

10 INDUSTRIAL AVE, SUITE 3 MAHWAH NJ 07430

PHONE: 201.684.0055 FAX: 201.684.0066

May 2, 2016

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

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.

Kyle Richers 10 Industrial Ave Mahwah, NJ 07430 908-447-4716 krichers@transcendwireless.com 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 ox 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 (μ W/cm2). The number of μ W/cm² calculated at each sample point is called the power density. The exposure limit for power density varies depending upon the frequencies being utilized. Wireless Carriers and Paging Services use different frequency bands each with different exposure limits, therefore it is necessary to report results and limits in terms of percent MPE rather than power density.

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

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

Public exposure to radio frequencies is regulated and enforced in units of microwatts per square centimeter $(\mu W/cm^2)$. The general population exposure limit for both the PCS, 700Mhz and AWS bands is 1000 $\mu W/cm^2$. Because each carrier will be using different frequency bands, and each frequency band has different exposure limits, it is necessary to report percent of MPE rather than power density.

<u>Occupational/controlled exposure</u> 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.

Sector:	А	Sector:	В	Sector:	С
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

T-Mobile Site Inventory and Power Data

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`



Submitted to Transcend Wireless 10 Industrial Avenue Suite 3 Mahwah, New Jersey 07430 Submitted by AECOM 500 Enterprise Drive, Suite 3B Rocky Hill, CT 06067 April 13, 2016

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

•••**T**••Mobile•

Site ID : Site Address:

CT11180C 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.

Proposed Antenna	Carrier	Antenna Center Elevation
<u>Remove:</u> (2) RR90_17_02DP EMS Panel Antennas (2) TMA Units	T-Mobile (existing)	@ EL. 180'
Install: (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	T-Mobile (Proposed)	@ EL. 180''

The proposed T-Mobile antenna upgrade is as follows:

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.
- 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 (\mathbf{i}) * Richard A. Sambor, P.E. BI CENSE 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)	See Below Mounts	180'	(1) 1-1/4" Fiber Optic Cable
See Above Inventory	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

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

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

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.
- 2. 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.
- 4. CONTRACTOR SHALL FURNISH ALL MATERIAL, LABOR AND EQUIPMENT TO COMPLETE THE WORK AND FURNISH A COMPLETED JOB ALL IN ACCORDANCE WITH LOCAL AND STATE GOVERNING AUTHORITIES AND OTHER AUTHORITIES HAVING LAWFUL JURISDICTION OVER THE WORK.
- 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.
- 6. 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.
- 7. 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.
- 8. 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.
- 10, 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,
- 11. 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,
- 12, 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.
- 13. THE CONTRACTOR SHALL VERIFY REQUIRED CLEARANCES INCLUDING BUT NOT LIMITED TO EXISTING BUILDINGS, EQUIPMENT PADS AND SHELTERS PRIOR TO COMMENING WORK.
- 14. 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	LEGS	A 139-GR 45
STRUCTURAL STEEL	DIAGONAL & HORIZONTAL MEMBER	
STRUCTURAL STEEL	- SOLID ROD SUB HORIZONTAL	A36

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-II", 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, REOURING $3/4^{\prime\prime}$ 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.

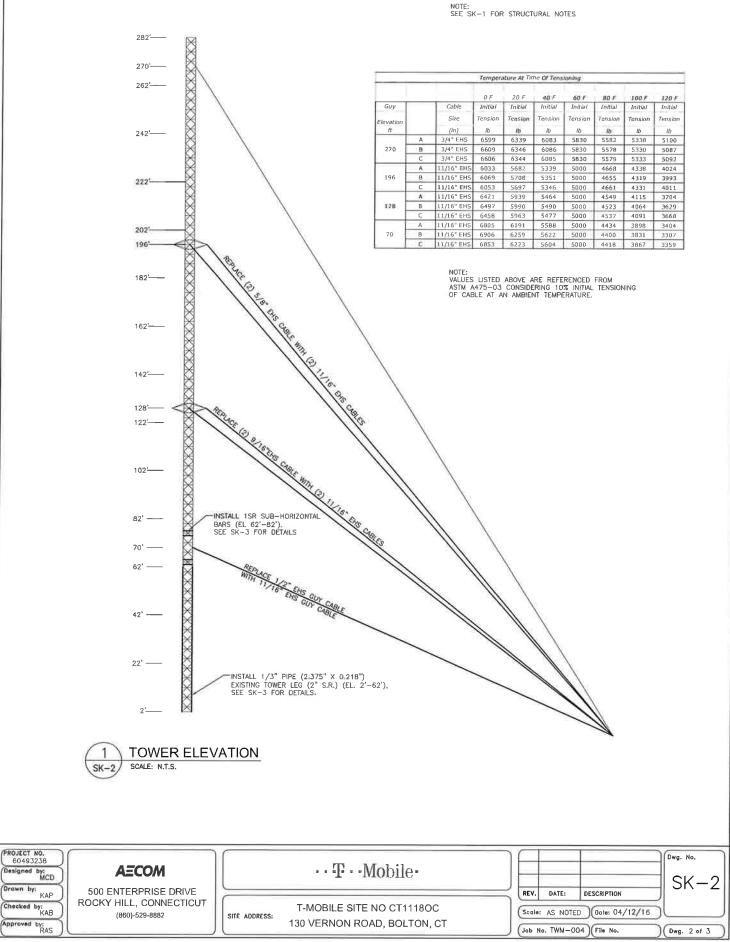
INSPECTIONS:

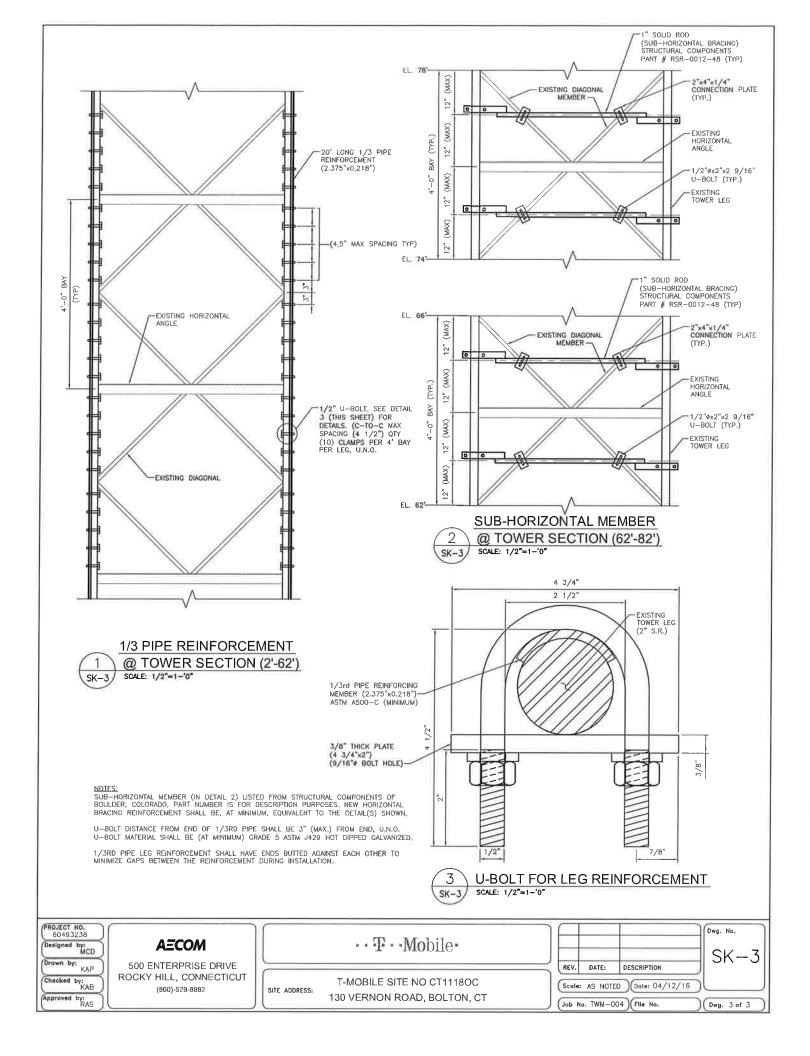
SPECIAL INSPECTIONS ARE REQUIRED PER THE CODE FOR STRUCTURAL STEEL WORK.

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 Oenigned by: MCD Drown by:	AECOM		··· T ··Mobile·		Dwg. No. SK-1
Checked by: KAB Approved by: RAS	ROCKY HILL, CONNECTICUT (860)-529-8882	SITE ADDRESS:	T-MOBILE SITE NO CT1118OC 130 VERNON ROAD, BOLTON, CT	REV. DATE: DESCRIPTION Scale: AS NOTED Oale: 04/12/16 Job No. TWM-004) File No. File No.) (Dwg. 1 of 3





AECOMPageofJob $Bolton, C+ + owir ModificationsProject No. <math>\frac{TWM - cosf-cogR1}{MCD}$ PageofDescription Clamp d - t + crmination d + timeComputed by<math>MCDDateElecution 0'-601Checked byDate

Reference

Calculations todetermine Maximum # of Clamps Required for development of reinforcing Pipe (Using U-Bolts ASTM A 449 = A + SC Group "A" Bolt (A + SC 141 her)

 $A = 3.6235.1n^{2}$ $I_{ueak} = 0.9501.1n^{4}$ $I_{ueak} = \sqrt{\frac{1}{A}} = \sqrt{\frac{1}{3.6235}} = 0.512$ $i_{L} = \frac{(11(24in) - 46.87)}{0.512}$ $Eq E-4] F_{e} = \frac{17E}{(nc)} = \frac{17^{2} \times 29000 hc^{2}}{(46.875)^{2}} = 130.261$ $Fcr = \left[c_{1658} + \frac{15}{3.6235}\right] + 5ks^{2} = 38.941 ks^{2}; P_{0} = (58.941 \times 3.6235)(c_{1}s) = 126.9951 bs$

AECOM

		Page of
	Project No. Tw/M-005/-004 R	Sheet of
	Computed by MCD	Date
Elevation of-60'	Checked by	Date

Reference

△[P(Reinforced) - Pexisting] = 126995-109335=17,660 165

- · Consider use of U-Bolts of 1/2" diameter & efgrade A 449 (simto A325)
- · Design as Sliperitical Connection where "D" is divided by Sliperitical Bolt Capacity to determine the minimum number of U-Bolts at ands.

[AISE] Chapter J-connections!

(AFSC J3-4) RA=[PDuhFTb#5]x8=[0.3)(1.11)(10)(12H.P)(1)]x1 = 4068165

17,660165 - 4,34 - S Sclamps Reavised 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 <i>Weight Multiplier</i>	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 inter- connected and Lu is there the total diagonal distance. Therefore, KL for X-brace

4

AECOM

Proventi At the Maline Man	Turne	Page of
Job Boiton, C+ Actour Mod. F. icat. icns	Project No. TWM-COSTOCY R.	Sheet of
Description Ext 10 w Right CL SUPPOTE NoriZenton	Computed by MCD	Date 4/572016
for input into try program	Checked by	Date
		Reference

determine Additional weight funer for this tower;

Use 4 1500 mentot
(b) 2"5 R Members @20 Lengty

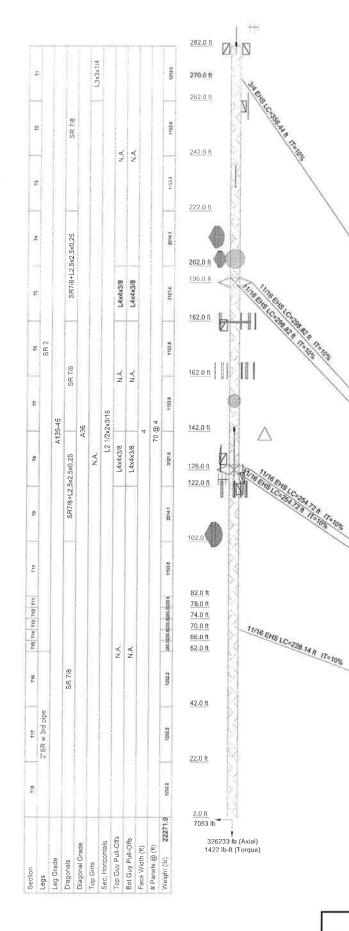
$$30(9)$$
 76"5 R Members @20 Lengty
 $10(9)$ 76"5 R Members
 $10(9)$ 76"5

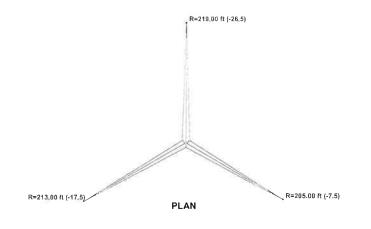
Proposed Reinforcement (1) 1" SR member Q5' Length Whard while Weishi

563.76 12348369385

Note: about value is considered to be consorvative since the number of horizontais are los than (2) for use.

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





DESIGNED APPURTENANCE LOADING

	TYPE	ELEVATION		TYPE	ELEVATION
FM Antenna (WMRQ)	289	(2) RRU (ATI)	164
2.5" x 10' Omr	ni (Not Used)	284	(2) RRU (ATT)		164
	865 Light Beacon Unit	282	(2) RRU (ATT)		164
(Tower)			Andrew 12' Se		164
6' Sland-off (U	Inknown)	281	(SF-U12-3-72) (ATT)		
6' Stand-off (U	034613656374	281	Andrew 12' Se		164
6' Sland-off (U	متكا خضهما الطرابين	281	(SF-U12-3-72)		
MF-950B (WB	117200 TL	280	Andrew 12' Se (SF-U12-3-72)		164
3' Sland-off (U		260		Anlenna (ATT)	164
2.5" x 14' Omr	ni (Ursknown)	260			1.67
3' Stand-off (U	inknown)	260	a second s	Antenna (ATT)	164
ASP-711 (Unk	nawn)	260	Bearing to Commission States	Antenna (ATT)	164
D8589-Y (Eve	rsource)	234.7	(2) LGP214nn		164
3' Stand-off (E	versource)	230	(4) LGP 219nr		164
	osed Dipole Antenna	218	(2) LGP214nn		164
(Eversource)	2		(4) LGP 219nn	A A A TO DATE	164
6' Sland-off (E	versource)	218	(2) LGP214nn		164
	ome (Eversource)	212.5	(4) LGP 219nn	a free for the form	164
8' Dish w/ Rad	ome (Eversource)	204,5	SBNH-1D6565		164
6' Dish w/ Rad	ome (Eversource)	204.5		idome (Eversource)	153
Pirod 12' T-Fra (T-Mobile)	ime Sector Mount (1)	182	(3) L-810 Obst Kit (Tower - Ob	ruction Lights w/ Mount 3S Light)	142
Pirod 12' T-Fra	me Sector Mount (1)	182	5' Sland-off (Unknown)		132
(T-Mobile)			14" Dipole (Un	known)	132
Pirod 12' T-Fra (T-Mobile)	me Sector Mount (1)	182	2.5" x 22' Whip 6' Sland-off (U		132
AIR21 B4A/B2	P (T-Mobile)	182	3' Stand-off (N	107 (10) \$ \$ (0) \$ \$	125
LNX-6515DS-	VTM (T-Mobile)	182	3" x 12.5' Omn		125
AIR21 B4A/B2	P (T-Mobile)	152	1' Yagi antenna		124.5
LNX-6515DS-V	VTM (T-Mobile)	182		F-EDIN (Verizon)	124.5
S11 82 RRH U	Contract to the second s	182		F-EDIN (Verizon)	121
RRUS-11 (T-M		182	and the second sec	-4CF-EDIN (Verizon)	121
S11 B2 RRH U	and a state of the	182	6'8"x4" Pipe M	. /	121
RRUS-11 (T-M		182	A strand at an a strange water and	NAME OF THE OWNER OF	121
6' Stand-off (N	Charles and the second s	180.5	(2) LPA-171080-8CF EDIN (Verizon)		121
		164	6'8'x4" Pipe Mount (Verizon)		121
SBNH-1D6565C (ATT)		164	(2) LPA-171063-8CF-EDIN (Verizon) (2) LPA-80063-4CF (Verizon)		121
Surge Suppres	the second se	164	halt de la companya d	ome (Eversource)	104.5
					104,0
00405		MATERIAL			-
GRADE	Fy	Fu	GRADE	Fy	Fu
A139-45	45 ksi	60 ksi	A36	36 ksi	58 ksi

TOWER DESIGN NOTES

- Tower is located in Tolland County, Connecticut.
 Tower designed for Exposure C to the TIA-222-G Standard.
 Tower designed for a 105 mph basic wind in accordance with the TIA-222-G Standard.
 Tower is also designed for a 50 mph basic wind with 1.00 in ice. Ice is considered to
 - increase in thickness with height.
- 5. Deflections are based upon a 60 mph winda
- 6. Tower Structure Class II.
- Topographic Category 1 with Crest Height of 0.00 ft
 TOWER RATING: 98.2%

84652 lb 1 139018 IB 110273 lb R=213.00 ft

ALL REACTIONS ARE FACTORED

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: MCI) App'd:
Phone: 860-529-8882	Code: TIA-222-G Date: 04/13/1	5 Scale: NTS
FAX: 860-529-3991	Path:	Dwg No E-1

TNX TOWER FEEDLINE DISTRIBUTION – TIA-222-G

Feed Line Distribution Chart 2' - 282'

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

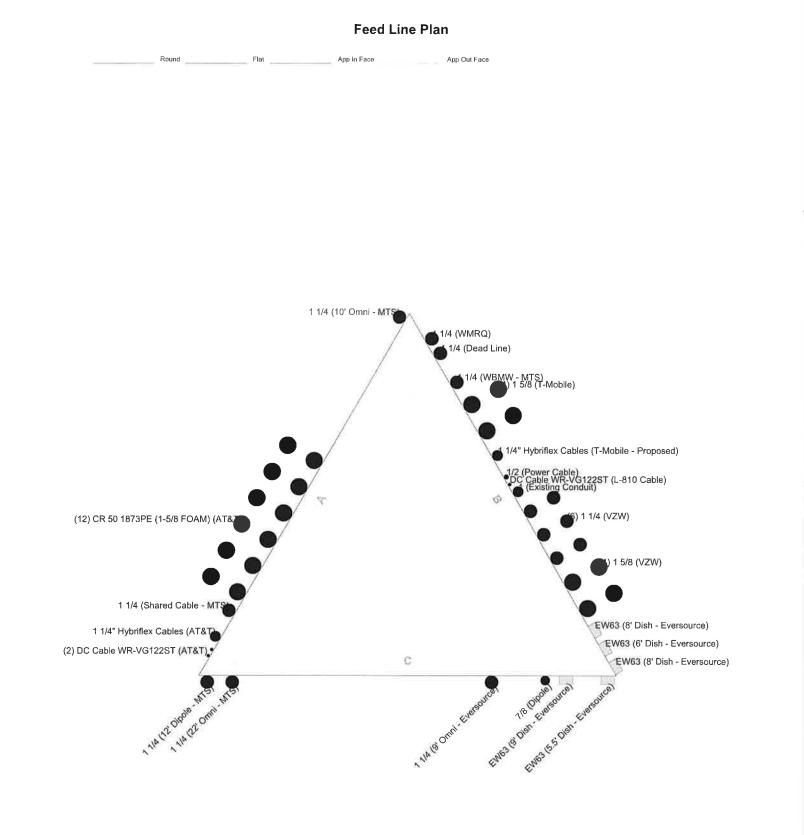
32.00	Face A	Face B	Face C
70.00			2
52.00			262.00
12 00		242.00	242.00
2.00		220.00	220.00 215.00
	The local design of the local design of	207.00	207.00
2.00			22
2.00		182.00	182.00 11
2.00		189.38	189.88
		155.25	155.25
2.00	(Sharid Cable - MTS)	155.25 142.00 142.00 135.00 135.00 137.2 (Power Cable) 137.2 (Power Cable)	142.00
8.00	1.1/4	135.00	135.00 132.25 128.00
2.00	1 14 (S	8	
00 00 00 00 00 00 00 00 00 00 00 00 00	AT&T) T (AT&T)	(6' Dish	107.30
00 PE (1-5/8 FC	1/4" Hybriflex Cables (AT&T) C Cable WR-VG122ST (AT&T)	(4) 1 5/8 (T-Mobile) EW63 (8' Dist EW63 (8' Dist EW63 (8' Dist (1-810 Cable) (1-810 Cable)	- MTS) MTS) MTS) MTS)
00 1873	Hybrin able	(ŷ) Line) (2251 (<u>e</u> ; , , , , , , , , , , , , , , , , , ,
CS 20 00.	1 1/4	(4), 1 5/8 (AZ(V) - (4), 1 4 (Ddiad Line) bble WR-VG (225) (5),1 1/4 (AZ(V) - (5),1 1/4 (NZ(V) - 1 1/4 (Ng) (72)	07 C (2 C) 66 C (2 C) 66 C (2 C) 67 C
.00 [3]		(4),1 \$/8 (\/2(\/V) 1 1/4 (Delad Line) DC Cable WR-\VG1255T (5)1 1/4 (\/20V) 1 1/4 "Hybriffex Cat	11/1
<u>0</u> 0			
.00			
Î		7.00	7.00

AECOM	^{Job:} 280' Guyed Tower	
	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

Elevation (ft)

Round

TNX TOWER FEEDLINE PLAN – TIA-222-G

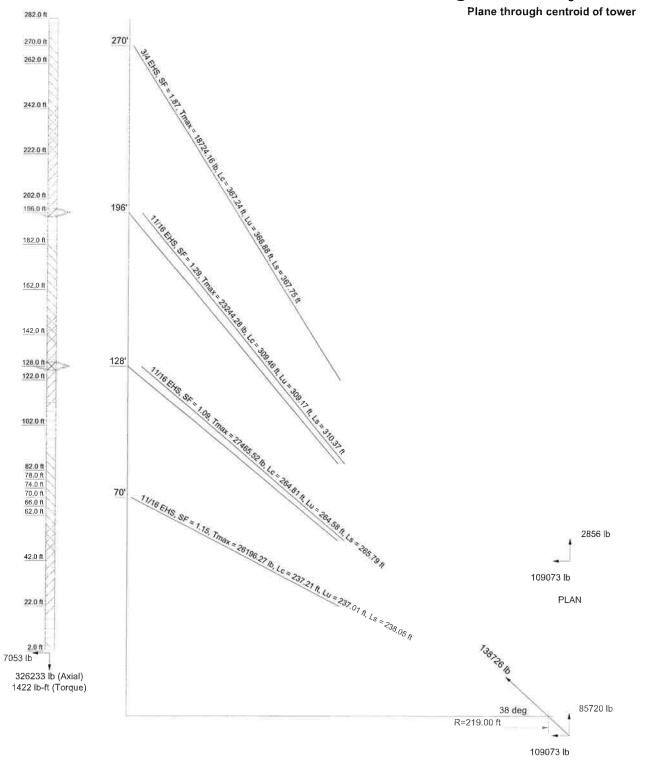


AECOM	^{Job:} 280' Guyed Tower	
	Project: 130 Vernon Rd Bolton, CT	
Rocky Hill, CT	Client: Transcend Wireless / TWM-005 / - 004 Rev 1	Drawn by: MCD, App'd:
Phone: 860-529-8882	Code: TIA-222-G	Date: 04/13/16 Scale: NTS
FAX: 860-529-3991	Path:	Dwg No. E-7

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

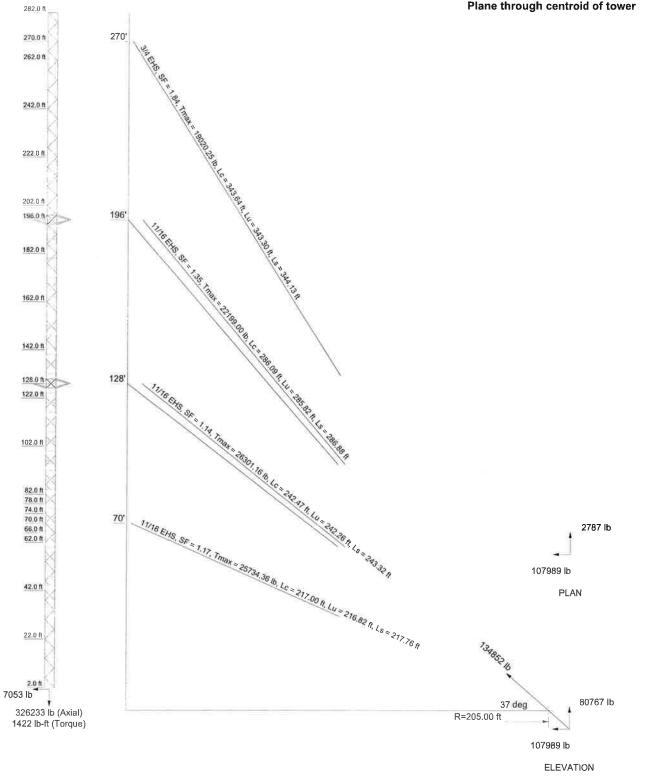


ELEVATION

AECOM	^{lob:} 280' Guyed Tower	
	Project: 130 Vernon Rd Bolton, 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-6

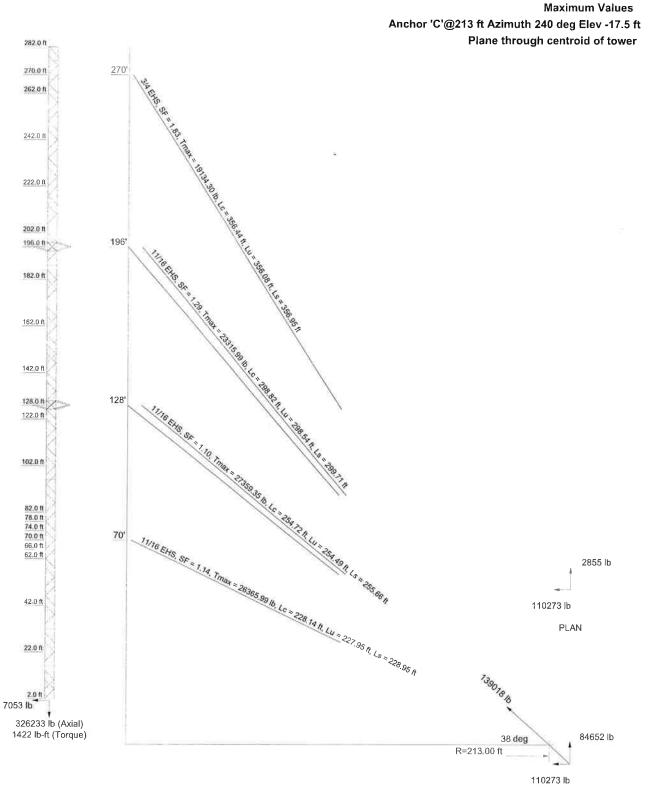
Guy Tensions and Tower Reactions TIA-222-G - 105 mph/50 mph 1.0000 in Ice Exposure C

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



AECOM	^{Job:} 280' Guyed Tower		
500 Enterprise Drive, Suite 3B	Project: 130 Vernon Rd Bolton, CT		
		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-6

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



ELEVATION

AECOM	^{Job:} 280' Guyed Tower		
500 Enterprise Drive, Suite 3B			
Rocky Hill, CT		Drawn by: MCD	App'd:
Phone: 860-529-8882		Date: 04/13/16	Scale: NTS
FAX: 860-529-3991	Path;		Dwg No. E-6

TNX TOWER DETAILED OUTPUT – TIA-222-G

tran Tomore	Job	Page
tnxTower	280' Guyed Tower	1 of 74
AECOM	Project	Date
500 Enterprise Drive, Suite 3B	130 Vernon Rd Bolton, CT	08:58:55 04/13/16
Rocky Hill, CT Phone: 860-529-8882 FAX: 860-529-3991	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

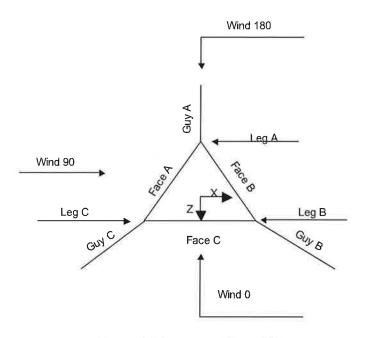
- Consider Moments Legs Consider Moments - Horizontals Consider Moments - Diagonals Use Moment Magnification
- Use Code Stress Ratios
- $\sqrt{}$ Use Code Safety Factors - Guys Escalate Ice Always Use Max Kz Use Special Wind Profile
- Include Bolts In Member Capacity Leg Bolts Are At Top Of Section
- Secondary Horizontal Braces Leg
- Use Diamond Inner Bracing (4 Sided)
- $\sqrt{}$ SR Members Have Cut Ends SR Members Are Concentric

- 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.
- Autocale Torque Arm Areas
- Add IBC .6D+W Combination
- Sort Capacity Reports By Component Triangulate Diamond Inner Bracing Treat Feed Line Bundles As Cylinder

Use ASCE 10 X-Brace Ly Rules

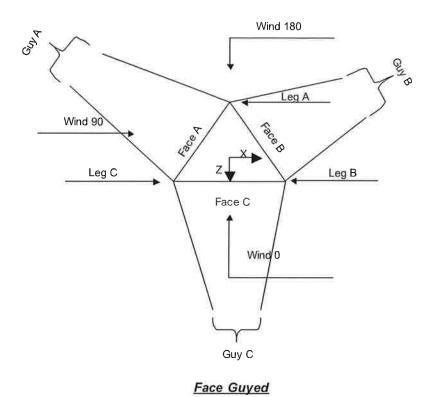
- Calculate Redundant Bracing Forces Ignore Redundant Members in FEA
- SR Leg Bolts Resist Compression
- All Leg Panels Have Same Allowable
- Offset Girt At Foundation V Consider Feed Line Torque
- Include Angle Block Shear Check Use TIA-222-G Bracing Resist. Exemption Use TIA-222-G Tension Splice Exemption Poles
 - Include Shear-Torsion Interaction Always Use Sub-Critical Flow Use Top Mounted Sockets

tnxTower	Job 280' Guyed Tower	Page 2 of 74
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Corner & Starmount Guyed Tower

tnxTower	Job 280' Guyed Tower	Page 3 of 74
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Tower Section Geometry

Tower	Tower	Assembly	Description	Section	Number	Section
Section	Elevation	Database	1	Width	of	Length
					Sections	
	ft			ft		ft
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/
Т7	162.00-142.00			4.00	1	20,00
T8	142.00-122.00			4.00	1.	20.00
Т9	122.00-102.00			4.00	1	20.00
T10	102.00-82.00		<u>2</u> .	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

tnxTower	Job 280' Guyed Tower	Page 4 of 74
AECOM 500 Enterprise Drive, Suite 3B	Project 130 Vernon Rd Bolton, CT	Date 08:58:55 04/13/16
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Tower Section	Tower Elevation	Assembly Database	Description	Section Width	Number of	Section Length
					Sections	0
	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	Tower	Diagonal	Bracing	Has	Has	Top Girt	Bottom Giri
Section	Elevation	Spacing	Туре	K Brace	Horizontals	Offset	Offset
				End			
	ft	ft		Panels		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
Т6	182.00-162.00	4.00	CX Brace	No	Yes	0.0000	0.0000
T 7	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	Leg	Leg	Leg	Diagonal	Diagonal	Diagonal
Elevation ft	Туре	Size	Grade	Туре	Size	Grade
Г1 282.00-262.00	Solid Round	2	A139-45	Solid Round	7/8	A36
			(45 ksi)			(36 ksi)
Γ2 262 00-242 00	Solid Round	2	A139-45	Solid Round	7/8	A36
			(45 ksi)			(36 ksi)
ГЗ 242.00-222.00	Solid Round	2	A139-45	Solid Round	7/8	A36
			(45 ksi)			(36 ksi)
4 222 00-202 00	Solid Round	2	A139-45	Arbitrary	SR7/8+L2.5x2.5x0.25	A36
			(45 ksi)	Shape		(36 ksi)
5 202.00-182.00	Solid Round	2	A139-45	Arbitrary	SR7/8+L2.5x2.5x0.25	A36
			(45 ksi)	Shape		(36 ksi)
6 182,00-162,00	Solid Round	2	A139-45	Solid Round	7/8	A36
			(45 ksi)			(36 ksi)
7 162.00-142.00	Solid Round	2	A139-45	Solid Round	7/8	A36
			(45 ksi)			(36 ksi)
8 142 00-122 00	Solid Round	2	A139-45	Arbitrary	SR7/8+L2.5x2.5x0.25	A36
			(45 ksi)	Shape		(36 ksi)
9 122.00-102.00	Solid Round	2	À139-45	Arbitrary	SR7/8+L2,5x2.5x0.25	A36
			(45 ksi)	Shape		(36 ksi)
10 102.00-82.00	Solid Round	2	À139-45	Solid Round	7/8	A36

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Tower Elevation ft	Leg Type	Leg Size	Leg Grade	Diagonal Type	Diagonal Size	Diagonal Grade
			(45 ksi)			(36 ksi)
T11 82.00-78.00	Solid Round	2	A139-45	Solid Round	7/8	A36
			(45 ksi)			(36 ksi)
T12 78.00-74,00	Solid Round	2	A139-45	Solid Round	7/8	A36
			(45 ksi)			(36 ksi)
T13 74.00-70.00	Solid Round	2	A139-45	Solid Round	7/8	A36
			(45 ksi)			(36 ksi)
T14 70.00-66.00	Solid Round	2	A139-45	Solid Round	7/8	A36
			(45 ksi)			(36 ksi)
T15 66.00-62.00	Solid Round	2	A139-45	Solid Round	7/8	A36
			(45 ksi)			(36 ksi)
T16 62.00-42.00	Arbitrary Shape	2"SR w 3rd pipe	A139-45	Solid Round	7/8	A36
			(45 ksi)			(36 ksi)
T17 42.00-22.00	Arbitrary Shape	2"SR w 3rd pipe	A139-45	Solid Round	7/8	A36
	-		(45 ksi)			(36 ksi)
T18 22.00-2.00	Arbitrary Shape	2"SR w 3rd pipe	A139-45	Solid Round	7/8	A36
			(45 ksi)			(36 ksi)

Tower Section Geometry (cont'd)

Tower Elevation ft	Top Girt Type	Top Girt Size	Top Girt Grade	Bottom Girt Type	Bottom Girt Size	Bottom Girt Grade
T1 282,00-262.00	Single Angle	L3x3x1/4	A36 (36 ksi)	Solid Round		A36 (36 ksi)

Tower Elevation	Secondary Horizontal Type	Secondary Horizontal Size	Secondary Horizontal Grade	Inner Bracing Type	Inner Bracing Size	Inner Bracing Grade
	9.4.0 - 1.7					
F1 282.00-262.00	Single Angle	L2 1/2x2x3/16	A36	Solid Round		A36
			(36 ksi)			(36 ksi)
Г2 262.00-242.00	Single Angle	L2 1/2x2x3/16	A36	Solid Round		A36
			(36 ksi)			(36 ksi)
ГЗ 242.00-222.00	Single Angle	L2 1/2x2x3/16	A36	Solid Round		A36
			(36 ksi)			(36 ksi)
Γ4 222.00-202,00	Single Angle	L2 1/2x2x3/16	A36	Solid Round		A36
			(36 ksi)			(36 ksi)
5 202,00-182.00	Single Angle	L2 1/2x2x3/16	A36	Solid Round		A36
			(36 ksi)			(36 ksi)
6 182.00-162.00	Single Angle	L2 1/2x2x3/16	A36	Solid Round		A36
			(36 ksi)			(36 ksi)
7 162.00-142.00	Single Angle	L2 1/2x2x3/16	A36	Solid Round		A36
			(36 ksi)			(36 ksi)
8 142.00-122.00	Single Angle	L2 1/2x2x3/16	A36	Solid Round		A36
			(36 ksi)			(36 ksi)
9 122.00-102.00	Single Angle	L2 1/2x2x3/16	A36	Solid Round		A36
	0 0		(36 ksi)			(36 ksi)
10 102.00-82.00	Single Angle	L2 1/2x2x3/16	A36	Solid Round		A36

tnxTower

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Project		Date
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	Transcend Wireless / TWW-005 / - 004 Rev T	MCD

Tower Elevation	Secondary Horizontal Type	Secondary Horizontal Size	Secondary Horizontal Grade	Inner Bracing Type	Inner Bracing Size	Inner Bracing Grade
ft						
			(36 ksi)			(36 ksi)
T11 82.00-78.00	Single Angle	L2 1/2x2x3/16	A36	Solid Round		A36
			(36 ksi)			(36 ksi)
Г12 78.00-74.00	Single Angle	L2 1/2x2x3/16	A36	Solid Round		A36
			(36 ksi)			(36 ksi)
FI3 74.00-70.00	Single Angle	L2 1/2x2x3/16	A36	Solid Round		A36
			(36 ksi)			(36 ksi)
Г14 70.00-66.00	Single Angle	L2 1/2x2x3/16	A36	Solid Round		A36
			(36 ksi)			(36 ksi)
Г15 66.00-62.00	Single Angle	L2 1/2x2x3/16	A36	Solid Round		A36
			(36 ksi)			(36 ksi)
Г16 62.00-42.00	Single Angle	L2 1/2x2x3/16	A36	Solid Round		A36
			(36 ksi)			(36 ksi)
Г17 42.00-22.00	Single Angle	L2 1/2x2x3/16	A36	Solid Round		A36
			(36 ksi)			(36 ksi)
T18 22.00-2.00	Single Angle	L2 1/2x2x3/16	A36	Solid Round		A36
			(36 ksi)			(36 ksi)

Tower Elevation	Gusset Area	Gusset Thickness	Gusset Grade	Adjust, Factor A _f	Adjust. Factor	Weight Mult.	Double Angle Stitch Bolt	Stitch Bolt	Stitch Bolt
	(per face)				A_r		Spacing	Spacing	Spacing
G	ft^2	in					Diagonals	Horizontals	Redundants
ft	P						in	in	īn
T1	0.00	0.0000	A36	1	1	1	36.0000	36.0000	36.0000
282.00-262.00	0.00		(36 ksi)						
T2	0.00	0.0000	A36	1	1	1	36.0000	36.0000	36.0000
262.00-242.00	0.00	0.0000	(36 ksi)						
T3	0.00	0.0000	A36	1	1	1	36.0000	36.0000	36.0000
242.00-222.00	0.00	0.0000	(36 ksi)	840	12				
T4	0.00	0.0000	A36	1	1.	1	36,0000	36.0000	36.0000
222.00-202.00	0.00	0.0000	(36 ksi)	3V	070				
T5	0.00	0.0000	A36	1	1	1	36.0000	36.0000	36.0000
202.00-182.00	0.00	0.0000	(36 ksi)	Call					
T6	0.00	0.0000	A36	1	1]	36.0000	36,0000	36.0000
182.00-162.00	0.00	0.0000	(36 ksi)		0477				
T7	0.00	0.0000	A36	1	1	I	36.0000	36.0000	36.0000
162.00-142.00 T8	0.00	0.0000	(36 ksi)						
	0.00	0,0000	A36	1	1	1	36,0000	36,0000	36.0000
142.00-122.00 T9	0.00	0.0000	(36 ksi)	5					
19	0.00	0.0000	A36	1	1	I	36.0000	36.0000	36,0000
T10	0.00	0.0000	(36 ksi)	14	- 24	,			
102.00-82.00	0.00	0.0000	A36	1	1	1	36.0000	36,0000	36.0000
T11	0.00	0.0000	(36 ksi) A36	24	14	,	26.0000		
82.00-78.00	0.00	0.0000		1	1	1	36.0000	36.0000	36.0000
82.00-78.00 T12	0.00	0.0000	(36 ksi)	3	(ä	1.00.40.4	2 (0000	26,0000	
78.00-74.00	0.00	0.0000	A36	31	1	1.23484	36.0000	36.0000	36.0000
T13	0.00	0.0000	(36 ksi) A36						
74.00-70.00	0.00	0.0000		1	1	I	36.0000	36.0000	36.0000
74.00-70.00 T14	0.00	0.0000	(36 ksi) A36			1	26,0000	2 (0000	2 6 0000
70.00-66.00	0.00	0.0000		4	1	1	36.0000	36.0000	36.0000
T15	0.00	0.0000	(36 ksi)	i i	9	1.02.40.4	24 0000	24.0000	2 < 0.000
	0.00	0.0000	A36	1	2	1.23484	36.0000	36.0000	36.0000
66.00-62.00			(36 ksi)						

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AECOM	Project		Date
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Tower	Gusset	Gusset	Gusset Grade	Adjust Factor	Adjust	Weight Mult.	Double Angle	Double Angle	Double Angle
Elevation	Area	Thickness		A_f	Factor		Stitch Bolt	Stitch Bolt	Stitch Bolt
	(per face)				A_{r}		Spacing	Spacing	Spacing :
							Diagonals	Horizontals	Redundants
ft	ft^2	in					in	in	in
T16	0.00	0.0000	A36	1	1	1	36.0000	36,0000	36.0000
62.00-42.00			(36 ksi)						
T17	0.00	0.0000	A36	1	1	1	36.0000	36.0000	36,0000
42.00-22.00			(36 ksi)						
T18 22.00-2.00	0.00	0.0000	A36	1	1	1	36.0000	36.0000	36.0000
			(36 ksi)						

Tower Section Geometry (cont'd)

			K Factors'										
Tower	Calc	Calc	Legs	Х	K	Single	Girts	Horiz.	Sec.	Inner			
Elevation	K	K		Brace	Brace	Diags			Horiz	Brace			
	Single	Solid		Diags	Diags								
0	Angles	Rounds		X	Х	X	Х	X	Х	Х			
			1/21/	Y	Y	Y	Y	Y	Y	Y			
T1	No	No	1	0.5	1	1	1	1	1	1			
282.00-262.00			1011	0.5	1	1	1	1	1	1			
Τ2	No	No	1	0.5	1	1	1	1	1	1			
262.00-242.00				0.5	1	1	1	1	1	1			
T3	No	No	1	0.5	1	1	1	1	1	1			
242.00-222.00				0.5	1	1	1	1	1	1			
Τ4	No	No	1	0.5	1	1	1	1	1	1			
222.00-202.00				0.5	1	1	1	1	1	1			
T5	No	No	1	0.5	1	1	1	1	1	1			
202.00-182.00				0.5	I.	1	1	1	1	1			
Т6	No	No	1	0.5	1	1	1	1	1	1			
182.00-162.00				0.5	1	1	1	1	1	1			
T7	No	No	1	0.5	1	1	1	1	1	1			
162.00-142.00				0.5	1	1	1	1	1	1			
Т8	No	No	1	0.5	1	1	1	1	1	1			
142.00-122.00				0.5	1	I	1	1	1	1			
T9	No	No	1	0.5	1	1	1	1	1	1			
122.00-102.00				0.5	1	1	1	1	1	1			
T10	No	No	1	0.5	1	1	1	1	1	1			
102.00-82.00				0.5	1	1	1	1	1	1			
T11	No	No	1	0.5	1	1	1	1	1	1			
82.00-78.00				0.5	1	1	1	1	1	1			
T12	No	No	0.5	0.25	1	1	1	1	1	1			
78.00-74.00				0.25	L	î.	1	1	10	1			
T13	No	No	1	0.5	1	1	1	1	1	1			
74.00-70.00				0.5	1	1	1	1	1	1			
T14	No	No	1	0.5	1	1	1	1	1	1			
70.00-66.00				0.5	1	Î.	T	1 I	Î	ĩ			
T15	No	No	0.5	0.25	1	1	Î.	1	1	1			
66.00-62.00			100	0.25	1	1	1	ĩ	1	1			
T16	No	No	1	0.5	1	ĩ	ĩ	1	1	î			
62.00-42.00				0.5	1	1	1	1	1	1			
T17	No	No	1	0.5	1	1	i	í	i	i i			
42.00-22.00				0.5	1	1	i	i	i				
T18	No	No	1	0.5	1	I	i	í	i	1			
22.00-2.00				0.5	1	ĩ	î	1	1	i			

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.

AECOM 500 Enterprise Drive, Suite 3B Rocky Hill, CT Phone: 860-529-8882 FAX: 860-529-3991

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Project		Date		
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Tower Elevation ft	Leg		Diago	nal	Top G	lirt	Botton	n Girt	Mid	Girt	Long Ho	rizontal	Short Ho	rizontal
586 -	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	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
282.00-262.00 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_w	Anchor Radius	Anchor Azimuth Adj.	Anchor Elevation	End Fitting Efficiency	
fi				lb		ksi	plf	ft	ft	a	ft	%	
270	EHS	А	3/4	5830.00	10%	19000	1.155	366.92	219.00	0.0000	-26,50	100%	
		В	3/4	5830.00	10%	19000	1,155	343,34	205.00	0.0000	-7.50	100%	
		С	3/4	5830.00	10%	19000	1.155	356.13	213.00	0.0000	-17.50	100%	
196	EHS	А	11/16	5000.00	10%	21000	0.813	309.21	219.00	0.0000	-26.50	100%	
		В	11/16	5000.00	10%	21000	0.813	285.86	205.00	0.0000	-7.50	100%	
		С	11/16	5000.00	10%	21000	0.813	298.58	213.00	0.0000	-17,50	100%	

tn	хТои	ver		Job			280' Gu	yed Towe	r		Pag	e 9 of 74
500 Ent	AECON erprise Driv	_	ite 3B	Project	Date 08	:58:55 04/13/16						
Pho	Rocky Hill, one: 860-529 X: 860-529	7-888.	2	Client	Client Transcend Wireless / TWM-005 / - 004 Rev 1							
128	EHS	A B	11/16 11/16	5000.00 5000.00	10% 10%	21000 21000	0.813 0.813	264_60 242_28	219.00 205.00	$0.0000 \\ 0.0000$	-26,50 -7.50	100% 100%
70	EHS	C A B C	11/16 11/16 11/16 11/16	5000.00 5000.00 5000.00 5000.00	10% 10% 10% 10%	21000 21000 21000 21000	0.813 0.813 0.813 0.813	254.52 237.02 216.83 227.96	213.00 219.00 205.00 213.00	0.0000 0.0000 0.0000 0.0000	-17.50 -26.50 -7.50 -17.50	100% 100% 100% 100%

			G	uy Data	(conťd)		
Guy Elevation ft	Mount Type	Torque-Arm Spread	Torque-Arm Leg Angle •	Torque-Arm Style	Torque-Arm Grade	Torque-Arm Type	Torque-Arm Size
270	Corner	1.					
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 fi	Diagonal Grade	Diagonal Type	Upper Diagonal Size	Lower Diagonal Size	Is Strap.	Pull-O <u>ff</u> Grade	Pull-Off Type	Pull-Off Size
270.00	A572-50	Solid Round				A36	Solid Round	
	(50 ksi)					(36 ksi)		
196.00	A572-50	Solid Round			Yes	A36	Single Angle	L4x4x3/8
	(50 ksi)					(36 ksi)		
128.00	A572-50	Solid Round			Yes	A36	Single Angle	L4x4x3/8
	(50 ksi)					(36 ksi)		
70.00	A572-50	Solid Round				A36	Solid Round	
	(50 ksi)					(36 ksi)		

			(Guy Dat	ta (cont'o	1)		
Guy	Cable	Cable	Cable	Cable	Tower	Tower	Tower	Tower
Elevation	Weight	Weight	Weight	Weight	Intercept	Intercept	Intercept	Intercept
	A	B	\bar{C}	\bar{D}	A	В	C	D
ft	lb	lb	lb	lb	ft	ft	ft	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	

tnxTower	Job	Page
InxTower	280' Guyed Tower	10 of 74
AECOM	Project	Date
500 Enterprise Drive, Suite 3B	130 Vernon Rd Bolton, CT	08:58:55 04/13/16
Rocky Hill, CT Phone: 860-529-8882 FAX: 860-529-3991	Client Transcend Wireless / TWM-005 / - 004 Rev 1	Designed by MCD

Guy Data (cont'd)

Guy Elevation ft	Calc K Single Angles		Torque Arm		Pull Off		Diagonal	
		Calc K Solid Rounds	K _x	K _y	K _x	Ky	K _x	К,
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)

		Torq	ue-Arm			Pull Off				Diagonal			
Guy	Bolt Size	Number	Net Width	U	Bolt Size	Number	Net Width	U	Bolt Size	Number	Net Width	U	
Elevation	in		Deduct		in		Deduct		in		Deduct		
ſî			in				in				in		
270	0.6250	0	0.0000	0.75	0.6250	0	0.0000	0.75	0.6250	0	0.0000	0.75	
	A325N				A325N				A325N				
196	0.0000	0	0.0000	1	0.6250	0	0.0000	0.75	0.6250	0	0.0000	0.75	
	A325N				A325N				A325N				
128	0.0000	0	0.0000	1	0.6250	0	0.0000	0.75	0.6250	0	0.0000	0.75	
	A325N				A325N				A325N				
70	0.6250	0	0.0000	0.75	0.6250	0	0.0000	0.75	0.6250	0	0.0000	0.75	
	A325N				A325N				A325N				

Guy Pressures

Guy Elevation	Guy Location	Ζ	q_z	qz Ice	Ice Thickness	
ft		ft	psf	psf	in	
270	А	121.75	32	7	2.2789	
	В	131,25	32	7	2.2961	
	С	126.25	32	7	2,2872	
196	A	84.75	29	7	2.1978	
	В	94.25	30	7	2.2213	
	С	89.25	30	7	2.2092	
128	А	50.75	26	6	2.0880	
	В	60.25	27	6	2.1241	
	С	55.25	27	6	2.1058	
70	А	21.75	22	5	1.9183	
	В	31.25	24	5	1.9891	
	С	26.25	23	5	1.9548	

Guy-Mast Forces (Excluding Wind) - No Ice

4 T	Job		Page
tnxTower		280' Guyed Tower	11 of 74
AECOM	Project		Date
500 Enterprise Drive, Suite 3B		130 Vernon Rd Bolton, CT	08:58:55 04/13/16
Rocky Hill, CT Phone: 860-529-8882 FAX: 860-529-3991	Client	Transcend Wireless / TWM-005 / - 004 Rev 1	Designed by MCD

Guy [,]	Guy	Chord	Guy Tension	F_x	F_{r}	F_z	M_{x}	M_y	M_z
Elevation	Location	Angle	Top Bottom				<u>i</u> g		
		0	lb				W 181	11	
ft		0.0	(100.1.1	16	16	16	lb-fi	lb-ft	lb-fi
270	А	53.8396	6172.14 5830.00	0.00	5056.62	-3539,19	-11677.76	0,00	0.00
	В	53.8550	6150.21 5830.00	3058.49	5035.14	1765.82	5814.08	0.00	-10070,28
	С	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	А	45,9725	5180.74 5000.00	-115.12	3785.52	-3535.06	-15298,99	25210.67	-26498.63
	А	45.9725	5180.74 5000.00	115.12	3785.52	-3535.06	-15298.99	-25210,67	26498.63
	В	45.3427	5165.31 5000.00	3153.43	3731.45	1677.06	30160.96	25488.86	0.00
	В	45.3427	5165.31 5000.00	3029.09	3731.45	1892.42	-15080.48	-25488.86	-26120,16
	С	45.5998	5173.43 5000.00	-3020.16	3755,51	1881.25	-15177.73	25374.59	26288.59
	С	45,5998	5173.43 5000.00	-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
128	А	35.6920	5125.50	-133.80	3061,17	-4108.79	-12371.56	29302.26	-21428.17
120			5000.00						
	А	35.6920	5125.50 5000.00	133.80	3061.17	-4108.79	-12371.56	-29302.26	21428.17
	В	33.9744	5110.07 5000.00	3700.58	2923.23	1968.05	23628.20	29911.44	0.00
	В	33.9744	5110.07 5000.00	3554.67	2923.23	2220.77	-11814.10	-29911.44	-20462.62
	С	34.8348	5118.19 5000.00	-3524.00	2993.14	2195.09	-12096.65	29607.69	20952.01
	С	34.8348	5118.19 5000.00	-3663.00	2993.14	1954.33	24193.29	-29607.69	0.00
			Sum:	68.25	17955.08	120.66	-832.37	-0.00	489.38
70	А	24.0051	5078.39 5000.00	0.00	2146.27	-4602.56	-4956.61	0.00	0.00
	В	20.9247	5062.95 5000.00	4069.43	1885.00	2349.48	2176.61	0.00	-3769.99
	С	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 Ib	F _x	Fy	Fz	M _x	My	Mz		
ft		0		16	lb	lb	lb-ft	lb-ft	lb-ft		
270	А	53.8396	15184.85 12347.19	0.00	12862.59	-8070.54	-29704.87	0.00	0.00		
	В	53.8550	14779.24 12092.31	6821.75	12505.10	3938.54	14439.65	0.00	-25010.21		
	С	53.7647	15013.28 12246.26	-6933.75	12700.25	4003.20	14664.98	-0.00	25400.49		

tnxTower	lob 280' Guyed Tower	Page 12 of 74
AECOM 500 Enterprise Drive, Suite 3B	Project 130 Vernon Rd Bolton, CT	Date 08:58:55 04/13/16
Rocky Hill, CT Phone: 860-529-8882 FAX: 860-529-3991	Client Transcend Wireless / TWM-005 / - 00	D4 Rev 1 Designed by MCD

Guy Elevation	Guy Location	Chord Angle	Guy Tension Top	F_x	F_y	F,	M_x	M_y	M_z
Dievation	Locution	Angle	Bottom Ib						
ft		0	10	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
	А	45.9725	13289,71 11388.31	277,78	10186.98	-8530,21	-41170.21	-60834.10	71308.89
	В	45.3427	12946.72 11177.85	7452.23	9817.04	3963.26	79350.20	60235,69	0,00
	В	45.3427	12946.72 11177 . 85	7158.40	9817.04	4472.19	-39675.10	-60235.69	-68719.29
	С	45.5998	13147.51 11307.87	-7228.19	10016.92	4502.42	-40482.90	60729.29	70118.44
	С	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	А	35.6920	12459.66 11242.22	-312.18	7952.47	-9586.66	-32139.52	68368.28	-55667.27
	А	35.6920	12459.66 11242.22	312,18	7952.47	-9586.66	-32139.52	-68368.28	55667.27
	В	33.9744	12194.64 11097.62	8499.89	7485,12	4520.42	60501.50	68703.76	0.00
	В	33.9744	12194.64 11097.62	8164.75	7485,12	5100.90	-30250.75	-68703.76	-52395.84
	С	34.8348	12355.89 11193.92	-8176.17	7738.24	5092.91	-31273.73	68694.01	54167.68
	С	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	А	24.0051	11502.55 10835.78	0.00	5360,46	-10177.13	-12379.45	0.00	0.00
	В	20.9247	11410.02 10843.78	8978.76	4764.20	5183.89	5501.22	0.00	-9528.40
	С	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	F _x	F_y	F2	M_{x}	M_y	M_z
			Bottom lb						
ft		0		lb	lb	lb	lb-ft	lb-ft	lb-ft
270	А	53.8396	6172.14 5830.00	0.00	5056.62	-3539.19	-11677.76	0.00	0.00
	В	53.8550	6150.21 5830.00	3058,49	5035.14	1765.82	5814.08	0.00	-10070.28
	С	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	А	45.9725	5180.74 5000.00	-115.12	3785.52	-3535.06	-15298.99	25210.67	-26498.63
	А	45.9725	5180.74 5000.00	115.12	3785,52	-3535.06	-15298.99	-25210.67	26498,63
	В	45.3427	5165.31	3153.43	3731.45	1677.06	30160.96	25488.86	0.00

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

Guy	Guy	Chord	Guy Tension	F_x	F_y	F_z	M_{χ}	M_{ν}	M_{z}
Elevation	Location	Angle	Тор		·				
			Bottom						
			lb						
ft		0		lb	lb	lb	lb-ft	lb-ft	lb-fi
			5000.00						
	В	45.3427	5165.31	3029.09	3731.45	1892.42	-15080.48	-25488.86	-26120
			5000.00						
	С	45.5998	5173.43	-3020.16	3755.51	1881.25	-15177.73	25374,59	26288.
			5000.00						
	С	45.5998	5173.43	-3139.29	3755.51	1674.91	30355.45	-25374.59	0.00
			5000.00						
			Sum:	23.07	22544.97	55.52	-339.77	-0.00	168.4
128	A	35.6920	5125,50	-133,80	3061.17	-4108.79	-12371.56	29302.26	-21428
			5000.00						
	A	35.6920	5125.50	133.80	3061.17	-4108,79	-12371.56	-29302.26	21428.
			5000.00						
	В	33.9744	5110.07	3700.58	2923.23	1968.05	23628.20	29911.44	0.00
			5000.00						
	В	33,9744	5110.07	3554.67	2923,23	2220.77	-11814.10	-29911.44	-20462
			5000.00						
	С	34.8348	5118.19	-3524.00	2993.14	2195.09	-12096.65	29607.69	20952.
			5000.00						
	С	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	489.3
70	А	24,0051	5078.39	0.00	2146.27	-4602.56	-4956.61	0.00	0,00
			5000.00						
	В	20.9247	5062,95	4069.43	1885.00	2349.48	2176.61	0.00	-3769.
			5000.00						
	С	22.5532	5071.08	-4026.75	2023.90	2324.85	2337.00	-0.00	4047.8
			5000.00						
			Sum:	42.67	6055.17	71.77	-443.01	0.00	277.8

Guy-Tensioning Information

									Tempo	rature At T	ime Of Tens	ioning					
				0	F	20) F	40	0 F	60)F	80	9 F	10	0 F	12	20 F
Guy Elevation	1	H	V	Initial Tension	Intercept	Initial Tension	Intercept	Initial Tension	Intercept	Initial Tension	Intercept	Initial Tension	Intercept	Initial Tension	Intercept	Initial Tension	Intercept
ft		ſ	ß	lb	ſ	lb	n	lb	ft	lb	ft	lb	ß	lb	n	lb	n
270	Α	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
	В	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
	Ç	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	Λ	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
	В	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
	С	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	Λ	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
	В	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
	С	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	Α	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
	В	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
	С	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

tnx7	ower
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AECOM 500 Enterprise Drive, Suite 3B Rocky Hill, CT Phone: 860-529-8882 FAX: 860-529-3991

	Job		Page
		280' Guyed Tower	14 of 74
	Project		Date
В		130 Vernon Rd Bolton, CT	08:58:55 04/13/16
	Client	Transcend Wireless / TWM-005 / - 004 Rev 1	Designed by MCD

D	<i>г</i>	477	0	DI	P	7 . 7			01	777: J. J. 75	TTT - L -
Description	race or	Allow Shield	Component Type	Placement	Face Offset	Lateral Offset	#	# Per	Clear Spacing	Width or Perimeter Diameter	Weight
	Leg			ft	în	(Frac FW)		Row	īn	in in	plf
7/8	С	No	Ar (CaAa)	220.00 - 7.00	0.0000	-0.33	1	1	1.1100	1.1100	0.54
(Dipole) 1 5/8	В	No	Ar (CaAa)	182.00 - 7.00	0.0000	-0.2	4	2	1.5000	1.9800	1.04
(T-Mobile) CR 50 1873PE	А	No	Ar (CaAa)	166.16 - 7.00	0.0000	-0,1	12	6	1,5000	1.9800	0.83
(1-5/8 FOAM)			¥								
(AT&T) 1 5/8	В	No	Ar (CaAa)	128.00 - 7.00	0.0000	0.29	4	2	1.5000	1.9800	1.04
(VZW) 1 1/4	А	No	Ar (CaAa)	282.00 - 7.00	0.0000	0.48	1	1	1.5500	1.5500	0.66
(10' Omni - MTS) 1 1/4	А	No	Ar (CaAa)	262.00 - 7.00	0.0000	-0.33	I	1	1.5500	1.5500	0.66
(Shared Cable - MTS) 1 1/4	С	No	Ar (CaAa)	135.00 - 7.00	0.0000	0.48	1	1	1.5500	1.5500	0.66
(12' Dipole - MTS)											
1 1/4 (22' Omni - MTS)	С	No	Ar (CaAa)	135.00 - 7.00	0.0000	0.42	1	1	1.5500	1.5500	0.66
1 1/4 (WMRQ)	В	No	Ar (CaAa)	282.00 - 7.00	0.0000	-0.42	1	1	1.5500	1.5500	0.66
EW63 (8' Dish -	В	No	Af (CaAa)	215.00 - 7.00	0.0000	0.48	1	1	1.5742	1.5742	0.51
Eversource) EW63 (6' Dish -	В	No	Af (CaAa)	207.00 - 7.00	0.0000	0.43	1	1	1.5742	1.5742	0.51
Eversource) EW63 (8' Dish -	В	No	Af (CaAa)	207.00 - 7.00	0.0000	0.38	1	1	1.5742	1.5742	0.51
Eversource) EW63 (5.5' Dish -	C	No	Af (CaAa)	155.25 - 7.00	0.0000	-0.48	1	1	1.5742	1.5742	0.51
Eversource) 1 1/4	В	No	Ar (CaAa)	132.25 - 7.00	0.0000	-0.38	Ę	1	1.5500	1.5500	0,66
(Dead Line) EW63 (9' Dish -	С	No	Af (CaAa)	107.50 - 7.00	0.0000	-0.38	I	1	1.5742	1.5742	0.51
Eversource) DC Cable WR-VG122S	В	No	Ar (CaAa)	142.00 - 7.00	0.000	-0.025	1	1	0.4000	0.4000	0,25
T (L-810 Cable) 1 1/4 (WBMW -	В	No	Ar (CaAa)	282.00 - 7.00	0.0000	-0.3	1	1	1.5500	1.5500	0.66
MTS) 1 1/4" Hybriflex	А	No	Ar (CaAa)	164.00 - 7.00	0.0000	-0.4	1	1	1.2500	1.2500	0.99
Cables (AT&T) 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	В	No	Ar (CaAa)	282.00 - 7.00	0:000	0	1	1	1.2500	1.2500	0.58
Conduit) 1 1/4 (VZW)	В	No	Ar (CaAa)	128.00 - 7.00	0.0000	0.12	6	3	1.5500	1,5500	0.66
1/2	В	No	Ar (CaAa)	282.00 - 7.00	0.0000	-0.045	1	1	0.5800	0.5800	0.25

tnxTower	Job	280' Guyed Tower	Page 15 of 74
AECOM 500 Enterprise Drive, Suite 3B	Project	130 Vernon Rd Bolton, CT	Date 08:58:55 04/13/16
Rocky Hill, CT Phone: 860-529-8882 FAX: 860-529-3991	Client	Transcend Wireless / TWM-005 / - 004 Rev 1	Designed by MCD

Description	Face or	Allow Shield	Component Type	Placement	Face Offset	Lateral Offset	#	# Per	Clear Spacing		Perimeter	Weigh
	Leg		71	ft	in	(Frac FW)		Row	in	în	ĩn	plf
(Power Cable)												
1 1/4	С	No	Ar (CaAa)	242.00 - 7.00	0.0000	-0.2	1	1	1.5500	1.5500		0.66
(9' Omni -												
Eversource)												
1 1/4"	В	No	Ar (CaAa)	164.00 - 7.00	0.0000	-0,1	1	1	1.2500	1-2500		0.99
Hybriflex												
Cables												
(T-Mobile -												
Proposed)												

Feed Line/Linear Appurtenances Section Areas

Tower	Tower	Face	A_R	A_F	$C_A A_A$	$C_A A_A$	Weight
Section	Elevation				In Face	Out Face	
	ft		ft²	_ft ²	ft^2	ft ²	lb
T1	282.00-262.00	А	0.000	0.000	3.100	0.000	13.20
		В	0.000	0.000	9.860	0.000	43.00
		С	0.000	0.000	0.000	0.000	0.00
T2	262.00-242.00	А	0.000	0.000	6.200	0,000	26.40
		В	0.000	0.000	9.860	0.000	43.00
		С	0.000	0.000	0.000	0.000	0.00
Т3	242.00-222.00	А	0.000	0.000	6,200	0.000	26.40
		В	0.000	0.000	9.860	0.000	43.00
		С	0.000	0.000	3.100	0.000	13.20
T4	222.00-202.00	А	0.000	0.000	6.200	0.000	26.40
		в	0.000	0.000	15.894	0.000	54.73
		С	0.000	0.000	5.098	0.000	22.92
T5	202.00-182.00	А	0.000	0.000	6.200	0.000	26.40
		В	0.000	0.000	25.602	0.000	73.60
		С	0.000	0.000	5.320	0.000	24.00
Т6	182.00-162.00	А	0.000	0.000	16.494	0.000	70.82
		в	0.000	0.000	41.692	0.000	158.78
		С	0.000	0.000	5.320	0.000	24.00
T7	162.00-142.00	А	0.000	0.000	57.820	0.000	255,44
		В	0.000	0.000	43.942	0.000	176.64
		С	0.000	0.000	8.796	0.000	30.76
T8	142.00-122.00	А	0.000	0.000	57.820	0.000	255.44
		В	0.000	0.000	56.663	0.000	237.13
		С	0.000	0.000	14.597	0.000	51.36
Т9	122.00-102.00	А	0.000	0.000	57.820	0.000	255.44
		В	0.000	0.000	82.282	0.000	357.24
		С	0.000	0.000	18,210	0.000	63,41
T10	102.00-82.00	А	0.000	0.000	57.820	0.000	255,44
		В	0.000	0.000	82,282	0.000	357.24
		С	0.000	0.000	22.015	0.000	70.80
T11	82.00-78.00	А	0.000	0.000	11.564	0.000	51.09
		В	0.000	0.000	16.456	0.000	71.45
		С	0.000	0.000	4.403	0.000	14.16
T12	78.00-74.00	А	0.000	0.000	11.564	0.000	51.09
		В	0.000	0.000	16.456	0.000	71.45
		С	0.000	0.000	4.403	0.000	14.16
T13	74.00-70.00	Ā	0.000	0.000	11.564	0.000	51.09
		В	0.000	0.000	16.456	0.000	71.45
		С	0.000	0.000	4.403	0.000	14.16
T14	70.00-66.00	Ā	0.000	0.000	11.564	0.000	51.09
		В	0.000	0.000	16.456	0.000	71.45
		ĉ	0.000	0.000	4.403	0.000	14.16

tnxTower	Job 280' Guyed Tower	Page 16 of 74
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Tower	Tower	Face	A _R	AF	$C_A A_A$	$C_A A_A$	Weight
Section	Elevation				In Face	Out Face	0
	ft		ft^2	ft^2	ft ²	$-ft^2$	lb
T15	66.00-62.00	А	0.000	0.000	11,564	0.000	51.09
		В	0.000	0.000	16.456	0.000	71.45
		С	0.000	0.000	4.403	0.000	14.16
T16	62.00-42.00	А	0.000	0,000	57.820	0.000	255.44
		В	0.000	0.000	82.282	0.000	357.24
		С	0.000	0.000	22,015	0.000	70.80
T17	42.00-22.00	А	0.000	0.000	57,820	0.000	255.44
		В	0.000	0.000	82,282	0.000	357.24
		С	0.000	0,000	22.015	0.000	70.80
T18	22.00-2.00	А	0.000	0.000	43.365	0.000	191.58
		В	0.000	0.000	61,712	0.000	267.93
		С	0.000	0.000	16.511	0.000	53.10

Feed Line/Linear Appurtenances Section Areas - With Ice

Tower	Tower	Face	Ice	A_R	AF	$C_A A_A$	$C_A A_A$	Weight
Section	Elevation	or	Thickness			In Face	Out Face	
	fi	Leg	in	ft^2	ft^2	ft^2	ft^2	lb
T1	282.00-262.00	А	2.470	0,000	0.000	12.979	0,000	255.77
		В		0.000	0.000	49.374	0.000	936.62
		С		0.000	0.000	0.000	0.000	0.00
T2	262.00-242.00	А	2.451	0.000	0.000	25.807	0.000	505.59
		В		0.000	0.000	49.074	0.000	925.32
		С		0.000	0.000	0.000	0.000	0.00
T3	242.00-222.00	А	2.431	0.000	0.000	25.645	0.000	499.25
		В		0.000	0.000	48.751	0.000	913.26
		С		0.000	0.000	12.823	0.000	249.62
T4	222.00-202.00	А	2,409	0.000	0.000	25.471	0.000	492.43
		В		0.000	0.000	65.517	0.000	1217.68
		С		0.000	0.000	23,405	0.000	442.34
T5	202.00-182.00	А	2.385	0.000	0.000	25.281	0.000	485.07
		В		0.000	0.000	92.385	0.000	1701.31
		С		0.000	0.000	24.401	0.000	457.03
T6	182.00-162.00	А	2.359	0.000	0.000	41.825	0.000	882.70
		В		0.000	0.000	128.833	0.000	2413.14
		С		0.000	0.000	24.192	0.000	449.28
T7	162.00-142.00	А	2.330	0.000	0.000	121.225	0.000	2618.2
		В		0.000	0.000	138.443	0.000	2573.95
		С		0.000	0.000	33,611	0.000	614.24
T 8	142.00-122.00	А	2.297	0.000	0.000	120.389	0.000	2583.44
		В		0.000	0,000	175.688	0.000	3253.64
		С		0,000	0.000	54.113	0.000	985.32
T9	122.00-102.00	А	2.260	0.000	0.000	119.431	0.000	2543.82
		В		0.000	0.000	231.264	0.000	4340.32
		С		0.000	0.000	65.896	0.000	1185.95
T10	102.00-82.00	А	2.216	0.000	0.000	118.305	0.000	2497.66
		В		0.000	0.000	228,572	0.000	4238.99
		С		0.000	0.000	75,197	0.000	1326.41
T11	82.00-78.00	А	2.185	0.000	0.000	23,504	0.000	493.14
		В		0.000	0.000	45.338	0.000	833.79
		С		0.000	0.000	14.892	0.000	259.69
T12	78.00-74.00	А	2.174	0,000	0.000	23.446	0.000	490.83
		В		0.000	0.000	45.202	0.000	828.73
		С		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
		В		0.000	0.000	45.058	0.000	823.45
		С		0.000	0.000	14,782	0.000	255.57
T14	70.00-66.00	А	2.150	0.000	0.000	23.323	0.000	485.87

tnxTower	Job 280' Guyed Tower	Page 17 of 74
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Tower Section	Tower Elevation	Face or	Ice Thickness	A_R	A_F	C _A A _A In Face	$C_A A_A$ Out Face	Weight
Bethon	ft	Leg	in	_ft ²	ft²	ft ²	ft ²	lb
		В		0.000	0.000	44,908	0.000	817.91
		С		0.000	0.000	14,723	0.000	253,36
T15	66.00-62.00	А	2.137	0.000	0.000	23.257	0.000	483.21
		В		0.000	0.000	44.749	0.000	812.09
		С		0.000	0.000	14.660	0.000	251.04
T16	62.00-42.00	А	2,093	0.000	0.000	115.161	0.000	2371.31
		В		0.000	0,000	221.059	0.000	3962.96
		С		0.000	0.000	72,248	0.000	1216.49
T17	42.00-22.00	А	1.994	0.000	0.000	112.626	0.000	2272.02
		В		0.000	0.000	214.995	0.000	3747.48
		С		0.000	0.000	69.867	0.000	1131.22
T18	22.00-2.00	А	1.808	0.000	0.000	80.901	0.000	1569.04
		В		0.000	0.000	152.706	0.000	2520.39
		С		0.000	0.000	49.047	0.000	734.56

Feed Line	Center of	Pressure
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Section	Elevation	CP_X	CP_Z	CPX	CP_Z
				Ice	Ice
	ft	in	in	în	īn
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
Т6	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
Т9	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	Feed Line	Description	Feed Line	Ka	K_a
Section	Record No.		Segment Elev.	No Ice	Ice
TI	9	1 1/4	262.00 -	1.0000	1.0000
			282.00		
T1	14	1 1/4	262.00 -	1.0000	1.0000
			282.00		
T1	25	1 1/4	262.00 -	1.0000	1.0000
			282.00		
T1	30	1	262.00 -	1.0000	1.0000
			282.00		

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 Job
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 280' Guyed Tower
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 Project
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 130 Vernon Rd Bolton, CT
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 Client
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 Transcend Wireless / TWM-005 / - 004 Rev 1
 MCD

Tower	Feed Line	Description	Feed Line	Ka	Ka
Section	Record No.	Description	Segment Elev,	No Ice	Ice
T1	32	1/2	262.00 -	1.0000	1.0000
T2	9	1 1/4	282,00	1.0000	1.0000
12	9	1 1/4	242.00 - 262.00	1.0000	1.0000
T2	10	1 1/4	242.00 -	1.0000	1.0000
TTO			262.00	1.0000	20000
Т2	14	1 1/4	242.00 - 262.00	1.0000	1,0000
T2	25	1 1/4	242.00 -	1.0000	1.0000
			262.00		
Т2	30	1	242.00 - 262.00	1.0000	1.0000
Т2	32	1/2	242.00 -	1=0000	1.0000
			262.00		
Т3	9	1 1/4	222.00 - 242.00	1.0000	1.0000
Т3	10	1 1/4	222.00 -	1.0000	1.0000
			242.00		
T3	14	1 1/4	222.00 -	1.0000	1.0000
Т3	25	1 1/4	242.00 222.00 -	1.0000	1.0000
			242.00		
T3	30	1	222.00 -	1.0000	1,0000
Т3	32	1/2	242.00 222.00 -	1.0000	1.0000
10	52	172	242.00	1.0000	1.0000
T3	33	1 1/4	222.00 -	1.0000	1.0000
T4	3	7/8	242.00 202.00 -	1.0000	1.0000
-T-	5	110	220.00	1.0000	1.0000
T4	9	1 1/4	202.00 -	1.0000	1.0000
T4	10	1 1/4	222.00 202.00 -	1.0000	1.0000
14	10	1 1/4	202.00 -	1.0000	1.0000
T4	14	1 1/4	202.00 -	1.0000	1.0000
T4	15	EW63	222_00 202_00 -	1.0000	1.0000
14	15	EW03	202.00 - 215.00	1.0000	1.0000
T4	16	EW63	202.00 -	1.0000	1.0000
T4	17	ENV(2	207.00	1.0000	1.0000
14	17	EW63	202.00 - 207.00	1.0000	1.0000
T4	25	1 1/4	202.00 -	1.0000	1.0000
774	20		222.00	1.0000	1.0000
T4	30	1	202.00 - 222.00	1.0000	1.0000
Т4	32	1/2	202.00 -	1.0000	1.0000
			222.00	1.0000	10000
Т4	33	1 1/4	202.00 - 222.00	1.0000	1,0000
Т5	3	7/8	182.00 -	1.0000	1.0000
			202.00		
T5	9	1 1/4	182.00 - 202.00	1.0000	1.0000
T5	10	1 1/4	182.00 -	1.0000	1.0000
			202.00		
T5	14	1 1/4	182.00 -	1.0000	1.0000
T5	15	EW63	202.00 182.00 -	1,0000	1.0000
			202.00		
T5	16	EW63	182.00 -	1,0000	1.0000
	1		202.00	1	l.

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AECOM 500 Enterprise Drive, Suite 3B Rocky Hill, CT Phone: 860-529-8882 FAX: 860-529-3991

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Project		Date
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Client	Transcend Wireless / TWM-005 / - 004 Rev 1	Designed by

MCD

Tower	Feed Line	Description	Feed Line	Ka	Ka
Section	Record No.		Segment Elev.	No Ice	Ice
T5	17	EW63	182.00 - 202.00	1.0000	1.0000
T5	25	1 1/4	182.00 -	1.0000	1.0000
			202,00		
T5	30	1	182.00 -	1.0000	1.0000
Т5	32	1/2	202.00 182.00 -	1,0000	1.0000
C I	26	172	202.00	1,0000	1.0000
Т5	33	1 1/4	182,00 -	1.0000	1.0000
			202,00	100000000000000000000000000000000000000	1/202020
Т6	3	7/8	162.00 - 182.00	1.0000	1.0000
Т6	4	1 5/8	162.00 -	1.0000	1.0000
			182.00		
T6	5	CR 50 1873PE (1-5/8	162.00 -	1.0000	1.0000
Т6	9	FOAM) 1 1/4	166.16 162.00 -	1.0000	1.0000
10		1 1/4	182.00	1.0000	1.0000
T6	10	1 1/4	162.00 -	1.0000	1,0000
			182.00	1 0 0 0 0	1 0 0 0 0
T6	14	1 1/4	162.00 - 182.00	1,0000	1.0000
Т6	15	EW63	162.00 -	1.0000	1.0000
			182.00		
Т6	16	EW63	162.00 -	1.0000	1.0000
Т6	17	EW63	182.00 162.00 -	1.0000	1.0000
10	17	1,405	182.00	1.0000	1.0000
Т6	25	1 1/4	162.00 -	1.0000	1.0000
T	27	1.1/40.11.1.10.0.11	182.00	1 0000	1.0000
T6	27	1 1/4" Hybriflex Cables	162.00 - 164.00	1.0000	1.0000
Т6	28	DC Cable WR-VG122ST	162.00 -	1.0000	1.0000
			164.00		
T6	30	1	162.00 -	1,0000	1.0000
T6	32	1/2	182.00 162.00 -	1.0000	1.0000
			182.00		
Т6	33	1 1/4	162.00 -	1.0000	1.0000
Т6	34	1 1/4" Hybriflex Cables	182.00 162.00 -	1.0000	1.0000
10		1 1/4 Hydrifiex Cables	164.00	1.0000	1.0000
T7	3	7/8	142.00 -	1.0000	1.0000
		1.5/0	162.00	1 0000	1 0000
Т7	4	1 5/8	142.00 - 162.00	1.0000	1.0000
Т7	5	CR 50 1873PE (1-5/8	142.00 -	1.0000	1.0000
		FOAM)	162.00	and a set of the last	
Т7	9	1 1/4	142.00 -	1.0000	1.0000
Т7	10	1 1/4	162.00 142.00 -	1.0000	1.0000
	10	1 1/1	162.00	1.0000	
Т7	14	1 1/4	142.00 -	1.0000	1.0000
Т7	1.5	EWC	162.00	1 0000	1 0000
17	15	EW63	142.00 - 162.00	1.0000	1.0000
Т7	16	EW63	142.00 -	1.0000	1.0000
			162,00		
T7	17	EW63	142.00 -	1,0000	1.0000
Т7	18	EW63	162.00 142.00 -	1.0000	1.0000
- /		2 // 02	155.25		
			12	55	20

Job

Project

Client

AECOM 500 Enterprise Drive, Suite 3B Rocky Hill, CT Phone: 860-529-8882 FAX: 860-529-3991

130 Vernon Rd Bolton, CT

280' Guyed Tower

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Transcend Wireless / TWM-005 / - 004 Rev 1

Designed by MCD

Tower	Feed Line	Description	Feed Line	Ka	Ka
Section	Record No.		Segment Elev.	No Ice	Ice
Т7	25	1 1/4	142.00 -	1.0000	1,0000
T7	27	1 1/4" Hybriflex Cables	162.00 142.00 - 162.00	1.0000	1.0000
Т7	28	DC Cable WR-VG122ST	142.00 - 162.00	1.0000	1.0000
Т7	30	1	142.00 - 162.00	1.0000	1.0000
Т7	32	1/2	142.00 - 162.00	1.0000	1.0000
Τ7	33	1 1/4	142.00 - 162.00	1.0000	1.0000
Τ7	34	1 1/4" Hybriflex Cables	142.00 - 162.00	1.0000	1.0000
Т8	3	7/8	122.00 - 142.00	1.0000	1.0000
Т8	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
Т8 Т8	7 9	1 5/8	122.00 - 128.00 122.00 -	1.0000 1.0000	1.0000
т8 Т8	10	1 1/4	142.00 122.00 -	1.0000	1.0000
T8	11	1 1/4	142.00 122.00 -	1.0000	1.0000
Т8	12	1 1/4	135.00 122.00 -	1.0000	1.0000
Т8	14	1 1/4	13 5.00 122.00 -	1.0000	1.0000
Т8	15	EW63	142.00 122.00 -	1.0000	1.0000
Т8	16	EW63	142.00 122.00 - 142.00	1.0000	1.0000
Т8	17	EW63	142.00 122.00 - 142.00	1.0000	1.0000
Т8	18	EW63	122.00 - 142.00	1.0000	1.0000
Т8	20	1 1/4	122.00 - 132.25	1.0000	1.0000
Т8	24	DC Cable WR-VG122ST	122.00 - 142.00	1.0000	1.0000
Т8	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 T8	28	DC Cable WR-VG122ST	122.00 - 142.00	1.0000	1.0000
Т8 Т8	30 31	1 1/4	122.00 - 142.00 122.00 -	1.0000	1.0000
18 T8	31	1 1/4	122.00 - 128.00 122.00 -	1.0000	1.0000
T8	33	1 1/4	142.00	1.0000	1.0000
Т8	34	1 1/4" Hybriflex Cables	142.00 122.00 -	1.0000	1.0000
Т9	3	7/8	142.00 102.00 -	1.0000	1.0000
	- 1	ļ	122.00	ļ	

Job

Project

Client

AECOM 500 Enterprise Drive, Suite 3B Rocky Hill, CT Phone: 860-529-8882 FAX: 860-529-3991

Feed Line

Tower

280' Guyed Tower

130 Vernon Rd Bolton, CT

Date 08:58:55 04/13/16 Designed by

MCD

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Page

Transcend Wireless / TWM-005 / - 004 Rev 1

Description Feed Line K_{a} K_a Section Record No. Segment Elev No Ice Ice T9 4 1 5/8 102.00 -1.0000 1.0000 122.00 T9 CR 50 1873PE (1-5/8 1.0000 1.0000 5 102.00 -FOAM) 122.00 7 Т9 1.0000 1.0000 1 5/8 102.00 -122.00 **T**9 9 1 1/4 102.00 -1,0000 1.0000 122.00 10 Т9 1 1/4 1.0000 1.0000 102.00 -122.00 T9 1.0000 1.0000 11 1 1/4 102.00 -122.00 Т9 1 1/4 1.0000 1.0000 12 102.00 -122.00 Т9 1 1/4 1.0000 1.0000 14 102.00 -122.00 Т9 EW63 102.00 -1,0000 1.0000 15 122.00 EW63 1.0000 **T**9 16 102.00 -1.0000 122.00 Т9 17 EW63 1.0000 102.00 -1.0000 122.00 EW63 1.0000 **T9** 18 102.00 -1.0000 122.00 Т9 1.0000 20 $1 \frac{1}{4}$ 102.00 1.0000 122.00 EW63 Т9 1.0000 1.0000 22 102.00 -107.50 Т9 DC Cable WR-VG122ST 1.0000 24 102.00 -1,0000 122.00 Т9 1.0000 1.0000 25 1 1/4 102,00 -122.00 Т9 1 1/4" Hybriflex Cables 27 102.00 -1.0000 1.0000 122.00 DC Cable WR-VG122ST 1.0000 **T**9 28 102.00 -1.0000 122.00 Т9 30 1.0000 1.0000 102.00 -122.00 Т9 1 1/4 1.0000 1.0000 31 102.00 -122.00 **T**9 32 1/2102.00 -1.0000 1.0000 122.00 1.0000 Т9 33 1 1/4 102.00 -1.0000 122.00 1 1/4" Hybriflex Cables 1.0000 Т9 34 102.00 -1.0000 122.00 7/8 82.00 - 102.00 1.0000 T10 3 1.0000 T10 4 1 5/8 82.00 - 102.00 1.0000 1.0000 CR 50 1873PE (1-5/8 82.00 - 102.00 T10 5 1.0000 1.0000 FOAM) 1 5/8 82.00 - 102.00 1.0000 T10 7 1.0000 T10 9 1 1/4 82.00 - 102.00 1.0000 1.0000 10 1 1/4 82.00 - 102.00 T10 1.0000 1.0000 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 T10 14 1 1/4 82.00 - 102.00 1.0000 1.0000 EW63 82.00 - 102.00 T10 15 1.0000 1.0000 T10 16 EW63 82.00 - 102.00 1.0000 1.0000 17 EW63 82.00 - 102.00 1.0000 1.0000 T10 T10 18 EW63 82.00 - 102.00 1.0000 1.0000 T10 1 1/4 82.00 - 102.00 1.0000 1.0000 20 T10 EW63 82.00 - 102.00 1.0000 22 1.0000

tnxTower

AECOM 500 Enterprise Drive, Suite 3B Rocky Hill, CT Phone: 860-529-8882 FAX: 860-529-3991

Job 280' Guyed Tower 22 of 74 Project 130 Vernon Rd Bolton, CT 08:58:55 04/13/16 Client Transcend Wireless / TWM-005 / - 004 Rev 1 MCD

Tower	Feed Line	Description	Feed Line	Ka	Ka
Section	Record No.		Segment Elev.	No Ice	Ice
T10	24	DC Cable WR-VG122ST	82.00 - 102.00	1.0000	1.0000
T10	25		82.00 - 102.00	1.0000	1.0000
T10	27	1 1/4" Hybriflex Cables		1.0000	1.0000
T10	28	DC Cable WR-VG122ST		1.0000	1.0000
T10	30	1	82.00 - 102.00	1.0000	1.0000
T10	31		82.00 - 102.00	1.0000	1.0000
T10	32		82.00 - 102.00	1.0000	1.0000
T10	33		82,00 - 102,00	1.0000	1.0000
T10 T11	34	1 1/4" Hybriflex Cables		1.0000	1.0000
T11 T11	3	7/8	78,00 - 82,00	1.0000	1.0000
T11 T11	4	1 5/8 CD 50 1972DE (1 5/8	78.00 - 82.00	1.0000	1.0000
111	3	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 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 T11	10	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	74.00 - 78.00	1.0000	1.0000
14115-537		FOAM)			
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	11/4	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 T12	33 34	1 1/4 1 1/4" Hybriflex Cables	74.00 - 78.00	1.0000	1.0000
T12 T13	34	,	74.00 - 78.00	1.0000	1.0000
T13	3	7/8 1 5/8	70.00 - 74.00 70.00 - 74.00	1.0000	1.0000
T13	4	CR 50 1873PE (1-5/8	70.00 - 74.00	1.0000	1.0000 1.0000
1.1	51	010-1) 1110100	70.00 - 74.00]	1.0000	1.0000

AECOM 500 Enterprise Drive, Suite 3B Rocky Hill, CT Phone: 860-529-8882 FAX: 860-529-3991 Job 280' Guyed Tower 23 of 74 Project 130 Vernon Rd Bolton, CT 08:58:55 04/13/16 Client Transcend Wireless / TWM-005 / - 004 Rev 1 MCD

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
DUCTION	ALCOID NO.	FOAM)	Degment Liev.	1010	100
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 T13	15 16	EW63 EW63	70.00 - 74.00 70.00 - 74.00	1.0000 1.0000	1.0000
T13	17	EW03 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 T14	3	7/8 1 5/8	66.00 - 70.00 66.00 - 7 0.00	1.0000	1.0000
T14	4	CR 50 1873PE (1-5/8	66.00 - 70.00	1.0000	1.0000 1.0000
114	5	FOAM)	00.00 - 70.00	1,0000	1.0000
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 T14	24	DC Cable WR-VG122ST	66.00 - 70.00	1.0000	1.0000
T14	25 27	1 1/4" Hybriflex Cables	66.00 - 70.00 66.00 - 70.00	1.0000	1.0000
T14	28	DC Cable WR-VG122ST	66.00 - 70.00	1.0000	1.0000 1.0000
T14	30	1 De cable wit-v 012251	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 14	1 1/4	62.00 - 66.00	1.0000	1.0000
T15 T15	14	1 1/4 EW63	62.00 - 66.00 62.00 - 66.00	1.0000	1.0000
T15	16	EW63 EW63	62.00 - 66.00	1.0000	1.0000
T15	17	EW63 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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Job

Project

Client

AECOM

500 Enterprise Drive, Suite 3B Rocky Hill, CT Phone: 860-529-8882 FAX: 860-529-3991

130 Vernon Rd Bolton, CT

280' Guyed Tower

Transcend Wireless / TWM-005 / - 004 Rev 1

Date 08:58:55 04/13/16 Designed by MCD

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Page

Section Record No. Ice Join Term Join	Tower	Feed Line	Description	Feed Line	Ka	Ka
$\begin{array}{ c c c c c c c c c c c c c c c c c c c$			Description			
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$			EW63			
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AECOM 500 Enterprise Drive, Suite 3B
Rocky Hill, CT
Phone: 860-529-8882 FAX: 860-529-3991

	Job		Page
		280' Guyed Tower	25 of 74
	Project		Date
3B		130 Vernon Rd Bolton, CT	08:58:55 04/13/16
	Client	-	Designed by
		Transcend Wireless / TWM-005 / - 004 Rev 1	MCD

Tower	Feed Line	Description	Feed Line	K_a	Ka
Section	Record No.		Segment Elev	No Ice	Ice
T18	5	CR 50 1873PE (1-5/8	7.00 - 22.00	1.0000	1.0000
		FOAM)			
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	Offset Type	Offsets: Horz Lateral	Azimuth Adjustment	Placement		$C_A A_A$ Front	C _A A _A Side	Weight
	Leg		Vert ft ft	ò	ft		_ft ²	ft ²	lb
5'8"x4" Pipe Mount	A	Enom Lag	ft0.50	0.0000	121.00	No Ice	1.07	1.07	72.00
*	A	From Leg		0.0000	121.00		1.97	1.97	72.00
(Verizon)			0.00 0.00			1/2" Ice 1" Ice	3.01	3.01	93.13
5'8"x4" Pipe Mount	В	From Leg	0.00	0.0000	121.00	No Ice	3.42 1.97	3.42	118.95 72.00
(Verizon)	D	From Leg	0.00	0.0000	121.00	1/2" Ice	3.01	1.97 3.01	93.13
(venzon)			0.00			172 Ice		3.42	
14' Dipole	С	From Leg	4.00	0.0000	132.00	No Ice	3.42 2.80		118.95
(Unknown)	C	riom Leg	0.00	0.0000	152.00	1/2" Ice	4.22	2.80 4.22	75.00 97.50
(UIKIIOWII)			0.00			172 ICe	4.22 5.64	4.22 5.64	120.00
6' Stand-off	С	From Leg	3.00	0.0000	132.00	No Ice	1.20	4.50	75.00
(Unknown)	C	FIOIII Leg	0.00	0.0000	132.00	1/2" Ice	1.20	5,50	125.00
(Unknown)			0.00			172 ICC 1" Icc	1.60	6.50	175.00
2.5" x 22' Whip	А	From Leg	4.00	0.0000	132.00	No Ice	5.51	5.51	150.30
(Unknown)	Л	110m Leg	0.00	0.0000	132.00	1/2" Ice	7.77	7.77	191.34
(Onknown)			0.00			1" Ice	10.05	10.05	246.78
6' Stand-off	А	From Leg	3.00	0.0000	132,00	No Ice	1.20	4.50	75.00
(Unknown)	11	rion Leg	0.00	0.0000	152,00	1/2" Ice	1.40	5.50	125.00
(Olikilowil)			0.00			172 ICC 1" Icc	1.60	6.50	175.00
ASP-711	А	From Leg	1.50	0.0000	260.00	No Ice	1.30	1.30	13.00
(Unknown)	A	r tom Leg	0.00	0.0000	200.00	1/2" Ice	3.63	3,63	31.56
(Unknown)			0.00			172 Ice	4.87	4.87	57.80
3' Stand-off	А	From Leg	0.00	0.0000	260.00	No Ice	4.87	2.00	50.00

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A. 500 Enterpri Rock Phone: FAX: 8

T	Job		Page
xTower		280' Guyed Tower	26 of 74
AECOM	Project		Date
prise Drive, Suite 3B		130 Vernon Rd Bolton, CT	08:58:55 04/13/16
ocky Hill, CT e: 860-529-8882 : 860-529-3991	Client	Transcend Wireless / TWM-005 / - 004 Rev 1	Designed by MCD

Description	Face or	Offset Type	Offsets: Horz	Azimuth Adjustment	Placement		$C_A A_A$ Front	C _A A _A Side	Weigh
	Leg		Lateral Vert						
			ft	o	ft		ft^2	ft^2	lb
			ft		<i>.</i>		<i>.</i> ,,	jt	10
(Unknown)			<i>ft</i> 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	В	From Leg	3.50	0,0000	260.00	No Ice	3.50	3.50	30.00
(Unknown)			0.00			1/2" Ice	4.93	4.93	55.97
21.04-1-60	D		0.00	0.0000	2(0.00	1" Ice	6,38	6.38	90,90
3' Stand-off	В	From Leg	1.50 0.00	0.0000	260.00	No Ice 1/2" Ice	1.00	2.00	50.00
(Unknown)			0.00			172 ICE 1" Ice	1.20 1.40	2.70 3.40	75.00 100.0
6' Stand-off	А	From Leg	2.50	0.0000	281.00	No Ice	1.40	4.50	75.00
(Unknown)		110m Leg	0.00	0.0000	201.00	1/2" Ice	1.40	5.50	125.0
(Online with)			0.00			1" Ice	1.60	6.50	175.0
6' Stand-off	В	From Leg	2.50	0.0000	281.00	No Ice	1.20	4.50	75.00
(Unknown)			0.00			1/2" Ice	1.40	5.50	125.00
			0.00			1" Ice	1.60	6.50	175.0
6' Stand-off	С	From Leg	2.50	0.0000	281.00	No Ice	1.20	4.50	75.00
(Unknown)			0,00			1/2" Ice	1.40	5.50	125.0
			0.00			1" Ice	1.60	6.50	175.0
DLS L 864-L-865 Light	С	None		0.0000	282.00	No Ice	2.50	1.14	52.00
Beacon Unit						1/2" Ice	2.72	1.29	69.23
(Tower)	~		0.50	0.0000	104 50	1" Ice	2.94	1.46	89.21
1' Yagi antenna	С	From Leg	0.50	0.0000	124.50	No Ice	0.50	0.50	25.00
(Not Used)			0.00			1/2" Ice	0.86	0.86	29.40
3" x 12.5' Omni	В	Enorm Law	0.00	0.0000	126.00	1" Ice	1.22	1.22	33.80
(Not Used)	В	From Leg	2.00 0.00	0.0000	125.00	No Ice 1/2" Ice	3.75 5.03	3.75 5.03	30.00
(Not Osed)			0.00			172 Ice	6.33	6.33	57.13 92.36
3' Stand-off	В	From Leg	1.50	0.0000	125.00	No Ice	1.00	2.00	50.00
(Not Used)	Б	110m Leg	0.00	0.0000	125.00	1/2" Ice	1.20	2.70	75.00
(1101-0504)			0.00			1" Ice	1.40	3.40	100.00
6' Stand-off	С	From Leg	3.00	0.0000	180.50	No Ice	1.20	4,50	75.00
(Not Used)		5	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	А	From Leg	1.00	0.0000	284.00	No Ice	2.50	2.50	30.00
(Not Used)			0.00			1/2" Ice	3.53	3.53	48.64
			0.00			1" Ice	4.58	4.58	73.79
FM Antenna	В	From Face	4.50	0.0000	289.00	No Ice	8.30	8.30	102.00
(WMRQ)			0.00			1/2" Ice	13.00	13.00	132.60
2) 7770 Panel Antenna		From Lon	0.00	0.0000	164.00	1" Ice	17.70	17.70	163.20
(AT&T)	A	From Leg	4.00 0.00	0.0000	164.00	No Ice 1/2" Ice	5.88 6.31	2.93 3.27	35.00
(A1001)			0.00			1" Ice	6.75	3.63	67.63 105.06
2) 7770 Panel Antenna	В	From Leg	4.00	0.0000	164.00	No Ice	5.88	2.93	35.00
(AT&T)	D	Trom Leg	0.00	0.0000	104.00	1/2" Ice	6.31	3.27	67.63
(111001)			0.00			1" Ice	6.75	3.63	105.06
2) 7770 Panel Antenna	С	From Leg	4.00	0.0000	164.00	No lce	5.88	2,93	35.00
(AT&T)			0.00			1/2" Ice	6.31	3.27	67.63
			0.00		2	1" Ice	6.75	3.63	105.06
(2) LGP214nn TMA	А	From Leg	4.00	0.0000	164.00	No Ice	1.29	0.23	1.90
(AT&T)			0.00			1/2" Ice	1.45	0.31	9.06
			0.00			1" Ice	1.61	0.40	18.12
(4) LGP 219nn	А	From Leg	4.00	0.0000	164.00	No Ice	0.23	0.12	5.50
(AT&T)			0.00			1/2" Ice	0.30	0.17	7.70
			0.00	0.0000		1" Ice	0.38	0.22	10.94
(2) LGP214nn TMA	В	From Leg	4.00	0.0000	164-00	No Ice	1.29	0.23	1.90
(AT&T)			0.00			1/2" lce	1.45	0.31	9.06
(4) X CD 210	P	E	0.00	0.0000	1/4 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	5.50

Job

Project

Client

AECOM 500 Enterprise Drive, Suite 3B Rocky Hill, CT Phone: 860-529-8882 FAX: 860-529-3991

130 Vernon Rd Bolton, CT

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Page

Date

Transcend Wireless / TWM-005 / - 004 Rev 1

280' Guyed Tower

Designed by MCD

08:58:55 04/13/16

Description	Face or	Offset Type	Offsets: Horz	Azimuth Adjustment	Placement		$C_A A_A$ Front	$C_A A_A$ Side	Weight
	Leg		Lateral	5					
			Vert	0	ß		<i>c</i> ²	<i>G</i> ²	11
			ft ft		ft		ft^2	ft^2	lb
(AT&T)						1/2" Ice	0.30	0.17	7.70
(0.00			1" Ice	0.38	0.22	10.94
(2) LGP214nn TMA	С	From Leg	4.00	0.0000	164.00	No Ice	1.29	0.23	1.90
(AT&T)		-	0.00			1/2" Ice	1.45	0,31	9.06
			0.00			1" Ice	1.61	0.40	18.12
(4) LGP 219nn	С	From Leg	4.00	0.0000	164.00	No Ice	0.23	0.12	5.50
(AT&T)			0.00			1/2" Ice	0.30	0.17	7.70
SBNH-1D6565C	А	From Leg	0.00 4.00	0.0000	164.00	1" Ice	0.38	0.22	10.94
(AT&T)	A	From Leg	0.00	0.0000	164.00	No Ice 1/2" Ice	11.41 12.02	7.70 8.29	61.00 126.70
(///@1)			0.00			172 Ice	12.65	8.89	200.07
SBNH-1D6565C	В	From Leg	4.00	0.0000	164.00	No Ice	11.41	7.70	61.00
(AT&T)		5	0.00			1/2" Ice	12.02	8.29	126.70
			0.00			1" Ice	12.65	8.89	200.07
SBNH-1D6565C	С	From Leg	4.00	0.0000	164.00	No Ice	11.41	7.70	61.00
(AT&T)			0.00			1/2" Ice	12.02	8.29	126.70
C	C	N	0.00	0.0000	164.00	1" Ice	12.65	8.89	200.07
Surge Suppressor	С	None		0.0000	164.00	No Ice	0.80	0.80	30.00
(AT&T)						1/2" Ice 1" Ice	0.94 1.09	0.94 1.09	41.94 55.86
(2) RRU	А	From Leg	4.00	0.0000	164.00	No Ice	1.09	0.70	10.00
(AT&T)	7.	TION LOD	0.00	0.0000	104.00	1/2" Ice	1.56	0.82	20.34
()			0.00			1" Ice	1.73	0.95	32.81
(2) RRU	В	From Leg	4,00	0.0000	164.00	No Ice	1.40	0.70	10.00
(AT&T)		Ū.	0.00			1/2" Ice	1.56	0.82	20,34
			0.00			1" Ice	1.73	0.95	32.81
(2) RRU	С	From Leg	4.00	0.0000	164.00	No Ice	1,40	0.70	10.00
(AT&T)			0.00			1/2" Ice	1.56	0.82	20.34
Andrew 121 Crister Francis			0.00	0.0000	1.64.00	1" Ice	1.73	0.95	32.81
Andrew 12' Sector Frame (SF-U12-3-72)	А	From Leg	2.00 0.00	0.0000	164.00	No Ice 1/2" Ice	10.80	10.80	487.00
(AT&T)			0.00			172 Ice	15.10 19.40	15.10 19.40	633.10 779.20
Andrew 12' Sector Frame	В	From Leg	2.00	0.0000	164.00	No Ice	10.80	10.80	487.00
(SF-U12-3-72)	2	1101111106	0.00	010000	101.00	1/2" Ice	15.10	15.10	633.10
(AT&T)			0.00			1" Ice	19.40	19.40	779.20
Andrew 12' Sector Frame	С	From Leg	2.00	0.0000	164.00	No Ice	10.80	10.80	487.00
(SF-U12-3-72)			0.00			1/2" Ice	15.10	15.10	633.10
(AT&T)			0.00			1" Ice	19.40	19.40	779.20
BXA-70063-6CF-EDIN	А	From Leg	1.00	0.0000	121.00	No Ice	7,73	4.16	20.00
(Verizon)			0.00			1/2" Ice	8.27	4.60	62.49
BXA-70063-6CF-EDIN	В	From Leg	0.00 1.00	0.0000	121.00	l" lce No Iso	8.81	5.04	110.83
(Verizon)	D	11000 Leg	0.00	0.0000	121.00	No Ice 1/2" Ice	7.73 8.27	4.16 4.60	20.00 62.49
(*612011)			0.00			1" Ice	8.81	5.04	110.83
2) LPA-80080-4CF-EDIN	А	From Leg	1.00	0.0000	121.00	No Ice	2.62	6.06	20.00
(Verizon)		5	0.00			1/2" Ice	2.92	6.45	53.12
			0.00			1" lce	3.23	6.86	90.72
(2) LPA-80063-4CF	В	From Leg	1.00	0.0000	121.00	No Ice	7.00	6.04	32.00
(Verizon)			0.00			1/2" Ice	7.41	6.43	84.41
T.D.A. 171000 000 000			0.00	0.0000	101	1" Ice	7.83	6.84	141.92
) LPA-171080-8CF-EDIN	A	From Leg	1.00	0.0000	121.00	No Ice	2.10	3.19	13.50
(Verizon)			0.00			1/2" Ice	2.40	3.54	33.28
) LPA-171063-8CF-EDIN	В	From Leg	0.00 1.00	0.0000	121.00	1" Ice No Ice	2.70	3.91	57.04
(Verizon)	Ц	TION LEB	0.00	0.0000	121.00	1/2" Ice	3.69 4.06	3.69 4.06	16.50 45.29
(4.08		45.29 78.40
			0.00			1" Ice	444	4.43	/x //

tnx

AECOM
500 Enterprise Drive, Suite 3B
Rocky Hill, CT
Phone: 860-529-8882
FAX: 860-529-3991

Tomon	Job		Page
cTower		280' Guyed Tower	28 of 74
AECOM	Project		Date
prise Drive, Suite 3B		130 Vernon Rd Bolton, CT	08:58:55 04/13/16
ocky Hill, CT 2: 860-529-8882 : 860-529-3991	Client	Transcend Wireless / TWM-005 / - 004 Rev 1	Designed by MCD

Description	Face or Leg	Offset Type	Offsets: Horz Lateral	Azimuth Adjustment	Placement		$C_A A_A$ Front	$C_A A_A$ Side	Weight
	Leg		Vert						
			ft ft	O	ft		ft²	ft^2	lb
			ft						
(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	А	From Leg	3.00	0.0000	218,00	No Ice	5,91	5.91	45.00
Antenna			0.00			1/2" Ice	7.68	7.68	79.03
(Eversource)		F	0.00	0.0000		1" Ice	9.47	9.47	125.80
6' Stand-off	А	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
	G	2.1	0.00	0.0000	1.40.00	1" Ice	1.60	6.50	175.00
(3) L-810 Obstruction Lights	С	None		0.0000	142.00	No Ice	0.85	0.43	45.00
w/ Mount Kit						1/2" Ice	0.97	0.53	51.66
(Tower - OBS Light)		D T	1.50	0.0000	100.00	1" Ice	1,11	0.63	60.04
Pirod 12' T-Frame Sector	А	From Leg	1.50	0.0000	182.00	No Ice	13.60	13.60	465.00
Mount (1)			0.00			1/2" Ice	18.40	18.40	600,00
(T-Mobile)	D	F 7	0.00	0.0000	100.00	1" Ice	23.20	23.20	735.00
Pirod 12' T-Frame Sector	В	From Leg	1.50	0.0000	182.00	No Ice	13.60	13.60	465.00
Mount (1)			0.00			1/2" Ice	18.40	18.40	600.00
(T-Mobile)	0	F T	0.00	0.0000	192.00	1" Ice	23.20	23.20	735.00
Pirod 12' T-Frame Sector	С	From Leg	1.50	0.0000	182.00	No Ice	13.60	13.60	465.00
Mount (1)			0.00			1/2" Ice	18.40	18.40	600.00
(T-Mobile)		F . F	0.00	0.0000	102.00	1" Ice	23.20	23.20	735.00
AIR21 B4A/B2P	А	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
LNX-6515DS-VTM		E	0.00 4.00	0.0000	102.00	1" Ice	6.80	6.85	230.27
	А	From Leg		0.0000	182.00	No Ice	11.39	8.98	72.65
(T-Mobile)			-6.00 0.00			1/2" Ice	12.01	9.88	153.92
AIR21 B4A/B2P	В	From Log	4.00	0.0000	192.00	1" Ice	12.63	10.79	244.99
(T-Mobile)	D	From Leg	4.00 6.00	0.0000	182.00	No Ice 1/2" Ice	6.05 6.42	5.56 6.19	110.02
(1-Mobile)			0.00			172 Ice			166.56
LNX-6515DS-VTM	В	Erom Log	4.00	0.0000	193.00		6.80	6.85	230.27
(T-Mobile)	D	From Leg	-6.00	0.0000	182.00	No Ice 1/2" Ice	11.39 12.01	8.98 9.88	72.65 153.92
(1-Moone)			0.00			172 100 1" Ice	12.63	9.88	244,99
S11 B2 RRH Unit	А	From Leg	4.00	0.0000	182.00	No Ice	0.41	0.12	244,99
(T-Mobile)	л	110III Leg	6.00	0.0000	102.00	1/2" Ice	0.49	0.12	5.05
(1-Moone)			0.00			1/2 ice	0.49	0.17	9.32
RRUS-11	А	From Leg	4.00	0.0000	182.00	No Ice	2.57	1.07	50.00
(T-Mobile)	А	110III Leg	-6.00	0.0000	162.00	1/2" Ice	2.76	1.07	69.57
(1-woone)			0.00			172 ICe	2.97	1.36	92.08
S11 B2 RRH Unit	В	From Leg	4.00	0.0000	182.00	No Ice	0.41	0.12	2.00
(T-Mobile)	Б	11011 Leg	6.00	0.0000	162.00	1/2" Ice	0.41	0.12	5.05
(1-1100110)			0.00			172 Ice	0.49	0.17	9.32
RRUS-11	В	From Leg	4.00	0.0000	182.00	No Ice	2.57	1.07	9.32 50.00
(T-Mobile)	D	r totti Leg	-6.00	0.0000	102.00	1/2" Ice	2.37	1.07	50.00 69.57
(1-100000)			0.00			172 ice	2.97	1.36	92.08
DB589-Y	А	From Leg	3.00	0.0000	234,70	No Ice	2.97	2.13	92.08
(Eversource)	Λ	Trom Leg	0.00	0.0000	234.70	1/2" Ice	3.00	3.00	27.39
(Eversource)			0.00			172 Ice 1" Ice	3.00	3.00	48.88

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

Description	Face or	Dish Tיpe	O <u>f</u> fset Type	Offsets: Horz	Azimuth Adjustment	3 dB Beam	Elevation	Outside Diameter		Aperture Area	Weight
	Leg	Type	1 ype	Lateral Vert	мајизитени	Width		Diameter		Area	
				ſl	0	۰	ſ	ft		ft?	lb
9' Dish w/ Radome	С	Paraboloid	From	3.00	0.0000		104.50	9.00	No Ice	63,62	100.00
(Eversource)		w/Radome	Leg	0.00					1/2" Ice	64.80	432.64
				0.00					1" Ice	65.98	765.28
5.5' Dish w/ Radome	А	Paraboloid	From	2.50	0.0000		153.00	5.50	No Ice	23.76	75,00
(Eversource)		w/Radome	Leg	0.00					1/2" Ice	24,48	200.66
				0.00					l" Ice	25,21	326.32
8' Dish w/ Radome	А	Paraboloid	From	2.83	0.0000		204,50	8.00	No Ice	50.27	75.00
(Eversource)		w/Radome	Leg	0.00					1/2" Ice	51.32	338,44
				0.00					1" Ice	52.37	601.88
6' Dish w/ Radome	С	Paraboloid	From	2.25	0.0000		204.50	6.00	No Ice	28.27	75.00
(Eversource)		w/Radome	Leg	0.00					1/2" Ice	29.07	224.23
				0.00					1" Ice	29.86	373.46
8' Dish w/ Radome	С	Paraboloid	From	2.83	0.0000		212.50	8.00	No Ice	50.27	75.00
(Eversource)		w/Radome	Leg	0.00					1/2" Ice	51.32	338.44
				0.00					1" Ice	52.37	601.88
MF-950B	С	Grid	From	0.50	0.0000		280.00	1.33	No Ice	2.66	13.00
(WBMW)			Leg	0.00					1/2" Ice	3.50	21.00
				0.00					1" Ice	4.34	29,00

Tower Pressures - No Ice

$G_H = \theta.85\theta$

Section	Z	Kz	q_z	A_G	F	A_F	A_R	Aleg	Leg	$C_A A_A$	$C_A A_A$
Elevation					a				%	In	Out
					С					Face	Face
ft	ft		psf	ft^2	е	ft^2	ft^2	ft^2		ft^2	ft^2
T1	272.00	1,562	37	83.333	Α	4.951	10.620	6.667	42.81	3.100	0.000
282.00-262.00					В	4.951	10.620		42.81	9.860	0.000
					C	4.951	10.620		42.81	0.000	0.000
T2	252.00	1.537	37	83.333	A	3.993	10.620	6.667	45.62	6.200	0.000
262.00-242.00					В	3.993	10.620		45.62	9.860	0.000
					C	3,993	10.620		45.62	0.000	0.000
T3	232.00	1.511	36	83.333	Α	3.993	10.620	6.667	45.62	6.200	0.000
242,00-222,00					В	3.993	10.620		45.62	9,860	0.000
					С	3.993	10.620		45.62	3.100	0.000
T4	212.00	1.483	36	83.333	A	15.287	6.667	6.667	30,37	6,200	0.000
222.00-202.00		1			В	15.287	6.667		30.37	15.894	0.000
					С	15.287	6.667		30.37	5.098	0.000
T5	192.00	1.452	35	83.333	A	17.843	6,667	6,667	27.20	6.200	0.000
202.00-182.00					В	17.843	6.667		27.20	25.602	0.000
					С	17.843	6.667		27.20	5.320	0.000
Т6	172.00	1.419	34	83,333	А	3.993	10.620	6.667	45.62	16.494	0.000
182.00-162.00)				В	3.993	10.620		45.62	41.692	0.000
					С	3.993	10.620		45.62	5,320	0.000
T7	152.00	1.382	33	83.333	Α	3.993	10.620	6.667	45.62	57.820	0.000
162.00-142.00					В	3.993	10.620		45.62	43.942	0,000
				1	С	3,993	10.620		45.62	8.796	0.000
T8	132.00	1,342	32	83.333	Α	17.843	6.667	6.667	27.20	57,820	0.000
142.00-122.00					В	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	31	83,333	Α	15.287	6.667	6.667	30.37	57.820	0.000
122.00-102.00					В	15.287	6.667		30.37	82.282	0.000
					С	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

	Job
tnxTower	

AECOM 500 Enterprise Drive, Suite 3B						
Rocky Hill, CT						
Phone: 860-529-8882						
FAX: 860-529-3991						

	Job		Page
		280' Guyed Tower	30 of 74
	Project		Date
: 3B		130 Vernon Rd Bolton, CT	08:58:55 04/13/16
	Client	Transcend Wireless / TWM-005 / - 004 Rev 1	Designed by MCD

Section	2	Kz	q_z	A_G	F	AF	AR	Aleg	Leg	$C_A A_A$	$C_A A_A$
Elevation					a			3	%	In	Out
					С					Face	Face
ft	ft		psf	ft^2	е	ft^2	ft^2	ft^2		ft^2	ft^2
102.00-82.00				10	В	3,993	10.620		45.62	82.282	0.000
					С	3.993	10.620		45.62	22.015	0.000
T11	80.00	1.208	29	16.667	Α	0,799	2,124	1.333	45.62	11.564	0.000
82.00-78.00					В	0.799	2,124		45,62	16.456	0.000
					С	0,799	2,124		45.62	4,403	0.000
T12	76.00	1,195	29	16,667	Α	0.799	2,124	1,333	45,62	11.564	0.000
78.00-74.00					В	0.799	2.124		45.62	16,456	0.000
					С	0,799	2.124		45.62	4,403	0.000
T13	72.00	1.181	28	16.667	Α	0.799	2.124	1.333	45.62	11.564	0.000
74.00-70.00					В	0.799	2.124		45,62	16.456	0.000
					С	0.799	2,124		45,62	4.403	0.000
T14	68.00	1.167	28	16.667	Α	0.799	2.124	1.333	45,62	11.564	0.000
70.00-66.00					В	0.799	2,124		45.62	16.456	0.000
					С	0.799	2.124		45.62	4.403	0.000
T15	64.00	1.152	28	16.667	Α	0.799	2,124	1,333	45_62	11.564	0.000
66.00-62.00					В	0.799	2,124		45.62	16.456	0.000
					С	0.799	2.124		45.62	4.403	0.000
T16	52.00	1.103	26	83.746	Α	11,381	3.949	7.393	48.23	57.820	0.000
62.00-42.00					В	11.381	3.949		48.23	82.282	0.000
					С	11.381	3.949		48,23	22.015	0.000
T17	32.00	0.996	24	83.746	Α	11.381	3.948	7.393	48.23	57.820	0.000
42.00-22.00					В	11.381	3.948		48.23	82,282	0.000
					С	11.381	3.948		48.23	22.015	0,000
T18 22.00-2.00	12.00	0.85	20	83.746	A	11.381	3.948	7.393	48.23	43,365	0.000
		1			В	11.381	3.948		48,23	61.712	0.000
					С	11,381	3.948		48.23	16.511	0.000

Tower Pressure - With Ice

Section	Ζ	Kz	q_z	tz	A_G	F	A _F	A _R	Aleg	Leg	$C_A A_A$	$C_A A_A$
Elevation						а				%	In	Out
						С					Face	Face
ft	ft		psf	în	ft^2	е	ft^2	ft^2	ft^2	L	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						В	4.951	58,865		36.25	49.374	0.000
						С	4.951	58.865		36,25	0.000	0.000
T2	252.00	1.537	8	2.4509	91.503	А	3.993	56.932	23.006	37.76	25.807	0.000
262.00-242.00						В	3.993	56.932		37.76	49.074	0.000
						С	3.993	56.932		37.76	0.000	0.000
Т3	232.00	1,511	8	2.4307	91,436	А	3.993	56.551	22,871	37,78	25.645	0.000
242.00-222.00						В	3,993	56.551		37,78	48.751	0.000
						С	3,993	56,551		37.78	12,823	0.000
T4	212.00	1.483	8	2.4089	91.363	А	29,797	30.421	22.726	37.74	25.471	0.000
222.00-202.00						В	29.797	30,421		37.74	65.517	0.000
						С	29.797	30,421		37.74	23.405	0.000
T5	192.00	1.452	8	2.3851	91.284	Α	32.209	33.234	22.567	34.48	25.281	0.000
202.00-182.00						В	32.209	33.234		34.48	92.385	0.000
						С	32.209	33.234		34.48	24,401	0.000
Т6	172.00	1.419	8	2.3590	91.197	Α	3.993	55.196	22.393	37.83	41.825	0.000
182.00-162.00						В	3.993	55.196		37.83	128.833	0.000
						С	3,993	55,196		37.83	24.192	0.000
T7	152.00	1.382	8	2.3300	91.100	Α	3.993	54.649	22.200	37.86	121.225	0.000
162.00-142.00						В	3,993	54,649	an a state of the second second	37.86	138.443	0.000
						С	3.993	54.649		37.86	33.611	0.000

 $G_H = \theta.85\theta$

tnxTower	Job	Page
<i>marower</i>	280' Guyed Tower	31 of 74
AECOM	Project	Date
500 Enterprise Drive, Suite 3B	130 Vernon Rd Bolton, CT	08:58:55 04/13/16
Rocky Hill, CT	Client	Designed by
Phone: 860-529-8882 FAX: 860-529-3991	Transcend Wireless / TWM-005 / - 004 Rev 1	MCD

Section	Z	Kz	q_z	tz	AG	F	A _F	A _R	Aleg	Leg	$C_A A_A$	$C_A A_A$
Elevation						a			Ű	%	In	Out
						с					Face	Face
ft	ft		psf	īn	ft^2	е	ft^2	ft^2	ft^2		ft^2	ft^2
Т8	132.00	1.342	7	2.2974	90,991	Α	31.681	32.257	21.983	34.38	120.389	0.000
142.00-122.00						В	31.681	32.257		34.38	175.688	0,000
						С	31.681	32.257		34,38	54.113	0.000
Т9	112.00	1.296	7	2,2600	90.867	Α	28.900	28.952	21,733	37.57	119.431	0.000
122.00-102.00						В	28,900	28.952		37.57	231.264	0.000
						С	28,900	28.952		37.57	65.896	0.000
T10	92.00	1.244	7	2,2159	90,720	Α	3.993	52.493	21.440	37.96	118.305	0.000
102.00-82.00						В	3.993	52.493		37.96	228.572	0.000
						С	3.993	52,493		37.96	75.197	0.000
T11 82.00-78.00	80.00	1.208	7	2,1852	18.123	Α	0,799	10,382	4.247	37,98	23.504	0.000
						В	0.799	10.382		37.98	45.338	0.000
						С	0.799	10.382		37.98	14.892	0.000
T12 78,00-74.00	76.00	1.195	6	2,1740	18.116	А	0.799	10.340	4.232	37.99	23.446	0.000
						В	0.799	10.340		37.99	45.202	0.000
						С	0.799	10.340		37.99	14.838	0.000
T13 74.00-70.00	72.00	1.181	6	2,1623	18,108	А	0.799	10.296	4.216	38.00	23.386	0.000
						В	0.799	10.296		38.00	45.058	0.000
						С	0.799	10.296		38.00	14.782	0.000
T14 70.00-66.00	68.00	1.167	6	2,1500	18.100	Α	0.799	10.249	4.200	38.02	23.323	0.000
						В	0.799	10.249		38.02	44.908	0,000
						С	0.799	10.249		38.02	14,723	0.000
T15 66.00-62.00	64.00	1.152	6	2.1370	18.091	Α	0.799	10.200	4.183	38.03	23.257	0.000
						В	0.799	10.200		38.03	44.749	0.000
	1					С	0.799	10.200		38.03	14.660	0.000
T16 62.00-42.00	52.00	1,103	6	2.0930	90.722	А	20.684	29.517	16.696	33.26	115.161	0.000
						В	20.684	29.517		33.26	221.059	0.000
						С	20.684	29.517		33.26	72.248	0.000
T17 42.00-22.00	32,00	0,996	5	1.9939	90.392	Α	20,243	28.302	16.255	33.48	112.626	0.000
						В	20.243	28.302		33.48	214.995	0.000
						С	20.243	28.302		33.48	69.867	0.000
T18 22.00-2.00	12,00	0.85	5	1.8076	89.771	Α	19.415	26.027	15.427	33.95	80.901	0.000
						В	19,415	26.027		33.95	152.706	0.000
						С	19,415	26.027		33.95	49.047	0.000

Tower Pressure - Service

G_H	= 0	.850
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Section	Ζ	Kz	q_z	A_G	F	AF	A_R	Aleg	Leg	$C_A A_A$	$C_A A_A$
Elevation					а				%	In	Out
					С					Face	Face
ft	ft	II	psf	ft^2	е	ft^2	ft^2	ft^2		ft^2	ft ²
T1	272.00	1,562	12	83.333	А	4.951	10.620	6.667	42.81	3.100	0.000
282.00-262.00					В	4.951	10.620		42.81	9,860	0.000
					С	4.951	10.620		42.81	0.000	0.000
T2	252.00	1.537	12	83.333	Α	3.993	10.620	6.667	45.62	6.200	0.000
262.00-242.00					В	3.993	10,620		45.62	9.860	0.000
					С	3,993	10.620		45.62	0.000	0.000
Т3	232.00	1,511	12	83,333	Α	3,993	10.620	6.667	45,62	6.200	0.000
242.00-222.00					В	3.993	10.620		45.62	9.860	0.000
					С	3.993	10.620		45.62	3,100	0.000
Т4	212.00	1.483	12	83.333	А	15.287	6,667	6.667	30.37	6.200	0.000
222.00-202.00					В	15.287	6.667		30.37	15.894	0.000
					С	15.287	6.667		30.37	5.098	0.000
T5	192.00	1.452	11	83.333	Α	17.843	6.667	6.667	27.20	6.200	0.000

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Iower	280' Guyed Tower	32 of 74
ЕСОМ	Project	Date
ise Drive, Suite 3B	130 Vernon Rd Bolton, CT	08:58:55 04/13/16
ky Hill, CT 860-529-8882 860-529-3991	Client Transcend Wireless / TWM-005 / - 0	04 Rev 1 Designed by MCD

Section	Z	Kz	q_z	AG	F	AF	A _R	Aleg	Leg	$C_A A_A$	$C_A A_A$
Elevation			,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		a				%	In	Out
					с					Face	Face
ft	ft		psf	ft^2	е	ft^2	ft^2	ft^2		ft^2	ft^2
202,00-182,00					В	17.843	6.667		27,20	25.602	0.000
					C	17.843	6,667		27.20	5.320	0.000
Т6	172.00	1.419	11	83,333	A	3.993	10.620	6.667	45.62	16.494	0.000
182.00-162.00					В	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					В	3.993	10_620		45.62	43.942	0.000
					С	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
		1.001			С	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
710	02.00	1.044	10	02.222	C	15.287	6.667		30.37	18.210	0.000
T10 102.00-82.00	92,00	1.244	10	83.333	A B	3.993	10.620	6,667	45.62	57.820	0.000
102.00-82.00					С	3.993 3.993	10.620		45.62	82,282	0.000
T11	80.00	1,208	9	16.667	A	0.799	10.620 2.124	1.333	45.62 45.62	22.015 11.564	$0.000 \\ 0.000$
82.00-78.00	80.00	1,208	9	10.007	B	0.799	2.124	1.555	45.62	16.456	0.000
82.00-78.00		t i			р С	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	70.00	1.195	, , ,	10.007	B	0.799	2.124	1,555	45.62	16.456	0.000
/0.00-/4.00	1				C	0.799	2.124		45.62	4,403	0.000
T13	72,00	1.181	9	16.667	Ă	0.799	2.124	1.333	45.62	11.564	0.000
74.00-70.00	, 2.00	1.10,		10.007	B	0.799	2,124	1.555	45.62	16.456	0.000
1 100 10.00					C	0.799	2.124		45.62	4.403	0.000
T14	68.00	1,167	9	16.667	Ă	0.799	2.124	1.333	45.62	11.564	0.000
70.00-66.00					В	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	Α	0.799	2.124	1.333	45.62	11.564	0.000
66.00-62.00	62	- 8			В	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	Α	11.381	3.949	7.393	48.23	57,820	0.000
62.00-42.00					В	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					В	11.381	3.948		48.23	82.282	0.000
1					С	11.381	3.948		48.23	22.015	0.000
T18 22.00-2.00	12.00	0.85	7	83.746	A	11.381	3.948	7,393	48.23	43,365	0.000
					В	11.381	3,948		48.23	61,712	0.000
					С	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	е	C _F	q _z	D _F	D_R	A _E	F	W	Ctrl Face
ft	lb	lb	C e			psf			ft ²	lb	plf	
T1	56.20	1212.62	Α	0.187	2.641	37	1	1	11.029	1340.74	67.04	С
282.00-262.00			В	0,187	2.641		1	1	11,029			
			С	0.187	2.641		1	1	11.029			
T2	69.40	1153.82	Α	0.175	2.68	37	1	1	10.053	1348.29	67.41	С
262.00-242.00			В	0.175	2.68		1	1	10.053		1000	
		÷	С	0.175	2.68		1	1	10.053			
Т3	82.60	1153.82	Α	0,175	2,68	36	1	1	10.053	1420.53	71.03	С
242.00-222.00			В	0.175	2.68		1	1	10.053			
		U I	С	0.175	2.68		1	1	10.053			

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

Section	Add	Self	F	е	C_F	q_z	D_F	D_R	AE	F	W	Ctrl
Elevation	Weight	Weight	a			1-						Face
			С			psf						
ft	lb	lb	е						ft^2	lb	plf	
T4	104.05	2014.07	A	0.263	2.398	36	1	1	19,210	2214.57	110.73	C
222.00-202.00			В	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	35	1	1	21.823	2592.82	129.64	С
202.00-182.00		TA 873.93	В	0.294	2.312		1	1	21.823			
			С	0.294	2,312		1	1	21.823			
T6	253.60	1153.82	A	0.175	2.68	34	1	1	10.053	2616.73	130.84	С
182.00-162.00			B	0.175	2.68		1	1	10.053			
	463.84	1152.02	C	0.175	2.68	22	1	1	10.053	2076 76	102.70	С
T7 162.00-142.00	462.84	1153.82	A B	0.175 0.175	2.68 2.68	33	4	1	10.053	3875.75	193,79	C
102,00-142.00			Б С	0.175	2.68			1	10.053 10.053			
Т8	543.92	2247.64	A	0.173	2.312	32	1 1	1	21.823	4788.30 [*]	239.41	С
142.00-122.00	545.92	TA 873.93	B	0.294	2.312	52	1	i	21.823	4768.30	237.41	C
142.00-122.00		17 015.55	C	0.294	2.312		÷.	1	21.823			
Т9	676.09	2014.07	A	0.263	2.398	31	1	i	19.210	4625.50 [*]	231.28	С
122.00-102.00	070.05	2011.07	В	0.263	2,398	51	î	1	19.210	1025,50	251,20	Ŭ
122.00 102.00			č	0,263	2.398		i i	- i	19.210			
Т10	683.48	1153.82	Ă	0.175	2.68	30	1	1	10.053	4437.86*	221.89	С
102.00-82.00			В	0,175	2.68		1	1	10.053			
22			С	0.175	2.68		1	1	10.053			
T11	136.70	230.76	А	0.175	2.68	29	1	1	2.011	861.84*	215.46	С
82.00-78.00			В	0.175	2.68		1	1	2.011			
			С	0.175	2.68		1	3	2.011			
T12	136.70	284.96	Α	0.175	2.68	29	1	1	2.011	852.58*	213.15	С
78.00-74.00			В	0.175	2.68		1	1	2.011			
			С	0.175	2.68		1	1	2.011			
T13	136.70	230.76	Α	0.175	2.68	28	1	1	2.011	842.93*	210.73	С
74.00-70.00			B	0.175	2.68		1	1	2,011			
	126 70	220 74	C	0.175	2.68	20	1	1	2.011	000.04	000.01	a
T14 70.00-66.00	136.70	230.76	A	0.175	2.68	28	1	1	2.011	832.85*	208.21	С
/0.00-06.00			B C	0.175 0.175	2.68 2.68			÷.	2.011 2.011			
T15	136.70	284.96	A	0.175	2.68	28	1	1	2.011	822.29*	205.57	С
66.00-62.00	150.70	204.90	B	0.175	2.68	20	1		2.011	022.29	203,37	Ç
00.00-02.00			C	0.175	2.68		1		2.011			
T16	683.48	1252.21	Ă	0.183	2.654	26	i	i	13.639	3955.05*	197.75	С
62.00-42.00	005.10	1252121	B	0.183	2.654	20	1	1	13.639	5755.05	171.15	C
02,00 12,00			Ĉ	0.183	2.654		1	1	13.639			
T17	683.48	1252.21	A	0.183	2.654	24	i	1	13.639	3570.77*	178.54	С
42.00-22.00			В	0.183	2.654		1	1	13.639			~
			С	0.183	2.654		1	1	13.639			
T18	512.61	1252.21	А	0.183	2.654	20	1	1	13.639	2734.79	136.74	С
22.00-2.00			В	0.183	2.654		1	1	13.639			
			С	0.183	2.654		1	1	13,639			
Sum Weight:	5619.23	22271.87			*2.1Ag			10		43734.19		
					limit							

			Τον	ver F	orce	s - N	o Ice	e - W	ind 45	To Fac	9	
Section Elevation	Add Weight	Self Weight	F a	е	C _F	qz	D_F	D_R	A _E	F	142	Ctrl. Face
ft	lb	lb	с е			psf			ft^2	lb	plf	

Job

Project

Client

AECOM 500 Enterprise Drive, Suite 3B Rocky Hill, CT Phone: 860-529-8882 FAX: 860-529-3991

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Transcend Wireless / TWM-005 / - 004 Rev 1

Designed by MCD

Section	Add	Self	F	е	C_F	q_z	D_F	D_R	A_E	F	W	Ctrl.
Elevation	Weight	Weight	а									Face
0			С			psf			a2		10	
ft	<i>lb</i>	<i>Ib</i>	e	0.107	0.(41	27	0.000		ft^2	<i>lb</i>	plf	0
T1	56.20	1212.62	A	0.187	2.641	37	0.825	1	10.162	1267.85	63.39	С
282,00-262.00			B C	0.187	2.641 2.641		0.825	1	10.162 10.162			
T2	69.40	1153.82	A	0.187	2.68	37	0.825	1	9.354	1289.56	64,48	C
262,00-242,00	09.40	1155.62	B	0.175	2.68	57	0.825	1	9.354	1269.30	04.40	
202.00-242.00			Б С	0.175	2.68		0.825	1	9.354			
Т3	82.60	1153.82	A	0.175	2.68	36	0.825	- i	9.354	1362.82	68.14	С
242.00-222.00	02.00	1155,62	B	0.175	2.68	50	0.825	1	9,354	1302.02	00.14	
242.00 222.00			Ĉ	0.175	2.68		0.825	i i	9.354			
T4	104.05	2014.07	Ă	0.263	2.398	36	0.825	ĩ	16.535	2020.65	101.03	С
222.00-202.00			В	0.263	2,398		0.825	- í.	16.535		101100	Ĩ
			С	0.263	2.398		0.825	1	16.535			
Т5	124.00	2247,64	Α	0,294	2.312	35	0.825	1	18,701	2379.10	118,95	С
202.00-182.00		TA 873.93	В	0.294	2.312		0.825	1	18.701			
			С	0,294	2.312		0,825	1	18,701			
T6	253.60	1153.82	Α	0,175	2.68	34	0,825	1	9.354	2562.54	128.13	C
182.00-162.00			В	0.175	2.68		0.825	1	9.354			
			С	0.175	2.68		0.825	1	9.354			
T7	462.84	1153.82	Α	0.175	2.68	33	0.825	1	9.354	3822.95	191.15	С
162.00-142.00			В	0,175	2.68		0.825	1	9,354			
			С	0.175	2.68		0.825	(1.)	9.354			
Т8	543.92	2247.64	A	0.294	2.312	32	0.825	1	18.701	4714,77	235.74	C
142.00-122.00		TA 873.93	В	0.294	2,312		0.825	1	18.701			
			С	0.294	2.312		0.825	1	18.701			
T9	676.09	2014.07	Α	0.263	2.398	31	0.825	1	16.535	4625.50 [*]	231,28	С
122,00-102.00			B	0.263	2,398		0.825	1	16.535			
771.0	(02.40	1152.00	С	0.263	2,398	20	0.825	1	16.535	4427 87*	001.00	
T10	683.48	1153.82	A	0.175	2.68	30	0.825	1	9.354	4437.86*	221.89	C
102.00-82.00			B	0.175	2.68		0.825	1	9.354			
T11	136,70	230,76	C A	0.175 0.175	2,68 2.68	29	0.825	1	9,354 1.871	861.84*	215.46	с
82.00-78.00	130.70	230.70	B	0.175	2.68	29	0.825	1	1.871	001.04	213.40	
82.00-78.00			С	0.175	2.68		0.825	1	1.871			
T12	136.70	284.96	A	0.175	2.68	29	0.825	î.	1.871	852.58*	213.15	С
78.00-74.00	150.70	201.90	B	0.175	2.68	27	0.825	1	1.871	052.50	215.15	Ŭ
/0.00 / 1.00			Č	0.175	2.68		0.825	î	1.871			
T13	136.70	230.76	Ă	0.175	2.68	28	0.825	1	1.871	842.93*	210.73	С
74.00-70.00	150170	220,10	В	0.175	2.68		0.825	i	1.871	0 12175	110170	Ű
			С	0.175	2.68		0.825	1	1.871			
T14	136.70	230.76	Α	0.175	2.68	28	0.825	1	1.871	832.85*	208.21	С
70.00-66.00			В	0.175	2.68		0.825	1	1.871			
			С	0.175	2,68		0.825	1	1,871			
T15	136.70	284.96	Α	0.175	2.68	28	0.825	1	1.871	822.29	205.57	С
66.00-62.00			В	0.175	2.68		0.825	1	1,871			
			С	0.175	2.68		0.825	1	1.871			
T16	683.48	1252.21	A	0.183	2.654	26	0.825	1	11.647	3955.05*	197.75	С
62.00-42.00			В	0,183	2.654		0.825	1	11.647			
			C	0.183	2.654		0.825	1	11.647			
T17	683.48	1252.21	A	0.183	2,654	24	0.825	1	11.647	3570,77*	178,54	С
42.00-22,00			В	0.183	2,654		0.825	1	11.647			
			C	0.183	2,654		0.825	1	11.647			
T18	512.61	1252.21	A	0.183	2.654	20	0.825	1	11.647	2643.18	132.16	С
22.00-2.00			В	0.183	2.654		0.825	1	11.647			
			С	0.183	2.654		0.825	1	11.647			
Sum Weight:	5619.23	22271.87			*2.1Ag					42865.10		
					limit							

AECOM 500 Enterprise Drive, Suite 3B Rocky Hill, CT Phone: 860-529-8882 FAX: 860-529-3991

Job		Page
	280' Guyed Tower	35 of 74
Project		Date
	130 Vernon Rd Bolton, CT	08:58:55 04/13/16
Client		Designed by
	Transcend Wireless / TWM-005 / - 004 Rev 1	MCD

Tower Forces - No Ice - Wind 60 To Face

Section	Add	Self	F	е	C_F	q_z	D_F	D_R	A _E	F	W	Ctrl.
Elevation	Weight	Weight	a	C		92	Dr	D_{K}	ME	,	TP	Face
	0	0	с			psf						
ft	16	lb	е			· · · ·			ft^2	lb	plf	
T1	56.20	1212.62	A	0.187	2.641	37	0.8	1	10.039	1257.43	62.87	С
282.00-262.00			B	0,187	2.641		0,8	1	10,039			
	(0.40	1150.00	C	0.187	2.641		0.8	1	10.039			
T2	69.40	1153,82	A	0,175	2.68	37	0.8	1	9.254	1281.18	64,06	C
262.00-242.00			B C	0.175	2.68 2.68		0.8 0.8		9.254 9.254			
Т3	82.60	1153.82	A	0.175	2.68	36	0.8	1	9.254	1354.58	67.73	С
242.00-222.00	02.00	1155.62	B	0.175	2.68	50	0.8	i	9.254	1554.50	07.75	
			C	0.175	2.68		0.8	i i	9.254			
T4	104.05	2014.07	Α	0.263	2.398	36	0.8	1	16.152	1992.95	99.65	С
222.00-202.00			В	0.263	2.398		0.8	1	16.152			
			C	0.263	2.398		0.8	1	16,152			
Т5	124.00	2247.64	Α	0.294	2.312	35	0.8	1	18.255	2348.57	117.43	C
202.00-182.00		TA 873.93	В	0.294	2,312		0.8	1	18.255			
75.4	252 (0	1162.00	C	0.294	2.312		0.8	1	18.255			
T6 182,00-162.00	253.60	1153.82	A B	0.175	2.68 2.68	34	0.8	1	9.254 9.254	2554.80	127,74	С
182,00-102.00			В С	0.175	2.68		0.8 0.8		9.254			
Т7	462.84	1153.82	A	0.175	2.68	33	0.8	1	9.254	3815.41	190.77	С
162.00-142.00	402.04	1155.62	B	0.175	2.68	55	0.8	î	9.254	2012	190.77	
102.00 112.00			č	0.175	2.68		0.8	i	9.254			
T8	543.92	2247.64	A	0.294	2.312	32	0.8	1	18.255	4686.55	234.33	С
142.00-122.00		TA 873.93	В	0.294	2.312		0.8	1	18.255			
			С	0.294	2,312		0.8	1	18,255			
T9	676.09	2014.07	А	0.263	2.398	31	0.8	1	16.152	4625.50*	231.28	С
122.00-102.00			В	0.263	2,398		0.8	1	16,152			
	100.10		С	0.263	2.398		0.8	1	16.152			
T10	683.48	1153.82	A	0.175	2.68	30	0.8	1	9,254	4437.86*	221.89	С
102.00-82.00			B C	0.175 0.175	2.68 2.68		0.8	1	9.254			
T11	136.70	230.76	A	0.175	2.08	29	0.8 0.8	1	9.254 1.851	861_84*	215.46	С
82.00-78.00	150.70	250.70	B	0.175	2.68	27	0.8	1	1.851	001-04	215.40	C
02.00 /0.00			C	0.175	2.68		0.8	i	1.851			
T12	136,70	284.96	Ă	0.175	2.68	29	0.8	1	1.851	852.58*	213.15	C
78.00-74.00			В	0.175	2.68		0.8	1	1,851			
			С	0.175	2.68		0.8	1	1.851	~		
T13	136.70	230.76	Α	0.175	2.68	28	0.8	1	1.851	842.93	210.73	С
74.00-70.00			В	0.175	2.68		0.8	1	1.851			
			С	0.175	2.68		0.8	1	1.851	*		
T14	136.70	230.76	A	0.175	2.68	28	0.8	1	1.851	832.85*	208.21	С
70.00-66.00			B C	0.175	2.68		0.8		1.851			
T15	136.70	284.96	A	0.175 0.175	2.68 2.68	28	0.8 0.8		1.851 1.851	822.29*	205.57	Ċ
66.00-62.00	130.70	204.90	B	0.175	2.68	20	0.8	÷.	1.851	022.29	205.57	C
00.00-02.00			C	0.175	2.68		0.8	1	1.851			
T16	683.48	1252.21	Ă	0.183	2.654	26	0.8	î	11.363	3955.05*	197.75	С
62.00-42.00	002 8.0	1 20 212 1	B	0.183	2.654	20	0.8	1	11.363	5755.05	01.10	Ŭ
			C	0.183	2.654		0.8	1	11.363			
T17	683.48	1252.21	A	0.183	2.654	24	0.8	1	11.362	3570.77*	178,54	С
42.00-22.00			В	0.183	2.654		0.8	1	11.362			
			С	0,183	2.654		0,8	1	11.362			
T18	512.61	1252.21	Α	0.183	2.654	20	0.8	1	11.362	2630,10	131.50	С
22.00-2.00			B	0.183	2.654		0.8	1	11.362			
Sum Weissleit	6(10.00)	22271.02	C	0,183	2.654		0.8	1	11.362	10/200 00		
Sum Weight:	5619.23	22271.87			*2.1Ag					42723.23		

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

Section	Add	Self	F	е	C_F	q_z	D_F	D_R	AE	F	W	Ctrl.
Elevation	Weight	Weight	а									Face
			С			psf						
ft	lb	lb	е						ft^2	lb	plf	
					limit							

Tower Forces - No Ice - Wind 90 To Face

Section	Add	Self	F	е	C_F	q_z	D_F	D_R	AE	F	W	Ctrl
Elevation	Weight	Weight	а			C						Face
G	lb	16	c e			psf			ft^2	11.	16	
<i>ft</i>	56.20	<i>lb</i> 1212.62	A	0.187	2.641	37	0.85			<i>lb</i>	plf (2.01	С
282.00-262.00	36.20	1212.02	B	0.187	2.641	37	0.85	1	10.286 10.286	1278.26	63.91	
282.00-202.00			с С	0.187	2.641		0.85	1	10.286			
T2	69.40	1153.82	A	0.187	2.641	37	0.85	1	9,454	1297.95	64.90	С
262.00-242.00	09.40	1155.82	B	0.175	2.68	37	0.85	i	9.454	1297.95	64.90	
202.00-242.00			C	0.175	2.68		0.85		9 4 5 4			
Т3	82,60	1153.82	A	0.175	2.68	36	0.85	1	9.454	1371.07	68.55	С
242.00-222.00	82,00	1155.62	B	0.175	2.68	30	0.85	1	9.434	13/1.07	00,00	
242.00-222.00			C	0.175	2.68		0.85	1	9.454			
T4	104.05	2014.07	A	0.263	2.398	36	0.85	1	16.917	2048,35	102.42	С
222.00-202.00	104.05	2014.07	B	0.263	2.398	50	0.85	i	16.917	2048,35	102,42	
222.00-202.00			C	0.263	2.398		0.85	1	16.917			
T5	124.00	2247.64	A	0.203	2.378	35	0.85	i	19.147	2409.63	120.48	С
202.00-182.00	124.00	TA 873.93	B	0.294	2.312	55	0.85	Ť.	19.147	2409.03	120.40	
202.00-102.00	,	17 015.75	C	0.294	2.312		0.85	i i	19.147			
T6	253.60	1153.82	Ă	0.175	2.68	34	0.85	1	9.454	2570.28	128.51	С
182.00-162.00	255.00	1155.62	B	0.175	2.68	54	0.85	î	9,454	2570.20	120.51	S S
102.00-102.00			C	0.175	2.68		0.85	i	9.454			
Т7	462.84	1153.82	A	0.175	2.68	33	0.85	î.	9.454	3830.50	191.52	С
162.00-142.00	402.04	1155.62	B	0.175	2.68	55	0.85	- i.	9.454	3630.30	191,52	C
102.00-142.00			C	0.175	2.68		0.85	1	9,454	1		
T8	543.92	2247.64	A	0.173	2.312	32	0.85	1	19,147	4742.99	227.15	C
142.00-122.00	545.92	TA 873.93	B	0.294	2.312	52	0.85	i		4/42.99	237.15	C
142.00-122.00	1	IA 075.95	ь С	0.294	2.312		0.85	i	19.147			
Т9	676.09	2014.07	A	0.294	2.312	31	0.85	1	19.147 16.917	4(25.50°	221.20	С
122:00-102.00	070.09	2014.07	B	0.263	2.398	51	0.85	1	16.917	4625.50*	231,28	C
122:00-102.00			ь С		2.398		0.85					
T10	683.48	1153.82	A	0.263 0.175	2.398	30	0.85	1	16.917 9.454	4427.0 (*	221.00	0
102.00-82.00	003.40	11,55.62	B	0.175	2.68	50	0.85	- î		4437.86*	221.89	С
102.00-82.00			С		2.00				9.454			
T11	136.70	230,76		0.175	2.68	29	0.85	1	9.454	0(1.04*)	215.46	
T11 82.00-78.00	136.70	230.76	A B	0.175	2.68	29	0.85		1.891	861.84	215.46	С
02.00-78.00			СВ	0.175	2.68 2.68		0.85	1	1.891			
T12	136.70	294.07	_	0.175		29		- <u>k</u>	1.891	9.69.69	212.16	~
T12 78.00-74.00	130.70	284.96	A B	0.175	2.68	29	0.85		1,891	852.58	213.15	С
/8.00-/4.00			_	0,175	2.68		0.85		1,891			
T13	126.70	220 70	C	0.175	2.68	20	0.85		1.891	0.40.00*	010.70	
74.00-70.00	136.70	230.76	A	0.175	2.68	28	0.85		1.891	842.93*	210.73	С
/4.00-/0.00			B	0.175	2.68		0.85	1	1.891			
	126 70	220 74	C	0.175	2.68		0,85	1	1.891	000.05*		
T14	136.70	230.76	A	0.175	2.68	28	0.85	1	1.891	832.85*	208.21	С
70.00-66.00			B	0.175	2.68		0.85	1	1.891			
	126 50	204.05	C	0.175	2.68		0.85	1	1.891			-
T15	136.70	284.96	A	0.175	2.68	28	0.85	1	1.891	822.29*	205.57	С
66.00-62.00		1	B	0,175	2.68		0.85	1	1.891			
	100 10	1000 5	C	0.175	2.68		0.85		1.891			
T16	683,48	1252.21	A	0,183	2.654	26	0.85	1	11.932	3955.05*	197.75	С

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

Section	Add	Self	F	е	C_F	q_z	D_F	D_R	A_E	F	w	Ctrl.
Elevation	Weight	Weight	a) (_						Face
			С			psf						
ft	lb	lb	е						ft^2	lb	plf	
62.00-42.00			В	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	С
42.00-22.00			В	0,183	2.654		0.85	1	11.931			
			С	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	С
22,00-2,00			В	0,183	2:654		0.85	1	11.931			
			С	0.183	2.654		0.85	1	11.931			
Sum Weight:	5619.23	22271.87	i 1		2.1Ag					43006.97		
					limit							

		Tow	/er	Force	es - I	Nith	lce -	Win	d Norm	nal To F	ace	
Section	Add	Self	F	е	C_F	q _z	D_F	D_R	A_E	F	w	Ctrl.
Elevation	Weight	Weight	а									Face
0	11.	11	С			psf			c2		10	
<i>ft</i> T1	<i>lb</i> 1192.39	<i>lb</i>	e	0.(07	1.77(0			ft^2	lb	plf	
282.00-262.00	1192.39	5004.11	A	0.697	1.776	8	1	1	52.568	1124.90	56.24	С
282.00-202.00			B C	0.697	1.776		1	1	52.568			
T2	1420.01	1659.00		0.697	1.776	0	1	1	52.568	1140.00	67.40	G
T2 262.00-242.00	1430,91	4658.98	A	0.666	1.778	8	1	1	48.810	1149.29	57.46	С
202.00-242.00			B C	0.666 0.666	1.778 1.778		1	1	48.810		1	
T3	1662.13	4612.76	A	0.662	1.778	8	1 S.		48.810	1210.20	(0.52	0
242.00-222.00	1002.15	4012.70	B	0.662	1.779	0	문화		48.367 48.367	1210.39	60.52	С
242.00-222.00			C	0.662	1.779			÷.	48.367			
T4	2152.46	5373.04	Ă	0.659	1.779	8	1	1	53.604	1315.26*	65.76	С
222.00-202.00	2152,40	5575.04	B	0.659	1.779	0	1	신	53.604	1315.20	05.70	C
222.00-202.00		0	C	0.659	1.779		1	21	53.604			
T5	2643.47	6127.59	A	0.039	1.778	8	1	÷.	59.568	1286.99*	64.35	С
202.00-182.00	2045.47	TA	В	0.717	1.778	8		1	59.568	1280.99	04.55	C
202.00 102.00		2978.29	C	0.717	1.778		- i -	1	59.568			
T6	3745.12	4450.95	Ă	0.649	1.782	8	- i -	î	46.814	1256.33	62.82	Ċ
182.00-162.00	5715112	1150.55	B	0.649	1.782	0	5	÷.	46.814	1250.55	02.02	C
102100 102100			Ĉ	0.649	1.782			1	46.814	1		
Т7	5806,47	4386.54	Ă	0.644	1.783	8		î.	46.194	1222.76*	61.14	С
162.00-142.00	0000117	1500.51	B	0.644	1.783	1991		語	46.194	1222,70		C
~			ĉ	0.644	1.783		- i -	i i	46.194			
Т8	6822.41	5949.45	Ā	0.703	1.776	7	1	i	57.906	1185.56*	59.28	С
142.00-122.00		TA	B	0.703	1.776		- î	i i	57.906	1105150	57.20	C
		2878.80	Ċ	0,703	1.776		1	1	57.906			
Т9	8070.08	5116.06	Ā	0.637	1.786	7	1	1	51.122	1143.68"	57.18	С
122.00-102.00			в	0.637	1.786		1	E	51.122	1110100	57.10	C
57 1			С	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	С
102.00-82.00		85	В	0.623	1.792		1	1	43,798			5
			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	С
82.00-78.00			В	0.617	1.794		1	1	8.633			~
		1	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	С
78.00-74.00			В	0.615	1.796		1	i i	8.587			0
			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	С

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

Section	Add	Self	F	е	C_F	qz	D_F	D_R	A_E	F	W	Ctrl
Elevation	Weight	Weight	а			c						Face
c			С			psf			ft^2		10	
	lb	lb	е							lb	plf	
74.00-70.00			В	0.613	1.797		1	1	8,539			
			С	0.613	1.797		1	1	8.539			
T14	1557.14	799.93	Α	0.61	1.798	6	1	1	8.489	205.10^{*}	51.27	С
70.00-66.00			В	0.61	1.798		1	1	8.489			
			С	0.61	1.798		1	1	8.489			
T15	1546.34	848.72	Α	0.608	1,799	6	1	1	8.437	202.40*	50.60	С
66.00-62.00			В	0.608	1.799		Ť	1	8.437			
			С	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	С
62.00-42.00			В	0.553	1.84		1	1	41.794	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	10100	Ū
			Ĉ	0.553	1.84		Ŷ.		41.794			
T17	7150.72	3529.47	Ă	0.537	1.856	5	ŝ.	1	40.215	873.96*	43.70	С
42.00-22.00	1120112	5527117	B	0.537	1.856	-	÷.		40.215	075.90	43.70	Č
12.00 22.00			Č	0.537	1.856		1		40.215			
Т18	4823.98	3222,22	A	0.506	1.892	5	- ÷	4	37,331	740.95*	37.05	С
22.00-2.00	T023.70	5222.22	B	0.506	1.892	S	1			740.95	57.05	C
22.00-2.00			ь С					1	37.331			
C WILL	(0048.72)	702(0 (0	U	0.506	1.892		1	- 2	37.331	1.000		
Sum Weight:	68948.72	70260.68			*2.1Ag					15614.97		
					limit							

Tower Forces - With Ice - Wind 45 To Face

Section	Add	Self	F	е	C_F	q_z	D_F	D_R	A_E	F	w	Ctrl,
Elevation	Weight	Weight	а									Face
			С			psf						
ft	lb	lb	е						ft^2	lb	plf	
T1	1192.39	5004.11	A	0.697	1.776	8	0.825	1	51.701	1113.78	55.69	С
282,00-262.00			В	0.697	1.776		0.825	1	51.701			
			С	0.697	1.776		0.825	1	51.701			
T2	1430.91	4658.98	Α	0.666	1.778	8	0.825	1	48.111	1140.46	57.02	С
262.00-242.00			В	0.666	1.778		0.825	1	48.111			
			С	0.666	1.778		0.825	1	48.111			
Т3	1662.13	4612.76	Α	0.662	1.779	8	0.825	1	47.668	1201.71	60.09	С
242.00-222.00			В	0.662	1.779		0.825	1	47.668			
			С	0.662	1.779		0.825	1	47.668			
T4	2152.46	5373.04	Α	0.659	1.779	8	0.825	1	48.390	1315.26*	65.76	С
222.00-202.00			В	0.659	1.779		0.825	1	48.390			
			С	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	С
202.00-182.00		TA	В	0.717	1.778		0.825	1	53,932			
		2978.29	С	0.717	1.778		0.825	1	53.932			
Т6	3745.12	4450.95	Α	0.649	1.782	8	0.825	1	46.115	1256.33	62.82	С
182.00-162.00			В	0.649	1.782	1	0.825	1.	46,115		20	
			C	0.649	1.782		0.825	1	46.115			
T7	5806.47	4386.54	Α	0.644	1.783	8	0.825	1	45.495	1222.76	61.14	С
162.00-142.00			В	0.644	1.783		0.825	1	45.495			
			С	0.644	1.783		0.825	1	45.495			
Т8	6822.41	5949.45	Α	0.703	1.776	7	0.825	1	52.362	1185.56*	59.28	С
142.00-122.00		TA	В	0.703	1.776		0.825	1	52.362			
		2878.80	С	0.703	1,776		0.825	1	52.362			
Т9	8070.08	5116.06	Α	0.637	1.786	7	0.825	1	46.064	1143.68*	57.18	С
122.00-102.00			В	0.637	1.786		0.825	1	46.064			
			C	0.637	1.786		0.825	1	46.064			
T10	8063.06	4138.75	Α	0.623	1.792	7	0.825	1	43.100	1095.52*	54.78	С

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

Section	Add	Self	F	е	C_F	q_z	D_F	D_R	AE	F	W	Ctrl.
Elevation	Weight	Weight	а									Face
			С			psf						
ft	lb	lb	е						ft^2	lb	plf	
102.00-82.00		0	В	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	С
82.00-78.00			В	0.617	1.794		0.825	1	8.493			
			C	0.617	1.794		0.825	1	8.493			
T12	1577.23	864,19	Α	0,615	1,796	6	0.825	1	8.448	210.14*	52.54	С
78.00-74.00			В	0.615	1.796		0.825	1	8.448			
			С	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	С
74,00-70.00			В	0.613	1.797		0.825	1	8.400			
			С	0.613	1.797		0.825	1	8,400			
T14	1557.14	799.93	Α	0.61	1.798	6	0.825	1	8.350	205.10^{*}	51.27	С
70.00-66.00			В	0.61	1.798		0.825	1	8.350			
			C	0.61	1.798		0.825	1	8.350			
T15	1546.34	848.72	Α	0.608	1.799	6	0.825	1	8,297	202.40*	50,60	С
66.00-62.00			В	0.608	1.799		0.825	1	8.297			
			С	0.608	1.799		0.825	1	8,297			
T16	7550.76	3701.03	Α	0.553	1.84	6	0.825	1	38.174	971.55*	48.58	С
62.00-42.00			В	0.553	1.84		0.825	1	38.174			
			С	0.553	1.84		0.825	1	38,174			
T17	7150.72	3529.47	Α	0.537	1.856	5	0.825	1	36.673	873.96*	43.70	С
42,00-22.00			В	0.537	1.856		0.825	1	36.673			
			С	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	С
22.00-2.00			В	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			*2.1Ag					15586.34		
Ĵ					limit							

		T	ow	er Fo	rces	- Wi	th Ic	e - N	/ind 60	To Fac	e	
Section	Add	Self	F	е	C_F	q_z	D_F	D_R	A _E	F	w	Ctrl.
Elevation	Weight	Weight	а									Face
			С			psf"						
ft	lb	lb	е						ft^2	lb	plf	
Tl	1192.39	5004.11	A	0.697	1.776	8	0.8	1	51.578	1112.19	55.61	С
282.00-262.00			В	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	Ť.	48.011	1139.20	56.96	С
262,00-242.00			В	0.666	1.778		0.8	1	48.011			
			С	0.666	1.778		0.8	1	48.011			
Т3	1662.13	4612.76	Α	0.662	1.779	8	0.8	1	47.569	1200.47	60.02	С
242.00-222.00			В	0.662	1.779		0.8	1	47.569		_	
			С	0.662	1.779		0.8	1	47.569			
T4	2152.46	5373.04	Α	0.659	1.779	8	0.8	1	47.645	1315.26*	65.76	С
222.00-202.00			В	0.659	1.779		0.8	1	47,645			
			С	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	С
202.00-182.00		TA	В	0.717	1.778		0.8	1	53.126			
		2978.29	С	0.717	1.778		0.8	1	53.126			
Т6	3745.12	4450.95	Α	0.649	1.782	8	0.8	1	46.015	1256.33*	62.82	С
182.00-162.00			В	0.649	1.782		0.8	1	46_015			
1993 - SA			С	0,649	1.782		0.8	1	46.015			
T7	5806.47	4386.54	Α	0.644	1.783	8	0.8	1	45.395	1222.76*	61.14	С

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500 Enterprise Drive, Suite 3B
Rocky Hill, CT
Phone: 860-529-8882
FAX: 860-529-3991

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Section	Add	Self	F	е	C_F	q_z	D_F	D_R	A_E	F	\mathcal{W}^*	Ctrl.
Elevation	Weight	Weight	a			1						Face
			С			psf						
ft	<i>lb</i>	lb	е						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			
Т8	6822.41	5949.45	A	0,703	1.776	7	0.8	1	51.570	1185,56*	59.28	С
142.00-122.00		TA	B	0.703	1.776		0.8	1	51.570			
		2878.80	С	0.703	1,776		0,8	1	51.570			
Т9	8070.08	5116,06	A	0.637	1,786	7	0.8	1	45.342	1143.68*	57.18	С
122.00-102.00			В	0.637	1.786		0.8	1	45.342			
			С	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	С
102,00-82,00			В	0.623	1.792		0.8	1	43.000			
			С	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	С
82.00-78.00			В	0.617	1.794		0.8	1	8.473			
			С	0.617	1.794		0.8	1	8.473			
T12	1577,23	864.19	Α	0.615	1.796	6	0.8	1	8,428	210.14*	52.54	С
78.00-74.00			В	0.615	1.796		0.8	1	8,428			
			С	0.615	1.796		0.8	1	8.428			
T13	1567.42	805.08	Α	0.613	1.797	6	0.8	1	8.380	207.67	51.92	С
74.00-70.00			В	0.613	1.797		0.8	1	8.380			
			С	0.613	1.797		0.8	1	8,380			
T14	1557.14	799.93	Α	0.61	1.798	6	0.8	1	8.330	205.10*	51.27	С
70.00-66.00			В	0.61	1.798		0.8	1	8.330			
			С	0.61	1.798		0.8	1	8.330			
T15	1546.34	848.72	Α	0,608	1.799	6	0.8	1	8.277	202.40*	50.60	С
66.00-62.00			В	0.608	1.799		0.8	1	8.277			
			С	0.608	1.799		0.8	<u>(1</u>	8.277			
T16	7550.76	3701.03	Α	0.553	1.84	6	0.8	1	37.657	971.55	48.58	С
62.00-42.00			В	0.553	1.84		0.8	1	37.657			
			С	0.553	1.84		0.8	1	37.657			
T17	7150.72	3529,47	Α	0.537	1.856	5	0.8	i i	36,167	873.96*	43.70	С
42.00-22.00		200	В	0.537	1.856		0.8	1	36.167			
			С	0.537	1.856		0.8	1	36.167			1
T18	4823.98	3222.22	Α	0.506	1.892	5	0.8	1	33.448	740.95*	37.05	С
22.00-2.00			В	0.506	1.892		0.8	1	33,448			
			С	0.506	1.892		0.8	1	33.448			
Sum Weight:	68948.72	70260.68			*2.1Ag			9	10.3×2 C	15582.25		
Ű.					limit							

		Т	ow	er Fo	rces	- Wi	th Ic	e - N	/ind 90	To Fac	е	
Section	Add	Self	F	е	C _F	q_z	D_F	D_R	AE	F	w	Ctrl.
Elevation	Weight	Weight	а									Face
			С			psf						
ft	lb	lb	е						ft^2	lb	plf	
T1	1192.39	5004.11	Α	0.697	1.776	8	0.85	1	51,825	1115,37	55.77	С
282.00-262.00			В	0.697	1.776		0.85	1	51,825			
			С	0.697	1,776		0.85	1	51.825			
T2	1430.91	4658.98	Α	0.666	1.778	8	0.85	1	48.211	1141.72	57.09	С
262.00-242.00			В	0.666	1.778		0.85	1	48.211			
			С	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	С
242 00-222 00		·	В	0.662	1.779		0.85	1	47.768			
			С	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	С

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	Job		Page
		280' Guyed Tower	41 of 74
	Project		Date
3B		130 Vernon Rd Bolton, CT	08:58:55 04/13/16
	Client	Transcend Wireless / TWM-005 / - 004 Rev 1	Designed by MCD

Section	Add	Self	F	е	C _F	q _z	D_F	D_R	A _E	F	w	Ctrl.
Elevation	Weight	Weight	a c			naf						Face
ft	lb	lb	e			psf			ft^2	lb	plf	
222.00-202.00			В	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	В	0.717	1.778		0.85	1	54.737			
		2978.29	C	0.717	1.778		0.85	1	54.737			
Т6	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			В	0.644	1.783		0.85	1	45.595			
			С	0.644	1,783		0.85	1	45.595			
Т8	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	В	0,703	1,776		0.85	1	53.154			
		2878.80	С	0.703	1.776		0.85	1	53,154			
Т9	8070_08	5116.06	A	0.637	1.786	7	0.85	1	46.787	1143.68*	57.18	С
122.00-102.00			В	0.637	1.786		0.85	1	46.787			
			С	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	С
102.00-82.00			В	0.623	1.792		0.85	1	43.200			
			С	0.623	1.792		0.85	1	43.200			
T11	1586.62	814.71	Α	0.617	1.794	7	0.85	1	8.513	212.51*	53,13	С
82.00-78.00			В	0.617	1.794		0.85	1	8.513			
			С	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	С
78.00-74.00			В	0.615	1.796		0.85	1	8.468			
			C	0.615	1.796		0.85	ł	8.468			
T13	1567.42	805.08	A	0.613	1.797	6	0.85	1	8.420	207,67*	51.92	С
74.00-70.00			B	0.613	1.797		0.85	1	8.420			
	1000.14	700.00	С	0.613	1.797		0.85	1	8.420	20.5 LO*		
T14	1557.14	799.93	A	0.61	1.798	6	0.85	1	8,370	205,10*	51.27	С
70.00-66.00			B	0.61	1.798		0.85	1	8.370			
716	1546.24	040 70	C	0.61	1,798		0.85	ļ	8.370	202.40*	50.00	
T15 66.00-62.00	1546.34	848,72	A	0.608	1.799 1.799	6	0.85	1	8.317	202.40*	50.60	С
00.00-02.00			B	0.608			0.85	1	8.317			
716	7550.76	3701.03	C	0.608	1.799		0.85	1	8,317	071 55*	10 00	С
T16 62.00-42.00	/550.76	3701.03	A B	0.553	1.84	6	0.85	1	38.691	971.55*	48,58	C
02,00-42,00			В С	0.553	1.84		0.85	1	38.691			
T17	7150 72	2520.47	-	0.553	1.84	5	0.85	- 24	38,691	072.04*	42 70	C
42.00-22.00	7150.72	3529.47	A B	0.537	1.856	S	0.85	1	37.179	873.96*	43.70	С
42.00-22.00			_	0.537	1.856		0.85		37,179			
710	4823.98	3222.22	C	0.537	1.856	5	0.85	4	37.179	740.05*	17.05	~
T18	4823.98	3222.22	A B	0.506	1.892	5	0.85	1	34.419	740.95*	37.05	C
22.00-2.00		0	С В	0.506	1.892		0.85	1	34.419			
Sum Weight	68948.72	70260.68	C	0.506	1.892		0.85	1	34.419	15500 42		
Sum Weight:	08948.72	/0200.08			[*] 2.1A _g					15590.43		
					limit							l

		Точ	ver	Force	es - 3	Servi	ice -	Wind	d Norm	al To F	ace	
Section Elevation	Add Weight	Self Weight	F a	е	C_F	q _z	D_F	D_R	A_E	F	W	Ctrl Face
fi	lb	lb	с е			psf			ft ²	lb	plf	
T1	56.20	1212.62	А	0.187	2.641	12	1	1	11.029	437.79	21.89	С

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	Project		Date
<i>3B</i>		130 Vernon Rd Bolton, CT	08:58:55 04/13/16
	Client		Designed by
		Transcend Wireless / TWM-005 / - 004 Rev 1	MCD

Section	Add	Self	F	е	C_F	q_z	D_F	D_R	AE	F	w	Ctrl
Elevation	Weight	Weight	а			1						Face
ft	lb	lb	с е			psf			ft^2	lb	plf	
282.00-262.00	10	10	B	0.187	2.641		1	1	11,029	10	pg	
			С	0.187	2.641		1	4	11.029			
T2	69.40	1153.82	A	0.175	2.68	12	1	1	10.053	440.26	22.01	С
262.00-242.00			В	0,175	2,68		1	1	10.053	1		
			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	С
242,00-222,00			B	0.175	2.68			1	10.053			
Т4	104.05	2014.07	C A	0.175 0.263	2.68 2.398	12	4. 1	1	10.053 19.210	723.13	36.16	С
222.00-202.00	104.05	2014.07	B	0.263	2.398	12	1	i.	19.210	725.15	30,10	C
222.00-202.00			ĉ	0.263	2.398		i	i	19,210			
Т5	124.00	2247,64	Ă	0,294	2,312	- 11	î.	- á	21.823	846.63	42.33	С
202.00-182.00		TA 873.93	В	0.294	2.312	202	1	1	21.823			
			С	0.294	2.312		Ĩ.)Î	21.823			
Т6	253,60	1153.82	Α	0.175	2.68	11	1	1	10,053	854.44	42.72	С
182.00-162.00			В	0.175	2.68		1	1	10,053			1
			С	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	С
162.00-142.00			B	0.175	2.68				10.053			
77.0	542.02	2247.64	C	0.175	2.68			1	10.053	15(2.52*	70.10	0
T8 142.00-122.00	543.92	TA 873.93	A B	0.294 0.294	2.312 2.312	11		1	21.823 21.823	1563.53*	78.18	С
142.00-122.00		IA 073.93	ь С	0.294	2.312		1	1	21.823			
Т9	676.09	2014.07	A	0.294	2.312	10	1	1	19.210	1510.37*	75.52	С
122.00-102.00	070.09	2014.07	B	0.263	2.398	10	1	- î	19.210	1510.57	15.52	C
			Ĉ	0.263	2.398		Ť.	- î l	19.210			
T10	683.48	1153,82	A	0.175	2.68	10	1	1	10.053	1449.10*	72.45	С
102.00-82.00			В	0.175	2.68		1	1	10.053			
			С	0.175	2.68		1	1	10.053			
T11	136.70	230.76	Α	0.175	2.68	9	1	1	2.011	281.42*	70.35	С
82.00-78.00			В	0.175	2.68		1	1	2.011			
			С	0.175	2.68		1	1	2.011	*	68.48	
T12	136.70	284.96	A	0.175	2.68	9	1	1	2,011	278.39*	69.60	С
78.00-74.00			B C	0.175 0.175	2.68 2.68		1	4	2.011 2.011			
T13	136.70	230.76	A	0.175	2.68	9	1	1	2.011	275.24*	68.81	С
74.00-70.00	150.70	250.70	B	0.175	2.68	9	1	1	2.011	275.24	00.01	C
/ 1.00 / 0.00			C	0.175	2.68		i	i	2.011			
T14	136.70	230.76	Ă	0.175	2.68	9	1	1	2.011	271.95*	67.99	С
70.00-66.00			В	0.175	2.68		1	1	2.011			
			С	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	С
66.00-62.00			В	0.175	2.68		1	1	2.011			
			С	0.175	2.68		1	1	2.011			
T16	683.48	1252.21	A	0.183	2.654	9	1	I	13.639	1291.45*	64.57	С
62 00-42 00			B	0.183	2.654		1	1	13.639			
T12	602.40	1262.21	C	0.183	2.654		1	1	13,639	11/2007	60.00	C
T17 42.00-22.00	683.48	1252.21	A	0.183	2.654	8			13.639	1165.97*	58.30	С
42.00-22.00			B C	0.183 0.183	2.654 2.654			1	13.639 13.639			
T18	512.61	1252.21	A	0.183	2.654	7	41	1 I	13.639	892.99	44.65	С
22.00-2.00	512.01	1202.21	B	0.183	2.654	· /	1	Ŷ	13.639	072.77		C
22.00 2.00			č	0.183	2.654		i	1	13.639			
Sum Weight:	5619.23	22271.87	Ĕ.		*2.1Ag					14280.55		
0					limit							

Job

Project

Client

AECOM 500 Enterprise Drive, Suite 3B Rocky Hill, CT Phone: 860-529-8882 FAX: 860-529-3991

280' Guyed Tower	
130 Vernon Rd Bolton, CT	

Transcend Wireless / TWM-005 / - 004 Rev 1

Date 08:58:55 04/13/16 Designed by MCD

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Page

Tower Forces - Service - Wind 45 To Face

Section	Add	Self	F	е	C_F	<i>q</i> ₂	D_F	D_R	AE	F	W	Ctrl.
Elevation	Weight	Weight	a		Cr.	42	Dr		TIE	,	rv	Face
			С			psf						
ft	lb	lb	e						ft^2	lb	plf	
T1	56.20	1212.62	A	0.187	2.641	12	0.825	1	10.162	413,99	20,70	С
282,00-262,00			В	0.187	2,641		0.825	1	10.162			
TO	(0.40	1162.02	C	0.187	2,641	12	0.825	1	10.162	(21.00	21.05	
T2 262.00-242.00	69.40	1153.82	AB	0.175	2.68 2.68	12	0.825	1	9.354 9.354	421.08	21.05	С
202.00-242.00			C	0.175	2.68		0.825	1	9.354			
Т3	82.60	1153.82	Ă	0.175	2.68	12	0.825	1	9.354	445.00	22.25	С
242.00-222.00	02.00		В	0.175	2,68		0.825	i	9.354			Ĩ
			С	0.175	2.68		0.825	1	9.354			
Т4	104.05	2014.07	Α	0.263	2.398	12	0.825	1	16.535	659.80	32.99	C
222,00-202,00			В	0.263	2.398		0.825	1	16.535			
			C	0,263	2.398		0.825	1	16.535			
T5	124.00	2247.64	A	0.294	2,312	11	0.825	1	18.701	776.85	38.84	С
202.00-182.00		TA 873.93	B C	0.294 0.294	2.312 2.312		0.825 0.825	1	18.701 18.701			
Т6	253.60	1153.82	A	0.175	2.512	11	0.825	i	9.354	836.75	41.84	С
182.00-162.00	255.00	1155.62	B	0.175	2.68	11	0.825	1	9,354	050.75	71.07	C
102.00 102.00			Ĉ	0.175	2.68		0.825	î	9.354			
Т7	462.84	1153.82	Α	0.175	2.68	11	0.825	1	9.354	1248.31	62.42	С
162.00-142.00			В	0.175	2.68	· · · ·	0,825	1	9.354			
			С	0.175	2.68		0.825	1	9,354			
Т8	543.92	2247.64	А	0.294	2.312	11	0.825	1	18.701	1539.52	76.98	С
142.00-122.00		TA 873.93	В	0.294	2.312		0.825	1	18.701			
	(7(00	2014.07	C	0.294	2.312	10	0.825	1	18.701	1610.20*	75.50	
T9 122.00-102.00	676.09	2014.07	A B	0.263 0.263	2.398 2.398	10	0.825	1	16.535 16.535	1510,37*	75.52	С
122.00-102.00			ь С	0.263	2,398		0.825	4	16.535			
T10	683.48	1153.82	Ă	0.175	2.68	10	0.825	i	9,354	1449.10^{*}	72.45	С
102.00-82.00	000,10	1100.02	В	0.175	2.68	10	0.825	i	9.354	1112.10	, 2.10	Ũ
November Mader			С	0.175	2.68		0.825	1	9.354			
T11	136.70	230.76	А	0.175	2.68	9	0.825	1	1.871	281.42*	70.35	С
82.00-78.00			В	0.175	2.68		0.825	1	1.871			
			С	0.175	2.68		0.825	1	1.871			
T12	136.70	284.96	A	0.175	2.68	9	0.825	1	1.871	278,39*	69.60	С
78.00-74.00			B	0.175	2.68		0.825	1	1,871			
T13	136.70	230,76	C A	0.175 0.175	2.68 2.68	9	0.825 0.825	1	1.871 1.871	275.24*	68.81	С
74.00-70.00	150.70	230.70	B	0.175	2.68	9	0.825	1	1.871	275.24	00.01	C
/ 4.00 / 0.00			Ċ	0.175	2,68		0.825	i	1.871			
T14	136.70	230.76	Ă	0.175	2.68	9	0.825	î.	1.871	271.95*	67.99	С
70.00-66.00			В	0.175	2.68		0.825	1	1.871			
			С	0,175	2.68		0.825	1	1.871			
T15	136.70	284.96	Α	0.175	2.68	9	0.825	1	1.871	268.50	67,13	С
66.00-62.00			В	0.175	2.68		0.825	<u>1</u>	1.871			
	100 10		C	0.175	2,68		0.825	1	1.871	1001 10*		
T16	683.48	1252.21	A	0.183	2.654	9	0.825	1	11.647	1291.45*	64.57	С
62.00-42.00			B	0,183	2,654		0.825	1	11.647			
T17	683.48	1252.21	C A	0.183 0.183	2.654 2.654	8	0.825	1	11.647 11.647	1165.97*	58,30	С
42.00-22.00	003.40	1232.23	B	0.183	2.654	0	0.825	1	11.647	1105.77	06,00	U
12.00-22.00			C	0.183	2.654		0.825	i i	11.647			
T18	512.61	1252.21	Ă	0.183	2.654	7	0.825	1	11.647	863.08	43.15	С
22.00-2.00			В	0.183	2.654		0.825	I	11.647			
			С	0,183	2.654		0.825	I.	11.647			
Sum Weight:	5619,23	22271.87			*2.1Ag					13996.77		
					limit							

tnxTower	Job 280' Guyed Tower	Page 44 of 74
AECOM 500 Enterprise Drive, Suite 3B	Project 130 Vernon Rd Bolton, CT	Date 08:58:55 04/13/16
Rocky Hill, CT Phone: 860-529-8882 FAX: 860-529-3991	Client Transcend Wireless / TWM-005 / - 004 Rev 1	Designed by MCD

Section	Add	Self	F	е	C_F	q_z	D_F	D_R	AE	F	142	Ctrl.
Elevation	Weight	Weight	а									Face
c			С			psf			<i>a</i> 2		10	
	lb	lb	e	0.105					ft ²	lb	plf	
T1	56,20	1212.62	A	0.187	2.641	12	0.8	1	10.039	410.59	20.53	С
282.00-262.00			B	0,187	2.641		0.8		10.039			
TO	(0.40	1152.00	C	0.187	2.641	12	0.8		10.039	410.24	20.02	~
T2	69.40	1153,82	A	0.175	2.68	12	0.8	4	9.254	418.34	20,92	С
262 00-242 00			B C	0.175	2.68		0.8 0.8		9.254 9.254	1		
Т3	82.60	1153.82	A	0 175	2.68 2,68	12	0.8	÷.	9.234	442.31	22,12	С
242.00-222.00	02.00	1155.62	B	0.175	2.68	12	0.8	4	9,254	442,51	22.12	C
242.00-222.00			C	0.175	2.68		0.8	- 1 I	9.254			
T4	104.05	2014.07	Ă	0.263	2.398	12	0.8	÷.	16.152	650.76	32.54	С
222.00-202.00	104.05	2014.07	B	0.263	2.398	12	0.8	i	16,152	050.70	52,54	C
			C	0.263	2.398		0.8	î	16.152			
Т5	124.00	2247.64	Ă	0.294	2.312	11	0.8	î	18.255	766.88	38.34	С
202.00-182.00	. = 1:00	TA 873.93	B	0.294	2.312		0,8	1	18,255			-
			C	0,294	2.312		0.8	1	18.255			
Т6	253,60	1153.82	Α	0.175	2.68	11	0.8	1	9.254	834.22	41.71	С
182.00-162.00		~	В	0.175	2.68		0.8	1	9.254		~	
			С	0.175	2.68		0.8	1	9.254			
Т7	462.84	1153.82	A	0.175	2.68	11	0.8	1	9,254	1245.85	62.29	С
162.00-142.00			В	0.175	2.68		0.8	1	9.254			
			С	0.175	2.68		0.8	1	9.254			
T8	543.92	2247.64	A	0.294	2.312	11	0.8	1	18.255	1530.30	76,52	С
142.00-122.00		TA 873.93	В	0.294	2.312		0.8	1	18.255			
			С	0.294	2.312		0.8	I	18.255			
T9	676.09	2014.07	A	0.263	2.398	10	0.8	1	16.152	1510.37*	75.52	С
122.00-102.00			B	0.263	2.398		0.8	1	16.152			
771.0	(02.40	1162.02	C	0.263	2.398	10	0.8	5	16.152	1440.10*	70.45	~
T10 102.00-82.00	683.48	1153.82	A B	0.175 0.175	2.68 2.68	10	0.8 0.8	1	9.254 9.254	1449,10*	72.45	С
102.00-82.00			С	0.175	2.68		0.8	1	9.234			
T11	136.70	230.76	A	0.175	2.68	9	0.8		1.851	281.42*	70.35	С
82.00-78.00	150.70	250.70	B	0.175	2.68		0.8	1	1.851	201.42	10.55	C
02.00-70.00			C	0.175	2.68		0.8	÷.	1.851			0
T12	136.70	284.96	Ă	0.175	2.68	9	0.8	î	1.851	278.39*	69.60	С
78.00-74.00	150.70	201.90	B	0.175	2.68		0.8	î	1.851	270135	0,000	Ŭ
			Ċ	0.175	2.68		0.8	1	1.851			
T13	136.70	230.76	A	0.175	2.68	9	0.8	1	1.851	275.24*	68.81	С
74.00-70.00			В	0.175	2.68		0.8	1	1.851			
			С	0.175	2.68		0.8	1	1_851			
T14	136.70	230.76	Α	0.175	2.68	9	0.8	1	1.851	271.95*	67.99	С
70.00-66.00			В	0.175	2.68		0.8	1	1.851			
			С	0.175	2.68		0.8	1	1.851			
T15	136.70	284.96	Α	0.175	2.68	9	0.8	1	1.851	268.50*	67.13	С
66.00-62.00			В	0.175	2.68		0.8	1	1.851			
			С	0.175	2.68		0.8	1	1.851			
T16	683,48	1252.21	A	0.183	2.654	9	0.8	1	11.363	1291.45*	64.57	С
62.00-42.00			В	0.183	2.654		0.8	1	11.363			
			С	0.183	2.654		0.8	1	11.363			
T17	683.48	1252.21	A	0,183	2.654	8	0.8	1	11,362	1165.97*	58.30	С
42.00-22.00			B	0.183	2.654		0.8	1	11.362			
		1000.01	C	0,183	2.654		0.8	1	11.362	0.70.01	10.01	
T18	512.61	1252.21	A	0.183	2.654	7	0.8	1	11.362	858.81	42.94	С

AECOM 500 Enterprise Drive, Suite 3B Rocky Hill, CT Phone: 860-529-8882 FAX: 860-529-3991

8	Job		Page
r		280' Guyed Tower	45 of 74
	Project		Date
uite 3B		130 Vernon Rd Bolton, CT	08:58:55 04/13/16
82 91	Client	Transcend Wireless / TWM-005 / - 004 Rev 1	Designed by MCD

Section Elevation	Add Weight	Self Weight	F a	е	C_F	q _z	D_F	D_R	A_E	F	w	Ctrl. Face
A	lb	lb	c e			psf			θ^2	lb	plf	Tuee
22.00-2.00	10		В	0.183	2.654		0,8	1	11.362	10	pŋ	
Sum Weight:	5619.23	22271.87	С	0.183	2,654 *2.1Ag limit		0.8	1	11.362	13950.44		

Tower Forces - Service - Wind 90 To Face

Section	Add	Self	F	е	C_F	qz	D_F	D_R	A_E	F	w	Ctrl
Elevation	Weight	Weight	a									Face
ft	lb	lb	с е			psf			ft^2	lb	plf	
	56,20	1212.62	A	0,187	2.641	12	0.85	1	10.286	417.39	20.87	C
282.00-262.00	50,20	1212.02	B	0.187	2.641	12	0.85	i	10.286	417.39	20.07	
202,00-202,00			C	0.187	2.641		0.85	1	10.286			
T2	69.40	1153.82	Ă	0.175	2.68	12	0.85	i	9,454	423.82	21.19	С
262.00-242.00	05.10	1155.02	B	0.175	2.68	12	0.85		9.454	125.02	21,19	
202100 212100			Ē	0.175	2.68		0.85	<u> </u>	9.454			
Т3	82.60	1153.82	Ā	0.175	2.68	12	0.85	1	9 454	447.70	22.38	С
242.00-222.00	01.00		В	0,175	2.68		0.85	i i	9.454		22100	
			C	0.175	2.68		0.85	i	9.454			
Т4	104.05	2014.07	A	0.263	2.398	12	0.85	1	16.917	668.85	33,44	C
222.00-202.00			В	0.263	2.398		0.85	1	16.917			
			С	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	С
202.00-182.00		TA 873.93	В	0.294	2.312		0.85	1	19.147			
			С	0.294	2.312		0.85	1	19,147			
Т6	253.60	1153.82	Α	0.175	2.68	11	0.85	1	9.454	839,28	41.96	С
182.00-162.00			В	0.175	2.68		0.85	1	9.454			
			С	0.175	2.68		0.85	1	9.454			
T7	462.84	1153.82	Α	0.175	2.68	11	0.85	1	9.454	1250.77	62.54	С
162.00-142.00			В	0.175	2.68		0.85	1	9.454			
			С	0.175	2.68		0.85	1	9,454			
Т8	543.92	2247.64	Α	0.294	2.312	11	0.85	1	19.147	1548.73	77.44	С
142.00-122.00		TA 873.93	В	0.294	2,312		0.85	1	19.147			
			С	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	С
122.00-102.00			В	0,263	2.398		0.85	1	16.917			
			С	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	С
102.00-82.00			В	0.175	2:68		0.85	1	9.454			
			С	0,175	2,68		0,85	1	9.454			
T11	136.70	230,76	А	0.175	2.68	9	0.85	1	1.891	281.42*	70,35	С
82.00-78.00			В	0.175	2.68		0.85	1	1.891			
			С	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	С
78,00-74.00			В	0.175	2.68		0.85	1	1.891			
	10/50		С	0.175	2.68		0.85	1	1.891		(0.0)	
T13	136.70	230.76	A	0.175	2.68	9	0.85	1	1,891	275.24*	68.81	С
74.00-70.00			B	0,175	2.68		0.85	1	1.891			
	126 50		С	0.175	2.68		0.85	1	1.891	0.71 0.55	(7.00)	0
T14	136.70	230.76	A	0.175	2.68	9	0.85	1	1.891	271.95*	67,99	С
70.00-66.00			B	0.175	2.68		0.85	1	1.891			
	126.50	204.07	C	0.175	2.68		0.85	- b	1.891	2/8 (2)	(7.12)	0
T15	136,70	284,96	A	0.175	2,68	9	0.85	1	1,891	268.50	67.13	С

tnxTower	Job 280' Guyed Tower	Page 46 of 74
AECOM 500 Enterprise Drive, Suite 3B	Project 130 Vernon Rd Bolton, CT	Date 08:58:55 04/13/16
Rocky Hill, CT Phone: 860-529-8882 FAX: 860-529-3991	Client Transcend Wireless / TWM-005 / - 004 Rev 1	Designed by MCD

Section	Add	Self	F	е	C_F	qz	D_F	D_R	AE	F	w	Ctrl.
Elevation	Weight	Weight	a									Face
			С			psf						
ft	lb	lb	е						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	С
62.00-42.00			В	0.183	2.654		0.85	1	11.932			
			С	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	С
42.00-22.00			В	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	С
22.00-2.00			В	0.183	2.654		0.85	1	11.931			
			С	0.183	2.654		0.85	1	11.931			
Sum Weight:	5619.23	22271.87			*2.1Ag					14043.09		
					limit							

Force Totals (Does not include forces on gr											
Load	Vertical	Sum of	Sum of	Sum of Torques							
Case	Forces	Forces	Forces								
		X	Ζ								
	lb	lb	lb	lb-ft							
Leg Weight	9335.14	- 5 10 - 10 - 10 - 10 - 10 - 10 - 10									
Bracing Weight	12936.73	the state of the state of the	NUN CONTRACTOR	2 - 12 - 10 - 10 - 10 - 10 - 10 - 10 - 1							
Total Member Self-Weight	22271.87		SP IFC M U.								
Guy Weight	4477.09	and the second second second second		Marshard B.							
Fotal Weight	38348.73		100 C 100 C								
Wind 0 deg - No Ice	WE WEST	277.21	-58205.65	-3326.99							
Wind 30 deg - No Ice	The second second	29114.93	-50250.68	-7258.29							
Wind 45 deg - No Ice	A. LAN, W. MAR	40894.93	-40767.21	-8170.76							
Wind 60 deg - No Ice	SALE STREET	49924.83	-28499.51	-10542.76							
Wind 90 deg - No Ice	Contraction of the second s	58049.86	362.37	-10768.98							
Wind 120 deg - No Ice	and the second second	50754.84	29020.22	-6405.94							
Wind 135 deg - No Ice		41445.17	40631.73	-4070.44							
Wind 150 deg - No Ice	A DESCRIPTION OF THE OWNER OWNE	29155.73	49126.39	62.98							
Wind 180 deg - No Ice	EXAL DATE TO A	298.91	56527.98	5384.04							
Wind 210 deg - No Ice		-28845.96	49812.84	8574.59							
Wind 225 deg - No Ice	The second second second	-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	The state of the second	-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		THE PARTY								
Guy Ice	38260.32			AS							
Fotal Weight Ice	209235.51	에는 12 전에 전하는									
Wind 0 deg - Ice	CONTRACTOR OF STREET,	135.03	-21296.95	919.68							
Wind 30 deg - Ice	C Diff. Sept. N.	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							
Vind 150 deg - Ice	A DECEMBER OF A	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							

tnxTower	Job	280' Guyed Tower	Page 47 of 74
AECOM 500 Enterprise Drive, Suite 3B	Project	130 Vernon Rd Bolton, CT	Date 08:58:55 04/13/16
Rocky Hill, CT Phone: 860-529-8882 FAX: 860-529-3991	Client	Transcend Wireless / TWM-005 / - 004 Rev 1	Designed by MCD

Load	Vertical	Sum of	Sum of	Sum of Torques
Case	Forces	Forces	Forces	
		X	Z	
	lb	lb	lb	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	ISULA TEST	-10443.64	-18231.63	2694.52
Total Weight	38348.73	ter U.S. TEMAN		ovate en 175 (
Wind 0 deg - Service	N. Casharan	90.52	-19005.93	-1086,36
Wind 30 deg - Service	- And Call	9506.91	-16408.38	-2370.05
Wind 45 deg - Service		13353,45	-13311.74	-2668.00
Wind 60 deg - Service	the second second second	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	ELS ESSO DURA	97.60	18458,12	1758.05
Wind 210 deg - Service		-9419.09	16265.42	2799.87
Wind 225 deg - Service	市田、東京市市	-13278.26	13313.96	3403.62
Wind 240 deg - Service	115- Bay 81 83	-16502.00	9539.51	3178.10
Wind 270 deg - Service	Calle Styles 1	-18589.47	68.00	2754.74
Wind 300 deg - Service	3 Hall 5 - 0 - 4 1	-15790.24	-9123.21	1684.48
Wind 315 deg - Service		-13062.89	-13174.11	1050.70
Wind 330 deg - Service	ALL REAL IN	-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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tnxTower	280' Guyed Tower	48 of 74
AECOM	Project	Date
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Rocky Hill, CT Phone: 860-529-8882 FAX: 860-529-3991	Client Transcend Wireless / TWM-005 / - 004 Rev 1	Designed by MCD

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	Mem	Member Forces			
Section No.	Elevation ft	Component Type	Condition	Gov. Load	Axial	Major Axis Moment	Minor Axis Moment	
				Comb	lb	lb-ft	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		-21	
		5	Top Tension	10	18724.16			
			Top Cable Vert	27	15920.69			
			Top Cable Norm	27	9855.23			

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

ection No.	Elevation ft	Component Type	Condition	Gov. Load	Axial	Major Axis Moment	Minor Axis Moment
8		-)P0		Comb.	lb	lb-ft	lb-ft
			Top Cable Tan	27	1.73	10]1	
			Bot Cable Vert	10	-13826.46		
			Bot Cable Norm	10	10795.22		
			Bot Cable Tan	10	1.67		
		Guy B	Bottom Tension	32	17621.77		
		Ouy D	Top Tension	15	19020.25		
			Top Cable Vert	32	16118.74		
			Top Cable Norm	32	10097.34		
			Top Cable Tan	32	3.64		
				15			
			Bot Cable Vert Bot Cable Norm	15	-13910.19		
				15	10818.20 2.49		
		C C	Bot Cable Tan				
		Guy C	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		(a. (-
Т2	262 - 242	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	Max Tension	32	451.90	0.00	0.00
		Horizontal					
			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
	£16 666	LOB	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				
		Diagonal		27	-195.80	-3.44	-225.49
		Diagonal	Max Tension Max. Compression	16	1740.96	0.00	0.00 0.00
				16	-1988.86	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
		a i	Max. Vx	23	0.09	0.00	0.00
		Secondary	Max Tension	27	459.24	0.00	0.00
		Horizontal					
			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
Т4	222 - 202	Leg	Max Tension Max Compression	15 34	8018.55 -28786.89	-131.83 32.04	-336.88 -150.99

Job

Project

Client

AECOM 500 Enterprise Drive, Suite 3B Rocky Hill, CT Phone: 860-529-8882 FAX: 860-529-3991

130 Vernon Rd Bolton, CT

280' Guyed Tower

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 Designed by

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Transcend Wireless / TWM-005 / - 004 Rev 1

MCD

ection No	Elevation	Component	Condition	Gov.	Axial	Major Axis	Minor Axis
No	ft	Туре		Load Comb.	lb	Moment	Moment
			Max. My	3	-1572.54	<u>lb-ft</u> 71.17	<i>lb-ft</i> -1038.05
			Max. Vy	5	-1180.12	-595.86	20,56
			Max. Vy	3	1023.66	-64.53	
		Diagonal	Max Tension	5	5554.58	-64.55	489,28
		Diagonal		12			0.00
			Max. Compression		-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
		C 1	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
-5	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
		TOTZONAL	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
		Court	Bottom Tension	11		0.00	0.00
		Guy A			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		
		a -	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		
				ر	270.73		
		Top Guy Pull-Off	Max Tension	5	24934.56	0.00	0.00

tnx	Tower	

Job

Project

Client

AECOM 500 Enterprise Drive, Suite 3B Rocky Hill, CT Phone: 860-529-8882 FAX: 860-529-3991

130 Vernon Rd Bolton, CT

280' Guyed Tower

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Transcend Wireless / TWM-005 / - 004 Rev 1

Section No.	Elevation ft	Component Type	Condition	Gov. Load	Axial	Major Axis Moment	Minor Ax. Moment
				Comb.	lb	lb-ft	lb-ft
			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
		Dattan Cuu	Max Tension				
		Bottom Guy Pull-Off	Max Tension	15	4463.93	0.00	0.00
			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
		Torque Arm Top	Max Tension	6	29547.05	0.00	0.00
		roique i i in rop	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
			Max. Vx	23	-0.10	0.00	0.00
		Torque Arm Bottom	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
Т6	182 - 162	Leg	Max Tension	8	20924.73	-340.34	-312.02
10	102 - 102	LUG	Max. Compression	9	-72636.68	-173.71	-755.91
			Max. Mx	14		-1554.73	
					-66583.40		-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
		Holizontai	M C	0	1000 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				
		Diagonal		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
		monzontai	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

Job

Project

Client

AECOM 500 Enterprise Drive, Suite 3B Rocky Hill, CT Phone: 860-529-8882 FAX: 860-529-3991

130 Vernon Rd Bolton, CT

280' Guyed Tower

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Transcend Wireless / TWM-005 / - 004 Rev 1

ection No	Elevation ft	Component Type	Condition	Gov. Load	Axial	Major Axis Moment	Minor Axi Moment
				Comb.	lb	lb-ft	lb-ft
Т8	142 - 122	Leg	Max Tension	5	22992.63	-197.24	244.78
	112 122	1766	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			
		F 1			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		0.00	0.00
		Guy A			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		
		Guy B	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		
		Guye	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		
			Bot Cable Norm	3	22518.17		
			Bot Cable Tan	3	224.65		
		Top Guy Pull-Off	Max Tension	5	34078.09	0.00	0.00
		1 2	Max. Compression	2	-13474.86	0.00	0.00
			Max. Max	24			0.00
					8085.29	-68.01	0.00
			Max. My	13	24113.57	0.00	0.00
			Max. Vy	24	68.01	0.00	0.00
			Max, Vx	13	-0.00	0.00	0.00
		Bottom Guy Pull-Off	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
			Max. Vy	24	68.01	0.00	0.00
		-	Max. Vx	13	-0.00	0.00	0.00
		Torque Ann Top	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

Job

Project

Client

AECOM 500 Enterprise Drive, Suite 3B Rocky Hill, CT Phone: 860-529-8882 FAX: 860-529-3991

130 Vernon Rd Bolton, CT

280' Guyed Tower

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Transcend Wireless / TWM-005 / - 004 Rev 1

Section No.	Elevation ft	Component Type	Condition	Gov. Load	Axial	Major Axis Moment	Minor Axi Moment
				Comb.	lb	lb-ft	lb-ft
			Max, Vx	23	-0.06	0.00	0.00
		Torque Arm Bottom	Max Tension	14	9299.48	0.00	0.00
		1	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
			Max, Vx	23	0.04	0.00	0.00
Т9	122 - 102	Leg	Max Tension	1	0.00	0.00	0.00
12	122 102	200	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
			Max. Vx	2	1424.71	14.83	746.43
		Disconsl	Max Tension	14			0.00
		Diagonal			7936.05	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
		_	Max. Vx	12	0.10	0.00	0.00
		Secondary Horizontal	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
			Max. Vx	9	-0.00	0.00	0.00
T10	102 - 82	Leg	Max Tension	7	3877.58	395.19	260.04
		5	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
			Max. Vx	8	1142.78	585.77	-1467.89
		Diagonal	Max Tension	8	4361.26	0.00	0.00
		Brugonar	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
			Max. Vx	23	-0.07	0.00	0.00
		Secondary Horizontal	Max Tension	30	1630.67	0.00	0.00
		man	Max. Compression	30	-1630.67	0.00	0.00
			Max. Max	18	1568.91	-35.94	0.00
				18		-35.94	
			Max. My Max. Viv		1589.85		-0.00
			Max. Vy May Ve	18	-35.94	0.00	0.00
T11	00 70	т	Max. Vx	12	0.00	0.00	0.00
Т11	82 - 78	Leg	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
			Max. Vx	8	1421.73	778.02	-2003.51
		Diagonal	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
			Max. Vx	30	-0.07	0.00	0,00
		Secondary Horizontal	Max Tension	30	1657.07	0.00	0.00
			Max. Compression	30	-1657.07	0.00	0.00

Job

Project

Client

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130 Vernon Rd Bolton, CT

280' Guyed Tower

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Section No.	Elevation ft	Component Type	Condition	Gov Load	Axial	Major Axis Moment	Minor Ax Moment
				Comb.	lb	lb-ft	lb-ft
			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
T12	78 - 74	Leg	Max Tension	1	0.00	0.00	0.00
114	10 14	LCE	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	Max Tension	31	1496.26	0.00	0.00
		Horizontal		10	1470,20	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
Т13	74 - 70	Leg	Max Tension	1	0.00	0.00	0.00
115	74-70	LUE	Max. Compression	31	-97195.50	-288.19	-2537.88
			Max. Mx	2	-76067.86	-3143.77	504.61
			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
		Diagonal	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
		Secondary	Max Tension	31	1683.48	0.00	0.00
		Horizontal					
			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
T14	70 - 66	Leg	Max Tension	1	0.00	0.00	0.00
114	70 - 00	LCB	Max. Compression	30	-103830.50	230.00	1053.25
				2	-85495.43		504,45
			Max. Mx			-3143.80	
			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
		Diagonal	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
					-20.87	0.00	0.00
			Max Vv	79			
			Max, Vy Max, Vx	29 23			
		Secondary	Max, Vy Max, Vx Max Tension	29 23 30	-0.09 1798.40	0.00 0.00	0.00
		Secondary Horizontal	Max, Vx Max Tension	23 30	-0.09 1798.40	0.00 0,00	0.00 0.00
			Max, Vx	23	-0.09	0.00	0.00
			Max, Vx Max Tension	23 30	-0.09 1798.40	0.00 0,00	0.00 0.00
			Max, Vx Max Tension Max. Compression	23 30 30	-0.09 1798.40 -1798.40	0.00 0.00 0.00	0.00 0.00 0.00
			Max, Vx Max Tension Max. Compression Max. Mx Max. My	23 30 30 18 12	-0.09 1798.40 -1798.40 1749.96 1516.67	0.00 0.00 -34.72 0.00	0.00 0.00 0.00 0.00 -0.00
			Max, Vx Max Tension Max. Compression Max. Mx	23 30 30 18	-0.09 1798.40 -1798.40 1749.96	0.00 0.00 -34.72	0.00 0.00 0.00 0.00

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tnx I	ower

Job

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Client

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130 Vernon Rd Bolton, CT

280' Guyed Tower

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Transcend Wireless / TWM-005 / - 004 Rev 1

Section No.	Elevation ft	Component Type	Condition	Gov. Load	Axial	Major Axis Moment	Minor Axis Moment
	150			Comb.	lb	lb-ft	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		
		City D	Top Tension	14	25734.36		
			7	14	9272.81		
			Top Cable Vert				
			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
		6	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
Г16	62 - 42	Leg	Max Tension	7	9675.18	612.64	0.65
		246	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. Vy Max. Vx	7	-608.75	875.57	78.82
		Diagonal	Max Tension				
		Diagonal	Max. Compression	6	6860.48 -5814.61	0.00 0.00	0.00 0.00
				11			
			Max: Mx Max: Mu	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
		Secondary	Max, Vx Max Tension	23 9	-0.07 1960.86	0.00 0.00	0.00 0.00
		Horizontal					
			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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	Anna Tanu an	Job	Page
	tnxTower	280' Guyed Tower	56 of 74
	AECOM	Project	Date
	500 Enterprise Drive, Suite 3B	130 Vernon Rd Bolton, CT	08:58:55 04/13/16
	Rocky Hill, CT	Client	Designed by
	Phone: 860-529-8882 FAX: 860-529-3991	Transcend Wireless / TWM-005 / - 004 Rev 1	MCD

Section	Elevation	Component	Condition	Gov.	Axial	Major Axis	Minor Axis
No_*	ft	Туре		Load		Moment	Moment
				Comb.	lb	lb-ft	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
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
		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. Hz	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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6.4.6. C. A.	Crrc.

Job

Project

Client

AECOM 500 Enterprise Drive, Suite 3B Rocky Hill, CT Phone: 860-529-8882 FAX: 860-529-3991

130 Vernon Rd Bolton, CT

280' Guyed Tower

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Transcend Wireless / TWM-005 / - 004 Rev 1

Designed by MCD

Location	Condition	Gov.	Vertical	Horizontal, X	Horizontal,
		Load	lb	lb	lb
		Comb_			
	Min, H _z	13	-3017.54	-1774.11	1022.81
Guy B @ 205 ft	Max. Vert	7	-2827,56	1656.90	955.86
Elev -7.5 ft					
Azimuth 120 deg					
	Max. H _x	14	-80767.18	94248.30	52735.89
	Max. H _z	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
	Min. Hz	7	-2827.56	1656,90	955.86
Guy A @ 219 ft Elev -26.5 ft	Max. Vert	2	-3244,57	-0.62	-2196.92
Azimuth 0 deg					
	Max. H _x	14	-45545.76	2807.93	-56408.80
	Max. H _z	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
	Min. Hz	11	-85719.67	1561.00	-109073.12
Mast	Max. Vert	19	326233.16	71.37	506.41
	Max. H _x	14	176911.41	6519.79	233.06
	Max. Hz	2	191366.29	24.98	6084.41
	Max. M _x	1	0.00	0.20	-11,31
	Max. M _z	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. Hz	10	153200.46	31.03	-7034.76
	Min. M _x	1	0.00	0.20	-11.31
	Min, M _z	1	0.00	0.20	-11.31
	Min. Torsion	14	-1221.63	6519.79	233.06

Tower Mast Reaction Summary

Load Combination	Vertical	Shearx	Shearz	Overturning Moment, M _x	Overturning Moment, M ₇	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 lce+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

<i>tnxTower</i>

	Job		Page
		280' Guyed Tower	58 of 74
	Project		Date
e 3B		130 Vernon Rd Bolton, CT	08:58:55 04/13/16
	Client	Transcend Wireless / TWM-005 / - 004 Rev 1	Designed by MCD

Load Combination	Vertical	Shear _x	Shearz	Overturning Moment, M _x	Overturning Moment, M ₂	Torque
	lb	lb	lb	lb-ft	lb-ft	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 -	176911.41	-6519.79	-233.06	0.00	0.00	1221.63
No Ice+1.0 Guy 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 1.2 Dead+1.0 Wind 225	324779.32	-351.14	498.40	0.00	0.00	-78.38
l.2 Dead+1.0 Wind 223 deg+1.0 Ice+1.0 Temp+1.0 Guy	325643.77 326134.71	-453.60 -537.05	399.81 287.46	0.00	0.00	59.03 216.36
lcg+1.0 Ice+1.0 Temp+1.0 Guy	325236.43	-654.55	38.71	0.00	0.00	447.19
leg+1.0 Ice+1.0 Temp+1.0 Guy	324436.04	-586.84	-262.19	0.00	0.00	250.59
leg+1.0 Ice+1.0 Temp+1.0 Guy 2 Dead+1.0 Wind 315	324632.17	-484.35	-394.18	0.00	0.00	97.72
leg+1.0 Ice+1.0 Temp+1.0 Guy .2 Dead+1.0 Wind 330	325199.46	-358.39	-477.44	0.00	0.00	9.81
leg+1.0 Ice+1.0 Temp+1.0 Guy Dead+Wind 0 deg -	97091.04	3.46	-1633,89	0.00	0.00	19.29
Service+Guy Dead+Wind 30 deg -	96862,72	783,50	-1387.10	0.00	0.00	-14.01
ervice+Guy Dead+Wind 45 deg -	96790.61	1108.33	-1120.51	0.00	0.00	-50,35
ervice+Guy Dead+Wind 60 deg -	96738.92	1358.91	-781.95	0.00	0.00	-150.02
ervice+Guy Dead+Wind 90 deg -	96632.15	1595=58	26.03	0.00	0.00	-246.36
Service+Guy Dead+Wind 120 deg -	96656.66	1419.63	835.88	0,00	0.00	-171.65
Service+Guy Dead+Wind 135 deg -	96552.01	1147,27	1149.60	0.00	0.00	-116.03
ervice+Guy Dead+Wind 150 deg -	96443.79	810.11	1395.69	0.00	0.00	-31.30

tnxTower	Job 280' Guyed Tower	Page 59 of 74
AECOM 500 Enterprise Drive, Suite 3B	Project 130 Vernon Rd Bolton, CT	Date 08:58:55 04/13/16
Rocky Hill, CT Phone: 860-529-8882 FAX: 860-529-3991	Client Transcend Wireless / TWM-005 / - 004 Rev 1	Designed by MCD

Load Combination	Vertical	Shear _x	Shearz	Overturning Moment, M ₃	Overturning Moment, M ₇	Torque
	lb	lb	lb	lb-ft	lb-ft	lb-ft
Dead+Wind 180 deg -	96451.39	-5.87	1594.43	0.00	0.00	31.86
Service+Guy						
Dead+Wind 210 deg -	96582.96	-817.72	1395.55	0.00	0.00	69.78
Service+Guy						
Dead+Wind 225 deg -	96747.78	-1151.97	1150.98	0.00	0.00	129.01
Service+Guy					× .	
Dead+Wind 240 deg -	96911.75	-1421.09	840.97	0.00	0.00	151.91
Service+Guy						
Dead+Wind 270 deg -	96949.18	-1598.72	34,74	0.00	0.00	186.87
Service+Guy						
Dead+Wind 300 deg -	97032.59	-1363.09	-777.41	0.00	0.00	118,91
Service+Guy						
Dead+Wind 315 deg -	97034.08	-1109.39	-1118.65	0.00	0.00	73.17
Service+Guy						
Dead+Wind 330 deg -	97028.16	-781.82	-1387.73	0.00	0.00	35.92
Service+Guy						

Solution Summary

		m of Applied Force			Sum of Reaction		
Load	PX	PY	PZ	PX	PY	PZ	% Erro
Comb.	lb	lb	lb	lb	lb	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	0.000%
36	10402.29	-38338.68	-17955.39	-10402.69	38338.67	17953.53	0.004%

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AECOM	Project		Date
500 Enterprise Drive, Suite 3B	1:	30 Vernon Rd Bolton, CT	08:58:55 04/13/16
Rocky Hill, CT Phone: 860-529-8882 FAX: 860-529-3991	Client Transcend	Wireless / TWM-005 / - 004 Rev 1	Designed by MCD

	Sui	n of Applied Force	S		Sum of Reaction	S	
Load	PX	PY	PZ	PX	PY	PZ	% Error
Comb.	lb	lb	lb	lb	lb	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	Converged?	Number	Displacement	Force
Combination		of Cycles	Tolerance	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	0.0000001	0.00001412
21	Yes	18	0.0000001	0.00001774
22	Yes	17	0.0000001	0.00001747
23	Yes	18	0.0000001	0.00001113
24	Yes	19	0.0000001	0.00001089
25	Yes	18	0.0000001	0.00001842
26	Yes	18	0.0000001	0.00001346
27	Yes	17	0.0000001	0.00001258
28	Yes	18	0,0000001	0.00001881
29	Yes	19	0.00000001	0.00001271
30	Yes	19	0.0000001	0.00001363
31	Yes	18	0.00000001	0.00001393
32	Yes	17	0.0000001	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	0.0000001	0.00003858
37	Yes	10	0.0000001	0.00006983

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AECOM 500 Enterprise Drive, Suite 3B Rocky Hill, CT Phone: 860-529-8882 FAX: 860-529-3991		Project	130 Verno	n Rd Bolton, CT	Date 08:58:55 04/13/16
		Client T	ranscend Wireless	Designed by MCD	
38					
	Yes	10	0.0000001	0.00004214	
39	Yes	11	0.0000001	0.00004246	
39 40	Yes Yes	11 11	0.00000001 0.00000001	0.00004246 0.00008685	
39 40 41	Yes Yes Yes	11 11 11	0.00000001 0.00000001 0.00000001	0.00004246 0.00008685 0.00007014	
39 40 41 42	Yes Yes Yes Yes	11 11 11 11	0.00000001 0.000000001 0.00000001 0.00000001	0.00004246 0.00008685 0.00007014 0.00004124	
39 40 41 42 43	Yes Yes Yes Yes Yes	11 11 11 11 10	0.00000001 0.00000001 0.00000001 0.00000001 0.00000001	0.00004246 0.00008685 0.00007014 0.00004124 0.00004218	
39 40 41 42 43 44	Yes Yes Yes Yes Yes Yes	11 11 11 11 10 11	0.00000001 0.00000001 0.00000001 0.00000001 0.00000001 0.00000001	0.00004246 0.00008685 0.00007014 0.00004124 0.00004218 0.00004098	
39 40 41 42 43 44 45	Yes Yes Yes Yes Yes Yes Yes	11 11 11 10 11 11	$\begin{array}{c} 0.00000001\\ 0.00000001\\ 0.00000001\\ 0.00000001\\ 0.00000001\\ 0.00000001\\ 0.00000001\\ 0.00000001\\ 0.00000001 \end{array}$	0.00004246 0.00008685 0.00007014 0.00004124 0.00004218 0.00004098 0.00006843	
39 40 41 42 43 44 45 46	Yes Yes Yes Yes Yes Yes Yes Yes	11 11 11 10 11 11 11	$\begin{array}{c} 0.00000001\\ 0.00000001\\ 0.00000001\\ 0.00000001\\ 0.00000001\\ 0.00000001\\ 0.00000001\\ 0.00000001\\ 0.00000001\\ 0.00000001\\ \end{array}$	0.00004246 0.00008685 0.00007014 0.00004124 0.00004218 0.00004098 0.00006843 0.00008034	
39 40 41 42 43 44 45 46 47	Yes Yes Yes Yes Yes Yes Yes Yes Yes	11 11 11 10 11 11 11 11	$\begin{array}{c} 0.00000001\\ 0.00000001\\ 0.00000001\\ 0.00000001\\ 0.00000001\\ 0.00000001\\ 0.00000001\\ 0.00000001\\ 0.00000001\\ 0.00000001\\ 0.00000001\\ \end{array}$	0.00004246 0.00008685 0.00007014 0.00004124 0.00004218 0.00004098 0.00006843 0.00006843 0.00008034 0.00008754	
39 40 41 42 43 44 45 46	Yes Yes Yes Yes Yes Yes Yes Yes	11 11 11 10 11 11 11	$\begin{array}{c} 0.00000001\\ 0.00000001\\ 0.00000001\\ 0.00000001\\ 0.00000001\\ 0.00000001\\ 0.00000001\\ 0.00000001\\ 0.00000001\\ 0.00000001\\ \end{array}$	0.00004246 0.00008685 0.00007014 0.00004124 0.00004218 0.00004098 0.00006843 0.00008034	

		Maximum	Tower [Deflection	s - Service Win
Section No.	Elevation	Horz, Deflection	Gov. Load	Tilt	Twist
	ft	În	Comb.	o	0
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
Т7	162 - 142	2.356	43	0.0227	0.0457
T8	142 - 122	2.201	44	0.0427	0.0260
Т9	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	Appurtenance	Gov Load	Deflection	Tilt	Twist	Radius of Curvature
ft		Comb	in	0	0	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
281.00	Unit 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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AECOM	Project		Date
500 Enterprise Drive, Suite 3B		130 Vernon Rd Bolton, CT	08:58:55 04/13/16
Rocky Hill, CT Phone: 860-529-8882 FAX: 860-529-3991	Client Transc	end Wireless / TWM-005 / - 004 Rev 1	Designed by MCD

Elevation	Appurtenance	Gov.	Deflection	Tilt	Twist	Radius of
ft		Load Comb.	in	0	0	Curvature fi
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
I 42.00	(3) L-810 Obstruction Lights w/	44	2.201	0.0427	0.0260	39142
	Mount Kit					
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	Horz. Deflection	Gov. Load	Tilt	Twist
110.	ft	in	Comb.	0	0
T1	282 - 262	20.326	13	0.4236	0.5298
T2	262 - 242	21.913	13	0.4242	0,4895
Т3	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
Т8	142 - 122	24.881	7	0.3467	0.1965
Т9	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	Deflection	Tilt	Twist	Radius of Curvature
ft		Comb.	in	0	0	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	13	20.326	0.4236	0.5298	136360
	Unit					
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

tnxTower	Job 280' Guyed Tower	Page 63 of 74
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Elevation	Appurtenance	Gov.	Deflection	Tilt	Twist	Radius of
		Load				Curvature
ft		Comb.	Ĭn	0	۰	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/	7	24,881	0.3467	0.1965	7588
	Mount Kit					
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	Size	Initial Tension Ib	Breaking Load lb	Actual T _u lb	Allowable ϕT_n	Required S.F.	Actual S.F.
T1	270.00 (A)	3/4 EHS	5830.00			<i>lb</i>	1.000	
11	270.00 (A) (690)		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 🖌
Т5	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 🕨
Т8	128.00 (A) (733)	11/16 EHS	5000.00	49999.91	27008,70	30000.00	1.000	1.411 🖌
	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 🖌

tnxTower	Job	2801 Ouwerd Tower	Page 64 of 74
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Section No.	Elevation ft	Size	Initial Tension Ib	Breaking Load lb	Actual T _u lb	Allowable ¢T" 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	Size	L	L_{u}	Kl/r	A	Mast Stability	P_u	ϕP_n	Ratio P _u
	ft		ft	ft		in ²	Index	lb	lb	φ <i>P</i> ,,
T1	282 - 262	2	20.00	2.00	48.0 K=1.00	3.1416	1.00	-19607.90	109335.00	0.179
T2	262 - 242	2	20,00	2.00	48.0 K=1.00	3.1416	1.00	-26090.50	109335.00	0.239 '
Т3	242 - 222	2	20.00	2.00	48.0 K=1.00	3.1416	1.00	-26514.20	109335.00	0.243
Τ4	222 - 202	2	20,00	2.00	48.0 K=1.00	3.1416	1.00	-28786.90	109335.00	0.263 1
Т5	202 - 182	2	20.00	2.00	48.0 K=1.00	3.1416	1.00	-54164.00	109335.00	0.495 '
T6	182 - 162	2	20.00	2.00	48.0 K=1.00	3.1416	1.00	-72636.70	109335.00	0.664 1
Τ7	162 - 142	2	20.00	2.00	48.0 K=1.00	3.1416	1.00	-68302.80	109335.00	0.625 '
Т8	142 - 122	2	20.00	2.00	48.0 K=1.00	3.1416	1.00	-84415.90	109335.00	0.772 '
Т9	122 - 102	2	20,00	2.00	48.0 K=1.00	3.1416	1.00	-90731.80	109335.00	0.830 '
T10	102 - 82	2	20.00	2.00	48.0 K=1.00	3.1416	1.00	-94146.70	109335.00	0.861
T11	82 - 78	2	4.00	2.00	48.0 K=1.00	3.1416	1.00	-95671.20	109335.00	0.875
T12	78 - 74	2	4.00	2.00	24.0 K=0.50	3.1416	0.95	-86386.40	116729.00	0.740 '
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
T15	66 - 62	2	4.00	2.00	24.0 K=0.50	3.1416	0.92	-94501.40	113132.00	0.835 '
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 '
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

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Section	Elevation	Size	L	Lu	Kl/r	A	Mast	P_{μ}	ϕP_{μ}	Ratio
Section No.							Stability			P_{ii}
	ft		ft	ft		in ²	Index	lb	lb	ϕP_n
										1

 $^{1}P_{u}$ / ϕP_{n} controls

Diagonal Design Data (Compression)										
Section No.	Elevation	Size	L	L _u	Kl/r	A	P_u	ϕP_n	Ratio P _u	
	ft		ft	ft		in ²	lb	lb	φP"	
T1	282 - 262	7/8	5.66	5.42	148.7 K=0,50	0.6013	-4189.28	6144.07	0.682	
T2	262 - 242	7/8	5.66	5.42	148.7 K=0.50	0.6013	-2385.22	6144.07	0.388	
Т3	242 - 222	7/8	5.66	5.42	148.7 K=0.50	0.6013	-1988.86	6144.07	0.324 "	
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	
Т5	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 '	
T6	182 - 162	7/8	5.66	5,42	148.7 K=0.50	0.6013	-2674.46	6144.07	0.435	
T7	162 - 142	7/8	5.66	5.42	148.7 K=0.50	0.6013	-6033.92	6144.07	0.982 1	
Т8	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	
Т9	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	
T11	82 - 78	7/8	5.66	5.42	148.7 K=0.50	0.6013	-333.54	6144.07	0.054	
T12	78 - 74	7/8	5.66	5.42	74.3 K=0.25	0.6013	-7590.56	14563.80	0.521 '	
T13	74 - 70	7/8	5.66	5.42	148.7 K=0.50	0.6013	-595.79	6144.07	0.097	
T14	70 - 66	7/8	5.66	5.42	148.7 K=0.50	0.6013	-807:01	6144.07	0.131	
T15	66 - 62	7/8	5,66	5.42	74.3 K=0.25	0.6013	-8375,59	14563.80	0.575	
T16	62 - 42	7/8	5.66	5.41	148.5 K=0.50	0.6013	-5814.61	6159.27	0.944	
T17	42 - 22	7/8	5.66	5.41	148,5 K=0.50	0.6013	-3471.91	6159.27	0.564 '	
T18	22 - 2	7/8	5.66	5.41	148.5 K=0.50	0.6013	-5750.79	6159.27	0.934 1	

 $^{1} P_{\mu} / \phi P_{\mu}$ controls

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Secondary Horizontal Design Data (Compression)

Section No.	Elevation	Size	L	Lu	Kl/r	A	P_u	ϕP_n	Ratio P _w
	ft		ft	ft		in ²	lb	lb	φP _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
Т2	262 - 242	L2 1/2x2x3/16	4.00	3.83	107.7 K=1.00	0.8090	-451.90	14228,40	0.032
T3	242 - 222	L2 1/2x2x3/16	4,00	3.83	107.7 K=1.00	0.8090	-459.24	14228,40	0.032
T4	222 - 202	L2 1/2x2x3/16	4.00	3.83	107.7 K=1.00	0.8090	-498.60	14228.40	0,035
T5	202 - 182	L2 1/2x2x3/16	4.00	3.83	107.7 K=1.00	0_8090	-938.15	14228,40	0.066
Т6	182 - 162	L2 1/2x2x3/16	4.00	3.83	107.7 K=1.00	0.8090	-1258.10	14228.40	0.088
Т7	162 - 142	L2 1/2x2x3/16	4.00	3,83	107.7 K=1.00	0.8090	-1183.04	14228.40	0.083
Т8	142 - 122	L2 1/2x2x3/16	4.00	3.83	107.7 K=1.00	0.8090	-1462.13	14228.40	0.103
Т9	122 - 102	L2 1/2x2x3/16	4.00	3.83	107.7 K=1.00	0,8090	-1571.52	14228.40	0.110
T10	102 - 82	L2 1/2x2x3/16	4.00	3.83	107.7 K=1.00	0.8090	-1630.67	14228.40	0.115
T11	82 - 78	L2 1/2x2x3/16	4.00	3.83	107.7 K=1.00	0.8090	-1657.07	14228.40	0.116
T12	78 - 74	L2 1/2x2x3/16	4.00	3.83	107.7 K=1.00	0.8090	-1496.26	14228.40	0.105
T13	74 - 70	L2 1/2x2x3/16	4.00	3,83	107.7 K=1.00	0,8090	-1683.48	14228.40	0.118
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 '
T16	62 - 42	L2 1/2x2x3/16	4.00	3,83	107.6 K=1.00	0.8090	-1960.86	14249.90	0.138 '
T17	42 - 22	L2 1/2x2x3/16	4.00	3.83	107.6 K=1.00	0.8090	-1957.16	14249,90	0.137 '
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_{u} controls

_		Тор (Girt Des	sign D)ata ((Compr	ression)		
Section No.	Elevation	Size	L	L_{μ}	Kl/r	A	Pu	ϕP_{μ}	Ratio
	ft		ft	ft		in^2	lb	lb	
T1	282 - 262	L3x3x1/4	4.00	3.83	77.7	1.4400	-2539.79	33952.10	0.075
					K=1.00				V

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Section	Elevation	Size	L	L_u	Kl/r	А	P_{μ}	ϕP_n	Ratio
No.									P_{u}
	ft		ft	ft		in^2	lb	lb	• <i>P</i>

 $^{1} P_{u} / \phi P_{u}$ controls

	Top Guy Pull-Off Design Data (Compression)										
Section No.	Elevation	Size	L	L_u	Kl/r	А	P _u	φP _n	Ratio		
	ft		ft	ft		in ²	lb	lb	φ <i>P</i> _n		
T5	202 - 182	L4x4x3/8	4,00	3.83	58.4	2,8600	-8653.32	77446.10	0.112		

			0.04						ϕr_n
T5	202 - 182	L4x4x3/8	4.00	3.83	58.4 K=1.00	2.8600	-8653.32	77446.10	0,112
Τ8	142 - 122	L4x4x3/8	4.00	3.83	58.4 K=1.00	2.8600	-13474,90	77446.10	0.174

¹ P_{u} / ϕP_{u} controls

		Bottom Gu	y Pull-C	off De	sign E	Data (O	Compre	ssion)	
Section No.	Elevation	Size	L	L _u	Kl/r	A	P _u	φ <i>P</i> ,,	Ratio P"
	ft		ft	ft		in ²	lb	lb	φ <i>P</i> _n
T5	202 - 182	L4x4x3/8	4.00	3.83	58.4 K=1.00	2.8600	-6109.11	77446.10	0.079 '
Τ8	142 - 122	L4x4x3/8	4.00	3,83	58.4 K=1.00	2.8600	-7372.26	77446.10	0.095 1

¹ $P_{u} / \phi P_{u}$ controls

Torque-Arm Bottom Design Data

Section No.	Elevation	Size	L	L_{u}	Kl/r	A	P_u	ϕP_n	Ratio P _u
	ft		ft	ft		in ²	lb	lb	φP _u
T5	202 - 182 (698)	L4x4x3/8	7.48	7,40	112.6 K=1.00	2.8600	-29855,50	47513.50	0.628
T5	202 - 182 (699)	L4x4x3/8	7.48	7.40	112.6 K=1.00	2.8600	-29794.20	47513.50	0.627 '
T5	202 - 182 (707)	L4x4x3/8	7.48	7.40	112.6 K=1.00	2.8600	-28193.90	47513.50	0,593
T5	202 - 182 (708)	L4x4x3/8	7.48	7.40	112.6 K=1.00	2.8600	-28928.60	47513.50	0.609 '
Т5	202 - 182 (713)	L4x4x3/8	7.48	7.40	112.6 K=1.00	2.8600	-28852.60	47513,50	0.607
Т5	202 - 182 (714)	L4x4x3/8	7.48	7.40	112.6 K=1.00	2.8600	-29514.30	47513.50	0.621

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Section No.	Elevation	Size	L	L_{u}	Kl/r	A	P _H	ϕP_n	Ratio P _w
	ft		ft	ft		in^2	lb	lb	φ <i>P</i> _n
									V
Т8	142 - 122 (722)	L4x4x3/8	7.48	7.40	112.6 K=1.00	2.8600	-33427.30	47513.50	0.704
Т8	142 - 122 (723)	L4x4x3/8	7.48	7.40	112.6 K=1.00	2.8600	-33826.80	47513.50	0.712
Т8	142 - 122 (731)	L4x4x3/8	7.48	7,40	112.6 K=1.00	2.8600	-32420,40	47513.50	0.682
Т8	142 - 122 (732)	L4x4x3/8	7.48	7.40	112.6 K=1.00	2.8600	-33359.60	47513.50	0.702 '
Т8	142 - 122 (737)	L4x4x3/8	7.48	7.40	112.6 K=1.00	2.8600	-31922.00	47513.50	0.672
Т8	142 - 122 (738)	L4x4x3/8	7.48	7.40	112.6 K=1.00	2.8600	-33254.30	47513.50	0.700 '

¹ P_u / ϕP_u controls

Tension Checks

		L	.eg Des	sign E	Data (Tensio	on)		
Section No.	Elevation	Size	L	Lu	Kl/r	A	P _u	φP _n	Ratio P _"
1 m	ft		ft	ft		in ²	lb	lb	φ <i>P</i> ,,
T1	282 - 262	2	20.00	2.00	48.0	3.1416	7477.24	127235.00	0.059
T2	262 - 242	2	20,00	2.00	48.0	3.1416	9900.69	127235.00	0.078 '
Т3	242 - 222	2	20.00	2.00	48.0	3.1416	11843.40	127235.00	0.093 '
Τ4	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 '
Т6	182 - 162	2	20.00	2.00	48.0	3,1416	20924.70	127235.00	0.164
Т7	162 - 142	2	20.00	2.00	48.0	3.1416	15638.30	127235.00	0.123
Т8	142 - 122	2	20,00	2.00	48.0	3.1416	22992.60	127235.00	0.181
T10	102 - 82	2	20.00	2.00	48.0	3.1416	3877.58	127235.00	0.030
T16	62 - 42	2"SR w 3rd pipe	20.00	2.00	46.9	3.6235	9675,18	146752.00	0.066
Т17	42 - 22	2"SR w 3rd pipe	20.00	2.00	46.9	3.6235	10654,60	146752.00	0.073 1

tnxTower	Job 280' Guyed Tower	Page 69 of 74
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Rocky Hill, CT Phone: 860-529-8882 FAX: 860-529-3991	Client Transcend Wireless / TWM-005 / - 004 Rev 1	Designed by MCD

¹ $P_u / \phi P_n$ controls

	Diagonal Design Data (Tension)												
Section No.	Elevation	Size	L	L _u	Kl/r	A	P _u	ф <i>Р</i> _и	Ratio P _u				
	ft		ft	ft		in ²	lb	lb	ϕP_n				
Т1	282 - 262	7/8	5.66	5.42	297.4	0.6013	4879.13	19482.80	0.250				
T2	262 - 242	7/8	5.66	5.42	297.4	0.6013	2729.60	19482.80	0.140 1				
12	202 - 242	//8	5.00	5.42	297.4	0.0013	2/29.00	19482.80	0.140				
Т3	242 - 222	7/8	5.66	5.42	297.4	0.6013	1740.96	19482,80	0.089^{-1}				
									V				
T4	222 - 202	SR7/8+L2.5x2.5x0.25	5.66	5.42	106.0	2,0910	5554,58	67748.40	0,082				
Т5	202 - 182	SR7/8+L2_5x2_5x0.25	5.66	5.42	106.0	2.0910	6700.11	(7740 40	0.099 1				
15	202 - 182	SK //8+L2.3X2.3X0.23	3.00	5.42	100.0	2,0910	6722.11	67748.40	0.099				
T6	182 - 162	7/8	5,66	5.42	297.4	0.6013	2654.90	19482.80	0.136				
									~				
T7	162 - 142	7/8	5.66	5.42	297.4	0.6013	5860.27	19482.80	0.301				
Т8	140 100	CD 7/8 I 1 2 5-2 5-0 25	5.66	5.42	106.0	2.0010	7027 69	(7740.40	0.117				
16	142 - 122	SR7/8+L2.5x2.5x0.25	2.00	5.42	106.0	2.0910	7937.58	67748.40	0.117				
Т9	122 - 102	SR7/8+L2.5x2.5x0.25	5.66	5.42	106.0	2.0910	7936.05	67748.40	0.117				
									V				
T10	102 - 82	7/8	5.66	5.42	297.4	0.6013	4361.26	19482.80	0.224				
T11	82 - 78	7/8	5.66	5,42	297.4	0.6013	6234.68	19482.80	0.320				
111	82 - 78	//0	5.00	J.4Z	297.4	0.0015	0234.08	19462.60	0.320				
T13	74 - 70	7/8	5.66	5.42	297.4	0.6013	8768.60	19482.80	0.450 1				
									V				
Г14	70 - 66	7/8	5.66	5.42	297.4	0.6013	9507.79	19482.80	0.488				
Г16	62 - 42	7/8	5.66	5.41	297.0	0.6013	6860.48	19482.80	0.352 1				
110	02 - 42	//0	00,00	5.41	297.0	0.0015	0600.46	19462.00	0.352				
Г17	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				
									V				

¹ $P_{u} / \phi P_{u}$ controls

		Secondar	y Horiz	ontal	Desi	gn Dat	a (Tens	sion)	
Section No.	Elevation	Size	L	L_u	Kl/r	A	P _u	φ <i>P</i> ,,	Ratio Pu
	ft		ft	ft		in ²	lb	lb	¢P _n
T1	282 - 262	L2 1/2x2x3/16	4.00	3,83	76.7	0.8090	339.62	26211.60	0.013
T2	262 - 242	L2 1/2x2x3/16	4-00	3.83	76.7	0.8090	451.90	26211.60	0.017

tnxTower	Job 280' Guyed Tower	Page 70 of 74
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Section No	Elevation	Size	L	L_{μ}	Kl/r	A	P _u	$\phi P_{\prime\prime}$	Ratio P _{ii}
	ft		ft	ft		in^2	lb	lb	φ <i>P</i> ,,
Т3	242 - 222	L2 1/2x2x3/16	4.00	3.83	76.7	0.8090	459,24	26211.60	0.018
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 '
Т6	182 - 162	L2 1/2x2x3/16	4.00	3.83	76.7	0.8090	1258,10	26211.60	0.048 '
Т7	162 - 142	L2 1/2x2x3/16	4.00	3.83	76.7	0.8090	1183.04	26211.60	0.045 '
Т8	142 - 122	L2 1/2x2x3/16	4.00	3.83	76,7	0.8090	1462.13	26211.60	0.056 '
Т9	122 - 102	L2 1/2x2x3/16	4.00	3.83	76.7	0,8090	1571.52	26211.60	0.060 '
T 10	102 - 82	L2 1/2x2x3/16	4.00	3.83	76.7	0,8090	1630.67	26211.60	0.062
T11	82 - 78	L2 1/2x2x3/16	4,00	3.83	76.7	0.8090	1657.07	26211.60	0.063
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 '
T14	70 - 66	L2 1/2x2x3/16	4.00	3.83	76.7	0.8090	1798.40	26211.60	0.069 '
T15	66 - 62	L2 1/2x2x3/16	4.00	3.83	76.7	0,8090	1636.81	26211.60	0.062 '
T16	62 - 42	L2 1/2x2x3/16	4.00	3.83	76.6	0.8090	1960.86	26211.60	0.075
T17	42 - 22	L2 1/2x2x3/16	4.00	3.83	76.6	0.8090	1957-16	26211.60	0.075 '
T18	22 - 2	L2 1/2x2x3/16	4.00	3.83	76.6	0.8090	1943.34	26211,60	0.074 1

¹ $P_{"} / \phi P_{"}$ controls

Top Guy Pull-Off Design Data (Tension)

Section No.	Elevation	Size	L	L_u	Kl/r	A	P_{u}	ϕP_n	Ratio P.,
	ft		ft	ft		in^2	lb	lb	ϕP_n
Т5	202 - 182	L4x4x3/8	4.00	3.83	37.4	2.8600	24934.60	92664.00	0.269
Т8	142 - 122	L4x4x3/8	4.00	3.83	37.4	2.8600	34078.10	92664.00	0.368

¹ $P_{u} / \phi P_{u}$ controls

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Bottom Guy Pull-Off Design Data (Tension) L_{u} Kl/r A P_m Section Elevation Size L Ratio ϕP_n No_* P_{μ} ft in^2 lb ft ft lb ϕP_n T5 202 - 182 L4x4x3/8 4.00 3.83 4463.93 37.4 2.8600 92664.00 0.048 1 0.160 ' Т8 142 - 122 L4x4x3/8 4.00 3.83 37.4 14832.10 2.8600 92664.00 1

¹ P_{μ} / ϕP_{μ} controls

		Torque-Arm Top Design Data									
Section No.	Elevation	Size	L	L_{μ}	Kl/r	A	P _n	φ <i>P</i> ,,	Ratio P _u		
	ft		ft	ft		in ²	lb	lЬ	φP _n		
T5	202 - 182 (693)	L4x4x3/8	7.48	7.40	72.2	2.8600	28345.30	92664.00	0.306		
Т5	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 ^T		
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 '		
T5	202 - 182 (712)	L4x4x3/8	7.48	7.40	72.2	2,8600	28744.20	92664.00	0.310		
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 '		
Т8	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		
Т8	142 - 122 (735)	L4x4x3/8	7.48	7.40	72.2	2.8600	32469,10	92664.00	0.350 ¹		
Τ8	142 - 122 (736)	L4x4x3/8	7.48	7,40	72.2	2.8600	32375.60	92664.00	0.349 1		

 1 P $_{u}$ / ϕ P $_{u}$ controls

	Torque-Arm Bottom Design Data								
Section No.	Elevation	Size	L	Lu	Kl/r	A	P _u	φ <i>P</i> ,,	Ratio
140.	ft		ft	ft		in ²	lb	lb	$\frac{\Gamma_u}{\phi P_u}$

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Rocky Hill, CT Phone: 860-529-8882 FAX: 860-529-3991	Client Transcend Wireless / TWM-005 / - 004 Rev 1	Designed by MCD

Section No.	Elevation	Size	L	L_{u}	Kl/r	А	P_{u}	$\phi P_{\prime\prime}$	Ratio P _w
	ft		ft	ft		in^2	lb	lb	φP _n
T5	202 - 182 (698)	L4x4x3/8	7.48	7.40	72,2	2,8600	882.70	92664.00	0.010
Т5	202 - 182 (699)	L4x4x3/8	7.48	7.40	72.2	2,8600	869.51	92664.00	0.009
Т5	202 - 182 (707)	L4x4x3/8	7.48	7_40	72.2	2.8600	1188.57	92664.00	0.013
Т5	202 - 182 (708)	L4x4x3/8	-7.48	7,40	72.2	2,8600	1425.85	92664.00	0.015 '
T5	202 - 182 (713)	L4x4x3/8	7.48	7,40	72.2	2,8600	1296.01	92664.00	0.014
Т5	202 - 182 (714)	L4x4x3/8	7.48	7.40	72.2	2,8600	1408.29	92664.00	0.015
T8	142 - 122 (722)	L4x4x3/8	7.48	7_40	72,2	2.8600	8320.77	92664.00	0.090
Т8	142 - 122 (723)	L4x4x3/8	7.48	7.40	72.2	2.8600	8624.87	92664.00	0.093
Т8	142 - 122 (731)	L4x4x3/8	7.48	7,40	72.2	2.8600	9153.96	92664.00	0.099 '
T8	142 - 122 (732)	L4x4x3/8	7.48	7.40	72.2	2.8600	9299.48	92664.00	0.100 '
T8	142 - 122 (737)	L4x4x3/8	7,48	7.40	72,2	2,8600	8251.67	92664.00	0.089
T8	142 - 122 (738)	L4x4x3/8	7.48	7.40	72.2	2.8600	8677.50	92664.00	0.094 '

¹ $P_{u} / \phi P_{u}$ controls

Section Capacity Table

Section No:	Elevation ft	Component Type	Size	Critical Element	P lb	øP _{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
Т6	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
Т8	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
Т3	242 - 222	Diagonal	7/8	106	-1988.86	6144.07	32.4	Pass

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Job

Project

Client

AECOM 500 Enterprise Drive, Suite 3B Rocky Hill, CT Phone: 860-529-8882 FAX: 860-529-3991

130 Vernon Rd Bolton, CT

280' Guyed Tower

Transcend Wireless / TWM-005 / - 004 Rev 1

CT Date 08:58:55 04/13/16

Designed by

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MCD

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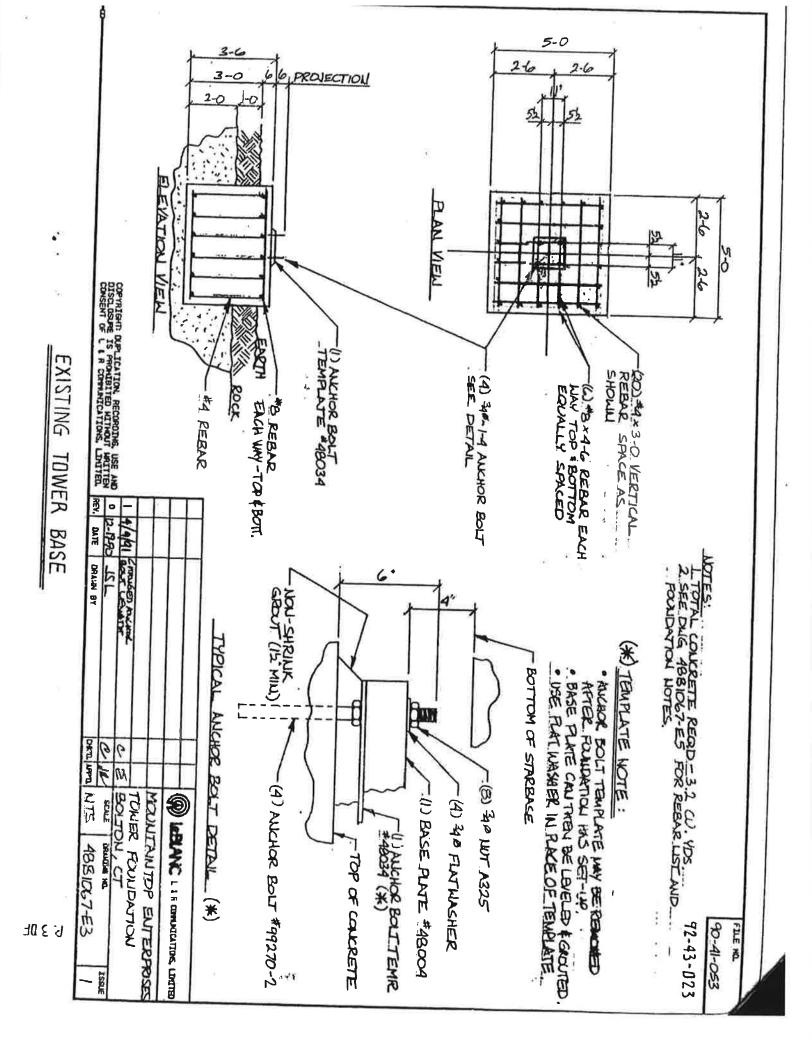
Section No.	Elevation ft	Component Type	Size	Critical Element	P lb	øP _{allow} Ib	% Capacity	Pass Fail
T4	222 - 202	Diagonal	SR7/8+L2.5x2_5x0.25	156	-5558,16	58429.20	9.5	Pass
T5	202 - 182	Diagonal	SR7/8+L2.5x2.5x0.25	229	-11843.70	58429,20	20.3	Pass
T6	182 - 162	Diagonal	7/8	283	-2674.46	6144.07	43.5	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	52.0	Pass
T12 T13	78 - 74	Diagonal	7/8	516	8768.60	19482.80	45.0	Pass
T13 T14	74 - 70	Ų	7/8	526	9507.79			
	70 - 66 66 - 62	Diagonal				19482.80	48.8	Pass
T15		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
Τ7	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
Т9	122 - 102	Secondary Horizontal	L2 1/2x2x3/16	407	-1571.52	14228.40	11.0	Pass
Т10	102 - 82	Secondary Horizontal	L2 1/2x2x3/16	455	-1630.67	14228.40	11.5	Pass
Г11	82 - 78	Secondary Horizontal	L2 1/2x2x3/16	495	-1657.07	14228.40	11.6	Pass
Г12	78 - 74	Secondary Horizontal	L2 1/2x2x3/16	506	-1496.26	14228.40	10.5	Pass
Г13	74 - 70	Secondary Horizontal	L2 1/2x2x3/16	518	-1683.48	14228.40	11.8	Pass
Г14	70 - 66	Secondary Horizontal	L2 1/2x2x3/16	530	-1798.40	14228.40	12.6	Pass
Г15	66 - 62	Secondary Horizontal	L2 1/2x2x3/16	542	-1636.81	14228.40	11.5	Pass
Т16	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
Т18	22 - 2	Secondary Horizontal	L2 $1/2x2x3/16$	659	-1943.34	14249.90	13.6	Pass
Tl	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@198 Guy A@128	11/16	734	27465.50	30000.00	91.6	
							87.3	Pass
Г14	70 - 66	Guy A@70	11/16	741	26196.30	30000.00		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
Т8	142 - 122	Guy B@128	11/16	728	26301.20	30000.00	87.7	Pass
Г14	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
Т8	142 - 122	Guy C@128	11/16	715	27359.40	30000.00	91.2	Pass
Г14	70 - 66	Guy C@70	11/16	739	26366.00	30000.00	87.9	Pass
Т5	202 - 182	Top Guy Pull-Off@196	L4x4x3/8	696	24934.60	92664.00	26.9	Pass
Т8	142 - 122	Top Guy Pull-Off@128	L4x4x3/8	720	34078.10	92664.00	36.8	Pass
T5	202 - 182	Bottom Guy Pull-Off@196	L4x4x3/8	700	-6109.11	77446.10	7.9	Pass
Т8	142 - 122	Bottom Guy Pull-Off@128	L4x4x3/8	725	14832.10	92664.00	16.0	Pass
Т5	202 - 182	Torque Aπn Top@196	L4x4x3/8	694	29547.00	92664.00	31.9	Pass
Т8	142 - 122	Torque Arm Top@128	L4x4x3/8	718	33242.20	92664.00	35.9	Pass
Т5	202 - 182	Torque Arm Bottom@196	L4x4x3/8	698	-29855.50	47513.50	62.8	Pass
Т8	142 - 122	Torque Arm	L4x4x3/8	723	-33826,80	47513.50	71.2	Pass

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Section	Elevation	Component	Size	Critical	Р		%	Pass
No.	ft	Туре		Element	lb	lb	Capacity	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

Program Version 7.0.5.1 - 2/1/2016 File:P:/Projects/Telcom/Structurals_By_Location/Connecticut/Bolton280'Guyed/5_TWM-005 - 004R1/ERI/Solution 2 - TIA_G_280' Guyed Tower Bolton, CT.eri

FOUNDATION ANALYSIS - TIA-222-G



ALCOM

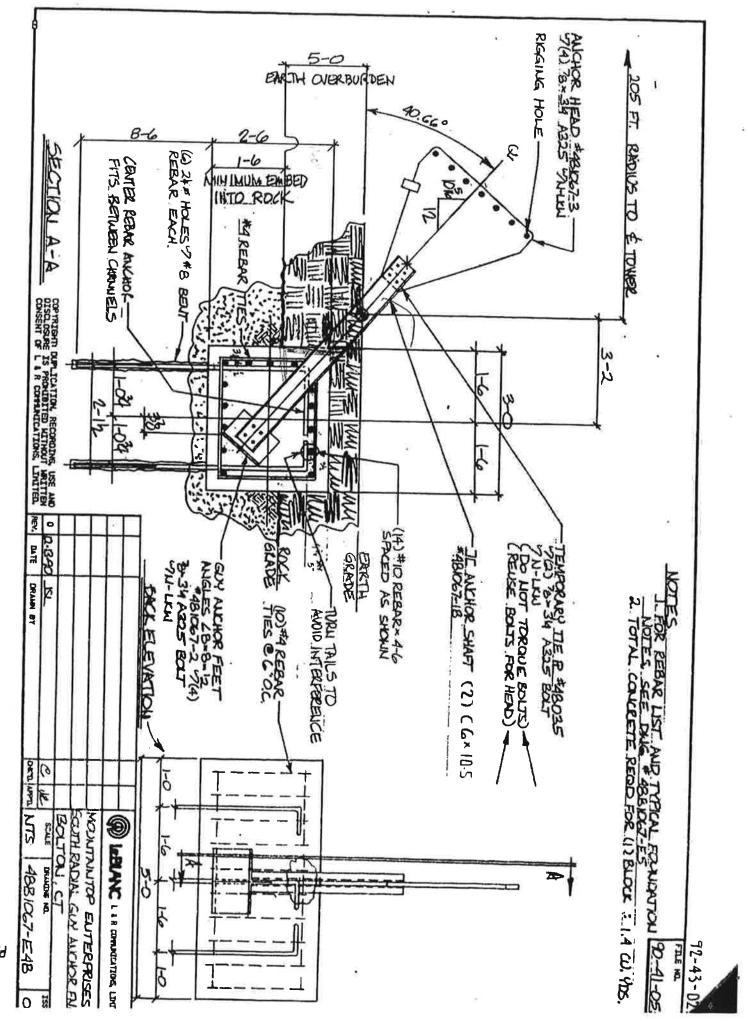
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Job Bolton, Ct Tower Med. F. Cations	Project No. Twm-ocs Loc4 Rev.1	Sheet of
Description Foundation Analysis MTIA-G	Computed by McD	Date 4/5/2016
Standard	Checked by	Date

Reference

Check-Foundation Bearing Foundation width of Base=5'-0" Foundation thickness of Base=5'-6" Concrete (DL) of Foundation=5'x5'x3.5'x150Pcf=13,125165 Compression of Loaded tower= 326,233165

Total Factored Compressive force = 326, 233165+ 13, 125165 = 339,358/65 APPly TIA-222-G Reduction Factor = 0.60 Allowable Bearing Pressure = 1075 f = 20,000 16/55 (Geotech Page 1) Ultimate Bearing Pressure = 2x Allowable = 49,000/6/55 to 6= 24,000/6/55 Bearing Capacity = <u>Peturtfandation</u> = <u>339,358/65</u> = <u>13,574</u> PSF Afandation = <u>51951</u>

 $TIA-6 Bearing Capacity = \frac{13,574}{24,000} = \frac{56,690}{24,000}$



EXISTING SOUTH GUY ANCHAR

•

049

AECOM

		Page of
Job Bolton, C+ Tower Modification 5	Project No. TWM-005/-004/2.ev,1	Sheet of
Description Foundat. CM Analysis W/ TIA-G	Computed by MCD	Date 4/5-12016
Standard.	Checked by	Date

Reference

Check Guyed Anchor:

· Existing foundation anchored to Rock, therefore check anchor connected to Rock capacities. Tw= 50PS; (Grow + 0 ROCK- WORKing Pu=LbxtrxDholex tw x Factor (1/2 Ult: mate Strensth) bond Stress Øfactor = 0,60 LL=81-6"=102." Phole= 2.11 Pu= 102:1xTT x2:1x 50P5: x 0.60 = 19,226165/91chor #anchars=6->(6)×19,226165=115,359165 Rosistance Anchor (Maximum) UPlift Force (TNX) = 85, 720165 $UPlift Copperity Check = \frac{85,720}{1151359} \times 100\% = 74.3\% - (0+r)$ Shear resistance (Shear Bearingto Rock): Allowto UH: MARE h+(Roch) x width x Surface Are pressure = 1-6"x5-0" x 5+5f x 2001b5x 2 (Allow) x 1+0n x 1 =150,000 165

AECOM

		Dawa
Job Bolton, Ct tower McDifications	Project No. TWM COS/-coyRe	
Description Foundation Analysis WTIA-G	Computed by MCD	_ Date _4/5/2016
Standard	Checked by	Date

Reference

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

$$\frac{Chech-Tension Anchor Steel}{(6)^{4''}diameter Steel \rightarrow tT} (1,00in^{9})^{2} = 0.78593in^{2} \times 40,000 PS, = 31,415 / b5/anchor$$

31, 415 16 Slanchor X Ganchors = 188, 493 16 5 X 0.90 = 169, 644165 (CK) visual AFSC inspection Factor

$$\frac{(heck-AncherShaft-7(2) (6 \times 10.5)}{Area = 2 \times 3.07 in^{2} = 6.14 in^{2}} F_{Y} steel = 36 Ks: (Assumed) = 0.9 (A + sc-tens; m)$$

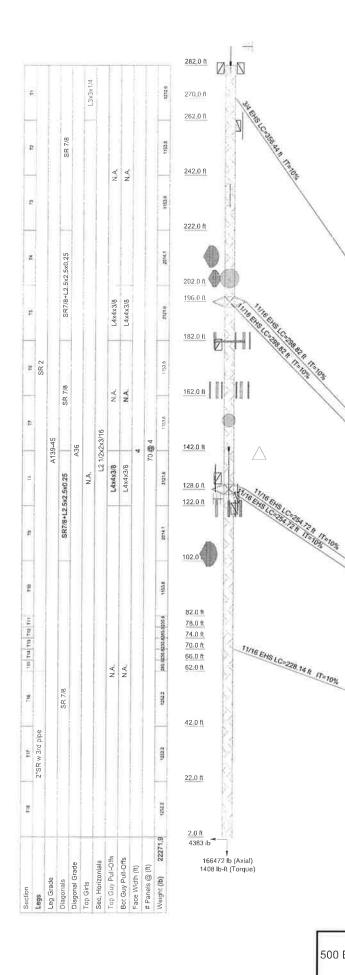
$$Steel Resistance = 0.9 \times 6.14 in^{2} \times 3.6, 000 PS'_{1} = 198, 936165$$

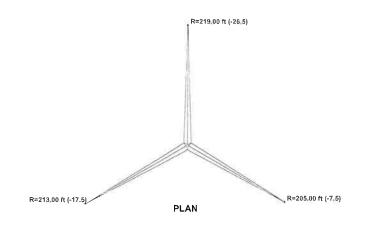
$$Largest "Pull" force = 139, 018165$$

$$(N \times 10^{10} r)$$

$$AnchorShaft (a Pacity = 139, 018165 \times 100\% = 69.970$$

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





DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION	TYPE	ELEVATION		
FM Antenna (WMRQ)	289	(2) RRU (ATT)	164		
2.5" x 10' Omni (Nol Used)	284	(2) RRU (ATI)	164		
DLS L 864-L-865 Light Beacon Unit	282	(2) RRU (ATT)	164		
(Tower)		Andrew 12' Sector Frame	164		
6' Sland-off (Unknown)	281	(SF-U12-3-72) (ATT)			
6' Stand-off (Unknown)	281	Andrew 12' Sector Frame	164		
6' Stand-off (Unknown)	281	(SF-U12-3-72) (ATT)	101		
MF-950B (WBMW)	280	Andrew 12' Seclor Frame (SF-U12-3-72) (ATT)	164		
3' Stand-off (Unknown)	260	(2) 7770 Panel Antenna (ATI)	164		
2 5" x 14' Omni (Unknown)	260	(2) 7770 Panel Antenna (ATT)	164		
3' Sland-off (Unknown)	260	(2) 7770 Panel Antenna (ATI)	164		
ASP-711 (Unknown)	260		164		
DB589-Y (Eversource)	234_7	(2) LGP214nn TMA (ATT) (4) LGP 219nn (ATT)	164		
3' Sland-off (Eversource)	230	(2) LGP214nn TMA (ATT)	164		
531-70HD Exposed Dipole Antenna	218	(4) LGP 219nn (ATT)	164		
(Eversource)		(2) LGP214nn TMA (ATT)			
6' Sland-off (Eversource)	218	· · · · · · · · · · · · · · · · · · ·	164		
8' Dish w/ Radome (Eversource)	212,5	(4) LGP 219nn (ATT)	164		
8' Dish w/ Radome (Eversource)	204,5	SBNH-1D6565C (ATI)	164		
6' Dish w/ Radome (Eversource)	204,5	5,5' Dish w/ Radome (Eversource)	153		
Pirod 12' T-Frame Sector Mount (1) (T-Mobile)	182	(3) L-810 Obstruction Lights w/ Mount Kit (Tower - OBS Light)	142		
Pirod 12' T-Frame Sector Mount (1)	182	6' Stand-off (Unknown)	132		
(T-Mobile)		14' Dipole (Unknown)	132		
Pirod 12' T-Frame Sector Mount (1)	182	2.5" x 22' Whip (Unknown)	132		
(T-Mobile)		6' Stand-off (Unknown)	132		
AIR21 B4A/B2P (T-Mobile)	182	3' Sland-off (Not Used)	125		
LNX-6515DS-VTM (T-Mobile)	182	3" x 12,5' Omni (Not Used)	125		
AIR21 B4A/B2P (T-Mobile)	182	1' Yagi antenna (Not Used)	124,5		
LNX-6515DS-VTM (T-Mobile)	182	BXA-70063-6CF-EDIN (Verizon)	121		
S11 B2 RRH Unit (T-Mobile)	182	BXA-70063-6CF-EDIN (Verizon)	121		
RRUS-11 (T-Mobile)	182	(2) LPA-80080-4CF-EDIN (Verizon)	121		
S11 B2 RRH Unil (T-Mobile)	182	6'8"x4" Pipe Mount (Verizon)	121		
RRUS-11 (T-Mobile)	182	(2) LPA-171080-8CF-EDIN (Verizon)	121		
6' Sland-off (Not Used)	180,5	6'8*x4* Pipe Mount (Verizon)	121		
SBNH-1D6565C (ATT)	164	(2) LPA-171063-BCF-EDIN (Verizon)	121		
SBNH-1D6565C (ATT)	164	(2) LPA-80063-4CF (Verizon)	121		
Surge Suppressor (ATT)	164	9' Dish w/ Radome (Eversource)	104.5		

MATERIAL STRENGTH

DE	гу	Fu	GRADE	Fy	FU
45 ksi	-	50 ksi	A36	36 ksi	50 ksi

TOWER DESIGN NOTES

1. Tower is located in Tolland County, Connecticut.

2. Tower designed for a 85 mph basic wind in accordance with the TIA/EIA-222-F Standard. Tower is also designed for a 74 mph basic wind with 0.50 in ice.
 Deflections are based upon a 50 mph wind.
 TOWER RATING: 76.3%

GRA

A139-45

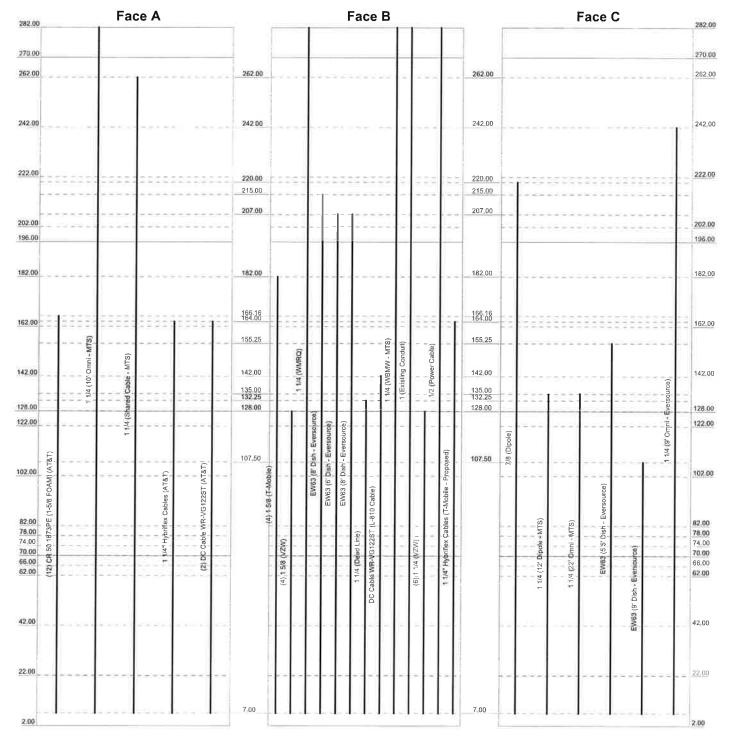
~ `	11
	63287 lb
	107
	79302 lb
	R=213.00 ft

AECOM	^{lob:} 280' Guyed Tower		
		Drawn by: MCD	App'd:
Phone: 860-529-8882	Code: TIA/EIA-222-F	Dale: 04/13/16	Scale: NTS
FAX: 860-529-3991	Path;		Dwg No. E-1

TNX TOWER FEEDLINE DISTRIBUTION – TIA-222-F

Feed Line Distribution Chart 2' - 282'

____ Flat ______ App In Face ______ App Out Face ______ Truss Leg



AECOM	^{lob:} 280' Guyed Tower	
500 Enterprise Drive, Suite 3B	Marchae and Annual Control of Con	
Rocky Hill, CT		Drawn by: MCD App'd:
Phone: 860-529-8882	Code: TIA/EIA-222-F	Date: 04/13/16 Scale: NTS
FAX: 860-529-3991	Path:	Dwg No. E-7

Elevation (ft)

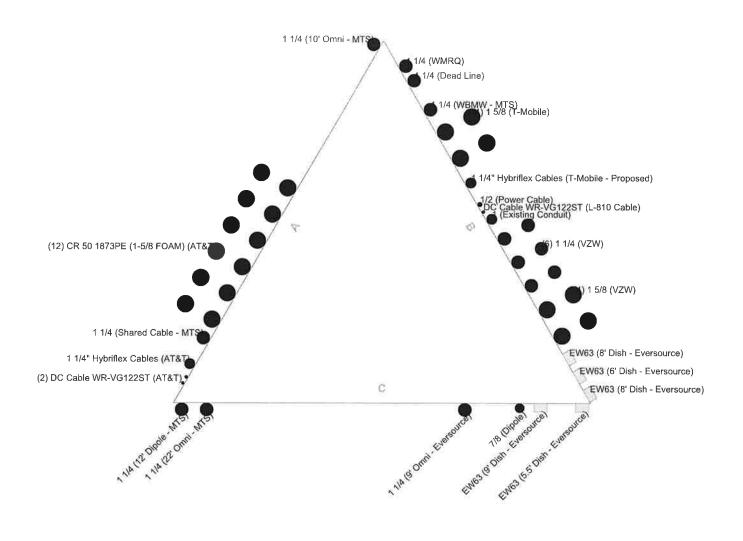
Round

TNX TOWER FEEDLINE PLAN -- TIA-222-F

Feed Line Plan

Flat App In Face App Out Face

Round

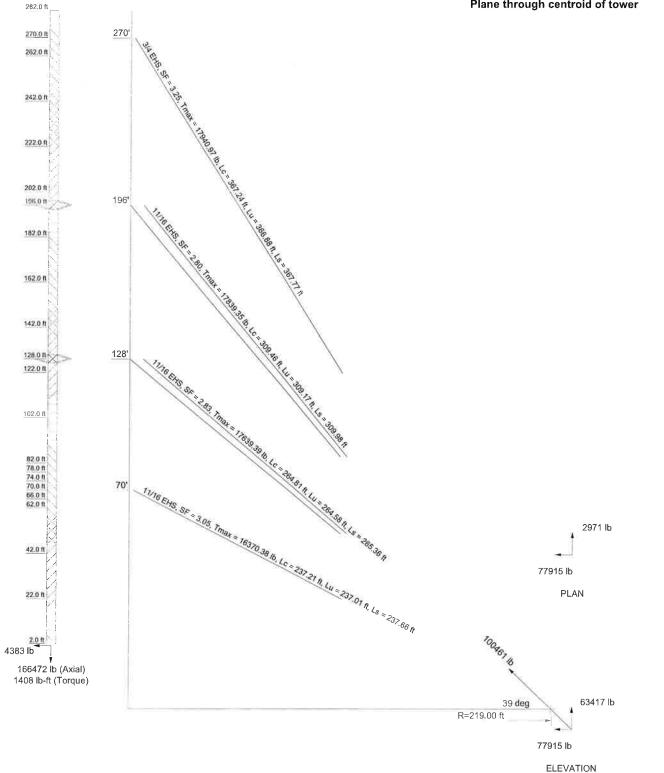


AECOM	Job: 280' Guyed Tower		
500 Enterprise Drive, Suite 3B	Project: 130 Vernon Rd Bolton, CT		
Rocky Hill, CT		Drawn by: MCD	App'd:
Phone: 860-529-8882	Code: TIA/EIA-222-F	Date: 04/13/16	Scale: NTS
FAX: 860-529-3991	Path:		Dwg No. E-7

GUY TENSIONS AND TOWER REACTIONS – TIA-222-F

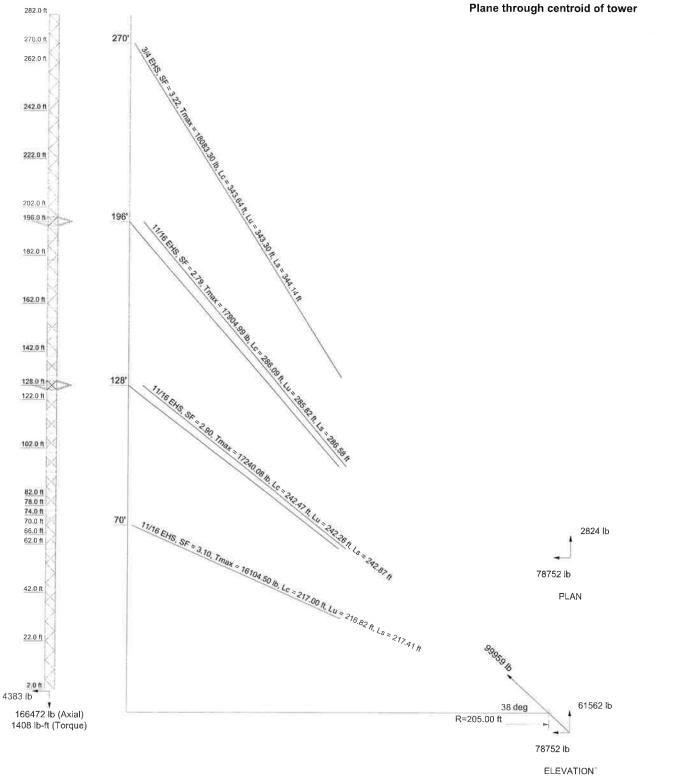
60493238 TWM-004 Rev. 1

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



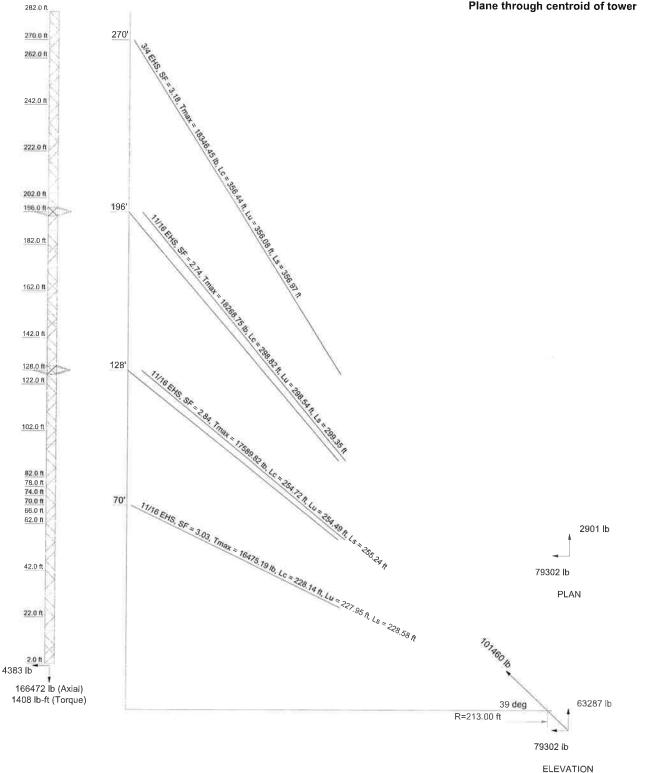
AECOM	^{Job:} 280' Guyed Tower	
500 Enterprise Drive, Suite 3B	Project: 130 Vernon Rd Bolton, CT	
Rocky Hill, CT	Client: Transcend Wireless / TWM-005 / -004 Rev. 1 Drawn by MCE	App'd;
Phone: 860-529-8882	Code: TIA/EIA-222-F Date: 04/13/16	Scale: NTS
FAX: 860-529-3991	Path:	Dwg No. E-6

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



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

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



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:
		Date: 04/13/16	
FAX: 860-529-3991	Path: Provincement interaction descent the contribut 21 is infeator. In		Dwg No. E-(

TNX TOWER DETAILED OUTPUT – TIA-222-F

tnxTower	Job	Page
inxTower	280' Guyed Tower	1 of 65
AECOM	Project	Date
500 Enterprise Drive, Suite 3B	130 Vernon Rd Bolton, CT	09:04:28 04/13/16
Rocky Hill, CT Phone: 860-529-8882 FAX: 860-529-3991	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

Consider Moments - Legs Consider Moments - Horizontals Consider Moments - Diagonals Use Moment Magnification

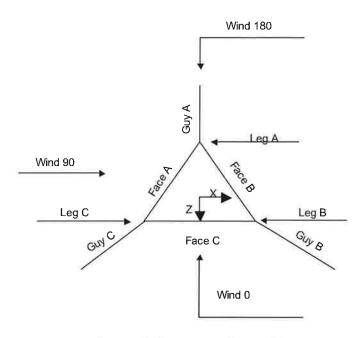
- ✓ Use Code Stress Ratios
- ✓ Use Code Safety Factors Guys Escalate Ice Always Use Max Kz Use Special Wind Profile
- √ Include Bolts In Member Capacity
- ✓ Leg Bolts Are At Top Of Section
- Secondary Horizontal Braces Leg
- Use Diamond Inner Bracing (4 Sided) √ SR Members Have Cut Ends
- SR Members Are Concentric

- 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
- $\sqrt{\text{Use Azimuth Dish Coefficients}}$
- √ 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

- 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 Poles

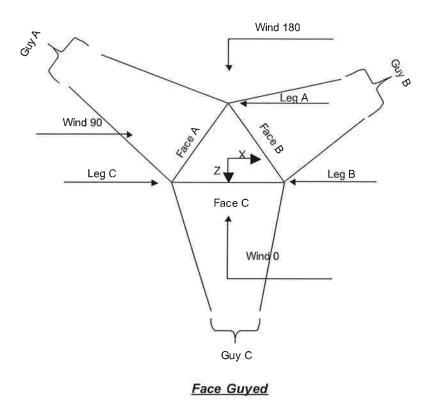
Include Shear-Torsion Interaction Always Use Sub-Critical Flow Use Top Mounted Sockets

tT	Job	Page
tnxTower	280' Guyed Tower	2 of 65
AECOM	Project	Date
500 Enterprise Drive, Suite 3B	130 Vernon Rd Bolton, CT	09:04:28 04/13/16
Rocky Hill, CT Phone: 860-529-8882 FAX: 860-529-3991	Client Transcend Wireless / TWM-005 / -004 Rev. 1	Designed by MCD



Corner & Starmount Guyed Tower

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



Tower Section Geometry

Tower	Tower	Assembly	Description	Section	Number	Section
Section	Elevation	Database		Width	of	Length
					Sections	
	ft			ft		ft
T1	282.00-262.00			4.00	1	20.00
T2	262.00-242.00			4.00	1	20,00
Т3	242.00-222.00			4.00	1	20.00
Τ4	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
Т8	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	T.	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

tureTowner	Job	Page
tnxTower	280' Guyed Tower	4 of 65
AECOM	Project	Date
500 Enterprise Drive, Suite 3B	130 Vernon Rd Bolton, CT	09:04:28 04/13/16
Rocky Hill, CT Phone: 860-529-8882 FAX: 860-529-3991	Client Transcend Wireless / TWM-005 / -004 Rev. 1	Designed by MCD

Tower	Tower	Assembly	Description	Section	Number	Section
Section	Elevation	Database		Width	of	Length
					Sections	
	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	Tower	Diagonal	Bracing	Has	Has	Top Girt	Bottom Giri
Section	Elevation	Spacing	Type	K Brace	Horizontals	Offset	Offset
				End			
	ft	ft		Panels		in	în
Tl	282.00-262.00	4.00	CX Brace	No	Yes	0.0000	0.0000
Т2	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
Т5	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
Т7	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
Т9	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 Elevation	Leg Type	Leg Size	Leg Grade	Diagonal Type	Diagonal Size	Diagonal Grade
Г1 282.00-262.00	Solid Round	2	A139-45 (45 ksi)	Solid Round	7/8	A36 (36 ksi)
Γ2 262,00-242,00	Solid Round	2	(45 ksi) A139-45 (45 ksi)	Solid Round	7/8	(36 ksi) (36 ksi)
ГЗ 242.00-222.00	Solid Round	2	A139-45 (45 ksi)	Solid Round	7/8	A36 (36 ksi)
Γ4 222.00-202.00	Solid Round	2	A139-45 (45 ksi)	Arbitrary Shape	SR7/8+L2_5x2_5x0.25	A36 (36 ksi)
Γ5 202.00-182.00	Solid Round	2	A139-45 (45 ksi)	Arbitrary Shape	SR7/8+L2.5x2.5x0.25	A36 (36 ksi)
Г6 182.00-162.00	Solid Round	2	A139-45 (45 ksi)	Solid Round	7/8	(36 ksi) (36 ksi)
7 162.00-142.00	Solid Round	2	A139-45 (45 ksi)	Solid Round	7/8	(36 ksi) (36 ksi)
8 142.00-122.00	Solid Round	2	A139-45 (45 ksi)	Arbitrary Shape	SR7/8+L2.5x2.5x0.25	A36 (36 ksi)
79 122.00-102.00	Solid Round	2	A139-45 (45 ksi)	Arbitrary	SR7/8+L2.5x2.5x0.25	A36
٢10 102.00-82.00	Solid Round	2	(43 KSI) A139-45	Shape Solid Round	7/8	(36 ksi) A36

T	Job	Page
tnxTower	280' Guyed Tower	5 of 65
AECOM	Project	Date
500 Enterprise Drive, Suite 3B	130 Vernon Rd Bolton, CT	09:04:28 04/13/16
Rocky Hill, CT Phone: 860-529-8882 FAX: 860-529-3991	Client Transcend Wireless / TWM-005 / -004	Rev. 1 Designed by MCD

Tower	Leg	Leg	Leg	Diagonal	Diagonal	Diagonal
Elevation ft	Туре	Size	Grade	Туре	Size	Grade
			(45 ksi)			(36 ksi)
T11 82.00-78.00	Solid Round	2	A139-45	Solid Round	7/8	A36
			(45 ksi)			(36 ksi)
T12 78 00-74.00	Solid Round	2	A139-45	Solid Round	7/8	A36
			(45 ksi)			(36 ksi)
T13 74,00-70,00	Solid Round	2	A139-45	Solid Round	7/8	A36
			(45 ksi)			(36 ksi)
T14 70.00-66.00	Solid Round	2	A139-45	Solid Round	7/8	A36
			(45 ksi)			(36 ksi)
T15 66.00-62.00	Solid Round	2	A139-45	Solid Round	7/8	A36
			(45 ksi)			(36 ksi)
T16 62.00-42.00	Arbitrary Shape	2"SR w 3rd pipe	A139-45	Solid Round	7/8	A36
			(45 ksi)			(36 ksi)
T17 42.00-22.00	Arbitrary Shape	2"SR w 3rd pipe	A139-45	Solid Round	7/8	A36
			(45 ksi)			(36 ksi)
T18 22.00-2.00	Arbitrary Shape	2"SR w 3rd pipe	A139-45	Solid Round	7/8	A36
			(45 ksi)			(36 ksi)

Tower Section Geometry (cont'd)

Tower Elevation ft	Top Girt Type	Top Girt Size	Top Girt Grade	Bottom Girt Type	Bottom Girt Size	Bottom Girt Grade
T1 282.00-262.00	Single Angle	L3x3x1/4	A36	Solid Round		A36
			(36 ksi)			(36 ksi)

Tower Elevation	Secondary Horizontal Type	Secondary Horizontal Size	Secondary Horizontal Grade	Inner Bracing Type	Inner Bracing Size	Inner Bracing Grade
ft						
Г1 282.00-262.00	Single Angle	L2 1/2x2x3/16	A36	Solid Round		A36
			(36 ksi)			(36 ksi)
Γ2 262.00-242.00	Single Angle	L2 1/2x2x3/16	A36	Solid Round		A36
			(36 ksi)			(36 ksi)
F3 242.00-222.00	Single Angle	L2 1/2x2x3/16	A36	Solid Round		A36
			(36 ksi)			(36 ksi)
Г4 222.00-202.00	Single Angle	L2 1/2x2x3/16	A36	Solid Round		A36
			(36 ksi)			(36 ksi)
5 202.00-182.00	Single Angle	L2 1/2x2x3/16	A36	Solid Round		A36
			(36 ksi)			(36 ksi)
6 182.00-162.00	Single Angle	L2 1/2x2x3/16	A36	Solid Round		A36
			(36 ksi)			(36 ksi)
7 162 00-142.00	Single Angle	L2 1/2x2x3/16	A36	Solid Round		A36
			(36 ksi)			(36 ksi)
8 142.00-122.00	Single Angle	L2 1/2x2x3/16	A36	Solid Round		A36
			(36 ksi)			(36 ksi)
9 122 00-102.00	Single Angle	L2 1/2x2x3/16	A36	Solid Round		A36
			(36 ksi)			(36 ksi)
10 102.00-82.00	Single Angle	L2 1/2x2x3/16	A36	Solid Round		A36

tnxTower

AECOM 500 Enterprise Drive, Suite 3B Rocky Hill, CT Phone: 860-529-8882 FAX: 860-529-3991

	Job		Page
		280' Guyed Tower	6 of 65
	Project		Date
В		130 Vernon Rd Bolton, CT	09:04:28 04/13/16
	Client	_	Designed by
		Transcend Wireless / TWM-005 / -004 Rev. 1	MCD

Tower Elevation	Secondary Horizontal Type	Secondary Horizontal Size	Secondary [,] Horizontal	Inner Bracing Туре	Inner Bracing Size	Inner Bracing Grade
ft			Grade			
			(36 ksi)			(36 ksi)
T11 82.00-78.00	Single Angle	L2 1/2x2x3/16	A36	Solid Round		A36
			(36 ksi)			(36 ksi)
T12 78.00-74.00	Single Angle	L2 1/2x2x3/16	A36	Solid Round		A36
			(36 ksi)			(36 ksi)
T13 74.00-70.00	Single Angle	L2 1/2x2x3/16	A36	Solid Round		A36
			(36 ksi)			(36 ksi)
Г14 70,00-66.00	Single Angle	L2 1/2x2x3/16	A36	Solid Round		A36
			(36 ksi)			(36 ksi)
Г15 66.00-62.00	Single Angle	L2 1/2x2x3/16	A36	Solid Round		A36
			(36 ksi)			(36 ksi)
Г16 62.00-42.00	Single Angle	L2 1/2x2x3/16	A36	Solid Round		A36
			(36 ksi)			(36 ksi)
T17 42.00-22.00	Single Angle	L2 1/2x2x3/16	A36	Solid Round		A36
			(36 ksi)			(36 ksi)
T18 22.00-2.00	Single Angle	L2 1/2x2x3/16	A36	Solid Round		A36
	- 0		(36 ksi)			(36 ksi)

Tower Elevation	Gusset Area (per face)	Gusset Thickness	Gusset Grade	Adjust Factor A _f	Adjust. Factor A,	Weight Mult.	Double Angle Stitch Bolt Spacing	Double Angle Stitch Bolt Spacing	Double Angle Stitch Bolt Spacing
	2						Diagonals	Horizontals	Redundants
ft	ft ²	în					in	īn	in
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	I	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)	105	1244	15			
T4	0.00	0.0000	A36	1	1	1	36.0000	36.0000	36.0000
222.00-202.00			(36 ksi)	1.4	21	14.0			
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	0.00	0.0000	(36 ksi)	3	÷.	2		26.0000	
T7	0.00	0.0000	A36	1	1		36.0000	36.0000	36.0000
162.00-142.00	0.00	0.0000	(36 ksi)	(•)	2 9	ş	26.0000	26.0000	26.0000
T8	0.00	0.0000	A36	1	i,	Į,	36.0000	36,0000	36,0000
142.00-122.00	0.00	0.0000	(36 ksi)	1			26,0000	26.0000	26.0000
T9 122.00-102.00	0.00	0.0000	A36		1	1	36.0000	36.0000	36,0000
T10	0.00	0.0000	(36 ksi)	1	r.	1	26,0000	2(0000	26 0000
102.00-82.00	0.00	0.0000	A36	1	1	1	36.0000	36.0000	36.0000
T11	0.00	0.0000	(36 ksi) A36	110	1	1°	36.0000	36.0000	26,0000
82.00-78.00	0.00	0.0000	(36 ksi)	1	¥.;	1	30.0000	30.0000	36.0000
T12	0.00	0.0000	(36 KSI) A36	1	1	1.23484	36.0000	36.0000	36.0000
78.00-74.00	0.00	0.0000	(36 ksi)		1)	1-23404	30.0000	30.0000	30.0000
T13	0.00	0.0000	(36 KSI) A36	1	Ē	1	36.0000	36.0000	36.0000
74.00-70.00	0.00	0.0000	(36 ksi)	36	17.	<u>9</u> /	0000-00	70.000	50.0000
T14	0.00	0.0000	A36	ă.	T	ř	36.0000	36.0000	36.0000
70.00-66.00	0.00	0.0000	(36 ksi)			5	50.0000	30.0000	50.0000
T15	0.00	0.0000	A36	3	1	1.23484	36.0000	36.0000	36.0000
66.00-62.00	0.00	0.0000	(36 ksi)			1123404	50.0000	50.0000	50.0000

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marower		280' Guyed Tower	7 of 65
AECOM	Project		Date
500 Enterprise Drive, Suite 3B		130 Vernon Rd Bolton, CT	09:04:28 04/13/16
Rocky Hill, CT Phone: 860-529-8882 FAX: 860-529-3991	Client	Transcend Wireless / TWM-005 / -004 Rev. 1	Designed by MCD

Tower	Gusset	Gusset	Gusset Grade	Adjust_Factor	Adjust.	Weight Mult.	Double Angle	Double Angle	Double Angle
Elevation	Area	Thickness		A_f	Factor		Stitch Bolt	Stitch Bolt	Stitch Bolt
	(per face)				A_r		Spacing	Spacing	Spacing
							Diagonals	Horizontals	Redundants
ft	ft^2	in					in	in	in
T16	0.00	0.0000	A36	1	1	1	36.0000	36.0000	36.0000
62.00-42.00			(36 ksi)						
T17	0.00	0.0000	A36	1	1	1	36.0000	36.0000	36,0000
42.00-22.00			(36 ksi)						
18 22.00-2 00	0.00	0.0000	A36	1	1	0	36.0000	36.0000	36,0000
			(36 ksi)						

Tower Section Geometry (cont'd)

			K Factors ¹										
Tower	Calc	Calc	Legs	Х	Κ	Single	Girts	Horiz.	Sec.	Inner			
Elevation	K	K		Brace	Brace	Diags			Horiz.	Brace			
	Single	Solid		Diags	Diags								
0	Angles	Rounds		X	Х	X	Х	X	Х	Х			
ft				Y	Y	Y	Y	Y	<u>Y</u>	Y			
T1	No	No	1	0.5	1	1	1	1	1	1			
282.00-262.00				0.5	1	1	1	1	1	1			
T2	No	No	1	0.5	1	1	1	1	1	1			
262.00-242.00				0,5	1	1	1	1	1	1			
T3	No	No	1	0.5	1	1	1	1	1	1			
242.00-222.00				0.5	1	1	1	1	1	1			
T4	No	No	1	0.5	1	1	1	1	1	1			
222.00-202.00				0.5	1	1	1	1	1	1			
Т5	No	No	1	0.5	1	1	1	1	1	1			
202.00-182.00				0.5	1	1	1	1	1	1			
T6	No	No	1	0.5	1	1	1	1	1	1			
182.00-162.00				0.5	1	1	1	1	1	1			
Τ7	No	No	1	0.5	1	1	1	1	I	1			
162.00-142.00				0.5	1	1	1	1	1	1			
Т8	No	No	1	0.5	1	1	1	1	1	1			
142.00-122.00				0.5	1	1	1	1	1	1			
Т9	No	No	1	0.5	1	1	1	1	1	1			
122.00-102.00				0.5	1	1	1	1	1	1			
T10	No	No	1	0.5	1	1	1	1	ĩ	ĩ			
102.00-82.00				0.5	1	1	1	1	ĩ	í			
T11	No	No	1	0.5	Ĕ	1		î	î	î			
82.00-78.00				0.5	1	ĩ	i i	1	ĩ	î			
T12	No	No	0.5	0.25	ĩ		i i	i	Ŷ	î			
78.00-74.00		110	010	0.25	1	î	i	1	i.	î			
T13	No	No	1	0.5	i i	i	i	i	i	i			
74.00-70.00		110		0.5	î.	î	1	î	î	î			
T14	No	No	1	0.5	î	i	í	i	î.	1			
70.00-66.00	110	110	1	0.5	î	i	i	1	÷.	÷			
T15	No	No	0.5	0.25	1	î	1	1	1	1			
66.00-62.00	110	140	0.5	0.25	1	i			1	1			
T16	No	No	1	0.23	1	1	4	1	1. 1	1			
62.00-42.00	INU	JNU	1	0.5	1	1	4		1	4			
62.00-42.00 T17	No	No	1	0.5	1	1	4		1	1			
42.00-22.00	INO	190	1		1	1	4	1	1	1			
	NI-	Ν7-	1	0.5		\$	1	1	5	1			
T18	No	No	1	0.5		t.	1	1	1	5			
22.00-2.00				0.5		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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AECOM 500 Enterprise Drive, Suite 3B Rocky Hill, CT Phone: 860-529-8882 FAX: 860-529-3991

	Job		Page
er		280' Guyed Tower	8 of 65
	Project		Date
, Suite 3B		130 Vernon Rd Bolton, CT	09:04:28 04/13/16
T 8882 1991	Client	Transcend Wireless / TWM-005 / -004 Rev. 1	Designed by MCD

Tower Elevation	Leg		Diago	nal	Top G	Firt	Botton	n Girt	Mid	Girt	Width Deduct in 5 0.0000 0.75 5 0.0000 0.75 5 0.0000 0.75 5 0.0000 0.75 5 0.0000 0.75 5 0.0000 0.75 5 0.0000 0.75 5 0.0000 0.75 5 0.0000 0.75 5 0.0000 0.75 5 0.0000 0.75 5 0.0000 0.75 5 0.0000 0.75 5 0.0000 0.75 5 0.0000 0.75 5 0.0000 0.75 5 0.0000 0.75 5 0.0000 0.75 5 0.0000 0.75		Short Ho	rizontal
ft														
	Net Width	U	Net Width	U	Net Width	U	Net	U	Net	U	Net	U	Net	U
	Deduct		Deduct		Deduct		Width		Width		Width		Width	
	ın		în		in		Deduct		Deduct		Deduct		Deduct	
							in		in	_			ິາມ	
T1	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
282.00-262.00	0.0000	1	0.0000	0.75	0.0000	0.76	0.0000	0.76	0.0000	0.75	0.0000	0.75	0.0000	0.85
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
202.00-242.00 T3	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
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	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
222.00-202.00				0170	010000	0175	010000	0.75	0.0000	0.75		0.75	0.0000	0.75
T5	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
202.00-182.00							12.0							
T6	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
182.00-162.00											<u> </u>			
T7	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
162.00-142.00	0.0000													
T8	0.0000	1	0.0000	0.75	0,0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
142.00-122.00 T9	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	
122.00-102.00	0.0000	I	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	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
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	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
82.00-78.00							0.0000	01112		0110		0.75	0.0000	0.75
T12	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
78.00-74.00														
T13	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
74.00-70.00														
T14	0,0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
70.00-66.00	0.0000	а 2	0.0000		0.0000									
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	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.76	0.0000	0.76	0.0000	0.76	0.0000	0.75
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	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
42.00-22.00	0.0000	1	0.0000	0.15	0,0000	5,15	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.15
Г18 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

						G	uy Da	ta				
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	0	ft	%
270	EHS	А	3/4	5830.00	10%	19000	1.155	366.92	219.00	0.0000	-26.50	100%
		В	3/4	5830.00	10%	19000	1.155	343.34	205.00	0.0000	-7.50	100%
		С	3/4	5830.00	10%	19000	1.155	356.13	213.00	0.0000	-17.50	100%
196	EHS	А	11/16	5000.00	10%	21000	0.813	309.21	219.00	0.0000	-26.50	100%
		В	11/16	5000.00	10%	21000	0.813	285.86	205.00	0.0000	-7.50	100%
		С	11/16	5000.00	10%	21000	0.813	298.58	213.00	0.0000	-17.50	100%

tn	хТои	ver	•	Job			280' Gu	yed Towe	r		F	Page 9 of 65	
500 Ent	AECOM 500 Enterprise Drive, Suite 3B Rocky Hill, CT Phone: 860-529-8882	ite 3B	Project		130) Vernon	Rd Bolto	n, CT			ate 09:04:28 04/13/16		
Pho	Rocky Hill, CT			Client Transcend Wireless / TWM-005 / -004 Rev. 1								Designed by MCD	
128	EHS	A B	11/16 11/16	5000.00 5000.00	10% 10%	21000 21000	0.813 0.813	264.60 242.28	219.00 205.00	0,0000 0.0000	-26.50 -7.50		
70	EHS	C A	11/16 11/16	5000.00 5000.00	10% 10%	$21000 \\ 21000$	0.813 0.813	254.52 237.02	213.00 219.00	0.0000 0.0000	-17.50 -26.50		
70	LIIS	B C	11/16 11/16	5000.00 5000.00 5000.00	10% 10%	21000 21000 21000	0.813	216.83 227.96	205.00 213.00	0.0000	-20.30 -7,50 -17.50	100%	

	Guy Data(cont'd)									
Guy Elevation ft	Mount Type	Torque-Arm Spread	Torque-Arm Leg Angle	Torque-Arm Style	Torque-Arm Grade	Torque-Arm Туре	Torque-Arm Size			
270	Comer	/l								
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	Diagonal	Diagonal	Upper Diagonal	Lower Diagonal	Is	Pull-Off	Pull-Off Type	Pull-Off Size
Elevation	Grade	Туре	Size	Size	Strap	Grade		
ſt								
270,00	A572-50	Solid Round				A36	Solid Round	
	(50 ksi)					(36 ksi)		
196.00	A572-50	Solid Round			Yes	A36	Single Angle	L4x4x3/8
	(50 ksi)					(36 ksi)		
128.00	A572-50	Solid Round			Yes	A36	Single Angle	L4x4x3/8
	(50 ksi)					(36 ksi)		
70.00	A572-50	Solid Round				A36	Solid Round	
	(50 ksi)					(36 ksi)		

	Guy Data (cont'd)										
Guy Elevation	Cable Weight	Cable Waight	Cable	Cable	Tower	Tower	Tower	Tower			
stevation	A	Weight B	Weight C	Weight D	Intercept A	Intercept B	Intercept	Intercept D			
ft	lb	lb	lb	lb	ft	ft	ft	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				

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tnxTower	280' Guyed Tower	10 of 65
AECOM	Project	Date
500 Enterprise Drive, Suite 3B	130 Vernon Rd Bolton, CT	09:04:28 04/13/16
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Guy Data (cont'd)

			Torqu	ie Arm	Pul	! Off	Diagonal	
Guy Elevation ft	Calc K Single Angles	Calc K Solid Rounds	K _x	K_y	K _x	Ky	K _x	К,
270	No	No			1	1	1	1
196	No	No	1	1	1	1	1	1
128	No	No	1	1	î.	1	1	1
70	No	No			1	1	1	1

Guy Data (cont'd)

		Torq	ue-Arm			Pu	ll Off			Diagonal			
Guy	Bolt Size	Number	Net Width	U	Bolt Size	Number	Net Width	U	Bolt Size	Number	Net Width	U	
Elevation	in		Deduct		in		Deduct		in		Deduct		
ft			in				in				in		
270	0.6250	0	0.0000	0.75	0.6250	0	0.0000	0.75	0.6250	0	0.0000	0.75	
	A325N				A325N				A325N				
196	0.0000	0	0.0000	1	0.6250	0	0.0000	0,75	0.6250	0	0.0000	0.75	
	A325N				A325N				A325N				
128	0.0000	0	0.0000	1	0.6250	0	0.0000	0.75	0.6250	0	0.0000	0.75	
	A325N				A325N				A325N				
70	0.6250	0	0.0000	0.75	0.6250	0	0.0000	0.75	0.6250	0	0.0000	0.75	
	A325N				A325N				A325N				

Guy Pressures

Guy'	Guy	Ζ	q_z	q_z	Ice
Elevation	Location			Ice	Thickness
ft		ft	psf	psf	in
270	А	121.75	27	20	0.5000
	В	131.25	27	21	0.5000
	С	126.25	27	20	0.5000
196	А	84.75	24	18	0.5000
	В	94.25	25	19	0.5000
	С	89.25	25	18	0.5000
128	А	50.75	21	16	0.5000
	В	60.25	22	16	0.5000
	С	55.25	21	16	0.5000
70	А	21.75	18	14	0.5000
	В	31.25	18	14	0.5000
	С	26.25	18	14	0.5000

Guy-Mast Forces (Excluding Wind) - No Ice

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

Guy• Elevation	Guy Location	Chord Angle	Guy Tension Top Bottom Ib	F_x	$F_{\mathcal{Y}}$	Fz	M_x	M_y	M_z
ft		٥		lb	lb	lb	lb-ft	lb-ft	lb-fi
270	А	53.8396	6172.14 5830.00	0.00	5056.62	-3539.19	-11677.76	0.00	0.00
	В	53.8550	6150,21 5830.00	3058.49	5035.14	1765.82	5814.08	0.00	-10070.28
	С	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
	А	45.9725	5180.74 5000.00	115.12	3785.52	-3535,06	-15298.99	-25210.67	26498,63
	В	45.3427	5165.31 5000.00	3153.43	3731.45	1677.06	30160.96	25488,86	0.00
	В	45.3427	5165.31 5000.00	3029.09	3731.45	1892.42	-15080.48	-25488.86	-26120.16
	С	45.5998	5173.43 5000.00	-3020.16	3755.51	1881.25	-15177.73	25374.59	26288.59
	С	45.5998	5173.43 5000.00	-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
128	А	35.6920	5125.50 5000.00	-133.80	3061.17	-4108.79	-12371,56	29302.26	-21428.17
	А	35,6920	5125.50 5000.00	133.80	3061.17	-4108.79	-12371.56	-29302.26	21428,17
	В	33.9744	5110.07 5000.00	3700.58	2923.23	1968.05	23628.20	29911.44	0.00
	В	33.9744	5110.07 5000.00	3554.67	2923.23	2220.77	-11814.10	-29911.44	-20462.62
	С	34.8348	5118.19 5000.00	-3524.00	2993.14	2195.09	-12096.65	29607.69	20952.01
	С	34.8348	5118.19 5000.00	-3663,00	2993.14	1954.33	24193.29	-29607,69	0.00
			Sum:	68.25	17955.08	120.66	-832.37	-0.00	489.38
70	А	24.0051	5078.39 5000.00	0.00	2146.27	-4602.56	-4956.61	0.00	0.00
	В	20.9247	5062.95 5000.00	4069.43	1885.00	2349.48	2176.61	0.00	-3769.99
	С	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	Fy	Fz	M _x	M_y	M _z		
ft		0		lb	lb	lb	lb-ft	lb-ft	lb-ft		
270	А	53,8396	8569.71 8001.40	0.00	7040.78	-4885_42	-16259.98	0.00	0.00		
	В	53.8550	8517.80 7985.91	4212.49	6992.34	2432.08	8074.06	0.00	-13984.68		
	С	53,7647	8546.06 7995.00	-4230.94	7011.94	2442.74	8096.69	-0.00	14023.88		

tnxTower	Job 280' Guyed Tower	Page 12 of 65
AECOM 500 Enterprise Drive, Suite 3B	Project 130 Vernon Rd Bolton, CT	Date 09:04:28 04/13/16
Rocky Hill, CT Phone: 860-529-8882 FAX: 860-529-3991	Client Transcend Wireless / TWM-005 / -004 Rev. 1	Designed by MCD

Guy Elevation	Guy Location	Chord Angle	Guy Tension Top	F_x	F_y	F_z	M _x	M_y	Mz
			Bottom						
ft		D	lb	lb	lb	lb	lb-ft	lb-ft	lb-ft
			Sum:	-18.45	21045.06	-10.60	-89.23	-0.00	39.20
196	А	45.9725	7426.16 7084.17	-164,04	5453.89	-5037.46	-22041.62	35925.20	-38177.2
	А	45,9725	7426.16 7084.17	164.04	5453.89	-5037.46	-22041.62	-35925.20	38177.2
	В	45,3427	7378,74 7065,95	4480.21	5356,89	2382.68	43299,27	36213.14	0.00
	В	45,3427	7378.74 7065.95	4303.56	5356.89	2688.64	-21649,63	-36213,14	-37498.2
	С	45,5998	7404.72 7076.56	-4298.25	5402.46	2677.37	-21833,78	36112.76	37817.2
	С	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	А	35.6920	7343.96 7106.49	-190.92	4418.52	-5862.93	-17857.25	41812.15	-30929.6
	А	35.6920	7343.96 7106.49	190.92	4418.52	-5862.93	-17857.25	-41812.15	30929,6
	В	33.9744	7294.93 7086.66	5263.43	4204.37	2799.21	33983.51	42543.83	0.00
	В	33.9744	7294.93 7086.66	5055,90	4204.37	3158.66	-16991.75	-42543.83	-29430.5
	С	34.8348	7321.83 7098.20	-5021.57	4313.83	3127,92	-17434.14	42189.92	30196.8
	С	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	А	24.0051	7282.73 7134.41	0.00	3114.63	-6583.11	-7192.93	0.00	0.00
	В	20.9247	7235.41 7116.29	5803.13	2729.37	3350.44	3151.60	0.00	-5458.7
	С	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	Fz	M_x	M_y	Mz
ft		٥		lb	lb	lb	lb-ft	lb-ft	lb-ft
270	А	53.8396	6172.14 5830.00	0.00	5056.62	-3539.19	-11677.76	0.00	0,00
	В	53.8550	6150,21 5830.00	3058.49	5035.14	1765.82	5814.08	0,00	-10070.28
	С	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	А	45,9725	5180.74 5000.00	-115,12	3785.52	-3535.06	-15298.99	25210.67	-26498,63
	А	45,9725	5180.74 5000.00	115.12	3785.52	-3535.06	-15298,99	-25210.67	26498,63
	В	45.3427	5165,31	3153.43	3731.45	1677.06	30160.96	25488.86	0.00

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

Guy.	Guy•	Chord	Guy Tension	F_x	F_y	F_{z}	M,,	M_y	M_z
Elevation	Location	Angle	Тор						
			Bottom						
ft		0	lb	lb	lb	lb	lb-ft	lb-ft	lb-ft
			5000.00	10	10	10	10-11	10-11	10-ji
	В	45.3427	5165.31	3029.09	3731.45	1892,42	-15080.48	-25488.86	-26120.1
	Б	-J.J-27	5000.00	5029.09	5751.45	1072,42	-13080.46	-25400.00	-20120.1
	С	45.5998	5173.43	-3020,16	3755.51	1881.25	-15177.73	25374.59	26288.5
	C	-10.0000	5000.00	5020,10	5155.51	1001.25	-15111.15	23374.37	20200.0
	С	45,5998	5173.43	-3139.29	3755.51	1674.91	30355.45	-25374.59	0.00
	0	19102220	5000.00	0.07.25	5755151	101191	50555.15	2007 (10)	0.00
			Sum:	23.07	22544.97	55.52	-339.77	-0.00	168.43
128	А	35.6920	5125,50	-133.80	3061.17	-4108.79	-12371.56	29302.26	-21428.1
			5000.00						
	А	35.6920	5125.50	133.80	3061.17	-4108.79	-12371.56	-29302.26	21428.1
			5000.00						
	В	33.9744	5110.07	3700.58	2923.23	1968.05	23628.20	29911.44	0.00
			5000.00						
	В	33.9744	5110.07	3554.67	2923.23	2220.77	-11814.10	-29911.44	-20462.6
			5000.00						
	С	34.8348	5118.19	-3524.00	2993.14	2195.09	-12096.65	29607.69	20952.0
			5000.00						
	С	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	А	24.0051	5078.39	0.00	2146.27	-4602.56	-4956.61	0.00	0.00
	D	00.0047	5000.00	10/0 13	1005.00	00.40.40		0.00	
	В	20,9247	5062.95	4069.43	1885.00	2349.48	2176.61	0.00	-3769.99
	С	22.5532	5000.00 5071.08	1026 75	2022.00	2224.05	2227.00	0.00	4047.00
	U	22.3332	5071.08	-4026.75	2023.90	2324.85	2337.00	-0.00	4047.80
			S000.00 Sum:	42.67	6055.17	71.77	-443.01	0.00	277.90
			oun.	42.0/	0055.17	/1.//	-443.01	0.00	277.80

Guy-Tensioning Information

								_	Tempe	rature At 7	ime Of Tens	ioning	_				
				0	F	20	0 F	4)F	6	0 F	80	0 F	10	0 F	12	0 F
Guy Elevation		Н	V	Initial Tension	Intercept	Initial Tension	Intercept	Initial Tension	Intercept	Initial Tension	Intercept	Initial Tension	Intercept	Initial Tension	Intercept	Initial Tension	Intercept
ſt		ft	ft	lb	ft	lb	ſI	lb	ft	lb	ft	lb	ft	lb	ft	lb	ft
270	Α	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
	В	202,69	277.50	6609	10.06	6346	10.47	6086	10,91	5830	11,38	5578	1.88	5330	12,42	5087	12.99
	С	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	Α	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
	В	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
	С	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	Λ	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
	В	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
	С	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	А	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
	В	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
	С	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

tnxTower	Job 280' Guyed Tower	Page 14 of 65
AECOM 500 Enterprise Drive, Suite 3B	Project 130 Vernon Rd Bolton, CT	Date 09:04:28 04/13/16
Rocky Hill, CT Phone: 860-529-8882 FAX: 860-529-3991	Client Transcend Wireless / TWM-005 / -004 Rev. 1	Designed by MCD

Description	or	Allow Shield	Component Type	Placement	Face Offset	Lateral Offset	#	# Per	Clear Spacing	Width or Diameter	Perimeter	Weight
	Leg			ft	in	(Frac FW)		Row	in	in	În	plf
7/8	С	No	Ar (CaAa)	220.00 - 7.00	0.0000	-0.33	1	1	1,1100	1.1100		0.54
(Dipole) 1 5/8	В	No	Ar (CaAa)	182.00 - 7.00	0.0000	-0.2	4	2	1.5000	1.9800		1.04
(T-Mobile) R 50 1873PE	А	No	Ar (CaAa)	166.16 - 7.00	0.0000	-0.1	12	6	1.5000	1_9800		0.83
I-5/8 FOAM) (AT&T)												
1 5/8 (VZW)	В	No	Ar (CaAa)	128.00 - 7.00	0.0000	0.29	4	2	1.5000	1.9800		1.04
1 1/4 (10' Omni -	А	No	Ar (CaAa)	282.00 - 7.00	0.0000	0.48	1	1	1.5500	1.5500		0.66
MTS) 1 1/4	А	No	Ar (CaAa)	262.00 - 7.00	0.0000	-0.33	1	1	1.5500	1.5500		0,66
Shared Cable - MTS)												
1 1/4 12' Dipole -	С	No	Ar (CaAa)	135.00 - 7.00	0.0000	0,48	1	1	1,5500	1.5500		0.66
MTS)												
1 1/4 (22' Omni -	С	No	Ar (CaAa)	135.00 - 7.00	0.0000	0.42	1	1	1.5500	1.5500		0.66
MTS) 1 1/4 (WMRO)	В	No	Ar (CaAa)	282.00 - 7.00	0.0000	-0.42	1	1	1.5500	1.5500		0.66
EW63 (8' Dish -	В	No	Af (CfAe)	215.00 - 7.00	0.0000	0.48	1	1	1.5742	1.5742	5.0668	0.51
Eversource)												
EW63 (6' Dish -	В	No	Af (CfAe)	207.00 - 7.00	0.0000	0.43	1	1	1.5742	1.5742	5.0668	0.51
Eversource)	B				0.0000							
EW63 (8' Dish -	В	No	Af (CfAe)	207.00 - 7.00	0.0000	0.38	1	1	1.5742	1.5742	5.0668	0.51
Eversource) EW63 (5.5' Dish -	С	No	Af (CfAe)	155.25 - 7.00	0,0000	-0.48	1	1	1.5742	1.5742	5.0668	0.51
Eversource)												
1 1/4 Dead Line)	В	No	Ar (CaAa)	132.25 - 7.00	0.0000	-0.38	1	1	1.5500	1.5500		0.66
EW63 (9' Dish -	С	No	Af (CfAe)	107.50 - 7.00	0.0000	-0.38	1	1	1.5742	1.5742	5.0668	0.51
Eversource)												
DC Cable VR-VG122S T	В	No	Ar (CaAa)	142.00 - 7.00	0.0000	-0.025	1	1	0.4000	0.4000		0.25
810 Cable)												
1 1/4 (WBMW -	В	No	Ar (CaAa)	282.00 - 7.00	0.0000	-0.3	1	1	1.5500	1.5500		0.66
MTS) 1 1/4"	А	No	Ar (CaAa)	164.00 - 7.00	0.0000	-0.4	1	1	1.2500	1.2500		0.99
Hybriflex Cables												
(AT&T) DC Cable /R-VG122S	A	No	Ar (CaAa)	164.00 - 7.00	0.0000	-0.44	2	2	0.4000	0.4000		0.25
T (AT&T)												
l (Existing	В	No	Ar (CaAa)	282.00 - 7.00	0.0000	0	1	1	1.2500	1.2500		0.58
Conduit) 1 1/4	В	No	Ar (CaAa)	128.00 - 7.00	0.0000	0.12	6	3	1.5500	1.5500		0.66
(VZW)												

tnxTower	ов 280' G	uyed Tower	Page 15 of 65
AECOM 500 Enterprise Drive, Suite 3B	roject 130 Verno	n Rd Bolton, CT	Date 09:04:28 04/13/16
Rocky Hill, CT Phone: 860-529-8882 FAX: 860-529-3991	lient Transcend Wireless	/ TWM-005 / -004 Rev. 1	Designed by MCD

Description	Face or	Allow Shield	Component Type	Placement	Face Offset	Lateral Offset	#	# Per	Clear Spacing	Width or Diameter	Perimeter	Weight
	Leg		51	ft	in	(Frac FW)		Row	in	in	in	plf
(Power Cable)												
1 1/4	С	No	Ar (CaAa)	242.00 - 7.00	0.0000	-0.2	1	1	1.5500	1.5500		0.66
(9' Omni -												
Eversource)												
1 1/4"	В	No	Ar (CaAa)	164.00 - 7.00	0.0000	-0.1	1	1	1.2500	1,2500		0.99
Hybriflex												
Cables												
(T-Mobile -												
Proposed)												

Feed Line/Linear Appurtenances Section Areas

Tower	Tower	Face	A_R	A_F	$C_A A_A$	$C_A A_A$	Weight
Section	Elevation				In Face	Out Face	
	ſi		ft2	ft²	ſî	ft2	lb
T1	282.00-262.00	А	0.000	0.000	3.100	0.000	13.20
		В	0.000	0.000	9.860	0.000	43.00
		С	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
		В	0.000	0.000	9.860	0.000	43.00
		С	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
		В	0.000	0.000	9.860	0.000	43.00
		С	0.000	0.000	3,100	0.000	13.20
T4	222.00-202.00	А	0.000	0.000	6.200	0.000	26.40
		В	0.000	3.017	9.860	0.000	54.73
		С	0.000	0.000	5.098	0.000	22,92
T5	202.00-182.00	А	0.000	0.000	6.200	0.000	26.40
		В	0.000	7,871	9.860	0,000	73.60
		С	0.000	0.000	5.320	0.000	24.00
T6	182.00-162.00	А	0.000	0.000	14.815	0.000	70.82
		В	0.000	7.871	23.913	0.000	158.78
		С	0.000	0.000	5.320	0.000	24.00
Τ7	162.00-142.00	А	0.000	0.000	49.749	0.000	255.44
		В	0.000	7.871	26.163	0.000	176.64
		С	0.000	1.738	5.320	0.000	30.76
T8	142.00-122.00	А	0.000	0.000	49.749	0.000	255.44
		В	0.000	7.871	37,782	0.000	237.13
		С	0.000	2.624	9.350	0.000	51.36
Т9	122.00-102.00	А	0.000	0.000	49.749	0.000	255.44
		В	0.000	7.871	60.829	0.000	357.24
		С	0.000	3.345	11.520	0.000	63.41
T10	102.00-82.00	А	0.000	0.000	49.749	0.000	255.44
		В	0.000	7.871	60.829	0.000	357.24
		С	0.000	5.247	11.520	0.000	70.80
T11	82.00-78.00	А	0.000	0.000	9.950	0.000	51.09
		В	0.000	1.574	12.166	0.000	71.45
		С	0.000	1.049	2.304	0.000	14.16
T12	78.00-74.00	А	0.000	0.000	9.950	0.000	51.09
		В	0.000	1.574	12.166	0.000	71.45
		С	0.000	1.049	2.304	0.000	14.16
T13	74.00-70.00	Ă	0.000	0.000	9.950	0.000	51.09
		В	0.000	1.574	12.166	0.000	71.45
		Č	0.000	1.049	2.304	0.000	14.16
T14	70.00-66.00	Ă	0.000	0.000	9.950	0.000	51.09
		В	0.000	1.574	12.166	0.000	71.45
		C	0.000	1.049	2.304	0.000	14.16

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

Tower	Tower	Face	AR	AF	$C_A A_A$	$C_A A_A$	Weight
Section	Elevation				In Face	Out Face	
	ft		ft^2	ft^2	ft^2	ft^2	lb
T15	66.00-62.00	А	0.000	0.000	9.950	0.000	51.09
		В	0.000	1.574	12.166	0.000	71.45
		С	0.000	1.049	2,304	0.000	14.16
T16	62.00-42.00	А	0.000	0.000	49.749	0.000	255.44
		В	0.000	7.871	60.829	0,000	357.24
		С	0.000	5.247	11.520	0.000	70,80
T17	42.00-22.00	А	0.000	0.000	49,749	0.000	255.44
		В	0.000	7.871	60.829	0.000	357.24
		С	0.000	5.247	11,520	0.000	70,80
T18	22.00-2.00	А	0.000	0.000	37.312	0.000	191.58
		В	0.000	5.903	45.622	0.000	267.93
		С	0.000	3,936	8,640	0.000	53.10

Feed Line/Linear Appurtenances Section Areas - With Ice

Tower	Tower	Face	Ice	A_R	A_F	$C_A A_A$	$C_A A_A$	Weigh
Section	Elevation	or	Thickness			In Face	Out Face	
	ft	Leg	in	ft^2	ft^2	ft^2	$\int t^2$	lb
T1	282.00-262.00	А	0.500	0.000	0.000	5.100	0.000	38.25
	В		0.000	0.000	17.860	0.000	127.67	
		С		0.000	0.000	0.000	0.000	0.00
T2	262.00-242.00	А	0.500	0.000	0.000	10.200	0.000	76.49
		В		0.000	0.000	17.860	0.000	127.67
		С		0.000	0.000	0.000	0.000	0.00
T3	242.00-222.00	А	0.500	0.000	0.000	10.200	0.000	76.49
		В		0.000	0.000	17.860	0.000	127.67
		С		0.000	0.000	5.100	0.000	38.25
T4	222.00-202.00	А	0.500	0.000	0.000	10.200	0.000	76.49
		В		0.000	4.295	17.860	0.000	170.52
		С		0.000	0,000	8.898	0.000	65.67
T5	202.00-182.00	А	0.500	0.000	0.000	10.200	0.000	76.49
		В		0.000	11.204	17.860	0.000	239.46
		С		0.000	0.000	9.320	0.000	68.72
Т6	182.00-162.00	А	0.500	0.000	0.000	19.818	0.000	200.55
	В		0.000	11.204	34,113	0.000	447.98	
		С		0.000	0.000	9.320	0.000	68.72
T7 162.00-142.00	162.00-142.00	А	0.500	0.000	0.000	61.616	0,000	709.23
		В		0.000	11.204	38.163	0.000	485.08
		С		0.000	2.474	9.320	0,000	93.40
T8	142.00-122.00	А	0.500	0.000	0.000	61.616	0.000	709.23
		В		0.000	11.204	54.007	0.000	650.83
	С		0.000	3,735	15.950	0.000	155.70	
Т9	122.00-102.00	А	0.500	0.000	0.000	61.616	0.000	709.23
		В		0.000	11.204	80.829	0.000	973.19
		С		0.000	4,762	19.520	0.000	192.72
T10	102.00-82.00	А	0.500	0.000	0.000	61.616	0.000	709_23
		В		0.000	11.204	80.829	0.000	973.19
		С		0.000	7.470	19.520	0.000	219.74
T11	82.00-78.00	А	0.500	0.000	0.000	12.323	0.000	141.85
		В		0.000	2.241	16.166	0.000	194.64
		С		0.000	1.494	3.904	0.000	43.95
T12	78.00-74.00	Ā	0.500	0.000	0,000	12.323	0.000	141.85
		В		0.000	2.241	16.166	0.000	194.64
		Ē		0.000	1.494	3.904	0.000	43.95
T13	74.00-70.00	Ă	0.500	0.000	0.000	12.323	0.000	141.85
		В		0.000	2.241	16,166	0.000	194.64
		Č		0.000	1.494	3,904	0.000	43.95
T14	70.00-66.00	Ă	0.500	0.000	0.000	12.323	0.000	141.85

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

Tower Section	Tower Elevation	Face or	Ice Thickness	A_R	A_F	C4A4 In Face	C _A A _A Out Face	Weight
seenon	ft	Leg	in	ft^2	ft^2	ft ²	ft^2	lb
		В		0.000	2,241	16.166	0,000	194.64
		С		0.000	1,494	3.904	0.000	43.95
T15	66.00-62.00	А	0.500	0.000	0.000	12.323	0.000	141.85
		В		0.000	2.241	16,166	0,000	194,64
		С		0.000	1.494	3,904	0.000	43.95
T16	62.00-42.00	А	0.500	0.000	0.000	61.616	0.000	709.23
		В		0.000	11.204	80.829	0.000	973.19
		С		0.000	7.470	19.520	0.000	219,74
T17	42.00-22.00	А	0.500	0.000	0.000	61.616	0.000	709.23
		В		0.000	11.204	80.829	0.000	973.19
		С		0.000	7.470	19.520	0.000	219.74
T18	22.00-2.00	А	0.500	0.000	0.000	46.212	0.000	531.92
		В		0.000	8.403	60.622	0.000	729.89
		С		0.000	5.602	14.640	0.000	164.80

Feed Line Center of Pressure

Section	Elevation	CP_X	CP_Z	CP_X	CP_Z
				Ice	Ice
	ft	in	in	in	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
Т4	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
Т8	142.00-122.00	-0.3973	-0.8396	-0.1313	-0.7561
Т9	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 Vort	Azimuth Adjustment	Placement		$C_A A_A$ Front	C _A A _A Side	Weight		
			Vert ft ft ft	o	ft		_ft ²	ft^2	lb		
8"x4" Pipe Mount	А	From Leg	0.50	0.0000	121.00	No Ice	2.60	2.60	72.00		
(Verizon)			0.00 0.00			1/2" Ice	3.01	3.01	93.13		
8"x4" Pipe Mount	В	From Leg	0.50	0.0000	121.00	No Ice	2.60	2,60	72.00		

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Tower		280' Guyed Tower	18 of 65
AECOM	Project		Date
prise Drive, Suite 3B		130 Vernon Rd Bolton, CT	09:04:28 04/13/16
cky Hill, CT :: 860-529-8882 860-529-3991	Client	Transcend Wireless / TWM-005 / -004 Rev. 1	Designed by MCD

Description	Face or Leg	Offset Type	Offsets: Horz Lateral	Azimuth Adjustment	Placement		$C_A A_A$ Front	$C_A A_A$ Side	Weight
			Vert ft ft ft	o	ft		ft^2	ft^2	lb
(Verizon)			0.00			1/2" Ice	3.01	3.01	93.13
14' Dipole (Unknown)	С	From Leg	4.00 0.00 0.00	0,0000	132.00	No Ice 1/2" Ice	2.80 4.22	2.80 4.22	75.00 97.50
6' Stand-off (Unknown)	С	From Leg	3,00 0,00 0.00	0.0000	132.00	No Ice 1/2" Ice	1.20 1.40	4.50 5.50	75.00 125.00
2.5" x 22' Whip (Unknown)	А	From Leg	4.00 0.00 0.00	0.0000	132.00	No Ice 1/2" Ice	5.51 7.77	5.51 7.77	150.30 191.34
6' Stand-off (Unknown)	А	From Leg	3.00 0.00 0.00	0.0000	132.00	No Ice 1/2" Ice	1.20 1.40	4.50 5.50	75.00 125.00
ASP-711 (Unknown)	А	From Leg	1.50 0.00 0.00	0.0000	260.00	No Ice 1/2" Ice	1.30 3.63	1,30 3.63	13.00 31.56
3' Stand-off (Unknown)	А	From Leg	0.75 0.00 0.00	0.0000	260.00	No Ice 1/2" Ice	1.00 1.20	2.00 2.70	50.00 75.00
2.5" x 14' Omni (Unknown)	В	From Leg	3.50 0.00 0.00	0.0000	260.00	No Ice 1/2" Ice	3.50 4.93	3.50 4.93	30.00 55.97
3' Stand-off (Unknown)	В	From Leg	1.50 0.00 0.00	0.0000	260.00	No Ice 1/2" Ice	1.00 1.20	2.00 2.70	50.00 75.00
6' Stand-off (Unknown)	А	From Leg	2.50 0.00 0.00	0.0000	281.00	No Ice 1/2" Ice	1.20 1.40	4.50 5.50	75.00 125.00
6' Stand-off (Unknown)	В	From Leg	2.50 0.00 0.00	0.0000	281.00	No Ice 1/2" Ice	1.20 1.40	4.50 5.50	75.00 125.00
6' Stand-off (Unknown)	С	From Leg	2.50 0.00 0.00	0.0000	281.00	No Ice 1/2" Ice	1.20 1.40	4.50 5.50	75.00 125.00
DLS L 864-L-865 Light Beacon Unit (Tower)	С	None	0,00	0.0000	282.00	No Ice 1/2" Ice	2.50 2.72	1.14 1.29	52.00 69.23
l' Yagi antenna (Not Used)	С	From Leg	0.50 0.00 0.00	0.0000	124.50	No Ice 1/2" Ice	0.50 0.86	0.50 0.86	25.00 29.40
3" x 12.5' Omni (Not Used)	В	From Leg	2.00 0.00 0.00	0.0000	125.00	No Ice 1/2" Ice	3.75 5.03	3.75 5.03	30.00 57.13
3' Stand-off (Not Used)	В	From Leg	1.50 0.00 0.00	0.0000	125.00	No Ice 1/2" Ice	1.00 1.20	2.00 2.70	50.00 75.00
6' Stand-off (Not Used)	С	From Leg	3.00 0.00 0.00	0,0000	180.50	No Ice 1/2" Ice	1.20 1.40	4.50 5.50	75.00 125.00
2.5" x 10' Omni (Not Used)	А	From Leg	1.00 0.00 0.00	0.0000	284.00	No Ice 1/2" Ice	2.50 3.53	2.50 3.53	30.00 48.64
FM Antenna (WMRQ)	В	From Face	4.50 0.00 0.00	0.0000	289.00	No Ice 1/2" Ice	8,30 13.00	8.30 13.00	102,00 132.60
2) 7770 Panel Antenna	А	From Leg	4.00	0.0000	164.00	No Ice	5.88	2.93	35.00

AECOM 500 Enterprise Drive, Suite 3B Rocky Hill, CT Phone: 860-529-8882 FAX: 860-529-3991

Job Page 280' Guyed Tower 19 of 65 Project Date 130 Vernon Rd Bolton, CT 09:04:28 04/13/16 Client Designed by Transcend Wireless / TWM-005 / -004 Rev. 1 MCD

Description	Face or	Offset Type	Offsets: Horz	Azimuth Adjustment	Placement		$C_A A_A$ Front	$C_A A_A$ Side	Weight
	Leg		Lateral Vert						
			ft	0	ft		ft^2	ft^2	lb
			ft						10
(AT&T)						1/2" Ice	6.31	3.27	67.63
			0.00						
(2) 7770 Panel Antenna	В	From Leg	4.00	0.0000	164.00	No Ice	5.88	2.93	35.00
(AT&T)			$0.00 \\ 0.00$			1/2" Ice	6.31	3.27	67.63
(2) 7770 Panel Antenna	С	From Leg	4.00	0.0000	164.00	No Ice	5.88	2.93	35.00
(AT&T)	U	110m Log	0.00	0.0000	101.00	1/2" Ice	6.31	3.27	67.63
			0.00						
(2) LGP214nn TMA	А	From Leg	4.00	0.0000	164.00	No Ice	1.29	0.23	1.90
(AT&T)			0.00			1/2" Ice	1.45	0.31	9.06
(4) LGP 219nn	А	From Leg	0.00 4.00	0.0000	164.00	No Ice	0.23	0.12	5.50
(4) LUF 21900 (AT&T)	А	From Leg	0.00	0.0000	104.00	1/2" Ice	0.23	0.12	5.50 7.70
() () () () () () () () () () () () () (0.00			1/2 100	0.00	0,17	1.10
(2) LGP214nn TMA	В	From Leg	4.00	0.0000	164.00	No Ice	1.29	0.23	1.90
(AT&T)			0.00			1/2" Ice	1.45	0.31	9.06
(4) I CD 210	D	F . I .	0.00	0.0000	1 (4 00	N. 1	0.00	0.10	5.50
(4) LGP 219nn (AT&T)	В	From Leg	4.00 0.00	0.0000	164.00	No Ice 1/2" Ice	0.23 0.30	0.12 0.17	5.50 7.70
(A1&1)			0.00			1/2 100	0.50	0.17	7.70
(2) LGP214nn TMA	С	From Leg	4.00	0.0000	164.00	No Ice	1.29	0.23	1.90
(AT&T)		0	0.00			1/2" Ice	1.45	0.31	9.06
			0.00						
(4) LGP 219nn	С	From Leg	4.00	0.0000	164.00	No Ice	0.23	0.12	5.50
(AT&T)			0.00			1/2" Ice	0.30	0.17	7.70
SBNH-1D6565C	А	From Leg	0.00 4.00	0.0000	164.00	No Ice	11.41	7.70	61.00
(AT&T)	11	TIOM LOG	0.00	0.0000	101.00	1/2" Ice	12.02	8.29	126.70
			0.00						
SBNH-1D6565C	В	From Leg	4.00	0.0000	164.00	No Ice	11.41	7.70	61.00
(AT&T)			0.00			1/2" Ice	12.02	8.29	126.70
SBNH-1D6565C	С	From Leg	0.00 4.00	0.0000	164.00	No Ice	11.41	7.70	61.00
(AT&T)	C	From Leg	4.00 0.00	0.0000	104.00	1/2" Ice	12.02	8.29	126.70
(//////)			0.00			172 100	12.02	0.29	120.70
Surge Suppressor	С	None		0.0000	164.00	No Ice	0.80	0.80	30.00
(AT&T)		_				1/2" Ice	0.94	0.94	41.94
(2) RRU	А	From Leg	4.00	0:0000	164.00	No Ice	1.40	0.70	10.00
(AT&T)			0.00 0.00			1/2" Ice	1.56	0.82	20,34
(2) RRU	В	From Leg	4.00	0.0000	164.00	No Ice	1.40	0.70	10.00
(AT&T)	-		0.00	010000	101100	1/2" Ice	1.56	0.82	20.34
			0.00						
(2) RRU	С	From Leg	4.00	0.0000	164.00	No Ice	1.40	0.70	10.00
(AT&T)			0.00			1/2" Ice	1.56	0.82	20.34
Andrew 12' Sector Frame	А	From Leg	0.00 2.00	0.0000	164.00	No Ice	10.80	10.80	487.00
(SF-U12-3-72)	71	110m Leg	0.00	0.0000	104.00	1/2" Ice	15.10	15.10	633.10
(AT&T)			0.00				1000	10110	000110
Andrew 12' Sector Frame	В	From Leg	2.00	0.0000	164.00	No lce	10.80	10.80	487.00
(SF-U12-3-72)			0.00			1/2" Ice	15,10	15.10	633.10
(AT&T)	C	Euger I	0.00	0.0000	164.00	N. T.	10.00	10.00	107 00
Andrew 12' Sector Frame (SF-U12-3-72)	С	From Leg	2.00 0.00	0.0000	164.00	No Ice 1/2" Ice	10.80 15.10	$10.80 \\ 15.10$	487.00 633.10
(AT&T)			0.00			172 100	19.10	13.10	10.500
BXA-70063-6CF-EDIN	А	From Leg	1.00	0.0000	121.00	No Ice	7.73	4.16	20.00
(Verizon)		0	0.00			1/2" Ice	8.27	4.60	62.49

AECOM 500 Enterprise Drive, Suite 3B Rocky Hill, CT Phone: 860-529-8882 FAX: 860-529-3991

	Job		Page
er		280' Guyed Tower	20 of 65
	Project		Date
Suite 3B		130 Vernon Rd Bolton, CT	09:04:28 04/13/16
T	Client		Designed by
8882 991		Transcend Wireless / TWM-005 / -004 Rev. 1	MCD

Description	Face or Leg	Offset Type	Offsets: Horz Lateral	Azimuth Adjustment	Placement		$C_A A_A$ Front	$C_A A_A$ Side	Weight
			Vert	0	<i>c</i>		c.2	c 7	
			ft ft ft		ft		ft^2	ft^2	lb
DWA 200(2 (OF FDD)	5		0.00	0.0000	101.00			116	20.00
BXA-70063-6CF-EDIN (Verizon)	В	From Leg	1.00 0.00 0.00	0.0000	121.00	No Ice 1/2" Ice	7.73 8.27	4.16 4.60	20.00 62.49
(2) LPA-80080-4CF-EDIN	А	From Leg	1.00	0.0000	121.00	No Ice	2.62	6.06	20.00
(Verizon)			$0.00 \\ 0.00$			1/2" Ice	2.92	6.45	53.12
(2) LPA-80063-4CF	В	From Leg	1.00	0.0000	121.00	No Ice	7.00	6.04	32.00
(Verizon)		0	0.00			1/2" Ice	7.41	6.43	84.41
(2) LPA-171080-8CF-EDIN	А	From Leg	0.00 1.00	0.0000	121.00	No Ice	2.10	3.19	13.50
(Verizon)	~	I TOILI Log	0.00	0.0000	121,00	1/2" Ice	2.40	3.54	33.28
			0.00						
(2) LPA-171063-8CF-EDIN (Verigen)	В	From Leg	1.00	0.0000	121.00	No Ice	3.69	3.69	16.50
(Verizon)			0.00 0.00			1/2" Ice	4.06	4.06	45.29
3' Stand-off	А	From Leg	0.00	0.0000	230.00	No Ice	1.00	2.00	50.00
(Eversource)			0.00			1/2" Ice	1.20	2.70	75.00
531-70HD Exposed Dipole	А	From Leg	0.00 3.00	0.0000	218.00	No Ice	5.91	5.91	45.00
Antenna	A	FIOM Leg	0.00	0.0000	218.00	1/2" Ice	7.68	7.68	79.03
(Eversource)			0.00						
6' Stand-off (Eversource)	A	From Leg	0.00 0.00	0.0000	218.00	No Ice 1/2" Ice	1.20	4.50	75.00
(Eversource)			0.00			1/2" Ice	1.40	5,50	125.00
3) L-810 Obstruction Lights	С	None		0.0000	142.00	No Ice	0.85	0.43	45.00
w/ Mount Kit (Tower - OBS Light)						1/2" Ice	0.97	0,53	51.66
Pirod 12' T-Frame Sector	А	From Leg	1.50	0.0000	182.00	No Ice	13.60	13.60	465.00
Mount (1) (T-Mobile)		0	$0.00 \\ 0.00$			1/2" Ice	18.40	18.40	600.00
Pirod 12' T-Frame Sector	в	From Leg	1.50	0.0000	182.00	No Ice	13.60	13.60	465.00
Mount (1) (T-Mobile)		0	0.00			1/2" Ice	18.40	18.40	600.00
Pirod 12' T-Frame Sector	С	From Leg	0.00 1.50	0.0000	182.00	No Ice	13.60	13.60	465.00
Mount (1)	_		0.00	010000	102100	1/2" Ice	18.40	18.40	600.00
(T-Mobile)			0.00						
AIR21 B4A/B2P (T-Mobile)	А	From Leg	4.00 6.00	0.0000	182.00	No Ice 1/2" Ice	6.53 6.98	5.56 6.26	110.02
(1-1000110)			0.00			1/2 100	0.98	0,20	166.56
LNX-6515DS-VTM	А	From Leg	4.00	0.0000	182.00	No Ice	11.39	8,98	72.65
(T-Mobile)			-6.00 0.00			1/2" Ice	12.01	9,88	153.92
AIR21 B4A/B2P	В	From Leg	4.00	0.0000	182.00	No Ice	6.53	5.56	110.02
(T-Mobile)		8	6.00			1/2" Ice	6.98	6.26	166.56
LNX-6515DS-VTM	В	From Leg	0.00 4.00	0.0000	182.00	No Ice	11,39	8.98	72.65
(T-Mobile)	-		-6.00 0.00	0.0000	. 52.00	1/2" Ice	12.01	9.88	153.92
S11 B2 RRH Unit	А	From Leg	4.00	0.0000	182.00	No Ice	0.48	0.14	2.00
(T-Mobile)		-	6.00 0.00			1/2" Ice	0.57	0.20	5.05
RRUS-11	А	From Leg	4.00	0.0000	182.00	No Ice	2.99	1.25	50.00
(T-Mobile)			-6.00	0.0000		1/2" Ice	3.23	1.41	69.57
S11 B2 RRH Unit	В	From Leg	0.00 4.00	0.0000	182.00	No Ice	0.48	0.14	2.00
	D	CIDHI 1.69	4 1111	1 1 1 1 1 1 1 1		IND ICP	1148	0 14	2.00

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tnxTower	280' Guyed Tower	21 of 65
AECOM	Project	Date
500 Enterprise Drive, Suite 3B	130 Vernon Rd Bolton, CT	09:04:28 04/13/16
Rocky Hill, CT Phone: 860-529-8882 FAX: 860-529-3991	Client Transcend Wireless / TWM-005 / -004 Rev. 1	Designed by MCD

Description	Face or Leg	Offset Type	Offsets. Horz Lateral Vert	Azimuth Adjustment	Placement		$C_A A_A$ Front	C _A A _A Side	Weigh
			ft ft ft	o	ft		ft ²	ft^2	lb
RRUS-11 (T-Mobile)	В	From Leg	0.00 4_00 -6.00 0.00	0.0000	182,00	No Ice 1/2" Ice	2.99 3.23	1.25 1.41	50.00 69.57
DB589-Y (Eversource)	А	From Leg	3.00 0.00 0.00	0.0000	234,70	No Ice 1/2" Ice	2.13 3.00	2.13 3.00	11,50 27.39

					Dis	shes					
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	0	0	ft	ft		ft^2	lb
9' Dish w/ Radome (Eversource)	С	Paraboloid w/Radome	From Leg	3.00 0.00 0.00	0.0000		104.50	9.00	No Ice 1/2" Ice	63.62 64.80	100.00 432.64
5.5' Dish w/ Radome (Eversource)	А	Paraboloid w/Radome	From Leg	2.50 0.00 0.00	0.0000		153.00	5.50	No Ice 1/2" Ice	23.76 24.48	75.00 200.66
8' Dish w/ Radome (Eversource)	А	Paraboloid w/Radome	From Leg	2.83 0.00 0.00	0.0000		204,50	8,00	No Ice 1/2" Ice	50.27 51.32	75.00 338.44
6' Dish w/ Radome (Eversource)	С	Paraboloid w/Radome	From Leg	2.25 0.00 0.00	0.0000		204.50	6.00	No Ice 1/2" Ice	28.27 29.07	75.00 224.23
8' Dish w/ Radome (Eversource)	С	Paraboloid w/Radome	From Leg	2.83 0.00 0.00	0.0000		212.50	8.00	No Ice 1/2" Ice	50.27 51.32	75.00 338.44
MF-950B (WBMW)	С	Grid	From Leg	0.50 0.00 0.00	0.0000		280.00	1.33	No Ice 1/2" Ice	2.66 3.50	13.00 21.00

Tower Pressures - No Ice

 $G_H = 1.092$

Section	Z	Kz	q_z	A_G	F	A _F	A _R	Aleg	Leg	$C_A A_A$	$C_A A_A$
Elevation					α				%	In	Out
ft	ft		psf	ft^2	с е	ft^2	ft^2	ft^2		Face ft ²	Face ft ²
T1	272.00	1.827	34	83.333	Α	4.951	10.620	6.667	42.81	3.100	0.000
282.00-262.00					В	4.951	10.620		42.81	9.860	0.000
					С	4,951	10.620		42.81	0.000	0.000
T2	252.00	1.788	33	83.333	Α	3.993	10.620	6.667	45.62	6.200	0.000
262.00-242.00					В	3.993	10.620		45.62	9.860	0.000

AECOM 500 Enterprise Drive, Suite 3B Rocky Hill, CT Phone: 860-529-8882 FAX: 860-529-3991

Job		Page
	280' Guyed Tower	22 of 65
Project		Date
	130 Vernon Rd Bolton, CT	09:04:28 04/13/16
Client	-	Designed by
	Transcend Wireless / TWM-005 / -004 Rev. 1	MCD

Section	Z	Kz	q_z	A_{G}	F	A _F	A _R	Aleg	Leg	$C_A A_A$	$C_{4}A_{4}$
Elevation		112	92	340	a		11.6	, rieg	%	In	Out
					c				,,,	Face	Face
ft	ft		psf	ft^2	e	ft^2	ft^2	ft^2		ft^2	ft^2
					С	3.993	10.620		45.62	0.000	0.000
T3	232.00	1.746	32	83.333	A	3.993	10.620	6.667	45.62	6.200	0.000
242,00-222.00					В	3,993	10,620		45.62	9,860	0.000
					C	3,993	10.620		45.62	3.100	0.000
T4	212.00	1,701	31	83.333	A	15.287	6.667	6.667	30.37	6,200	0.000
222.00-202.00					В	18.304	6.667		26.70	9.860	0.000
					C	15.287	6.667		30.37	5.098	0.000
T5	192.00	1.654	31	83.333	A	17,843	6,667	6.667	27.20	6.200	0,000
202.00-182.00					В	25.714	6.667		20.59	9,860	0,000
					C	17.843	6,667		27.20	5,320	0.000
T6	172.00	1.603	30	83.333	Α	3.993	10.620	6.667	45.62	14.815	0.000
182.00-162.00					В	11.864	10.620		29.65	23.913	7 0.000
					C	3,993	10.620		45.62	5.320	0.000
T7	152.00	1:547	29	83.333	Α	3.993	10.620	6.667	45.62	49,749	0.000
162.00-142.00					В	11.864	10.620		29.65	26.163	0.000
					С	5.731	10.620		40.77	5.320	0.000
Т8	132.00	1.486	27	83.333	A	17.843	6.667	6.667	27.20	49.749	0.000
142.00-122.00					В	25.714	6.667		20.59	37,782	0.000
					С	20.466	6.667		24.57	9,350	0.000
Т9	112.00	1.418	26	83.333	A	15.287	6.667	6.667	30.37	49.749	0.000
122.00-102.00					В	23.158	6.667		22.35	60.829	0.000
					С	18.632	6.667		26.35	11.520	0.000
T10	92.00	1.34	25	83.333	A	3.993	10.620	6.667	45.62	49.749	0.000
102.00-82.00					В	11.864	10.620		29.65	60.829	0.000
					C	9.240	10.620		33.57	11.520	0.000
T11	80.00	1,288	24	16.667	A	0.799	2.124	1.333	45.62	9.950	0.000
82.00-78.00					В	2,373	2.124		29.65	12.166	0.000
		1.0.0			C	1.848	2.124		33.57	2.304	0.000
T12	76.00	1.269	23	16.667	A	0.799	2.124	1.333	45.62	9.950	0.000
78.00-74.00					B	2.373	2.124		29.65	12.166	0.000
T12	72.00	1.25	22	16.607	C	1.848	2.124	1 222	33.57	2.304	0.000
T13 74.00-70.00	72.00	1.25	23	16.667	A	0.799	2.124	1.333	45.62	9.950	0.000
74.00-70.00					B	2.373	2.124		29.65	12.166	0.000
T14	68.00	1,229	23	16.667	C A	1.848 0.799	2.124 2.124	1 2 2 2	33.57	2.304	0.000
70.00-66.00	08.00	1.229	23	10.00/	A B	2,373	2.124	1.333	45.62 29.65	9,950 12,166	$0.000 \\ 0.000$
70.00-00.00					с С	1.848	2.124		33.57		0.000
T15	64.00	1.208	22	16.667	A	0.799	2.124	1.333	45.62	2.304	0.000
66.00-62.00	04.00	1.206	22	10.007	B	2.373	2.124	1.555	29.65	9.950 12.166	0.000
00.00-02.00					C	1_848	2.124		33.57	2.304	0.000
T16	52.00	1.139	21	83.746	Ă	1.381	3.949	7.393	48.23	49.749	0.000
62.00-42.00	52.00	1.137	21	052740	B	19.253	3.949	1.393	48.23	60.829	0.000
02.00-42.00					Б С	19.233	3.949		35.93	11.520	0.000
T17	32.00	1	18	83.746	Ă	11.381	3.949	7.393	48.23	49.749	0.000
42.00-22.00	52.00	1	10	0,740	B	19.253	3.948	1.292	31.87	60.829	0.000
42,00-22,00					C	16.629	3.948		35.93	11.520	0.000
T18 22.00-2.00	12.00	1	18	83.746	A	11.381	3.948	7.393	48.23	37.312	0.000
110 22.00-2.00	12.00	- <u>'</u>]	10	05.740	B	17.285	3.948	2.292	34.82	45.622	0.000
					C	15.317	3.948		38.38	8.640	0.000
					0	15.517	5.540		00.00	0.040	0,000

Tower Pressure - With Ice

AECOM 500 Enterprise Drive, Suite 3B Rocky Hill, CT Phone: 860-529-8882 FAX: 860-529-3991

	Job		Page
r		280' Guyed Tower	23 of 65
	Project		Date
uite 3B		130 Vernon Rd Bolton, CT	09:04:28 04/13/16
	Client		Designed by
82 91		Transcend Wireless / TWM-005 / -004 Rev. 1	MCD

Section	Z	Kz	g _z	t_Z	AG	F	A _F	A _R	Aleg	Leg	$C_A A_A$	$C_A A_A$
Elevation						а				%	In	Out
ft	ft		psf	în	ft^2	С	fr ²	ft ²	ft^2		Face ft ²	Face ft ²
/ ¹	272.00	1.827	25	0.5000	85.000	e A	4.951	20,387	10,000	39.47	5.100	
282.00-262.00	272.00	1.027	2.5	0.5000	0.000	B	4,951		10,000	39.47	17.860	
202.00-202.00						C	4.951	20.387		39.47	0.000	
Т2	252,00	1.788	25	0.5000	85.000	A	3,993	20.068	10.000	41.56	10 200	0.000
262.00-242.00	252,00	1.700	2.5	0.0000	65.000	B	3.993	20.068	10.000	41.56	17,860	0.000
202 00 212 00						Ċ	3.993	20.068		41.56	0 000	0.000
Т3	232.00	1.746	24	0.5000	85.000	Ă	3,993	20.068	10.000	41.56	10.200	0.000
242.00-222.00	252100			0.0000	051000	B	3,993	20.068	10.000	41.56	17.860	0.000
						Č	3.993	20.068		41.56	5.100	0.000
T4	212.00	1.701	24	0,5000	85.000	Ã	18.299	11.597	10.000	33,45	10.200	0.000
222,00-202,00		1811			001000	В	22.594	11.597		29.25	17.860	0.000
						Ĉ	18.299	11.597		33.45	8.898	0.000
T5	192.00	1.654	23	0.5000	85.000	A	20,854	12.236	10.000	30.22	10.200	0.000
202.00-182.00	22.227.066					В	32,059	12.236		22.58	17.860	0.000
						С	20.854	12.236		30.22	9.320	0.000
T6	172.00	1.603	22	0.5000	85.000	А	3.993	20,068	10.000	41,56	19.818	0.000
182.00-162.00						В	15.197	20.068		28,36	34.113	0.000
						С	3.993	20.068		41.56	9.320	0.000
T7	152.00	1.547	21	0.5000	85.000	Α	3.993	20.068	10.000	41.56	61,616	0.000
162.00-142.00						В	15.197	20.068		28.36	38,163	0.000
						С	6.467	20.068		37.69	9.320	0.000
Т8	132.00	1.486	21	0.5000	85.000	Α	20.854	12.236	10.000	30.22	61.616	0.000
142.00-122.00						В	32.059	12.236		22.58	54.007	0.000
						С	24,589	12.236		27.16	15.950	0.000
T9	112.00	1.418	20	0.5000	85.000	Α	18.299	11.597	10,000	33.45	61.616	0.000
122.00-102.00						В	29.503	11.597		24.33	80.829	0.000
	22. 22.				1000	С	23.061	11.597		28.85	19.520	0.000
T10	92.00	1.34	19	0.5000	85.000	Α	3.993	20.068	10.000	41.56	61.616	0.000
102.00-82.00						В	15.197	20.068		28.36	80.829	0.000
						С	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
			1			В	3.039	4.014		28.36	16.166	0.000
	-					C	2,293	4.014	12172000	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
						В	3.039	4,014		28.36	16.166	0.000
T12 74 00 70 00				0.0000	1.0.000	C	2.293	4.014	2,222	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
1						B	3,039	4.014		28.36	16,166	0.000
T14 70 00 66 00	68.00	1 220	17	0.5000	17.000	C	2.293	4.014	2 000	31.72	3.904	0.000
T14 70.00-66.00	08.00	1.229	1/	0.5000	17,000	A B	0.799	4.014	2,000	41.56	12.323	0.000
						СВ	3.039	4.014		28.36	16.166	0.000
T15 66.00-62.00	64.00	1.208	17	0.5000	17.000	A	2.293 0.799	4.014 4.014	2.000	31.72 41.56	3.904	0.000
115 00.00-02.00	04.00	1.206	1/	0.3000	17.000	B			2.000		12,323	0.000
1 1							3.039	4.014		28.36	16.166	0.000
T16 62.00-42.00	52.00	1.139	16	0.5000	85.412	C	2.293 13.604	4.014	9.616	31.72	3,904	0.000
10 02.00-42.00	52.00	1.1.59	10	0.0000	05.412	A B	24.808	10.056	9.010	40.64	61.616	0.000
						С	24.808	10.056		27.58 30.89	80.829	0.000
T17 42.00-22.00	32.00	1	14	0.5000	85.412		13.604	10.055	9.616	40.64	19.5 2 0 61.616	0.000
117 42:00-22.00	52,00	1	14	0.5000	05.412	A B	24.808	10.055	9.010	27.58	80.829	0.000
I 1						С	24.808	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
110 22.00-2.00	12.00	1	1-4	0.000	05.412	B	22.007	10.055	9.010	29.99	60.622	
I 1	1					C	19.206	10.055		32.86	14.640	0.000
						U	17.200	10.055		52.00	14,040	0.000

Tower Pressure - Service

tnxTower	Job 280' Guyed Tower	Page 24 of 65
AECOM 500 Enterprise Drive, Suite 3B	Project 130 Vernon Rd Bolton, CT	Date 09:04:28 04/13/16
Rocky Hill, CT Phone: 860-529-8882 FAX: 860-529-3991	Client Transcend Wireless / TWM-005 / -004 Rev. 1	Designed by MCD

 $G_H = 1.092$

Section	Z	Kz	qz.	A_G	F	A _F	A _R	Aleg	Leg	$C_A A_A$	$C_A A_A$
Elevation					a				%	In	Out
ft	ft		psf	ft^2	с е	ft^2	ft^2	ft ²		Face ft ²	Face ft ²
T1	272.00	1.827	12	83,333	Α	4.951	10,620	6,667	42.81	3.100	0.000
282.00-262.00					B	4,951	10.620		42.81	9,860	0.000
	2.2000			2.2	C	4.951	10.620		42.81	0.000	0.000
T2	252.00	1.788	11	83.333	A	3,993	10,620	6.667	45,62	6,200	0.000
262.00-242.00					B	3,993	10.620		45.62	9,860	0.000
					C	3.993	10,620		45.62	0,000	0,000
T3	232,00	1,746	11	83,333	A	3.993	10.620	6.667	45.62	6.200	0.000
242.00-222.00					В	3.993	10.620		45.62	9.860	0.000
					C	3,993	10.620		45,62	3.100	0.000
T4	212.00	1.701	11	83.333	A	15,287	6.667	6.667	30.37	6.200	0.000
222,00-202.00					B	18,304	6,667		26.70	9,860	0.000
					C	15.287	6.667		30.37	5.098	0.000
T5	192.00	1.654	11	83.333	A	17.843	6.667	6.667	27.20	6.200	0.000
202.00-182.00					В	25.714	6.667		20,59	9.860	0.000
					C	17.843	6,667		27.20	5.320	0.000
T6	172.00	1,603	10	83.333	A	3.993	10.620	6.667	45.62	14.815	0.000
182.00-162.00					В	11.864	10.620		29.65	23.913	0.000
					C	3.993	10.620		45.62	5.320	0.000
T7	152.00	1.547	10	83.333	A	3,993	10.620	6.667	45.62	49.749	0.000
162.00-142.00					В	11.864	10.620		29.65	26.163	0.000
					C	5.731	10.620		40.77	5.320	0.000
T8	132.00	1,486	10	83.333	A	17.843	6.667	6.667	27.20	49.749	0.000
142.00-122.00					В	25.714	6.667		20.59	37.782	0.000
					C	20.466	6.667		24.57	9.350	0.000
Т9	112.00	1.418	9	83.333	Α	15.287	6.667	6.667	30.37	49.749	0.000
122.00-102.00					В	23,158	6.667		22.35	60.829	0.000
					С	18,632	6.667		26.35	11,520	0.000
T10	92.00	1.34	9	83,333	Α	3.993	10.620	6.667	45.62	49.749	0.000
102.00-82.00					В	11.864	10.620		29.65	60.829	0,000
					С	9.240	10.620		33.57	11.520	0.000
T11	80.00	1.288	8	16.667	Α	0.799	2.124	1.333	45.62	9.950	0.000
82.00-78.00					В	2.373	2.124		29.65	12,166	0.000
					С	1.848	2.124		33.57	2.304	0.000
T12	76.00	1.269	8	16.667	Α	0.799	2.124	1.333	45.62	9.950	0.000
78.00-74.00					В	2.373	2.124		29.65	12.166	0.000
					С	1.848	2.124		33.57	2.304	0.000
T13	72.00	1.25	8	16.667	Α	0,799	2.124	1.333	45.62	9.950	0.000
74.00-70.00					В	2,373	2.124		29.65	12.166	0.000
					С	1.848	2.124		33.57	2.304	0.000
T14	68.00	1.229	8	16.667	A	0.799	2.124	1.333	45.62	9.950	0.000
70.00-66.00					В	2.373	2,124		29.65	12.166	0.000
					С	1.848	2.124		33.57	2.304	0.000
T15	64.00	1.208	8	16.667	A	0,799	2.124	1,333	45.62	9,950	0.000
66.00-62.00					В	2.373	2.124		29.65	12.166	0.000
					С	1:848	2.124		33.57	2.304	0.000
T16	52.00	1.139	7	83.746	A	11.381	3,949	7.393	48.23	49.749	0.000
62.00-42.00					В	19.253	3.949		31.87	60.829	0.000
					С	16.629	3.949		35.93	11.520	0.000
T17	32.00	1	6	83,746	A	11.381	3.948	7=393	48.23	49-749	0.000
42.00-22.00					В	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
					В	17.285	3.948		34.82	45.622	0.000
					С	15.317	3.948		38.38	8.640	0.000

Job

Project

Client

AECOM 500 Enterprise Drive, Suite 3B Rocky Hill, CT Phone: 860-529-8882 FAX: 860-529-3991

280' Guyed Tower	
130 Vernon Rd Bolton, CT	

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Transcend Wireless / TWM-005 / -004 Rev. 1

Designed by MCD

Tower Forces - No Ice - Wind Normal To Face

Section	Add	Self	F	e	C_F	R_R	D_F	D_R	AE	F	עו	Ctrl.
Elevation	Weight	Weight	a									Face
c	11		С						0.2		10	
<i>fi</i> T1	<i>lb</i> 56.20	<i>lb</i> 1212.62	e A	0.187	2.641	0.588	1	1	<u>ft</u> ² 11.194	<i>lb</i> 1568.98	<i>plf</i> 78.45	C
282.00-262.00	56.20	1212.02	B	0.187	2.641	0.588	L L	1	11.194	1208.98	/8.45	
282.00-202.00			Ċ	0.187	2.641	0.588	i	1	11.194			
Т2	69.40	1153.82	Ă	0.175	2.68	0.586	i î	î	10.213	1568.24	78,41	С
262,00-242,00	0,110	1100102	В	0.175	2.68	0.586	i	i	10.213	1000121	10111	
			С	0.175	2.68	0.586	1	1	10.213			
Т3	82,60	1153,82	A	0.175	2.68	0.586	1.	1	10,213	1640.94	82.05	С
242.00-222.00			В	0.175	2.68	0.586	1	1	10.213			
			С	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	2496.07	124.80	В
222.00-202.00			B	0.3	2.297	0.616	<u>1</u>	1	22.410	1		
TE	124.00	2247.64	C	0.263	2,398	0.605			19.323	2007.02	140.20	
T5	124.00	2247,64	A	0.294	2.312	0.614	- N	1	21,937	2807.83	140.39	В
202.00-182.00		TA 873.93	B C	0.389 0.294	2.087 2.312	0.647 0.614		1	30.027			
Т6	253.60	1153.82	A	0.294	2.512	0.586		1	21.937 10.213	2836.53	141.83	в
182.00-162.00	235.00	1155.62	B	0.173	2.379	0.580	1		18.312	2650.55	141.03	В
102.00-102.00			C	0.175	2.68	0.586		Ğ	10.213			
T7	462.84	1153.82	A	0,175	2.68	0.586	î.	î	10.213	3900.09	195.00	в
162.00-142.00			В	0.27	2.379	0.607	1	1	18.312		.,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	-
			C	0.196	2.609	0.59	1	i i	11.993			
T8	543.92	2247.64	Α	0.294	2.312	0.614	1	1	21.937	4788.95	239.45	B
142.00-122.00		TA 873.93	В	0.389	2.087	0.647	1	1	30.027			*35×.
			С	0.326	2.23	0,624	1	1	24.627			
Т9	676.09	2014.07	Α	0.263	2.398	0.605	1	1	19.323	4773.15	238.66	С
122.00-102.00			В	0.358	2.153	0.635	1	1	27,394			
			С	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	4485.29	224.26	В
102,00-82.00			В	0,27	2.379	0,607	1	1	18.312			
			С	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	861.94	215.49	В
82.00-78.00			B	0.27	2.379	0.607	1	1	3.662			
	126 70	201.07	С	0.238	2.473	0.599	1	1	3,120	0.40.40	010.07	
T12	136.70	284.96	A	0.175	2.68 2.379	0.586 0.607	1	1	2.043	849.40	212.35	В
78.00-74.00			B C	0.27 0.238	2.379	0.607	1	1	3.662 3.120			
Т13	136,70	230.76	A	0.238	2.473	0.599	1	î	2.043	836.38	209.10	В
74.00-70.00	150,70	230,70	B	0.173	2.08	0.580		1	3.662	630.36	209.10	Б
74.00-70.00			С	0.238	2.373	0.599	1	1	3.120			
T14	136.70	230.76	A	0.175	2.68	0.599	i	i	2.043	822.83	205.71	В
70.00-66.00	150170	250110	В	0.27	2.379	0.607	i	î	3.662	022.05	200111	2
,			C	0.238	2.473	0.599	1	1	3.120			
T15	136.70	284.96	A	0.175	2.68	0.586	1	î	2.043	808.70	202.18	В
66.00-62.00			В	0.27	2.379		1	1	3,662			
A: 1.50			С	0.238	2.473	0.599	1	1	3,120			
T16	683.48	1252.21	Α	0.183	2.654	0.587	1	1	13.700	3852.52*	192,63	С
62.00-42.00			В	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	Α	0.183	2.654	0.587	1	1	13.699	3383.13*	169.16	С
42.00-22.00			В	0.277	2.359	0.609	1	1	21.657			
			С	0.246	2.45	0,601	1	L	19.001			
T18	512.61	1252,21	А	0.183	2.654	0.587	1	1	13.699	2813.67	140.68	в
22,00-2,00			В	0.254	2.427	0.603	1	1	19.665			
			С	0.23	2.499	0.597	1	1	17.674			
Sum Weight:	5619.23	22271.87			*2Ag					45094.67		
			-		limit							

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

			[OI	wer Fo	orce	s - N	o lce	e - W	ind 45	To Face	!	
Section	Add	Self	F	e	CF	R_R	D_F	D_R	AE	F	w	Ctrl.
Elevation	Weight	Weight	a	C.		A.K.	27	Dĸ	116	,	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	Face
	0	0	С									
fi	lb	lb	e						ft^2	lb	plf	
T1	56.20	1212.62	A	0.187	2.641	0.588	0.825	1	10.327	1484.55	74.23	С
282.00-262.00			B	0,187	2.641	0,588	0,825	I.	10.327			
			C	0.187	2.641	0.588	0.825	1	10.327			
T2	69.40	1153.82	A	0.175	2.68	0.586	0.825	1	9.514	1500.61	75.03	С
262.00-242.00			B	0.175	2.68	0.586	0.825	1	9.514			
	00.00		C	0.175	2.68	0.586	0.825	1	9.514			
T3	82,60	1153,82	A	0.175	2.68	0,586	0,825	1	9.514	1574.89	78.74	С
242.00-222.00			B	0.175	2.68	0.586	0.825	1	9.514			
T4	104.05	2014.07	C	0.175	2.68	0.586	0.825		9.514	22/2 22	112.16	D
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	В
222.00-202.00			B C	0,3 0.263	2.297 2.398	0.616 0.605	0.825 0.825	1	19.206			
T5	124.00	2247.64		0.263	2.398	0.605	0.825	1	16.648 18.814	2494.08	124.70	В
202.00-182.00	124.00	TA 873.93	A B	0.294	2.087	0.614	0.825	1	25.527	2494.06	124.70	в
202.00-182.00		TA 073.95	C	0.294	2.087	0.614	0.825		18.814			
Т6	253.60	1153.82	A	0.294	2.512	0.586	0.825	1	9.514	2676.60	133.83	В
82.00-162.00	255.00	1155.62	B	0.173	2.379	0.580	0.825	1	16.235	2070.00	155.65	D
182.00-102,00			C	0.27	2.379	0.586	0.825		9.514			
Т7	462,84	1153.82	A	0.175	2.68	0.586	0.825	1	9.514	3745.71	187.29	В
62.00-142.00	402,64	1155,62	B	0.175	2.379	0.580	0.825		16.235	5745.71	107.29	Б
102.00-142.00			Ċ	0.196	2.609	0.59	0.825	1	10.990			
Т8	543.92	2247.64	A	0.190	2.312	0.614	0.825		18.814	4507.06	225.35	В
42,00-122,00	545.72	TA 873.93	B	0.389	2.087	0.647	0.825	- i i	25.527	4507.00	223.33	Б
42,00-122,00		111 015.75	C	0.326	2.007	0.624	0.825	1	21.045			
Т9	676.09	2014.07	A	0.263	2.398	0.605	0.825	1	16.648	4773.15*	238.66	в
22.00-102.00	070.05	2014.07	B	0.358	2.153	0.635	0.825	1	23.341	4775,15	250.00	D
22.00 102 00			C	0.304	2.287	0.617	0.825	1	19.485			
T10	683.48	1153.82	A	0.175	2.68	0.586	0.825		9.514	4351.54	217.58	В
102.00-82.00	000110	1100100	B	0.27	2.379	0.607	0.825		16.235	1551.57	211.50	D
TODICC ODICC			C	0.238	2.473	0.599	0.825	- i	13.984			
T11	136.70	230.76	Ă	0.175	2.68	0.586	0.825		1,903	836.24	209.06	В
82.00-78.00			В	0.27	2.379	0.607	0.825	1	3.247	050121	20,100	~
			Ĉ	0.238	2.473	0.599	0.825	1	2.797			
T12	136.70	284.96	Ă	0.175	2.68	0.586	0.825	1	1.903	824.07	206.02	В
78.00-74.00			В	0.27	2.379	0.607	0.825	1	3.247			_
			С	0.238	2,473	0.599	0.825	1	2,797			
T13	136.70	230.76	Α	0.175	2.68	0.586	0.825	1	1.903	811.44	202.86	В
74.00-70.00			В	0.27	2.379	0.607	0.825	1	3.247			
			С	0.238	2.473	0.599	0.825	1	2.797			
T14	136.70	230.76	Α	0.175	2.68	0.586	0.825	1	1.903	798.30	199.57	В
70.00-66.00			В	0.27	2.379	0.607	0.825	1	3.247			
10			С	0.238	2.473	0.599	0.825	1	2.797			
T15	136.70	284.96	Α	0.175	2.68	0.586	0.825	1	1.903	784.59	196.15	В
66.00-62.00			В	0,27	2.379	0.607	0.825	1	3.247			
			C	0.238	2.473	0.599	0.825	1	2.797			
T16	683.48	1252.21	Α	0,183	2,654	0.587	0.825	1	11.708	3800.71	190.04	В
62.00-42.00			В	0.277	2.359	0.609	0.825	1	18,289			
			С	0.246	2.45	0.601	0.825	1	16.091			
T17	683,48	1252.21	A	0.183	2.654	0.587	0.825	1	11.708	3337.63	166.88	В
42.00-22.00	C.		в	0.277	2.359	0.609	0.825	1	18.288			
			C	0.246	2.45	0.601	0.825	1	16.091			
T18	512.61	1252.21	A	0.183	2.654	0.587	0.825	1	11.708	2665.39	133.27	В
22.00-2.00			в	0.254	2.427	0.603	0.825	1	16.640			

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

Section Elevation	Add Weight	Self Weight	F a	е	C_F	R_R	D_F	D_R	A_E	F	W	Ctrl₄ Face
ft	lb	lb	с е						$\int t^2$	lb	plf	
Sum Weight:	5619.23	22271.87	С	0.23	2.499 [*] 2A _g limit	0.597	0.825	1	14,993	43209.77		

Tower Forces - No Ice - Wind 60 To Face

Section	Add	Self	F	е	C_F	R_R	D_F	D_R	A_E	F	w	Ctrl
Elevation	Weight	Weight	а									Face
2			С									
ft	lb	lb	е						ft^2	lb	plf	
T1	56,20	1212.62	A	0.187	2.641	0.588	0.8	1	10.203	1472.49	73,62	С
282.00-262.00			В	0.187	2.641	0.588	0.8	1	10.203			
	(0.40	1150.00	C	0.187	2,641	0,588	0.8	1	10.203			
T2	69.40	1153.82	A	0.175	2.68	0.586	0.8	1	9.414	1490.95	74.55	C
262.00-242.00			В	0.175	2.68	0.586	0.8	1	9.414			
TT2	80.00	1160.00	C	0.175	2.68	0.586	0.8	1	9.414	1.0 (0. 1.0		
T3	82.60	1153.82	A	0.175	2.68	0.586	0.8		9.414	1565.45	78.27	С
242.00-222.00			B	0.175	2.68	0.586	0.8	<u>a</u> .	9.414			
T4	104.05	2014.07	C	0.175	2.68	0.586	0.8	1	9.414	2207.00	110.26	D
222.00-202.00	104.05	2014.07	A B	0.263 0.3	2.398 2.297	0.605 0.616	0,8 0.8	1	16.266 18.749	2207.09	110.35	В
222.00-202.00		1	В С	0.3	2.398	0.616	0.8	1				
Т5	124.00	2247.64	A	0.263	2.398	0.605	0.8	1	16.266 18.368	2449.26	122.46	В
202.00-182.00	124.00	TA 873.93	B	0.294	2.087	0.614	0.8	i	24.884	2449.20	122.40	в
202.00-182.00		IA 075.95	Б С	0.389	2.312	0.614	0.8	i	18.368			
T6	253.60	1153.82	A	0.175	2.512	0.586	0.8	1	9.414	2653.75	132.69	В
182.00-162.00	255.00	1155.62	B	0.173	2.379	0.607	0.8	i	15.939	2055.75	132,09	Б
102.00-102.00			C	0.175	2.68	0.586	0.8	- i I	9.414			
Т7	462.84	1153.82	Ă	0.175	2.68	0.586	0.8	i	9.414	3723.65	186.18	В
162.00-142.00	402.04	1155.62	B	0,175	2.379	0.607	0.8	- i	15.939	5723.05	100.10	Б
102.00-142.00			C	0.196	2.609	0.59	0.8	i	10.847			1
Т8	543.92	2247.64	A	0.294	2.312	0.614	0.8	i i	18.368	4466.79	223.34	в
142.00-122.00	515.52	TA 873.93	B	0.389	2.087	0.647	0.8		24.884	4400.75	225.54	Ъ
112,00 122.00		11(0/5.55	č	0.326	2,23	0.624	0.8	1	20.534			
Т9	676.09	2014.07	Ă	0.263	2.398	0.605	0.8	1	16.266	4773.15*	238.66	в
122.00-102.00	070103	201101	В	0.358	2.153	0.635	0.8	î	22.762	1115115	200.00	
			ĉ	0.304	2.287	0.617	0.8	1	19.019			
T10	683.48	1153.82	A	0.175	2.68	0.586	0.8	1	9.414	4332.43	216.62	В
102.00-82.00			В	0.27	2.379	0.607	0.8	i l	15.939		210,02	2
			C	0.238	2.473	0.599	0.8	1	13.753			
T11	136,70	230.76	Ā	0.175	2.68	0.586	0.8	1	1.883	832.57	208.14	В
82.00-78.00	~ ~		в	0.27	2.379	0.607	0.8	1	3,188			_
			С	0.238	2.473	0.599	0.8	1	2.751			
T12	136.70	284.96	A	0.175	2.68	0.586	0.8	1	1.883	820.46	205.11	В
78.00-74.00			в	0.27	2.379	0.607	0.8	1	3.188			
			С	0.238	2.473	0.599	0.8	1	2.751			
T13	136.70	230.76	A	0.175	2.68	0.586	0.8	1	1.883	807.88	201.97	В
74.00-70.00			в	0.27	2.379	0.607	0.8	1	3,188	C 1 1 1 2 1		
			С	0.238	2.473	0.599	0.8	1	2,751			
Т14	136.70	230.76	A	0.175	2.68	0.586	0.8	1	1.883	794.79	198.70	В
70.00-66.00			в	0.27	2,379	0.607	0.8	1	3.188			
			С	0.238	2.473	0,599	0.8	1	2.751			
T15	136.70	284.96	A	0.175	2.68	0.586	0.8	1	1.883	781.14	195.29	В
66.00-62.00			в	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	В

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

Section Elevation	Add Weight	Self Weight	F a	е	C_F	R_R	D_F	D_R	A_E	F	W	Ctrl_ Face
Lievation	Weight	weight	c u					1	1			ruce
ft	lb	lb	e						ft^2	lb	plf	
62.00-42.00			В	0.277	2.359	0.609	0.8	T	17.807			
			С	0.246	2.45	0.601	0.8	1	15.675			
T17	683.48	1252,21	Α	0.183	2.654	0.587	0.8	1	11.423	3314.69	165.73	В
42.00-22.00			В	0.277	2.359	0.609	0.8	1	17.807			
			С	0.246	2.45	0.601	0,8	1	15.675			
T18	512.61	1252.21	Α	0.183	2.654	0.587	0.8	1	11.423	2644.21	132,21	В
22.00-2.00			В	0.254	2.427	0,603	0.8	$\widetilde{1}$	16,208			
			С	0.23	2.499	0,597	0.8	1	14.611			
Sum Weight:	5619.23	22271.87			*2A _g limit					42905.36		

			Τοι	ver Fo	orce	s - No	o Ice	- Wi	nd 90 1	To Face		
Section	Add	Self	F	е	C_F	R_R	D_F	D_R	AE	F	w	Ctrl.
Elevation	Weight	Weight	a									Face
ft	lb	lb	с е						ft^2	lb	plf	
T1	56.20	1212.62	Α	0.187	2.641	0.588	0.85	1	10.451	1496.61	74.83	С
82.00-262.00			В	0.187	2.641	0.588	0.85	1	10.451			
			С	0.187	2.641	0.588	0.85	1	10.451			
T2	69.40	1153.82	Α	0.175	2.68	0.586	0.85	1	9.614	1510.27	75.51	С
62.00-242.00			В	0.175	2.68	0.586	0.85	1	9.614			
5			С	0.175	2.68	0.586	0.85	1	9.614			
T3	82.60	1153.82	Α	0.175	2.68	0.586	0.85	1	9.614	1584.32	79.22	С
42.00-222.00			В	0.175	2.68	0.586	0.85	1	9.614			
			С	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	В
22.00-202.00			В	0.3	2.297	0.616	0.85	1	19.664			2
			С	0.263	2.398	0.605	0.85	1	17.030			
Т5	124.00	2247.64	A	0.294	2.312	0.614	0.85	1	19.260	2538,90	126.95	В
02.00-182.00		TA 873.93	В	0.389	2.087	0.647	0.85		26.170	2000100	120.55	В
			Ĉ	0.294	2.312	0.614	0.85	- i -	19.260			
T6	253.60	1153.82	Ă	0.175	2.68	0.586	0.85		9.614	2699.45	134.97	В
82.00-162.00		1100101	В	0.27	2 3 7 9	0.607	0.85	1	16.532	2075.15	151.77	D
02.00 102.00			Ĉ	0.175	2.68	0.586	0.85	- î l	9.614			
T7	462.84	1153.82	Ă	0.175	2.68	0.586	0.85	i	9.614	3767.76	188.39	В
62.00-142.00	102.01	1155.02	B	0.27	2.379	0.607	0.85		16.532	5707.70	100.35	D
02 00 1 12,00			C	0.196	2.609	0.59	0.85		11.133			
тв	543.92	2247.64	A	0.294	2.312	0.614	0.85	1 I I	19.260	4547.33	227.37	В
42.00-122.00	545.92	TA 873.93	B	0.389	2.087	0.647	0.85	1		4547.55	221.31	D
12.00-122.00		140/3.73	C	0.389	2.087	0.647	0.85	1	26.170 21.557			
Т9	676.09	2014.07	A	0.320	2.23	0.624	0.85	1	17.030	4773.15*	238.66	Ĉ
22.00-102.00	070.09	2014.07	B	0.203	2.398	0.605	0.85	1	23.920	4/13.13	236.00	C
22.00-102.00			C	0.304	2.133	0.617	0.85	1	19.951			
T10	683,48	1153.82	Ă	0.175	2.68		0.85		22.5	1270 (5	218 62	10
	065.46	1155.62				0.586		11	9.614	4370.65	218.53	B
102.00-82.00			B	0.27	2.379	0.607	0.85		16.532			
771,	126 20	220.76	C	0.238	2.473	0.599	0.85	1	14.215	020.01		D
T11	136,70	230,76	A	0.175	2.68	0.586	0.85	1	1.923	839.91	209.98	В
82.00-78.00			B	0.27	2.379	0.607	0.85	÷.	3.306			
T10	126.00	204.05	C	0.238	2.473	0.599	0.85		2,843			
T12	136.70	284.96	A	0.175	2.68	0.586	0.85	1	1.923	827.69	206.92	В
78_00-74_00			B	0.27	2.379	0.607	0.85		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	В
74.00-70.00			В	0.27	2.379	0.607	0.85	1	3.306			
			C	0.238	2.473	0.599	0.85	1	2.843		1	

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

Section	Add	Self	F	е	C_F	R _R	D_F	D_R	AE	F	w	Ctrl.
Elevation	Weight	Weight	а									Face
			С									
ft	lb	lb	е						ft^2	lb	plf	
T14	136.70	230.76	Α	0.175	2.68	0.586	0.85	1	1,923	801.80	200.45	В
70.00-66.00			В	0.27	2.379	0.607	0.85	1	3.306			
			С	0,238	2,473	0.599	0.85	1	2.843			
T15	136.70	284.96	Α	0.175	2.68	0.586	0.85	- 1	1.923	788.03	197.01	В
66.00-62,00			В	0.27	2.379	0.607	0.85	1	3,306			
			C	0.238	2.473	0.599	0.85	1	2.843			
T16	683.48	1252.21	Α	0.183	2.654	0,587	0.85	1	11.992	3826.82	191.34	В
62,00-42,00			В	0.277	2,359	0.609	0.85	1	18.770			
			С	0.246	2.45	0.601	0.85	1	16.507			
T17	683,48	1252.21	Α	0,183	2.654	0,587	0.85		11,992	3360,56	168.03	В
42,00-22.00			В	0.277	2.359	0,609	0.85	1	18,770			
			С	0.246	2.45	0.601	0.85	1	16.506			
T18	512.61	1252.21	Α	0.183	2.654	0.587	0.85	1	11.992	2686.57	134.33	В
22,00-2.00			В	0.254	2.427	0.603	0.85	1	17:072			
			С	0.23	2.499	0.597	0.85	1	15,376			
Sum Weight:	5619.23	22271.87			*2Ag			1.11		43514.19		
					limit							

Tower Forces - With Ice - Wind Normal To Face

Section	Add	Self	F	е	C_F	R_R	D_F	D_R	AE	F	w	Ctrl
Elevation	Weight	Weight	а									Fac
			С	1								
ft	lb	lb	е						ft^2	lb	plf	
T1	165.91	1607.29	A	0,298	2.301	0.615	1	1	17.496	1749,73	87.49	C
282.00-262.00			В	0.298	2.301	0.615	1	1	17.496			
			С	0.298	2.301	0.615	1	1	17.496			
T2	204.16	1515.90	Α	0.283	2.342	0.611	1	1	16.252	1790.55	89.53	C
262.00-242.00			В	0.283	2.342	0.611	1	1	16.252			
			С	0.283	2.342	0.611	1	1	16.252			
T3	242,40	1515.90	Α	0.283	2.342	0.611	1	1	16.252	1883.62	94.18	C
242.00-222.00			В	0.283	2.342	0.611	1	1	16.252			
			С	0.283	2.342	0.611	1	1	16.252			
T4	312.68	2563.59	Α	0.352	2.168	0.633	1	1	25.641	2553,69	127.68	B
222.00-202.00			В	0.402	2.06	0.653	1	1	30.161			
			C	0.352	2.168	0.633	1	1	25.641			
T5	384.67	2880.99	A	0.389	2.086	0.647	1	1	28.775	2848.96	142,45	В
202.00-182.00		TA	В	0.521	1.874	0.708	1	1	40.728			
		1187.59	C	0.389	2.086	0.647	1	1	28.775			
Т6	717.24	1515.90	Α	0,283	2.342	0.611	1	I.	16.252	2939.06	146,95	В
182.00-162.00			В	0.415	2.035	0.658	1	1	28.398			
			С	0.283	2.342	0.611	1	1	16.252			
T7	1287.71	1515.90	Α	0.283	2.342	0.611	1	1	16.252	3911.63	195.58	В
162.00-142.00			В	0.415	2.035	0.658	- î	1	28.398			
			С	0.312	2.264	0.62	1	1	18.903			
Т8	1515.76	2880,99	Α	0.389	2.086	0.647	1	1	28.775	3826.97*	191.35	С
142.00-122.00		TA	В	0.521	1.874	0.708	1	1	40.728			
~		1187.59	С	0.433	2,002	0.666	1	1	32.735			
Т9	1875.13	2563.59	A	0.352	2.168	0.633	1	1	25.641	3651.47*	182.57	С
122.00-102.00			В	0.484	1.922	0.689	1	1	37.497			
2			С	0.408	2.049	0.655	1	1	30.654			
T10	1902.15	1515.90	A	0.283	2.342	0.611	1	1	16.252	3451.90	172.60	С
102.00-82.00	-		в	0.415	2.035	0.658	1	1	28.398			_
			c	0.371	2.124	0.64	1	1	24.310			
T11	380.43	303.18	Ā	0.283	2.342	0.611	i l	i i	3.250	663.36°	165.84	С
82.00-78.00			В	0.415	2.035	0.658	1	1	5.680	000.00		5

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

Section	Add	Self	F	е	C_F	R_R	D_F	D_R	AE	F	w	Ctrl.
Elevation	Weight	Weight	a									Face
ſi	lb	lb	С						ft^2	71	10	
//	10	- ID	e	0.051		0.64		720		lb	plf	
			С	0,371	2,124	0.64	1	1	4.862			
T12	380.43	357.37	A	0,283	2.342	0.611	L I	1	3.250	653.71 [*]	163.43	С
78.00-74,00			В	0.415	2.035	0,658	1	1	5.680			
			C	0.371	2.124	0,64	1	1	4.862			
T13	380.43	303,18	A	0,283	2,342	0.611	1	1	3,250	643.68	160.92	С
74.00-70.00			В	0,415	2.035	0.658	1	1	5.680			
			С	0,371	2.124	0,64	1	1	4.862			
T14	380.43	303.18	Α	0.283	2.342	0.611	1	1	3.250	633.26*	158,31	C
70.00-66.00			В	0.415	2.035	0.658	1	1	5.680			
)	С	0.371	2.124	0.64	T.	1	4.862			
T15	380.43	357.37	Α	0.283	2.342	0.611	1	a 1	3,250	622.38*	155.60	С
66.00-62.00			В	0.415	2.035	0.658	Ĩ.	1.	5.680			
			С	0,371	2.124	0.64	1	1	4.862			
T16	1902.15	1605.90	A	0.277	2.359	0.609	t	1	19.729	2946.90^{*}	147.34	С
62.00-42.00			В	0,408	2.048	0.655	1 E	\tilde{i}	31,395		1	U U
			Ĉ	0.364	2.139	0.638	Ē		27,487			
T17	1902.15	1605.90	Ă	0.277	2.359	0.609	i i		19.729	2587.85*	129.39	Ċ
42.00-22.00	1902-15	1005.20	B	0.408	2.048	0.655	i i	1	31.394	2507-05	127.37	C
12,00 22.00			C	0.364	2.139	0.638	1		27.486			
T18	1426.61	1605.90	A	0.277	2.359	0.609			19.729	2587.85*	129.39	С
22,00-2,00	1420.01	1005.90	B	0.375	2.115	0.642		4	28,461	2307.03	129.39	C
22.00-2.00			Б С	0.373	2.115	0.63			25.539			
Sum Waight	15740.85	20002.15	C	0.343	^{2.189}	0.03	10 A.C	<u>a</u>	23.339	20046 59		
Sum Weight:	15740.85	28893.15								39946.58		
					limit				· · · · · · _ · _ · _			

Tower Forces - With Ice - Wind 45 To Face

Section	Add	Self	F	e	C_F	R_R	D_F	D_R	AE	F	w	Ctrl.
Elevation	Weight	Weight	а									Face
			С									
ft	lb	lb	е						ft^2	lb	plf	
T1	165.91	1607.29	A	0.298	2,301	0,615	0.825	1	16.630	1694.54	84.73	С
282.00-262.00			В	0,298	2.301	0.615	0.825	1	16.630			
			С	0.298	2.301	0.615	0.825	1	16.630			
T2	204.16	1515.90	A	0.283	2,342	0.611	0.825	1	15.553	1746.23	87.31	С
262.00-242.00			В	0.283	2.342	0.611	0.825	1	15.553			
			С	0.283	2,342	0.611	0.825	1	15.553			
T3	242.40	1515.90	A	0.283	2.342	0.611	0.825	1	15.553	1840.34	92.02	С
242.00-222.00			В	0.283	2.342	0.611	0.825	1	15.553			
			C	0.283	2.342	0.611	0.825	1	15.553			
T4	312.68	2563.59	A	0.352	2.168	0.633	0.825	1	22.439	2343.80	117.19	В
222.00-202.00			В	0.402	2,06	0.653	0.825	1	26.207			
			С	0.352	2.168	0,633	0.825	1	22.439			
T5	384.67	2880.99	A	0.389	2.086	0.647	0.825	1	25.125	2585.53	129,28	В
202.00-182.00		TA	В	0.521	1.874	0.708	0.825	1	35.118			
		1187.59	C	0.389	2.086	0.647	0.825	1	25.125			
Т6	717.24	1515.90	A	0.283	2.342	0.611	0.825	- 11	15,553	2807.64	140.38	B
182.00-162.00			В	0.415	2.035	0.658	0.825	1	25.738			
			C	0.283	2.342	0.611	0.825	1	15.553			
T7	1287.71	1515.90	A	0.283	2.342	0.611	0.825	1	15.553	3784 76	189.24	B
162.00-142.00			В	0.415	2.035	0.658	0.825	1	25.738			
			С	0.312	2.264	0.62	0.825	1	17.772			
Т8	1515.76	2880.99	А	0.389	2.086	0.647	0.825	1	25.125	3826.97*	191.35	С
142.00-122.00		TA	В	0,521	1.874	0.708	0.825	1	35.118			
		1187.59	С	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	Ι.	22.439	3651.47*	182.57	С

tnxTower

AECOM
500 Enterprise Drive, Suite 3B
Rocky Hill, CT
Phone: 860-529-8882
FAX: 860-529-3991

	Lala		Page
	Jop	280' Guyed Tower	31 of 65
	Project		Date
te 3B		130 Vernon Rd Bolton, CT	09:04:28 04/13/16
?	Client	Transcend Wireless / TWM-005 / -004 Rev. 1	Designed by MCD

Section	Add	Self	F	С	C_F	R_R	D_F	D_R	A_E	F	W	Ctrl.
Elevation	Weight	Weight	а									Face
			С									
ft	lb	lb	е						ft^2	lb	plf	
122.00-102.00			B	0.484	1.922	0.689	0.825	1	32.333			
			С	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			
			С	0.371	2.124	0.64	0.825	1	22.304			
T11	380.43	303.18	Α	0,283	2,342	0.611	0.825	1	3.111	663.36*	165.84	C
82.00-78.00			В	0.415	2.035	0.658	0.825	1	5,148			
			С	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			В	0.415	2.035	0,658	0.825	1	5.148			
			С	0,371	2.124	0.64	0.825	1	4.461			
T13	380.43	303.18	Α	0.283	2.342	0.611	0.825	1	3.111	643,68*	160.92	C
74.00-70.00		25	В	0.415	2,035	0.658	0.825	1	5,148	~		
			С	0.371	2.124	0.64	0.825	1	4.461			
T14	380,43	303.18	Α	0.283	2.342	0.611	0.825	1	3.111	633.26*	158.31	С
70.00-66.00			В	0.415	2.035	0.658	0.825	1	5.148			
			С	0.371	2.124	0.64	0.825	1	4.461			
T15	380.43	357.37	Α	0.283	2.342	0.611	0.825	1	3.111	622.38	155.60	С
66.00-62.00			В	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	Α	0.277	2.359	0.609	0.825	1	17.349	2946.90*	147.34	С
62.00-42.00			В	0.408	2.048	0.655	0.825	1	27.053			
			С	0.364	2.139	0.638	0.825	1	23.799			
T17	1902.15	1605.90	Α	0.277	2.359	0.609	0.825	1	17.348	2587.85*	129.39	С
42.00-22.00			В	0.408	2.048	0.655	0.825	1	27.053			
12			С	0,364	2.139	0.638	0.825	1	23.798	1		
T18	1426.61	1605.90	A	0.277	2.359	0.609	0.825	1	17.348	2587.85*	129.39	В
22.00-2.00			в	0.375	2.115	0.642	0.825	1	24.610			
			С	0.343	2.189	0.63	0.825	1	22.178			
Sum Weight:	15740.85	28893.15			*2Ag					39072.17	6	
					limit							

Section Elevation	Add Weight	Self Weight	F a	е	C_F	R_R	D_F	D_R	A_E	F	W	Ctrl. Face
Dicranon	,, eight		c									1 ucc
ft	<i>lb</i> _	lb	e						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	С
282.00-262.00			В	0.298	2.301	0.615	0.8	1	16.506			
			С	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	С
262.00-242.00	-		В	0.283	2,342	0.611	0.8	1	15.453		÷.	~
~			С	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	С
242 00-222 00			в	0.283	2.342	0.611	0.8	1	15.453			
			С	0.283	2.342	0.611	0.8	Ĩ	15.453			
T4	312.68	2563-59	A	0.352	2.168	0.633	0.8	1	21,981	2313.81	115.69	В
222.00-202.00			В	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	В
202.00-182.00		TA	В	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			
Т6	717.24	1515.90	A	0.283	2,342	0.611	0.8	I.	15.453	2788,86	139.44	В
182.00-162.00		100 A	в	0.415	2.035	0.658	0.8	1	25.358	~		
			C	0.283	2.342	0.611	0.8	1	15.453			

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AECOM 500 Enterprise Drive, Suite 3B
Rocky Hill, CT
Phone: 860-529-8882
FAX: 860-529-3991

Job		Page
	280' Guyed Tower	32 of 65
Project		Date
	130 Vernon Rd Bolton, CT	09:04:28 04/13/16
Client	Transcend Wireless / TWM-005 / -004 Rev. 1	Designed by MCD

Section	Add	Self	F	е	C_F	R_R	D_F	D_R	A_E	F	W	Ctrl.
Elevation	Weight	Weight	а									Face
			С						.2			
ft	lb	<i>lb</i>	е						ft^2	lb	plf	
T7	1287,71	1515.90	A	0.283	2.342	0.611	0.8	1	15.453	3766.64	188.33	В
162.00-142.00			B	0.415	2.035	0.658	0.8	1	25.358			[
			C	0.312	2.264	0,62	0.8	1	17.610	*		
Т8	1515.76	2880.99	A	0.389	2.086	0.647	0.8	1	24.604	3826.97*	191.35	C
142.00-122.00		ТА	В	0.521	1.874	0.708	0.8	-1	34,316			
		1187.59	С	0,433	2.002	0.666	0.8	1	27.817			
Т9	1875.13	2563.59	A	0,352	2.168	0.633	0.8	1	21,981	3651.47*	182.57	C
122.00-102.00			В	0.484	1.922	0,689	0.8	1	31.596			
			С	0.408	2.049	0.655	0.8	-1	26.042			
T10	1902.15	1515.90	Α	0.283	2.342	0.611	0,8	1	15.453	3451.90*	172.60	С
102.00-82.00			В	0,415	2.035	0.658	0.8	1	25.358			
			С	0.371	2.124	0.64	0.8	1	22.017			
T11	380.43	303,18	A	0.283	2.342	0.611	0.8	1	3.091	663.36*	165.84	C
82.00-78.00			В	0.415	2.035	0.658	0.8	1	5.072			
			С	0.371	2.124	0.64	0.8	1	4.403			
T12	380.43	357.37	A	0.283	2.342	0.611	0.8	1	3.091	653.71*	163.43	C
78.00-74.00			В	0.415	2.035	0.658	0.8	1	5.072			
			С	0.371	2.124	0.64	0.8	1	4.403			
T13	380.43	303.18	Α	0.283	2.342	0.611	0.8	1	3.091	643.68*	160.92	C
74.00-70.00			В	0.415	2.035	0.658	0.8	1	5.072			1
			С	0.371	2.124	0.64	0.8	1	4.403			
T14	380.43	303.18	Α	0.283	2.342	0.611	0.8	1	3.091	633.26*	158.31	C
70.00-66.00			В	0.415	2.035	0.658	0.8	1	5.072			
			С	0.371	2.124	0.64	0.8	1	4.403			
T15	380.43	357.37	Α	0.283	2.342	0.611	0.8	1	3.091	622.38*	155.60	C
66.00-62.00			В	0.415	2.035	0.658	0.8	1	5.072			
			С	0.371	2.124	0.64	0.8	1	4,403			
T16	1902.15	1605.90	A	0.277	2.359	0.609	0.8	1	17.009	2946.90*	147.34	С
62.00-42.00			В	0.408	2.048	0.655	0.8	1	26.433			
			C	0.364	2.139	0.638	0.8	1	23.272			
T17	1902.15	1605.90	A	0.277	2.359	0.609	0.8	1	17.008	2587.85*	129.39	С
42.00-22.00			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	1426.61	1605.90	Α	0.277	2.359	0.609	0.8	1	17.008	2587.85*	129.39	В
22.00-2.00			в	0.375	2.115	0.642	0.8	1	24.060	0		
~			C	0.343	2.189	0.63	0.8	1	21.698			
Sum Weight:	15740.85	28893.15			*2Ag					38947.26		
<u> </u>					limit							

Tower Forces - With Ice - Wind 90 To Face												
Section Elevation	Add Weight	Self Weight	F a	е	C_F	R_R	D_F	D _R	A_E	F	w	Ctrl. Face
ft	lb	lb	c e						ft²	lb	plf	
T1	165,91	1607.29	Α	0.298	2.301	0.615	0.85	1	16.753	1702.43	85.12	С
282.00-262.00			В	0.298	2.301	0,615	0.85	1	16.753			
			С	0.298	2.301	0.615	0.85	1	16.753			
T2	204.16	1515.90	Α	0.283	2,342	0.611	0.85	1	15.653	1752.57	87.63	С
262.00-242.00		· · · ·	В	0.283	2.342	0.611	0.85	1	15.653			
			С	0.283	2.342	0.611	0.85	1	15.653			~
Т3	242.40	1515.90	Α	0.283	2.342	0.611	0.85	1	15.653	1846.53	92.33	С
242.00-222.00			В	0.283	2.342	0.611	0.85	1	15.653			
			С	0.283	2.342	0.611	0.85	1	15,653			
T4	312.68	2563.59	Α	0.352	2.168	0.633	0.85	1	22,896	2373.78	118.69	В
222.00-202.00			В	0.402	2.06	0.653	0.85	1	26.772			

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Inr	Tower	

AECOM 500 Enterprise Drive, Suite 3B Rocky Hill, CT Phone: 860-529-8882 FAX: 860-529-3991

	Job		Page
		280' Guyed Tower	33 of 65
	Project		Date
5		130 Vernon Rd Bolton, CT	09:04:28 04/13/16
)	Client		Designed by
		Transcend Wireless / TWM-005 / -004 Rev. 1	MCD

Section	Add	Self	F	е	C_F	R_R	D_F	D_R	A _E	F	W	Ctrl.
Elevation	Weight	Weight	a		· ·							Face
			c									
ft	lb	lb	e						ft2	lb	plf	
			C	0,352	2.168	0.633	0.85	1	22.896			
T5	384.67	2880.99	A	0.389	2.086	0.647	0.85	1	25.647	2623.16	131.16	В
202.00-182.00		TA	В	0.521	1.874	0.708	0,85	1	35.919			
		1187.59	C	0.389	2.086	0.647	0.85	1	25.647			
T6	717.24	1515,90	A	0,283	2.342	0.611	0.85	1	15.653	2826.41	141.32	В
182,00-162,00			В	0,415	2.035	0.658	0.85	1	26.118			
			C	0,283	2.342	0.611	0.85	1	15.653			
T7	1287.71	1515.90	A	0.283	2.342	0.611	0.85	1	15.653	3802.89	190.14	В
162.00-142.00			B	0,415	2.035	0.658	0.85	1	26.118			
			C	0.312	2.264	0.62	0.85	1	17,933			
Т8	1515.76	2880.99	A	0,389	2.086	0.647	0.85	1	25.647	3826.97*	191.35	С
142.00-122.00		TA	В	0.521	1.874	0.708	0.85	1	35.919			
		1187.59	C	0.433	2.002	0.666	0.85	1	29.047			
Т9	1875.13	2563.59	A	0.352	2.168	0.633	0.85	1	22,896	3651.47*	182.57	С
122,00-102,00			В	0,484	1.922	0.689	0,85	1	33,071			
			С	0.408	2:049	0.655	0.85	1	27.195			
T10	1902,15	1515.90	A	0.283	2.342	0.611	0.85	1	15.653	3451.90*	172.60	С
102.00-82.00			В	0.415	2.035	0.658	0.85	1	26.118			
			C	0.371	2.124	0.64	0.85	1	22.590			
T11	380.43	303.18	Α	0.283	2,342	0.611	0.85	1	3.131	663.36*	165.84	С
82.00-78.00			В	0.415	2.035	0.658	0.85	1	5.224			
			C	0.371	2.124	0.64	0.85	1	4.518			
T12	380.43	357.37	Α	0.283	2.342	0.611	0,85	1	3.131	653.71*	163.43	С
78.00-74.00			В	0.415	2.035	0.658	0.85	1	5,224			
			С	0.371	2,124	0.64	0.85	1	4.518			
T13	380.43	303.18	Α	0.283	2.342	0.611	0.85	1	3.131	643.68*	160.92	С
74.00-70.00			В	0.415	2.035	0.658	0.85	1	5.224			
			С	0,371	2.124	0.64	0.85	1	4.518			
T14	380.43	303.18	A	0.283	2.342	0.611	0.85	1	3.131	633.26*	158,31	С
70,00-66.00			B	0.415	2.035	0.658	0.85	1	5.224			
	200.42	267.27	С	0.371	2.124	0.64	0.85	1	4.518	(00.00*		-
T15 66.00-62.00	380.43	357.37	A	0.283	2.342	0.611	0.85	1	3.131	622.38*	155.60	С
00.00-02.00			B	0.415	2.035	0.658	0.85	1	5.224			
T16	1902.15	1605.00	С	0.371	2.124	0.64	0.85	1	4.518	2046.00*	147.24	a
T16 62.00-42.00	1902.15	1605.90	A	0.277	2.359	0.609	0.85	1	17.689	2946.90*	147.34	С
62.00-42.00			B	0.408	2.048	0.655	0.85	1	27.674			
T17	1902.15	1605.00	C	0.364	2.139 2.359	0.638	0.85	1	24.326	2597.05*	120.20	
42.00-22.00	1902.15	1605.90	A B	0.277		0.609	0.85	1	17.688	2587.85*	129.39	С
42.00-22.00			В С	0.408	2.048	0.655	0.85	1	27.673			
T18	1426.61	1605.90		0.364	2.139	0.638	0.85	(E)	24.325	2507.05*	120.20	С
22.00-2.00	1420.01	1002.90	A B	0.277 0.375	2.359	0.609	0.85	1	17.688	2587.85*	129.39	C
22.00-2.00			СВ	0.375	2.115 2.189	0.642	0.85	1	25.160			
Sum Weight:	15740.85	28893.15	0	0.343	^{2.189} [*] 2A _g	0.63	0.85	1	22.658	20107.00		
Sum weight:	13740.83	20093.13			ZA _g limit				ĭ l	39197.09		
					mmu							

	Tower Forces - Service - Wind Normal To Face											
Section Elevation	Add Weight	Self Weight	F a	е	C_F	R _R	D_F	D_R	A_E	F	W	Ctrl. Face
ft	lb	lb	c e						ft^2	lb	plf	
T1	56.20	1212.62	Α	0.187	2.641	0.588	1	1	11.194	542.90	27.15	С
282.00-262.00			В	0.187	2,641	0,588	1	1	11.194			
			С	0.187	2.641	0.588	1	Ť	11.194			
T2	69.40	1153.82	A	0.175	2.68	0.586	1	1	10.213	542.64	27.13	С

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tnx l	ower	

AECOM 500 Enterprise Drive, Suite 3B Rocky Hill, CT Phone: 860-529-8882 FAX: 860-529-3991

	Job		Page
		280' Guyed Tower	34 of 65
	Project		Date
3B		130 Vernon Rd Bolton, CT	09:04:28 04/13/16
	Client	Transcend Wireless / TWM-005 / -004 Rev. 1	Designed by MCD

$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	Section	Add	Self	F	е	C_F	R_R	D_F	D_R	A _E	F	W	Ctrl.
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$			Weight	11 I I	Č	U P	116	27	24	I I I I I I I I I I I I I I I I I I I	1	~~~~	
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $													1 400
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	ft	lb	lb	е						ft^2	lb	plf	
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	262.00-242.00			В	0.175	2.68	0.586	1	1	10.213			
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $				С	0.175	2.68	0.586	I	1				
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	T3	82.60	1153.82	A	0.175	2.68	0.586	1	1		567.80	28.39	C
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	242.00-222.00							1	1				
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $				C				1					
Image: state		104.05	2014,07					1	1		863.69	43,18	В
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	222.00-202.00							1					
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $								1					
1 2 2 2 1		124.00						1	251		971.57	48.58	В
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	202.00-182.00		TA 873.93					L.					
								1	1.0				
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$		253.60	1153.82					1	1.2		981.50	49.07	В
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	182,00-162.00							1					
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	T-1	463.94	1162.00					1			1040 51	(7.10	
$ \left[\begin{array}{cccccccccccccccccccccccccccccccccccc$		402.84	1153.82								1349.5]	67,48	В
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	102.00-142.00												
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	TO	542.02	224764					r.			1657.09	02.05	36
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $		545,92									1057.08	82.85	в
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	142.00-122.00		IA 075.75										
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	то	676.09	2014.07					0.523	1 20		1651.61*	82.58	C
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$		070.05	2014.07					10.00	01		1051,01	02.30	C
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	122.00-102.00							1.50	180				
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	T10	683.48	1153.82					1.000			1552.00	77-60	R
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $		005.10	1155.02								1552.00	,,,,00	
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$								1.	1 2211				
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	T11	136.70	230.76					1 BASS			298.25	74.56	в
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $	82.00-78.00			В				1.	1				-
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$				C		2.473	0.599	1	1	3.120			
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$		136.70	284.96	Α		2.68		1	1		293,91	73.48	В
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	78.00-74.00					2.379	0.607	1	1	3.662			
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$				С		2.473	0.599	1	1	3.120			
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $		136.70	230.76					1	1		289.41	72.35	В
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	74.00-70.00							1	1				
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$								1	1				
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	T14	136.70	230.76					1.1			284.72	71.18	В
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	70.00-66.00								1				
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$		10 (00	00101					12.1	1				
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$		136.70	284.96						1		279.83	69.96	В
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	00.00-62.00								1				
62.00-42.00 B 0.277 2.359 0.609 1 1 21.658 T17 683.48 1252.21 A 0.183 2.654 0.587 1 1 19.001 42,00-22.00 B 0.277 2.359 0.609 1 1 13.699 1170.63* 58.53 C 42,00-22.00 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 19.001 T18 512.61 1252.21 A 0.183 2.654 0.587 1 1 19.001 E 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 C 0.23 2.499 0.597 1 1 17.674 1	TIC	(02.40	1252.21						1		1000.05*		
T17 683.48 1252.21 A 0.246 2.45 0.601 1 1 19.001 42,00-22.00 B 0.277 2.359 0.609 1 1 21.657 58.53 C 11 C 0.246 2.45 0.601 1 1 19.001 58.53 C 1252.20 B 0.277 2.359 0.609 1 1 19.001 58.53 C 118 512.61 1252.21 A 0.183 2.654 0.587 1 1 19.001 48.68 B 22.00-2.00 B 0.254 2.427 0.603 1 1 19.665 48.68 B		063,48	1252.21					4	1		1333.05	66.65	C
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 12.657 58.53 C T18 512.61 1252.21 A 0.183 2.654 0.587 1 1 19.001 B 0.254 2.457 0.603 1 1 13.699 973.59 48.68 B 22.00-2.00 C 0.23 2.499 0.597 1 1 19.665 1	02.00-42.00							2.6					
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 C 0.23 2.499 0.597 1 1 17.674	T17	682 10	1252.21						1		1170 62	50 50	C
T18 512.61 1252.21 A 0.183 2.654 0.601 1 1 19.001 973.59 48.68 B 22.00-2.00 C 0.233 2.427 0.603 1 1 19.665 973.59 48.68 B		063.46	1232.21								1170.03	20.23	U
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 19.665 1 1 10.674 10.675	72.00-22.00							1	1				
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	T18	512.61	1252.21					31	1	2.2	073 50	18.60	в
C 0.23 2.499 0.597 1 1 17.674		512.01	12,22,21					1			113.39	-0,00	U
	22.00 2.00							1	i i				
	Sum Weight:	5619.23	22271-87	~	0.23		0.001	28		11.014	15603.69		
			/								10005.07		

Tower Forces - Service - Wind 45 To Face

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AECOM 500 Enterprise Drive, Suite 3B
Rocky Hill, CT
Phone: 860-529-8882 FAX: 860-529-3991

	Job		Page
		280' Guyed Tower	35 of 65
	Project		Date
8		130 Vernon Rd Bolton, CT	09:04:28 04/13/16
	Client		Designed by
		Transcend Wireless / TWM-005 / -004 Rev. 1	MCD

Section	Add	Self	F	e	C_F	R_R	D_F	D_R	A _E	F	147	Ctrl
Elevation	Weight	Weight	a	C		AR .	Dr		TIE	1	ΠP	Face
			c									1 400
ft	lb	lb	e						ft^2	lb	plf	
T1	56.20	1212.62	A	0.187	2,641	0.588	0.825	1	10.327	513.69	25.68	С
282.00-262.00			В	0.187	2.641	0.588	0.825	i	10.327	515105	25,00	
			С	0.187	2.641	0.588	0.825	1	10_327	0		
T2	69.40	1153.82	Ā	0.175	2.68	0.586	0.825	i	9.514	519.24	25,96	С
262,00-242.00			B	0.175	2.68	0.586	0.825	î	9,514	575121	20100	Ŭ
			Ĉ	0.175	2.68	0.586	0.825	i	9.514			
Т3	82,60	1153.82	Ā	0.175	2.68	0.586	0.825	i	9.514	544.94	27.25	С
242,00-222.00	01100	1105101	B	0.175	2.68	0.586	0.825	i	9.514	511.51	21.20	Ŭ
			Ĉ	0.175	2.68	0.586	0.825	í	9.514			
T4	104.05	2014.07	Ā	0.263	2.398	0.605	0.825	i	16.648	776.20	38.81	В
222.00-202.00	101100	2011101	B	0.3	2.297	0.616	0.825	î	19.206	110.20	50.01	^D
			Ĉ	0.263	2.398	0.605	0.825	i.	16.648			
Т5	124.00	2247.64	Ă	0.294	2.312	0.614	0.825	i i	18.814	863.00	43.15	В
202.00-182.00	121100	TA 873,93	В	0.389	2.087	0.647	0.825	6	25,527	005.00	15.15	Б
202100 102100		111013195	C	0.294	2.312	0.614	0.825	i	18.814			
Т6	253.60	1153.82	Ă	0.175	2.68	0.586	0.825	1	9.514	926.16	46,31	В
182.00-162.00	200.00	1150,02	B	0.175	2.379	0.607	0.825	i	16.235	220.10	L CIOL	5
102.00 102.00			C	0.175	2.68	0.586	0.825	- i	9.514			
Т7	462.84	1153.82	Ă	0.175	2.68	0.586	0.825	i	9.514	1296.09	64.80	в
162.00-142.00	402.04	1155.02	B	0.27	2.379	0.607	0.825	i i	16.235	1290.09	04.00	Ы
102.00 142.00			C	0.196	2.609	0.59	0.825	1	10.233			
Т8	543.92	2247.64	A	0.294	2.312	0.614	0.825	i	18.814	1559,54	77.98	В
142.00-122.00	545.72	TA 873.93	B	0.389	2.087	0.647	0.825	i ii	25.527	1559,54	/1.90	8
142.00-122.00		17 075,75	C	0.326	2.087	0.624	0.825	i	21.045			
Т9	676.09	2014.07	Ă	0.263	2.398	0.605	0.825	1	16.648	1651.61*	82.58	В
122.00-102.00	070.07	2014.07	B	0.358	2.153	0.635	0.825	i	23.341	1051,01	02.30	D
122,00-102,00			C	0.304	2.287	0.617	0.825	1	19,485			
Т10	683.48	1153.82	A	0.175	2.68	0.586	0.825	1	9.514	1505.72	75,29	В
102.00-82.00	002,00	1155.02	B	0.175	2.379	0.607	0.825	i	16.235	1505.72	13,27	Б
102.00-02.00			C	0.238	2.473	0.599	0.825	1	13.984			
T11	136.70	230.76	A	0.175	2.68	0.599	0.825	î	1.903	289.36	72.34	В
82.00-78.00	150.70	230.70	B	0.27	2.379	0.607	0.825	1	3.247	209,00	12.34	Б
02.00-70.00			C	0.238	2.473	0.599	0.825	i	2.797			
T12	136.70	284.96	Ă	0.175	2.68	0.586	0.825	i	1.903	285.15	71.29	В
78.00-74.00	150.70	2.04.90	B	0.175	2.379	0.607	0.825	i	3.247	205.15	/1,27	ы
70.00-74.00			č	0.238	2.473	0.599	0.825	i	2,797			
T13	136.70	230.76	A	0.175	2.68	0.599	0.825	í	1,903	280.78	70,19	В
74.00-70.00	150.70	250.70	B	0.173	2.08	0.580	0.825	1	3.247	200.70	70,19	d
/ 1 00-70,00			C	0.27	2.373	0.599	0.825	1	2.797			
T14	136.70	230.76	A	0.238	2.475	0.599	0.825	1	1.903	276,23	69.06	В
70.00-66.00	150.70	200.70	B	0.173	2.08	0.580	0.825	1	3.247	270.23	09.00	ы
10.00-00.00			C	0.238	2.473	0.599	0.825	1	2.797			
T15	136.70	284.96	A	0.238	2.473	0.599	0.825	្នុំ	1.903	271.48	67.87	В
66.00-62.00	130.70	204.70	B	0.173	2.379	0.580	0.825	i	3.247	271.40	07.07	D
00.00-02.00			C	0.27	2.473	0.599	0.825	1	2 797			
T16	683.48	1252.21	A	0.238	2.654	0.599	0.825	1	11.708	1215 12	65.76	D
62.00-42.00	003.40	1232,21	B	0.183	2.034	0.587	0.825	1	18.289	1315.12	03.70	В
02 00-42 00			C	0.246	2.339	0.609	0.825	÷.	16.091			
T17	683.48	1252.21	A	0.246	2.45	0.587	0.825		11.708	1154.89	57.74	В
42.00-22.00	005.40	12.32.21	B	0.183	2.034	0.587	0.825	닅	18.288	1154.89	5/ 14	в
42.00-22.00			C	0.277	2.339	0.609		÷.				
Т18	512.61	1252.21		0.246	2.45	0.587	0.825	1	16.091	022.20	46.11	р
22.00-2.00	512.01	1232.21	A B						11.708	922.28	46.11	В
22.00-2.00			C	0.254 0.23	2.427 2.499	0.603 0.597	0.825	1	16.640			
Sum Woight	5610.22	22271 07	4	0.23	^{2.499} [*] 2A _g	0.397	0.825	5 S	14.993	14051 40		
Sum Weight:	5619.23	22271.87	- 1							14951.48		
					limit							

AECOM 500 Enterprise Drive, Suite 3B Rocky Hill, CT Phone: 860-529-8882 FAX: 860-529-3991

	Job		Page
		280' Guyed Tower	36 of 65
	Project		Date
3B		130 Vernon Rd Bolton, CT	09:04:28 04/13/16
	Client		Designed by
		Transcend Wireless / TWM-005 / -004 Rev. 1	MCD

Tower Forces - Service - Wind 60 To Face

Section	Add	Self	F	е	C_F	R_R	D_F	D_R	A_E	F	W	Ctrl.
Elevation	Weight	Weight	a	C.	0,	1 AR	DF	D_R	AE	1.	W	Face
			c									1 400
ft	lb	lb	е						ft^2	lb	plf	
T1	56.20	1212.62	A	0,187	2.641	0.588	0,8	1	10.203	509.51	25.48	С
282.00-262.00			В	0.187	2.641	0.588	0.8	1	10,203			
	(0.40	1152.00	C	0.187	2,641	0.588	0.8	1	10.203			
T2 262,00-242,00	69.40	1153.82	A B	0.175	2.68	0.586	0.8	1	9.414	515.90	25.79	С
202,00-242,00			В С	0,175 0.175	2.68 2.68	0.586	0.8 0.8	1	9.414 9.414			
Т3	82.60	1153.82	A	0.175	2.68	0.586	0.8	1	9.414	541,68	27.08	С
242.00-222.00	02.00	1100.02	B	0.175	2.68	0,586	0.8	1	9.414	541.00	27.00	
			С	0.175	2.68	0.586	0.8	1	9.414			6
T4	104.05	2014.07	A	0.263	2.398	0.605	0,8	1	16.266	763.70	38.19	В
222.00-202.00			В	0,3	2,297	0.616	0.8	1	18.749			
			С	0.263	2,398	0.605	0,8	1	16.266			
T5	124.00	2247.64	A	0.294	2,312	0.614	0.8		18,368	847.49	42.37	В
202,00-182.00		TA 873.93	B	0.389	2.087	0.647	0.8	1	24.884			
T6	253,60	1153.82	C A	0.294 0.175	2.312 2.68	0.614 0.586	0.8 0.8	1	18.368	019.25	45.01	D
182,00-162.00	233,00	1155.82	B	0.175	2.08	0.580	0.8	1	9.414 15.939	918.25	45.91	В
102,00-102.00			C	0.175	2.579	0.586	0.8	1	9.414			
Т7	462,84	1153.82	Ă	0.175	2.68	0.586	0.8	i	9.414	1288.46	64.42	в
162.00-142.00			В	0.27	2.379	0.607	0.8	1	15,939	1200.10	01.12	
7.51			С	0.196	2.609	0.59	0.8	1	10.847			
Т8	543.92	2247.64	Α	0.294	2.312	0,614	0.8	1	18,368	1545.60	77.28	В
142.00-122.00		TA 873.93	В	0.389	2,087	0.647	0.8	1	24.884			
			С	0.326	2.23	0.624	0.8	1	20.534			
T9	676.09	2014.07	A	0.263	2.398	0,605	0.8	1	16.266	1651.61*	82.58	В
122,00-102.00			B	0.358	2.153	0.635	0.8	1	22,762		1	1
Т10	683.48	1153.82	C A	0.304 0.175	2.287 2.68	0.617 0.586	0.8 0.8	1	19.019 9.414	1499.11	74.96	в
102.00-82.00	063,46	1155.62	B	0.173	2.379	0.580	0.8	1	15.939	1499.11	/4.90	B
102.00 02.00			Ċ	0.238	2.473	0.599	0.8	1	13,753			
T11	136.70	230.76	A	0.175	2.68	0.586	0.8	i	1.883	288.09	72.02	В
82.00-78.00			В	0.27	2.379	0.607	0.8	1	3.188		/ =/0 =	2
			С	0.238	2.473	0.599	0.8	1	2.751			
T12	136.70	284.96	А	0.175	2.68	0.586	0.8	I	1,883	283.89	70.97	В
78.00-74.00			В	0,27	2.379	0.607	0.8	1	3.188			
	10 (70		С	0.238	2.473	0.599	0.8	1	2.751			
T13	136.70	230.76	A	0.175	2.68	0.586	0.8	1	1.883	279.54	69.89	В
74,00-70.00			B C	0.27 0.238	2,379 2.473	0.607	0.8	1	3.188			
T14	136.70	230.76	A	0.238	2.473	0.599	0.8	1	2.751 1.883	275.01	68.75	В
70.00-66.00	100,10	230.70	B	0.173	2.379	0.380	0.8	1	3.188	275.01	08.73	a
			C	0.238	2.473	0.599	0.8	î.	2.751			
T15	136.70	284.96	Ā	0.175	2.68	0.586	0.8	i	1.883	270.29	67.57	В
66.00-62.00			в	0.27	2.379		0.8	1	3.188			
			С	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	1306.09	65.30	В
62,00-42,00			B	0.277	2,359	0.609	0.8	1	17.807			
	(00.10	1000 01	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	1146.95	57.35	В
42,00-22,00			B	0.277	2.359	0.609	0,8		17.807			
T18	512.61	1252.21	C	0.246 0.183	2.45 2.654	0.601	0.8	1	15.675	014.05	15 75	P
22.00-2.00	512.01	1232,21	A B	0.183	2.654	0.587	0.8		11.423	914.95	45.75	В
22.00-2.00			c	0.234	2.427	0.597	0.8	1	14.611			
Sum Weight:	5619.23	22271.87	~	0.23	*2Ag	0.571	0.0	10	14.011	14846.15		
					limit					1.1010.10		

tnxTower	Job 280' Guyed Tower	Page 37 of 65
AECOM 500 Enterprise Drive, Suite 3B	Project 130 Vernon Rd Bolton, CT	Date 09:04:28 04/13/16
Rocky Hill, CT Phone: 860-529-8882 FAX: 860-529-3991	Client Transcend Wireless / TWM-005 / -004 Rev. 1	Designed by MCD

			01		1003		TVICC	5 - ••	'ind 90	101400		
Section Elevation	Add Weight	Self Weight	F a	е	C _F	R _R	D_F	D_R	A_E	F	W	Ctrl Face
ft	lb	lb	с е						ft ²	lb	plf	
T1	56.20	1212.62	Α	0.187	2.641	0.588	0.85	1	10.451	517.86	25.89	С
282.00-262.00			В	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	522.59	26,13	С
262.00-242.00			B C	0.175	2.68 2.68	0.586	0.85		9.614			
Т3	82,60	1153.82	A	0.175	2.68	0.586 0.586	0.85		9.614 9.614	548.21	27.41	С
42.00-222.00	02.00	1155.02	B	0.175	2.68	0.586	0.85	1	9.614	546.21	27.71	C
12.00 222.00			C	0.175	2.68	0.586	0.85	- il	9.614			
T4	104.05	2014.07	Ă	0.263	2.398	0.605	0.85	1	17.030	788.70	39.43	В
22.00-202.00			В	0.3	2,297	0.616	0.85	1	19.664			
			С	0.263	2.398	0.605	0.85	1	17.030			
T5	124.00	2247.64	А	0,294	2.312	0.614	0.85	1	19.260	878.51	43.93	В
02.00-182.00		TA 873.93	В	0.389	2.087	0.647	0.85	1	26.170			
			С	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		9.614	934.06	46.70	В
82.00-162.00			B C	0.27	2.379 2.68	0.607 0.586	0.85 0.85	4	16.532 9.614			
T7	462.84	1153.82	A	0.175 0.175	2.68	0.586	0.85	1	9.614	1303.72	65.19	в
52.00-142.00	402.04	1155.02	B	0.175	2,379	0.580	0.85		16.532	1505.72	0.1.9	D
02.00 142.00			C	0.196	2.609	0.59	0.85		11.133			
Т8	543.92	2247.64	Ã	0.294	2.312	0.614	0.85	1	19.260	1573.47	78.67	B
42.00-122.00		TA 873.93	В	0.389	2.087	0.647	0.85	1	26,170			
			С	0.326	2.23	0.624	0.85	1	21.557			
Т9	676.09	2014.07	Α	0.263	2,398	0.605	0.85	1	17.030	1651.61	82.58	С
22.00-102.00			В	0.358	2.153	0.635	0.85	1	23.920			
	(00.40	1152.00	C	0,304	2,287	0.617	0.85	1	19.951	1010.04	5 6 6	
T10	683.48	1153.82	A	0.175	2.68	0.586	0.85	1	9.614	1512.34	75.62	В
102.00-82.00			B C	0.27 0.238	2.379 2.473	0.607 0.599	0.85	1	16.532 14.215			
T11	136.70	230.76	A	0.238	2.475	0.599	0.85	1	14.213	290.63	72.66	В
82.00-78.00	150.70	250.70	B	0.27	2.379	0.607	0.85	i l	3.306	290.05	72.00	U
02.00 70.00			č	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	286.40	71.60	В
78.00-74.00			В	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	282.01	70,50	В
74.00-70.00			В	0.27	2.379	0.607	0.85	1	3.306			
			C	0.238	2.473	0.599	0.85	1	2.843			
T14	136.70	230.76	A	0,175	2.68	0.586	0.85	1	1.923	277.44	69.36	В
70.00-66.00			B	0.27	2.379	0.607	0.85 0.85		3.306			
T15	136.70	284.96	C A	0.238 0.175	2.473 2.68	0.599	0.85	1	2.843 1.923	272.68	68.17	В
66.00-62.00	130.70	204.90	B	0.175	2,379	0.580	0.85	1	3.306	2/2.00	00.17	D
00.00-02.00			C	0.238	2.473	0.599	0.85	i	2.843			
T16	683.48	1252.21	Ă	0.183	2.654	0.587	0.85	i	11.992	1324.16	66.21	В
62.00-42.00			B	0.277	2.359	0.609	0.85	1	18,770			-
			Č	0.246	2,45	0.601	0.85	1	16.507			
Т17	683.48	1252.21	Α	0.183	2.654	0.587	0.85	1	11.992	1162.82	58.14	B
42.00-22.00			В	0.277	2.359	0.609	0.85	1	18.770			
			С	0.246	2,45	0.601	0.85	1	16.506			
T18	512.61	1252.21	A	0.183	2.654	0,587	0,85	1	11.992	929.61	46.48	в
22.00-2.00			B	0.254	2.427	0.603	0.85	1.1	17.072			

tnxTower

AECOM 500 Enterprise Drive, Suite 3B Rocky Hill, CT Phone: 860-529-8882 FAX: 860-529-3991

Job		Page
	280' Guyed Tower	38 of 65
Project		Date
	130 Vernon Rd Bolton, CT	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	е	C_F	R _R	D_F	D _R	A _E	F	w	Ctrl_ Face
fi	lb	lb	с е						ft^2	lb	plf	
Sum Weight:	5619.23	22271.87	С	0.23	2.499 [*] 2A _g limit	0.597	0.85	1	15.376	15056.81		

Force Totals (Does not include forces on guys)

Load	Vertical	Sum of	Sum of	Sum of Torques
Case	Forces	Forces	Forces	
		X	Z	
	lb	lb	lb	lb-ft
Leg Weight	9335.14			100 H 100 H 100
Bracing Weight	12936.73		and Story	
Total Member Self-Weight	22271.87		1210211	The second secon
Guy Weight	4477.09			
Total Weight	38348.73	1 No. 3 20 10		English and the
Wind 0 deg - No Ice	The second s	298.48	-61348.82	-4666.64
Wind 30 deg - No Ice	* 200 G 150 T	30283.86	-52279.77	-9454.49
Wind 45 deg - No Ice		42415.80	-42285.76	-10528.91
Wind 60 deg - No Ice	2-7-15	51645.05	-29457.03	-13114.84
Wind 90 deg - No Ice	10 0-1-1-31	60380.35	416.94	-13034.47
Wind 120 deg - No Ice	and the second s	53504.69	30593.24	-7618.34
Wind 135 deg - No Ice	27. 그는 지역	42471.09	41580.22	-4507.34
Wind 150 deg - No Ice	ALL STRAT	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	10 July 10 Jul	-42166.08	42301.20	13010.74
Wind 240 deg - No Ice		-53253.56	30792,91	12284.98
Wind 270 deg - No Ice	100 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	-59135.38	225.91	10453.19
Wind 300 deg - No Ice	1000	-49912.00	-28851.38	6171.99
Wind 315 deg - No Ice	And the second s	-40863.97	-41254.24	3579.20
Wind 330 deg - No Ice	Vertile property	-28993.38	-51041.57	775.09
Member Ice	6621.28			
Guy Ice	3710.00	19 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		
Total Weight Ice	62752.57			
Wind 0 deg - Ice	S THE REAL PROPERTY.	352.83	-54074.67	-1972.64
Wind 30 deg - Ice		27064.76	-46555.71	-6707.27
Wind 45 deg - Ice	MOISTI REAL	37981.98	-37791.64	-8177.90
Wind 60 deg - Ice	3- B- 8- 1117	46347-13	-26462.63	-10829.67
Wind 90 deg - Ice	그의 밑 [북 1]	53851.18	242.49	-11856.96
Wind 120 deg - Ice	a realities of the	47213.24	26867.93	-8181.02
Wind 135 deg - Ice	the second second	38014.00	37177.25	-5797.29
Wind 150 deg - Ice	The second second second	27012.22	45581.55	-1935.95
Wind 180 deg - Ice	이 말았는데, 의	251.37	52471.23	3811.54
Wind 210 deg - Ice	TTA LEAD AND	-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	s steam ::	-44955.06	-25949.18	7018.14
Wind 315 deg - Ice	HUMP I	-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	- % - SV X- T-	17870.26	-10192.74	-4538.01
Wind 90 deg - Service		20892.85	144.27	-4510.20

tnxTower	Job 280' Guyed Tower	Page 39 of 65
AECOM 500 Enterprise Drive, Suite 3B	Project 130 Vernon Rd Bolton, CT	Date 09:04:28 04/13/16
Rocky Hill, CT Phone: 860-529-8882 FAX: 860-529-3991	Client Transcend Wireless / TWM-005 / -004 Rev. 1	Designed by MCD

Load	Vertical	Sum of	Sum of	Sum of Torques
Case	Forces	Forces	Forces	
		Х	Ζ	
	lb	lb	lb	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	11日 日 二日 二日	10501.71	17663.09	129.22
Wind 180 deg - Service		118.34	20215.76	2402.37
Wind 210 deg - Service	and the second second	-10376.86	17924.00	3767.21
Wind 225 deg - Service	A Designed to the	-14590.34	14637.09	4501.99
Wind 240 deg - Service	THE WAS DESCRIPTION OF	-18426.84	10654.99	4250.86
Wind 270 deg - Service	State of the second	-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 49 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 220 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	

tnxTower	Job 280' Guyed Tower	Page 40 of 65
AECOM 500 Enterprise Drive, Suite 3B	Project 130 Vernon Rd Bolton, CT	Date 09:04:28 04/13/16
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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 Axi Moment lb-ft
T1	282 - 262	Leg	Max Tension	22	7073.36	-249.82	148.10
11	202 202	LUG	Max. Compression	27	-14517.80	9.33	444.78
			Max. Max. Mx	20	-13828.36	-787.46	312.53
			Max. My	20	-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
		Diagonai	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	Max Tension	30	305.27	0.00	0.00
		Horizontal	Wax rension	50	505.27	0.00	0.00
		TOTISOIRU	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
		rop Gitt	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	0100	0.00
		ou) It	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		

tnxTower	Job	280' Guyed Tower
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Project

Client

AECOM 500 Enterprise Drive, Suite 3B Rocky Hill, CT Phone: 860-529-8882 FAX: 860-529-3991

130 Vernon Rd Bolton, CT

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Transcend Wireless / TWM-005 / -004 Rev. 1

Section No.	Elevation ft	Component Type	Condition	Gov Load	Force	Major Axis Moment	Minor Axi Moment
				Comb.	lb	lb-ft	lb-fi
		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		
Т2	262 - 242	Leg	Max Tension	13	7016.19	-82.94	45.07
12	202 - 242	Lug	Max. Compression	22		15.36	-9.31
			*	20	-22750.02 -17995.19		
			Max. Mx			-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
			Max. Vx	23	0.04	0.00	0.00
		Secondary Horizontal	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
Т3	242 - 222	Lag	Max Tension	7		-40.45	
13	242-222	Leg		22	8523.43		-39.92
			Max. Compression		-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
		Secondary Horizontal	Max Tension	22	390.20	0.00	0.00
			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
	222 2VA	LUE	Max Compression	31	-21053.17	-59.53	-36.74
						818.32	
			Max. Mx Max. Mu	5	-13987.25		-48,52
			Max. My	3	-2947.85	54.89	-737.91
			Max. Vy	5	-832.04	-419.82	14.55
		D	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
		1101.201104	Max. Compression	31	-364.65	0.00	0.00

Job

Project

Client

AECOM 500 Enterprise Drive, Suite 3B Rocky Hill, CT Phone: 860-529-8882 FAX: 860-529-3991

280' Guyed Tower

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Transcend Wireless / TWM-005 / -004 Rev. 1

130 Vernon Rd Bolton, CT

lection No.	Elevation ft	Component Type	Condition	Gov. Load	Force	Major Axis Moment	Minor Axi Moment
				Comb.	lb	lb-ft	lb-ft
			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
T5	202 - 182	Leg	Max Tension	15	10392.94	37.55	121.38
10	202 102	200	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
		Diagonal	Max Tension	12	4735.81	0.00	0.00
		Diagonal	Max. Compression	28	-9790.53	0.00	0.00
			Max, Mx	21	4093.61	25.70	
			Max. My	23	-3156.35	0.00	0.00
			~	23			0.14
			Max, Vy		-18.17	0.00	0.00
		C 1	Max, Vx	23	-0.10	0.00	0.00
		Secondary Horizontal	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		
			Bot Cable Norm	32	12678.99		
			Bot Cable Tan	32	12.41		
		Guy C	Bottom Tension	22	17942.68		
		duy o	Top Tension	22	18268.75		
			Top Cable Vert	22	13313.24		
			Top Cable Norm	22	12510.19		
			Top Cable Tan	22	12310.19		
			Bot Cable Vert	22			
			Bot Cable Norm	22	-12491.76 12880.05		
			Bot Cable Tan	22			
		Top Cur Bull Off	Max Tension	22	11.20	0.00	0.00
		Top Guy Pull-Off			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
		Bottom Guy	Max. Vx Max Tension	23 15	-0.00 3110.94	0.00 0.00	0.00 0.00
		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
			IVIAA. YA				

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tnx I	ower

Job

Project

Client

AECOM 500 Enterprise Drive, Suite 3B

280' Guyed Tower

130 Vernon Rd Bolton, CT

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Rocky Hill, CT Phone: 860-529-8882 FAX: 860-529-3991

Transcend Wireless / TWM-005 / -004 Rev. 1

Section No.	Elevation ft	Component Type	Condition	Gov. Load	Force	Major Axis Moment	Minor Ax Moment
				Comb.	lb	lb-ft	lb-ft
			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
		Torque Arm Bottom	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
T6	182 - 162	Leg	Max Tension	7	11669.32	-270.98	-156.78
	ICE ICE	266	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
		0	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	
100	1/2 1/2				-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
		Diagonai	Max. Compression	12		0.00	
					-4068.51		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	18	9.77	0.00	0.00
			Max, Vx	23	-0.00	0.00	0,00
Т8	142 - 122	Leg	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		-381.16	-415.27	-79.85
				6			
			Max. Vx	2	341.20	43.93	367.03
		Diagonal	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
			IVIGA, VV	40	-10-20	0.00	0.00
			Max, Vx	30	-0.10	0.00	0.00

Job

Project

Client

AECOM 500 Enterprise Drive, Suite 3B Rocky Hill, CT Phone: 860-529-8882 FAX: 860-529-3991

130 Vernon Rd Bolton, CT

280' Guyed Tower

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Transcend Wireless / TWM-005 / -004 Rev. 1

Section No	Elevation ft	Component Type	Condition	Gov, Load	Force	Major Axis Moment	Minor Ax Moment
				Comb.	lb	lb-ft	lb-fi
		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
Т9	122 - 102	Leg	Max Tension	1	0.00	0.00	0.00
		5	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

Job

Project

Client

AECOM 500 Enterprise Drive, Suite 3B Rocky Hill, CT Phone: 860-529-8882 FAX: 860-529-3991

280' Guyed Tower

130 Vernon Rd Bolton, CT

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Designed by

Transcend Wireless / TWM-005 / -004 Rev. 1

MCD

Section No.	Elevation ft	Component Type	Condition	Gov Load	Force	Major Axis Moment	Minor Ax Momen
	C :			Comb.	lb	lb-ft	lb-ft
			Max. Vx	17	878.13	41.19	474.26
		Diagonal	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
			Max. Vx	23	-0.07	0.00	0.00
		Secondary	Max Tension	19	998.86	0.00	0.00
		Horizontal	IVIAX TENSION		770.00	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
			Max, Vx	26	-0.00	0.00	0.00
T10	102 - 82	Leg	Max Tension	1	0.00	0.00	0.00
		0	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
			Max. Vx	28	624.63	-88.63	-792.46
		Diagonal	Max Tension	3	2407.43	0.00	0.00
		Diagonal					
			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
			Max. Vx	23	0.03	0.00	0.00
		Secondary Horizontal	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
			Max. Vx	23	-0.00	0.00	0.00
T11	82 - 78	Leg	Max Tension	1	0.00	0.00	0.00
111	02 - 70	LCB	Max. Compression	7	-54218.39	363.14	-1114.03
			Max, Mx	2	-53131.31		
				7		-1125.02	250.32
			Max. My		-54218.39	363.14	-1114.03
			Max. Vy	2	755.19	-1125.02	250.32
			Max. Vx	7	784.96	363.14	-1114.03
		Diagonal	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
			Max. Vx	23	-0.03	0.00	0.00
		Secondary Horizontal	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
			Max. Vx	23	-0.00	0.00	0.00
T12	78 - 74	Log	Max Tension				
112	/0 - /4	Leg]	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
			Max. Vx	7	-617.07	363.16	-1114.02
		Diagonal	Max Tension	1	0.00	0.00	0.00
			M. C.	2	1751 20	0.00	0.00
			Max. Compression	3	-4754.20	0.00	0.00

tnxTower

Job

Project

Client

AECOM 500 Enterprise Drive, Suite 3B Rocky Hill, CT Phone: 860-529-8882 FAX: 860-529-3991

130 Vernon Rd Bolton, CT

280' Guyed Tower

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Date 09:04:28 04/13/16

Transcend Wireless / TWM-005 / -004 Rev. 1

Section No:	Elevation ft	Component Type	Condition	Gov. Load	Force	Major Axis Moment	Minor Axi. Moment
	5.			Comb.	lb	lb-ft	lb-ft
			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
		Secondary Horizontal	Max Tension	33	785.41	0.00	0.00
		110110011001	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
T13	74 - 70	Leg	Max Tension	1	0.00	0.00	0.00
		0	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
		Diagonal	Max Tension	3	5437.98	0.00	0.00
		DiaBoura	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	0.00
			Max. Vy	28	-5.80	0.00	0.00
			Max. Vx	23	-0.03	0.00	0.00
		Secondary Horizontal	Max Tension	20	956.12	0.00	0.00
		Honzomai	Max. Compression	20	-956.12	0.00	0.00
			Max. Mx	18	701.23	-9.77	0.00
				23		0.00	
			Max. My		946.45		0.00
			Max. Vy Max. Vx	18	9.77	0.00	0.00
TC1 4	70 - 66	T		23	-0.00	0.00	0.00
T14	/0 - 00	Leg	Max Tension	1	0.00	0.00	0.00
			Max. Compression	7	-57043.24	-380.19	721.20
			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
		Diagonal	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		
				11	80.00		
		Gauy P	Bot Cable Tan	11	80.99		
		Guy B	Bot Cable Tan Bottom Tension	14	16041.90		
		Guy B	Bot Cable Tan Bottom Tension Top Tension	14 14	16041.90 16104.50		
		Guy B	Bot Cable Tan Bottom Tension	14	16041.90		

Job

Project

Client

AECOM 500 Enterprise Drive, Suite 3B Rocky Hill, CT

Rocky Hill, CT Phone: 860-529-8882 FAX: 860-529-3991

Transcend Wireless / TWM-005 / -004 Rev. 1

280' Guyed Tower

130 Vernon Rd Bolton, CT

Date 09:04:28 04/13/16 Designed by

MCD

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Page

Section No.	Elevation ft	Component Type	Condition	Gov. Load	Force	Major Axis Moment	Minor Axis Moment
1.01	2	- >pc		Comb.	lb	lb-ft	lb-ft
			Bot Cable Vert	14	-5614.31		
			Bot Cable Norm	14	15027.19		
			Bot Cable Tan	14	76.28		
		Guy C	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 Bot Cable Tan	6	15199.85		
T15	66 - 62	Lag	Max Tension	6 1	80.81 0.00	0,00	0.00
115	00 - 02	Leg	Max. Compression	25	-51687.98	249.30	-1268.41
			Max. Mx	25	-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
		8	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
			Max. Vy	25	-6.77	0.00	0.00
			Max. Vx	13	0.03	0.00	0.00
		Secondary Horizontal	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
			Max, Vy	18	11.06	0.00	0.00
			Max. Vx	23	-0.00	0.00	0.00
T16	62 - 42	Leg	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
			Max. Vy	32	-949.04	-1285.73	-2.27
		D' 1	Max. Vx	8	255.72	469.87	-57.09
		Diagonal	Max Tension	6	4149.45	0.00	0.00
			Max. Compression	23 25	-3605.98	0.00 8.21	0.00
			Max. Mx Max, My	23 7	-140.75 943.04	0.00	0.00 0.05
			Max. Vy	25	-5.81	0.00	0.00
			Max. Vx	7	-0.03	0.00	0.00
		Secondary Horizontal	Max Tension	22	1291.87	0.00	0.00
			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
Г17	42 - 22	Leg	Max Tension	1	0.00	0.00	0.00
			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
		Diagonal	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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LILA I	UNCI

280' Guyed Tower

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Date

AECOM

Job

Project

Client

130 Vernon Rd Bolton, CT

500 Enterprise Drive, Suite 3B Rocky Hill, CT Phone: 860-529-8882 FAX: 860-529-3991

Transcend Wireless / TWM-005 / -004 Rev. 1

Designed by MCD

09:04:28 04/13/16

Section No.	Elevation ft	Component Type	Condition	Gov, Load Comb	Force lb	Major Axis Moment Ib-ft	Minor Axis Moment Ib-ft
		Secondary Horizontal	Max Tension	22	1318.96	0.00	0.00
			Max. Compression	22	-1318.96	0.00	0.00
			Max. Mx	18	743.81	-9.77	0.00
			Max. My	23	1275.69	0.00	0.00
			Max. Vy	18	9.77	0.00	0.00
			Max, Vx	23	-0.00	0.00	0.00
T18	22 - 2	Leg	Max Tension	1	0.00	0.00	0.00
		0	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
		0	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.	Vertical	Horizontal, X	Horizontal, Z	
		Load	lb	lb	lb	
		Comb.				
Guy C @ 213 ft Elev -17.5 ft	Max. Vert	13	-2252,24	-1713.66	988.33	
Azimuth 240 deg						
	Max. H _x	13	-2252.24	-1713.66	988.33	
	Max. Hz	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 ₁ H _z	13	-2252.24	-1713,66	988.33	
Guy B @ 205 ft Elev -7.5 ft	Max. Vert	7	-2146.11	1648.67	951.30	
Azimuth 120 deg		22	(15(0.10	(0100.10	20205 50	
	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	

tnxTower	Job 280' Guyed Tower	Page 49 of 65
AECOM 500 Enterprise Drive, Suite 3B	Project 130 Vernon Rd Bolton, CT	Date 09:04:28 04/13/16
Rocky Hill, CT Phone: 860-529-8882 FAX: 860-529-3991	Client Transcend Wireless / TWM-005 / -004 Rev. 1	Designed by MCD

Location	Condition	Gov. Load Comb	Vertical lb	Horizontal, X lb	Horizontal, 2 lb
	Max, H _x	31	-35003.49	2958.58	-42181.18
	Max, Hz	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. Hz	27	-63416.90	14.51	-77915.06
Mast	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	I	0.00	0,20	-11.31
	Max. Mz	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. Hz	10	119981.00	26.81	-4381,23
	Min. M _x	1	0.00	0.20	-11.31
	Min. Mz	1	0.00	0.20	-11.31
	Min. Torsion	31	-1200.92	3343.75	61.74

Tower Mast Reaction Summary

Load Combination	Vertical	Shear _x	Shearz	Overturning Moment, M_x	Overturning Moment, Mz	Torque
P 101	<i>lb</i>	lb	<i>lb</i>	lb-ft	lb-ft	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

tnxTower

Job

Project

Client

AECOM 500 Enterprise Drive, Suite 3B Rocky: Hill, CT Phone: 860-529-8882 FAX: 860-529-3991

130 Vernon Rd Bolton, CT

280' Guyed Tower

Page 50 of 65 Date 09:04:28 04/13/16 Designed by

Transcend Wireless / TWM-005 / -004 Rev. 1

Load Combination	Vertical	Shear _x	Shearz	Overturning Moment, M_{τ}	Overturning Moment, M₂	Torque
	lb	lb	lb	lb-ft	lb-fi	lb-ft
Dead+Wind 0	165142.97	-13.35	-3293.83	0.00	0.00	-126.95
deg+Ice+Temp+Guy Dead+Wind 30 deg+Ice+Temp+Guy	165768.25	1706.13	-2769.51	0.00	0.00	-105.15
Dead+Wind 45 deg+Ice+Temp+Guy	165073.07	2405.71	-2279.97	0.00	0.00	-353.66
Dead+Wind 60 deg+Ice+Temp+Guy	164417.21	2915.15	-1669.40	0.00	0.00	-884.95
Dead+Wind 90 deg+Ice+Temp+Guy	165550.25	3276.33	-82.86	0.00	0.00	-1407.99
Dead+Wind 120 deg+Ice+Temp+Guy	166472.47	2817.13	1640.49	0.00	0.00	-746.23
Dead+Wind 135 deg+Ice+Temp+Guy	165285.30	2290.12	2376.43	0.00	0.00	-267.54
Dead+Wind 150 deg+Ice+Temp+Guy	165003.30	1544.79	2906.47	0.00	0.00	153.19
Dead+Wind 180 deg+Ice+Temp+Guy	163556.01	-13.81	3392.69	0.00	0,00	309.84
Dead+Wind 210 deg+Ice+Temp+Guy	165383.70	-1565.54	2888.85	0.00	0.00	300.92
Dead+Wind 225 deg+Ice+Temp+Guy	165228.01	-2317.99	2366.82	0.00	0.00	566.25
Dead+Wind 240 deg+Ice+Temp+Guy	165835.96	-2862.59	1652.09	0.00	0.00	861.14
Dead+Wind 270 deg+Ice+Temp+Guy	164881.64	-3343.75	-61.74	0.00	0.00	1200.92
Dead+Wind 300 deg+Ice+Temp+Guy	164458,81	-2970.04	-1685.70	0.00	0.00	567.50
Dead+Wind 315 deg+Ice+Temp+Guy	164666.61	-2452.24	-2323.78	0.00	0.00	137.29
Dead+Wind 330 deg+Ice+Temp+Guy	164747.94	-1748.09	-2829.13	0.00	0.00	-162.44
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

tnxTower	Job 280' Guyed Tower	Page 51 of 65
AECOM 500 Enterprise Drive, Suite 3B	Project 130 Vernon Rd Bolton, CT	Date 09:04:28 04/13/16
Rocky Hill, CT Phone: 860-529-8882 FAX: 860-529-3991	Client Transcend Wireless / TWM-005 / -004 Rev. 1	Designed by MCD

Load Combination	Vertical	Shear _x	Shearz	Overturning Moment, M _x	Overturning Moment, M ₂	Torque
	lb	lb	lb	lb-ft	lb-ft	lb-ft
Service+Guy Dead+Wind 330 deg -	97468.72	-795.38	-1407.96	0.00	0.00	-9.64
Service+Guy	97408.72	-795.56	-1407.90	0.00	0.00	-9.04

Solution Summary

	Su	im of Applied Force	6		Sum of Reaction	10	
Load	PX	рү прриси 1 отес. РҮ	PZ	PX	ΡΥ	PZ	% Error
Comb.	lb	lb	lb	lb	lb	lb	70 EI 101
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%

tnxTower	Job	280' Guyed Tower	Page 52 of 65
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	Sum of Applied Forces						
Load	PX	PY	PZ	PX	PY	PZ	% Error
Comb.	lb	lb	lb	lb	lb	lb	
50	-11049.18	-38325.42	-19409.12	11049,74	38325.40	19406.83	0.005%

Non-Linear Convergence Results

Load	Converged?	Number	Displacement	Force
Combination	Convergeu	of Cycles	Tolerance	Tolerance
1	Yes	10	0.00000001	0.00005501
2	Yes	20	0.00005317	0.00003501
3	Yes	19	0.00006820	0.00004878
4	Yes	18	0.00008262	0.00005531
5	Yes	18	0.00000202	
6	Yes	13		0.00006389
7	Yes	20	0.00009614	0.00007150
8		20	0.00007590	0.00006561
8	Yes		0.00005941	0.00004903
-	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	0.0000001	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	10	0.00000001	0.00005255
40	Yes	12	0.00000001	0.00003669
40	Yes	12	0.00000001	0.00008693
42	Yes	11	0.00000001	0.00005145
43	Yes	10	0.00000001	0.00005524
43	Yes	10	0.00000001	0.00005149
44	Yes	11	0.00000001	
45 46				0.00007935
	Yes	12	0.00000001	0.00003111
47	Yes	11	0.0000001	0.00004551
48	Yes	10	0.00000001	0.00004773
49	Yes	10	0.0000001	0.00007741
50	Yes	-11	0.0000001	0.00004307

tnxTower	Job	280' Guyed Tower	Page 53 of 65
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		Maximum	Tower I	Deflection	s - Service Wine
Section No.	Elevation	Horz. Deflection	Gov. Load	Tilt	Twist
110	ft	in	Comb.	ø	ø
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
Т6	182 - 162	2.702	43	0.0323	0.0703
T7	162 - 142	2.662	44	0.0386	0.0578
Т8	142 - 122	2.463	46	0.0602	0.0335
Т9	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	Appurtenance	Gov. Load	Deflection	Tilt	Twist	Radius of Curvature
ft		Comb.	in	٥	0	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	l' 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

tnxTower	Job 280' Guyed Tower	Page 54 of 65
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Elevation	Appurtenance	Gov.	Deflection	Tilt	Twist	Radius of
		Load				Curvature
ft		Comb.	in	0	0	ft
70.00	Guy	46	1.945	0.0723	0.0217	27859

Maximum Tower Deflections - Design Wind

Section	Elevation	Horz.	Gov.	Tilt	Twist
No.		Deflection	Load		
	ft	in	Comb.	o	ø
T1	282 - 262	13.063	20	0.2945	0.4596
T2	262 - 242	12.979	20	0.2943	0.4239
Т3	242 - 222	12.848	7	0.2291	0.3791
Т4	222 - 202	13.622	7	0,1856	0.3201
T5	202 - 182	14.090	7	0.1718	0.2958
Т6	182 - 162	14.557	7	0.1561	0.2856
Τ7	162 - 142	14.493	7	0.2848	0.2313
Т8	142 - 122	13.657	7	0.3448	0.1493
Т9	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	Appurtenance	Gov. Load	Deflection	Tilt	Twist	Radius of Curvature
ſt		Comb.	īn	0	•	fi
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

tnxTower	Job 280' Gu	ved Tower 55 of 65
AECOM 500 Enterprise Drive, Suite 3B	Project 130 Vernon	Rd Bolton, CT Date 09:04:28 04/13/16
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Elevation	Appurtenance	Gov. Load	Deflection	Tilt	Twist	Radius of Curvature
A		Comb.	în	0	0	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 ft	Size	Initial Tension lb	Breaking Load lb	Actual T lb	Allowable T _a lb	Required S.F.	Actual S.F.
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
Т8	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
Γ14	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

tnxTower

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Client Transcend Wireless / TWM-005 / -004 Rev. 1

Designed by MCD

Leg Design Data (Compression)

Section No.	Elevation	Size	L	L_u	Kl/r	Mast Stability	F_a	А	Actual P	Allow Pa	Ratio P
	ft		ft	ft		Index	ksi	in^2	lb	lb	Pa
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
Т3	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
Т7	162 - 142	2	20.00	2.00	48.0 K=1.00	1.00	22,528	3.1416	-51927.40	70773.60	0.734
Т8	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	Size	L	L _u	Kl/r	<i>F</i> _a	А	Actual P	Allow	Ratio	
	ft		ft	ſt		ksi	in ²	lb	lb		
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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AECOM 500 Enterprise Drive, Suite 3B	Project 130 Vernon Rd Bolton, CT	Date 09:04:28 04/13/16
Rocky Hill, CT Phone: 860-529-8882 FAX: 860-529-3991	Client Transcend Wireless / TWM-005 / -004 Rev. 1	Designed by MCD

Section No	Elevation	Size	L	L_{ii}	Kl/r	Fa	A	Actual P	Allow P _a	Ratio P
	ft		ft	ft		ksi	in^2	lb	lb	Pa
					K=0.50					V
T2	262 - 242	7/8	5.66	5.42	148.7 K=0.50	6.754	0.6013	-2025,78	4061.32	0.499
Т3	242 - 222	7/8	5.66	5.42	148.7 K=0,50	6.754	0,6013	-1803.62	4061 32	0,444
T4	222 - 202	SR7/8+L2_5x2_5x0_25	5.66	5.42	53.0 K=0,50	18.081	2.0910	-3924.98	37807.40	0.104
Т5	202 - 182	SR7/8+L2.5x2.5x0.25	5.66	5.42	53.0 K=0.50	18.081	2.0910	-9790_53	37807.40	0.259
T 6	182 - 162	7/8	5.66	5.42	148.7 K=0.50	6,754	0.6013	-1682.32	4061.32	0.414
Τ7	162 - 142	7/8	5,66	5.42	148.7 K=0.50	6.754	0.6013	-4068.51	4061.32	1.002
Т8	142 - 122	SR7/8+L2,5x2,5x0.25	5.66	5.42	53.0 K=0.50	18.081	2.0910	-12388.70	37807.40	0.328
T9	122 - 102	SR7/8+L2.5x2.5x0.25	5.66	5.42	53.0 K=0.50	18.081	2.0910	-4637.78	37807.40	0.123
T10	102 - 82	7/8	5.66	5.42	148.7 K=0.50	6.754	0.6013	-3257.37	4061.32	0.802
T11	82 - 78	7/8	5.66	5.42	148.7 K=0.50	6.754	0.6013	-270.42	4061.32	0.067
T12	78 - 74	7/8	5.66	5.42	74.3 K=0.25	15.972	0.6013	-4754,20	9604.51	0.495
T13	74 - 70	7/8	5.66	5.42	148.7 K=0.50	6.754	0.6013	-343.16	4061.32	0.084
T14	70 - 66	7/8	5.66	5.42	148.7 K=0.50	6.754	0.6013	-379.69	4061.32	0.093
T15	66 - 62	7/8	5.66	5,42	74.3 K=0.25	15,972	0.6013	-5176.02	9604.51	0.539
T16	62 - 42	7/8	5.66	5.41	148.5 K=0.50	6.771	0.6013	-3605.98	4071.37	0.886
T17	42 - 22	7/8	5.66	5.41	148.5 K=0.50	6,771	0.6013	-1912.45	4071.37	0.470
T18	22 - 2	7/8	5.66	5.41	148.5 K=0.50	6.771	0.6013	-3393.49	4071.37	0.833

Secondary Horizontal Design Data (Compression)

Section No	Elevation	Size	L	L_{u}	Kl/r	F_a	A	Actual P	Allow, P _a	Ratio P
	ft		ft	ft		ksi	in ²	lb	lb	Pat
T1	282 - 262	L2 1/2x2x3/16	4.00	3.83	107.7 K=1.00	11.976	0.8090	-251.46	9688.31	0.026
T2	262 - 242	L2 1/2x2x3/16	4.00	3.83	107.7 K=1.00	11.976	0.8090	-394.04	9688,31	0.041
Т3	242 - 222	L2 1/2x2x3/16	4.00	3.83	107.7 K=1.00	11.976	0,8090	-390.20	9688.31	0.040
T4	222 - 202	L2 1/2x2x3/16	4.00	3.83	107.7 K=1.00	11.976	0.8090	-364.65	9688.31	0.038
Т5	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	Size	L	L_u	Kl/r	F_a	А	Actual P	Allow. P _a	Ratio P
	ft		ft	ft		ksi	in^2	lb	lb	Pa
					K=1.00					~
Т6	182 - 162	L2 1/2x2x3/16	4.00	3.83	107.7 K=1.00	11.976	0.8090	-959.31	9688.31	0.099
Τ7	162 - 142	L2 1/2x2x3/16	4.00	3.83	107.7 K=1.00	11.976	0.8090	-899,41	9688.31	0.093
Т8	142 - 122	L2 1/2x2x3/16	4.00	3.83	107.7 K=1.00	11.976	0.8090	-1135.91	9688.31	0.117
Т9	122 - 102	L2 1/2x2x3/16	4.00	3.83	107.7 K=1.00	11.976	0.8090	-998.86	9688.31	0.103
T 10	102 - 82	L2 1/2x2x3/16	4.00	3.83	107.7 K=1.00	11.976	0.8090	-1028.86	9688.31	0.106
T11	82 - 78	L2 1/2x2x3/16	4,00	3.83	107.7 K=1.00	11.976	0.8090	-939.09	9688,31	0.097
T 12	78 - 74	L2 1/2x2x3/16	4.00	3.83	107.7 K=1.00	11.976	0.8090	-599.65	9688.31	0.062
T13	74 - 70	L2 1/2x2x3/16	4.00	3.83	107.7 K=1.00	11.976	0.8090	-956.12	9688;31	0.099
T14	70 - 66	L2 1/2x2x3/16	4.00	3.83	107.7 K=1.00	11.976	0.8090	-758.88	9688.31	0.078
T15	66 - 62	L2 1/2x2x3/16	4.00	3,83	107.7 K=1.00	11.976	0.8090	-895.26	9688.31	0.092
T16	62 - 42	L2 1/2x2x3/16	4.00	3.83	107.6 K=1.00	11.993	0.8090	-1291.87	9702,60	0,133
T17	42 - 22	L2 1/2x2x3/16	4.00	3.83	107.6 K=1.00	11.993	0.8090	-1318.96	9702.60	0.136
T18	22 - 2	L2 1/2x2x3/16	4.00	3.83	107.6 K=1.00	11.993	0.8090	-1240.38	9702.60	0.128

* DL controls

Top Girt Design Data (Compression)										
Section No.	Elevation	Size	L	L _u	Kl/r	F_{a}	A	Actual P	Allow. Pa	Ratio P
	ft		ft	ft		ksi	in ²	lb	Ιb	Pa
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 I	Top Guy Pull-Off Design Data (Compression)							
Section No.	Elevation	Size	L	L _u	Kl/r	F _a	A	Actual P	Allow. Pa	Ratio P
	ft		ft	ft		ksi	in^2	lb	lb	P_{a}
Т5	202 - 182	L4x4x3/8	4.00	3.83	58.4 K=1.00	17.585	2.8600	-5822.44	50292.20	0.116
Т8	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	Elevation	Size	L	L_{μ}	Kl/r	F_a	A	Actual	Allow	Ratio
No								Р	P_{a}	Р
	ft		ft	ft		ksi	in^2	lb	lb	Pa

Bottom Guy Pull-Off Design Data (Compression)

Section No	Elevation	Size	L	L_{μ}	Kl/r	F_a	A	Actual P	Allow Pa	Ratio P
	ft		ft	ft		ksi	in ²	lЬ	lb	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

Section No.	Elevation	Size	L	L _u	Kl/r	F_{a}	A	Actual P	Allow. Pa	Ratio P
	ft		ft	ft		ksi	in ²	lb	lb	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
Т5	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
Т8	142 - 122 (722)	L4x4x3/8	7.48	7.40	112.6 K=1.00	11.313	2.8600	-21511.40	32355.50	0.665
Т8	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
Τ8	142 - 122 (732)	L4x4x3/8	7.48	7.40	112,6 K=1.00	11,313	2.8600	-21353.80	32355.50	0,660
Т8	142 - 122 (737)	L4x4x3/8	7.48	7.40	112.6 K=1.00	11.313	2.8600	-20501.70	32355.50	0.634
Т8	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

tnxTower

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_	Transcend Wireless / TWM-005 / -004 Rev. 1	MCD

Leg Design Data (Tension)

Section No.	Elevation	Size	L	L_{μ}	Kl/r	F_a	A	Actual P	Allow. Pa	Ratio P
	ft		ft	ft		ksi	in^2	lb	lb	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
Τ7	162 - 142	2	20.00	2.00	48.0	27.000	3,1416	7378.06	84823.00	0.087
Т8	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	Size	L	Lu	Kl/r	F _a	А	Actual P	Allow. P _a	Ratio P
	ft		ft	ft		ksi	in ²	lb	lb	P_{d}
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
Т5	202 - 182	SR7/8+L2.5x2.5x0.25	5.66	5,42	106.0	21.600	2.0910	4735.81	45165.60	0.105
Т6	182 - 162	7/8	5.66	5.42	297.4	21.600	0.6013	1680.84	12988,50	0.129
Т7	162 - 142	7/8	5.66	5.42	297.4	21.600	0.6013	3954.54	12988.50	0.304
Т8	142 - 122	SR7/8+L2.5x2.5x0.25	5.66	5.42	106.0	21.600	2,0910	5179.33	45165.60	0_115
Т9	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	Size	L	L_{μ}	Kl/r	F_a	A	Actual P	Allow Pa	Ratio P
	ft		ft	ft		ksi	in ²	lb	lb	<i>P</i> _#
										4
T16	62 - 42	7/8	5.66	5.41	297.0	21.600	0.6013	4149,45	12988.50	0.31
T17	42 - 22	7/8	5.66	5.41	297.0	21.600	0.6013	1205.02	12988.50	0.09
117		//0	5.00	5.11	297:0	21.000	0.0015	1205.02	12900.90	0.07.
T18	22 - 2	7/8	5,66	5.41	297.0	21.600	0.6013	2575.40	12988.50	0.19

Secondary Horizontal Design Data (Tension)

Section No.	Elevation	Size	L	L_{μ}	Kl/r	F_a	A	Actual P	Allow	Ratio
NO.	ft		ft	ft		ksi	in ²	P lb	P_a lb	$\frac{P}{P_a}$
T1	282 - 262	L2 1/2x2x3/16	4.00	3.83	76.7	21.600	0.8090	305.27	17474.40	0.017
Τ2	262 - 242	L2 1/2x2x3/16	4.00	3,83	76.7	21.600	0.8090	394.04	17474.40	0.023
Т3	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
Τ7	162 - 142	L2 1/2x2x3/16	4.00	3.83	76.7	21,600	0.8090	899.41	17474.40	0,051
Т8	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

tnxTower

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* DL controls

Top Guy Pull-Off Design Data (Tension)

Section No.	Elevation	Size	L	L_u	Kl/r	F_{a}	A	Actual P	Allow, P _a	Ratio P
	ft		ft	ft		ksi	in^2	lb	lb ³	Pa
Т5	202 - 182	L4x4x3/8	4.00	3.83	37.4	21.600	2,8600	19707.50	61776.00	0.319
Т8	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	Elevation	Size	L	Lu	Kl/r	F _a	A	Actual	Allow	Ratio
No.	ft		ft	ft		ksi	in ²	P lb	P_a lb	P.
T5	202 - 182	L4x4x3/8	4.00	3.83	37,4	21.600	2.8600	3110.94	61776.00	0.050
Т8	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	Elevation	Size	L	Lu	Kl/r	F_a	A	Actual	Allow.	Ratio
No.								P	P_a	Р
	ft		ft	ft		ksi	in ²	lb	lb	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
	. ,									1
Т5	202 - 182 (705)	L4x4x3/8	7.48	7.40	72.2	21.600	2.8600	22736.90	61776.00	0.368
	()	2 Million D			1212	2110000	2.0000	22750.50	01770:00	0.500
Т5	202 - 182 (706)	L4x4x3/8	7.48	7.40	72.2	21.600	2.8600	22639.40	61776.00	0.366
15	202 - 182 (700)	L4X4X3/0	7.40	7,40	12.2	21.000	2.8000	22039.40	01770.00	0.300
(The	202 182 (711)	T 4 4 2/0	7.40	7.40	70.0	01 (00	0.0(00		(155(00	
T5	202 - 182 (711)	L4x4x3/8	7.48	7.40	72.2	21.600	2.8600	22470,90	61776,00	0.364
										Lar.
T5	202 - 182 (712)	L4x4x3/8	7.48	7.40	72.2	21,600	2.8600	23448.00	61776.00	0.380
Т8	142 - 122 (717)	L4x4x3/8	7.48	7.40	72.2	21.600	2.8600	21285.10	61776.00	0.345
										V
Τ8	142 - 122 (718)	L4x4x3/8	7.48	7.40	72,2	21.600	2,8600	21777.30	61776.00	0.353
										1
Т8	142 - 122 (729)	L4x4x3/8	7.48	7.40	72.2	21.600	2.8600	20677.20	61776.00	0.335
		LIN MOTO		/	,	21.000	2.0000	2007720	01770.00	
Т8	142 - 122 (730)	L4x4x3/8	7.48	7.40	72.2	21,600	2.8600	20732.90	61776.00	0.226
10	(-2 - 122(750))	L47472/0	/ 40	7,40	12.2	21.000	2.0000	20132.90	01770.00	0.336
										1 million

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500 Enterprise Drive, Suite 3B	130 Vernon Rd Bolton, CT	09:04:28 04/13/16
Rocky Hill, CT Phone: 860-529-8882 FAX: 860-529-3991	Client Transcend Wireless / TWM-005 / -004 Rev. 1	Designed by MCD

Section	Elevation	Size	L	L_{μ}	Kl/r	F_{a}	А	Actual	Allow.	Ratio
No								P	P_a	Р
	ft		ft	ft		ksi	in ²	lb	lb	P_a
T8	142 - 122 (735)	L4x4x3/8	7.48	7.40	72.2	21.600	2,8600	20824.60	61776.00	0.337
Т8	142 - 122 (736)	L4x4x3/8	7.48	7.40	72.2	21.600	2.8600	21303.50	61776.00	0.345

		Tor	que-Arr	n Bot	tom D)esign	Data			
Section No	Elevation	Size	L	Lu	Kl/r	F _a	A	Actual P	Allow. P _a	Ratio P
	ft		ft	ft		ksi	in^2	lb	lb	
T5	202 - 182 (698)	L4x4x3/8	7.48	7.40	72.2	21,600	2,8600	560.74	61776.00	0.009
										1
T5	202 - 182 (699)	L4x4x3/8	7.48	7.40	72.2	21.600	2.8600	567.84	61776.00	0.009
Т5	202 - 182 (707)	L4x4x3/8	7.48	7.40	72.2	21.600	2.8600	789.81	61776.00	0.013
										V
T5	202 - 182 (708)	L4x4x3/8	7.48	7,40	72.2	21.600	2.8600	957.43	61776.00	0.015
										Land Land
T5	202 - 182 (713)	L4x4x3/8	7.48	7.40	72.2	21.600	2.8600	763.93	61776.00	0.012
										V
T5	202 - 182 (714)	L4x4x3/8	7.48	7.40	72,2	21.600	2.8600	941.30	61776.00	0.015
										Les la constante de la constan
Т8	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
										Les la
Т8	142 - 122 (731)	L4x4x3/8	7.48	7.40	72.2	21.600	2.8600	5534.79	61776.00	0.090
										Le la
Т8	142 - 122 (732)	L4x4x3/8	7.48	7.40	72.2	21,600	2.8600	5607.39	61776.00	0.091
Т8	142 - 122 (737)	L4x4x3/8	7.48	7.40	72.2	21.600	2.8600	4998.60	61776.00	0.081
Т8	142 - 122 (738)	L4x4x3/8	7.48	7.40	72.2	21,600	2.8600	5191.78	61776.00	0.084
										V

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
Т3	242 - 222	Leg	2	100	-22528.10	94341.21	23.9	Pass
Т4	222 - 202	Leg	2	148	-21053.20	94341.21	22.3	Pass
Т5	202 - 182	Leg	2	198	-42573.10	94341.21	45.1	Pass
Т6	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
Τ8	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

tnxTower

AECOM 500 Enterprise Drive, Suite 3B Rocky Hill, CT Phone: 860-529-8882 FAX: 860-529-3991

Job		Page
	280' Guyed Tower	64 of 65
Project		Date
	130 Vernon Rd Bolton, CT	09:04:28 04/13/16
Client		Designed by
	Transcend Wireless / TWM-005 / -004 Rev. 1	MCD

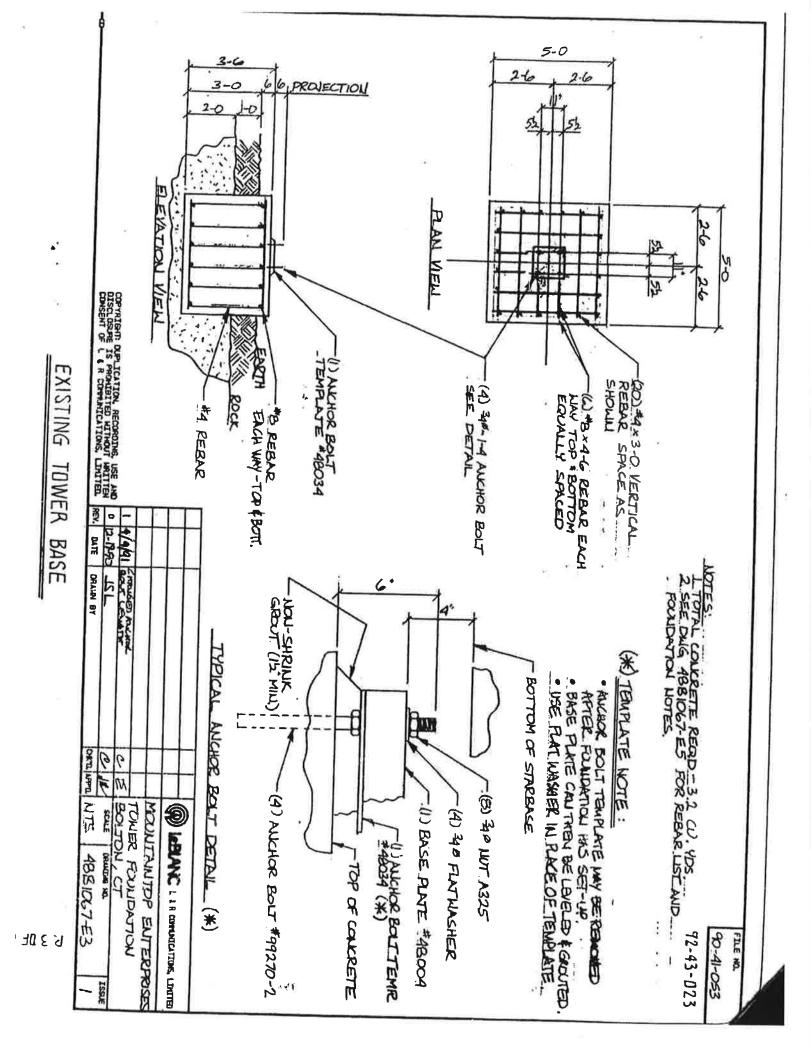
Section No.	Elevation ft	Component Type	Size	Critical Element	P lb	SF*P _{allow} lb	% Capacity	Pass Fail
T10	102 - 82	Leg	2	436	-59401.40	94341.21	63.0	Pass
T11	82 - 78	Leg	2	486	-54218.40	94341.21	57.5	Pass
T12	78 - 74		2	480	-34218.40	75128.80	46.1	
T12 T13	78 - 74 74 - 70	Leg	2	496 510			40.1 58.5	Pass
T14		Leg			-55201.40	94341.21		Pass
	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
Т5	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
Т8	142 - 122	Diagonal	SR7/8+L2.5x2.5x0.25	356	-12388.70	50397,26	24.6	Pass
Т9	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	
T18	42 - 22		7/8	648	-3393.49	5427.14	62,5	Pass
		Diagonal						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
Т7	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
TI	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@190 Guy A@128	11/16	734	17639.30	25000.00	70.6	
18 T14		Guy A $@728$ Guy A $@70$						Pass
	70 - 66 282 - 262		11/16	741	16370.40	25000.00	65.5	Pass
T1		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
Т5	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 Pull-Off@196	L4x4x3/8	696	19707.50	82347.40	23.9	Pass
Т8	142 - 122	Top Guy	L4x4x3/8	720	23464.20	82347.40	28.5	Pass

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

Section	Elevation	Component	Size	Critical	Р	SF*Pallow	%	Pass
No.	ft	Туре		Element	lb	lb	Capacity	Fail
		Pull-Off@128						
T5	202 - 182	Bottom Guy	L4x4x3/8	700	-3724.13	67039.50	5.6	Pass
		Pull-Off@196						
T8	142 - 122	Bottom Guy	L4x4x3/8	726	10674.60	82347.40	13.0	Pass
		Pull-Off@128						
Т5	202 - 182	Torque Arm	L4x4x3/8	694	23722.60	82347.40	28.8	Pass
		Top@196						
Т8	142 - 122	Torque Arm	L4x4x3/8	718	21777.30	82347.40	26.4	Pass
		Top@128						
T5	202 - 182	Torque Arm	L4x4x3/8	698	-23223.80	43129,88	53.8	Pass
		Bottom@196						
Τ8	142 - 122	Torque Arm	L4x4x3/8	723	-21741.60	43129.88	50.4	Pass
		Bottom@128					0	
							Summary	-
						Leg (T17)	69,5	Pass
						Diagonal	76.3	Pass
						(T1)	10.2	D
						Secondary Horizontal	10.2	Pass
						(T17)		
						Top Girt	7.6	Pass
						(T1)	7.0	rass
						Guy A (T5)	71.4	Pass
						Guy B (T5)	71.4	Pass
						Guy C (T5)	73.1	Pass
						Top Guy	28.5	Pass
						Pull-Off	20.0	1 433
						(T8)		
						Bottom Guy	13.0	Pass
						Pull-Off		1 400
						(T8)		
						Torque Arm	28.8	Pass
						Top (T5)		
						Torque Arm	53.8	Pass
						Bottom (T5)		
						RATING =	76.3	Pass

Program Version 7.0.5.1 - 2/1/2016 File:P:/Projects/Telcom/Structurals_By_Location/Connecticut/Bolton280'Guyed/5_TWM-005 - 004R1/ERI/Solution 2 - TIA_F_280' Guyed Tower Bolton, CT.eri

FOUNDATION ANALYSIS - TIA-222-F



Job Bolton, Ct Tower Mod. F. Cations		Page of
	Project No. Two-005 foo4 Rev.1	Sheet of
Description Foundation Analysis WTIA-F	Computed by MCD	Date 4/5/2016
Standard	Checked by	Date

Reference

Check-Foundation Bearing

Sconcrete = 150PCF

Foundation width of Base = 51-01'

Foundation thickness of Base=5-6"

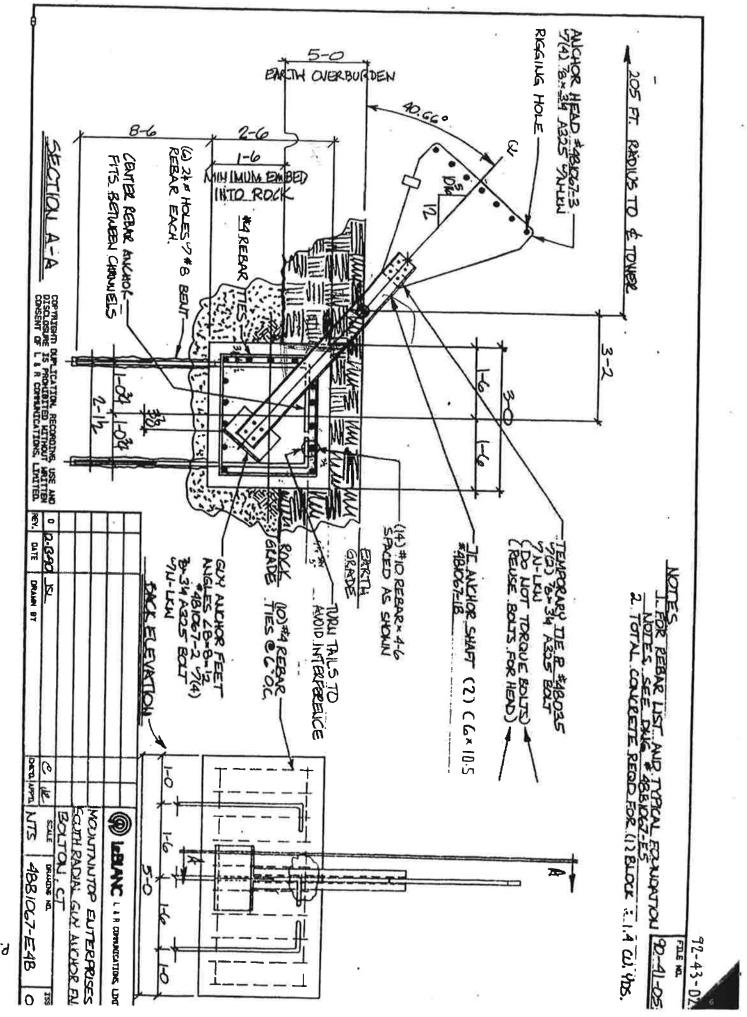
Concrete (DL) of Foundation = 5'x5'x3.5'x150Pcf=13,125165 Compression of Loaded tower = $166,47 \ge 165$

Total Dead Load Compressive force = 166, 472/165 + 13, 125/165 = 179,597 165

Allowable Bearing Pressure = 10TS f=20,000 16/sf (Geotech Page 2)

Bearing capacity = Petwortfandation) = 179,597 115 = 7184 PSF Afoundation = 51×51 = 7184 PSF

TIA- Bearing Capacity = $\frac{7184}{29000}$ psf = $\frac{35.9\%}{29000}$



EXISTING SOUTH GUY ANCHOR

•*

049

AECOM Job Balton, C+ + ower Madif. (atim S Description Foundation Analysis W/T=A-F Standard Project No. Thum-ous/-auguar Sheet _____ of ____ Computed by MCD _____ Date _____

Reference

Check Guyad Anchor:

- · Existing foundation anchored to Rock, therefore, check anchor Connected to Rock capacities
- Pallow = Lb * Dholex(Fu) * tr

= 16022165/91000

twallow = working bond stress =: 50Psi = 2rB:(Y2 ultimato strengtrn) = 2 = 50Psi = 20Psi =

#9nchors=6=16,022 ×6=96,132.71bs Anchor (maximum) velify force (TAX) = 63,417165UPliF+ Capacity Check = 63,417 = 66% - 64%

Shearresistance (Shear Bear: No to Rock) htrock hwidth x Surfacear on Pressure = 1-6"x51-0"x5tsf, 2000 lbs = 75,000 lbs Anlow 1+00 = 75,000 lbs

Apply surface Friction to shear resistance = 75,000 - 93,750165

Maximum Anchorstrar= 79,302 (bf (fix))

Shear capacity check = 79302165 = 84.6%

Note: Above calculation is Not considering the Steel Anchor Capacity against Shear & Considering Steel Reinforcement,

AECOM		
Nolling to at Mad turk is	- - / 0 - /	Page of
Job Belton, Cf tower Moditications	Project No. Twm-cost-cay.Rev1	Sheet of
Description Foundation Analysis WTIAF	Computed by MCD	Date 4/5/2016
Standard	Checked by	Date
		D (

Reference

Check tension A achor Steel 1
(6)
$$4^{11}$$
 diventer -2 $\frac{tr}{4}(1)^2 = 0.78543 \times 40 = 31,437 \times 6 = 188,623.16F$
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About AECOM

AECOM (NYSE: ACM) is a global provider of professional technical and management support services to a broad range of markets, including transportation, facilities, environmental, energy, water and government. With approximately 45,000 employees around the world, AECOM is a leader in all of the key markets that it serves. AECOM provides a blend of global reach, local knowledge, innovation, and collaborative technical excellence in delivering solutions that enhance and sustain the world's built, natural, and social environments. A Fortune 500 company, AECOM serves clients in more than 100 countries and has annual revenue in excess of \$6 billion.

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500 Enterprise Drive, Suite 3B Rocky Hill, CT 06067 860-529-8882 Fax: 860-529-3991

T-MOBILE NORTH

CT11180C **BOLTON CT.**

130 VERNON ROA BOLTON, CT 0604



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GENERAL NOTES

VICINITY MAP

Echo Dr

Brent Dr

Mountain Q

R

SITE

DO NOT SCALE DRAWINGS

CONTRACTOR SHALL VERIFY PLANS AND EXISTING DIMENSIONS AND

CONDITIONS ON THE JOB SITE AND SHALL IMMEDIATELY NOTIFY THE

ARCHITECT IN WRITING OF ANY DISCREPANCIES BEFORE PROCEEDING

WITH THE WORK OR BE RESPONSIBLE FOR SAME.

COLOR CODE FOR UTILITY LOCATIONS

SEWER

ELECTRIC - RED

WATER

TEL/CATV - ORANGE

GAS/OIL - YELLOW SURVEY

– BLUE

CALL:

'CALL BEFORE YOU DKI'

WWW.CBYD.COM

CALL 81, OR 1-800-922-4455

CALL THREE WORKING DAYS PRIOR TO DIGGING

RECLAIMED WATER

SAFETY PREDAUTIONS SHALL BE IMPLISEDTED BY CONTRACTOR'S) AT ALL TREDHOME IN ACCORDANCE WITH CLASSENT CON STANDARDS.

PROPOSED EXCAVATION - WHITE

Grief Rd

Colonial Rd

CALLED NORTH

- GREEN

- PINK

– PURPLE

Boston Tpke

202

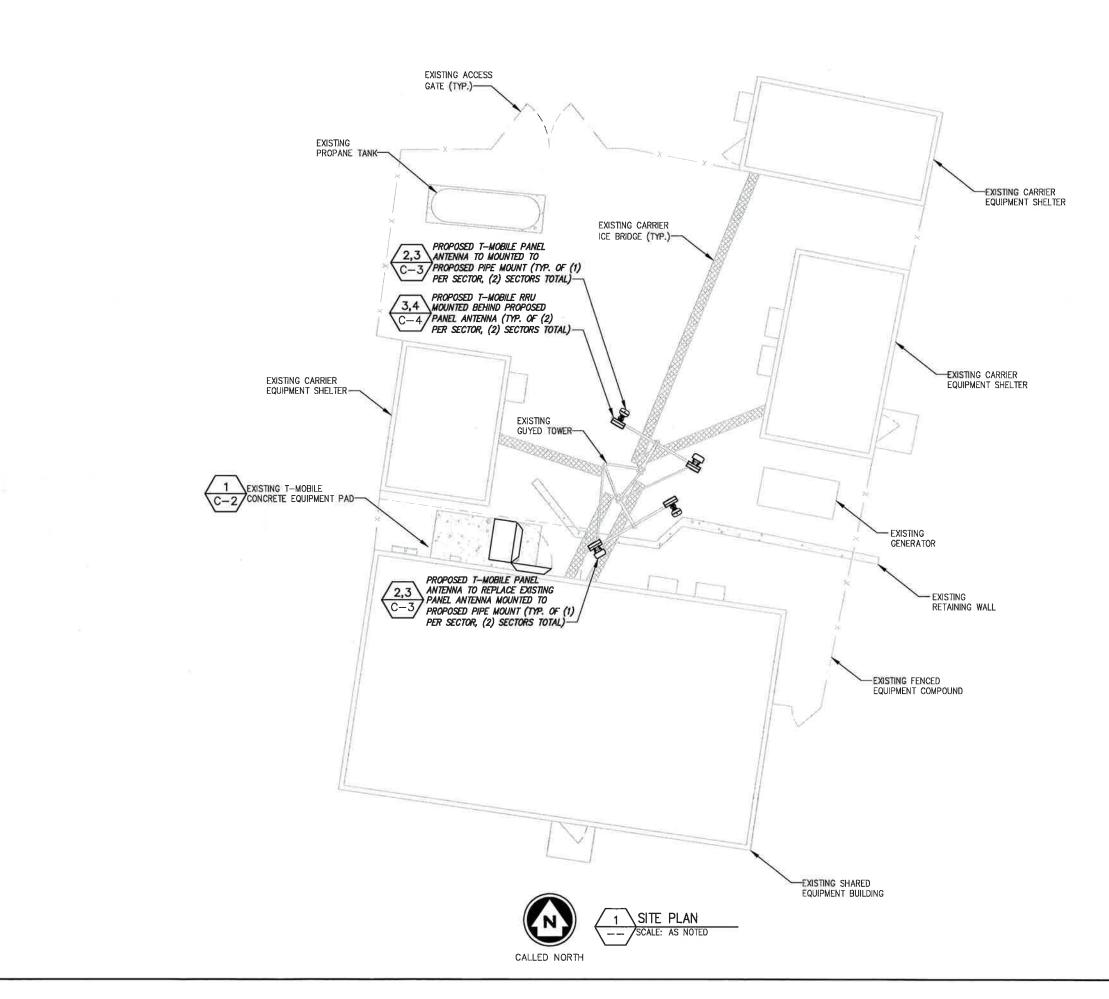
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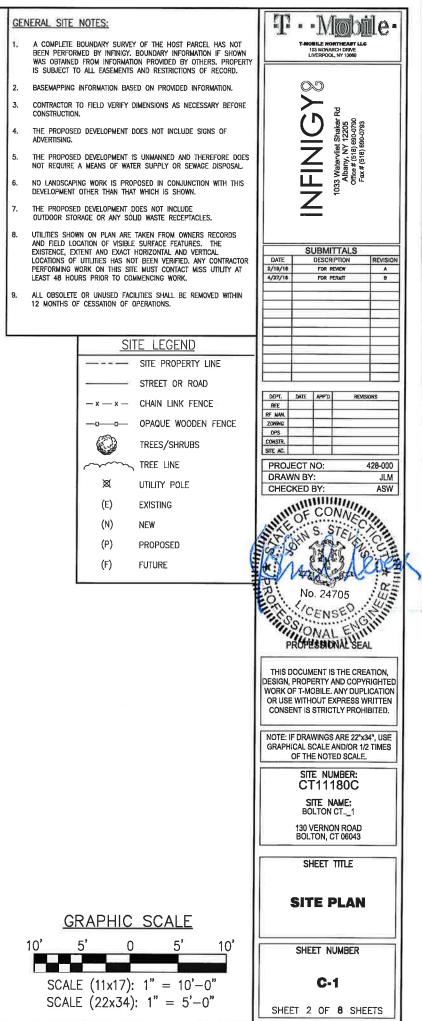
- 1. THE CONTRACTOR SHALL GIVE ALL NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES. RULES, REGULATIONS AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY, MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS, AND LOCAL AND STATE JURISDICTIONAL CODES BEARING ON THE PERFORMANCE OF THE WORK. THE WORK PERFORMED ON THE PROJECT AND THE MATERIALS INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS AND ORDINANCES.
- 2. THE ARCHITECT/ENGINEER HAVE MADE EVERY EFFORT TO SET FORTH IN THE CONSTRUCTION AND CONSTRUCT DOCUMENTS THE COMPLETE SCOPE OF WORK. THE CONTRACTOR BIDDING THE JOB IS NEVERTHELESS CAUTIONED THAT MINOR OMISSIONS OR ERRORS IN THE DRAWINGS AND OR SPECIFICATIONS SHALL NOT EXCUSE SAID CONTRACTOR FROM COMPLETING THE PROJECT AND IMPROVEMENTS IN ACCORDANCE WITH THE INTENT OF THESE DOCUMENTS.
- 3. THE CONTRACTOR OR BIDDER SHALL BEAR THE RESPONSIBILITY OF NOTIFYING (IN WRITING) THE T-MOBILE REPRESENTATIVE OF ANY CONFLICTS, ERRORS, OR OMISSIONS PRIOR TO THE SUBMISSION OF THE CONTRACTOR'S PROPOSAL OR PERFORMANCE OF WORK, IN THE EVENT OF DISCREPANCIES, THE CONTRACTOR SHALL PRICE THE MORE COSTLY OR EXPENSIVE WORK, UNLESS DIRECTED IN WRITING OTHERWISE.
- A. THE SCOPE OF WORK SHALL INCLUDE FURNISHING OF ALL MATERIALS, EQUIPMENT, LABOR AND ALL OTHER MATERIALS AND LABOR DEEMED NECESSARY TO COMPLETE THE WORK/PROJECT AS DESCRIBED HEREIN.
- 5. THE CONTRACTOR SHALL VISIT THE JOB SITE PRIOR TO THE SUBMISSION OF BIDS OR PERFORMING WORK TO FAMILIARIZE HIMSELF WITH THE FIELD CONDITIONS AND TO VERIFY THAT THE PROJECT CAN BE CONSTRUCTED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
- 6. THE CONTRACTOR SHALL OBTAIN AUTHORIZATION TO PROCEED NOT CLEARLY DEFINED BY THE CONSTRUCTION AND FINGE DRAWINGS/CONTRACT DOCUMENTS.
- 7. THE CONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS ACCORDING TO THE MANUFACTURER'S/VENDOR'S SPECIFICATIONS UNLESS NOTED OTHERWISE OR WHERE LOCAL CODES OR ORDINANCES TAKE PRECEDENCE.

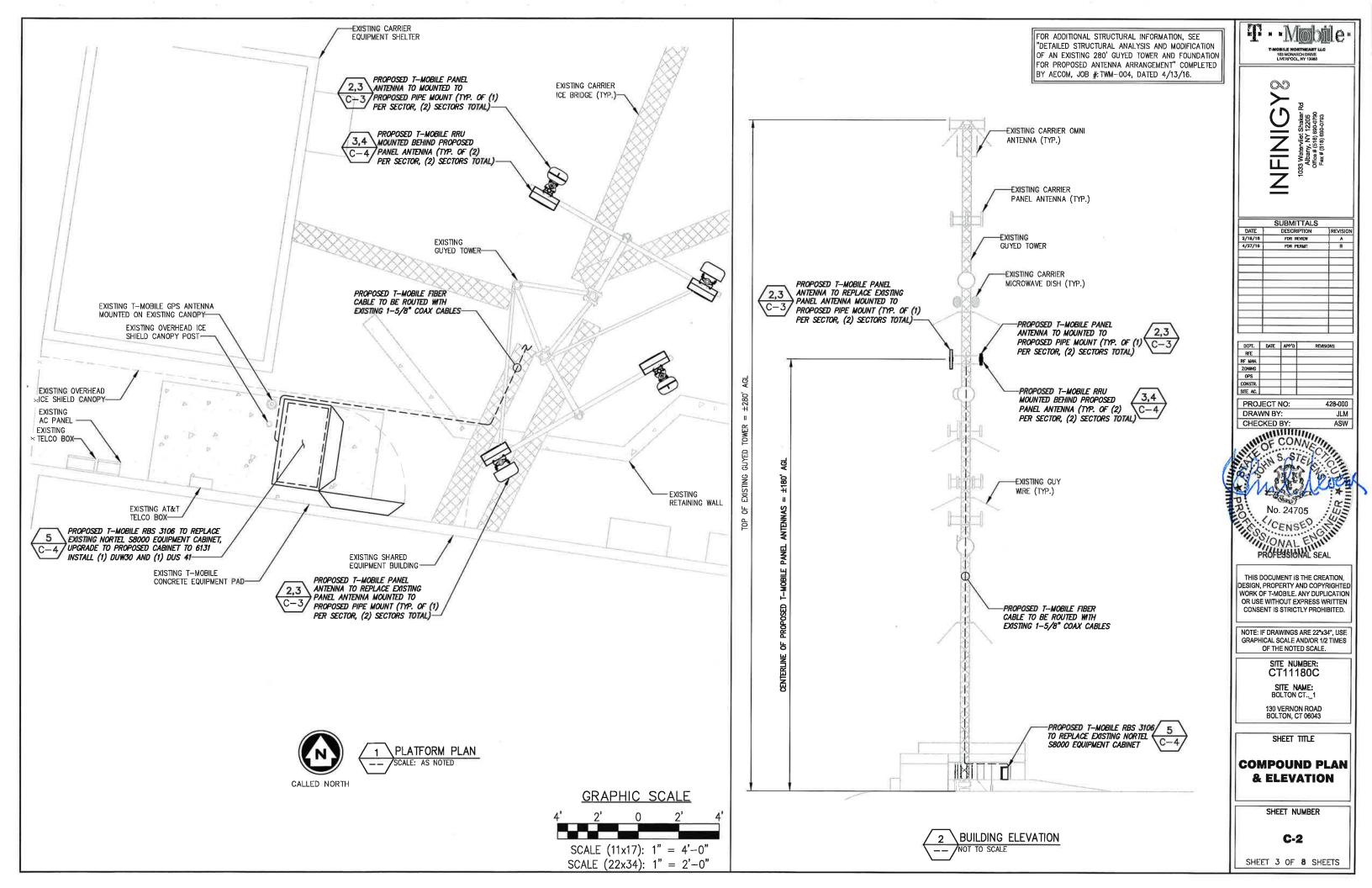
- 8. THE CONTRACTOR SHALL PROVIDE A FULL SET OF CONSTRUCTION DOCUMENTS AT THE SITE UPDATED WITH THE LATEST REVISIONS AND ADDENDUM OR CLARIFICATIONS AVAILABLE FOR THE USE BY ALL PERSONNEL INVOLVED WITH THE PROJECT.
- 9. THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE PROJECT DESCRIBED HEREIN. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, AND PROCEDURES AND FOR COORDINATING ALL PORTIONS OF THE WORK UNDER CONTRACT.
- 10. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ANY PERMITS AND INSPECTIONS WHICH ARE REQUIRED FOR THE WORK BY THE ARCHITECT/ENGINEER, THE STATE, COUNTY, OR LOCAL GOVERNMENT AUTHORITY.
- 11. THE CONTRACTOR SHALL MAKE NECESSARY PROVISIONS TO PROTECT EXISTING IMPROVEMENTS, EASEMENTS, PAVING, CURBING, ETC., DURING CONSTRUCTION. UPON COMPLETION OF WORK, THE CONTRACTOR SHALL REPAIR ANY DAMAGE THAT MAY HAVE OCCURRED DUE TO CONSTRUCTION ON OR ABOUT THE PROPERTY
- 12. THE CONTRACTOR SHALL KEEP THE GENERAL WORK AREA CLEAN AND HAZARD FREE DURING CONSTRUCTION AND DISPOSE OF ALL DIRT. DEBRIS, RUBBISH AND REMOVE EQUIPMENT NOT SPECIFIED AS REMAINING ON PROPERTY. PREMISES SHALL BE LEFT IN CLEAN CONDITION AND FREE FROM PAINT SPOTS, DUST, OR SMUDGES OF ANY NATURE.
- 13. THE CONTRACTOR SHALL COMPLY WITH ALL OSHA REQUIREMENTS, AS WELL AS THE LATEST EDITIONS OF ANY PERTINENT STATE SAFETY REGULATIONS.
- 14. THE CONTRACTOR SHALL NOTIFY THE T-MOBILE REPRESENTATIVE WHERE A CONFLICT OCCURS ON ANY OF THE CONTRACT DOCUMENTS, THE CONTRACTOR IS NOT TO ORDER MATERIAL OR CONSTRUCT ANY PORTION OF THE WORK THAT IS IN CONFLICT UNTIL CONFLICT IS RESOLVED BY THE T-MOBILE REPRESENTATIVE.
- 15. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS, ELEVATIONS, PROPERTY LINES, ETC., ON THE JOB.
- 16. THE CONTRACTOR SHALL RETURN ALL DISTURBED AREAS TO THEIR ORIGINAL CONDITION AT THE COMPLETION OF WORK

EAST LLC		
		1033 Waterviet Albary, NY Office # (5(9) 6) Fax # (5(19) 6
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—		SUBMITTALS DATE DESCRIPTION REVISION
		2/16/16 FOR REVIEW A 4/27/16 FOR PERMIT B
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		DEFT. DATE APP'D REVISIONS RFE
		RF MAN. ZONING OPS CONSTR,
		STE AC PROJECT NO: 428-000 DRAWN BY: JLM
URATION)		CHECKED BY: ASW
PROJECT SI	IMMARY	STALL OF STALL
SITE NUMBER: CT11180C SITE NAME: BOLTON CT1	APPLICANT: T-MOBILE NORTHEAST LLC	Time places
SITE ADDRESS: 130 VERNON ROAD BOLTON, CT 06043	LIVERPOOL, NY 13088 PROJECT MANAGER: TRANSCEND WIRELESS 10 INDUSTRIAL AVE, SUITE 3	No. 24705
PROPERTY OWNER: MOUNTAINTOP ENTERPRISES INC.		MROFENSTONAL DEAL
PARCEL: TBD	CONTACT: JAMIE MARCHINI (973) 885–0660	THIS DOCUMENT IS THE CREATION, DESIGN, PROPERTY AND COPYRIGHTED
ZONING: TBD JURISDICTION: TOWN OF BOLTON, CT	ARCHITECT/ENGINEER: INFINIGY ENGINEERING 1033 WATERVLIET SHAKER ROAD ALBANY, NY 12205	WORK OF T-MOBILE. ANY DUPLICATION OR USE WITHOUT EXPRESS WRITTEN CONSENT IS STRICTLY PROHIBITED.
LAT./LONG.: N 41.802648' / W -72.441213' CONSTRUCTION TYPE: L700 UPGRADE	CONTACT: ALEX WELLER 518-690-0790	NOTE: IF DRAWINGS ARE 22"x34", USE GRAPHICAL SCALE AND/OR 1/2 TIMES
PROJECT DESCRIPTION	SHEET INDEX	OF THE NOTED SCALE.
] Existing Monopole.	SHEET DESCRIPTION REVISION T-1 TITLE SHEET B	SITE NAME: BOLTON CT1
■ EXISTING TRANSMISSION TOWER ☑ PROPOSED RBS 3106 ☑ EXISTING ■ EXISTING BILLBOARD ☑ EXISTING \$8000 □ EXISTING ■ EXISTING ROOFTOP □ SITE SUPPORT KIT □ EXISTING		130 VERNON ROAD BOLTON, CT 06043
EXISTING ROOF TOP STIE SUPPORT KIT STEEL PLATFO EXISTING FLAGPOLE STIE SUPPORT CABINET EXISTING PPC EXISTING FORT WORTH Z GPS PANELBOARD	C-4 EQUIPMENT SPECIFICATIONS B E-1 GROUNDING AND POWER DIAGRAMS B E-2 COAX/FIBER PLUMBING DIAGRAM B	SHEET TITLE
T-MOBILE NORTHEAST LLC PROPOSES THE MODIFICATION OF AN UNMANNED WIRELESS BROADBAND FACILITY, ADDITION OF PROPOSED LTE PANEL ANTENNAS, RRU'S AND FIBER CABLE. REUSE, GPS.	N-1 GENERAL AND ELECTRICAL NOTES B	TITLE SHEET
LIE PAREL ANTERNAS, KRU'S AND HBER CABLE. REUSE, GPS. REPLACE EXISTING SBOOD EQUIPMENT CABINET WITH NEW RBS 3106 EQUIPMENT CABINET,		SHEET NUMBER
		T-1 SHEET 1 OF 8 SHEETS

PROJECT DESC	CRIPTION	
UNMANNED WIRELESS BRO LTE PANEL ANTENNAS, REPLACE EXISTING SB000	EXISTING CABINET(S) EXISTING RBS 6201 PROPOSED RBS 3106 EXISTING S8000 SITE SUPPORT KIT SITE SUPPORT CABINET GPS COPROFILE MODIFIC ADDAND FACILITY. ADDITION RRU'S AND FIBER CABLE. I EQUIPMENT CABINET.	ATION OF AN OF PROPOSED REUSE, GPS.

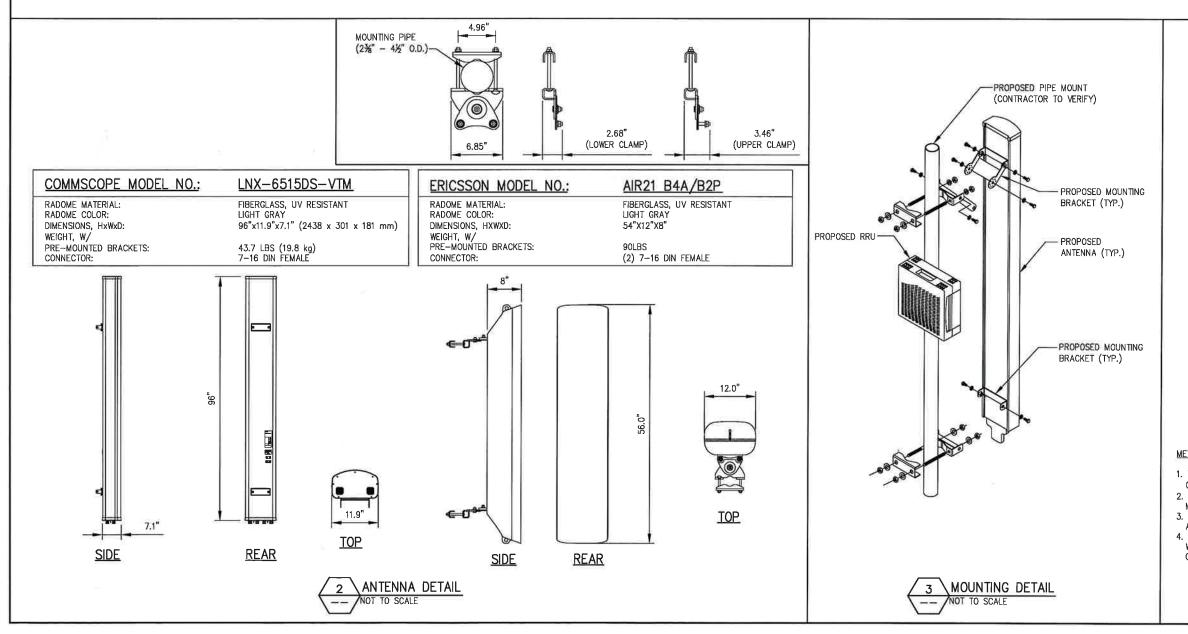






									_		R	F SYSTEM	SCHED	ULE (701	1D_Wou	utU21	CONFIG	GURATIO	N)							
SECTOR	TECHNOLOGY	ANTENNA PORT	BAND	ANTENNA MODEL #	VENDOR	QTY (REMOVED)	QTY (NEW)	AZIMUTH	M-TILT	ETILT	antenna Centerline	TMA MODEL #	VENDOR	RRU MODEL #	VENDOR	CABLE LENGTH	CABLE DIAMETER	CABLE QTY	CABLE TYPE	CABLE MODEL #	VENDOR	CABLE TAGGING	COLOR CODING	JUMPER TYPE	JUMPER TAGGING	COLOR CODING
	LTE	TBD	B4A	AIR21 B4A/B2P	ERICSSON	0	1	30*	~	2	180'-0") 		H 0		780 HYBRID WASTERLINE EXTREME HYBRID (9/18) ERKSSON FIBER 1			0	FIBER						
A	UMTS	TBD	B2P		ERICSSON		ľ	50	U U	2	100 -0			KRUS II DZ				(ANTI	ENNA CONNE	CTED VIA PROPOSED P	ROPOSED CA	ABLE)		FIBER		-
	LTE 700	TBD	B12P	LNX-6515DS-VTM	COMMSCOPE	1	1	30	o	2	180'-0"	-	-	(PROPOSED) RRUS 11 B12	ERICSSON	(ANTENNA CONNECTED VA PROPOSED PROPOSED CABLE)						FIBER		÷.		
	LTE	TBD	B4A	AIR21 B4A/B2P	ERICSSON			150	~	~	180'-0"	<u>-</u> 20	~	=	-	(ANTENNA CONNECTED VA PROPOSED PROPOSED CABLE)						FIBER		-		
В	UMTS	TBD	B2P		ERICSSON			150	U.	2	100 -0			(PROPOSED) RRUS 11 B2	ERICSSON	'		(ANT	ENNA CONNEC	CTED VIA PROPOSED F	ROPOSED CA	ABLE)		FIBER	100	
	LTE 700	TBD	B12P	LNX-6515DS-VTM	COMMSCOPE	1	1	150	o	2"	180'-0"	-	-	(PROPOSED) RRUS 11 B12	ERICSSON	1		(ANTI	ENNA CONNEC	CTED VIA PROPOSED F	ROPOSED CA	IBLE)		FIBER		
											PI	<i>XISTING</i> Roposed Ber Conne ¹	KEY R - RED - GSM G - GREEN - UI CTION B - BLUE - UM Y - YELLOW - L O - ORANGE - 1	MTS 1900 TS AWS LTE												





METALLIC TAG NOTES:

TAG

#1

TAG #2

 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 ACCOMODATE ALL CONFIGURATIONS.

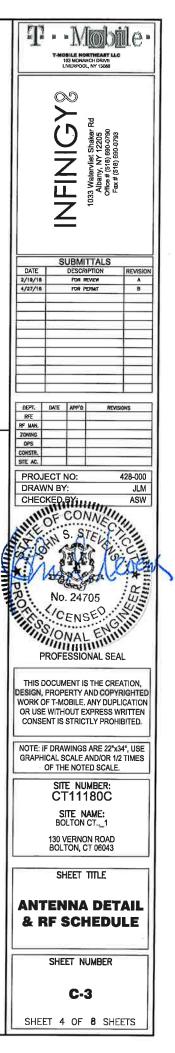
TAG #1

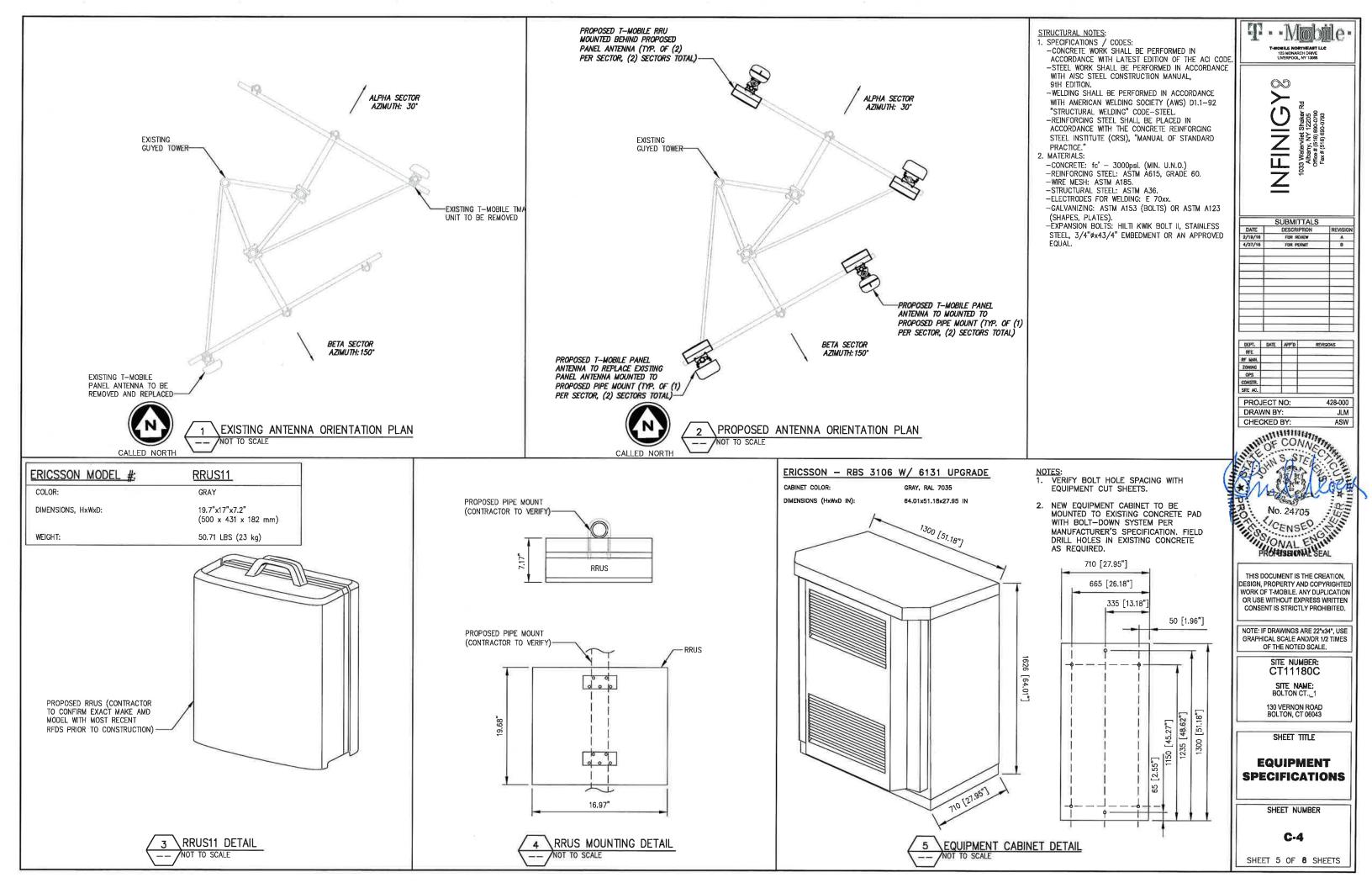
TAG #2

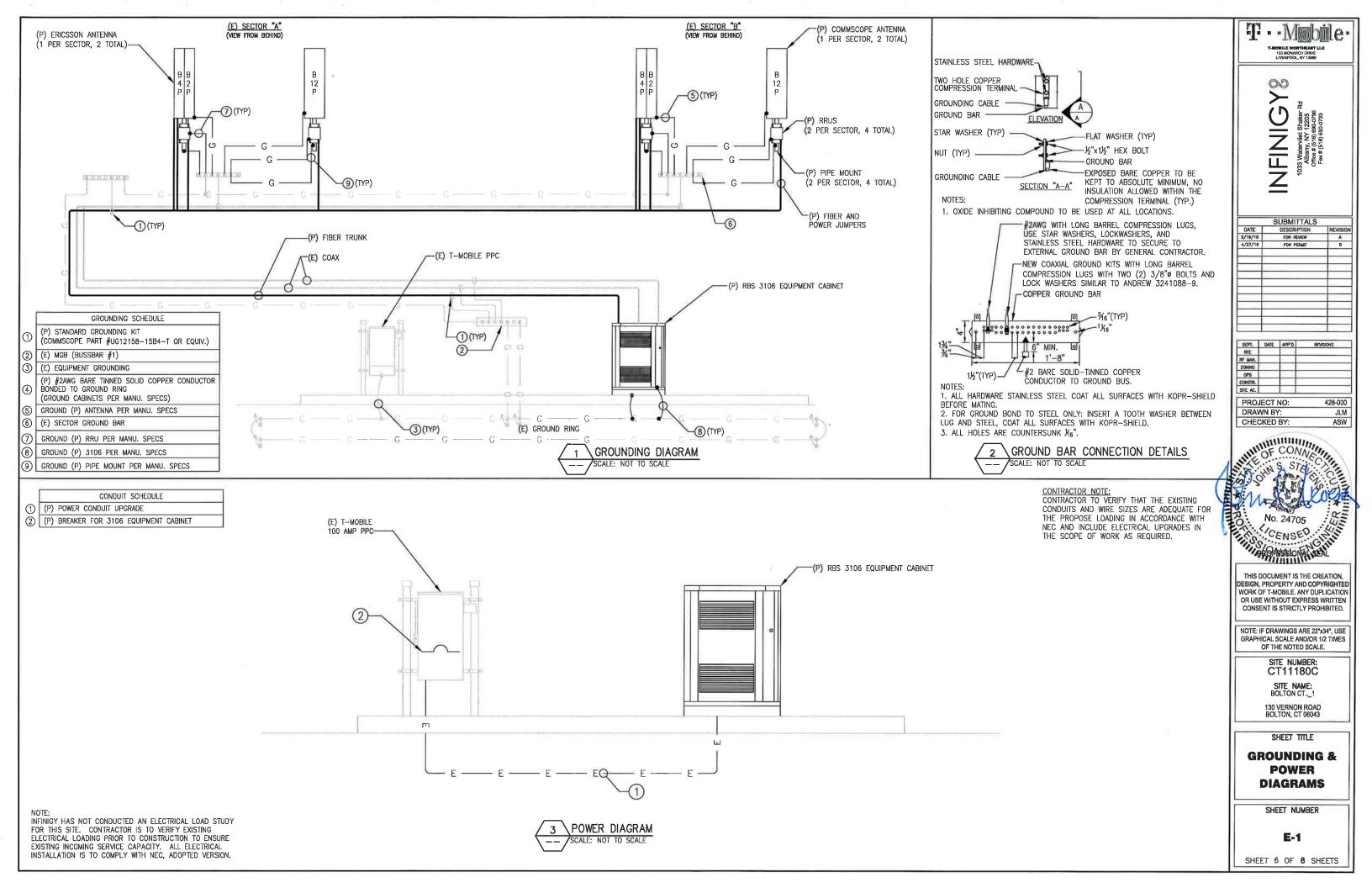
TAG #1

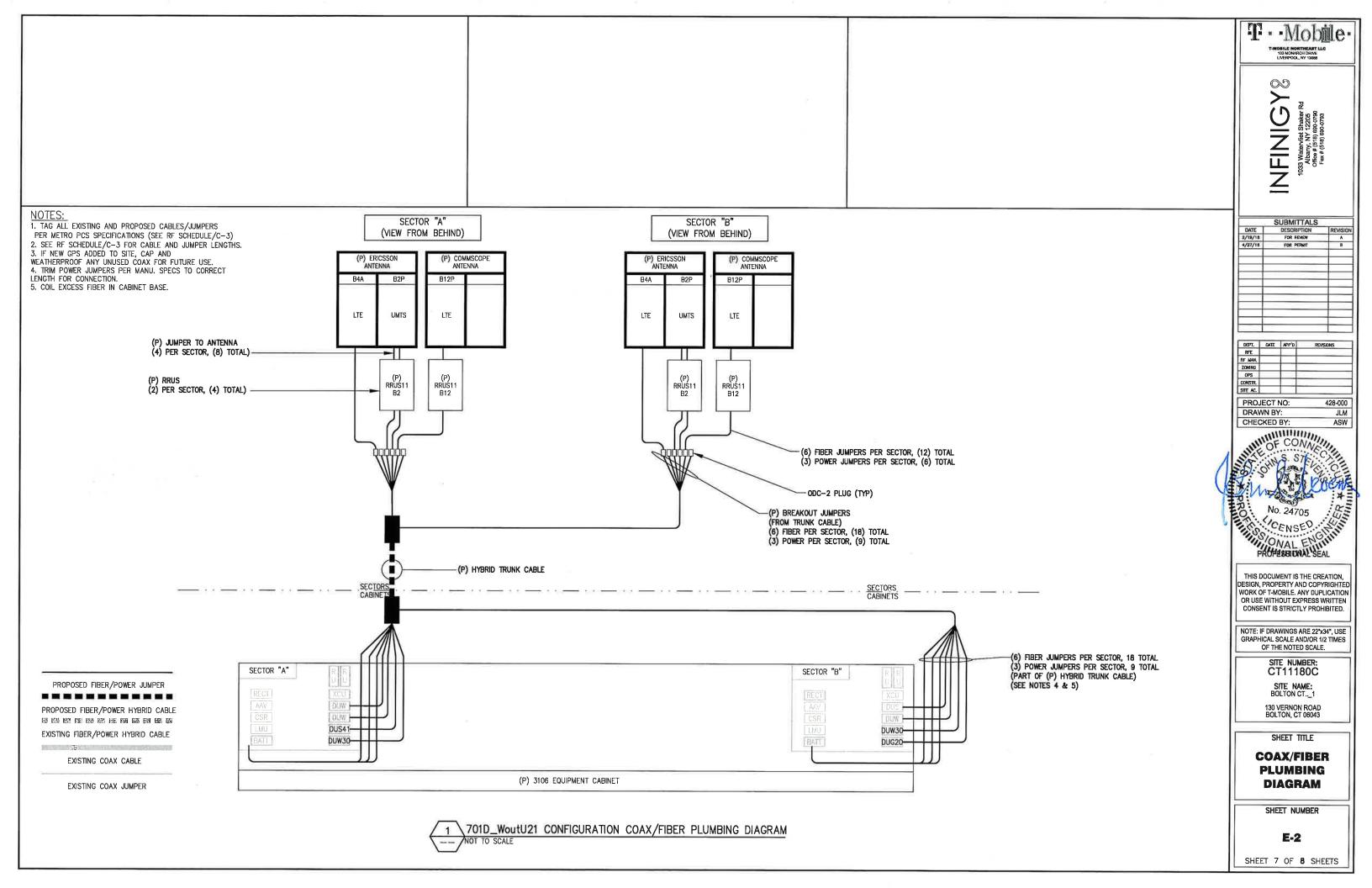
TAG #2

Γ	4	/M	IETA	LLIC	TAG	DETAIL
7	_	////	OT TO	SCALE		









ELECTRICAL NOTES:

WORK INCLUDED

- 1. INCLUDE ALL LABOR, MATERIALS, EQUIPMENT, PLANT SERVICES AND ADMINISTRATIVE TASKS REQUIRED TO COMPLETE AND MAKE OPERABLE THE ELECTRICAL WORK SHOWN ON THE DRAWINGS AND SPECIFIED HEREIN, INCLUDING BUT NOT LIMITED TO THE FOLLOWING:
- A, PREPARE AND SUBMIT SHOP DRAWINGS, DIAGRAMS AND LLUSTRATIONS.
- B. PROCURE ALL NECESSARY PERMITS AND APPROVALS AND PAY ALL REQUIRED FEES AND CHARGES IN CONNECTION WITH THE WORK OF THIS CONTRACT.
- C. SUBMIT AS-BUILT DRAWINGS, OPERATING AND MAINTENANCE INSTRUCTIONS AND MANUALS
- D. EXECUTE ALL CUTTING, DRILLING, ROUGH AND FINISH PATCHING OF EXISTING OR NEWLY INSTALLED CONSTRUCTION REQUIRED FOR THE WORK OF THIS CONTRACT, FOR SLAB PENETRATIONS THROUGH POST TENSION SLABS, X-RAY EXACT AREA OF PENEIRATION PRIOR TO PERFORMING WORK. COORDINATE ALL X-RAY WORK WITH BUILDING ENGINEER.
- E. PROVIDE HANGERS, SUPPORTS, FOUNDATIONS, STRUCTURAL FRAMING SUPPORTS, AND BASES FOR CONDUIT AND EQUIPMENT PROVIDED OR INSTALLED UNDER THE WORK OF CONTRACT. PROVIDE COUNTER FLASHING, SLEEVES AND SEALS FOR FLOOR AND WALL PENETRATIONS
- F. MAINTAIN ALL EXISTING ELECTRICAL SERVICES IN THE BUILDING AREAS NOT AFFECTED BY THE ALTERATION DURING THE PROGRESS OF THE WORK INCLUDING PROVIDING ALL TEMPORARY JUMPERS, CONDUITS, CAPS, PROTECTIVE DEVICES. CONNECTIONS AND EQUIPMENT REQUIRED. PROVIDE TEMPORARY LIGHT AND POWER FOR CONSTRUCTION PURPOSES
- IS THE INTENT OF THESE DRAWINGS AND SPECIFICATIONS TO CALL FOR AN INSTALLATION THAT IS COMPLETE IN EVERY RESPECT. IT IS NOT THE INTENT TO GIVE EVERY DETAIL ON THE DRAWINGS AND IN THE SPECIFICATIONS. IF AN ITEM OF WORK IS INDICATED IN THE DRAWINGS, IT IS CONSIDERED SUFFICIENT FOR INCLUSION IN THE CONTRACT, FURNISH AND INSTALL ALL MATERIAL AND EQUIPMENT USUALLY FURNISHED OR NEEDED TO MAKE A COMPLETE INSTALLATION WHETHER OR NOT SPECIFICALLY MENTIONED IN THE CONTRACT DOCUMENTS.

GENERAL REQUIREMENTS

- 1. PROVIDE ALL WORK IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE (NEC) AND LOCAL AND STATE ELECTRICAL 2. THE ELECTRICAL PLANS ARE DIAGRAMMATIC ONLY, REFER TO
- THE ARCHITECTURAL PLANS FOR THE EXACT DIMENSIONS OF THE BUILDING.
- 3. LOAD CALCULATIONS ARE BASED ON EXISTING BUILDING INFORMATION/DRAWINGS PROVIDED TO ENGINEERING. CONTRACTOR IS TO VERIFY ALL EXISTING RATINGS AND LOADS PRIOR TO PURCHASING OF SPECIFIED FOUIPMENT FOR COMPLIANCE TO NEC. CONTRACTOR TO NOTIFY ENGINEER OF ANY DISCREPANCIES AND REQUEST FURTHER DIRECTION BY ENGINEER
- 4. EXISTING BUILDING EQUIPMENT IS NOTED ON THE DRAWINGS NEW OR RELOCATED EQUIPMENT IS SHOWN WITH SOLID LINES. FUTURE EQUIPMENT (NOT IN THIS CONTRACT) IS DEPICTED WITH SHADED LINES. REQUEST CLARIFICATION OF DRAWINGS OR OF SPECIFICATIONS PRIOR TO PRICING OR INSTALLATION. 5. GENERAL
- A. AFTER CAREFULLY STUDYING THE DRAWINGS AND SPECIFICATIONS, AND REFORE SUBMITTING THE PROPOSAL MAKE A MANDATORY SITE VISIT TO ASCERTAIN CONDITIONS OF THE SITE, AND THE NATURE AND EXACT QUANTITY OF WORK TO BE PERFORMED. NO EXTRA COMPENSATION WILL BE ALLOWED FOR FAILURE TO NOTIFY THE OWNER. IN WRITING. OF ANY DISCREPANCIES THAT MAY HAVE BEEN NOTED BETWEEN THE EXISTING CONDITIONS AND THE DRAWINGS AND SPECIFICATIONS.
- B. VERIFY ALL MEASUREMENTS AT THE SITE AND BE RESPONSIBLE FOR CORRECTNESS OF SAME. 6. QUALITY, WORKMANSHIP, MATERIALS AND SAFETY
- A. PROVIDE NEW MATERIALS AND EQUIPMENT OF A DOMESTIC MANUFACTURER BY THOSE REGULARLY ENGAGED IN THE PRODUCTION AND MANUFACTURE OF SPECIFIED MATERIALS AND EQUIPMENT. WHERE UL, OR OTHER AGENCY, HAS ESTABLISHED STANDARDS FOR MATERIALS, PROVIDE MATERIALS WHICH ARE LISTED AND LABELED ACCORDINGLY. THE COMMERCIALLY STANDARD ITEMS OF EQUIPMENT AND THE SPECIFIC NAMES MENTIONED HEREIN ARE INTENDED FOR THE PROPER FUNCTIONING OF THE WORK.
- B. WORK SHALL BE PERFORMED BY WORKMEN SKILLED IN THE TRADE REQUIRED FOR THE WORK, INSTALL MATERIALS AND EQUIPMENT TO PRESENT A NEAT APPEARANCE WHEN COMPLETED AND IN ACCORDANCE WITH THE APPROVED RECOMMENDATIONS OF THE MANUFACTURER AND IN ACCORDANCE WITH CONTRACT DOCUMENTS.
- C. PROVIDE LABOR, MATERIALS, APPARATUS AND APPLIANCES ESSENTIAL TO THE FUNCTIONING OF THE SYSTEMS DESCRIBED OR INDICATED HEREIN, OR WHICH MAY BE REASONABLY IMPLIED AS ESSENTIAL WHENEVER MENTIONED IN THE CONTRACT DOCUMENT OR NOT.
- D. MAKE WRITTEN REQUESTS FOR SUPPLEMENTARY INSTRUCTIONS TO ARCHITECT/ENGINEER IN CASE OF DOUBT AS TO WORK INTENDED OR IN EVENT OF NEED FOR EXPLANATION THEREOF.
- E. PERFORMANCE AND MATERIAL REQUIREMENTS SCHEDULED OR SPECIFIED ARE MINIMUM STANDARD ACCEPTABLE. THE RIGHT TO JUDGE THE QUALITY OF EQUIPMENT THAT DEVIATES FROM THE CONTRACT DOCUMENT REMAINS SOLELY WITH ARCHITECT/ENGINEER, CONTRACT DOCUMENT OR NOT. GUARANTEE
- 1. GUARANTEE MATERIALS, PARTS AND LABOR FOR WORK FOR ONE YEAR FROM THE DATE OF ISSUANCE OF OCCUPANCY PERMIT. DURING THAT PERIOD. MAKE GOOD FAULTS OR IMPERFECTIONS THAT MAY ARISE DUE TO DEFECTS OR OMISSIONS IN MATERIALS OR WORKMANSHIP WITH NO ADDITIONAL COMPENSATION AND AS DIRECTED BY ARCHITECT.

CLEANING

- 1. REMOVE ALL CONSTRUCTION DEBRIS RESULTING FROM THE WORK.
- 2. CLEAN EQUIPMENT AND SYSTEMS FOLLOWING THE COMPLETION OF THE PROJECT TO THE SATISFACTION OF THE ENGINEER. COORDINATION AND SUPERVISION
- 1. CAREFULLY LAY OUT ALL WORK IN ADVANCE TO AVOID UNNECESSARY CUTTING, CHANNELING, CHASING OR DRILLING OF FLOORS, WALLS, PARTITIONS, CEILINGS OR OTHER SURFACES.
- WHERE SUCH WORK IS NECESSARY, HOWEVER, PATCH AND REPAIR THE WORK IN AN APPROVED MANNER BY SKILLED MECHANICS AT NO ADDITIONAL COST TO THE OWNER. RENDER FULL COOPERATION TO OTHER TRADES WHERE WORK WILL BE INSTALLED IN CLOSE PROXIMITY TO WORK OF OTHER TRADES. ASSIST IN WORKING OUT SPACE CONDITIONS. IF WORK IS INSTALLED BEFORE COORDINATION WITH OTHER TRADES, OR CAUSES INTERFERENCE, MAKE CHANGES NECESSARY TO CORRECT CONDITIONS WITHOUT EXTRA CHARGE.

SUBMITTALS

- . AS-BUILT DRAWINGS: A. UPON COMPLETION OF THE WORK, FURNISH TO THE OWNER "AS-BUILT" DRAWINGS.
- 2. SERVICE MANUALS: A. UPON COMPLETION OF THE WORK, FULLY INSTRUCT T-MOBILE AS TO THE OPERATION AND MAINTENANCE OF ALL MATERIAL FOLIPMENT AND SYSTEMS
- B. PROVIDE 3 COMPLETE BOUND SETS OF INSTRUCTIONS FOR OPERATING AND MAINTAINING ALL SYSTEMS AND EQUIPMENT
- CUTTING AND PATCHING
- 1. PROVIDE ALL CUITING, DRILLING, ROUGH AND FINISH PATCHING REQUIRED TO COMPLETE THE WORK. 2. OBTAIN OWNER APPROVAL PRIOR TO CUTTING THROUGH FLOORS
- OR WALLS FOR PIPING OR CONDUIT. TESTS, INSPECTION AND APPROVAL
- 1. BEFORE ENERGIZING ANY ELECTRICAL INSTALLATION, INSPECT EACH UNIT IN DETAIL. TIGHTEN ALL BOLTS AND CONNECTIONS (TORQUE-TIGHTEN WHERE REQUIRED) AND DETERMINE THAT ALL COMPONENTS ARE ALIGNED, AND THE EQUIPMENT IS IN SAFE, OPERATIONAL CONDITION.
- PROVIDE THE COMPLETE ELECTRICAL SYSTEM FREE OF GROUND FAULTS AND SHORT CIRCUITS SUCH THAT THE SYSTEM WILL OPERATE SATISFACTORILY UNDER FULL LOAD CONDITIONS WITHOUT EXCESSIVE HEATING AT ANY POINT IN THE SYSTEM
- SPECIAL REQUIREMENTS
- 1. DO NOT LEAVE ANY WORK INCOMPLETE NOR ANY HAZARDOUS SITUATIONS CREATED WHICH WILL AFFECT THE LIFE OR SAFETY OF THE PUBLIC AND/OR BUILDING OCCUPANTS, DO NOT NTERFERE WITH OR CUTOFF ANY OF THE EXISTING SERVICES WITHOUT THE OWNER'S WRITTEN PERMISSION.
- 2. WHEN NECESSARY TO TEMPORARILY DISCONNECT ANY EXISTING BUILDING UTILITIES AND SERVICE SYSTEMS, INCLUDING FEEDER OR BRANCH CIRCUITING SUPPLYING EXISTING FACILITIES, CONFER WITH THE OWNER AND ARRANGE THE PERIOD OF INTERRUPTION FOR A TIME MUTUALLY AGREED UPON. SHUTDOWN NOTE: SCHEDULE AND NOTIFY OWNER 48 HOURS PRIOR TO SHUTDOWN. ALL SHUTDOWN WORK TO BE SCHEDULED AT A TIME CONVENIENT TO OWNER.
- GROUNDING
- 1. ROUTE ALL GROUNDING CONDUCTORS AS SHOWN ON CONDUIT/GROUNDING RISER.
- 2. ROUTE 500 KCMIL CU. THHN CONDUCTOR FROM THE MGB LOCATION TO BUILDING STEEL. VERIFY BUILDING STEEL IS EFFECTIVELY GROUNDED PER NEC TO THE MAIN SERVICE
- GROUNDING ELECTRODE CONDUCTOR (GEC) 3. MAKE ALL GROUND CONNECTIONS FROM MGB TO FIFCTRICAL EQUIPMENT WITH 2 HOLE, CRIMP TYPE, BURNDY COMPRESSION TERMINATIONS, SIZED AS REQUIRED.
- USE 1 HOLE, CRIMP TYPE, BURNDY COMPRESSIONS TERMINATIONS, SIZED AS REQUIRED, AT EQUIPMENT GROUND CONNECTIONS
- 5. HIRE AN INDEPENDENT LAB TO PERFORM THE SPECIFIED OHMS TESTING, PROVIDE 4 SETS OF THE CERTIFIED DOCUMENTS TO THE OWNER FOR VERIFICATION PRIOR TO THE PROJECT COMPLETION.
- RACEWAYS
- 1. ALL WIRING TO BE INSTALLED IN CONDUIT SYSTEMS IN ACCORDANCE WITH THE FOLLOWING:
 - A. EXTERIOR FEEDERS AND CONTROL, WHERE UNDERGROUND. TO BE IN SCH 40 PVC. B. EXTERIOR, ABOVE GROUND POWER CONDUITS TO BE

 - GALVANIZED RIGID STEEL (RGS). C. ALL TELECOMMUNICATION CONDUITS, INTERIOR/EXTERIOR, TO BE EMT
 - D. INSTALL PULL ROPES IN ALL NEW EMPTY CONDUITS INSTALLED ON THIS PROJECT.
- E. ALL TELECOM CONDUITS AND PULL BOXES INSTALLED ON THIS PROJECT TO BE LABELED "T-MOBILE". OWNER WILL
 - PROVIDE LABELS FOR CONTRACTOR TO INSTALL. F. INTERIOR FEEDERS TO BE INSTALLED IN E.M.T. WITH STEEL
 - COMPRESSION FITTINGS. G. MINIMUM SIZE CONDUIT TO BE ¹/₄" TRADE SIZE
 - UNLESS OTHERWISE INDICATED ON THE DRAWINGS. H. FINAL CONNECTIONS TO MOTORS AND VIBRATING EQUIPMENT TO BE INSTALLED IN LIQUID-TIGHT FLEXIBLE METAL CONDUIT.
 - . CONDUIT TO BE RUN CONCEALED IN CEILINGS, FINISHED AREAS OR DRYWALL PARTITIONS, UNLESS OTHERWISE NOTED. J. THE ROUTING OF CONDUITS INDICATED ON THE DRAWINGS IS
 - DIAGRAMMATIC. BEFORE INSTALLING ANY WORK, EXAMINE THE WORKING LAYOUTS AND SHOP DRAWINGS OF THE OTHER TRADES TO DETERMINE THE EXACT LOCATIONS AND CLEARANCES.
 - K. ALL EXTERIOR MOUNTING HARDWARE TO BE GALVANIZED STEEL, COORDINATE WITH BUILDING ENGINEER PRIOR TO ATTACHING TO BUILDING STRUCTURE.

RACEWAYS CONT'D

- L. PENETRATIONS OF WALLS, FLOORS AND ROOFS, FOR THE PASSAGE OF ELECTRICAL RACEWAYS, TO BE PROPERLY SEALED AFTER INSTALLATION OF RACEWAYS SO AS TO MAINTAIN THE STRUCTURAL OR WATERPROOF INTEGRITY OF
- THE WALL, FLOOR OR ROOF SYSTEM TO BE PENETRATED, SEAL ALL CONDUIT PENETRATIONS THROUGH FIRE OR SMOKE RATED WALLS, CEILINGS OR SMOKE TIGHT CORRIDOR PARTITIONS TO MAINTAIN PROPER RATING OF WALL OR CFILING.

CONFLICTS

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFICATIONS OF ALL MEASUREMENTS AT THE SITE BEFORE ORDERING ANY MATERIALS OR DOING ANY WORK. NO EXTRA CHARGE OR

COMPENSATION SHALL BE ALLOWED DUE TO DIFFERENCE BETWEEN ACTUAL DIMENSIONS AND DIMENSIONS INDICATED ON

DIMENSION WHICH MAY BE FOUND SHALL BE SUBMITTED TO THE

THE CONSTRUCTION DRAWINGS, ANY SUCH DISCREPANCY IN

OWNER FOR CONSIDERATION BEFORE THE CONTRACTOR

ALLOWED ANY EXTRA COMPENSATION BY REASON OF ANY

MATTER OR THING CONCERNING SUCH BIDDER MIGHT HAVE

FULLY INFORMED THEMSELVES PRIOR TO THE BIDDING. 3. NO PLEA OF IGNORANCE OF CONDITIONS THAT EXIST, OR OF

DIFFICULTIES OR CONDITIONS THAT MAY BE ENCOUNTERED, OR OF ANY OTHER RELEVANT MATTER CONCERNING THE WORK TO

BE PERFORMED IN THE EXECUTION OF THE WORK WILL BE ACCEPTED AS AN EXCUSE FOR ANY FAILURE OR OMISSION ON

THE PART OF THE CONTRACTOR TO FULFILL EVERY DETAIL OF ALL THE REQUIREMENTS OF THE CONTRACT DOCUMENTS

CONTRACTOR IS RESPONSIBLE FOR APPLICATION AND PAYMENT OF CONTRACTOR LICENSES AND BONDS.

1. ALL MATERIALS MUST BE STORED IN A LEVEL AND DRY FASHION

FLOW OF OTHER WORK. ANY STORAGE METHOD MUST MEET ALL

COMPLETION OF THE WORK. THEY SHALL REMOVE ALL RUBBISH FROM AND ABOUT THE BUILDING AREA, INCLUDING ALL THEIR

TOOLS. SCAFFOLDING AND SURPLUS MATERIALS AND SHALL

A. VISUALLY INSPECT EXTERIOR SURFACES AND REMOVE ALL

B. REMOVE ALL TRACES OF SPLASHED MATERIALS FROM

ADJACENT SURFACES. C. IF NECESSARY, TO ACHIEVE A UNIFORM DEGREE OF

TRACES OF SOIL, WASTE MATERIALS, SMUDGES AND OTHER

CLEANLINESS, HOSE DOWN THE EXTERIOR OF THE STRUCTURE.

A VISUALLY INSPECT INTERIOR SURFACE AND REMOVE ALL TRACES OF SOIL, WASTE MATERIALS, SMUDGES AND OTHER FOREIGN MATTER FROM WALLS, FLOOR, AND CEILING.

C. REMOVE PAINT DROPPINGS, SPOTS, STAINS, AND DIRT FROM

REMOVE ALL TRACES OF SPLASHED MATERIALS FROM

1. REFER TO SECTION 17 OF SIGNED MCSA: SEE PROFESSIONAL

GENERAL CARPENTRY, ELECTRICAL AND ANTENNA DRAWINGS ARE INTERRELATED. IN PERFORMANCE OF THE WORK, THE

CONTRACTOR MUST REFER TO ALL DRAWINGS. ALL COORDINATION TO BE THE RESPONSIBILITY OF THE CONTRACTOR.

1. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS AS REQUIRED AND

LISTED IN THESE SPECIFICATIONS TO THE OWNER FOR

2. ALL SHOP DRAWINGS SHALL BE REVIEWED, CHECKED AND

CORRECTED BY CONTRACTOR PRIOR TO SUBMITTAL TO THE

SUBMIT 3 COPIES OF EACH REQUEST FOR SUBSTITUTION. IN EACH REQUEST, IDENTIFY THE PRODUCT OR FABRICATION OR INSTALLATION METHOD TO BE REPLACED BY THE SUBSTITUTION.

NCLUDE RELATED SPECIFICATION SECTION AND DRAWING

NUMBERS AND COMPLETE DOCUMENTATION SHOWING COMPLIANCE WITH THE REQUIREMENTS FOR SUBSTITUTIONS

SAMPLES TO THE OWNER FOR APPROVAL IN LIEU OF CUT

PRODUCTS AND MATERIALS BEING INSTALLED. THE CONTRACTOR

SHALL, IF DEEMED NECESSARY BY THE OWNER, SUBMIT ACTUAL

ARCHITECTURAL SYMBOLS

ROOM

###

DETAIL REFERENCE KEY

DRAWING DETAIL NUMBER

LSHEET NUMBER OF DETAIL-

A-3

(x)-

REFER TO

RE: 2/A-3

2. SUBMIT ALL NECESSARY PRODUCT DATA AND CUT SHEETS

WHICH PROPERLY INDICATE AND DESCRIBE THE ITEMS,

LEAVE THEIR WORK CLEAN AND READY TO USE.

RECOMMENDATIONS OF THE ASSOCIATED MANUFACTURER

CLEANUP 1. THE CONTRACTORS SHALL, AT ALL TIMES, KEEP THE SITE FREE

FROM ACCUMULATION OF WASTE MATERIALS OR RUBBISH CAUSED BY THEIR EMPLOYEES AT WORK AND AT THE

AND IN A MANNER THAT DOES NOT NECESSARILY OBSTRUCT THE

2. SEE MASTER CONTRACTION SERVICES AGREEMENT FOR

GOVERNING THE WORK.

CONTRACTS AND WARRANTIES

ADDITIONAL DETAILS.

2. EXTERIOR

INTERIOR

SHOP DRAWINGS

OWNER

SHEETS.

PRODUCTS AND SUBSTITUTIONS

FOREIGN MATTER.

ADJACENT SURFACES.

FINISHED SURFACES.

SERVICE AGREEMENT FOR MCSA.

RELATED DOCUMENTS AND COORDINATION

CHANGE ORDER PROCEDURE:

PROCEEDS WITH THE WORK IN THE AFFECTED AREAS. 2. THE BIDDER, IF AWARDED THE CONTRACT, WILL NOT BE

- M. PROVIDE ALL CONDUIT ENDS WITH INSULATED METALLIC GROUNDING BUSHINGS
- GROUNDING BUSHINGS. N. CONDUIT TO BE SUPPORTED AT MAXIMUM DISTANCE OF 8'-0'', or as required by NeC, in Horizontal and VERTICAL DIRECTIONS. 0. PROVIDE STAINLESS STEEL BLANK COVER PLATES FOR ALL
- JUNCTION BOXES AND/OR OUTLET BOXES NOT USED IN EXPOSED AREAS. PROVIDE ALL OTHER UNUSED BOXES WITH
- STANDARD STEEL COVER PLATES. P. WHERE APPLICABLE, PROVIDE ROOFTOP CONDUIT SUPPORT SYSTEM, CONFORMING TO ROOFTOP WARRANTY REQUIREMENTS, PER BUILDING.

WIRES AND CABLES

- 1. CONTRACTOR TO COORDINATE WITH EQUIPMENT SUPPLIER AND VENDOR FOR EXACT EQUIPMENT OVER-CURRENT PROTECTION VOLTAGE, WIRE SIZE AND PLUG CONFIGURATION. IF APPLICABLE
- PRIOR TO BID. 2. ALL EQUIPMENT/DEVICES TO BE PROVIDED WITH INSULATED GROUND CONDUCTOR
- 3. ALL WIRE AND CABLE TO BE 600VOLT, COPPER, WITH THWN/
- THHN INSULATION, EXCEPT AS NOTED. 4. WIRE FOR POWER AND LIGHTING WILL NOT BE LESS THAN NO.

NO. 12 NO. 10

- 12AWG. ALL WIRE NO. 8 AND LARGER TO BE STRANDED. 5. CONTROL WIRING IS NOT TO BE LESS THAN NO. 14AWG. FLEXIBLE IN SINGLE CONDUCTORS OR MULTI-CONDUCTOR CABLES. CONTROL WIRING WILL CONSIST OF MULTI-CONDUCTOR CABLES. WHEREVER POSSIBLE, CABLES TO BE PROVIDED WITH AN OVERALL FLAME-RETARDANT, EXTRUDED JACKET AND RATED FOR PLENUM USE. ALL CONTROL WIRE TO BE 600VOLT RATED.
- WIRE PREVIOUSLY PULLED INTO CONDUIT IS CONSIDERED USED AND IS NOT TO BE RE-PULLED. 7. HOME RUNS AND BRANCH CIRCUIT WIRING FOR 20A, 120V
- CIRCUITS: <u>LENGTH (FT.)</u> 0 TO 50 51 TO 100 HOME RUN WIRE SIZE
- 101 TO 150
- NO. 8 8. VOLTAGE DROP IS NOT TO EXCEED 3%.
- MAKE ALL CONNECTIONS WITH UL APPROVED, SOLDERLESS, PRESSURE TYPE INSULATED CONNECTORS: SCOTCHLOK OR AND APPROVED EQUAL.
- WIRING DEVICES
- 1. ALL RECEPTACLES INSTALLED IN THIS PROJECT TO BE GROUNDING TYPE, WITH GROUNDING PIN SLOT CONNECTED TO DEVICE GROUND SCREW FOR GROUND WIRE CONNECTION. DISCONNECT SWITCHES AND FUSES
- 1. DISCONNECT SWITCHES TO BE VOLTAGE-RATED TO SUIT THE CHARACTERISTICS OF THE SYSTEM FROM WHICH THEY ARE SUPPLIED.
- 2. PROVIDE HEAVY-DUTY, METAL-ENCLOSED, EXTERNALLY-OPERATED DISCONNECT SWITCHES, FUSED OR UNFUSED, OF SUCH TYPE AND SIZE AS REQUIRED TO PROPERLY PROTECT OR DISCONNECT THE LOAD FOR WHICH THEY ARE INTENDED.
- 3. PROVIDE NEMA 1 DISCONNECT SWITCHES FOR INTERIOR
- INSTALLATION, NEWA 3R FOR EXTERIOR INSTALLATION
- 4. DISCONNECT SWITCHES TO BE MANUFACTURED BY: A. GENERAL ELECTRIC COMPANY
- B SQUARE-D
- PROVIDE RK-1 TYPE FUSES, UNLESS NOTED OTHERWISE. INSTALLATION
- 1. INSTALL DISCONNECT SWITCHES WHERE INDICATED ON
- DRAWINGS
- 2. INSTALL FUSES IN FUSIBLE DISCONNECT SWITCHES, FUSES
- MUST MATCH IN TYPE AND RATING. 3. FUSES TO BE MOUNTED SO THAT THE LABELS SHOWING THEIR RATINGS CAN BE READ WITHOUT REQUIRING FUSE REMOVAL
- FURNISH AND DEPOSIT SPARE FUSES AT THE JOB SITE AS FOLLOWS:
- A. THREE SPARES FOR EACH TYPE AND SIZE, IN EXCESS OF 60A, USED FOR INITIAL FUSING.
- B. TEN PERCENT SPARES FOR EACH TYPE AND SIZE, UP TO AND INCLUDING 60A, USED FOR INITIAL FUSING. IN NO CASE WILL LESS THAN THREE FUSES OF ONE PARTICULAR TYPE AND
- SIZE BE FURNISHED.

GENERAL NOTES:

CHANGE ORDER.

- INTENT 1. THESE SPECIFICATIONS AND CONSTRUCTION DRAWINGS ACCOMPANYING THEM DESCRIBE THE WORK TO BE DONE AND
- THE MATERIALS TO BE FURNISHED FOR CONSTRUCTION. 2. THE DRAWINGS AND SPECIFICATIONS ARE INTENDED TO BE
- FULLY EXPLANATORY AND SUPPLEMENTARY. HOWEVER, SHOULD ANYTHING BE SHOWN, INDICATED, OR SPECIFIED ON ONE AND NOT THE OTHER, IT SHALL BE DONE THE SAME AS IF SHOWN NDICATED OR SPECIFIED IN BOTH 3. THE INTENTION OF THE DOCUMENTS IS TO INCLUDE ALL LABOR
- AND MATERIALS REASONABLY NECESSARY FOR THE PROPER EXECUTION AND COMPLETION OF THE WORK AS STIPULATED IN HE CONTRACT. 4. THE PURPOSE OF THE SPECIFICATIONS IS TO INTERPRET THE

INTENT OF THE DRAWINGS AND TO DESIGNATE THE METHOD OF THE PROCEDURE, TYPE AND QUALITY OF MATERIALS REQUIRED

TO COMPLETE THE WORK. 5. MINOR DEVIATIONS FROM THE DESIGN LAYOUT ARE ANTICIPATED

AND SHALL BE CONSIDERED AS PART OF THE WORK, NO CHANGES THAT ALTER THE CHARACTER OF THE WORK WILL BE

MADE OR PERMITTED BY THE OWNER WITHOUT ISSUING A

