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May 2, 2016

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

Kyle Richers
10 Industrial Ave
Mahwah, NJ 07430
908-447-4716
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Notice of Exempt Modification
130 Vernon Road, Bolton, CT 06043
Latitude- 41.802648
Longitude- -72.441213

Dear Ms. Bachman

T-Mobile currently maintains 2 existing antennas at the 180 foot level of the existing 280 foot guyed tower at 130 Vernon Road, Bolton, Connecticut. The tower is owned by Mountaintop Enterprises Inc. T-Mobile now intends to replace 2 existing antennas with 2 new antennas, and add 2 new antennas. The antennas would be installed at the same 180 foot level of the tower. T-Mobile also intends to install 4 new remote radio heads, and (1) 1-1/4" fiber cable. The structural analysis is passing as a result of tower modifications, as detailed in AECOM's structural analysis/modification design.

This facility was approved by the Council in application TS-VOICESTREAM-012-010301.

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

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

1. The proposed modifications will not result in an increase in the height of the existing structure.
2. The proposed modifications will not require the extension of the site boundary.
3. The proposed modifications will not increase noise levels at the facility by six decibels or more, or to levels that exceed state and local criteria.
4. The operation of the replacement antennas will not increase radio frequency emissions at the facility to a level at or above the Federal Communications Commission safety standard,
5. The proposed 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 with certain modifications.

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

Sincerely,

Kyle Richers

Kyle Richers

10 Industrial Ave, Suite 3

Mahwah, New Jersey 07430

908-447-4716

krichers@transcendwireless.com

Attachments:

CC: The Honorable Robert R. Morra, First Selectman, Town of Bolton

James Rupert, Zoning Enforcement Officer, Town of Bolton

Mountaintop Enterprises, Inc.

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

T-Mobile Existing Facility

Site ID: CT11180C-L700-SA-V1

BOLTON CT_1
130 VERNON ROAD
BOLTON, CT 06043

April 29, 2016

Site Compliance Summary	
Compliance Status:	COMPLIANT
Site total MPE% of FCC general public allowable limit:	15.1 %

April 29, 2016

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

Emissions Analysis for Site: **CT11180C-L700-SA-V1 – BOLTON CT_1**

EBI Consulting was directed to analyze the proposed T-Mobile facility located at **130 VERNON ROAD, BOLTON, CT** for the purpose of determining whether the emissions from the Proposed T-Mobile Antenna Installation located on this property are within specified federal limits.

All information used in this report was analyzed as a percentage of current Maximum Permissible Exposure (% MPE) as listed in the FCC OET Bulletin 65 Edition 97-01 and ANSI/IEEE Std C95.1. The FCC regulates Maximum Permissible Exposure in units of microwatts per square centimeter ($\mu\text{W}/\text{cm}^2$). The number of $\mu\text{W}/\text{cm}^2$ 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 ($\mu\text{W}/\text{cm}^2$). The general population exposure limit for both the PCS, 700Mhz and AWS bands is 1000 $\mu\text{W}/\text{cm}^2$. Because each carrier will be using different frequency bands, and each frequency band has different exposure limits, it is necessary to report percent of MPE rather than power density.

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

exposed person has been made fully aware of the potential for exposure and can exercise control over his or her exposure by leaving the area or by some other appropriate means.

Additional details can be found in FCC OET 65.

CALCULATIONS

Calculations were done for the proposed T-Mobile Wireless antenna facility located at **130 VERNON ROAD, BOLTON, CT** using the equipment information listed below. All calculations were performed per the specifications under FCC OET 65. Since T-Mobile is proposing highly focused directional panel antennas, which project most of the emitted energy out toward the horizon, all calculations were performed assuming a lobe representing the maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB, 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 UMTS channels (PCS Band - 1900 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel
- 2) 1 LTE channels (700 Band) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.
- 3) 1 LTE channels (AWS Band – 2100 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 60 Watts per Channel.
- 4) 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.
- 5) For the following calculations the sample point was the top of a six foot person standing at the base of the tower. The maximum gain of the antenna per the antenna manufactures supplied specifications [minus 10 dB] (if required) 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.
- 6) The antennas used in this modeling are the AIR21 B2A/B4P for 1900 MHz (PCS) and 2100 MHz (AWS) and the LNX-6515DS-VTM for the 700 MHz channels. This is based on feedback from the carrier with regards to anticipated antenna selection. The AIR21 B2A/B4P has a maximum gain of **15.35 dBd** at its main lobe, and the LNX-6515DS-VTM has a maximum gain of **14.55 dBd** at its main lobe. 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.

- 7) The antenna mounting height centerline of the proposed antennas is 180 Feet above ground level (AGL).
- 8) 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.

T-Mobile Site Inventory and Power Data

Sector:	A	Sector:	B	Sector:	C
Antenna #:	1	Antenna #:	1	Antenna #:	1
Make / Model:	AIR21 B2A/B4P	Make / Model:	AIR21 B2A/B4P	Make / Model:	AIR21 B2A/B4P
Gain:	15.35 dBd	Gain:	15.35 dBd	Gain:	15.35 dBd
Height (AGL):	180	Height (AGL):	180	Height (AGL):	180
Frequency Bands	1900 UMTS/ LTE 2100 (AWS)	Frequency Bands	1900 UMTS/ LTE 2100 (AWS)	Frequency Bands	1900 UMTS/ LTE 2100 (AWS)
Channel Count	3	Channel Count	3	# PCS Channels:	3
Total TX Power:	90	Total TX Power:	90	# AWS Channels:	90
ERP (W):	3084.91	ERP (W):	3084.91	ERP (W):	3084.91
Antenna A1 MPE%	1.3	Antenna B1 MPE%	1.3	Antenna C1 MPE%	1.3
Antenna #:	2	Antenna #:	2	Antenna #:	2
Make / Model:	LNX-6515DS-VTM	Make / Model:	LNX-6515DS-VTM	Make / Model:	LNX-6515DS-VTM
Gain:	14.55 dBd	Gain:	14.55 dBd	Gain:	14.55 dBd
Height (AGL):	180	Height (AGL):	180	Height (AGL):	180
Frequency Bands	LTE 700	Frequency Bands	LTE 700	Frequency Bands	LTE 700
Channel Count	1	Channel Count	1	Channel Count	1
Total TX Power:	30	Total TX Power:	30	Total TX Power:	30
ERP (W):	855.31	ERP (W):	855.31	ERP (W):	855.31
Antenna A2 MPE%	1.1	Antenna B2 MPE%	1.1	Antenna C2 MPE%	1.1

Site Composite MPE%	
Carrier	MPE%
T-Mobile	7.2
ATT	4.8 %
Verizon	3.1 %
Other Carrier	1.9%
Site Total MPE %:	15.1

T-Mobile Sector 1 Total:	2.4 %
T-Mobile Sector 2 Total:	2.4%
T-Mobile Sector 3 Total:	2.4 %
Site Total:	7.2

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 T-Mobile 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:

T-Mobile Sector	Power Density Value (%)
Sector 1:	2.4%
Sector 2:	2.4 %
Sector 3 :	2.4 %
T-Mobile Total:	7.2 %
Site Total:	15.1
Site Compliance Status:	Compliant

The anticipated composite MPE value for this site assuming all carriers present is **15.1%** 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.



Brian Frazier
Sr. RF Engineer

EBI Consulting
21 B Street
Burlington, MA 01803`

DETAILED STRUCTURAL ANALYSIS AND MODIFICATION OF AN EXISTING 280' GUYED TOWER AND FOUNDATION FOR PROPOSED ANTENNA ARRANGEMENT



Site ID : CT11180C
Site Address: 130 Vernon Road
Bolton, CT

60493238
TWM-004 Rev. 1

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1. EXECUTIVE SUMMARY

This report summarizes the structural analysis of the modified 280' guyed lattice tower located at 130 Vernon Road in Bolton, Connecticut. The analysis was conducted in accordance with the 2005 Connecticut State Building Code which requires a three second gust wind speed of 100 mph per 2003 IBC (Table 1609.3.1) and the TIA/EIA-222-G Standard for a wind velocity of 105 mph (3-second gust). The wind speed from the TIA/EIA-222-G governs the design at 105 mph (3-second gust) and 50 mph (3-second gust) concurrent with increasing ice thickness starting at 1.0 inch. The antenna loading considered in the analysis utilizing the TIA/EIA-222-G Standard consists of all existing and proposed antennas, transmission lines, and ancillary items as outlined in the Introduction Section of this report.

This report also summarizes the structural analysis of the same modified tower in accordance with the 2005 Connecticut State Building Code and the TIA/EIA-222-F Standard for Steel Antenna Towers and Supporting Structures to comply with the current state design Code requirements which implement a three second gust wind speed of 100 mph which converts to a 80 mph fastest mile per 2003 IBC (Table 1609.3.1) and the TIA/EIA-222-F standard for a wind velocity of 85 mph (fastest mile). The wind speed from the TIA/EIA-222-F governs the design at 85 mph (fastest mile) and 74 mph (fastest mile) concurrent with ½" ice. The antenna loading considered in the analysis utilizing the TIA/EIA-222-F Standard consists of all existing and proposed antennas, transmission lines, and ancillary items as outlined in the Introduction Section of this report.

The proposed T-Mobile antenna upgrade is as follows:

Proposed Antenna	Carrier	Antenna Center Elevation
<p><u>Remove:</u> (2) RR90_17_02DP EMS Panel Antennas (2) TMA Units</p>	T-Mobile (existing)	@ EL. 180'
<p><u>Install:</u> (2) Ericsson AIR 21 B4A/B2P Panel Antennas (Alpha & Beta Sectors) (2) S11 B2 RRH Units (Alpha & Beta Sectors) (2) Ericsson RRUS11_B12 RRH Units (1) 1-1/4" Fiber Optic Cable</p>	T-Mobile (Proposed)	@ EL. 180"

The results of an initial analysis conducted utilizing the TIA/EIA-222-G Standard indicated the existing tower structure and guy cables did not have enough capacity for the proposed antenna upgrade. The tower structure and components require modifications shown on SK-1 through SK-3. **Once the modifications indicated on sheets SK-1 through SK-3 are performed, the modified structure is considered structurally adequate with the wind load classifications for both TIA/EIA-222-G and TIA/EIA-222-F Standards specified above along with the existing and proposed antenna loading.**

1. **EXECUTIVE SUMMARY (continued)**

This analysis is based on:

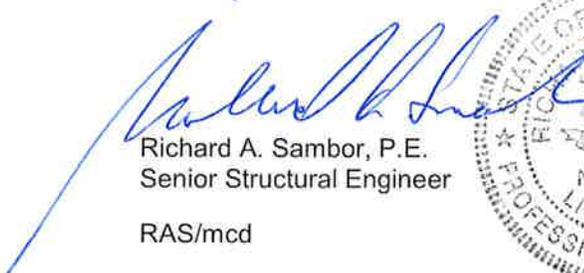
- 1) The tower structure's theoretical capacity, not including any assessment of the condition of the tower.
- 2) Geotechnical information taken from report by Dr. Clarence Welti, P.E., P.C. Geotechnical Engineering dated February 13, 1991.
- 3) Tower geometry, structural member sizes and foundation information taken from structural analysis performed by L&R Communications, Limited, L&R File No. 92-43-023, signed and sealed October 16, 1992.
- 4) Tower inventory mapping of existing tower antennas, mounts and cables performed by Northeast Towers, Inc. for Mountaintop Services, obtained via e-mail, dated November 10, 2014.
- 5) Previous Structural analysis performed by URS Corporation on behalf of T-Mobile, project no. 36931359 / NSS-014, signed and sealed November 18, 2014.
- 6) Structural analysis performed by URS Corp. for Eversource Energy (formerly Northeast Utilities), Job No. MTS-013 / 36931459, signed and sealed September 24, 2015.
- 7) Antenna inventory for T-Mobile proposed antennas obtained via e-mail dated February 10, 2016.
- 8) Previous failing structural analysis performed by AECOM on behalf of T-Mobile, project number TWM-004, signed and sealed March 9, 2016.
- 9) Antenna and mount configuration as specified on the inventory page following this Executive Summary.

This report is only valid as per the assumptions and data utilized in this report for antenna inventory, mounts and associated cables. The user of this report shall field verify the antenna and mount configuration used as well as the physical condition of the tower members assumption of the antenna and mount configuration as well as the physical condition of the tower members, cabling, connections and foundations. Notify the engineer in writing immediately if any of the information in this report is found to be other than specified.

If you should have any questions, please call.

Sincerely,

AECOM, contracting as URS Corporation AES


Richard A. Sambor, P.E.
Senior Structural Engineer

RAS/mcd

cc: CF/Book – AECOM



2. INTRODUCTION

The subject tower is located at 130 Vernon Road in Bolton, Connecticut. The structure is a 280' guyed lattice tower. The inventory is summarized in the table below:

Antenna Type	Carrier	Mount	Antenna Centerline Elevation	Cable
10' Omnidirectional Antenna	Not in Operation	3' Standoff	284'	1-1/4"
(1) LED Medium Intensity Beacon Light (DLS L-864/L-865)	Tower (existing)	Top of Tower Plate	280'	(1) 18 AWG Dual Flashhead Cable (1) 1/2" Power Cable
FM Antenna	WMRQ (Existing)	5' Standoff	289'	1-1/4"
Kathrein MF-950B Grid Antenna	WBMW (Existing)	Leg Mounted	280'	1-1/4"
14' Whip antenna	Mountaintop Services (Existing)	3' Standoff	260'	1-1/4" (shared with dipole)
ASPA-711 Dipole Antenna	Mountaintop Services (Existing)	1' Standoff	260'	1-1/4" (shared with whip)
(1) Decibel DB-589-Y Omni Antenna	Eversource Energy (existing)	(1) 3' Side-Arm (mounted at 230')	234.7'	(1) 1-1/4"
(1) 531-70HD Dipole Antenna	Eversource Energy (existing)	(1) 6' Side-Arm	218'	(1) 7/8"
8' Dish with Radome	Eversource Energy (Existing)	Leg Mount	212'-6"	(1) EW63
8' Dish with Radome	Eversource Energy (Existing)	Leg Mount	204'-6"	(1) EW63
6' Dish with Radome	Eversource Energy (Existing)	Leg Mount	204'-6"	(1) EW63
None	Not in Use	6' Standoff	180'-6"	N/A
(2) AIR21 B4A/B2P (2) LNX-6515DS-VTM (2) S11 B2 RRH Units (2) RRUS11_B12 RRH Units	T-Mobile (Proposed)	<i>See Below Mounts</i>	180'	(1) 1-1/4" Fiber Optic Cable
<i>See Above Inventory</i>	T-Mobile (Existing)	(3) T-Arm Mounts	180'	(4) 1-5/8"

Antenna Type	Carrier	Mount	Antenna Centerline Elevation	Cable
(6) Powerwave 7770 Panel Antennas (3) SBNH-1D6565C Panel Antennas (6) LGP21401 TMAs (12) LGP21901 Diplexers (6) Ericsson RRUs (1) Surge Suppressor	AT&T (Existing)	(3) Andrew 12' Sector Frames, (SF-U12-3-72)	164'	(12) 1-5/8" (1) Fiber Optic Cable (2) DC Cables
(3) L-810 Obstruction Lights	Tower (existing)	Leg Mount	140'	(1) 1/2" DC Cable
22' Whip Antenna	Unknown (Existing)	6' Standoff	132'	(1) 1-1/4"
12' Dipole	Unknown (Existing)	6' Standoff	132'	(1) 1-1/4"
12.5' Omni	Not in Operation	1.5' Standoff	125'	Dead Line
1' Yagi	Not in Operation	Leg Mount	124'-6"	N/A
<u>Alpha:</u> (1) BXA-70063-6CF (2) LPA-80080-4CF (2) LPA-171080-8CF <u>Beta:</u> (1) BXA-70063-6CF (2) LPA-80063-4CF (2) LPA-171063-8CF	Verizon (existing)	(2) T-Arms	121'	(4) 1-5/8" (6) 1 1/4"
4' Dish with Radome	Eversource Energy (Existing)	Leg Mount	113'	(1) EW-90
9' Dish with Radome	Eversource Energy (Existing)	Leg Mount	104'-6"	(1) EW-63

This structural analysis of the communications tower was performed by AECOM for T-Mobile. The purpose of this analysis was to investigate the structural integrity of the modified tower with its existing and proposed antenna loads. This analysis was conducted to evaluate stress on the tower and the effect of forces to the foundation of the tower resulting from existing and proposed antenna arrangements.

3. ANALYSIS METHODOLOGY AND LOADING CONDITIONS

The structural analysis was done in accordance with the 2005 Connecticut State Building Code, TIA/EIA-222-G—Structural Standard for Steel Antenna Towers and Antenna Supporting Structures, and the American Institute of Steel Construction (AISC) Manual of Steel Construction—Load Resistance Factor Design (LRFD).

The analysis was conducted using TNX tower version 7.0.5.1 and used the following conditions for this tower review (following the TIA/EIA-222-G Standard):

- Structure Class 2 – (Substantial Communications)
- Topographic Category 1 – (No abrupt changes in general topography)
 - NOTE: Tower base is surrounded by nearby hills that would restrict rolling wind speed build-up effects for this location.
- Exposure Class C – (Open Terrain with scattered obstructions)
- Load Conditions:
 - Two load conditions were evaluated as shown which were compared to design stresses according to AISC and TIA/EIA-222-G Standard.

Basic Wind Speed:

- Tolland County: $V = 105$ mph (3-second gust) [Annex B of ANSI/TIA-222-G-2006]

Loading cases:

Load Condition 1 = 105 mph (3-second gust) Wind Load (without ice) + Tower Dead Load

Load Condition 2 = 50 mph (3-second gust) Wind load (with ice) + Ice Load + Tower Dead Load

The ice thickness used for this analysis is **1 inch** (assumed to start at the base of the tower) and is considered to increase in thickness with height.

The use of Seismic loads were not included for this tower analysis review.

The structural analysis was also done in accordance with the 2005 Connecticut State Building Code, TIA/EIA-222-F—Structural Standard for Steel Antenna Towers and Antenna Supporting Structures, and the American Institute of Steel Construction (AISC) Manual of Steel Construction—Allowable Stress Design (ASD).

The Connecticut State Building Code requires a three second gust wind speed of 100 mph which converts to a 80 mph fastest mile per 2003 IBC (Table 1609.3.1). The TIA/EIA-222-F requires a basic wind speed of 85 mph fastest mile. In this case the wind speed from the TIA/EIA-222-F governs the design.

The analysis was conducted using TNX Tower 7.0.5.1. Two load conditions were evaluated as shown below which were compared to allowable stresses according to AISC and TIA/EIA-222-F Standard:

Load Condition 1 = 85 mph (fastest mile) Wind Load (without ice) + Tower Dead Load

Load Condition 2 = 74 mph (fastest mile) Wind Load (with ice) + Ice Load + Tower Dead Load

Please note that wind pressure is a function of velocity squared. Under Load Condition 2, a 25 percent reduction in wind pressure is allowed by code to account for the unlikelihood of the full wind pressure and ice load occurring at the same time. The same results may be achieved by utilizing a lower wind pressure without taking the 25 percent reduction, as shown above.

The TIA/EIA-222-F standard permits a one-third increase in allowable stresses for towers and monopoles less than 700 feet tall. For the purposes of this analysis, in computing the load capacity the allowable stresses of the tower members were increased by one-third.

This one-third increase in stress is NOT allowed for TIA/EIA-222-G analysis conditions

4. FINDINGS AND EVALUATION

Stresses on the tower structure were evaluated to compare with design stresses and allowable stresses in accordance with AISC (following TIA/EIA-222-G and TIA/EIA-222-F Standards, respectively). The results of an initial analysis indicated that the tower structure and guyed cables did not have enough capacity to support the proposed loading conditions (noted herein). The tower structure and guy cables require modifications shown on SK-1 through SK-3. Once the modifications indicated on sheets SK-1 through SK-3 are performed, the modified structure is considered structurally adequate with the wind load classifications specified with the existing and proposed antenna loading noted herein. See below for tower capacity summary following the State Code under TIA/EIA-222-G and TIA/EIA-222-F Standards requirements

Table 1: Tower Component vs Capacity Summary (TIA/EIA-222-G Standard):

COMPONENT (SECTION NO.)	CONTROLLING COMPONENT / ELEVATION	TIA/EIA-222-G STRESS RATIO (% CAPACITY)	PASS/FAIL
Legs (T14)	64' – 68'	95.0 %	Pass
Diagonal (T7)	140' – 160'	98.2 %	Pass
Sec. Horizontal (T16)	40' – 60'	13.8 %	Pass
Top Girt (T1)	260' – 280'	7.5	Pass
Guy @ 270' (3/4" EHS)	270'	54.7 %	Pass
Guy @ 196' (11/16" EHS)	196'	77.7 %	Pass
Guy @ 128' (11/16" EHS)	128'	91.6 %	Pass
Guy @ 70' (11/16" EHS)	70'	87.9 %	Pass
Top Guy Pull-Off (T8)	120' – 140'	36.8 %	Pass
Bottom Guy Pull-Off (T8)	120' – 140'	16.0 %	Pass
Torque Arm Top (T8)	120' – 140'	35.9 %	Pass
Torque Arm Bottom (T8)	120' – 140'	71.2 %	Pass
Foundation	Guy Anchor Shear	98.0 %	Pass

Table 2: Tower Component vs Capacity Summary (TIA/EIA-222-F Standard):

COMPONENT (SECTION NO.)	CONTROLLING COMPONENT / ELEVATION	TIA/EIA-222-F STRESS RATIO (% CAPACITY)	PASS/FAIL
Legs (T17)	20' – 40'	69.5 %	Pass
Diagonal (T1)	260' – 280'	76.3 %	Pass
Sec. Horizontal (T17)	20' – 40'	10.2 %	Pass
Top Girt (T1)	260' – 280'	7.6 %	Pass
Guy @ 270' (3/4" EHS)	270'	62.9 %	Pass
Guy @ 196' (11/16" EHS)	196'	73.1 %	Pass
Guy @ 128' (11/16" EHS)	128'	70.6 %	Pass
Guy @ 70' (11/16" EHS)	70'	65.9 %	Pass
Top Guy Pull-Off (T8)	120' – 140'	28.5 %	Pass
Bottom Guy Pull-Off (T8)	120' – 140'	13.0 %	Pass
Torque Arm Top (T5)	180' – 200'	28.8 %	Pass
Torque Arm Bottom (T5)	180' – 200'	53.8 %	Pass
Foundation	Guy Anchor Shear	84.6 %	Pass

5. CONCLUSIONS AND RECOMMENDATIONS

The results of an initial analysis conducted utilizing the TIA/EIA-222-G Standard indicated the existing tower structure and guy cables did not have enough capacity for the proposed antenna upgrade. The tower structure and components require modifications shown on SK-1 through SK-3. **Once the modifications indicated on sheets SK-1 through SK-3 are performed, the modified structure is considered structurally adequate with the wind load classifications specified under the State Code utilizing TIA/EIA-222-G requirements and TIA/EIA-222-F requirements along with the existing and proposed antenna loading.**

Limitations/Assumptions:

This report is based on the following:

1. Tower inventory as listed in this report.
2. Tower is properly installed and maintained.
3. All members are as specified in the original design documents and are in good condition.
4. All required members are in place.
5. All bolts are in place and are properly tightened.
6. Tower is in plumb condition.
7. All member protective coatings are in good condition.
8. All tower members were properly designed, detailed, fabricated, and installed and have been properly maintained since erection.
9. Foundations are in good condition without defect and were properly constructed to support original design loads as specified in the original design documents.
10. All coaxial cables are installed as specified in Section 6 of this report.

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

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

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

Ongoing and Periodic Inspection and Maintenance:

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

The owner shall refer to TIA/EIA-222-G section 14.2 and TIA/EIA-222-F section 14.1 for recommendations for maintenance and inspection. The frequency of the inspection and maintenance intervals is to be determined by the owner based upon actual site and environmental conditions. It is recommended that a complete and thorough inspection of the entire tower structural system be performed at least yearly and more frequently as conditions warrant. It is also recommended that the structure be inspected after severe wind and/or ice storms or other extreme loading conditions.

6. DRAWINGS AND DATA

REINFORCEMENT DRAWINGS SK-1 THROUGH SK-3

GENERAL CONSTRUCTION NOTES

- ALL WORK SHALL COMPLY WITH THE CONNECTICUT STATE BUILDING, SUPPLEMENTS AND AMENDMENTS AND LIFE SAFETY CODES.
- CONTRACTOR IS TO REVIEW ALL DRAWINGS AND NOTES 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 SUB-CONTRACTORS AND ALL RELATED PARTIES. THE SUB-CONTRACTORS SHALL EXAMINE ALL THE DRAWINGS AND NOTES FOR THE INFORMATION THAT AFFECTS THEIR WORK.
- CONTRACTOR SHALL PROVIDE A COMPLETE BUILD-OUT WITH ALL FINISHES, STRUCTURAL, MECHANICAL, AND ELECTRICAL COMPONENTS AND PROVIDE ALL ITEMS AS SHOWN OR INDICATED ON DRAWINGS.
- 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.
- CONTRACTOR SHALL SECURE AND PAY FOR ALL PERMITS AND ALL INSPECTIONS REQUIRED AND SHALL ALSO PAY FEES REQUIRED FOR THE GENERAL CONSTRUCTION AND ELECTRICAL SUB-CONTRACTORS SHALL PAY FOR THEIR PERMITS.
- CONTRACTOR SHALL MAINTAIN A CURRENT SET OF DRAWINGS ON SITE AT ALL TIMES AND ENSURE THE DISTRIBUTION OF NEW DRAWINGS TO SUB-CONTRACTORS AND OTHER RELEVANT PARTIES AS SOON AS THEY ARE MADE AVAILABLE. ALL OLD DRAWINGS SHALL BE MARKED VOID AND REMOVED FROM THE CONTRACT AREA. CONTRACTOR SHALL FURNISH 'AS-BUILT' SET OF DRAWINGS TO OWNER UPON COMPLETION OF PROJECT.
- INSTALLATION OF THIS WIRELESS COMMUNICATIONS EQUIPMENT SITE REQUIRES WORK IN THE IMMEDIATE VICINITY OF EXISTING OPERATING TELECOMMUNICATION SYSTEMS. THE CONTRACTOR SHALL PROVIDE AND COORDINATE THE METHODS OF PROTECTION WITH THE VARIOUS TELECOMMUNICATION CARRIERS AND THE TOWER OWNER. THERE SHALL BE NO INTERRUPTION OF OPERATION WITHOUT TIMELY COORDINATION WITH AND APPROVAL BY THE VARIOUS COMMUNICATIONS OPERATORS.
- ALL EQUIPMENT AND PRODUCTS PURCHASED ARE TO BE REVIEWED BY CONTRACTOR AND ALL APPLICABLE SUB-CONTRACTORS FOR ANY CONDITION PER MFR'S RECOMMENDATIONS. CONTRACTOR TO SUPPLY THESE ITEMS AT NO COST TO OWNER OR ARCHITECT.
- 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.
- CONTRACTOR TO REVIEW ALL SHOP DRAWINGS AND SUBMIT COPY TO ARCHITECT FOR REVIEW. DRAWINGS MUST BEAR THE CHECKER'S INITIALS BEFORE SUBMITTAL TO THE ARCHITECT FOR REVIEW.
- 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. SUBMIT ANY DISCREPANCIES FROM THE DRAWINGS TO THE ARCHITECT.
- THE CONTRACTOR IS SOLELY RESPONSIBLE TO DETERMINE CONSTRUCTION PROCEDURE AND SEQUENCE, AND TO ENSURE THE SAFETY OF THE EXISTING STRUCTURE AND ITS COMPONENT PARTS DURING CONSTRUCTION. THIS INCLUDES THE ADDITION OF WHATEVER SHORING, BRACING, UNDERPINNING, ETC. THAT MAY BE NECESSARY.
- THE CONTRACTOR SHALL VERIFY REQUIRED CLEARANCES INCLUDING BUT NOT LIMITED TO EXISTING BUILDINGS, EQUIPMENT PADS AND SHELTERS PRIOR TO COMMENCING WORK.
- EXISTING DIMENSIONS OF STRUCTURE SHOWN ON THESE DOCUMENTS ARE DATED OCTOBER 1992 BY (LeBLANC) L&R COMMUNICATIONS, LIMITED AND ARE NOT GUARANTEED. CONTRACTOR SHALL TAKE FIELD DIMENSIONS AS NECESSARY TO ASSURE PROPER FIT OF ALL FINISHED WORK AND SHALL ASSUME FULL RESPONSIBILITY FOR THEIR ACCURACY. WHEN SHOP DRAWINGS BASED ON FIELD MEASUREMENT ARE SUBMITTED FOR REVIEW, DIMENSIONS ARE PROVIDED FOR THE ENGINEER'S REFERENCE ONLY.

STRUCTURAL NOTES

STRUCTURAL STEEL MATERIAL:

STRUCTURAL STEEL LEGSA 139-GR 45
 STRUCTURAL STEEL DIAGONAL & HORIZONTAL MEMBERA36
 STRUCTURAL STEEL - SOLID ROD SUB HORIZONTALA36

STRUCTURAL STEEL SHALL CONFORM TO ALL THE REQUIREMENTS OF THE ASTM SPECIFICATION, AS REFERENCED IN THE CODE.

UNLESS OTHERWISE NOTED, ALL STEEL WILL BE GALVANIZED IN ACCORDANCE WITH ASTM 123 AFTER FABRICATION. TOUCH UP ALL DAMAGED GALVANIZED STEEL WITH APPROVED COLD ZINC, "GALVANOX", "DRY GALV", "ZINC-IT", OR APPROVED EQUIVALENT, IN ACCORDANCE WITH MANUFACTURERS GUIDELINES. TOUCH-UP DAMAGED NON GALVANIZED STEEL WITH SAME PAINT APPLIED IN SHOP OR FIELD.

SHOP AND ERECTION DRAWINGS SHALL BE SUBMITTED FOR ALL STRUCTURAL STEEL WORK IN ACCORDANCE WITH THE CONTRACT DOCUMENTS. SUBMIT 2 SETS OF PRINTS FOR THE ENGINEER REVIEW.

MILL BEARING ENDS OF COLUMNS, STIFFENERS, AND OTHER BEARING SURFACES TO TRANSFER LOAD OVER ENTIRE CROSS SECTION.

THE OMISSION OF ANY MATERIAL THAT WAS SHOWN ON THE CONTRACT DRAWINGS SHALL NOT RELIEVE THE CONTRACTOR OF PROVIDING THE SAME.

CONNECTIONS / FIELD ASSEMBLY:

BOLTED CONNECTIONS: UNLESS OTHERWISE NOTED, ALL JOINTS ARE SLIP CRITICAL TYPE, REQUIRING 3/4" DIA. A325-N BOLTS, A563 NUTS AND F436 WASHERS. ALL GALVANIZED, BEVELED WASHERS SHALL BE USED ON BEAM FLANGES HAVING A SLOPE GREATER THAN 1:20.

STRUCTURE IS DESIGNED TO BE LEVEL AND PLUMB, SELF-SUPPORTING AND STABLE AFTER WORK IS COMPLETED.

COMMENCEMENT OF WORK WITHOUT NOTIFYING THE ENGINEER OF ANY DISCREPANCIES WILL BE CONSIDERED ACCEPTANCE OF PRECEDING WORK.

THE CONTRACTOR IS RESPONSIBLE FOR THE STABILITY OF THE STRUCTURE DURING CONSTRUCTION. NO MEMBER OF THE TOWER SHALL BE LEFT DISCONNECTED FOR THE NEXT WORKING DAY. THE CONTRACTOR SHALL BE AWARE OF WEATHER AND WIND CONDITIONS AND NOT PERFORM MEMBER REPLACEMENT IN A WIND.

INSPECTIONS:

SPECIAL INSPECTIONS ARE REQUIRED PER THE CODE FOR STRUCTURAL STEEL WORK.

T-MOBILE WILL SUPPLY THE SERVICES OF A SPECIAL INSPECTOR AND TESTING AGENTS AS REQUIRED. CONTRACTOR SHALL COORDINATE INSPECTIONS OF FABRICATOR'S AND ERECTOR'S WORK AND MATERIALS TO MEET THE REQUIREMENTS OF THE STATEMENT OF SPECIAL INSPECTIONS FOR THIS PROJECT.

COPIES OF TESTING AND INSPECTION REPORTS WILL BE PROVIDED TO THE OWNER, BUILDING OFFICIAL, ENGINEER OF RECORD AND CONTRACTOR.

PROJECT NO.
60493238
 Designed by:
MCD
 Drawn by:
KAP
 Checked by:
KAB
 Approved by:
RAS

AECOM
 500 ENTERPRISE DRIVE
 ROCKY HILL, CONNECTICUT
 (860)-529-8882

•• T •• Mobile ••

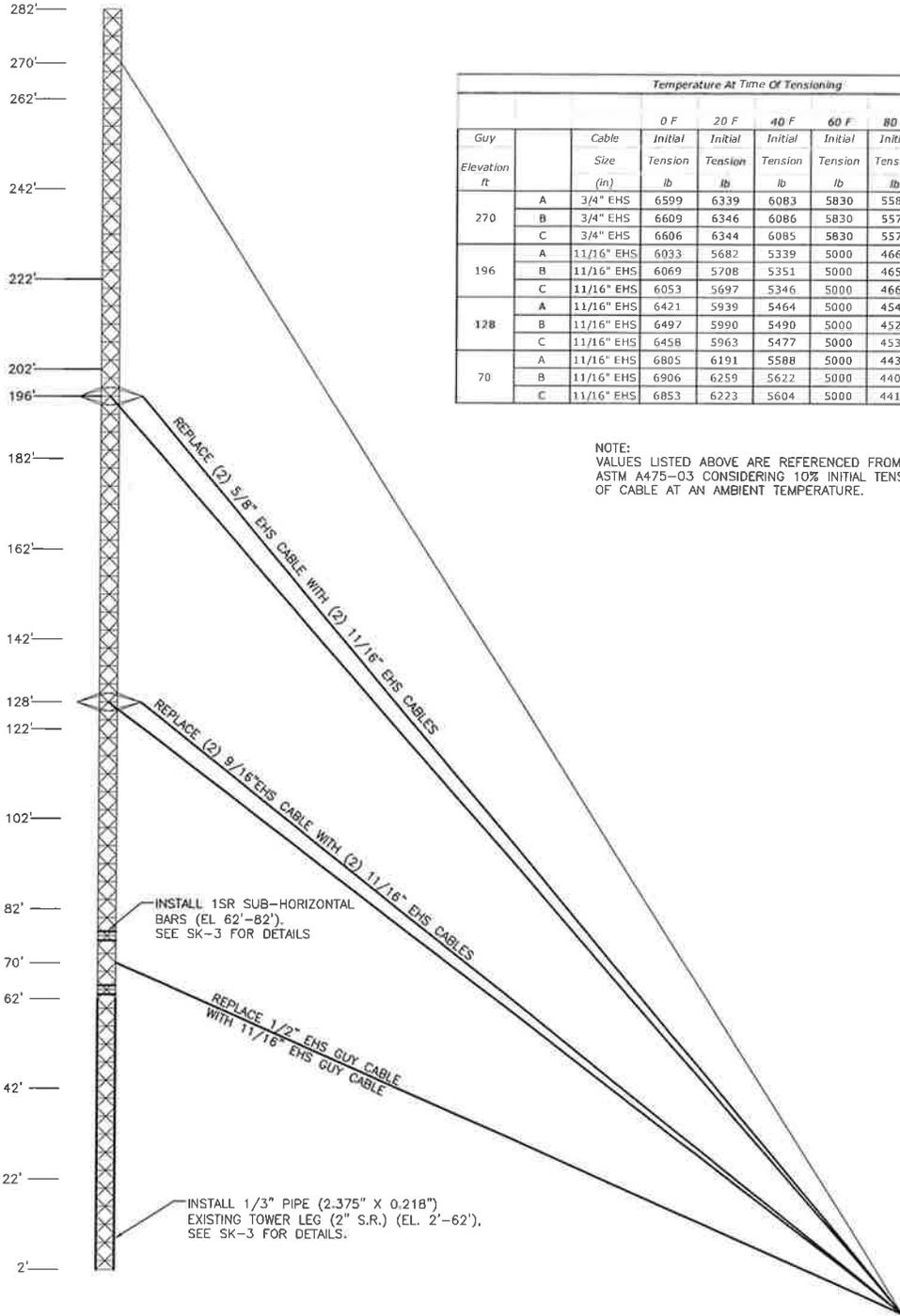
SITE ADDRESS: T-MOBILE SITE NO CT11180C
 130 VERNON ROAD, BOLTON, CT

REV.	DATE:	DESCRIPTION

Scale: AS NOTED Date: 04/12/16
 Job No. TWM-004 File No. Dwg. 1 of 3

Dwg. No.
SK-1

NOTE:
SEE SK-1 FOR STRUCTURAL NOTES



		Temperature At Time Of Tensioning							
Guy	Elevation ft	Cable Size (in)	0 F	20 F	40 F	60 F	80 F	100 F	120 F
			Initial Tension lb						
270	A	3/4" EHS	6599	6339	6083	5830	5582	5338	5100
	B	3/4" EHS	6609	6346	6086	5830	5578	5330	5087
	C	3/4" EHS	6606	6344	6085	5830	5579	5333	5092
196	A	11/16" EHS	6033	5682	5339	5000	4668	4338	4024
	B	11/16" EHS	6069	5708	5351	5000	4655	4319	3993
	C	11/16" EHS	6053	5697	5346	5000	4661	4331	4011
128	A	11/16" EHS	6421	5939	5464	5000	4549	4115	3704
	B	11/16" EHS	6497	5990	5490	5000	4523	4064	3629
	C	11/16" EHS	6458	5963	5477	5000	4537	4091	3668
70	A	11/16" EHS	6805	6191	5588	5000	4434	3898	3404
	B	11/16" EHS	6906	6259	5622	5000	4400	3831	3307
	C	11/16" EHS	6853	6223	5604	5000	4418	3867	3359

NOTE:
VALUES LISTED ABOVE ARE REFERENCED FROM
ASTM A475-03 CONSIDERING 10% INITIAL TENSIONING
OF CABLE AT AN AMBIENT TEMPERATURE.

1 TOWER ELEVATION
SK-2 SCALE: N.T.S.

PROJECT NO.
60493238
Designed by:
MCD
Drawn by:
KAP
Checked by:
KAB
Approved by:
RAS

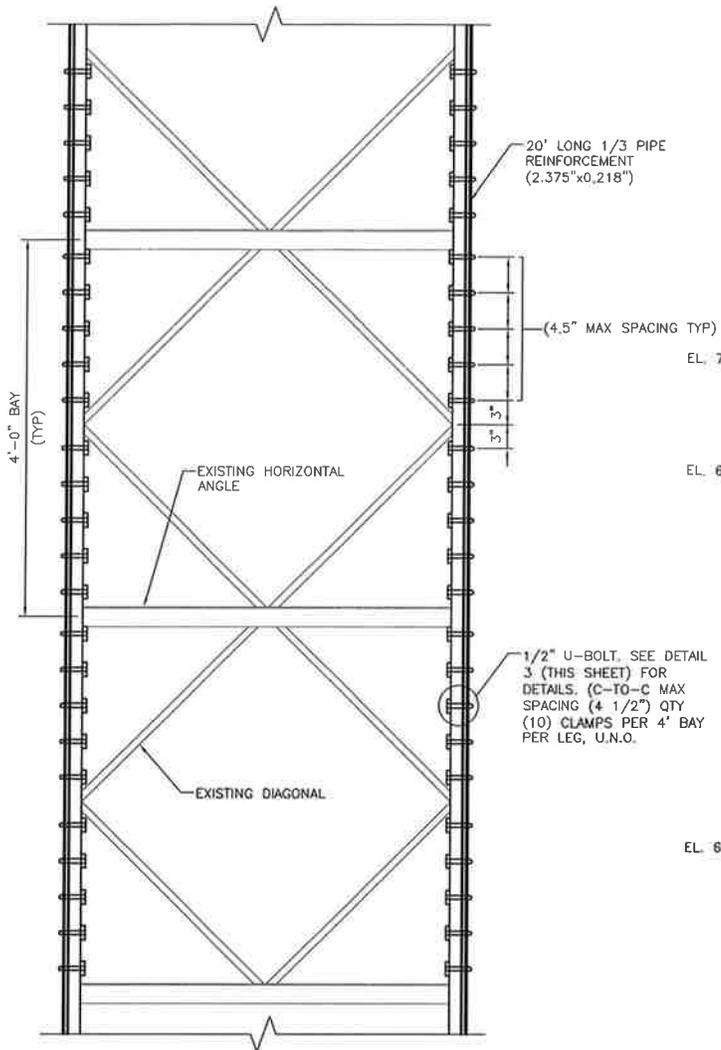
AECOM
500 ENTERPRISE DRIVE
ROCKY HILL, CONNECTICUT
(860)-529-8882

••T••Mobile•

SITE ADDRESS: T-MOBILE SITE NO CT11180C
130 VERNON ROAD, BOLTON, CT

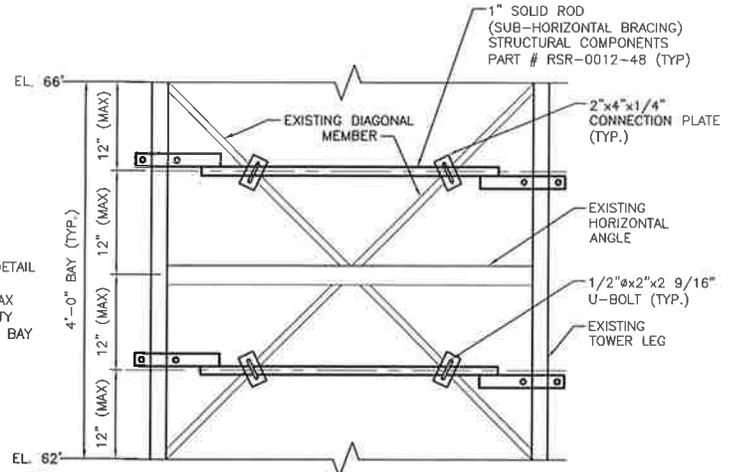
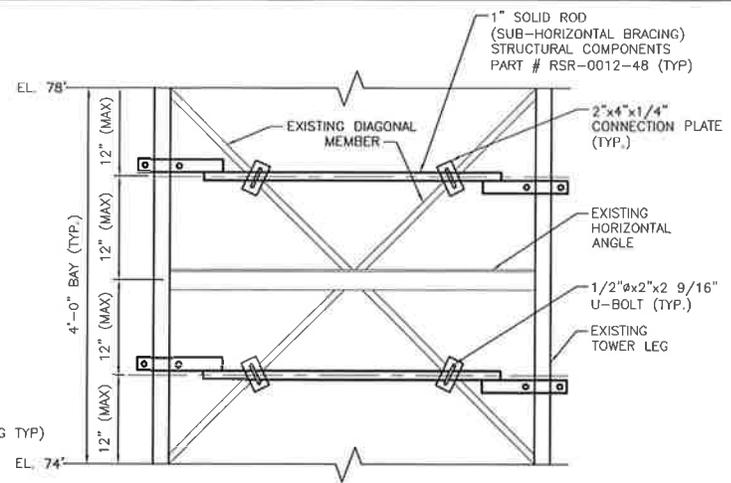
REV.	DATE:	DESCRIPTION
Scale: AS NOTED	Date: 04/12/16	
Job No. TWM-004	File No.	

Dwg. No.
SK-2
Dwg. 2 of 3

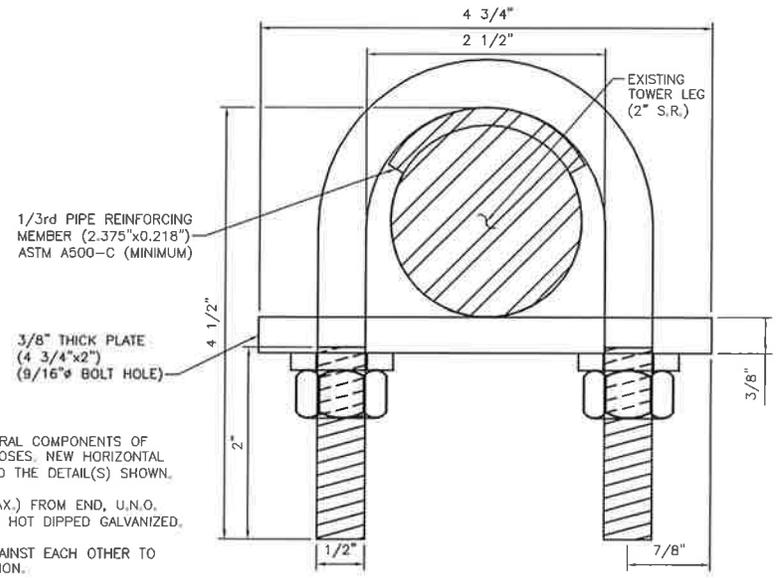


1
SK-3
1/3 PIPE REINFORCEMENT @ TOWER SECTION (2'-62')
SCALE: 1/2"=1'-0"

NOTES:
 SUB-HORIZONTAL MEMBER (IN DETAIL 2) LISTED FROM STRUCTURAL COMPONENTS OF BOULDER, COLORADO, PART NUMBER IS FOR DESCRIPTION PURPOSES, NEW HORIZONTAL BRACING REINFORCEMENT SHALL BE, AT MINIMUM, EQUIVALENT TO THE DETAIL(S) SHOWN.
 U-BOLT DISTANCE FROM END OF 1/3RD PIPE SHALL BE 3" (MAX.) FROM END, U.N.O.
 U-BOLT MATERIAL SHALL BE (AT MINIMUM) GRADE 5 ASTM J429 HOT DIPPED GALVANIZED.
 1/3RD PIPE LEG REINFORCEMENT SHALL HAVE ENDS BUTTED AGAINST EACH OTHER TO MINIMIZE GAPS BETWEEN THE REINFORCEMENT DURING INSTALLATION.



2
SK-3
SUB-HORIZONTAL MEMBER @ TOWER SECTION (62'-82')
SCALE: 1/2"=1'-0"



3
SK-3
U-BOLT FOR LEG REINFORCEMENT
SCALE: 1/2"=1'-0"

PROJECT NO.
60493238
Designed by:
MCD
Drawn by:
KAP
Checked by:
KAB
Approved by:
RAS

AECOM
500 ENTERPRISE DRIVE
ROCKY HILL, CONNECTICUT
(860)-529-8862

T-Mobile
T-MOBILE SITE NO CT11180C
130 VERNON ROAD, BOLTON, CT

REV.	DATE:	DESCRIPTION
Scale:	AS NOTED	Date: 04/12/16
Job No.	TWM-004	File No.

Dwg. No.
SK-3
Dwg. 3 of 3

Job Bolton, CT tower Modification S

Project No. TMM-005/-004R1

Page _____ of _____

Description Clamp determination

Computed by MCD

Sheet _____ of _____

Elevation 0'-60'

Checked by _____

Date _____

Date _____

Reference

Calculations to determine maximum # of clamps required for development of reinforcing pipe (using U-bolts ASTM A449 \Rightarrow AISC Group "A" Bolt (AISC 14th ed))

$$L_b \text{ maximum} = 2 \text{ ft} \rightarrow 24 \text{ in}$$

$$K = 1 \text{ (conservative)}$$

$$r_{\text{existing}} = 0.5 \text{ in}$$

$$A_{\text{existing}} = 3.14159 \text{ in}^2$$

$$\frac{KL}{r} = \frac{(1)(24)}{0.5} = 48$$

• Leg material strength = 45 ksi

* AISC Chapter "E" - Compression Design

$$\phi_c = 0.9 \text{ (LRFD)}$$

Section E3 Check $\frac{KL}{r} \leq 4.71 \sqrt{\frac{E}{F_y}} \rightarrow 48 \leq 119.5 \therefore$ use Eq [E3-2]

$$F_{cr} = \left[0.658^{F_y/E} \right] F_y \rightarrow \left[0.658^{45/29,000} \right] 45 \text{ ksi} = 38.669 \text{ ksi}$$

$$\text{Eq [E-4]} \rightarrow F_e = \frac{\pi^2 E}{\left(\frac{KL}{r}\right)^2} = \frac{\pi^2 \times 29,000 \text{ ksi}}{(48)^2} = 124,227 \text{ ksi}$$

$$\text{Eq [E3-1]} \rightarrow P_n = F_{cr} \times A_s = 38.669 \text{ ksi} \times 3.14159 \text{ in}^2 = 121,488 \text{ lbs} \times \phi_c \quad (0.9)$$

$$= \underline{109,335 \text{ lbs}}$$

Reinforcing of 2" screw / 1/3 Pipe (2EH)

$$A = 3.6235 \text{ in}^2$$

$$I_{\text{weak}} = 0.9501 \text{ in}^4$$

$$r_{\text{weak}} = \sqrt{\frac{I}{A}} = \sqrt{\frac{0.9501}{3.6235}} = 0.512 \therefore \frac{KL}{r} = \frac{(1)(24 \text{ in})}{0.512} = 46.875$$

$$\text{[Eq E-4]} F_e = \frac{\pi^2 E}{\left(\frac{KL}{r}\right)^2} = \frac{\pi^2 \times 29,000 \text{ ksi}}{(46.875)^2} = 130,261$$

$$F_{cr} = \left[0.658^{45/130,261} \right] 45 \text{ ksi} = 38,941 \text{ ksi} \quad P_n = (38,941 \times 3.6235) (0.9) = \underline{126,995 \text{ lbs}}$$

Job Bolton, CT Tower Modification S

Project No. TWMA05/004R1

Page _____ of _____

Description Clamp determination

Computed by MCD

Sheet _____ of _____

Elevation 0'-60'

Checked by _____

Date _____

Date _____

Reference

$$\Delta [P_{\text{reinforced}} - P_{\text{existing}}] = 126995 - 109335 = \underline{17,660 \text{ lbf}}$$

- Consider use of U-Bolts of 1/2" diameter & of grade A 449 (sim to A325)
- Design as slip critical connection where "S" is divided by slip critical Bolt Capacity to determine the minimum number of U-Bolts at ends.

[AISC] Chapter J-connections:

$$[AISC J3-4] \bar{R}_A = [P_u h_f T_b \#s] \times \phi = [(0.3)(1.13)(1.0)(12 \text{ kip})(1)] \times 1$$

$$= \underline{4068 \text{ lbf}}$$

$$\frac{17,660 \text{ lbf}}{4068 \text{ lbf}} = 4.34 \rightarrow \underline{5 \text{ clamps required per 2 foot segment}}$$

Round IPA on Horizontals

Flat IPA on Diagonals

Round IPA on Diagonals

The input is provided separately for IPAs of flat and round attachments. Those areas are then added, if applicable, to the areas of flat and/or round appurtenances with appropriate Ca coefficients.

Any component areas entered via the **Area Adjustment Factors** should not be duplicated here.

Weight Adjustment Factor

Weight Multiplier

This factor will be multiplied times the self-weight of the structural members to determine the section weight. This factor is supplied to take into account the weight of gusset plates not entered as gusset area, ladders, galvanizing, etc.

Pressure Adjustment Factor

Wind Pressure Multiplier

Any nonnegative value (including zero) may be specified. The Multiplier modifies pressures applied to all tower components, for all wind directions, within a section(s) for which it is defined. For the User Forces and Antenna Pole input categories, the multiplier modifies the EPA-derived forces only (i.e., "CaAc Shear" and "Pole CaAa", respectively).

K Factors

K factors are the effective column buckling length factor as defined in the AISC standard. Users should also refer to ASCE 10-97 for determining the appropriate K factors for single angle compression members. The ASCE formulae take into account normal framing eccentricities.

Auto-Calc Single Angle K-Factors

When checked, the program will automatically calculate an appropriate K-factor for single angle members as well as the x-axis of double angle members within the section. See the Technical Appendix for more information.

Auto-Calc Solid Round K-Factors

When checked, the program will automatically calculate an appropriate K-factor for solid round members within the section. See the Technical Appendix for more information.

K Legs

The effective length factor, K, for the leg can be set by the user. This factor is multiplied times each panel length to determine KL/r, which in turn determines the allowable axial stress on the leg. For example, if a 20 foot section has 4 panels and K=1.2, then L would be equal to 5 feet and KL=6 feet (1.2x5). This factor is ignored for monopoles.

K Truss-Legs

Three entries allow you to control the K factor for the individual leg panel member (usually a solid round leg member) within the truss-leg, as well as any X-braced diagonal members and Z-braced diagonal members. There is a separate set of three entries for tower legs as well as for tower inner members when truss-legs are used for horizontal or diagonal members.

K X-Brace Diagonals

The effective length factors, K, for the diagonal bracing can be set by the user. This factor is multiplied times the unbraced length to determine KL/r that in turn determines the allowable axial stress on the diagonals. X-brace diagonals are assumed to be connected to one another. They are assumed to have a bolt or welded stitch plate where the x-bracing crosses at the mid-point. Lu is therefore ½ the total diagonal distance. CX and TX bracing is assumed not to be interconnected and Lu is there the total diagonal distance. Therefore, KL for X-brace

Reference

determine additional weight factor for TRX tower;

use 4 segments of

- (3) 2" SR Members @ 20 Length
- 30 (4) 7/8" SR Members @ 20 Length
- (15) L 2' x 2' x 3/16 @ 1' Length

Existing weight →

3' x 10.99 p/f x 20	= 641.1 lbs
30 x 9.396 p/f x 62.8 p/l	= 1594.5 lbs
15 x 2.75 p/f x 4 ft	= 165 lbs
2400.65 lbs existing (20 segments)	

Proposed Reinforcement ²⁷ (1) 1" SR member @ 5' Length w/ hardware (say 1/4" SR member)

27 x 4.176 p/f x 5 ft = 563.76 lbs additional

$$\frac{563.76}{2400.65} = 1.2348369385$$

Note: above value is considered to be conservative since the number of horizontals are less than (27) for use.

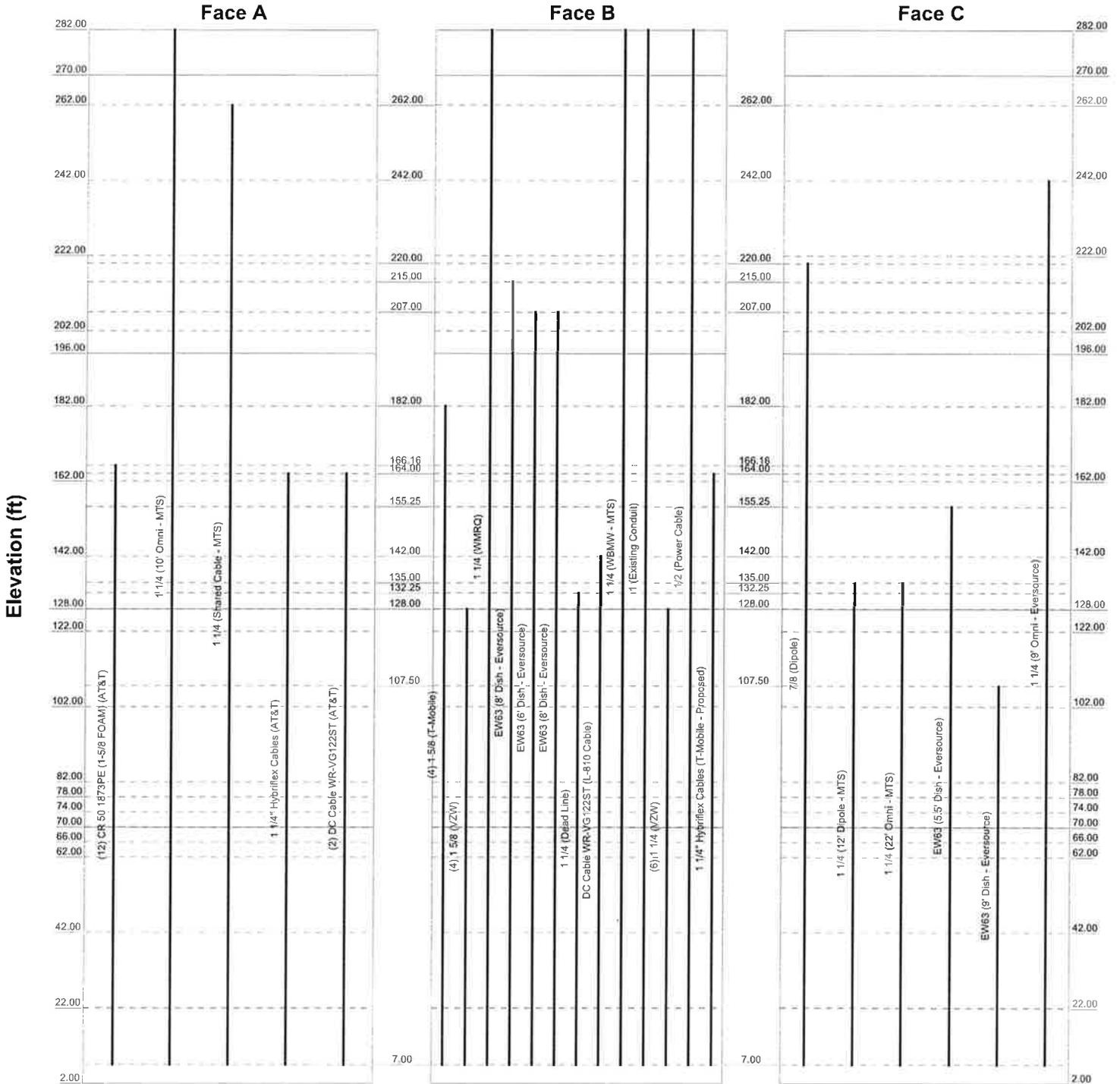
TNX TOWER INPUT/OUTPUT SUMMARY – TIA-222-G

TNX TOWER FEEDLINE DISTRIBUTION – TIA-222-G

Feed Line Distribution Chart

2' - 282'

Round Flat App In Face App Out Face Truss Leg

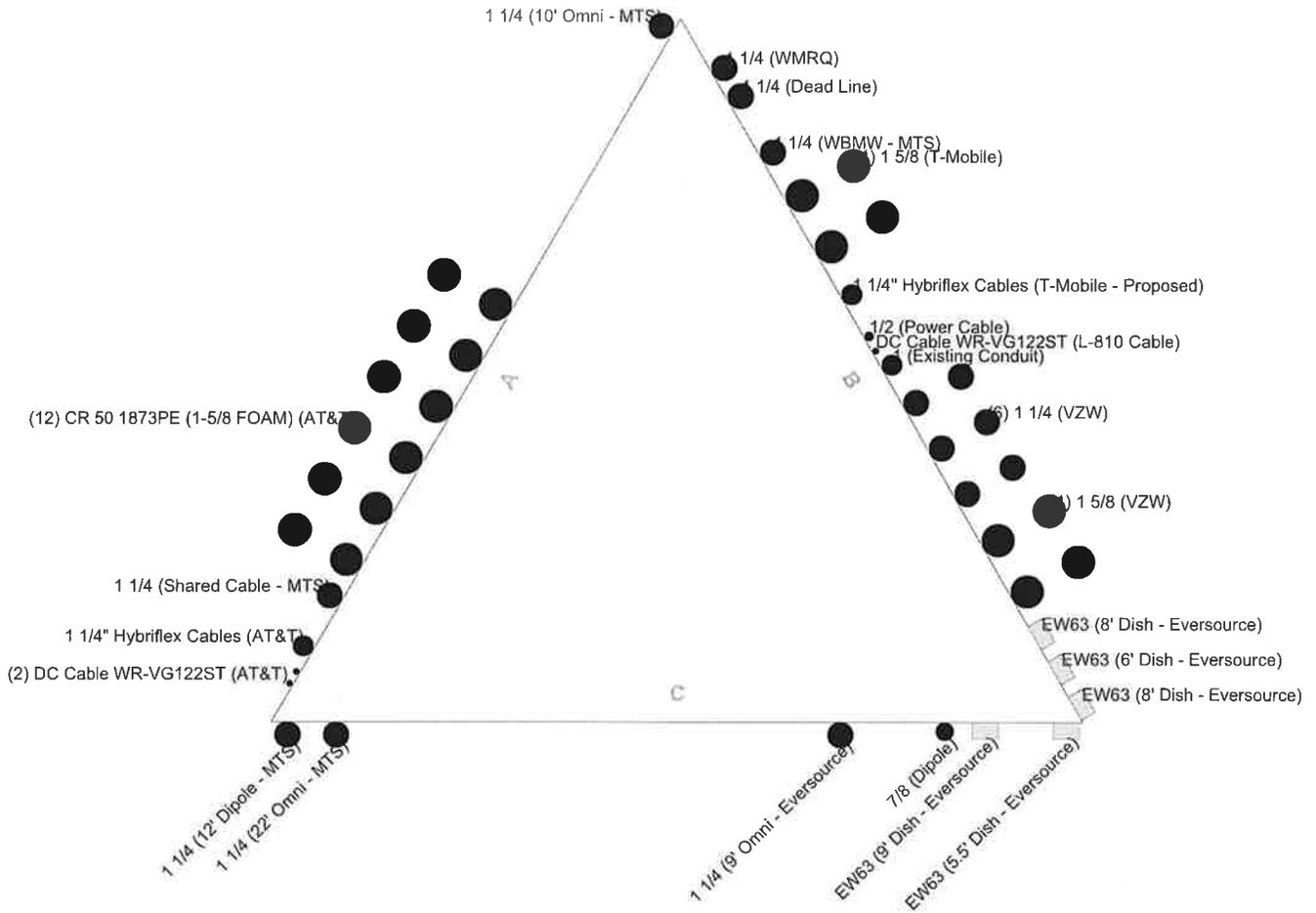


AECOM 500 Enterprise Drive, Suite 3B Rocky Hill, CT Phone: 860-529-8882 FAX: 860-529-3991	Job: 280' Guyed Tower		
	Project: 130 Vernon Rd Bolton, CT		
	Client: Transcend Wireless / TWM-005 / - 004 Rev 1	Drawn by: MCD	App'd:
	Code: TIA-222-G	Date: 04/13/16	Scale: NTS
	Path:	Dwg No. E-7	

TNX TOWER FEEDLINE PLAN – TIA-222-G

Feed Line Plan

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

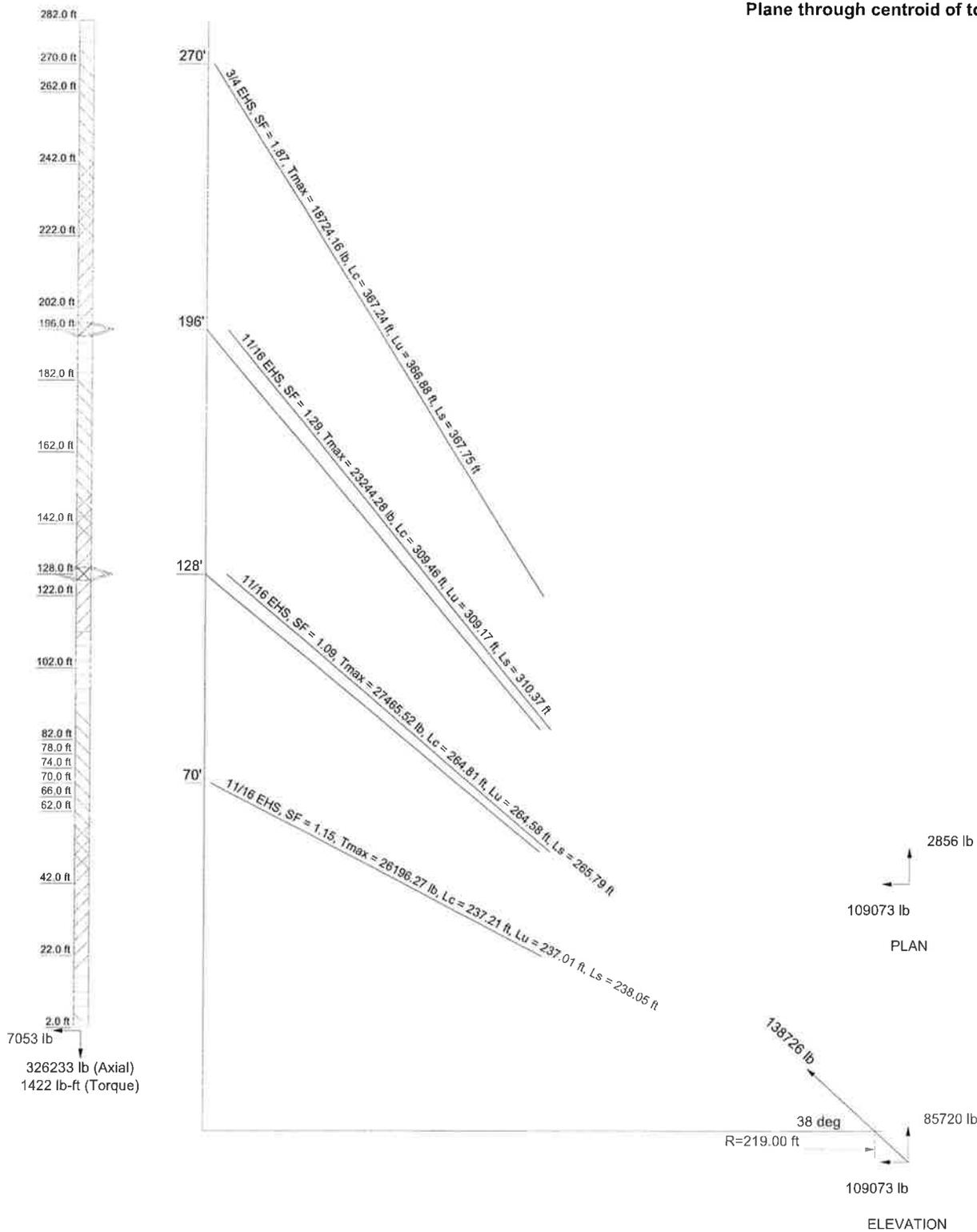


AECOM		Job: 280' Guyed Tower	
500 Enterprise Drive, Suite 3B		Project: 130 Vernon Rd Bolton, CT	
Rocky Hill, CT		Client: Transcend Wireless / TWM-005 / - 004 Rev 1	Drawn by: MCD App'd:
Phone: 860-529-8882		Code: TIA-222-G	Date: 04/13/16 Scale: NTS
FAX: 860-529-3991		Path:	Dwg No. E-7

GUY TENSIONS AND TOWER REACTIONS – TIA-222-G

Guy Tensions and Tower Reactions
TIA-222-G - 105 mph/50 mph 1.0000 in Ice Exposure C

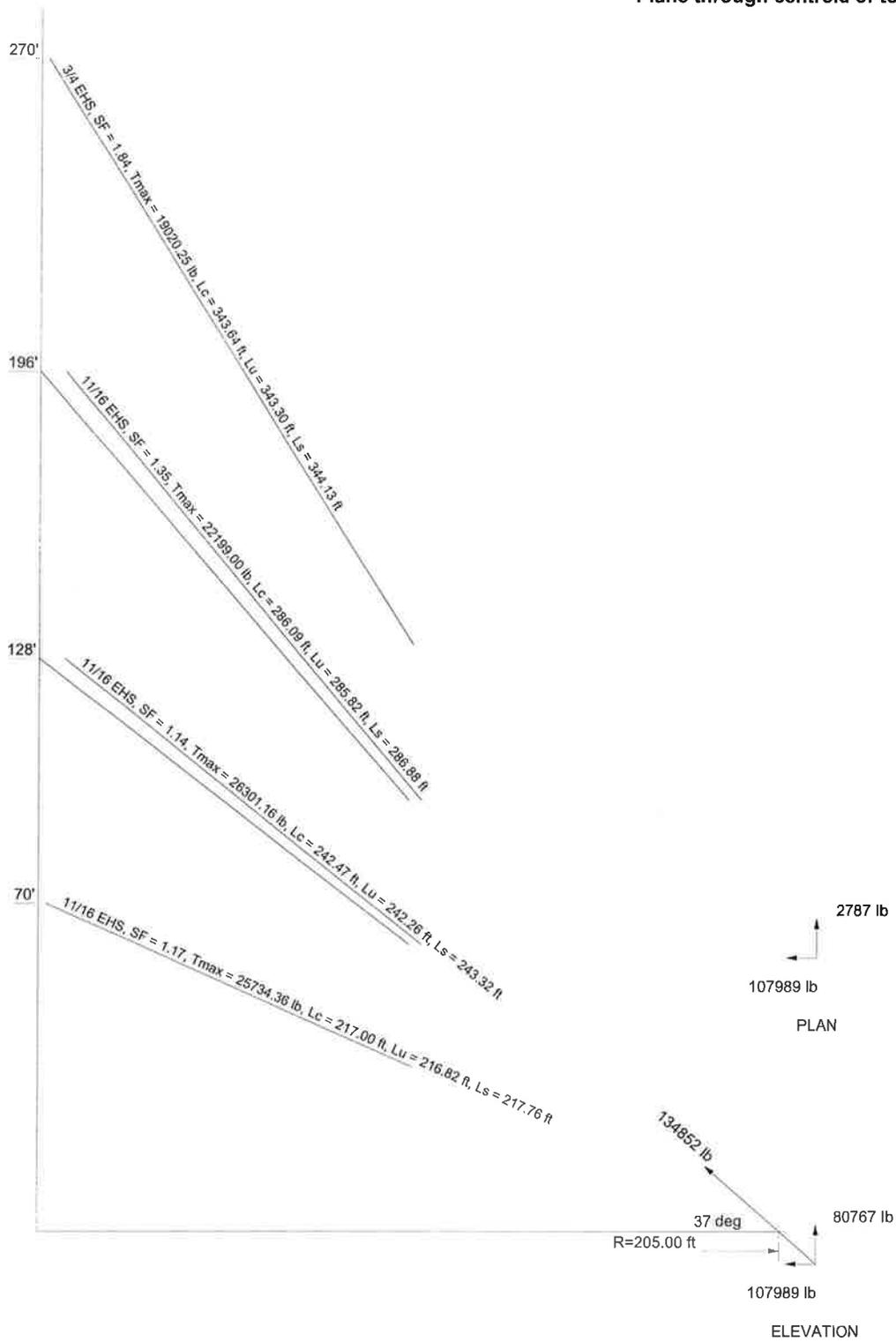
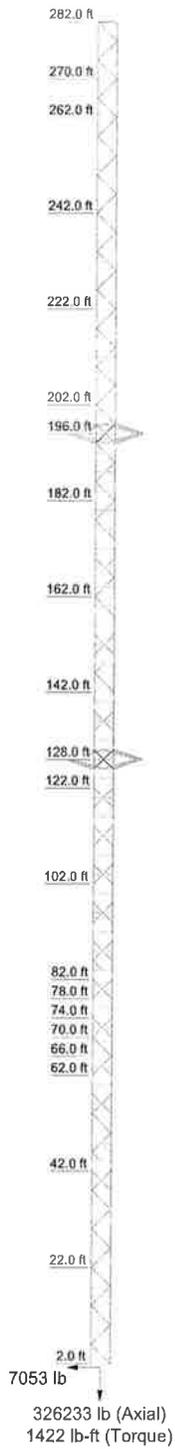
Maximum Values
Anchor 'A'@219 ft Azimuth 0 deg Elev -26.5 ft
Plane through centroid of tower



<p align="center">AECOM</p> <p>500 Enterprise Drive, Suite 3B Rocky Hill, CT Phone: 860-529-8882 FAX: 860-529-3991</p>	Job: 280' Guyed Tower		
	Project: 130 Vernon Rd Bolton, CT		
	Client: Transcend Wireless / TWM-005 / - 004 Rev 1	Drawn by: MCD	App'd:
	Code: TIA-222-G	Date: 04/13/16	Scale: NTS
	Path:		Dwg No. E-6

Guy Tensions and Tower Reactions
 TIA-222-G - 105 mph/50 mph 1.0000 in Ice Exposure C

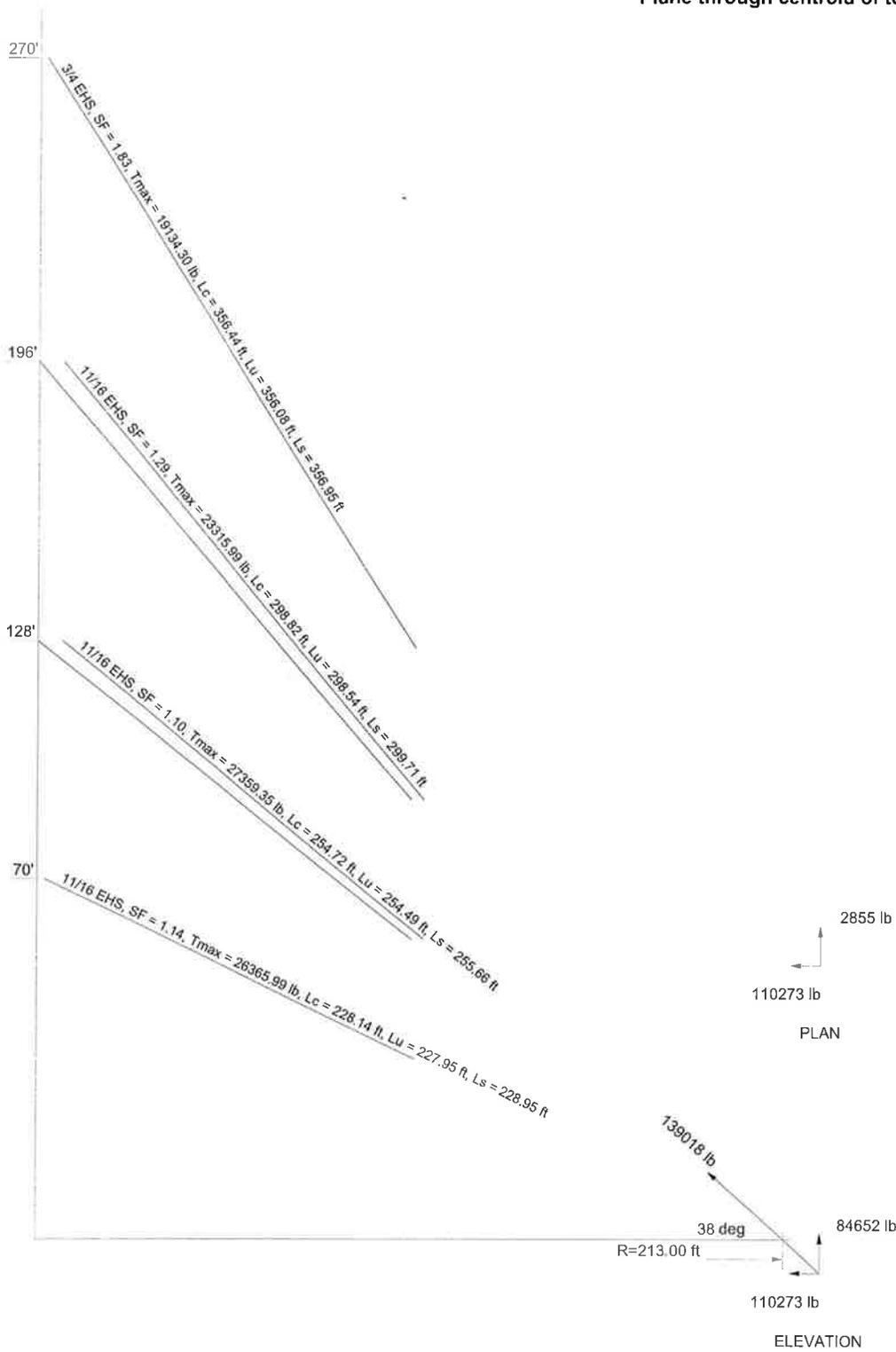
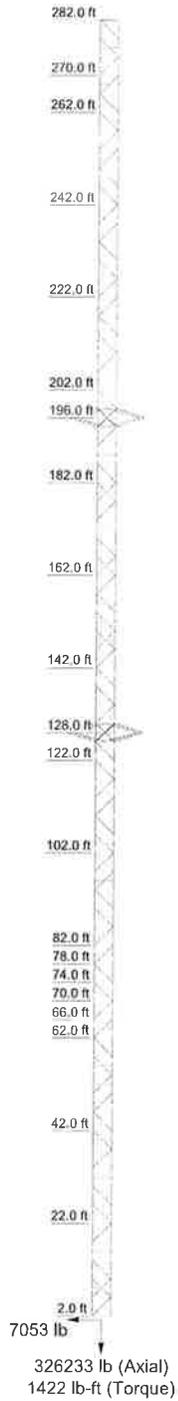
Maximum Values
 Anchor 'B'@205 ft Azimuth 120 deg Elev -7.5 ft
 Plane through centroid of tower



AECOM 500 Enterprise Drive, Suite 3B Rocky Hill, CT Phone: 860-529-8882 FAX: 860-529-3991	Job: 280' Guyed Tower		
	Project: 130 Vernon Rd Bolton, CT		
	Client: Transcend Wireless / TWM-005 / - 004 Rev 1	Drawn by: MCD	App'd:
	Code: TIA-222-G	Date: 04/13/16	Scale: NTS
	Path:		Dwg No. E-6

Guy Tensions and Tower Reactions
 TIA-222-G - 105 mph/50 mph 1.0000 in Ice Exposure C

Maximum Values
 Anchor 'C'@213 ft Azimuth 240 deg Elev -17.5 ft
 Plane through centroid of tower



AECOM 500 Enterprise Drive, Suite 3B Rocky Hill, CT Phone: 860-529-8882 FAX: 860-529-3991	Job: 280' Guyed Tower		
	Project: 130 Vernon Rd Bolton, CT		
	Client: Transcend Wireless / TWM-005 / - 004 Rev 1	Drawn by: MCD	App'd:
	Code: TIA-222-G	Date: 04/13/16	Scale: NTS
	Path:	Dwg No. E-6	

TNX TOWER DETAILED OUTPUT – TIA-222-G

tnxTower AECOM 500 Enterprise Drive, Suite 3B Rocky Hill, CT Phone: 860-529-8882 FAX: 860-529-3991	Job 280' Guyed Tower	Page 1 of 74
	Project 130 Vernon Rd Bolton, CT	Date 08:58:55 04/13/16
	Client Transcend Wireless / TWM-005 / - 004 Rev 1	Designed by MCD

Tower Input Data

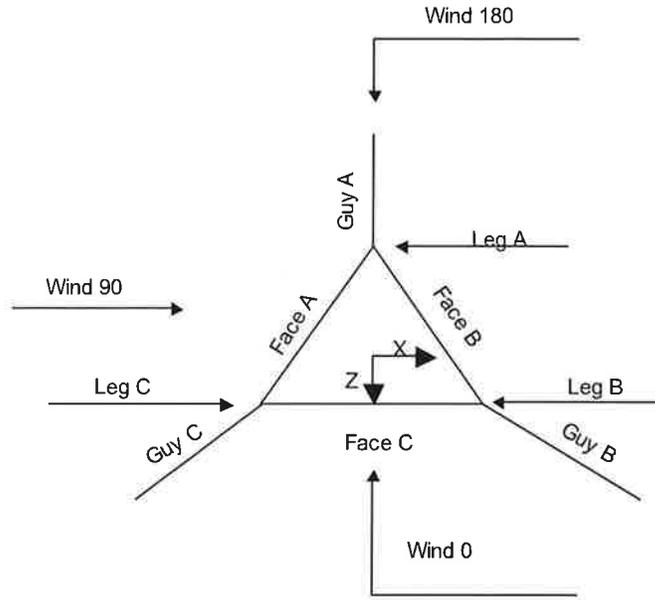
The main tower is a 3x guyed tower with an overall height of 282.00 ft above the ground line.
The base of the tower is set at an elevation of 2.00 ft above the ground line.
The face width of the tower is 4.00 ft at the top and 4.00 ft at the base.
This tower is designed using the TIA-222-G standard.
The following design criteria apply:

- Tower is located in Tolland County, Connecticut.
- Basic wind speed of 105 mph.
- Structure Class II.
- Exposure Category C.
- Topographic Category 1.
- Crest Height 0.00 ft.
- Nominal ice thickness of 1.0000 in.
- Ice thickness is considered to increase with height.
- Ice density of 56 pcf.
- A wind speed of 50 mph is used in combination with ice.
- Temperature drop of 50 °F.
- Deflections calculated using a wind speed of 60 mph.
- Pressures are calculated at each section.
- Safety factor used in guy design is 1.
- Stress ratio used in tower member design is 1.
- Local bending stresses due to climbing loads, feed line supports, and appurtenance mounts are not considered.

Options

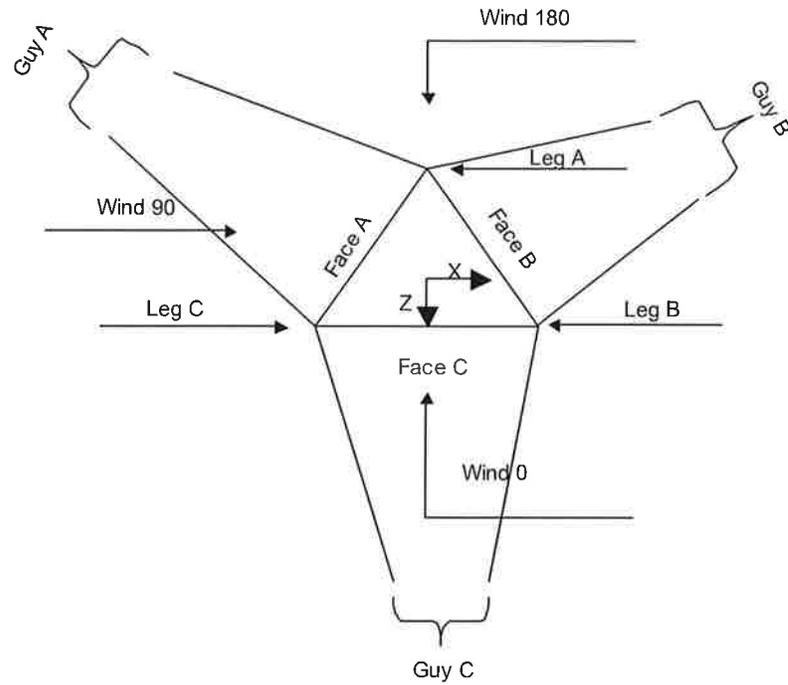
- | | | |
|--|--|---|
| <ul style="list-style-type: none"> Consider Moments - Legs Consider Moments - Horizontals Consider Moments - Diagonals Use Moment Magnification √ Use Code Stress Ratios √ Use Code Safety Factors - Guys Escalate Ice Always Use Max Kz Use Special Wind Profile √ Include Bolts In Member Capacity √ Leg Bolts Are At Top Of Section √ Secondary Horizontal Braces Leg Use Diamond Inner Bracing (4 Sided) √ SR Members Have Cut Ends SR Members Are Concentric | <ul style="list-style-type: none"> Distribute Leg Loads As Uniform Assume Legs Pinned √ Assume Rigid Index Plate √ Use Clear Spans For Wind Area √ Use Clear Spans For KL/r √ Retension Guys To Initial Tension Bypass Mast Stability Checks √ Use Azimuth Dish Coefficients √ Project Wind Area of Appurt. √ Autocalc Torque Arm Areas Add IBC .6D+W Combination √ Sort Capacity Reports By Component Triangulate Diamond Inner Bracing Treat Feed Line Bundles As Cylinder | <ul style="list-style-type: none"> Use ASCE 10 X-Brace Ly Rules √ Calculate Redundant Bracing Forces Ignore Redundant Members in FEA √ SR Leg Bolts Resist Compression √ All Leg Panels Have Same Allowable Offset Girt At Foundation √ Consider Feed Line Torque Include Angle Block Shear Check Use TIA-222-G Bracing Resist. Exemption Use TIA-222-G Tension Splice Exemption <li style="text-align: center;">Poles Include Shear-Torsion Interaction Always Use Sub-Critical Flow Use Top Mounted Sockets |
|--|--|---|

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Corner & Starmount Guyed Tower

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Face Guyed

Tower Section Geometry

Tower Section	Tower Elevation	Assembly Database	Description	Section Width	Number of Sections	Section Length
	<i>ft</i>			<i>ft</i>		<i>ft</i>
T1	282.00-262.00			4.00	1	20.00
T2	262.00-242.00			4.00	1	20.00
T3	242.00-222.00			4.00	1	20.00
T4	222.00-202.00			4.00	1	20.00
T5	202.00-182.00			4.00	1	20.00
T6	182.00-162.00			4.00	1	20.00
T7	162.00-142.00			4.00	1	20.00
T8	142.00-122.00			4.00	1	20.00
T9	122.00-102.00			4.00	1	20.00
T10	102.00-82.00			4.00	1	20.00
T11	82.00-78.00			4.00	1	4.00
T12	78.00-74.00			4.00	1	4.00
T13	74.00-70.00			4.00	1	4.00
T14	70.00-66.00			4.00	1	4.00
T15	66.00-62.00			4.00	1	4.00
T16	62.00-42.00			4.00	1	20.00

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Tower Section	Tower Elevation	Assembly Database	Description	Section Width	Number of Sections	Section Length
	ft			ft		ft
T17	42.00-22.00			4.00	1	20.00
T18	22.00-2.00			4.00	1	20.00

Tower Section Geometry (cont'd)

Tower Section	Tower Elevation	Diagonal Spacing	Bracing Type	Has K Brace End Panels	Has Horizontals	Top Girt Offset	Bottom Girt Offset
	ft	ft				in	in
T1	282.00-262.00	4.00	CX Brace	No	Yes	0.0000	0.0000
T2	262.00-242.00	4.00	CX Brace	No	Yes	0.0000	0.0000
T3	242.00-222.00	4.00	CX Brace	No	Yes	0.0000	0.0000
T4	222.00-202.00	4.00	CX Brace	No	Yes	0.0000	0.0000
T5	202.00-182.00	4.00	CX Brace	No	Yes	0.0000	0.0000
T6	182.00-162.00	4.00	CX Brace	No	Yes	0.0000	0.0000
T7	162.00-142.00	4.00	CX Brace	No	Yes	0.0000	0.0000
T8	142.00-122.00	4.00	CX Brace	No	Yes	0.0000	0.0000
T9	122.00-102.00	4.00	CX Brace	No	Yes	0.0000	0.0000
T10	102.00-82.00	4.00	CX Brace	No	Yes	0.0000	0.0000
T11	82.00-78.00	4.00	CX Brace	No	Yes	0.0000	0.0000
T12	78.00-74.00	4.00	CX Brace	No	Yes	0.0000	0.0000
T13	74.00-70.00	4.00	CX Brace	No	Yes	0.0000	0.0000
T14	70.00-66.00	4.00	CX Brace	No	Yes	0.0000	0.0000
T15	66.00-62.00	4.00	CX Brace	No	Yes	0.0000	0.0000
T16	62.00-42.00	4.00	CX Brace	No	Yes	0.0000	0.0000
T17	42.00-22.00	4.00	CX Brace	No	Yes	0.0000	0.0000
T18	22.00-2.00	4.00	CX Brace	No	Yes	0.0000	0.0000

Tower Section Geometry (cont'd)

Tower Elevation	Leg Type	Leg Size	Leg Grade	Diagonal Type	Diagonal Size	Diagonal Grade
ft						
T1 282.00-262.00	Solid Round	2	A139-45 (45 ksi)	Solid Round	7/8	A36 (36 ksi)
T2 262.00-242.00	Solid Round	2	A139-45 (45 ksi)	Solid Round	7/8	A36 (36 ksi)
T3 242.00-222.00	Solid Round	2	A139-45 (45 ksi)	Solid Round	7/8	A36 (36 ksi)
T4 222.00-202.00	Solid Round	2	A139-45 (45 ksi)	Arbitrary Shape	SR7/8+L2.5x2.5x0.25	A36 (36 ksi)
T5 202.00-182.00	Solid Round	2	A139-45 (45 ksi)	Arbitrary Shape	SR7/8+L2.5x2.5x0.25	A36 (36 ksi)
T6 182.00-162.00	Solid Round	2	A139-45 (45 ksi)	Solid Round	7/8	A36 (36 ksi)
T7 162.00-142.00	Solid Round	2	A139-45 (45 ksi)	Solid Round	7/8	A36 (36 ksi)
T8 142.00-122.00	Solid Round	2	A139-45 (45 ksi)	Arbitrary Shape	SR7/8+L2.5x2.5x0.25	A36 (36 ksi)
T9 122.00-102.00	Solid Round	2	A139-45 (45 ksi)	Arbitrary Shape	SR7/8+L2.5x2.5x0.25	A36 (36 ksi)
T10 102.00-82.00	Solid Round	2	A139-45	Solid Round	7/8	A36

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Tower Elevation ft	Leg Type	Leg Size	Leg Grade	Diagonal Type	Diagonal Size	Diagonal Grade
T11 82.00-78.00	Solid Round	2	(45 ksi) A139-45	Solid Round	7/8	(36 ksi) A36
T12 78.00-74.00	Solid Round	2	(45 ksi) A139-45	Solid Round	7/8	(36 ksi) A36
T13 74.00-70.00	Solid Round	2	(45 ksi) A139-45	Solid Round	7/8	(36 ksi) A36
T14 70.00-66.00	Solid Round	2	(45 ksi) A139-45	Solid Round	7/8	(36 ksi) A36
T15 66.00-62.00	Solid Round	2	(45 ksi) A139-45	Solid Round	7/8	(36 ksi) A36
T16 62.00-42.00	Arbitrary Shape	2"SR w 3rd pipe	(45 ksi) A139-45	Solid Round	7/8	(36 ksi) A36
T17 42.00-22.00	Arbitrary Shape	2"SR w 3rd pipe	(45 ksi) A139-45	Solid Round	7/8	(36 ksi) A36
T18 22.00-2.00	Arbitrary Shape	2"SR w 3rd pipe	(45 ksi) A139-45	Solid Round	7/8	(36 ksi) A36

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 282.00-262.00	Single Angle	L3x3x1/4	A36 (36 ksi)	Solid Round		A36 (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
T1 282.00-262.00	Single Angle	L2 1/2x2x3/16	A36 (36 ksi)	Solid Round		A36 (36 ksi)
T2 262.00-242.00	Single Angle	L2 1/2x2x3/16	A36 (36 ksi)	Solid Round		A36 (36 ksi)
T3 242.00-222.00	Single Angle	L2 1/2x2x3/16	A36 (36 ksi)	Solid Round		A36 (36 ksi)
T4 222.00-202.00	Single Angle	L2 1/2x2x3/16	A36 (36 ksi)	Solid Round		A36 (36 ksi)
T5 202.00-182.00	Single Angle	L2 1/2x2x3/16	A36 (36 ksi)	Solid Round		A36 (36 ksi)
T6 182.00-162.00	Single Angle	L2 1/2x2x3/16	A36 (36 ksi)	Solid Round		A36 (36 ksi)
T7 162.00-142.00	Single Angle	L2 1/2x2x3/16	A36 (36 ksi)	Solid Round		A36 (36 ksi)
T8 142.00-122.00	Single Angle	L2 1/2x2x3/16	A36 (36 ksi)	Solid Round		A36 (36 ksi)
T9 122.00-102.00	Single Angle	L2 1/2x2x3/16	A36 (36 ksi)	Solid Round		A36 (36 ksi)
T10 102.00-82.00	Single Angle	L2 1/2x2x3/16	A36	Solid Round		A36

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Tower Elevation	Secondary Horizontal Type	Secondary Horizontal Size	Secondary Horizontal Grade	Inner Bracing Type	Inner Bracing Size	Inner Bracing Grade
<i>ft</i>						
T11 82.00-78.00	Single Angle	L2 1/2x2x3/16	(36 ksi) A36	Solid Round		(36 ksi) A36
T12 78.00-74.00	Single Angle	L2 1/2x2x3/16	(36 ksi) A36	Solid Round		(36 ksi) A36
T13 74.00-70.00	Single Angle	L2 1/2x2x3/16	(36 ksi) A36	Solid Round		(36 ksi) A36
T14 70.00-66.00	Single Angle	L2 1/2x2x3/16	(36 ksi) A36	Solid Round		(36 ksi) A36
T15 66.00-62.00	Single Angle	L2 1/2x2x3/16	(36 ksi) A36	Solid Round		(36 ksi) A36
T16 62.00-42.00	Single Angle	L2 1/2x2x3/16	(36 ksi) A36	Solid Round		(36 ksi) A36
T17 42.00-22.00	Single Angle	L2 1/2x2x3/16	(36 ksi) A36	Solid Round		(36 ksi) A36
T18 22.00-2.00	Single Angle	L2 1/2x2x3/16	(36 ksi) A36	Solid Round		(36 ksi) A36

Tower Section Geometry (cont'd)

Tower Elevation	Gusset Area (per face)	Gusset Thickness	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
<i>ft</i>	<i>ft²</i>	<i>in</i>							
T1	0.00	0.0000	A36	1	1	1	36.0000	36.0000	36.0000
282.00-262.00			(36 ksi)						
T2	0.00	0.0000	A36	1	1	1	36.0000	36.0000	36.0000
262.00-242.00			(36 ksi)						
T3	0.00	0.0000	A36	1	1	1	36.0000	36.0000	36.0000
242.00-222.00			(36 ksi)						
T4	0.00	0.0000	A36	1	1	1	36.0000	36.0000	36.0000
222.00-202.00			(36 ksi)						
T5	0.00	0.0000	A36	1	1	1	36.0000	36.0000	36.0000
202.00-182.00			(36 ksi)						
T6	0.00	0.0000	A36	1	1	1	36.0000	36.0000	36.0000
182.00-162.00			(36 ksi)						
T7	0.00	0.0000	A36	1	1	1	36.0000	36.0000	36.0000
162.00-142.00			(36 ksi)						
T8	0.00	0.0000	A36	1	1	1	36.0000	36.0000	36.0000
142.00-122.00			(36 ksi)						
T9	0.00	0.0000	A36	1	1	1	36.0000	36.0000	36.0000
122.00-102.00			(36 ksi)						
T10	0.00	0.0000	A36	1	1	1	36.0000	36.0000	36.0000
102.00-82.00			(36 ksi)						
T11	0.00	0.0000	A36	1	1	1	36.0000	36.0000	36.0000
82.00-78.00			(36 ksi)						
T12	0.00	0.0000	A36	1	1	1.23484	36.0000	36.0000	36.0000
78.00-74.00			(36 ksi)						
T13	0.00	0.0000	A36	1	1	1	36.0000	36.0000	36.0000
74.00-70.00			(36 ksi)						
T14	0.00	0.0000	A36	1	1	1	36.0000	36.0000	36.0000
70.00-66.00			(36 ksi)						
T15	0.00	0.0000	A36	1	1	1.23484	36.0000	36.0000	36.0000
66.00-62.00			(36 ksi)						

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Tower Elevation	Gusset Area (per face)	Gusset Thickness	Gusset Grade	Adjust. Factor A_f	Adjust. Factor A_r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals	Double Angle Stitch Bolt Spacing Horizontals	Double Angle Stitch Bolt Spacing Redundants
ft	ft ²	in					in	in	in
T16 62.00-42.00	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T17 42.00-22.00	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T18 22.00-2.00	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000

Tower Section Geometry (cont'd)

Tower Elevation	Calc K Single Angles	Calc K Solid Rounds	Legs	K Factors ¹						
				X Brace Diags	K Brace Diags	Single Diags	Girts	Horiz.	Sec. Horiz.	Inner Brace
				X Y	X Y	X Y	X Y	X Y	X Y	X Y
T1 282.00-262.00	No	No	1	0.5	1	1	1	1	1	1
T2 262.00-242.00	No	No	1	0.5	1	1	1	1	1	1
T3 242.00-222.00	No	No	1	0.5	1	1	1	1	1	1
T4 222.00-202.00	No	No	1	0.5	1	1	1	1	1	1
T5 202.00-182.00	No	No	1	0.5	1	1	1	1	1	1
T6 182.00-162.00	No	No	1	0.5	1	1	1	1	1	1
T7 162.00-142.00	No	No	1	0.5	1	1	1	1	1	1
T8 142.00-122.00	No	No	1	0.5	1	1	1	1	1	1
T9 122.00-102.00	No	No	1	0.5	1	1	1	1	1	1
T10 102.00-82.00	No	No	1	0.5	1	1	1	1	1	1
T11 82.00-78.00	No	No	1	0.5	1	1	1	1	1	1
T12 78.00-74.00	No	No	0.5	0.25	1	1	1	1	1	1
T13 74.00-70.00	No	No	1	0.5	1	1	1	1	1	1
T14 70.00-66.00	No	No	1	0.5	1	1	1	1	1	1
T15 66.00-62.00	No	No	0.5	0.25	1	1	1	1	1	1
T16 62.00-42.00	No	No	1	0.5	1	1	1	1	1	1
T17 42.00-22.00	No	No	1	0.5	1	1	1	1	1	1
T18 22.00-2.00	No	No	1	0.5	1	1	1	1	1	1

¹Note: 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.

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Tower Section Geometry (cont'd)

Tower Elevation ft	Leg		Diagonal		Top Girt		Bottom Girt		Mid Girt		Long Horizontal		Short Horizontal	
	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U
T1 282.00-262.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T2 262.00-242.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T3 242.00-222.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T4 222.00-202.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T5 202.00-182.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T6 182.00-162.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T7 162.00-142.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T8 142.00-122.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T9 122.00-102.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T10 102.00-82.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T11 82.00-78.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T12 78.00-74.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T13 74.00-70.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T14 70.00-66.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T15 66.00-62.00	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 62.00-42.00	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
T17 42.00-22.00	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
T18 22.00-2.00	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

Guy Data

Guy Elevation	Guy Grade	Guy Size	Initial Tension	%	Guy Modulus	Guy Weight	L _u	Anchor Radius	Anchor Azimuth Adj.	Anchor Elevation	End Fitting Efficiency
ft			lb		ksi	plf	ft	ft	°	ft	%
270	EHS	A 3/4	5830.00	10%	19000	1.155	366.92	219.00	0.0000	-26.50	100%
		B 3/4	5830.00	10%	19000	1.155	343.34	205.00	0.0000	-7.50	100%
		C 3/4	5830.00	10%	19000	1.155	356.13	213.00	0.0000	-17.50	100%
196	EHS	A 11/16	5000.00	10%	21000	0.813	309.21	219.00	0.0000	-26.50	100%
		B 11/16	5000.00	10%	21000	0.813	285.86	205.00	0.0000	-7.50	100%
		C 11/16	5000.00	10%	21000	0.813	298.58	213.00	0.0000	-17.50	100%

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128	EHS	A	11/16	5000.00	10%	21000	0.813	264.60	219.00	0.0000	-26.50	100%
		B	11/16	5000.00	10%	21000	0.813	242.28	205.00	0.0000	-7.50	100%
		C	11/16	5000.00	10%	21000	0.813	254.52	213.00	0.0000	-17.50	100%
70	EHS	A	11/16	5000.00	10%	21000	0.813	237.02	219.00	0.0000	-26.50	100%
		B	11/16	5000.00	10%	21000	0.813	216.83	205.00	0.0000	-7.50	100%
		C	11/16	5000.00	10%	21000	0.813	227.96	213.00	0.0000	-17.50	100%

Guy Data(cont'd)

Guy Elevation ft	Mount Type	Torque-Arm Spread ft	Torque-Arm Leg Angle °	Torque-Arm Style	Torque-Arm Grade	Torque-Arm Type	Torque-Arm Size
270	Corner						
196	Torque Arm	14.00	15.0000	Wing	A36 (36 ksi)	Single Angle	L4x4x3/8
128	Torque Arm	14.00	15.0000	Wing	A36 (36 ksi)	Single Angle	L4x4x3/8
70	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
270.00	A572-50 (50 ksi)	Solid Round				A36 (36 ksi)	Solid Round	
196.00	A572-50 (50 ksi)	Solid Round			Yes	A36 (36 ksi)	Single Angle	L4x4x3/8
128.00	A572-50 (50 ksi)	Solid Round			Yes	A36 (36 ksi)	Single Angle	L4x4x3/8
70.00	A572-50 (50 ksi)	Solid Round				A36 (36 ksi)	Solid Round	

Guy Data (cont'd)

Guy Elevation ft	Cable Weight A lb	Cable Weight B lb	Cable Weight C lb	Cable Weight D lb	Tower Intercept A ft	Tower Intercept B ft	Tower Intercept C ft	Tower Intercept D ft
270	423.80	396.56	411.33		12.97	11.38	12.23	
196	251.38	232.40	242.75		6.2 sec/pulse 7.64	5.8 sec/pulse 6.54	6.0 sec/pulse 7.13	
128	215.12	196.97	206.92		4.8 sec/pulse 5.63	4.4 sec/pulse 4.72	4.6 sec/pulse 5.21	
70	192.70	176.28	185.33		4.1 sec/pulse 4.54	3.8 sec/pulse 3.80	3.9 sec/pulse 4.20	
					3.7 sec/pulse	3.4 sec/pulse	3.5 sec/pulse	

tnxTower AECOM 500 Enterprise Drive, Suite 3B Rocky Hill, CT Phone: 860-529-8882 FAX: 860-529-3991	Job	280' Guyed Tower	Page	10 of 74
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Guy Data (cont'd)

Guy Elevation ft	Calc K Single Angles	Calc K Solid Rounds	Torque Arm		Pull Off		Diagonal	
			K _x	K _y	K _x	K _y	K _x	K _y
270	No	No			1	1	1	1
196	No	No	1	1	1	1	1	1
128	No	No	1	1	1	1	1	1
70	No	No			1	1	1	1

Guy Data (cont'd)

Guy Elevation ft	Torque-Arm				Pull Off				Diagonal			
	Bolt Size in	Number	Net Width Deduct in	U	Bolt Size in	Number	Net Width Deduct in	U	Bolt Size in	Number	Net Width Deduct in	U
270	0.6250 A325N	0	0.0000	0.75	0.6250 A325N	0	0.0000	0.75	0.6250 A325N	0	0.0000	0.75
196	0.0000 A325N	0	0.0000	1	0.6250 A325N	0	0.0000	0.75	0.6250 A325N	0	0.0000	0.75
128	0.0000 A325N	0	0.0000	1	0.6250 A325N	0	0.0000	0.75	0.6250 A325N	0	0.0000	0.75
70	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
270	A	121.75	32	7	2.2789
	B	131.25	32	7	2.2961
	C	126.25	32	7	2.2872
196	A	84.75	29	7	2.1978
	B	94.25	30	7	2.2213
	C	89.25	30	7	2.2092
128	A	50.75	26	6	2.0880
	B	60.25	27	6	2.1241
	C	55.25	27	6	2.1058
70	A	21.75	22	5	1.9183
	B	31.25	24	5	1.9891
	C	26.25	23	5	1.9548

Guy-Mast Forces (Excluding Wind) - No Ice

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Guy Elevation	Guy Location	Chord Angle	Guy Tension Top Bottom lb	F _x	F _y	F _z	M _x	M _y	M _z
ft		°		lb	lb	lb	lb-ft	lb-ft	lb-ft
270	A	53.8396	6172.14 5830.00	0.00	5056.62	-3539.19	-11677.76	0.00	0.00
	B	53.8550	6150.21 5830.00	3058.49	5035.14	1765.82	5814.08	0.00	-10070.28
	C	53.7647	6161.75 5830.00	-3067.94	5041.58	1771.28	5821.51	-0.00	10083.15
196			Sum:	-9.45	15133.33	-2.10	-42.17	-0.00	12.87
	A	45.9725	5180.74 5000.00	-115.12	3785.52	-3535.06	-15298.99	25210.67	-26498.63
	A	45.9725	5180.74 5000.00	115.12	3785.52	-3535.06	-15298.99	-25210.67	26498.63
	B	45.3427	5165.31 5000.00	3153.43	3731.45	1677.06	30160.96	25488.86	0.00
	B	45.3427	5165.31 5000.00	3029.09	3731.45	1892.42	-15080.48	-25488.86	-26120.16
	C	45.5998	5173.43 5000.00	-3020.16	3755.51	1881.25	-15177.73	25374.59	26288.59
128			Sum:	23.07	22544.97	55.52	-339.77	-0.00	168.43
	A	35.6920	5125.50 5000.00	-133.80	3061.17	-4108.79	-12371.56	29302.26	-21428.17
	A	35.6920	5125.50 5000.00	133.80	3061.17	-4108.79	-12371.56	-29302.26	21428.17
	B	33.9744	5110.07 5000.00	3700.58	2923.23	1968.05	23628.20	29911.44	0.00
	B	33.9744	5110.07 5000.00	3554.67	2923.23	2220.77	-11814.10	-29911.44	-20462.62
	C	34.8348	5118.19 5000.00	-3524.00	2993.14	2195.09	-12096.65	29607.69	20952.01
70			Sum:	68.25	17955.08	120.66	-832.37	-0.00	489.38
	A	24.0051	5078.39 5000.00	0.00	2146.27	-4602.56	-4956.61	0.00	0.00
	B	20.9247	5062.95 5000.00	4069.43	1885.00	2349.48	2176.61	0.00	-3769.99
	C	22.5532	5071.08 5000.00	-4026.75	2023.90	2324.85	2337.00	-0.00	4047.80
			Sum:	42.67	6055.17	71.77	-443.01	0.00	277.80

Guy-Mast Forces (Excluding Wind) - Ice

Guy Elevation	Guy Location	Chord Angle	Guy Tension Top Bottom lb	F _x	F _y	F _z	M _x	M _y	M _z
ft		°		lb	lb	lb	lb-ft	lb-ft	lb-ft
270	A	53.8396	15184.85 12347.19	0.00	12862.59	-8070.54	-29704.87	0.00	0.00
	B	53.8550	14779.24 12092.31	6821.75	12505.10	3938.54	14439.65	0.00	-25010.21
	C	53.7647	15013.28 12246.26	-6933.75	12700.25	4003.20	14664.98	-0.00	25400.49

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Guy Elevation	Guy Location	Chord Angle	Guy Tension Top Bottom lb	F _x	F _y	F _z	M _x	M _y	M _z
ft		°		lb	lb	lb	lb-ft	lb-ft	lb-ft
			Sum:	-112.00	38067.94	-128.81	-600.24	-0.00	390.29
196	A	45.9725	13289.71 11388.31	-277.78	10186.98	-8530.21	-41170.21	60834.10	-71308.89
	A	45.9725	13289.71 11388.31	277.78	10186.98	-8530.21	-41170.21	-60834.10	71308.89
	B	45.3427	12946.72 11177.85	7452.23	9817.04	3963.26	79350.20	60235.69	0.00
	B	45.3427	12946.72 11177.85	7158.40	9817.04	4472.19	-39675.10	-60235.69	-68719.29
	C	45.5998	13147.51 11307.87	-7228.19	10016.92	4502.42	-40482.90	60729.29	70118.44
	C	45.5998	13147.51 11307.87	-7513.30	10016.92	4008.59	80965.80	-60729.29	0.00
			Sum:	-130.85	60041.89	-113.96	-2182.41	0.00	1399.14
128	A	35.6920	12459.66 11242.22	-312.18	7952.47	-9586.66	-32139.52	68368.28	-55667.27
	A	35.6920	12459.66 11242.22	312.18	7952.47	-9586.66	-32139.52	-68368.28	55667.27
	B	33.9744	12194.64 11097.62	8499.89	7485.12	4520.42	60501.50	68703.76	0.00
	B	33.9744	12194.64 11097.62	8164.75	7485.12	5100.90	-30250.75	-68703.76	-52395.84
	C	34.8348	12355.89 11193.92	-8176.17	7738.24	5092.91	-31273.73	68694.01	54167.68
	C	34.8348	12355.89 11193.92	-8498.68	7738.24	4534.32	62547.45	-68694.01	0.00
			Sum:	-10.22	46351.66	75.24	-2754.55	-0.00	1771.84
70	A	24.0051	11502.55 10835.78	0.00	5360.46	-10177.13	-12379.45	0.00	0.00
	B	20.9247	11410.02 10843.78	8978.76	4764.20	5183.89	5501.22	0.00	-9528.40
	C	22.5532	11489.77 10867.46	-8918.17	5096.05	5148.91	5884.42	-0.00	10192.11
			Sum:	60.59	15220.71	155.67	-993.81	0.00	663.71

Guy-Mast Forces (Excluding Wind) - Service

Guy Elevation	Guy Location	Chord Angle	Guy Tension Top Bottom lb	F _x	F _y	F _z	M _x	M _y	M _z
ft		°		lb	lb	lb	lb-ft	lb-ft	lb-ft
270	A	53.8396	6172.14 5830.00	0.00	5056.62	-3539.19	-11677.76	0.00	0.00
	B	53.8550	6150.21 5830.00	3058.49	5035.14	1765.82	5814.08	0.00	-10070.28
	C	53.7647	6161.75 5830.00	-3067.94	5041.58	1771.28	5821.51	-0.00	10083.15
			Sum:	-9.45	15133.33	-2.10	-42.17	-0.00	12.87
196	A	45.9725	5180.74 5000.00	-115.12	3785.52	-3535.06	-15298.99	25210.67	-26498.63
	A	45.9725	5180.74 5000.00	115.12	3785.52	-3535.06	-15298.99	-25210.67	26498.63
	B	45.3427	5165.31	3153.43	3731.45	1677.06	30160.96	25488.86	0.00

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Guy Elevation	Guy Location	Chord Angle	Guy Tension Top Bottom lb	F _x	F _y	F _z	M _x	M _y	M _z
ft		°		lb	lb	lb	lb-ft	lb-ft	lb-ft
			5000.00						
	B	45.3427	5165.31	3029.09	3731.45	1892.42	-15080.48	-25488.86	-26120.16
			5000.00						
	C	45.5998	5173.43	-3020.16	3755.51	1881.25	-15177.73	25374.59	26288.59
			5000.00						
	C	45.5998	5173.43	-3139.29	3755.51	1674.91	30355.45	-25374.59	0.00
			5000.00						
128	A	35.6920	5125.50	23.07	22544.97	55.52	-339.77	-0.00	168.43
			5000.00	-133.80	3061.17	-4108.79	-12371.56	29302.26	-21428.17
			5000.00						
	A	35.6920	5125.50	133.80	3061.17	-4108.79	-12371.56	-29302.26	21428.17
			5000.00						
	B	33.9744	5110.07	3700.58	2923.23	1968.05	23628.20	29911.44	0.00
			5000.00						
	B	33.9744	5110.07	3554.67	2923.23	2220.77	-11814.10	-29911.44	-20462.62
			5000.00						
	C	34.8348	5118.19	-3524.00	2993.14	2195.09	-12096.65	29607.69	20952.01
			5000.00						
	C	34.8348	5118.19	-3663.00	2993.14	1954.33	24193.29	-29607.69	0.00
			5000.00						
			Sum:	68.25	17955.08	120.66	-832.37	-0.00	489.38
70	A	24.0051	5078.39	0.00	2146.27	-4602.56	-4956.61	0.00	0.00
			5000.00						
	B	20.9247	5062.95	4069.43	1885.00	2349.48	2176.61	0.00	-3769.99
			5000.00						
	C	22.5532	5071.08	-4026.75	2023.90	2324.85	2337.00	-0.00	4047.80
			5000.00						
			Sum:	42.67	6055.17	71.77	-443.01	0.00	277.80

Guy-Tensioning Information

		Temperature At Time Of Tensioning															
Guy Elevation	H	V	0 F		20 F		40 F		60 F		80 F		100 F		120 F		
			Initial Tension	Intercept													
ft	ft	ft	lb	ft	lb	ft	ft	lb	ft	lb	ft	ft	lb	ft	lb	ft	
270	A	216.69	296.50	6599	11.49	6339	11.95	6083	12.44	5830	12.97	5582	13.53	5338	14.13	5100	14.77
	B	202.69	277.50	6609	10.06	6346	10.47	6086	10.91	5830	11.38	5578	11.88	5330	12.42	5087	12.99
	C	210.69	287.50	6606	10.82	6344	11.26	6085	11.73	5830	12.23	5579	12.76	5333	13.34	5092	13.95
196	A	215.07	222.50	6033	6.35	5682	6.74	5339	7.16	5000	7.64	4668	8.18	4338	8.79	4024	9.46
	B	201.08	203.50	6069	5.40	5708	5.74	5351	6.12	5000	6.54	4655	7.02	4319	7.56	3993	8.16
	C	209.08	213.50	6053	5.91	5697	6.27	5346	6.68	5000	7.13	4661	7.64	4331	8.21	4011	8.86
128	A	215.07	154.50	6421	4.39	5939	4.75	5464	5.15	5000	5.63	4549	6.18	4115	6.82	3704	7.57
	B	201.08	135.50	6497	3.64	5990	3.95	5490	4.31	5000	4.72	4523	5.22	4064	5.80	3629	6.49
	C	209.08	145.50	6458	4.04	5963	4.38	5477	4.76	5000	5.21	4537	5.74	4091	6.35	3668	7.07
70	A	216.69	96.50	6805	3.34	6191	3.67	5588	4.06	5000	4.54	4434	5.11	3898	5.81	3404	6.64
	B	202.69	77.50	6906	2.76	6259	3.04	5622	3.38	5000	3.80	4400	4.32	3831	4.95	3307	5.73
	C	210.69	87.50	6853	3.07	6223	3.38	5604	3.75	5000	4.20	4418	4.75	3867	5.42	3359	6.23

Feed Line/Linear Appurtenances - Entered As Round Or Flat

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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 (Dipole)	C	No	Ar (CaAa)	220.00 - 7.00	0.0000	-0.33	1	1	1.1100	1.1100		0.54
1 5/8 (T-Mobile)	B	No	Ar (CaAa)	182.00 - 7.00	0.0000	-0.2	4	2	1.5000	1.9800		1.04
CR 50 1873PE (1-5/8 FOAM)	A	No	Ar (CaAa)	166.16 - 7.00	0.0000	-0.1	12	6	1.5000	1.9800		0.83
(AT&T) 1 5/8 (VZW)	B	No	Ar (CaAa)	128.00 - 7.00	0.0000	0.29	4	2	1.5000	1.9800		1.04
1 1/4 (10' Omni - MTS)	A	No	Ar (CaAa)	282.00 - 7.00	0.0000	0.48	1	1	1.5500	1.5500		0.66
1 1/4 (Shared Cable - MTS)	A	No	Ar (CaAa)	262.00 - 7.00	0.0000	-0.33	1	1	1.5500	1.5500		0.66
1 1/4 (12' Dipole - MTS)	C	No	Ar (CaAa)	135.00 - 7.00	0.0000	0.48	1	1	1.5500	1.5500		0.66
1 1/4 (22' Omni - MTS)	C	No	Ar (CaAa)	135.00 - 7.00	0.0000	0.42	1	1	1.5500	1.5500		0.66
1 1/4 (WMRQ)	B	No	Ar (CaAa)	282.00 - 7.00	0.0000	-0.42	1	1	1.5500	1.5500		0.66
EW63 (8' Dish - Eversource)	B	No	Af (CaAa)	215.00 - 7.00	0.0000	0.48	1	1	1.5742	1.5742		0.51
EW63 (6' Dish - Eversource)	B	No	Af (CaAa)	207.00 - 7.00	0.0000	0.43	1	1	1.5742	1.5742		0.51
EW63 (8' Dish - Eversource)	B	No	Af (CaAa)	207.00 - 7.00	0.0000	0.38	1	1	1.5742	1.5742		0.51
EW63 (5.5' Dish - Eversource)	C	No	Af (CaAa)	155.25 - 7.00	0.0000	-0.48	1	1	1.5742	1.5742		0.51
1 1/4 (Dead Line)	B	No	Ar (CaAa)	132.25 - 7.00	0.0000	-0.38	1	1	1.5500	1.5500		0.66
EW63 (9' Dish - Eversource)	C	No	Af (CaAa)	107.50 - 7.00	0.0000	-0.38	1	1	1.5742	1.5742		0.51
DC Cable WR-VG122S T	B	No	Ar (CaAa)	142.00 - 7.00	0.0000	-0.025	1	1	0.4000	0.4000		0.25
(L-810 Cable) 1 1/4 (WBMW - MTS)	B	No	Ar (CaAa)	282.00 - 7.00	0.0000	-0.3	1	1	1.5500	1.5500		0.66
1 1/4" Hybriflex Cables (AT&T)	A	No	Ar (CaAa)	164.00 - 7.00	0.0000	-0.4	1	1	1.2500	1.2500		0.99
DC Cable WR-VG122S T	A	No	Ar (CaAa)	164.00 - 7.00	0.0000	-0.44	2	2	0.4000	0.4000		0.25
(AT&T) 1 (Existing Conduit)	B	No	Ar (CaAa)	282.00 - 7.00	0.0000	0	1	1	1.2500	1.2500		0.58
1 1/4 (VZW)	B	No	Ar (CaAa)	128.00 - 7.00	0.0000	0.12	6	3	1.5500	1.5500		0.66
1/2	B	No	Ar (CaAa)	282.00 - 7.00	0.0000	-0.045	1	1	0.5800	0.5800		0.25

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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
(Power Cable) 1 1/4 (9' Omni - Eversource)	C	No	Ar (CaAa)	242.00 - 7.00	0.0000	-0.2	1	1	1.5500	1.5500		0.66
1 1/4" Hybriflex Cables (T-Mobile - Proposed)	B	No	Ar (CaAa)	164.00 - 7.00	0.0000	-0.1	1	1	1.2500	1.2500		0.99

Feed Line/Linear Appurtenances Section Areas

Tower Section	Tower Elevation ft	Face	A _R ft ²	A _F ft ²	C _A A _A In Face ft ²	C _A A _A Out Face ft ²	Weight lb
T1	282.00-262.00	A	0.000	0.000	3.100	0.000	13.20
		B	0.000	0.000	9.860	0.000	43.00
		C	0.000	0.000	0.000	0.000	0.00
T2	262.00-242.00	A	0.000	0.000	6.200	0.000	26.40
		B	0.000	0.000	9.860	0.000	43.00
		C	0.000	0.000	0.000	0.000	0.00
T3	242.00-222.00	A	0.000	0.000	6.200	0.000	26.40
		B	0.000	0.000	9.860	0.000	43.00
		C	0.000	0.000	3.100	0.000	13.20
T4	222.00-202.00	A	0.000	0.000	6.200	0.000	26.40
		B	0.000	0.000	15.894	0.000	54.73
		C	0.000	0.000	5.098	0.000	22.92
T5	202.00-182.00	A	0.000	0.000	6.200	0.000	26.40
		B	0.000	0.000	25.602	0.000	73.60
		C	0.000	0.000	5.320	0.000	24.00
T6	182.00-162.00	A	0.000	0.000	16.494	0.000	70.82
		B	0.000	0.000	41.692	0.000	158.78
		C	0.000	0.000	5.320	0.000	24.00
T7	162.00-142.00	A	0.000	0.000	57.820	0.000	255.44
		B	0.000	0.000	43.942	0.000	176.64
		C	0.000	0.000	8.796	0.000	30.76
T8	142.00-122.00	A	0.000	0.000	57.820	0.000	255.44
		B	0.000	0.000	56.663	0.000	237.13
		C	0.000	0.000	14.597	0.000	51.36
T9	122.00-102.00	A	0.000	0.000	57.820	0.000	255.44
		B	0.000	0.000	82.282	0.000	357.24
		C	0.000	0.000	18.210	0.000	63.41
T10	102.00-82.00	A	0.000	0.000	57.820	0.000	255.44
		B	0.000	0.000	82.282	0.000	357.24
		C	0.000	0.000	22.015	0.000	70.80
T11	82.00-78.00	A	0.000	0.000	11.564	0.000	51.09
		B	0.000	0.000	16.456	0.000	71.45
		C	0.000	0.000	4.403	0.000	14.16
T12	78.00-74.00	A	0.000	0.000	11.564	0.000	51.09
		B	0.000	0.000	16.456	0.000	71.45
		C	0.000	0.000	4.403	0.000	14.16
T13	74.00-70.00	A	0.000	0.000	11.564	0.000	51.09
		B	0.000	0.000	16.456	0.000	71.45
		C	0.000	0.000	4.403	0.000	14.16
T14	70.00-66.00	A	0.000	0.000	11.564	0.000	51.09
		B	0.000	0.000	16.456	0.000	71.45
		C	0.000	0.000	4.403	0.000	14.16

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Tower Section	Tower Elevation ft	Face	A_R ft ²	A_F ft ²	C_{AA} In Face ft ²	C_{AA} Out Face ft ²	Weight lb
T15	66.00-62.00	A	0.000	0.000	11.564	0.000	51.09
		B	0.000	0.000	16.456	0.000	71.45
		C	0.000	0.000	4.403	0.000	14.16
T16	62.00-42.00	A	0.000	0.000	57.820	0.000	255.44
		B	0.000	0.000	82.282	0.000	357.24
		C	0.000	0.000	22.015	0.000	70.80
T17	42.00-22.00	A	0.000	0.000	57.820	0.000	255.44
		B	0.000	0.000	82.282	0.000	357.24
		C	0.000	0.000	22.015	0.000	70.80
T18	22.00-2.00	A	0.000	0.000	43.365	0.000	191.58
		B	0.000	0.000	61.712	0.000	267.93
		C	0.000	0.000	16.511	0.000	53.10

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} In Face ft ²	C_{AA} Out Face ft ²	Weight lb
T1	282.00-262.00	A	2.470	0.000	0.000	12.979	0.000	255.77
		B		0.000	0.000	49.374	0.000	936.62
		C		0.000	0.000	0.000	0.000	0.00
T2	262.00-242.00	A	2.451	0.000	0.000	25.807	0.000	505.59
		B		0.000	0.000	49.074	0.000	925.32
		C		0.000	0.000	0.000	0.000	0.00
T3	242.00-222.00	A	2.431	0.000	0.000	25.645	0.000	499.25
		B		0.000	0.000	48.751	0.000	913.26
		C		0.000	0.000	12.823	0.000	249.62
T4	222.00-202.00	A	2.409	0.000	0.000	25.471	0.000	492.43
		B		0.000	0.000	65.517	0.000	1217.68
		C		0.000	0.000	23.405	0.000	442.34
T5	202.00-182.00	A	2.385	0.000	0.000	25.281	0.000	485.07
		B		0.000	0.000	92.385	0.000	1701.37
		C		0.000	0.000	24.401	0.000	457.03
T6	182.00-162.00	A	2.359	0.000	0.000	41.825	0.000	882.70
		B		0.000	0.000	128.833	0.000	2413.14
		C		0.000	0.000	24.192	0.000	449.28
T7	162.00-142.00	A	2.330	0.000	0.000	121.225	0.000	2618.27
		B		0.000	0.000	138.443	0.000	2573.95
		C		0.000	0.000	33.611	0.000	614.24
T8	142.00-122.00	A	2.297	0.000	0.000	120.389	0.000	2583.44
		B		0.000	0.000	175.688	0.000	3253.64
		C		0.000	0.000	54.113	0.000	985.32
T9	122.00-102.00	A	2.260	0.000	0.000	119.431	0.000	2543.82
		B		0.000	0.000	231.264	0.000	4340.32
		C		0.000	0.000	65.896	0.000	1185.95
T10	102.00-82.00	A	2.216	0.000	0.000	118.305	0.000	2497.66
		B		0.000	0.000	228.572	0.000	4238.99
		C		0.000	0.000	75.197	0.000	1326.41
T11	82.00-78.00	A	2.185	0.000	0.000	23.504	0.000	493.14
		B		0.000	0.000	45.338	0.000	833.79
		C		0.000	0.000	14.892	0.000	259.69
T12	78.00-74.00	A	2.174	0.000	0.000	23.446	0.000	490.83
		B		0.000	0.000	45.202	0.000	828.73
		C		0.000	0.000	14.838	0.000	257.67
T13	74.00-70.00	A	2.162	0.000	0.000	23.386	0.000	488.41
		B		0.000	0.000	45.058	0.000	823.45
		C		0.000	0.000	14.782	0.000	255.57
T14	70.00-66.00	A	2.150	0.000	0.000	23.323	0.000	485.87

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Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A _R ft ²	A _F ft ²	C _A A _A In Face ft ²	C _A A _A Out Face ft ²	Weight lb
T15	66.00-62.00	B		0.000	0.000	44.908	0.000	817.91
		C		0.000	0.000	14.723	0.000	253.36
		A	2.137	0.000	0.000	23.257	0.000	483.21
T16	62.00-42.00	B		0.000	0.000	44.749	0.000	812.09
		C		0.000	0.000	14.660	0.000	251.04
		A	2.093	0.000	0.000	115.161	0.000	2371.31
T17	42.00-22.00	B		0.000	0.000	221.059	0.000	3962.96
		C		0.000	0.000	72.248	0.000	1216.49
		A	1.994	0.000	0.000	112.626	0.000	2272.02
T18	22.00-2.00	B		0.000	0.000	214.995	0.000	3747.48
		C		0.000	0.000	69.867	0.000	1131.22
		A	1.808	0.000	0.000	80.901	0.000	1569.04
		B		0.000	0.000	152.706	0.000	2520.39
		C		0.000	0.000	49.047	0.000	734.56

Feed Line Center of Pressure

Section	Elevation ft	CP _X in	CP _Z in	CP _X Ice in	CP _Z Ice in
T1	282.00-262.00	0.6670	-2.5484	0.8353	-2.5419
T2	262.00-242.00	0.0176	-2.1402	0.2079	-2.1385
T3	242.00-222.00	0.2628	-1.5434	0.4195	-1.5781
T4	222.00-202.00	1.1626	-0.5049	1.2317	-0.7551
T5	202.00-182.00	1.9131	0.0657	1.8492	-0.2361
T6	182.00-162.00	1.3560	-0.9670	1.4584	-0.4558
T7	162.00-142.00	-0.4252	-0.7863	0.6223	-0.3319
T8	142.00-122.00	-0.0719	-0.5772	0.5663	-0.2309
T9	122.00-102.00	0.5704	-0.4600	0.6600	-0.1793
T10	102.00-82.00	0.6763	-0.3858	0.7501	-0.0927
T11	82.00-78.00	0.6763	-0.3858	0.7488	-0.0938
T12	78.00-74.00	0.6763	-0.3858	0.7483	-0.0942
T13	74.00-70.00	0.6763	-0.3858	0.7478	-0.0946
T14	70.00-66.00	0.6763	-0.3858	0.7473	-0.0950
T15	66.00-62.00	0.6763	-0.3858	0.7467	-0.0955
T16	62.00-42.00	0.6742	-0.3846	0.7500	-0.0978
T17	42.00-22.00	0.6742	-0.3846	0.7452	-0.1015
T18	22.00-2.00	0.6596	-0.3763	0.7145	-0.1060

Shielding Factor Ka

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
T1	9	1 1/4	262.00 - 282.00	1.0000	1.0000
T1	14	1 1/4	262.00 - 282.00	1.0000	1.0000
T1	25	1 1/4	262.00 - 282.00	1.0000	1.0000
T1	30	1	262.00 - 282.00	1.0000	1.0000

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Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_n No Ice	K_n Ice
T1	32	1/2	262.00 - 282.00	1.0000	1.0000
T2	9	1 1/4	242.00 - 262.00	1.0000	1.0000
T2	10	1 1/4	242.00 - 262.00	1.0000	1.0000
T2	14	1 1/4	242.00 - 262.00	1.0000	1.0000
T2	25	1 1/4	242.00 - 262.00	1.0000	1.0000
T2	30	1	242.00 - 262.00	1.0000	1.0000
T2	32	1/2	242.00 - 262.00	1.0000	1.0000
T3	9	1 1/4	222.00 - 242.00	1.0000	1.0000
T3	10	1 1/4	222.00 - 242.00	1.0000	1.0000
T3	14	1 1/4	222.00 - 242.00	1.0000	1.0000
T3	25	1 1/4	222.00 - 242.00	1.0000	1.0000
T3	30	1	222.00 - 242.00	1.0000	1.0000
T3	32	1/2	222.00 - 242.00	1.0000	1.0000
T3	33	1 1/4	222.00 - 242.00	1.0000	1.0000
T4	3	7/8	202.00 - 220.00	1.0000	1.0000
T4	9	1 1/4	202.00 - 222.00	1.0000	1.0000
T4	10	1 1/4	202.00 - 222.00	1.0000	1.0000
T4	14	1 1/4	202.00 - 222.00	1.0000	1.0000
T4	15	EW63	202.00 - 215.00	1.0000	1.0000
T4	16	EW63	202.00 - 207.00	1.0000	1.0000
T4	17	EW63	202.00 - 207.00	1.0000	1.0000
T4	25	1 1/4	202.00 - 222.00	1.0000	1.0000
T4	30	1	202.00 - 222.00	1.0000	1.0000
T4	32	1/2	202.00 - 222.00	1.0000	1.0000
T4	33	1 1/4	202.00 - 222.00	1.0000	1.0000
T5	3	7/8	182.00 - 202.00	1.0000	1.0000
T5	9	1 1/4	182.00 - 202.00	1.0000	1.0000
T5	10	1 1/4	182.00 - 202.00	1.0000	1.0000
T5	14	1 1/4	182.00 - 202.00	1.0000	1.0000
T5	15	EW63	182.00 - 202.00	1.0000	1.0000
T5	16	EW63	182.00 - 202.00	1.0000	1.0000

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Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T5	17	EW63	182.00 - 202.00	1.0000	1.0000
T5	25	1 1/4	182.00 - 202.00	1.0000	1.0000
T5	30	1	182.00 - 202.00	1.0000	1.0000
T5	32	1/2	182.00 - 202.00	1.0000	1.0000
T5	33	1 1/4	182.00 - 202.00	1.0000	1.0000
T6	3	7/8	162.00 - 182.00	1.0000	1.0000
T6	4	1 5/8	162.00 - 182.00	1.0000	1.0000
T6	5	CR 50 1873PE (1-5/8 FOAM)	162.00 - 166.16	1.0000	1.0000
T6	9	1 1/4	162.00 - 182.00	1.0000	1.0000
T6	10	1 1/4	162.00 - 182.00	1.0000	1.0000
T6	14	1 1/4	162.00 - 182.00	1.0000	1.0000
T6	15	EW63	162.00 - 182.00	1.0000	1.0000
T6	16	EW63	162.00 - 182.00	1.0000	1.0000
T6	17	EW63	162.00 - 182.00	1.0000	1.0000
T6	25	1 1/4	162.00 - 182.00	1.0000	1.0000
T6	27	1 1/4" Hybriflex Cables	162.00 - 164.00	1.0000	1.0000
T6	28	DC Cable WR-VG122ST	162.00 - 164.00	1.0000	1.0000
T6	30	1	162.00 - 182.00	1.0000	1.0000
T6	32	1/2	162.00 - 182.00	1.0000	1.0000
T6	33	1 1/4	162.00 - 182.00	1.0000	1.0000
T6	34	1 1/4" Hybriflex Cables	162.00 - 164.00	1.0000	1.0000
T7	3	7/8	142.00 - 162.00	1.0000	1.0000
T7	4	1 5/8	142.00 - 162.00	1.0000	1.0000
T7	5	CR 50 1873PE (1-5/8 FOAM)	142.00 - 162.00	1.0000	1.0000
T7	9	1 1/4	142.00 - 162.00	1.0000	1.0000
T7	10	1 1/4	142.00 - 162.00	1.0000	1.0000
T7	14	1 1/4	142.00 - 162.00	1.0000	1.0000
T7	15	EW63	142.00 - 162.00	1.0000	1.0000
T7	16	EW63	142.00 - 162.00	1.0000	1.0000
T7	17	EW63	142.00 - 162.00	1.0000	1.0000
T7	18	EW63	142.00 - 155.25	1.0000	1.0000

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Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T7	25	1 1/4	142.00 - 162.00	1.0000	1.0000
T7	27	1 1/4" Hybriflex Cables	142.00 - 162.00	1.0000	1.0000
T7	28	DC Cable WR-VG122ST	142.00 - 162.00	1.0000	1.0000
T7	30	1	142.00 - 162.00	1.0000	1.0000
T7	32	1/2	142.00 - 162.00	1.0000	1.0000
T7	33	1 1/4	142.00 - 162.00	1.0000	1.0000
T7	34	1 1/4" Hybriflex Cables	142.00 - 162.00	1.0000	1.0000
T8	3	7/8	122.00 - 142.00	1.0000	1.0000
T8	4	1 5/8	122.00 - 142.00	1.0000	1.0000
T8	5	CR 50 1873PE (1-5/8 FOAM)	122.00 - 142.00	1.0000	1.0000
T8	7	1 5/8	122.00 - 128.00	1.0000	1.0000
T8	9	1 1/4	122.00 - 142.00	1.0000	1.0000
T8	10	1 1/4	122.00 - 142.00	1.0000	1.0000
T8	11	1 1/4	122.00 - 135.00	1.0000	1.0000
T8	12	1 1/4	122.00 - 135.00	1.0000	1.0000
T8	14	1 1/4	122.00 - 142.00	1.0000	1.0000
T8	15	EW63	122.00 - 142.00	1.0000	1.0000
T8	16	EW63	122.00 - 142.00	1.0000	1.0000
T8	17	EW63	122.00 - 142.00	1.0000	1.0000
T8	18	EW63	122.00 - 142.00	1.0000	1.0000
T8	20	1 1/4	122.00 - 132.25	1.0000	1.0000
T8	24	DC Cable WR-VG122ST	122.00 - 142.00	1.0000	1.0000
T8	25	1 1/4	122.00 - 142.00	1.0000	1.0000
T8	27	1 1/4" Hybriflex Cables	122.00 - 142.00	1.0000	1.0000
T8	28	DC Cable WR-VG122ST	122.00 - 142.00	1.0000	1.0000
T8	30	1	122.00 - 142.00	1.0000	1.0000
T8	31	1 1/4	122.00 - 128.00	1.0000	1.0000
T8	32	1/2	122.00 - 142.00	1.0000	1.0000
T8	33	1 1/4	122.00 - 142.00	1.0000	1.0000
T8	34	1 1/4" Hybriflex Cables	122.00 - 142.00	1.0000	1.0000
T9	3	7/8	102.00 - 122.00	1.0000	1.0000

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Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T9	4	1 5/8	102.00 - 122.00	1.0000	1.0000
T9	5	CR 50 1873PE (1-5/8 FOAM)	102.00 - 122.00	1.0000	1.0000
T9	7	1 5/8	102.00 - 122.00	1.0000	1.0000
T9	9	1 1/4	102.00 - 122.00	1.0000	1.0000
T9	10	1 1/4	102.00 - 122.00	1.0000	1.0000
T9	11	1 1/4	102.00 - 122.00	1.0000	1.0000
T9	12	1 1/4	102.00 - 122.00	1.0000	1.0000
T9	14	1 1/4	102.00 - 122.00	1.0000	1.0000
T9	15	EW63	102.00 - 122.00	1.0000	1.0000
T9	16	EW63	102.00 - 122.00	1.0000	1.0000
T9	17	EW63	102.00 - 122.00	1.0000	1.0000
T9	18	EW63	102.00 - 122.00	1.0000	1.0000
T9	20	1 1/4	102.00 - 122.00	1.0000	1.0000
T9	22	EW63	102.00 - 107.50	1.0000	1.0000
T9	24	DC Cable WR-VG122ST	102.00 - 122.00	1.0000	1.0000
T9	25	1 1/4	102.00 - 122.00	1.0000	1.0000
T9	27	1 1/4" Hybriflex Cables	102.00 - 122.00	1.0000	1.0000
T9	28	DC Cable WR-VG122ST	102.00 - 122.00	1.0000	1.0000
T9	30	1	102.00 - 122.00	1.0000	1.0000
T9	31	1 1/4	102.00 - 122.00	1.0000	1.0000
T9	32	1/2	102.00 - 122.00	1.0000	1.0000
T9	33	1 1/4	102.00 - 122.00	1.0000	1.0000
T9	34	1 1/4" Hybriflex Cables	102.00 - 122.00	1.0000	1.0000
T10	3	7/8	82.00 - 102.00	1.0000	1.0000
T10	4	1 5/8	82.00 - 102.00	1.0000	1.0000
T10	5	CR 50 1873PE (1-5/8 FOAM)	82.00 - 102.00	1.0000	1.0000
T10	7	1 5/8	82.00 - 102.00	1.0000	1.0000
T10	9	1 1/4	82.00 - 102.00	1.0000	1.0000
T10	10	1 1/4	82.00 - 102.00	1.0000	1.0000
T10	11	1 1/4	82.00 - 102.00	1.0000	1.0000
T10	12	1 1/4	82.00 - 102.00	1.0000	1.0000
T10	14	1 1/4	82.00 - 102.00	1.0000	1.0000
T10	15	EW63	82.00 - 102.00	1.0000	1.0000
T10	16	EW63	82.00 - 102.00	1.0000	1.0000
T10	17	EW63	82.00 - 102.00	1.0000	1.0000
T10	18	EW63	82.00 - 102.00	1.0000	1.0000
T10	20	1 1/4	82.00 - 102.00	1.0000	1.0000
T10	22	EW63	82.00 - 102.00	1.0000	1.0000

tnxTower AECOM 500 Enterprise Drive, Suite 3B Rocky Hill, CT Phone: 860-529-8882 FAX: 860-529-3991	Job 280' Guyed Tower	Page 22 of 74
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Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
T10	24	DC Cable WR-VG122ST	82.00 - 102.00	1.0000	1.0000
T10	25	1 1/4	82.00 - 102.00	1.0000	1.0000
T10	27	1 1/4" Hybriflex Cables	82.00 - 102.00	1.0000	1.0000
T10	28	DC Cable WR-VG122ST	82.00 - 102.00	1.0000	1.0000
T10	30	1	82.00 - 102.00	1.0000	1.0000
T10	31	1 1/4	82.00 - 102.00	1.0000	1.0000
T10	32	1/2	82.00 - 102.00	1.0000	1.0000
T10	33	1 1/4	82.00 - 102.00	1.0000	1.0000
T10	34	1 1/4" Hybriflex Cables	82.00 - 102.00	1.0000	1.0000
T11	3	7/8	78.00 - 82.00	1.0000	1.0000
T11	4	1 5/8	78.00 - 82.00	1.0000	1.0000
T11	5	CR 50 1873PE (1-5/8 FOAM)	78.00 - 82.00	1.0000	1.0000
T11	7	1 5/8	78.00 - 82.00	1.0000	1.0000
T11	9	1 1/4	78.00 - 82.00	1.0000	1.0000
T11	10	1 1/4	78.00 - 82.00	1.0000	1.0000
T11	11	1 1/4	78.00 - 82.00	1.0000	1.0000
T11	12	1 1/4	78.00 - 82.00	1.0000	1.0000
T11	14	1 1/4	78.00 - 82.00	1.0000	1.0000
T11	15	EW63	78.00 - 82.00	1.0000	1.0000
T11	16	EW63	78.00 - 82.00	1.0000	1.0000
T11	17	EW63	78.00 - 82.00	1.0000	1.0000
T11	18	EW63	78.00 - 82.00	1.0000	1.0000
T11	20	1 1/4	78.00 - 82.00	1.0000	1.0000
T11	22	EW63	78.00 - 82.00	1.0000	1.0000
T11	24	DC Cable WR-VG122ST	78.00 - 82.00	1.0000	1.0000
T11	25	1 1/4	78.00 - 82.00	1.0000	1.0000
T11	27	1 1/4" Hybriflex Cables	78.00 - 82.00	1.0000	1.0000
T11	28	DC Cable WR-VG122ST	78.00 - 82.00	1.0000	1.0000
T11	30	1	78.00 - 82.00	1.0000	1.0000
T11	31	1 1/4	78.00 - 82.00	1.0000	1.0000
T11	32	1/2	78.00 - 82.00	1.0000	1.0000
T11	33	1 1/4	78.00 - 82.00	1.0000	1.0000
T11	34	1 1/4" Hybriflex Cables	78.00 - 82.00	1.0000	1.0000
T12	3	7/8	74.00 - 78.00	1.0000	1.0000
T12	4	1 5/8	74.00 - 78.00	1.0000	1.0000
T12	5	CR 50 1873PE (1-5/8 FOAM)	74.00 - 78.00	1.0000	1.0000
T12	7	1 5/8	74.00 - 78.00	1.0000	1.0000
T12	9	1 1/4	74.00 - 78.00	1.0000	1.0000
T12	10	1 1/4	74.00 - 78.00	1.0000	1.0000
T12	11	1 1/4	74.00 - 78.00	1.0000	1.0000
T12	12	1 1/4	74.00 - 78.00	1.0000	1.0000
T12	14	1 1/4	74.00 - 78.00	1.0000	1.0000
T12	15	EW63	74.00 - 78.00	1.0000	1.0000
T12	16	EW63	74.00 - 78.00	1.0000	1.0000
T12	17	EW63	74.00 - 78.00	1.0000	1.0000
T12	18	EW63	74.00 - 78.00	1.0000	1.0000
T12	20	1 1/4	74.00 - 78.00	1.0000	1.0000
T12	22	EW63	74.00 - 78.00	1.0000	1.0000
T12	24	DC Cable WR-VG122ST	74.00 - 78.00	1.0000	1.0000
T12	25	1 1/4	74.00 - 78.00	1.0000	1.0000
T12	27	1 1/4" Hybriflex Cables	74.00 - 78.00	1.0000	1.0000
T12	28	DC Cable WR-VG122ST	74.00 - 78.00	1.0000	1.0000
T12	30	1	74.00 - 78.00	1.0000	1.0000
T12	31	1 1/4	74.00 - 78.00	1.0000	1.0000
T12	32	1/2	74.00 - 78.00	1.0000	1.0000
T12	33	1 1/4	74.00 - 78.00	1.0000	1.0000
T12	34	1 1/4" Hybriflex Cables	74.00 - 78.00	1.0000	1.0000
T13	3	7/8	70.00 - 74.00	1.0000	1.0000
T13	4	1 5/8	70.00 - 74.00	1.0000	1.0000
T13	5	CR 50 1873PE (1-5/8)	70.00 - 74.00	1.0000	1.0000

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Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
		FOAM)			
T13	7	1 5/8	70.00 - 74.00	1.0000	1.0000
T13	9	1 1/4	70.00 - 74.00	1.0000	1.0000
T13	10	1 1/4	70.00 - 74.00	1.0000	1.0000
T13	11	1 1/4	70.00 - 74.00	1.0000	1.0000
T13	12	1 1/4	70.00 - 74.00	1.0000	1.0000
T13	14	1 1/4	70.00 - 74.00	1.0000	1.0000
T13	15	EW63	70.00 - 74.00	1.0000	1.0000
T13	16	EW63	70.00 - 74.00	1.0000	1.0000
T13	17	EW63	70.00 - 74.00	1.0000	1.0000
T13	18	EW63	70.00 - 74.00	1.0000	1.0000
T13	20	1 1/4	70.00 - 74.00	1.0000	1.0000
T13	22	EW63	70.00 - 74.00	1.0000	1.0000
T13	24	DC Cable WR-VG122ST	70.00 - 74.00	1.0000	1.0000
T13	25	1 1/4	70.00 - 74.00	1.0000	1.0000
T13	27	1 1/4" Hybriflex Cables	70.00 - 74.00	1.0000	1.0000
T13	28	DC Cable WR-VG122ST	70.00 - 74.00	1.0000	1.0000
T13	30	1	70.00 - 74.00	1.0000	1.0000
T13	31	1 1/4	70.00 - 74.00	1.0000	1.0000
T13	32	1/2	70.00 - 74.00	1.0000	1.0000
T13	33	1 1/4	70.00 - 74.00	1.0000	1.0000
T13	34	1 1/4" Hybriflex Cables	70.00 - 74.00	1.0000	1.0000
T14	3	7/8	66.00 - 70.00	1.0000	1.0000
T14	4	1 5/8	66.00 - 70.00	1.0000	1.0000
T14	5	CR 50 1873PE (1-5/8	66.00 - 70.00	1.0000	1.0000
		FOAM)			
T14	7	1 5/8	66.00 - 70.00	1.0000	1.0000
T14	9	1 1/4	66.00 - 70.00	1.0000	1.0000
T14	10	1 1/4	66.00 - 70.00	1.0000	1.0000
T14	11	1 1/4	66.00 - 70.00	1.0000	1.0000
T14	12	1 1/4	66.00 - 70.00	1.0000	1.0000
T14	14	1 1/4	66.00 - 70.00	1.0000	1.0000
T14	15	EW63	66.00 - 70.00	1.0000	1.0000
T14	16	EW63	66.00 - 70.00	1.0000	1.0000
T14	17	EW63	66.00 - 70.00	1.0000	1.0000
T14	18	EW63	66.00 - 70.00	1.0000	1.0000
T14	20	1 1/4	66.00 - 70.00	1.0000	1.0000
T14	22	EW63	66.00 - 70.00	1.0000	1.0000
T14	24	DC Cable WR-VG122ST	66.00 - 70.00	1.0000	1.0000
T14	25	1 1/4	66.00 - 70.00	1.0000	1.0000
T14	27	1 1/4" Hybriflex Cables	66.00 - 70.00	1.0000	1.0000
T14	28	DC Cable WR-VG122ST	66.00 - 70.00	1.0000	1.0000
T14	30	1	66.00 - 70.00	1.0000	1.0000
T14	31	1 1/4	66.00 - 70.00	1.0000	1.0000
T14	32	1/2	66.00 - 70.00	1.0000	1.0000
T14	33	1 1/4	66.00 - 70.00	1.0000	1.0000
T14	34	1 1/4" Hybriflex Cables	66.00 - 70.00	1.0000	1.0000
T15	3	7/8	62.00 - 66.00	1.0000	1.0000
T15	4	1 5/8	62.00 - 66.00	1.0000	1.0000
T15	5	CR 50 1873PE (1-5/8	62.00 - 66.00	1.0000	1.0000
		FOAM)			
T15	7	1 5/8	62.00 - 66.00	1.0000	1.0000
T15	9	1 1/4	62.00 - 66.00	1.0000	1.0000
T15	10	1 1/4	62.00 - 66.00	1.0000	1.0000
T15	11	1 1/4	62.00 - 66.00	1.0000	1.0000
T15	12	1 1/4	62.00 - 66.00	1.0000	1.0000
T15	14	1 1/4	62.00 - 66.00	1.0000	1.0000
T15	15	EW63	62.00 - 66.00	1.0000	1.0000
T15	16	EW63	62.00 - 66.00	1.0000	1.0000
T15	17	EW63	62.00 - 66.00	1.0000	1.0000
T15	18	EW63	62.00 - 66.00	1.0000	1.0000
T15	20	1 1/4	62.00 - 66.00	1.0000	1.0000

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Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
T15	22	EW63	62.00 - 66.00	1.0000	1.0000
T15	24	DC Cable WR-VG122ST	62.00 - 66.00	1.0000	1.0000
T15	25	1 1/4	62.00 - 66.00	1.0000	1.0000
T15	27	1 1/4" Hybriflex Cables	62.00 - 66.00	1.0000	1.0000
T15	28	DC Cable WR-VG122ST	62.00 - 66.00	1.0000	1.0000
T15	30	1	62.00 - 66.00	1.0000	1.0000
T15	31	1 1/4	62.00 - 66.00	1.0000	1.0000
T15	32	1/2	62.00 - 66.00	1.0000	1.0000
T15	33	1 1/4	62.00 - 66.00	1.0000	1.0000
T15	34	1 1/4" Hybriflex Cables	62.00 - 66.00	1.0000	1.0000
T16	3	7/8	42.00 - 62.00	1.0000	1.0000
T16	4	1 5/8	42.00 - 62.00	1.0000	1.0000
T16	5	CR 50 1873PE (1-5/8 FOAM)	42.00 - 62.00	1.0000	1.0000
T16	7	1 5/8	42.00 - 62.00	1.0000	1.0000
T16	9	1 1/4	42.00 - 62.00	1.0000	1.0000
T16	10	1 1/4	42.00 - 62.00	1.0000	1.0000
T16	11	1 1/4	42.00 - 62.00	1.0000	1.0000
T16	12	1 1/4	42.00 - 62.00	1.0000	1.0000
T16	14	1 1/4	42.00 - 62.00	1.0000	1.0000
T16	15	EW63	42.00 - 62.00	1.0000	1.0000
T16	16	EW63	42.00 - 62.00	1.0000	1.0000
T16	17	EW63	42.00 - 62.00	1.0000	1.0000
T16	18	EW63	42.00 - 62.00	1.0000	1.0000
T16	20	1 1/4	42.00 - 62.00	1.0000	1.0000
T16	22	EW63	42.00 - 62.00	1.0000	1.0000
T16	24	DC Cable WR-VG122ST	42.00 - 62.00	1.0000	1.0000
T16	25	1 1/4	42.00 - 62.00	1.0000	1.0000
T16	27	1 1/4" Hybriflex Cables	42.00 - 62.00	1.0000	1.0000
T16	28	DC Cable WR-VG122ST	42.00 - 62.00	1.0000	1.0000
T16	30	1	42.00 - 62.00	1.0000	1.0000
T16	31	1 1/4	42.00 - 62.00	1.0000	1.0000
T16	32	1/2	42.00 - 62.00	1.0000	1.0000
T16	33	1 1/4	42.00 - 62.00	1.0000	1.0000
T16	34	1 1/4" Hybriflex Cables	42.00 - 62.00	1.0000	1.0000
T17	3	7/8	22.00 - 42.00	1.0000	1.0000
T17	4	1 5/8	22.00 - 42.00	1.0000	1.0000
T17	5	CR 50 1873PE (1-5/8 FOAM)	22.00 - 42.00	1.0000	1.0000
T17	7	1 5/8	22.00 - 42.00	1.0000	1.0000
T17	9	1 1/4	22.00 - 42.00	1.0000	1.0000
T17	10	1 1/4	22.00 - 42.00	1.0000	1.0000
T17	11	1 1/4	22.00 - 42.00	1.0000	1.0000
T17	12	1 1/4	22.00 - 42.00	1.0000	1.0000
T17	14	1 1/4	22.00 - 42.00	1.0000	1.0000
T17	15	EW63	22.00 - 42.00	1.0000	1.0000
T17	16	EW63	22.00 - 42.00	1.0000	1.0000
T17	17	EW63	22.00 - 42.00	1.0000	1.0000
T17	18	EW63	22.00 - 42.00	1.0000	1.0000
T17	20	1 1/4	22.00 - 42.00	1.0000	1.0000
T17	22	EW63	22.00 - 42.00	1.0000	1.0000
T17	24	DC Cable WR-VG122ST	22.00 - 42.00	1.0000	1.0000
T17	25	1 1/4	22.00 - 42.00	1.0000	1.0000
T17	27	1 1/4" Hybriflex Cables	22.00 - 42.00	1.0000	1.0000
T17	28	DC Cable WR-VG122ST	22.00 - 42.00	1.0000	1.0000
T17	30	1	22.00 - 42.00	1.0000	1.0000
T17	31	1 1/4	22.00 - 42.00	1.0000	1.0000
T17	32	1/2	22.00 - 42.00	1.0000	1.0000
T17	33	1 1/4	22.00 - 42.00	1.0000	1.0000
T17	34	1 1/4" Hybriflex Cables	22.00 - 42.00	1.0000	1.0000
T18	3	7/8	7.00 - 22.00	1.0000	1.0000
T18	4	1 5/8	7.00 - 22.00	1.0000	1.0000

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Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_n No Ice	K_n Ice
T18	5	CR 50 1873PE (1-5/8 FOAM)	7.00 - 22.00	1.0000	1.0000
T18	7	1 5/8	7.00 - 22.00	1.0000	1.0000
T18	9	1 1/4	7.00 - 22.00	1.0000	1.0000
T18	10	1 1/4	7.00 - 22.00	1.0000	1.0000
T18	11	1 1/4	7.00 - 22.00	1.0000	1.0000
T18	12	1 1/4	7.00 - 22.00	1.0000	1.0000
T18	14	1 1/4	7.00 - 22.00	1.0000	1.0000
T18	15	EW63	7.00 - 22.00	1.0000	1.0000
T18	16	EW63	7.00 - 22.00	1.0000	1.0000
T18	17	EW63	7.00 - 22.00	1.0000	1.0000
T18	18	EW63	7.00 - 22.00	1.0000	1.0000
T18	20	1 1/4	7.00 - 22.00	1.0000	1.0000
T18	22	EW63	7.00 - 22.00	1.0000	1.0000
T18	24	DC Cable WR-VG122ST	7.00 - 22.00	1.0000	1.0000
T18	25	1 1/4	7.00 - 22.00	1.0000	1.0000
T18	27	1 1/4" Hybriflex Cables	7.00 - 22.00	1.0000	1.0000
T18	28	DC Cable WR-VG122ST	7.00 - 22.00	1.0000	1.0000
T18	30	1	7.00 - 22.00	1.0000	1.0000
T18	31	1 1/4	7.00 - 22.00	1.0000	1.0000
T18	32	1/2	7.00 - 22.00	1.0000	1.0000
T18	33	1 1/4	7.00 - 22.00	1.0000	1.0000
T18	34	1 1/4" Hybriflex Cables	7.00 - 22.00	1.0000	1.0000

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	C_{AA} Front	C_{AA} Side	Weight
			Horz Lateral	Vert					
			ft	ft	°	ft	ft ²	ft ²	lb
6'8"x4" Pipe Mount (Verizon)	A	From Leg	0.50	0.0000	121.00	No Ice	1.97	1.97	72.00
			0.00			1/2" Ice	3.01	3.01	93.13
			0.00			1" Ice	3.42	3.42	118.95
6'8"x4" Pipe Mount (Verizon)	B	From Leg	0.50	0.0000	121.00	No Ice	1.97	1.97	72.00
			0.00			1/2" Ice	3.01	3.01	93.13
			0.00			1" Ice	3.42	3.42	118.95
14' Dipole (Unknown)	C	From Leg	4.00	0.0000	132.00	No Ice	2.80	2.80	75.00
			0.00			1/2" Ice	4.22	4.22	97.50
			0.00			1" Ice	5.64	5.64	120.00
6' Stand-off (Unknown)	C	From Leg	3.00	0.0000	132.00	No Ice	1.20	4.50	75.00
			0.00			1/2" Ice	1.40	5.50	125.00
			0.00			1" Ice	1.60	6.50	175.00
2.5" x 22' Whip (Unknown)	A	From Leg	4.00	0.0000	132.00	No Ice	5.51	5.51	150.30
			0.00			1/2" Ice	7.77	7.77	191.34
			0.00			1" Ice	10.05	10.05	246.78
6' Stand-off (Unknown)	A	From Leg	3.00	0.0000	132.00	No Ice	1.20	4.50	75.00
			0.00			1/2" Ice	1.40	5.50	125.00
			0.00			1" Ice	1.60	6.50	175.00
ASP-711 (Unknown)	A	From Leg	1.50	0.0000	260.00	No Ice	1.30	1.30	13.00
			0.00			1/2" Ice	3.63	3.63	31.56
			0.00			1" Ice	4.87	4.87	57.80
3' Stand-off	A	From Leg	0.75	0.0000	260.00	No Ice	1.00	2.00	50.00

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Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	C _{AA} Front	C _{AA} Side	Weight
			Horz	Lateral					
			ft	ft	°	ft	ft ²	ft ²	lb
(Unknown)			0.00			1/2" Ice	1.20	2.70	75.00
			0.00			1" Ice	1.40	3.40	100.00
2.5" x 14' Omni	B	From Leg	3.50		0.0000	260.00	No Ice	3.50	30.00
(Unknown)			0.00			1/2" Ice	4.93	4.93	55.97
			0.00			1" Ice	6.38	6.38	90.90
3' Stand-off	B	From Leg	1.50		0.0000	260.00	No Ice	1.00	50.00
(Unknown)			0.00			1/2" Ice	1.20	2.70	75.00
			0.00			1" Ice	1.40	3.40	100.00
6' Stand-off	A	From Leg	2.50		0.0000	281.00	No Ice	1.20	4.50
(Unknown)			0.00			1/2" Ice	1.40	5.50	125.00
			0.00			1" Ice	1.60	6.50	175.00
6' Stand-off	B	From Leg	2.50		0.0000	281.00	No Ice	1.20	4.50
(Unknown)			0.00			1/2" Ice	1.40	5.50	125.00
			0.00			1" Ice	1.60	6.50	175.00
6' Stand-off	C	From Leg	2.50		0.0000	281.00	No Ice	1.20	4.50
(Unknown)			0.00			1/2" Ice	1.40	5.50	125.00
			0.00			1" Ice	1.60	6.50	175.00
DLS L 864-L-865 Light Beacon Unit (Tower)	C	None			0.0000	282.00	No Ice	2.50	1.14
						1/2" Ice	2.72	1.29	69.23
						1" Ice	2.94	1.46	89.21
1' Yagi antenna (Not Used)	C	From Leg	0.50		0.0000	124.50	No Ice	0.50	25.00
			0.00			1/2" Ice	0.86	0.86	29.40
			0.00			1" Ice	1.22	1.22	33.80
3" x 12.5' Omni (Not Used)	B	From Leg	2.00		0.0000	125.00	No Ice	3.75	30.00
			0.00			1/2" Ice	5.03	5.03	57.13
			0.00			1" Ice	6.33	6.33	92.36
3' Stand-off (Not Used)	B	From Leg	1.50		0.0000	125.00	No Ice	1.00	50.00
			0.00			1/2" Ice	1.20	2.70	75.00
			0.00			1" Ice	1.40	3.40	100.00
6' Stand-off (Not Used)	C	From Leg	3.00		0.0000	180.50	No Ice	1.20	4.50
			0.00			1/2" Ice	1.40	5.50	125.00
			0.00			1" Ice	1.60	6.50	175.00
2.5" x 10' Omni (Not Used)	A	From Leg	1.00		0.0000	284.00	No Ice	2.50	30.00
			0.00			1/2" Ice	3.53	3.53	48.64
			0.00			1" Ice	4.58	4.58	73.79
FM Antenna (WMRQ)	B	From Face	4.50		0.0000	289.00	No Ice	8.30	102.00
			0.00			1/2" Ice	13.00	13.00	132.60
			0.00			1" Ice	17.70	17.70	163.20
(2) 7770 Panel Antenna (AT&T)	A	From Leg	4.00		0.0000	164.00	No Ice	5.88	35.00
			0.00			1/2" Ice	6.31	3.27	67.63
			0.00			1" Ice	6.75	3.63	105.06
(2) 7770 Panel Antenna (AT&T)	B	From Leg	4.00		0.0000	164.00	No Ice	5.88	35.00
			0.00			1/2" Ice	6.31	3.27	67.63
			0.00			1" Ice	6.75	3.63	105.06
(2) 7770 Panel Antenna (AT&T)	C	From Leg	4.00		0.0000	164.00	No Ice	5.88	35.00
			0.00			1/2" Ice	6.31	3.27	67.63
			0.00			1" Ice	6.75	3.63	105.06
(2) LGP214nn TMA (AT&T)	A	From Leg	4.00		0.0000	164.00	No Ice	1.29	0.23
			0.00			1/2" Ice	1.45	0.31	9.06
			0.00			1" Ice	1.61	0.40	18.12
(4) LGP 219nn (AT&T)	A	From Leg	4.00		0.0000	164.00	No Ice	0.23	0.12
			0.00			1/2" Ice	0.30	0.17	7.70
			0.00			1" Ice	0.38	0.22	10.94
(2) LGP214nn TMA (AT&T)	B	From Leg	4.00		0.0000	164.00	No Ice	1.29	0.23
			0.00			1/2" Ice	1.45	0.31	9.06
			0.00			1" Ice	1.61	0.40	18.12
(4) LGP 219nn	B	From Leg	4.00		0.0000	164.00	No Ice	0.23	0.12

tnxTower AECOM 500 Enterprise Drive, Suite 3B Rocky Hill, CT Phone: 860-529-8882 FAX: 860-529-3991	Job	280' Guyed Tower	Page	27 of 74
	Project	130 Vernon Rd Bolton, CT	Date	08:58:55 04/13/16
	Client	Transcend Wireless / TWM-005 / - 004 Rev 1	Designed by	MCD

Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	C _{AA} Front	C _{AA} Side	Weight
			Horz	Vert					
			ft	ft	°	ft	ft ²	ft ²	lb
(AT&T)			0.00			1/2" Ice	0.30	0.17	7.70
			0.00			1" Ice	0.38	0.22	10.94
(2) LGP214nn TMA (AT&T)	C	From Leg	4.00		0.0000	No Ice	1.29	0.23	1.90
			0.00			1/2" Ice	1.45	0.31	9.06
			0.00			1" Ice	1.61	0.40	18.12
(4) LGP 219nn (AT&T)	C	From Leg	4.00		0.0000	No Ice	0.23	0.12	5.50
			0.00			1/2" Ice	0.30	0.17	7.70
			0.00			1" Ice	0.38	0.22	10.94
SBNH-1D6565C (AT&T)	A	From Leg	4.00		0.0000	No Ice	11.41	7.70	61.00
			0.00			1/2" Ice	12.02	8.29	126.70
			0.00			1" Ice	12.65	8.89	200.07
SBNH-1D6565C (AT&T)	B	From Leg	4.00		0.0000	No Ice	11.41	7.70	61.00
			0.00			1/2" Ice	12.02	8.29	126.70
			0.00			1" Ice	12.65	8.89	200.07
SBNH-1D6565C (AT&T)	C	From Leg	4.00		0.0000	No Ice	11.41	7.70	61.00
			0.00			1/2" Ice	12.02	8.29	126.70
			0.00			1" Ice	12.65	8.89	200.07
Surge Suppressor (AT&T)	C	None			0.0000	No Ice	0.80	0.80	30.00
						1/2" Ice	0.94	0.94	41.94
						1" Ice	1.09	1.09	55.86
(2) RRU (AT&T)	A	From Leg	4.00		0.0000	No Ice	1.40	0.70	10.00
			0.00			1/2" Ice	1.56	0.82	20.34
			0.00			1" Ice	1.73	0.95	32.81
(2) RRU (AT&T)	B	From Leg	4.00		0.0000	No Ice	1.40	0.70	10.00
			0.00			1/2" Ice	1.56	0.82	20.34
			0.00			1" Ice	1.73	0.95	32.81
(2) RRU (AT&T)	C	From Leg	4.00		0.0000	No Ice	1.40	0.70	10.00
			0.00			1/2" Ice	1.56	0.82	20.34
			0.00			1" Ice	1.73	0.95	32.81
Andrew 12' Sector Frame (SF-U12-3-72) (AT&T)	A	From Leg	2.00		0.0000	No Ice	10.80	10.80	487.00
			0.00			1/2" Ice	15.10	15.10	633.10
			0.00			1" Ice	19.40	19.40	779.20
Andrew 12' Sector Frame (SF-U12-3-72) (AT&T)	B	From Leg	2.00		0.0000	No Ice	10.80	10.80	487.00
			0.00			1/2" Ice	15.10	15.10	633.10
			0.00			1" Ice	19.40	19.40	779.20
Andrew 12' Sector Frame (SF-U12-3-72) (AT&T)	C	From Leg	2.00		0.0000	No Ice	10.80	10.80	487.00
			0.00			1/2" Ice	15.10	15.10	633.10
			0.00			1" Ice	19.40	19.40	779.20
BXA-70063-6CF-EDIN (Verizon)	A	From Leg	1.00		0.0000	No Ice	7.73	4.16	20.00
			0.00			1/2" Ice	8.27	4.60	62.49
			0.00			1" Ice	8.81	5.04	110.83
BXA-70063-6CF-EDIN (Verizon)	B	From Leg	1.00		0.0000	No Ice	7.73	4.16	20.00
			0.00			1/2" Ice	8.27	4.60	62.49
			0.00			1" Ice	8.81	5.04	110.83
(2) LPA-80080-4CF-EDIN (Verizon)	A	From Leg	1.00		0.0000	No Ice	2.62	6.06	20.00
			0.00			1/2" Ice	2.92	6.45	53.12
			0.00			1" Ice	3.23	6.86	90.72
(2) LPA-80063-4CF (Verizon)	B	From Leg	1.00		0.0000	No Ice	7.00	6.04	32.00
			0.00			1/2" Ice	7.41	6.43	84.41
			0.00			1" Ice	7.83	6.84	141.92
(2) LPA-171080-8CF-EDIN (Verizon)	A	From Leg	1.00		0.0000	No Ice	2.10	3.19	13.50
			0.00			1/2" Ice	2.40	3.54	33.28
			0.00			1" Ice	2.70	3.91	57.04
(2) LPA-171063-8CF-EDIN (Verizon)	B	From Leg	1.00		0.0000	No Ice	3.69	3.69	16.50
			0.00			1/2" Ice	4.06	4.06	45.29
			0.00			1" Ice	4.43	4.43	78.40
3' Stand-off	A	From Leg	0.00		0.0000	No Ice	1.00	2.00	50.00

tnxTower AECOM 500 Enterprise Drive, Suite 3B Rocky Hill, CT Phone: 860-529-8882 FAX: 860-529-3991	Job	280' Guyed Tower	Page	28 of 74
	Project	130 Vernon Rd Bolton, CT	Date	08:58:55 04/13/16
	Client	Transcend Wireless / TWM-005 / - 004 Rev 1	Designed by	MCD

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert	Azimuth Adjustment	Placement	C _{AA} Front	C _{AA} Side	Weight
			ft	°	ft	ft ²	ft ²	lb
(Eversource)			0.00			1/2" Ice 1.20	2.70	75.00
			0.00			1" Ice 1.40	3.40	100.00
531-70HD Exposed Dipole Antenna	A	From Leg	3.00	0.0000	218.00	No Ice 5.91	5.91	45.00
			0.00			1/2" Ice 7.68	7.68	79.03
(Eversource)			0.00			1" Ice 9.47	9.47	125.80
6' Stand-off	A	From Leg	0.00	0.0000	218.00	No Ice 1.20	4.50	75.00
(Eversource)			0.00			1/2" Ice 1.40	5.50	125.00
			0.00			1" Ice 1.60	6.50	175.00
(3) L-810 Obstruction Lights w/ Mount Kit	C	None		0.0000	142.00	No Ice 0.85	0.43	45.00
(Tower - OBS Light)						1/2" Ice 0.97	0.53	51.66
						1" Ice 1.11	0.63	60.04
Pirod 12' T-Frame Sector Mount (1)	A	From Leg	1.50	0.0000	182.00	No Ice 13.60	13.60	465.00
(T-Mobile)			0.00			1/2" Ice 18.40	18.40	600.00
			0.00			1" Ice 23.20	23.20	735.00
Pirod 12' T-Frame Sector Mount (1)	B	From Leg	1.50	0.0000	182.00	No Ice 13.60	13.60	465.00
(T-Mobile)			0.00			1/2" Ice 18.40	18.40	600.00
			0.00			1" Ice 23.20	23.20	735.00
Pirod 12' T-Frame Sector Mount (1)	C	From Leg	1.50	0.0000	182.00	No Ice 13.60	13.60	465.00
(T-Mobile)			0.00			1/2" Ice 18.40	18.40	600.00
			0.00			1" Ice 23.20	23.20	735.00
AIR21 B4A/B2P	A	From Leg	4.00	0.0000	182.00	No Ice 6.05	5.56	110.02
(T-Mobile)			6.00			1/2" Ice 6.42	6.19	166.56
			0.00			1" Ice 6.80	6.85	230.27
LNX-6515DS-VTM	A	From Leg	4.00	0.0000	182.00	No Ice 11.39	8.98	72.65
(T-Mobile)			-6.00			1/2" Ice 12.01	9.88	153.92
			0.00			1" Ice 12.63	10.79	244.99
AIR21 B4A/B2P	B	From Leg	4.00	0.0000	182.00	No Ice 6.05	5.56	110.02
(T-Mobile)			6.00			1/2" Ice 6.42	6.19	166.56
			0.00			1" Ice 6.80	6.85	230.27
LNX-6515DS-VTM	B	From Leg	4.00	0.0000	182.00	No Ice 11.39	8.98	72.65
(T-Mobile)			-6.00			1/2" Ice 12.01	9.88	153.92
			0.00			1" Ice 12.63	10.79	244.99
S11 B2 RRH Unit	A	From Leg	4.00	0.0000	182.00	No Ice 0.41	0.12	2.00
(T-Mobile)			6.00			1/2" Ice 0.49	0.17	5.05
			0.00			1" Ice 0.58	0.23	9.32
RRUS-11	A	From Leg	4.00	0.0000	182.00	No Ice 2.57	1.07	50.00
(T-Mobile)			-6.00			1/2" Ice 2.76	1.21	69.57
			0.00			1" Ice 2.97	1.36	92.08
S11 B2 RRH Unit	B	From Leg	4.00	0.0000	182.00	No Ice 0.41	0.12	2.00
(T-Mobile)			6.00			1/2" Ice 0.49	0.17	5.05
			0.00			1" Ice 0.58	0.23	9.32
RRUS-11	B	From Leg	4.00	0.0000	182.00	No Ice 2.57	1.07	50.00
(T-Mobile)			-6.00			1/2" Ice 2.76	1.21	69.57
			0.00			1" Ice 2.97	1.36	92.08
DB589-Y	A	From Leg	3.00	0.0000	234.70	No Ice 2.13	2.13	11.50
(Eversource)			0.00			1/2" Ice 3.00	3.00	27.39
			0.00			1" Ice 3.76	3.76	48.88

Dishes

tnxTower AECOM 500 Enterprise Drive, Suite 3B Rocky Hill, CT Phone: 860-529-8882 FAX: 860-529-3991	Job	280' Guyed Tower	Page	29 of 74
	Project	130 Vernon Rd Bolton, CT	Date	08:58:55 04/13/16
	Client	Transcend Wireless / TWM-005 / - 004 Rev 1	Designed by	MCD

Description	Face or Leg	Dish Type	Offset Type	Offsets:		Azimuth Adjustment	3 dB Beam Width	Elevation	Outside Diameter	Aperture Area	Weight
				Horz	Lateral Vert						
				ft	°	°	ft	ft	ft ²	lb	
9' Dish w/ Radome (Eversource)	C	Paraboloid w/Radome	From Leg	3.00	0.0000	104.50	9.00	No Ice	63.62	100.00	
				0.00	0.00			1/2" Ice	64.80	432.64	
				0.00	0.00			1" Ice	65.98	765.28	
5.5' Dish w/ Radome (Eversource)	A	Paraboloid w/Radome	From Leg	2.50	0.0000	153.00	5.50	No Ice	23.76	75.00	
				0.00	0.00			1/2" Ice	24.48	200.66	
				0.00	0.00			1" Ice	25.21	326.32	
8' Dish w/ Radome (Eversource)	A	Paraboloid w/Radome	From Leg	2.83	0.0000	204.50	8.00	No Ice	50.27	75.00	
				0.00	0.00			1/2" Ice	51.32	338.44	
				0.00	0.00			1" Ice	52.37	601.88	
6' Dish w/ Radome (Eversource)	C	Paraboloid w/Radome	From Leg	2.25	0.0000	204.50	6.00	No Ice	28.27	75.00	
				0.00	0.00			1/2" Ice	29.07	224.23	
				0.00	0.00			1" Ice	29.86	373.46	
8' Dish w/ Radome (Eversource)	C	Paraboloid w/Radome	From Leg	2.83	0.0000	212.50	8.00	No Ice	50.27	75.00	
				0.00	0.00			1/2" Ice	51.32	338.44	
				0.00	0.00			1" Ice	52.37	601.88	
MF-950B (WBMW)	C	Grid	From Leg	0.50	0.0000	280.00	1.33	No Ice	2.66	13.00	
				0.00	0.00			1/2" Ice	3.50	21.00	
				0.00	0.00			1" Ice	4.34	29.00	

Tower Pressures - No Ice

$G_H = 0.850$

Section Elevation	z	K _Z	q _z	A _G	F _a	A _F	A _R	A _{leg}	Leg %	C _A A _A In Face	C _A A _A Out Face			
ft	ft		psf	ft ²	e	ft ²	ft ²	ft ²		ft ²	ft ²			
T1 282.00-262.00	272.00	1.562	37	83.333	A	4.951	10.620	6.667	42.81	3.100	0.000			
					B	4.951	10.620					42.81	9.860	0.000
					C	4.951	10.620					42.81	0.000	0.000
T2 262.00-242.00	252.00	1.537	37	83.333	A	3.993	10.620	6.667	45.62	6.200	0.000			
					B	3.993	10.620					45.62	9.860	0.000
					C	3.993	10.620					45.62	0.000	0.000
T3 242.00-222.00	232.00	1.511	36	83.333	A	3.993	10.620	6.667	45.62	6.200	0.000			
					B	3.993	10.620					45.62	9.860	0.000
					C	3.993	10.620					45.62	3.100	0.000
T4 222.00-202.00	212.00	1.483	36	83.333	A	15.287	6.667	6.667	30.37	6.200	0.000			
					B	15.287	6.667					30.37	15.894	0.000
					C	15.287	6.667					30.37	5.098	0.000
T5 202.00-182.00	192.00	1.452	35	83.333	A	17.843	6.667	6.667	27.20	6.200	0.000			
					B	17.843	6.667					27.20	25.602	0.000
					C	17.843	6.667					27.20	5.320	0.000
T6 182.00-162.00	172.00	1.419	34	83.333	A	3.993	10.620	6.667	45.62	16.494	0.000			
					B	3.993	10.620					45.62	41.692	0.000
					C	3.993	10.620					45.62	5.320	0.000
T7 162.00-142.00	152.00	1.382	33	83.333	A	3.993	10.620	6.667	45.62	57.820	0.000			
					B	3.993	10.620					45.62	43.942	0.000
					C	3.993	10.620					45.62	8.796	0.000
T8 142.00-122.00	132.00	1.342	32	83.333	A	17.843	6.667	6.667	27.20	57.820	0.000			
					B	17.843	6.667					27.20	56.663	0.000
					C	17.843	6.667					27.20	14.597	0.000
T9 122.00-102.00	112.00	1.296	31	83.333	A	15.287	6.667	6.667	30.37	57.820	0.000			
					B	15.287	6.667					30.37	82.282	0.000
					C	15.287	6.667					30.37	18.210	0.000
T10	92.00	1.244	30	83.333	A	3.993	10.620	6.667	45.62	57.820	0.000			

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	Project 130 Vernon Rd Bolton, CT	Date 08:58:55 04/13/16
	Client Transcend Wireless / TWM-005 / - 004 Rev 1	Designed by MCD

Section Elevation	z	K _z	q _z	A _G	F _a c e	A _F	A _R	A _{leg}	Leg %	C _A A _A In Face ft ²	C _A A _A Out Face ft ²
ft	ft		psf	ft ²		ft ²	ft ²	ft ²			
102.00-82.00					B	3,993	10.620		45.62	82,282	0.000
					C	3,993	10.620		45.62	22,015	0.000
T11	80.00	1.208	29	16.667	A	0,799	2.124	1.333	45.62	11,564	0.000
82.00-78.00					B	0,799	2,124		45,62	16,456	0.000
					C	0,799	2,124		45,62	4,403	0.000
T12	76.00	1,195	29	16,667	A	0,799	2,124	1,333	45,62	11,564	0.000
78.00-74.00					B	0,799	2,124		45,62	16,456	0.000
					C	0,799	2,124		45,62	4,403	0.000
T13	72.00	1,181	28	16,667	A	0,799	2,124	1,333	45,62	11,564	0.000
74.00-70.00					B	0,799	2,124		45,62	16,456	0.000
					C	0,799	2,124		45,62	4,403	0.000
T14	68.00	1,167	28	16,667	A	0,799	2,124	1,333	45,62	11,564	0.000
70.00-66.00					B	0,799	2,124		45,62	16,456	0.000
					C	0,799	2,124		45,62	4,403	0.000
T15	64.00	1,152	28	16,667	A	0,799	2,124	1,333	45,62	11,564	0.000
66.00-62.00					B	0,799	2,124		45,62	16,456	0.000
					C	0,799	2,124		45,62	4,403	0.000
T16	52.00	1,103	26	83,746	A	11,381	3,949	7,393	48,23	57,820	0.000
62.00-42.00					B	11,381	3,949		48,23	82,282	0.000
					C	11,381	3,949		48,23	22,015	0.000
T17	32.00	0,996	24	83,746	A	11,381	3,948	7,393	48,23	57,820	0.000
42.00-22.00					B	11,381	3,948		48,23	82,282	0.000
					C	11,381	3,948		48,23	22,015	0.000
T18	22.00-2.00	0.85	20	83,746	A	11,381	3,948	7,393	48,23	43,365	0.000
					B	11,381	3,948		48,23	61,712	0.000
					C	11,381	3,948		48,23	16,511	0.000

Tower Pressure - With Ice

$G_H = 0.850$

Section Elevation	z	K _z	q _z	t _z	A _G	F _a c e	A _F	A _R	A _{leg}	Leg %	C _A A _A In Face ft ²	C _A A _A Out Face ft ²
ft	ft		psf	in	ft ²		ft ²	ft ²	ft ²			
T1	272.00	1.562	8	2.4697	91.566	A	4.951	58.865	23.131	36.25	12,979	0.000
282.00-262.00						B	4.951	58.865		36.25	49,374	0.000
						C	4.951	58.865		36.25	0.000	0.000
T2	252.00	1.537	8	2.4509	91.503	A	3.993	56.932	23.006	37.76	25,807	0.000
262.00-242.00						B	3.993	56.932		37.76	49,074	0.000
						C	3.993	56.932		37.76	0.000	0.000
T3	232.00	1.511	8	2.4307	91.436	A	3.993	56.551	22,871	37.78	25,645	0.000
242.00-222.00						B	3.993	56.551		37.78	48,751	0.000
						C	3.993	56.551		37.78	12,823	0.000
T4	212.00	1.483	8	2.4089	91.363	A	29,797	30,421	22,726	37.74	25,471	0.000
222.00-202.00						B	29,797	30,421		37.74	65,517	0.000
						C	29,797	30,421		37.74	23,405	0.000
T5	192.00	1.452	8	2.3851	91.284	A	32.209	33,234	22,567	34.48	25,281	0.000
202.00-182.00						B	32.209	33,234		34.48	92,385	0.000
						C	32.209	33,234		34.48	24,401	0.000
T6	172.00	1.419	8	2.3590	91.197	A	3.993	55.196	22.393	37.83	41,825	0.000
182.00-162.00						B	3.993	55.196		37.83	128,833	0.000
						C	3.993	55.196		37.83	24,192	0.000
T7	152.00	1.382	8	2.3300	91.100	A	3.993	54.649	22.200	37.86	121,225	0.000
162.00-142.00						B	3.993	54.649		37.86	138,443	0.000
						C	3.993	54.649		37.86	33,611	0.000

tnxTower AECOM 500 Enterprise Drive, Suite 3B Rocky Hill, CT Phone: 860-529-8882 FAX: 860-529-3991	Job 280' Guyed Tower	Page 31 of 74
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Section Elevation	z	K _Z	q _z	t _z	A _G	F _a	A _F	A _R	A _{leg}	Leg %	C _A A _A In Face	C _A A _A Out Face
ft	ft		psf	in	ft ²	e	ft ²	ft ²	ft ²		ft ²	ft ²
T8 142.00-122.00	132.00	1.342	7	2.2974	90.991	A	31.681	32.257	21.983	34.38	120.389	0.000
						B	31.681	32.257		34.38	175.688	0.000
						C	31.681	32.257		34.38	54.113	0.000
T9 122.00-102.00	112.00	1.296	7	2.2600	90.867	A	28.900	28.952	21.733	37.57	119.431	0.000
						B	28.900	28.952		37.57	231.264	0.000
						C	28.900	28.952		37.57	65.896	0.000
T10 102.00-82.00	92.00	1.244	7	2.2159	90.720	A	3.993	52.493	21.440	37.96	118.305	0.000
						B	3.993	52.493		37.96	228.572	0.000
						C	3.993	52.493		37.96	75.197	0.000
T11 82.00-78.00	80.00	1.208	7	2.1852	18.123	A	0.799	10.382	4.247	37.98	23.504	0.000
						B	0.799	10.382		37.98	45.338	0.000
						C	0.799	10.382		37.98	14.892	0.000
T12 78.00-74.00	76.00	1.195	6	2.1740	18.116	A	0.799	10.340	4.232	37.99	23.446	0.000
						B	0.799	10.340		37.99	45.202	0.000
						C	0.799	10.340		37.99	14.838	0.000
T13 74.00-70.00	72.00	1.181	6	2.1623	18.108	A	0.799	10.296	4.216	38.00	23.386	0.000
						B	0.799	10.296		38.00	45.058	0.000
						C	0.799	10.296		38.00	14.782	0.000
T14 70.00-66.00	68.00	1.167	6	2.1500	18.100	A	0.799	10.249	4.200	38.02	23.323	0.000
						B	0.799	10.249		38.02	44.908	0.000
						C	0.799	10.249		38.02	14.723	0.000
T15 66.00-62.00	64.00	1.152	6	2.1370	18.091	A	0.799	10.200	4.183	38.03	23.257	0.000
						B	0.799	10.200		38.03	44.749	0.000
						C	0.799	10.200		38.03	14.660	0.000
T16 62.00-42.00	52.00	1.103	6	2.0930	90.722	A	20.684	29.517	16.696	33.26	115.161	0.000
						B	20.684	29.517		33.26	221.059	0.000
						C	20.684	29.517		33.26	72.248	0.000
T17 42.00-22.00	32.00	0.996	5	1.9939	90.392	A	20.243	28.302	16.255	33.48	112.626	0.000
						B	20.243	28.302		33.48	214.995	0.000
						C	20.243	28.302		33.48	69.867	0.000
T18 22.00-2.00	12.00	0.85	5	1.8076	89.771	A	19.415	26.027	15.427	33.95	80.901	0.000
						B	19.415	26.027		33.95	152.706	0.000
						C	19.415	26.027		33.95	49.047	0.000

Tower Pressure - Service

$$G_H = 0.850$$

Section Elevation	z	K _Z	q _z	A _G	F _a	A _F	A _R	A _{leg}	Leg %	C _A A _A In Face	C _A A _A Out Face
ft	ft		psf	ft ²	e	ft ²	ft ²	ft ²		ft ²	ft ²
T1 282.00-262.00	272.00	1.562	12	83.333	A	4.951	10.620	6.667	42.81	3.100	0.000
					B	4.951	10.620		42.81	9.860	0.000
					C	4.951	10.620		42.81	0.000	0.000
T2 262.00-242.00	252.00	1.537	12	83.333	A	3.993	10.620	6.667	45.62	6.200	0.000
					B	3.993	10.620		45.62	9.860	0.000
					C	3.993	10.620		45.62	0.000	0.000
T3 242.00-222.00	232.00	1.511	12	83.333	A	3.993	10.620	6.667	45.62	6.200	0.000
					B	3.993	10.620		45.62	9.860	0.000
					C	3.993	10.620		45.62	3.100	0.000
T4 222.00-202.00	212.00	1.483	12	83.333	A	15.287	6.667	6.667	30.37	6.200	0.000
					B	15.287	6.667		30.37	15.894	0.000
					C	15.287	6.667		30.37	5.098	0.000
T5 192.00	192.00	1.452	11	83.333	A	17.843	6.667	6.667	27.20	6.200	0.000

tnxTower AECOM 500 Enterprise Drive, Suite 3B Rocky Hill, CT Phone: 860-529-8882 FAX: 860-529-3991	Job	280' Guyed Tower	Page	32 of 74
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Section Elevation	z	K _Z	q _z	A _G	F _a	A _F	A _R	A _{leg}	Leg %	C _{AA} In Face	C _{AA} Out Face
ft	ft		psf	ft ²	e	ft ²	ft ²	ft ²		ft ²	ft ²
202.00-182.00					B	17.843	6.667		27.20	25.602	0.000
					C	17.843	6.667		27.20	5.320	0.000
T6	172.00	1.419	11	83.333	A	3.993	10.620	6.667	45.62	16.494	0.000
182.00-162.00					B	3.993	10.620		45.62	41.692	0.000
					C	3.993	10.620		45.62	5.320	0.000
T7	152.00	1.382	11	83.333	A	3.993	10.620	6.667	45.62	57.820	0.000
162.00-142.00					B	3.993	10.620		45.62	43.942	0.000
					C	3.993	10.620		45.62	8.796	0.000
T8	132.00	1.342	11	83.333	A	17.843	6.667	6.667	27.20	57.820	0.000
142.00-122.00					B	17.843	6.667		27.20	56.663	0.000
					C	17.843	6.667		27.20	14.597	0.000
T9	112.00	1.296	10	83.333	A	15.287	6.667	6.667	30.37	57.820	0.000
122.00-102.00					B	15.287	6.667		30.37	82.282	0.000
					C	15.287	6.667		30.37	18.210	0.000
T10	92.00	1.244	10	83.333	A	3.993	10.620	6.667	45.62	57.820	0.000
102.00-82.00					B	3.993	10.620		45.62	82.282	0.000
					C	3.993	10.620		45.62	22.015	0.000
T11	80.00	1.208	9	16.667	A	0.799	2.124	1.333	45.62	11.564	0.000
82.00-78.00					B	0.799	2.124		45.62	16.456	0.000
					C	0.799	2.124		45.62	4.403	0.000
T12	76.00	1.195	9	16.667	A	0.799	2.124	1.333	45.62	11.564	0.000
78.00-74.00					B	0.799	2.124		45.62	16.456	0.000
					C	0.799	2.124		45.62	4.403	0.000
T13	72.00	1.181	9	16.667	A	0.799	2.124	1.333	45.62	11.564	0.000
74.00-70.00					B	0.799	2.124		45.62	16.456	0.000
					C	0.799	2.124		45.62	4.403	0.000
T14	68.00	1.167	9	16.667	A	0.799	2.124	1.333	45.62	11.564	0.000
70.00-66.00					B	0.799	2.124		45.62	16.456	0.000
					C	0.799	2.124		45.62	4.403	0.000
T15	64.00	1.152	9	16.667	A	0.799	2.124	1.333	45.62	11.564	0.000
66.00-62.00					B	0.799	2.124		45.62	16.456	0.000
					C	0.799	2.124		45.62	4.403	0.000
T16	52.00	1.103	9	83.746	A	11.381	3.949	7.393	48.23	57.820	0.000
62.00-42.00					B	11.381	3.949		48.23	82.282	0.000
					C	11.381	3.949		48.23	22.015	0.000
T17	32.00	0.996	8	83.746	A	11.381	3.948	7.393	48.23	57.820	0.000
42.00-22.00					B	11.381	3.948		48.23	82.282	0.000
					C	11.381	3.948		48.23	22.015	0.000
T18	22.00-2.00	0.85	7	83.746	A	11.381	3.948	7.393	48.23	43.365	0.000
					B	11.381	3.948		48.23	61.712	0.000
					C	11.381	3.948		48.23	16.511	0.000

Tower Forces - No Ice - Wind Normal To Face

Section Elevation	Add Weight	Self Weight	F _a	e	C _F	q _z	D _F	D _R	A _E	F	w	Ctrl. Face
ft	lb	lb	e			psf			ft ²	lb	plf	
T1	56.20	1212.62	A	0.187	2.641	37	1	1	11.029	1340.74	67.04	C
282.00-262.00			B	0.187	2.641		1	1	11.029			
			C	0.187	2.641		1	1	11.029			
T2	69.40	1153.82	A	0.175	2.68	37	1	1	10.053	1348.29	67.41	C
262.00-242.00			B	0.175	2.68		1	1	10.053			
			C	0.175	2.68		1	1	10.053			
T3	82.60	1153.82	A	0.175	2.68	36	1	1	10.053	1420.53	71.03	C
242.00-222.00			B	0.175	2.68		1	1	10.053			
			C	0.175	2.68		1	1	10.053			

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Section Elevation	Add Weight	Self Weight	F a c e	e	C _F	q _z	D _F	D _R	A _E	F	w	Ctrl. Face
ft	lb	lb				psf			ft ²	lb	plf	
T4 222.00-202.00	104.05	2014.07	A	0.263	2.398	36	1	1	19.210	2214.57	110.73	C
			B	0.263	2.398		1	1	19.210			
			C	0.263	2.398		1	1	19.210			
T5 202.00-182.00	124.00	2247.64 TA 873.93	A	0.294	2.312	35	1	1	21.823	2592.82	129.64	C
			B	0.294	2.312		1	1	21.823			
			C	0.294	2.312		1	1	21.823			
T6 182.00-162.00	253.60	1153.82	A	0.175	2.68	34	1	1	10.053	2616.73	130.84	C
			B	0.175	2.68		1	1	10.053			
			C	0.175	2.68		1	1	10.053			
T7 162.00-142.00	462.84	1153.82	A	0.175	2.68	33	1	1	10.053	3875.75	193.79	C
			B	0.175	2.68		1	1	10.053			
			C	0.175	2.68		1	1	10.053			
T8 142.00-122.00	543.92	2247.64 TA 873.93	A	0.294	2.312	32	1	1	21.823	4788.30*	239.41	C
			B	0.294	2.312		1	1	21.823			
			C	0.294	2.312		1	1	21.823			
T9 122.00-102.00	676.09	2014.07	A	0.263	2.398	31	1	1	19.210	4625.50*	231.28	C
			B	0.263	2.398		1	1	19.210			
			C	0.263	2.398		1	1	19.210			
T10 102.00-82.00	683.48	1153.82	A	0.175	2.68	30	1	1	10.053	4437.86*	221.89	C
			B	0.175	2.68		1	1	10.053			
			C	0.175	2.68		1	1	10.053			
T11 82.00-78.00	136.70	230.76	A	0.175	2.68	29	1	1	2.011	861.84*	215.46	C
			B	0.175	2.68		1	1	2.011			
			C	0.175	2.68		1	1	2.011			
T12 78.00-74.00	136.70	284.96	A	0.175	2.68	29	1	1	2.011	852.58*	213.15	C
			B	0.175	2.68		1	1	2.011			
			C	0.175	2.68		1	1	2.011			
T13 74.00-70.00	136.70	230.76	A	0.175	2.68	28	1	1	2.011	842.93*	210.73	C
			B	0.175	2.68		1	1	2.011			
			C	0.175	2.68		1	1	2.011			
T14 70.00-66.00	136.70	230.76	A	0.175	2.68	28	1	1	2.011	832.85*	208.21	C
			B	0.175	2.68		1	1	2.011			
			C	0.175	2.68		1	1	2.011			
T15 66.00-62.00	136.70	284.96	A	0.175	2.68	28	1	1	2.011	822.29*	205.57	C
			B	0.175	2.68		1	1	2.011			
			C	0.175	2.68		1	1	2.011			
T16 62.00-42.00	683.48	1252.21	A	0.183	2.654	26	1	1	13.639	3955.05*	197.75	C
			B	0.183	2.654		1	1	13.639			
			C	0.183	2.654		1	1	13.639			
T17 42.00-22.00	683.48	1252.21	A	0.183	2.654	24	1	1	13.639	3570.77*	178.54	C
			B	0.183	2.654		1	1	13.639			
			C	0.183	2.654		1	1	13.639			
T18 22.00-2.00	512.61	1252.21	A	0.183	2.654	20	1	1	13.639	2734.79	136.74	C
			B	0.183	2.654		1	1	13.639			
			C	0.183	2.654		1	1	13.639			
Sum Weight:	5619.23	22271.87			2.1A _g limit					43734.19		

Tower Forces - No Ice - Wind 45 To Face

Section Elevation	Add Weight	Self Weight	F a c e	e	C _F	q _z	D _F	D _R	A _E	F	w	Ctrl. Face
ft	lb	lb				psf			ft ²	lb	plf	

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Section Elevation	Add Weight	Self Weight	F a c e	e	C _F	q _z	D _F	D _R	A _E	F	w	Ctrl. Face
ft	lb	lb				psf			ft ²	lb	plf	
T1 282.00-262.00	56.20	1212.62	A	0.187	2.641	37	0.825	1	10.162	1267.85	63.39	C
			B	0.187	2.641		0.825	1	10.162			
			C	0.187	2,641		0.825	1	10.162			
T2 262.00-242.00	69.40	1153.82	A	0.175	2.68	37	0.825	1	9.354	1289.56	64.48	C
			B	0.175	2.68		0.825	1	9.354			
			C	0.175	2.68		0.825	1	9.354			
T3 242.00-222.00	82.60	1153.82	A	0.175	2.68	36	0.825	1	9.354	1362.82	68.14	C
			B	0.175	2.68		0.825	1	9.354			
			C	0.175	2.68		0.825	1	9.354			
T4 222.00-202.00	104.05	2014.07	A	0.263	2.398	36	0.825	1	16.535	2020.65	101.03	C
			B	0.263	2,398		0.825	1	16.535			
			C	0.263	2.398		0.825	1	16.535			
T5 202.00-182.00	124.00	2247.64	A	0.294	2.312	35	0.825	1	18.701	2379.10	118.95	C
		TA 873.93	B	0.294	2.312		0.825	1	18.701			
			C	0.294	2,312		0.825	1	18.701			
T6 182.00-162.00	253.60	1153.82	A	0.175	2.68	34	0.825	1	9.354	2562.54	128.13	C
			B	0.175	2.68		0.825	1	9.354			
			C	0.175	2.68		0.825	1	9.354			
T7 162.00-142.00	462.84	1153.82	A	0.175	2.68	33	0.825	1	9.354	3822.95	191.15	C
			B	0.175	2.68		0.825	1	9.354			
			C	0.175	2.68		0.825	1	9.354			
T8 142.00-122.00	543.92	2247.64	A	0.294	2.312	32	0.825	1	18.701	4714.77	235.74	C
		TA 873.93	B	0.294	2,312		0.825	1	18.701			
			C	0.294	2,312		0.825	1	18.701			
T9 122.00-102.00	676.09	2014.07	A	0.263	2.398	31	0.825	1	16.535	4625.50*	231.28	C
			B	0.263	2,398		0.825	1	16.535			
			C	0.263	2,398		0.825	1	16.535			
T10 102.00-82.00	683.48	1153.82	A	0.175	2.68	30	0.825	1	9.354	4437.86*	221.89	C
			B	0.175	2.68		0.825	1	9.354			
			C	0.175	2.68		0.825	1	9.354			
T11 82.00-78.00	136.70	230.76	A	0.175	2.68	29	0.825	1	1.871	861.84*	215.46	C
			B	0.175	2.68		0.825	1	1.871			
			C	0.175	2.68		0.825	1	1.871			
T12 78.00-74.00	136.70	284.96	A	0.175	2.68	29	0.825	1	1.871	852.58*	213.15	C
			B	0.175	2.68		0.825	1	1.871			
			C	0.175	2.68		0.825	1	1.871			
T13 74.00-70.00	136.70	230.76	A	0.175	2.68	28	0.825	1	1.871	842.93*	210.73	C
			B	0.175	2.68		0.825	1	1.871			
			C	0.175	2.68		0.825	1	1.871			
T14 70.00-66.00	136.70	230.76	A	0.175	2.68	28	0.825	1	1.871	832.85*	208.21	C
			B	0.175	2.68		0.825	1	1.871			
			C	0.175	2.68		0.825	1	1.871			
T15 66.00-62.00	136.70	284.96	A	0.175	2.68	28	0.825	1	1.871	822.29*	205.57	C
			B	0.175	2.68		0.825	1	1.871			
			C	0.175	2.68		0.825	1	1.871			
T16 62.00-42.00	683.48	1252.21	A	0.183	2.654	26	0.825	1	11.647	3955.05*	197.75	C
			B	0.183	2,654		0.825	1	11.647			
			C	0.183	2,654		0.825	1	11.647			
T17 42.00-22.00	683.48	1252.21	A	0.183	2.654	24	0.825	1	11.647	3570.77*	178.54	C
			B	0.183	2,654		0.825	1	11.647			
			C	0.183	2,654		0.825	1	11.647			
T18 22.00-2.00	512.61	1252.21	A	0.183	2.654	20	0.825	1	11.647	2643.18	132.16	C
			B	0.183	2,654		0.825	1	11.647			
			C	0.183	2,654		0.825	1	11.647			
Sum Weight:	5619.23	22271.87			*2.1A _g limit					42865.10		

tnxTower AECOM 500 Enterprise Drive, Suite 3B Rocky Hill, CT Phone: 860-529-8882 FAX: 860-529-3991	Job 280' Guyed Tower	Page 35 of 74
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Tower Forces - No Ice - Wind 60 To Face

Section Elevation	Add Weight	Self Weight	F a c e	e	C _F	q _z	D _F	D _R	A _E	F	w	Ctrl. Face
ft	lb	lb				psf			ft ²	lb	plf	
T1 282.00-262.00	56.20	1212.62	A	0.187	2.641	37	0.8	1	10.039	1257.43	62.87	C
			B	0.187	2.641		0.8	1	10.039			
			C	0.187	2.641		0.8	1	10.039			
T2 262.00-242.00	69.40	1153.82	A	0.175	2.68	37	0.8	1	9.254	1281.18	64.06	C
			B	0.175	2.68		0.8	1	9.254			
			C	0.175	2.68		0.8	1	9.254			
T3 242.00-222.00	82.60	1153.82	A	0.175	2.68	36	0.8	1	9.254	1354.58	67.73	C
			B	0.175	2.68		0.8	1	9.254			
			C	0.175	2.68		0.8	1	9.254			
T4 222.00-202.00	104.05	2014.07	A	0.263	2.398	36	0.8	1	16.152	1992.95	99.65	C
			B	0.263	2.398		0.8	1	16.152			
			C	0.263	2.398		0.8	1	16.152			
T5 202.00-182.00	124.00	2247.64	A	0.294	2.312	35	0.8	1	18.255	2348.57	117.43	C
		TA 873.93	B	0.294	2.312		0.8	1	18.255			
		C	0.294	2.312		0.8	1	18.255				
T6 182.00-162.00	253.60	1153.82	A	0.175	2.68	34	0.8	1	9.254	2554.80	127.74	C
			B	0.175	2.68		0.8	1	9.254			
			C	0.175	2.68		0.8	1	9.254			
T7 162.00-142.00	462.84	1153.82	A	0.175	2.68	33	0.8	1	9.254	3815.41	190.77	C
			B	0.175	2.68		0.8	1	9.254			
			C	0.175	2.68		0.8	1	9.254			
T8 142.00-122.00	543.92	2247.64	A	0.294	2.312	32	0.8	1	18.255	4686.55	234.33	C
		TA 873.93	B	0.294	2.312		0.8	1	18.255			
		C	0.294	2.312		0.8	1	18.255				
T9 122.00-102.00	676.09	2014.07	A	0.263	2.398	31	0.8	1	16.152	4625.50*	231.28	C
			B	0.263	2.398		0.8	1	16.152			
			C	0.263	2.398		0.8	1	16.152			
T10 102.00-82.00	683.48	1153.82	A	0.175	2.68	30	0.8	1	9.254	4437.86*	221.89	C
			B	0.175	2.68		0.8	1	9.254			
			C	0.175	2.68		0.8	1	9.254			
T11 82.00-78.00	136.70	230.76	A	0.175	2.68	29	0.8	1	1.851	861.84*	215.46	C
			B	0.175	2.68		0.8	1	1.851			
			C	0.175	2.68		0.8	1	1.851			
T12 78.00-74.00	136.70	284.96	A	0.175	2.68	29	0.8	1	1.851	852.58*	213.15	C
			B	0.175	2.68		0.8	1	1.851			
			C	0.175	2.68		0.8	1	1.851			
T13 74.00-70.00	136.70	230.76	A	0.175	2.68	28	0.8	1	1.851	842.93*	210.73	C
			B	0.175	2.68		0.8	1	1.851			
			C	0.175	2.68		0.8	1	1.851			
T14 70.00-66.00	136.70	230.76	A	0.175	2.68	28	0.8	1	1.851	832.85*	208.21	C
			B	0.175	2.68		0.8	1	1.851			
			C	0.175	2.68		0.8	1	1.851			
T15 66.00-62.00	136.70	284.96	A	0.175	2.68	28	0.8	1	1.851	822.29*	205.57	C
			B	0.175	2.68		0.8	1	1.851			
			C	0.175	2.68		0.8	1	1.851			
T16 62.00-42.00	683.48	1252.21	A	0.183	2.654	26	0.8	1	11.363	3955.05*	197.75	C
			B	0.183	2.654		0.8	1	11.363			
			C	0.183	2.654		0.8	1	11.363			
T17 42.00-22.00	683.48	1252.21	A	0.183	2.654	24	0.8	1	11.362	3570.77*	178.54	C
			B	0.183	2.654		0.8	1	11.362			
			C	0.183	2.654		0.8	1	11.362			
T18 22.00-2.00	512.61	1252.21	A	0.183	2.654	20	0.8	1	11.362	2630.10	131.50	C
			B	0.183	2.654		0.8	1	11.362			
			C	0.183	2.654		0.8	1	11.362			
Sum Weight:	5619.23	22271.87			2.1A _w				42723.23			

tnxTower AECOM 500 Enterprise Drive, Suite 3B Rocky Hill, CT Phone: 860-529-8882 FAX: 860-529-3991	Job 280' Guyed Tower	Page 36 of 74
	Project 130 Vernon Rd Bolton, CT	Date 08:58:55 04/13/16
	Client Transcend Wireless / TWM-005 / - 004 Rev 1	Designed by MCD

Section Elevation	Add Weight	Self Weight	F a c e	e	C _F	q _z	D _F	D _R	A _E	F	w	Ctrl. Face
ft	lb	lb				psf			ft ²	lb	plf	
					limit							

Tower Forces - No Ice - Wind 90 To Face

Section Elevation	Add Weight	Self Weight	F a c e	e	C _F	q _z	D _F	D _R	A _E	F	w	Ctrl. Face
ft	lb	lb				psf			ft ²	lb	plf	
T1 282.00-262.00	56.20	1212.62	A	0.187	2.641	37	0.85	1	10.286	1278.26	63.91	C
			B	0.187	2.641		0.85	1	10.286			
			C	0.187	2.641		0.85	1	10.286			
T2 262.00-242.00	69.40	1153.82	A	0.175	2.68	37	0.85	1	9.454	1297.95	64.90	C
			B	0.175	2.68		0.85	1	9.454			
			C	0.175	2.68		0.85	1	9.454			
T3 242.00-222.00	82.60	1153.82	A	0.175	2.68	36	0.85	1	9.454	1371.07	68.55	C
			B	0.175	2.68		0.85	1	9.454			
			C	0.175	2.68		0.85	1	9.454			
T4 222.00-202.00	104.05	2014.07	A	0.263	2.398	36	0.85	1	16.917	2048.35	102.42	C
			B	0.263	2.398		0.85	1	16.917			
			C	0.263	2.398		0.85	1	16.917			
T5 202.00-182.00	124.00	2247.64	A	0.294	2.312	35	0.85	1	19.147	2409.63	120.48	C
		TA 873.93	B	0.294	2.312		0.85	1	19.147			
			C	0.294	2.312		0.85	1	19.147			
T6 182.00-162.00	253.60	1153.82	A	0.175	2.68	34	0.85	1	9.454	2570.28	128.51	C
			B	0.175	2.68		0.85	1	9.454			
			C	0.175	2.68		0.85	1	9.454			
T7 162.00-142.00	462.84	1153.82	A	0.175	2.68	33	0.85	1	9.454	3830.50	191.52	C
			B	0.175	2.68		0.85	1	9.454			
			C	0.175	2.68		0.85	1	9.454			
T8 142.00-122.00	543.92	2247.64	A	0.294	2.312	32	0.85	1	19.147	4742.99	237.15	C
		TA 873.93	B	0.294	2.312		0.85	1	19.147			
			C	0.294	2.312		0.85	1	19.147			
T9 122.00-102.00	676.09	2014.07	A	0.263	2.398	31	0.85	1	16.917	4625.50*	231.28	C
			B	0.263	2.398		0.85	1	16.917			
			C	0.263	2.398		0.85	1	16.917			
T10 102.00-82.00	683.48	1153.82	A	0.175	2.68	30	0.85	1	9.454	4437.86*	221.89	C
			B	0.175	2.68		0.85	1	9.454			
			C	0.175	2.68		0.85	1	9.454			
T11 82.00-78.00	136.70	230.76	A	0.175	2.68	29	0.85	1	1.891	861.84*	215.46	C
			B	0.175	2.68		0.85	1	1.891			
			C	0.175	2.68		0.85	1	1.891			
T12 78.00-74.00	136.70	284.96	A	0.175	2.68	29	0.85	1	1.891	852.58*	213.15	C
			B	0.175	2.68		0.85	1	1.891			
			C	0.175	2.68		0.85	1	1.891			
T13 74.00-70.00	136.70	230.76	A	0.175	2.68	28	0.85	1	1.891	842.93*	210.73	C
			B	0.175	2.68		0.85	1	1.891			
			C	0.175	2.68		0.85	1	1.891			
T14 70.00-66.00	136.70	230.76	A	0.175	2.68	28	0.85	1	1.891	832.85*	208.21	C
			B	0.175	2.68		0.85	1	1.891			
			C	0.175	2.68		0.85	1	1.891			
T15 66.00-62.00	136.70	284.96	A	0.175	2.68	28	0.85	1	1.891	822.29*	205.57	C
			B	0.175	2.68		0.85	1	1.891			
			C	0.175	2.68		0.85	1	1.891			
T16	683.48	1252.21	A	0.183	2.654	26	0.85	1	11.932	3955.05*	197.75	C

tnxTower AECOM 500 Enterprise Drive, Suite 3B Rocky Hill, CT Phone: 860-529-8882 FAX: 860-529-3991	Job	280' Guyed Tower	Page	37 of 74
	Project	130 Vernon Rd Bolton, CT	Date	08:58:55 04/13/16
	Client	Transcend Wireless / TWM-005 / - 004 Rev 1	Designed by	MCD

Section Elevation	Add Weight	Self Weight	F a c e	e	C _F	q _z	D _F	D _R	A _E	F	w	Ctrl. Face
ft	lb	lb				psf			ft ²	lb	plf	
62.00-42.00			B	0.183	2.654		0.85	1	11.932			
			C	0.183	2.654		0.85	1	11.932			
T17	683.48	1252.21	A	0.183	2.654	24	0.85	1	11.931	3570.77*	178.54	C
42.00-22.00			B	0.183	2.654		0.85	1	11.931			
			C	0.183	2.654		0.85	1	11.931			
T18	512.61	1252.21	A	0.183	2.654	20	0.85	1	11.931	2656.27	132.81	C
22.00-2.00			B	0.183	2.654		0.85	1	11.931			
			C	0.183	2.654		0.85	1	11.931			
Sum Weight:	5619.23	22271.87								43006.97		

Tower Forces - With Ice - Wind Normal To Face

Section Elevation	Add Weight	Self Weight	F a c e	e	C _F	q _z	D _F	D _R	A _E	F	w	Ctrl. Face
ft	lb	lb				psf			ft ²	lb	plf	
T1	1192.39	5004.11	A	0.697	1.776	8	1	1	52.568	1124.90	56.24	C
282.00-262.00			B	0.697	1.776		1	1	52.568			
			C	0.697	1.776		1	1	52.568			
T2	1430.91	4658.98	A	0.666	1.778	8	1	1	48.810	1149.29	57.46	C
262.00-242.00			B	0.666	1.778		1	1	48.810			
			C	0.666	1.778		1	1	48.810			
T3	1662.13	4612.76	A	0.662	1.779	8	1	1	48.367	1210.39	60.52	C
242.00-222.00			B	0.662	1.779		1	1	48.367			
			C	0.662	1.779		1	1	48.367			
T4	2152.46	5373.04	A	0.659	1.779	8	1	1	53.604	1315.26*	65.76	C
222.00-202.00			B	0.659	1.779		1	1	53.604			
			C	0.659	1.779		1	1	53.604			
T5	2643.47	6127.59	A	0.717	1.778	8	1	1	59.568	1286.99*	64.35	C
202.00-182.00			TA	0.717	1.778		1	1	59.568			
			C	0.717	1.778		1	1	59.568			
T6	3745.12	4450.95	A	0.649	1.782	8	1	1	46.814	1256.33*	62.82	C
182.00-162.00			B	0.649	1.782		1	1	46.814			
			C	0.649	1.782		1	1	46.814			
T7	5806.47	4386.54	A	0.644	1.783	8	1	1	46.194	1222.76*	61.14	C
162.00-142.00			B	0.644	1.783		1	1	46.194			
			C	0.644	1.783		1	1	46.194			
T8	6822.41	5949.45	A	0.703	1.776	7	1	1	57.906	1185.56*	59.28	C
142.00-122.00			TA	0.703	1.776		1	1	57.906			
			C	0.703	1.776		1	1	57.906			
T9	8070.08	5116.06	A	0.637	1.786	7	1	1	51.122	1143.68*	57.18	C
122.00-102.00			B	0.637	1.786		1	1	51.122			
			C	0.637	1.786		1	1	51.122			
T10	8063.06	4138.75	A	0.623	1.792	7	1	1	43.798	1095.52*	54.78	C
102.00-82.00			B	0.623	1.792		1	1	43.798			
			C	0.623	1.792		1	1	43.798			
T11	1586.62	814.71	A	0.617	1.794	7	1	1	8.633	212.51*	53.13	C
82.00-78.00			B	0.617	1.794		1	1	8.633			
			C	0.617	1.794		1	1	8.633			
T12	1577.23	864.19	A	0.615	1.796	6	1	1	8.587	210.14*	52.54	C
78.00-74.00			B	0.615	1.796		1	1	8.587			
			C	0.615	1.796		1	1	8.587			
T13	1567.42	805.08	A	0.613	1.797	6	1	1	8.539	207.67*	51.92	C

tnxTower AECOM 500 Enterprise Drive, Suite 3B Rocky Hill, CT Phone: 860-529-8882 FAX: 860-529-3991	Job	280' Guyed Tower	Page	38 of 74
	Project	130 Vernon Rd Bolton, CT	Date	08:58:55 04/13/16
	Client	Transcend Wireless / TWM-005 / - 004 Rev 1	Designed by	MCD

Section Elevation	Add Weight	Self Weight	F a c e	e	C _F	q _z	D _F	D _R	A _E	F	w	Ctrl. Face
ft	lb	lb				psf			ft ²	lb	plf	
74.00-70.00			B	0.613	1.797		1	1	8.539			
			C	0.613	1.797		1	1	8.539			
T14	1557.14	799.93	A	0.61	1.798	6	1	1	8.489	205.10*	51.27	C
70.00-66.00			B	0.61	1.798		1	1	8.489			
			C	0.61	1.798		1	1	8.489			
T15	1546.34	848.72	A	0.608	1.799	6	1	1	8.437	202.40*	50.60	C
66.00-62.00			B	0.608	1.799		1	1	8.437			
			C	0.608	1.799		1	1	8.437			
T16	7550.76	3701.03	A	0.553	1.84	6	1	1	41.794	971.55*	48.58	C
62.00-42.00			B	0.553	1.84		1	1	41.794			
			C	0.553	1.84		1	1	41.794			
T17	7150.72	3529.47	A	0.537	1.856	5	1	1	40.215	873.96*	43.70	C
42.00-22.00			B	0.537	1.856		1	1	40.215			
			C	0.537	1.856		1	1	40.215			
T18	4823.98	3222.22	A	0.506	1.892	5	1	1	37.331	740.95*	37.05	C
22.00-2.00			B	0.506	1.892		1	1	37.331			
			C	0.506	1.892		1	1	37.331			
Sum Weight:	68948.72	70260.68			*2.1A _g limit					15614.97		

Tower Forces - With Ice - Wind 45 To Face

Section Elevation	Add Weight	Self Weight	F a c e	e	C _F	q _z	D _F	D _R	A _E	F	w	Ctrl. Face
ft	lb	lb				psf			ft ²	lb	plf	
T1	1192.39	5004.11	A	0.697	1.776	8	0.825	1	51.701	1113.78	55.69	C
282.00-262.00			B	0.697	1.776		0.825	1	51.701			
			C	0.697	1.776		0.825	1	51.701			
T2	1430.91	4658.98	A	0.666	1.778	8	0.825	1	48.111	1140.46	57.02	C
262.00-242.00			B	0.666	1.778		0.825	1	48.111			
			C	0.666	1.778		0.825	1	48.111			
T3	1662.13	4612.76	A	0.662	1.779	8	0.825	1	47.668	1201.71	60.09	C
242.00-222.00			B	0.662	1.779		0.825	1	47.668			
			C	0.662	1.779		0.825	1	47.668			
T4	2152.46	5373.04	A	0.659	1.779	8	0.825	1	48.390	1315.26*	65.76	C
222.00-202.00			B	0.659	1.779		0.825	1	48.390			
			C	0.659	1.779		0.825	1	48.390			
T5	2643.47	6127.59	A	0.717	1.778	8	0.825	1	53.932	1286.99*	64.35	C
202.00-182.00			TA	0.717	1.778		0.825	1	53.932			
			B	0.717	1.778		0.825	1	53.932			
T6	3745.12	4450.95	A	0.649	1.782	8	0.825	1	46.115	1256.33*	62.82	C
182.00-162.00			B	0.649	1.782		0.825	1	46.115			
			C	0.649	1.782		0.825	1	46.115			
T7	5806.47	4386.54	A	0.644	1.783	8	0.825	1	45.495	1222.76*	61.14	C
162.00-142.00			B	0.644	1.783		0.825	1	45.495			
			C	0.644	1.783		0.825	1	45.495			
T8	6822.41	5949.45	A	0.703	1.776	7	0.825	1	52.362	1185.56*	59.28	C
142.00-122.00			TA	0.703	1.776		0.825	1	52.362			
			B	0.703	1.776		0.825	1	52.362			
T9	8070.08	5116.06	A	0.637	1.786	7	0.825	1	46.064	1143.68*	57.18	C
122.00-102.00			B	0.637	1.786		0.825	1	46.064			
			C	0.637	1.786		0.825	1	46.064			
T10	8063.06	4138.75	A	0.623	1.792	7	0.825	1	43.100	1095.52*	54.78	C

tnxTower AECOM 500 Enterprise Drive, Suite 3B Rocky Hill, CT Phone: 860-529-8882 FAX: 860-529-3991	Job	280' Guyed Tower	Page	39 of 74
	Project	130 Vernon Rd Bolton, CT	Date	08:58:55 04/13/16
	Client	Transcend Wireless / TWM-005 / - 004 Rev 1	Designed by	MCD

Section Elevation ft	Add Weight lb	Self Weight lb	F a c e	e	C _F	q _z psf	D _F	D _R	A _E ft ²	F lb	w plf	Ctrl. Face
102.00-82.00			B	0.623	1.792		0.825	1	43.100			
			C	0.623	1.792		0.825	1	43.100			
T11	1586.62	814.71	A	0.617	1.794	7	0.825	1	8.493	212.51*	53.13	C
82.00-78.00			B	0.617	1.794		0.825	1	8.493			
			C	0.617	1.794		0.825	1	8.493			
T12	1577.23	864.19	A	0.615	1.796	6	0.825	1	8.448	210.14*	52.54	C
78.00-74.00			B	0.615	1.796		0.825	1	8.448			
			C	0.615	1.796		0.825	1	8.448			
T13	1567.42	805.08	A	0.613	1.797	6	0.825	1	8.400	207.67*	51.92	C
74.00-70.00			B	0.613	1.797		0.825	1	8.400			
			C	0.613	1.797		0.825	1	8.400			
T14	1557.14	799.93	A	0.61	1.798	6	0.825	1	8.350	205.10*	51.27	C
70.00-66.00			B	0.61	1.798		0.825	1	8.350			
			C	0.61	1.798		0.825	1	8.350			
T15	1546.34	848.72	A	0.608	1.799	6	0.825	1	8.297	202.40*	50.60	C
66.00-62.00			B	0.608	1.799		0.825	1	8.297			
			C	0.608	1.799		0.825	1	8.297			
T16	7550.76	3701.03	A	0.553	1.84	6	0.825	1	38.174	971.55*	48.58	C
62.00-42.00			B	0.553	1.84		0.825	1	38.174			
			C	0.553	1.84		0.825	1	38.174			
T17	7150.72	3529.47	A	0.537	1.856	5	0.825	1	36.673	873.96*	43.70	C
42.00-22.00			B	0.537	1.856		0.825	1	36.673			
			C	0.537	1.856		0.825	1	36.673			
T18	4823.98	3222.22	A	0.506	1.892	5	0.825	1	33.934	740.95*	37.05	C
22.00-2.00			B	0.506	1.892		0.825	1	33.934			
			C	0.506	1.892		0.825	1	33.934			
Sum Weight:	68948.72	70260.68			*2.1A _g limit					15586.34		

Tower Forces - With Ice - Wind 60 To Face

Section Elevation ft	Add Weight lb	Self Weight lb	F a c e	e	C _F	q _z psf	D _F	D _R	A _E ft ²	F lb	w plf	Ctrl. Face
T1	1192.39	5004.11	A	0.697	1.776	8	0.8	1	51.578	1112.19	55.61	C
282.00-262.00			B	0.697	1.776		0.8	1	51.578			
			C	0.697	1.776		0.8	1	51.578			
T2	1430.91	4658.98	A	0.666	1.778	8	0.8	1	48.011	1139.20	56.96	C
262.00-242.00			B	0.666	1.778		0.8	1	48.011			
			C	0.666	1.778		0.8	1	48.011			
T3	1662.13	4612.76	A	0.662	1.779	8	0.8	1	47.569	1200.47	60.02	C
242.00-222.00			B	0.662	1.779		0.8	1	47.569			
			C	0.662	1.779		0.8	1	47.569			
T4	2152.46	5373.04	A	0.659	1.779	8	0.8	1	47.645	1315.26*	65.76	C
222.00-202.00			B	0.659	1.779		0.8	1	47.645			
			C	0.659	1.779		0.8	1	47.645			
T5	2643.47	6127.59	A	0.717	1.778	8	0.8	1	53.126	1286.99*	64.35	C
202.00-182.00			TA	0.717	1.778		0.8	1	53.126			
			C	0.717	1.778		0.8	1	53.126			
T6	3745.12	4450.95	A	0.649	1.782	8	0.8	1	46.015	1256.33*	62.82	C
182.00-162.00			B	0.649	1.782		0.8	1	46.015			
			C	0.649	1.782		0.8	1	46.015			
T7	5806.47	4386.54	A	0.644	1.783	8	0.8	1	45.395	1222.76*	61.14	C

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Section Elevation	Add Weight	Self Weight	F a c e	e	C _F	q _z	D _F	D _R	A _E	F	w	Ctrl. Face
ft	lb	lb	e			psf			ft ²	lb	plf	
162.00-142.00			B	0.644	1.783		0.8	1	45.395			
			C	0.644	1.783		0.8	1	45.395			
T8	6822.41	5949.45	A	0.703	1.776	7	0.8	1	51.570	1185.56*	59.28	C
142.00-122.00			TA	0.703	1.776		0.8	1	51.570			
			C	0.703	1.776		0.8	1	51.570			
T9	8070.08	5116.06	A	0.637	1.786	7	0.8	1	45.342	1143.68*	57.18	C
122.00-102.00			B	0.637	1.786		0.8	1	45.342			
			C	0.637	1.786		0.8	1	45.342			
T10	8063.06	4138.75	A	0.623	1.792	7	0.8	1	43.000	1095.52*	54.78	C
102.00-82.00			B	0.623	1.792		0.8	1	43.000			
			C	0.623	1.792		0.8	1	43.000			
T11	1586.62	814.71	A	0.617	1.794	7	0.8	1	8.473	212.51*	53.13	C
82.00-78.00			B	0.617	1.794		0.8	1	8.473			
			C	0.617	1.794		0.8	1	8.473			
T12	1577.23	864.19	A	0.615	1.796	6	0.8	1	8.428	210.14*	52.54	C
78.00-74.00			B	0.615	1.796		0.8	1	8.428			
			C	0.615	1.796		0.8	1	8.428			
T13	1567.42	805.08	A	0.613	1.797	6	0.8	1	8.380	207.67*	51.92	C
74.00-70.00			B	0.613	1.797		0.8	1	8.380			
			C	0.613	1.797		0.8	1	8.380			
T14	1557.14	799.93	A	0.61	1.798	6	0.8	1	8.330	205.10*	51.27	C
70.00-66.00			B	0.61	1.798		0.8	1	8.330			
			C	0.61	1.798		0.8	1	8.330			
T15	1546.34	848.72	A	0.608	1.799	6	0.8	1	8.277	202.40*	50.60	C
66.00-62.00			B	0.608	1.799		0.8	1	8.277			
			C	0.608	1.799		0.8	1	8.277			
T16	7550.76	3701.03	A	0.553	1.84	6	0.8	1	37.657	971.55*	48.58	C
62.00-42.00			B	0.553	1.84		0.8	1	37.657			
			C	0.553	1.84		0.8	1	37.657			
T17	7150.72	3529.47	A	0.537	1.856	5	0.8	1	36.167	873.96*	43.70	C
42.00-22.00			B	0.537	1.856		0.8	1	36.167			
			C	0.537	1.856		0.8	1	36.167			
T18	4823.98	3222.22	A	0.506	1.892	5	0.8	1	33.448	740.95*	37.05	C
22.00-2.00			B	0.506	1.892		0.8	1	33.448			
			C	0.506	1.892		0.8	1	33.448			
Sum Weight:	68948.72	70260.68								15582.25		

Tower Forces - With Ice - Wind 90 To Face

Section Elevation	Add Weight	Self Weight	F a c e	e	C _F	q _z	D _F	D _R	A _E	F	w	Ctrl. Face
ft	lb	lb	e			psf			ft ²	lb	plf	
T1	1192.39	5004.11	A	0.697	1.776	8	0.85	1	51.825	1115.37	55.77	C
282.00-262.00			B	0.697	1.776		0.85	1	51.825			
			C	0.697	1.776		0.85	1	51.825			
T2	1430.91	4658.98	A	0.666	1.778	8	0.85	1	48.211	1141.72	57.09	C
262.00-242.00			B	0.666	1.778		0.85	1	48.211			
			C	0.666	1.778		0.85	1	48.211			
T3	1662.13	4612.76	A	0.662	1.779	8	0.85	1	47.768	1202.95	60.15	C
242.00-222.00			B	0.662	1.779		0.85	1	47.768			
			C	0.662	1.779		0.85	1	47.768			
T4	2152.46	5373.04	A	0.659	1.779	8	0.85	1	49.135	1315.26*	65.76	C

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Section Elevation	Add Weight	Self Weight	F a c e	e	C _F	q _z	D _F	D _R	A _E	F	w	Ctrl. Face
ft	lb	lb	e			psf			ft ²	lb	plf	
222.00-202.00			B	0.659	1.779		0.85	1	49.135			
			C	0.659	1.779		0.85	1	49.135			
T5	2643.47	6127.59	A	0.717	1.778	8	0.85	1	54.737	1286.99*	64.35	C
202.00-182.00			TA	0.717	1.778		0.85	1	54.737			
			B	0.717	1.778		0.85	1	54.737			
T6	3745.12	4450.95	A	0.649	1.782	8	0.85	1	46.215	1256.33*	62.82	C
182.00-162.00			B	0.649	1.782		0.85	1	46.215			
			C	0.649	1.782		0.85	1	46.215			
T7	5806.47	4386.54	A	0.644	1.783	8	0.85	1	45.595	1222.76*	61.14	C
162.00-142.00			B	0.644	1.783		0.85	1	45.595			
			C	0.644	1.783		0.85	1	45.595			
T8	6822.41	5949.45	A	0.703	1.776	7	0.85	1	53.154	1185.56*	59.28	C
142.00-122.00			TA	0.703	1.776		0.85	1	53.154			
			B	0.703	1.776		0.85	1	53.154			
T9	8070.08	5116.06	A	0.637	1.786	7	0.85	1	46.787	1143.68*	57.18	C
122.00-102.00			B	0.637	1.786		0.85	1	46.787			
			C	0.637	1.786		0.85	1	46.787			
T10	8063.06	4138.75	A	0.623	1.792	7	0.85	1	43.200	1095.52*	54.78	C
102.00-82.00			B	0.623	1.792		0.85	1	43.200			
			C	0.623	1.792		0.85	1	43.200			
T11	1586.62	814.71	A	0.617	1.794	7	0.85	1	8.513	212.51*	53.13	C
82.00-78.00			B	0.617	1.794		0.85	1	8.513			
			C	0.617	1.794		0.85	1	8.513			
T12	1577.23	864.19	A	0.615	1.796	6	0.85	1	8.468	210.14*	52.54	C
78.00-74.00			B	0.615	1.796		0.85	1	8.468			
			C	0.615	1.796		0.85	1	8.468			
T13	1567.42	805.08	A	0.613	1.797	6	0.85	1	8.420	207.67*	51.92	C
74.00-70.00			B	0.613	1.797		0.85	1	8.420			
			C	0.613	1.797		0.85	1	8.420			
T14	1557.14	799.93	A	0.61	1.798	6	0.85	1	8.370	205.10*	51.27	C
70.00-66.00			B	0.61	1.798		0.85	1	8.370			
			C	0.61	1.798		0.85	1	8.370			
T15	1546.34	848.72	A	0.608	1.799	6	0.85	1	8.317	202.40*	50.60	C
66.00-62.00			B	0.608	1.799		0.85	1	8.317			
			C	0.608	1.799		0.85	1	8.317			
T16	7550.76	3701.03	A	0.553	1.84	6	0.85	1	38.691	971.55*	48.58	C
62.00-42.00			B	0.553	1.84		0.85	1	38.691			
			C	0.553	1.84		0.85	1	38.691			
T17	7150.72	3529.47	A	0.537	1.856	5	0.85	1	37.179	873.96*	43.70	C
42.00-22.00			B	0.537	1.856		0.85	1	37.179			
			C	0.537	1.856		0.85	1	37.179			
T18	4823.98	3222.22	A	0.506	1.892	5	0.85	1	34.419	740.95*	37.05	C
22.00-2.00			B	0.506	1.892		0.85	1	34.419			
			C	0.506	1.892		0.85	1	34.419			
Sum Weight:	68948.72	70260.68								15590.43		

Tower Forces - Service - Wind Normal To Face

Section Elevation	Add Weight	Self Weight	F a c e	e	C _F	q _z	D _F	D _R	A _E	F	w	Ctrl. Face
ft	lb	lb	e			psf			ft ²	lb	plf	
T1	56.20	1212.62	A	0.187	2.641	12	1	1	11.029	437.79	21.89	C

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Section Elevation	Add Weight	Self Weight	F a c e	e	C _F	q _z	D _F	D _R	A _E	F	w	Ctrl. Face
ft	lb	lb				psf			ft ²	lb	plf	
282.00-262.00			B	0.187	2.641		1	1	11.029			
			A	0.187	2.641		1	1	11.029			
T2	69.40	1153.82	C	0.175	2.68	12	1	1	10.053	440.26	22.01	C
262.00-242.00			B	0.175	2.68		1	1	10.053			
			C	0.175	2.68		1	1	10.053			
T3	82.60	1153.82	A	0.175	2.68	12	1	1	10.053	463.85	23.19	C
242.00-222.00			B	0.175	2.68		1	1	10.053			
			C	0.175	2.68		1	1	10.053			
T4	104.05	2014.07	A	0.263	2.398	12	1	1	19.210	723.13	36.16	C
222.00-202.00			B	0.263	2.398		1	1	19.210			
			C	0.263	2.398		1	1	19.210			
T5	124.00	2247.64	A	0.294	2.312	11	1	1	21.823	846.63	42.33	C
202.00-182.00		TA 873.93	B	0.294	2.312		1	1	21.823			
			C	0.294	2.312		1	1	21.823			
T6	253.60	1153.82	A	0.175	2.68	11	1	1	10.053	854.44	42.72	C
182.00-162.00			B	0.175	2.68		1	1	10.053			
			C	0.175	2.68		1	1	10.053			
T7	462.84	1153.82	A	0.175	2.68	11	1	1	10.053	1265.55	63.28	C
162.00-142.00			B	0.175	2.68		1	1	10.053			
			C	0.175	2.68		1	1	10.053			
T8	543.92	2247.64	A	0.294	2.312	11	1	1	21.823	1563.53*	78.18	C
142.00-122.00		TA 873.93	B	0.294	2.312		1	1	21.823			
			C	0.294	2.312		1	1	21.823			
T9	676.09	2014.07	A	0.263	2.398	10	1	1	19.210	1510.37*	75.52	C
122.00-102.00			B	0.263	2.398		1	1	19.210			
			C	0.263	2.398		1	1	19.210			
T10	683.48	1153.82	A	0.175	2.68	10	1	1	10.053	1449.10*	72.45	C
102.00-82.00			B	0.175	2.68		1	1	10.053			
			C	0.175	2.68		1	1	10.053			
T11	136.70	230.76	A	0.175	2.68	9	1	1	2.011	281.42*	70.35	C
82.00-78.00			B	0.175	2.68		1	1	2.011			
			C	0.175	2.68		1	1	2.011			
T12	136.70	284.96	A	0.175	2.68	9	1	1	2.011	278.39*	69.60	C
78.00-74.00			B	0.175	2.68		1	1	2.011			
			C	0.175	2.68		1	1	2.011			
T13	136.70	230.76	A	0.175	2.68	9	1	1	2.011	275.24*	68.81	C
74.00-70.00			B	0.175	2.68		1	1	2.011			
			C	0.175	2.68		1	1	2.011			
T14	136.70	230.76	A	0.175	2.68	9	1	1	2.011	271.95*	67.99	C
70.00-66.00			B	0.175	2.68		1	1	2.011			
			C	0.175	2.68		1	1	2.011			
T15	136.70	284.96	A	0.175	2.68	9	1	1	2.011	268.50*	67.13	C
66.00-62.00			B	0.175	2.68		1	1	2.011			
			C	0.175	2.68		1	1	2.011			
T16	683.48	1252.21	A	0.183	2.654	9	1	1	13.639	1291.45*	64.57	C
62.00-42.00			B	0.183	2.654		1	1	13.639			
			C	0.183	2.654		1	1	13.639			
T17	683.48	1252.21	A	0.183	2.654	8	1	1	13.639	1165.97*	58.30	C
42.00-22.00			B	0.183	2.654		1	1	13.639			
			C	0.183	2.654		1	1	13.639			
T18	512.61	1252.21	A	0.183	2.654	7	1	1	13.639	892.99	44.65	C
22.00-2.00			B	0.183	2.654		1	1	13.639			
			C	0.183	2.654		1	1	13.639			
Sum Weight:	5619.23	22271.87			*2.1A _e limit					14280.55		

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Tower Forces - Service - Wind 45 To Face

Section Elevation	Add Weight	Self Weight	F a c e	e	C _F	q _z	D _F	D _R	A _E	F	w	Ctrl. Face
ft	lb	lb				psf			ft ²	lb	plf	
T1 282.00-262.00	56.20	1212.62	A	0.187	2.641	12	0.825	1	10.162	413.99	20.70	C
			B	0.187	2.641		0.825	1	10.162			
			C	0.187	2.641		0.825	1	10.162			
T2 262.00-242.00	69.40	1153.82	A	0.175	2.68	12	0.825	1	9.354	421.08	21.05	C
			B	0.175	2.68		0.825	1	9.354			
			C	0.175	2.68		0.825	1	9.354			
T3 242.00-222.00	82.60	1153.82	A	0.175	2.68	12	0.825	1	9.354	445.00	22.25	C
			B	0.175	2.68		0.825	1	9.354			
			C	0.175	2.68		0.825	1	9.354			
T4 222.00-202.00	104.05	2014.07	A	0.263	2.398	12	0.825	1	16.535	659.80	32.99	C
			B	0.263	2.398		0.825	1	16.535			
			C	0.263	2.398		0.825	1	16.535			
T5 202.00-182.00	124.00	2247.64	A	0.294	2.312	11	0.825	1	18.701	776.85	38.84	C
		TA 873.93	B	0.294	2.312		0.825	1	18.701			
		C	0.294	2.312		0.825	1	18.701				
T6 182.00-162.00	253.60	1153.82	A	0.175	2.68	11	0.825	1	9.354	836.75	41.84	C
			B	0.175	2.68		0.825	1	9.354			
			C	0.175	2.68		0.825	1	9.354			
T7 162.00-142.00	462.84	1153.82	A	0.175	2.68	11	0.825	1	9.354	1248.31	62.42	C
			B	0.175	2.68		0.825	1	9.354			
			C	0.175	2.68		0.825	1	9.354			
T8 142.00-122.00	543.92	2247.64	A	0.294	2.312	11	0.825	1	18.701	1539.52	76.98	C
		TA 873.93	B	0.294	2.312		0.825	1	18.701			
		C	0.294	2.312		0.825	1	18.701				
T9 122.00-102.00	676.09	2014.07	A	0.263	2.398	10	0.825	1	16.535	1510.37*	75.52	C
			B	0.263	2.398		0.825	1	16.535			
			C	0.263	2.398		0.825	1	16.535			
T10 102.00-82.00	683.48	1153.82	A	0.175	2.68	10	0.825	1	9.354	1449.10*	72.45	C
			B	0.175	2.68		0.825	1	9.354			
			C	0.175	2.68		0.825	1	9.354			
T11 82.00-78.00	136.70	230.76	A	0.175	2.68	9	0.825	1	1.871	281.42*	70.35	C
			B	0.175	2.68		0.825	1	1.871			
			C	0.175	2.68		0.825	1	1.871			
T12 78.00-74.00	136.70	284.96	A	0.175	2.68	9	0.825	1	1.871	278.39*	69.60	C
			B	0.175	2.68		0.825	1	1.871			
			C	0.175	2.68		0.825	1	1.871			
T13 74.00-70.00	136.70	230.76	A	0.175	2.68	9	0.825	1	1.871	275.24*	68.81	C
			B	0.175	2.68		0.825	1	1.871			
			C	0.175	2.68		0.825	1	1.871			
T14 70.00-66.00	136.70	230.76	A	0.175	2.68	9	0.825	1	1.871	271.95*	67.99	C
			B	0.175	2.68		0.825	1	1.871			
			C	0.175	2.68		0.825	1	1.871			
T15 66.00-62.00	136.70	284.96	A	0.175	2.68	9	0.825	1	1.871	268.50*	67.13	C
			B	0.175	2.68		0.825	1	1.871			
			C	0.175	2.68		0.825	1	1.871			
T16 62.00-42.00	683.48	1252.21	A	0.183	2.654	9	0.825	1	11.647	1291.45*	64.57	C
			B	0.183	2.654		0.825	1	11.647			
			C	0.183	2.654		0.825	1	11.647			
T17 42.00-22.00	683.48	1252.21	A	0.183	2.654	8	0.825	1	11.647	1165.97*	58.30	C
			B	0.183	2.654		0.825	1	11.647			
			C	0.183	2.654		0.825	1	11.647			
T18 22.00-2.00	512.61	1252.21	A	0.183	2.654	7	0.825	1	11.647	863.08	43.15	C
			B	0.183	2.654		0.825	1	11.647			
			C	0.183	2.654		0.825	1	11.647			
Sum Weight:	5619.23	22271.87								13996.77		

*2.1A_g limit

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Tower Forces - Service - Wind 60 To Face

Section Elevation	Add Weight	Self Weight	F a c e	e	C _F	q _z psf	D _F	D _R	A _E ft ²	F lb	w plf	Ctrl. Face
ft	lb	lb										
T1 282.00-262.00	56.20	1212.62	A	0.187	2.641	12	0.8	1	10.039	410.59	20.53	C
			B	0.187	2.641		0.8	1	10.039			
			C	0.187	2.641		0.8	1	10.039			
T2 262.00-242.00	69.40	1153.82	A	0.175	2.68	12	0.8	1	9.254	418.34	20.92	C
			B	0.175	2.68		0.8	1	9.254			
			C	0.175	2.68		0.8	1	9.254			
T3 242.00-222.00	82.60	1153.82	A	0.175	2.68	12	0.8	1	9.254	442.31	22.12	C
			B	0.175	2.68		0.8	1	9.254			
			C	0.175	2.68		0.8	1	9.254			
T4 222.00-202.00	104.05	2014.07	A	0.263	2.398	12	0.8	1	16.152	650.76	32.54	C
			B	0.263	2.398		0.8	1	16.152			
			C	0.263	2.398		0.8	1	16.152			
T5 202.00-182.00	124.00	2247.64	A	0.294	2.312	11	0.8	1	18.255	766.88	38.34	C
		TA 873.93	B	0.294	2.312		0.8	1	18.255			
			C	0.294	2.312		0.8	1	18.255			
T6 182.00-162.00	253.60	1153.82	A	0.175	2.68	11	0.8	1	9.254	834.22	41.71	C
			B	0.175	2.68		0.8	1	9.254			
			C	0.175	2.68		0.8	1	9.254			
T7 162.00-142.00	462.84	1153.82	A	0.175	2.68	11	0.8	1	9.254	1245.85	62.29	C
			B	0.175	2.68		0.8	1	9.254			
			C	0.175	2.68		0.8	1	9.254			
T8 142.00-122.00	543.92	2247.64	A	0.294	2.312	11	0.8	1	18.255	1530.30	76.52	C
		TA 873.93	B	0.294	2.312		0.8	1	18.255			
			C	0.294	2.312		0.8	1	18.255			
T9 122.00-102.00	676.09	2014.07	A	0.263	2.398	10	0.8	1	16.152	1510.37*	75.52	C
			B	0.263	2.398		0.8	1	16.152			
			C	0.263	2.398		0.8	1	16.152			
T10 102.00-82.00	683.48	1153.82	A	0.175	2.68	10	0.8	1	9.254	1449.10*	72.45	C
			B	0.175	2.68		0.8	1	9.254			
			C	0.175	2.68		0.8	1	9.254			
T11 82.00-78.00	136.70	230.76	A	0.175	2.68	9	0.8	1	1.851	281.42*	70.35	C
			B	0.175	2.68		0.8	1	1.851			
			C	0.175	2.68		0.8	1	1.851			
T12 78.00-74.00	136.70	284.96	A	0.175	2.68	9	0.8	1	1.851	278.39*	69.60	C
			B	0.175	2.68		0.8	1	1.851			
			C	0.175	2.68		0.8	1	1.851			
T13 74.00-70.00	136.70	230.76	A	0.175	2.68	9	0.8	1	1.851	275.24*	68.81	C
			B	0.175	2.68		0.8	1	1.851			
			C	0.175	2.68		0.8	1	1.851			
T14 70.00-66.00	136.70	230.76	A	0.175	2.68	9	0.8	1	1.851	271.95*	67.99	C
			B	0.175	2.68		0.8	1	1.851			
			C	0.175	2.68		0.8	1	1.851			
T15 66.00-62.00	136.70	284.96	A	0.175	2.68	9	0.8	1	1.851	268.50*	67.13	C
			B	0.175	2.68		0.8	1	1.851			
			C	0.175	2.68		0.8	1	1.851			
T16 62.00-42.00	683.48	1252.21	A	0.183	2.654	9	0.8	1	11.363	1291.45*	64.57	C
			B	0.183	2.654		0.8	1	11.363			
			C	0.183	2.654		0.8	1	11.363			
T17 42.00-22.00	683.48	1252.21	A	0.183	2.654	8	0.8	1	11.362	1165.97*	58.30	C
			B	0.183	2.654		0.8	1	11.362			
			C	0.183	2.654		0.8	1	11.362			
T18	512.61	1252.21	A	0.183	2.654	7	0.8	1	11.362	858.81	42.94	C

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Section Elevation	Add Weight	Self Weight	F a c e	e	C _F	q _z	D _F	D _R	A _E	F	w	Ctrl. Face
ft	lb	lb				psf			ft ²	lb	plf	
22.00-2.00			B	0.183	2,654		0.8	1	11.362			
			C	0.183	2,654		0.8	1	11.362			
Sum Weight:	5619.23	22271.87			*2.1A _g limit					13950.44		

Tower Forces - Service - Wind 90 To Face

Section Elevation	Add Weight	Self Weight	F a c e	e	C _F	q _z	D _F	D _R	A _E	F	w	Ctrl. Face
ft	lb	lb				psf			ft ²	lb	plf	
T1	56.20	1212.62	A	0.187	2.641	12	0.85	1	10.286	417.39	20.87	C
282.00-262.00			B	0.187	2.641		0.85	1	10.286			
			C	0.187	2.641		0.85	1	10.286			
T2	69.40	1153.82	A	0.175	2.68	12	0.85	1	9.454	423.82	21.19	C
262.00-242.00			B	0.175	2.68		0.85	1	9.454			
			C	0.175	2.68		0.85	1	9.454			
T3	82.60	1153.82	A	0.175	2.68	12	0.85	1	9.454	447.70	22.38	C
242.00-222.00			B	0.175	2.68		0.85	1	9.454			
			C	0.175	2.68		0.85	1	9.454			
T4	104.05	2014.07	A	0.263	2.398	12	0.85	1	16.917	668.85	33.44	C
222.00-202.00			B	0.263	2.398		0.85	1	16.917			
			C	0.263	2.398		0.85	1	16.917			
T5	124.00	2247.64	A	0.294	2.312	11	0.85	1	19.147	786.82	39.34	C
202.00-182.00		TA 873.93	B	0.294	2.312		0.85	1	19.147			
			C	0.294	2.312		0.85	1	19.147			
T6	253.60	1153.82	A	0.175	2.68	11	0.85	1	9.454	839.28	41.96	C
182.00-162.00			B	0.175	2.68		0.85	1	9.454			
			C	0.175	2.68		0.85	1	9.454			
T7	462.84	1153.82	A	0.175	2.68	11	0.85	1	9.454	1250.77	62.54	C
162.00-142.00			B	0.175	2.68		0.85	1	9.454			
			C	0.175	2.68		0.85	1	9.454			
T8	543.92	2247.64	A	0.294	2.312	11	0.85	1	19.147	1548.73	77.44	C
142.00-122.00		TA 873.93	B	0.294	2.312		0.85	1	19.147			
			C	0.294	2.312		0.85	1	19.147			
T9	676.09	2014.07	A	0.263	2.398	10	0.85	1	16.917	1510.37*	75.52	C
122.00-102.00			B	0.263	2.398		0.85	1	16.917			
			C	0.263	2.398		0.85	1	16.917			
T10	683.48	1153.82	A	0.175	2.68	10	0.85	1	9.454	1449.10*	72.45	C
102.00-82.00			B	0.175	2.68		0.85	1	9.454			
			C	0.175	2.68		0.85	1	9.454			
T11	136.70	230.76	A	0.175	2.68	9	0.85	1	1.891	281.42*	70.35	C
82.00-78.00			B	0.175	2.68		0.85	1	1.891			
			C	0.175	2.68		0.85	1	1.891			
T12	136.70	284.96	A	0.175	2.68	9	0.85	1	1.891	278.39*	69.60	C
78.00-74.00			B	0.175	2.68		0.85	1	1.891			
			C	0.175	2.68		0.85	1	1.891			
T13	136.70	230.76	A	0.175	2.68	9	0.85	1	1.891	275.24*	68.81	C
74.00-70.00			B	0.175	2.68		0.85	1	1.891			
			C	0.175	2.68		0.85	1	1.891			
T14	136.70	230.76	A	0.175	2.68	9	0.85	1	1.891	271.95*	67.99	C
70.00-66.00			B	0.175	2.68		0.85	1	1.891			
			C	0.175	2.68		0.85	1	1.891			
T15	136.70	284.96	A	0.175	2.68	9	0.85	1	1.891	268.50*	67.13	C

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Section Elevation	Add Weight	Self Weight	F a c e	e	C _F	q _z	D _F	D _R	A _E	F	w	Ctrl. Face
ft	lb	lb				psf			ft ²	lb	plf	
66.00-62.00			B	0.175	2.68		0.85	1	1.891			
			C	0.175	2.68		0.85	1	1.891			
T16	683.48	1252.21	A	0.183	2.654	9	0.85	1	11.932	1291.45*	64.57	C
62.00-42.00			B	0.183	2.654		0.85	1	11.932			
			C	0.183	2.654		0.85	1	11.932			
T17	683.48	1252.21	A	0.183	2.654	8	0.85	1	11.931	1165.97*	58.30	C
42.00-22.00			B	0.183	2.654		0.85	1	11.931			
			C	0.183	2.654		0.85	1	11.931			
T18	512.61	1252.21	A	0.183	2.654	7	0.85	1	11.931	867.35	43.37	C
22.00-2.00			B	0.183	2.654		0.85	1	11.931			
			C	0.183	2.654		0.85	1	11.931			
Sum Weight:	5619.23	22271.87			2.1A _g limit					14043.09		

Force Totals (Does not include forces on guys)

Load Case	Vertical Forces	Sum of Forces X	Sum of Forces Z	Sum of Torques
	lb	lb	lb	lb-ft
Leg Weight	9335.14			
Bracing Weight	12936.73			
Total Member Self-Weight	22271.87			
Guy Weight	4477.09			
Total Weight	38348.73			
Wind 0 deg - No Ice		277.21	-58205.65	-3326.99
Wind 30 deg - No Ice		29114.93	-50250.68	-7258.29
Wind 45 deg - No Ice		40894.93	-40767.21	-8170.76
Wind 60 deg - No Ice		49924.83	-28499.51	-10542.76
Wind 90 deg - No Ice		58049.86	362.37	-10768.98
Wind 120 deg - No Ice		50754.84	29020.22	-6405.94
Wind 135 deg - No Ice		41445.17	40631.73	-4070.44
Wind 150 deg - No Ice		29155.73	49126.39	62.98
Wind 180 deg - No Ice		298.91	56527.98	5384.04
Wind 210 deg - No Ice		-28845.96	49812.84	8574.59
Wind 225 deg - No Ice		-40664.66	40773.99	10423.59
Wind 240 deg - No Ice		-50537.37	29214.75	9732.92
Wind 270 deg - No Ice		-56930.24	208.25	8436.38
Wind 300 deg - No Ice		-48357.61	-27939.83	5158.72
Wind 315 deg - No Ice		-40005.10	-40345.71	3217.77
Wind 330 deg - No Ice		-27939.22	-49129.05	953.31
Member Ice	47988.81			
Guy Ice	38260.32			
Total Weight Ice	209235.51			
Wind 0 deg - Ice		135.03	-21296.95	919.68
Wind 30 deg - Ice		10797.21	-18531.48	-1215.34
Wind 45 deg - Ice		15192.67	-15093.00	-2125.12
Wind 60 deg - Ice		18576.89	-10619.59	-3406.04
Wind 90 deg - Ice		21476.53	49.66	-4625.30
Wind 120 deg - Ice		18605.17	10571.28	-4122.94
Wind 135 deg - Ice		15207.59	14904.40	-3571.29
Wind 150 deg - Ice		10748.99	18231.98	-2439.50
Wind 180 deg - Ice		65.86	21078.32	-380.91
Wind 210 deg - Ice		-10686.35	18422.80	1610.46

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Load Case	Vertical Forces lb	Sum of Forces X lb	Sum of Forces Z lb	Sum of Torques lb-ft
Wind 225 deg - Ice		-15101.31	15091.81	2730.28
Wind 240 deg - Ice		-18518.16	10676.97	3203.26
Wind 270 deg - Ice		-21174.00	56.28	3975.15
Wind 300 deg - Ice		-18149.71	-10449.01	3786.95
Wind 315 deg - Ice		-14817.82	-14846.68	3357.95
Wind 330 deg - Ice		-10443.64	-18231.63	2694.52
Total Weight	38348.73			
Wind 0 deg - Service		90.52	-19005.93	-1086.36
Wind 30 deg - Service		9506.91	-16408.38	-2370.05
Wind 45 deg - Service		13353.45	-13311.74	-2668.00
Wind 60 deg - Service		16301.98	-9305.96	-3442.53
Wind 90 deg - Service		18955.06	118.33	-3516.40
Wind 120 deg - Service		16573.01	9475.99	-2091.73
Wind 135 deg - Service		13533.12	13267.50	-1329.12
Wind 150 deg - Service		9520.24	16041.27	20.56
Wind 180 deg - Service		97.60	18458.12	1758.05
Wind 210 deg - Service		-9419.09	16265.42	2799.87
Wind 225 deg - Service		-13278.26	13313.96	3403.62
Wind 240 deg - Service		-16502.00	9539.51	3178.10
Wind 270 deg - Service		-18589.47	68.00	2754.74
Wind 300 deg - Service		-15790.24	-9123.21	1684.48
Wind 315 deg - Service		-13062.89	-13174.11	1050.70
Wind 330 deg - Service		-9123.01	-16042.14	311.29

Load Combinations

Comb. No.	Description
1	Dead Only
2	1.2 Dead+1.6 Wind 0 deg - No Ice+1.0 Guy
3	1.2 Dead+1.6 Wind 30 deg - No Ice+1.0 Guy
4	1.2 Dead+1.6 Wind 45 deg - No Ice+1.0 Guy
5	1.2 Dead+1.6 Wind 60 deg - No Ice+1.0 Guy
6	1.2 Dead+1.6 Wind 90 deg - No Ice+1.0 Guy
7	1.2 Dead+1.6 Wind 120 deg - No Ice+1.0 Guy
8	1.2 Dead+1.6 Wind 135 deg - No Ice+1.0 Guy
9	1.2 Dead+1.6 Wind 150 deg - No Ice+1.0 Guy
10	1.2 Dead+1.6 Wind 180 deg - No Ice+1.0 Guy
11	1.2 Dead+1.6 Wind 210 deg - No Ice+1.0 Guy
12	1.2 Dead+1.6 Wind 225 deg - No Ice+1.0 Guy
13	1.2 Dead+1.6 Wind 240 deg - No Ice+1.0 Guy
14	1.2 Dead+1.6 Wind 270 deg - No Ice+1.0 Guy
15	1.2 Dead+1.6 Wind 300 deg - No Ice+1.0 Guy
16	1.2 Dead+1.6 Wind 315 deg - No Ice+1.0 Guy
17	1.2 Dead+1.6 Wind 330 deg - No Ice+1.0 Guy
18	1.2 Dead+1.0 Ice+1.0 Temp+Guy
19	1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp+1.0 Guy
20	1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp+1.0 Guy
21	1.2 Dead+1.0 Wind 45 deg+1.0 Ice+1.0 Temp+1.0 Guy
22	1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp+1.0 Guy
23	1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp+1.0 Guy
24	1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp+1.0 Guy
25	1.2 Dead+1.0 Wind 135 deg+1.0 Ice+1.0 Temp+1.0 Guy
26	1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp+1.0 Guy

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Comb. No.	Description
27	1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp+1.0 Guy
28	1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp+1.0 Guy
29	1.2 Dead+1.0 Wind 225 deg+1.0 Ice+1.0 Temp+1.0 Guy
30	1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp+1.0 Guy
31	1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp+1.0 Guy
32	1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp+1.0 Guy
33	1.2 Dead+1.0 Wind 315 deg+1.0 Ice+1.0 Temp+1.0 Guy
34	1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp+1.0 Guy
35	Dead+Wind 0 deg - Service+Guy
36	Dead+Wind 30 deg - Service+Guy
37	Dead+Wind 45 deg - Service+Guy
38	Dead+Wind 60 deg - Service+Guy
39	Dead+Wind 90 deg - Service+Guy
40	Dead+Wind 120 deg - Service+Guy
41	Dead+Wind 135 deg - Service+Guy
42	Dead+Wind 150 deg - Service+Guy
43	Dead+Wind 180 deg - Service+Guy
44	Dead+Wind 210 deg - Service+Guy
45	Dead+Wind 225 deg - Service+Guy
46	Dead+Wind 240 deg - Service+Guy
47	Dead+Wind 270 deg - Service+Guy
48	Dead+Wind 300 deg - Service+Guy
49	Dead+Wind 315 deg - Service+Guy
50	Dead+Wind 330 deg - Service+Guy

Maximum Member Forces

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial lb	Major Axis Moment lb-ft	Minor Axis Moment lb-ft	
T1	282 - 262	Leg	Max Tension	5	7477.24	-237.51	141.44	
			Max. Compression	27	-19607.89	4.10	489.34	
			Max. Mx	20	-17884.64	-848.25	378.47	
			Max. My	27	-5410.10	-2.88	-933.59	
			Max. Vy	7	-648.97	-0.00	0.00	
			Max. Vx	17	672.70	-0.00	-0.00	
		Diagonal	Max Tension	6	4879.13	0.00	0.00	
			Max. Compression	15	-4189.28	0.00	0.00	
			Max. Mx	23	4733.56	35.56	0.00	
			Max. My	23	3201.01	0.00	0.18	
			Max. Vy	23	-25.15	0.00	0.00	
			Max. Vx	23	-0.13	0.00	0.00	
		Secondary Horizontal	Max Tension	27	339.62	0.00	0.00	
			Max. Compression	27	-339.62	0.00	0.00	
			Max. Mx	20	292.26	-40.83	0.00	
			Max. My	6	205.64	0.00	0.00	
			Max. Vy	20	40.83	0.00	0.00	
			Max. Vx	6	-0.00	0.00	0.00	
			Top Girt	Max Tension	1	0.00	0.00	0.00
				Max. Compression	19	-2539.79	0.00	0.00
				Max. Mx	34	-1820.73	-52.27	0.00
				Max. My	6	-1340.89	0.00	0.00
				Max. Vy	34	52.27	0.00	0.00
				Max. Vx	6	-0.00	0.00	0.00
			Guy A	Bottom Tension	27	17541.60		
				Top Tension	10	18724.16		
				Top Cable Vert	27	15920.69		
Top Cable Norm	27	9855.23						

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Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial lb	Major Axis Moment lb-ft	Minor Axis Moment lb-ft		
T2	262 - 242	Guy B	Top Cable Tan	27	1.73				
			Bot Cable Vert	10	-13826.46				
			Bot Cable Norm	10	10795.22				
			Bot Cable Tan	10	1.67				
			Bottom Tension	32	17621.77				
			Top Tension	15	19020.25				
			Top Cable Vert	32	16118.74				
			Top Cable Norm	32	10097.34				
			Top Cable Tan	32	3.64				
			Bot Cable Vert	15	-13910.19				
			Bot Cable Norm	15	10818.20				
			Bot Cable Tan	15	2.49				
			Bottom Tension	22	18006.42				
			Top Tension	4	19134.30				
			Top Cable Vert	22	16218.84				
			Top Cable Norm	22	10152.37				
		Top Cable Tan	22	5.42					
		Bot Cable Vert	4	-14196.01					
		Bot Cable Norm	4	11076.14					
		Bot Cable Tan	4	153.38					
		Leg			Max Tension	13	9900.69	-116.10	63.33
					Max. Compression	32	-26090.52	-18.31	-6.50
					Max. Mx	20	-20696.23	-530.44	224.53
					Max. My	27	-22312.30	-24.68	-577.85
					Max. Vy	3	-395.67	-508.91	154.46
					Max. Vx	27	-412.79	-24.68	-577.85
		Diagonal			Max Tension	6	2729.60	0.00	0.00
					Max. Compression	2	-2385.22	0.00	0.00
					Max. Mx	32	792.27	35.20	0.00
					Max. My	23	-360.53	0.00	0.16
					Max. Vy	32	-24.89	0.00	0.00
					Max. Vx	23	0.11	0.00	0.00
Secondary Horizontal				Max Tension	32	451.90	0.00	0.00	
				Max. Compression	32	-451.90	0.00	0.00	
				Max. Mx	28	438.46	-40.46	0.00	
				Max. My	6	227.74	0.00	0.00	
				Max. Vy	28	40.46	0.00	0.00	
				Max. Vx	6	-0.00	0.00	0.00	
	T3		242 - 222	Leg	Max Tension	7	11843.40	-49.27	-51.89
					Max. Compression	27	-26514.23	-2.86	-50.11
Max. Mx					19	-22021.30	202.75	77.16	
Max. My					27	-24930.20	-3.44	-225.49	
Max. Vy		34			170.50	202.59	97.13		
Max. Vx		27			-195.80	-3.44	-225.49		
Diagonal		Max Tension			16	1740.96	0.00	0.00	
		Max. Compression			16	-1988.86	0.00	0.00	
		Max. Mx		32	551.89	34.82	0.00		
		Max. My		23	-217.80	0.00	0.13		
		Max. Vy		32	-24.62	0.00	0.00		
		Max. Vx		23	0.09	0.00	0.00		
		Secondary Horizontal		Max Tension	27	459.24	0.00	0.00	
				Max. Compression	27	-459.24	0.00	0.00	
Max. Mx				29	432.89	-40.06	0.00		
Max. My				23	421.01	0.00	-0.00		
Max. Vy	29		40.06	0.00	0.00				
Max. Vx	23		0.00	0.00	0.00				
T4	222 - 202		Leg	Max Tension	15	8018.55	-131.83	-336.88	
				Max. Compression	34	-28786.89	32.04	-150.99	
		Max. Mx		5	-18456.75	1165.44	-66.31		

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Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial lb	Major Axis Moment lb-ft	Minor Axis Moment lb-ft
			Max. My	3	-1572.54	71.17	-1038.05
			Max. Vy	5	-1180.12	-595.86	20.56
			Max. Vx	3	1023.66	-64.53	489.28
		Diagonal	Max Tension	5	5554.58	0.00	0.00
			Max. Compression	12	-5558.16	0.00	0.00
			Max. Mx	32	1558.50	50.80	0.00
			Max. My	31	-536.18	0.00	-0.18
			Max. Vy	32	-35.92	0.00	0.00
			Max. Vx	31	0.12	0.00	0.00
		Secondary Horizontal	Max Tension	34	498.60	0.00	0.00
			Max. Compression	34	-498.60	0.00	0.00
			Max. Mx	24	449.92	-39.63	0.00
			Max. My	23	456.42	0.00	-0.00
			Max. Vy	24	39.63	0.00	0.00
			Max. Vx	23	0.00	0.00	0.00
T5	202 - 182	Leg	Max Tension	15	18091.11	35.19	159.89
			Max. Compression	9	-54164.03	180.41	-387.99
			Max. Mx	6	-22495.99	524.45	51.61
			Max. My	2	-9560.67	-24.90	-491.73
			Max. Vy	6	399.44	-255.76	-53.73
			Max. Vx	2	391.42	-40.62	287.19
		Diagonal	Max Tension	12	6722.11	0.00	0.00
			Max. Compression	10	-11843.69	0.00	0.00
			Max. Mx	22	-1170.73	50.53	0.00
			Max. My	6	-1473.28	0.00	0.16
			Max. Vy	22	-35.73	0.00	0.00
			Max. Vx	6	0.11	0.00	0.00
		Secondary Horizontal	Max Tension	9	938.15	0.00	0.00
			Max. Compression	9	-938.15	0.00	0.00
			Max. Mx	29	894.06	-39.17	0.00
			Max. My	23	889.90	0.00	-0.00
			Max. Vy	29	39.17	0.00	0.00
			Max. Vx	23	0.00	0.00	0.00
		Guy A	Bottom Tension	11	23066.92		
			Top Tension	11	23244.28		
			Top Cable Vert	11	16864.17		
			Top Cable Norm	11	15996.63		
			Top Cable Tan	11	66.47		
			Bot Cable Vert	11	-16317.66		
			Bot Cable Norm	11	16301.98		
			Bot Cable Tan	11	249.37		
		Guy B	Bottom Tension	17	22036.70		
			Top Tension	17	22199.00		
			Top Cable Vert	17	15935.72		
			Top Cable Norm	17	15454.60		
			Top Cable Tan	17	59.93		
			Bot Cable Vert	17	-15425.97		
			Bot Cable Norm	17	15735.32		
			Bot Cable Tan	17	235.13		
		Guy C	Bottom Tension	3	23145.84		
			Top Tension	3	23315.99		
			Top Cable Vert	3	16804.56		
			Top Cable Norm	3	16162.88		
			Top Cable Tan	3	59.49		
			Bot Cable Vert	3	-16274.72		
			Bot Cable Norm	3	16456.07		
			Bot Cable Tan	3	246.95		
		Top Guy Pull-Off	Max Tension	5	24934.56	0.00	0.00
			Max. Compression	13	-8653.32	0.00	0.00

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Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial lb	Major Axis Moment lb-ft	Minor Axis Moment lb-ft	
T6	182 - 162	Bottom Guy Pull-Off	Max. Mx	29	4362.01	-70.22	0.00	
			Max. My	6	23028.61	0.00	0.00	
			Max. Vy	29	-70.22	0.00	0.00	
			Max. Vx	6	-0.00	0.00	0.00	
			Max Tension	15	4463.93	0.00	0.00	
			Torque Arm Top	Max. Compression	2	-6109.11	0.00	0.00
				Max. Mx	29	-443.36	-70.22	0.00
				Max. My	6	4104.32	0.00	0.00
				Max. Vy	29	-70.22	0.00	0.00
				Max. Vx	6	-0.00	0.00	0.00
				Max Tension	6	29547.05	0.00	0.00
				Max. Compression	1	0.00	0.00	0.00
				Max. Mx	22	23683.97	-236.93	0.00
				Max. My	23	17693.20	0.00	0.19
		Max. Vy		22	126.65	0.00	0.00	
		Torque Arm Bottom	Max. Vx	23	-0.10	0.00	0.00	
			Max Tension	13	1425.85	0.00	0.00	
			Max. Compression	3	-29855.50	0.00	0.00	
			Max. Mx	32	-13467.32	-237.05	0.00	
			Max. My	23	-15890.16	0.00	-0.17	
			Max. Vy	32	-126.71	0.00	0.00	
			Max. Vx	23	0.09	0.00	0.00	
			Max Tension	8	20924.73	-340.34	-312.02	
		Leg	Max. Compression	9	-72636.68	-173.71	-755.91	
			Max. Mx	14	-66583.40	-1554.73	-272.32	
			Max. My	10	-69983.53	0.32	1649.40	
			Max. Vy	14	1645.59	-198.72	-242.89	
			Max. Vx	17	1698.20	412.34	40.70	
			Diagonal	Max Tension	6	2654.90	0.00	0.00
				Max. Compression	6	-2674.46	0.00	0.00
				Max. Mx	21	265.68	33.42	0.00
				Max. My	23	-975.80	0.00	0.11
Max. Vy	21			-23.63	0.00	0.00		
Max. Vx	23			-0.08	0.00	0.00		
Secondary Horizontal	Max Tension		9	1258.10	0.00	0.00		
	Max. Compression		9	-1258.10	0.00	0.00		
	Max. Mx		23	974.64	-38.66	0.00		
	Max. My		23	1045.78	0.00	-0.00		
	Max. Vy		23	-38.66	0.00	0.00		
	Max. Vx		23	-0.00	0.00	0.00		
T7	162 - 142		Leg	Max Tension	8	15638.29	-401.66	-356.81
		Max. Compression		9	-68302.76	200.30	-106.39	
		Max. Mx		14	-63155.37	714.14	238.47	
		Max. My		10	-65536.05	0.42	-822.43	
		Max. Vy		6	-425.91	-115.50	-167.84	
		Max. Vx		10	-533.33	1.81	-381.31	
		Diagonal	Max Tension	12	5860.28	0.00	0.00	
			Max. Compression	12	-6033.92	0.00	0.00	
			Max. Mx	33	1068.53	32.88	0.00	
			Max. My	32	-591.68	0.00	-0.11	
			Max. Vy	33	-23.25	0.00	0.00	
			Max. Vx	32	0.07	0.00	0.00	
		Secondary Horizontal	Max Tension	9	1183.04	0.00	0.00	
			Max. Compression	9	-1183.04	0.00	0.00	
			Max. Mx	19	1030.95	-38.10	0.00	
			Max. My	31	1050.43	0.00	0.00	
			Max. Vy	19	38.10	0.00	0.00	
			Max. Vx	31	-0.00	0.00	0.00	

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Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial lb	Major Axis Moment lb-ft	Minor Axis Moment lb-ft	
T8	142 - 122	Leg	Max Tension	5	22992.63	-197.24	244.78	
			Max. Compression	19	-84415.94	39.20	-558.15	
			Max. Mx	6	-39619.70	-614.96	-113.66	
			Max. My	27	-66605.83	-35.86	-627.86	
			Max. Vy	6	-560.01	-614.96	-113.66	
			Max. Vx	2	531.32	70.82	560.53	
		Diagonal	Max Tension	11	7937.58	0.00	0.00	
			Max. Compression	12	-16097.36	0.00	0.00	
			Max. Mx	34	1201.23	49.60	0.00	
			Max. My	13	832.70	0.00	-0.15	
			Max. Vy	34	-35.07	0.00	0.00	
			Max. Vx	13	0.10	0.00	0.00	
			Secondary Horizontal	Max Tension	19	1462.13	0.00	0.00
				Max. Compression	19	-1462.13	0.00	0.00
				Max. Mx	24	1267.93	-37.48	0.00
				Max. My	23	1377.29	0.00	0.00
		Max. Vy		24	37.48	0.00	0.00	
		Max. Vx		23	-0.00	0.00	0.00	
		Guy A	Bottom Tension	11	27342.23			
			Top Tension	11	27465.52			
			Top Cable Vert	11	16121.05			
			Top Cable Norm	11	22236.60			
			Top Cable Tan	11	13.02			
			Bot Cable Vert	11	-15716.05			
			Bot Cable Norm	11	22373.01			
			Bot Cable Tan	11	227.32			
			Guy B	Bottom Tension	17	26193.02		
				Top Tension	17	26301.16		
		Top Cable Vert		17	14790.50			
		Top Cable Norm		17	21748.37			
		Top Cable Tan		17	18.83			
		Bot Cable Vert		17	-14421.27			
		Bot Cable Norm		17	21864.46			
		Bot Cable Tan		17	216.53			
		Guy C	Bottom Tension	3	27243.27			
			Top Tension	3	27359.35			
			Top Cable Vert	3	15721.04			
			Top Cable Norm	3	22391.58			
			Top Cable Tan	3	17.66			
			Bot Cable Vert	3	-15332.24			
		Top Guy Pull-Off	Bot Cable Norm	3	22518.17			
			Bot Cable Tan	3	224.65			
			Max Tension	5	34078.09	0.00	0.00	
			Max. Compression	2	-13474.86	0.00	0.00	
			Max. Mx	24	8085.29	-68.01	0.00	
			Max. My	13	24113.57	0.00	0.00	
		Bottom Guy Pull-Off	Max. Vy	24	68.01	0.00	0.00	
Max. Vx	13		-0.00	0.00	0.00			
Max Tension	5		14832.07	0.00	0.00			
Max. Compression	2		-7372.26	0.00	0.00			
Max. Mx	24		5824.57	-68.01	0.00			
Max. My	13		8790.28	0.00	0.00			
Torque Arm Top	Max. Vy	24	68.01	0.00	0.00			
	Max. Vx	13	-0.00	0.00	0.00			
	Max Tension	6	33242.17	0.00	0.00			
	Max. Compression	1	0.00	0.00	0.00			
	Max. Mx	34	19686.32	-229.48	0.00			
	Max. My	23	13649.22	0.00	0.11			
		Max. Vy	34	122.66	0.00	0.00		

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Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial lb	Major Axis Moment lb-ft	Minor Axis Moment lb-ft	
T9	122 - 102	Torque Arm Bottom	Max. Vx	23	-0.06	0.00	0.00	
			Max Tension	14	9299.48	0.00	0.00	
			Max. Compression	11	-33826.80	0.00	0.00	
			Max. Mx	33	-11609.50	-229.57	0.00	
			Max. My	23	-15729.10	0.00	-0.08	
			Max. Vy	33	122.71	0.00	0.00	
		Leg	Max. Vx	23	0.04	0.00	0.00	
			Max Tension	1	0.00	0.00	0.00	
			Max. Compression	19	-90731.75	32.25	-359.86	
			Max. Mx	17	-80208.17	-1161.08	405.25	
			Max. My	2	-82085.83	-35.90	-1350.96	
			Max. Vy	6	-1164.58	-640.65	0.39	
			Diagonal	Max. Vx	2	1424.71	14.83	746.43
				Max Tension	14	7936.05	0.00	0.00
				Max. Compression	7	-7531.33	0.00	0.00
				Max. Mx	34	1443.31	49.15	0.00
				Max. My	12	3815.98	0.00	-0.14
				Max. Vy	34	-34.75	0.00	0.00
Secondary Horizontal	Max. Vx	12	0.10	0.00	0.00			
	Max Tension	19	1571.52	0.00	0.00			
	Max. Compression	19	-1571.52	0.00	0.00			
	Max. Mx	18	1514.08	-36.77	0.00			
	Max. My	9	1474.55	0.00	0.00			
	Max. Vy	18	36.77	0.00	0.00			
T10	102 - 82	Leg	Max. Vx	9	-0.00	0.00	0.00	
			Max Tension	7	3877.58	395.19	260.04	
			Max. Compression	30	-94146.74	-125.72	-1475.68	
			Max. Mx	2	-71240.80	1555.01	188.52	
			Max. My	7	-87319.61	677.50	-1489.25	
			Max. Vy	2	-1077.74	-597.78	-304.01	
		Diagonal	Max. Vx	8	1142.78	585.77	-1467.89	
			Max Tension	8	4361.26	0.00	0.00	
			Max. Compression	6	-5437.63	0.00	0.00	
			Max. Mx	28	2685.18	30.70	0.00	
			Max. My	23	-3205.24	0.00	0.10	
			Max. Vy	28	-21.71	0.00	0.00	
		Secondary Horizontal	Max. Vx	23	-0.07	0.00	0.00	
			Max Tension	30	1630.67	0.00	0.00	
			Max. Compression	30	-1630.67	0.00	0.00	
			Max. Mx	18	1568.91	-35.94	0.00	
			Max. My	12	1589.85	0.00	-0.00	
			Max. Vy	18	-35.94	0.00	0.00	
T11	82 - 78	Leg	Max. Vx	12	0.00	0.00	0.00	
			Max Tension	1	0.00	0.00	0.00	
			Max. Compression	30	-95671.19	-184.77	-1944.79	
			Max. Mx	2	-82092.74	-2138.91	263.06	
			Max. My	7	-84344.68	914.80	-2036.57	
			Max. Vy	2	1384.02	-2138.91	263.06	
		Diagonal	Max. Vx	8	1421.73	778.02	-2003.51	
			Max Tension	3	6234.68	0.00	0.00	
			Max. Compression	11	-333.54	0.00	0.00	
			Max. Mx	28	3310.41	30.15	0.00	
			Max. My	30	3349.53	0.00	-0.09	
			Max. Vy	28	-21.32	0.00	0.00	
		Secondary Horizontal	Max. Vx	30	-0.07	0.00	0.00	
			Max Tension	30	1657.07	0.00	0.00	
			Max. Compression	30	-1657.07	0.00	0.00	
			Max. Mx	18	1605.12	-35.37	0.00	

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Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial lb	Major Axis Moment lb-ft	Minor Axis Moment lb-ft
T12	78 - 74	Leg	Max. My	12	1483.37	0.00	-0.00
			Max. Vy	18	35.37	0.00	0.00
			Max. Vx	12	0.00	0.00	0.00
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	31	-86386.43	256.30	1079.37
			Max. Mx	2	-65973.03	-2138.92	262.95
			Max. My	7	-68154.00	914.90	-2036.52
			Max. Vy	2	-1120.28	-2138.92	262.95
			Max. Vx	29	-1136.31	-149.53	-1951.24
		Diagonal	Max Tension	1	0.00	0.00	0.00
			Max. Compression	6	-7590.56	0.00	0.00
			Max. Mx	28	-3213.63	31.56	0.00
			Max. My	23	-3726.72	0.00	0.13
			Max. Vy	28	-22.32	0.00	0.00
			Max. Vx	23	0.09	0.00	0.00
		Secondary Horizontal	Max Tension	31	1496.26	0.00	0.00
			Max. Compression	31	-1496.26	0.00	0.00
			Max. Mx	18	1460.54	-36.71	0.00
Max. My	12		1174.32	0.00	-0.00		
Max. Vy	18		36.71	0.00	0.00		
Max. Vx	12		0.00	0.00	0.00		
Max Tension	1		0.00	0.00	0.00		
Max. Compression	31		-97195.50	-288.19	-2537.88		
Max. Mx	2		-76067.86	-3143.77	504.61		
T13	74 - 70	Leg	Max. My	7	-78516.14	1211.47	-3036.42
			Max. Vy	2	1945.35	-3143.77	504.61
			Max. Vx	8	1959.12	1013.20	-3033.89
			Max Tension	3	8768.60	0.00	0.00
			Max. Compression	12	-595.79	0.00	0.00
			Max. Mx	28	4029.70	29.73	0.00
			Max. My	30	4016.28	0.00	-0.11
			Max. Vy	28	-21.02	0.00	0.00
			Max. Vx	30	-0.08	0.00	0.00
		Diagonal	Max Tension	31	1683.48	0.00	0.00
			Max. Compression	31	-1683.48	0.00	0.00
			Max. Mx	18	1644.17	-34.95	0.00
			Max. My	12	1318.34	0.00	-0.00
			Max. Vy	18	-34.95	0.00	0.00
			Max. Vx	12	0.00	0.00	0.00
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	30	-103830.50	230.00	1053.25
			Max. Mx	2	-85495.43	-3143.80	504.45
T14	70 - 66	Leg	Max. My	7	-88573.94	1211.61	-3036.36
			Max. Vy	2	-1971.93	-3143.80	504.45
			Max. Vx	8	-1995.67	1013.33	-3033.85
			Max Tension	17	9507.79	0.00	0.00
			Max. Compression	2	-807.01	0.00	0.00
			Max. Mx	29	2626.23	29.51	0.00
			Max. My	23	3353.13	0.00	0.13
			Max. Vy	29	-20.87	0.00	0.00
			Max. Vx	23	-0.09	0.00	0.00
		Diagonal	Max Tension	30	1798.40	0.00	0.00
			Max. Compression	30	-1798.40	0.00	0.00
			Max. Mx	18	1749.96	-34.72	0.00
			Max. My	12	1516.67	0.00	-0.00
			Max. Vy	18	34.72	0.00	0.00
			Max. Vx	12	0.00	0.00	0.00
			Max Tension	11	26118.94	0.00	0.00
			Max. Compression	30	-1798.40	0.00	0.00
			Max. Mx	18	1749.96	-34.72	0.00
Secondary Horizontal	Max. My	12	1516.67	0.00	-0.00		
	Max. Vy	18	34.72	0.00	0.00		
	Max. Vx	12	0.00	0.00	0.00		
Guy A	Bottom Tension	11	26118.94	0.00	0.00		

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Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial lb	Major Axis Moment lb-ft	Minor Axis Moment lb-ft
			Top Tension	11	26196.27		
			Top Cable Vert	11	10744.23		
			Top Cable Norm	11	23891.53		
			Top Cable Tan	11	26.27		
			Bot Cable Vert	11	-10455.47		
			Bot Cable Norm	11	23934.32		
			Bot Cable Tan	11	175.52		
		Guy B	Bottom Tension	14	25672.37		
			Top Tension	14	25734.36		
			Top Cable Vert	14	9272.81		
			Top Cable Norm	14	24005.64		
			Top Cable Tan	14	35.94		
			Bot Cable Vert	14	-9014.69		
			Bot Cable Norm	14	24036.93		
			Bot Cable Tan	14	177.58		
		Guy C	Bottom Tension	6	26295.97		
			Top Tension	6	26365.99		
			Top Cable Vert	6	10196.42		
			Top Cable Norm	6	24314.54		
			Top Cable Tan	6	37.17		
			Bot Cable Vert	6	-9921.18		
			Bot Cable Norm	6	24351.88		
			Bot Cable Tan	6	183.74		
T15	66 - 62	Leg	Max Tension	1	0.00	0.00	0.00
			Max. Compression	30	-94501.42	-216.75	-2293.84
			Max. Mx	2	-75598.41	-2473.26	309.60
			Max. My	7	-78496.28	1044.82	-2358.00
			Max. Vy	2	1344.29	-2473.26	309.60
			Max. Vx	29	1379.15	-176.27	-2302.02
		Diagonal	Max Tension	1	0.00	0.00	0.00
			Max. Compression	3	-8375.59	0.00	0.00
			Max. Mx	29	-4589.28	30.90	0.00
			Max. My	30	-4490.18	0.00	-0.10
			Max. Vy	29	-21.85	0.00	0.00
			Max. Vx	30	-0.07	0.00	0.00
		Secondary Horizontal	Max Tension	30	1636.81	0.00	0.00
			Max. Compression	30	-1636.81	0.00	0.00
			Max. Mx	18	1583.85	-36.03	0.00
			Max. My	12	1378.80	0.00	-0.00
			Max. Vy	18	36.03	0.00	0.00
			Max. Vx	12	0.00	0.00	0.00
T16	62 - 42	Leg	Max Tension	7	9675.18	612.64	0.65
			Max. Compression	9	-113210.47	23.30	126.77
			Max. Mx	7	-96398.34	-2357.95	-1044.93
			Max. My	7	-94690.85	-2355.89	1050.11
			Max. Vy	8	-1658.83	-2315.11	-885.01
			Max. Vx	7	-608.75	875.57	78.82
		Diagonal	Max Tension	6	6860.48	0.00	0.00
			Max. Compression	11	-5814.61	0.00	0.00
			Max. Mx	25	738.21	28.51	0.00
			Max. My	23	2671.78	0.00	0.11
			Max. Vy	25	-20.16	0.00	0.00
			Max. Vx	23	-0.07	0.00	0.00
		Secondary Horizontal	Max Tension	9	1960.86	0.00	0.00
			Max. Compression	9	-1960.86	0.00	0.00
			Max. Mx	18	1768.10	-33.68	0.00
			Max. My	12	1907.24	0.00	-0.00
			Max. Vy	18	33.68	0.00	0.00
			Max. Vx	12	0.00	0.00	0.00

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Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial lb	Major Axis Moment lb-ft	Minor Axis Moment lb-ft
T17	42 - 22	Leg	Max Tension	7	10654.62	336.45	0.94
			Max. Compression	9	-112996.90	-196.92	50.22
			Max. Mx	29	-106978.61	-1483.60	84.29
			Max. My	7	-99685.73	-1220.80	518.94
			Max. Vy	22	-1175.91	-1478.88	9.22
			Max. Vx	7	349.62	740.13	-104.89
		Diagonal	Max Tension	12	2376.91	0.00	0.00
			Max. Compression	12	-3471.91	0.00	0.00
			Max. Mx	25	-514.09	26.82	0.00
			Max. My	7	-1135.87	0.00	0.13
			Max. Vy	25	-18.97	0.00	0.00
			Max. Vx	7	-0.09	0.00	0.00
		Secondary Horizontal	Max Tension	9	1957.16	0.00	0.00
			Max. Compression	9	-1957.16	0.00	0.00
			Max. Mx	27	1733.81	-31.92	0.00
			Max. My	13	1739.02	0.00	-0.00
			Max. Vy	27	31.92	0.00	0.00
			Max. Vx	13	0.00	0.00	0.00
			Max. Vx	7	0.00	0.00	0.00
T18	22 - 2	Leg	Max Tension	1	0.00	0.00	0.00
			Max. Compression	27	-112198.60	-373.36	1.58
			Max. Mx	20	-111316.38	-1198.13	-28.35
			Max. My	7	-88634.64	-843.23	266.14
			Max. Vy	19	-1026.32	-1162.21	-12.86
			Max. Vx	7	189.15	598.12	-101.02
		Diagonal	Max Tension	12	4589.67	0.00	0.00
			Max. Compression	12	-5750.80	0.00	0.00
			Max. Mx	25	45.35	23.81	0.00
			Max. My	7	-418.94	0.00	0.15
			Max. Vy	25	-16.84	0.00	0.00
			Max. Vx	7	-0.10	0.00	0.00
		Secondary Horizontal	Max Tension	27	1943.34	0.00	0.00
			Max. Compression	27	-1943.34	0.00	0.00
			Max. Mx	27	1838.40	-28.73	0.00
			Max. My	13	1538.87	0.00	-0.00
			Max. Vy	27	28.73	0.00	0.00
			Max. Vx	13	0.00	0.00	0.00
			Max. Vx	7	0.00	0.00	0.00
		Base Beam	Max Tension	7	6088.43	-148950.50	382.19
Max. Compression	10		-4605.20	529.65	-0.53		
Max. Mx	19		-108751.90	-250212.90	420.18		
Max. My	6		-60116.68	-138295.88	4428.69		
Max. Vy	19		-108751.90	-250212.90	420.18		
Max. Vx	6		1921.91	-138295.88	4428.69		

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical lb	Horizontal, X lb	Horizontal, Z lb
Guy C @ 213 ft Elev -17.5 ft Azimuth 240 deg	Max. Vert	13	-3017.54	-1774.11	1022.81
	Max. H _x	13	-3017.54	-1774.11	1022.81
	Max. H _z	3	-84652.30	-94724.89	56476.94
	Min. Vert	3	-84652.30	-94724.89	56476.94
	Min. H _x	6	-84065.81	-95806.77	53580.68

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Location	Condition	Gov. Load Comb.	Vertical lb	Horizontal, X lb	Horizontal, Z lb
Guy B @ 205 ft Elev -7.5 ft Azimuth 120 deg	Min. H _z	13	-3017.54	-1774.11	1022.81
	Max. Vert	7	-2827.56	1656.90	955.86
	Max. H _x	14	-80767.18	94248.30	52735.89
	Max. H _y	17	-80425.13	92338.52	55016.02
	Min. Vert	14	-80767.18	94248.30	52735.89
	Min. H _x	7	-2827.56	1656.90	955.86
Guy A @ 219 ft Elev -26.5 ft Azimuth 0 deg	Min. H _z	7	-2827.56	1656.90	955.86
	Max. Vert	2	-3244.57	-0.62	-2196.92
	Max. H _x	14	-45545.76	2807.93	-56408.80
	Max. H _y	2	-3244.57	-0.62	-2196.92
	Min. Vert	11	-85719.67	1561.00	-109073.12
	Min. H _x	6	-46251.79	-2855.90	-57366.28
Mast	Min. H _y	11	-85719.67	1561.00	-109073.12
	Max. Vert	19	326233.16	71.37	506.41
	Max. H _x	14	176911.41	6519.79	233.06
	Max. H _y	2	191366.29	24.98	6084.41
	Max. M _x	1	0.00	0.20	-11.31
	Max. M _y	1	0.00	0.20	-11.31
	Max. Torsion	6	1422.14	-6347.71	301.45
	Min. Vert	1	95339.25	0.20	-11.31
	Min. H _x	6	180540.53	-6347.71	301.45
	Min. H _y	10	153200.46	31.03	-7034.76
	Min. M _x	1	0.00	0.20	-11.31
	Min. M _y	1	0.00	0.20	-11.31
	Min. Torsion	14	-1221.63	6519.79	233.06

Tower Mast Reaction Summary

Load Combination	Vertical	Shear _x	Shear _y	Overturning Moment, M _x	Overturning Moment, M _y	Torque
	lb	lb	lb	lb-ft	lb-ft	lb-ft
Dead Only	95339.25	-0.20	11.31	0.00	0.00	-0.18
1.2 Dead+1.6 Wind 0 deg - No Ice+1.0 Guy	191366.29	-24.98	-6084.41	0.00	0.00	-66.43
1.2 Dead+1.6 Wind 30 deg - No Ice+1.0 Guy	179493.83	3413.01	-5386.19	0.00	0.00	-302.02
1.2 Dead+1.6 Wind 45 deg - No Ice+1.0 Guy	165386.68	4907.99	-4644.07	0.00	0.00	-466.11
1.2 Dead+1.6 Wind 60 deg - No Ice+1.0 Guy	153653.54	6053.13	-3487.60	0.00	0.00	-1269.00
1.2 Dead+1.6 Wind 90 deg - No Ice+1.0 Guy	180540.53	6347.71	-301.45	0.00	0.00	-1422.14
1.2 Dead+1.6 Wind 120 deg - No Ice+1.0 Guy	194581.38	5129.75	2963.46	0.00	0.00	-1029.20
1.2 Dead+1.6 Wind 135 deg - No Ice+1.0 Guy	189057.22	4111.58	4421.21	0.00	0.00	-742.45
1.2 Dead+1.6 Wind 150 deg - No Ice+1.0 Guy	179969.67	2901.92	5678.96	0.00	0.00	-297.71
1.2 Dead+1.6 Wind 180 deg - No Ice+1.0 Guy	153200.46	-31.03	7034.76	0.00	0.00	503.81
1.2 Dead+1.6 Wind 210 deg - No Ice+1.0 Guy	179940.12	-2948.20	5656.42	0.00	0.00	711.91
1.2 Dead+1.6 Wind 225 deg -	188510.49	-4178.77	4412.82	0.00	0.00	990.84

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Load Combination	Vertical lb	Shear _x lb	Shear _z lb	Overturing Moment, M _x lb-ft	Overturing Moment, M _z lb-ft	Torque lb-ft
No Ice+1.0 Guy						
1.2 Dead+1.6 Wind 240 deg - No Ice+1.0 Guy	193094.87	-5229.05	2992.83	0.00	0.00	1090.30
1.2 Dead+1.6 Wind 270 deg - No Ice+1.0 Guy	176911.41	-6519.79	-233.06	0.00	0.00	1221.63
1.2 Dead+1.6 Wind 300 deg - No Ice+1.0 Guy	151940.00	-6122.54	-3501.46	0.00	0.00	758.58
1.2 Dead+1.6 Wind 315 deg - No Ice+1.0 Guy	162510.31	-4972.58	-4744.99	0.00	0.00	277.92
1.2 Dead+1.6 Wind 330 deg - No Ice+1.0 Guy	175969.66	-3484.09	-5534.24	0.00	0.00	83.52
1.2 Dead+1.0 Ice+1.0 Temp+Guy	320521.95	-59.08	35.86	0.00	0.00	1.80
1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp+1.0 Guy	326233.16	-71.37	-506.41	0.00	0.00	89.65
1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp+1.0 Guy	325056.31	208.79	-445.48	0.00	0.00	131.86
1.2 Dead+1.0 Wind 45 deg+1.0 Ice+1.0 Temp+1.0 Guy	324400.82	332.54	-362.09	0.00	0.00	18.06
1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp+1.0 Guy	324162.71	433.36	-235.22	0.00	0.00	-221.88
1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp+1.0 Guy	324959.92	509.88	52.28	0.00	0.00	-519.78
1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp+1.0 Guy	325886.85	417.86	301.07	0.00	0.00	-310.66
1.2 Dead+1.0 Wind 135 deg+1.0 Ice+1.0 Temp+1.0 Guy	325452.89	341.88	416.49	0.00	0.00	-142.96
1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp+1.0 Guy	324659.44	243.35	512.08	0.00	0.00	0.64
1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp+1.0 Guy	323783.88	-53.56	590.18	0.00	0.00	-33.54
1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp+1.0 Guy	324779.32	-351.14	498.40	0.00	0.00	-78.38
1.2 Dead+1.0 Wind 225 deg+1.0 Ice+1.0 Temp+1.0 Guy	325643.77	-453.60	399.81	0.00	0.00	59.03
1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp+1.0 Guy	326134.71	-537.05	287.46	0.00	0.00	216.36
1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp+1.0 Guy	325236.43	-654.55	38.71	0.00	0.00	447.19
1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp+1.0 Guy	324436.04	-586.84	-262.19	0.00	0.00	250.59
1.2 Dead+1.0 Wind 315 deg+1.0 Ice+1.0 Temp+1.0 Guy	324632.17	-484.35	-394.18	0.00	0.00	97.72
1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp+1.0 Guy	325199.46	-358.39	-477.44	0.00	0.00	9.81
Dead+Wind 0 deg - Service+Guy	97091.04	3.46	-1633.89	0.00	0.00	19.29
Dead+Wind 30 deg - Service+Guy	96862.72	783.50	-1387.10	0.00	0.00	-14.01
Dead+Wind 45 deg - Service+Guy	96790.61	1108.33	-1120.51	0.00	0.00	-50.35
Dead+Wind 60 deg - Service+Guy	96738.92	1358.91	-781.95	0.00	0.00	-150.02
Dead+Wind 90 deg - Service+Guy	96632.15	1595.58	26.03	0.00	0.00	-246.36
Dead+Wind 120 deg - Service+Guy	96656.66	1419.63	835.88	0.00	0.00	-171.65
Dead+Wind 135 deg - Service+Guy	96552.01	1147.27	1149.60	0.00	0.00	-116.03
Dead+Wind 150 deg - Service+Guy	96443.79	810.11	1395.69	0.00	0.00	-31.30

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Load Combination	Vertical lb	Shear _x lb	Shear _y lb	Overturning Moment, M _x lb-ft	Overturning Moment, M _y lb-ft	Torque lb-ft
Dead+Wind 180 deg - Service+Guy	96451.39	-5.87	1594.43	0.00	0.00	31.86
Dead+Wind 210 deg - Service+Guy	96582.96	-817.72	1395.55	0.00	0.00	69.78
Dead+Wind 225 deg - Service+Guy	96747.78	-1151.97	1150.98	0.00	0.00	129.01
Dead+Wind 240 deg - Service+Guy	96911.75	-1421.09	840.97	0.00	0.00	151.91
Dead+Wind 270 deg - Service+Guy	96949.18	-1598.72	34.74	0.00	0.00	186.87
Dead+Wind 300 deg - Service+Guy	97032.59	-1363.09	-777.41	0.00	0.00	118.91
Dead+Wind 315 deg - Service+Guy	97034.08	-1109.39	-1118.65	0.00	0.00	73.17
Dead+Wind 330 deg - Service+Guy	97028.16	-781.82	-1387.73	0.00	0.00	35.92

Solution Summary

Load Comb.	Sum of Applied Forces			Sum of Reactions			% Error
	PX lb	PY lb	PZ lb	PX lb	PY lb	PZ lb	
1	0.00	-38348.26	0.00	1.03	38348.27	1.61	0.005%
2	427.14	-45585.84	-101914.20	-426.78	45586.31	101915.44	0.001%
3	50971.22	-45075.66	-87981.40	-50970.62	45075.96	87982.75	0.001%
4	71668.46	-44712.68	-71408.08	-71668.18	44712.84	71408.92	0.001%
5	87517.21	-44576.58	-49984.37	-87507.87	44576.60	50001.49	0.018%
6	101697.17	-45180.62	598.34	-101698.52	45180.94	-599.17	0.001%
7	88877.87	-45770.01	50855.28	-88878.81	45770.42	-50855.52	0.001%
8	71758.88	-45614.94	70397.58	-71759.89	45615.29	-70397.84	0.001%
9	51074.50	-45227.54	86211.25	-51075.82	45227.82	-86211.54	0.001%
10	494.65	-44659.33	99229.93	-471.82	44659.35	-99230.40	0.021%
11	-50540.87	-45169.51	87280.86	50542.49	45169.87	-87280.81	0.002%
12	-71300.04	-45532.50	71418.92	71301.31	45532.95	-71418.76	0.001%
13	-88497.27	-45668.60	51128.75	88498.40	45668.95	-51128.87	0.001%
14	-99905.79	-45064.56	314.65	99907.30	45064.93	-315.19	0.002%
15	-85042.30	-44475.16	-49126.65	85043.36	44475.30	49130.46	0.004%
16	-69454.76	-44630.23	-69939.95	69454.80	44630.36	69940.54	0.001%
17	-49128.08	-45017.63	-86215.50	49128.03	45017.91	86216.74	0.001%
18	0.00	-216005.35	0.00	-0.44	216005.33	-2.29	0.001%
19	125.05	-216488.60	-30270.49	-124.96	216488.59	30270.12	0.000%
20	15275.35	-215966.00	-26279.25	-15275.28	215965.99	26278.93	0.000%
21	21551.57	-215594.26	-21411.37	-21551.38	215594.25	21410.86	0.000%
22	26358.79	-215452.16	-15103.08	-26358.25	215452.14	15102.42	0.000%
23	30452.60	-216056.39	63.30	-30452.28	216056.39	-63.18	0.000%
24	26411.07	-216648.19	15080.15	-26410.93	216648.19	-15079.99	0.000%
25	21577.81	-216489.23	21228.15	-21577.49	216489.23	-21227.83	0.000%
26	15253.04	-216095.75	25997.33	-15252.80	216095.74	-25997.00	0.000%
27	75.84	-215522.11	30051.86	-75.93	215522.10	-30051.03	0.000%
28	-15164.49	-216044.71	26170.56	15164.19	216044.70	-26170.10	0.000%
29	-21460.21	-216416.44	21410.17	21460.07	216416.44	-21409.93	0.000%
30	-26300.06	-216558.55	15160.46	26299.92	216558.55	-15160.19	0.000%
31	-30150.07	-215954.32	42.63	30149.77	215954.31	-42.37	0.000%
32	-25955.60	-215362.52	-14957.87	25955.23	215362.51	14957.41	0.000%
33	-21188.03	-215521.47	-21170.43	21187.99	215521.47	21170.00	0.000%
34	-14947.69	-215914.96	-25996.98	14947.74	215914.96	25996.70	0.000%
35	87.17	-38442.80	-20798.82	-87.21	38442.76	20795.86	0.007%
36	10402.29	-38338.68	-17955.39	-10402.69	38338.67	17953.53	0.004%

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Load Comb.	Sum of Applied Forces			Sum of Reactions			% Error
	PX lb	PY lb	PZ lb	PX lb	PY lb	PZ lb	
37	14626.22	-38264.60	-14573.08	-14626.71	38264.59	14569.49	0.008%
38	17860.65	-38236.83	-10200.89	-17859.75	38236.83	10200.07	0.003%
39	20754.53	-38360.10	122.11	-20753.14	38360.09	-120.87	0.004%
40	18138.34	-38480.39	10378.63	-18135.29	38480.34	-10376.94	0.008%
41	14644.67	-38448.74	14366.85	-14642.06	38448.71	-14365.87	0.006%
42	10423.37	-38369.68	17594.13	-10421.62	38369.67	-17593.61	0.004%
43	100.95	-38253.72	20251.01	-101.06	38253.72	-20249.75	0.003%
44	-10314.46	-38357.84	17812.42	10312.63	38357.82	-17811.85	0.004%
45	-14551.03	-38431.91	14575.29	14548.42	38431.88	-14574.34	0.006%
46	-18060.67	-38459.69	10434.44	18057.76	38459.65	-10432.87	0.008%
47	-20388.94	-38336.42	64.21	20387.65	38336.40	-63.10	0.004%
48	-17355.57	-38216.13	-10025.85	17353.25	38216.12	10024.16	0.007%
49	-14174.44	-38247.78	-14273.46	14174.84	38247.77	14270.31	0.007%
50	-10026.14	-38326.84	-17595.00	10026.47	38326.83	17593.35	0.004%

Non-Linear Convergence Results

Load Combination	Converged?	Number of Cycles	Displacement Tolerance	Force Tolerance
1	Yes	10	0.00000001	0.00005501
2	Yes	20	0.00008383	0.00009408
3	Yes	20	0.00007572	0.00007735
4	Yes	20	0.00007789	0.00006473
5	Yes	16	0.00006577	0.00009498
6	Yes	21	0.00006502	0.00006320
7	Yes	21	0.00006350	0.00007110
8	Yes	21	0.00005905	0.00006345
9	Yes	21	0.00005819	0.00005789
10	Yes	16	0.00007874	0.00008738
11	Yes	20	0.00008754	0.00008907
12	Yes	20	0.00009186	0.00009968
13	Yes	21	0.00005379	0.00006075
14	Yes	20	0.00009711	0.00009068
15	Yes	14	0.00008424	0.00006883
16	Yes	20	0.00007325	0.00005620
17	Yes	20	0.00007589	0.00007286
18	Yes	13	0.00010000	0.00004241
19	Yes	19	0.00000001	0.00001852
20	Yes	19	0.00000001	0.00001412
21	Yes	18	0.00000001	0.00001774
22	Yes	17	0.00000001	0.00001747
23	Yes	18	0.00000001	0.00001113
24	Yes	19	0.00000001	0.00001089
25	Yes	18	0.00000001	0.00001842
26	Yes	18	0.00000001	0.00001346
27	Yes	17	0.00000001	0.00001258
28	Yes	18	0.00000001	0.00001881
29	Yes	19	0.00000001	0.00001271
30	Yes	19	0.00000001	0.00001363
31	Yes	18	0.00000001	0.00001393
32	Yes	17	0.00000001	0.00001204
33	Yes	18	0.00000001	0.00001448
34	Yes	19	0.00000001	0.00001256
35	Yes	11	0.00000001	0.00006651
36	Yes	11	0.00000001	0.00003858
37	Yes	10	0.00000001	0.00006983

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38	Yes	10	0.00000001	0.00004214
39	Yes	11	0.00000001	0.00004246
40	Yes	11	0.00000001	0.00008685
41	Yes	11	0.00000001	0.00007014
42	Yes	11	0.00000001	0.00004124
43	Yes	10	0.00000001	0.00004218
44	Yes	11	0.00000001	0.00004098
45	Yes	11	0.00000001	0.00006843
46	Yes	11	0.00000001	0.00008034
47	Yes	11	0.00000001	0.00003754
48	Yes	9	0.00000001	0.00008988
49	Yes	10	0.00000001	0.00006257
50	Yes	11	0.00000001	0.00003459

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T1	282 - 262	1.773	38	0.0633	0.0947
T2	262 - 242	1.940	38	0.0627	0.0862
T3	242 - 222	2.082	38	0.0472	0.0764
T4	222 - 202	2.158	37	0.0321	0.0629
T5	202 - 182	2.220	43	0.0343	0.0573
T6	182 - 162	2.344	43	0.0357	0.0559
T7	162 - 142	2.356	43	0.0227	0.0457
T8	142 - 122	2.201	44	0.0427	0.0260
T9	122 - 102	2.119	45	0.0077	0.0204
T10	102 - 82	2.117	45	0.0223	0.0227
T11	82 - 78	1.965	45	0.0538	0.0162
T12	78 - 74	1.921	45	0.0584	0.0159
T13	74 - 70	1.860	45	0.0610	0.0156
T14	70 - 66	1.814	45	0.0625	0.0152
T15	66 - 62	1.755	45	0.0657	0.0146
T16	62 - 42	1.710	45	0.0706	0.0140
T17	42 - 22	1.342	45	0.1130	0.0102
T18	22 - 2	0.759	46	0.1618	0.0055

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
289.00	FM Antenna	38	1.773	0.0633	0.0947	701332
284.00	2.5" x 10' Omni	38	1.773	0.0633	0.0947	701332
282.00	DLS L 864-L-865 Light Beacon	38	1.773	0.0633	0.0947	701332
	Unit					
281.00	6' Stand-off	38	1.781	0.0634	0.0943	701332
280.00	MF-950B	38	1.790	0.0636	0.0938	701332
270.00	Guy	38	1.874	0.0643	0.0896	292222
260.00	ASP-711	38	1.956	0.0618	0.0854	141256
234.70	DB589-Y	38	2.118	0.0404	0.0714	55123
230.00	3' Stand-off	38	2.136	0.0365	0.0680	56437
218.00	531-70HD Exposed Dipole Antenna	37	2.167	0.0311	0.0610	120160
212.50	8' Dish w/ Radome	43	2.178	0.0310	0.0591	120929
204.50	8' Dish w/ Radome	43	2.208	0.0332	0.0576	41332

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Elevation	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
196.00	Guy	43	2.256	0.0375	0.0570	71582
182.00	Pirod 12' T-Frame Sector Mount (1)	43	2.344	0.0357	0.0559	38390
180.50	6' Stand-off	43	2.351	0.0338	0.0556	34496
164.00	(2) 7770 Panel Antenna	43	2.364	0.0207	0.0474	18527
153.00	5.5' Dish w/ Radome	44	2.294	0.0349	0.0363	47962
142.00	(3) L-810 Obstruction Lights w/ Mount Kit	44	2.201	0.0427	0.0260	39142
132.00	14' Dipole	44	2.140	0.0267	0.0218	34393
128.00	Guy	44	2.125	0.0178	0.0212	34111
125.00	3" x 12.5' Omni	45	2.120	0.0119	0.0208	34137
124.50	1' Yagi antenna	45	2.120	0.0111	0.0207	34225
121.00	6'8"x4" Pipe Mount	45	2.119	0.0067	0.0204	40465
104.50	9' Dish w/ Radome	45	2.123	0.0182	0.0225	22615
70.00	Guy	45	1.814	0.0625	0.0152	27900

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T1	282 - 262	20.326	13	0.4236	0.5298
T2	262 - 242	21.913	13	0.4242	0.4895
T3	242 - 222	23.492	7	0.3437	0.4440
T4	222 - 202	24.610	7	0.2398	0.4029
T5	202 - 182	25.324	7	0.1985	0.3820
T6	182 - 162	26.070	7	0.1545	0.3636
T7	162 - 142	26.057	7	0.1897	0.3007
T8	142 - 122	24.881	7	0.3467	0.1965
T9	122 - 102	23.742	7	0.2147	0.1673
T10	102 - 82	22.629	7	0.3868	0.1608
T11	82 - 78	20.335	7	0.6835	0.1249
T12	78 - 74	19.788	7	0.7350	0.1182
T13	74 - 70	19.062	7	0.7756	0.1116
T14	70 - 66	18.465	7	0.8109	0.1049
T15	66 - 62	17.705	7	0.8533	0.0987
T16	62 - 42	17.067	7	0.9024	0.0926
T17	42 - 22	12.677	7	1.2127	0.0617
T18	22 - 2	6.888	7	1.5258	0.0322

Critical Deflections and Radius of Curvature - Design Wind

Elevation	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
289.00	FM Antenna	13	20.326	0.4236	0.5298	136360
284.00	2.5" x 10' Omni	13	20.326	0.4236	0.5298	136360
282.00	DLS L 864-L-865 Light Beacon Unit	13	20.326	0.4236	0.5298	136360
281.00	6' Stand-off	13	20.407	0.4246	0.5278	136360
280.00	MF-950B	13	20.487	0.4255	0.5258	136360
270.00	Guy	13	21.288	0.4312	0.5055	56817
260.00	ASP-711	7	22.071	0.4199	0.4856	26224

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Elevation	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
234.70	DB589-Y	7	23.965	0.3024	0.4205	8697
230.00	3' Stand-off	7	24.230	0.2767	0.4098	8577
218.00	531-70HD Exposed Dipole Antenna	7	24.768	0.2266	0.3987	12703
212.50	8' Dish w/ Radome	7	24.961	0.2136	0.3926	21474
204.50	8' Dish w/ Radome	7	25.233	0.2015	0.3842	8091
196.00	Guy	7	25.562	0.1910	0.3777	14240
182.00	Pirod 12' T-Frame Sector Mount (1)	7	26.070	0.1545	0.3636	5906
180.50	6' Stand-off	7	26.107	0.1477	0.3611	5429
164.00	(2) 7770 Panel Antenna	7	26.119	0.1727	0.3101	3155
153.00	5.5' Dish w/ Radome	7	25.611	0.2873	0.2512	6334
142.00	(3) L-810 Obstruction Lights w/ Mount Kit	7	24.881	0.3467	0.1965	7588
132.00	14' Dipole	7	24.261	0.2843	0.1732	6793
128.00	Guy	7	24.041	0.2492	0.1696	6827
125.00	3" x 12.5' Omni	7	23.886	0.2277	0.1682	6906
124.50	1' Yagi antenna	7	23.861	0.2249	0.1680	6963
121.00	6'8"x4" Pipe Mount	7	23.696	0.2129	0.1671	8479
104.50	9' Dish w/ Radome	7	22.827	0.3508	0.1607	2862
70.00	Guy	7	18.465	0.8109	0.1049	1880

Guy Design Data

Section No.	Elevation ft	Size	Initial Tension lb	Breaking Load lb	Actual T_u lb	Allowable ϕT_u lb	Required S.F.	Actual S.F.
T1	270.00 (A) (690)	3/4 EHS	5830.00	58299.91	18724.20	34980.00	1.000	1.868 ✓
	270.00 (B) (689)	3/4 EHS	5830.00	58299.91	19020.30	34980.00	1.000	1.839 ✓
	270.00 (C) (688)	3/4 EHS	5830.00	58299.91	19134.30	34980.00	1.000	1.828 ✓
T5	196.00 (A) (709)	11/16 EHS	5000.00	49999.91	22640.20	30000.00	1.000	1.325 ✓
	196.00 (A) (710)	11/16 EHS	5000.00	49999.91	23244.30	30000.00	1.000	1.291 ✓
	196.00 (B) (703)	11/16 EHS	5000.00	49999.91	21705.40	30000.00	1.000	1.382 ✓
	196.00 (B) (704)	11/16 EHS	5000.00	49999.91	22199.00	30000.00	1.000	1.351 ✓
	196.00 (C) (691)	11/16 EHS	5000.00	49999.91	23316.00	30000.00	1.000	1.287 ✓
	196.00 (C) (692)	11/16 EHS	5000.00	49999.91	22230.50	30000.00	1.000	1.349 ✓
	T8	128.00 (A) (733)	11/16 EHS	5000.00	49999.91	27008.70	30000.00	1.000
128.00 (A) (734)		11/16 EHS	5000.00	49999.91	27465.50	30000.00	1.000	1.092 ✓
128.00 (B) (727)		11/16 EHS	5000.00	49999.91	26256.00	30000.00	1.000	1.143 ✓
128.00 (B) (728)		11/16 EHS	5000.00	49999.91	26301.20	30000.00	1.000	1.141 ✓
128.00 (C) (715)		11/16 EHS	5000.00	49999.91	27359.40	30000.00	1.000	1.097 ✓
128.00 (C) (716)		11/16 EHS	5000.00	49999.91	26857.40	30000.00	1.000	1.117 ✓
T14	70.00 (A)	11/16 EHS	5000.00	49999.91	26196.30	30000.00	1.000	1.145 ✓

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Section No.	Elevation ft	Size	Initial Tension lb	Breaking Load lb	Actual T_u lb	Allowable ϕT_u lb	Required S.F.	Actual S.F.
	(741)							
	70.00 (B) (740)	11/16 EHS	5000.00	49999.91	25734.40	30000.00	1.000	1.166 ✓
	70.00 (C) (739)	11/16 EHS	5000.00	49999.91	26366.00	30000.00	1.000	1.138 ✓

Compression Checks

Leg Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in ²	Mast Stability Index	P_u lb	ϕP_u lb	Ratio $\frac{P_u}{\phi P_u}$
T1	282 - 262	2	20.00	2.00	48.0 K=1.00	3.1416	1.00	-19607.90	109335.00	0.179 ¹
T2	262 - 242	2	20.00	2.00	48.0 K=1.00	3.1416	1.00	-26090.50	109335.00	0.239 ¹
T3	242 - 222	2	20.00	2.00	48.0 K=1.00	3.1416	1.00	-26514.20	109335.00	0.243 ¹
T4	222 - 202	2	20.00	2.00	48.0 K=1.00	3.1416	1.00	-28786.90	109335.00	0.263 ¹
T5	202 - 182	2	20.00	2.00	48.0 K=1.00	3.1416	1.00	-54164.00	109335.00	0.495 ¹
T6	182 - 162	2	20.00	2.00	48.0 K=1.00	3.1416	1.00	-72636.70	109335.00	0.664 ¹
T7	162 - 142	2	20.00	2.00	48.0 K=1.00	3.1416	1.00	-68302.80	109335.00	0.625 ¹
T8	142 - 122	2	20.00	2.00	48.0 K=1.00	3.1416	1.00	-84415.90	109335.00	0.772 ¹
T9	122 - 102	2	20.00	2.00	48.0 K=1.00	3.1416	1.00	-90731.80	109335.00	0.830 ¹
T10	102 - 82	2	20.00	2.00	48.0 K=1.00	3.1416	1.00	-94146.70	109335.00	0.861 ¹
T11	82 - 78	2	4.00	2.00	48.0 K=1.00	3.1416	1.00	-95671.20	109335.00	0.875 ¹
T12	78 - 74	2	4.00	2.00	24.0 K=0.50	3.1416	0.95	-86386.40	116729.00	0.740 ¹
T13	74 - 70	2	4.00	2.00	48.0 K=1.00	3.1416	1.00	-97195.50	109335.00	0.889 ¹
T14	70 - 66	2	4.00	2.00	48.0 K=1.00	3.1416	1.00	-103831.00	109335.00	0.950 ¹
T15	66 - 62	2	4.00	2.00	24.0 K=0.50	3.1416	0.92	-94501.40	113132.00	0.835 ¹
T16	62 - 42	2"SR w 3rd pipe	20.00	2.00	46.9 K=1.00	3.6235	1.00	-113210.00	127000.00	0.891 ¹
T17	42 - 22	2"SR w 3rd pipe	20.00	2.00	46.9 K=1.00	3.6235	1.00	-112997.00	127000.00	0.890 ¹
T18	22 - 2	2"SR w 3rd pipe	20.00	2.00	46.9 K=1.00	3.6235	1.00	-112199.00	127000.00	0.883 ¹

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Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	Mast Stability Index	P _u lb	φP _n lb	Ratio $\frac{P_u}{\phi P_n}$
										✓

¹ P_u / φP_n controls

Diagonal Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u lb	φP _n lb	Ratio $\frac{P_u}{\phi P_n}$
T1	282 - 262	7/8	5.66	5.42	148.7 K=0.50	0.6013	-4189.28	6144.07	0.682 ¹
T2	262 - 242	7/8	5.66	5.42	148.7 K=0.50	0.6013	-2385.22	6144.07	0.388 ¹
T3	242 - 222	7/8	5.66	5.42	148.7 K=0.50	0.6013	-1988.86	6144.07	0.324 ¹
T4	222 - 202	SR7/8+L2.5x2.5x0.25	5.66	5.42	53.0 K=0.50	2.0910	-5558.16	58429.20	0.095 ¹
T5	202 - 182	SR7/8+L2.5x2.5x0.25	5.66	5.42	53.0 K=0.50	2.0910	-11843.70	58429.20	0.203 ¹
T6	182 - 162	7/8	5.66	5.42	148.7 K=0.50	0.6013	-2674.46	6144.07	0.435 ¹
T7	162 - 142	7/8	5.66	5.42	148.7 K=0.50	0.6013	-6033.92	6144.07	0.982 ¹
T8	142 - 122	SR7/8+L2.5x2.5x0.25	5.66	5.42	53.0 K=0.50	2.0910	-16097.40	58429.20	0.276 ¹
T9	122 - 102	SR7/8+L2.5x2.5x0.25	5.66	5.42	53.0 K=0.50	2.0910	-7531.33	58429.20	0.129 ¹
T10	102 - 82	7/8	5.66	5.42	148.7 K=0.50	0.6013	-5437.63	6144.07	0.885 ¹
T11	82 - 78	7/8	5.66	5.42	148.7 K=0.50	0.6013	-333.54	6144.07	0.054 ¹
T12	78 - 74	7/8	5.66	5.42	74.3 K=0.25	0.6013	-7590.56	14563.80	0.521 ¹
T13	74 - 70	7/8	5.66	5.42	148.7 K=0.50	0.6013	-595.79	6144.07	0.097 ¹
T14	70 - 66	7/8	5.66	5.42	148.7 K=0.50	0.6013	-807.01	6144.07	0.131 ¹
T15	66 - 62	7/8	5.66	5.42	74.3 K=0.25	0.6013	-8375.59	14563.80	0.575 ¹
T16	62 - 42	7/8	5.66	5.41	148.5 K=0.50	0.6013	-5814.61	6159.27	0.944 ¹
T17	42 - 22	7/8	5.66	5.41	148.5 K=0.50	0.6013	-3471.91	6159.27	0.564 ¹
T18	22 - 2	7/8	5.66	5.41	148.5 K=0.50	0.6013	-5750.79	6159.27	0.934 ¹

¹ P_u / φP_n controls

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Secondary Horizontal Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u lb	φP _n lb	Ratio $\frac{P_u}{\phi P_n}$
T1	282 - 262	L2 1/2x2x3/16	4.00	3.83	107.7 K=1.00	0.8090	-339.62	14228.40	0.024 ¹
T2	262 - 242	L2 1/2x2x3/16	4.00	3.83	107.7 K=1.00	0.8090	-451.90	14228.40	0.032 ¹
T3	242 - 222	L2 1/2x2x3/16	4.00	3.83	107.7 K=1.00	0.8090	-459.24	14228.40	0.032 ¹
T4	222 - 202	L2 1/2x2x3/16	4.00	3.83	107.7 K=1.00	0.8090	-498.60	14228.40	0.035 ¹
T5	202 - 182	L2 1/2x2x3/16	4.00	3.83	107.7 K=1.00	0.8090	-938.15	14228.40	0.066 ¹
T6	182 - 162	L2 1/2x2x3/16	4.00	3.83	107.7 K=1.00	0.8090	-1258.10	14228.40	0.088 ¹
T7	162 - 142	L2 1/2x2x3/16	4.00	3.83	107.7 K=1.00	0.8090	-1183.04	14228.40	0.083 ¹
T8	142 - 122	L2 1/2x2x3/16	4.00	3.83	107.7 K=1.00	0.8090	-1462.13	14228.40	0.103 ¹
T9	122 - 102	L2 1/2x2x3/16	4.00	3.83	107.7 K=1.00	0.8090	-1571.52	14228.40	0.110 ¹
T10	102 - 82	L2 1/2x2x3/16	4.00	3.83	107.7 K=1.00	0.8090	-1630.67	14228.40	0.115 ¹
T11	82 - 78	L2 1/2x2x3/16	4.00	3.83	107.7 K=1.00	0.8090	-1657.07	14228.40	0.116 ¹
T12	78 - 74	L2 1/2x2x3/16	4.00	3.83	107.7 K=1.00	0.8090	-1496.26	14228.40	0.105 ¹
T13	74 - 70	L2 1/2x2x3/16	4.00	3.83	107.7 K=1.00	0.8090	-1683.48	14228.40	0.118 ¹
T14	70 - 66	L2 1/2x2x3/16	4.00	3.83	107.7 K=1.00	0.8090	-1798.40	14228.40	0.126 ¹
T15	66 - 62	L2 1/2x2x3/16	4.00	3.83	107.7 K=1.00	0.8090	-1636.81	14228.40	0.115 ¹
T16	62 - 42	L2 1/2x2x3/16	4.00	3.83	107.6 K=1.00	0.8090	-1960.86	14249.90	0.138 ¹
T17	42 - 22	L2 1/2x2x3/16	4.00	3.83	107.6 K=1.00	0.8090	-1957.16	14249.90	0.137 ¹
T18	22 - 2	L2 1/2x2x3/16	4.00	3.83	107.6 K=1.00	0.8090	-1943.34	14249.90	0.136 ¹

¹ P_u / φP_n controls

Top Girt Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u lb	φP _n lb	Ratio $\frac{P_u}{\phi P_n}$
T1	282 - 262	L3x3x1/4	4.00	3.83	77.7 K=1.00	1.4400	-2539.79	33952.10	0.075 ¹

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Section No.	Elevation	Size	L	L _u	Kl/r	A	P _u	φP _n	Ratio P _u / φP _n
	ft		ft	ft		in ²	lb	lb	

¹ P_u / φP_n controls

Top Guy Pull-Off Design Data (Compression)

Section No.	Elevation	Size	L	L _u	Kl/r	A	P _u	φP _n	Ratio P _u / φP _n
	ft		ft	ft		in ²	lb	lb	
T5	202 - 182	L4x4x3/8	4.00	3.83	58.4 K=1.00	2.8600	-8653.32	77446.10	0.112 ¹
T8	142 - 122	L4x4x3/8	4.00	3.83	58.4 K=1.00	2.8600	-13474.90	77446.10	0.174 ¹

¹ P_u / φP_n controls

Bottom Guy Pull-Off Design Data (Compression)

Section No.	Elevation	Size	L	L _u	Kl/r	A	P _u	φP _n	Ratio P _u / φP _n
	ft		ft	ft		in ²	lb	lb	
T5	202 - 182	L4x4x3/8	4.00	3.83	58.4 K=1.00	2.8600	-6109.11	77446.10	0.079 ¹
T8	142 - 122	L4x4x3/8	4.00	3.83	58.4 K=1.00	2.8600	-7372.26	77446.10	0.095 ¹

¹ P_u / φP_n controls

Torque-Arm Bottom Design Data

Section No.	Elevation	Size	L	L _u	Kl/r	A	P _u	φP _n	Ratio P _u / φP _n
	ft		ft	ft		in ²	lb	lb	
T5	202 - 182 (698)	L4x4x3/8	7.48	7.40	112.6 K=1.00	2.8600	-29855.50	47513.50	0.628 ¹
T5	202 - 182 (699)	L4x4x3/8	7.48	7.40	112.6 K=1.00	2.8600	-29794.20	47513.50	0.627 ¹
T5	202 - 182 (707)	L4x4x3/8	7.48	7.40	112.6 K=1.00	2.8600	-28193.90	47513.50	0.593 ¹
T5	202 - 182 (708)	L4x4x3/8	7.48	7.40	112.6 K=1.00	2.8600	-28928.60	47513.50	0.609 ¹
T5	202 - 182 (713)	L4x4x3/8	7.48	7.40	112.6 K=1.00	2.8600	-28852.60	47513.50	0.607 ¹
T5	202 - 182 (714)	L4x4x3/8	7.48	7.40	112.6 K=1.00	2.8600	-29514.30	47513.50	0.621 ¹

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Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u lb	φP _n lb	Ratio $\frac{P_u}{\phi P_n}$
T8	142 - 122 (722)	L4x4x3/8	7.48	7.40	112.6 K=1.00	2.8600	-33427.30	47513.50	0.704 ¹
T8	142 - 122 (723)	L4x4x3/8	7.48	7.40	112.6 K=1.00	2.8600	-33826.80	47513.50	0.712 ¹
T8	142 - 122 (731)	L4x4x3/8	7.48	7.40	112.6 K=1.00	2.8600	-32420.40	47513.50	0.682 ¹
T8	142 - 122 (732)	L4x4x3/8	7.48	7.40	112.6 K=1.00	2.8600	-33359.60	47513.50	0.702 ¹
T8	142 - 122 (737)	L4x4x3/8	7.48	7.40	112.6 K=1.00	2.8600	-31922.00	47513.50	0.672 ¹
T8	142 - 122 (738)	L4x4x3/8	7.48	7.40	112.6 K=1.00	2.8600	-33254.30	47513.50	0.700 ¹

¹ P_u / φP_n controls

Tension Checks

Leg Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u lb	φP _n lb	Ratio $\frac{P_u}{\phi P_n}$
T1	282 - 262	2	20.00	2.00	48.0	3.1416	7477.24	127235.00	0.059 ¹
T2	262 - 242	2	20.00	2.00	48.0	3.1416	9900.69	127235.00	0.078 ¹
T3	242 - 222	2	20.00	2.00	48.0	3.1416	11843.40	127235.00	0.093 ¹
T4	222 - 202	2	20.00	2.00	48.0	3.1416	8018.55	127235.00	0.063 ¹
T5	202 - 182	2	20.00	2.00	48.0	3.1416	18091.10	127235.00	0.142 ¹
T6	182 - 162	2	20.00	2.00	48.0	3.1416	20924.70	127235.00	0.164 ¹
T7	162 - 142	2	20.00	2.00	48.0	3.1416	15638.30	127235.00	0.123 ¹
T8	142 - 122	2	20.00	2.00	48.0	3.1416	22992.60	127235.00	0.181 ¹
T10	102 - 82	2	20.00	2.00	48.0	3.1416	3877.58	127235.00	0.030 ¹
T16	62 - 42	2"SR w 3rd pipe	20.00	2.00	46.9	3.6235	9675.18	146752.00	0.066 ¹
T17	42 - 22	2"SR w 3rd pipe	20.00	2.00	46.9	3.6235	10654.60	146752.00	0.073 ¹

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¹ $P_u / \phi P_n$ controls

Diagonal Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u lb	ϕP_n lb	Ratio $\frac{P_u}{\phi P_n}$
T1	282 - 262	7/8	5.66	5.42	297.4	0.6013	4879.13	19482.80	0.250 ¹
T2	262 - 242	7/8	5.66	5.42	297.4	0.6013	2729.60	19482.80	0.140 ¹
T3	242 - 222	7/8	5.66	5.42	297.4	0.6013	1740.96	19482.80	0.089 ¹
T4	222 - 202	SR7/8+L2.5x2.5x0.25	5.66	5.42	106.0	2.0910	5554.58	67748.40	0.082 ¹
T5	202 - 182	SR7/8+L2.5x2.5x0.25	5.66	5.42	106.0	2.0910	6722.11	67748.40	0.099 ¹
T6	182 - 162	7/8	5.66	5.42	297.4	0.6013	2654.90	19482.80	0.136 ¹
T7	162 - 142	7/8	5.66	5.42	297.4	0.6013	5860.27	19482.80	0.301 ¹
T8	142 - 122	SR7/8+L2.5x2.5x0.25	5.66	5.42	106.0	2.0910	7937.58	67748.40	0.117 ¹
T9	122 - 102	SR7/8+L2.5x2.5x0.25	5.66	5.42	106.0	2.0910	7936.05	67748.40	0.117 ¹
T10	102 - 82	7/8	5.66	5.42	297.4	0.6013	4361.26	19482.80	0.224 ¹
T11	82 - 78	7/8	5.66	5.42	297.4	0.6013	6234.68	19482.80	0.320 ¹
T13	74 - 70	7/8	5.66	5.42	297.4	0.6013	8768.60	19482.80	0.450 ¹
T14	70 - 66	7/8	5.66	5.42	297.4	0.6013	9507.79	19482.80	0.488 ¹
T16	62 - 42	7/8	5.66	5.41	297.0	0.6013	6860.48	19482.80	0.352 ¹
T17	42 - 22	7/8	5.66	5.41	297.0	0.6013	2376.91	19482.80	0.122 ¹
T18	22 - 2	7/8	5.66	5.41	297.0	0.6013	4589.67	19482.80	0.236 ¹

¹ $P_u / \phi P_n$ controls

Secondary Horizontal Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u lb	ϕP_n lb	Ratio $\frac{P_u}{\phi P_n}$
T1	282 - 262	L2 1/2x2x3/16	4.00	3.83	76.7	0.8090	339.62	26211.60	0.013 ¹
T2	262 - 242	L2 1/2x2x3/16	4.00	3.83	76.7	0.8090	451.90	26211.60	0.017 ¹

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Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u lb	φP _n lb	Ratio $\frac{P_u}{\phi P_n}$
T3	242 - 222	L2 1/2x2x3/16	4.00	3.83	76.7	0.8090	459.24	26211.60	0.018 ¹
T4	222 - 202	L2 1/2x2x3/16	4.00	3.83	76.7	0.8090	498.60	26211.60	0.019 ¹
T5	202 - 182	L2 1/2x2x3/16	4.00	3.83	76.7	0.8090	938.15	26211.60	0.036 ¹
T6	182 - 162	L2 1/2x2x3/16	4.00	3.83	76.7	0.8090	1258.10	26211.60	0.048 ¹
T7	162 - 142	L2 1/2x2x3/16	4.00	3.83	76.7	0.8090	1183.04	26211.60	0.045 ¹
T8	142 - 122	L2 1/2x2x3/16	4.00	3.83	76.7	0.8090	1462.13	26211.60	0.056 ¹
T9	122 - 102	L2 1/2x2x3/16	4.00	3.83	76.7	0.8090	1571.52	26211.60	0.060 ¹
T10	102 - 82	L2 1/2x2x3/16	4.00	3.83	76.7	0.8090	1630.67	26211.60	0.062 ¹
T11	82 - 78	L2 1/2x2x3/16	4.00	3.83	76.7	0.8090	1657.07	26211.60	0.063 ¹
T12	78 - 74	L2 1/2x2x3/16	4.00	3.83	76.7	0.8090	1496.26	26211.60	0.057 ¹
T13	74 - 70	L2 1/2x2x3/16	4.00	3.83	76.7	0.8090	1683.48	26211.60	0.064 ¹
T14	70 - 66	L2 1/2x2x3/16	4.00	3.83	76.7	0.8090	1798.40	26211.60	0.069 ¹
T15	66 - 62	L2 1/2x2x3/16	4.00	3.83	76.7	0.8090	1636.81	26211.60	0.062 ¹
T16	62 - 42	L2 1/2x2x3/16	4.00	3.83	76.6	0.8090	1960.86	26211.60	0.075 ¹
T17	42 - 22	L2 1/2x2x3/16	4.00	3.83	76.6	0.8090	1957.16	26211.60	0.075 ¹
T18	22 - 2	L2 1/2x2x3/16	4.00	3.83	76.6	0.8090	1943.34	26211.60	0.074 ¹

¹ P_u / φP_n controls

Top Guy Pull-Off Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u lb	φP _n lb	Ratio $\frac{P_u}{\phi P_n}$
T5	202 - 182	L4x4x3/8	4.00	3.83	37.4	2.8600	24934.60	92664.00	0.269 ¹
T8	142 - 122	L4x4x3/8	4.00	3.83	37.4	2.8600	34078.10	92664.00	0.368 ¹

¹ P_u / φP_n controls

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Bottom Guy Pull-Off Design Data (Tension)

Section No.	Elevation <i>ft</i>	Size	L <i>ft</i>	L _u <i>ft</i>	Kl/r	A <i>in²</i>	P _u <i>lb</i>	φP _u <i>lb</i>	Ratio $\frac{P_u}{\phi P_u}$
T5	202 - 182	L4x4x3/8	4.00	3.83	37.4	2.8600	4463.93	92664.00	0.048 ¹
T8	142 - 122	L4x4x3/8	4.00	3.83	37.4	2.8600	14832.10	92664.00	0.160 ¹

¹ P_u / φP_u controls

Torque-Arm Top Design Data

Section No.	Elevation <i>ft</i>	Size	L <i>ft</i>	L _u <i>ft</i>	Kl/r	A <i>in²</i>	P _u <i>lb</i>	φP _u <i>lb</i>	Ratio $\frac{P_u}{\phi P_u}$
T5	202 - 182 (693)	L4x4x3/8	7.48	7.40	72.2	2.8600	28345.30	92664.00	0.306 ¹
T5	202 - 182 (694)	L4x4x3/8	7.48	7.40	72.2	2.8600	29547.00	92664.00	0.319 ¹
T5	202 - 182 (705)	L4x4x3/8	7.48	7.40	72.2	2.8600	27955.10	92664.00	0.302 ¹
T5	202 - 182 (706)	L4x4x3/8	7.48	7.40	72.2	2.8600	27792.90	92664.00	0.300 ¹
T5	202 - 182 (711)	L4x4x3/8	7.48	7.40	72.2	2.8600	27670.40	92664.00	0.299 ¹
T5	202 - 182 (712)	L4x4x3/8	7.48	7.40	72.2	2.8600	28744.20	92664.00	0.310 ¹
T8	142 - 122 (717)	L4x4x3/8	7.48	7.40	72.2	2.8600	33046.80	92664.00	0.357 ¹
T8	142 - 122 (718)	L4x4x3/8	7.48	7.40	72.2	2.8600	33242.20	92664.00	0.359 ¹
T8	142 - 122 (729)	L4x4x3/8	7.48	7.40	72.2	2.8600	31748.40	92664.00	0.343 ¹
T8	142 - 122 (730)	L4x4x3/8	7.48	7.40	72.2	2.8600	31227.10	92664.00	0.337 ¹
T8	142 - 122 (735)	L4x4x3/8	7.48	7.40	72.2	2.8600	32469.10	92664.00	0.350 ¹
T8	142 - 122 (736)	L4x4x3/8	7.48	7.40	72.2	2.8600	32375.60	92664.00	0.349 ¹

¹ P_u / φP_u controls

Torque-Arm Bottom Design Data

Section No.	Elevation <i>ft</i>	Size	L <i>ft</i>	L _u <i>ft</i>	Kl/r	A <i>in²</i>	P _u <i>lb</i>	φP _u <i>lb</i>	Ratio $\frac{P_u}{\phi P_u}$
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Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u lb	φP _n lb	Ratio P _u / φP _n ¹
T5	202 - 182 (698)	L4x4x3/8	7.48	7.40	72.2	2.8600	882.70	92664.00	0.010 ¹
T5	202 - 182 (699)	L4x4x3/8	7.48	7.40	72.2	2.8600	869.51	92664.00	0.009 ¹
T5	202 - 182 (707)	L4x4x3/8	7.48	7.40	72.2	2.8600	1188.57	92664.00	0.013 ¹
T5	202 - 182 (708)	L4x4x3/8	7.48	7.40	72.2	2.8600	1425.85	92664.00	0.015 ¹
T5	202 - 182 (713)	L4x4x3/8	7.48	7.40	72.2	2.8600	1296.01	92664.00	0.014 ¹
T5	202 - 182 (714)	L4x4x3/8	7.48	7.40	72.2	2.8600	1408.29	92664.00	0.015 ¹
T8	142 - 122 (722)	L4x4x3/8	7.48	7.40	72.2	2.8600	8320.77	92664.00	0.090 ¹
T8	142 - 122 (723)	L4x4x3/8	7.48	7.40	72.2	2.8600	8624.87	92664.00	0.093 ¹
T8	142 - 122 (731)	L4x4x3/8	7.48	7.40	72.2	2.8600	9153.96	92664.00	0.099 ¹
T8	142 - 122 (732)	L4x4x3/8	7.48	7.40	72.2	2.8600	9299.48	92664.00	0.100 ¹
T8	142 - 122 (737)	L4x4x3/8	7.48	7.40	72.2	2.8600	8251.67	92664.00	0.089 ¹
T8	142 - 122 (738)	L4x4x3/8	7.48	7.40	72.2	2.8600	8677.50	92664.00	0.094 ¹

¹ P_u / φP_n controls

Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P lb	φP _{allow} lb	% Capacity	Pass Fail
T1	282 - 262	Leg	2	3	-19607.90	109335.00	17.9	Pass
T2	262 - 242	Leg	2	53	-26090.50	109335.00	23.9	Pass
T3	242 - 222	Leg	2	102	-26514.20	109335.00	24.3	Pass
T4	222 - 202	Leg	2	150	-28786.90	109335.00	26.3	Pass
T5	202 - 182	Leg	2	198	-54164.00	109335.00	49.5	Pass
T6	182 - 162	Leg	2	246	-72636.70	109335.00	66.4	Pass
T7	162 - 142	Leg	2	294	-68302.80	109335.00	62.5	Pass
T8	142 - 122	Leg	2	342	-84415.90	109335.00	77.2	Pass
T9	122 - 102	Leg	2	390	-90731.80	109335.00	83.0	Pass
T10	102 - 82	Leg	2	438	-94146.70	109335.00	86.1	Pass
T11	82 - 78	Leg	2	486	-95671.20	109335.00	87.5	Pass
T12	78 - 74	Leg	2	498	-86386.40	116729.00	74.0	Pass
T13	74 - 70	Leg	2	510	-97195.50	109335.00	88.9	Pass
T14	70 - 66	Leg	2	522	-103831.00	109335.00	95.0	Pass
T15	66 - 62	Leg	2	534	-94501.40	113132.00	83.5	Pass
T16	62 - 42	Leg	2"SR w 3rd pipe	546	-113210.00	127000.00	89.1	Pass
T17	42 - 22	Leg	2"SR w 3rd pipe	594	-112997.00	127000.00	89.0	Pass
T18	22 - 2	Leg	2"SR w 3rd pipe	642	-112199.00	127000.00	88.3	Pass
T1	282 - 262	Diagonal	7/8	37	-4189.28	6144.07	68.2	Pass
T2	262 - 242	Diagonal	7/8	87	-2385.22	6144.07	38.8	Pass
T3	242 - 222	Diagonal	7/8	106	-1988.86	6144.07	32.4	Pass

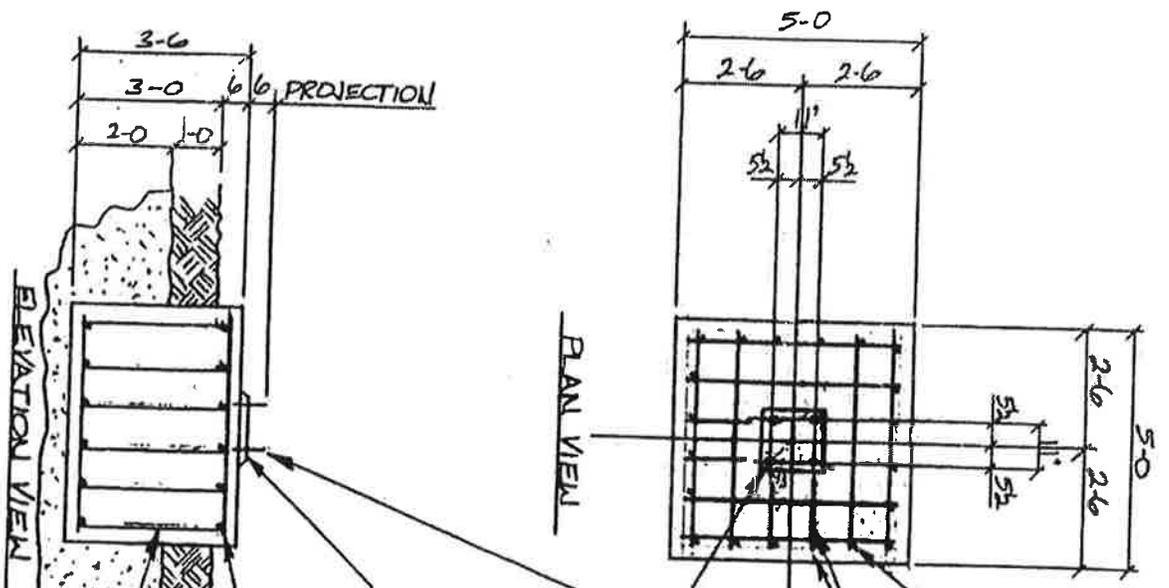
tnxTower AECOM 500 Enterprise Drive, Suite 3B Rocky Hill, CT Phone: 860-529-8882 FAX: 860-529-3991	Job	280' Guyed Tower	Page	73 of 74
	Project	130 Vernon Rd Bolton, CT	Date	08:58:55 04/13/16
	Client	Transcend Wireless / TWM-005 / - 004 Rev 1	Designed by	MCD

Section No.	Elevation ft	Component Type	Size	Critical Element	P lb	ϕP_{allow} lb	% Capacity	Pass Fail	
T4	222 - 202	Diagonal	SR7/8+L2.5x2.5x0.25	156	-5558.16	58429.20	9.5	Pass	
T5	202 - 182	Diagonal	SR7/8+L2.5x2.5x0.25	229	-11843.70	58429.20	20.3	Pass	
T6	182 - 162	Diagonal	7/8	283	-2674.46	6144.07	43.5	Pass	
T7	162 - 142	Diagonal	7/8	300	-6033.92	6144.07	98.2	Pass	
T8	142 - 122	Diagonal	SR7/8+L2.5x2.5x0.25	356	-16097.40	58429.20	27.6	Pass	
T9	122 - 102	Diagonal	SR7/8+L2.5x2.5x0.25	418	-7531.33	58429.20	12.9	Pass	
T10	102 - 82	Diagonal	7/8	443	-5437.63	6144.07	88.5	Pass	
T11	82 - 78	Diagonal	7/8	492	6234.68	19482.80	32.0	Pass	
T12	78 - 74	Diagonal	7/8	503	-7590.56	14563.80	52.1	Pass	
T13	74 - 70	Diagonal	7/8	516	8768.60	19482.80	45.0	Pass	
T14	70 - 66	Diagonal	7/8	526	9507.79	19482.80	48.8	Pass	
T15	66 - 62	Diagonal	7/8	535	-8375.59	14563.80	57.5	Pass	
T16	62 - 42	Diagonal	7/8	577	-5814.61	6159.27	94.4	Pass	
T17	42 - 22	Diagonal	7/8	600	-3471.91	6159.27	56.4	Pass	
T18	22 - 2	Diagonal	7/8	648	-5750.79	6159.27	93.4	Pass	
T1	282 - 262	Secondary Horizontal	L2 1/2x2x3/16	23	-339.62	14228.40	2.4	Pass	
T2	262 - 242	Secondary Horizontal	L2 1/2x2x3/16	62	-451.90	14228.40	3.2	Pass	
T3	242 - 222	Secondary Horizontal	L2 1/2x2x3/16	111	-459.24	14228.40	3.2	Pass	
T4	222 - 202	Secondary Horizontal	L2 1/2x2x3/16	158	-498.60	14228.40	3.5	Pass	
T5	202 - 182	Secondary Horizontal	L2 1/2x2x3/16	206	-938.15	14228.40	6.6	Pass	
T6	182 - 162	Secondary Horizontal	L2 1/2x2x3/16	255	-1258.10	14228.40	8.8	Pass	
T7	162 - 142	Secondary Horizontal	L2 1/2x2x3/16	302	-1183.04	14228.40	8.3	Pass	
T8	142 - 122	Secondary Horizontal	L2 1/2x2x3/16	350	-1462.13	14228.40	10.3	Pass	
T9	122 - 102	Secondary Horizontal	L2 1/2x2x3/16	407	-1571.52	14228.40	11.0	Pass	
T10	102 - 82	Secondary Horizontal	L2 1/2x2x3/16	455	-1630.67	14228.40	11.5	Pass	
T11	82 - 78	Secondary Horizontal	L2 1/2x2x3/16	495	-1657.07	14228.40	11.6	Pass	
T12	78 - 74	Secondary Horizontal	L2 1/2x2x3/16	506	-1496.26	14228.40	10.5	Pass	
T13	74 - 70	Secondary Horizontal	L2 1/2x2x3/16	518	-1683.48	14228.40	11.8	Pass	
T14	70 - 66	Secondary Horizontal	L2 1/2x2x3/16	530	-1798.40	14228.40	12.6	Pass	
T15	66 - 62	Secondary Horizontal	L2 1/2x2x3/16	542	-1636.81	14228.40	11.5	Pass	
T16	62 - 42	Secondary Horizontal	L2 1/2x2x3/16	555	-1960.86	14249.90	13.8	Pass	
T17	42 - 22	Secondary Horizontal	L2 1/2x2x3/16	602	-1957.16	14249.90	13.7	Pass	
T18	22 - 2	Secondary Horizontal	L2 1/2x2x3/16	659	-1943.34	14249.90	13.6	Pass	
T1	282 - 262	Top Girt	L3x3x1/4	4	-2539.79	33952.10	7.5	Pass	
T1	282 - 262	Guy A@270	3/4	690	18724.20	34980.00	53.5	Pass	
T5	202 - 182	Guy A@196	11/16	710	23244.30	30000.00	77.5	Pass	
T8	142 - 122	Guy A@128	11/16	734	27465.50	30000.00	91.6	Pass	
T14	70 - 66	Guy A@70	11/16	741	26196.30	30000.00	87.3	Pass	
T1	282 - 262	Guy B@270	3/4	689	19020.30	34980.00	54.4	Pass	
T5	202 - 182	Guy B@196	11/16	704	22199.00	30000.00	74.0	Pass	
T8	142 - 122	Guy B@128	11/16	728	26301.20	30000.00	87.7	Pass	
T14	70 - 66	Guy B@70	11/16	740	25734.40	30000.00	85.8	Pass	
T1	282 - 262	Guy C@270	3/4	688	19134.30	34980.00	54.7	Pass	
T5	202 - 182	Guy C@196	11/16	691	23316.00	30000.00	77.7	Pass	
T8	142 - 122	Guy C@128	11/16	715	27359.40	30000.00	91.2	Pass	
T14	70 - 66	Guy C@70	11/16	739	26366.00	30000.00	87.9	Pass	
T5	202 - 182	Top Guy	L4x4x3/8	696	24934.60	92664.00	26.9	Pass	
T8	142 - 122	Pull-Off@196	Top Guy	L4x4x3/8	720	34078.10	92664.00	36.8	Pass
T5	202 - 182	Bottom Guy	Pull-Off@128	L4x4x3/8	700	-6109.11	77446.10	7.9	Pass
T8	142 - 122	Bottom Guy	Pull-Off@196	L4x4x3/8	725	14832.10	92664.00	16.0	Pass
T5	202 - 182	Torque Arm	Pull-Off@128	L4x4x3/8	694	29547.00	92664.00	31.9	Pass
T8	142 - 122	Torque Arm	Top@196	L4x4x3/8	718	33242.20	92664.00	35.9	Pass
T5	202 - 182	Torque Arm	Top@128	L4x4x3/8	698	-29855.50	47513.50	62.8	Pass
T8	142 - 122	Torque Arm	Bottom@196	L4x4x3/8	723	-33826.80	47513.50	71.2	Pass

tnxTower AECOM 500 Enterprise Drive, Suite 3B Rocky Hill, CT Phone: 860-529-8882 FAX: 860-529-3991	Job 280' Guyed Tower	Page 74 of 74
	Project 130 Vernon Rd Bolton, CT	Date 08:58:55 04/13/16
	Client Transcend Wireless / TWM-005 / - 004 Rev 1	Designed by MCD

Section No.	Elevation ft	Component Type	Size	Critical Element	P lb	ϕP_{allow} lb	% Capacity	Pass Fail
		Bottom@128						
							Summary	
						Leg (T14)	95.0	Pass
						Diagonal (T7)	98.2	Pass
						Secondary Horizontal (T16)	13.8	Pass
						Top Girt (T1)	7.5	Pass
						Guy A (T8)	91.6	Pass
						Guy B (T8)	87.7	Pass
						Guy C (T8)	91.2	Pass
						Top Guy Pull-Off (T8)	36.8	Pass
						Bottom Guy Pull-Off (T8)	16.0	Pass
						Torque Arm Top (T8)	35.9	Pass
						Torque Arm Bottom (T8)	71.2	Pass
						RATING =	98.2	Pass

FOUNDATION ANALYSIS – TIA-222-G



(2) #4 x 3-0 VERTICAL REBAR SPACE AS SHOWN

(2) #8 x 4-6 REBAR EACH WAY TOP & BOTTOM EQUALLY SPACED

(4) 3/4" - 1-4 ANCHOR BOLT SEE DETAIL

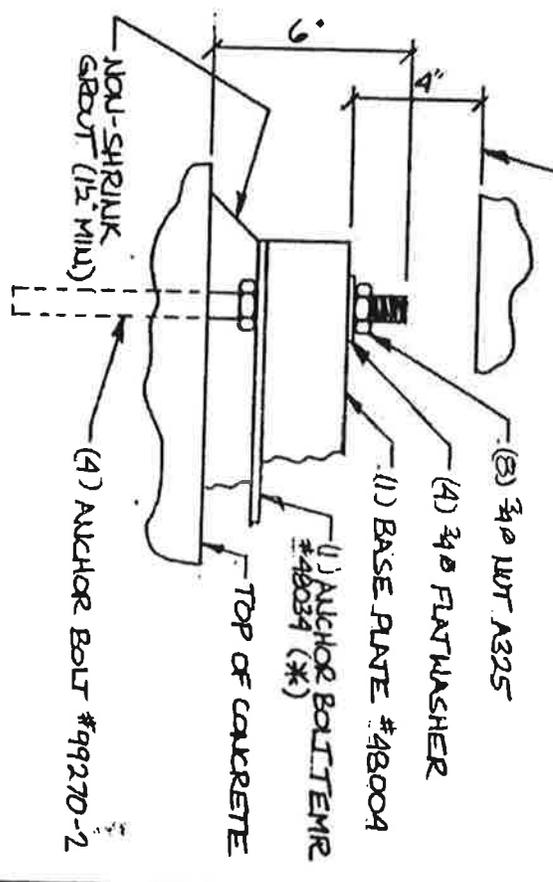
NOTES:

1. TOTAL CONCRETE READ = 3.2 CU. YDS.
2. SEE DWG 4881067-E5 FOR REBAR LIST AND FOUNDATION NOTES.

92-43-023

(*) TEMPLATE NOTE:

- ANCHOR BOLT TEMPLATE MAY BE REMOVED AFTER FOUNDATION HAS SET-UP.
- BASE PLATE CAN BE LEVELLED & GROUTED.
- USE FLAT WASHER IN PLACE OF TEMPLATE.



TYPICAL ANCHOR BOLT DETAIL (*)

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REV.	DATE	BY	DRWN BY	CHKD BY	DATE	SCALE	DRWG NO.	ISSUE
1	4/9/91	EMERSON	ASL					
0	2-19-92	ASL						

EXISTING TOWER BASE

FILE NO. 90-41-053

Job Bolton, CT Tower Mod.ificationsProject No. TWMA-005/004 Rev. 1

Page _____ of _____

Description Foundation Analysis w/ TIA-6 StandardComputed by MCD

Sheet _____ of _____

Date 4/5/2016

Checked by _____

Date _____

Reference

Check - Foundation Bearing

$$\gamma_{\text{concrete}} = \underline{150 \text{ PCF}}$$

$$\text{Foundation width of Base} = \underline{5'-0''}$$

$$\text{Foundation thickness of Base} = \underline{3'-6''}$$

$$\text{Concrete (DL) of Foundation} = 5' \times 5' \times 3.5' \times 150 \text{ PCF} = \underline{13,125 \text{ lbf}}$$

$$\text{Compression of Loaded tower} = \underline{326,233 \text{ lbf}}$$

$$\text{Total Factored Compressive force} = 326,233 \text{ lbf} + 13,125 \text{ lbf} = \underline{339,358 \text{ lbf}}$$

$$\text{Apply TIA-222-G Reduction Factor} = 0.60$$

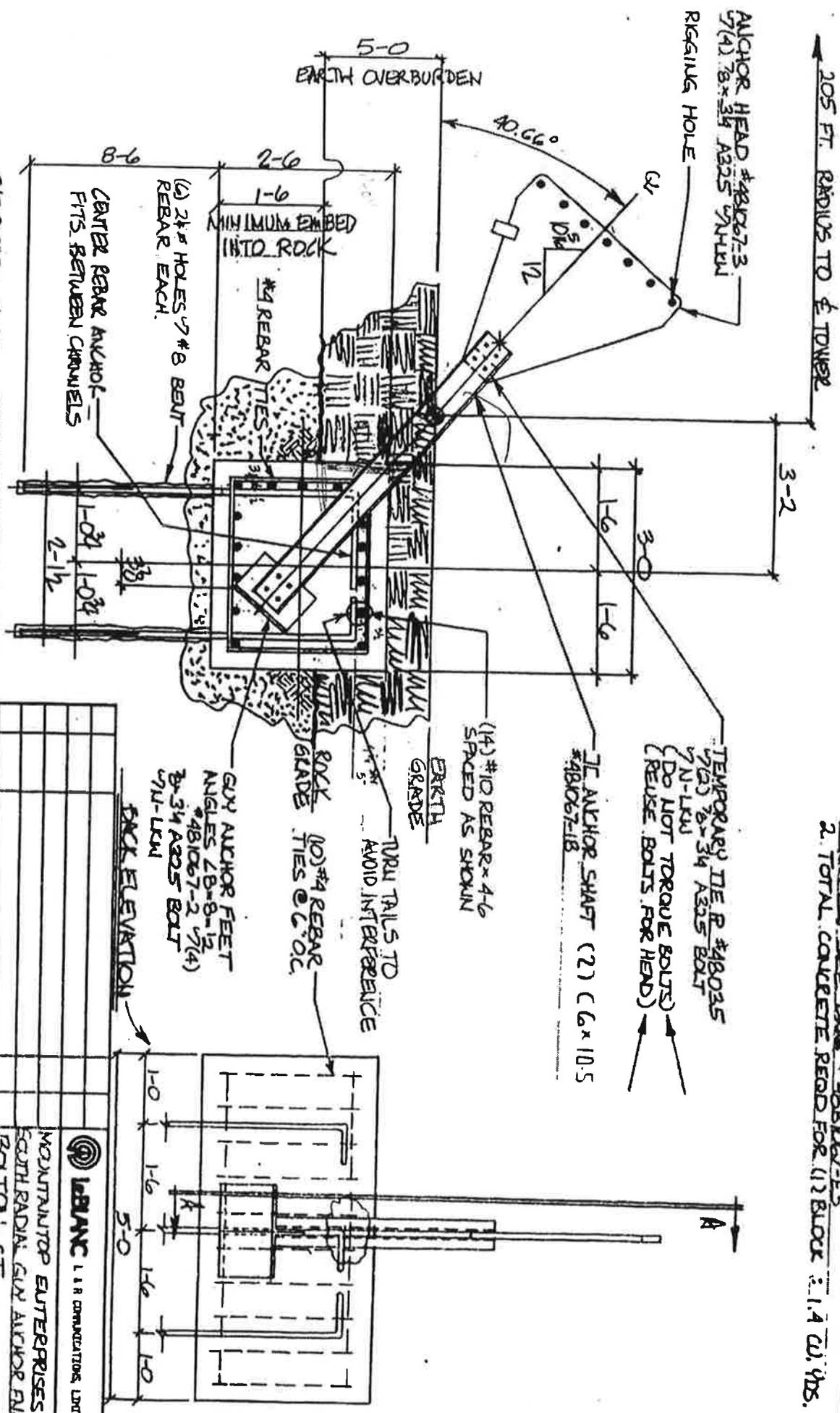
$$\text{Allowable Bearing Pressure} = 10 \text{ TSF} = 20,000 \text{ lb/sf (Geotech Page 1)}$$

$$\text{Ultimate Bearing Pressure} = 2 \times \text{Allowable} = 40,000 \text{ lb/sf} \times 0.6 = 24,000 \text{ lb/sf}$$

$$\text{Bearing Capacity} = \frac{P(\text{tower} + \text{foundation})}{A_{\text{foundation}}} = \frac{339,358 \text{ lbf}}{5' \times 5'} = \underline{13,574 \text{ PSF}}$$

$$\text{TIA-6 Bearing Capacity} = \frac{13,574}{24,000} = \underline{56.6\%}$$

NOTES
 1. FOR REBAR LIST AND TYPICAL FOUNDATION NOTES SEE PAGE # 48B1067-ES
 2. TOTAL CONCRETE REQD FOR (1) BLOCK IS 1.4 CU. YDS.



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REV.	DATE	DRAWN BY	SCALE	DRAWING NO.	ISS
0	0-3-90	SL		48B1067-E4B	0

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MODERN TOP ENTERPRISES
 SOUTH BAY GUY ANCHOR AND
 BOLTON, CT

EXISTING SOUTH GUY ANCHOR

Job Bolton, Ct Tower Modification
 Description Foundat. 'on Analysis w/ TIA-G
 Standard

Page _____ of _____
 Project No. TWM-005/-004 Rev. 1 Sheet _____ of _____
 Computed by MCD Date 4/5/2016
 Checked by _____ Date _____

Reference

Check Grouted Anchor:

- Existing foundation anchored to Rock, therefore check anchor connected to Rock capacities.

$$P_u = L_b \times \pi \times D_{\text{hole}} \times T_w \times \phi_{\text{factor}}$$

$$T_w = 50 \text{ PSI} \left(\text{Grout to Rock - working} \right. \\ \left. \left(\frac{1}{2} \text{ ultimate strength} \right) \right) \text{ bond stress}$$

$$\phi_{\text{factor}} = \underline{0.60}$$

$$L_b = 8' - 6" = 102.0 \text{ in}$$

$$D_{\text{hole}} = 2.0 \text{ in}$$

$$P_u = 102.0 \text{ in} \times \pi \times 2.0 \text{ in} \times 50 \text{ PSI} \times 0.60 = 19,226 \text{ lbf/anchor}$$

$$\# \text{ anchors} = 6 \rightarrow (6) \times 19,226 \text{ lbf} = \underline{115,359 \text{ lbf}} \text{ Resistance}$$

$$\text{Anchor (Maximum) Uplift Force (TNX)} = \underline{85,720 \text{ lbf}}$$

$$\text{Uplift Capacity Check} = \frac{85,720}{115,359} \times 100\% = \underline{74.3\%} \rightarrow (\text{OK})$$

Shear Resistance (Shear Bearing to Rock):

Allow to
ultimate

$$h(\text{Rock}) \times \text{width} \times \text{Surface Area pressure} = 1' - 6" \times 5' - 0" \times 5 \text{ tsf} \times \frac{2,000 \text{ lbf}}{1 \text{ sq ft}} \times \frac{2}{1} \\ \text{(Allow)} \\ = \underline{150,000 \text{ lbf}}$$

Apply TIA-222-G Reduct. on factor = 0.75 (Lateral Resistance)

$$150,000 \text{ lbf} \times 0.75 = 112,500 \text{ lbf} \text{ (Shear Resistance)}$$

$$\text{(Maximum) Anchor shear force (TNX)} = 110,273 \text{ lbf}$$

$$\text{Shear Capacity check} = \frac{110,273}{112,500} = \underline{98.0\%} \rightarrow (\text{OK})$$

Job Bolton, CT tower Modifications

Project No. TUM-005/004 Rev. 1

Page _____ of _____

Description Foundation Analysis w/ TIA-G Standard

Computed by MCD

Sheet _____ of _____

Date 4/5/2016

Checked by _____

Date _____

Reference

- Note: Shear resistance is NOT considering any additional resistance from steel anchor bars.

Check-Tension Anchor Steel

(Assumed steel)

$$(6) \uparrow \text{diameter steel} \rightarrow \frac{\pi}{4} (1.00 \text{ in})^2 = 0.7854 \text{ in}^2 \times 40,000 \text{ PSI} = 31,415 \text{ lbf/anchor}$$

$$31,415 \text{ lbf/anchor} \times 6 \text{ anchors} = 188,493 \text{ lbf} \times 0.90 = 169,644 \text{ lbf (OK) visual inspection}$$

AISC
Factor

Check-Anchor Shaft \rightarrow (2) C6x10.5

$$\text{Area} = 2 \times 3.07 \text{ in}^2 = 6.14 \text{ in}^2 \quad F_y \text{ steel} = 36 \text{ ksi (Assumed)} \quad \phi = 0.9 (\text{AISC-tension})$$

$$\text{Steel Resistance} = 0.9 \times 6.14 \text{ in}^2 \times 36,000 \text{ PSI} = 198,936 \text{ lbf}$$

$$\text{Largest "Pull" force} = 139,018 \text{ lbf}$$

(TN tower)

$$\text{Anchor Shaft Capacity} = \frac{139,018 \text{ lbf}}{198,936 \text{ lbf}} \times 100\% = \underline{\underline{69.9\%}}$$

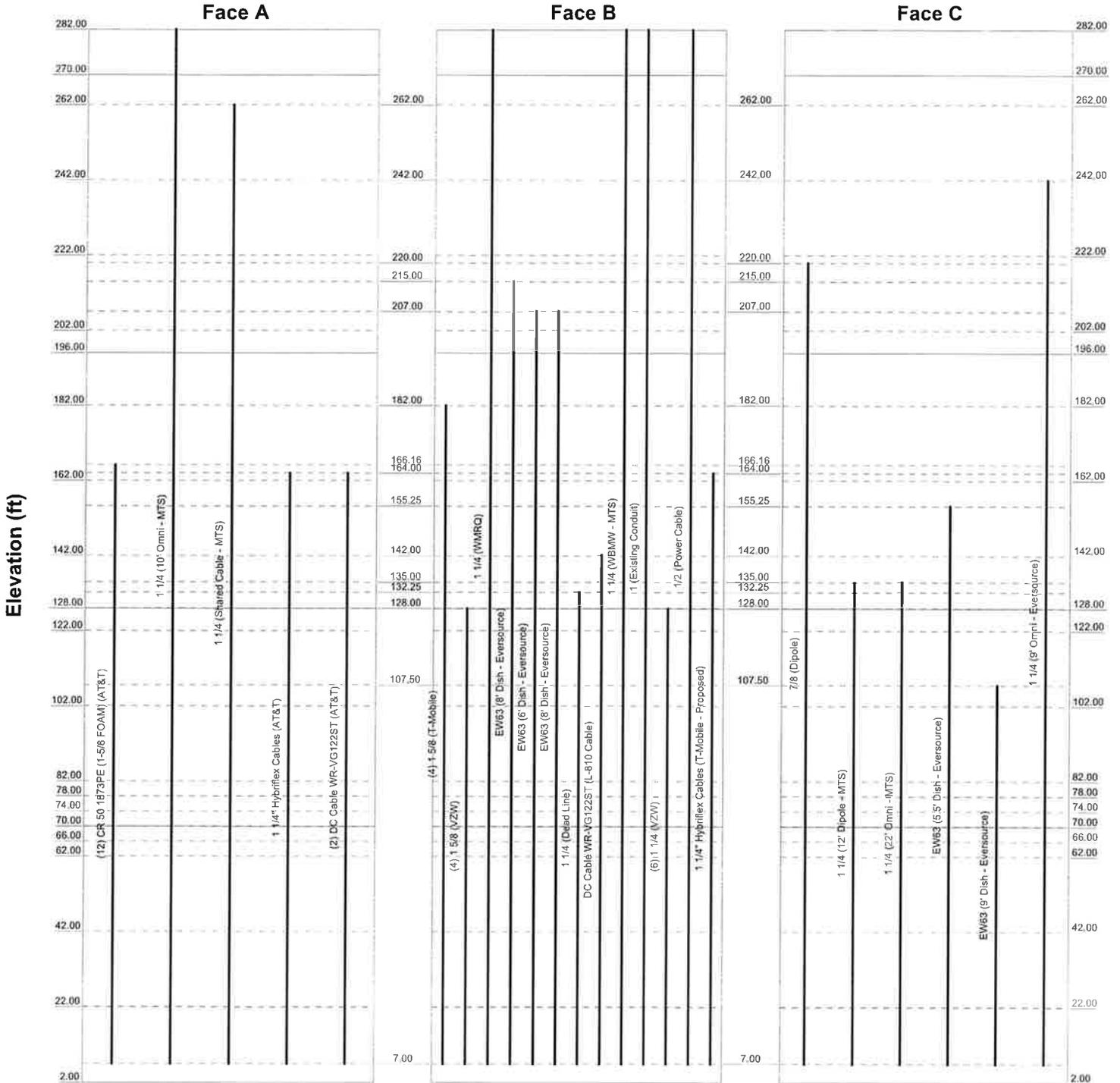
TNX TOWER INPUT/OUTPUT SUMMARY – TIA-222-F

TNX TOWER FEEDLINE DISTRIBUTION – TIA-222-F

Feed Line Distribution Chart

2' - 282'

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



AECOM 500 Enterprise Drive, Suite 3B Rocky Hill, CT Phone: 860-529-8882 FAX: 860-529-3991	Job: 280' Guyed Tower		Project: 130 Vernon Rd Bolton, CT	
	Client: Transcend Wireless / TWM-005 / -004 Rev. 1	Drawn by: MCD	App'd:	
	Code: TIA/EIA-222-F	Date: 04/13/16	Scale: NTS	
	Path:	Dwg No.: E-7		

TNX TOWER FEEDLINE PLAN – TIA-222-F

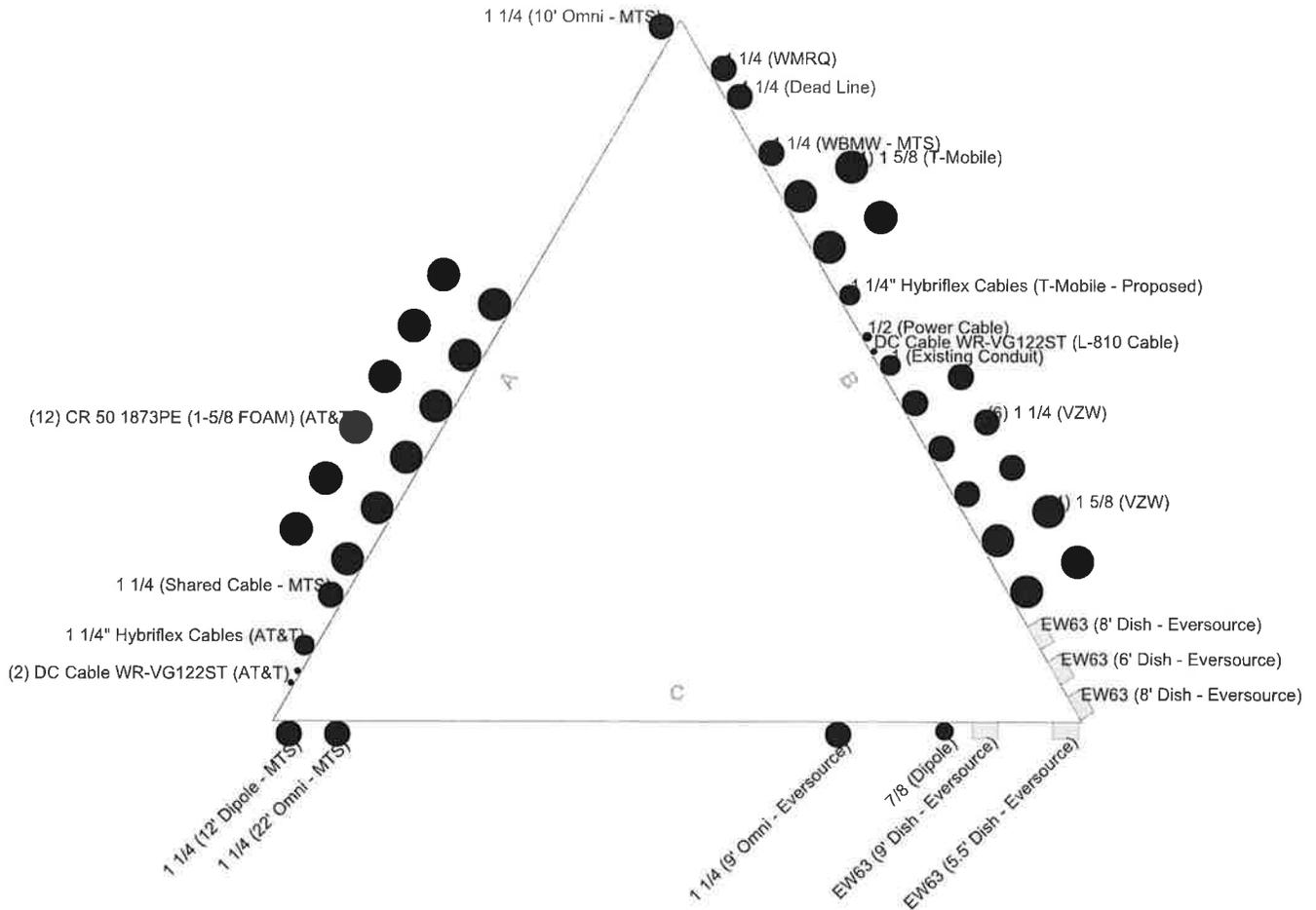
Feed Line Plan

Round

Flat

App In Face

App Out Face

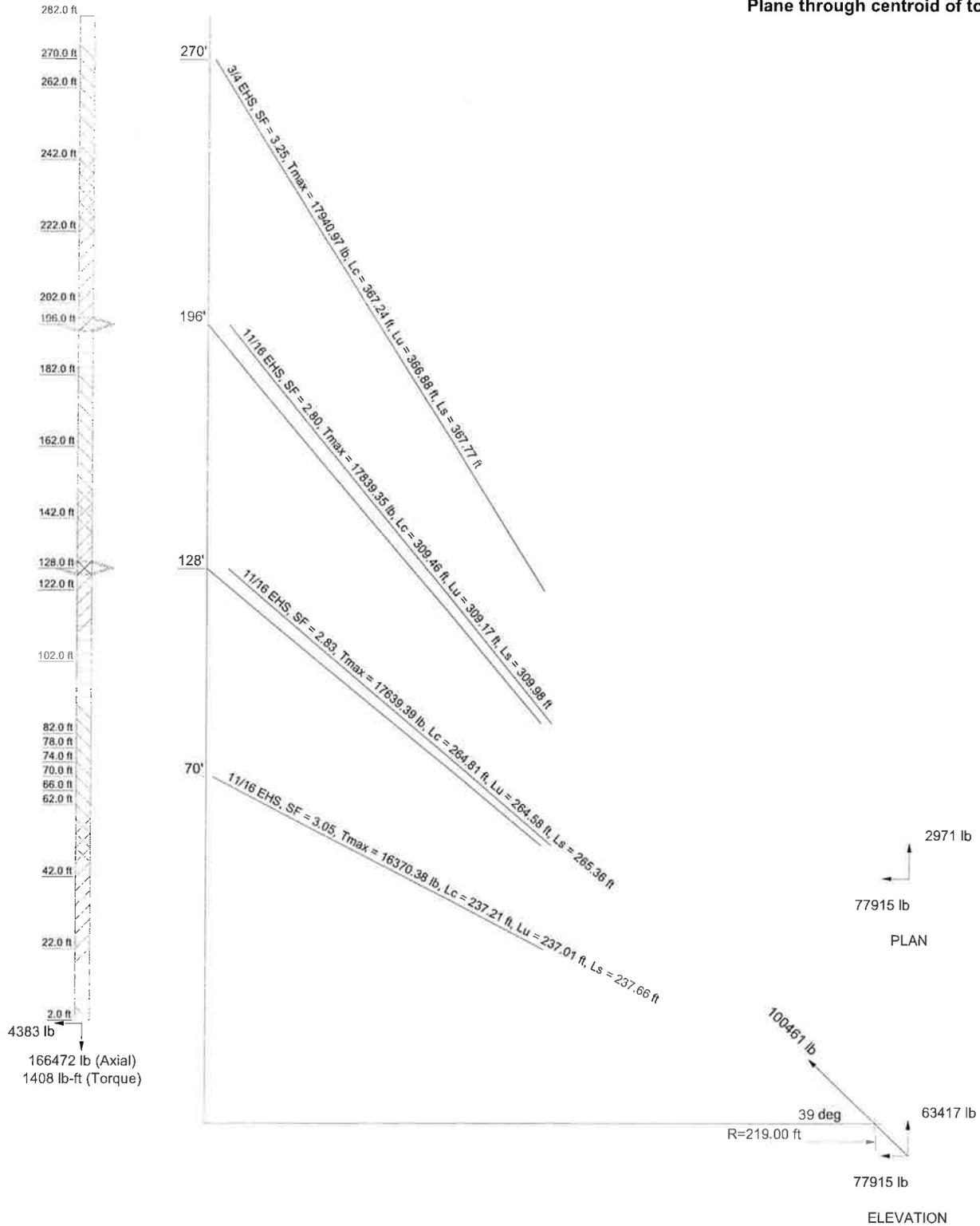


AECOM 500 Enterprise Drive, Suite 3B Rocky Hill, CT Phone: 860-529-8882 FAX: 860-529-3991	Job: 280' Guyed Tower		
	Project: 130 Vernon Rd Bolton, CT		
	Client: Transcend Wireless / TWM-005 / -004 Rev. 1	Drawn by: MCD	App'd:
	Code: TIA/EIA-222-F	Date: 04/13/16	Scale: NTS
	Path:	Dwg No. E-7	

GUY TENSIONS AND TOWER REACTIONS – TIA-222-F

Guy Tensions and Tower Reactions
 TIA/EIA-222-F - 85 mph/74 mph 0.5000 in Ice

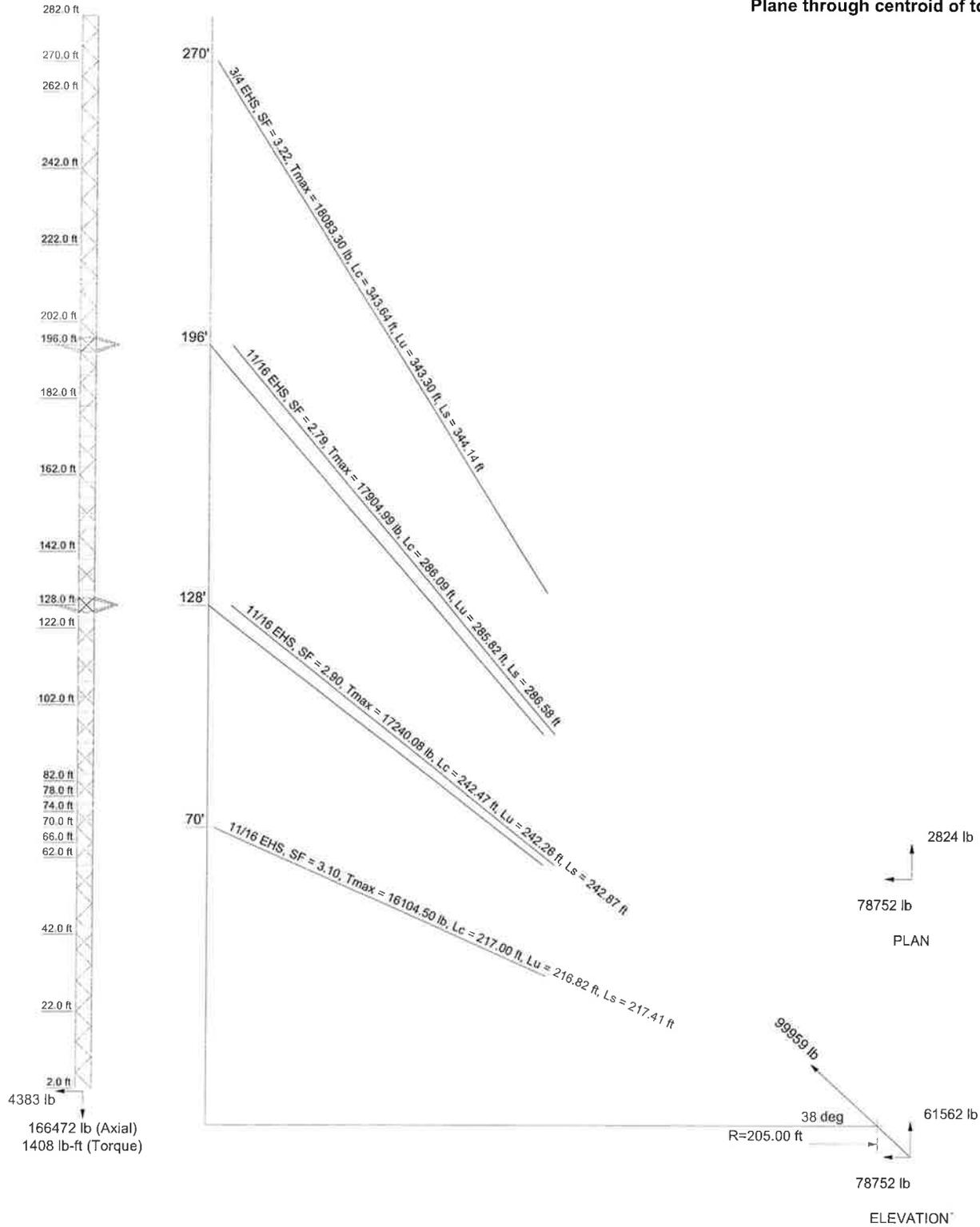
Maximum Values
 Anchor 'A' @ 219 ft Azimuth 0 deg Elev -26.5 ft
 Plane through centroid of tower



AECOM 500 Enterprise Drive, Suite 3B Rocky Hill, CT Phone: 860-529-8882 FAX: 860-529-3991	Job: 280' Guyed Tower		
	Project: 130 Vernon Rd Bolton, CT		
	Client: Transcend Wireless / TWM-005 / -004 Rev. 1	Drawn by: MCD	App'd:
	Code: TIA/EIA-222-F	Date: 04/13/16	Scale: NTS
	Path:	Dwg No. E-6	

Guy Tensions and Tower Reactions
 TIA/EIA-222-F - 85 mph/74 mph 0.5000 in Ice

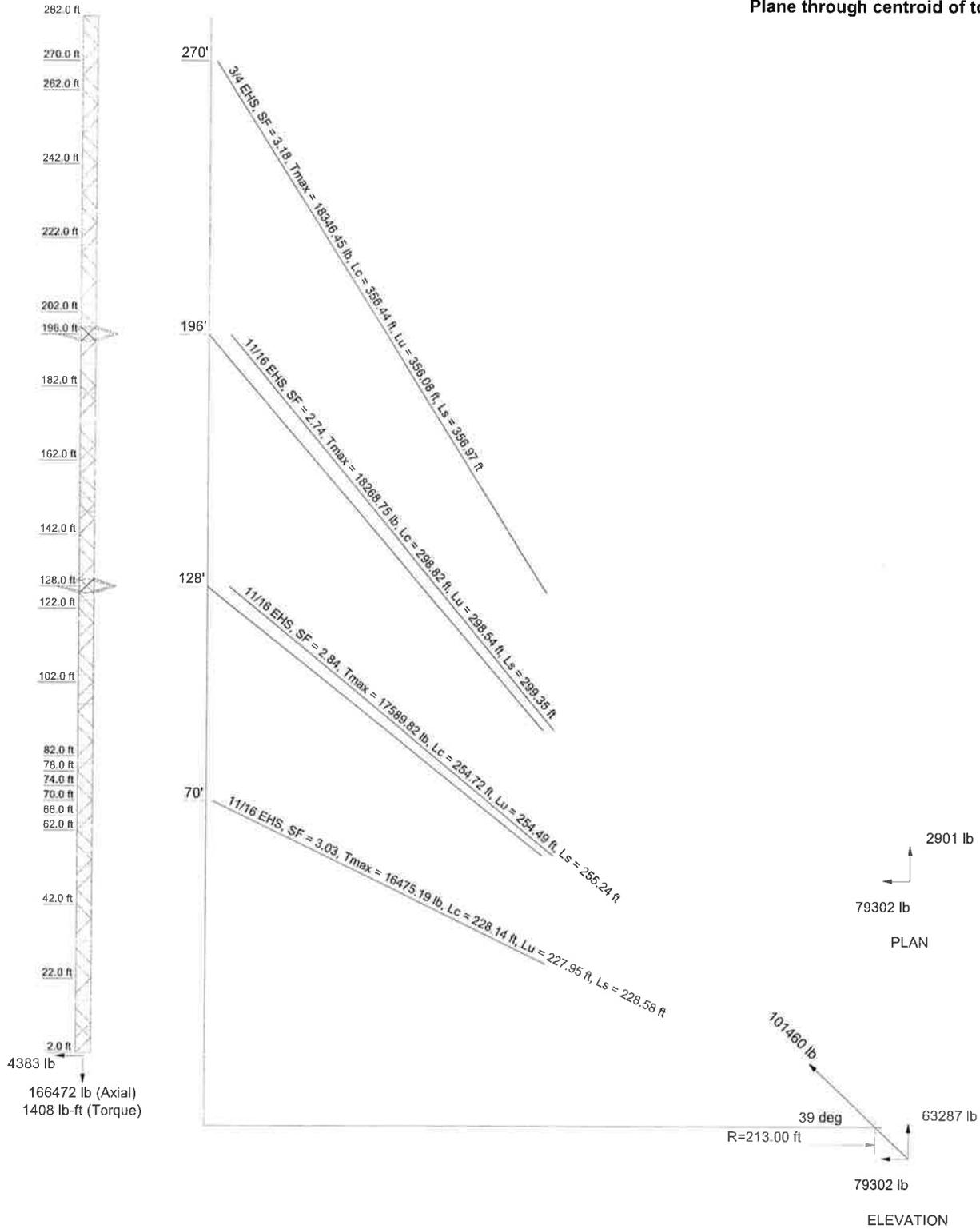
Maximum Values
 Anchor 'B' @ 205 ft Azimuth 120 deg Elev -7.5 ft
 Plane through centroid of tower



AECOM 500 Enterprise Drive, Suite 3B Rocky Hill, CT Phone: 860-529-8882 FAX: 860-529-3991	Job: 280' Guyed Tower	
	Project: 130 Vernon Rd Bolton, CT	
	Client: Transcend Wireless / TWM-005 / -004 Rev. 1	Drawn by: MCD App'd:
	Code: TIA/EIA-222-F	Date: 04/13/16 Scale: NTS
	Path:	Dwg No. E-6

Guy Tensions and Tower Reactions
TIA/EIA-222-F - 85 mph/74 mph 0.5000 in Ice

Maximum Values
Anchor 'C'@213 ft Azimuth 240 deg Elev -17.5 ft
Plane through centroid of tower



AECOM 500 Enterprise Drive, Suite 3B Rocky Hill, CT Phone: 860-529-8882 FAX: 860-529-3991	Job: 280' Guyed Tower
	Project: 130 Vernon Rd Bolton, CT
	Client: Transcend Wireless / TWM-005 / -004 Rev. 1
	Code: TIA/EIA-222-F
	Path:
Drawn by: MCD Date: 04/13/16 App'd: NTS Scale: NTS Dwg No: E-6	

TNX TOWER DETAILED OUTPUT – TIA-222-F

tnxTower AECOM 500 Enterprise Drive, Suite 3B Rocky Hill, CT Phone: 860-529-8882 FAX: 860-529-3991	Job 280' Guyed Tower	Page 1 of 65
	Project 130 Vernon Rd Bolton, CT	Date 09:04:28 04/13/16
	Client Transcend Wireless / TWM-005 / -004 Rev. 1	Designed by MCD

Tower Input Data

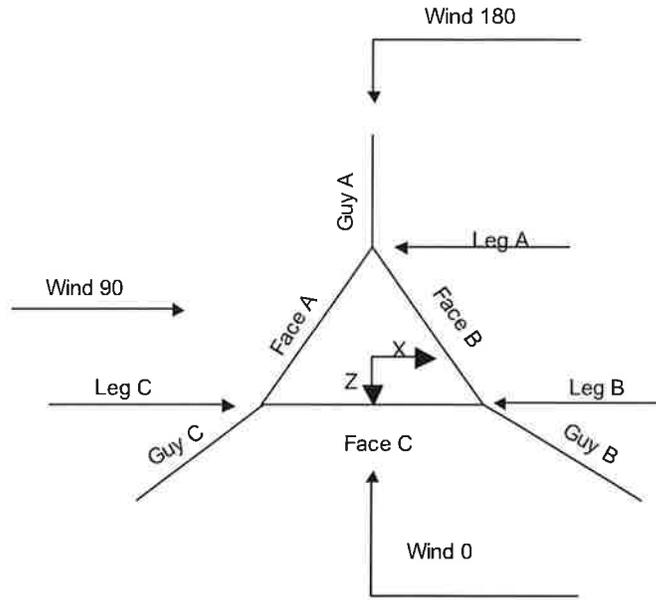
The main tower is a 3x guyed tower with an overall height of 282.00 ft above the ground line.
The base of the tower is set at an elevation of 2.00 ft above the ground line.
The face width of the tower is 4.00 ft at the top and 4.00 ft at the base.
This tower is designed using the TIA/EIA-222-F standard.
The following design criteria apply:

- Tower is located in Tolland County, Connecticut.
- Basic wind speed of 85 mph.
- Nominal ice thickness of 0.5000 in.
- Ice density of 56 pcf.
- A wind speed of 74 mph is used in combination with ice.
- Temperature drop of 50 °F.
- Deflections calculated using a wind speed of 50 mph.
- Pressures are calculated at each section.
- Safety factor used in guy design is 2.
- Stress ratio used in tower member design is 1.333.
- Local bending stresses due to climbing loads, feed line supports, and appurtenance mounts are not considered.

Options

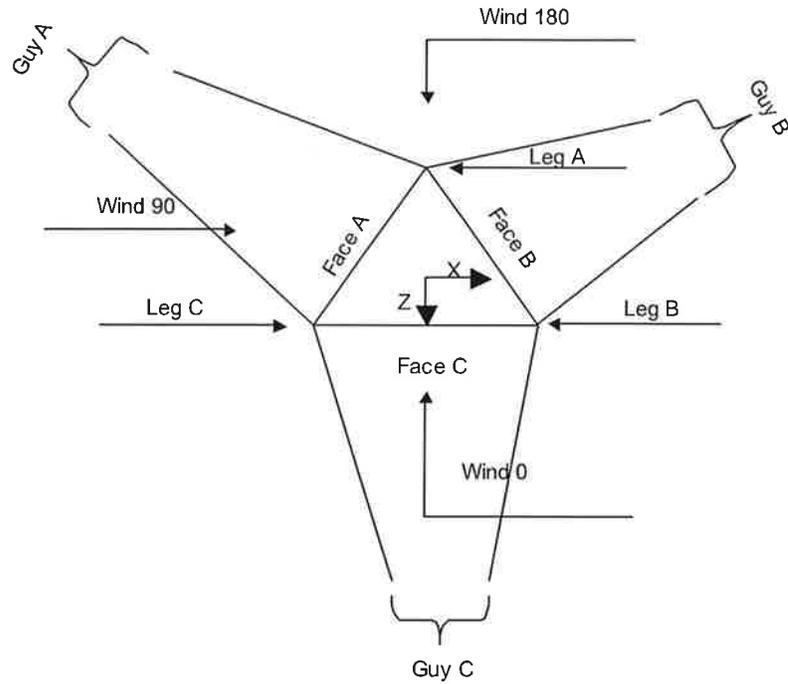
- | | | |
|--|--|---|
| <ul style="list-style-type: none"> Consider Moments - Legs Consider Moments - Horizontals Consider Moments - Diagonals Use Moment Magnification √ Use Code Stress Ratios √ Use Code Safety Factors - Guys Escalate Ice Always Use Max Kz Use Special Wind Profile √ Include Bolts In Member Capacity √ Leg Bolts Are At Top Of Section √ Secondary Horizontal Braces Leg Use Diamond Inner Bracing (4 Sided) √ SR Members Have Cut Ends SR Members Are Concentric | <ul style="list-style-type: none"> Distribute Leg Loads As Uniform Assume Legs Pinned √ Assume Rigid Index Plate √ Use Clear Spans For Wind Area √ Use Clear Spans For KL/r √ Retension Guys To Initial Tension Bypass Mast Stability Checks √ Use Azimuth Dish Coefficients √ Project Wind Area of Appurt. √ Autocalc Torque Arm Areas Add IBC .6D+W Combination √ Sort Capacity Reports By Component Triangulate Diamond Inner Bracing Treat Feed Line Bundles As Cylinder | <ul style="list-style-type: none"> Use ASCE 10 X-Brace Ly Rules √ Calculate Redundant Bracing Forces Ignore Redundant Members in FEA √ SR Leg Bolts Resist Compression √ All Leg Panels Have Same Allowable Offset Girt At Foundation √ Consider Feed Line Torque Include Angle Block Shear Check Use TIA-222-G Bracing Resist. Exemption Use TIA-222-G Tension Splice Exemption <p style="text-align: center;">Poles</p> <ul style="list-style-type: none"> Include Shear-Torsion Interaction Always Use Sub-Critical Flow Use Top Mounted Sockets |
|--|--|---|

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Corner & Starmount Guyed Tower

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Face Guyed

Tower Section Geometry

<i>Tower Section</i>	<i>Tower Elevation</i>	<i>Assembly Database</i>	<i>Description</i>	<i>Section Width</i>	<i>Number of Sections</i>	<i>Section Length</i>
	<i>ft</i>			<i>ft</i>		<i>ft</i>
T1	282.00-262.00			4.00	1	20.00
T2	262.00-242.00			4.00	1	20.00
T3	242.00-222.00			4.00	1	20.00
T4	222.00-202.00			4.00	1	20.00
T5	202.00-182.00			4.00	1	20.00
T6	182.00-162.00			4.00	1	20.00
T7	162.00-142.00			4.00	1	20.00
T8	142.00-122.00			4.00	1	20.00
T9	122.00-102.00			4.00	1	20.00
T10	102.00-82.00			4.00	1	20.00
T11	82.00-78.00			4.00	1	4.00
T12	78.00-74.00			4.00	1	4.00
T13	74.00-70.00			4.00	1	4.00
T14	70.00-66.00			4.00	1	4.00
T15	66.00-62.00			4.00	1	4.00
T16	62.00-42.00			4.00	1	20.00

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Tower Section	Tower Elevation	Assembly Database	Description	Section Width	Number of Sections	Section Length
	<i>ft</i>			<i>ft</i>		<i>ft</i>
T17	42.00-22.00			4.00	1	20.00
T18	22.00-2.00			4.00	1	20.00

Tower Section Geometry (cont'd)

Tower Section	Tower Elevation	Diagonal Spacing	Bracing Type	Has K Brace End Panels	Has Horizontals	Top Girt Offset	Bottom Girt Offset
	<i>ft</i>	<i>ft</i>				<i>in</i>	<i>in</i>
T1	282.00-262.00	4.00	CX Brace	No	Yes	0.0000	0.0000
T2	262.00-242.00	4.00	CX Brace	No	Yes	0.0000	0.0000
T3	242.00-222.00	4.00	CX Brace	No	Yes	0.0000	0.0000
T4	222.00-202.00	4.00	CX Brace	No	Yes	0.0000	0.0000
T5	202.00-182.00	4.00	CX Brace	No	Yes	0.0000	0.0000
T6	182.00-162.00	4.00	CX Brace	No	Yes	0.0000	0.0000
T7	162.00-142.00	4.00	CX Brace	No	Yes	0.0000	0.0000
T8	142.00-122.00	4.00	CX Brace	No	Yes	0.0000	0.0000
T9	122.00-102.00	4.00	CX Brace	No	Yes	0.0000	0.0000
T10	102.00-82.00	4.00	CX Brace	No	Yes	0.0000	0.0000
T11	82.00-78.00	4.00	CX Brace	No	Yes	0.0000	0.0000
T12	78.00-74.00	4.00	CX Brace	No	Yes	0.0000	0.0000
T13	74.00-70.00	4.00	CX Brace	No	Yes	0.0000	0.0000
T14	70.00-66.00	4.00	CX Brace	No	Yes	0.0000	0.0000
T15	66.00-62.00	4.00	CX Brace	No	Yes	0.0000	0.0000
T16	62.00-42.00	4.00	CX Brace	No	Yes	0.0000	0.0000
T17	42.00-22.00	4.00	CX Brace	No	Yes	0.0000	0.0000
T18	22.00-2.00	4.00	CX Brace	No	Yes	0.0000	0.0000

Tower Section Geometry (cont'd)

Tower Elevation	Leg Type	Leg Size	Leg Grade	Diagonal Type	Diagonal Size	Diagonal Grade
<i>ft</i>						
T1 282.00-262.00	Solid Round	2	A139-45 (45 ksi)	Solid Round	7/8	A36 (36 ksi)
T2 262.00-242.00	Solid Round	2	A139-45 (45 ksi)	Solid Round	7/8	A36 (36 ksi)
T3 242.00-222.00	Solid Round	2	A139-45 (45 ksi)	Solid Round	7/8	A36 (36 ksi)
T4 222.00-202.00	Solid Round	2	A139-45 (45 ksi)	Arbitrary Shape	SR7/8+L2.5x2.5x0.25	A36 (36 ksi)
T5 202.00-182.00	Solid Round	2	A139-45 (45 ksi)	Arbitrary Shape	SR7/8+L2.5x2.5x0.25	A36 (36 ksi)
T6 182.00-162.00	Solid Round	2	A139-45 (45 ksi)	Solid Round	7/8	A36 (36 ksi)
T7 162.00-142.00	Solid Round	2	A139-45 (45 ksi)	Solid Round	7/8	A36 (36 ksi)
T8 142.00-122.00	Solid Round	2	A139-45 (45 ksi)	Arbitrary Shape	SR7/8+L2.5x2.5x0.25	A36 (36 ksi)
T9 122.00-102.00	Solid Round	2	A139-45 (45 ksi)	Arbitrary Shape	SR7/8+L2.5x2.5x0.25	A36 (36 ksi)
T10 102.00-82.00	Solid Round	2	A139-45	Solid Round	7/8	A36

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Tower Elevation ft	Leg Type	Leg Size	Leg Grade	Diagonal Type	Diagonal Size	Diagonal Grade
T11 82.00-78.00	Solid Round	2	(45 ksi) A139-45	Solid Round	7/8	(36 ksi) A36
T12 78.00-74.00	Solid Round	2	(45 ksi) A139-45	Solid Round	7/8	(36 ksi) A36
T13 74.00-70.00	Solid Round	2	(45 ksi) A139-45	Solid Round	7/8	(36 ksi) A36
T14 70.00-66.00	Solid Round	2	(45 ksi) A139-45	Solid Round	7/8	(36 ksi) A36
T15 66.00-62.00	Solid Round	2	(45 ksi) A139-45	Solid Round	7/8	(36 ksi) A36
T16 62.00-42.00	Arbitrary Shape	2"SR w 3rd pipe	(45 ksi) A139-45	Solid Round	7/8	(36 ksi) A36
T17 42.00-22.00	Arbitrary Shape	2"SR w 3rd pipe	(45 ksi) A139-45	Solid Round	7/8	(36 ksi) A36
T18 22.00-2.00	Arbitrary Shape	2"SR w 3rd pipe	(45 ksi) A139-45	Solid Round	7/8	(36 ksi) A36

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 282.00-262.00	Single Angle	L3x3x1/4	A36 (36 ksi)	Solid Round		A36 (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
T1 282.00-262.00	Single Angle	L2 1/2x2x3/16	A36 (36 ksi)	Solid Round		A36 (36 ksi)
T2 262.00-242.00	Single Angle	L2 1/2x2x3/16	A36 (36 ksi)	Solid Round		A36 (36 ksi)
T3 242.00-222.00	Single Angle	L2 1/2x2x3/16	A36 (36 ksi)	Solid Round		A36 (36 ksi)
T4 222.00-202.00	Single Angle	L2 1/2x2x3/16	A36 (36 ksi)	Solid Round		A36 (36 ksi)
T5 202.00-182.00	Single Angle	L2 1/2x2x3/16	A36 (36 ksi)	Solid Round		A36 (36 ksi)
T6 182.00-162.00	Single Angle	L2 1/2x2x3/16	A36 (36 ksi)	Solid Round		A36 (36 ksi)
T7 162.00-142.00	Single Angle	L2 1/2x2x3/16	A36 (36 ksi)	Solid Round		A36 (36 ksi)
T8 142.00-122.00	Single Angle	L2 1/2x2x3/16	A36 (36 ksi)	Solid Round		A36 (36 ksi)
T9 122.00-102.00	Single Angle	L2 1/2x2x3/16	A36 (36 ksi)	Solid Round		A36 (36 ksi)
T10 102.00-82.00	Single Angle	L2 1/2x2x3/16	A36	Solid Round		A36

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Tower Elevation	Secondary Horizontal Type	Secondary Horizontal Size	Secondary Horizontal Grade	Inner Bracing Type	Inner Bracing Size	Inner Bracing Grade
<i>ft</i>						
T11 82.00-78.00	Single Angle	L2 1/2x2x3/16	(36 ksi) A36	Solid Round		(36 ksi) A36
T12 78.00-74.00	Single Angle	L2 1/2x2x3/16	(36 ksi) A36	Solid Round		(36 ksi) A36
T13 74.00-70.00	Single Angle	L2 1/2x2x3/16	(36 ksi) A36	Solid Round		(36 ksi) A36
T14 70.00-66.00	Single Angle	L2 1/2x2x3/16	(36 ksi) A36	Solid Round		(36 ksi) A36
T15 66.00-62.00	Single Angle	L2 1/2x2x3/16	(36 ksi) A36	Solid Round		(36 ksi) A36
T16 62.00-42.00	Single Angle	L2 1/2x2x3/16	(36 ksi) A36	Solid Round		(36 ksi) A36
T17 42.00-22.00	Single Angle	L2 1/2x2x3/16	(36 ksi) A36	Solid Round		(36 ksi) A36
T18 22.00-2.00	Single Angle	L2 1/2x2x3/16	(36 ksi) A36	Solid Round		(36 ksi) A36

Tower Section Geometry (cont'd)

Tower Elevation	Gusset Area (per face)	Gusset Thickness	Gusset Grade	Adjust. Factor A_f	Adjust. Factor A_r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals	Double Angle Stitch Bolt Spacing Horizontals	Double Angle Stitch Bolt Spacing Redundants
<i>ft</i>	<i>ft²</i>	<i>in</i>					<i>in</i>	<i>in</i>	<i>in</i>
T1 282.00-262.00	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T2 262.00-242.00	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T3 242.00-222.00	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T4 222.00-202.00	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T5 202.00-182.00	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T6 182.00-162.00	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T7 162.00-142.00	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T8 142.00-122.00	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T9 122.00-102.00	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T10 102.00-82.00	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T11 82.00-78.00	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T12 78.00-74.00	0.00	0.0000	A36 (36 ksi)	1	1	1.23484	36.0000	36.0000	36.0000
T13 74.00-70.00	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T14 70.00-66.00	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T15 66.00-62.00	0.00	0.0000	A36 (36 ksi)	1	1	1.23484	36.0000	36.0000	36.0000

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Tower Elevation	Gusset Area (per face)	Gusset Thickness	Gusset Grade	Adjust. Factor A_f	Adjust. Factor A_r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals	Double Angle Stitch Bolt Spacing Horizontals	Double Angle Stitch Bolt Spacing Redundants
ft	ft ²	in					in	in	in
T16 62.00-42.00	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T17 42.00-22.00	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000
T18 22.00-2.00	0.00	0.0000	A36 (36 ksi)	1	1	1	36.0000	36.0000	36.0000

Tower Section Geometry (cont'd)

Tower Elevation	Calc K Single Angles	Calc K Solid Rounds	Legs	K Factors ¹							
				X Brace Diags	K Brace Diags	Single Diags	Girts	Horiz.	Sec. Horiz.	Inner Brace	
				X Y	X Y	X Y	X Y	X Y	X Y	X Y	
T1 282.00-262.00	No	No	1	0.5	1	1	1	1	1	1	1
T2 262.00-242.00	No	No	1	0.5	1	1	1	1	1	1	1
T3 242.00-222.00	No	No	1	0.5	1	1	1	1	1	1	1
T4 222.00-202.00	No	No	1	0.5	1	1	1	1	1	1	1
T5 202.00-182.00	No	No	1	0.5	1	1	1	1	1	1	1
T6 182.00-162.00	No	No	1	0.5	1	1	1	1	1	1	1
T7 162.00-142.00	No	No	1	0.5	1	1	1	1	1	1	1
T8 142.00-122.00	No	No	1	0.5	1	1	1	1	1	1	1
T9 122.00-102.00	No	No	1	0.5	1	1	1	1	1	1	1
T10 102.00-82.00	No	No	1	0.5	1	1	1	1	1	1	1
T11 82.00-78.00	No	No	1	0.5	1	1	1	1	1	1	1
T12 78.00-74.00	No	No	0.5	0.25	1	1	1	1	1	1	1
T13 74.00-70.00	No	No	1	0.5	1	1	1	1	1	1	1
T14 70.00-66.00	No	No	1	0.5	1	1	1	1	1	1	1
T15 66.00-62.00	No	No	0.5	0.25	1	1	1	1	1	1	1
T16 62.00-42.00	No	No	1	0.5	1	1	1	1	1	1	1
T17 42.00-22.00	No	No	1	0.5	1	1	1	1	1	1	1
T18 22.00-2.00	No	No	1	0.5	1	1	1	1	1	1	1

¹Note: 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.

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Tower Section Geometry (cont'd)

Tower Elevation ft	Leg		Diagonal		Top Girt		Bottom Girt		Mid Girt		Long Horizontal		Short Horizontal	
	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U
T1 282.00-262.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T2 262.00-242.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T3 242.00-222.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T4 222.00-202.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T5 202.00-182.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T6 182.00-162.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T7 162.00-142.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T8 142.00-122.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T9 122.00-102.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T10 102.00-82.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T11 82.00-78.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T12 78.00-74.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T13 74.00-70.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T14 70.00-66.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T15 66.00-62.00	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 62.00-42.00	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
T17 42.00-22.00	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
T18 22.00-2.00	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

Guy Data

Guy Elevation ft	Guy Grade	Guy Size	Initial Tension lb	%	Guy Modulus ksi	Guy Weight plf	L _u ft	Anchor Radius ft	Anchor Azimuth Adj. °	Anchor Elevation ft	End Fitting Efficiency %
270	EHS	A	3/4	5830.00	10%	19000	1.155	366.92	219.00	0.0000	100%
		B	3/4	5830.00	10%	19000	1.155	343.34	205.00	0.0000	100%
		C	3/4	5830.00	10%	19000	1.155	356.13	213.00	0.0000	100%
196	EHS	A	1 1/16	5000.00	10%	21000	0.813	309.21	219.00	0.0000	100%
		B	1 1/16	5000.00	10%	21000	0.813	285.86	205.00	0.0000	100%
		C	1 1/16	5000.00	10%	21000	0.813	298.58	213.00	0.0000	100%

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128	EHS	A	11/16	5000.00	10%	21000	0.813	264.60	219.00	0.0000	-26.50	100%
		B	11/16	5000.00	10%	21000	0.813	242.28	205.00	0.0000	-7.50	100%
		C	11/16	5000.00	10%	21000	0.813	254.52	213.00	0.0000	-17.50	100%
70	EHS	A	11/16	5000.00	10%	21000	0.813	237.02	219.00	0.0000	-26.50	100%
		B	11/16	5000.00	10%	21000	0.813	216.83	205.00	0.0000	-7.50	100%
		C	11/16	5000.00	10%	21000	0.813	227.96	213.00	0.0000	-17.50	100%

Guy Data(cont'd)

Guy Elevation ft	Mount Type	Torque-Arm Spread ft	Torque-Arm Leg Angle °	Torque-Arm Style	Torque-Arm Grade	Torque-Arm Type	Torque-Arm Size
270	Corner						
196	Torque Arm	14.00	15.0000	Wing	A36 (36 ksi)	Single Angle	L4x4x3/8
128	Torque Arm	14.00	15.0000	Wing	A36 (36 ksi)	Single Angle	L4x4x3/8
70	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
270.00	A572-50 (50 ksi)	Solid Round				A36 (36 ksi)	Solid Round	
196.00	A572-50 (50 ksi)	Solid Round			Yes	A36 (36 ksi)	Single Angle	L4x4x3/8
128.00	A572-50 (50 ksi)	Solid Round			Yes	A36 (36 ksi)	Single Angle	L4x4x3/8
70.00	A572-50 (50 ksi)	Solid Round				A36 (36 ksi)	Solid Round	

Guy Data (cont'd)

Guy Elevation ft	Cable Weight A lb	Cable Weight B lb	Cable Weight C lb	Cable Weight D lb	Tower Intercept A ft	Tower Intercept B ft	Tower Intercept C ft	Tower Intercept D ft
270	423.80	396.56	411.33		12.97	11.38	12.23	
					6.2 sec/pulse	5.8 sec/pulse	6.0 sec/pulse	
196	251.38	232.40	242.75		7.64	6.54	7.13	
					4.8 sec/pulse	4.4 sec/pulse	4.6 sec/pulse	
128	215.12	196.97	206.92		5.63	4.72	5.21	
					4.1 sec/pulse	3.8 sec/pulse	3.9 sec/pulse	
70	192.70	176.28	185.33		4.54	3.80	4.20	
					3.7 sec/pulse	3.4 sec/pulse	3.5 sec/pulse	

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Guy Data (cont'd)

Guy Elevation ft	Calc K Single Angles	Calc K Solid Rounds	Torque Arm		Pull Off		Diagonal	
			K _x	K _y	K _x	K _y	K _x	K _y
270	No	No						
196	No	No						
128	No	No						
70	No	No						

Guy Data (cont'd)

Guy Elevation ft	Torque-Arm				Pull Off				Diagonal			
	Bolt Size in	Number	Net Width Deduct in	U	Bolt Size in	Number	Net Width Deduct in	U	Bolt Size in	Number	Net Width Deduct in	U
270	0.6250 A325N	0	0.0000	0.75	0.6250 A325N	0	0.0000	0.75	0.6250 A325N	0	0.0000	0.75
196	0.0000 A325N	0	0.0000	1	0.6250 A325N	0	0.0000	0.75	0.6250 A325N	0	0.0000	0.75
128	0.0000 A325N	0	0.0000	1	0.6250 A325N	0	0.0000	0.75	0.6250 A325N	0	0.0000	0.75
70	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
270	A	121.75	27	20	0.5000
	B	131.25	27	21	0.5000
	C	126.25	27	20	0.5000
196	A	84.75	24	18	0.5000
	B	94.25	25	19	0.5000
	C	89.25	25	18	0.5000
128	A	50.75	21	16	0.5000
	B	60.25	22	16	0.5000
	C	55.25	21	16	0.5000
70	A	21.75	18	14	0.5000
	B	31.25	18	14	0.5000
	C	26.25	18	14	0.5000

Guy-Mast Forces (Excluding Wind) - No Ice

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Guy Elevation	Guy Location	Chord Angle	Guy Tension Top Bottom lb	F _x	F _y	F _z	M _x	M _y	M _z
ft		°		lb	lb	lb	lb-ft	lb-ft	lb-ft
270	A	53.8396	6172.14 5830.00	0.00	5056.62	-3539.19	-11677.76	0.00	0.00
	B	53.8550	6150.21 5830.00	3058.49	5035.14	1765.82	5814.08	0.00	-10070.28
	C	53.7647	6161.75 5830.00	-3067.94	5041.58	1771.28	5821.51	-0.00	10083.15
196			Sum:	-9.45	15133.33	-2.10	-42.17	-0.00	12.87
	A	45.9725	5180.74 5000.00	-115.12	3785.52	-3535.06	-15298.99	25210.67	-26498.63
	A	45.9725	5180.74 5000.00	115.12	3785.52	-3535.06	-15298.99	-25210.67	26498.63
	B	45.3427	5165.31 5000.00	3153.43	3731.45	1677.06	30160.96	25488.86	0.00
	B	45.3427	5165.31 5000.00	3029.09	3731.45	1892.42	-15080.48	-25488.86	-26120.16
	C	45.5998	5173.43 5000.00	-3020.16	3755.51	1881.25	-15177.73	25374.59	26288.59
128			Sum:	23.07	22544.97	55.52	-339.77	-0.00	168.43
	A	35.6920	5125.50 5000.00	-133.80	3061.17	-4108.79	-12371.56	29302.26	-21428.17
	A	35.6920	5125.50 5000.00	133.80	3061.17	-4108.79	-12371.56	-29302.26	21428.17
	B	33.9744	5110.07 5000.00	3700.58	2923.23	1968.05	23628.20	29911.44	0.00
	B	33.9744	5110.07 5000.00	3554.67	2923.23	2220.77	-11814.10	-29911.44	-20462.62
	C	34.8348	5118.19 5000.00	-3524.00	2993.14	2195.09	-12096.65	29607.69	20952.01
70			Sum:	68.25	17955.08	120.66	-832.37	-0.00	489.38
	A	24.0051	5078.39 5000.00	0.00	2146.27	-4602.56	-4956.61	0.00	0.00
	B	20.9247	5062.95 5000.00	4069.43	1885.00	2349.48	2176.61	0.00	-3769.99
	C	22.5532	5071.08 5000.00	-4026.75	2023.90	2324.85	2337.00	-0.00	4047.80
			Sum:	42.67	6055.17	71.77	-443.01	0.00	277.80

Guy-Mast Forces (Excluding Wind) - Ice

Guy Elevation	Guy Location	Chord Angle	Guy Tension Top Bottom lb	F _x	F _y	F _z	M _x	M _y	M _z
ft		°		lb	lb	lb	lb-ft	lb-ft	lb-ft
270	A	53.8396	8569.71 8001.40	0.00	7040.78	-4885.42	-16259.98	0.00	0.00
	B	53.8550	8517.80 7985.91	4212.49	6992.34	2432.08	8074.06	0.00	-13984.68
	C	53.7647	8546.06 7995.00	-4230.94	7011.94	2442.74	8096.69	-0.00	14023.88

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Guy Elevation	Guy Location	Chord Angle	Guy Tension Top Bottom lb	F _x	F _y	F _z	M _x	M _y	M _z
ft		°		lb	lb	lb	lb-ft	lb-ft	lb-ft
			Sum:	-18.45	21045.06	-10.60	-89.23	-0.00	39.20
196	A	45.9725	7426.16 7084.17	-164.04	5453.89	-5037.46	-22041.62	35925.20	-38177.20
	A	45.9725	7426.16 7084.17	164.04	5453.89	-5037.46	-22041.62	-35925.20	38177.20
	B	45.3427	7378.74 7065.95	4480.21	5356.89	2382.68	43299.27	36213.14	0.00
	B	45.3427	7378.74 7065.95	4303.56	5356.89	2688.64	-21649.63	-36213.14	-37498.26
	C	45.5998	7404.72 7076.56	-4298.25	5402.46	2677.37	-21833.78	36112.76	37817.22
	C	45.5998	7404.72 7076.56	-4467.80	5402.46	2383.71	43667.57	-36112.76	0.00
			Sum:	17.73	32426.48	57.47	-599.82	0.00	318.96
128	A	35.6920	7343.96 7106.49	-190.92	4418.52	-5862.93	-17857.25	41812.15	-30929.66
	A	35.6920	7343.96 7106.49	190.92	4418.52	-5862.93	-17857.25	-41812.15	30929.66
	B	33.9744	7294.93 7086.66	5263.43	4204.37	2799.21	33983.51	42543.83	0.00
	B	33.9744	7294.93 7086.66	5055.90	4204.37	3158.66	-16991.75	-42543.83	-29430.58
	C	34.8348	7321.83 7098.20	-5021.57	4313.83	3127.92	-17434.14	42189.92	30196.82
	C	34.8348	7321.83 7098.20	-5219.65	4313.83	2784.85	34868.28	-42189.92	0.00
			Sum:	78.11	25873.45	144.77	-1288.60	-0.00	766.24
70	A	24.0051	7282.73 7134.41	0.00	3114.63	-6583.11	-7192.93	0.00	0.00
	B	20.9247	7235.41 7116.29	5803.13	2729.37	3350.44	3151.60	0.00	-5458.73
	C	22.5532	7261.34 7126.85	-5752.18	2934.34	3321.02	3388.28	-0.00	5868.68
			Sum:	50.95	8778.33	88.35	-653.05	0.00	409.94

Guy-Mast Forces (Excluding Wind) - Service

Guy Elevation	Guy Location	Chord Angle	Guy Tension Top Bottom lb	F _x	F _y	F _z	M _x	M _y	M _z
ft		°		lb	lb	lb	lb-ft	lb-ft	lb-ft
270	A	53.8396	6172.14 5830.00	0.00	5056.62	-3539.19	-11677.76	0.00	0.00
	B	53.8550	6150.21 5830.00	3058.49	5035.14	1765.82	5814.08	0.00	-10070.28
	C	53.7647	6161.75 5830.00	-3067.94	5041.58	1771.28	5821.51	-0.00	10083.15
			Sum:	-9.45	15133.33	-2.10	-42.17	-0.00	12.87
196	A	45.9725	5180.74 5000.00	-115.12	3785.52	-3535.06	-15298.99	25210.67	-26498.63
	A	45.9725	5180.74 5000.00	115.12	3785.52	-3535.06	-15298.99	-25210.67	26498.63
	B	45.3427	5165.31	3153.43	3731.45	1677.06	30160.96	25488.86	0.00

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Guy Elevation	Guy Location	Chord Angle	Guy Tension Top Bottom lb	F _x	F _y	F _z	M _x	M _y	M _z	
ft		°		lb	lb	lb	lb-ft	lb-ft	lb-ft	
128	B	45.3427	5000.00 5165.31	3029.09	3731.45	1892.42	-15080.48	-25488.86	-26120.16	
	C	45.5998	5000.00 5173.43	-3020.16	3755.51	1881.25	-15177.73	25374.59	26288.59	
	C	45.5998	5000.00 5173.43	-3139.29	3755.51	1674.91	30355.45	-25374.59	0.00	
				Sum:	23.07	22544.97	55.52	-339.77	-0.00	168.43
	A	35.6920	5000.00 5125.50	-133.80	3061.17	-4108.79	-12371.56	29302.26	-21428.17	
	A	35.6920	5000.00 5125.50	133.80	3061.17	-4108.79	-12371.56	-29302.26	21428.17	
	B	33.9744	5000.00 5110.07	3700.58	2923.23	1968.05	23628.20	29911.44	0.00	
	B	33.9744	5000.00 5110.07	3554.67	2923.23	2220.77	-11814.10	-29911.44	-20462.62	
	C	34.8348	5000.00 5118.19	-3524.00	2993.14	2195.09	-12096.65	29607.69	20952.01	
	C	34.8348	5000.00 5118.19	-3663.00	2993.14	1954.33	24193.29	-29607.69	0.00	
70			Sum:	68.25	17955.08	120.66	-832.37	-0.00	489.38	
	A	24.0051	5000.00 5078.39	0.00	2146.27	-4602.56	-4956.61	0.00	0.00	
	B	20.9247	5000.00 5062.95	4069.43	1885.00	2349.48	2176.61	0.00	-3769.99	
	C	22.5532	5000.00 5071.08	-4026.75	2023.90	2324.85	2337.00	-0.00	4047.80	
				Sum:	42.67	6055.17	71.77	-443.01	0.00	277.80

Guy-Tensioning Information

Guy Elevation	H	V	Temperature At Time Of Tensioning														
			0 F		20 F		40 F		60 F		80 F		100 F		120 F		
			Initial Tension	Intercept	Initial Tension	Intercept	Initial Tension	Intercept	Initial Tension	Intercept	Initial Tension	Intercept	Initial Tension	Intercept	Initial Tension	Intercept	
ft	ft	ft	lb	ft	lb	ft	lb	ft	lb	ft	lb	ft	lb	ft	lb	ft	
270	A	216.69	296.50	6599	11.49	6339	11.95	6083	12.44	5830	12.97	5582	13.53	5338	14.13	5100	14.77
	B	202.69	277.50	6609	10.06	6346	10.47	6086	10.91	5830	11.38	5578	11.88	5330	12.42	5087	12.99
	C	210.69	287.50	6606	10.82	6344	11.26	6085	11.73	5830	12.23	5579	12.76	5333	13.34	5092	13.95
196	A	215.07	222.50	6033	6.35	5682	6.74	5339	7.16	5000	7.64	4668	8.18	4338	8.79	4024	9.46
	B	201.08	203.50	6069	5.40	5708	5.74	5351	6.12	5000	6.54	4655	7.02	4319	7.56	3993	8.16
	C	209.08	213.50	6053	5.91	5697	6.27	5346	6.68	5000	7.13	4661	7.64	4331	8.21	4011	8.86
128	A	215.07	154.50	6421	4.39	5939	4.75	5464	5.15	5000	5.63	4549	6.18	4115	6.82	3704	7.57
	B	201.08	135.50	6497	3.64	5990	3.95	5490	4.31	5000	4.72	4523	5.22	4064	5.80	3629	6.49
	C	209.08	145.50	6458	4.04	5963	4.38	5477	4.76	5000	5.21	4537	5.74	4091	6.35	3668	7.07
70	A	216.69	96.50	6805	3.34	6191	3.67	5588	4.06	5000	4.54	4434	5.11	3898	5.81	3404	6.64
	B	202.69	77.50	6906	2.76	6259	3.04	5622	3.38	5000	3.80	4400	4.32	3831	4.95	3307	5.73
	C	210.69	87.50	6853	3.07	6223	3.38	5604	3.75	5000	4.20	4418	4.75	3867	5.42	3359	6.23

Feed Line/Linear Appurtenances - Entered As Round Or Flat

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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 (Dipole)	C	No	Ar (CaAa)	220.00 - 7.00	0.0000	-0.33	1	1	1,1100	1.1100		0.54
1 5/8 (T-Mobile)	B	No	Ar (CaAa)	182.00 - 7.00	0.0000	-0.2	4	2	1.5000	1.9800		1.04
CR 50 1873PE (1-5/8 FOAM)	A	No	Ar (CaAa)	166.16 - 7.00	0.0000	-0.1	12	6	1.5000	1.9800		0.83
(AT&T) 1 5/8 (VZW)	B	No	Ar (CaAa)	128.00 - 7.00	0.0000	0.29	4	2	1.5000	1.9800		1.04
1 1/4 (10' Omni - MTS)	A	No	Ar (CaAa)	282.00 - 7.00	0.0000	0.48	1	1	1.5500	1.5500		0.66
1 1/4 (Shared Cable - MTS)	A	No	Ar (CaAa)	262.00 - 7.00	0.0000	-0.33	1	1	1.5500	1.5500		0.66
1 1/4 (12' Dipole - MTS)	C	No	Ar (CaAa)	135.00 - 7.00	0.0000	0.48	1	1	1.5500	1.5500		0.66
1 1/4 (22' Omni - MTS)	C	No	Ar (CaAa)	135.00 - 7.00	0.0000	0.42	1	1	1.5500	1.5500		0.66
1 1/4 (WMRQ)	B	No	Ar (CaAa)	282.00 - 7.00	0.0000	-0.42	1	1	1.5500	1.5500		0.66
EW63 (8' Dish - Eversource)	B	No	Af (CfAe)	215.00 - 7.00	0.0000	0.48	1	1	1.5742	1.5742	5.0668	0.51
EW63 (6' Dish - Eversource)	B	No	Af (CfAe)	207.00 - 7.00	0.0000	0.43	1	1	1.5742	1.5742	5.0668	0.51
EW63 (8' Dish - Eversource)	B	No	Af (CfAe)	207.00 - 7.00	0.0000	0.38	1	1	1.5742	1.5742	5.0668	0.51
EW63 (5.5' Dish - Eversource)	C	No	Af (CfAe)	155.25 - 7.00	0.0000	-0.48	1	1	1.5742	1.5742	5.0668	0.51
1 1/4 (Dead Line)	B	No	Ar (CaAa)	132.25 - 7.00	0.0000	-0.38	1	1	1.5500	1.5500		0.66
EW63 (9' Dish - Eversource)	C	No	Af (CfAe)	107.50 - 7.00	0.0000	-0.38	1	1	1.5742	1.5742	5.0668	0.51
DC Cable WR-VG122S T (L-810 Cable)	B	No	Ar (CaAa)	142.00 - 7.00	0.0000	-0.025	1	1	0.4000	0.4000		0.25
1 1/4 (WBMW - MTS)	B	No	Ar (CaAa)	282.00 - 7.00	0.0000	-0.3	1	1	1.5500	1.5500		0.66
1 1/4" Hybriflex Cables (AT&T)	A	No	Ar (CaAa)	164.00 - 7.00	0.0000	-0.4	1	1	1.2500	1.2500		0.99
DC Cable WR-VG122S T (AT&T)	A	No	Ar (CaAa)	164.00 - 7.00	0.0000	-0.44	2	2	0.4000	0.4000		0.25
1 (Existing Conduit)	B	No	Ar (CaAa)	282.00 - 7.00	0.0000	0	1	1	1.2500	1.2500		0.58
1 1/4 (VZW)	B	No	Ar (CaAa)	128.00 - 7.00	0.0000	0.12	6	3	1.5500	1.5500		0.66
1/2	B	No	Ar (CaAa)	282.00 - 7.00	0.0000	-0.045	1	1	0.5800	0.5800		0.25

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	Client	Transcend Wireless / TWM-005 / -004 Rev. 1	Designed by	MCD

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
(Power Cable) 1 1/4 (9' Omni - Eversource)	C	No	Ar (CaAa)	242.00 - 7.00	0.0000	-0.2	1	1	1.5500	1.5500		0.66
1 1/4" Hybriflex Cables (T-Mobile - Proposed)	B	No	Ar (CaAa)	164.00 - 7.00	0.0000	-0.1	1	1	1.2500	1.2500		0.99

Feed Line/Linear Appurtenances Section Areas

Tower Section	Tower Elevation ft	Face	A _R ft ²	A _F ft ²	C _{AA} In Face ft ²	C _{AA} Out Face ft ²	Weight lb
T1	282.00-262.00	A	0.000	0.000	3.100	0.000	13.20
		B	0.000	0.000	9.860	0.000	43.00
		C	0.000	0.000	0.000	0.000	0.00
T2	262.00-242.00	A	0.000	0.000	6.200	0.000	26.40
		B	0.000	0.000	9.860	0.000	43.00
		C	0.000	0.000	0.000	0.000	0.00
T3	242.00-222.00	A	0.000	0.000	6.200	0.000	26.40
		B	0.000	0.000	9.860	0.000	43.00
		C	0.000	0.000	3.100	0.000	13.20
T4	222.00-202.00	A	0.000	0.000	6.200	0.000	26.40
		B	0.000	3.017	9.860	0.000	54.73
		C	0.000	0.000	5.098	0.000	22.92
T5	202.00-182.00	A	0.000	0.000	6.200	0.000	26.40
		B	0.000	7.871	9.860	0.000	73.60
		C	0.000	0.000	5.320	0.000	24.00
T6	182.00-162.00	A	0.000	0.000	14.815	0.000	70.82
		B	0.000	7.871	23.913	0.000	158.78
		C	0.000	0.000	5.320	0.000	24.00
T7	162.00-142.00	A	0.000	0.000	49.749	0.000	255.44
		B	0.000	7.871	26.163	0.000	176.64
		C	0.000	1.738	5.320	0.000	30.76
T8	142.00-122.00	A	0.000	0.000	49.749	0.000	255.44
		B	0.000	7.871	37.782	0.000	237.13
		C	0.000	2.624	9.350	0.000	51.36
T9	122.00-102.00	A	0.000	0.000	49.749	0.000	255.44
		B	0.000	7.871	60.829	0.000	357.24
		C	0.000	3.345	11.520	0.000	63.41
T10	102.00-82.00	A	0.000	0.000	49.749	0.000	255.44
		B	0.000	7.871	60.829	0.000	357.24
		C	0.000	5.247	11.520	0.000	70.80
T11	82.00-78.00	A	0.000	0.000	9.950	0.000	51.09
		B	0.000	1.574	12.166	0.000	71.45
		C	0.000	1.049	2.304	0.000	14.16
T12	78.00-74.00	A	0.000	0.000	9.950	0.000	51.09
		B	0.000	1.574	12.166	0.000	71.45
		C	0.000	1.049	2.304	0.000	14.16
T13	74.00-70.00	A	0.000	0.000	9.950	0.000	51.09
		B	0.000	1.574	12.166	0.000	71.45
		C	0.000	1.049	2.304	0.000	14.16
T14	70.00-66.00	A	0.000	0.000	9.950	0.000	51.09
		B	0.000	1.574	12.166	0.000	71.45
		C	0.000	1.049	2.304	0.000	14.16

tnxTower AECOM 500 Enterprise Drive, Suite 3B Rocky Hill, CT Phone: 860-529-8882 FAX: 860-529-3991	Job	280' Guyed Tower	Page	16 of 65
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	Client	Transcend Wireless / TWM-005 / -004 Rev. 1	Designed by	MCD

Tower Section	Tower Elevation ft	Face	A _R ft ²	A _F ft ²	C _A A _A In Face ft ²	C _A A _A Out Face ft ²	Weight lb
T15	66.00-62.00	A	0.000	0.000	9.950	0.000	51.09
		B	0.000	1,574	12.166	0.000	71.45
		C	0.000	1,049	2,304	0.000	14.16
T16	62.00-42.00	A	0.000	0.000	49.749	0.000	255.44
		B	0.000	7,871	60.829	0.000	357.24
		C	0.000	5,247	11,520	0.000	70.80
T17	42.00-22.00	A	0.000	0.000	49,749	0.000	255.44
		B	0.000	7,871	60,829	0.000	357.24
		C	0.000	5,247	11,520	0.000	70.80
T18	22.00-2.00	A	0.000	0.000	37,312	0.000	191.58
		B	0.000	5,903	45,622	0.000	267.93
		C	0.000	3,936	8,640	0.000	53.10

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 _A A _A In Face ft ²	C _A A _A Out Face ft ²	Weight lb
T1	282.00-262.00	A	0.500	0.000	0.000	5.100	0.000	38.25
		B		0.000	0.000	17.860	0.000	127.67
		C		0.000	0.000	0.000	0.000	0.00
T2	262.00-242.00	A	0.500	0.000	0.000	10.200	0.000	76.49
		B		0.000	0.000	17.860	0.000	127.67
		C		0.000	0.000	0.000	0.000	0.00
T3	242.00-222.00	A	0.500	0.000	0.000	10.200	0.000	76.49
		B		0.000	0.000	17.860	0.000	127.67
		C		0.000	0.000	5.100	0.000	38.25
T4	222.00-202.00	A	0.500	0.000	0.000	10.200	0.000	76.49
		B		0.000	4,295	17.860	0.000	170.52
		C		0.000	0.000	8.898	0.000	65.67
T5	202.00-182.00	A	0.500	0.000	0.000	10.200	0.000	76.49
		B		0.000	11,204	17.860	0.000	239.46
		C		0.000	0.000	9.320	0.000	68.72
T6	182.00-162.00	A	0.500	0.000	0.000	19.818	0.000	200.55
		B		0.000	11,204	34,113	0.000	447.98
		C		0.000	0.000	9.320	0.000	68.72
T7	162.00-142.00	A	0.500	0.000	0.000	61.616	0.000	709.23
		B		0.000	11,204	38,163	0.000	485.08
		C		0.000	2,474	9,320	0.000	93.40
T8	142.00-122.00	A	0.500	0.000	0.000	61.616	0.000	709.23
		B		0.000	11,204	54,007	0.000	650.83
		C		0.000	3,735	15,950	0.000	155.70
T9	122.00-102.00	A	0.500	0.000	0.000	61.616	0.000	709.23
		B		0.000	11,204	80,829	0.000	973.19
		C		0.000	4,762	19,520	0.000	192.72
T10	102.00-82.00	A	0.500	0.000	0.000	61.616	0.000	709.23
		B		0.000	11,204	80,829	0.000	973.19
		C		0.000	7,470	19,520	0.000	219.74
T11	82.00-78.00	A	0.500	0.000	0.000	12.323	0.000	141.85
		B		0.000	2,241	16,166	0.000	194.64
		C		0.000	1,494	3,904	0.000	43.95
T12	78.00-74.00	A	0.500	0.000	0.000	12.323	0.000	141.85
		B		0.000	2,241	16,166	0.000	194.64
		C		0.000	1,494	3,904	0.000	43.95
T13	74.00-70.00	A	0.500	0.000	0.000	12.323	0.000	141.85
		B		0.000	2,241	16,166	0.000	194.64
		C		0.000	1,494	3,904	0.000	43.95
T14	70.00-66.00	A	0.500	0.000	0.000	12.323	0.000	141.85

tnxTower AECOM 500 Enterprise Drive, Suite 3B Rocky Hill, CT Phone: 860-529-8882 FAX: 860-529-3991	Job	280' Guyed Tower	Page	17 of 65
	Project	130 Vernon Rd Bolton, CT	Date	09:04:28 04/13/16
	Client	Transcend Wireless / TWM-005 / -004 Rev. 1	Designed by	MCD

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A _R ft ²	A _F ft ²	C _A A _A In Face ft ²	C _A A _A Out Face ft ²	Weight lb
T15	66.00-62.00	B		0.000	2,241	16,166	0.000	194.64
		C		0.000	1,494	3,904	0.000	43.95
		A	0.500	0.000	0.000	12.323	0.000	141.85
T16	62.00-42.00	B		0.000	2,241	16,166	0.000	194.64
		C		0.000	1,494	3,904	0.000	43.95
		A	0.500	0.000	0.000	61.616	0.000	709.23
T17	42.00-22.00	B		0.000	11,204	80,829	0.000	973.19
		C		0.000	7,470	19,520	0.000	219.74
		A	0.500	0.000	0.000	61.616	0.000	709.23
T18	22.00-2.00	B		0.000	11,204	80,829	0.000	973.19
		C		0.000	7,470	19,520	0.000	219.74
		A	0.500	0.000	0.000	46.212	0.000	531.92
		B		0.000	8,403	60,622	0.000	729.89
		C		0.000	5,602	14,640	0.000	164.80

Feed Line Center of Pressure

Section	Elevation ft	CP _x in	CP _z in	CP _x Ice in	CP _z Ice in
T1	282.00-262.00	0.6670	-2.5484	0.7565	-2.5449
T2	262.00-242.00	0.0176	-2.1402	0.1191	-2.1393
T3	242.00-222.00	0.2628	-1.5434	0.3463	-1.5619
T4	222.00-202.00	0.8675	-0.7991	0.9533	-0.8936
T5	202.00-182.00	1.4724	-0.4174	1.5097	-0.5351
T6	182.00-162.00	1.0250	-1.4548	1.1524	-1.2935
T7	162.00-142.00	-0.8189	-1.1210	-0.3999	-0.9891
T8	142.00-122.00	-0.3973	-0.8396	-0.1313	-0.7561
T9	122.00-102.00	0.3377	-0.6883	0.4333	-0.6295
T10	102.00-82.00	0.4138	-0.6637	0.5088	-0.5896
T11	82.00-78.00	0.4138	-0.6637	0.5088	-0.5896
T12	78.00-74.00	0.4138	-0.6637	0.5088	-0.5896
T13	74.00-70.00	0.4138	-0.6637	0.5088	-0.5896
T14	70.00-66.00	0.4138	-0.6637	0.5088	-0.5896
T15	66.00-62.00	0.4138	-0.6637	0.5088	-0.5896
T16	62.00-42.00	0.4121	-0.6611	0.5097	-0.5906
T17	42.00-22.00	0.4121	-0.6611	0.5097	-0.5906
T18	22.00-2.00	0.4009	-0.6431	0.4938	-0.5722

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft	C _A A _A Front ft ²	C _A A _A Side ft ²	Weight lb	
6'8"x4" Pipe Mount (Verizon)	A	From Leg	0.50	0.0000	121.00	No Ice	2.60	2.60	72.00
			0.00			1/2" Ice	3.01	3.01	93.13
			0.00						
6'8"x4" Pipe Mount	B	From Leg	0.50	0.0000	121.00	No Ice	2.60	2.60	72.00

tnxTower AECOM 500 Enterprise Drive, Suite 3B Rocky Hill, CT Phone: 860-529-8882 FAX: 860-529-3991	Job	280' Guyed Tower	Page	18 of 65
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	Client	Transcend Wireless / TWM-005 / -004 Rev. 1	Designed by	MCD

Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	C _{AA} Front	C _{AA} Side	Weight
			Horz	Vert					
			ft	ft	°	ft	ft ²	ft ²	lb
(Verizon)			0.00			1/2" Ice	3.01	3.01	93.13
			0.00						
14' Dipole (Unknown)	C	From Leg	4.00		0.0000	No Ice	2.80	2.80	75.00
			0.00			1/2" Ice	4.22	4.22	97.50
			0.00						
6' Stand-off (Unknown)	C	From Leg	3.00		0.0000	No Ice	1.20	4.50	75.00
			0.00			1/2" Ice	1.40	5.50	125.00
			0.00						
2.5" x 22' Whip (Unknown)	A	From Leg	4.00		0.0000	No Ice	5.51	5.51	150.30
			0.00			1/2" Ice	7.77	7.77	191.34
			0.00						
6' Stand-off (Unknown)	A	From Leg	3.00		0.0000	No Ice	1.20	4.50	75.00
			0.00			1/2" Ice	1.40	5.50	125.00
			0.00						
ASP-711 (Unknown)	A	From Leg	1.50		0.0000	No Ice	1.30	1.30	13.00
			0.00			1/2" Ice	3.63	3.63	31.56
			0.00						
3' Stand-off (Unknown)	A	From Leg	0.75		0.0000	No Ice	1.00	2.00	50.00
			0.00			1/2" Ice	1.20	2.70	75.00
			0.00						
2.5" x 14' Omni (Unknown)	B	From Leg	3.50		0.0000	No Ice	3.50	3.50	30.00
			0.00			1/2" Ice	4.93	4.93	55.97
			0.00						
3' Stand-off (Unknown)	B	From Leg	1.50		0.0000	No Ice	1.00	2.00	50.00
			0.00			1/2" Ice	1.20	2.70	75.00
			0.00						
6' Stand-off (Unknown)	A	From Leg	2.50		0.0000	No Ice	1.20	4.50	75.00
			0.00			1/2" Ice	1.40	5.50	125.00
			0.00						
6' Stand-off (Unknown)	B	From Leg	2.50		0.0000	No Ice	1.20	4.50	75.00
			0.00			1/2" Ice	1.40	5.50	125.00
			0.00						
6' Stand-off (Unknown)	C	From Leg	2.50		0.0000	No Ice	1.20	4.50	75.00
			0.00			1/2" Ice	1.40	5.50	125.00
			0.00						
DLS L 864-L-865 Light Beacon Unit (Tower)	C	None			0.0000	No Ice	2.50	1.14	52.00
						1/2" Ice	2.72	1.29	69.23
1' Yagi antenna (Not Used)	C	From Leg	0.50		0.0000	No Ice	0.50	0.50	25.00
			0.00			1/2" Ice	0.86	0.86	29.40
			0.00						
3" x 12.5' Omni (Not Used)	B	From Leg	2.00		0.0000	No Ice	3.75	3.75	30.00
			0.00			1/2" Ice	5.03	5.03	57.13
			0.00						
3' Stand-off (Not Used)	B	From Leg	1.50		0.0000	No Ice	1.00	2.00	50.00
			0.00			1/2" Ice	1.20	2.70	75.00
			0.00						
6' Stand-off (Not Used)	C	From Leg	3.00		0.0000	No Ice	1.20	4.50	75.00
			0.00			1/2" Ice	1.40	5.50	125.00
			0.00						
2.5" x 10' Omni (Not Used)	A	From Leg	1.00		0.0000	No Ice	2.50	2.50	30.00
			0.00			1/2" Ice	3.53	3.53	48.64
			0.00						
FM Antenna (WMRQ)	B	From Face	4.50		0.0000	No Ice	8.30	8.30	102.00
			0.00			1/2" Ice	13.00	13.00	132.60
			0.00						
(2) 7770 Panel Antenna	A	From Leg	4.00		0.0000	No Ice	5.88	2.93	35.00

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	Client	Transcend Wireless / TWM-005 / -004 Rev. 1	Designed by	MCD

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft	C _{AA} Front ft ²	C _{AA} Side ft ²	Weight lb
(AT&T)			0.00 0.00			1/2" Ice 6.31	3.27	67.63
(2) 7770 Panel Antenna (AT&T)	B	From Leg	4.00 0.00 0.00	0.0000	164.00	No Ice 1/2" Ice 6.31	2.93 3.27	35.00 67.63
(2) 7770 Panel Antenna (AT&T)	C	From Leg	4.00 0.00 0.00	0.0000	164.00	No Ice 1/2" Ice 6.31	2.93 3.27	35.00 67.63
(2) LGP214nn TMA (AT&T)	A	From Leg	4.00 0.00 0.00	0.0000	164.00	No Ice 1/2" Ice 1.45	0.23 0.31	1.90 9.06
(4) LGP 219nn (AT&T)	A	From Leg	4.00 0.00 0.00	0.0000	164.00	No Ice 1/2" Ice 0.30	0.12 0.17	5.50 7.70
(2) LGP214nn TMA (AT&T)	B	From Leg	4.00 0.00 0.00	0.0000	164.00	No Ice 1/2" Ice 1.45	0.23 0.31	1.90 9.06
(4) LGP 219nn (AT&T)	B	From Leg	4.00 0.00 0.00	0.0000	164.00	No Ice 1/2" Ice 0.30	0.12 0.17	5.50 7.70
(2) LGP214nn TMA (AT&T)	C	From Leg	4.00 0.00 0.00	0.0000	164.00	No Ice 1/2" Ice 1.45	0.23 0.31	1.90 9.06
(4) LGP 219nn (AT&T)	C	From Leg	4.00 0.00 0.00	0.0000	164.00	No Ice 1/2" Ice 0.30	0.12 0.17	5.50 7.70
SBNH-1D6565C (AT&T)	A	From Leg	4.00 0.00 0.00	0.0000	164.00	No Ice 1/2" Ice 12.02	7.70 8.29	61.00 126.70
SBNH-1D6565C (AT&T)	B	From Leg	4.00 0.00 0.00	0.0000	164.00	No Ice 1/2" Ice 12.02	7.70 8.29	61.00 126.70
SBNH-1D6565C (AT&T)	C	From Leg	4.00 0.00 0.00	0.0000	164.00	No Ice 1/2" Ice 12.02	7.70 8.29	61.00 126.70
Surge Suppressor (AT&T)	C	None		0.0000	164.00	No Ice 1/2" Ice 0.94	0.80 0.94	30.00 41.94
(2) RRU (AT&T)	A	From Leg	4.00 0.00 0.00	0.0000	164.00	No Ice 1/2" Ice 1.56	0.70 0.82	10.00 20.34
(2) RRU (AT&T)	B	From Leg	4.00 0.00 0.00	0.0000	164.00	No Ice 1/2" Ice 1.56	0.70 0.82	10.00 20.34
(2) RRU (AT&T)	C	From Leg	4.00 0.00 0.00	0.0000	164.00	No Ice 1/2" Ice 1.56	0.70 0.82	10.00 20.34
Andrew 12' Sector Frame (SF-U12-3-72) (AT&T)	A	From Leg	2.00 0.00 0.00	0.0000	164.00	No Ice 1/2" Ice 15.10	10.80 15.10	487.00 633.10
Andrew 12' Sector Frame (SF-U12-3-72) (AT&T)	B	From Leg	2.00 0.00 0.00	0.0000	164.00	No Ice 1/2" Ice 15.10	10.80 15.10	487.00 633.10
Andrew 12' Sector Frame (SF-U12-3-72) (AT&T)	C	From Leg	2.00 0.00 0.00	0.0000	164.00	No Ice 1/2" Ice 15.10	10.80 15.10	487.00 633.10
BXA-70063-6CF-EDIN (Verizon)	A	From Leg	1.00 0.00	0.0000	121.00	No Ice 1/2" Ice 8.27	4.16 4.60	20.00 62.49

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	Client	Transcend Wireless / TWM-005 / -004 Rev. 1	Designed by	MCD

Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	C _{AA} Front	C _{AA} Side	Weight
			Horz	Lateral					
			ft	ft	°	ft	ft ²	ft ²	lb
BXA-70063-6CF-EDIN (Verizon)	B	From Leg	0.00	0.00	0.0000	121.00	No Ice 7.73	4.16	20.00
			1.00	0.00			1/2" Ice 8.27	4.60	62.49
(2) LPA-80080-4CF-EDIN (Verizon)	A	From Leg	0.00	0.00	0.0000	121.00	No Ice 2.62	6.06	20.00
			1.00	0.00			1/2" Ice 2.92	6.45	53.12
(2) LPA-80063-4CF (Verizon)	B	From Leg	0.00	0.00	0.0000	121.00	No Ice 7.00	6.04	32.00
			1.00	0.00			1/2" Ice 7.41	6.43	84.41
(2) LPA-171080-8CF-EDIN (Verizon)	A	From Leg	0.00	0.00	0.0000	121.00	No Ice 2.10	3.19	13.50
			1.00	0.00			1/2" Ice 2.40	3.54	33.28
(2) LPA-171063-8CF-EDIN (Verizon)	B	From Leg	0.00	0.00	0.0000	121.00	No Ice 3.69	3.69	16.50
			1.00	0.00			1/2" Ice 4.06	4.06	45.29
3' Stand-off (Eversource)	A	From Leg	0.00	0.00	0.0000	230.00	No Ice 1.00	2.00	50.00
			0.00	0.00			1/2" Ice 1.20	2.70	75.00
531-70HD Exposed Dipole Antenna (Eversource)	A	From Leg	0.00	0.00	0.0000	218.00	No Ice 5.91	5.91	45.00
			3.00	0.00			1/2" Ice 7.68	7.68	79.03
6' Stand-off (Eversource)	A	From Leg	0.00	0.00	0.0000	218.00	No Ice 1.20	4.50	75.00
			0.00	0.00			1/2" Ice 1.40	5.50	125.00
(3) L-810 Obstruction Lights w/ Mount Kit (Tower - OBS Light)	C	None	0.00	0.00	0.0000	142.00	No Ice 0.85	0.43	45.00
			0.00	0.00			1/2" Ice 0.97	0.53	51.66
Pirod 12' T-Frame Sector Mount (1) (T-Mobile)	A	From Leg	0.00	0.00	0.0000	182.00	No Ice 13.60	13.60	465.00
			1.50	0.00			1/2" Ice 18.40	18.40	600.00
Pirod 12' T-Frame Sector Mount (1) (T-Mobile)	B	From Leg	0.00	0.00	0.0000	182.00	No Ice 13.60	13.60	465.00
			1.50	0.00			1/2" Ice 18.40	18.40	600.00
Pirod 12' T-Frame Sector Mount (1) (T-Mobile)	C	From Leg	0.00	0.00	0.0000	182.00	No Ice 13.60	13.60	465.00
			1.50	0.00			1/2" Ice 18.40	18.40	600.00
AIR21 B4A/B2P (T-Mobile)	A	From Leg	0.00	0.00	0.0000	182.00	No Ice 6.53	5.56	110.02
			4.00	6.00			1/2" Ice 6.98	6.26	166.56
LNX-6515DS-VTM (T-Mobile)	A	From Leg	0.00	0.00	0.0000	182.00	No Ice 11.39	8.98	72.65
			4.00	-6.00			1/2" Ice 12.01	9.88	153.92
AIR21 B4A/B2P (T-Mobile)	B	From Leg	0.00	0.00	0.0000	182.00	No Ice 6.53	5.56	110.02
			4.00	6.00			1/2" Ice 6.98	6.26	166.56
LNX-6515DS-VTM (T-Mobile)	B	From Leg	0.00	0.00	0.0000	182.00	No Ice 11.39	8.98	72.65
			4.00	-6.00			1/2" Ice 12.01	9.88	153.92
S11 B2 RRH Unit (T-Mobile)	A	From Leg	0.00	0.00	0.0000	182.00	No Ice 0.48	0.14	2.00
			4.00	6.00			1/2" Ice 0.57	0.20	5.05
RRUS-11 (T-Mobile)	A	From Leg	0.00	0.00	0.0000	182.00	No Ice 2.99	1.25	50.00
			4.00	-6.00			1/2" Ice 3.23	1.41	69.57
S11 B2 RRH Unit (T-Mobile)	B	From Leg	0.00	0.00	0.0000	182.00	No Ice 0.48	0.14	2.00
			4.00	6.00			1/2" Ice 0.57	0.20	5.05

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Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert	Azimuth Adjustment	Placement	C _{AA} Front	C _{AA} Side	Weight					
			ft	°	ft	ft ²	ft ²	lb					
RRUS-11 (T-Mobile)	B	From Leg	0.00	0.0000	182.00	No Ice	2.99	1.25	50.00				
			4.00							1/2" Ice	3.23	1.41	69.57
			-6.00										
DB589-Y (Eversource)	A	From Leg	0.00	0.0000	234.70	No Ice	2.13	2.13	11.50				
			3.00							1/2" Ice	3.00	3.00	27.39
			0.00										

Dishes

Description	Face or Leg	Dish Type	Offset Type	Offsets: Horz Lateral Vert	Azimuth Adjustment	3 dB Beam Width	Elevation	Outside Diameter	Aperture Area	Weight				
				ft	°	°	ft	ft	ft ²	lb				
9' Dish w/ Radome (Eversource)	C	Paraboloid w/Radome	From Leg	3.00	0.0000		104.50	9.00	No Ice	63.62	100.00			
				0.00								1/2" Ice	64.80	432.64
				0.00										
5.5' Dish w/ Radome (Eversource)	A	Paraboloid w/Radome	From Leg	2.50	0.0000		153.00	5.50	No Ice	23.76	75.00			
				0.00								1/2" Ice	24.48	200.66
				0.00										
8' Dish w/ Radome (Eversource)	A	Paraboloid w/Radome	From Leg	2.83	0.0000		204.50	8.00	No Ice	50.27	75.00			
				0.00								1/2" Ice	51.32	338.44
				0.00										
6' Dish w/ Radome (Eversource)	C	Paraboloid w/Radome	From Leg	2.25	0.0000		204.50	6.00	No Ice	28.27	75.00			
				0.00								1/2" Ice	29.07	224.23
				0.00										
8' Dish w/ Radome (Eversource)	C	Paraboloid w/Radome	From Leg	2.83	0.0000		212.50	8.00	No Ice	50.27	75.00			
				0.00								1/2" Ice	51.32	338.44
				0.00										
MF-950B (WBMW)	C	Grid	From Leg	0.50	0.0000		280.00	1.33	No Ice	2.66	13.00			
				0.00								1/2" Ice	3.50	21.00
				0.00										

Tower Pressures - No Ice

$$G_H = 1.092$$

Section Elevation	z	K _Z	q _z	A _G	F _a	A _F	A _R	A _{leg}	Leg %	C _{AA} In Face	C _{AA} Out Face	
ft	ft		psf	ft ²	e	ft ²	ft ²	ft ²		ft ²	ft ²	
T1 282.00-262.00	272.00	1.827	34	83.333	A	4.951	10.620	6.667	42.81	3.100	0.000	
					B	4.951	10.620			42.81	9.860	0.000
					C	4.951	10.620			42.81	0.000	0.000
T2 262.00-242.00	252.00	1.788	33	83.333	A	3.993	10.620	6.667	45.62	6.200	0.000	
					B	3.993	10.620			45.62	9.860	0.000

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Section Elevation	z	K _Z	q _z	A _G	F a c e	A _F	A _R	A _{leg}	Leg %	C _A A ₁ In Face	C _A A ₃ Out Face
ft	ft		psf	ft ²		ft ²	ft ²	ft ²		ft ²	ft ²
T3 242.00-222.00	232.00	1.746	32	83.333	C	3.993	10.620		45.62	0.000	0.000
					A	3.993	10.620	6.667	45.62	6.200	0.000
					B	3.993	10.620		45.62	9.860	0.000
T4 222.00-202.00	212.00	1.701	31	83.333	C	3.993	10.620		45.62	3.100	0.000
					A	15.287	6.667	6.667	30.37	6.200	0.000
					B	18.304	6.667		26.70	9.860	0.000
T5 202.00-182.00	192.00	1.654	31	83.333	C	15.287	6.667		30.37	5.098	0.000
					A	17.843	6.667	6.667	27.20	6.200	0.000
					B	25.714	6.667		20.59	9.860	0.000
T6 182.00-162.00	172.00	1.603	30	83.333	C	17.843	6.667		27.20	5.320	0.000
					A	3.993	10.620	6.667	45.62	14.815	0.000
					B	11.864	10.620		29.65	23.913	0.000
T7 162.00-142.00	152.00	1.547	29	83.333	C	3.993	10.620		45.62	5.320	0.000
					A	3.993	10.620	6.667	45.62	49.749	0.000
					B	11.864	10.620		29.65	26.163	0.000
T8 142.00-122.00	132.00	1.486	27	83.333	C	5.731	10.620		40.77	5.320	0.000
					A	17.843	6.667	6.667	27.20	49.749	0.000
					B	25.714	6.667		20.59	37.782	0.000
T9 122.00-102.00	112.00	1.418	26	83.333	C	20.466	6.667		24.57	9.350	0.000
					A	15.287	6.667	6.667	30.37	49.749	0.000
					B	23.158	6.667		22.35	60.829	0.000
T10 102.00-82.00	92.00	1.34	25	83.333	C	18.632	6.667		26.35	11.520	0.000
					A	3.993	10.620	6.667	45.62	49.749	0.000
					B	11.864	10.620		29.65	60.829	0.000
T11 82.00-78.00	80.00	1.288	24	16.667	C	9.240	10.620		33.57	11.520	0.000
					A	0.799	2.124	1.333	45.62	9.950	0.000
					B	2.373	2.124		29.65	12.166	0.000
T12 78.00-74.00	76.00	1.269	23	16.667	C	1.848	2.124		33.57	2.304	0.000
					A	0.799	2.124	1.333	45.62	9.950	0.000
					B	2.373	2.124		29.65	12.166	0.000
T13 74.00-70.00	72.00	1.25	23	16.667	C	1.848	2.124		33.57	2.304	0.000
					A	0.799	2.124	1.333	45.62	9.950	0.000
					B	2.373	2.124		29.65	12.166	0.000
T14 70.00-66.00	68.00	1.229	23	16.667	C	1.848	2.124		33.57	2.304	0.000
					A	0.799	2.124	1.333	45.62	9.950	0.000
					B	2.373	2.124		29.65	12.166	0.000
T15 66.00-62.00	64.00	1.208	22	16.667	C	1.848	2.124		33.57	2.304	0.000
					A	0.799	2.124	1.333	45.62	9.950	0.000
					B	2.373	2.124		29.65	12.166	0.000
T16 62.00-42.00	52.00	1.139	21	83.746	C	1.848	2.124		33.57	2.304	0.000
					A	11.381	3.948	7.393	48.23	49.749	0.000
					B	19.253	3.948		31.87	60.829	0.000
T17 42.00-22.00	32.00	1	18	83.746	C	16.629	3.948		35.93	11.520	0.000
					A	11.381	3.948	7.393	48.23	49.749	0.000
					B	19.253	3.948		31.87	60.829	0.000
T18 22.00-2.00	12.00	1	18	83.746	C	16.629	3.948		35.93	11.520	0.000
					A	11.381	3.948	7.393	48.23	37.312	0.000
					B	17.285	3.948		34.82	45.622	0.000
					C	15.317	3.948		38.38	8.640	0.000

Tower Pressure - With Ice

$$G_H = 1.092$$

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Section Elevation	z	K _Z	q _z	t _z	A _G	F a c e	A _F	A _R	A _{leg}	Leg %	C _A A _A In Face ft ²	C _A A _A Out Face ft ²
ft	ft		psf	in	ft ²		ft ²	ft ²	ft ²			
T1 282.00-262.00	272.00	1.827	25	0.5000	85.000	A	4.951	20,387	10,000	39.47	5.100	0.000
						B	4.951	20,387		39.47	17.860	0.000
						C	4.951	20,387		39.47	0.000	0.000
T2 262.00-242.00	252.00	1.788	25	0.5000	85.000	A	3.993	20,068	10,000	41.56	10.200	0.000
						B	3.993	20,068		41.56	17.860	0.000
						C	3.993	20,068		41.56	0.000	0.000
T3 242.00-222.00	232.00	1.746	24	0.5000	85.000	A	3.993	20,068	10,000	41.56	10.200	0.000
						B	3.993	20,068		41.56	17.860	0.000
						C	3.993	20,068		41.56	5.100	0.000
T4 222.00-202.00	212.00	1.701	24	0.5000	85.000	A	18.299	11,597	10,000	33.45	10.200	0.000
						B	22.594	11,597		29.25	17.860	0.000
						C	18.299	11,597		33.45	8.898	0.000
T5 202.00-182.00	192.00	1.654	23	0.5000	85.000	A	20,854	12,236	10,000	30.22	10.200	0.000
						B	32,059	12,236		22.58	17.860	0.000
						C	20,854	12,236		30.22	9.320	0.000
T6 182.00-162.00	172.00	1.603	22	0.5000	85.000	A	3.993	20,068	10,000	41.56	19.818	0.000
						B	15.197	20,068		28.36	34.113	0.000
						C	3.993	20,068		41.56	9.320	0.000
T7 162.00-142.00	152.00	1.547	21	0.5000	85.000	A	3.993	20,068	10,000	41.56	61.616	0.000
						B	15.197	20,068		28.36	38,163	0.000
						C	6.467	20,068		37.69	9.320	0.000
T8 142.00-122.00	132.00	1.486	21	0.5000	85.000	A	20,854	12,236	10,000	30.22	61.616	0.000
						B	32,059	12,236		22.58	54,007	0.000
						C	24,589	12,236		27.16	15,950	0.000
T9 122.00-102.00	112.00	1.418	20	0.5000	85.000	A	18,299	11,597	10,000	33.45	61.616	0.000
						B	29,503	11,597		24.33	80,829	0.000
						C	23,061	11,597		28.85	19,520	0.000
T10 102.00-82.00	92.00	1.34	19	0.5000	85.000	A	3.993	20,068	10,000	41.56	61.616	0.000
						B	15.197	20,068		28.36	80,829	0.000
						C	11.463	20,068		31.72	19,520	0.000
T11 82.00-78.00	80.00	1.288	18	0.5000	17,000	A	0.799	4,014	2,000	41.56	12,323	0.000
						B	3,039	4,014		28.36	16,166	0.000
						C	2,293	4,014		31.72	3,904	0.000
T12 78.00-74.00	76.00	1.269	18	0.5000	17,000	A	0.799	4,014	2,000	41.56	12,323	0.000
						B	3,039	4,014		28.36	16,166	0.000
						C	2,293	4,014		31.72	3,904	0.000
T13 74.00-70.00	72.00	1.25	17	0.5000	17,000	A	0.799	4,014	2,000	41.56	12,323	0.000
						B	3,039	4,014		28.36	16,166	0.000
						C	2,293	4,014		31.72	3,904	0.000
T14 70.00-66.00	68.00	1.229	17	0.5000	17,000	A	0.799	4,014	2,000	41.56	12,323	0.000
						B	3,039	4,014		28.36	16,166	0.000
						C	2,293	4,014		31.72	3,904	0.000
T15 66.00-62.00	64.00	1.208	17	0.5000	17,000	A	0.799	4,014	2,000	41.56	12,323	0.000
						B	3,039	4,014		28.36	16,166	0.000
						C	2,293	4,014		31.72	3,904	0.000
T16 62.00-42.00	52.00	1.139	16	0.5000	85.412	A	13.604	10,056	9.616	40.64	61.616	0.000
						B	24.808	10,056		27.58	80,829	0.000
						C	21,073	10,056		30.89	19,520	0.000
T17 42.00-22.00	32.00	1	14	0.5000	85.412	A	13.604	10,055	9.616	40.64	61.616	0.000
						B	24.808	10,055		27.58	80,829	0.000
						C	21,073	10,055		30.89	19,520	0.000
T18 22.00-2.00	12.00	1	14	0.5000	85.412	A	13.604	10,055	9.616	40.64	46,212	0.000
						B	22,007	10,055		29.99	60,622	0.000
						C	19,206	10,055		32.86	14,640	0.000

Tower Pressure - Service

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$$G_H = 1.092$$

Section Elevation ft	z ft	K _Z	q _z psf	A _G ft ²	F a c e	A _F ft ²	A _R ft ²	A _{leg} ft ²	Leg %	C _A A _A In Face ft ²	C _A A _A Out Face ft ²
T1 282.00-262.00	272.00	1.827	12	83.333	A	4.951	10.620	6.667	42.81	3.100	0.000
					B	4.951	10.620		42.81	9.860	0.000
					C	4.951	10.620		42.81	0.000	0.000
T2 262.00-242.00	252.00	1.788	11	83.333	A	3.993	10.620	6.667	45.62	6.200	0.000
					B	3.993	10.620		45.62	9.860	0.000
					C	3.993	10.620		45.62	0.000	0.000
T3 242.00-222.00	232.00	1.746	11	83.333	A	3.993	10.620	6.667	45.62	6.200	0.000
					B	3.993	10.620		45.62	9.860	0.000
					C	3.993	10.620		45.62	3.100	0.000
T4 222.00-202.00	212.00	1.701	11	83.333	A	15.287	6.667	6.667	30.37	6.200	0.000
					B	18.304	6.667		26.70	9.860	0.000
					C	15.287	6.667		30.37	5.098	0.000
T5 202.00-182.00	192.00	1.654	11	83.333	A	17.843	6.667	6.667	27.20	6.200	0.000
					B	25.714	6.667		20.59	9.860	0.000
					C	17.843	6.667		27.20	5.320	0.000
T6 182.00-162.00	172.00	1.603	10	83.333	A	3.993	10.620	6.667	45.62	14.815	0.000
					B	11.864	10.620		29.65	23.913	0.000
					C	3.993	10.620		45.62	5.320	0.000
T7 162.00-142.00	152.00	1.547	10	83.333	A	3.993	10.620	6.667	45.62	49.749	0.000
					B	11.864	10.620		29.65	26.163	0.000
					C	5.731	10.620		40.77	5.320	0.000
T8 142.00-122.00	132.00	1.486	10	83.333	A	17.843	6.667	6.667	27.20	49.749	0.000
					B	25.714	6.667		20.59	37.782	0.000
					C	20.466	6.667		24.57	9.350	0.000
T9 122.00-102.00	112.00	1.418	9	83.333	A	15.287	6.667	6.667	30.37	49.749	0.000
					B	23.158	6.667		22.35	60.829	0.000
					C	18.632	6.667		26.35	11.520	0.000
T10 102.00-82.00	92.00	1.34	9	83.333	A	3.993	10.620	6.667	45.62	49.749	0.000
					B	11.864	10.620		29.65	60.829	0.000
					C	9.240	10.620		33.57	11.520	0.000
T11 82.00-78.00	80.00	1.288	8	16.667	A	0.799	2.124	1.333	45.62	9.950	0.000
					B	2.373	2.124		29.65	12.166	0.000
					C	1.848	2.124		33.57	2.304	0.000
T12 78.00-74.00	76.00	1.269	8	16.667	A	0.799	2.124	1.333	45.62	9.950	0.000
					B	2.373	2.124		29.65	12.166	0.000
					C	1.848	2.124		33.57	2.304	0.000
T13 74.00-70.00	72.00	1.25	8	16.667	A	0.799	2.124	1.333	45.62	9.950	0.000
					B	2.373	2.124		29.65	12.166	0.000
					C	1.848	2.124		33.57	2.304	0.000
T14 70.00-66.00	68.00	1.229	8	16.667	A	0.799	2.124	1.333	45.62	9.950	0.000
					B	2.373	2.124		29.65	12.166	0.000
					C	1.848	2.124		33.57	2.304	0.000
T15 66.00-62.00	64.00	1.208	8	16.667	A	0.799	2.124	1.333	45.62	9.950	0.000
					B	2.373	2.124		29.65	12.166	0.000
					C	1.848	2.124		33.57	2.304	0.000
T16 62.00-42.00	52.00	1.139	7	83.746	A	11.381	3.949	7.393	48.23	49.749	0.000
					B	19.253	3.949		31.87	60.829	0.000
					C	16.629	3.949		35.93	11.520	0.000
T17 42.00-22.00	32.00	1	6	83.746	A	11.381	3.948	7.393	48.23	49.749	0.000
					B	19.253	3.948		31.87	60.829	0.000
					C	16.629	3.948		35.93	11.520	0.000
T18 22.00-2.00	12.00	1	6	83.746	A	11.381	3.948	7.393	48.23	37.312	0.000
					B	17.285	3.948		34.82	45.622	0.000
					C	15.317	3.948		38.38	8.640	0.000

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Tower Forces - No Ice - Wind Normal To Face

Section Elevation	Add Weight	Self Weight	F a c e	e	C _F	R _R	D _F	D _R	A _E	F	w	Ctrl. Face
ft	lb	lb							ft ²	lb	plf	
T1 282.00-262.00	56.20	1212.62	A	0.187	2.641	0.588	1	1	11.194	1568.98	78.45	C
			B	0.187	2.641	0.588	1	1	11.194			
			C	0.187	2.641	0.588	1	1	11.194			
T2 262.00-242.00	69.40	1153.82	A	0.175	2.68	0.586	1	1	10.213	1568.24	78.41	C
			B	0.175	2.68	0.586	1	1	10.213			
			C	0.175	2.68	0.586	1	1	10.213			
T3 242.00-222.00	82.60	1153.82	A	0.175	2.68	0.586	1	1	10.213	1640.94	82.05	C
			B	0.175	2.68	0.586	1	1	10.213			
			C	0.175	2.68	0.586	1	1	10.213			
T4 222.00-202.00	104.05	2014.07	A	0.263	2.398	0.605	1	1	19.323	2496.07	124.80	B
			B	0.3	2.297	0.616	1	1	22.410			
			C	0.263	2.398	0.605	1	1	19.323			
T5 202.00-182.00	124.00	2247.64 TA 873.93	A	0.294	2.312	0.614	1	1	21.937	2807.83	140.39	B
			B	0.389	2.087	0.647	1	1	30.027			
			C	0.294	2.312	0.614	1	1	21.937			
T6 182.00-162.00	253.60	1153.82	A	0.175	2.68	0.586	1	1	10.213	2836.53	141.83	B
			B	0.27	2.379	0.607	1	1	18.312			
			C	0.175	2.68	0.586	1	1	10.213			
T7 162.00-142.00	462.84	1153.82	A	0.175	2.68	0.586	1	1	10.213	3900.09	195.00	B
			B	0.27	2.379	0.607	1	1	18.312			
			C	0.196	2.609	0.59	1	1	11.993			
T8 142.00-122.00	543.92	2247.64 TA 873.93	A	0.294	2.312	0.614	1	1	21.937	4788.95	239.45	B
			B	0.389	2.087	0.647	1	1	30.027			
			C	0.326	2.23	0.624	1	1	24.627			
T9 122.00-102.00	676.09	2014.07	A	0.263	2.398	0.605	1	1	19.323	4773.15*	238.66	C
			B	0.358	2.153	0.635	1	1	27.394			
			C	0.304	2.287	0.617	1	1	22.746			
T10 102.00-82.00	683.48	1153.82	A	0.175	2.68	0.586	1	1	10.213	4485.29	224.26	B
			B	0.27	2.379	0.607	1	1	18.312			
			C	0.238	2.473	0.599	1	1	15.601			
T11 82.00-78.00	136.70	230.76	A	0.175	2.68	0.586	1	1	2.043	861.94	215.49	B
			B	0.27	2.379	0.607	1	1	3.662			
			C	0.238	2.473	0.599	1	1	3.120			
T12 78.00-74.00	136.70	284.96	A	0.175	2.68	0.586	1	1	2.043	849.40	212.35	B
			B	0.27	2.379	0.607	1	1	3.662			
			C	0.238	2.473	0.599	1	1	3.120			
T13 74.00-70.00	136.70	230.76	A	0.175	2.68	0.586	1	1	2.043	836.38	209.10	B
			B	0.27	2.379	0.607	1	1	3.662			
			C	0.238	2.473	0.599	1	1	3.120			
T14 70.00-66.00	136.70	230.76	A	0.175	2.68	0.586	1	1	2.043	822.83	205.71	B
			B	0.27	2.379	0.607	1	1	3.662			
			C	0.238	2.473	0.599	1	1	3.120			
T15 66.00-62.00	136.70	284.96	A	0.175	2.68	0.586	1	1	2.043	808.70	202.18	B
			B	0.27	2.379	0.607	1	1	3.662			
			C	0.238	2.473	0.599	1	1	3.120			
T16 62.00-42.00	683.48	1252.21	A	0.183	2.654	0.587	1	1	13.700	3852.52*	192.63	C
			B	0.277	2.359	0.609	1	1	21.658			
			C	0.246	2.45	0.601	1	1	19.001			
T17 42.00-22.00	683.48	1252.21	A	0.183	2.654	0.587	1	1	13.699	3383.13*	169.16	C
			B	0.277	2.359	0.609	1	1	21.657			
			C	0.246	2.45	0.601	1	1	19.001			
T18 22.00-2.00	512.61	1252.21	A	0.183	2.654	0.587	1	1	13.699	2813.67	140.68	B
			B	0.254	2.427	0.603	1	1	19.665			
			C	0.23	2.499	0.597	1	1	17.674			
Sum Weight:	5619.23	22271.87							45094.67			

*2A_e limit

tnxTower AECOM 500 Enterprise Drive, Suite 3B Rocky Hill, CT Phone: 860-529-8882 FAX: 860-529-3991	Job	280' Guyed Tower	Page	26 of 65
	Project	130 Vernon Rd Bolton, CT	Date	09:04:28 04/13/16
	Client	Transcend Wireless / TWM-005 / -004 Rev. 1	Designed by	MCD

Tower Forces - No Ice - Wind 45 To Face

Section Elevation	Add Weight	Self Weight	F a c e	e	C _F	R _R	D _F	D _R	A _E	F	w	Ctrl. Face
ft	lb	lb							ft ²	lb	plf	
T1 282.00-262.00	56.20	1212.62	A	0.187	2.641	0.588	0.825	1	10.327	1484.55	74.23	C
			B	0.187	2.641	0.588	0.825	1	10.327			
			C	0.187	2.641	0.588	0.825	1	10.327			
T2 262.00-242.00	69.40	1153.82	A	0.175	2.68	0.586	0.825	1	9.514	1500.61	75.03	C
			B	0.175	2.68	0.586	0.825	1	9.514			
			C	0.175	2.68	0.586	0.825	1	9.514			
T3 242.00-222.00	82.60	1153.82	A	0.175	2.68	0.586	0.825	1	9.514	1574.89	78.74	C
			B	0.175	2.68	0.586	0.825	1	9.514			
			C	0.175	2.68	0.586	0.825	1	9.514			
T4 222.00-202.00	104.05	2014.07	A	0.263	2.398	0.605	0.825	1	16.648	2243.22	112.16	B
			B	0.3	2.297	0.616	0.825	1	19.206			
			C	0.263	2.398	0.605	0.825	1	16.648			
T5 202.00-182.00	124.00	2247.64	A	0.294	2.312	0.614	0.825	1	18.814	2494.08	124.70	B
		TA 873.93	B	0.389	2.087	0.647	0.825	1	25.527			
		C	0.294	2.312	0.614	0.825	1	18.814				
T6 182.00-162.00	253.60	1153.82	A	0.175	2.68	0.586	0.825	1	9.514	2676.60	133.83	B
			B	0.27	2.379	0.607	0.825	1	16.235			
			C	0.175	2.68	0.586	0.825	1	9.514			
T7 162.00-142.00	462.84	1153.82	A	0.175	2.68	0.586	0.825	1	9.514	3745.71	187.29	B
			B	0.27	2.379	0.607	0.825	1	16.235			
			C	0.196	2.609	0.59	0.825	1	10.990			
T8 142.00-122.00	543.92	2247.64	A	0.294	2.312	0.614	0.825	1	18.814	4507.06	225.35	B
		TA 873.93	B	0.389	2.087	0.647	0.825	1	25.527			
		C	0.326	2.23	0.624	0.825	1	21.045				
T9 122.00-102.00	676.09	2014.07	A	0.263	2.398	0.605	0.825	1	16.648	4773.15*	238.66	B
			B	0.358	2.153	0.635	0.825	1	23.341			
			C	0.304	2.287	0.617	0.825	1	19.485			
T10 102.00-82.00	683.48	1153.82	A	0.175	2.68	0.586	0.825	1	9.514	4351.54	217.58	B
			B	0.27	2.379	0.607	0.825	1	16.235			
			C	0.238	2.473	0.599	0.825	1	13.984			
T11 82.00-78.00	136.70	230.76	A	0.175	2.68	0.586	0.825	1	1.903	836.24	209.06	B
			B	0.27	2.379	0.607	0.825	1	3.247			
			C	0.238	2.473	0.599	0.825	1	2.797			
T12 78.00-74.00	136.70	284.96	A	0.175	2.68	0.586	0.825	1	1.903	824.07	206.02	B
			B	0.27	2.379	0.607	0.825	1	3.247			
			C	0.238	2.473	0.599	0.825	1	2.797			
T13 74.00-70.00	136.70	230.76	A	0.175	2.68	0.586	0.825	1	1.903	811.44	202.86	B
			B	0.27	2.379	0.607	0.825	1	3.247			
			C	0.238	2.473	0.599	0.825	1	2.797			
T14 70.00-66.00	136.70	230.76	A	0.175	2.68	0.586	0.825	1	1.903	798.30	199.57	B
			B	0.27	2.379	0.607	0.825	1	3.247			
			C	0.238	2.473	0.599	0.825	1	2.797			
T15 66.00-62.00	136.70	284.96	A	0.175	2.68	0.586	0.825	1	1.903	784.59	196.15	B
			B	0.27	2.379	0.607	0.825	1	3.247			
			C	0.238	2.473	0.599	0.825	1	2.797			
T16 62.00-42.00	683.48	1252.21	A	0.183	2.654	0.587	0.825	1	11.708	3800.71	190.04	B
			B	0.277	2.359	0.609	0.825	1	18.289			
			C	0.246	2.45	0.601	0.825	1	16.091			
T17 42.00-22.00	683.48	1252.21	A	0.183	2.654	0.587	0.825	1	11.708	3337.63	166.88	B
			B	0.277	2.359	0.609	0.825	1	18.288			
			C	0.246	2.45	0.601	0.825	1	16.091			
T18 22.00-2.00	512.61	1252.21	A	0.183	2.654	0.587	0.825	1	11.708	2665.39	133.27	B
			B	0.254	2.427	0.603	0.825	1	16.640			

tnxTower AECOM 500 Enterprise Drive, Suite 3B Rocky Hill, CT Phone: 860-529-8882 FAX: 860-529-3991	Job 280' Guyed Tower	Page 27 of 65
	Project 130 Vernon Rd Bolton, CT	Date 09:04:28 04/13/16
	Client Transcend Wireless / TWM-005 / -004 Rev. 1	Designed by MCD

Section Elevation	Add Weight	Self Weight	F a c e	e	C _F	R _R	D _F	D _R	A _E	F	w	Ctrl. Face
ft	lb	lb							ft ²	lb	plf	
Sum Weight:	5619.23	22271.87	C	0.23	2.499 *2A _E limit	0.597	0.825	1	14,993	43209.77		

Tower Forces - No Ice - Wind 60 To Face

Section Elevation	Add Weight	Self Weight	F a c e	e	C _F	R _R	D _F	D _R	A _E	F	w	Ctrl. Face
ft	lb	lb							ft ²	lb	plf	
T1 282.00-262.00	56.20	1212.62	A	0.187	2.641	0.588	0.8	1	10.203	1472.49	73.62	C
			B	0.187	2.641	0.588	0.8	1	10.203			
			C	0.187	2.641	0.588	0.8	1	10.203			
T2 262.00-242.00	69.40	1153.82	A	0.175	2.68	0.586	0.8	1	9.414	1490.95	74.55	C
			B	0.175	2.68	0.586	0.8	1	9.414			
			C	0.175	2.68	0.586	0.8	1	9.414			
T3 242.00-222.00	82.60	1153.82	A	0.175	2.68	0.586	0.8	1	9.414	1565.45	78.27	C
			B	0.175	2.68	0.586	0.8	1	9.414			
			C	0.175	2.68	0.586	0.8	1	9.414			
T4 222.00-202.00	104.05	2014.07	A	0.263	2.398	0.605	0.8	1	16.266	2207.09	110.35	B
			B	0.3	2.297	0.616	0.8	1	18.749			
			C	0.263	2.398	0.605	0.8	1	16.266			
T5 202.00-182.00	124.00	2247.64 TA 873.93	A	0.294	2.312	0.614	0.8	1	18.368	2449.26	122.46	B
			B	0.389	2.087	0.647	0.8	1	24.884			
			C	0.294	2.312	0.614	0.8	1	18.368			
T6 182.00-162.00	253.60	1153.82	A	0.175	2.68	0.586	0.8	1	9.414	2653.75	132.69	B
			B	0.27	2.379	0.607	0.8	1	15.939			
			C	0.175	2.68	0.586	0.8	1	9.414			
T7 162.00-142.00	462.84	1153.82	A	0.175	2.68	0.586	0.8	1	9.414	3723.65	186.18	B
			B	0.27	2.379	0.607	0.8	1	15.939			
			C	0.196	2.609	0.59	0.8	1	10.847			
T8 142.00-122.00	543.92	2247.64 TA 873.93	A	0.294	2.312	0.614	0.8	1	18.368	4466.79	223.34	B
			B	0.389	2.087	0.647	0.8	1	24.884			
			C	0.326	2.23	0.624	0.8	1	20.534			
T9 122.00-102.00	676.09	2014.07	A	0.263	2.398	0.605	0.8	1	16.266	4773.15*	238.66	B
			B	0.358	2.153	0.635	0.8	1	22.762			
			C	0.304	2.287	0.617	0.8	1	19.019			
T10 102.00-82.00	683.48	1153.82	A	0.175	2.68	0.586	0.8	1	9.414	4332.43	216.62	B
			B	0.27	2.379	0.607	0.8	1	15.939			
			C	0.238	2.473	0.599	0.8	1	13.753			
T11 82.00-78.00	136.70	230.76	A	0.175	2.68	0.586	0.8	1	1.883	832.57	208.14	B
			B	0.27	2.379	0.607	0.8	1	3.188			
			C	0.238	2.473	0.599	0.8	1	2.751			
T12 78.00-74.00	136.70	284.96	A	0.175	2.68	0.586	0.8	1	1.883	820.46	205.11	B
			B	0.27	2.379	0.607	0.8	1	3.188			
			C	0.238	2.473	0.599	0.8	1	2.751			
T13 74.00-70.00	136.70	230.76	A	0.175	2.68	0.586	0.8	1	1.883	807.88	201.97	B
			B	0.27	2.379	0.607	0.8	1	3.188			
			C	0.238	2.473	0.599	0.8	1	2.751			
T14 70.00-66.00	136.70	230.76	A	0.175	2.68	0.586	0.8	1	1.883	794.79	198.70	B
			B	0.27	2.379	0.607	0.8	1	3.188			
			C	0.238	2.473	0.599	0.8	1	2.751			
T15 66.00-62.00	136.70	284.96	A	0.175	2.68	0.586	0.8	1	1.883	781.14	195.29	B
			B	0.27	2.379	0.607	0.8	1	3.188			
			C	0.238	2.473	0.599	0.8	1	2.751			
T16	683.48	1252.21	A	0.183	2.654	0.587	0.8	1	11.423	3774.59	188.73	B

tnxTower AECOM 500 Enterprise Drive, Suite 3B Rocky Hill, CT Phone: 860-529-8882 FAX: 860-529-3991	Job	280' Guyed Tower	Page	28 of 65
	Project	130 Vernon Rd Bolton, CT	Date	09:04:28 04/13/16
	Client	Transcend Wireless / TWM-005 / -004 Rev. 1	Designed by	MCD

Section Elevation	Add Weight	Self Weight	F a c e	e	C _F	R _R	D _F	D _R	A _E	F	w	Ctrl. Face
ft	lb	lb	e						ft ²	lb	plf	
62.00-42.00			B	0.277	2.359	0.609	0.8	1	17.807			
			C	0.246	2.45	0.601	0.8	1	15.675			
T17	683.48	1252.21	A	0.183	2.654	0.587	0.8	1	11.423	3314.69	165.73	B
42.00-22.00			B	0.277	2.359	0.609	0.8	1	17.807			
			C	0.246	2.45	0.601	0.8	1	15.675			
T18	512.61	1252.21	A	0.183	2.654	0.587	0.8	1	11.423	2644.21	132.21	B
22.00-2.00			B	0.254	2.427	0.603	0.8	1	16.208			
			C	0.23	2.499	0.597	0.8	1	14.611			
Sum Weight:	5619.23	22271.87			2A _g limit					42905.36		

Tower Forces - No Ice - Wind 90 To Face

Section Elevation	Add Weight	Self Weight	F a c e	e	C _F	R _R	D _F	D _R	A _E	F	w	Ctrl. Face
ft	lb	lb	e						ft ²	lb	plf	
T1	56.20	1212.62	A	0.187	2.641	0.588	0.85	1	10.451	1496.61	74.83	C
282.00-262.00			B	0.187	2.641	0.588	0.85	1	10.451			
			C	0.187	2.641	0.588	0.85	1	10.451			
T2	69.40	1153.82	A	0.175	2.68	0.586	0.85	1	9.614	1510.27	75.51	C
262.00-242.00			B	0.175	2.68	0.586	0.85	1	9.614			
			C	0.175	2.68	0.586	0.85	1	9.614			
T3	82.60	1153.82	A	0.175	2.68	0.586	0.85	1	9.614	1584.32	79.22	C
242.00-222.00			B	0.175	2.68	0.586	0.85	1	9.614			
			C	0.175	2.68	0.586	0.85	1	9.614			
T4	104.05	2014.07	A	0.263	2.398	0.605	0.85	1	17.030	2279.34	113.97	B
222.00-202.00			B	0.3	2.297	0.616	0.85	1	19.664			
			C	0.263	2.398	0.605	0.85	1	17.030			
T5	124.00	2247.64	A	0.294	2.312	0.614	0.85	1	19.260	2538.90	126.95	B
202.00-182.00		TA 873.93	B	0.389	2.087	0.647	0.85	1	26.170			
			C	0.294	2.312	0.614	0.85	1	19.260			
T6	253.60	1153.82	A	0.175	2.68	0.586	0.85	1	9.614	2699.45	134.97	B
182.00-162.00			B	0.27	2.379	0.607	0.85	1	16.532			
			C	0.175	2.68	0.586	0.85	1	9.614			
T7	462.84	1153.82	A	0.175	2.68	0.586	0.85	1	9.614	3767.76	188.39	B
162.00-142.00			B	0.27	2.379	0.607	0.85	1	16.532			
			C	0.196	2.609	0.59	0.85	1	11.133			
T8	543.92	2247.64	A	0.294	2.312	0.614	0.85	1	19.260	4547.33	227.37	B
142.00-122.00		TA 873.93	B	0.389	2.087	0.647	0.85	1	26.170			
			C	0.326	2.23	0.624	0.85	1	21.557			
T9	676.09	2014.07	A	0.263	2.398	0.605	0.85	1	17.030	4773.15*	238.66	C
122.00-102.00			B	0.358	2.153	0.635	0.85	1	23.920			
			C	0.304	2.287	0.617	0.85	1	19.951			
T10	683.48	1153.82	A	0.175	2.68	0.586	0.85	1	9.614	4370.65	218.53	B
102.00-82.00			B	0.27	2.379	0.607	0.85	1	16.532			
			C	0.238	2.473	0.599	0.85	1	14.215			
T11	136.70	230.76	A	0.175	2.68	0.586	0.85	1	1.923	839.91	209.98	B
82.00-78.00			B	0.27	2.379	0.607	0.85	1	3.306			
			C	0.238	2.473	0.599	0.85	1	2.843			
T12	136.70	284.96	A	0.175	2.68	0.586	0.85	1	1.923	827.69	206.92	B
78.00-74.00			B	0.27	2.379	0.607	0.85	1	3.306			
			C	0.238	2.473	0.599	0.85	1	2.843			
T13	136.70	230.76	A	0.175	2.68	0.586	0.85	1	1.923	815.00	203.75	B
74.00-70.00			B	0.27	2.379	0.607	0.85	1	3.306			
			C	0.238	2.473	0.599	0.85	1	2.843			

tnxTower AECOM 500 Enterprise Drive, Suite 3B Rocky Hill, CT Phone: 860-529-8882 FAX: 860-529-3991	Job 280' Guyed Tower	Page 29 of 65
	Project 130 Vernon Rd Bolton, CT	Date 09:04:28 04/13/16
	Client Transcend Wireless / TWM-005 / -004 Rev. 1	Designed by MCD

Section Elevation	Add Weight	Self Weight	F a c e	e	C _F	R _R	D _F	D _R	A _E	F	w	Ctrl. Face
ft	lb	lb							ft ²	lb	plf	
T14 70.00-66.00	136.70	230.76	A	0.175	2.68	0.586	0.85	1	1.923	801.80	200.45	B
			B	0.27	2.379	0.607	0.85	1	3.306			
			C	0.238	2.473	0.599	0.85	1	2.843			
T15 66.00-62.00	136.70	284.96	A	0.175	2.68	0.586	0.85	1	1.923	788.03	197.01	B
			B	0.27	2.379	0.607	0.85	1	3.306			
			C	0.238	2.473	0.599	0.85	1	2.843			
T16 62.00-42.00	683.48	1252.21	A	0.183	2.654	0.587	0.85	1	11.992	3826.82	191.34	B
			B	0.277	2.359	0.609	0.85	1	18.770			
			C	0.246	2.45	0.601	0.85	1	16.507			
T17 42.00-22.00	683.48	1252.21	A	0.183	2.654	0.587	0.85	1	11.992	3360.56	168.03	B
			B	0.277	2.359	0.609	0.85	1	18.770			
			C	0.246	2.45	0.601	0.85	1	16.506			
T18 22.00-2.00	512.61	1252.21	A	0.183	2.654	0.587	0.85	1	11.992	2686.57	134.33	B
			B	0.254	2.427	0.603	0.85	1	17.072			
			C	0.23	2.499	0.597	0.85	1	15.376			
Sum Weight:	5619.23	22271.87			*2A _g limit				43514.19			

Tower Forces - With Ice - Wind Normal To Face

Section Elevation	Add Weight	Self Weight	F a c e	e	C _F	R _R	D _F	D _R	A _E	F	w	Ctrl. Face
ft	lb	lb							ft ²	lb	plf	
T1 282.00-262.00	165.91	1607.29	A	0.298	2.301	0.615	1	1	17.496	1749.73	87.49	C
			B	0.298	2.301	0.615	1	1	17.496			
			C	0.298	2.301	0.615	1	1	17.496			
T2 262.00-242.00	204.16	1515.90	A	0.283	2.342	0.611	1	1	16.252	1790.55	89.53	C
			B	0.283	2.342	0.611	1	1	16.252			
			C	0.283	2.342	0.611	1	1	16.252			
T3 242.00-222.00	242.40	1515.90	A	0.283	2.342	0.611	1	1	16.252	1883.62	94.18	C
			B	0.283	2.342	0.611	1	1	16.252			
			C	0.283	2.342	0.611	1	1	16.252			
T4 222.00-202.00	312.68	2563.59	A	0.352	2.168	0.633	1	1	25.641	2553.69	127.68	B
			B	0.402	2.06	0.653	1	1	30.161			
			C	0.352	2.168	0.633	1	1	25.641			
T5 202.00-182.00	384.67	2880.99	A	0.389	2.086	0.647	1	1	28.775	2848.96	142.45	B
			TA	0.521	1.874	0.708	1	1	40.728			
			C	0.389	2.086	0.647	1	1	28.775			
T6 182.00-162.00	717.24	1515.90	A	0.283	2.342	0.611	1	1	16.252	2939.06	146.95	B
			B	0.415	2.035	0.658	1	1	28.398			
			C	0.283	2.342	0.611	1	1	16.252			
T7 162.00-142.00	1287.71	1515.90	A	0.283	2.342	0.611	1	1	16.252	3911.63	195.58	B
			B	0.415	2.035	0.658	1	1	28.398			
			C	0.312	2.264	0.62	1	1	18.903			
T8 142.00-122.00	1515.76	2880.99	A	0.389	2.086	0.647	1	1	28.775	3826.97*	191.35	C
			TA	0.521	1.874	0.708	1	1	40.728			
			C	0.433	2.002	0.666	1	1	32.735			
T9 122.00-102.00	1875.13	2563.59	A	0.352	2.168	0.633	1	1	25.641	3651.47*	182.57	C
			B	0.484	1.922	0.689	1	1	37.497			
			C	0.408	2.049	0.655	1	1	30.654			
T10 102.00-82.00	1902.15	1515.90	A	0.283	2.342	0.611	1	1	16.252	3451.90*	172.60	C
			B	0.415	2.035	0.658	1	1	28.398			
			C	0.371	2.124	0.64	1	1	24.310			
T11 82.00-78.00	380.43	303.18	A	0.283	2.342	0.611	1	1	3.250	663.36*	165.84	C
			B	0.415	2.035	0.658	1	1	5.680			

tnxTower AECOM 500 Enterprise Drive, Suite 3B Rocky Hill, CT Phone: 860-529-8882 FAX: 860-529-3991	Job	280' Guyed Tower	Page	30 of 65
	Project	130 Vernon Rd Bolton, CT	Date	09:04:28 04/13/16
	Client	Transcend Wireless / TWM-005 / -004 Rev. 1	Designed by	MCD

Section Elevation ft	Add Weight lb	Self Weight lb	F a c e	e	C _F	R _R	D _F	D _R	A _E ft ²	F lb	w plf	Ctrl. Face
T12 78.00-74.00	380.43	357.37	C	0.371	2.124	0.64	1	1	4.862	653.71*	163.43	C
			A	0.283	2.342	0.611	1	1	3.250			
			B	0.415	2.035	0.658	1	1	5.680			
T13 74.00-70.00	380.43	303.18	C	0.371	2.124	0.64	1	1	4.862	643.68*	160.92	C
			A	0.283	2.342	0.611	1	1	3.250			
			B	0.415	2.035	0.658	1	1	5.680			
T14 70.00-66.00	380.43	303.18	C	0.371	2.124	0.64	1	1	4.862	633.26*	158.31	C
			A	0.283	2.342	0.611	1	1	3.250			
			B	0.415	2.035	0.658	1	1	5.680			
T15 66.00-62.00	380.43	357.37	C	0.371	2.124	0.64	1	1	4.862	622.38*	155.60	C
			A	0.283	2.342	0.611	1	1	3.250			
			B	0.415	2.035	0.658	1	1	5.680			
T16 62.00-42.00	1902.15	1605.90	C	0.371	2.124	0.64	1	1	4.862	2946.90*	147.34	C
			A	0.277	2.359	0.609	1	1	19.729			
			B	0.408	2.048	0.655	1	1	31.395			
T17 42.00-22.00	1902.15	1605.90	C	0.364	2.139	0.638	1	1	27.487	2587.85*	129.39	C
			A	0.277	2.359	0.609	1	1	19.729			
			B	0.408	2.048	0.655	1	1	31.394			
T18 22.00-2.00	1426.61	1605.90	C	0.364	2.139	0.638	1	1	27.486	2587.85*	129.39	C
			A	0.277	2.359	0.609	1	1	19.729			
			B	0.375	2.115	0.642	1	1	28.461			
Sum Weight:	15740.85	28893.15			*2A _g limit				25.539	39946.58		

Tower Forces - With Ice - Wind 45 To Face

Section Elevation ft	Add Weight lb	Self Weight lb	F a c e	e	C _F	R _R	D _F	D _R	A _E ft ²	F lb	w plf	Ctrl. Face
T1 282.00-262.00	165.91	1607.29	A	0.298	2.301	0.615	0.825	1	16.630	1694.54	84.73	C
			B	0.298	2.301	0.615	0.825	1	16.630			
			C	0.298	2.301	0.615	0.825	1	16.630			
T2 262.00-242.00	204.16	1515.90	A	0.283	2.342	0.611	0.825	1	15.553	1746.23	87.31	C
			B	0.283	2.342	0.611	0.825	1	15.553			
			C	0.283	2.342	0.611	0.825	1	15.553			
T3 242.00-222.00	242.40	1515.90	A	0.283	2.342	0.611	0.825	1	15.553	1840.34	92.02	C
			B	0.283	2.342	0.611	0.825	1	15.553			
			C	0.283	2.342	0.611	0.825	1	15.553			
T4 222.00-202.00	312.68	2563.59	A	0.352	2.168	0.633	0.825	1	22.439	2343.80	117.19	B
			B	0.402	2.06	0.653	0.825	1	26.207			
			C	0.352	2.168	0.633	0.825	1	22.439			
T5 202.00-182.00	384.67	2880.99	A	0.389	2.086	0.647	0.825	1	25.125	2585.53	129.28	B
			TA	0.521	1.874	0.708	0.825	1	35.118			
			B	0.389	2.086	0.647	0.825	1	25.125			
T6 182.00-162.00	717.24	1515.90	A	0.283	2.342	0.611	0.825	1	15.553	2807.64	140.38	B
			B	0.415	2.035	0.658	0.825	1	25.738			
			C	0.283	2.342	0.611	0.825	1	15.553			
T7 162.00-142.00	1287.71	1515.90	A	0.283	2.342	0.611	0.825	1	15.553	3784.76	189.24	B
			B	0.415	2.035	0.658	0.825	1	25.738			
			C	0.312	2.264	0.62	0.825	1	17.772			
T8 142.00-122.00	1515.76	2880.99	A	0.389	2.086	0.647	0.825	1	25.125	3826.97*	191.35	C
			TA	0.521	1.874	0.708	0.825	1	35.118			
			B	0.433	2.002	0.666	0.825	1	28.432			
T9	1875.13	2563.59	A	0.352	2.168	0.633	0.825	1	22.439	3651.47*	182.57	C

tnxTower AECOM 500 Enterprise Drive, Suite 3B Rocky Hill, CT Phone: 860-529-8882 FAX: 860-529-3991	Job 280' Guyed Tower	Page 31 of 65
	Project 130 Vernon Rd Bolton, CT	Date 09:04:28 04/13/16
	Client Transcend Wireless / TWM-005 / -004 Rev. 1	Designed by MCD

Section Elevation	Add Weight	Self Weight	F a c e	e	C _F	R _R	D _F	D _R	A _E	F	w	Ctrl. Face
ft	lb	lb							ft ²	lb	plf	
122.00-102.00			B	0.484	1.922	0.689	0.825	1	32.333			
			C	0.408	2.049	0.655	0.825	1	26.619			
T10	1902.15	1515.90	A	0.283	2.342	0.611	0.825	1	15.553	3451.90*	172.60	C
102.00-82.00			B	0.415	2.035	0.658	0.825	1	25.738			
			C	0.371	2.124	0.64	0.825	1	22.304			
T11	380.43	303.18	A	0.283	2.342	0.611	0.825	1	3.111	663.36*	165.84	C
82.00-78.00			B	0.415	2.035	0.658	0.825	1	5.148			
			C	0.371	2.124	0.64	0.825	1	4.461			
T12	380.43	357.37	A	0.283	2.342	0.611	0.825	1	3.111	653.71*	163.43	C
78.00-74.00			B	0.415	2.035	0.658	0.825	1	5.148			
			C	0.371	2.124	0.64	0.825	1	4.461			
T13	380.43	303.18	A	0.283	2.342	0.611	0.825	1	3.111	643.68*	160.92	C
74.00-70.00			B	0.415	2.035	0.658	0.825	1	5.148			
			C	0.371	2.124	0.64	0.825	1	4.461			
T14	380.43	303.18	A	0.283	2.342	0.611	0.825	1	3.111	633.26*	158.31	C
70.00-66.00			B	0.415	2.035	0.658	0.825	1	5.148			
			C	0.371	2.124	0.64	0.825	1	4.461			
T15	380.43	357.37	A	0.283	2.342	0.611	0.825	1	3.111	622.38*	155.60	C
66.00-62.00			B	0.415	2.035	0.658	0.825	1	5.148			
			C	0.371	2.124	0.64	0.825	1	4.461			
T16	1902.15	1605.90	A	0.277	2.359	0.609	0.825	1	17.349	2946.90*	147.34	C
62.00-42.00			B	0.408	2.048	0.655	0.825	1	27.053			
			C	0.364	2.139	0.638	0.825	1	23.799			
T17	1902.15	1605.90	A	0.277	2.359	0.609	0.825	1	17.348	2587.85*	129.39	C
42.00-22.00			B	0.408	2.048	0.655	0.825	1	27.053			
			C	0.364	2.139	0.638	0.825	1	23.798			
T18	1426.61	1605.90	A	0.277	2.359	0.609	0.825	1	17.348	2587.85*	129.39	B
22.00-2.00			B	0.375	2.115	0.642	0.825	1	24.610			
			C	0.343	2.189	0.63	0.825	1	22.178			
Sum Weight:	15740.85	28893.15			2A _g limit					39072.17		

Tower Forces - With Ice - Wind 60 To Face

Section Elevation	Add Weight	Self Weight	F a c e	e	C _F	R _R	D _F	D _R	A _E	F	w	Ctrl. Face
ft	lb	lb							ft ²	lb	plf	
T1	165.91	1607.29	A	0.298	2.301	0.615	0.8	1	16.506	1686.66	84.33	C
282.00-262.00			B	0.298	2.301	0.615	0.8	1	16.506			
			C	0.298	2.301	0.615	0.8	1	16.506			
T2	204.16	1515.90	A	0.283	2.342	0.611	0.8	1	15.453	1739.90	87.00	C
262.00-242.00			B	0.283	2.342	0.611	0.8	1	15.453			
			C	0.283	2.342	0.611	0.8	1	15.453			
T3	242.40	1515.90	A	0.283	2.342	0.611	0.8	1	15.453	1834.16	91.71	C
242.00-222.00			B	0.283	2.342	0.611	0.8	1	15.453			
			C	0.283	2.342	0.611	0.8	1	15.453			
T4	312.68	2563.59	A	0.352	2.168	0.633	0.8	1	21.981	2313.81	115.69	B
222.00-202.00			B	0.402	2.06	0.653	0.8	1	25.643			
			C	0.352	2.168	0.633	0.8	1	21.981			
T5	384.67	2880.99	A	0.389	2.086	0.647	0.8	1	24.604	2547.90	127.39	B
202.00-182.00		TA	B	0.521	1.874	0.708	0.8	1	34.316			
		1187.59	C	0.389	2.086	0.647	0.8	1	24.604			
T6	717.24	1515.90	A	0.283	2.342	0.611	0.8	1	15.453	2788.86	139.44	B
182.00-162.00			B	0.415	2.035	0.658	0.8	1	25.358			
			C	0.283	2.342	0.611	0.8	1	15.453			

tnxTower AECOM 500 Enterprise Drive, Suite 3B Rocky Hill, CT Phone: 860-529-8882 FAX: 860-529-3991	Job	280' Guyed Tower	Page	32 of 65
	Project	130 Vernon Rd Bolton, CT	Date	09:04:28 04/13/16
	Client	Transcend Wireless / TWM-005 / -004 Rev. 1	Designed by	MCD

Section Elevation	Add Weight	Self Weight	F a c e	e	C _F	R _R	D _F	D _R	A _E	F	w	Ctrl. Face
ft	lb	lb							ft ²	lb	plf	
T7 162.00-142.00	1287.71	1515.90	A	0.283	2.342	0.611	0.8	1	15.453	3766.64	188.33	B
			B	0.415	2.035	0.658	0.8	1	25.358			
			C	0.312	2.264	0.62	0.8	1	17.610			
T8 142.00-122.00	1515.76	2880.99	A	0.389	2.086	0.647	0.8	1	24.604	3826.97*	191.35	C
			TA	0.521	1.874	0.708	0.8	1	34.316			
			B	0.433	2.002	0.666	0.8	1	27.817			
T9 122.00-102.00	1875.13	2563.59	A	0.352	2.168	0.633	0.8	1	21.981	3651.47*	182.57	C
			B	0.484	1.922	0.689	0.8	1	31.596			
			C	0.408	2.049	0.655	0.8	1	26.042			
T10 102.00-82.00	1902.15	1515.90	A	0.283	2.342	0.611	0.8	1	15.453	3451.90*	172.60	C
			B	0.415	2.035	0.658	0.8	1	25.358			
			C	0.371	2.124	0.64	0.8	1	22.017			
T11 82.00-78.00	380.43	303.18	A	0.283	2.342	0.611	0.8	1	3.091	663.36*	165.84	C
			B	0.415	2.035	0.658	0.8	1	5.072			
			C	0.371	2.124	0.64	0.8	1	4.403			
T12 78.00-74.00	380.43	357.37	A	0.283	2.342	0.611	0.8	1	3.091	653.71*	163.43	C
			B	0.415	2.035	0.658	0.8	1	5.072			
			C	0.371	2.124	0.64	0.8	1	4.403			
T13 74.00-70.00	380.43	303.18	A	0.283	2.342	0.611	0.8	1	3.091	643.68*	160.92	C
			B	0.415	2.035	0.658	0.8	1	5.072			
			C	0.371	2.124	0.64	0.8	1	4.403			
T14 70.00-66.00	380.43	303.18	A	0.283	2.342	0.611	0.8	1	3.091	633.26*	158.31	C
			B	0.415	2.035	0.658	0.8	1	5.072			
			C	0.371	2.124	0.64	0.8	1	4.403			
T15 66.00-62.00	380.43	357.37	A	0.283	2.342	0.611	0.8	1	3.091	622.38*	155.60	C
			B	0.415	2.035	0.658	0.8	1	5.072			
			C	0.371	2.124	0.64	0.8	1	4.403			
T16 62.00-42.00	1902.15	1605.90	A	0.277	2.359	0.609	0.8	1	17.009	2946.90*	147.34	C
			B	0.408	2.048	0.655	0.8	1	26.433			
			C	0.364	2.139	0.638	0.8	1	23.272			
T17 42.00-22.00	1902.15	1605.90	A	0.277	2.359	0.609	0.8	1	17.008	2587.85*	129.39	C
			B	0.408	2.048	0.655	0.8	1	26.432			
			C	0.364	2.139	0.638	0.8	1	23.271			
T18 22.00-2.00	1426.61	1605.90	A	0.277	2.359	0.609	0.8	1	17.008	2587.85*	129.39	B
			B	0.375	2.115	0.642	0.8	1	24.060			
			C	0.343	2.189	0.63	0.8	1	21.698			
Sum Weight:	15740.85	28893.15				2A _g limit				38947.26		

Tower Forces - With Ice - Wind 90 To Face

Section Elevation	Add Weight	Self Weight	F a c e	e	C _F	R _R	D _F	D _R	A _E	F	w	Ctrl. Face
ft	lb	lb							ft ²	lb	plf	
T1 282.00-262.00	165.91	1607.29	A	0.298	2.301	0.615	0.85	1	16.753	1702.43	85.12	C
			B	0.298	2.301	0.615	0.85	1	16.753			
			C	0.298	2.301	0.615	0.85	1	16.753			
T2 262.00-242.00	204.16	1515.90	A	0.283	2.342	0.611	0.85	1	15.653	1752.57	87.63	C
			B	0.283	2.342	0.611	0.85	1	15.653			
			C	0.283	2.342	0.611	0.85	1	15.653			
T3 242.00-222.00	242.40	1515.90	A	0.283	2.342	0.611	0.85	1	15.653	1846.53	92.33	C
			B	0.283	2.342	0.611	0.85	1	15.653			
			C	0.283	2.342	0.611	0.85	1	15.653			
T4 222.00-202.00	312.68	2563.59	A	0.352	2.168	0.633	0.85	1	22.896	2373.78	118.69	B
			B	0.402	2.06	0.653	0.85	1	26.772			

tnxTower AECOM 500 Enterprise Drive, Suite 3B Rocky Hill, CT Phone: 860-529-8882 FAX: 860-529-3991	Job	280' Guyed Tower	Page	33 of 65
	Project	130 Vernon Rd Bolton, CT	Date	09:04:28 04/13/16
	Client	Transcend Wireless / TWM-005 / -004 Rev. 1	Designed by	MCD

Section Elevation	Add Weight	Self Weight	F a c e	e	C _F	R _R	D _F	D _R	A _E	F	w	Ctrl. Face
ft	lb	lb							ft ²	lb	plf	
T5 202.00-182.00	384.67	2880.99	C	0.352	2.168	0.633	0.85	1	22.896	2623.16	131.16	B
			A	0.389	2.086	0.647	0.85	1	25.647			
			TA	0.521	1.874	0.708	0.85	1	35.919			
T6 182.00-162.00	717.24	1515.90	C	0.389	2.086	0.647	0.85	1	25.647	2826.41	141.32	B
			A	0.283	2.342	0.611	0.85	1	15.653			
			B	0.415	2.035	0.658	0.85	1	26.118			
T7 162.00-142.00	1287.71	1515.90	C	0.283	2.342	0.611	0.85	1	15.653	3802.89	190.14	B
			A	0.283	2.342	0.611	0.85	1	15.653			
			B	0.415	2.035	0.658	0.85	1	26.118			
T8 142.00-122.00	1515.76	2880.99	C	0.312	2.264	0.62	0.85	1	17.933	3826.97*	191.35	C
			A	0.389	2.086	0.647	0.85	1	25.647			
			TA	0.521	1.874	0.708	0.85	1	35.919			
T9 122.00-102.00	1875.13	2563.59	C	0.433	2.002	0.666	0.85	1	29.047	3651.47*	182.57	C
			A	0.352	2.168	0.633	0.85	1	22.896			
			B	0.484	1.922	0.689	0.85	1	33.071			
T10 102.00-82.00	1902.15	1515.90	C	0.408	2.049	0.655	0.85	1	27.195	3451.90*	172.60	C
			A	0.283	2.342	0.611	0.85	1	15.653			
			B	0.415	2.035	0.658	0.85	1	26.118			
T11 82.00-78.00	380.43	303.18	C	0.371	2.124	0.64	0.85	1	22.590	663.36*	165.84	C
			A	0.283	2.342	0.611	0.85	1	3.131			
			B	0.415	2.035	0.658	0.85	1	5.224			
T12 78.00-74.00	380.43	357.37	C	0.371	2.124	0.64	0.85	1	4.518	653.71*	163.43	C
			A	0.283	2.342	0.611	0.85	1	3.131			
			B	0.415	2.035	0.658	0.85	1	5.224			
T13 74.00-70.00	380.43	303.18	C	0.371	2.124	0.64	0.85	1	4.518	643.68*	160.92	C
			A	0.283	2.342	0.611	0.85	1	3.131			
			B	0.415	2.035	0.658	0.85	1	5.224			
T14 70.00-66.00	380.43	303.18	C	0.371	2.124	0.64	0.85	1	4.518	633.26*	158.31	C
			A	0.283	2.342	0.611	0.85	1	3.131			
			B	0.415	2.035	0.658	0.85	1	5.224			
T15 66.00-62.00	380.43	357.37	C	0.371	2.124	0.64	0.85	1	4.518	622.38*	155.60	C
			A	0.283	2.342	0.611	0.85	1	3.131			
			B	0.415	2.035	0.658	0.85	1	5.224			
T16 62.00-42.00	1902.15	1605.90	C	0.371	2.124	0.64	0.85	1	4.518	2946.90*	147.34	C
			A	0.277	2.359	0.609	0.85	1	17.689			
			B	0.408	2.048	0.655	0.85	1	27.674			
T17 42.00-22.00	1902.15	1605.90	C	0.364	2.139	0.638	0.85	1	24.326	2587.85*	129.39	C
			A	0.277	2.359	0.609	0.85	1	17.688			
			B	0.408	2.048	0.655	0.85	1	27.673			
T18 22.00-2.00	1426.61	1605.90	C	0.364	2.139	0.638	0.85	1	24.325	2587.85*	129.39	C
			A	0.277	2.359	0.609	0.85	1	17.688			
			B	0.375	2.115	0.642	0.85	1	25.160			
Sum Weight:	15740.85	28893.15			*2A _E limit					39197.09		

Tower Forces - Service - Wind Normal To Face

Section Elevation	Add Weight	Self Weight	F a c e	e	C _F	R _R	D _F	D _R	A _E	F	w	Ctrl. Face
ft	lb	lb							ft ²	lb	plf	
T1 282.00-262.00	56.20	1212.62	A	0.187	2.641	0.588	1	1	11.194	542.90	27.15	C
			B	0.187	2.641	0.588	1	1	11.194			
			C	0.187	2.641	0.588	1	1	11.194			
T2	69.40	1153.82	A	0.175	2.68	0.586	1	1	10.213	542.64	27.13	C

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	Client Transcend Wireless / TWM-005 / -004 Rev. 1	Designed by MCD

Section Elevation	Add Weight	Self Weight	F a c e	e	C _F	R _R	D _F	D _R	A _E	F	w	Ctrl. Face
ft	lb	lb							ft ²	lb	plf	
262.00-242.00			B	0.175	2.68	0.586	1	1	10.213			
			C	0.175	2.68	0.586	1	1	10.213			
T3	82.60	1153.82	A	0.175	2.68	0.586	1	1	10.213	567.80	28.39	C
242.00-222.00			B	0.175	2.68	0.586	1	1	10.213			
			C	0.175	2.68	0.586	1	1	10.213			
T4	104.05	2014.07	A	0.263	2.398	0.605	1	1	19.323	863.69	43.18	B
222.00-202.00			B	0.3	2.297	0.616	1	1	22.410			
			C	0.263	2.398	0.605	1	1	19.323			
T5	124.00	2247.64	A	0.294	2.312	0.614	1	1	21.937	971.57	48.58	B
202.00-182.00		TA 873.93	B	0.389	2.087	0.647	1	1	30.027			
			C	0.294	2.312	0.614	1	1	21.937			
T6	253.60	1153.82	A	0.175	2.68	0.586	1	1	10.213	981.50	49.07	B
182.00-162.00			B	0.27	2.379	0.607	1	1	18.312			
			C	0.175	2.68	0.586	1	1	10.213			
T7	462.84	1153.82	A	0.175	2.68	0.586	1	1	10.213	1349.51	67.48	B
162.00-142.00			B	0.27	2.379	0.607	1	1	18.312			
			C	0.196	2.609	0.59	1	1	11.993			
T8	543.92	2247.64	A	0.294	2.312	0.614	1	1	21.937	1657.08	82.85	B
142.00-122.00		TA 873.93	B	0.389	2.087	0.647	1	1	30.027			
			C	0.326	2.23	0.624	1	1	24.627			
T9	676.09	2014.07	A	0.263	2.398	0.605	1	1	19.323	1651.61*	82.58	C
122.00-102.00			B	0.358	2.153	0.635	1	1	27.394			
			C	0.304	2.287	0.617	1	1	22.746			
T10	683.48	1153.82	A	0.175	2.68	0.586	1	1	10.213	1552.00	77.60	B
102.00-82.00			B	0.27	2.379	0.607	1	1	18.312			
			C	0.238	2.473	0.599	1	1	15.601			
T11	136.70	230.76	A	0.175	2.68	0.586	1	1	2.043	298.25	74.56	B
82.00-78.00			B	0.27	2.379	0.607	1	1	3.662			
			C	0.238	2.473	0.599	1	1	3.120			
T12	136.70	284.96	A	0.175	2.68	0.586	1	1	2.043	293.91	73.48	B
78.00-74.00			B	0.27	2.379	0.607	1	1	3.662			
			C	0.238	2.473	0.599	1	1	3.120			
T13	136.70	230.76	A	0.175	2.68	0.586	1	1	2.043	289.41	72.35	B
74.00-70.00			B	0.27	2.379	0.607	1	1	3.662			
			C	0.238	2.473	0.599	1	1	3.120			
T14	136.70	230.76	A	0.175	2.68	0.586	1	1	2.043	284.72	71.18	B
70.00-66.00			B	0.27	2.379	0.607	1	1	3.662			
			C	0.238	2.473	0.599	1	1	3.120			
T15	136.70	284.96	A	0.175	2.68	0.586	1	1	2.043	279.83	69.96	B
66.00-62.00			B	0.27	2.379	0.607	1	1	3.662			
			C	0.238	2.473	0.599	1	1	3.120			
T16	683.48	1252.21	A	0.183	2.654	0.587	1	1	13.700	1333.05*	66.65	C
62.00-42.00			B	0.277	2.359	0.609	1	1	21.658			
			C	0.246	2.45	0.601	1	1	19.001			
T17	683.48	1252.21	A	0.183	2.654	0.587	1	1	13.699	1170.63*	58.53	C
42.00-22.00			B	0.277	2.359	0.609	1	1	21.657			
			C	0.246	2.45	0.601	1	1	19.001			
T18	512.61	1252.21	A	0.183	2.654	0.587	1	1	13.699	973.59	48.68	B
22.00-2.00			B	0.254	2.427	0.603	1	1	19.665			
			C	0.23	2.499	0.597	1	1	17.674			
Sum Weight:	5619.23	22271.87			*2A _g limit					15603.69		

Tower Forces - Service - Wind 45 To Face

tnxTower AECOM 500 Enterprise Drive, Suite 3B Rocky Hill, CT Phone: 860-529-8882 FAX: 860-529-3991	Job	280' Guyed Tower	Page	35 of 65
	Project	130 Vernon Rd Bolton, CT	Date	09:04:28 04/13/16
	Client	Transcend Wireless / TWM-005 / -004 Rev. 1	Designed by	MCD

Section Elevation	Add Weight	Self Weight	F a c e	e	C _F	R _R	D _F	D _R	A _E	F	w	Ctrl. Face
ft	lb	lb							ft ²	lb	plf	
T1 282.00-262.00	56.20	1212.62	A	0.187	2.641	0.588	0.825	1	10.327	513.69	25.68	C
			B	0.187	2.641	0.588	0.825	1	10.327			
			C	0.187	2.641	0.588	0.825	1	10.327			
T2 262.00-242.00	69.40	1153.82	A	0.175	2.68	0.586	0.825	1	9.514	519.24	25.96	C
			B	0.175	2.68	0.586	0.825	1	9.514			
			C	0.175	2.68	0.586	0.825	1	9.514			
T3 242.00-222.00	82.60	1153.82	A	0.175	2.68	0.586	0.825	1	9.514	544.94	27.25	C
			B	0.175	2.68	0.586	0.825	1	9.514			
			C	0.175	2.68	0.586	0.825	1	9.514			
T4 222.00-202.00	104.05	2014.07	A	0.263	2.398	0.605	0.825	1	16.648	776.20	38.81	B
			B	0.3	2.297	0.616	0.825	1	19.206			
			C	0.263	2.398	0.605	0.825	1	16.648			
T5 202.00-182.00	124.00	2247.64	A	0.294	2.312	0.614	0.825	1	18.814	863.00	43.15	B
		TA 873.93	B	0.389	2.087	0.647	0.825	1	25.527			
			C	0.294	2.312	0.614	0.825	1	18.814			
T6 182.00-162.00	253.60	1153.82	A	0.175	2.68	0.586	0.825	1	9.514	926.16	46.31	B
			B	0.27	2.379	0.607	0.825	1	16.235			
			C	0.175	2.68	0.586	0.825	1	9.514			
T7 162.00-142.00	462.84	1153.82	A	0.175	2.68	0.586	0.825	1	9.514	1296.09	64.80	B
			B	0.27	2.379	0.607	0.825	1	16.235			
			C	0.196	2.609	0.59	0.825	1	10.990			
T8 142.00-122.00	543.92	2247.64	A	0.294	2.312	0.614	0.825	1	18.814	1559.54	77.98	B
		TA 873.93	B	0.389	2.087	0.647	0.825	1	25.527			
			C	0.326	2.23	0.624	0.825	1	21.045			
T9 122.00-102.00	676.09	2014.07	A	0.263	2.398	0.605	0.825	1	16.648	1651.61*	82.58	B
			B	0.358	2.153	0.635	0.825	1	23.341			
			C	0.304	2.287	0.617	0.825	1	19.485			
T10 102.00-82.00	683.48	1153.82	A	0.175	2.68	0.586	0.825	1	9.514	1505.72	75.29	B
			B	0.27	2.379	0.607	0.825	1	16.235			
			C	0.238	2.473	0.599	0.825	1	13.984			
T11 82.00-78.00	136.70	230.76	A	0.175	2.68	0.586	0.825	1	1.903	289.36	72.34	B
			B	0.27	2.379	0.607	0.825	1	3.247			
			C	0.238	2.473	0.599	0.825	1	2.797			
T12 78.00-74.00	136.70	284.96	A	0.175	2.68	0.586	0.825	1	1.903	285.15	71.29	B
			B	0.27	2.379	0.607	0.825	1	3.247			
			C	0.238	2.473	0.599	0.825	1	2.797			
T13 74.00-70.00	136.70	230.76	A	0.175	2.68	0.586	0.825	1	1.903	280.78	70.19	B
			B	0.27	2.379	0.607	0.825	1	3.247			
			C	0.238	2.473	0.599	0.825	1	2.797			
T14 70.00-66.00	136.70	230.76	A	0.175	2.68	0.586	0.825	1	1.903	276.23	69.06	B
			B	0.27	2.379	0.607	0.825	1	3.247			
			C	0.238	2.473	0.599	0.825	1	2.797			
T15 66.00-62.00	136.70	284.96	A	0.175	2.68	0.586	0.825	1	1.903	271.48	67.87	B
			B	0.27	2.379	0.607	0.825	1	3.247			
			C	0.238	2.473	0.599	0.825	1	2.797			
T16 62.00-42.00	683.48	1252.21	A	0.183	2.654	0.587	0.825	1	11.708	1315.12	65.76	B
			B	0.277	2.359	0.609	0.825	1	18.289			
			C	0.246	2.45	0.601	0.825	1	16.091			
T17 42.00-22.00	683.48	1252.21	A	0.183	2.654	0.587	0.825	1	11.708	1154.89	57.74	B
			B	0.277	2.359	0.609	0.825	1	18.288			
			C	0.246	2.45	0.601	0.825	1	16.091			
T18 22.00-2.00	512.61	1252.21	A	0.183	2.654	0.587	0.825	1	11.708	922.28	46.11	B
			B	0.254	2.427	0.603	0.825	1	16.640			
			C	0.23	2.499	0.597	0.825	1	14.993			
Sum Weight:	5619.23	22271.87			*2A _g limit					14951.48		

tnxTower AECOM 500 Enterprise Drive, Suite 3B Rocky Hill, CT Phone: 860-529-8882 FAX: 860-529-3991	Job 280' Guyed Tower	Page 36 of 65
	Project 130 Vernon Rd Bolton, CT	Date 09:04:28 04/13/16
	Client Transcend Wireless / TWM-005 / -004 Rev. 1	Designed by MCD

Tower Forces - Service - Wind 60 To Face

Section Elevation	Add Weight	Self Weight	F a c e	e	C _F	R _R	D _F	D _R	A _E	F	w	Ctrl. Face
ft	lb	lb							ft ²	lb	plf	
T1 282.00-262.00	56.20	1212.62	A	0.187	2.641	0.588	0.8	1	10.203	509.51	25.48	C
			B	0.187	2.641	0.588	0.8	1	10.203			
			C	0.187	2.641	0.588	0.8	1	10.203			
T2 262.00-242.00	69.40	1153.82	A	0.175	2.68	0.586	0.8	1	9.414	515.90	25.79	C
			B	0.175	2.68	0.586	0.8	1	9.414			
			C	0.175	2.68	0.586	0.8	1	9.414			
T3 242.00-222.00	82.60	1153.82	A	0.175	2.68	0.586	0.8	1	9.414	541.68	27.08	C
			B	0.175	2.68	0.586	0.8	1	9.414			
			C	0.175	2.68	0.586	0.8	1	9.414			
T4 222.00-202.00	104.05	2014.07	A	0.263	2.398	0.605	0.8	1	16.266	763.70	38.19	B
			B	0.3	2.297	0.616	0.8	1	18.749			
			C	0.263	2.398	0.605	0.8	1	16.266			
T5 202.00-182.00	124.00	2247.64 TA 873.93	A	0.294	2.312	0.614	0.8	1	18.368	847.49	42.37	B
			B	0.389	2.087	0.647	0.8	1	24.884			
			C	0.294	2.312	0.614	0.8	1	18.368			
T6 182.00-162.00	253.60	1153.82	A	0.175	2.68	0.586	0.8	1	9.414	918.25	45.91	B
			B	0.27	2.379	0.607	0.8	1	15.939			
			C	0.175	2.68	0.586	0.8	1	9.414			
T7 162.00-142.00	462.84	1153.82	A	0.175	2.68	0.586	0.8	1	9.414	1288.46	64.42	B
			B	0.27	2.379	0.607	0.8	1	15.939			
			C	0.196	2.609	0.59	0.8	1	10.847			
T8 142.00-122.00	543.92	2247.64 TA 873.93	A	0.294	2.312	0.614	0.8	1	18.368	1545.60	77.28	B
			B	0.389	2.087	0.647	0.8	1	24.884			
			C	0.326	2.23	0.624	0.8	1	20.534			
T9 122.00-102.00	676.09	2014.07	A	0.263	2.398	0.605	0.8	1	16.266	1651.61*	82.58	B
			B	0.358	2.153	0.635	0.8	1	22.762			
			C	0.304	2.287	0.617	0.8	1	19.019			
T10 102.00-82.00	683.48	1153.82	A	0.175	2.68	0.586	0.8	1	9.414	1499.11	74.96	B
			B	0.27	2.379	0.607	0.8	1	15.939			
			C	0.238	2.473	0.599	0.8	1	13.753			
T11 82.00-78.00	136.70	230.76	A	0.175	2.68	0.586	0.8	1	1.883	288.09	72.02	B
			B	0.27	2.379	0.607	0.8	1	3.188			
			C	0.238	2.473	0.599	0.8	1	2.751			
T12 78.00-74.00	136.70	284.96	A	0.175	2.68	0.586	0.8	1	1.883	283.89	70.97	B
			B	0.27	2.379	0.607	0.8	1	3.188			
			C	0.238	2.473	0.599	0.8	1	2.751			
T13 74.00-70.00	136.70	230.76	A	0.175	2.68	0.586	0.8	1	1.883	279.54	69.89	B
			B	0.27	2.379	0.607	0.8	1	3.188			
			C	0.238	2.473	0.599	0.8	1	2.751			
T14 70.00-66.00	136.70	230.76	A	0.175	2.68	0.586	0.8	1	1.883	275.01	68.75	B
			B	0.27	2.379	0.607	0.8	1	3.188			
			C	0.238	2.473	0.599	0.8	1	2.751			
T15 66.00-62.00	136.70	284.96	A	0.175	2.68	0.586	0.8	1	1.883	270.29	67.57	B
			B	0.27	2.379	0.607	0.8	1	3.188			
			C	0.238	2.473	0.599	0.8	1	2.751			
T16 62.00-42.00	683.48	1252.21	A	0.183	2.654	0.587	0.8	1	11.423	1306.09	65.30	B
			B	0.277	2.359	0.609	0.8	1	17.807			
			C	0.246	2.45	0.601	0.8	1	15.675			
T17 42.00-22.00	683.48	1252.21	A	0.183	2.654	0.587	0.8	1	11.423	1146.95	57.35	B
			B	0.277	2.359	0.609	0.8	1	17.807			
			C	0.246	2.45	0.601	0.8	1	15.675			
T18 22.00-2.00	512.61	1252.21	A	0.183	2.654	0.587	0.8	1	11.423	914.95	45.75	B
			B	0.254	2.427	0.603	0.8	1	16.208			
			C	0.23	2.499	0.597	0.8	1	14.611			
Sum Weight:	5619.23	22271.87								14846.15		

tnxTower AECOM 500 Enterprise Drive, Suite 3B Rocky Hill, CT Phone: 860-529-8882 FAX: 860-529-3991	Job 280' Guyed Tower	Page 37 of 65
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Tower Forces - Service - Wind 90 To Face

Section Elevation	Add Weight	Self Weight	F a c e	e	C _F	R _R	D _F	D _R	A _E	F	w	Ctrl Face
ft	lb	lb							ft ²	lb	plf	
T1 282.00-262.00	56.20	1212.62	A	0.187	2.641	0.588	0.85	1	10.451	517.86	25.89	C
			B	0.187	2.641	0.588	0.85	1	10.451			
			C	0.187	2.641	0.588	0.85	1	10.451			
T2 262.00-242.00	69.40	1153.82	A	0.175	2.68	0.586	0.85	1	9.614	522.59	26.13	C
			B	0.175	2.68	0.586	0.85	1	9.614			
			C	0.175	2.68	0.586	0.85	1	9.614			
T3 242.00-222.00	82.60	1153.82	A	0.175	2.68	0.586	0.85	1	9.614	548.21	27.41	C
			B	0.175	2.68	0.586	0.85	1	9.614			
			C	0.175	2.68	0.586	0.85	1	9.614			
T4 222.00-202.00	104.05	2014.07	A	0.263	2.398	0.605	0.85	1	17.030	788.70	39.43	B
			B	0.3	2.297	0.616	0.85	1	19.664			
			C	0.263	2.398	0.605	0.85	1	17.030			
T5 202.00-182.00	124.00	2247.64 TA 873.93	A	0.294	2.312	0.614	0.85	1	19.260	878.51	43.93	B
			B	0.389	2.087	0.647	0.85	1	26.170			
			C	0.294	2.312	0.614	0.85	1	19.260			
T6 182.00-162.00	253.60	1153.82	A	0.175	2.68	0.586	0.85	1	9.614	934.06	46.70	B
			B	0.27	2.379	0.607	0.85	1	16.532			
			C	0.175	2.68	0.586	0.85	1	9.614			
T7 162.00-142.00	462.84	1153.82	A	0.175	2.68	0.586	0.85	1	9.614	1303.72	65.19	B
			B	0.27	2.379	0.607	0.85	1	16.532			
			C	0.196	2.609	0.59	0.85	1	11.133			
T8 142.00-122.00	543.92	2247.64 TA 873.93	A	0.294	2.312	0.614	0.85	1	19.260	1573.47	78.67	B
			B	0.389	2.087	0.647	0.85	1	26.170			
			C	0.326	2.23	0.624	0.85	1	21.557			
T9 122.00-102.00	676.09	2014.07	A	0.263	2.398	0.605	0.85	1	17.030	1651.61*	82.58	C
			B	0.358	2.153	0.635	0.85	1	23.920			
			C	0.304	2.287	0.617	0.85	1	19.951			
T10 102.00-82.00	683.48	1153.82	A	0.175	2.68	0.586	0.85	1	9.614	1512.34	75.62	B
			B	0.27	2.379	0.607	0.85	1	16.532			
			C	0.238	2.473	0.599	0.85	1	14.215			
T11 82.00-78.00	136.70	230.76	A	0.175	2.68	0.586	0.85	1	1.923	290.63	72.66	B
			B	0.27	2.379	0.607	0.85	1	3.306			
			C	0.238	2.473	0.599	0.85	1	2.843			
T12 78.00-74.00	136.70	284.96	A	0.175	2.68	0.586	0.85	1	1.923	286.40	71.60	B
			B	0.27	2.379	0.607	0.85	1	3.306			
			C	0.238	2.473	0.599	0.85	1	2.843			
T13 74.00-70.00	136.70	230.76	A	0.175	2.68	0.586	0.85	1	1.923	282.01	70.50	B
			B	0.27	2.379	0.607	0.85	1	3.306			
			C	0.238	2.473	0.599	0.85	1	2.843			
T14 70.00-66.00	136.70	230.76	A	0.175	2.68	0.586	0.85	1	1.923	277.44	69.36	B
			B	0.27	2.379	0.607	0.85	1	3.306			
			C	0.238	2.473	0.599	0.85	1	2.843			
T15 66.00-62.00	136.70	284.96	A	0.175	2.68	0.586	0.85	1	1.923	272.68	68.17	B
			B	0.27	2.379	0.607	0.85	1	3.306			
			C	0.238	2.473	0.599	0.85	1	2.843			
T16 62.00-42.00	683.48	1252.21	A	0.183	2.654	0.587	0.85	1	11.992	1324.16	66.21	B
			B	0.277	2.359	0.609	0.85	1	18.770			
			C	0.246	2.45	0.601	0.85	1	16.507			
T17 42.00-22.00	683.48	1252.21	A	0.183	2.654	0.587	0.85	1	11.992	1162.82	58.14	B
			B	0.277	2.359	0.609	0.85	1	18.770			
			C	0.246	2.45	0.601	0.85	1	16.506			
T18 22.00-2.00	512.61	1252.21	A	0.183	2.654	0.587	0.85	1	11.992	929.61	46.48	B
			B	0.254	2.427	0.603	0.85	1	17.072			

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Section Elevation	Add Weight	Self Weight	F a c e	e	C _F	R _R	D _F	D _R	A _E	F	w	Ctrl. Face
ft	lb	lb							ft ²	lb	plf	
Sum Weight:	5619.23	22271.87	C	0.23	2.499 *2A _E limit	0.597	0.85	1	15.376	15056.81		

Force Totals (Does not include forces on guys)

Load Case	Vertical Forces	Sum of Forces X	Sum of Forces Z	Sum of Torques
	lb	lb	lb	lb-ft
Leg Weight	9335.14			
Bracing Weight	12936.73			
Total Member Self-Weight	22271.87			
Guy Weight	4477.09			
Total Weight	38348.73			
Wind 0 deg - No Ice		298.48	-61348.82	-4666.64
Wind 30 deg - No Ice		30283.86	-52279.77	-9454.49
Wind 45 deg - No Ice		42415.80	-42285.76	-10528.91
Wind 60 deg - No Ice		51645.05	-29457.03	-13114.84
Wind 90 deg - No Ice		60380.35	416.94	-13034.47
Wind 120 deg - No Ice		53504.69	30593.24	-7618.34
Wind 135 deg - No Ice		42471.09	41580.22	-4507.34
Wind 150 deg - No Ice		30349.95	51046.32	373.44
Wind 180 deg - No Ice		342.02	58423.53	6942.86
Wind 210 deg - No Ice		-29989.12	51800.35	10887.24
Wind 225 deg - No Ice		-42166.08	42301.20	13010.74
Wind 240 deg - No Ice		-53253.56	30792.91	12284.98
Wind 270 deg - No Ice		-59135.38	225.91	10453.19
Wind 300 deg - No Ice		-49912.00	-28851.38	6171.99
Wind 315 deg - No Ice		-40863.97	-41254.24	3579.20
Wind 330 deg - No Ice		-28993.38	-51041.57	775.09
Member Ice	6621.28			
Guy Ice	3710.00			
Total Weight Ice	62752.57			
Wind 0 deg - Ice		352.83	-54074.67	-1972.64
Wind 30 deg - Ice		27064.76	-46555.71	-6707.27
Wind 45 deg - Ice		37981.98	-37791.64	-8177.90
Wind 60 deg - Ice		46347.13	-26462.63	-10829.67
Wind 90 deg - Ice		53851.18	242.49	-11856.96
Wind 120 deg - Ice		47213.24	26867.93	-8181.02
Wind 135 deg - Ice		38014.00	37177.25	-5797.29
Wind 150 deg - Ice		27012.22	45581.55	-1935.95
Wind 180 deg - Ice		251.37	52471.23	3811.54
Wind 210 deg - Ice		-26750.74	46188.11	7944.01
Wind 225 deg - Ice		-37720.45	37795.38	10168.81
Wind 240 deg - Ice		-46947.10	27121.68	10153.66
Wind 270 deg - Ice		-52851.87	174.88	9739.66
Wind 300 deg - Ice		-44955.06	-25949.18	7018.14
Wind 315 deg - Ice		-36722.25	-36957.16	5084.38
Wind 330 deg - Ice		-25967.63	-45579.64	2816.51
Total Weight	38348.73			
Wind 0 deg - Service		103.28	-21227.97	-1614.76
Wind 30 deg - Service		10478.84	-18089.89	-3271.45
Wind 45 deg - Service		14676.75	-14631.75	-3643.22
Wind 60 deg - Service		17870.26	-10192.74	-4538.01
Wind 90 deg - Service		20892.85	144.27	-4510.20

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Load Case	Vertical Forces lb	Sum of Forces X lb	Sum of Forces Z lb	Sum of Torques lb-ft
Wind 120 deg - Service		18513.73	10585.90	-2636.10
Wind 135 deg - Service		14695.88	14387.62	-1559.63
Wind 150 deg - Service		10501.71	17663.09	129.22
Wind 180 deg - Service		118.34	20215.76	2402.37
Wind 210 deg - Service		-10376.86	17924.00	3767.21
Wind 225 deg - Service		-14590.34	14637.09	4501.99
Wind 240 deg - Service		-18426.84	10654.99	4250.86
Wind 270 deg - Service		-20462.07	78.17	3617.02
Wind 300 deg - Service		-17270.59	-9983.18	2135.64
Wind 315 deg - Service		-14139.78	-14274.82	1238.48
Wind 330 deg - Service		-10032.31	-17661.44	268.20

Load Combinations

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

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Comb. No.	Description
39	Dead+Wind 90 deg - Service+Guy
40	Dead+Wind 120 deg - Service+Guy
41	Dead+Wind 135 deg - Service+Guy
42	Dead+Wind 150 deg - Service+Guy
43	Dead+Wind 180 deg - Service+Guy
44	Dead+Wind 210 deg - Service+Guy
45	Dead+Wind 225 deg - Service+Guy
46	Dead+Wind 240 deg - Service+Guy
47	Dead+Wind 270 deg - Service+Guy
48	Dead+Wind 300 deg - Service+Guy
49	Dead+Wind 315 deg - Service+Guy
50	Dead+Wind 330 deg - Service+Guy

Maximum Member Forces

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Force lb	Major Axis Moment lb-ft	Minor Axis Moment lb-ft	
T1	282 - 262	Leg	Max Tension	22	7073.36	-249.82	148.10	
			Max. Compression	27	-14517.80	9.33	444.78	
			Max. Mx	20	-13828.36	-787.46	312.53	
			Max. My	27	-14432.82	-3.18	-852.20	
			Max. Vy	24	-538.41	0.00	0.00	
			Max. Vx	27	557.82	-3.17	-852.20	
			Diagonal	Max Tension	23	4768.41	0.00	0.00
				Max. Compression	32	-4129.71	0.00	0.00
				Max. Mx	32	3809.71	8.18	0.00
				Max. My	23	2340.31	0.00	0.06
				Max. Vy	32	-5.78	0.00	0.00
				Max. Vx	23	-0.04	0.00	0.00
		Secondary Horizontal	Max Tension	30	305.27	0.00	0.00	
			Max. Compression	27	-251.46	0.00	0.00	
			Max. Mx	29	272.01	-9.77	0.00	
			Max. My	7	177.52	0.00	0.00	
			Max. Vy	18	9.77	0.00	0.00	
			Max. Vx	7	-0.00	0.00	0.00	
			Top Girt	Max Tension	1	0.00	0.00	0.00
				Max. Compression	19	-2268.34	0.00	0.00
				Max. Mx	28	-1778.38	-15.23	0.00
				Max. My	7	-1192.78	0.00	0.00
				Max. Vy	18	15.23	0.00	0.00
				Max. Vx	7	-0.00	0.00	0.00
			Guy A	Bottom Tension	27	17376.14		
				Top Tension	27	17940.97		
				Top Cable Vert	27	14846.40		
				Top Cable Norm	27	10072.88		
				Top Cable Tan	27	1.48		
				Bot Cable Vert	27	-13599.30		
		Bot Cable Norm		27	10816.16			
		Bot Cable Tan		27	1.48			
		Guy B		Bottom Tension	32	17554.84		
				Top Tension	32	18083.30		
				Top Cable Vert	32	14943.76		
				Top Cable Norm	32	10182.83		
Top Cable Tan	32		2.03					
Bot Cable Vert	32		-13765.78					
Bot Cable Norm	32	10893.84						
Bot Cable Tan	32	2.03						

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Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Force lb	Major Axis Moment lb-ft	Minor Axis Moment lb-ft	
T2	262 - 242	Guy C	Bottom Tension	22	17798.94			
			Top Tension	22	18346.45			
			Top Cable Vert	22	15149.71			
			Top Cable Norm	22	10347.87			
			Top Cable Tan	22	3.63			
			Bot Cable Vert	22	-13933.89			
			Bot Cable Norm	22	11074.71			
			Bot Cable Tan	22	3.63			
			Leg	Max Tension	13	7016.19	-82.94	45.07
		Max. Compression		22	-22750.02	15.36	-9.31	
		Max. Mx		20	-17995.19	-494.78	173.21	
		Max. My		27	-18816.68	-42.14	-522.74	
		Max. Vy		21	-378.76	-488.89	214.03	
		Max. Vx		27	-402.64	-42.14	-522.74	
		Diagonal		Max Tension	32	2433.91	0.00	0.00
				Max. Compression	27	-2025.78	0.00	0.00
				Max. Mx	32	969.88	8.18	0.00
				Max. My	23	742.02	0.00	0.05
				Max. Vy	32	-5.79	0.00	0.00
		Secondary Horizontal		Max. Vx	23	0.04	0.00	0.00
			Max Tension	22	394.04	0.00	0.00	
Max. Compression	22		-394.04	0.00	0.00			
Max. Mx	18		138.44	-9.77	0.00			
Max. My	7		269.17	0.00	0.00			
Max. Vy	18		9.77	0.00	0.00			
Max. Vx	7		-0.00	0.00	0.00			
T3	242 - 222		Leg	Max Tension	7	8523.43	-40.45	-39.92
		Max. Compression		22	-22528.11	-27.76	32.05	
		Max. Mx		20	-21782.80	-177.32	71.45	
		Max. My		27	-21460.84	-0.61	-192.45	
		Max. Vy		21	-153.49	-173.88	88.20	
		Max. Vx		27	-176.73	-0.61	-192.45	
		Diagonal	Max Tension	33	1564.16	0.00	0.00	
			Max. Compression	33	-1803.62	0.00	0.00	
			Max. Mx	22	644.42	8.19	0.00	
			Max. My	23	-260.93	0.00	0.05	
			Max. Vy	22	-5.79	0.00	0.00	
			Max. Vx	23	0.04	0.00	0.00	
			Max Tension	22	390.20	0.00	0.00	
		Secondary Horizontal	Max. Compression	22	-390.20	0.00	0.00	
			Max. Mx	18	140.39	-9.77	0.00	
Max. My	31		366.07	0.00	0.00			
Max. Vy	18		9.77	0.00	0.00			
Max. Vx	31		-0.00	0.00	0.00			
T4	222 - 202		Leg	Max Tension	7	5132.89	-4.94	2.77
				Max. Compression	31	-21053.17	-59.53	-36.74
				Max. Mx	5	-13987.25	818.32	-48.52
		Max. My		3	-2947.85	54.89	-737.91	
		Max. Vy		5	-832.04	-419.82	14.55	
		Max. Vx		3	734.12	-50.71	353.90	
		Diagonal	Max Tension	5	3955.14	0.00	0.00	
			Max. Compression	12	-3924.98	0.00	0.00	
			Max. Mx	21	2298.87	25.71	0.00	
			Max. My	23	-906.71	0.00	0.15	
			Max. Vy	21	-18.18	0.00	0.00	
			Max. Vx	23	-0.11	0.00	0.00	
Secondary Horizontal	Max Tension	31	364.65	0.00	0.00			
	Max. Compression	31	-364.65	0.00	0.00			

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Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Force lb	Major Axis Moment lb-ft	Minor Axis Moment lb-ft	
T5	202 - 182	Leg	Max. Mx	18	167.65	-9.77	0.00	
			Max. My	23	324.86	0.00	0.00	
			Max. Vy	18	9.77	0.00	0.00	
			Max. Vx	23	-0.00	0.00	0.00	
			Max Tension	15	10392.94	37.55	121.38	
			Max. Compression	27	-42573.13	32.70	-325.72	
			Max. Mx	6	-16350.41	359.52	36.24	
			Max. My	2	-7887.78	-15.18	-341.11	
			Max. Vy	6	278.73	-179.24	-38.99	
			Max. Vx	27	280.86	32.70	-325.72	
			Max Tension	12	4735.81	0.00	0.00	
			Max. Compression	28	-9790.53	0.00	0.00	
		Diagonal	Max. Mx	21	4093.61	25.70	0.00	
			Max. My	23	-3156.35	0.00	0.14	
			Max. Vy	21	-18.17	0.00	0.00	
			Max. Vx	23	-0.10	0.00	0.00	
			Max Tension	27	737.39	0.00	0.00	
			Max. Compression	27	-737.39	0.00	0.00	
			Max. Mx	18	353.12	-9.77	0.00	
			Max. My	23	679.43	0.00	0.00	
			Max. Vy	18	9.77	0.00	0.00	
			Max. Vx	23	-0.00	0.00	0.00	
			Guy A	Bottom Tension	27	17499.45		
				Top Tension	27	17839.35		
		Top Cable Vert		27	13096.23			
		Top Cable Norm		27	12113.25			
		Top Cable Tan		27	11.40			
		Bot Cable Vert		27	-12248.82			
		Bot Cable Norm		27	12497.89			
		Bot Cable Tan		27	12.83			
		Guy B		Bottom Tension	32	17594.17		
				Top Tension	32	17904.99		
				Top Cable Vert	32	12988.68		
				Top Cable Norm	32	12324.07		
			Top Cable Tan	32	12.03			
			Bot Cable Vert	32	-12198.28			
		Guy C	Bot Cable Norm	32	12678.99			
			Bot Cable Tan	32	12.41			
			Bottom Tension	22	17942.68			
			Top Tension	22	18268.75			
			Top Cable Vert	22	13313.24			
			Top Cable Norm	22	12510.19			
Top Guy Pull-Off	Top Cable Tan	22	13.08					
	Bot Cable Vert	22	-12491.76					
	Bot Cable Norm	22	12880.05					
	Bot Cable Tan	22	11.20					
	Max Tension	22	19707.48	0.00	0.00			
	Max. Compression	13	-5822.44	0.00	0.00			
	Max. Mx	18	4812.51	-26.45	0.00			
	Max. My	23	6548.21	0.00	0.00			
	Max. Vy	18	26.45	0.00	0.00			
	Max. Vx	23	-0.00	0.00	0.00			
	Max Tension	15	3110.94	0.00	0.00			
	Bottom Guy Pull-Off	Max. Compression	2	-3724.13	0.00	0.00		
Max. Mx		18	137.37	-26.45	0.00			
Max. My		23	-895.59	0.00	0.00			
Max. Vy		18	26.45	0.00	0.00			
Max. Vx		23	-0.00	0.00	0.00			
Max Tension		23	23722.57	0.00	0.00			
Torque Arm Top	Max. Compression	2	-3724.13	0.00	0.00			
	Max. Mx	18	137.37	-26.45	0.00			
	Max. My	23	-895.59	0.00	0.00			
	Max. Vy	18	26.45	0.00	0.00			
	Max. Vx	23	-0.00	0.00	0.00			

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Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Force lb	Major Axis Moment lb-ft	Minor Axis Moment lb-ft		
T6	182 - 162	Torque Arm Bottom	Max. Compression	1	0.00	0.00	0.00		
			Max. Mx	21	22657.30	-89.24	0.00		
			Max. My	23	9541.10	0.00	0.14		
			Max. Vy	21	47.70	0.00	0.00		
			Max. Vx	23	-0.08	0.00	0.00		
			Max Tension	13	957.43	0.00	0.00		
			Max. Compression	22	-23223.79	0.00	0.00		
			Max. Mx	21	-9238.73	-89.27	0.00		
			Max. My	23	-21322.22	0.00	-0.12		
			Max. Vy	21	47.72	0.00	0.00		
			Max. Vx	23	0.07	0.00	0.00		
			Max Tension	7	11669.32	-270.98	-156.78		
			Max. Compression	27	-55385.86	-0.04	-575.64		
			Max. Mx	14	-46347.53	-1048.30	-174.42		
		Max. My	10	-49645.15	0.78	1122.07			
		Max. Vy	14	1184.62	-127.19	-180.11			
		Max. Vx	17	1232.72	293.50	42.11			
		Diagonal	Max Tension	6	1680.84	0.00	0.00		
			Max. Compression	6	-1682.32	0.00	0.00		
			Max. Mx	20	750.34	8.20	0.00		
			Max. My	23	-1492.71	0.00	0.05		
			Max. Vy	20	-5.80	0.00	0.00		
			Max. Vx	23	0.03	0.00	0.00		
			Secondary Horizontal	Max Tension	27	959.31	0.00	0.00	
				Max. Compression	27	-959.31	0.00	0.00	
				Max. Mx	18	395.67	-9.77	0.00	
				Max. My	23	867.82	0.00	0.00	
Max. Vy	18	9.77		0.00	0.00				
Max. Vx	23	-0.00		0.00	0.00				
T7	162 - 142	Leg	Max Tension	7	7378.06	-318.48	-189.92		
			Max. Compression	27	-51927.43	3.12	-142.08		
			Max. Mx	14	-44033.12	502.82	157.99		
			Max. My	10	-46665.04	0.77	-579.54		
			Max. Vy	6	-319.83	-96.91	-125.05		
			Max. Vx	10	-399.41	2.00	-283.00		
			Diagonal	Max Tension	12	3954.54	0.00	0.00	
				Max. Compression	12	-4068.51	0.00	0.00	
				Max. Mx	20	3679.41	8.22	0.00	
				Max. My	30	559.56	0.00	-0.05	
		Max. Vy		20	-5.81	0.00	0.00		
		Max. Vx		30	0.03	0.00	0.00		
		Secondary Horizontal	Max Tension	27	899.41	0.00	0.00		
			Max. Compression	27	-899.41	0.00	0.00		
			Max. Mx	18	414.85	-9.77	0.00		
			Max. My	23	817.84	0.00	0.00		
			Max. Vy	18	9.77	0.00	0.00		
		T8	142 - 122	Leg	Max. Vx	23	-0.00	0.00	0.00
					Max Tension	5	11905.72	-149.21	177.57
					Max. Compression	19	-65581.99	-54.02	46.84
					Max. Mx	30	-32228.23	433.29	46.70
Max. My	27				-24458.79	-95.56	-435.69		
Max. Vy	6				-381.16	-415.27	-79.85		
Diagonal	Max. Vx			2	341.20	43.93	367.03		
	Max Tension			11	5179.33	0.00	0.00		
	Max. Compression			30	-12388.68	0.00	0.00		
	Max. Mx			28	3939.00	25.78	0.00		
	Max. My			30	470.19	0.00	-0.14		
	Max. Vy			28	-18.23	0.00	0.00		
	Max. Vx			30	-0.10	0.00	0.00		

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Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Force lb	Major Axis Moment lb-ft	Minor Axis Moment lb-ft
		Secondary Horizontal	Max Tension	19	1135.91	0.00	0.00
			Max. Compression	19	-1135.91	0.00	0.00
			Max. Mx	18	571.13	-9.77	0.00
			Max. My	23	1013.64	0.00	0.00
			Max. Vy	18	9.77	0.00	0.00
			Max. Vx	23	-0.00	0.00	0.00
		Guy A	Bottom Tension	11	17514.76		
			Top Tension	11	17639.39		
			Top Cable Vert	11	10397.65		
			Top Cable Norm	11	14249.07		
			Top Cable Tan	11	30.02		
			Bot Cable Vert	11	-10061.38		
			Bot Cable Norm	11	14336.11		
			Bot Cable Tan	11	106.71		
		Guy B	Bottom Tension	32	17032.67		
			Top Tension	32	17240.08		
			Top Cable Vert	32	9834.80		
			Top Cable Norm	32	14159.70		
			Top Cable Tan	32	6.30		
			Bot Cable Vert	32	-9271.49		
			Bot Cable Norm	32	14288.15		
			Bot Cable Tan	32	8.03		
		Guy C	Bottom Tension	3	17472.46		
			Top Tension	3	17589.82		
			Top Cable Vert	3	10150.84		
			Top Cable Norm	3	14365.28		
			Top Cable Tan	3	27.67		
			Bot Cable Vert	3	-9827.12		
			Bot Cable Norm	3	14446.57		
			Bot Cable Tan	3	105.25		
		Top Guy Pull-Off	Max Tension	22	23464.16	0.00	0.00
			Max. Compression	2	-8389.46	0.00	0.00
			Max. Mx	18	6458.60	-26.45	0.00
			Max. My	23	8721.06	0.00	0.00
			Max. Vy	18	26.45	0.00	0.00
			Max. Vx	23	-0.00	0.00	0.00
		Bottom Guy Pull-Off	Max Tension	32	10674.57	0.00	0.00
			Max. Compression	2	-4572.58	0.00	0.00
			Max. Mx	18	2942.89	-26.45	0.00
			Max. My	23	3311.03	0.00	0.00
			Max. Vy	18	26.45	0.00	0.00
			Max. Vx	23	-0.00	0.00	0.00
		Torque Arm Top	Max Tension	6	21777.30	0.00	0.00
			Max. Compression	1	0.00	0.00	0.00
			Max. Mx	28	20224.29	-89.29	0.00
			Max. My	23	19097.02	0.00	0.09
			Max. Vy	28	47.73	0.00	0.00
			Max. Vx	23	0.05	0.00	0.00
		Torque Arm Bottom	Max Tension	14	5607.39	0.00	0.00
			Max. Compression	11	-21741.57	0.00	0.00
			Max. Mx	28	-10507.85	-89.31	0.00
			Max. My	23	832.49	0.00	-0.06
			Max. Vy	28	47.74	0.00	0.00
			Max. Vx	23	0.03	0.00	0.00
T9	122 - 102	Leg	Max Tension	1	0.00	0.00	0.00
			Max. Compression	19	-57669.09	68.34	-112.98
			Max. Mx	6	-57515.40	684.77	-20.27
			Max. My	17	-42941.42	-126.89	-824.30
			Max. Vy	7	-752.74	-436.89	-158.38

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Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Force lb	Major Axis Moment lb-ft	Minor Axis Moment lb-ft	
T10	102 - 82	Diagonal	Max. Vx	17	878.13	41.19	474.26	
			Max Tension	14	4851.44	0.00	0.00	
			Max. Compression	7	-4637.78	0.00	0.00	
			Max. Mx	28	76.81	25.73	0.00	
			Max. My	23	1128.39	0.00	0.09	
			Max. Vy	28	-18.19	0.00	0.00	
		Secondary Horizontal	Max. Vx	23	-0.07	0.00	0.00	
			Max Tension	19	998.86	0.00	0.00	
			Max. Compression	19	-998.86	0.00	0.00	
			Max. Mx	18	641.45	-9.77	0.00	
			Max. My	26	920.20	0.00	0.00	
			Max. Vy	18	9.77	0.00	0.00	
		Leg	Max. Vx	26	-0.00	0.00	0.00	
			Max Tension	1	0.00	0.00	0.00	
			Max. Compression	6	-59401.36	-441.07	359.33	
			Max. Mx	2	-47089.58	800.02	185.12	
			Max. My	7	-56201.54	253.71	-800.78	
			Max. Vy	2	-577.53	-353.99	-172.16	
			Diagonal	Max. Vx	28	624.63	-88.63	-792.46
				Max Tension	3	2407.43	0.00	0.00
				Max. Compression	3	-3257.37	0.00	0.00
Max. Mx	28			2134.32	8.20	0.00		
Max. My	23			-2175.10	0.00	0.04		
Max. Vy	28			-5.80	0.00	0.00		
Secondary Horizontal	Max. Vx		23	0.03	0.00	0.00		
	Max Tension		6	1028.86	0.00	0.00		
	Max. Compression		6	-1028.86	0.00	0.00		
	Max. Mx	18	661.65	-9.77	0.00			
	Max. My	23	994.12	0.00	0.00			
	Max. Vy	18	9.77	0.00	0.00			
T11	82 - 78	Leg	Max. Vx	23	-0.00	0.00	0.00	
			Max Tension	1	0.00	0.00	0.00	
			Max. Compression	7	-54218.39	363.14	-1114.03	
			Max. Mx	2	-53131.31	-1125.02	250.32	
			Max. My	7	-54218.39	363.14	-1114.03	
			Max. Vy	2	755.19	-1125.02	250.32	
		Diagonal	Max. Vx	7	784.96	363.14	-1114.03	
			Max Tension	3	3828.00	0.00	0.00	
			Max. Compression	12	-270.43	0.00	0.00	
			Max. Mx	28	3290.77	8.21	0.00	
			Max. My	23	3321.75	0.00	0.04	
			Max. Vy	28	-5.80	0.00	0.00	
		Secondary Horizontal	Max. Vx	23	-0.03	0.00	0.00	
			Max Tension	7	939.09	0.00	0.00	
			Max. Compression	7	-939.09	0.00	0.00	
Max. Mx	18		678.49	-9.77	0.00			
Max. My	23		931.08	0.00	0.00			
Max. Vy	18		9.77	0.00	0.00			
T12	78 - 74	Leg	Max. Vx	23	-0.00	0.00	0.00	
			Max Tension	1	0.00	0.00	0.00	
			Max. Compression	33	-45345.69	279.40	509.89	
			Max. Mx	2	-43297.47	-1125.02	250.31	
			Max. My	7	-44363.87	363.16	-1114.02	
			Max. Vy	2	-599.90	-1125.02	250.31	
		Diagonal	Max. Vx	7	-617.07	363.16	-1114.02	
			Max Tension	1	0.00	0.00	0.00	
			Max. Compression	3	-4754.20	0.00	0.00	
			Max. Mx	28	-761.59	9.57	0.00	

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Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Force lb	Major Axis Moment lb-ft	Minor Axis Moment lb-ft
T13	74 - 70	Secondary Horizontal	Max. My	23	-2783.70	0.00	0.05
			Max. Vy	28	-6.77	0.00	0.00
			Max. Vx	23	0.04	0.00	0.00
			Max Tension	33	785.41	0.00	0.00
			Max. Compression	33	-785.41	0.00	0.00
			Max. Mx	18	598.77	-11.06	0.00
			Max. My	23	772.82	0.00	0.00
			Max. Vy	18	11.06	0.00	0.00
			Max. Vx	23	-0.00	0.00	0.00
			Max Tension	1	0.00	0.00	0.00
		Leg	Max. Compression	20	-55201.42	231.23	-1188.26
			Max. Mx	2	-49459.05	-1732.41	415.01
			Max. My	7	-50660.24	526.60	-1726.59
			Max. Vy	2	1098.33	-1732.41	415.01
			Max. Vx	7	1121.22	526.60	-1726.59
			Max Tension	3	5437.98	0.00	0.00
			Max. Compression	12	-343.16	0.00	0.00
			Max. Mx	28	4605.87	8.21	0.00
			Max. My	23	4847.98	0.00	0.04
			Max. Vy	28	-5.80	0.00	0.00
Secondary Horizontal	Max. Vx	23	-0.03	0.00	0.00		
	Max Tension	20	956.12	0.00	0.00		
	Max. Compression	20	-956.12	0.00	0.00		
	Max. Mx	18	701.23	-9.77	0.00		
	Max. My	23	946.45	0.00	0.00		
	Max. Vy	18	9.77	0.00	0.00		
	Max. Vx	23	-0.00	0.00	0.00		
	Max Tension	1	0.00	0.00	0.00		
	Max. Compression	7	-57043.24	-380.19	721.20		
	Leg	Max. Mx	2	-55383.41	-1732.42	414.99	
Max. My		7	-56973.93	526.62	-1726.58		
Max. Vy		2	-1115.72	-1732.42	414.99		
Max. Vx		7	-1140.93	526.62	-1726.58		
Max Tension		17	5796.58	0.00	0.00		
Max. Compression		2	-379.69	0.00	0.00		
Max. Mx		25	-41.77	8.20	0.00		
Max. My		23	2510.26	0.00	0.05		
Max. Vy		25	-5.80	0.00	0.00		
Max. Vx		23	0.03	0.00	0.00		
Secondary Horizontal	Max Tension	7	988.02	0.00	0.00		
	Max. Compression	7	-988.02	0.00	0.00		
	Max. Mx	18	758.88	-9.77	0.00		
	Max. My	23	959.85	0.00	0.00		
	Max. Vy	18	9.77	0.00	0.00		
	Max. Vx	23	-0.00	0.00	0.00		
	Guy A	Bottom Tension	11	16292.41			
		Top Tension	11	16370.38			
		Top Cable Vert	11	6758.44			
		Top Cable Norm	11	14910.15			
Top Cable Tan		11	19.66				
Bot Cable Vert		11	-6500.96				
Bot Cable Norm		11	14939.00				
Bot Cable Tan		11	80.99				
Guy B		Bottom Tension	14	16041.90			
		Top Tension	14	16104.50			
	Top Cable Vert	14	5841.72				
	Top Cable Norm	14	15007.64				
	Top Cable Tan	14	12.23				

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Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Force lb	Major Axis Moment lb-ft	Minor Axis Moment lb-ft	
T15	66 - 62	Guy C	Bot Cable Vert	14	-5614.31			
			Bot Cable Norm	14	15027.19			
			Bot Cable Tan	14	76.28			
			Bottom Tension	6	16404.52			
			Top Tension	6	16475.19			
			Top Cable Vert	6	6413.38			
			Top Cable Norm	6	15175.65			
			Top Cable Tan	6	14.20			
			Bot Cable Vert	6	-6169.77			
			Bot Cable Norm	6	15199.85			
		Leg	Bot Cable Tan	6	80.81			
			Max Tension	1	0.00	0.00	0.00	
			Max. Compression	25	-51687.98	249.30	-1268.41	
			Max. Mx	2	-49214.28	-1294.63	299.43	
			Max. My	7	-50736.65	405.28	-1289.27	
			Max. Vy	2	716.05	-1294.63	299.43	
			Max. Vx	29	744.14	-244.02	-1270.94	
			Diagonal	Max Tension	1	0.00	0.00	0.00
				Max. Compression	17	-5176.02	0.00	0.00
				Max. Mx	25	-4544.28	9.57	0.00
Max. My	13	-4060.36		0.00	-0.05			
Secondary Horizontal	Max. Vy	25	-6.77	0.00	0.00			
	Max. Vx	13	0.03	0.00	0.00			
	Max Tension	25	895.26	0.00	0.00			
	Max. Compression	25	-895.26	0.00	0.00			
	Max. Mx	18	657.31	-11.06	0.00			
	Max. My	23	888.04	0.00	0.00			
T16	62 - 42	Leg	Max. Vy	18	11.06	0.00	0.00	
			Max. Vx	23	-0.00	0.00	0.00	
			Max Tension	1	0.00	0.00	0.00	
			Max. Compression	22	-74585.91	-97.33	-1.04	
			Max. Mx	7	-61463.29	-1289.26	-405.30	
			Max. My	8	-54838.68	-1175.04	418.66	
		Diagonal	Max. Vy	32	-949.04	-1285.73	-2.27	
			Max. Vx	8	255.72	469.87	-57.09	
			Max Tension	6	4149.45	0.00	0.00	
			Max. Compression	23	-3605.98	0.00	0.00	
		Secondary Horizontal	Max. Mx	25	-140.75	8.21	0.00	
			Max. My	7	943.04	0.00	0.05	
			Max. Vy	25	-5.81	0.00	0.00	
			Max. Vx	7	-0.03	0.00	0.00	
Max Tension	22	1291.87	0.00	0.00				
T17	42 - 22	Leg	Max. Compression	22	-1291.87	0.00	0.00	
			Max. Mx	18	749.58	-9.77	0.00	
			Max. My	23	1252.87	0.00	0.00	
			Max. Vy	18	9.77	0.00	0.00	
			Max. Vx	23	-0.00	0.00	0.00	
			Max Tension	1	0.00	0.00	0.00	
		Diagonal	Max. Compression	22	-76150.25	-220.22	-0.55	
			Max. Mx	32	-75702.46	-733.80	-1.33	
			Max. My	8	-55175.98	-604.23	188.06	
			Max. Vy	32	-649.02	-733.80	-1.33	
Max. Vx	8	140.26	397.01	-61.04				
Max Tension	12	1205.02	0.00	0.00				
Max. Compression	12	-1912.45	0.00	0.00				
Max. Mx	25	438.11	8.23	0.00				
Max. My	7	-455.26	0.00	0.06				
Max. Vy	25	-5.82	0.00	0.00				
Max. Vx	7	-0.04	0.00	0.00				

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Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Force lb	Major Axis Moment lb-ft	Minor Axis Moment lb-ft		
T18	22 - 2	Secondary Horizontal	Max Tension	22	1318.96	0.00	0.00		
			Max. Compression	22	-1318.96	0.00	0.00		
		Leg	Max. Mx	18	743.81	-9.77	0.00	0.00	
			Max. My	23	1275.69	0.00	0.00	0.00	
			Max. Vy	18	9.77	0.00	0.00	0.00	
			Max. Vx	23	-0.00	0.00	0.00	0.00	
			Max Tension	1	0.00	0.00	0.00	0.00	
			Max. Compression	22	-71613.37	-298.46	0.16		
			Max. Mx	32	-71354.14	-597.43	-1.49		
			Max. My	8	-51818.90	-465.87	104.20		
			Max. Vy	32	-552.23	-597.43	-1.49		
			Max. Vx	8	87.24	353.71	-42.50		
			Diagonal	Max Tension	11	2575.40	0.00	0.00	
				Max. Compression	12	-3393.49	0.00	0.00	
				Max. Mx	25	1519.99	8.24	0.00	
				Max. My	7	-30.20	0.00	0.06	
				Max. Vy	25	-5.83	0.00	0.00	
				Max. Vx	7	-0.05	0.00	0.00	
			Secondary Horizontal	Max Tension	22	1240.38	0.00	0.00	
				Max. Compression	22	-1240.38	0.00	0.00	
		Max. Mx		18	760.34	-9.77	0.00		
		Max. My		23	1207.00	0.00	0.00		
		Max. Vy		18	9.77	0.00	0.00		
		Max. Vx		23	-0.00	0.00	0.00		
		Base Beam		Max Tension	7	3502.57	-106911.07	273.99	
				Max. Compression	10	-2515.29	412.43	-0.42	
				Max. Mx	24	-55506.94	-127686.31	-1332.81	
				Max. My	6	-43939.24	-101098.05	2721.05	
Max. Vy	24			-55506.94	-127686.31	-1332.81			
Max. Vx	6			1179.50	-101098.05	2721.05			

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical lb	Horizontal, X lb	Horizontal, Z lb
Guy C @ 213 ft Elev -17.5 ft Azimuth 240 deg	Max. Vert	13	-2252.24	-1713.66	988.33
	Max. H _x	13	-2252.24	-1713.66	988.33
	Max. H _z	21	-62702.11	-67768.87	39821.15
	Min. Vert	22	-63287.14	-68658.33	39684.99
	Min. H _x	22	-63287.14	-68658.33	39684.99
	Min. H _z	13	-2252.24	-1713.66	988.33
Guy B @ 205 ft Elev -7.5 ft Azimuth 120 deg	Max. Vert	7	-2146.11	1648.67	951.30
	Max. H _x	32	-61562.18	68189.18	39397.50
	Max. H _z	32	-61562.18	68189.18	39397.50
	Min. Vert	32	-61562.18	68189.18	39397.50
	Min. H _x	7	-2146.11	1648.67	951.30
	Min. H _z	7	-2146.11	1648.67	951.30
Guy A @ 219 ft Elev -26.5 ft Azimuth 0 deg	Max. Vert	2	-2392.80	-0.41	-2060.38

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Location	Condition	Gov. Load Comb.	Vertical lb	Horizontal, X lb	Horizontal, Z lb
Mast	Max. H _x	31	-35003.49	2958.58	-42181.18
	Max. H _z	2	-2392.80	-0.41	-2060.38
	Min. Vert	27	-63416.90	14.51	-77915.06
	Min. H _x	23	-34851.49	-2970.93	-42063.69
	Min. H _z	27	-63416.90	14.51	-77915.06
	Max. Vert	24	166472.47	-2817.13	-1640.49
	Max. H _x	14	129860.43	4374.82	0.67
	Max. H _z	2	137467.29	2.36	4367.62
	Max. M _x	1	0.00	0.20	-11.31
	Max. M _z	1	0.00	0.20	-11.31
	Max. Torsion	23	1407.99	-3276.33	82.86
	Min. Vert	1	95339.25	0.20	-11.31
	Min. H _x	6	131886.43	-4318.28	33.82
	Min. H _z	10	119981.00	26.81	-4381.23
	Min. M _x	1	0.00	0.20	-11.31
	Min. M _z	1	0.00	0.20	-11.31
	Min. Torsion	31	-1200.92	3343.75	61.74

Tower Mast Reaction Summary

Load Combination	Vertical lb	Shear _x lb	Shear _z lb	Overturning Moment, M _x lb-ft	Overturning Moment, M _z lb-ft	Torque lb-ft
Dead Only	95339.25	-0.20	11.31	0.00	0.00	-0.18
Dead+Wind 0 deg - No Ice+Guy	137467.29	-2.36	-4367.62	0.00	0.00	-345.19
Dead+Wind 30 deg - No Ice+Guy	131418.69	2181.69	-3713.91	0.00	0.00	-559.26
Dead+Wind 45 deg - No Ice+Guy	124983.09	3080.62	-3064.13	0.00	0.00	-710.64
Dead+Wind 60 deg - No Ice+Guy	120549.07	3758.08	-2182.99	0.00	0.00	-1177.78
Dead+Wind 90 deg - No Ice+Guy	131886.43	4318.28	-33.82	0.00	0.00	-1287.20
Dead+Wind 120 deg - No Ice+Guy	139550.90	3747.75	2177.10	0.00	0.00	-766.89
Dead+Wind 135 deg - No Ice+Guy	135502.60	2982.83	3041.53	0.00	0.00	-400.42
Dead+Wind 150 deg - No Ice+Guy	131436.12	2115.02	3785.23	0.00	0.00	31.11
Dead+Wind 180 deg - No Ice+Guy	119981.00	-26.81	4381.23	0.00	0.00	627.51
Dead+Wind 210 deg - No Ice+Guy	131476.69	-2133.77	3771.21	0.00	0.00	821.60
Dead+Wind 225 deg - No Ice+Guy	135175.82	-3003.59	3035.73	0.00	0.00	1027.32
Dead+Wind 240 deg - No Ice+Guy	138550.86	-3778.88	2193.17	0.00	0.00	1108.12
Dead+Wind 270 deg - No Ice+Guy	129860.43	-4374.82	-0.67	0.00	0.00	1100.92
Dead+Wind 300 deg - No Ice+Guy	119977.98	-3792.31	-2177.62	0.00	0.00	544.91
Dead+Wind 315 deg - No Ice+Guy	123623.74	-3108.49	-3090.69	0.00	0.00	150.58
Dead+Wind 330 deg - No Ice+Guy	129399.41	-2204.12	-3768.54	0.00	0.00	-110.76
Dead+Ice+Temp+Guy	132718.48	-3.36	24.33	0.00	0.00	-0.16

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Load Combination	Vertical lb	Shear _x lb	Shear _z lb	Overturing Moment, M _y lb-ft	Overturing Moment, M _z lb-ft	Torque lb-ft
Dead+Wind 0	165142.97	-13.35	-3293.83	0.00	0.00	-126.95
deg+Ice+Temp+Guy						
Dead+Wind 30	165768.25	1706.13	-2769.51	0.00	0.00	-105.15
deg+Ice+Temp+Guy						
Dead+Wind 45	165073.07	2405.71	-2279.97	0.00	0.00	-353.66
deg+Ice+Temp+Guy						
Dead+Wind 60	164417.21	2915.15	-1669.40	0.00	0.00	-884.95
deg+Ice+Temp+Guy						
Dead+Wind 90	165550.25	3276.33	-82.86	0.00	0.00	-1407.99
deg+Ice+Temp+Guy						
Dead+Wind 120	166472.47	2817.13	1640.49	0.00	0.00	-746.23
deg+Ice+Temp+Guy						
Dead+Wind 135	165285.30	2290.12	2376.43	0.00	0.00	-267.54
deg+Ice+Temp+Guy						
Dead+Wind 150	165003.30	1544.79	2906.47	0.00	0.00	153.19
deg+Ice+Temp+Guy						
Dead+Wind 180	163556.01	-13.81	3392.69	0.00	0.00	309.84
deg+Ice+Temp+Guy						
Dead+Wind 210	165383.70	-1565.54	2888.85	0.00	0.00	300.92
deg+Ice+Temp+Guy						
Dead+Wind 225	165228.01	-2317.99	2366.82	0.00	0.00	566.25
deg+Ice+Temp+Guy						
Dead+Wind 240	165835.96	-2862.59	1652.09	0.00	0.00	861.14
deg+Ice+Temp+Guy						
Dead+Wind 270	164881.64	-3343.75	-61.74	0.00	0.00	1200.92
deg+Ice+Temp+Guy						
Dead+Wind 300	164458.81	-2970.04	-1685.70	0.00	0.00	567.50
deg+Ice+Temp+Guy						
Dead+Wind 315	164666.61	-2452.24	-2323.78	0.00	0.00	137.29
deg+Ice+Temp+Guy						
Dead+Wind 330	164747.94	-1748.09	-2829.13	0.00	0.00	-162.44
deg+Ice+Temp+Guy						
Dead+Wind 0 deg - Service+Guy	97483.27	2.73	-1678.78	0.00	0.00	-84.31
Dead+Wind 30 deg - Service+Guy	97293.74	794.62	-1406.06	0.00	0.00	-148.75
Dead+Wind 45 deg - Service+Guy	97288.47	1116.84	-1129.68	0.00	0.00	-189.47
Dead+Wind 60 deg - Service+Guy	97255.84	1361.77	-784.27	0.00	0.00	-297.25
Dead+Wind 90 deg - Service+Guy	97026.79	1620.34	24.78	0.00	0.00	-370.84
Dead+Wind 120 deg - Service+Guy	96994.67	1462.62	859.60	0.00	0.00	-222.38
Dead+Wind 135 deg - Service+Guy	96840.84	1158.24	1159.74	0.00	0.00	-113.04
Dead+Wind 150 deg - Service+Guy	96803.58	822.09	1416.11	0.00	0.00	16.72
Dead+Wind 180 deg - Service+Guy	96918.04	-6.57	1596.68	0.00	0.00	144.88
Dead+Wind 210 deg - Service+Guy	96967.26	-830.10	1414.31	0.00	0.00	213.53
Dead+Wind 225 deg - Service+Guy	97063.82	-1163.07	1159.52	0.00	0.00	282.67
Dead+Wind 240 deg - Service+Guy	97281.15	-1463.73	863.60	0.00	0.00	306.55
Dead+Wind 270 deg - Service+Guy	97378.80	-1624.50	33.25	0.00	0.00	299.85
Dead+Wind 300 deg - Service+Guy	97579.83	-1368.02	-780.02	0.00	0.00	153.23
Dead+Wind 315 deg -	97552.98	-1121.20	-1128.20	0.00	0.00	64.00

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Load Combination	Vertical lb	Shear _x lb	Shear _y lb	Overturning Moment, M _x lb-ft	Overturning Moment, M _y lb-ft	Torque lb-ft
Service+Guy Dead+Wind 330 deg - Service+Guy	97468.72	-795.38	-1407.96	0.00	0.00	-9.64

Solution Summary

Load Comb.	Sum of Applied Forces			Sum of Reactions			% Error
	PX lb	PY lb	PZ lb	PX lb	PY lb	PZ lb	
1	0.00	-38348.26	0.00	1.03	38348.27	1.61	0.005%
2	286.40	-38655.38	-67178.87	-286.31	38655.40	67178.47	0.001%
3	33195.79	-38318.67	-57309.44	-33195.72	38318.67	57308.71	0.001%
4	46556.31	-38079.32	-46386.33	-46556.57	38079.31	46385.15	0.002%
5	56717.05	-37989.16	-32365.89	-56716.01	37989.20	32369.66	0.005%
6	66237.59	-38384.67	429.62	-66236.69	38384.68	-428.81	0.002%
7	58599.00	-38770.79	33528.94	-58598.50	38770.83	-33528.51	0.001%
8	46638.50	-38668.80	45706.47	-46638.02	38668.82	-45706.11	0.001%
9	33288.71	-38414.26	56097.11	-33287.66	38414.26	-56096.57	0.002%
10	354.10	-38041.14	64253.58	-342.83	38041.28	-64256.01	0.015%
11	-32901.05	-38377.85	56830.02	32900.29	38377.85	-56829.45	0.001%
12	-46306.59	-38617.19	46401.76	46305.69	38617.21	-46400.95	0.002%
13	-58325.55	-38707.36	33701.77	58325.22	38707.39	-33701.34	0.001%
14	-64992.63	-38311.85	213.24	64992.03	38311.85	-212.62	0.001%
15	-55006.31	-37925.73	-31787.08	55007.40	37925.76	31787.07	0.001%
16	-45031.38	-38027.72	-45380.49	45031.68	38027.71	45379.56	0.001%
17	-31932.14	-38282.26	-56092.36	31932.25	38282.26	56091.72	0.001%
18	0.00	-62751.72	0.00	-0.80	62751.72	-1.74	0.003%
19	330.89	-63312.97	-64644.73	-330.79	63312.96	64643.99	0.001%
20	32344.05	-62697.74	-55674.36	-32344.04	62697.74	55673.89	0.001%
21	45489.04	-62260.44	-45225.74	-45489.14	62260.43	45225.17	0.001%
22	55542.87	-62095.64	-31736.53	-55542.36	62095.62	31735.30	0.001%
23	64470.30	-62818.10	265.55	-64469.92	62818.10	-265.14	0.001%
24	56449.59	-63523.46	32190.60	-56449.24	63523.47	-32190.29	0.001%
25	45569.99	-63337.10	44658.01	-45569.37	63337.09	-44657.58	0.001%
26	32340.29	-62872.08	54738.56	-32339.80	62872.08	-54738.31	0.001%
27	273.31	-62190.48	63041.29	-273.57	62190.45	-63039.77	0.002%
28	-32030.04	-62805.70	55306.76	32029.62	62805.70	-55306.43	0.001%
29	-45227.51	-63243.01	45229.49	45227.01	63243.00	-45229.01	0.001%
30	-56142.85	-63407.81	32395.58	56142.56	63407.80	-32395.25	0.000%
31	-63470.99	-62685.34	151.82	63470.69	62685.34	-151.43	0.001%
32	-54191.41	-61979.98	-31271.85	54190.46	61979.95	31270.22	0.002%
33	-44278.24	-62166.35	-44437.92	44278.41	62166.35	44437.45	0.001%
34	-31295.70	-62631.37	-54736.65	31295.91	62631.36	54735.78	0.001%
35	99.10	-38454.53	-23245.28	-99.16	38454.47	23241.08	0.009%
36	11486.43	-38338.02	-19830.26	-11487.08	38338.00	19827.62	0.006%
37	16109.45	-38255.20	-16050.63	-16109.65	38255.19	16048.98	0.004%
38	19625.28	-38224.00	-11199.27	-19624.04	38224.00	11198.18	0.004%
39	22919.58	-38360.86	148.66	-22917.63	38360.84	-146.75	0.006%
40	20276.47	-38494.46	11601.71	-20275.13	38494.44	-11600.98	0.003%
41	16137.89	-38459.17	15815.39	-16134.29	38459.13	-15814.09	0.009%
42	11518.59	-38371.10	19410.77	-11516.02	38371.08	-19410.05	0.006%
43	122.53	-38241.99	22233.07	-122.64	38241.99	-22231.26	0.004%
44	-11384.45	-38358.50	19664.37	11381.80	38358.48	-19663.60	0.006%
45	-16023.04	-38441.32	16055.97	16019.55	38441.27	-16054.75	0.008%
46	-20181.85	-38472.52	11661.51	20180.64	38472.50	-11660.87	0.003%
47	-22488.80	-38335.66	73.79	22487.05	38335.64	-72.12	0.005%
48	-19033.33	-38202.05	-10998.99	19032.20	38202.05	10998.10	0.003%
49	-15581.79	-38237.35	-15702.59	15582.51	38237.33	15698.19	0.010%

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Load Comb.	Sum of Applied Forces			Sum of Reactions			% Error
	PX lb	PY lb	PZ lb	PX lb	PY lb	PZ lb	
50	-11049.18	-38325.42	-19409.12	11049.74	38325.40	19406.83	0.005%

Non-Linear Convergence Results

Load Combination	Converged?	Number of Cycles	Displacement Tolerance	Force Tolerance
1	Yes	10	0.00000001	0.00005501
2	Yes	20	0.00005317	0.00004676
3	Yes	19	0.00006820	0.00005480
4	Yes	18	0.00008262	0.00005531
5	Yes	13	0.00000001	0.00006389
6	Yes	19	0.00009614	0.00007150
7	Yes	20	0.00007590	0.00006561
8	Yes	20	0.00005941	0.00004903
9	Yes	19	0.00008804	0.00006712
10	Yes	12	0.00008524	0.00009844
11	Yes	19	0.00007748	0.00006180
12	Yes	19	0.00009999	0.00008349
13	Yes	20	0.00006491	0.00005671
14	Yes	19	0.00007442	0.00005375
15	Yes	13	0.00000001	0.00003409
16	Yes	18	0.00006904	0.00004273
17	Yes	19	0.00006045	0.00004515
18	Yes	8	0.00000001	0.00005324
19	Yes	20	0.00008497	0.00005420
20	Yes	20	0.00005763	0.00003600
21	Yes	19	0.00006461	0.00003710
22	Yes	14	0.00009192	0.00005153
23	Yes	20	0.00007555	0.00004309
24	Yes	21	0.00006344	0.00003948
25	Yes	20	0.00009305	0.00005575
26	Yes	20	0.00006932	0.00004059
27	Yes	14	0.00000001	0.00004040
28	Yes	20	0.00006321	0.00003912
29	Yes	20	0.00008153	0.00005099
30	Yes	21	0.00005409	0.00003430
31	Yes	20	0.00006195	0.00003476
32	Yes	13	0.00008838	0.00005333
33	Yes	19	0.00000001	0.00002994
34	Yes	19	0.00009990	0.00005735
35	Yes	11	0.00000001	0.00008726
36	Yes	11	0.00000001	0.00004927
37	Yes	11	0.00000001	0.00003545
38	Yes	10	0.00000001	0.00005351
39	Yes	11	0.00000001	0.00005255
40	Yes	12	0.00000001	0.00003669
41	Yes	11	0.00000001	0.00008693
42	Yes	11	0.00000001	0.00005145
43	Yes	10	0.00000001	0.00005524
44	Yes	11	0.00000001	0.00005149
45	Yes	11	0.00000001	0.00007935
46	Yes	12	0.00000001	0.00003111
47	Yes	11	0.00000001	0.00004551
48	Yes	10	0.00000001	0.00004773
49	Yes	10	0.00000001	0.00007741
50	Yes	11	0.00000001	0.00004307

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Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T1	282 - 262	2.300	38	0.0688	0.1178
T2	262 - 242	2.451	38	0.0684	0.1074
T3	242 - 222	2.571	38	0.0494	0.0954
T4	222 - 202	2.609	37	0.0299	0.0790
T5	202 - 182	2.621	43	0.0304	0.0720
T6	182 - 162	2.702	43	0.0323	0.0703
T7	162 - 142	2.662	44	0.0386	0.0578
T8	142 - 122	2.463	46	0.0602	0.0335
T9	122 - 102	2.353	46	0.0199	0.0270
T10	102 - 82	2.316	46	0.0328	0.0297
T11	82 - 78	2.122	46	0.0629	0.0239
T12	78 - 74	2.070	46	0.0680	0.0228
T13	74 - 70	1.999	46	0.0709	0.0222
T14	70 - 66	1.945	46	0.0723	0.0217
T15	66 - 62	1.878	46	0.0751	0.0209
T16	62 - 42	1.826	46	0.0797	0.0201
T17	42 - 22	1.421	46	0.1218	0.0149
T18	22 - 2	0.800	46	0.1713	0.0081

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
289.00	FM Antenna	38	2.300	0.0688	0.1178	586437
284.00	2.5" x 10' Omni	38	2.300	0.0688	0.1178	586437
282.00	DLS L 864-L-865 Light Beacon Unit	38	2.300	0.0688	0.1178	586437
281.00	6' Stand-off	38	2.308	0.0690	0.1173	586437
280.00	MF-950B	38	2.316	0.0692	0.1168	586437
270.00	Guy	38	2.392	0.0703	0.1116	244349
260.00	ASP-711	38	2.466	0.0673	0.1064	116620
234.70	DB589-Y	38	2.595	0.0410	0.0893	44048
230.00	3' Stand-off	38	2.603	0.0361	0.0852	45037
218.00	531-70HD Exposed Dipole Antenna	37	2.607	0.0283	0.0766	89691
212.50	8' Dish w/ Radome	43	2.605	0.0277	0.0743	111333
204.50	8' Dish w/ Radome	43	2.615	0.0294	0.0724	35942
196.00	Guy	43	2.644	0.0330	0.0717	62069
182.00	Pirod 12' T-Frame Sector Mount (1)	43	2.702	0.0323	0.0703	33164
180.50	6' Stand-off	43	2.706	0.0310	0.0699	29897
164.00	(2) 7770 Panel Antenna	44	2.675	0.0344	0.0600	16149
153.00	5.5' Dish w/ Radome	35	2.577	0.0544	0.0464	41531
142.00	(3) L-810 Obstruction Lights w/ Mount Kit	46	2.463	0.0602	0.0335	33119
132.00	14' Dipole	46	2.390	0.0411	0.0285	29657
128.00	Guy	46	2.371	0.0312	0.0277	29587
125.00	3" x 12.5' Omni	46	2.361	0.0247	0.0273	29742
124.50	1' Yagi antenna	46	2.359	0.0238	0.0272	29934
121.00	6'8"x4" Pipe Mount	46	2.351	0.0188	0.0271	35299
104.50	9' Dish w/ Radome	46	2.328	0.0287	0.0298	21381

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Elevation	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
70.00	Guy	46	1.945	0.0723	0.0217	27859

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T1	282 - 262	13.063	20	0.2945	0.4596
T2	262 - 242	12.979	20	0.2943	0.4239
T3	242 - 222	12.848	7	0.2291	0.3791
T4	222 - 202	13.622	7	0.1856	0.3201
T5	202 - 182	14.090	7	0.1718	0.2958
T6	182 - 162	14.557	7	0.1561	0.2856
T7	162 - 142	14.493	7	0.2848	0.2313
T8	142 - 122	13.657	7	0.3448	0.1493
T9	122 - 102	12.870	7	0.2118	0.1285
T10	102 - 82	12.157	7	0.2343	0.1166
T11	82 - 78	10.820	7	0.3885	0.1046
T12	78 - 74	10.498	7	0.4127	0.1016
T13	74 - 70	10.103	7	0.4300	0.0984
T14	70 - 66	9.761	7	0.4433	0.0951
T15	66 - 62	9.360	7	0.4608	0.0906
T16	62 - 42	9.008	7	0.4828	0.0859
T17	42 - 22	6.698	7	0.6388	0.0605
T18	22 - 2	3.644	7	0.8054	0.0318

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
289.00	FM Antenna	20	13.063	0.2945	0.4596	153326
284.00	2.5" x 10' Omni	20	13.063	0.2945	0.4596	153326
282.00	DLS L 864-L-865 Light Beacon Unit	20	13.063	0.2945	0.4596	153326
281.00	6' Stand-off	20	13.059	0.2952	0.4579	153326
280.00	MF-950B	20	13.056	0.2959	0.4561	153326
270.00	Guy	20	13.019	0.3001	0.4385	63886
260.00	ASP-711	20	12.967	0.2908	0.4201	31165
234.70	DB589-Y	7	13.178	0.1952	0.3568	11746
230.00	3' Stand-off	7	13.362	0.1739	0.3421	11586
218.00	531-70HD Exposed Dipole Antenna	7	13.728	0.1888	0.3118	16642
212.50	8' Dish w/ Radome	7	13.856	0.1878	0.3037	29054
204.50	8' Dish w/ Radome	7	14.032	0.1770	0.2969	10807
196.00	Guy	7	14.242	0.1586	0.2941	17328
182.00	Pirod 12' T-Frame Sector Mount (1)	7	14.557	0.1561	0.2856	8360
180.50	6' Stand-off	7	14.578	0.1616	0.2835	7735
164.00	(2) 7770 Panel Antenna	7	14.540	0.2697	0.2393	4735
153.00	5.5' Dish w/ Radome	7	14.170	0.3379	0.1913	10153
142.00	(3) L-810 Obstruction Lights w/ Mount Kit	7	13.657	0.3448	0.1493	10871
132.00	14' Dipole	7	13.228	0.2819	0.1330	9100

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Elevation	Appurtenance	Gov. Load Comb.	Deflection	Tilt	Twist	Radius of Curvature
ft			in	°	°	ft
128.00	Guy	7	13.076	0.2501	0.1307	8690
125.00	3" x 12.5' Omni	7	12.969	0.2283	0.1296	8454
124.50	1' Yagi antenna	7	12.952	0.2250	0.1294	8453
121.00	6'8"x4" Pipe Mount	7	12.838	0.2077	0.1281	9397
104.50	9' Dish w/ Radome	7	12.275	0.2148	0.1182	5670
70.00	Guy	7	9.761	0.4433	0.0951	5401

Guy Design Data

Section No.	Elevation	Size	Initial Tension	Breaking Load	Actual T	Allowable T _a	Required S.F.	Actual S.F.
	ft		lb	lb	lb	lb		
T1	270.00 (A) (690)	3/4 EHS	5830.00	58299.91	17941.00	29150.00	2.000	3.250 ✓
	270.00 (B) (689)	3/4 EHS	5830.00	58299.91	18083.30	29150.00	2.000	3.224 ✓
	270.00 (C) (688)	3/4 EHS	5830.00	58299.91	18346.40	29150.00	2.000	3.178 ✓
T5	196.00 (A) (709)	11/16 EHS	5000.00	49999.91	17683.80	25000.00	2.000	2.827 ✓
	196.00 (A) (710)	11/16 EHS	5000.00	49999.91	17839.30	25000.00	2.000	2.803 ✓
	196.00 (B) (703)	11/16 EHS	5000.00	49999.91	17405.60	25000.00	2.000	2.873 ✓
	196.00 (B) (704)	11/16 EHS	5000.00	49999.91	17905.00	25000.00	2.000	2.793 ✓
	196.00 (C) (691)	11/16 EHS	5000.00	49999.91	18268.80	25000.00	2.000	2.737 ✓
	196.00 (C) (692)	11/16 EHS	5000.00	49999.91	17620.70	25000.00	2.000	2.838 ✓
T8	128.00 (A) (733)	11/16 EHS	5000.00	49999.91	17278.50	25000.00	2.000	2.894 ✓
	128.00 (A) (734)	11/16 EHS	5000.00	49999.91	17639.40	25000.00	2.000	2.835 ✓
	128.00 (B) (727)	11/16 EHS	5000.00	49999.91	17057.80	25000.00	2.000	2.931 ✓
	128.00 (B) (728)	11/16 EHS	5000.00	49999.91	17240.10	25000.00	2.000	2.900 ✓
	128.00 (C) (715)	11/16 EHS	5000.00	49999.91	17589.80	25000.00	2.000	2.843 ✓
	128.00 (C) (716)	11/16 EHS	5000.00	49999.91	17150.80	25000.00	2.000	2.915 ✓
T14	70.00 (A) (741)	11/16 EHS	5000.00	49999.91	16370.40	25000.00	2.000	3.054 ✓
	70.00 (B) (740)	11/16 EHS	5000.00	49999.91	16104.50	25000.00	2.000	3.105 ✓
	70.00 (C) (739)	11/16 EHS	5000.00	49999.91	16475.20	25000.00	2.000	3.035 ✓

Compression Checks

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Leg Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	Mast Stability Index	F _a ksi	A in ²	Actual P lb	Allow. P _a lb	Ratio P P _a
T1	282 - 262	2	20.00	2.00	48.0 K=1.00	1.00	22.528	3.1416	-14517.80	70773.60	0.205
T2	262 - 242	2	20.00	2.00	48.0 K=1.00	1.00	22.528	3.1416	-22750.00	70773.60	0.321
T3	242 - 222	2	20.00	2.00	48.0 K=1.00	1.00	22.528	3.1416	-22528.10	70773.60	0.318
T4	222 - 202	2	20.00	2.00	48.0 K=1.00	1.00	22.528	3.1416	-21053.20	70773.60	0.297
T5	202 - 182	2	20.00	2.00	48.0 K=1.00	1.00	22.528	3.1416	-42573.10	70773.60	0.602
T6	182 - 162	2	20.00	2.00	48.0 K=1.00	1.00	22.528	3.1416	-55385.90	70773.60	0.783
T7	162 - 142	2	20.00	2.00	48.0 K=1.00	1.00	22.528	3.1416	-51927.40	70773.60	0.734
T8	142 - 122	2	20.00	2.00	48.0 K=1.00	1.00	22.528	3.1416	-65582.00	70773.60	0.927
T9	122 - 102	2	20.00	2.00	48.0 K=1.00	1.00	22.528	3.1416	-57669.10	70773.60	0.815
T10	102 - 82	2	20.00	2.00	48.0 K=1.00	1.00	22.528	3.1416	-59401.40	70773.60	0.839
T11	82 - 78	2	4.00	2.00	48.0 K=1.00	1.00	22.528	3.1416	-54218.40	70773.60	0.766
T12	78 - 74	2	4.00	2.00	24.0 K=0.50	0.95	23.914	3.1416	-34621.00	75128.80	0.461*
T13	74 - 70	2	4.00	2.00	48.0 K=1.00	1.00	22.528	3.1416	-55201.40	70773.60	0.780
T14	70 - 66	2	4.00	2.00	48.0 K=1.00	1.00	22.528	3.1416	-43813.70	70773.60	0.619*
T15	66 - 62	2	4.00	2.00	24.0 K=0.50	0.94	23.687	3.1416	-51688.00	74415.70	0.695
T16	62 - 42	2"SR w 3rd pipe	20.00	2.00	46.9 K=1.00	1.00	22.671	3.6235	-74585.90	82148.20	0.908
T17	42 - 22	2"SR w 3rd pipe	20.00	2.00	46.9 K=1.00	1.00	22.671	3.6235	-76150.30	82148.20	0.927
T18	22 - 2	2"SR w 3rd pipe	20.00	2.00	46.9 K=1.00	1.00	22.671	3.6235	-71613.40	82148.20	0.872

* DL controls

Diagonal Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	F _a ksi	A in ²	Actual P lb	Allow. P _a lb	Ratio P P _a
T1	282 - 262	7/8	5.66	5.42	148.7	6.754	0.6013	-4129.71	4061.32	1.017

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Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	F _a ksi	A in ²	Actual P lb	Allow. P _a lb	Ratio P/P _a
					K=0.50					
T2	262 - 242	7/8	5.66	5.42	148.7	6.754	0.6013	-2025.78	4061.32	0.499
					K=0.50					
T3	242 - 222	7/8	5.66	5.42	148.7	6.754	0.6013	-1803.62	4061.32	0.444
					K=0.50					
T4	222 - 202	SR7/8+L2.5x2.5x0.25	5.66	5.42	53.0	18.081	2.0910	-3924.98	37807.40	0.104
					K=0.50					
T5	202 - 182	SR7/8+L2.5x2.5x0.25	5.66	5.42	53.0	18.081	2.0910	-9790.53	37807.40	0.259
					K=0.50					
T6	182 - 162	7/8	5.66	5.42	148.7	6.754	0.6013	-1682.32	4061.32	0.414
					K=0.50					
T7	162 - 142	7/8	5.66	5.42	148.7	6.754	0.6013	-4068.51	4061.32	1.002
					K=0.50					
T8	142 - 122	SR7/8+L2.5x2.5x0.25	5.66	5.42	53.0	18.081	2.0910	-12388.70	37807.40	0.328
					K=0.50					
T9	122 - 102	SR7/8+L2.5x2.5x0.25	5.66	5.42	53.0	18.081	2.0910	-4637.78	37807.40	0.123
					K=0.50					
T10	102 - 82	7/8	5.66	5.42	148.7	6.754	0.6013	-3257.37	4061.32	0.802
					K=0.50					
T11	82 - 78	7/8	5.66	5.42	148.7	6.754	0.6013	-270.42	4061.32	0.067
					K=0.50					
T12	78 - 74	7/8	5.66	5.42	74.3	15.972	0.6013	-4754.20	9604.51	0.495
					K=0.25					
T13	74 - 70	7/8	5.66	5.42	148.7	6.754	0.6013	-343.16	4061.32	0.084
					K=0.50					
T14	70 - 66	7/8	5.66	5.42	148.7	6.754	0.6013	-379.69	4061.32	0.093
					K=0.50					
T15	66 - 62	7/8	5.66	5.42	74.3	15.972	0.6013	-5176.02	9604.51	0.539
					K=0.25					
T16	62 - 42	7/8	5.66	5.41	148.5	6.771	0.6013	-3605.98	4071.37	0.886
					K=0.50					
T17	42 - 22	7/8	5.66	5.41	148.5	6.771	0.6013	-1912.45	4071.37	0.470
					K=0.50					
T18	22 - 2	7/8	5.66	5.41	148.5	6.771	0.6013	-3393.49	4071.37	0.833
					K=0.50					

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 lb	Allow. P _a lb	Ratio P/P _a
T1	282 - 262	L2 1/2x2x3/16	4.00	3.83	107.7	11.976	0.8090	-251.46	9688.31	0.026
					K=1.00					
T2	262 - 242	L2 1/2x2x3/16	4.00	3.83	107.7	11.976	0.8090	-394.04	9688.31	0.041
					K=1.00					
T3	242 - 222	L2 1/2x2x3/16	4.00	3.83	107.7	11.976	0.8090	-390.20	9688.31	0.040
					K=1.00					
T4	222 - 202	L2 1/2x2x3/16	4.00	3.83	107.7	11.976	0.8090	-364.65	9688.31	0.038
					K=1.00					
T5	202 - 182	L2 1/2x2x3/16	4.00	3.83	107.7	11.976	0.8090	-737.39	9688.31	0.076

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Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	F _a ksi	A in ²	Actual P lb	Allow. P _a lb	Ratio $\frac{P}{P_u}$
T6	182 - 162	L2 1/2x2x3/16	4.00	3.83	K=1.00 107.7	11.976	0.8090	-959.31	9688.31	0.099
T7	162 - 142	L2 1/2x2x3/16	4.00	3.83	K=1.00 107.7	11.976	0.8090	-899.41	9688.31	0.093
T8	142 - 122	L2 1/2x2x3/16	4.00	3.83	K=1.00 107.7	11.976	0.8090	-1135.91	9688.31	0.117
T9	122 - 102	L2 1/2x2x3/16	4.00	3.83	K=1.00 107.7	11.976	0.8090	-998.86	9688.31	0.103
T10	102 - 82	L2 1/2x2x3/16	4.00	3.83	K=1.00 107.7	11.976	0.8090	-1028.86	9688.31	0.106
T11	82 - 78	L2 1/2x2x3/16	4.00	3.83	K=1.00 107.7	11.976	0.8090	-939.09	9688.31	0.097
T12	78 - 74	L2 1/2x2x3/16	4.00	3.83	K=1.00 107.7	11.976	0.8090	-599.65	9688.31	0.062*
T13	74 - 70	L2 1/2x2x3/16	4.00	3.83	K=1.00 107.7	11.976	0.8090	-956.12	9688.31	0.099
T14	70 - 66	L2 1/2x2x3/16	4.00	3.83	K=1.00 107.7	11.976	0.8090	-758.88	9688.31	0.078*
T15	66 - 62	L2 1/2x2x3/16	4.00	3.83	K=1.00 107.7	11.976	0.8090	-895.26	9688.31	0.092
T16	62 - 42	L2 1/2x2x3/16	4.00	3.83	K=1.00 107.6	11.993	0.8090	-1291.87	9702.60	0.133
T17	42 - 22	L2 1/2x2x3/16	4.00	3.83	K=1.00 107.6	11.993	0.8090	-1318.96	9702.60	0.136
T18	22 - 2	L2 1/2x2x3/16	4.00	3.83	K=1.00 107.6	11.993	0.8090	-1240.38	9702.60	0.128

* DL controls

Top Girt Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	F _a ksi	A in ²	Actual P lb	Allow. P _a lb	Ratio $\frac{P}{P_u}$
T1	282 - 262	L3x3x1/4	4.00	3.83	77.7 K=1.00	15.609	1.4400	-2268.34	22476.90	0.101

Top Guy Pull-Off Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	F _a ksi	A in ²	Actual P lb	Allow. P _a lb	Ratio $\frac{P}{P_u}$
T5	202 - 182	L4x4x3/8	4.00	3.83	58.4 K=1.00	17.585	2.8600	-5822.44	50292.20	0.116
T8	142 - 122	L4x4x3/8	4.00	3.83	58.4 K=1.00	17.585	2.8600	-8389.46	50292.20	0.167

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Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	F _a ksi	A in ²	Actual P lb	Allow. P _a lb	Ratio $\frac{P}{P_a}$
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Bottom Guy Pull-Off Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	F _a ksi	A in ²	Actual P lb	Allow. P _a lb	Ratio $\frac{P}{P_a}$
T5	202 - 182	L4x4x3/8	4.00	3.83	58.4 K=1.00	17.585	2.8600	-3724.13	50292.20	0.074
T8	142 - 122	L4x4x3/8	4.00	3.83	58.4 K=1.00	17.585	2.8600	-4572.58	50292.20	0.091

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 lb	Allow. P _a lb	Ratio $\frac{P}{P_a}$
T5	202 - 182 (698)	L4x4x3/8	7.48	7.40	112.6 K=1.00	11.313	2.8600	-23223.80	32355.50	0.718
T5	202 - 182 (699)	L4x4x3/8	7.48	7.40	112.6 K=1.00	11.313	2.8600	-22775.80	32355.50	0.704
T5	202 - 182 (707)	L4x4x3/8	7.48	7.40	112.6 K=1.00	11.313	2.8600	-22391.80	32355.50	0.692
T5	202 - 182 (708)	L4x4x3/8	7.48	7.40	112.6 K=1.00	11.313	2.8600	-22835.50	32355.50	0.706
T5	202 - 182 (713)	L4x4x3/8	7.48	7.40	112.6 K=1.00	11.313	2.8600	-22876.90	32355.50	0.707
T5	202 - 182 (714)	L4x4x3/8	7.48	7.40	112.6 K=1.00	11.313	2.8600	-22863.90	32355.50	0.707
T8	142 - 122 (722)	L4x4x3/8	7.48	7.40	112.6 K=1.00	11.313	2.8600	-21511.40	32355.50	0.665
T8	142 - 122 (723)	L4x4x3/8	7.48	7.40	112.6 K=1.00	11.313	2.8600	-21741.60	32355.50	0.672
T8	142 - 122 (731)	L4x4x3/8	7.48	7.40	112.6 K=1.00	11.313	2.8600	-20787.30	32355.50	0.642
T8	142 - 122 (732)	L4x4x3/8	7.48	7.40	112.6 K=1.00	11.313	2.8600	-21353.80	32355.50	0.660
T8	142 - 122 (737)	L4x4x3/8	7.48	7.40	112.6 K=1.00	11.313	2.8600	-20501.70	32355.50	0.634
T8	142 - 122 (738)	L4x4x3/8	7.48	7.40	112.6 K=1.00	11.313	2.8600	-21294.60	32355.50	0.658

Tension Checks

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Leg Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	F _a ksi	A in ²	Actual P lb	Allow. P _a lb	Ratio $\frac{P}{P_a}$
T1	282 - 262	2	20.00	2.00	48.0	27.000	3.1416	7073.36	84823.00	0.083
T2	262 - 242	2	20.00	2.00	48.0	27.000	3.1416	7016.19	84823.00	0.083
T3	242 - 222	2	20.00	2.00	48.0	27.000	3.1416	8523.43	84823.00	0.100
T4	222 - 202	2	20.00	2.00	48.0	27.000	3.1416	5132.89	84823.00	0.061
T5	202 - 182	2	20.00	2.00	48.0	27.000	3.1416	10392.90	84823.00	0.123
T6	182 - 162	2	20.00	2.00	48.0	27.000	3.1416	11669.30	84823.00	0.138
T7	162 - 142	2	20.00	2.00	48.0	27.000	3.1416	7378.06	84823.00	0.087
T8	142 - 122	2	20.00	2.00	48.0	27.000	3.1416	11905.70	84823.00	0.140

Diagonal Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	F _a ksi	A in ²	Actual P lb	Allow. P _a lb	Ratio $\frac{P}{P_a}$
T1	282 - 262	7/8	5.66	5.42	297.4	21.600	0.6013	4768.41	12988.50	0.367
T2	262 - 242	7/8	5.66	5.42	297.4	21.600	0.6013	2433.91	12988.50	0.187
T3	242 - 222	7/8	5.66	5.42	297.4	21.600	0.6013	1564.16	12988.50	0.120
T4	222 - 202	SR7/8+L2.5x2.5x0.25	5.66	5.42	106.0	21.600	2.0910	3955.14	45165.60	0.088
T5	202 - 182	SR7/8+L2.5x2.5x0.25	5.66	5.42	106.0	21.600	2.0910	4735.81	45165.60	0.105
T6	182 - 162	7/8	5.66	5.42	297.4	21.600	0.6013	1680.84	12988.50	0.129
T7	162 - 142	7/8	5.66	5.42	297.4	21.600	0.6013	3954.54	12988.50	0.304
T8	142 - 122	SR7/8+L2.5x2.5x0.25	5.66	5.42	106.0	21.600	2.0910	5179.33	45165.60	0.115
T9	122 - 102	SR7/8+L2.5x2.5x0.25	5.66	5.42	106.0	21.600	2.0910	4851.44	45165.60	0.107
T10	102 - 82	7/8	5.66	5.42	297.4	21.600	0.6013	2407.43	12988.50	0.185
T11	82 - 78	7/8	5.66	5.42	297.4	21.600	0.6013	3828.00	12988.50	0.295
T13	74 - 70	7/8	5.66	5.42	297.4	21.600	0.6013	5437.98	12988.50	0.419
T14	70 - 66	7/8	5.66	5.42	297.4	21.600	0.6013	5796.58	12988.50	0.446

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Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	F _a ksi	A in ²	Actual P lb	Allow. P _a lb	Ratio $\frac{P}{P_u}$
T16	62 - 42	7/8	5.66	5.41	297.0	21.600	0.6013	4149.45	12988.50	0.319
T17	42 - 22	7/8	5.66	5.41	297.0	21.600	0.6013	1205.02	12988.50	0.093
T18	22 - 2	7/8	5.66	5.41	297.0	21.600	0.6013	2575.40	12988.50	0.198

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 lb	Allow. P _a lb	Ratio $\frac{P}{P_u}$
T1	282 - 262	L2 1/2x2x3/16	4.00	3.83	76.7	21.600	0.8090	305.27	17474.40	0.017
T2	262 - 242	L2 1/2x2x3/16	4.00	3.83	76.7	21.600	0.8090	394.04	17474.40	0.023
T3	242 - 222	L2 1/2x2x3/16	4.00	3.83	76.7	21.600	0.8090	390.20	17474.40	0.022
T4	222 - 202	L2 1/2x2x3/16	4.00	3.83	76.7	21.600	0.8090	364.65	17474.40	0.021
T5	202 - 182	L2 1/2x2x3/16	4.00	3.83	76.7	21.600	0.8090	737.39	17474.40	0.042
T6	182 - 162	L2 1/2x2x3/16	4.00	3.83	76.7	21.600	0.8090	959.31	17474.40	0.055
T7	162 - 142	L2 1/2x2x3/16	4.00	3.83	76.7	21.600	0.8090	899.41	17474.40	0.051
T8	142 - 122	L2 1/2x2x3/16	4.00	3.83	76.7	21.600	0.8090	1135.91	17474.40	0.065
T9	122 - 102	L2 1/2x2x3/16	4.00	3.83	76.7	21.600	0.8090	998.86	17474.40	0.057
T10	102 - 82	L2 1/2x2x3/16	4.00	3.83	76.7	21.600	0.8090	1028.86	17474.40	0.059
T11	82 - 78	L2 1/2x2x3/16	4.00	3.83	76.7	21.600	0.8090	939.09	17474.40	0.054
T12	78 - 74	L2 1/2x2x3/16	4.00	3.83	76.7	21.600	0.8090	599.65	17474.40	0.034*
T13	74 - 70	L2 1/2x2x3/16	4.00	3.83	76.7	21.600	0.8090	956.12	17474.40	0.055
T14	70 - 66	L2 1/2x2x3/16	4.00	3.83	76.7	21.600	0.8090	758.88	17474.40	0.043*
T15	66 - 62	L2 1/2x2x3/16	4.00	3.83	76.7	21.600	0.8090	895.26	17474.40	0.051
T16	62 - 42	L2 1/2x2x3/16	4.00	3.83	76.6	21.600	0.8090	1291.87	17474.40	0.074
T17	42 - 22	L2 1/2x2x3/16	4.00	3.83	76.6	21.600	0.8090	1318.96	17474.40	0.075
T18	22 - 2	L2 1/2x2x3/16	4.00	3.83	76.6	21.600	0.8090	1240.38	17474.40	0.071

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* DL controls

Top Guy Pull-Off Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	F _a ksi	A in ²	Actual P lb	Allow. P _a lb	Ratio $\frac{P}{P_a}$
T5	202 - 182	L4x4x3/8	4.00	3.83	37.4	21.600	2.8600	19707.50	61776.00	0.319
T8	142 - 122	L4x4x3/8	4.00	3.83	37.4	21.600	2.8600	23464.20	61776.00	0.380

Bottom Guy Pull-Off Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	F _a ksi	A in ²	Actual P lb	Allow. P _a lb	Ratio $\frac{P}{P_a}$
T5	202 - 182	L4x4x3/8	4.00	3.83	37.4	21.600	2.8600	3110.94	61776.00	0.050
T8	142 - 122	L4x4x3/8	4.00	3.83	37.4	21.600	2.8600	10674.60	61776.00	0.173

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 lb	Allow. P _a lb	Ratio $\frac{P}{P_a}$
T5	202 - 182 (693)	L4x4x3/8	7.48	7.40	72.2	21.600	2.8600	22663.90	61776.00	0.367
T5	202 - 182 (694)	L4x4x3/8	7.48	7.40	72.2	21.600	2.8600	23722.60	61776.00	0.384
T5	202 - 182 (705)	L4x4x3/8	7.48	7.40	72.2	21.600	2.8600	22736.90	61776.00	0.368
T5	202 - 182 (706)	L4x4x3/8	7.48	7.40	72.2	21.600	2.8600	22639.40	61776.00	0.366
T5	202 - 182 (711)	L4x4x3/8	7.48	7.40	72.2	21.600	2.8600	22470.90	61776.00	0.364
T5	202 - 182 (712)	L4x4x3/8	7.48	7.40	72.2	21.600	2.8600	23448.00	61776.00	0.380
T8	142 - 122 (717)	L4x4x3/8	7.48	7.40	72.2	21.600	2.8600	21285.10	61776.00	0.345
T8	142 - 122 (718)	L4x4x3/8	7.48	7.40	72.2	21.600	2.8600	21777.30	61776.00	0.353
T8	142 - 122 (729)	L4x4x3/8	7.48	7.40	72.2	21.600	2.8600	20677.20	61776.00	0.335
T8	142 - 122 (730)	L4x4x3/8	7.48	7.40	72.2	21.600	2.8600	20732.90	61776.00	0.336

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Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	F _a ksi	A in ²	Actual P lb	Allow. P _a lb	Ratio P/P _a
T8	142 - 122 (735)	L4x4x3/8	7.48	7.40	72.2	21.600	2.8600	20824.60	61776.00	0.337
T8	142 - 122 (736)	L4x4x3/8	7.48	7.40	72.2	21.600	2.8600	21303.50	61776.00	0.345

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 lb	Allow. P _a lb	Ratio P/P _a
T5	202 - 182 (698)	L4x4x3/8	7.48	7.40	72.2	21.600	2.8600	560.74	61776.00	0.009
T5	202 - 182 (699)	L4x4x3/8	7.48	7.40	72.2	21.600	2.8600	567.84	61776.00	0.009
T5	202 - 182 (707)	L4x4x3/8	7.48	7.40	72.2	21.600	2.8600	789.81	61776.00	0.013
T5	202 - 182 (708)	L4x4x3/8	7.48	7.40	72.2	21.600	2.8600	957.43	61776.00	0.015
T5	202 - 182 (713)	L4x4x3/8	7.48	7.40	72.2	21.600	2.8600	763.93	61776.00	0.012
T5	202 - 182 (714)	L4x4x3/8	7.48	7.40	72.2	21.600	2.8600	941.30	61776.00	0.015
T8	142 - 122 (722)	L4x4x3/8	7.48	7.40	72.2	21.600	2.8600	5059.87	61776.00	0.082
T8	142 - 122 (723)	L4x4x3/8	7.48	7.40	72.2	21.600	2.8600	5186.03	61776.00	0.084
T8	142 - 122 (731)	L4x4x3/8	7.48	7.40	72.2	21.600	2.8600	5534.79	61776.00	0.090
T8	142 - 122 (732)	L4x4x3/8	7.48	7.40	72.2	21.600	2.8600	5607.39	61776.00	0.091
T8	142 - 122 (737)	L4x4x3/8	7.48	7.40	72.2	21.600	2.8600	4998.60	61776.00	0.081
T8	142 - 122 (738)	L4x4x3/8	7.48	7.40	72.2	21.600	2.8600	5191.78	61776.00	0.084

Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P lb	SF*P _{allow} lb	% Capacity	Pass Fail
T1	282 - 262	Leg	2	3	-14517.80	94341.21	15.4	Pass
T2	262 - 242	Leg	2	52	-22750.00	94341.21	24.1	Pass
T3	242 - 222	Leg	2	100	-22528.10	94341.21	23.9	Pass
T4	222 - 202	Leg	2	148	-21053.20	94341.21	22.3	Pass
T5	202 - 182	Leg	2	198	-42573.10	94341.21	45.1	Pass
T6	182 - 162	Leg	2	246	-55385.90	94341.21	58.7	Pass
T7	162 - 142	Leg	2	294	-51927.40	94341.21	55.0	Pass
T8	142 - 122	Leg	2	342	-65582.00	94341.21	69.5	Pass
T9	122 - 102	Leg	2	390	-57669.10	94341.21	61.1	Pass

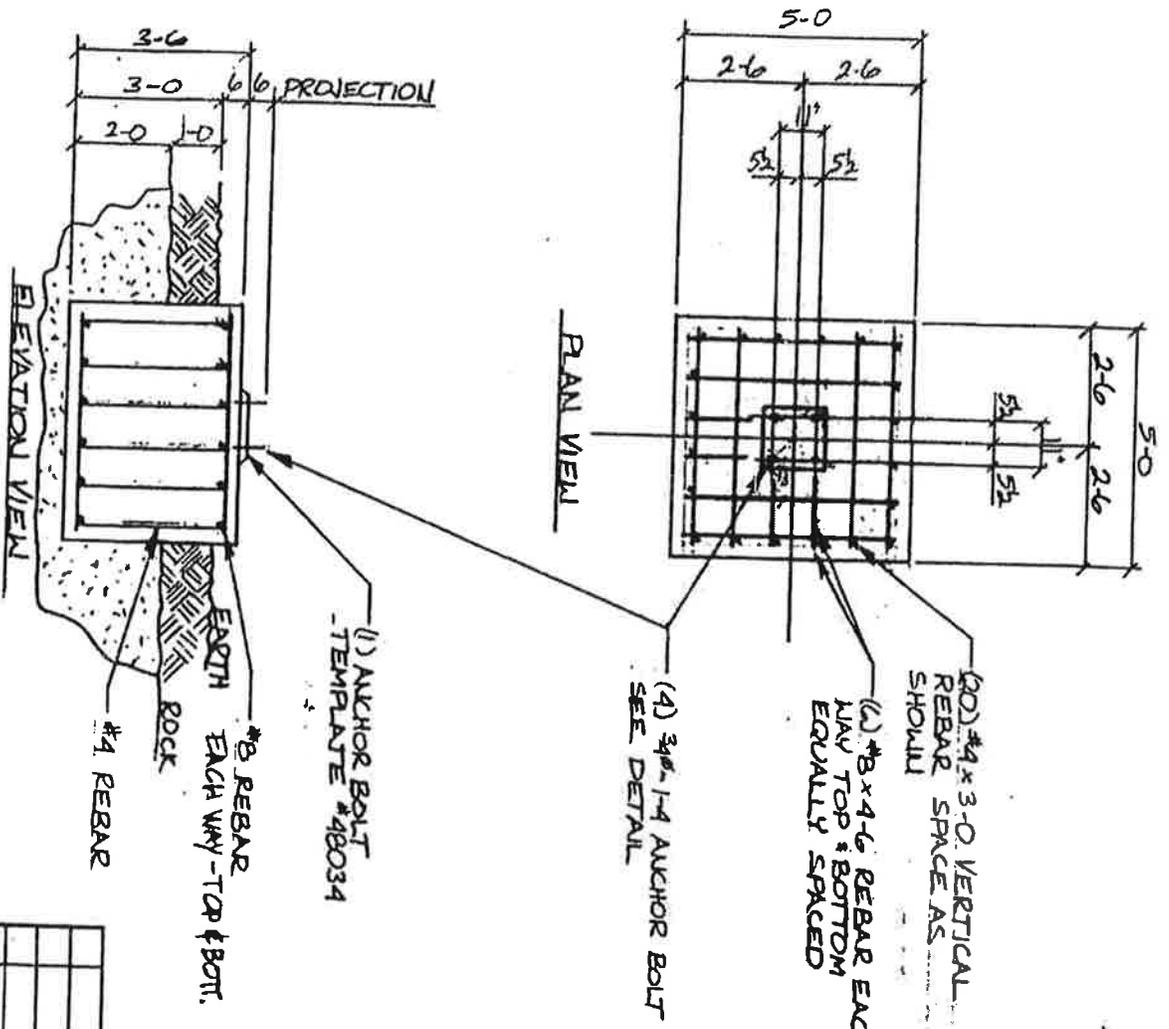
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Section No.	Elevation ft	Component Type	Size	Critical Element	P lb	SF*P _{allow} lb	% Capacity	Pass Fail
T10	102 - 82	Leg	2	436	-59401.40	94341.21	63.0	Pass
T11	82 - 78	Leg	2	486	-54218.40	94341.21	57.5	Pass
T12	78 - 74	Leg	2	496	-34621.00	75128.80	46.1	Pass
T13	74 - 70	Leg	2	510	-55201.40	94341.21	58.5	Pass
T14	70 - 66	Leg	2	522	-43813.70	70773.60	61.9	Pass
T15	66 - 62	Leg	2	534	-51688.00	99196.13	52.1	Pass
T16	62 - 42	Leg	2"SR w 3rd pipe	544	-74585.90	109503.55	68.1	Pass
T17	42 - 22	Leg	2"SR w 3rd pipe	592	-76150.30	109503.55	69.5	Pass
T18	22 - 2	Leg	2"SR w 3rd pipe	640	-71613.40	109503.55	65.4	Pass
T1	282 - 262	Diagonal	7/8	37	-4129.71	5413.74	76.3	Pass
T2	262 - 242	Diagonal	7/8	86	-2025.78	5413.74	37.4	Pass
T3	242 - 222	Diagonal	7/8	106	-1803.62	5413.74	33.3	Pass
T4	222 - 202	Diagonal	SR7/8+L2.5x2.5x0.25	156	-3924.98	50397.26	7.8	Pass
T5	202 - 182	Diagonal	SR7/8+L2.5x2.5x0.25	230	-9790.53	50397.26	19.4	Pass
T6	182 - 162	Diagonal	7/8	283	-1682.32	5413.74	31.1	Pass
T7	162 - 142	Diagonal	7/8	300	-4068.51	5413.74	75.2	Pass
T8	142 - 122	Diagonal	SR7/8+L2.5x2.5x0.25	356	-12388.70	50397.26	24.6	Pass
T9	122 - 102	Diagonal	SR7/8+L2.5x2.5x0.25	418	-4637.78	50397.26	9.2	Pass
T10	102 - 82	Diagonal	7/8	443	-3257.37	5413.74	60.2	Pass
T11	82 - 78	Diagonal	7/8	492	3828.00	17313.67	22.1	Pass
T12	78 - 74	Diagonal	7/8	503	-4754.20	12802.81	37.1	Pass
T13	74 - 70	Diagonal	7/8	516	5437.98	17313.67	31.4	Pass
T14	70 - 66	Diagonal	7/8	526	5796.58	17313.67	33.5	Pass
T15	66 - 62	Diagonal	7/8	537	-5176.02	12802.81	40.4	Pass
T16	62 - 42	Diagonal	7/8	574	-3605.98	5427.14	66.4	Pass
T17	42 - 22	Diagonal	7/8	600	-1912.45	5427.14	35.2	Pass
T18	22 - 2	Diagonal	7/8	648	-3393.49	5427.14	62.5	Pass
T1	282 - 262	Secondary Horizontal	L2 1/2x2x3/16	15	-251.46	12914.52	1.9	Pass
T2	262 - 242	Secondary Horizontal	L2 1/2x2x3/16	61	-394.04	12914.52	3.1	Pass
T3	242 - 222	Secondary Horizontal	L2 1/2x2x3/16	109	-390.20	12914.52	3.0	Pass
T4	222 - 202	Secondary Horizontal	L2 1/2x2x3/16	157	-364.65	12914.52	2.8	Pass
T5	202 - 182	Secondary Horizontal	L2 1/2x2x3/16	215	-737.39	12914.52	5.7	Pass
T6	182 - 162	Secondary Horizontal	L2 1/2x2x3/16	254	-959.31	12914.52	7.4	Pass
T7	162 - 142	Secondary Horizontal	L2 1/2x2x3/16	302	-899.41	12914.52	7.0	Pass
T8	142 - 122	Secondary Horizontal	L2 1/2x2x3/16	350	-1135.91	12914.52	8.8	Pass
T9	122 - 102	Secondary Horizontal	L2 1/2x2x3/16	407	-998.86	12914.52	7.7	Pass
T10	102 - 82	Secondary Horizontal	L2 1/2x2x3/16	454	-1028.86	12914.52	8.0	Pass
T11	82 - 78	Secondary Horizontal	L2 1/2x2x3/16	494	-939.09	12914.52	7.3	Pass
T12	78 - 74	Secondary Horizontal	L2 1/2x2x3/16	505	-599.65	9688.31	6.2	Pass
T13	74 - 70	Secondary Horizontal	L2 1/2x2x3/16	519	-956.12	12914.52	7.4	Pass
T14	70 - 66	Secondary Horizontal	L2 1/2x2x3/16	531	-758.88	9688.31	7.8	Pass
T15	66 - 62	Secondary Horizontal	L2 1/2x2x3/16	542	-895.26	12914.52	6.9	Pass
T16	62 - 42	Secondary Horizontal	L2 1/2x2x3/16	555	-1291.87	12933.56	10.0	Pass
T17	42 - 22	Secondary Horizontal	L2 1/2x2x3/16	601	-1318.96	12933.56	10.2	Pass
T18	22 - 2	Secondary Horizontal	L2 1/2x2x3/16	649	-1240.38	12933.56	9.6	Pass
T1	282 - 262	Top Girt	L3x3x1/4	4	-2268.34	29961.71	7.6	Pass
T1	282 - 262	Guy A@270	3/4	690	17941.00	29150.00	61.5	Pass
T5	202 - 182	Guy A@196	11/16	710	17839.30	25000.00	71.4	Pass
T8	142 - 122	Guy A@128	11/16	734	17639.40	25000.00	70.6	Pass
T14	70 - 66	Guy A@70	11/16	741	16370.40	25000.00	65.5	Pass
T1	282 - 262	Guy B@270	3/4	689	18083.30	29150.00	62.0	Pass
T5	202 - 182	Guy B@196	11/16	704	17905.00	25000.00	71.6	Pass
T8	142 - 122	Guy B@128	11/16	728	17240.10	25000.00	69.0	Pass
T14	70 - 66	Guy B@70	11/16	740	16104.50	25000.00	64.4	Pass
T1	282 - 262	Guy C@270	3/4	688	18346.40	29150.00	62.9	Pass
T5	202 - 182	Guy C@196	11/16	691	18268.80	25000.00	73.1	Pass
T8	142 - 122	Guy C@128	11/16	715	17589.80	25000.00	70.4	Pass
T14	70 - 66	Guy C@70	11/16	739	16475.20	25000.00	65.9	Pass
T5	202 - 182	Top Guy	L4x4x3/8	696	19707.50	82347.40	23.9	Pass
T8	142 - 122	Pull-Off@196 Top Guy	L4x4x3/8	720	23464.20	82347.40	28.5	Pass

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Section No.	Elevation ft	Component Type	Size	Critical Element	P lb	SF*P _{allow} lb	% Capacity	Pass Fail	
T5	202 - 182	Pull-Off@128 Bottom Guy	L4x4x3/8	700	-3724,13	67039.50	5.6	Pass	
T8	142 - 122	Pull-Off@196 Bottom Guy	L4x4x3/8	726	10674.60	82347.40	13.0	Pass	
T5	202 - 182	Pull-Off@128 Torque Arm Top@196	L4x4x3/8	694	23722.60	82347.40	28.8	Pass	
T8	142 - 122	Torque Arm Top@128	L4x4x3/8	718	21777.30	82347.40	26.4	Pass	
T5	202 - 182	Torque Arm Bottom@196	L4x4x3/8	698	-23223.80	43129.88	53.8	Pass	
T8	142 - 122	Torque Arm Bottom@128	L4x4x3/8	723	-21741.60	43129.88	50.4	Pass	
							Summary		
							Leg (T17)	69.5	Pass
							Diagonal (T1)	76.3	Pass
							Secondary Horizontal (T17)	10.2	Pass
							Top Girt (T1)	7.6	Pass
							Guy A (T5)	71.4	Pass
							Guy B (T5)	71.6	Pass
							Guy C (T5)	73.1	Pass
							Top Guy Pull-Off (T8)	28.5	Pass
							Bottom Guy Pull-Off (T8)	13.0	Pass
							Torque Arm Top (T5)	28.8	Pass
							Torque Arm Bottom (T5)	53.8	Pass
							RATING =	76.3	Pass

FOUNDATION ANALYSIS – TIA-222-F



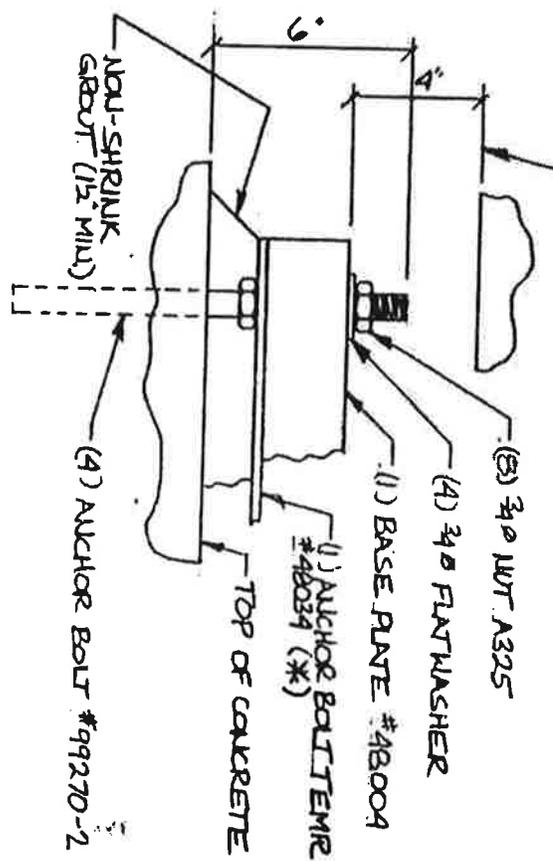
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EXISTING TOWER BASE

NOTES:
 1. TOTAL CONCRETE REQD = 3.2 CU. YDS.
 2. SEE Dwg 4881067-E5 FOR REBAR LIST AND FOUNDATION NOTES.

(*) TEMPLATE NOTE:

- ANCHOR BOLT TEMPLATE MAY BE REMOVED AFTER FOUNDATION HAS SET-UP.
- BASE PLATE CAUTION BE LEVELLED & GRADED.
- USE FLAT WASHER IN PLACE OF TEMPLATE.



TYPICAL ANCHOR BOLT DETAIL (*)

REV.	DATE	BY	CHKD.	APPR.	DESCRIPTION
1	1/4/91	JSL			PROPOSED ANCHOR BOLT DETAIL
0	12-19-90	JSL			EXISTING TOWER BASE

 LELANC L & R COMMUNICATIONS, LIMITED	MOUNTAIN TOP ENTERPRISES TOWER FOUNDATION BOLTON, CT
SCALE	DRWG. NO.
NTS	4881067-E3
ISSUE	1

FILE NO.
90-41-053

92-43-023

Job Bolton, Ct Tower Mod.ifications

Description Foundation Analysis w/ TIA-F
Standard

Project No. TWM-005/004 Rev.1

Computed by MCD

Checked by _____

Page _____ of _____

Sheet _____ of _____

Date 4/5/2016

Date _____

Reference

Check - Foundation Bearing

$$\gamma_{\text{concrete}} = \underline{150 \text{ pcf}}$$

$$\text{Foundation width of Base} = \underline{5'-0''}$$

$$\text{Foundation thickness of Base} = \underline{3'-6''}$$

$$\text{Concrete (DL) of Foundation} = 5' \times 5' \times 3.5' \times 150 \text{ pcf} = \underline{13,125 \text{ lbf}}$$

$$\text{Compression of Loaded tower} = \underline{166,472 \text{ lbf}}$$

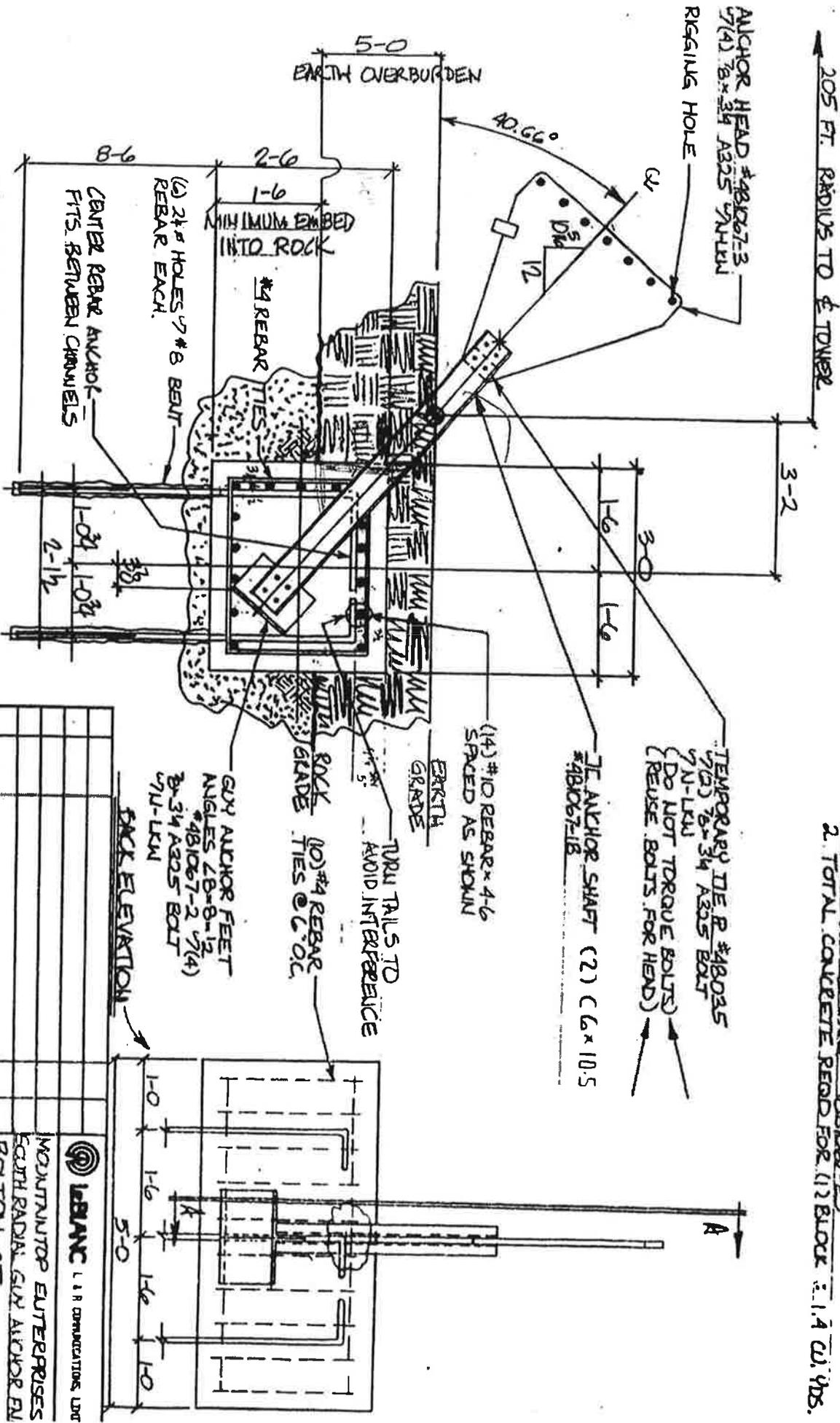
$$\text{Total Dead Load Compressive force} = \underline{166,472 \text{ lbf}} + 13,125 \text{ lbf} = \underline{179,597 \text{ lbf}}$$

$$\text{Allowable Bearing Pressure} = 10 \text{ TSF} = 20,000 \text{ lb/sf (Geotech Page 1)}$$

$$\text{Bearing Capacity} = \frac{P(\text{tower} + \text{foundation})}{A_{\text{foundation}}} = \frac{179,597 \text{ lbf}}{5' \times 5'} = 7184 \text{ psf}$$

$$\text{TIA - Bearing Capacity} = \frac{7184 \text{ psf}}{20,000 \text{ psf}} = \underline{\underline{35.9\%}}$$

NOTES
 1. FOR REBAR LIST AND TYPICAL EQUIPMENT NOTES SEE PAGE #48B1067-E5
 2. TOTAL CONCRETE REQD FOR (1) BLOCK & (1) 4" W. YDS.



SECTION A-A

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REV.	DATE	DRAWN BY	CHKD. BY	SCALE	DRAWING NO.	ISS
0	2-29-92	JS	JS		48B1067-E4B	0

LEBANC L & R COMMUNICATIONS, LTD.
 MOUNTAIN TOP ENTERPRISES
 SOUTH RADAR GUY ANCHOR AND
 BOLTON, CT

EXISTING SOUTH GUY ANCHOR

Job Bolton, C++ tower Modifications
 Description Foundation Analysis w/ T&E-F
 Standard _____

Page _____ of _____
 Project No. TMM-005/-004 Rev 1 Sheet _____ of _____
 Computed by MCD Date 4/5/2016
 Checked by _____ Date _____

Reference

Check GUYED Anchor:

- Existing foundation anchored to Rock, therefore, check anchor connected to Rock capacities

$$P_{allow} = L_b \times D_{hole} \times (f_w) \times \pi$$

$$= 102.0 \text{ in} \times 2.0 \text{ in} \times 25 \text{ PSI} \times \pi$$

$$= 16,022 \text{ lbf/anchor}$$

$T_{allow} = \text{working bond stress} = 50 \text{ PSI} = 25 \text{ PSI}$
 (1/2 ultimate strength) \leftarrow F.S.

$$L_b = 8' - 6" = 102.0 \text{ in}$$

$$D_{hole} = 2.0 \text{ in}$$

$$\# \text{ anchors} = 6 = 16,022 \times 6 = \underline{96,132.7 \text{ lbf}}$$

$$\text{Anchor (maximum) uplift force (MAX)} = \underline{63,417 \text{ lbf}}$$

$$\text{Uplift Capacity Check} = \frac{63,417}{96,133} = 66\% \rightarrow \text{OK}$$

Shear resistance (Shear Bear: Ag to rock)

$$h_{\text{rock}} \times \text{width} \times \text{Surface Area Pressure} = 1' - 6" \times 5' \times 2000 \text{ lbf} \times \frac{1}{1 + \text{FS}} = \frac{75,000 \text{ lbf}}{\text{Allow}}$$

$$\text{Apply surface friction to shear resistance} \rightarrow \frac{75,000}{0.8} = \underline{93,750 \text{ lbf}}$$

$$\text{maximum Anchor shear} = 79,302 \text{ lbf (MAX)}$$

$$\text{Shear capacity check} = \frac{79,302 \text{ lbf}}{93,750 \text{ lbf}} = 84.6\%$$

Note: Above calculation is Not considering the Steel Anchor Capacity against Shear considering Steel Reinforcement.

Job Bolted tower Modifications
 Description Foundation Analysis w/ TIAF Standard

Project No. TUM-005/cor Rev 1 Page ____ of ____
 Computed by MCD Sheet ____ of ____
 Date 4/5/2016
 Checked by _____ Date _____

Reference

Check Tension Anchor Steel

$$(6) \text{ 1" diameter } \rightarrow \frac{\pi}{4}(1)^2 = 0.78543 \times 40 = 31,437 \times 6 = 188,623 \text{ lbf}$$

$$\frac{188,623}{1.67} = 112,948 \text{ lbf}$$

$\Omega = 1.67$
 (OK) Visual inspection

Check Anchor shaft \rightarrow (2) (6x10.5)

$$\text{Area} = 2 \times 3.07 \text{ in}^2 = 6.14 \text{ in}^2 \quad F_y \text{ steel} = 36 \text{ ksi} \quad \Omega = 1.67$$

$$\text{Steel Resistance} = \frac{6.14 \times 36,000}{1.67} = 132,359 \text{ lbf}$$

$$\text{Largest "Pull" force} = 101,460 \text{ lbf}$$

$$\text{Anchor shaft capacity} = \frac{101,460}{132,359} = 76.7\% \quad (\text{OK})$$

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860-529-8882
Fax: 860-529-3991

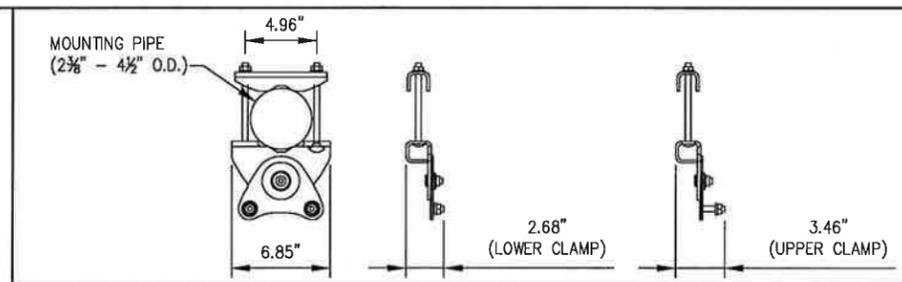
RF SYSTEM SCHEDULE (701D_WoutU21 CONFIGURATION)

SECTOR	TECHNOLOGY	ANTENNA PORT	BAND	ANTENNA MODEL #	VENDOR	QTY (REMOVED)	QTY (NEW)	AZIMUTH	M-TILT	E-TILT	ANTENNA CENTERLINE	TMA MODEL #	VENDOR	RRU MODEL #	VENDOR	CABLE LENGTH	CABLE DIAMETER	CABLE QTY.	CABLE TYPE	CABLE MODEL #	VENDOR	CABLE TAGGING	COLOR CODING	JUMPER TYPE	JUMPER TAGGING	COLOR CODING
A	LTE	TBD	B4A	AIR21 B4A/B2P	ERICSSON	0	1	30°	0°	2'	180°-0°	-	-	-	-	TBD	-	-	HYBRID	MASTERLINE EXTREME HYBRID (9/18)	ERICSSON	FIBER 1	0	FIBER	---	-
	UMTS	TBD	B2P																(PROPOSED) RRUS 11 B2	ERICSSON	(ANTENNA CONNECTED VIA PROPOSED PROPOSED CABLE)	FIBER	---	-		
	LTE 700	TBD	B12P	LNX-6515DS-VTM	COMMSCOPE	1	1	30°	0°	2'	180°-0°	-	-	(PROPOSED) RRUS 11 B12	ERICSSON	(ANTENNA CONNECTED VIA PROPOSED PROPOSED CABLE)	FIBER	---	-							
B	LTE	TBD	B4A	AIR21 B4A/B2P	ERICSSON	0	1	150°	0°	2'	180°-0°	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	UMTS	TBD	B2P																							(PROPOSED) RRUS 11 B2
	LTE 700	TBD	B12P	LNX-6515DS-VTM	COMMSCOPE	1	1	150°	0°	2'	180°-0°	-	-	(PROPOSED) RRUS 11 B12	ERICSSON	(ANTENNA CONNECTED VIA PROPOSED PROPOSED CABLE)	FIBER	---	-							

KEY

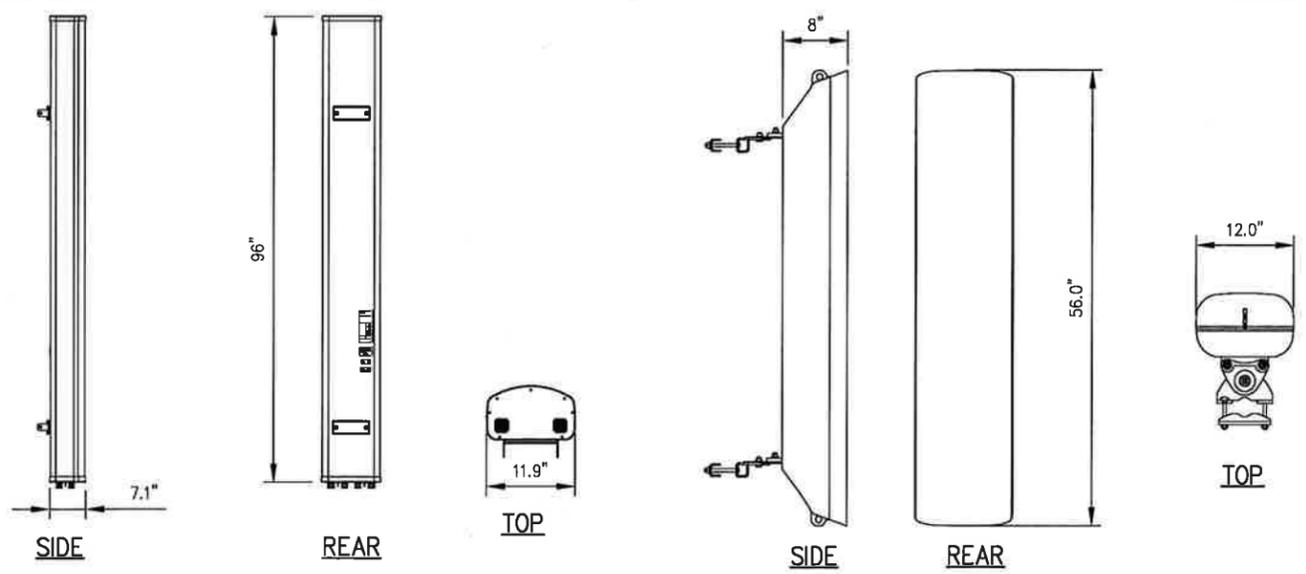
EXISTING	R - RED - GSM
PROPOSED	G - GREEN - UMTS 1900
FIBER CONNECTION	B - BLUE - UMTS AWS
	Y - YELLOW - LTE
	O - ORANGE - FIBER CABLE

1 RF SCHEDULE
 NOT TO SCALE

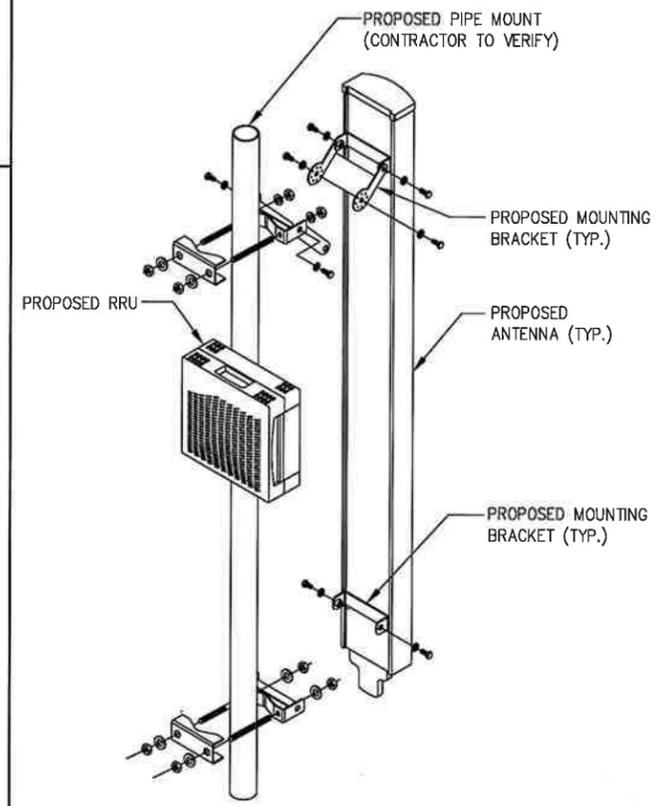


COMMSCOPE MODEL NO.: LNX-6515DS-VTM
 RADOME MATERIAL: FIBERGLASS, UV RESISTANT
 RADOME COLOR: LIGHT GRAY
 DIMENSIONS, HxWxD: 96"x11.9"x7.1" (2438 x 301 x 181 mm)
 WEIGHT, W/ PRE-MOUNTED BRACKETS: 43.7 LBS (19.8 kg)
 CONNECTOR: 7-16 DIN FEMALE

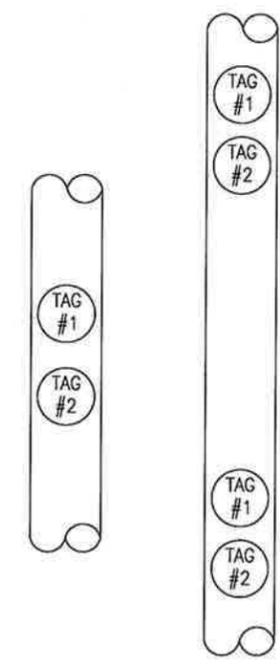
ERICSSON MODEL NO.: AIR21 B4A/B2P
 RADOME MATERIAL: FIBERGLASS, UV RESISTANT
 RADOME COLOR: LIGHT GRAY
 DIMENSIONS, HxWxD: 54"x12"x8"
 WEIGHT, W/ PRE-MOUNTED BRACKETS: 90LBS
 CONNECTOR: (2) 7-16 DIN FEMALE



2 ANTENNA DETAIL
 NOT TO SCALE



3 MOUNTING DETAIL
 NOT TO SCALE



- METALLIC TAG NOTES:**
- TWO METALLIC TAGS SHALL BE ATTACHED AT EACH END OF EVERY CABLE LONGER THAN (3) THREE FEET.
 - CABLES LESS THAN (3) THREE FEET WILL HAVE TWO METALLIC TAGS ATTACHED AT THE CENTER OF THE CABLE.
 - TAGS WILL BE FASTENED WITH STAINLESS STEEL ZIP TIES APPROPRIATE FOR CABLE DIAMETER.
 - STANDARDIZED METALLIC TAG KITS WILL BE ASSEMBLED WITH TAGS ALREADY ENGRAVED TO ACCOMMODATE ALL CONFIGURATIONS.

4 METALLIC TAG DETAIL
 NOT TO SCALE

SUBMITTALS

DATE	DESCRIPTION	REVISION
2/19/18	FOR REVIEW	A
4/27/18	FOR PERMIT	B

DEPT.	DATE	APP'D	REVISIONS
RFE			
RF MAN.			
ZONING			
OPS			
CONSTR.			
SITE AC.			

PROJECT NO: 428-000
 DRAWN BY: JLM
 CHECKED BY: ASW



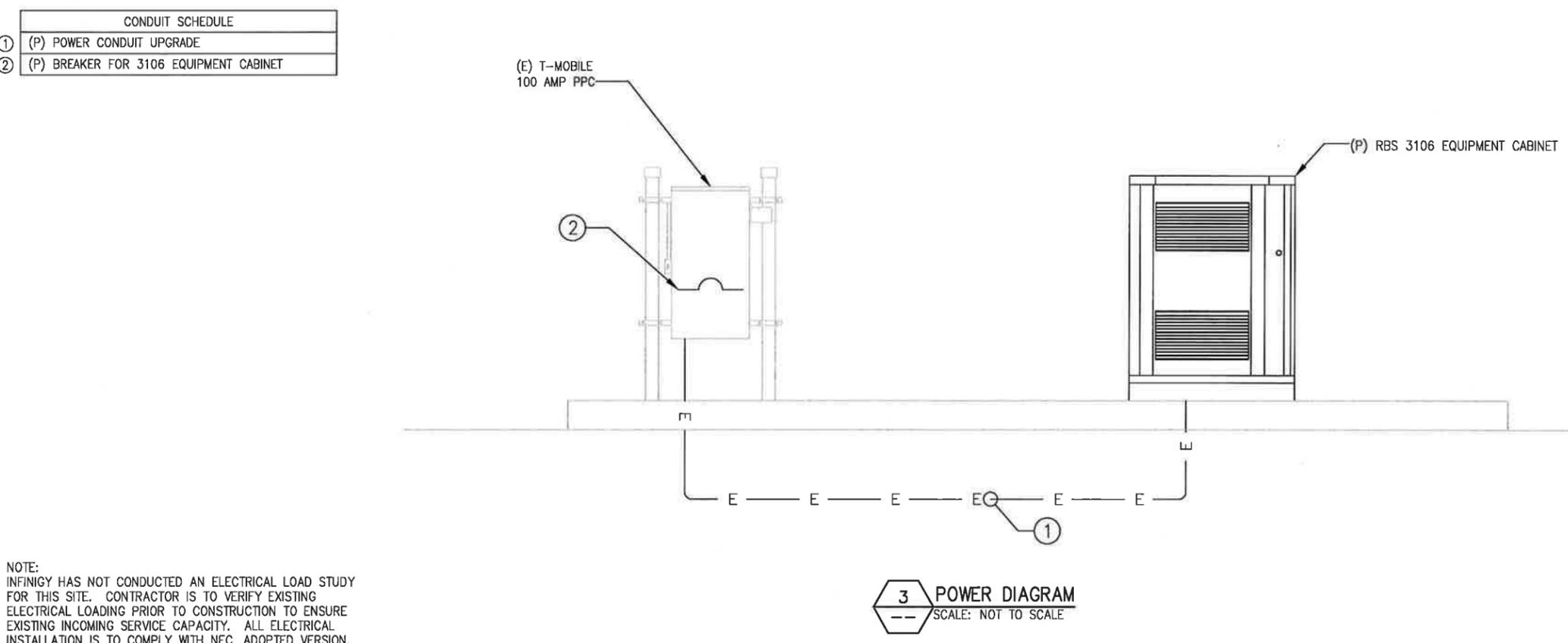
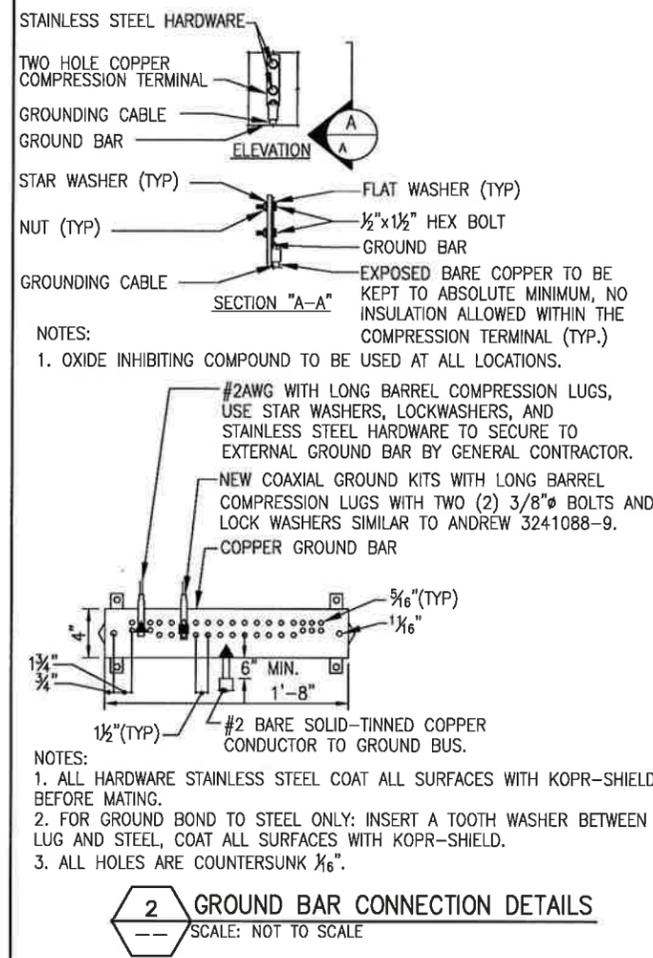
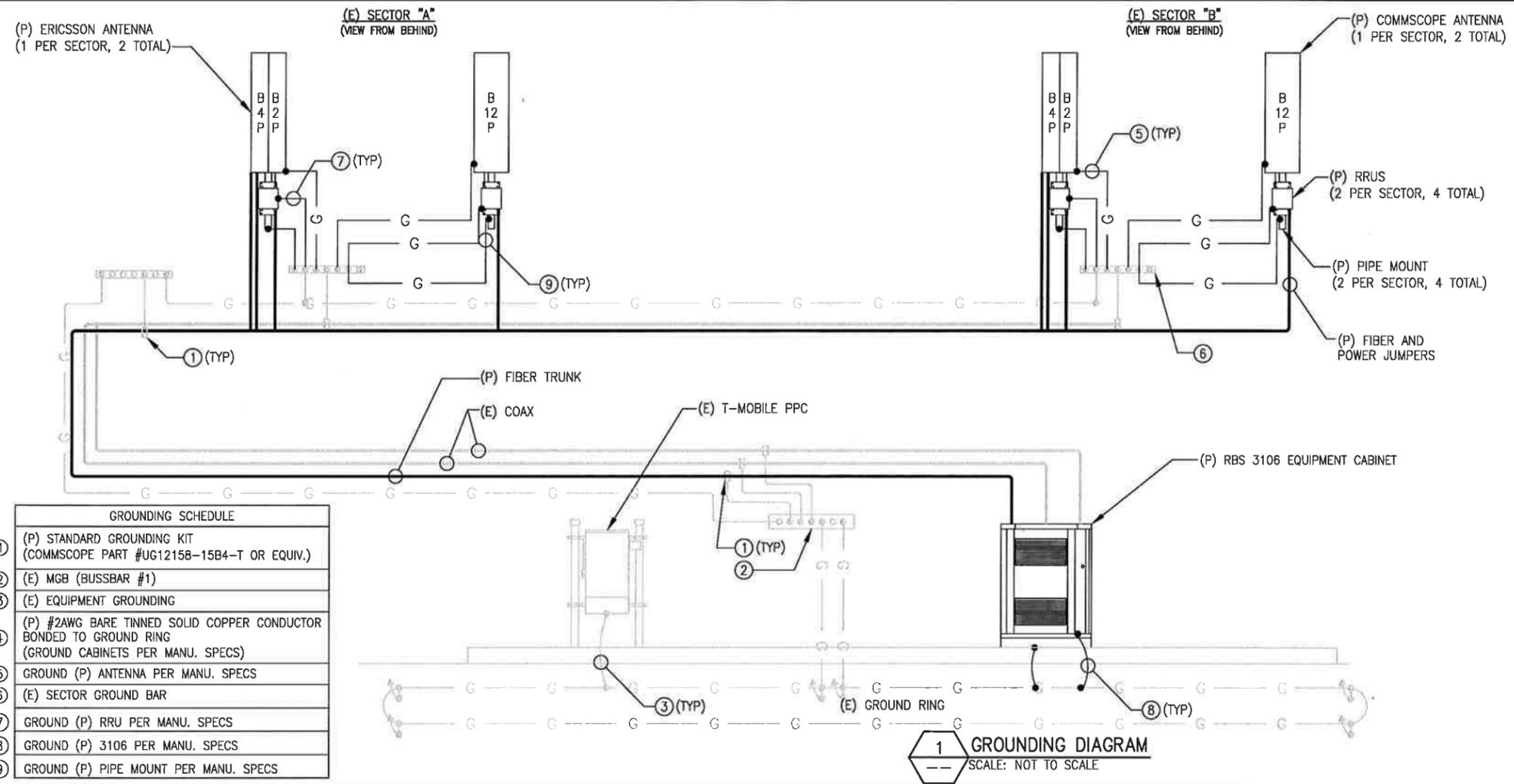
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SITE NUMBER: CT11180C
SITE NAME: BOLTON CT...1
 130 VERNON ROAD
 BOLTON, CT 06043

SHEET TITLE
ANTENNA DETAIL & RF SCHEDULE

SHEET NUMBER
C-3
 SHEET 4 OF 8 SHEETS



CONTRACTOR NOTE:
 CONTRACTOR TO VERIFY THAT THE EXISTING CONDUITS AND WIRE SIZES ARE ADEQUATE FOR THE PROPOSED LOADING IN ACCORDANCE WITH NEC AND INCLUDE ELECTRICAL UPGRADES IN THE SCOPE OF WORK AS REQUIRED.



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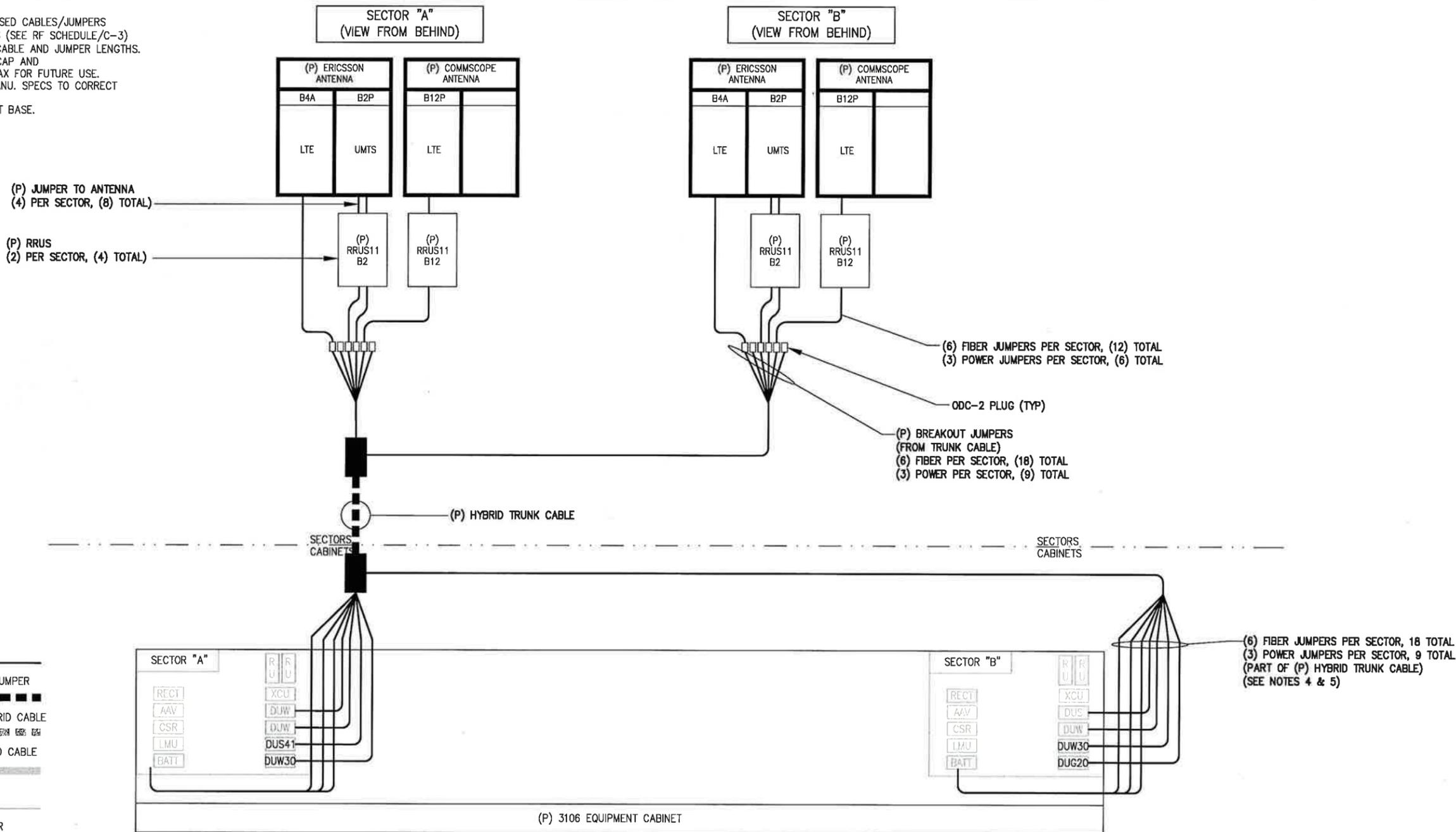
SITE NUMBER:
 CT11180C
SITE NAME:
 BOLTON CT_1
 130 VERNON ROAD
 BOLTON, CT 06043

SHEET TITLE
GROUNDING & POWER DIAGRAMS

SHEET NUMBER
E-1

NOTE:
 INFINIGY HAS NOT CONDUCTED AN ELECTRICAL LOAD STUDY FOR THIS SITE. CONTRACTOR IS TO VERIFY EXISTING ELECTRICAL LOADING PRIOR TO CONSTRUCTION TO ENSURE EXISTING INCOMING SERVICE CAPACITY. ALL ELECTRICAL INSTALLATION IS TO COMPLY WITH NEC, ADOPTED VERSION.

- NOTES:**
1. TAG ALL EXISTING AND PROPOSED CABLES/JUMPERS PER METRO PCS SPECIFICATIONS (SEE RF SCHEDULE/C-3)
 2. SEE RF SCHEDULE/C-3 FOR CABLE AND JUMPER LENGTHS.
 3. IF NEW GPS ADDED TO SITE, CAP AND WEATHERPROOF ANY UNUSED COAX FOR FUTURE USE.
 4. TRIM POWER JUMPERS PER MANU. SPECS TO CORRECT LENGTH FOR CONNECTION.
 5. COIL EXCESS FIBER IN CABINET BASE.



- PROPOSED FIBER/POWER JUMPER
- PROPOSED FIBER/POWER HYBRID CABLE
- EXISTING FIBER/POWER HYBRID CABLE
- EXISTING COAX CABLE
- EXISTING COAX JUMPER

SUBMITTALS

DATE	DESCRIPTION	REVISION
2/18/15	FOR REVIEW	A
4/27/15	FOR PERMIT	B

DEPT.	DATE	APP'D	REVISIONS
RFE			
RF MAN.			
ZONING			
OPS			
CONSTR.			
SITE AC.			

PROJECT NO: 428-000
 DRAWN BY: JLM
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SITE NUMBER: CT11180C
 SITE NAME: BOLTON CT...1
 130 VERNON ROAD
 BOLTON, CT 06043

SHEET TITLE
COAX/FIBER PLUMBING DIAGRAM

SHEET NUMBER
E-2
 SHEET 7 OF 8 SHEETS

1 701D_WoutU21 CONFIGURATION COAX/FIBER PLUMBING DIAGRAM
 NOT TO SCALE

