON BASEBAND EQUIPMENT RACK.
3. THE BARE GROUND WIRE OF EACH MULTI–CONDUCTOR CABLE SHALL BE CONNECTED TO THE "P" GROUND BAR ON THE RACK. WHEN A SHIELDED CABLE IS USED, THE DRAIN WIRE ALSO SHALL BE CONNECTED TO THE "P" GROUND BAR.
4. CABLE GROUND WIRE AND SHIELD DRAIN WIRE TO BE LEFT UN–TERMINATED AT RRU AND DC POWER PLANT.
5. SEE LTE SCHEMATIC DIAGRAM DETAIL 1/E–1 FOR BREAKER RATING.

REV.	DATE	DRAWN BY	CHK'D BY	DESCRIPTION
0	09/19/16	KAWJR	CAG	CONSTRUCTION DOCUMENTS – ISSUED FOR CONSTRUCTION

PROFESSIONAL ENGINEER SEAL

at&t

EMPIRE telecom

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

AT&T MOBILITY

WIRELESS COMMUNICATIONS FACILITY

MONTVILLE

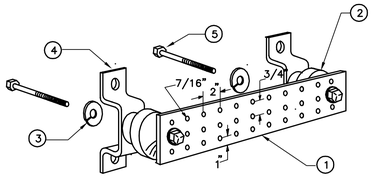
CT2049 – LTE 2C

695 OLD COLCHESTER ROAD
MONTVILLE, CT 06382

DATE: 09/14/16
SCALE: AS NOTED
JOB NO. 16071.44

LTE WIRING DIAGRAM

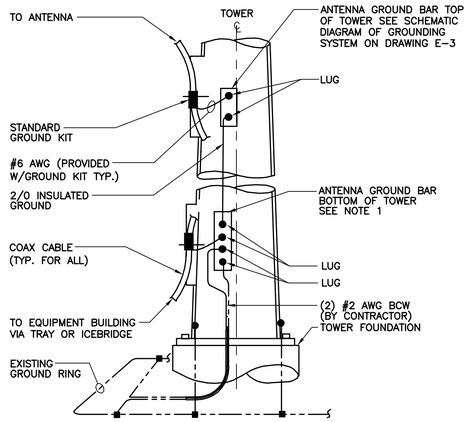
E-2



LEGEND

1. TINNED COPPER GROUND BAR, 1/4"x 4"x 20", NEWTON INSTRUMENT CO. HOLE CENTERS TO MATCH NEMA DOUBLE LUG .
2. INSULATORS, NEWTON INSTRUMENT CAT. NO. 2. 3061-4.
3. 3. 5/8" LOCK WASHERS, NEWTON INSTRUMENT CO. CAT. NO. 3015-8.
4. WALL MOUNTING BRACKET, NEWTON INSTRUMENT CO. 4. CAT NO. A-6056.
5. STAINLESS STEEL SECURITY SCREWS.

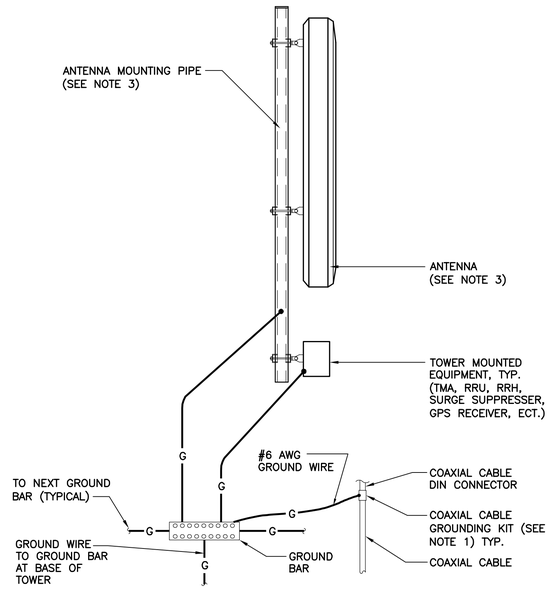
3 GROUND BAR DETAIL
E-3 NOT TO SCALE



NOTES:

1. NUMBER OF GROUND BARS MAY VARY DEPENDING ON THE TYPE OF TOWER, LOCATION AND CONNECTION ORIENTATION. PROVIDE AS REQUIRED.
2. A SEPARATE GROUND BAR TO BE USED FOR GPS ANTENNA IF REQUIRED.

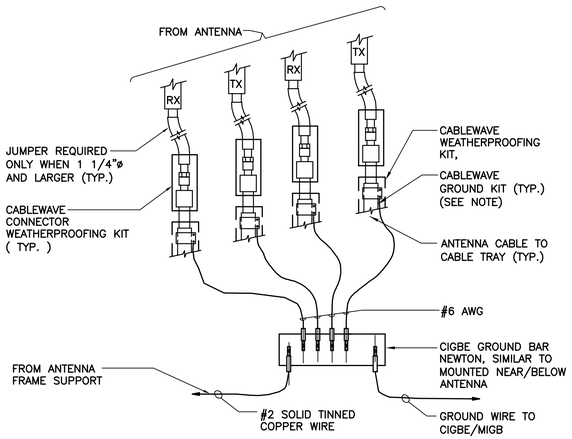
2 ANTENNA CABLE GROUNDING - TOWER
E-3 NOT TO SCALE



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.

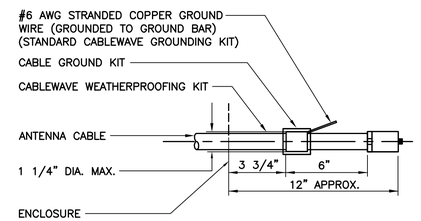
1 TYPICAL ANTENNA GROUNDING DETAIL
E-3 NOT TO SCALE



NOTE:

1. DO NOT INSTALL CABLE GROUND KIT AT A BEND AND ALWAYS DIRECT GROUND WIRE DOWN TO CIGBE

5 CONNECTION OF GROUND WIRES TO GROUND BAR
E-3 NOT TO SCALE



NOTE:

1. DO NOT INSTALL CABLE GROUND KIT AT A BEND AND ALWAYS DIRECT GROUND WIRE DOWN TO GROUND BAR.

4 ANTENNA CABLE GROUNDING DETAIL
E-3 NOT TO SCALE

REV.	DATE	DRAWN BY	CHK'D BY	DESCRIPTION
0	09/19/16	KAWJR	CAG	CONSTRUCTION DOCUMENTS - ISSUED FOR CONSTRUCTION

PROFESSIONAL ENGINEER SEAL

at&t

EMPIRE telecom

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

AT&T MOBILITY

WIRELESS COMMUNICATIONS FACILITY

MONTVILLE

CT2049 - LTE 2C

695 OLD COLCHESTER ROAD
MONTVILLE, CT 06382

DATE: 09/14/16
SCALE: AS NOTED
JOB NO. 16071.44

TYPICAL ELECTRICAL DETAILS

E-3

Sheet No. 7 of 7