

**Structural Analysis Report**

*370-ft Existing Guyed Lattice Tower*

*Proposed AT&T Mobility  
Antenna Upgrade*

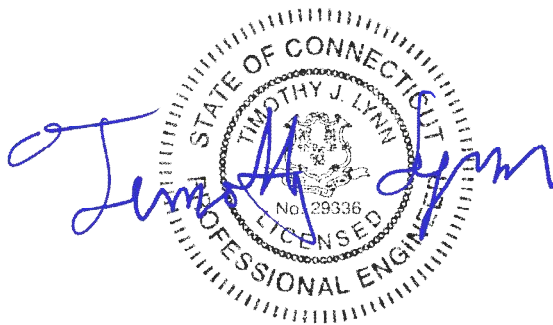
*AT&T Site Ref: CT2049*

*689 Old Colchester Road  
Montville, CT*

*Centek Project No. 16071.44*

*~~Date: September 9, 2016~~*

*Rev 1: November 1, 2016*



**Prepared for:**  
AT&T Mobility  
500 Enterprise Drive, Suite 3A  
Rocky Hill, CT 06067

## **Table of Contents**

### **SECTION 1 – REPORT**

- INTRODUCTION
- ANTENNA AND APPURTENANCE SUMMARY
- PRIMARY ASSUMPTIONS USED IN THE ANALYSIS
- ANALYSIS
- TOWER LOADING
- TOWER CAPACITY
- CONCLUSION

### **SECTION 2 – CONDITIONS & SOFTWARE**

- STANDARD ENGINEERING CONDITIONS
- GENERAL DESCRIPTION OF STRUCTURAL ANALYSIS PROGRAM

### **SECTION 3 – CALCULATIONS**

- tnxTower INPUT/OUTPUT SUMMARY
- tnxTower FEED LINE PLAN
- tnxTower FEED LINE DISTRIBUTION
- tnxTower LEG COMPRESSION
- tnxTower GLOBAL MAST SHEAR AND MOMENT DIAGRAMS
- tnxTower DEFLECTION DIAGRAMS
- tnxTower STRESS DISTRIBUTION
- tnxTower WIND PRESSURE AND ICE THICKNESS
- tnxTower DETAILED OUTPUT
- tnxTower GUY TENSION AND ANCHOR REACTIONS
- GUY ANCHOR FOUNDATION ANALYSIS
- BASE FOUNDATION ANALYSIS

### **SECTION 4 – REFERENCE MATERIALS**

- AT&T RF DATA SHEET
- EQUIPMENT CUT SHEETS

## *I n t r o d u c t i o n*

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

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

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

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

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

## *A n t e n n a   a n d   A p p u r t e n a n c e   S u m m a r y*

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

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

- UNKNOWN (Existing):  
Antenna: One (1) 10' by 3"  $\varnothing$  Omni-directional (whip) antenna mounted on a 3-ft side arm with an elevation of  $\pm 325$ -ft above the tower base.  
Coax Cable: One (1) 1-5/8" coax cables running on a leg/face of the existing tower as specified in Section 3 of this report.
- VERIZON (Existing to Remain):  
Antennas: Three (3) Andrew LNX-6514DS panel antennas, three (3) Antel QUAD656C0000 panel antennas, six (6) Andrew HBXX-6517DS panel antennas, three (3) Alcatel-Lucent RRH4x45-AWS Remote Radio Heads, three (3) Alcatel-Lucent RRH4x30-B13 Remote Radio Heads, two (2) RFS DB-T1-6Z-8AB-0Z main distribution boxes and six (6) RFS FD9R6004/2C-3L diplexers mounted on three (3) boom gates with a RAD center elevation of  $\pm 305$ -ft above the existing tower base.  
Coax Cables: Twelve (12) 1-5/8"  $\varnothing$  coax cables and two (2) 1-5/8"  $\varnothing$  Hybriflex fiber lines running on the face of the existing tower as specified in Section 3 of this report.
- Secret Service (Existing):  
Antenna: One (1) 20' by 3"  $\varnothing$  Omni-directional (whip) antenna pipe mounted with an elevation of  $\pm 250$ -ft above the tower base.  
Coax Cable: None
- UNKNOWN (Existing):  
Antenna: One (1) 4' yagi antenna leg mounted with an elevation of  $\pm 200$ -ft above the tower base.  
Coax Cable: One (1) 7/8" coax cables running on a leg/face of the existing tower as specified in Section 3 of this report.
- UNKNOWN (Existing):  
Antenna: Four (4) 5' yagi antennas mounted on two (2) pipe mounts with an elevation of  $\pm 180$ -ft above the tower base.  
Coax Cable: One (1) 7/8" coax cables running on a leg/face of the existing tower as specified in Section 3 of this report.
- UNKNOWN (Existing):  
Antenna: One (1) 5' yagi antenna leg mounted with an elevation of  $\pm 148$ -ft above the tower base.  
Coax Cable: One (1) 1/2" coax cables running on a leg/face of the existing tower as specified in Section 3 of this report.
- UNKNOWN (Existing):  
Antenna: One (1) 8' yagi antenna leg mounted with an elevation of  $\pm 140$ -ft above the tower base.  
Coax Cable: One (1) 7/8" coax cables running on a leg/face of the existing tower as specified in Section 3 of this report.
- UNKNOWN (Existing):  
Antenna: One (1) 4' yagi antenna leg mounted with an elevation of  $\pm 125$ -ft above the tower base.  
Coax Cable: One (1) 1/2" coax cables running on a leg/face of the existing tower as specified in Section 3 of this report.

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

### *Primary Assumptions Used in the Analysis*

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

## A n a l y s i s

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

The existing tower was analyzed for the controlling basic wind speed (3-second gust) with no ice and the applicable wind and ice combination to determine stresses in members as per guidelines of TIA-222-G-2005 entitled "Structural Standard for Antenna Support Structures and Antennas", the American Institute of Steel Construction (AISC) and the Manual of Steel Construction; Load and Resistance Factor Design (LRFD).

The controlling wind speed is determined by evaluating the local available wind speed data as provided in Appendix N of the CSBC<sup>1</sup> and the wind speed data available in the TIA-222-G-2005 Standard.

## T o w e r L o a d i n g

Tower loading was determined by the basic wind speed as applied to projected surface areas with modification factors per TIA-222-G-2005, gravity loads of the tower structure and its components, and the application of 0.75" radial ice on the tower structure and its components.

Basic Wind Speed:	New London; v = 105-120 mph (3-second gust)	[Annex B of TIA-222-G-2005]
	Montville; v = 105 mph (3 second gust)	[Appendix N of the 2016 CT Building Code]
Load Cases:	<u>Load Case 1</u> ; 105 mph wind speed w/ no ice plus gravity load – used in calculation of tower stresses and rotation.	[Appendix N of the 2016 CT Building Code]
	<u>Load Case 2</u> ; 50 mph wind speed w/ 0.75" radial ice plus gravity load – used in calculation of tower stresses.	[Annex B of TIA-222-G-2005]

---

<sup>1</sup> The 2012 International Building Code as amended by the 2016 Connecticut State Building Code (CSBC).

## Tower Capacity

Tower stresses were calculated utilizing the structural analysis software tnxTower. Allowable stresses were determined based on Table 4-8 of the TIA code.

- Calculated stresses were found to be within allowable limits. In Load Case 2, per tnxTower "Section Capacity Table", this tower was found to be at **90.8%** of its total capacity.

Tower Section	Elevation	Stress Ratio (percentage of capacity)	Result
Leg (4)	343.75' - 350.00'	88.4%	<b>PASS</b>
Diagonal (T22)	231.25' - 237.5'	90.8%	<b>PASS</b>
Guy A @ 201.41' radius (T31)	162.5'-0"	69.3%	<b>PASS</b>

## Foundations and Anchorage

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

- The worst case tower base and guy anchor reactions developed from the governing Load Case 1 were used in the verification of the anchorage foundations:

Tower Guy Reactions				
Vector	Inner	Mid-Inner	Mid-Outer	Outer
Horizontal (In Plane of GW)	12 kips	42 kips	63 kips	27 kips
Horizontal (Out of Plane of GW)	0 kips	1 kips	3 kips	2 kips
Vertical	6 kips	27 kips	72 kips	37 kips
Resultant Force at end of Guy Wire	13 kips	50 kips	96 kips	45 kips
Tower Base Reactions				
Vector	Proposed Reaction			
Horizontal Shear	1.0 kips			
Axial Compression	450.0 kips			



Foundation	Design Limit	TIA-222-G Section 9.4 FS <sup>(1)</sup>	Proposed Loading (FS) <sup>(1)</sup>	Result
Reinf. Conc. Anchor Block (C) at 114.41-ft radius.	Uplift	1.0	8.14	<b>PASS</b>
	Sliding	1.0	5.70	<b>PASS</b>
Reinf. Conc. Anchor Block (B) at 193.65-ft radius.	Uplift	1.0	3.65	<b>PASS</b>
	Sliding	1.0	3.30	<b>PASS</b>
Reinf. Conc. Anchor Block (A) at 224.79-ft radius.	Uplift	1.0	2.67	<b>PASS</b>
	Sliding	1.0	3.50	<b>PASS</b>
Reinf. Conc. Anchor Block (A) at 247.15-ft radius.	Uplift	1.0	3.41	<b>PASS</b>
	Sliding	1.0	5.00	<b>PASS</b>
		<b>Ultimate Bearing</b>	<b>Proposed</b>	
Base Foundation	Bearing	16.0 ksf	9.57 ksf	<b>PASS</b>

| Note 1: FS denotes 'Factor of Safety'.

## Conclusion

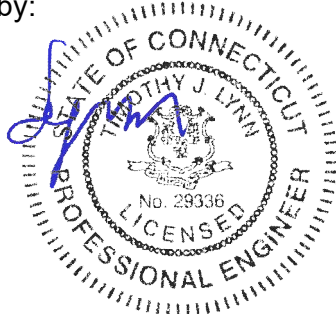
This analysis shows that the subject tower **is adequate** to support the proposed modified antenna configuration.

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

Please feel free to call with any questions or comments.

Respectfully Submitted by:

Timothy J. Lynn, PE  
 Structural Engineer



*Standard Conditions for Furnishing of  
Professional Engineering Services on  
Existing Structures*

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

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

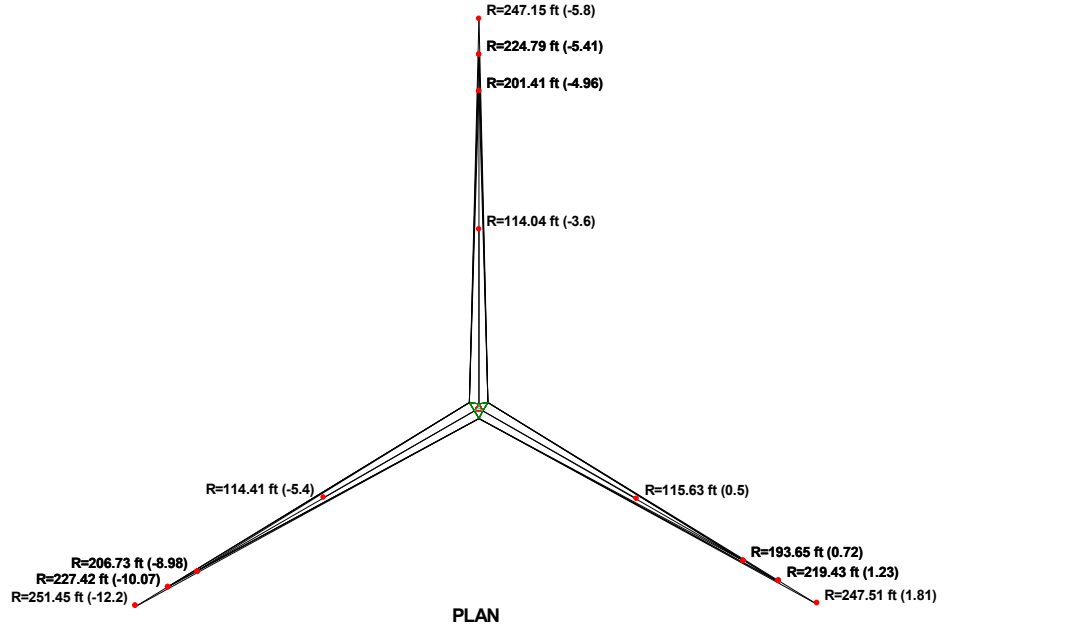
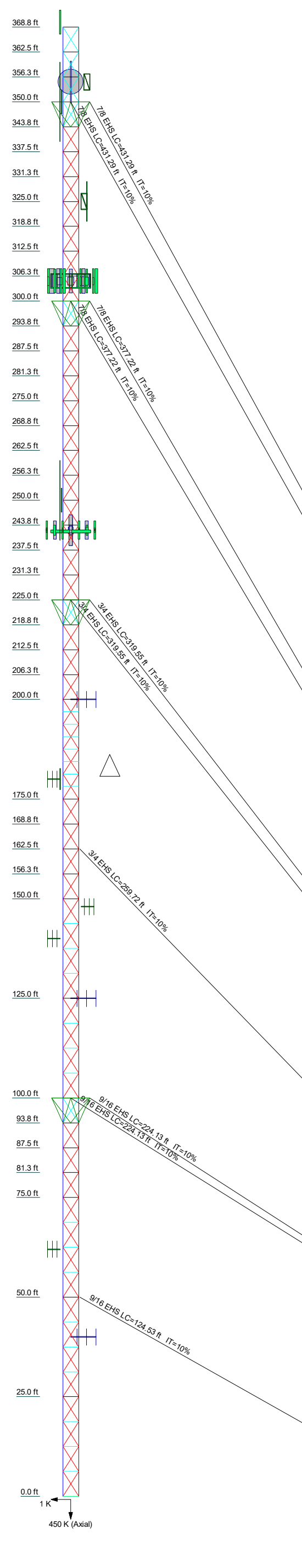
## GENERAL DESCRIPTION OF STRUCTURAL ANALYSIS PROGRAM

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

### tnxTower Features:

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

Section	T1	T2	T3	T4	T5	T6	T7	T8	T9	T10	T11	T12	T13	T14	T15	T16	T17	T18	T19	T20	T21	T22	T23	T24	T25	T26	T27	T28	T29	T30	T31	T32	T33	T34	T35	T36	T37	T38	T39	T40	T41
Legs	SR 3/4																				SR 3										SR 2, 3/4										
Leg Grade	A																				B										SR 5/8										
Diagonals	SR 3/4																				SR 3/4										SR 3/4										
Diagonal Grade	A, 36																				B										A, 36										
Top Girts	P1.25x.14																				2L 1/2x2x1/4										P1.25x.14										
Horizontals	N.A.																				N.A.										N.A.										
Sec. Horizontals	N.A.																				N.A.										N.A.										
Face Width (ft)	5																				5										5										
# Panels @ (ft)	59 @ 6.25																				59 @ 6.25										59 @ 6.25										
Weight (K)	42.5	42.5	42.5	42.5	42.5	42.5	42.5	42.5	42.5	42.5	42.5	42.5	42.5	42.5	42.5	42.5	42.5	42.5	42.5	42.5	42.5	42.5	42.5	42.5	42.5	42.5	42.5	42.5	42.5	42.5	42.5	42.5	42.5	42.5	42.5	42.5	42.5	42.5	42.5	42.5	42.5



### DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION	TYPE	ELEVATION
Search Antenna	370	RRUS-32 (ATI - Proposed)	242.5
10'6"x4" Pipe Mount	355	RRUS-32 (ATI - Proposed)	242.5
Rohn 6' Side-Arm(1)	355	RRUS-32 (ATI - Proposed)	242.5
8' Dish	355	DC6-48-60-18-8F Surge Arrestor (ATI - Existing)	242.5
6"x4" Pipe Mount	350	Pirod 12' T-Frame Sector Mount (1) (ATI - Existing)	242.5
20' x 3" Dia Omni	350	Pirod 12' T-Frame Sector Mount (1) (ATI - Existing)	242.5
ROHN 3-ft Side Arm	325	Pirod 12' T-Frame Sector Mount (1) (ATI - Existing)	242.5
10' x 3" Dia Omni	325	Pirod 12' T-Frame Sector Mount (1) (ATI - Existing)	242.5
QUAD656C0000 (Verizon Existing)	305	(2) LGP21901 Diplexer (ATI - Existing)	242.5
HBXX-6517DS (Verizon Existing)	305	(2) 7770.00 (ATI - Existing)	242.5
LNX-6514DS-T4M (Verizon Existing)	305	(2) 7770.00 (ATI - Existing)	242.5
HBXX-6517DS (Verizon Existing)	305	(2) 7770.00 (ATI - Existing)	242.5
QUAD656C0000 (Verizon Existing)	305	(2) 7770.00 (ATI - Existing)	242.5
HBXX-6517DS (Verizon Existing)	305	HPA-65R-BUU-H6 (ATI - Proposed)	242.5
LNX-6514DS-T4M (Verizon Existing)	305	HPA-65R-BUU-H8 (ATI - Proposed)	242.5
HBXX-6517DS (Verizon Existing)	305	HPA-65R-BUU-H8 (ATI - Proposed)	242.5
QUAD656C0000 (Verizon Existing)	305	(2) LPG21401 TMA (ATI - Existing)	242.5
HBXX-6517DS (Verizon Existing)	305	(2) LPG21401 TMA (ATI - Existing)	242.5
RRH4x45/2x90-AWS (Verizon Existing)	305	(2) LGP21901 Diplexer (ATI - Existing)	242.5
RRH4x45/2x90-AWS (Verizon Existing)	305	(2) LGP21901 Diplexer (ATI - Existing)	242.5
RRH4x30-B13 (Verizon Existing)	305	RRUS-11 (ATI - Existing)	242.5
RRH4x30-B13 (Verizon Existing)	305	Yagi	200
RRH4x30-B13 (Verizon Existing)	305	(2) 5'3"x4" Pipe Mount	180
DB-T1-6Z-8AB-0Z (Verizon Existing)	305	(4) Yagi	180
DB-T1-6Z-8AB-0Z (Verizon Existing)	305	Yagi	148
Rohn 6' x 12' Boom Gate (1) (Verizon Existing)	305	Yagi	140
Rohn 6' x 12' Boom Gate (1) (Verizon Existing)	305	Yagi	125
Rohn 6' x 12' Boom Gate (1) (Verizon Existing)	305	(2) X-Style	88
6"x4" Pipe Mount	250	X-Style	88
20' x 3" Dia Omni	250	X-Style	88
RRUS-11 (ATI - Existing)	242.5	Yagi	62
RRUS-11 (ATI - Existing)	242.5	Yagi	40

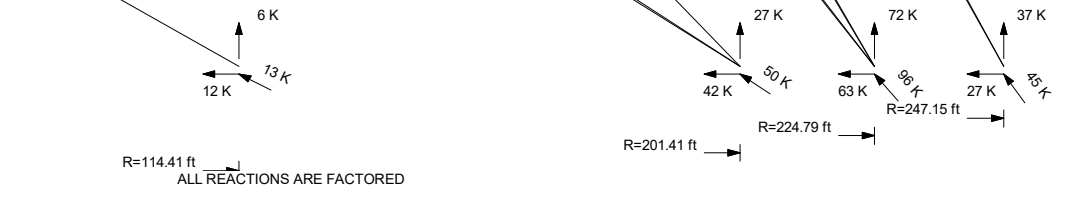
### SYMBOL LIST

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

### MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A36	36 ksi	58 ksi			

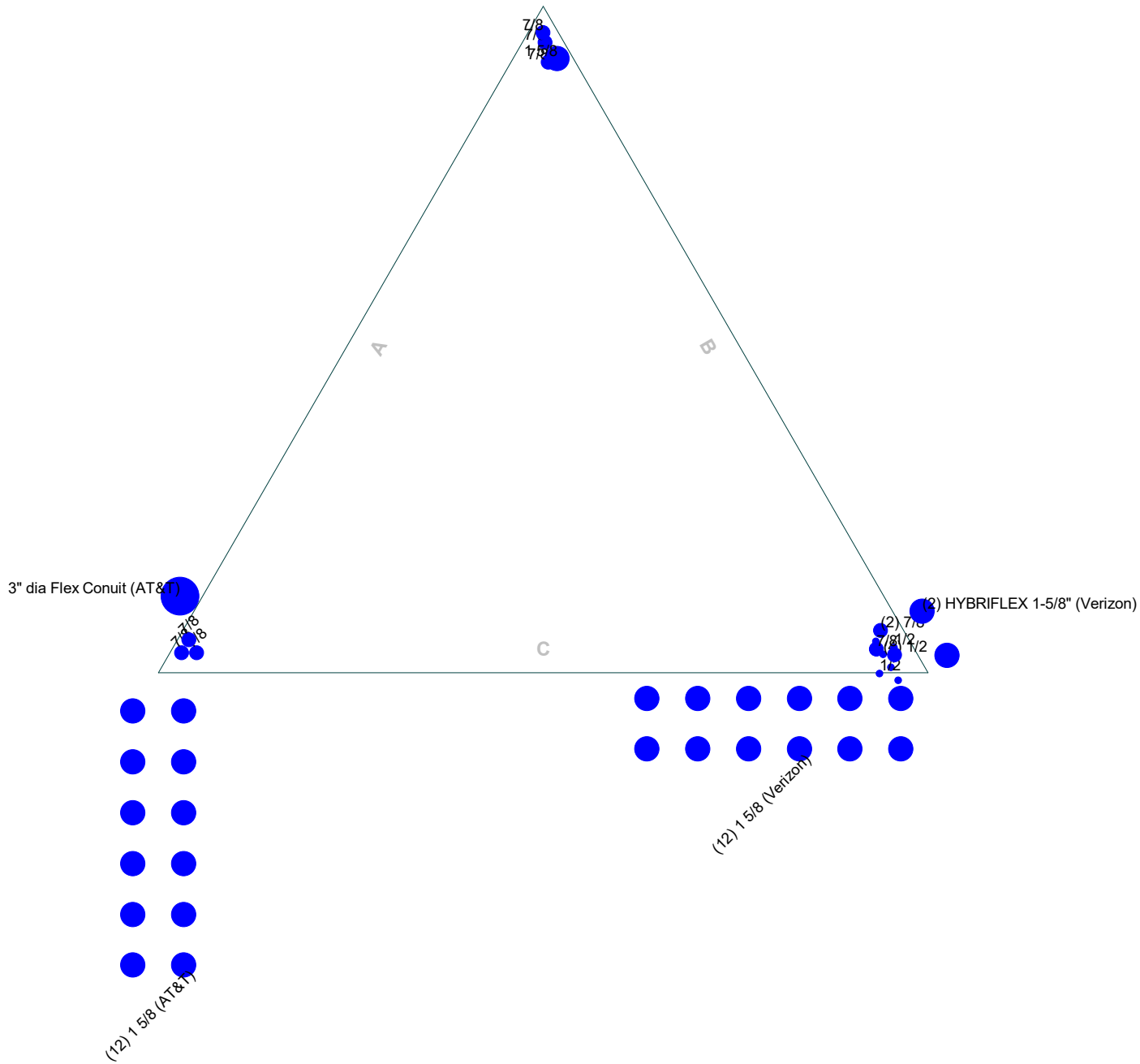
- ### TOWER DESIGN NOTES
1. Tower designed for Exposure C to the TIA-222-G Standard.
  2. Tower designed for a 105 mph basic wind in accordance with the TIA-222-G Standard.
  3. Tower is also designed for a 50 mph basic wind with 0.75 in ice. Ice is considered to increase in thickness with height.
  4. Deflections are based upon a 60 mph wind.
  5. Tower Structure Class II.
  6. Topographic Category 1 with Crest Height of 0.00 ft
  7. TOWER RATING: 90.8%



<b>Centek Engineering Inc.</b> 63-2 North Branford Rd. Branford, CT 06405 Phone: (203) 488-0580 FAX: (203) 488-8587	<b>Job:</b> 16071.44 - CT2049
	<b>Project:</b> 370' Guyed Tower - 689 Old Colchester Road, Montville, CT
	<b>Client:</b> AT&T Mobility <b>Drawn by:</b> T.JL <b>App'd:</b>
	<b>Code:</b> TIA-222-G <b>Date:</b> 11/01/16 <b>Scale:</b> NTS
	<b>Path:</b> <small>3333241607100_W444_Montville CT 204904_370'Guyed Tower Backup Documents Rev 11/01/16 Tower Files\370' Guyed Tower.dwg</small> <b>Dwg No.</b> E-1

# Feed Line Plan

— Round   
 — Flat   
 — App In Face   
 — App Out Face

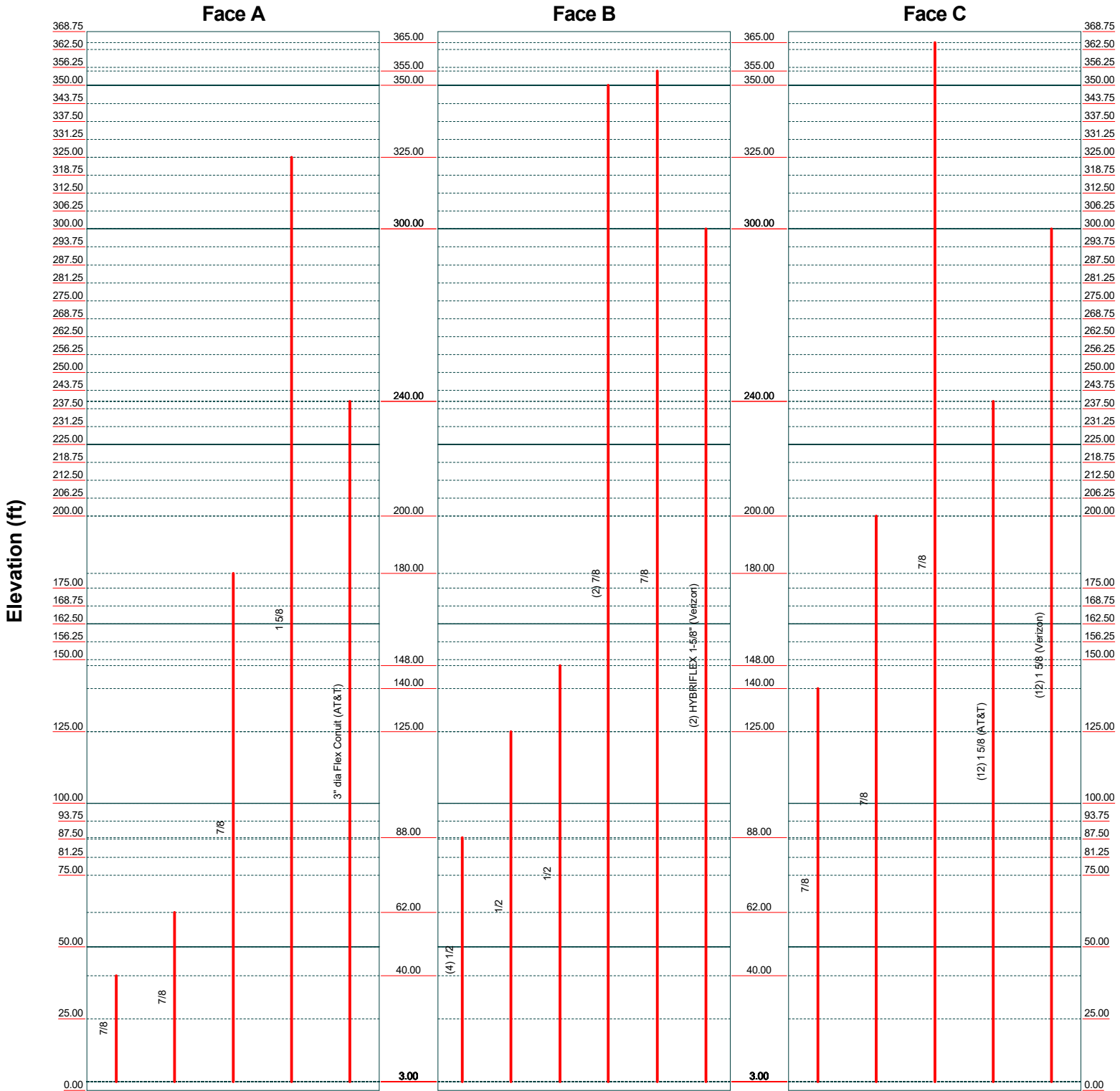


<b>Centek Engineering Inc.</b> 63-2 North Branford Rd. Branford, CT 06405 Phone: (203) 488-0580 FAX: (203) 488-8587		Job: <b>16071.44 - CT2049</b>	
		Project: <b>370' Guyed Tower - 689 Old Colchester Road, Montville, CT</b>	
Client: AT&T Mobility		Drawn by: T.J.L.	App'd:
Code: TIA-222-G		Date: 11/01/16	Scale: NTS
Path: J:\Jobs\1607100\1644_Montville CT\204904_Structural\Backup_Documentation\Per\11brnTower\Files\370' Guyed Rohn Tower.dwg		Dwg No. E-7	

# Feed Line Distribution Chart

## 0' - 368'9"

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

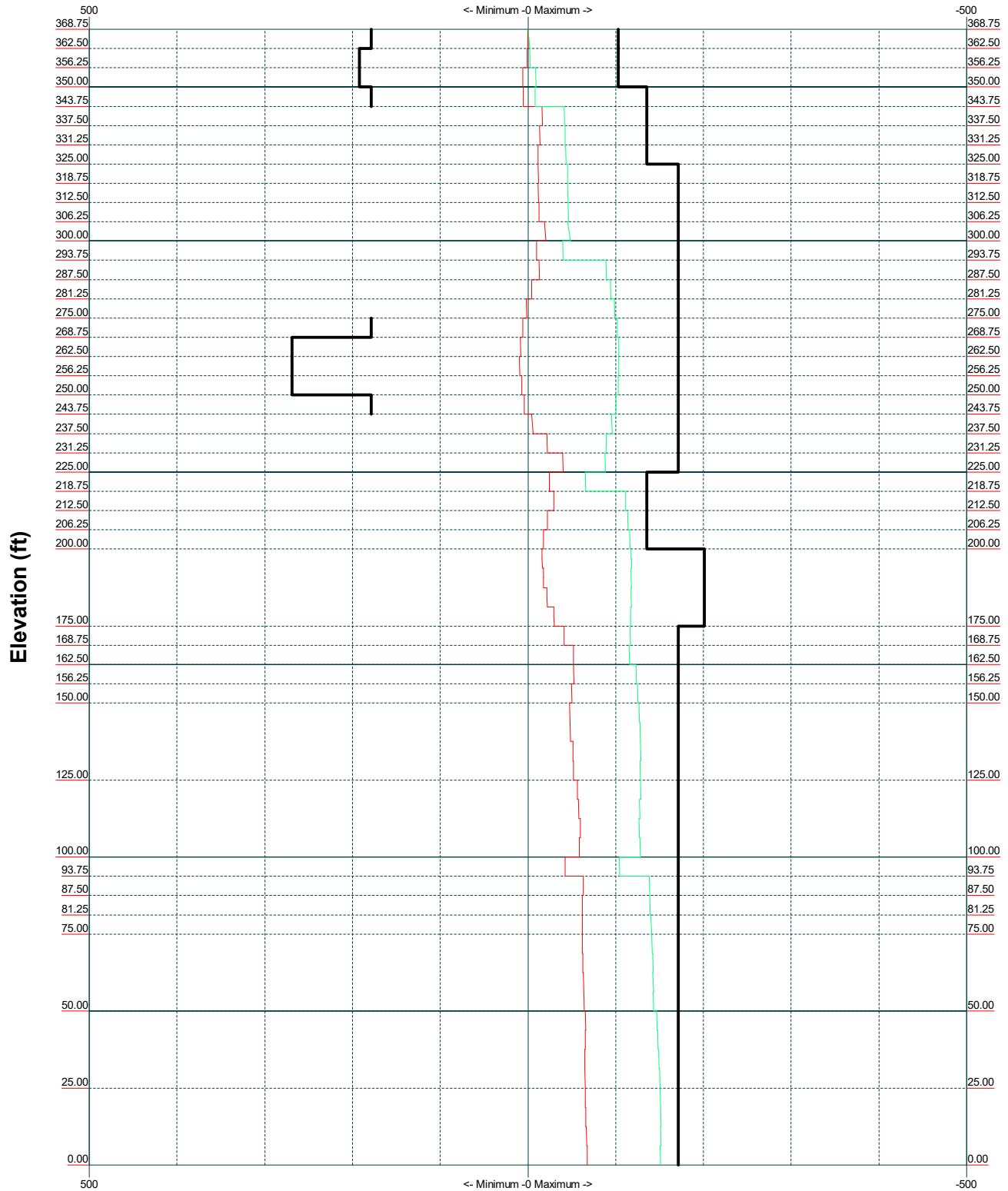


<b>Centek Engineering Inc.</b>		
63-2 North Branford Rd. Branford, CT 06405 Phone: (203) 488-0580 FAX: (203) 488-8587		
<b>Job: 16071.44 - CT2049</b>		
Project: <b>370' Guyed Tower - 689 Old Colchester Road, Montville, CT</b>		
Client: AT&T Mobility	Drawn by: TJL	App'd:
Code: TIA-222-G	Date: 11/01/16	Scale: NTS
Path: J:\Jobs\1607100\1644_Montville CT 204904_Structural\Backup_Documentation\Per_UltraTower_Files\370' Guyed Rohn Tower.m	Dwg No. E-7	

TIA-222-G - 105 mph/50 mph 0.7500 in Ice Exposure C

Leg Capacity ———

Leg Compression (K)



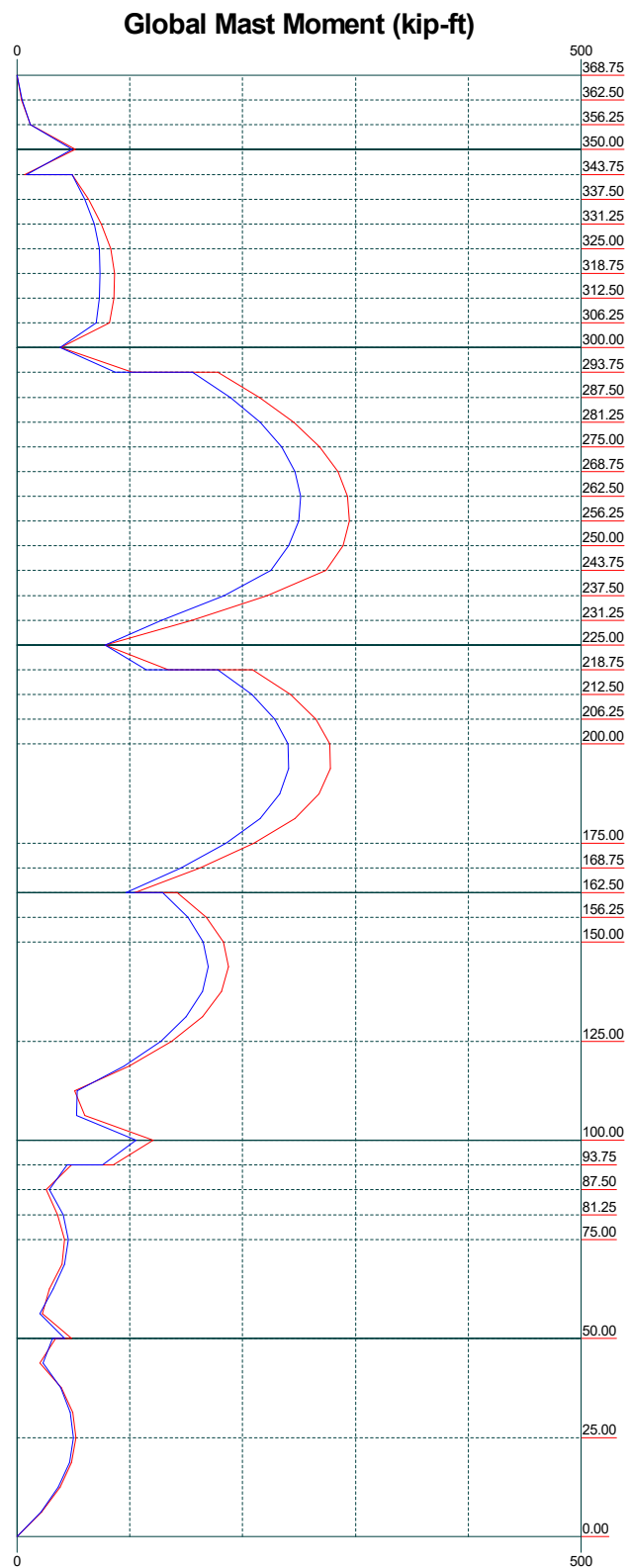
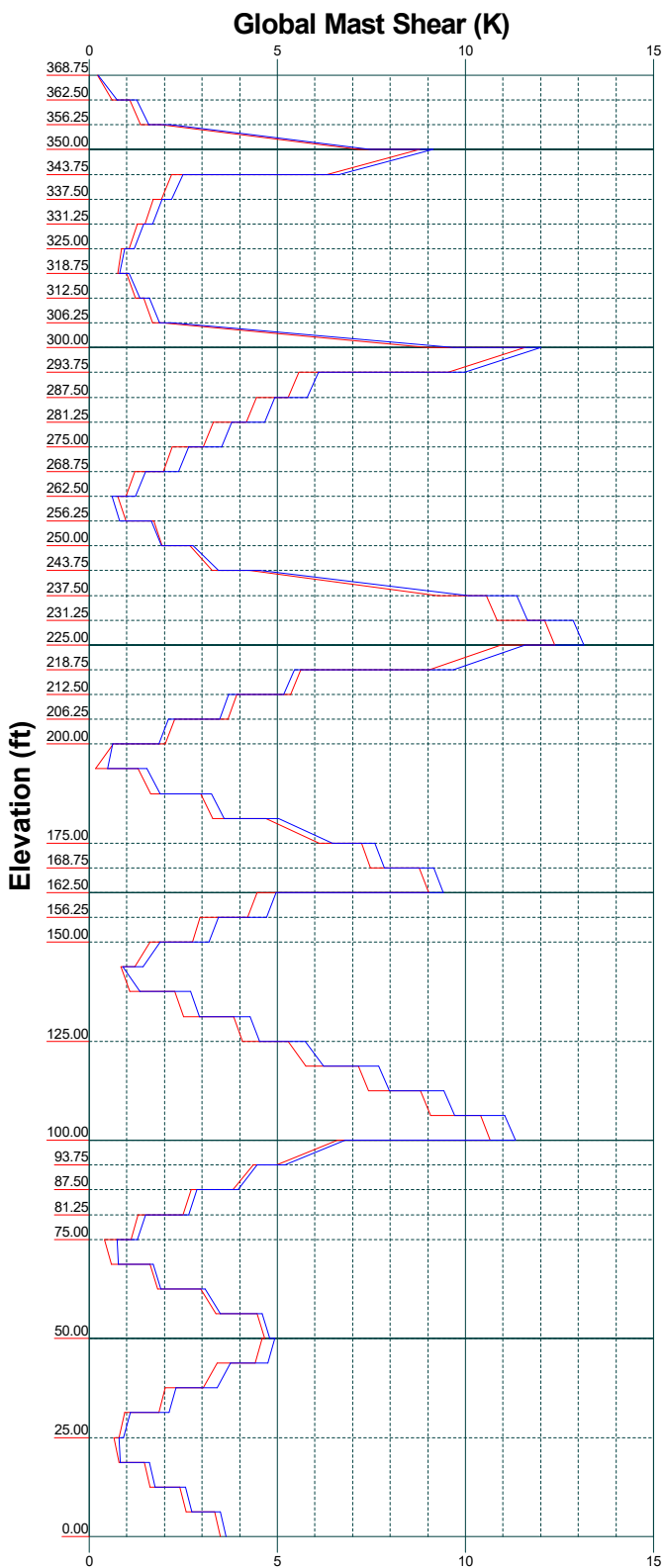
<b>Centek Engineering Inc.</b>		Job: <b>16071.44 - CT2049</b>	
63-2 North Branford Rd. Branford, CT 06405			
Phone: (203) 488-0580		Drawn by: TJL	App'd:
FAX: (203) 488-8587		Code: TIA-222-G	Date: 11/01/16
		Scale: NTS	Dwg No. E-3
Path: J:\Jobs\1607100\1644_Montville CT204904_Structural\Backup_Documentation\Per_UltraTower_Files\370' Guyed Rohn Tower.ctb			

Vx

Vz

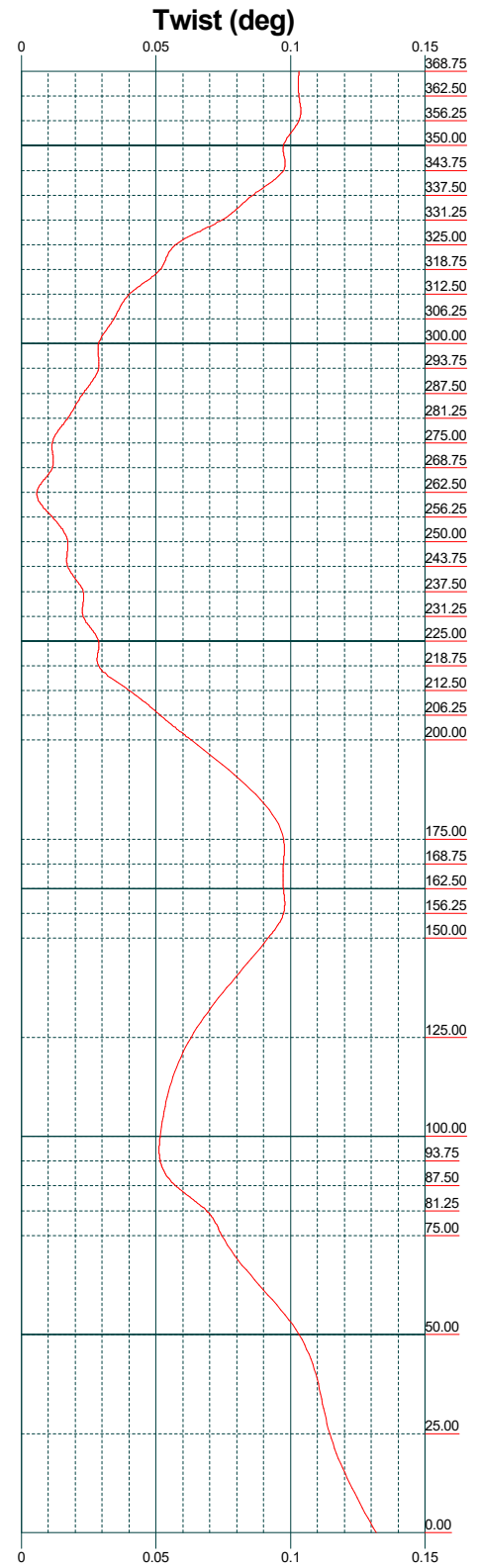
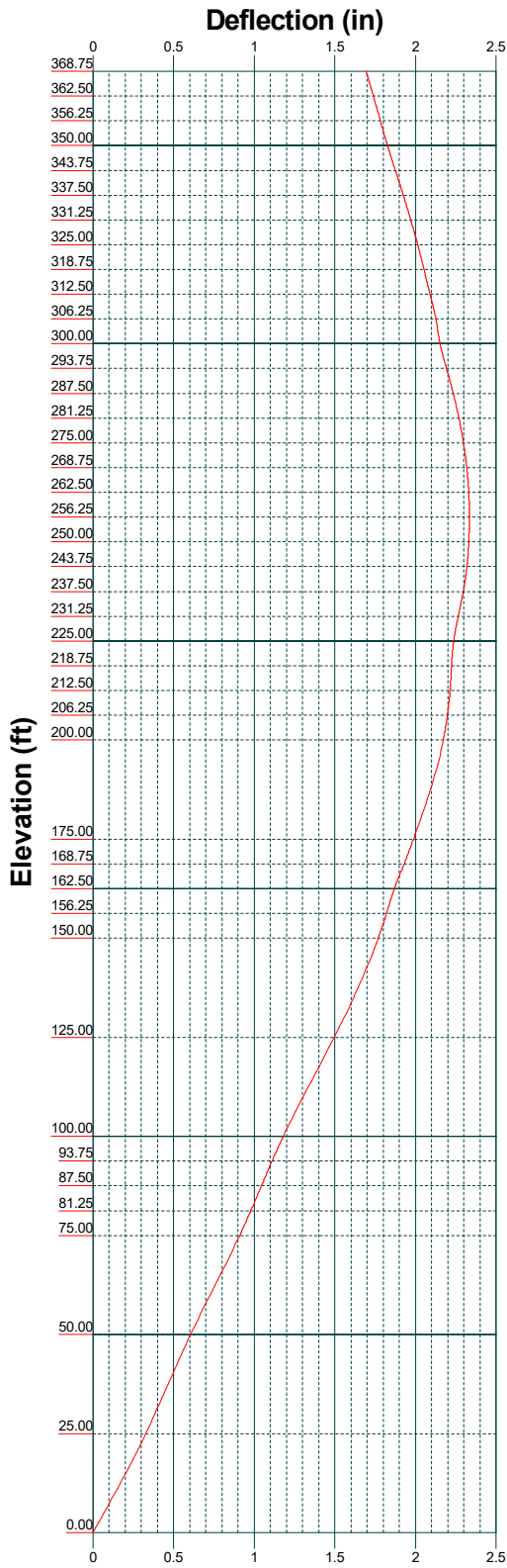
Mx

Mz



<b>Centek Engineering Inc.</b>		
63-2 North Branford Rd. Branford, CT 06405 Phone: (203) 488-0580 FAX: (203) 488-8587		
Job: <b>16071.44 - CT2049</b>	Project: <b>370' Guyed Tower - 689 Old Colchester Road, Montville, CT</b>	Client: AT&T Mobility
Code: TIA-222-G	Date: 11/01/16	App'd:
Path: J:\Jobs\1607100\1644_Montville CT\204904_Structural\Backup_Documentation\Per_UltraTower_Files\370' Guyed Rohn Tower.dwg	Dwg No. E-4	Scale: NTS

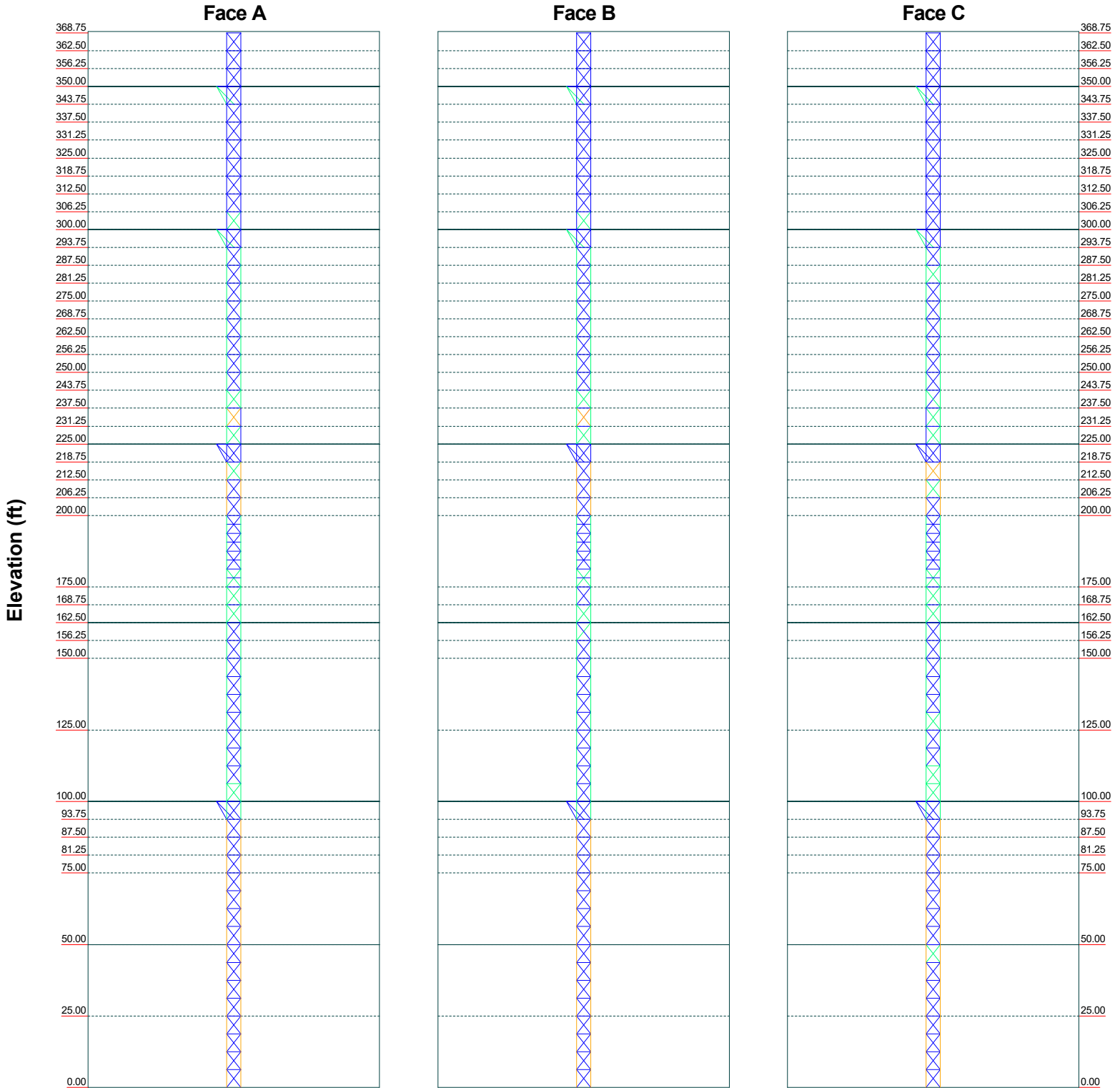




<b>Centek Engineering Inc.</b>		
63-2 North Branford Rd. Branford, CT 06405 Phone: (203) 488-0580 FAX: (203) 488-8587		
Job: <b>16071.44 - CT2049</b>	Project: <b>370' Guyed Tower - 689 Old Colchester Road, Montville, CT</b>	
Client: AT&T Mobility	Drawn by: TJL	App'd:
Code: TIA-222-G	Date: 11/01/16	Scale: NTS
Path: J:\Jobs\1607100\1644_Montville CT\204904_Structural\Backup_Documentation\Per\1\1607100\Files\370' Guyed Rohn Tower.dwg	Dwg No. E-5	

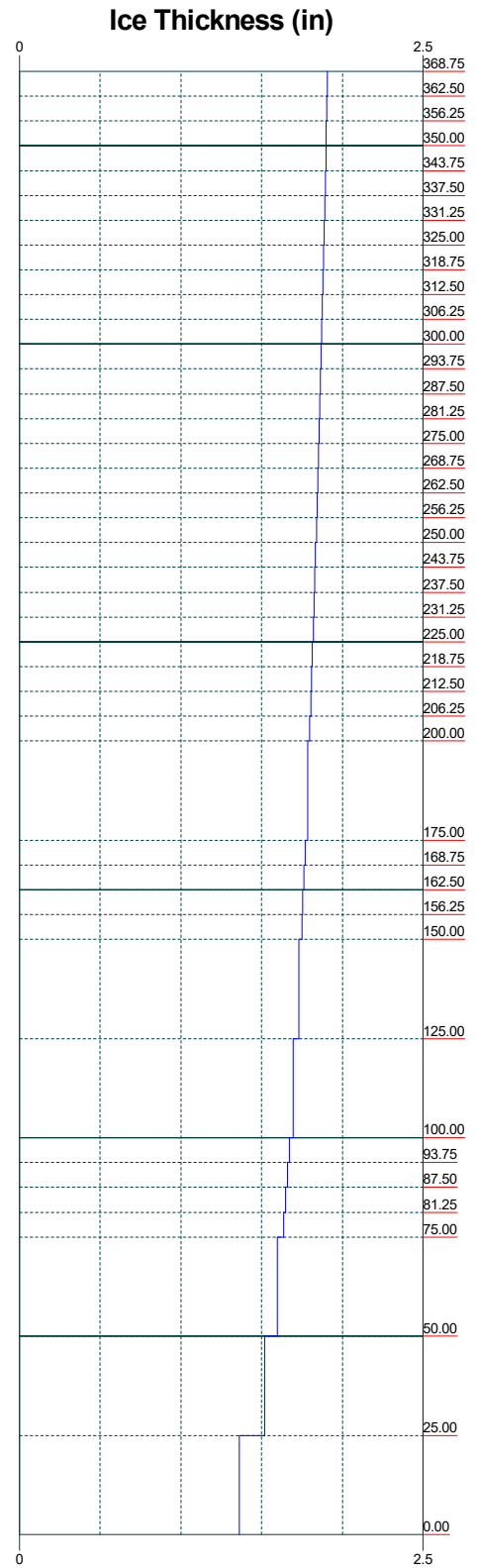
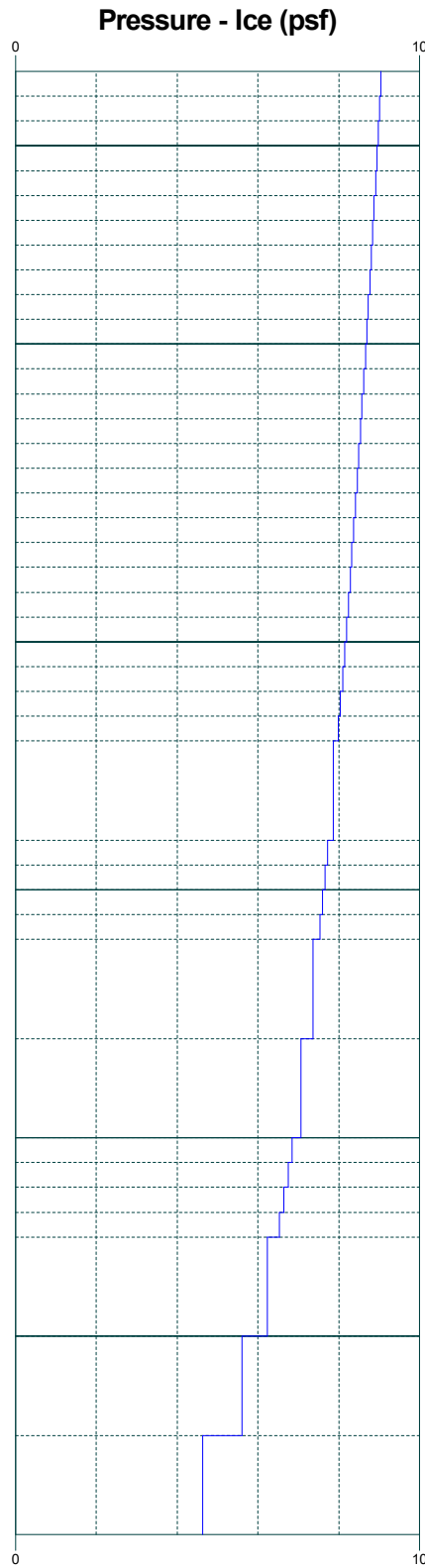
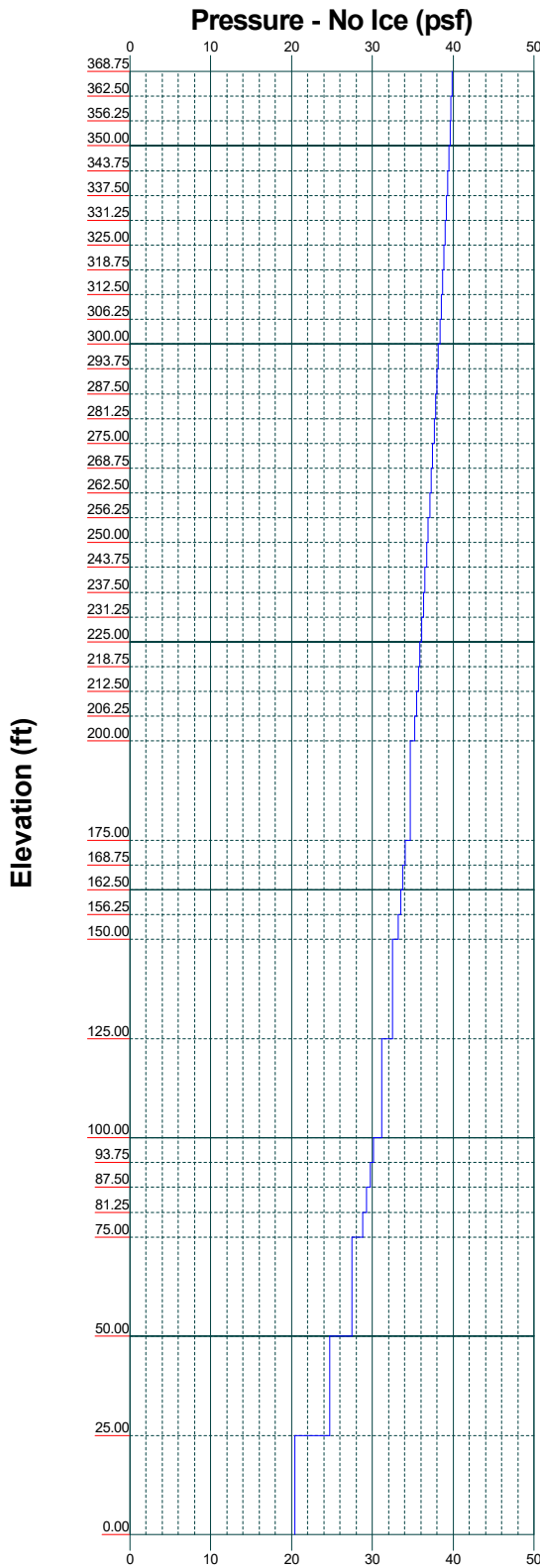
# Stress Distribution Chart 0' - 368'9"

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



<b>Centek Engineering Inc.</b>		Job: <b>16071.44 - CT2049</b>	
63-2 North Branford Rd. Branford, CT 06405			
Phone: (203) 488-0580		Date: 11/01/16	
FAX: (203) 488-8587		Scale: NTS	
Path: J:\Jobs\1607100\1644_Montville CT\204904_Structural\Backup_Documentation\Per_UltraTower_Files\370' Guyed Rohn Tower.ctb		Dwg No. E-8	

**Wind Pressures and Ice Thickness**  
**TIA-222-G - 105 mph/50 mph 0.7500 in Ice Exposure C**



<b>Centek Engineering Inc.</b>		
63-2 North Branford Rd. Branford, CT 06405 Phone: (203) 488-0580 FAX: (203) 488-8587		
Job: <b>16071.44 - CT2049</b>	Project: <b>370' Guyed Tower - 689 Old Colchester Road, Montville, CT</b>	
Client: AT&T Mobility	Drawn by: T.J.L.	App'd:
Code: TIA-222-G	Date: 11/01/16	Scale: NTS
Path: J:\Jobs\1607100\1644_Montville CT\204904_Structural\Backup_Documentation\Per\11\Guyed Tower Files\370' Guyed Rohn Tower.dwg	Dwg No. E-9	

<b>tnxTower</b>  <b>Centek Engineering Inc.</b> 63-2 North Branford Rd. Branford, CT 06405 Phone: (203) 488-0580 FAX: (203) 488-8587	<b>Job</b> 16071.44 - CT2049	<b>Page</b> 1 of 111
	<b>Project</b> 370' Guyed Tower - 689 Old Colchester Road, Montville, CT	<b>Date</b> 11:00:57 11/01/16
	<b>Client</b> AT&T Mobility	<b>Designed by</b> TJL

## Tower Input Data

The main tower is a 3x guyed tower with an overall height of 368.75 ft above the ground line.

The base of the tower is set at an elevation of 0.00 ft above the ground line.

The face width of the tower is 5.00 ft at the top and 5.00 ft at the base.

This tower is designed using the TIA-222-G standard.

The following design criteria apply:

Basic wind speed of 105 mph.

Structure Class II.

Exposure Category C.

Topographic Category 1.

Crest Height 0.00 ft.

Nominal ice thickness of 0.7500 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.

Tension only take-up is 0.0313 in.

Pressures are calculated at each section.

Safety factor used in guy design is 1.

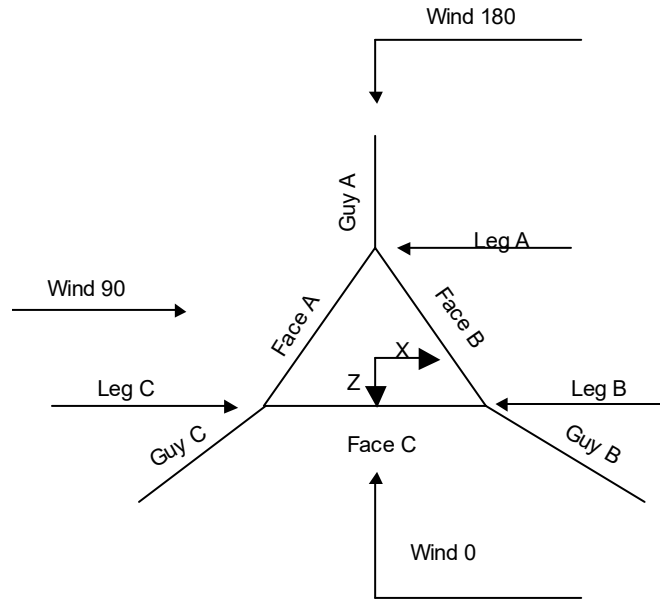
Stress ratio used in tower member design is 1.

Local bending stresses due to climbing loads, feed line supports, and appurtenance mounts are not considered.

## Options

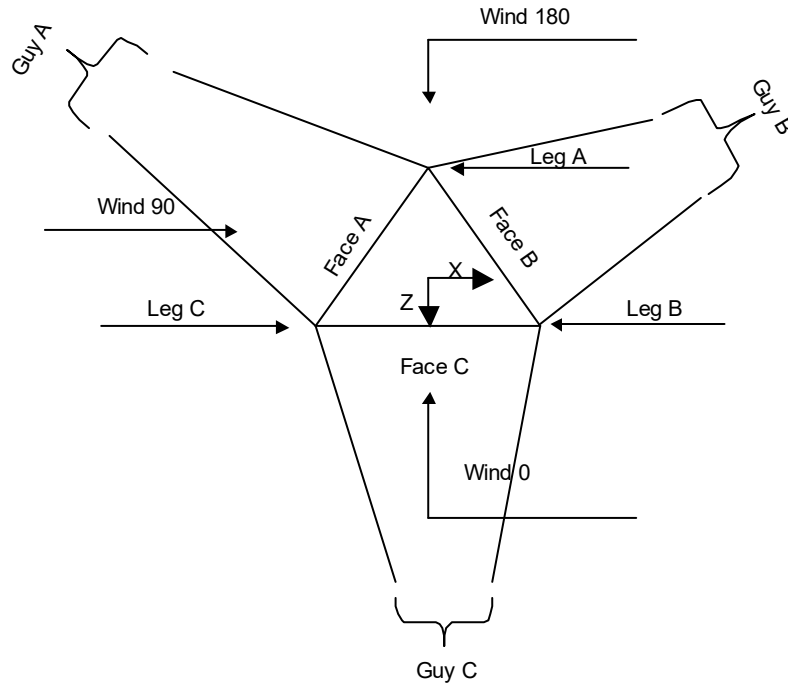
Consider Moments - Legs	Distribute Leg Loads As Uniform	Use ASCE 10 X-Brace Ly Rules
Consider Moments - Horizontals	Assume Legs Pinned	√ Calculate Redundant Bracing Forces
Consider Moments - Diagonals	√ Assume Rigid Index Plate	Ignore Redundant Members in FEA
Use Moment Magnification	√ Use Clear Spans For Wind Area	SR Leg Bolts Resist Compression
√ Use Code Stress Ratios	√ Use Clear Spans For KL/r	√ All Leg Panels Have Same Allowable
√ Use Code Safety Factors - Guys	√ Retension Guys To Initial Tension	Offset Girt At Foundation
Escalate Ice	Bypass Mast Stability Checks	√ Consider Feed Line Torque
Always Use Max Kz	Use Azimuth Dish Coefficients	Include Angle Block Shear Check
Use Special Wind Profile	√ Project Wind Area of Appurt.	Use TIA-222-G Bracing Resist. Exemption
√ Include Bolts In Member Capacity	√ Autocalc Torque Arm Areas	Use TIA-222-G Tension Splice Exemption
√ Leg Bolts Are At Top Of Section	Add IBC .6D+W Combination	Poles
√ Secondary Horizontal Braces Leg	√ Sort Capacity Reports By Component	Include Shear-Torsion Interaction
Use Diamond Inner Bracing (4 Sided)	Triangulate Diamond Inner Bracing	Always Use Sub-Critical Flow
SR Members Have Cut Ends	Treat Feed Line Bundles As Cylinder	Use Top Mounted Sockets
SR Members Are Concentric		

<b>Job</b>	16071.44 - CT2049	<b>Page</b>	2 of 111
<b>Project</b>	370' Guyed Tower - 689 Old Colchester Road, Montville, CT	<b>Date</b>	11:00:57 11/01/16
<b>Client</b>	AT&T Mobility	<b>Designed by</b>	TJL



**Corner & Starmount Guyed Tower**

<b>Job</b>	16071.44 - CT2049	<b>Page</b>	3 of 111
<b>Project</b>	370' Guyed Tower - 689 Old Colchester Road, Montville, CT	<b>Date</b>	11:00:57 11/01/16
<b>Client</b>	AT&T Mobility	<b>Designed by</b>	TJL



**Face Guyed**

**Tower Section Geometry**

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

<b>tnxTower</b>  <b>Centek Engineering Inc.</b> 63-2 North Branford Rd. Branford, CT 06405 Phone: (203) 488-0580 FAX: (203) 488-8587	<b>Job</b>	16071.44 - CT2049	<b>Page</b>	4 of 111	
	<b>Project</b>	370' Guyed Tower - 689 Old Colchester Road, Montville, CT		<b>Date</b>	11:00:57 11/01/16
	<b>Client</b>	AT&T Mobility		<b>Designed by</b>	TJL

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

### Tower Section Geometry (cont'd)

Tower Section	Tower Elevation <i>ft</i>	Diagonal Spacing <i>ft</i>	Bracing Type	Has K Brace End Panels	Has Horizontals	Top Girt Offset <i>in</i>	Bottom Girt Offset <i>in</i>
T1	368.75-362.50	6.25	X Brace	No	No	0.0000	0.0000
T2	362.50-356.25	6.25	X Brace	No	No	0.0000	0.0000
T3	356.25-350.00	6.25	X Brace	No	No	0.0000	0.0000
T4	350.00-343.75	6.25	X Brace	No	Yes	0.0000	0.0000
T5	343.75-337.50	6.25	TX Brace	No	Yes	0.0000	0.0000
T6	337.50-331.25	6.25	TX Brace	No	Yes	0.0000	0.0000
T7	331.25-325.00	6.25	TX Brace	No	Yes	0.0000	0.0000
T8	325.00-318.75	6.25	TX Brace	No	Yes	0.0000	0.0000
T9	318.75-312.50	6.25	TX Brace	No	Yes	0.0000	0.0000
T10	312.50-306.25	6.25	TX Brace	No	Yes	0.0000	0.0000
T11	306.25-300.00	6.25	TX Brace	No	Yes	0.0000	0.0000
T12	300.00-293.75	6.25	X Brace	No	Yes	0.0000	0.0000
T13	293.75-287.50	6.25	TX Brace	No	Yes	0.0000	0.0000
T14	287.50-281.25	6.25	TX Brace	No	Yes	0.0000	0.0000
T15	281.25-275.00	6.25	TX Brace	No	Yes	0.0000	0.0000
T16	275.00-268.75	6.25	TX Brace	No	Yes	0.0000	0.0000
T17	268.75-262.50	6.25	TX Brace	No	Yes	0.0000	0.0000
T18	262.50-256.25	6.25	TX Brace	No	Yes	0.0000	0.0000
T19	256.25-250.00	6.25	TX Brace	No	Yes	0.0000	0.0000
T20	250.00-243.75	6.25	TX Brace	No	Yes	0.0000	0.0000
T21	243.75-237.50	6.25	TX Brace	No	Yes	0.0000	0.0000
T22	237.50-231.25	6.25	TX Brace	No	Yes	0.0000	0.0000
T23	231.25-225.00	6.25	TX Brace	No	Yes	0.0000	0.0000

<b>tnxTower</b>  <b>Centek Engineering Inc.</b> 63-2 North Branford Rd. Branford, CT 06405 Phone: (203) 488-0580 FAX: (203) 488-8587	<b>Job</b> 16071.44 - CT2049	<b>Page</b> 5 of 111
	<b>Project</b> 370' Guyed Tower - 689 Old Colchester Road, Montville, CT	<b>Date</b> 11:00:57 11/01/16
	<b>Client</b> AT&T Mobility	<b>Designed by</b> TJL

Tower Section	Tower Elevation ft	Diagonal Spacing ft	Bracing Type	Has K Brace End Panels	Has Horizontals	Top Girt Offset in	Bottom Girt Offset in
T24	225.00-218.75	6.25	X Brace	No	Yes	0.0000	0.0000
T25	218.75-212.50	6.25	TX Brace	No	Yes	0.0000	0.0000
T26	212.50-206.25	6.25	TX Brace	No	Yes	0.0000	0.0000
T27	206.25-200.00	6.25	TX Brace	No	Yes	0.0000	0.0000
T28	200.00-175.00	6.25	TX Brace	No	Yes	0.0000	0.0000
T29	175.00-168.75	6.25	TX Brace	No	Yes	0.0000	0.0000
T30	168.75-162.50	6.25	TX Brace	No	Yes	0.0000	0.0000
T31	162.50-156.25	6.25	TX Brace	No	Yes	0.0000	0.0000
T32	156.25-150.00	6.25	TX Brace	No	Yes	0.0000	0.0000
T33	150.00-125.00	6.25	TX Brace	No	Yes	0.0000	0.0000
T34	125.00-100.00	6.25	TX Brace	No	Yes	0.0000	0.0000
T35	100.00-93.75	6.25	X Brace	No	Yes	0.0000	0.0000
T36	93.75-87.50	6.25	TX Brace	No	Yes	0.0000	0.0000
T37	87.50-81.25	6.25	TX Brace	No	Yes	0.0000	0.0000
T38	81.25-75.00	6.25	TX Brace	No	Yes	0.0000	0.0000
T39	75.00-50.00	6.25	TX Brace	No	Yes	0.0000	0.0000
T40	50.00-25.00	6.25	TX Brace	No	Yes	0.0000	0.0000
T41	25.00-0.00	6.25	TX Brace	No	Yes	0.0000	0.0000

### Tower Section Geometry (cont'd)

Tower Elevation ft	Leg Type	Leg Size	Leg Grade	Diagonal Type	Diagonal Size	Diagonal Grade
T1 368.75-362.50	Solid Round	2 3/4	A36 (36 ksi)	Single Angle	L2 1/2x2 1/2x1/4	A36 (36 ksi)
T2 362.50-356.25	Solid Round	2 3/4	A36 (36 ksi)	Double Angle	2L3x3x5/16	A36 (36 ksi)
T3 356.25-350.00	Solid Round	2 3/4	A36 (36 ksi)	Double Angle	2L3x3x5/16	A36 (36 ksi)
T4 350.00-343.75	Solid Round	3	A36 (36 ksi)	Single Angle	L3x2 1/2x1/4	A36 (36 ksi)
T5 343.75-337.50	Solid Round	3	A36 (36 ksi)	Solid Round	5/8	A36 (36 ksi)
T6 337.50-331.25	Solid Round	3	A36 (36 ksi)	Solid Round	5/8	A36 (36 ksi)
T7 331.25-325.00	Solid Round	3	A36 (36 ksi)	Solid Round	5/8	A36 (36 ksi)
T8 325.00-318.75	Solid Round	3 1/4	A36 (36 ksi)	Solid Round	3/4	A36 (36 ksi)
T9 318.75-312.50	Solid Round	3 1/4	A36 (36 ksi)	Solid Round	3/4	A36 (36 ksi)
T10 312.50-306.25	Solid Round	3 1/4	A36 (36 ksi)	Solid Round	3/4	A36 (36 ksi)
T11 306.25-300.00	Solid Round	3 1/4	A36 (36 ksi)	Solid Round	3/4	A36 (36 ksi)
T12 300.00-293.75	Solid Round	3 1/4	A36 (36 ksi)	Single Angle	L3x2 1/2x1/4	A36 (36 ksi)
T13 293.75-287.50	Solid Round	3 1/4	A36 (36 ksi)	Solid Round	3/4	A36 (36 ksi)
T14 287.50-281.25	Solid Round	3 1/4	A36 (36 ksi)	Solid Round	5/8	A36 (36 ksi)
T15 281.25-275.00	Solid Round	3 1/4	A36 (36 ksi)	Solid Round	5/8	A36 (36 ksi)
T16 275.00-268.75	Solid Round	3 1/4	A36 (36 ksi)	Solid Round	5/8	A36 (36 ksi)
T17 268.75-262.50	Solid Round	3 1/4	A36 (36 ksi)	Solid Round	5/8	A36 (36 ksi)



<b>tnxTower</b>  <b>Centek Engineering Inc.</b> 63-2 North Branford Rd. Branford, CT 06405 Phone: (203) 488-0580 FAX: (203) 488-8587	<b>Job</b>	<b>Page</b>	
		16071.44 - CT2049	6 of 111
	<b>Project</b>	370' Guyed Tower - 689 Old Colchester Road, Montville, CT	<b>Date</b>
		11:00:57 11/01/16	
<b>Client</b>	AT&T Mobility	<b>Designed by</b>	
		TJL	

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

### Tower Section Geometry (cont'd)

Tower Elevation ft	Top Girt Type	Top Girt Size	Top Girt Grade	Bottom Girt Type	Bottom Girt Size	Bottom Girt Grade
T1 368.75-362.50	Double Angle	2L2 1/2x2x1/4	A36	Pipe		A36

<p style="text-align: center;"><b><i>tnxTower</i></b></p> <p style="text-align: center;"><b>Centek Engineering Inc.</b> 63-2 North Branford Rd. Branford, CT 06405 Phone: (203) 488-0580 FAX: (203) 488-8587</p>	<b>Job</b>	<b>Page</b>	
		16071.44 - CT2049	7 of 111
	<b>Project</b>	370' Guyed Tower - 689 Old Colchester Road, Montville, CT	<b>Date</b>
		11:00:57 11/01/16	
<b>Client</b>	AT&T Mobility	<b>Designed by</b>	
		TJL	

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

<b><i>tnxTower</i></b>  <b>Centek Engineering Inc.</b> 63-2 North Branford Rd. Branford, CT 06405 Phone: (203) 488-0580 FAX: (203) 488-8587	<b>Job</b>	16071.44 - CT2049	<b>Page</b>	8 of 111
	<b>Project</b>	370' Guyed Tower - 689 Old Colchester Road, Montville, CT	<b>Date</b>	11:00:57 11/01/16
	<b>Client</b>	AT&T Mobility	<b>Designed by</b>	TJL

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

### Tower Section Geometry (cont'd)

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

<p style="text-align: center;"><b><i>tnxTower</i></b></p> <p style="text-align: center;"><b>Centek Engineering Inc.</b> 63-2 North Branford Rd. Branford, CT 06405 Phone: (203) 488-0580 FAX: (203) 488-8587</p>	<b>Job</b>	<b>Page</b>	
		16071.44 - CT2049	9 of 111
	<b>Project</b>	370' Guyed Tower - 689 Old Colchester Road, Montville, CT	<b>Date</b> 11:00:57 11/01/16
	<b>Client</b>	<b>Designed by</b>	
	AT&T Mobility	TJL	

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

### Tower Section Geometry (cont'd)

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













<b>tnxTower</b>  <b>Centek Engineering Inc.</b> 63-2 North Branford Rd. Branford, CT 06405 Phone: (203) 488-0580 FAX: (203) 488-8587	<b>Job</b>	16071.44 - CT2049	<b>Page</b>	15 of 111	
	<b>Project</b>	370' Guyed Tower - 689 Old Colchester Road, Montville, CT		<b>Date</b>	11:00:57 11/01/16
	<b>Client</b>	AT&T Mobility		<b>Designed by</b>	TJL

### Tower Section Geometry (cont'd)

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

<b>Job</b>	16071.44 - CT2049	<b>Page</b>	16 of 111
<b>Project</b>	370' Guyed Tower - 689 Old Colchester Road, Montville, CT	<b>Date</b>	11:00:57 11/01/16
<b>Client</b>	AT&T Mobility	<b>Designed by</b>	TJL

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

**Guy Data**

Guy Elevation ft	Guy Grade	Guy Size	Initial Tension K	%	Guy Modulus ksi	Guy Weight plf	L <sub>u</sub> ft	Anchor Radius ft	Anchor Azimuth Adj. °	Anchor Elevation ft	End Fitting Efficiency %
350	EHS	A 7/8	7.97	10%	19000	1.581	430.92	247.15	0.0000	-5.80	100%
		B 7/8	7.97	10%	19000	1.581	424.88	247.51	0.0000	1.81	100%
		C 7/8	7.97	10%	19000	1.581	438.63	251.45	0.0000	-12.20	100%
300	EHS	A 7/8	7.97	10%	19000	1.581	376.90	224.79	0.0000	-5.41	100%
		B 7/8	7.97	10%	19000	1.581	368.38	219.43	0.0000	1.23	100%
		C 7/8	7.97	10%	19000	1.581	382.21	227.42	0.0000	-10.07	100%
225	EHS	A 3/4	5.83	10%	19000	1.155	319.27	224.79	0.0000	-5.41	100%
		B 3/4	5.83	10%	19000	1.155	310.78	219.43	0.0000	1.23	100%
		C 3/4	5.83	10%	19000	1.155	324.45	227.42	0.0000	-10.07	100%
162.5	EHS	A 3/4	5.83	10%	19000	1.155	259.49	201.41	0.0000	-4.96	100%
		B 3/4	5.83	10%	19000	1.155	249.91	193.65	0.0000	0.72	100%
		C 3/4	5.83	10%	19000	1.155	266.15	206.73	0.0000	-8.98	100%
100	EHS	A 9/16	3.50	10%	21000	0.671	223.95	201.41	0.0000	-4.96	100%
		B 9/16	3.50	10%	21000	0.671	214.45	193.65	0.0000	0.72	100%
		C 9/16	3.50	10%	21000	0.671	230.53	206.73	0.0000	-8.98	100%
50	EHS	A 9/16	3.50	10%	21000	0.671	123.30	114.04	0.0000	-3.60	100%
		B 9/16	3.50	10%	21000	0.671	123.03	115.63	0.0000	0.50	100%
		C 9/16	3.50	10%	21000	0.671	124.42	114.41	0.0000	-5.40	100%

<b>tnxTower</b>  <b>Centek Engineering Inc.</b> 63-2 North Branford Rd. Branford, CT 06405 Phone: (203) 488-0580 FAX: (203) 488-8587	<b>Job</b> 16071.44 - CT2049	<b>Page</b> 17 of 111
	<b>Project</b> 370' Guyed Tower - 689 Old Colchester Road, Montville, CT	<b>Date</b> 11:00:57 11/01/16
	<b>Client</b> AT&T Mobility	<b>Designed by</b> TJL

### Guy Data(cont'd)

Guy Elevation ft	Mount Type	Torque-Arm Spread ft	Torque-Arm Leg Angle °	Torque-Arm Style	Torque-Arm Grade	Torque-Arm Type	Torque-Arm Size
350	Torque Arm	12.00	49.0000	Bat Ear	A36 (36 ksi)	Double Angle	2L3x2 1/2x1/4
300	Torque Arm	12.00	49.0000	Bat Ear	A36 (36 ksi)	Double Angle	2L3x2 1/2x1/4
225	Torque Arm	12.00	49.0000	Bat Ear	A36 (36 ksi)	Double Angle	2L3x2 1/2x1/4
162.5	Corner						
100	Torque Arm	12.00	49.0000	Bat Ear	A36 (36 ksi)	Double Angle	2L3x2 1/2x1/4
50	Corner						

### Guy Data (cont'd)

Guy Elevation ft	Diagonal Grade	Diagonal Type	Upper Diagonal Size	Lower Diagonal Size	Is Strap	Pull-Off Grade	Pull-Off Type	Pull-Off Size
350.00	A572-50 (50 ksi)	Solid Round				A36 (36 ksi)	Channel	
300.00	A572-50 (50 ksi)	Solid Round				A36 (36 ksi)	Channel	
225.00	A572-50 (50 ksi)	Solid Round				A36 (36 ksi)	Channel	
162.50	A572-50 (50 ksi)	Solid Round				A36 (36 ksi)	Channel	
100.00	A572-50 (50 ksi)	Solid Round				A36 (36 ksi)	Channel	
50.00	A572-50 (50 ksi)	Solid Round				A36 (36 ksi)	Channel	

### Guy Data (cont'd)

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

<b>tnxTower</b>  <b>Centek Engineering Inc.</b> 63-2 North Branford Rd. Branford, CT 06405 Phone: (203) 488-0580 FAX: (203) 488-8587	<b>Job</b>	16071.44 - CT2049	<b>Page</b>	18 of 111	
	<b>Project</b>	370' Guyed Tower - 689 Old Colchester Road, Montville, CT		<b>Date</b>	11:00:57 11/01/16
	<b>Client</b>	AT&T Mobility		<b>Designed by</b>	TJL

Guy Elevation	Cable Weight	Cable Weight	Cable Weight	Cable Weight	Tower Intercept	Tower Intercept	Tower Intercept	Tower Intercept
ft	A	B	C	D	A	B	C	D
	K	K	K	K	ft	ft	ft	ft
					2.1 sec/pulse	2.1 sec/pulse	2.1 sec/pulse	

### Guy Data (cont'd)

Guy Elevation ft	Calc K Single Angles	Calc K Solid Rounds	Torque Arm		Pull Off		Diagonal	
			K <sub>x</sub>	K <sub>y</sub>	K <sub>x</sub>	K <sub>y</sub>	K <sub>x</sub>	K <sub>y</sub>
350	No	No	1	1	1	1	1	1
300	No	No	1	1	1	1	1	1
225	No	No	1	1	1	1	1	1
162.5	No	No			1	1	1	1
100	No	No	1	1	1	1	1	1
50	No	No			1	1	1	1

### Guy Data (cont'd)

Guy Elevation ft	Torque-Arm				Pull Off				Diagonal			
	Bolt Size in	Number	Net Width Deduct in	U	Bolt Size in	Number	Net Width Deduct in	U	Bolt Size in	Number	Net Width Deduct in	U
350	0.8750	0	0.0000	1	0.6250	0	0.0000	0.75	0.6250	0	0.0000	0.75
	A325N				A325N				A325N			
300	0.8750	0	0.0000	1	0.6250	0	0.0000	0.75	0.6250	0	0.0000	0.75
	A325N				A325N				A325N			
225	0.8750	0	0.0000	1	0.6250	0	0.0000	0.75	0.6250	0	0.0000	0.75
	A325N				A325N				A325N			
162.5	0.8750	0	0.0000	1	0.6250	0	0.0000	0.75	0.6250	0	0.0000	0.75
	A325N				A325N				A325N			
100	0.8750	0	0.0000	1	0.6250	0	0.0000	0.75	0.6250	0	0.0000	0.75
	A325N				A325N				A325N			
50	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 ft	Guy Location	z ft	q <sub>z</sub> psf	q <sub>z</sub> Ice psf	Ice Thickness in
350	A	172.10	34	8	1.7694
	B	175.91	34	8	1.7732
	C	168.90	34	8	1.7660
300	A	147.30	33	7	1.7420
	B	150.62	33	8	1.7459
	C	144.97	33	7	1.7393
225	A	109.80	31	7	1.6916
	B	113.12	31	7	1.6966
	C	107.47	31	7	1.6880

<b>tnxTower</b>  <b>Centek Engineering Inc.</b> 63-2 North Branford Rd. Branford, CT 06405 Phone: (203) 488-0580 FAX: (203) 488-8587	<b>Job</b> 16071.44 - CT2049	<b>Page</b> 19 of 111
	<b>Project</b> 370' Guyed Tower - 689 Old Colchester Road, Montville, CT	<b>Date</b> 11:00:57 11/01/16
	<b>Client</b> AT&T Mobility	<b>Designed by</b> TJL

Guy Elevation ft	Guy Location	z ft	q <sub>z</sub> psf	q <sub>z</sub> Ice psf	Ice Thickness in
162.5	A	78.77	29	7	1.6363
	B	81.61	29	7	1.6422
	C	76.76	29	7	1.6321
100	A	47.52	26	6	1.5557
	B	50.36	26	6	1.5648
	C	45.51	26	6	1.5490
50	A	23.20	22	5	1.4481
	B	25.25	23	5	1.4604
	C	22.30	22	5	1.4423

### Guy-Mast Forces (Excluding Wind) - No Ice

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

<b>tnxTower</b>  <b>Centek Engineering Inc.</b> 63-2 North Branford Rd. Branford, CT 06405 Phone: (203) 488-0580 FAX: (203) 488-8587	<b>Job</b>	16071.44 - CT2049	<b>Page</b>	20 of 111
	<b>Project</b>	370' Guyed Tower - 689 Old Colchester Road, Montville, CT	<b>Date</b>	11:00:57 11/01/16
	<b>Client</b>	AT&T Mobility	<b>Designed by</b>	TJL

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

### Guy-Mast Forces (Excluding Wind) - Ice

Guy Elevation	Guy Location	Chord Angle	Guy Tension Top Bottom K	F <sub>x</sub>	F <sub>y</sub>	F <sub>z</sub>	M <sub>x</sub>	M <sub>y</sub>	M <sub>z</sub>
ft		°		K	K	K	kip-ft	kip-ft	kip-ft
350	A	55.5848	16.57 13.98	-0.21	14.17	-8.60	-49.08	52.31	-85.01
	A	55.5848	16.57 13.98	0.21	14.17	-8.60	-49.08	-52.31	85.01
	B	54.9653	16.57 14.02	7.68	14.07	4.19	97.49	53.20	0.00
	B	54.9653	16.57 14.02	7.46	14.07	4.56	-48.75	-53.20	-84.43
	C	55.5941	16.67 14.04	-7.38	14.26	4.50	-49.39	52.55	85.55
	C	55.5941	16.67 14.04	-7.58	14.26	4.14	98.78	-52.55	0.00
			Sum:	0.18	84.99	0.19	-0.02	0.00	1.11
	A	54.0597	15.75 13.57	-0.23	13.21	-8.57	-45.77	52.25	-79.28
	A	54.0597	15.75 13.57	0.23	13.21	-8.57	-45.77	-52.25	79.28
	B	54.1282	15.63 13.49	7.48	13.12	4.05	90.87	51.84	0.00
B	54.1282	15.63 13.49	7.25	13.12	4.46	-45.44	-51.84	-78.70	

<b>tnxTower</b>  <b>Centek Engineering Inc.</b> 63-2 North Branford Rd. Branford, CT 06405 Phone: (203) 488-0580 FAX: (203) 488-8587	<b>Job</b> 16071.44 - CT2049	<b>Page</b> 21 of 111
	<b>Project</b> 370' Guyed Tower - 689 Old Colchester Road, Montville, CT	<b>Date</b> 11:00:57 11/01/16
	<b>Client</b> AT&T Mobility	<b>Designed by</b> TJJ

Guy Elevation	Guy Location	Chord Angle	Guy Tension Top Bottom K	F <sub>x</sub>	F <sub>y</sub>	F <sub>z</sub>	M <sub>x</sub>	M <sub>y</sub>	M <sub>z</sub>	
ft		°		K	K	K	kip-ft	kip-ft	kip-ft	
225	C	54.1506	15.81 13.60	-7.32	13.28	4.49	-46.01	52.29	79.68	
	C	54.1506	15.81 13.60	-7.55	13.28	4.09	92.01	-52.29	0.00	
				Sum:	<b>-0.14</b>	79.22	<b>-0.06</b>	<b>-0.10</b>	0.00	<b>0.98</b>
	A	46.1415	12.14 10.71	-0.21	9.22	-7.89	-31.95	48.07	-55.33	
	A	46.1415	12.14 10.71	0.21	9.22	-7.89	-31.95	-48.07	55.33	
	B	46.0057	12.04 10.65	6.91	9.12	3.74	63.20	47.86	0.00	
	B	46.0057	12.04 10.65	6.69	9.12	4.11	-31.60	-47.86	-54.73	
				Sum:	<b>-0.05</b>	55.27	<b>-0.05</b>	<b>-0.10</b>	0.00	<b>1.03</b>
162.5	A	40.1486	11.28 10.29	0.00	7.72	-8.22	-22.28	0.00	0.00	
	B	40.3002	11.14 10.18	7.03	7.63	4.06	11.02	0.00	-19.09	
	C	40.0717	11.37 10.36	-7.18	7.78	4.15	11.22	-0.00	19.44	
				Sum:	<b>-0.16</b>	23.13	<b>-0.02</b>	<b>-0.03</b>	0.00	<b>0.35</b>
	A	27.9237	7.60 7.10	-0.20	3.97	-6.48	-13.74	39.54	-23.80	
100	A	27.9237	7.60 7.10	0.20	3.97	-6.48	-13.74	-39.54	23.80	
	B	27.5536	7.50 7.03	5.66	3.86	3.03	26.78	39.22	0.00	
	B	27.5536	7.50 7.03	5.46	3.86	3.39	-13.39	-39.22	-23.19	
	C	28.1874	7.66 7.15	-5.54	4.04	3.42	-13.98	39.73	24.21	
	C	28.1874	7.66 7.15	-5.74	4.04	3.09	27.96	-39.73	0.00	
				Sum:	<b>-0.16</b>	23.73	<b>-0.02</b>	<b>-0.11</b>	0.00	<b>1.02</b>
	A	25.7442	5.98 5.75	0.00	2.81	-5.28	-8.10	0.00	0.00	
	B	23.7039	6.01 5.80	4.68	2.64	2.70	3.81	0.00	-6.59	
50	C	26.4162	5.98 5.74	-4.54	2.87	2.62	4.14	-0.00	7.17	
				Sum:	<b>0.14</b>	8.31	<b>0.05</b>	<b>-0.16</b>	0.00	<b>0.58</b>

### Guy-Mast Forces (Excluding Wind) - Service

Guy Elevation	Guy Location	Chord Angle	Guy Tension Top Bottom K	F <sub>x</sub>	F <sub>y</sub>	F <sub>z</sub>	M <sub>x</sub>	M <sub>y</sub>	M <sub>z</sub>
ft		°		K	K	K	kip-ft	kip-ft	kip-ft
350	A	55.5848	8.53	-0.11	7.15	-4.66	-24.76	28.35	-42.88



<b>Job</b>	16071.44 - CT2049	<b>Page</b>	22 of 111
<b>Project</b>	370' Guyed Tower - 689 Old Colchester Road, Montville, CT	<b>Date</b>	11:00:57 11/01/16
<b>Client</b>	AT&T Mobility	<b>Designed by</b>	TJL

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

<b>tnxTower</b>  <b>Centek Engineering Inc.</b> 63-2 North Branford Rd. Branford, CT 06405 Phone: (203) 488-0580 FAX: (203) 488-8587	<b>Job</b> 16071.44 - CT2049	<b>Page</b> 23 of 111
	<b>Project</b> 370' Guyed Tower - 689 Old Colchester Road, Montville, CT	<b>Date</b> 11:00:57 11/01/16
	<b>Client</b> AT&T Mobility	<b>Designed by</b> TJL

Guy Elevation	Guy Location	Chord Angle	Guy Tension Top Bottom K	F <sub>x</sub>	F <sub>y</sub>	F <sub>z</sub>	M <sub>x</sub>	M <sub>y</sub>	M <sub>z</sub>
ft		°		K	K	K	kip-ft	kip-ft	kip-ft
			3.50						
	B	23.7039	3.53	2.79	1.45	1.61	2.10	0.00	-3.64
			3.50						
	C	26.4162	3.54	-2.73	1.61	1.58	2.32	-0.00	4.02
			3.50						
			Sum:	<b>0.06</b>	4.63	<b>0.02</b>	<b>-0.11</b>	0.00	<b>0.38</b>

### Guy-Tensioning Information

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

### Feed Line/Linear Appurtenances - Entered As Round Or Flat

Description	Face or Leg	Allow Shield	Component Type	Placement	Face Offset	Lateral Offset	#	# Per Row	Clear Spacing	Width or Diameter	Perimeter	Weight
				ft	in	(Frac FW)			in	in	in	plf
7/8	A	No	Ar (CaAa)	40.00 - 3.00	-1.0000	0.46	1	1	1.1100	1.1100		0.54
7/8	A	No	Ar (CaAa)	62.00 - 3.00	-0.5000	0.47	1	1	1.1100	1.1100		0.54
1/2	B	No	Ar (CaAa)	88.00 - 3.00	-2.0000	0.46	4	4	0.5800	0.5800		0.25
1/2	B	No	Ar (CaAa)	125.00 - 3.00	-1.0000	0.45	1	1	0.5800	0.5800		0.25
7/8	C	No	Ar (CaAa)	140.00 - 3.00	-1.0000	0.47	1	1	1.1100	1.1100		0.54
1/2	B	No	Ar (CaAa)	148.00 - 3.00	-3.0000	0.47	1	1	0.5800	0.5800		0.25
7/8	A	No	Ar (CaAa)	180.00 - 3.00	-2.0000	0.44	1	1	1.1100	1.1100		0.54
7/8	C	No	Ar (CaAa)	200.00 - 3.00	-1.0000	0.45	1	1	1.1100	1.1100		0.54
1 5/8	A	No	Ar (CaAa)	325.00 - 3.00	-2.0000	0.45	1	1	1.9800	1.9800		1.04
7/8	B	No	Ar (CaAa)	350.00 - 3.00	-1.0000	0.44	2	2	1.1100	1.1100		0.54
7/8	B	No	Ar (CaAa)	355.00 - 3.00	-2.0000	0.44	1	1	1.1100	1.1100		0.54
7/8	C	No	Ar (CaAa)	365.00 - 3.00	-2.0000	0.46	1	1	1.1100	1.1100		0.54
3" dia Flex Conduit (AT&T)	A	No	Ar (CaAa)	240.00 - 3.00	0.0000	-0.4	1	1	3.0000	3.0000		5.00
1 5/8 (AT&T)	C	No	Ar (CaAa)	240.00 - 3.00	2.0000	0.5	12	2	1.9800	1.9800		1.04

<b>tnxTower</b>  <b>Centek Engineering Inc.</b> 63-2 North Branford Rd. Branford, CT 06405 Phone: (203) 488-0580 FAX: (203) 488-8587	<b>Job</b>	16071.44 - CT2049	<b>Page</b>	24 of 111	
	<b>Project</b>	370' Guyed Tower - 689 Old Colchester Road, Montville, CT		<b>Date</b>	11:00:57 11/01/16
	<b>Client</b>	AT&T Mobility		<b>Designed by</b>	TJL

Description	Face or Leg	Allow Shield	Component Type	Placement ft	Face Offset in	Lateral Offset (Frac FW)	#	# Per Row	Clear Spacing in	Width or Diameter in	Perimeter in	Weight plf
1 5/8" (Verizon)	C	No	Ar (CaAa)	300.00 - 3.00	1.0000	-0.3	12	6	1.9800	1.9800		1.04
HYBRIFLEX 1-5/8" (Verizon)	B	No	Ar (CaAa)	300.00 - 3.00	1.0000	0.46	2	2	1.9800	1.9800		1.90

### Feed Line/Linear Appurtenances Section Areas

Tower Section	Tower Elevation ft	Face	A <sub>R</sub> ft <sup>2</sup>	A <sub>F</sub> ft <sup>2</sup>	C <sub>A</sub> A <sub>A</sub> In Face ft <sup>2</sup>	C <sub>A</sub> A <sub>A</sub> Out Face ft <sup>2</sup>	Weight K
T1	368.75-362.50	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.278	0.000	0.00
T2	362.50-356.25	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.694	0.000	0.00
T3	356.25-350.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.555	0.000	0.00
		C	0.000	0.000	0.694	0.000	0.00
T4	350.00-343.75	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	2.081	0.000	0.01
		C	0.000	0.000	0.694	0.000	0.00
T5	343.75-337.50	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	2.081	0.000	0.01
		C	0.000	0.000	0.694	0.000	0.00
T6	337.50-331.25	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	2.081	0.000	0.01
		C	0.000	0.000	0.694	0.000	0.00
T7	331.25-325.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	2.081	0.000	0.01
		C	0.000	0.000	0.694	0.000	0.00
T8	325.00-318.75	A	0.000	0.000	1.238	0.000	0.01
		B	0.000	0.000	2.081	0.000	0.01
		C	0.000	0.000	0.694	0.000	0.00
T9	318.75-312.50	A	0.000	0.000	1.238	0.000	0.01
		B	0.000	0.000	2.081	0.000	0.01
		C	0.000	0.000	0.694	0.000	0.00
T10	312.50-306.25	A	0.000	0.000	1.238	0.000	0.01
		B	0.000	0.000	2.081	0.000	0.01
		C	0.000	0.000	0.694	0.000	0.00
T11	306.25-300.00	A	0.000	0.000	1.238	0.000	0.01
		B	0.000	0.000	2.081	0.000	0.01
		C	0.000	0.000	0.694	0.000	0.00
T12	300.00-293.75	A	0.000	0.000	1.238	0.000	0.01
		B	0.000	0.000	4.556	0.000	0.03
		C	0.000	0.000	15.544	0.000	0.08
T13	293.75-287.50	A	0.000	0.000	1.238	0.000	0.01
		B	0.000	0.000	4.556	0.000	0.03
		C	0.000	0.000	15.544	0.000	0.08
T14	287.50-281.25	A	0.000	0.000	1.238	0.000	0.01
		B	0.000	0.000	4.556	0.000	0.03
		C	0.000	0.000	15.544	0.000	0.08
T15	281.25-275.00	A	0.000	0.000	1.238	0.000	0.01
		B	0.000	0.000	4.556	0.000	0.03
		C	0.000	0.000	15.544	0.000	0.08
T16	275.00-268.75	A	0.000	0.000	1.238	0.000	0.01

<b>Job</b>	16071.44 - CT2049	<b>Page</b>	25 of 111
<b>Project</b>	370' Guyed Tower - 689 Old Colchester Road, Montville, CT	<b>Date</b>	11:00:57 11/01/16
<b>Client</b>	AT&T Mobility	<b>Designed by</b>	TJL

Tower Section	Tower Elevation ft	Face	$A_R$ ft <sup>2</sup>	$A_F$ ft <sup>2</sup>	$C_{AA}$ In Face ft <sup>2</sup>	$C_{AA}$ Out Face ft <sup>2</sup>	Weight K
		B	0.000	0.000	4.556	0.000	0.03
		C	0.000	0.000	15.544	0.000	0.08
T17	268.75-262.50	A	0.000	0.000	1.238	0.000	0.01
		B	0.000	0.000	4.556	0.000	0.03
		C	0.000	0.000	15.544	0.000	0.08
T18	262.50-256.25	A	0.000	0.000	1.238	0.000	0.01
		B	0.000	0.000	4.556	0.000	0.03
		C	0.000	0.000	15.544	0.000	0.08
T19	256.25-250.00	A	0.000	0.000	1.238	0.000	0.01
		B	0.000	0.000	4.556	0.000	0.03
		C	0.000	0.000	15.544	0.000	0.08
T20	250.00-243.75	A	0.000	0.000	1.238	0.000	0.01
		B	0.000	0.000	4.556	0.000	0.03
		C	0.000	0.000	15.544	0.000	0.08
T21	243.75-237.50	A	0.000	0.000	1.979	0.000	0.02
		B	0.000	0.000	4.556	0.000	0.03
		C	0.000	0.000	21.484	0.000	0.11
T22	237.50-231.25	A	0.000	0.000	3.095	0.000	0.04
		B	0.000	0.000	4.556	0.000	0.03
		C	0.000	0.000	30.394	0.000	0.16
T23	231.25-225.00	A	0.000	0.000	3.100	0.000	0.04
		B	0.000	0.000	4.556	0.000	0.03
		C	0.000	0.000	30.394	0.000	0.16
T24	225.00-218.75	A	0.000	0.000	3.106	0.000	0.04
		B	0.000	0.000	4.556	0.000	0.03
		C	0.000	0.000	30.394	0.000	0.16
T25	218.75-212.50	A	0.000	0.000	3.111	0.000	0.04
		B	0.000	0.000	4.556	0.000	0.03
		C	0.000	0.000	30.394	0.000	0.16
T26	212.50-206.25	A	0.000	0.000	3.112	0.000	0.04
		B	0.000	0.000	4.556	0.000	0.03
		C	0.000	0.000	30.394	0.000	0.16
T27	206.25-200.00	A	0.000	0.000	3.112	0.000	0.04
		B	0.000	0.000	4.556	0.000	0.03
		C	0.000	0.000	30.394	0.000	0.16
T28	200.00-175.00	A	0.000	0.000	13.005	0.000	0.15
		B	0.000	0.000	18.225	0.000	0.14
		C	0.000	0.000	124.350	0.000	0.65
T29	175.00-168.75	A	0.000	0.000	3.806	0.000	0.04
		B	0.000	0.000	4.556	0.000	0.03
		C	0.000	0.000	31.087	0.000	0.16
T30	168.75-162.50	A	0.000	0.000	3.806	0.000	0.04
		B	0.000	0.000	4.556	0.000	0.03
		C	0.000	0.000	31.087	0.000	0.16
T31	162.50-156.25	A	0.000	0.000	3.806	0.000	0.04
		B	0.000	0.000	4.556	0.000	0.03
		C	0.000	0.000	31.087	0.000	0.16
T32	156.25-150.00	A	0.000	0.000	3.806	0.000	0.04
		B	0.000	0.000	4.556	0.000	0.03
		C	0.000	0.000	31.087	0.000	0.16
T33	150.00-125.00	A	0.000	0.000	15.225	0.000	0.16
		B	0.000	0.000	19.559	0.000	0.14
		C	0.000	0.000	126.015	0.000	0.66
T34	125.00-100.00	A	0.000	0.000	15.225	0.000	0.16
		B	0.000	0.000	21.125	0.000	0.15
		C	0.000	0.000	127.125	0.000	0.66
T35	100.00-93.75	A	0.000	0.000	3.806	0.000	0.04
		B	0.000	0.000	5.281	0.000	0.04
		C	0.000	0.000	31.781	0.000	0.17
T36	93.75-87.50	A	0.000	0.000	3.806	0.000	0.04
		B	0.000	0.000	5.397	0.000	0.04

<b>tnxTower</b>  <b>Centek Engineering Inc.</b> 63-2 North Branford Rd. Branford, CT 06405 Phone: (203) 488-0580 FAX: (203) 488-8587	<b>Job</b> 16071.44 - CT2049	<b>Page</b> 26 of 111
	<b>Project</b> 370' Guyed Tower - 689 Old Colchester Road, Montville, CT	<b>Date</b> 11:00:57 11/01/16
	<b>Client</b> AT&T Mobility	<b>Designed by</b> TJL

Tower Section	Tower Elevation ft	Face	$A_R$ ft <sup>2</sup>	$A_F$ ft <sup>2</sup>	$C_{AA}$ In Face ft <sup>2</sup>	$C_{AA}$ Out Face ft <sup>2</sup>	Weight K
T37	87.50-81.25	C	0.000	0.000	31.781	0.000	0.17
		A	0.000	0.000	3.806	0.000	0.04
		B	0.000	0.000	6.731	0.000	0.04
T38	81.25-75.00	C	0.000	0.000	31.781	0.000	0.17
		A	0.000	0.000	3.806	0.000	0.04
		B	0.000	0.000	6.731	0.000	0.04
T39	75.00-50.00	C	0.000	0.000	31.781	0.000	0.17
		A	0.000	0.000	16.557	0.000	0.17
		B	0.000	0.000	26.925	0.000	0.17
T40	50.00-25.00	C	0.000	0.000	127.125	0.000	0.66
		A	0.000	0.000	19.665	0.000	0.19
		B	0.000	0.000	26.925	0.000	0.17
T41	25.00-0.00	C	0.000	0.000	127.125	0.000	0.66
		A	0.000	0.000	18.282	0.000	0.17
		B	0.000	0.000	23.694	0.000	0.15
		C	0.000	0.000	111.870	0.000	0.58

### Feed Line/Linear Appurtenances Section Areas - With Ice

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	$A_R$ ft <sup>2</sup>	$A_F$ ft <sup>2</sup>	$C_{AA}$ In Face ft <sup>2</sup>	$C_{AA}$ Out Face ft <sup>2</sup>	Weight K	
T1	368.75-362.50	A	1.908	0.000	0.000	0.000	0.000	0.00	
		B		0.000	0.000	0.000	0.000	0.00	
		C		0.000	0.000	1.231	0.000	0.02	
T2	362.50-356.25	A	1.905	0.000	0.000	0.000	0.000	0.00	
		B		0.000	0.000	0.000	0.000	0.00	
		C		0.000	0.000	3.074	0.000	0.05	
T3	356.25-350.00	A	1.901	0.000	0.000	0.000	0.000	0.00	
		B		0.000	0.000	2.456	0.000	0.04	
		C		0.000	0.000	3.070	0.000	0.05	
T4	350.00-343.75	A	1.898	0.000	0.000	0.000	0.000	0.00	
		B		0.000	0.000	9.825	0.000	0.12	
		C		0.000	0.000	3.066	0.000	0.05	
T5	343.75-337.50	A	1.894	0.000	0.000	0.000	0.000	0.00	
		B		0.000	0.000	9.813	0.000	0.12	
		C		0.000	0.000	3.062	0.000	0.05	
T6	337.50-331.25	A	1.891	0.000	0.000	0.000	0.000	0.00	
		B		0.000	0.000	9.801	0.000	0.12	
		C		0.000	0.000	3.057	0.000	0.05	
T7	331.25-325.00	A	1.887	0.000	0.000	0.000	0.000	0.00	
		B		0.000	0.000	9.789	0.000	0.12	
		C		0.000	0.000	3.053	0.000	0.05	
T8	325.00-318.75	A	1.884	0.000	0.000	0.000	3.592	0.000	0.06
		B		0.000	0.000	0.000	9.776	0.000	0.12
		C		0.000	0.000	3.048	0.000	0.05	
T9	318.75-312.50	A	1.880	0.000	0.000	0.000	3.587	0.000	0.06
		B		0.000	0.000	0.000	9.764	0.000	0.12
		C		0.000	0.000	3.044	0.000	0.05	
T10	312.50-306.25	A	1.876	0.000	0.000	0.000	3.583	0.000	0.06
		B		0.000	0.000	0.000	9.751	0.000	0.12
		C		0.000	0.000	3.039	0.000	0.05	
T11	306.25-300.00	A	1.872	0.000	0.000	0.000	3.578	0.000	0.06
		B		0.000	0.000	0.000	9.738	0.000	0.12
		C		0.000	0.000	3.034	0.000	0.05	
T12	300.00-293.75	A	1.869	0.000	0.000	0.000	3.573	0.000	0.06
		B		0.000	0.000	0.000	18.505	0.000	0.25
		C		0.000	0.000	0.000	24.350	0.000	0.62

<b>tnxTower</b>  <b>Centek Engineering Inc.</b> 63-2 North Branford Rd. Branford, CT 06405 Phone: (203) 488-0580 FAX: (203) 488-8587	<b>Job</b>	16071.44 - CT2049	<b>Page</b>	27 of 111	
	<b>Project</b>	370' Guyed Tower - 689 Old Colchester Road, Montville, CT		<b>Date</b>	11:00:57 11/01/16
	<b>Client</b>	AT&T Mobility		<b>Designed by</b>	TJL

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A <sub>R</sub> ft <sup>2</sup>	A <sub>F</sub> ft <sup>2</sup>	C <sub>AA</sub> In Face ft <sup>2</sup>	C <sub>AA</sub> Out Face ft <sup>2</sup>	Weight K
T13	293.75-287.50	A	1.865	0.000	0.000	3.568	0.000	0.06
		B		0.000	0.000	18.483	0.000	0.24
		C		0.000	0.000	24.337	0.000	0.62
T14	287.50-281.25	A	1.860	0.000	0.000	3.563	0.000	0.06
		B		0.000	0.000	18.461	0.000	0.24
		C		0.000	0.000	24.324	0.000	0.62
T15	281.25-275.00	A	1.856	0.000	0.000	3.558	0.000	0.06
		B		0.000	0.000	18.438	0.000	0.24
		C		0.000	0.000	24.310	0.000	0.61
T16	275.00-268.75	A	1.852	0.000	0.000	3.553	0.000	0.06
		B		0.000	0.000	18.414	0.000	0.24
		C		0.000	0.000	24.297	0.000	0.61
T17	268.75-262.50	A	1.848	0.000	0.000	3.547	0.000	0.06
		B		0.000	0.000	18.390	0.000	0.24
		C		0.000	0.000	24.283	0.000	0.61
T18	262.50-256.25	A	1.843	0.000	0.000	3.542	0.000	0.06
		B		0.000	0.000	18.366	0.000	0.24
		C		0.000	0.000	24.268	0.000	0.61
T19	256.25-250.00	A	1.839	0.000	0.000	3.536	0.000	0.06
		B		0.000	0.000	18.341	0.000	0.24
		C		0.000	0.000	24.254	0.000	0.61
T20	250.00-243.75	A	1.834	0.000	0.000	3.530	0.000	0.06
		B		0.000	0.000	18.315	0.000	0.24
		C		0.000	0.000	24.239	0.000	0.61
T21	243.75-237.50	A	1.830	0.000	0.000	5.189	0.000	0.10
		B		0.000	0.000	18.289	0.000	0.24
		C		0.000	0.000	32.720	0.000	0.84
T22	237.50-231.25	A	1.825	0.000	0.000	7.675	0.000	0.16
		B		0.000	0.000	18.263	0.000	0.24
		C		0.000	0.000	45.440	0.000	1.17
T23	231.25-225.00	A	1.820	0.000	0.000	7.662	0.000	0.16
		B		0.000	0.000	18.235	0.000	0.24
		C		0.000	0.000	45.414	0.000	1.17
T24	225.00-218.75	A	1.815	0.000	0.000	7.650	0.000	0.16
		B		0.000	0.000	18.207	0.000	0.24
		C		0.000	0.000	45.388	0.000	1.17
T25	218.75-212.50	A	1.810	0.000	0.000	7.637	0.000	0.16
		B		0.000	0.000	18.178	0.000	0.24
		C		0.000	0.000	45.360	0.000	1.17
T26	212.50-206.25	A	1.804	0.000	0.000	7.623	0.000	0.16
		B		0.000	0.000	18.149	0.000	0.24
		C		0.000	0.000	45.332	0.000	1.17
T27	206.25-200.00	A	1.799	0.000	0.000	7.610	0.000	0.16
		B		0.000	0.000	18.118	0.000	0.23
		C		0.000	0.000	45.303	0.000	1.16
T28	200.00-175.00	A	1.785	0.000	0.000	32.636	0.000	0.65
		B		0.000	0.000	72.155	0.000	0.93
		C		0.000	0.000	192.609	0.000	4.81
T29	175.00-168.75	A	1.769	0.000	0.000	10.441	0.000	0.20
		B		0.000	0.000	17.953	0.000	0.23
		C		0.000	0.000	48.051	0.000	1.20
T30	168.75-162.50	A	1.763	0.000	0.000	10.416	0.000	0.19
		B		0.000	0.000	17.916	0.000	0.23
		C		0.000	0.000	48.009	0.000	1.19
T31	162.50-156.25	A	1.756	0.000	0.000	10.391	0.000	0.19
		B		0.000	0.000	17.879	0.000	0.23
		C		0.000	0.000	47.965	0.000	1.19
T32	156.25-150.00	A	1.749	0.000	0.000	10.364	0.000	0.19
		B		0.000	0.000	17.840	0.000	0.23
		C		0.000	0.000	47.919	0.000	1.19
T33	150.00-125.00	A	1.730	0.000	0.000	41.176	0.000	0.76

<b>tnxTower</b>  <b>Centek Engineering Inc.</b> 63-2 North Branford Rd. Branford, CT 06405 Phone: (203) 488-0580 FAX: (203) 488-8587	<b>Job</b> 16071.44 - CT2049	<b>Page</b> 28 of 111
	<b>Project</b> 370' Guyed Tower - 689 Old Colchester Road, Montville, CT	<b>Date</b> 11:00:57 11/01/16
	<b>Client</b> AT&T Mobility	<b>Designed by</b> TJL

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A <sub>R</sub> ft <sup>2</sup>	A <sub>F</sub> ft <sup>2</sup>	C <sub>AA</sub> In Face ft <sup>2</sup>	C <sub>AA</sub> Out Face ft <sup>2</sup>	Weight K
		B		0.000	0.000	80.236	0.000	1.02
		C		0.000	0.000	198.043	0.000	4.82
T34	125.00-100.00	A	1.696	0.000	0.000	40.661	0.000	0.74
		B		0.000	0.000	90.038	0.000	1.13
		C		0.000	0.000	201.545	0.000	4.83
T35	100.00-93.75	A	1.671	0.000	0.000	10.071	0.000	0.18
		B		0.000	0.000	22.307	0.000	0.28
		C		0.000	0.000	50.191	0.000	1.20
T36	93.75-87.50	A	1.659	0.000	0.000	10.029	0.000	0.18
		B		0.000	0.000	22.739	0.000	0.28
		C		0.000	0.000	50.105	0.000	1.19
T37	87.50-81.25	A	1.648	0.000	0.000	9.985	0.000	0.18
		B		0.000	0.000	28.617	0.000	0.34
		C		0.000	0.000	50.013	0.000	1.19
T38	81.25-75.00	A	1.635	0.000	0.000	9.938	0.000	0.18
		B		0.000	0.000	28.489	0.000	0.33
		C		0.000	0.000	49.915	0.000	1.18
T39	75.00-50.00	A	1.599	0.000	0.000	44.378	0.000	0.77
		B		0.000	0.000	112.491	0.000	1.30
		C		0.000	0.000	198.539	0.000	4.67
T40	50.00-25.00	A	1.519	0.000	0.000	54.609	0.000	0.88
		B		0.000	0.000	109.259	0.000	1.23
		C		0.000	0.000	196.069	0.000	4.54
T41	25.00-0.00	A	1.361	0.000	0.000	48.229	0.000	0.72
		B		0.000	0.000	90.513	0.000	0.96
		C		0.000	0.000	168.232	0.000	3.77

### Feed Line Center of Pressure

Section	Elevation ft	CP <sub>X</sub> in	CP <sub>Z</sub> in	CP <sub>X</sub> Ice in	CP <sub>Z</sub> Ice in
T1	368.75-362.50	-0.2109	0.1128	-0.3101	0.1659
T2	362.50-356.25	-0.4652	0.2489	-0.6804	0.3640
T3	356.25-350.00	-0.1089	0.4342	-0.1557	0.6207
T4	350.00-343.75	0.7122	0.8231	0.2578	0.7352
T5	343.75-337.50	1.0142	1.1722	0.3271	0.9316
T6	337.50-331.25	1.0639	1.2295	0.3358	0.9553
T7	331.25-325.00	1.0639	1.2295	0.3365	0.9560
T8	325.00-318.75	0.9143	0.0967	0.3222	0.0597
T9	318.75-312.50	0.9148	0.0968	0.3233	0.0600
T10	312.50-306.25	0.9148	0.0968	0.3239	0.0601
T11	306.25-300.00	0.8793	0.0930	0.3175	0.0589
T12	300.00-293.75	3.0154	2.8177	1.4801	1.3559
T13	293.75-287.50	3.3978	3.1750	1.6680	1.5281
T14	287.50-281.25	3.4737	3.2458	1.7009	1.5581
T15	281.25-275.00	3.4737	3.2458	1.7032	1.5603
T16	275.00-268.75	3.4737	3.2458	1.7055	1.5624
T17	268.75-262.50	3.4737	3.2458	1.7079	1.5646
T18	262.50-256.25	3.4737	3.2458	1.7104	1.5668
T19	256.25-250.00	3.4488	3.2226	1.7030	1.5601
T20	250.00-243.75	3.3978	3.1750	1.6848	1.5434
T21	243.75-237.50	1.1886	3.9029	0.6463	2.0604
T22	237.50-231.25	-0.8316	4.5680	-0.4793	2.6200
T23	231.25-225.00	-0.8257	4.5288	-0.4753	2.6008
T24	225.00-218.75	-0.7919	4.3368	-0.4524	2.4784
T25	218.75-212.50	-0.8447	4.6185	-0.4843	2.6554

<b>tnxTower</b>  <b>Centek Engineering Inc.</b> 63-2 North Branford Rd. Branford, CT 06405 Phone: (203) 488-0580 FAX: (203) 488-8587	<b>Job</b> 16071.44 - CT2049	<b>Page</b> 29 of 111
	<b>Project</b> 370' Guyed Tower - 689 Old Colchester Road, Montville, CT	<b>Date</b> 11:00:57 11/01/16
	<b>Client</b> AT&T Mobility	<b>Designed by</b> TJL

Section	Elevation	CP <sub>X</sub>	CP <sub>Z</sub>	CP <sub>X</sub>	CP <sub>Z</sub>
	ft	in	in	Ice in	Ice in
T26	212.50-206.25	-0.6751	4.7130	-0.4886	2.6820
T27	206.25-200.00	-0.6751	4.7130	-0.4887	2.6857
T28	200.00-175.00	-0.7533	4.5785	-0.6560	2.5261
T29	175.00-168.75	-0.7414	4.4229	-0.6610	2.3736
T30	168.75-162.50	-0.7415	4.4236	-0.6613	2.3793
T31	162.50-156.25	-0.7444	4.4407	-0.6636	2.3923
T32	156.25-150.00	-0.7512	4.4811	-0.6689	2.4164
T33	150.00-125.00	-0.7551	4.4753	-0.6061	2.5047
T34	125.00-100.00	-0.6859	4.2022	-0.4490	2.4391
T35	100.00-93.75	-0.6802	4.1677	-0.4462	2.4331
T36	93.75-87.50	-0.7017	4.4090	-0.4543	2.5726
T37	87.50-81.25	-0.5062	4.4561	-0.2688	2.5696
T38	81.25-75.00	-0.5062	4.4561	-0.2685	2.5761
T39	75.00-50.00	-0.5027	4.3699	-0.2642	2.4577
T40	50.00-25.00	-0.4935	4.1664	-0.2539	2.1995
T41	25.00-0.00	-0.4835	4.0406	-0.2426	2.1590

### Shielding Factor Ka

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K <sub>a</sub> No Ice	K <sub>a</sub> Ice
T1	12		7/8 362.50 - 365.00	0.6000	0.4984
T2	12		7/8 356.25 - 362.50	0.6000	0.4805
T3	11		7/8 350.00 - 355.00	0.6000	0.4810
T3	12		7/8 350.00 - 356.25	0.6000	0.4810
T4	10		7/8 343.75 - 350.00	0.6000	0.4765
T4	11		7/8 343.75 - 350.00	0.6000	0.4765
T4	12		7/8 343.75 - 350.00	0.6000	0.4765
T5	10		7/8 337.50 - 343.75	0.6000	0.5644
T5	11		7/8 337.50 - 343.75	0.6000	0.5644
T5	12		7/8 337.50 - 343.75	0.6000	0.5644
T6	10		7/8 331.25 - 337.50	0.6000	0.5744
T6	11		7/8 331.25 - 337.50	0.6000	0.5744
T6	12		7/8 331.25 - 337.50	0.6000	0.5744
T7	10		7/8 325.00 - 331.25	0.6000	0.5749
T7	11		7/8 325.00 - 331.25	0.6000	0.5749
T7	12		7/8 325.00 - 331.25	0.6000	0.5749
T8	9		1 5/8 318.75 - 325.00	0.6000	0.5654



<b>Job</b>	16071.44 - CT2049	<b>Page</b>	30 of 111
<b>Project</b>	370' Guyed Tower - 689 Old Colchester Road, Montville, CT	<b>Date</b>	11:00:57 11/01/16
<b>Client</b>	AT&T Mobility	<b>Designed by</b>	TJL

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	$K_a$ No Ice	$K_a$ Ice
T8	10		7/8 318.75 - 325.00	0.6000	0.5654
T8	11		7/8 318.75 - 325.00	0.6000	0.5654
T8	12		7/8 318.75 - 325.00	0.6000	0.5654
T9	9		1 5/8 312.50 - 318.75	0.6000	0.5665
T9	10		7/8 312.50 - 318.75	0.6000	0.5665
T9	11		7/8 312.50 - 318.75	0.6000	0.5665
T9	12		7/8 312.50 - 318.75	0.6000	0.5665
T10	9		1 5/8 306.25 - 312.50	0.6000	0.5671
T10	10		7/8 306.25 - 312.50	0.6000	0.5671
T10	11		7/8 306.25 - 312.50	0.6000	0.5671
T10	12		7/8 306.25 - 312.50	0.6000	0.5671
T11	9		1 5/8 300.00 - 306.25	0.6000	0.5581
T11	10		7/8 300.00 - 306.25	0.6000	0.5581
T11	11		7/8 300.00 - 306.25	0.6000	0.5581
T11	12		7/8 300.00 - 306.25	0.6000	0.5581
T12	9		1 5/8 293.75 - 300.00	0.6000	0.4773
T12	10		7/8 293.75 - 300.00	0.6000	0.4773
T12	11		7/8 293.75 - 300.00	0.6000	0.4773
T12	12		7/8 293.75 - 300.00	0.6000	0.4773
T12	15		1 5/8 293.75 - 300.00	0.6000	0.4773
T12	16	HYBRIFLEX 1-5/8"	293.75 - 300.00	0.6000	0.4773
T13	9		1 5/8 287.50 - 293.75	0.6000	0.5592
T13	10		7/8 287.50 - 293.75	0.6000	0.5592
T13	11		7/8 287.50 - 293.75	0.6000	0.5592
T13	12		7/8 287.50 - 293.75	0.6000	0.5592
T13	15		1 5/8 287.50 - 293.75	0.6000	0.5592
T13	16	HYBRIFLEX 1-5/8"	287.50 - 293.75	0.6000	0.5592
T14	9		1 5/8 281.25 - 287.50	0.6000	0.5738
T14	10		7/8 281.25 - 287.50	0.6000	0.5738
T14	11		7/8 281.25 - 287.50	0.6000	0.5738
T14	12		7/8 281.25 - 287.50	0.6000	0.5738

<i>Tower Section</i>	<i>Feed Line Record No.</i>	<i>Description</i>	<i>Feed Line Segment Elev.</i>	<i>K<sub>a</sub> No Ice</i>	<i>K<sub>a</sub> Ice</i>
T14	15	1 5/8	281.25 - 287.50	0.6000	0.5738
T14	16	HYBRIFLEX 1-5/8"	281.25 - 287.50	0.6000	0.5738
T15	9	1 5/8	275.00 - 281.25	0.6000	0.5744
T15	10	7/8	275.00 - 281.25	0.6000	0.5744
T15	11	7/8	275.00 - 281.25	0.6000	0.5744
T15	12	7/8	275.00 - 281.25	0.6000	0.5744
T15	15	1 5/8	275.00 - 281.25	0.6000	0.5744
T15	16	HYBRIFLEX 1-5/8"	275.00 - 281.25	0.6000	0.5744
T16	9	1 5/8	268.75 - 275.00	0.6000	0.5750
T16	10	7/8	268.75 - 275.00	0.6000	0.5750
T16	11	7/8	268.75 - 275.00	0.6000	0.5750
T16	12	7/8	268.75 - 275.00	0.6000	0.5750
T16	15	1 5/8	268.75 - 275.00	0.6000	0.5750
T16	16	HYBRIFLEX 1-5/8"	268.75 - 275.00	0.6000	0.5750
T17	9	1 5/8	262.50 - 268.75	0.6000	0.5756
T17	10	7/8	262.50 - 268.75	0.6000	0.5756
T17	11	7/8	262.50 - 268.75	0.6000	0.5756
T17	12	7/8	262.50 - 268.75	0.6000	0.5756
T17	15	1 5/8	262.50 - 268.75	0.6000	0.5756
T17	16	HYBRIFLEX 1-5/8"	262.50 - 268.75	0.6000	0.5756
T18	9	1 5/8	256.25 - 262.50	0.6000	0.5762
T18	10	7/8	256.25 - 262.50	0.6000	0.5762
T18	11	7/8	256.25 - 262.50	0.6000	0.5762
T18	12	7/8	256.25 - 262.50	0.6000	0.5762
T18	15	1 5/8	256.25 - 262.50	0.6000	0.5762
T18	16	HYBRIFLEX 1-5/8"	256.25 - 262.50	0.6000	0.5762
T19	9	1 5/8	250.00 - 256.25	0.6000	0.5724
T19	10	7/8	250.00 - 256.25	0.6000	0.5724
T19	11	7/8	250.00 - 256.25	0.6000	0.5724
T19	12	7/8	250.00 - 256.25	0.6000	0.5724
T19	15	1 5/8	250.00 - 256.25	0.6000	0.5724

<i>Tower Section</i>	<i>Feed Line Record No.</i>	<i>Description</i>	<i>Feed Line Segment Elev.</i>	<i>K<sub>a</sub> No Ice</i>	<i>K<sub>a</sub> Ice</i>
T19	16	HYBRIFLEX 1-5/8"	250.00 - 256.25	0.6000	0.5724
T20	9	1 5/8	243.75 - 250.00	0.6000	0.5635
T20	10	7/8	243.75 - 250.00	0.6000	0.5635
T20	11	7/8	243.75 - 250.00	0.6000	0.5635
T20	12	7/8	243.75 - 250.00	0.6000	0.5635
T20	15	1 5/8	243.75 - 250.00	0.6000	0.5635
T20	16	HYBRIFLEX 1-5/8"	243.75 - 250.00	0.6000	0.5635
T21	9	1 5/8	237.50 - 243.75	0.6000	0.5642
T21	10	7/8	237.50 - 243.75	0.6000	0.5642
T21	11	7/8	237.50 - 243.75	0.6000	0.5642
T21	12	7/8	237.50 - 243.75	0.6000	0.5642
T21	13	3" dia Flex Conuit	237.50 - 240.00	1.0000	0.5642
T21	14	1 5/8	237.50 - 240.00	0.6000	0.5642
T21	15	1 5/8	237.50 - 243.75	0.6000	0.5642
T21	16	HYBRIFLEX 1-5/8"	237.50 - 243.75	0.6000	0.5642
T22	9	1 5/8	231.25 - 237.50	0.6000	0.5649
T22	10	7/8	231.25 - 237.50	0.6000	0.5649
T22	11	7/8	231.25 - 237.50	0.6000	0.5649
T22	12	7/8	231.25 - 237.50	0.6000	0.5649
T22	13	3" dia Flex Conuit	231.25 - 237.50	1.0000	0.5649
T22	14	1 5/8	231.25 - 237.50	0.6000	0.5649
T22	15	1 5/8	231.25 - 237.50	0.6000	0.5649
T22	16	HYBRIFLEX 1-5/8"	231.25 - 237.50	0.6000	0.5649
T23	9	1 5/8	225.00 - 231.25	0.6000	0.5565
T23	10	7/8	225.00 - 231.25	0.6000	0.5565
T23	11	7/8	225.00 - 231.25	0.6000	0.5565
T23	12	7/8	225.00 - 231.25	0.6000	0.5565
T23	13	3" dia Flex Conuit	225.00 - 231.25	1.0000	0.5565
T23	14	1 5/8	225.00 - 231.25	0.6000	0.5565
T23	15	1 5/8	225.00 - 231.25	0.6000	0.5565
T23	16	HYBRIFLEX 1-5/8"	225.00 - 231.25	0.6000	0.5565

<i>Tower Section</i>	<i>Feed Line Record No.</i>	<i>Description</i>	<i>Feed Line Segment Elev.</i>	<i>K<sub>a</sub> No Ice</i>	<i>K<sub>a</sub> Ice</i>
T24	9	1 5/8	218.75 - 225.00	0.6000	0.5080
T24	10	7/8	218.75 - 225.00	0.6000	0.5080
T24	11	7/8	218.75 - 225.00	0.6000	0.5080
T24	12	7/8	218.75 - 225.00	0.6000	0.5080
T24	13	3" dia Flex Conuit	218.75 - 225.00	1.0000	0.5080
T24	14	1 5/8	218.75 - 225.00	0.6000	0.5080
T24	15	1 5/8	218.75 - 225.00	0.6000	0.5080
T24	16	HYBRIFLEX 1-5/8"	218.75 - 225.00	0.6000	0.5080
T25	9	1 5/8	212.50 - 218.75	0.6000	0.5764
T25	10	7/8	212.50 - 218.75	0.6000	0.5764
T25	11	7/8	212.50 - 218.75	0.6000	0.5764
T25	12	7/8	212.50 - 218.75	0.6000	0.5764
T25	13	3" dia Flex Conuit	212.50 - 218.75	1.0000	0.5764
T25	14	1 5/8	212.50 - 218.75	0.6000	0.5764
T25	15	1 5/8	212.50 - 218.75	0.6000	0.5764
T25	16	HYBRIFLEX 1-5/8"	212.50 - 218.75	0.6000	0.5764
T26	9	1 5/8	206.25 - 212.50	0.6000	0.5868
T26	10	7/8	206.25 - 212.50	0.6000	0.5868
T26	11	7/8	206.25 - 212.50	0.6000	0.5868
T26	12	7/8	206.25 - 212.50	0.6000	0.5868
T26	13	3" dia Flex Conuit	206.25 - 212.50	0.6000	0.5868
T26	14	1 5/8	206.25 - 212.50	0.6000	0.5868
T26	15	1 5/8	206.25 - 212.50	0.6000	0.5868
T26	16	HYBRIFLEX 1-5/8"	206.25 - 212.50	0.6000	0.5868
T27	9	1 5/8	200.00 - 206.25	0.6000	0.5876
T27	10	7/8	200.00 - 206.25	0.6000	0.5876
T27	11	7/8	200.00 - 206.25	0.6000	0.5876
T27	12	7/8	200.00 - 206.25	0.6000	0.5876
T27	13	3" dia Flex Conuit	200.00 - 206.25	0.6000	0.5876
T27	14	1 5/8	200.00 - 206.25	0.6000	0.5876
T27	15	1 5/8	200.00 - 206.25	0.6000	0.5876

<b>Job</b>	16071.44 - CT2049	<b>Page</b>	34 of 111
<b>Project</b>	370' Guyed Tower - 689 Old Colchester Road, Montville, CT	<b>Date</b>	11:00:57 11/01/16
<b>Client</b>	AT&T Mobility	<b>Designed by</b>	TJL

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K <sub>a</sub> No Ice	K <sub>a</sub> Ice
T27	16	HYBRIFLEX 1-5/8"	200.00 - 206.25	0.6000	0.5876
T28	7	7/8	175.00 - 180.00	0.6000	0.5299
T28	8	7/8	175.00 - 200.00	0.6000	0.5299
T28	9	1 5/8	175.00 - 200.00	0.6000	0.5299
T28	10	7/8	175.00 - 200.00	0.6000	0.5299
T28	11	7/8	175.00 - 200.00	0.6000	0.5299
T28	12	7/8	175.00 - 200.00	0.6000	0.5299
T28	13	3" dia Flex Conuit	175.00 - 200.00	0.6000	0.5299
T28	14	1 5/8	175.00 - 200.00	0.6000	0.5299
T28	15	1 5/8	175.00 - 200.00	0.6000	0.5299
T28	16	HYBRIFLEX 1-5/8"	175.00 - 200.00	0.6000	0.5299
T29	7	7/8	168.75 - 175.00	0.6000	0.5726
T29	8	7/8	168.75 - 175.00	0.6000	0.5726
T29	9	1 5/8	168.75 - 175.00	0.6000	0.5726
T29	10	7/8	168.75 - 175.00	0.6000	0.5726
T29	11	7/8	168.75 - 175.00	0.6000	0.5726
T29	12	7/8	168.75 - 175.00	0.6000	0.5726
T29	13	3" dia Flex Conuit	168.75 - 175.00	0.6000	0.5726
T29	14	1 5/8	168.75 - 175.00	0.6000	0.5726
T29	15	1 5/8	168.75 - 175.00	0.6000	0.5726
T29	16	HYBRIFLEX 1-5/8"	168.75 - 175.00	0.6000	0.5726
T30	7	7/8	162.50 - 168.75	0.6000	0.5742
T30	8	7/8	162.50 - 168.75	0.6000	0.5742
T30	9	1 5/8	162.50 - 168.75	0.6000	0.5742
T30	10	7/8	162.50 - 168.75	0.6000	0.5742
T30	11	7/8	162.50 - 168.75	0.6000	0.5742
T30	12	7/8	162.50 - 168.75	0.6000	0.5742
T30	13	3" dia Flex Conuit	162.50 - 168.75	0.6000	0.5742
T30	14	1 5/8	162.50 - 168.75	0.6000	0.5742
T30	15	1 5/8	162.50 - 168.75	0.6000	0.5742
T30	16	HYBRIFLEX 1-5/8"	162.50 - 168.75	0.6000	0.5742

<i>Tower Section</i>	<i>Feed Line Record No.</i>	<i>Description</i>	<i>Feed Line Segment Elev.</i>	<i>K<sub>a</sub> No Ice</i>	<i>K<sub>a</sub> Ice</i>
T31	7		7/8 156.25 - 162.50	0.6000	0.5792
T31	8		7/8 156.25 - 162.50	0.6000	0.5792
T31	9		1 5/8 156.25 - 162.50	0.6000	0.5792
T31	10		7/8 156.25 - 162.50	0.6000	0.5792
T31	11		7/8 156.25 - 162.50	0.6000	0.5792
T31	12		7/8 156.25 - 162.50	0.6000	0.5792
T31	13	3" dia Flex Conuit	156.25 - 162.50	0.6000	0.5792
T31	14		1 5/8 156.25 - 162.50	0.6000	0.5792
T31	15		1 5/8 156.25 - 162.50	0.6000	0.5792
T31	16	HYBRIFLEX 1-5/8"	156.25 - 162.50	0.6000	0.5792
T32	7		7/8 150.00 - 156.25	0.6000	0.5897
T32	8		7/8 150.00 - 156.25	0.6000	0.5897
T32	9		1 5/8 150.00 - 156.25	0.6000	0.5897
T32	10		7/8 150.00 - 156.25	0.6000	0.5897
T32	11		7/8 150.00 - 156.25	0.6000	0.5897
T32	12		7/8 150.00 - 156.25	0.6000	0.5897
T32	13	3" dia Flex Conuit	150.00 - 156.25	0.6000	0.5897
T32	14		1 5/8 150.00 - 156.25	0.6000	0.5897
T32	15		1 5/8 150.00 - 156.25	0.6000	0.5897
T32	16	HYBRIFLEX 1-5/8"	150.00 - 156.25	0.6000	0.5897
T33	5		7/8 125.00 - 140.00	0.6000	0.5924
T33	6		1/2 125.00 - 148.00	0.6000	0.5924
T33	7		7/8 125.00 - 150.00	0.6000	0.5924
T33	8		7/8 125.00 - 150.00	0.6000	0.5924
T33	9		1 5/8 125.00 - 150.00	0.6000	0.5924
T33	10		7/8 125.00 - 150.00	0.6000	0.5924
T33	11		7/8 125.00 - 150.00	0.6000	0.5924
T33	12		7/8 125.00 - 150.00	0.6000	0.5924
T33	13	3" dia Flex Conuit	125.00 - 150.00	0.6000	0.5924
T33	14		1 5/8 125.00 - 150.00	0.6000	0.5924
T33	15		1 5/8 125.00 - 150.00	0.6000	0.5924

<b>Job</b>	16071.44 - CT2049	<b>Page</b>	36 of 111
<b>Project</b>	370' Guyed Tower - 689 Old Colchester Road, Montville, CT	<b>Date</b>	11:00:57 11/01/16
<b>Client</b>	AT&T Mobility	<b>Designed by</b>	TJL

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K <sub>a</sub> No Ice	K <sub>a</sub> Ice
T33	16	HYBRIFLEX 1-5/8"	125.00 - 150.00	0.6000	0.5924
T34	4	1/2	100.00 - 125.00	0.6000	0.5292
T34	5	7/8	100.00 - 125.00	0.6000	0.5292
T34	6	1/2	100.00 - 125.00	0.6000	0.5292
T34	7	7/8	100.00 - 125.00	0.6000	0.5292
T34	8	7/8	100.00 - 125.00	0.6000	0.5292
T34	9	1 5/8	100.00 - 125.00	0.6000	0.5292
T34	10	7/8	100.00 - 125.00	0.6000	0.5292
T34	11	7/8	100.00 - 125.00	0.6000	0.5292
T34	12	7/8	100.00 - 125.00	0.6000	0.5292
T34	13	3" dia Flex Conuit	100.00 - 125.00	0.6000	0.5292
T34	14	1 5/8	100.00 - 125.00	0.6000	0.5292
T34	15	1 5/8	100.00 - 125.00	0.6000	0.5292
T34	16	HYBRIFLEX 1-5/8"	100.00 - 125.00	0.6000	0.5292
T35	4	1/2	93.75 - 100.00	0.6000	0.5232
T35	5	7/8	93.75 - 100.00	0.6000	0.5232
T35	6	1/2	93.75 - 100.00	0.6000	0.5232
T35	7	7/8	93.75 - 100.00	0.6000	0.5232
T35	8	7/8	93.75 - 100.00	0.6000	0.5232
T35	9	1 5/8	93.75 - 100.00	0.6000	0.5232
T35	10	7/8	93.75 - 100.00	0.6000	0.5232
T35	11	7/8	93.75 - 100.00	0.6000	0.5232
T35	12	7/8	93.75 - 100.00	0.6000	0.5232
T35	13	3" dia Flex Conuit	93.75 - 100.00	0.6000	0.5232
T35	14	1 5/8	93.75 - 100.00	0.6000	0.5232
T35	15	1 5/8	93.75 - 100.00	0.6000	0.5232
T35	16	HYBRIFLEX 1-5/8"	93.75 - 100.00	0.6000	0.5232
T36	3	1/2	87.50 - 88.00	0.6000	0.5884
T36	4	1/2	87.50 - 93.75	0.6000	0.5884
T36	5	7/8	87.50 - 93.75	0.6000	0.5884
T36	6	1/2	87.50 - 93.75	0.6000	0.5884
T36	7	7/8	87.50 - 93.75	0.6000	0.5884
T36	8	7/8	87.50 - 93.75	0.6000	0.5884
T36	9	1 5/8	87.50 - 93.75	0.6000	0.5884
T36	10	7/8	87.50 - 93.75	0.6000	0.5884
T36	11	7/8	87.50 - 93.75	0.6000	0.5884
T36	12	7/8	87.50 - 93.75	0.6000	0.5884
T36	13	3" dia Flex Conuit	87.50 - 93.75	0.6000	0.5884
T36	14	1 5/8	87.50 - 93.75	0.6000	0.5884
T36	15	1 5/8	87.50 - 93.75	0.6000	0.5884
T36	16	HYBRIFLEX 1-5/8"	87.50 - 93.75	0.6000	0.5884
T37	3	1/2	81.25 - 87.50	0.6000	0.6000
T37	4	1/2	81.25 - 87.50	0.6000	0.6000
T37	5	7/8	81.25 - 87.50	0.6000	0.6000
T37	6	1/2	81.25 - 87.50	0.6000	0.6000
T37	7	7/8	81.25 - 87.50	0.6000	0.6000
T37	8	7/8	81.25 - 87.50	0.6000	0.6000
T37	9	1 5/8	81.25 - 87.50	0.6000	0.6000

<b>Job</b>	16071.44 - CT2049	<b>Page</b>	37 of 111
<b>Project</b>	370' Guyed Tower - 689 Old Colchester Road, Montville, CT	<b>Date</b>	11:00:57 11/01/16
<b>Client</b>	AT&T Mobility	<b>Designed by</b>	TJL

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	$K_a$ No Ice	$K_a$ Ice
T37	10	7/8	81.25 - 87.50	0.6000	0.6000
T37	11	7/8	81.25 - 87.50	0.6000	0.6000
T37	12	7/8	81.25 - 87.50	0.6000	0.6000
T37	13	3" dia Flex Conuit	81.25 - 87.50	0.6000	0.6000
T37	14	1 5/8	81.25 - 87.50	0.6000	0.6000
T37	15	1 5/8	81.25 - 87.50	0.6000	0.6000
T37	16	HYBRIFLEX 1-5/8"	81.25 - 87.50	0.6000	0.6000
T38	3	1/2	75.00 - 81.25	0.6000	0.6000
T38	4	1/2	75.00 - 81.25	0.6000	0.6000
T38	5	7/8	75.00 - 81.25	0.6000	0.6000
T38	6	1/2	75.00 - 81.25	0.6000	0.6000
T38	7	7/8	75.00 - 81.25	0.6000	0.6000
T38	8	7/8	75.00 - 81.25	0.6000	0.6000
T38	9	1 5/8	75.00 - 81.25	0.6000	0.6000
T38	10	7/8	75.00 - 81.25	0.6000	0.6000
T38	11	7/8	75.00 - 81.25	0.6000	0.6000
T38	12	7/8	75.00 - 81.25	0.6000	0.6000
T38	13	3" dia Flex Conuit	75.00 - 81.25	0.6000	0.6000
T38	14	1 5/8	75.00 - 81.25	0.6000	0.6000
T38	15	1 5/8	75.00 - 81.25	0.6000	0.6000
T38	16	HYBRIFLEX 1-5/8"	75.00 - 81.25	0.6000	0.6000
T39	2	7/8	50.00 - 62.00	0.6000	0.6000
T39	3	1/2	50.00 - 75.00	0.6000	0.6000
T39	4	1/2	50.00 - 75.00	0.6000	0.6000
T39	5	7/8	50.00 - 75.00	0.6000	0.6000
T39	6	1/2	50.00 - 75.00	0.6000	0.6000
T39	7	7/8	50.00 - 75.00	0.6000	0.6000
T39	8	7/8	50.00 - 75.00	0.6000	0.6000
T39	9	1 5/8	50.00 - 75.00	0.6000	0.6000
T39	10	7/8	50.00 - 75.00	0.6000	0.6000
T39	11	7/8	50.00 - 75.00	0.6000	0.6000
T39	12	7/8	50.00 - 75.00	0.6000	0.6000
T39	13	3" dia Flex Conuit	50.00 - 75.00	0.6000	0.6000
T39	14	1 5/8	50.00 - 75.00	0.6000	0.6000
T39	15	1 5/8	50.00 - 75.00	0.6000	0.6000
T39	16	HYBRIFLEX 1-5/8"	50.00 - 75.00	0.6000	0.6000
T40	1	7/8	25.00 - 40.00	0.6000	0.6000
T40	2	7/8	25.00 - 50.00	0.6000	0.6000
T40	3	1/2	25.00 - 50.00	0.6000	0.6000
T40	4	1/2	25.00 - 50.00	0.6000	0.6000
T40	5	7/8	25.00 - 50.00	0.6000	0.6000
T40	6	1/2	25.00 - 50.00	0.6000	0.6000
T40	7	7/8	25.00 - 50.00	0.6000	0.6000
T40	8	7/8	25.00 - 50.00	0.6000	0.6000
T40	9	1 5/8	25.00 - 50.00	0.6000	0.6000
T40	10	7/8	25.00 - 50.00	0.6000	0.6000
T40	11	7/8	25.00 - 50.00	0.6000	0.6000
T40	12	7/8	25.00 - 50.00	0.6000	0.6000
T40	13	3" dia Flex Conuit	25.00 - 50.00	0.6000	0.6000
T40	14	1 5/8	25.00 - 50.00	0.6000	0.6000
T40	15	1 5/8	25.00 - 50.00	0.6000	0.6000
T40	16	HYBRIFLEX 1-5/8"	25.00 - 50.00	0.6000	0.6000
T41	1	7/8	3.00 - 25.00	0.6000	0.6000
T41	2	7/8	3.00 - 25.00	0.6000	0.6000
T41	3	1/2	3.00 - 25.00	0.6000	0.6000
T41	4	1/2	3.00 - 25.00	0.6000	0.6000
T41	5	7/8	3.00 - 25.00	0.6000	0.6000
T41	6	1/2	3.00 - 25.00	0.6000	0.6000
T41	7	7/8	3.00 - 25.00	0.6000	0.6000
T41	8	7/8	3.00 - 25.00	0.6000	0.6000
T41	9	1 5/8	3.00 - 25.00	0.6000	0.6000
T41	10	7/8	3.00 - 25.00	0.6000	0.6000



<b>tnxTower</b>  <b>Centek Engineering Inc.</b> 63-2 North Branford Rd. Branford, CT 06405 Phone: (203) 488-0580 FAX: (203) 488-8587	<b>Job</b> 16071.44 - CT2049	<b>Page</b> 38 of 111
	<b>Project</b> 370' Guyed Tower - 689 Old Colchester Road, Montville, CT	<b>Date</b> 11:00:57 11/01/16
	<b>Client</b> AT&T Mobility	<b>Designed by</b> TJL

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K <sub>a</sub> No Ice	K <sub>a</sub> Ice
T41	11	7/8	3.00 - 25.00	0.6000	0.6000
T41	12	7/8	3.00 - 25.00	0.6000	0.6000
T41	13	3" dia Flex Conduit	3.00 - 25.00	0.6000	0.6000
T41	14	1 5/8	3.00 - 25.00	0.6000	0.6000
T41	15	1 5/8	3.00 - 25.00	0.6000	0.6000
T41	16	HYBRIFLEX 1-5/8"	3.00 - 25.00	0.6000	0.6000

### Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	C <sub>AA</sub> Front	C <sub>AA</sub> Side	Weight
			Horz Lateral	Vert					
			ft	ft	°	ft	ft <sup>2</sup>	ft <sup>2</sup>	K
Search Antenna	C	From Leg	1.00	0.0000	370.00	No Ice	1.28	3.73	0.30
			0.00			1/2" Ice	3.73	4.39	0.45
			0.00			1" Ice	6.18	5.05	0.60
10'6"x4" Pipe Mount	A	From Leg	0.50	0.0000	355.00	No Ice	2.99	2.99	0.11
			0.00			1/2" Ice	5.62	5.62	0.15
			0.00			1" Ice	6.25	6.25	0.19
Rohn 6' Side-Arm(1)	B	From Leg	3.00	0.0000	355.00	No Ice	6.00	6.00	0.14
			0.00			1/2" Ice	8.50	8.50	0.21
			0.00			1" Ice	11.00	11.00	0.28
20' x 3" Dia Omni	C	From Leg	1.00	0.0000	350.00	No Ice	5.70	5.70	0.05
			0.00			1/2" Ice	8.03	8.03	0.09
			0.00			1" Ice	10.08	10.08	0.15
6'x4" Pipe Mount	C	From Leg	0.50	0.0000	350.00	No Ice	1.59	1.59	0.05
			0.00			1/2" Ice	2.46	2.46	0.07
			0.00			1" Ice	2.83	2.83	0.09
10' x 3" Dia Omni	B	From Leg	3.00	0.0000	325.00	No Ice	2.87	2.87	0.03
			0.00			1/2" Ice	4.03	4.03	0.05
			0.00			1" Ice	5.03	5.03	0.08
ROHN 3-ft Side Arm	B	From Leg	2.00	0.0000	325.00	No Ice	3.10	3.10	0.07
			0.00			1/2" Ice	5.00	5.00	0.10
			0.00			1" Ice	6.90	6.90	0.13
20' x 3" Dia Omni	C	From Leg	1.00	0.0000	250.00	No Ice	5.90	5.90	0.05
			0.00			1/2" Ice	8.03	8.03	0.09
			0.00			1" Ice	10.08	10.08	0.15
6'x4" Pipe Mount	C	From Leg	0.50	0.0000	250.00	No Ice	1.63	1.63	0.05
			0.00			1/2" Ice	2.46	2.46	0.07
			0.00			1" Ice	2.83	2.83	0.09
Yagi	A	From Leg	1.00	0.0000	200.00	No Ice	5.00	5.00	0.04
			0.00			1/2" Ice	6.50	6.50	0.06
			0.00			1" Ice	8.00	8.00	0.08
(4) Yagi	C	From Leg	1.00	0.0000	180.00	No Ice	5.00	5.00	0.04
			0.00			1/2" Ice	6.50	6.50	0.06
			0.00			1" Ice	8.00	8.00	0.08
(2) 5'3"x4" Pipe Mount	C	From Leg	1.00	0.0000	180.00	No Ice	1.44	1.44	0.06
			0.00			1/2" Ice	2.21	2.21	0.07
			0.00			1" Ice	2.54	2.54	0.09
Yagi	B	From Leg	1.00	0.0000	148.00	No Ice	5.00	5.00	0.04
			0.00			1/2" Ice	6.50	6.50	0.06
			0.00			1" Ice	8.00	8.00	0.08

<b>tnxTower</b>  <b>Centek Engineering Inc.</b> 63-2 North Branford Rd. Branford, CT 06405 Phone: (203) 488-0580 FAX: (203) 488-8587	<b>Job</b>		16071.44 - CT2049		<b>Page</b>		39 of 111	
	<b>Project</b>		370' Guyed Tower - 689 Old Colchester Road, Montville, CT		<b>Date</b>		11:00:57 11/01/16	
	<b>Client</b>		AT&T Mobility		<b>Designed by</b>		TJL	

Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	C <sub>AA</sub>		Weight	
			Horz	Vert			Front	Side		
			ft	ft	°	ft	ft <sup>2</sup>	ft <sup>2</sup>	K	
Yagi	C	From Leg	1.00	0.0000		140.00	No Ice	5.00	5.00	0.04
			0.00				1/2" Ice	6.50	6.50	0.06
			0.00				1" Ice	8.00	8.00	0.08
Yagi	A	From Leg	1.00	0.0000		125.00	No Ice	5.00	5.00	0.04
			0.00				1/2" Ice	6.50	6.50	0.06
			0.00				1" Ice	8.00	8.00	0.08
X-Style	A	From Leg	1.00	0.0000		88.00	No Ice	1.50	2.00	0.02
			0.00				1/2" Ice	1.50	2.00	0.03
			0.00				1" Ice	1.50	2.00	0.04
(2) X-Style	B	From Leg	1.00	0.0000		88.00	No Ice	1.50	2.00	0.02
			0.00				1/2" Ice	1.50	2.00	0.03
			0.00				1" Ice	1.50	2.00	0.04
X-Style	A	From Leg	1.00	0.0000		88.00	No Ice	1.50	2.00	0.02
			0.00				1/2" Ice	1.50	2.00	0.03
			0.00				1" Ice	1.50	2.00	0.04
Yagi	C	From Leg	1.00	0.0000		62.00	No Ice	5.00	5.00	0.04
			0.00				1/2" Ice	6.50	6.50	0.06
			0.00				1" Ice	8.00	8.00	0.08
Yagi	A	From Leg	1.00	0.0000		40.00	No Ice	5.00	5.00	0.04
			0.00				1/2" Ice	6.50	6.50	0.06
			0.00				1" Ice	8.00	8.00	0.08
(2) 7770.00 (AT&T - Existing)	A	From Leg	3.00	0.0000		242.50	No Ice	5.51	2.93	0.04
			0.00				1/2" Ice	5.87	3.27	0.07
			0.00				1" Ice	6.23	3.63	0.11
(2) 7770.00 (AT&T - Existing)	B	From Leg	3.00	0.0000		242.50	No Ice	5.51	2.93	0.04
			0.00				1/2" Ice	5.87	3.27	0.07
			0.00				1" Ice	6.23	3.63	0.11
(2) 7770.00 (AT&T - Existing)	C	From Leg	3.00	0.0000		242.50	No Ice	5.51	2.93	0.04
			0.00				1/2" Ice	5.87	3.27	0.07
			0.00				1" Ice	6.23	3.63	0.11
HPA-65R-BUU-H6 (AT&T - Proposed)	A	From Leg	3.00	0.0000		242.50	No Ice	9.66	6.45	0.05
			0.00				1/2" Ice	10.13	6.91	0.11
			0.00				1" Ice	10.61	7.38	0.18
HPA-65R-BUU-H8 (AT&T - Proposed)	A	From Leg	3.00	0.0000		242.50	No Ice	12.98	7.52	0.07
			0.00				1/2" Ice	13.56	8.09	0.14
			0.00				1" Ice	14.15	8.67	0.22
HPA-65R-BUU-H8 (AT&T - Proposed)	A	From Leg	3.00	0.0000		242.50	No Ice	12.98	7.52	0.07
			0.00				1/2" Ice	13.56	8.09	0.14
			0.00				1" Ice	14.15	8.67	0.22
(2) LPG21401 TMA (AT&T - Existing)	A	From Leg	3.00	0.0000		242.50	No Ice	0.82	0.35	0.02
			0.00				1/2" Ice	0.94	0.44	0.02
			0.00				1" Ice	1.06	0.54	0.03
(2) LPG21401 TMA (AT&T - Existing)	B	From Leg	3.00	0.0000		242.50	No Ice	0.82	0.35	0.02
			0.00				1/2" Ice	0.94	0.44	0.02
			0.00				1" Ice	1.06	0.54	0.03
(2) LPG21401 TMA (AT&T - Existing)	C	From Leg	3.00	0.0000		242.50	No Ice	0.82	0.35	0.02
			0.00				1/2" Ice	0.94	0.44	0.02
			0.00				1" Ice	1.06	0.54	0.03
(2) LGP21901 Diplexer (AT&T - Existing)	A	From Leg	3.00	0.0000		242.50	No Ice	0.20	0.10	0.01
			0.00				1/2" Ice	0.26	0.14	0.01
			0.00				1" Ice	0.33	0.19	0.01
(2) LGP21901 Diplexer (AT&T - Existing)	B	From Leg	3.00	0.0000		242.50	No Ice	0.20	0.10	0.01
			0.00				1/2" Ice	0.26	0.14	0.01
			0.00				1" Ice	0.33	0.19	0.01
(2) LGP21901 Diplexer (AT&T - Existing)	C	From Leg	3.00	0.0000		242.50	No Ice	0.20	0.10	0.01
			0.00				1/2" Ice	0.26	0.14	0.01
			0.00				1" Ice	0.33	0.19	0.01

<b>tnxTower</b>  <b>Centek Engineering Inc.</b> 63-2 North Branford Rd. Branford, CT 06405 Phone: (203) 488-0580 FAX: (203) 488-8587	<b>Job</b>	16071.44 - CT2049	<b>Page</b>	40 of 111
	<b>Project</b>	370' Guyed Tower - 689 Old Colchester Road, Montville, CT	<b>Date</b>	11:00:57 11/01/16
	<b>Client</b>	AT&T Mobility	<b>Designed by</b>	TJL

Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	C <sub>AA</sub> Front	C <sub>AA</sub> Side	Weight
			Horz	Vert					
			ft	ft	°	ft	ft <sup>2</sup>	ft <sup>2</sup>	K
RRUS-11 (AT&T - Existing)	A	From Leg	3.00	0.0000		242.50	No Ice 2.57	1.07	0.05
			0.00				1/2" Ice 2.76	1.21	0.07
			0.00				1" Ice 2.97	1.36	0.09
RRUS-11 (AT&T - Existing)	B	From Leg	3.00	0.0000		242.50	No Ice 2.57	1.07	0.05
			0.00				1/2" Ice 2.76	1.21	0.07
			0.00				1" Ice 2.97	1.36	0.09
RRUS-11 (AT&T - Existing)	C	From Leg	3.00	0.0000		242.50	No Ice 2.57	1.07	0.05
			0.00				1/2" Ice 2.76	1.21	0.07
			0.00				1" Ice 2.97	1.36	0.09
RRUS-32 (AT&T - Proposed)	A	From Leg	3.00	0.0000		242.50	No Ice 3.31	2.42	0.08
			0.00				1/2" Ice 3.56	2.64	0.10
			0.00				1" Ice 3.81	2.86	0.14
RRUS-32 (AT&T - Proposed)	B	From Leg	3.00	0.0000		242.50	No Ice 3.31	2.42	0.08
			0.00				1/2" Ice 3.56	2.64	0.10
			0.00				1" Ice 3.81	2.86	0.14
RRUS-32 (AT&T - Proposed)	C	From Leg	3.00	0.0000		242.50	No Ice 3.31	2.42	0.08
			0.00				1/2" Ice 3.56	2.64	0.10
			0.00				1" Ice 3.81	2.86	0.14
DC6-48-60-18-8F Surge Arrestor (AT&T - Existing)	A	From Leg	3.00	0.0000		242.50	No Ice 1.91	1.91	0.02
			0.00				1/2" Ice 2.10	2.10	0.04
			0.00				1" Ice 2.29	2.29	0.06
Pirod 12' T-Frame Sector Mount (1) (AT&T - Existing)	A	From Leg	1.00	0.0000		242.50	No Ice 13.60	13.60	0.47
			0.00				1/2" Ice 18.40	18.40	0.60
			0.00				1" Ice 23.20	23.20	0.73
Pirod 12' T-Frame Sector Mount (1) (AT&T - Existing)	B	From Leg	1.00	0.0000		242.50	No Ice 13.60	13.60	0.47
			0.00				1/2" Ice 18.40	18.40	0.60
			0.00				1" Ice 23.20	23.20	0.73
Pirod 12' T-Frame Sector Mount (1) (AT&T - Existing)	C	From Leg	1.00	0.0000		242.50	No Ice 13.60	13.60	0.47
			0.00				1/2" Ice 18.40	18.40	0.60
			0.00				1" Ice 23.20	23.20	0.73
QUAD656C0000 (Verizon Existing)	A	From Leg	3.00	0.0000		305.00	No Ice 13.24	5.62	0.06
			-6.00				1/2" Ice 13.75	6.09	0.13
			0.00				1" Ice 14.27	6.56	0.21
HBXX-6517DS (Verizon Existing)	A	From Leg	3.00	0.0000		305.00	No Ice 8.53	5.24	0.05
			-4.00				1/2" Ice 9.00	5.71	0.10
			0.00				1" Ice 9.48	6.18	0.16
LNX-6514DS-T4M (Verizon Existing)	A	From Leg	3.00	0.0000		305.00	No Ice 8.17	5.41	0.04
			0.00				1/2" Ice 8.63	5.86	0.09
			0.00				1" Ice 9.10	6.33	0.15
HBXX-6517DS (Verizon Existing)	A	From Leg	3.00	0.0000		305.00	No Ice 8.53	5.24	0.05
			4.00				1/2" Ice 9.00	5.71	0.10
			0.00				1" Ice 9.48	6.18	0.16
QUAD656C0000 (Verizon Existing)	B	From Leg	3.00	0.0000		305.00	No Ice 13.24	5.62	0.06
			-6.00				1/2" Ice 13.75	6.09	0.13
			0.00				1" Ice 14.27	6.56	0.21
HBXX-6517DS (Verizon Existing)	B	From Leg	3.00	0.0000		305.00	No Ice 8.53	5.24	0.05
			-4.00				1/2" Ice 9.00	5.71	0.10
			0.00				1" Ice 9.48	6.18	0.16
LNX-6514DS-T4M (Verizon Existing)	B	From Leg	3.00	0.0000		305.00	No Ice 8.17	5.41	0.04
			0.00				1/2" Ice 8.63	5.86	0.09
			0.00				1" Ice 9.10	6.33	0.15
HBXX-6517DS (Verizon Existing)	B	From Leg	3.00	0.0000		305.00	No Ice 8.53	5.24	0.05
			4.00				1/2" Ice 9.00	5.71	0.10
			0.00				1" Ice 9.48	6.18	0.16
QUAD656C0000 (Verizon Existing)	C	From Leg	3.00	0.0000		305.00	No Ice 13.24	5.62	0.06
			-6.00				1/2" Ice 13.75	6.09	0.13
			0.00				1" Ice 14.27	6.56	0.21

<b>tnxTower</b>  <b>Centek Engineering Inc.</b> 63-2 North Branford Rd. Branford, CT 06405 Phone: (203) 488-0580 FAX: (203) 488-8587	<b>Job</b>	16071.44 - CT2049	<b>Page</b>	41 of 111	
	<b>Project</b>	370' Guyed Tower - 689 Old Colchester Road, Montville, CT		<b>Date</b>	11:00:57 11/01/16
	<b>Client</b>	AT&T Mobility		<b>Designed by</b>	TJL

Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	C <sub>AA</sub>		Weight
			Horz Lateral	Vert			Front	Side	
			ft	ft	°	ft	ft <sup>2</sup>	ft <sup>2</sup>	K
HBXX-6517DS (Verizon Existing)	C	From Leg	3.00	0.0000	305.00	No Ice	8.53	5.24	0.05
			-4.00			1/2" Ice	9.00	5.71	0.10
			0.00			1" Ice	9.48	6.18	0.16
LNX-6514DS-T4M (Verizon Existing)	C	From Leg	3.00	0.0000	305.00	No Ice	8.17	5.41	0.04
			0.00			1/2" Ice	8.63	5.86	0.09
			0.00			1" Ice	9.10	6.33	0.15
HBXX-6517DS (Verizon Existing)	C	From Leg	3.00	0.0000	305.00	No Ice	8.53	5.24	0.05
			4.00			1/2" Ice	9.00	5.71	0.10
			0.00			1" Ice	9.48	6.18	0.16
RRH4x45/2x90-AWS (Verizon Existing)	A	From Leg	3.00	0.0000	305.00	No Ice	2.58	1.69	0.08
			4.00			1/2" Ice	2.79	1.87	0.10
			0.00			1" Ice	3.01	2.06	0.12
RRH4x45/2x90-AWS (Verizon Existing)	B	From Leg	3.00	0.0000	305.00	No Ice	2.58	1.69	0.08
			4.00			1/2" Ice	2.79	1.87	0.10
			0.00			1" Ice	3.01	2.06	0.12
RRH4x45/2x90-AWS (Verizon Existing)	C	From Leg	3.00	0.0000	305.00	No Ice	2.58	1.69	0.08
			4.00			1/2" Ice	2.79	1.87	0.10
			0.00			1" Ice	3.01	2.06	0.12
RRH4x30-B13 (Verizon Existing)	A	From Leg	3.00	0.0000	305.00	No Ice	2.16	1.62	0.06
			-4.00			1/2" Ice	2.35	1.79	0.08
			0.00			1" Ice	2.55	1.97	0.10
RRH4x30-B13 (Verizon Existing)	B	From Leg	3.00	0.0000	305.00	No Ice	2.16	1.62	0.06
			-4.00			1/2" Ice	2.35	1.79	0.08
			0.00			1" Ice	2.55	1.97	0.10
RRH4x30-B13 (Verizon Existing)	C	From Leg	3.00	0.0000	305.00	No Ice	2.16	1.62	0.06
			-4.00			1/2" Ice	2.35	1.79	0.08
			0.00			1" Ice	2.55	1.97	0.10
DB-T1-6Z-8AB-0Z (Verizon Existing)	A	From Leg	3.00	0.0000	305.00	No Ice	4.80	2.00	0.04
			0.00			1/2" Ice	5.07	2.19	0.08
			0.00			1" Ice	5.35	2.39	0.12
DB-T1-6Z-8AB-0Z (Verizon Existing)	B	From Leg	3.00	0.0000	305.00	No Ice	4.80	2.00	0.04
			0.00			1/2" Ice	5.07	2.19	0.08
			0.00			1" Ice	5.35	2.39	0.12
Rohn 6' x 12' Boom Gate (1) (Verizon Existing)	A	From Leg	1.00	0.0000	305.00	No Ice	16.60	16.60	0.56
			0.00			1/2" Ice	19.80	19.80	0.70
			0.00			1" Ice	23.00	23.00	0.84
Rohn 6' x 12' Boom Gate (1) (Verizon Existing)	B	From Leg	1.00	0.0000	305.00	No Ice	16.60	16.60	0.56
			0.00			1/2" Ice	19.80	19.80	0.70
			0.00			1" Ice	23.00	23.00	0.84
Rohn 6' x 12' Boom Gate (1) (Verizon Existing)	C	From Leg	1.00	0.0000	305.00	No Ice	16.60	16.60	0.56
			0.00			1/2" Ice	19.80	19.80	0.70
			0.00			1" Ice	23.00	23.00	0.84

## Dishes

Description	Face or Leg	Dish Type	Offset Type	Offsets:		Azimuth Adjustment	3 dB Beam Width	Elevation	Outside Diameter	Aperture Area	Weight	
				Horz Lateral	Vert							
				ft	ft	°	°	ft	ft	ft <sup>2</sup>	K	
8' Dish	A	Paraboloid w/o	From	1.00		Worst		355.00	8.00	No Ice	50.27	0.10

<b>tnxTower</b>  <b>Centek Engineering Inc.</b> 63-2 North Branford Rd. Branford, CT 06405 Phone: (203) 488-0580 FAX: (203) 488-8587	<b>Job</b> 16071.44 - CT2049	<b>Page</b> 42 of 111
	<b>Project</b> 370' Guyed Tower - 689 Old Colchester Road, Montville, CT	<b>Date</b> 11:00:57 11/01/16
	<b>Client</b> AT&T Mobility	<b>Designed by</b> TJL

Description	Face or Leg	Dish Type	Offset Type	Offsets: Horz Lateral Vert	Azimuth Adjustment	3 dB Beam Width	Elevation	Outside Diameter	Aperture Area	Weight
				ft	°	°	ft	ft	ft <sup>2</sup>	K
		Radome	Leg	0.00				1/2" Ice	51.32	0.26
				0.00				1" Ice	52.37	0.49

### Tower Pressures - No Ice

$$G_H = 0.850$$

Section Elevation	z	K <sub>Z</sub>	q <sub>z</sub>	A <sub>G</sub>	F a c e	A <sub>F</sub>	A <sub>R</sub>	A <sub>leg</sub>	Leg %	C <sub>A A</sub> In Face	C <sub>A A</sub> Out Face
ft	ft		psf	ft <sup>2</sup>		ft <sup>2</sup>	ft <sup>2</sup>	ft <sup>2</sup>		ft <sup>2</sup>	ft <sup>2</sup>
T1 368.75-362.50	365.63	1.663	40	32.682	A	4.176	2.865	2.865	40.69	0.000	0.000
					B	4.176	2.865		40.69	0.000	0.000
					C	4.176	2.865		40.69	0.278	0.000
T2 362.50-356.25	359.38	1.657	40	32.682	A	4.812	2.865	2.865	37.31	0.000	0.000
					B	4.812	2.865		37.31	0.000	0.000
					C	4.812	2.865		37.31	0.694	0.000
T3 356.25-350.00	353.13	1.651	40	32.682	A	4.812	2.865	2.865	37.31	0.000	0.000
					B	4.812	2.865		37.31	0.555	0.000
					C	4.812	2.865		37.31	0.694	0.000
T4 350.00-343.75	346.88	1.644	39	32.813	A	4.804	3.125	3.125	39.41	0.000	0.000
					B	4.804	3.125		39.41	2.081	0.000
					C	4.804	3.125		39.41	0.694	0.000
T5 343.75-337.50	340.63	1.638	39	32.813	A	0.990	3.917	3.125	63.69	0.000	0.000
					B	0.990	3.917		63.69	2.081	0.000
					C	0.990	3.917		63.69	0.694	0.000
T6 337.50-331.25	334.38	1.632	39	32.813	A	0.000	4.574	3.125	68.32	0.000	0.000
					B	0.000	4.574		68.32	2.081	0.000
					C	0.000	4.574		68.32	0.694	0.000
T7 331.25-325.00	328.13	1.625	39	32.813	A	0.000	4.574	3.125	68.32	0.000	0.000
					B	0.000	4.574		68.32	2.081	0.000
					C	0.000	4.574		68.32	0.694	0.000
T8 325.00-318.75	321.88	1.619	39	32.943	A	0.000	4.991	3.385	67.83	1.238	0.000
					B	0.000	4.991		67.83	2.081	0.000
					C	0.000	4.991		67.83	0.694	0.000
T9 318.75-312.50	315.63	1.612	39	32.943	A	0.000	4.986	3.385	67.90	1.238	0.000
					B	0.000	4.986		67.90	2.081	0.000
					C	0.000	4.986		67.90	0.694	0.000
T10 312.50-306.25	309.38	1.605	39	32.943	A	0.000	4.986	3.385	67.90	1.238	0.000
					B	0.000	4.986		67.90	2.081	0.000
					C	0.000	4.986		67.90	0.694	0.000
T11 306.25-300.00	303.13	1.598	38	32.943	A	0.985	4.332	3.385	63.67	1.238	0.000
					B	0.985	4.332		63.67	2.081	0.000
					C	0.985	4.332		63.67	0.694	0.000
T12 300.00-293.75	296.88	1.591	38	32.943	A	4.770	3.385	3.385	41.51	1.238	0.000
					B	4.770	3.385		41.51	4.556	0.000
					C	4.770	3.385		41.51	15.544	0.000
T13 293.75-287.50	290.63	1.584	38	32.943	A	0.985	4.332	3.385	63.67	1.238	0.000
					B	0.985	4.332		63.67	4.556	0.000
					C	0.985	4.332		63.67	15.544	0.000
T14 287.50-281.25	284.38	1.577	38	32.943	A	0.000	4.828	3.385	70.12	1.238	0.000
					B	0.000	4.828		70.12	4.556	0.000
					C	0.000	4.828		70.12	15.544	0.000
T15 281.25-275.00	278.13	1.57	38	32.943	A	0.000	4.828	3.385	70.12	1.238	0.000
					B	0.000	4.828		70.12	4.556	0.000

<b>tnxTower</b>  <b>Centek Engineering Inc.</b> 63-2 North Branford Rd. Branford, CT 06405 Phone: (203) 488-0580 FAX: (203) 488-8587	<b>Job</b> 16071.44 - CT2049	<b>Page</b> 43 of 111
	<b>Project</b> 370' Guyed Tower - 689 Old Colchester Road, Montville, CT	<b>Date</b> 11:00:57 11/01/16
	<b>Client</b> AT&T Mobility	<b>Designed by</b> TJL

Section Elevation	z	K <sub>Z</sub>	q <sub>z</sub>	A <sub>G</sub>	F a c e	A <sub>F</sub>	A <sub>R</sub>	A <sub>leg</sub>	Leg %	C <sub>AA</sub> In Face ft <sup>2</sup>	C <sub>AA</sub> Out Face ft <sup>2</sup>
ft	ft		psf	ft <sup>2</sup>		ft <sup>2</sup>	ft <sup>2</sup>	ft <sup>2</sup>			
T16 275.00-268.75	271.88	1.562	37	32.943	C	0.000	4.828		70.12	15.544	0.000
					A	0.000	4.828	3.385	70.12	1.238	0.000
					B	0.000	4.828		70.12	4.556	0.000
					C	0.000	4.828		70.12	15.544	0.000
T17 268.75-262.50	265.63	1.555	37	32.943	A	0.000	4.828	3.385	70.12	1.238	0.000
					B	0.000	4.828		70.12	4.556	0.000
					C	0.000	4.828		70.12	15.544	0.000
T18 262.50-256.25	259.38	1.547	37	32.943	A	0.000	4.828	3.385	70.12	1.238	0.000
					B	0.000	4.828		70.12	4.556	0.000
					C	0.000	4.828		70.12	15.544	0.000
T19 256.25-250.00	253.13	1.539	37	32.943	A	0.000	4.986	3.385	67.90	1.238	0.000
					B	0.000	4.986		67.90	4.556	0.000
					C	0.000	4.986		67.90	15.544	0.000
T20 250.00-243.75	246.88	1.531	37	32.943	A	0.985	4.332	3.385	63.67	1.238	0.000
					B	0.985	4.332		63.67	4.556	0.000
					C	0.985	4.332		63.67	15.544	0.000
T21 243.75-237.50	240.63	1.523	37	32.943	A	0.985	4.332	3.385	63.67	1.979	0.000
					B	0.985	4.332		63.67	4.556	0.000
					C	0.985	4.332		63.67	21.484	0.000
T22 237.50-231.25	234.38	1.514	36	32.943	A	0.985	4.332	3.385	63.67	3.095	0.000
					B	0.985	4.332		63.67	4.556	0.000
					C	0.985	4.332		63.67	30.394	0.000
T23 231.25-225.00	228.13	1.506	36	32.943	A	0.985	4.647	3.385	60.11	3.100	0.000
					B	0.985	4.647		60.11	4.556	0.000
					C	0.985	4.647		60.11	30.394	0.000
T24 225.00-218.75	221.88	1.497	36	32.813	A	4.147	3.125	3.125	42.98	3.106	0.000
					B	4.147	3.125		42.98	4.556	0.000
					C	4.147	3.125		42.98	30.394	0.000
T25 218.75-212.50	215.63	1.488	36	32.813	A	0.990	3.917	3.125	63.69	3.111	0.000
					B	0.990	3.917		63.69	4.556	0.000
					C	0.990	3.917		63.69	30.394	0.000
T26 212.50-206.25	209.38	1.479	35	32.813	A	0.000	4.574	3.125	68.32	3.112	0.000
					B	0.000	4.574		68.32	4.556	0.000
					C	0.000	4.574		68.32	30.394	0.000
T27 206.25-200.00	203.13	1.469	35	32.813	A	0.000	4.574	3.125	68.32	3.112	0.000
					B	0.000	4.574		68.32	4.556	0.000
					C	0.000	4.574		68.32	30.394	0.000
T28 200.00-175.00	187.50	1.445	35	131.250	A	0.000	20.925	12.500	59.74	13.005	0.000
					B	0.000	20.925		59.74	18.225	0.000
					C	0.000	20.925		59.74	124.350	0.000
T29 175.00-168.75	171.88	1.418	34	32.943	A	0.000	5.307	3.385	63.79	3.806	0.000
					B	0.000	5.307		63.79	4.556	0.000
					C	0.000	5.307		63.79	31.087	0.000
T30 168.75-162.50	165.63	1.407	34	32.943	A	0.000	5.301	3.385	63.86	3.806	0.000
					B	0.000	5.301		63.86	4.556	0.000
					C	0.000	5.301		63.86	31.087	0.000
T31 162.50-156.25	159.38	1.396	33	32.943	A	0.985	4.174	3.385	65.62	3.806	0.000
					B	0.985	4.174		65.62	4.556	0.000
					C	0.985	4.174		65.62	31.087	0.000
T32 156.25-150.00	153.13	1.384	33	32.943	A	0.000	4.828	3.385	70.12	3.806	0.000
					B	0.000	4.828		70.12	4.556	0.000
					C	0.000	4.828		70.12	31.087	0.000
T33 150.00-125.00	137.50	1.353	32	131.771	A	0.000	19.313	13.542	70.12	15.225	0.000
					B	0.000	19.313		70.12	19.559	0.000
					C	0.000	19.313		70.12	126.015	0.000
T34 125.00-100.00	112.50	1.297	31	131.771	A	12.617	16.158	13.542	47.06	15.225	0.000
					B	12.617	16.158		47.06	21.125	0.000
					C	12.617	16.158		47.06	127.125	0.000
T35 100.00-93.75	96.88	1.257	30	32.943	A	4.140	3.385	3.385	44.99	3.806	0.000
					B	4.140	3.385		44.99	5.281	0.000

<b>tnxTower</b>  <b>Centek Engineering Inc.</b> 63-2 North Branford Rd. Branford, CT 06405 Phone: (203) 488-0580 FAX: (203) 488-8587	<b>Job</b> 16071.44 - CT2049	<b>Page</b> 44 of 111
	<b>Project</b> 370' Guyed Tower - 689 Old Colchester Road, Montville, CT	<b>Date</b> 11:00:57 11/01/16
	<b>Client</b> AT&T Mobility	<b>Designed by</b> TJL

Section Elevation ft	z ft	K <sub>Z</sub>	q <sub>z</sub> psf	A <sub>G</sub> ft <sup>2</sup>	F a c e ft <sup>2</sup>	A <sub>F</sub> ft <sup>2</sup>	A <sub>R</sub> ft <sup>2</sup>	A <sub>leg</sub> ft <sup>2</sup>	Leg %	C <sub>AA</sub> In Face ft <sup>2</sup>	C <sub>AA</sub> Out Face ft <sup>2</sup>
T36 93.75-87.50	90.63	1.24	30	32.943	C	4.140	3.385	3.385	44.99	31.781	0.000
					A	0.985	4.332		63.67	3.806	0.000
					B	0.985	4.332		63.67	5.397	0.000
T37 87.50-81.25	84.38	1.221	29	32.943	C	0.985	4.332	3.385	70.12	3.806	0.000
					A	0.000	4.828		70.12	6.731	0.000
					B	0.000	4.828		70.12	31.781	0.000
T38 81.25-75.00	78.13	1.202	29	32.943	C	0.000	4.828	3.385	70.12	3.806	0.000
					A	0.000	4.828		70.12	6.731	0.000
					B	0.000	4.828		70.12	31.781	0.000
T39 75.00-50.00	62.50	1.146	28	131.771	C	0.000	19.313	13.542	70.12	16.557	0.000
					A	0.000	19.313		70.12	26.925	0.000
					B	0.000	19.313		70.12	127.125	0.000
T40 50.00-25.00	37.50	1.029	25	131.771	C	0.985	18.659	13.542	68.94	19.665	0.000
					A	0.985	18.659		68.94	26.925	0.000
					B	0.985	18.659		68.94	127.125	0.000
T41 25.00-0.00	12.50	0.85	20	131.771	C	0.000	19.313	13.542	70.12	18.282	0.000
					A	0.000	19.313		70.12	23.694	0.000
					B	0.000	19.313		70.12	111.870	0.000

### Tower Pressure - With Ice

$G_H = 0.850$

Section Elevation ft	z ft	K <sub>Z</sub>	q <sub>z</sub> psf	t <sub>z</sub> in	A <sub>G</sub> ft <sup>2</sup>	F a c e ft <sup>2</sup>	A <sub>F</sub> ft <sup>2</sup>	A <sub>R</sub> ft <sup>2</sup>	A <sub>leg</sub> ft <sup>2</sup>	Leg %	C <sub>AA</sub> In Face ft <sup>2</sup>	C <sub>AA</sub> Out Face ft <sup>2</sup>
T1 368.75-362.50	365.63	1.663	9	1.9078	34.670	A	4.176	13.213	6.839	39.33	0.000	0.000
						B	4.176	13.213		39.33	0.000	0.000
						C	4.176	13.213		39.33	1.231	0.000
T2 362.50-356.25	359.38	1.657	9	1.9046	34.666	A	4.812	13.195	6.832	37.94	0.000	0.000
						B	4.812	13.195		37.94	0.000	0.000
						C	4.812	13.195		37.94	3.074	0.000
T3 356.25-350.00	353.13	1.651	9	1.9012	34.663	A	4.812	13.177	6.825	37.94	0.000	0.000
						B	4.812	13.177		37.94	2.456	0.000
						C	4.812	13.177		37.94	3.070	0.000
T4 350.00-343.75	346.88	1.644	9	1.8978	34.789	A	4.804	13.409	7.079	38.87	0.000	0.000
						B	4.804	13.409		38.87	9.825	0.000
						C	4.804	13.409		38.87	3.066	0.000
T5 343.75-337.50	340.63	1.638	9	1.8944	34.786	A	0.990	14.165	7.072	46.66	0.000	0.000
						B	0.990	14.165		46.66	9.813	0.000
						C	0.990	14.165		46.66	3.062	0.000
T6 337.50-331.25	334.38	1.632	9	1.8909	34.782	A	0.000	14.803	7.064	47.72	0.000	0.000
						B	0.000	14.803		47.72	9.801	0.000
						C	0.000	14.803		47.72	3.057	0.000
T7 331.25-325.00	328.13	1.625	9	1.8873	34.778	A	0.000	14.784	7.057	47.73	0.000	0.000
						B	0.000	14.784		47.73	9.789	0.000
						C	0.000	14.784		47.73	3.053	0.000
T8 325.00-318.75	321.88	1.619	9	1.8837	34.905	A	0.000	15.170	7.310	48.18	3.592	0.000
						B	0.000	15.170		48.18	9.776	0.000
						C	0.000	15.170		48.18	3.048	0.000
T9 318.75-312.50	315.63	1.612	9	1.8800	34.901	A	0.000	15.128	7.302	48.27	3.587	0.000
						B	0.000	15.128		48.27	9.764	0.000
						C	0.000	15.128		48.27	3.044	0.000
T10	309.38	1.605	9	1.8762	34.897	A	0.000	15.108	7.294	48.28	3.583	0.000

<b>Job</b>	16071.44 - CT2049	<b>Page</b>	45 of 111
<b>Project</b>	370' Guyed Tower - 689 Old Colchester Road, Montville, CT	<b>Date</b>	11:00:57 11/01/16
<b>Client</b>	AT&T Mobility	<b>Designed by</b>	TJL

Section Elevation ft	z ft	Kz	qz psf	tz in	AG ft <sup>2</sup>	F a c e	AF ft <sup>2</sup>	AR ft <sup>2</sup>	Aleg ft <sup>2</sup>	Leg %	CAA In Face ft <sup>2</sup>	CAA Out Face ft <sup>2</sup>
312.50-306.25						B	0.000	15.108		48.28	9.751	0.000
						C	0.000	15.108		48.28	3.039	0.000
T11 306.25-300.00	303.13	1.598	9	1.8724	34.893	A	0.985	14.433	7.286	47.26	3.578	0.000
						B	0.985	14.433		47.26	9.738	0.000
						C	0.985	14.433		47.26	3.034	0.000
T12 300.00-293.75	296.88	1.591	9	1.8685	34.889	A	4.770	13.466	7.278	39.91	3.573	0.000
						B	4.770	13.466		39.91	18.505	0.000
						C	4.770	13.466		39.91	24.350	0.000
T13 293.75-287.50	290.63	1.584	9	1.8645	34.885	A	0.985	14.391	7.270	47.28	3.568	0.000
						B	0.985	14.391		47.28	18.483	0.000
						C	0.985	14.391		47.28	24.337	0.000
T14 287.50-281.25	284.38	1.577	9	1.8605	34.881	A	0.000	14.866	7.261	48.85	3.563	0.000
						B	0.000	14.866		48.85	18.461	0.000
						C	0.000	14.866		48.85	24.324	0.000
T15 281.25-275.00	278.13	1.57	9	1.8564	34.876	A	0.000	14.843	7.253	48.86	3.558	0.000
						B	0.000	14.843		48.86	18.438	0.000
						C	0.000	14.843		48.86	24.310	0.000
T16 275.00-268.75	271.88	1.562	8	1.8522	34.872	A	0.000	14.821	7.244	48.88	3.553	0.000
						B	0.000	14.821		48.88	18.414	0.000
						C	0.000	14.821		48.88	24.297	0.000
T17 268.75-262.50	265.63	1.555	8	1.8479	34.868	A	0.000	14.797	7.235	48.89	3.547	0.000
						B	0.000	14.797		48.89	18.390	0.000
						C	0.000	14.797		48.89	24.283	0.000
T18 262.50-256.25	259.38	1.547	8	1.8435	34.863	A	0.000	14.774	7.226	48.91	3.542	0.000
						B	0.000	14.774		48.91	18.366	0.000
						C	0.000	14.774		48.91	24.268	0.000
T19 256.25-250.00	253.13	1.539	8	1.8390	34.858	A	0.000	14.907	7.217	48.41	3.536	0.000
						B	0.000	14.907		48.41	18.341	0.000
						C	0.000	14.907		48.41	24.254	0.000
T20 250.00-243.75	246.88	1.531	8	1.8344	34.854	A	0.985	14.228	7.207	47.37	3.530	0.000
						B	0.985	14.228		47.37	18.315	0.000
						C	0.985	14.228		47.37	24.239	0.000
T21 243.75-237.50	240.63	1.523	8	1.8297	34.849	A	0.985	14.203	7.197	47.39	5.189	0.000
						B	0.985	14.203		47.39	18.289	0.000
						C	0.985	14.203		47.39	32.720	0.000
T22 237.50-231.25	234.38	1.514	8	1.8249	34.844	A	0.985	14.177	7.187	47.40	7.675	0.000
						B	0.985	14.177		47.40	18.263	0.000
						C	0.985	14.177		47.40	45.440	0.000
T23 231.25-225.00	228.13	1.506	8	1.8199	34.838	A	0.985	14.466	7.177	46.45	7.662	0.000
						B	0.985	14.466		46.45	18.235	0.000
						C	0.985	14.466		46.45	45.414	0.000
T24 225.00-218.75	221.88	1.497	8	1.8149	34.703	A	4.147	12.926	6.906	40.45	7.650	0.000
						B	4.147	12.926		40.45	18.207	0.000
						C	4.147	12.926		40.45	45.388	0.000
T25 218.75-212.50	215.63	1.488	8	1.8097	34.698	A	0.990	13.707	6.895	46.92	7.637	0.000
						B	0.990	13.707		46.92	18.178	0.000
						C	0.990	13.707		46.92	45.360	0.000
T26 212.50-206.25	209.38	1.479	8	1.8044	34.692	A	0.000	14.335	6.884	48.02	7.623	0.000
						B	0.000	14.335		48.02	18.149	0.000
						C	0.000	14.335		48.02	45.332	0.000
T27 206.25-200.00	203.13	1.469	8	1.7989	34.686	A	0.000	14.306	6.873	48.04	7.610	0.000
						B	0.000	14.306		48.04	18.118	0.000
						C	0.000	14.306		48.04	45.303	0.000
T28 200.00-175.00	187.50	1.445	8	1.7846	138.686	A	0.000	65.192	27.372	41.99	32.636	0.000
						B	0.000	65.192		41.99	72.155	0.000
						C	0.000	65.192		41.99	192.609	0.000
T29 175.00-168.75	171.88	1.418	8	1.7691	34.786	A	0.000	14.867	7.071	47.56	10.441	0.000
						B	0.000	14.867		47.56	17.953	0.000
						C	0.000	14.867		47.56	48.051	0.000
T30	165.63	1.407	8	1.7626	34.779	A	0.000	14.811	7.057	47.65	10.416	0.000



<b>tnxTower</b>  <b>Centek Engineering Inc.</b> 63-2 North Branford Rd. Branford, CT 06405 Phone: (203) 488-0580 FAX: (203) 488-8587	<b>Job</b> 16071.44 - CT2049	<b>Page</b> 46 of 111
	<b>Project</b> 370' Guyed Tower - 689 Old Colchester Road, Montville, CT	<b>Date</b> 11:00:57 11/01/16
	<b>Client</b> AT&T Mobility	<b>Designed by</b> TJL

Section Elevation ft	z ft	K <sub>Z</sub>	q <sub>z</sub> psf	t <sub>z</sub> in	A <sub>G</sub> ft <sup>2</sup>	F a c e ft <sup>2</sup>	A <sub>F</sub> ft <sup>2</sup>	A <sub>R</sub> ft <sup>2</sup>	A <sub>leg</sub> ft <sup>2</sup>	Leg %	C <sub>AA</sub> In Face ft <sup>2</sup>	C <sub>AA</sub> Out Face ft <sup>2</sup>	
168.75-162.50						B	0.000	14.811		47.65	17.916	0.000	
						C	0.000	14.811		47.65	48.009	0.000	
T31	159.38	1.396	8	1.7558	34.772	A	0.985	13.647	7.043	48.14	10.391	0.000	
162.50-156.25						B	0.985	13.647		48.14	17.879	0.000	
						C	0.985	13.647		48.14	47.965	0.000	
T32	153.13	1.384	8	1.7488	34.764	A	0.000	14.263	7.029	49.28	10.364	0.000	
156.25-150.00						B	0.000	14.263		49.28	17.840	0.000	
						C	0.000	14.263		49.28	47.919	0.000	
T33	137.50	1.353	7	1.7301	138.980	A	0.000	56.648	27.959	49.36	41.176	0.000	
150.00-125.00						B	0.000	56.648		49.36	80.236	0.000	
						C	0.000	56.648		49.36	198.043	0.000	
T34	112.50	1.297	7	1.6957	138.836	A	12.617	52.752	27.673	42.33	40.661	0.000	
125.00-100.00						B	12.617	52.752		42.33	90.038	0.000	
						C	12.617	52.752		42.33	201.545	0.000	
T35	96.88	1.257	7	1.6706	34.683	A	4.140	12.398	6.866	41.52	10.071	0.000	
100.00-93.75						B	4.140	12.398		41.52	22.307	0.000	
						C	4.140	12.398		41.52	50.191	0.000	
T36	93.75-87.50	90.63	1.24	7	1.6595	34.671	A	0.985	13.284	6.843	47.95	10.029	0.000
						B	0.985	13.284		47.95	22.739	0.000	
						C	0.985	13.284		47.95	50.105	0.000	
T37	87.50-81.25	84.38	1.221	7	1.6476	34.659	A	0.000	13.717	6.818	49.70	9.985	0.000
						B	0.000	13.717		49.70	28.617	0.000	
						C	0.000	13.717		49.70	50.013	0.000	
T38	81.25-75.00	78.13	1.202	7	1.6350	34.646	A	0.000	13.649	6.792	49.76	9.938	0.000
						B	0.000	13.649		49.76	28.489	0.000	
						C	0.000	13.649		49.76	49.915	0.000	
T39	75.00-50.00	62.50	1.146	6	1.5989	138.433	A	0.000	53.817	26.866	49.92	44.378	0.000
						B	0.000	53.817		49.92	112.491	0.000	
						C	0.000	53.817		49.92	198.539	0.000	
T40	50.00-25.00	37.50	1.029	6	1.5193	138.101	A	0.985	51.445	26.202	49.98	54.609	0.000
						B	0.985	51.445		49.98	109.259	0.000	
						C	0.985	51.445		49.98	196.069	0.000	
T41	25.00-0.00	12.50	0.85	5	1.3612	137.443	A	0.000	48.688	24.885	51.11	48.229	0.000
						B	0.000	48.688		51.11	90.513	0.000	
						C	0.000	48.688		51.11	168.232	0.000	

### Tower Pressure - Service

$$G_H = 0.850$$

Section Elevation ft	z ft	K <sub>Z</sub>	q <sub>z</sub> psf	A <sub>G</sub> ft <sup>2</sup>	F a c e ft <sup>2</sup>	A <sub>F</sub> ft <sup>2</sup>	A <sub>R</sub> ft <sup>2</sup>	A <sub>leg</sub> ft <sup>2</sup>	Leg %	C <sub>AA</sub> In Face ft <sup>2</sup>	C <sub>AA</sub> Out Face ft <sup>2</sup>
T1	365.63	1.663	13	32.682	A	4.176	2.865	2.865	40.69	0.000	0.000
368.75-362.50					B	4.176	2.865		40.69	0.000	0.000
					C	4.176	2.865		40.69	0.278	0.000
T2	359.38	1.657	13	32.682	A	4.812	2.865	2.865	37.31	0.000	0.000
362.50-356.25					B	4.812	2.865		37.31	0.000	0.000
					C	4.812	2.865		37.31	0.694	0.000
T3	353.13	1.651	13	32.682	A	4.812	2.865	2.865	37.31	0.000	0.000
356.25-350.00					B	4.812	2.865		37.31	0.555	0.000
					C	4.812	2.865		37.31	0.694	0.000
T4	346.88	1.644	13	32.813	A	4.804	3.125	3.125	39.41	0.000	0.000
350.00-343.75					B	4.804	3.125		39.41	2.081	0.000

<b>Job</b>	16071.44 - CT2049	<b>Page</b>	47 of 111
<b>Project</b>	370' Guyed Tower - 689 Old Colchester Road, Montville, CT	<b>Date</b>	11:00:57 11/01/16
<b>Client</b>	AT&T Mobility	<b>Designed by</b>	TJL

Section Elevation	z	K <sub>Z</sub>	q <sub>z</sub>	A <sub>G</sub>	F a c e	A <sub>F</sub>	A <sub>R</sub>	A <sub>leg</sub>	Leg %	C <sub>AA</sub> In Face ft <sup>2</sup>	C <sub>AA</sub> Out Face ft <sup>2</sup>
ft	ft		psf	ft <sup>2</sup>		ft <sup>2</sup>	ft <sup>2</sup>	ft <sup>2</sup>			
T5 343.75-337.50	340.63	1.638	13	32.813	C	4.804	3.125	3.125	39.41	0.694	0.000
					A	0.990	3.917		63.69	0.000	0.000
					B	0.990	3.917		63.69	2.081	0.000
T6 337.50-331.25	334.38	1.632	13	32.813	C	0.990	3.917	3.125	63.69	0.694	0.000
					A	0.000	4.574		68.32	0.000	0.000
					B	0.000	4.574		68.32	2.081	0.000
T7 331.25-325.00	328.13	1.625	13	32.813	C	0.000	4.574	3.125	68.32	0.694	0.000
					A	0.000	4.574		68.32	0.000	0.000
					B	0.000	4.574		68.32	2.081	0.000
T8 325.00-318.75	321.88	1.619	13	32.943	C	0.000	4.991	3.385	67.83	1.238	0.000
					A	0.000	4.991		67.83	2.081	0.000
					B	0.000	4.991		67.83	0.694	0.000
T9 318.75-312.50	315.63	1.612	13	32.943	C	0.000	4.986	3.385	67.90	1.238	0.000
					A	0.000	4.986		67.90	2.081	0.000
					B	0.000	4.986		67.90	0.694	0.000
T10 312.50-306.25	309.38	1.605	13	32.943	C	0.000	4.986	3.385	67.90	1.238	0.000
					A	0.000	4.986		67.90	2.081	0.000
					B	0.000	4.986		67.90	0.694	0.000
T11 306.25-300.00	303.13	1.598	13	32.943	C	0.985	4.332	3.385	63.67	1.238	0.000
					A	0.985	4.332		63.67	2.081	0.000
					B	0.985	4.332		63.67	0.694	0.000
T12 300.00-293.75	296.88	1.591	12	32.943	C	4.770	3.385	3.385	41.51	1.238	0.000
					A	4.770	3.385		41.51	4.556	0.000
					B	4.770	3.385		41.51	15.544	0.000
T13 293.75-287.50	290.63	1.584	12	32.943	C	0.985	4.332	3.385	63.67	1.238	0.000
					A	0.985	4.332		63.67	4.556	0.000
					B	0.985	4.332		63.67	15.544	0.000
T14 287.50-281.25	284.38	1.577	12	32.943	C	0.000	4.828	3.385	70.12	1.238	0.000
					A	0.000	4.828		70.12	4.556	0.000
					B	0.000	4.828		70.12	15.544	0.000
T15 281.25-275.00	278.13	1.57	12	32.943	C	0.000	4.828	3.385	70.12	1.238	0.000
					A	0.000	4.828		70.12	4.556	0.000
					B	0.000	4.828		70.12	15.544	0.000
T16 275.00-268.75	271.88	1.562	12	32.943	C	0.000	4.828	3.385	70.12	1.238	0.000
					A	0.000	4.828		70.12	4.556	0.000
					B	0.000	4.828		70.12	15.544	0.000
T17 268.75-262.50	265.63	1.555	12	32.943	C	0.000	4.828	3.385	70.12	1.238	0.000
					A	0.000	4.828		70.12	4.556	0.000
					B	0.000	4.828		70.12	15.544	0.000
T18 262.50-256.25	259.38	1.547	12	32.943	C	0.000	4.828	3.385	70.12	1.238	0.000
					A	0.000	4.828		70.12	4.556	0.000
					B	0.000	4.828		70.12	15.544	0.000
T19 256.25-250.00	253.13	1.539	12	32.943	C	0.000	4.986	3.385	67.90	1.238	0.000
					A	0.000	4.986		67.90	4.556	0.000
					B	0.000	4.986		67.90	15.544	0.000
T20 250.00-243.75	246.88	1.531	12	32.943	C	0.985	4.332	3.385	63.67	1.238	0.000
					A	0.985	4.332		63.67	4.556	0.000
					B	0.985	4.332		63.67	15.544	0.000
T21 243.75-237.50	240.63	1.523	12	32.943	C	0.985	4.332	3.385	63.67	1.979	0.000
					A	0.985	4.332		63.67	4.556	0.000
					B	0.985	4.332		63.67	21.484	0.000
T22 237.50-231.25	234.38	1.514	12	32.943	C	0.985	4.332	3.385	63.67	3.095	0.000
					A	0.985	4.332		63.67	4.556	0.000
					B	0.985	4.332		63.67	30.394	0.000
T23 231.25-225.00	228.13	1.506	12	32.943	C	0.985	4.647	3.385	60.11	3.100	0.000
					A	0.985	4.647		60.11	4.556	0.000
					B	0.985	4.647		60.11	30.394	0.000
T24 225.00-218.75	221.88	1.497	12	32.813	C	4.147	3.125	3.125	42.98	3.106	0.000
					A	4.147	3.125		42.98	4.556	0.000

<b>tnxTower</b>  <b>Centek Engineering Inc.</b> 63-2 North Branford Rd. Branford, CT 06405 Phone: (203) 488-0580 FAX: (203) 488-8587	<b>Job</b> 16071.44 - CT2049	<b>Page</b> 48 of 111
	<b>Project</b> 370' Guyed Tower - 689 Old Colchester Road, Montville, CT	<b>Date</b> 11:00:57 11/01/16
	<b>Client</b> AT&T Mobility	<b>Designed by</b> TJL

Section Elevation <i>ft</i>	<i>z</i> <i>ft</i>	<i>K<sub>Z</sub></i>	<i>q<sub>z</sub></i> <i>psf</i>	<i>A<sub>G</sub></i> <i>ft<sup>2</sup></i>	<i>F<sub>a</sub></i> <i>c</i> <i>e</i>	<i>A<sub>F</sub></i> <i>ft<sup>2</sup></i>	<i>A<sub>R</sub></i> <i>ft<sup>2</sup></i>	<i>A<sub>leg</sub></i> <i>ft<sup>2</sup></i>	<i>Leg</i> <i>%</i>	<i>C<sub>AA</sub></i> <i>In</i> <i>Face</i> <i>ft<sup>2</sup></i>	<i>C<sub>AA</sub></i> <i>Out</i> <i>Face</i> <i>ft<sup>2</sup></i>
T25	215.63	1.488	12	32.813	C	4.147	3.125		42.98	30.394	0.000
218.75-212.50					A	0.990	3.917	3.125	63.69	3.111	0.000
					B	0.990	3.917		63.69	4.556	0.000
					C	0.990	3.917		63.69	30.394	0.000
T26	209.38	1.479	12	32.813	A	0.000	4.574	3.125	68.32	3.112	0.000
212.50-206.25					B	0.000	4.574		68.32	4.556	0.000
					C	0.000	4.574		68.32	30.394	0.000
T27	203.13	1.469	12	32.813	A	0.000	4.574	3.125	68.32	3.112	0.000
206.25-200.00					B	0.000	4.574		68.32	4.556	0.000
					C	0.000	4.574		68.32	30.394	0.000
T28	187.50	1.445	11	131.250	A	0.000	20.925	12.500	59.74	13.005	0.000
200.00-175.00					B	0.000	20.925		59.74	18.225	0.000
					C	0.000	20.925		59.74	124.350	0.000
T29	171.88	1.418	11	32.943	A	0.000	5.307	3.385	63.79	3.806	0.000
175.00-168.75					B	0.000	5.307		63.79	4.556	0.000
					C	0.000	5.307		63.79	31.087	0.000
T30	165.63	1.407	11	32.943	A	0.000	5.301	3.385	63.86	3.806	0.000
168.75-162.50					B	0.000	5.301		63.86	4.556	0.000
					C	0.000	5.301		63.86	31.087	0.000
T31	159.38	1.396	11	32.943	A	0.985	4.174	3.385	65.62	3.806	0.000
162.50-156.25					B	0.985	4.174		65.62	4.556	0.000
					C	0.985	4.174		65.62	31.087	0.000
T32	153.13	1.384	11	32.943	A	0.000	4.828	3.385	70.12	3.806	0.000
156.25-150.00					B	0.000	4.828		70.12	4.556	0.000
					C	0.000	4.828		70.12	31.087	0.000
T33	137.50	1.353	11	131.771	A	0.000	19.313	13.542	70.12	15.225	0.000
150.00-125.00					B	0.000	19.313		70.12	19.559	0.000
					C	0.000	19.313		70.12	126.015	0.000
T34	112.50	1.297	10	131.771	A	12.617	16.158	13.542	47.06	15.225	0.000
125.00-100.00					B	12.617	16.158		47.06	21.125	0.000
					C	12.617	16.158		47.06	127.125	0.000
T35	96.88	1.257	10	32.943	A	4.140	3.385	3.385	44.99	3.806	0.000
100.00-93.75					B	4.140	3.385		44.99	5.281	0.000
					C	4.140	3.385		44.99	31.781	0.000
T36	90.63	1.24	10	32.943	A	0.985	4.332	3.385	63.67	3.806	0.000
93.75-87.50					B	0.985	4.332		63.67	5.397	0.000
					C	0.985	4.332		63.67	31.781	0.000
T37	84.38	1.221	10	32.943	A	0.000	4.828	3.385	70.12	3.806	0.000
87.50-81.25					B	0.000	4.828		70.12	6.731	0.000
					C	0.000	4.828		70.12	31.781	0.000
T38	78.13	1.202	9	32.943	A	0.000	4.828	3.385	70.12	3.806	0.000
81.25-75.00					B	0.000	4.828		70.12	6.731	0.000
					C	0.000	4.828		70.12	31.781	0.000
T39	62.50	1.146	9	131.771	A	0.000	19.313	13.542	70.12	16.557	0.000
75.00-50.00					B	0.000	19.313		70.12	26.925	0.000
					C	0.000	19.313		70.12	127.125	0.000
T40	37.50	1.029	8	131.771	A	0.985	18.659	13.542	68.94	19.665	0.000
50.00-25.00					B	0.985	18.659		68.94	26.925	0.000
					C	0.985	18.659		68.94	127.125	0.000
T41	25.00-0.00	12.50	7	131.771	A	0.000	19.313	13.542	70.12	18.282	0.000
					B	0.000	19.313		70.12	23.694	0.000
					C	0.000	19.313		70.12	111.870	0.000

**Tower Forces - No Ice - Wind Normal To Face**

<b>Job</b>	16071.44 - CT2049	<b>Page</b>	49 of 111
<b>Project</b>	370' Guyed Tower - 689 Old Colchester Road, Montville, CT	<b>Date</b>	11:00:57 11/01/16
<b>Client</b>	AT&T Mobility	<b>Designed by</b>	TJL

Section Elevation	Add Weight	Self Weight	F a c e	e	C <sub>F</sub>	q <sub>z</sub>	D <sub>F</sub>	D <sub>R</sub>	A <sub>E</sub>	F	w	Ctrl. Face
ft	K	K				psf			ft <sup>2</sup>	K	plf	
T1 368.75-362.50	0.00	0.68	A	0.215	2.545	40	1	1	5.830	0.51	81.41	C
			B	0.215	2.545		1	1	5.830			
			C	0.215	2.545		1	1	5.830			
T2 362.50-356.25	0.00	1.09	A	0.235	2.484	40	1	1	6.478	0.56	89.22	C
			B	0.235	2.484		1	1	6.478			
			C	0.235	2.484		1	1	6.478			
T3 356.25-350.00	0.01	1.09	A	0.235	2.484	40	1	1	6.478	0.57	90.68	C
			B	0.235	2.484		1	1	6.478			
			C	0.235	2.484		1	1	6.478			
T4 350.00-343.75	0.01	0.77 TA 0.79	A	0.242	2.463	39	1	1	6.608	0.60	96.25	C
			B	0.242	2.463		1	1	6.608			
			C	0.242	2.463		1	1	6.608			
T5 343.75-337.50	0.01	0.61	A	0.15	2.773	39	1	1	3.189	0.35	56.17	C
			B	0.15	2.773		1	1	3.189			
			C	0.15	2.773		1	1	3.189			
T6 337.50-331.25	0.01	0.54	A	0.139	2.811	39	1	1	2.569	0.30	47.30	C
			B	0.139	2.811		1	1	2.569			
			C	0.139	2.811		1	1	2.569			
T7 331.25-325.00	0.01	0.54	A	0.139	2.811	39	1	1	2.570	0.29	47.13	C
			B	0.139	2.811		1	1	2.570			
			C	0.139	2.811		1	1	2.570			
T8 325.00-318.75	0.02	0.64	A	0.152	2.766	39	1	1	2.768	0.33	53.15	C
			B	0.152	2.766		1	1	2.768			
			C	0.152	2.766		1	1	2.768			
T9 318.75-312.50	0.02	0.64	A	0.151	2.767	39	1	1	2.766	0.33	52.91	C
			B	0.151	2.767		1	1	2.766			
			C	0.151	2.767		1	1	2.766			
T10 312.50-306.25	0.02	0.64	A	0.151	2.767	39	1	1	2.767	0.33	52.71	C
			B	0.151	2.767		1	1	2.767			
			C	0.151	2.767		1	1	2.767			
T11 306.25-300.00	0.02	0.71	A	0.161	2.73	38	1	1	3.389	0.38	60.80	C
			B	0.161	2.73		1	1	3.389			
			C	0.161	2.73		1	1	3.389			
T12 300.00-293.75	0.12	0.85 TA 0.79	A	0.248	2.445	38	1	1	6.704	0.95	151.58	C
			B	0.248	2.445		1	1	6.704			
			C	0.248	2.445		1	1	6.704			
T13 293.75-287.50	0.12	0.71	A	0.161	2.73	38	1	1	3.391	0.71	114.04	C
			B	0.161	2.73		1	1	3.391			
			C	0.161	2.73		1	1	3.391			
T14 287.50-281.25	0.12	0.61	A	0.147	2.784	38	1	1	2.680	0.65	104.26	C
			B	0.147	2.784		1	1	2.680			
			C	0.147	2.784		1	1	2.680			
T15 281.25-275.00	0.12	0.61	A	0.147	2.784	38	1	1	2.681	0.65	103.80	C
			B	0.147	2.784		1	1	2.681			
			C	0.147	2.784		1	1	2.681			
T16 275.00-268.75	0.12	0.61	A	0.147	2.784	37	1	1	2.682	0.65	103.32	C
			B	0.147	2.784		1	1	2.682			
			C	0.147	2.784		1	1	2.682			
T17 268.75-262.50	0.12	0.61	A	0.147	2.784	37	1	1	2.684	0.64	102.84	C
			B	0.147	2.784		1	1	2.684			
			C	0.147	2.784		1	1	2.684			
T18 262.50-256.25	0.12	0.61	A	0.147	2.784	37	1	1	2.685	0.64	102.34	C
			B	0.147	2.784		1	1	2.685			
			C	0.147	2.784		1	1	2.685			
T19 256.25-250.00	0.12	0.64	A	0.151	2.767	37	1	1	2.779	0.64	102.88	C
			B	0.151	2.767		1	1	2.779			
			C	0.151	2.767		1	1	2.779			
T20 250.00-243.75	0.12	0.71	A	0.161	2.73	37	1	1	3.401	0.69	110.31	C
			B	0.161	2.73		1	1	3.401			
			C	0.161	2.73		1	1	3.401			

<b>tnxTower</b>  <b>Centek Engineering Inc.</b> 63-2 North Branford Rd. Branford, CT 06405 Phone: (203) 488-0580 FAX: (203) 488-8587	<b>Job</b> 16071.44 - CT2049	<b>Page</b> 50 of 111
	<b>Project</b> 370' Guyed Tower - 689 Old Colchester Road, Montville, CT	<b>Date</b> 11:00:57 11/01/16
	<b>Client</b> AT&T Mobility	<b>Designed by</b> TJL

Section Elevation	Add Weight	Self Weight	F a c e	e	C <sub>F</sub>	q <sub>z</sub> psf	D <sub>F</sub>	D <sub>R</sub>	A <sub>E</sub> ft <sup>2</sup>	F K	w plf	Ctrl. Face
T21 243.75-237.50	0.17	0.71	A	0.161	2.73	37	1	1	3.402	0.82	131.13	C
			B	0.161	2.73		1	1	3.402			
			C	0.161	2.73		1	1	3.402			
T22 237.50-231.25	0.23	0.71	A	0.161	2.73	36	1	1	3.403	1.01	162.35	C
			B	0.161	2.73		1	1	3.403			
			C	0.161	2.73		1	1	3.403			
T23 231.25-225.00	0.23	0.77	A	0.171	2.696	36	1	1	3.591	1.02	163.37	C
			B	0.171	2.696		1	1	3.591			
			C	0.171	2.696		1	1	3.591			
T24 225.00-218.75	0.23	0.95 TA 0.79	A	0.222	2.525	36	1	1	5.953	1.18	188.58	C
			B	0.222	2.525		1	1	5.953			
			C	0.222	2.525		1	1	5.953			
T25 218.75-212.50	0.23	0.61	A	0.15	2.773	36	1	1	3.212	0.99	157.74	C
			B	0.15	2.773		1	1	3.212			
			C	0.15	2.773		1	1	3.212			
T26 212.50-206.25	0.23	0.54	A	0.139	2.811	35	1	1	2.591	0.91	145.32	C
			B	0.139	2.811		1	1	2.591			
			C	0.139	2.811		1	1	2.591			
T27 206.25-200.00	0.23	0.54	A	0.139	2.811	35	1	1	2.591	0.90	144.40	C
			B	0.139	2.811		1	1	2.591			
			C	0.139	2.811		1	1	2.591			
T28 200.00-175.00	0.94	2.28	A	0.159	2.737	35	1	1	11.897	3.71	148.37	C
			B	0.159	2.737		1	1	11.897			
			C	0.159	2.737		1	1	11.897			
T29 175.00-168.75	0.24	0.69	A	0.161	2.731	34	1	1	2.990	0.92	147.34	C
			B	0.161	2.731		1	1	2.990			
			C	0.161	2.731		1	1	2.990			
T30 168.75-162.50	0.24	0.69	A	0.161	2.732	34	1	1	2.989	0.91	146.18	C
			B	0.161	2.732		1	1	2.989			
			C	0.161	2.732		1	1	2.989			
T31 162.50-156.25	0.24	0.69	A	0.157	2.747	33	1	1	3.332	0.93	149.52	C
			B	0.157	2.747		1	1	3.332			
			C	0.157	2.747		1	1	3.332			
T32 156.25-150.00	0.24	0.61	A	0.147	2.784	33	1	1	2.715	0.88	141.06	C
			B	0.147	2.784		1	1	2.715			
			C	0.147	2.784		1	1	2.715			
T33 150.00-125.00	0.96	2.45	A	0.147	2.784	32	1	1	10.885	3.50	139.96	C
			B	0.147	2.784		1	1	10.885			
			C	0.147	2.784		1	1	10.885			
T34 125.00-100.00	0.98	2.84	A	0.218	2.536	31	1	1	21.936	4.07	162.66	C
			B	0.218	2.536		1	1	21.936			
			C	0.218	2.536		1	1	21.936			
T35 100.00-93.75	0.24	1.03 TA 0.79	A	0.228	2.504	30	1	1	6.103	1.02	163.26	C
			B	0.228	2.504		1	1	6.103			
			C	0.228	2.504		1	1	6.103			
T36 93.75-87.50	0.24	0.71	A	0.161	2.73	30	1	1	3.449	0.86	137.55	C
			B	0.161	2.73		1	1	3.449			
			C	0.161	2.73		1	1	3.449			
T37 87.50-81.25	0.25	0.61	A	0.147	2.784	29	1	1	2.739	0.82	131.54	C
			B	0.147	2.784		1	1	2.739			
			C	0.147	2.784		1	1	2.739			
T38 81.25-75.00	0.25	0.61	A	0.147	2.784	29	1	1	2.739	0.81	129.43	C
			B	0.147	2.784		1	1	2.739			
			C	0.147	2.784		1	1	2.739			
T39 75.00-50.00	1.01	2.45	A	0.147	2.784	28	1	1	10.954	3.11	124.24	C
			B	0.147	2.784		1	1	10.954			
			C	0.147	2.784		1	1	10.954			
T40 50.00-25.00	1.02	2.47	A	0.149	2.775	25	1	1	11.573	2.86	114.49	C
			B	0.149	2.775		1	1	11.573			
			C	0.149	2.775		1	1	11.573			

<b>tnxTower</b>  <b>Centek Engineering Inc.</b> 63-2 North Branford Rd. Branford, CT 06405 Phone: (203) 488-0580 FAX: (203) 488-8587	<b>Job</b> 16071.44 - CT2049	<b>Page</b> 51 of 111
	<b>Project</b> 370' Guyed Tower - 689 Old Colchester Road, Montville, CT	<b>Date</b> 11:00:57 11/01/16
	<b>Client</b> AT&T Mobility	<b>Designed by</b> TJL

Section Elevation ft	Add Weight K	Self Weight K	F a c e	e	C <sub>F</sub>	q <sub>z</sub> psf	D <sub>F</sub>	D <sub>R</sub>	A <sub>E</sub> ft <sup>2</sup>	F K	w plf	Ctrl. Face
T41 25.00-0.00	0.91	2.45	A	0.147	2.784	20	1	1	10.954	2.13	85.14	C
			B	0.147	2.784		1	1	10.954			
			C	0.147	2.784		1	1	10.954			
Sum Weight:	10.55	42.50								44.13		

### Tower Forces - No Ice - Wind 60 To Face

Section Elevation ft	Add Weight K	Self Weight K	F a c e	e	C <sub>F</sub>	q <sub>z</sub> psf	D <sub>F</sub>	D <sub>R</sub>	A <sub>E</sub> ft <sup>2</sup>	F K	w plf	Ctrl. Face
T1 368.75-362.50	0.00	0.68	A	0.215	2.545	40	0.8	1	4.995	0.44	69.87	C
			B	0.215	2.545		0.8	1	4.995			
			C	0.215	2.545		0.8	1	4.995			
T2 362.50-356.25	0.00	1.09	A	0.235	2.484	40	0.8	1	5.516	0.48	76.30	C
			B	0.235	2.484		0.8	1	5.516			
			C	0.235	2.484		0.8	1	5.516			
T3 356.25-350.00	0.01	1.09	A	0.235	2.484	40	0.8	1	5.516	0.49	77.81	C
			B	0.235	2.484		0.8	1	5.516			
			C	0.235	2.484		0.8	1	5.516			
T4 350.00-343.75	0.01	0.77 TA 0.79	A	0.242	2.463	39	0.8	1	5.647	0.52	83.55	C
			B	0.242	2.463		0.8	1	5.647			
			C	0.242	2.463		0.8	1	5.647			
T5 343.75-337.50	0.01	0.61	A	0.15	2.773	39	0.8	1	2.991	0.33	53.24	C
			B	0.15	2.773		0.8	1	2.991			
			C	0.15	2.773		0.8	1	2.991			
T6 337.50-331.25	0.01	0.54	A	0.139	2.811	39	0.8	1	2.569	0.30	47.30	C
			B	0.139	2.811		0.8	1	2.569			
			C	0.139	2.811		0.8	1	2.569			
T7 331.25-325.00	0.01	0.54	A	0.139	2.811	39	0.8	1	2.570	0.29	47.13	C
			B	0.139	2.811		0.8	1	2.570			
			C	0.139	2.811		0.8	1	2.570			
T8 325.00-318.75	0.02	0.64	A	0.152	2.766	39	0.8	1	2.768	0.33	53.15	C
			B	0.152	2.766		0.8	1	2.768			
			C	0.152	2.766		0.8	1	2.768			
T9 318.75-312.50	0.02	0.64	A	0.151	2.767	39	0.8	1	2.766	0.33	52.91	C
			B	0.151	2.767		0.8	1	2.766			
			C	0.151	2.767		0.8	1	2.766			
T10 312.50-306.25	0.02	0.64	A	0.151	2.767	39	0.8	1	2.767	0.33	52.71	C
			B	0.151	2.767		0.8	1	2.767			
			C	0.151	2.767		0.8	1	2.767			
T11 306.25-300.00	0.02	0.71	A	0.161	2.73	38	0.8	1	3.192	0.36	58.00	C
			B	0.161	2.73		0.8	1	3.192			
			C	0.161	2.73		0.8	1	3.192			
T12 300.00-293.75	0.12	0.85 TA 0.79	A	0.248	2.445	38	0.8	1	5.750	0.87	139.46	C
			B	0.248	2.445		0.8	1	5.750			
			C	0.248	2.445		0.8	1	5.750			
T13 293.75-287.50	0.12	0.71	A	0.161	2.73	38	0.8	1	3.194	0.70	111.25	C
			B	0.161	2.73		0.8	1	3.194			
			C	0.161	2.73		0.8	1	3.194			
T14 287.50-281.25	0.12	0.61	A	0.147	2.784	38	0.8	1	2.680	0.65	104.26	C
			B	0.147	2.784		0.8	1	2.680			
			C	0.147	2.784		0.8	1	2.680			
T15	0.12	0.61	A	0.147	2.784	38	0.8	1	2.681	0.65	103.80	C

<b>tnxTower</b>  <b>Centek Engineering Inc.</b> 63-2 North Branford Rd. Branford, CT 06405 Phone: (203) 488-0580 FAX: (203) 488-8587	<b>Job</b> 16071.44 - CT2049	<b>Page</b> 52 of 111
	<b>Project</b> 370' Guyed Tower - 689 Old Colchester Road, Montville, CT	<b>Date</b> 11:00:57 11/01/16
	<b>Client</b> AT&T Mobility	<b>Designed by</b> TJL

Section Elevation <i>ft</i>	Add Weight <i>K</i>	Self Weight <i>K</i>	F a c e	e	C <sub>F</sub>	q <sub>z</sub> <i>psf</i>	D <sub>F</sub>	D <sub>R</sub>	A <sub>E</sub> <i>ft<sup>2</sup></i>	F <i>K</i>	w <i>plf</i>	Ctrl. Face
281.25-275.00			B	0.147	2.784		0.8	1	2.681			
			C	0.147	2.784		0.8	1	2.681			
T16	0.12	0.61	A	0.147	2.784	37	0.8	1	2.682	0.65	103.32	C
275.00-268.75			B	0.147	2.784		0.8	1	2.682			
			C	0.147	2.784		0.8	1	2.682			
T17	0.12	0.61	A	0.147	2.784	37	0.8	1	2.684	0.64	102.84	C
268.75-262.50			B	0.147	2.784		0.8	1	2.684			
			C	0.147	2.784		0.8	1	2.684			
T18	0.12	0.61	A	0.147	2.784	37	0.8	1	2.685	0.64	102.34	C
262.50-256.25			B	0.147	2.784		0.8	1	2.685			
			C	0.147	2.784		0.8	1	2.685			
T19	0.12	0.64	A	0.151	2.767	37	0.8	1	2.779	0.64	102.88	C
256.25-250.00			B	0.151	2.767		0.8	1	2.779			
			C	0.151	2.767		0.8	1	2.779			
T20	0.12	0.71	A	0.161	2.73	37	0.8	1	3.203	0.67	107.62	C
250.00-243.75			B	0.161	2.73		0.8	1	3.203			
			C	0.161	2.73		0.8	1	3.203			
T21	0.17	0.71	A	0.161	2.73	37	0.8	1	3.205	0.80	128.45	C
243.75-237.50			B	0.161	2.73		0.8	1	3.205			
			C	0.161	2.73		0.8	1	3.205			
T22	0.23	0.71	A	0.161	2.73	36	0.8	1	3.206	1.00	159.69	C
237.50-231.25			B	0.161	2.73		0.8	1	3.206			
			C	0.161	2.73		0.8	1	3.206			
T23	0.23	0.77	A	0.171	2.696	36	0.8	1	3.394	1.00	160.76	C
231.25-225.00			B	0.171	2.696		0.8	1	3.394			
			C	0.171	2.696		0.8	1	3.394			
T24	0.23	0.95	A	0.222	2.525	36	0.8	1	5.124	1.11	178.36	C
225.00-218.75		TA 0.79	B	0.222	2.525		0.8	1	5.124			
			C	0.222	2.525		0.8	1	5.124			
T25	0.23	0.61	A	0.15	2.773	36	0.8	1	3.014	0.97	155.08	C
218.75-212.50			B	0.15	2.773		0.8	1	3.014			
			C	0.15	2.773		0.8	1	3.014			
T26	0.23	0.54	A	0.139	2.811	35	0.8	1	2.591	0.91	145.32	C
212.50-206.25			B	0.139	2.811		0.8	1	2.591			
			C	0.139	2.811		0.8	1	2.591			
T27	0.23	0.54	A	0.139	2.811	35	0.8	1	2.591	0.90	144.40	C
206.25-200.00			B	0.139	2.811		0.8	1	2.591			
			C	0.139	2.811		0.8	1	2.591			
T28	0.94	2.28	A	0.159	2.737	35	0.8	1	11.897	3.71	148.37	C
200.00-175.00			B	0.159	2.737		0.8	1	11.897			
			C	0.159	2.737		0.8	1	11.897			
T29	0.24	0.69	A	0.161	2.731	34	0.8	1	2.990	0.92	147.34	C
175.00-168.75			B	0.161	2.731		0.8	1	2.990			
			C	0.161	2.731		0.8	1	2.990			
T30	0.24	0.69	A	0.161	2.732	34	0.8	1	2.989	0.91	146.18	C
168.75-162.50			B	0.161	2.732		0.8	1	2.989			
			C	0.161	2.732		0.8	1	2.989			
T31	0.24	0.69	A	0.157	2.747	33	0.8	1	3.135	0.92	147.05	C
162.50-156.25			B	0.157	2.747		0.8	1	3.135			
			C	0.157	2.747		0.8	1	3.135			
T32	0.24	0.61	A	0.147	2.784	33	0.8	1	2.715	0.88	141.06	C
156.25-150.00			B	0.147	2.784		0.8	1	2.715			
			C	0.147	2.784		0.8	1	2.715			
T33	0.96	2.45	A	0.147	2.784	32	0.8	1	10.885	3.50	139.96	C
150.00-125.00			B	0.147	2.784		0.8	1	10.885			
			C	0.147	2.784		0.8	1	10.885			
T34	0.98	2.84	A	0.218	2.536	31	0.8	1	19.412	3.90	155.89	C
125.00-100.00			B	0.218	2.536		0.8	1	19.412			
			C	0.218	2.536		0.8	1	19.412			
T35	0.24	1.03	A	0.228	2.504	30	0.8	1	5.275	0.97	154.76	C

<b>tnxTower</b>  <b>Centek Engineering Inc.</b> 63-2 North Branford Rd. Branford, CT 06405 Phone: (203) 488-0580 FAX: (203) 488-8587	<b>Job</b>	16071.44 - CT2049	<b>Page</b>	53 of 111	
	<b>Project</b>	370' Guyed Tower - 689 Old Colchester Road, Montville, CT		<b>Date</b>	11:00:57 11/01/16
	<b>Client</b>	AT&T Mobility		<b>Designed by</b>	TJL

Section Elevation ft	Add Weight K	Self Weight K	F a c e	e	C <sub>F</sub>	q <sub>z</sub> psf	D <sub>F</sub>	D <sub>R</sub>	A <sub>E</sub> ft <sup>2</sup>	F K	w plf	Ctrl. Face
100.00-93.75		TA 0.79	B	0.228	2.504		0.8	1	5.275			
			C	0.228	2.504		0.8	1	5.275			
T36 93.75-87.50	0.24	0.71	A	0.161	2.73	30	0.8	1	3.252	0.85	135.37	C
			B	0.161	2.73		0.8	1	3.252			
			C	0.161	2.73		0.8	1	3.252			
T37 87.50-81.25	0.25	0.61	A	0.147	2.784	29	0.8	1	2.739	0.82	131.54	C
			B	0.147	2.784		0.8	1	2.739			
			C	0.147	2.784		0.8	1	2.739			
T38 81.25-75.00	0.25	0.61	A	0.147	2.784	29	0.8	1	2.739	0.81	129.43	C
			B	0.147	2.784		0.8	1	2.739			
			C	0.147	2.784		0.8	1	2.739			
T39 75.00-50.00	1.01	2.45	A	0.147	2.784	28	0.8	1	10.954	3.11	124.24	C
			B	0.147	2.784		0.8	1	10.954			
			C	0.147	2.784		0.8	1	10.954			
T40 50.00-25.00	1.02	2.47	A	0.149	2.775	25	0.8	1	11.376	2.85	114.03	C
			B	0.149	2.775		0.8	1	11.376			
			C	0.149	2.775		0.8	1	11.376			
T41 25.00-0.00	0.91	2.45	A	0.147	2.784	20	0.8	1	10.954	2.13	85.14	C
			B	0.147	2.784		0.8	1	10.954			
			C	0.147	2.784		0.8	1	10.954			
Sum Weight:	10.55	42.50								43.28		

**Tower Forces - No Ice - Wind 90 To Face**

Section Elevation ft	Add Weight K	Self Weight K	F a c e	e	C <sub>F</sub>	q <sub>z</sub> psf	D <sub>F</sub>	D <sub>R</sub>	A <sub>E</sub> ft <sup>2</sup>	F K	w plf	Ctrl. Face
T1 368.75-362.50	0.00	0.68	A	0.215	2.545	40	0.85	1	5.204	0.45	72.76	C
			B	0.215	2.545		0.85	1	5.204			
			C	0.215	2.545		0.85	1	5.204			
T2 362.50-356.25	0.00	1.09	A	0.235	2.484	40	0.85	1	5.756	0.50	79.53	C
			B	0.235	2.484		0.85	1	5.756			
			C	0.235	2.484		0.85	1	5.756			
T3 356.25-350.00	0.01	1.09	A	0.235	2.484	40	0.85	1	5.756	0.51	81.03	C
			B	0.235	2.484		0.85	1	5.756			
			C	0.235	2.484		0.85	1	5.756			
T4 350.00-343.75	0.01	0.77	A	0.242	2.463	39	0.85	1	5.887	0.54	86.72	C
		TA 0.79	B	0.242	2.463		0.85	1	5.887			
			C	0.242	2.463		0.85	1	5.887			
T5 343.75-337.50	0.01	0.61	A	0.15	2.773	39	0.85	1	3.041	0.34	53.97	C
			B	0.15	2.773		0.85	1	3.041			
			C	0.15	2.773		0.85	1	3.041			
T6 337.50-331.25	0.01	0.54	A	0.139	2.811	39	0.85	1	2.569	0.30	47.30	C
			B	0.139	2.811		0.85	1	2.569			
			C	0.139	2.811		0.85	1	2.569			
T7 331.25-325.00	0.01	0.54	A	0.139	2.811	39	0.85	1	2.570	0.29	47.13	C
			B	0.139	2.811		0.85	1	2.570			
			C	0.139	2.811		0.85	1	2.570			
T8 325.00-318.75	0.02	0.64	A	0.152	2.766	39	0.85	1	2.768	0.33	53.15	C
			B	0.152	2.766		0.85	1	2.768			
			C	0.152	2.766		0.85	1	2.768			
T9 318.75-312.50	0.02	0.64	A	0.151	2.767	39	0.85	1	2.766	0.33	52.91	C
			B	0.151	2.767		0.85	1	2.766			



<b>Job</b>	16071.44 - CT2049	<b>Page</b>	54 of 111
<b>Project</b>	370' Guyed Tower - 689 Old Colchester Road, Montville, CT	<b>Date</b>	11:00:57 11/01/16
<b>Client</b>	AT&T Mobility	<b>Designed by</b>	TJL

Section Elevation	Add Weight	Self Weight	F a c e	e	C <sub>F</sub>	q <sub>z</sub>	D <sub>F</sub>	D <sub>R</sub>	A <sub>E</sub>	F	w	Ctrl. Face
ft	K	K				psf			ft <sup>2</sup>	K	plf	
T10 312.50-306.25	0.02	0.64	C	0.151	2.767		0.85	1	2.766			
			A	0.151	2.767	39	0.85	1	2.767	0.33	52.71	C
			B	0.151	2.767		0.85	1	2.767			
T11 306.25-300.00	0.02	0.71	C	0.151	2.767		0.85	1	2.767			
			A	0.161	2.73	38	0.85	1	3.241	0.37	58.70	C
			B	0.161	2.73		0.85	1	3.241			
T12 300.00-293.75	0.12	0.85 TA 0.79	C	0.161	2.73		0.85	1	3.241			
			A	0.248	2.445	38	0.85	1	5.988	0.89	142.49	C
			B	0.248	2.445		0.85	1	5.988			
T13 293.75-287.50	0.12	0.71	C	0.248	2.445		0.85	1	5.988			
			A	0.161	2.73	38	0.85	1	3.243	0.70	111.95	C
			B	0.161	2.73		0.85	1	3.243			
T14 287.50-281.25	0.12	0.61	C	0.161	2.73		0.85	1	3.243			
			A	0.147	2.784	38	0.85	1	2.680	0.65	104.26	C
			B	0.147	2.784		0.85	1	2.680			
T15 281.25-275.00	0.12	0.61	C	0.147	2.784		0.85	1	2.680			
			A	0.147	2.784	38	0.85	1	2.681	0.65	103.80	C
			B	0.147	2.784		0.85	1	2.681			
T16 275.00-268.75	0.12	0.61	C	0.147	2.784		0.85	1	2.681			
			A	0.147	2.784	37	0.85	1	2.682	0.65	103.32	C
			B	0.147	2.784		0.85	1	2.682			
T17 268.75-262.50	0.12	0.61	C	0.147	2.784		0.85	1	2.682			
			A	0.147	2.784	37	0.85	1	2.684	0.64	102.84	C
			B	0.147	2.784		0.85	1	2.684			
T18 262.50-256.25	0.12	0.61	C	0.147	2.784		0.85	1	2.684			
			A	0.147	2.784	37	0.85	1	2.685	0.64	102.34	C
			B	0.147	2.784		0.85	1	2.685			
T19 256.25-250.00	0.12	0.64	C	0.147	2.784		0.85	1	2.685			
			A	0.151	2.767	37	0.85	1	2.779	0.64	102.88	C
			B	0.151	2.767		0.85	1	2.779			
T20 250.00-243.75	0.12	0.71	C	0.151	2.767		0.85	1	2.779			
			A	0.161	2.73	37	0.85	1	3.253	0.68	108.30	C
			B	0.161	2.73		0.85	1	3.253			
T21 243.75-237.50	0.17	0.71	C	0.161	2.73		0.85	1	3.253			
			A	0.161	2.73	37	0.85	1	3.254	0.81	129.12	C
			B	0.161	2.73		0.85	1	3.254			
T22 237.50-231.25	0.23	0.71	C	0.161	2.73		0.85	1	3.254			
			A	0.161	2.73	36	0.85	1	3.256	1.00	160.35	C
			B	0.161	2.73		0.85	1	3.256			
T23 231.25-225.00	0.23	0.77	C	0.161	2.73		0.85	1	3.256			
			A	0.171	2.696	36	0.85	1	3.443	1.01	161.41	C
			B	0.171	2.696		0.85	1	3.443			
T24 225.00-218.75	0.23	0.95 TA 0.79	C	0.171	2.696		0.85	1	3.443			
			A	0.222	2.525	36	0.85	1	5.331	1.13	180.91	C
			B	0.222	2.525		0.85	1	5.331			
T25 218.75-212.50	0.23	0.61	C	0.222	2.525		0.85	1	5.331			
			A	0.15	2.773	36	0.85	1	3.064	0.97	155.74	C
			B	0.15	2.773		0.85	1	3.064			
T26 212.50-206.25	0.23	0.54	C	0.15	2.773		0.85	1	3.064			
			A	0.139	2.811	35	0.85	1	2.591	0.91	145.32	C
			B	0.139	2.811		0.85	1	2.591			
T27 206.25-200.00	0.23	0.54	C	0.139	2.811		0.85	1	2.591			
			A	0.139	2.811	35	0.85	1	2.591	0.90	144.40	C
			B	0.139	2.811		0.85	1	2.591			
T28 200.00-175.00	0.94	2.28	C	0.139	2.811		0.85	1	2.591			
			A	0.159	2.737	35	0.85	1	11.897	3.71	148.37	C
			B	0.159	2.737		0.85	1	11.897			
T29 175.00-168.75	0.24	0.69	C	0.159	2.737		0.85	1	11.897			
			A	0.161	2.731	34	0.85	1	2.990	0.92	147.34	C
			B	0.161	2.731		0.85	1	2.990			

<b>tnxTower</b>  <b>Centek Engineering Inc.</b> 63-2 North Branford Rd. Branford, CT 06405 Phone: (203) 488-0580 FAX: (203) 488-8587	<b>Job</b> 16071.44 - CT2049	<b>Page</b> 55 of 111
	<b>Project</b> 370' Guyed Tower - 689 Old Colchester Road, Montville, CT	<b>Date</b> 11:00:57 11/01/16
	<b>Client</b> AT&T Mobility	<b>Designed by</b> TJL

Section Elevation ft	Add Weight K	Self Weight K	F a c e	e	C <sub>F</sub>	q <sub>z</sub> psf	D <sub>F</sub>	D <sub>R</sub>	A <sub>E</sub> ft <sup>2</sup>	F K	w plf	Ctrl. Face
T30 168.75-162.50	0.24	0.69	C	0.161	2.731	34	0.85	1	2.990	0.91	146.18	C
			A	0.161	2.732		0.85	1	2.989			
			B	0.161	2.732		0.85	1	2.989			
T31 162.50-156.25	0.24	0.69	C	0.161	2.732	33	0.85	1	2.989	0.92	147.67	C
			A	0.157	2.747		0.85	1	3.185			
			B	0.157	2.747		0.85	1	3.185			
T32 156.25-150.00	0.24	0.61	C	0.157	2.747	33	0.85	1	3.185	0.88	141.06	C
			A	0.147	2.784		0.85	1	2.715			
			B	0.147	2.784		0.85	1	2.715			
T33 150.00-125.00	0.96	2.45	C	0.147	2.784	32	0.85	1	10.885	3.50	139.96	C
			A	0.147	2.784		0.85	1	10.885			
			B	0.147	2.784		0.85	1	10.885			
T34 125.00-100.00	0.98	2.84	C	0.218	2.536	31	0.85	1	20.043	3.94	157.58	C
			A	0.218	2.536		0.85	1	20.043			
			B	0.218	2.536		0.85	1	20.043			
T35 100.00-93.75	0.24	1.03 TA 0.79	C	0.228	2.504	30	0.85	1	5.482	0.98	156.89	C
			A	0.228	2.504		0.85	1	5.482			
			B	0.228	2.504		0.85	1	5.482			
T36 93.75-87.50	0.24	0.71	C	0.161	2.73	30	0.85	1	3.301	0.85	135.91	C
			A	0.161	2.73		0.85	1	3.301			
			B	0.161	2.73		0.85	1	3.301			
T37 87.50-81.25	0.25	0.61	C	0.147	2.784	29	0.85	1	2.739	0.82	131.54	C
			A	0.147	2.784		0.85	1	2.739			
			B	0.147	2.784		0.85	1	2.739			
T38 81.25-75.00	0.25	0.61	C	0.147	2.784	29	0.85	1	2.739	0.81	129.43	C
			A	0.147	2.784		0.85	1	2.739			
			B	0.147	2.784		0.85	1	2.739			
T39 75.00-50.00	1.01	2.45	C	0.147	2.784	28	0.85	1	10.954	3.11	124.24	C
			A	0.147	2.784		0.85	1	10.954			
			B	0.147	2.784		0.85	1	10.954			
T40 50.00-25.00	1.02	2.47	C	0.149	2.775	25	0.85	1	11.425	2.85	114.15	C
			A	0.149	2.775		0.85	1	11.425			
			B	0.149	2.775		0.85	1	11.425			
T41 25.00-0.00	0.91	2.45	C	0.147	2.784	20	0.85	1	10.954	2.13	85.14	C
			A	0.147	2.784		0.85	1	10.954			
			B	0.147	2.784		0.85	1	10.954			
Sum Weight:	10.55	42.50								43.49		

### Tower Forces - With Ice - Wind Normal To Face

Section Elevation ft	Add Weight K	Self Weight K	F a c e	e	C <sub>F</sub>	q <sub>z</sub> psf	D <sub>F</sub>	D <sub>R</sub>	A <sub>E</sub> ft <sup>2</sup>	F K	w plf	Ctrl. Face
T1 368.75-362.50	0.02	1.74	A	0.502	1.898	9	1	1	13.238	0.20	31.66	C
			B	0.502	1.898		1	1	13.238			
			C	0.502	1.898		1	1	13.238			
T2 362.50-356.25	0.05	2.42	A	0.519	1.876	9	1	1	13.992	0.21	33.99	C
			B	0.519	1.876		1	1	13.992			
			C	0.519	1.876		1	1	13.992			
T3 356.25-350.00	0.08	2.42	A	0.519	1.877	9	1	1	13.976	0.22	35.28	C
			B	0.519	1.877		1	1	13.976			
			C	0.519	1.877		1	1	13.976			

<b>Job</b>	16071.44 - CT2049	<b>Page</b>	56 of 111
<b>Project</b>	370' Guyed Tower - 689 Old Colchester Road, Montville, CT	<b>Date</b>	11:00:57 11/01/16
<b>Client</b>	AT&T Mobility	<b>Designed by</b>	TJL

Section Elevation	Add Weight	Self Weight	F a c e	e	C <sub>F</sub>	q <sub>z</sub>	D <sub>F</sub>	D <sub>R</sub>	A <sub>E</sub>	F	w	Ctrl. Face
ft	K	K				psf			ft <sup>2</sup>	K	plf	
T4 350.00-343.75	0.17	1.87 TA 2.41	A B C	0.524 0.524 0.524	1.871 1.871 1.871	9	1 1 1	1 1 1	14.163 14.163 14.163	0.25	39.72	C
T5 343.75-337.50	0.17	1.34	A B C	0.436 0.436 0.436	1.998 1.998 1.998	9	1 1 1	1 1 1	10.231 10.231 10.231	0.21	33.58	C
T6 337.50-331.25	0.17	1.15	A B C	0.426 0.426 0.426	2.016 2.016 2.016	9	1 1 1	1 1 1	9.588 9.588 9.588	0.20	32.25	C
T7 331.25-325.00	0.17	1.15	A B C	0.425 0.425 0.425	2.016 2.016 2.016	9	1 1 1	1 1 1	9.572 9.572 9.572	0.20	32.09	C
T8 325.00-318.75	0.23	1.27	A B C	0.435 0.435 0.435	2 2 2	9	1 1 1	1 1 1	9.890 9.890 9.890	0.22	34.80	C
T9 318.75-312.50	0.23	1.27	A B C	0.433 0.433 0.433	2.002 2.002 2.002	9	1 1 1	1 1 1	9.854 9.854 9.854	0.22	34.60	C
T10 312.50-306.25	0.23	1.27	A B C	0.433 0.433 0.433	2.002 2.002 2.002	9	1 1 1	1 1 1	9.837 9.837 9.837	0.22	34.42	C
T11 306.25-300.00	0.23	1.45	A B C	0.442 0.442 0.442	1.987 1.987 1.987	9	1 1 1	1 1 1	10.444 10.444 10.444	0.22	35.33	C
T12 300.00-293.75	0.92	1.94 TA 2.38	A B C	0.523 0.523 0.523	1.872 1.872 1.872	9	1 1 1	1 1 1	14.163 14.163 14.163	0.36	57.31	C
T13 293.75-287.50	0.92	1.45	A B C	0.441 0.441 0.441	1.989 1.989 1.989	9	1 1 1	1 1 1	10.409 10.409 10.409	0.34	54.67	C
T14 287.50-281.25	0.92	1.22	A B C	0.426 0.426 0.426	2.014 2.014 2.014	9	1 1 1	1 1 1	9.632 9.632 9.632	0.34	53.67	C
T15 281.25-275.00	0.92	1.22	A B C	0.426 0.426 0.426	2.016 2.016 2.016	9	1 1 1	1 1 1	9.614 9.614 9.614	0.33	53.39	C
T16 275.00-268.75	0.92	1.22	A B C	0.425 0.425 0.425	2.017 2.017 2.017	8	1 1 1	1 1 1	9.595 9.595 9.595	0.33	53.11	C
T17 268.75-262.50	0.92	1.22	A B C	0.424 0.424 0.424	2.018 2.018 2.018	8	1 1 1	1 1 1	9.576 9.576 9.576	0.33	52.82	C
T18 262.50-256.25	0.91	1.21	A B C	0.424 0.424 0.424	2.019 2.019 2.019	8	1 1 1	1 1 1	9.556 9.556 9.556	0.33	52.53	C
T19 256.25-250.00	0.91	1.25	A B C	0.428 0.428 0.428	2.012 2.012 2.012	8	1 1 1	1 1 1	9.669 9.669 9.669	0.33	52.21	C
T20 250.00-243.75	0.91	1.43	A B C	0.436 0.436 0.436	1.996 1.996 1.996	8	1 1 1	1 1 1	10.273 10.273 10.273	0.33	52.64	C
T21 243.75-237.50	1.17	1.43	A B C	0.436 0.436 0.436	1.997 1.997 1.997	8	1 1 1	1 1 1	10.252 10.252 10.252	0.37	58.78	C
T22 237.50-231.25	1.57	1.43	A B C	0.435 0.435 0.435	1.999 1.999 1.999	8	1 1 1	1 1 1	10.231 10.231 10.231	0.43	68.07	C
T23 231.25-225.00	1.57	1.51	A B C	0.444 0.444 0.444	1.984 1.984 1.984	8	1 1 1	1 1 1	10.477 10.477 10.477	0.42	67.36	C

<b>tnxTower</b>  <b>Centek Engineering Inc.</b> 63-2 North Branford Rd. Branford, CT 06405 Phone: (203) 488-0580 FAX: (203) 488-8587	<b>Job</b> 16071.44 - CT2049	<b>Page</b> 57 of 111
	<b>Project</b> 370' Guyed Tower - 689 Old Colchester Road, Montville, CT	<b>Date</b> 11:00:57 11/01/16
	<b>Client</b> AT&T Mobility	<b>Designed by</b> TJL

Section Elevation ft	Add Weight K	Self Weight K	F a c e	e	C <sub>F</sub>	q <sub>z</sub> psf	D <sub>F</sub>	D <sub>R</sub>	A <sub>E</sub> ft <sup>2</sup>	F K	w plf	Ctrl. Face
T24 225.00-218.75	1.56	2.10 TA 2.32	A	0.492	1.911	8	1	1	12.945	0.42	67.47	C
			B	0.492	1.911		1	1	12.945			
			C	0.492	1.911		1	1	12.945			
T25 218.75-212.50	1.56	1.29	A	0.424	2.019	8	1	1	9.854	0.42	67.07	C
			B	0.424	2.019		1	1	9.854			
			C	0.424	2.019		1	1	9.854			
T26 212.50-206.25	1.56	1.11	A	0.413	2.038	8	1	1	9.204	0.41	66.17	C
			B	0.413	2.038		1	1	9.204			
			C	0.413	2.038		1	1	9.204			
T27 206.25-200.00	1.55	1.10	A	0.412	2.04	8	1	1	9.180	0.41	65.72	C
			B	0.412	2.04		1	1	9.180			
			C	0.412	2.04		1	1	9.180			
T28 200.00-175.00	6.39	4.97	A	0.47	1.942	8	1	1	43.632	1.62	64.75	C
			B	0.47	1.942		1	1	43.632			
			C	0.47	1.942		1	1	43.632			
T29 175.00-168.75	1.62	1.29	A	0.427	2.012	8	1	1	9.642	0.41	66.30	C
			B	0.427	2.012		1	1	9.642			
			C	0.427	2.012		1	1	9.642			
T30 168.75-162.50	1.62	1.29	A	0.426	2.015	8	1	1	9.594	0.41	65.77	C
			B	0.426	2.015		1	1	9.594			
			C	0.426	2.015		1	1	9.594			
T31 162.50-156.25	1.61	1.35	A	0.421	2.024	8	1	1	9.794	0.41	66.09	C
			B	0.421	2.024		1	1	9.794			
			C	0.421	2.024		1	1	9.794			
T32 156.25-150.00	1.61	1.17	A	0.41	2.044	8	1	1	9.139	0.41	65.11	C
			B	0.41	2.044		1	1	9.139			
			C	0.41	2.044		1	1	9.139			
T33 150.00-125.00	6.60	4.63	A	0.408	2.049	7	1	1	36.230	1.65	65.96	C
			B	0.408	2.049		1	1	36.230			
			C	0.408	2.049		1	1	36.230			
T34 125.00-100.00	6.70	6.11	A	0.471	1.941	7	1	1	47.944	1.61	64.52	C
			B	0.471	1.941		1	1	47.944			
			C	0.471	1.941		1	1	47.944			
T35 100.00-93.75	1.66	2.07 TA 2.17	A	0.477	1.932	7	1	1	12.480	0.39	62.61	C
			B	0.477	1.932		1	1	12.480			
			C	0.477	1.932		1	1	12.480			
T36 93.75-87.50	1.65	1.33	A	0.412	2.042	7	1	1	9.505	0.39	62.52	C
			B	0.412	2.042		1	1	9.505			
			C	0.412	2.042		1	1	9.505			
T37 87.50-81.25	1.71	1.12	A	0.396	2.072	7	1	1	8.702	0.40	64.33	C
			B	0.396	2.072		1	1	8.702			
			C	0.396	2.072		1	1	8.702			
T38 81.25-75.00	1.70	1.11	A	0.394	2.076	7	1	1	8.649	0.39	63.08	C
			B	0.394	2.076		1	1	8.649			
			C	0.394	2.076		1	1	8.649			
T39 75.00-50.00	6.74	4.38	A	0.389	2.087	6	1	1	33.983	1.51	60.25	C
			B	0.389	2.087		1	1	33.983			
			C	0.389	2.087		1	1	33.983			
T40 50.00-25.00	6.65	4.30	A	0.38	2.106	6	1	1	33.276	1.36	54.46	C
			B	0.38	2.106		1	1	33.276			
			C	0.38	2.106		1	1	33.276			
T41 25.00-0.00	5.45	3.97	A	0.354	2.162	5	1	1	30.072	0.98	39.18	C
			B	0.354	2.162		1	1	30.072			
			C	0.354	2.162		1	1	30.072			
Sum Weight:	72.24	87.84								20.21		

<b>tnxTower</b>  <b>Centek Engineering Inc.</b> 63-2 North Branford Rd. Branford, CT 06405 Phone: (203) 488-0580 FAX: (203) 488-8587	<b>Job</b> 16071.44 - CT2049	<b>Page</b> 58 of 111
	<b>Project</b> 370' Guyed Tower - 689 Old Colchester Road, Montville, CT	<b>Date</b> 11:00:57 11/01/16
	<b>Client</b> AT&T Mobility	<b>Designed by</b> TJL

**Tower Forces - With Ice - Wind 60 To Face**

Section Elevation	Add Weight	Self Weight	F a c e	e	C <sub>F</sub>	q <sub>z</sub>	D <sub>F</sub>	D <sub>R</sub>	A <sub>E</sub>	F	w	Ctrl. Face
ft	K	K				psf			ft <sup>2</sup>	K	plf	
T1 368.75-362.50	0.02	1.74	A	0.502	1.898	9	0.8	1	12.403	0.19	29.71	C
			B	0.502	1.898		0.8	1	12.403			
			C	0.502	1.898		0.8	1	12.403			
T2 362.50-356.25	0.05	2.42	A	0.519	1.876	9	0.8	1	13.030	0.20	31.77	C
			B	0.519	1.876		0.8	1	13.030			
			C	0.519	1.876		0.8	1	13.030			
T3 356.25-350.00	0.08	2.42	A	0.519	1.877	9	0.8	1	13.014	0.21	33.07	C
			B	0.519	1.877		0.8	1	13.014			
			C	0.519	1.877		0.8	1	13.014			
T4 350.00-343.75	0.17	1.87 TA 2.41	A	0.524	1.871	9	0.8	1	13.202	0.23	37.53	C
			B	0.524	1.871		0.8	1	13.202			
			C	0.524	1.871		0.8	1	13.202			
T5 343.75-337.50	0.17	1.34	A	0.436	1.998	9	0.8	1	10.033	0.21	33.10	C
			B	0.436	1.998		0.8	1	10.033			
			C	0.436	1.998		0.8	1	10.033			
T6 337.50-331.25	0.17	1.15	A	0.426	2.016	9	0.8	1	9.588	0.20	32.25	C
			B	0.426	2.016		0.8	1	9.588			
			C	0.426	2.016		0.8	1	9.588			
T7 331.25-325.00	0.17	1.15	A	0.425	2.016	9	0.8	1	9.572	0.20	32.09	C
			B	0.425	2.016		0.8	1	9.572			
			C	0.425	2.016		0.8	1	9.572			
T8 325.00-318.75	0.23	1.27	A	0.435	2	9	0.8	1	9.890	0.22	34.80	C
			B	0.435	2		0.8	1	9.890			
			C	0.435	2		0.8	1	9.890			
T9 318.75-312.50	0.23	1.27	A	0.433	2.002	9	0.8	1	9.854	0.22	34.60	C
			B	0.433	2.002		0.8	1	9.854			
			C	0.433	2.002		0.8	1	9.854			
T10 312.50-306.25	0.23	1.27	A	0.433	2.002	9	0.8	1	9.837	0.22	34.42	C
			B	0.433	2.002		0.8	1	9.837			
			C	0.433	2.002		0.8	1	9.837			
T11 306.25-300.00	0.23	1.45	A	0.442	1.987	9	0.8	1	10.247	0.22	34.87	C
			B	0.442	1.987		0.8	1	10.247			
			C	0.442	1.987		0.8	1	10.247			
T12 300.00-293.75	0.92	1.94 TA 2.38	A	0.523	1.872	9	0.8	1	13.209	0.35	55.21	C
			B	0.523	1.872		0.8	1	13.209			
			C	0.523	1.872		0.8	1	13.209			
T13 293.75-287.50	0.92	1.45	A	0.441	1.989	9	0.8	1	10.212	0.34	54.21	C
			B	0.441	1.989		0.8	1	10.212			
			C	0.441	1.989		0.8	1	10.212			
T14 287.50-281.25	0.92	1.22	A	0.426	2.014	9	0.8	1	9.632	0.34	53.67	C
			B	0.426	2.014		0.8	1	9.632			
			C	0.426	2.014		0.8	1	9.632			
T15 281.25-275.00	0.92	1.22	A	0.426	2.016	9	0.8	1	9.614	0.33	53.39	C
			B	0.426	2.016		0.8	1	9.614			
			C	0.426	2.016		0.8	1	9.614			
T16 275.00-268.75	0.92	1.22	A	0.425	2.017	8	0.8	1	9.595	0.33	53.11	C
			B	0.425	2.017		0.8	1	9.595			
			C	0.425	2.017		0.8	1	9.595			
T17 268.75-262.50	0.92	1.22	A	0.424	2.018	8	0.8	1	9.576	0.33	52.82	C
			B	0.424	2.018		0.8	1	9.576			
			C	0.424	2.018		0.8	1	9.576			
T18 262.50-256.25	0.91	1.21	A	0.424	2.019	8	0.8	1	9.556	0.33	52.53	C
			B	0.424	2.019		0.8	1	9.556			
			C	0.424	2.019		0.8	1	9.556			
T19 256.25-250.00	0.91	1.25	A	0.428	2.012	8	0.8	1	9.669	0.33	52.21	C
			B	0.428	2.012		0.8	1	9.669			
			C	0.428	2.012		0.8	1	9.669			

<b>tnxTower</b>  <b>Centek Engineering Inc.</b> 63-2 North Branford Rd. Branford, CT 06405 Phone: (203) 488-0580 FAX: (203) 488-8587	<b>Job</b>	16071.44 - CT2049	<b>Page</b>	59 of 111
	<b>Project</b>	370' Guyed Tower - 689 Old Colchester Road, Montville, CT	<b>Date</b>	11:00:57 11/01/16
	<b>Client</b>	AT&T Mobility	<b>Designed by</b>	TJL

Section Elevation	Add Weight	Self Weight	F a c e	e	C <sub>F</sub>	q <sub>z</sub> psf	D <sub>F</sub>	D <sub>R</sub>	A <sub>E</sub> ft <sup>2</sup>	F K	w plf	Ctrl. Face
T20 250.00-243.75	0.91	1.43	A	0.436	1.996	8	0.8	1	10.076	0.33	52.19	C
			B	0.436	1.996		0.8	1	10.076			
			C	0.436	1.996		0.8	1	10.076			
T21 243.75-237.50	1.17	1.43	A	0.436	1.997	8	0.8	1	10.055	0.36	58.34	C
			B	0.436	1.997		0.8	1	10.055			
			C	0.436	1.997		0.8	1	10.055			
T22 237.50-231.25	1.57	1.43	A	0.435	1.999	8	0.8	1	10.034	0.42	67.63	C
			B	0.435	1.999		0.8	1	10.034			
			C	0.435	1.999		0.8	1	10.034			
T23 231.25-225.00	1.57	1.51	A	0.444	1.984	8	0.8	1	10.280	0.42	66.93	C
			B	0.444	1.984		0.8	1	10.280			
			C	0.444	1.984		0.8	1	10.280			
T24 225.00-218.75	1.56	2.10	A	0.492	1.911	8	0.8	1	12.116	0.41	65.72	C
		TA 2.32	B	0.492	1.911		0.8	1	12.116			
			C	0.492	1.911		0.8	1	12.116			
T25 218.75-212.50	1.56	1.29	A	0.424	2.019	8	0.8	1	9.657	0.42	66.63	C
			B	0.424	2.019		0.8	1	9.657			
			C	0.424	2.019		0.8	1	9.657			
T26 212.50-206.25	1.56	1.11	A	0.413	2.038	8	0.8	1	9.204	0.41	66.17	C
			B	0.413	2.038		0.8	1	9.204			
			C	0.413	2.038		0.8	1	9.204			
T27 206.25-200.00	1.55	1.10	A	0.412	2.04	8	0.8	1	9.180	0.41	65.72	C
			B	0.412	2.04		0.8	1	9.180			
			C	0.412	2.04		0.8	1	9.180			
T28 200.00-175.00	6.39	4.97	A	0.47	1.942	8	0.8	1	43.632	1.62	64.75	C
			B	0.47	1.942		0.8	1	43.632			
			C	0.47	1.942		0.8	1	43.632			
T29 175.00-168.75	1.62	1.29	A	0.427	2.012	8	0.8	1	9.642	0.41	66.30	C
			B	0.427	2.012		0.8	1	9.642			
			C	0.427	2.012		0.8	1	9.642			
T30 168.75-162.50	1.62	1.29	A	0.426	2.015	8	0.8	1	9.594	0.41	65.77	C
			B	0.426	2.015		0.8	1	9.594			
			C	0.426	2.015		0.8	1	9.594			
T31 162.50-156.25	1.61	1.35	A	0.421	2.024	8	0.8	1	9.597	0.41	65.67	C
			B	0.421	2.024		0.8	1	9.597			
			C	0.421	2.024		0.8	1	9.597			
T32 156.25-150.00	1.61	1.17	A	0.41	2.044	8	0.8	1	9.139	0.41	65.11	C
			B	0.41	2.044		0.8	1	9.139			
			C	0.41	2.044		0.8	1	9.139			
T33 150.00-125.00	6.60	4.63	A	0.408	2.049	7	0.8	1	36.230	1.65	65.96	C
			B	0.408	2.049		0.8	1	36.230			
			C	0.408	2.049		0.8	1	36.230			
T34 125.00-100.00	6.70	6.11	A	0.471	1.941	7	0.8	1	45.421	1.58	63.34	C
			B	0.471	1.941		0.8	1	45.421			
			C	0.471	1.941		0.8	1	45.421			
T35 100.00-93.75	1.66	2.07	A	0.477	1.932	7	0.8	1	11.653	0.38	61.12	C
		TA 2.17	B	0.477	1.932		0.8	1	11.653			
			C	0.477	1.932		0.8	1	11.653			
T36 93.75-87.50	1.65	1.33	A	0.412	2.042	7	0.8	1	9.308	0.39	62.15	C
			B	0.412	2.042		0.8	1	9.308			
			C	0.412	2.042		0.8	1	9.308			
T37 87.50-81.25	1.71	1.12	A	0.396	2.072	7	0.8	1	8.702	0.40	64.33	C
			B	0.396	2.072		0.8	1	8.702			
			C	0.396	2.072		0.8	1	8.702			
T38 81.25-75.00	1.70	1.11	A	0.394	2.076	7	0.8	1	8.649	0.39	63.08	C
			B	0.394	2.076		0.8	1	8.649			
			C	0.394	2.076		0.8	1	8.649			
T39 75.00-50.00	6.74	4.38	A	0.389	2.087	6	0.8	1	33.983	1.51	60.25	C
			B	0.389	2.087		0.8	1	33.983			
			C	0.389	2.087		0.8	1	33.983			

<b>tnxTower</b>  <b>Centek Engineering Inc.</b> 63-2 North Branford Rd. Branford, CT 06405 Phone: (203) 488-0580 FAX: (203) 488-8587	<b>Job</b> 16071.44 - CT2049	<b>Page</b> 60 of 111
	<b>Project</b> 370' Guyed Tower - 689 Old Colchester Road, Montville, CT	<b>Date</b> 11:00:57 11/01/16
	<b>Client</b> AT&T Mobility	<b>Designed by</b> TJL

Section Elevation ft	Add Weight K	Self Weight K	F a c e	e	C <sub>F</sub>	q <sub>z</sub> psf	D <sub>F</sub>	D <sub>R</sub>	A <sub>E</sub> ft <sup>2</sup>	F K	w plf	Ctrl. Face
T40 50.00-25.00	6.65	4.30	A	0.38	2.106	6	0.8	1	33.079	1.36	54.39	C
			B	0.38	2.106		0.8	1	33.079			
			C	0.38	2.106		0.8	1	33.079			
T41 25.00-0.00	5.45	3.97	A	0.354	2.162	5	0.8	1	30.072	0.98	39.18	C
			B	0.354	2.162		0.8	1	30.072			
			C	0.354	2.162		0.8	1	30.072			
Sum Weight:	72.24	87.84								20.06		

### Tower Forces - With Ice - Wind 90 To Face

Section Elevation ft	Add Weight K	Self Weight K	F a c e	e	C <sub>F</sub>	q <sub>z</sub> psf	D <sub>F</sub>	D <sub>R</sub>	A <sub>E</sub> ft <sup>2</sup>	F K	w plf	Ctrl. Face
T1 368.75-362.50	0.02	1.74	A	0.502	1.898	9	0.85	1	12.612	0.19	30.20	C
			B	0.502	1.898		0.85	1	12.612			
			C	0.502	1.898		0.85	1	12.612			
T2 362.50-356.25	0.05	2.42	A	0.519	1.876	9	0.85	1	13.270	0.20	32.33	C
			B	0.519	1.876		0.85	1	13.270			
			C	0.519	1.876		0.85	1	13.270			
T3 356.25-350.00	0.08	2.42	A	0.519	1.877	9	0.85	1	13.254	0.21	33.62	C
			B	0.519	1.877		0.85	1	13.254			
			C	0.519	1.877		0.85	1	13.254			
T4 350.00-343.75	0.17	1.87 TA 2.41	A	0.524	1.871	9	0.85	1	13.442	0.24	38.08	C
			B	0.524	1.871		0.85	1	13.442			
			C	0.524	1.871		0.85	1	13.442			
T5 343.75-337.50	0.17	1.34	A	0.436	1.998	9	0.85	1	10.082	0.21	33.22	C
			B	0.436	1.998		0.85	1	10.082			
			C	0.436	1.998		0.85	1	10.082			
T6 337.50-331.25	0.17	1.15	A	0.426	2.016	9	0.85	1	9.588	0.20	32.25	C
			B	0.426	2.016		0.85	1	9.588			
			C	0.426	2.016		0.85	1	9.588			
T7 331.25-325.00	0.17	1.15	A	0.425	2.016	9	0.85	1	9.572	0.20	32.09	C
			B	0.425	2.016		0.85	1	9.572			
			C	0.425	2.016		0.85	1	9.572			
T8 325.00-318.75	0.23	1.27	A	0.435	2	9	0.85	1	9.890	0.22	34.80	C
			B	0.435	2		0.85	1	9.890			
			C	0.435	2		0.85	1	9.890			
T9 318.75-312.50	0.23	1.27	A	0.433	2.002	9	0.85	1	9.854	0.22	34.60	C
			B	0.433	2.002		0.85	1	9.854			
			C	0.433	2.002		0.85	1	9.854			
T10 312.50-306.25	0.23	1.27	A	0.433	2.002	9	0.85	1	9.837	0.22	34.42	C
			B	0.433	2.002		0.85	1	9.837			
			C	0.433	2.002		0.85	1	9.837			
T11 306.25-300.00	0.23	1.45	A	0.442	1.987	9	0.85	1	10.296	0.22	34.99	C
			B	0.442	1.987		0.85	1	10.296			
			C	0.442	1.987		0.85	1	10.296			
T12 300.00-293.75	0.92	1.94 TA 2.38	A	0.523	1.872	9	0.85	1	13.448	0.35	55.74	C
			B	0.523	1.872		0.85	1	13.448			
			C	0.523	1.872		0.85	1	13.448			
T13 293.75-287.50	0.92	1.45	A	0.441	1.989	9	0.85	1	10.261	0.34	54.33	C
			B	0.441	1.989		0.85	1	10.261			
			C	0.441	1.989		0.85	1	10.261			
T14	0.92	1.22	A	0.426	2.014	9	0.85	1	9.632	0.34	53.67	C

<b>tnxTower</b>  <b>Centek Engineering Inc.</b> 63-2 North Branford Rd. Branford, CT 06405 Phone: (203) 488-0580 FAX: (203) 488-8587	<b>Job</b>	16071.44 - CT2049	<b>Page</b>	61 of 111
	<b>Project</b>	370' Guyed Tower - 689 Old Colchester Road, Montville, CT	<b>Date</b>	11:00:57 11/01/16
	<b>Client</b>	AT&T Mobility	<b>Designed by</b>	TJL

Section Elevation <i>ft</i>	Add Weight <i>K</i>	Self Weight <i>K</i>	F a c e	<i>e</i>	<i>C<sub>F</sub></i>	<i>q<sub>z</sub></i> <i>psf</i>	<i>D<sub>F</sub></i>	<i>D<sub>R</sub></i>	<i>A<sub>E</sub></i> <i>ft<sup>2</sup></i>	<i>F</i> <i>K</i>	<i>w</i> <i>plf</i>	Ctrl. Face
287.50-281.25			B	0.426	2.014		0.85	1	9.632			
			C	0.426	2.014		0.85	1	9.632			
T15	0.92	1.22	A	0.426	2.016	9	0.85	1	9.614	0.33	53.39	C
281.25-275.00			B	0.426	2.016		0.85	1	9.614			
			C	0.426	2.016		0.85	1	9.614			
T16	0.92	1.22	A	0.425	2.017	8	0.85	1	9.595	0.33	53.11	C
275.00-268.75			B	0.425	2.017		0.85	1	9.595			
			C	0.425	2.017		0.85	1	9.595			
T17	0.92	1.22	A	0.424	2.018	8	0.85	1	9.576	0.33	52.82	C
268.75-262.50			B	0.424	2.018		0.85	1	9.576			
			C	0.424	2.018		0.85	1	9.576			
T18	0.91	1.21	A	0.424	2.019	8	0.85	1	9.556	0.33	52.53	C
262.50-256.25			B	0.424	2.019		0.85	1	9.556			
			C	0.424	2.019		0.85	1	9.556			
T19	0.91	1.25	A	0.428	2.012	8	0.85	1	9.669	0.33	52.21	C
256.25-250.00			B	0.428	2.012		0.85	1	9.669			
			C	0.428	2.012		0.85	1	9.669			
T20	0.91	1.43	A	0.436	1.996	8	0.85	1	10.125	0.33	52.30	C
250.00-243.75			B	0.436	1.996		0.85	1	10.125			
			C	0.436	1.996		0.85	1	10.125			
T21	1.17	1.43	A	0.436	1.997	8	0.85	1	10.104	0.37	58.45	C
243.75-237.50			B	0.436	1.997		0.85	1	10.104			
			C	0.436	1.997		0.85	1	10.104			
T22	1.57	1.43	A	0.435	1.999	8	0.85	1	10.083	0.42	67.74	C
237.50-231.25			B	0.435	1.999		0.85	1	10.083			
			C	0.435	1.999		0.85	1	10.083			
T23	1.57	1.51	A	0.444	1.984	8	0.85	1	10.329	0.42	67.03	C
231.25-225.00			B	0.444	1.984		0.85	1	10.329			
			C	0.444	1.984		0.85	1	10.329			
T24	1.56	2.10	A	0.492	1.911	8	0.85	1	12.323	0.41	66.16	C
225.00-218.75		TA 2.32	B	0.492	1.911		0.85	1	12.323			
			C	0.492	1.911		0.85	1	12.323			
T25	1.56	1.29	A	0.424	2.019	8	0.85	1	9.706	0.42	66.74	C
218.75-212.50			B	0.424	2.019		0.85	1	9.706			
			C	0.424	2.019		0.85	1	9.706			
T26	1.56	1.11	A	0.413	2.038	8	0.85	1	9.204	0.41	66.17	C
212.50-206.25			B	0.413	2.038		0.85	1	9.204			
			C	0.413	2.038		0.85	1	9.204			
T27	1.55	1.10	A	0.412	2.04	8	0.85	1	9.180	0.41	65.72	C
206.25-200.00			B	0.412	2.04		0.85	1	9.180			
			C	0.412	2.04		0.85	1	9.180			
T28	6.39	4.97	A	0.47	1.942	8	0.85	1	43.632	1.62	64.75	C
200.00-175.00			B	0.47	1.942		0.85	1	43.632			
			C	0.47	1.942		0.85	1	43.632			
T29	1.62	1.29	A	0.427	2.012	8	0.85	1	9.642	0.41	66.30	C
175.00-168.75			B	0.427	2.012		0.85	1	9.642			
			C	0.427	2.012		0.85	1	9.642			
T30	1.62	1.29	A	0.426	2.015	8	0.85	1	9.594	0.41	65.77	C
168.75-162.50			B	0.426	2.015		0.85	1	9.594			
			C	0.426	2.015		0.85	1	9.594			
T31	1.61	1.35	A	0.421	2.024	8	0.85	1	9.646	0.41	65.78	C
162.50-156.25			B	0.421	2.024		0.85	1	9.646			
			C	0.421	2.024		0.85	1	9.646			
T32	1.61	1.17	A	0.41	2.044	8	0.85	1	9.139	0.41	65.11	C
156.25-150.00			B	0.41	2.044		0.85	1	9.139			
			C	0.41	2.044		0.85	1	9.139			
T33	6.60	4.63	A	0.408	2.049	7	0.85	1	36.230	1.65	65.96	C
150.00-125.00			B	0.408	2.049		0.85	1	36.230			
			C	0.408	2.049		0.85	1	36.230			
T34	6.70	6.11	A	0.471	1.941	7	0.85	1	46.052	1.59	63.64	C



<b>tnxTower</b>  <b>Centek Engineering Inc.</b> 63-2 North Branford Rd. Branford, CT 06405 Phone: (203) 488-0580 FAX: (203) 488-8587	<b>Job</b>	16071.44 - CT2049	<b>Page</b>	62 of 111
	<b>Project</b>	370' Guyed Tower - 689 Old Colchester Road, Montville, CT	<b>Date</b>	11:00:57 11/01/16
	<b>Client</b>	AT&T Mobility	<b>Designed by</b>	TJL

Section Elevation <i>ft</i>	Add Weight <i>K</i>	Self Weight <i>K</i>	F a c e	<i>e</i>	<i>C<sub>F</sub></i>	<i>q<sub>z</sub></i> <i>psf</i>	<i>D<sub>F</sub></i>	<i>D<sub>R</sub></i>	<i>A<sub>E</sub></i> <i>ft<sup>2</sup></i>	<i>F</i> <i>K</i>	<i>w</i> <i>plf</i>	Ctrl. Face
125.00-100.00			B	0.471	1.941		0.85	1	46.052			
			C	0.471	1.941		0.85	1	46.052			
T35	1.66	2.07	A	0.477	1.932	7	0.85	1	11.859	0.38	61.49	C
100.00-93.75		TA 2.17	B	0.477	1.932		0.85	1	11.859			
			C	0.477	1.932		0.85	1	11.859			
T36	1.65	1.33	A	0.412	2.042	7	0.85	1	9.357	0.39	62.24	C
93.75-87.50			B	0.412	2.042		0.85	1	9.357			
			C	0.412	2.042		0.85	1	9.357			
T37	1.71	1.12	A	0.396	2.072	7	0.85	1	8.702	0.40	64.33	C
87.50-81.25			B	0.396	2.072		0.85	1	8.702			
			C	0.396	2.072		0.85	1	8.702			
T38	1.70	1.11	A	0.394	2.076	7	0.85	1	8.649	0.39	63.08	C
81.25-75.00			B	0.394	2.076		0.85	1	8.649			
			C	0.394	2.076		0.85	1	8.649			
T39	6.74	4.38	A	0.389	2.087	6	0.85	1	33.983	1.51	60.25	C
75.00-50.00			B	0.389	2.087		0.85	1	33.983			
			C	0.389	2.087		0.85	1	33.983			
T40	6.65	4.30	A	0.38	2.106	6	0.85	1	33.128	1.36	54.41	C
50.00-25.00			B	0.38	2.106		0.85	1	33.128			
			C	0.38	2.106		0.85	1	33.128			
T41	5.45	3.97	A	0.354	2.162	5	0.85	1	30.072	0.98	39.18	C
25.00-0.00			B	0.354	2.162		0.85	1	30.072			
			C	0.354	2.162		0.85	1	30.072			
Sum Weight:	72.24	87.84								20.10		

### Tower Forces - Service - Wind Normal To Face

Section Elevation <i>ft</i>	Add Weight <i>K</i>	Self Weight <i>K</i>	F a c e	<i>e</i>	<i>C<sub>F</sub></i>	<i>q<sub>z</sub></i> <i>psf</i>	<i>D<sub>F</sub></i>	<i>D<sub>R</sub></i>	<i>A<sub>E</sub></i> <i>ft<sup>2</sup></i>	<i>F</i> <i>K</i>	<i>w</i> <i>plf</i>	Ctrl. Face
T1	0.00	0.68	A	0.215	2.545	13	1	1	5.830	0.17	26.58	C
368.75-362.50			B	0.215	2.545		1	1	5.830			
			C	0.215	2.545		1	1	5.830			
T2	0.00	1.09	A	0.235	2.484	13	1	1	6.478	0.18	29.13	C
362.50-356.25			B	0.235	2.484		1	1	6.478			
			C	0.235	2.484		1	1	6.478			
T3	0.01	1.09	A	0.235	2.484	13	1	1	6.478	0.19	29.61	C
356.25-350.00			B	0.235	2.484		1	1	6.478			
			C	0.235	2.484		1	1	6.478			
T4	0.01	0.77	A	0.242	2.463	13	1	1	6.608	0.20	31.43	C
350.00-343.75		TA 0.79	B	0.242	2.463		1	1	6.608			
			C	0.242	2.463		1	1	6.608			
T5	0.01	0.61	A	0.15	2.773	13	1	1	3.189	0.11	18.34	C
343.75-337.50			B	0.15	2.773		1	1	3.189			
			C	0.15	2.773		1	1	3.189			
T6	0.01	0.54	A	0.139	2.811	13	1	1	2.569	0.10	15.45	C
337.50-331.25			B	0.139	2.811		1	1	2.569			
			C	0.139	2.811		1	1	2.569			
T7	0.01	0.54	A	0.139	2.811	13	1	1	2.570	0.10	15.39	C
331.25-325.00			B	0.139	2.811		1	1	2.570			
			C	0.139	2.811		1	1	2.570			
T8	0.02	0.64	A	0.152	2.766	13	1	1	2.768	0.11	17.35	C
325.00-318.75			B	0.152	2.766		1	1	2.768			

<b>tnxTower</b>  <b>Centek Engineering Inc.</b> 63-2 North Branford Rd. Branford, CT 06405 Phone: (203) 488-0580 FAX: (203) 488-8587	<b>Job</b> 16071.44 - CT2049	<b>Page</b> 63 of 111
	<b>Project</b> 370' Guyed Tower - 689 Old Colchester Road, Montville, CT	<b>Date</b> 11:00:57 11/01/16
	<b>Client</b> AT&T Mobility	<b>Designed by</b> TJL

Section Elevation ft	Add Weight K	Self Weight K	F a c e	e	C <sub>F</sub>	q <sub>z</sub> psf	D <sub>F</sub>	D <sub>R</sub>	A <sub>E</sub> ft <sup>2</sup>	F K	w plf	Ctrl. Face
T9 318.75-312.50	0.02	0.64	C	0.152	2.766		1	1	2.768			
			A	0.151	2.767	13	1	1	2.766	0.11	17.28	C
			B	0.151	2.767		1	1	2.766			
T10 312.50-306.25	0.02	0.64	C	0.151	2.767		1	1	2.766			
			A	0.151	2.767	13	1	1	2.767	0.11	17.21	C
			B	0.151	2.767		1	1	2.767			
T11 306.25-300.00	0.02	0.71	C	0.151	2.767		1	1	2.767			
			A	0.161	2.73	13	1	1	3.389	0.12	19.85	C
			B	0.161	2.73		1	1	3.389			
T12 300.00-293.75	0.12	0.85 TA 0.79	C	0.161	2.73		1	1	3.389			
			A	0.248	2.445	12	1	1	6.704	0.31	49.49	C
			B	0.248	2.445		1	1	6.704			
T13 293.75-287.50	0.12	0.71	C	0.248	2.445		1	1	6.704			
			A	0.161	2.73	12	1	1	3.391	0.23	37.24	C
			B	0.161	2.73		1	1	3.391			
T14 287.50-281.25	0.12	0.61	C	0.161	2.73		1	1	3.391			
			A	0.147	2.784	12	1	1	2.680	0.21	34.05	C
			B	0.147	2.784		1	1	2.680			
T15 281.25-275.00	0.12	0.61	C	0.147	2.784		1	1	2.680			
			A	0.147	2.784	12	1	1	2.681	0.21	33.89	C
			B	0.147	2.784		1	1	2.681			
T16 275.00-268.75	0.12	0.61	C	0.147	2.784		1	1	2.681			
			A	0.147	2.784	12	1	1	2.682	0.21	33.74	C
			B	0.147	2.784		1	1	2.682			
T17 268.75-262.50	0.12	0.61	C	0.147	2.784		1	1	2.682			
			A	0.147	2.784	12	1	1	2.684	0.21	33.58	C
			B	0.147	2.784		1	1	2.684			
T18 262.50-256.25	0.12	0.61	C	0.147	2.784		1	1	2.684			
			A	0.147	2.784	12	1	1	2.685	0.21	33.42	C
			B	0.147	2.784		1	1	2.685			
T19 256.25-250.00	0.12	0.64	C	0.147	2.784		1	1	2.685			
			A	0.151	2.767	12	1	1	2.779	0.21	33.59	C
			B	0.151	2.767		1	1	2.779			
T20 250.00-243.75	0.12	0.71	C	0.151	2.767		1	1	2.779			
			A	0.161	2.73	12	1	1	3.401	0.23	36.02	C
			B	0.161	2.73		1	1	3.401			
T21 243.75-237.50	0.17	0.71	C	0.161	2.73		1	1	3.401			
			A	0.161	2.73	12	1	1	3.402	0.27	42.82	C
			B	0.161	2.73		1	1	3.402			
T22 237.50-231.25	0.23	0.71	C	0.161	2.73		1	1	3.402			
			A	0.161	2.73	12	1	1	3.403	0.33	53.01	C
			B	0.161	2.73		1	1	3.403			
T23 231.25-225.00	0.23	0.77	C	0.161	2.73		1	1	3.403			
			A	0.171	2.696	12	1	1	3.591	0.33	53.34	C
			B	0.171	2.696		1	1	3.591			
T24 225.00-218.75	0.23	0.95 TA 0.79	C	0.171	2.696		1	1	3.591			
			A	0.222	2.525	12	1	1	5.953	0.38	61.58	C
			B	0.222	2.525		1	1	5.953			
T25 218.75-212.50	0.23	0.61	C	0.222	2.525		1	1	5.953			
			A	0.15	2.773	12	1	1	3.212	0.32	51.51	C
			B	0.15	2.773		1	1	3.212			
T26 212.50-206.25	0.23	0.54	C	0.15	2.773		1	1	3.212			
			A	0.139	2.811	12	1	1	2.591	0.30	47.45	C
			B	0.139	2.811		1	1	2.591			
T27 206.25-200.00	0.23	0.54	C	0.139	2.811		1	1	2.591			
			A	0.139	2.811	12	1	1	2.591	0.29	47.15	C
			B	0.139	2.811		1	1	2.591			
T28 200.00-175.00	0.94	2.28	C	0.139	2.811		1	1	2.591			
			A	0.159	2.737	11	1	1	11.897	1.21	48.45	C
			B	0.159	2.737		1	1	11.897			

<b>tnxTower</b>  <b>Centek Engineering Inc.</b> 63-2 North Branford Rd. Branford, CT 06405 Phone: (203) 488-0580 FAX: (203) 488-8587	<b>Job</b> 16071.44 - CT2049	<b>Page</b> 64 of 111
	<b>Project</b> 370' Guyed Tower - 689 Old Colchester Road, Montville, CT	<b>Date</b> 11:00:57 11/01/16
	<b>Client</b> AT&T Mobility	<b>Designed by</b> TJL

Section Elevation ft	Add Weight K	Self Weight K	F a c e	e	C <sub>F</sub>	q <sub>z</sub> psf	D <sub>F</sub>	D <sub>R</sub>	A <sub>E</sub> ft <sup>2</sup>	F K	w plf	Ctrl. Face
T29 175.00-168.75	0.24	0.69	C	0.159	2.737	11	1	1	11.897	0.30	48.11	C
			A	0.161	2.731				2.990			
			B	0.161	2.731				2.990			
T30 168.75-162.50	0.24	0.69	C	0.161	2.731	11	1	1	2.990	0.30	47.73	C
			A	0.161	2.732				2.989			
			B	0.161	2.732				2.989			
T31 162.50-156.25	0.24	0.69	C	0.161	2.732	11	1	1	2.989	0.31	48.82	C
			A	0.157	2.747				3.332			
			B	0.157	2.747				3.332			
T32 156.25-150.00	0.24	0.61	C	0.157	2.747	11	1	1	3.332	0.29	46.06	C
			A	0.147	2.784				2.715			
			B	0.147	2.784				2.715			
T33 150.00-125.00	0.96	2.45	C	0.147	2.784	11	1	1	10.885	1.14	45.70	C
			A	0.147	2.784				10.885			
			B	0.147	2.784				10.885			
T34 125.00-100.00	0.98	2.84	C	0.147	2.784	10	1	1	21.936	1.33	53.11	C
			A	0.218	2.536				21.936			
			B	0.218	2.536				21.936			
T35 100.00-93.75	0.24	1.03 TA 0.79	C	0.228	2.504	10	1	1	6.103	0.33	53.31	C
		A	0.228	2.504	6.103							
		B	0.228	2.504	6.103							
T36 93.75-87.50	0.24	0.71	C	0.161	2.73	10	1	1	3.449	0.28	44.91	C
			A	0.161	2.73				3.449			
			B	0.161	2.73				3.449			
T37 87.50-81.25	0.25	0.61	C	0.147	2.784	10	1	1	2.739	0.27	42.95	C
			A	0.147	2.784				2.739			
			B	0.147	2.784				2.739			
T38 81.25-75.00	0.25	0.61	C	0.147	2.784	9	1	1	2.739	0.26	42.26	C
			A	0.147	2.784				2.739			
			B	0.147	2.784				2.739			
T39 75.00-50.00	1.01	2.45	C	0.147	2.784	9	1	1	10.954	1.01	40.57	C
			A	0.147	2.784				10.954			
			B	0.147	2.784				10.954			
T40 50.00-25.00	1.02	2.47	C	0.149	2.775	8	1	1	11.573	0.93	37.39	C
			A	0.149	2.775				11.573			
			B	0.149	2.775				11.573			
T41 25.00-0.00	0.91	2.45	C	0.149	2.775	7	1	1	11.573	0.70	27.80	C
			A	0.147	2.784				10.954			
			B	0.147	2.784				10.954			
Sum Weight:	10.55	42.50								14.41		

### Tower Forces - Service - Wind 60 To Face

Section Elevation ft	Add Weight K	Self Weight K	F a c e	e	C <sub>F</sub>	q <sub>z</sub> psf	D <sub>F</sub>	D <sub>R</sub>	A <sub>E</sub> ft <sup>2</sup>	F K	w plf	Ctrl. Face
T1 368.75-362.50	0.00	0.68	A	0.215	2.545	13	0.8	1	4.995	0.14	22.82	C
			B	0.215	2.545				4.995			
			C	0.215	2.545				4.995			
T2 362.50-356.25	0.00	1.09	A	0.235	2.484	13	0.8	1	5.516	0.16	24.91	C
			B	0.235	2.484				5.516			
			C	0.235	2.484				5.516			

<b>Job</b>	16071.44 - CT2049	<b>Page</b>	65 of 111
<b>Project</b>	370' Guyed Tower - 689 Old Colchester Road, Montville, CT	<b>Date</b>	11:00:57 11/01/16
<b>Client</b>	AT&T Mobility	<b>Designed by</b>	TJL

Section Elevation	Add Weight	Self Weight	F a c e	e	C <sub>F</sub>	q <sub>z</sub>	D <sub>F</sub>	D <sub>R</sub>	A <sub>E</sub>	F	w	Ctrl. Face
ft	K	K				psf			ft <sup>2</sup>	K	plf	
T3 356.25-350.00	0.01	1.09	A	0.235	2.484	13	0.8	1	5.516	0.16	25.41	C
			B	0.235	2.484		0.8	1	5.516			
			C	0.235	2.484		0.8	1	5.516			
T4 350.00-343.75	0.01	0.77 TA 0.79	A	0.242	2.463	13	0.8	1	5.647	0.17	27.28	C
			B	0.242	2.463		0.8	1	5.647			
			C	0.242	2.463		0.8	1	5.647			
T5 343.75-337.50	0.01	0.61	A	0.15	2.773	13	0.8	1	2.991	0.11	17.38	C
			B	0.15	2.773		0.8	1	2.991			
			C	0.15	2.773		0.8	1	2.991			
T6 337.50-331.25	0.01	0.54	A	0.139	2.811	13	0.8	1	2.569	0.10	15.45	C
			B	0.139	2.811		0.8	1	2.569			
			C	0.139	2.811		0.8	1	2.569			
T7 331.25-325.00	0.01	0.54	A	0.139	2.811	13	0.8	1	2.570	0.10	15.39	C
			B	0.139	2.811		0.8	1	2.570			
			C	0.139	2.811		0.8	1	2.570			
T8 325.00-318.75	0.02	0.64	A	0.152	2.766	13	0.8	1	2.768	0.11	17.35	C
			B	0.152	2.766		0.8	1	2.768			
			C	0.152	2.766		0.8	1	2.768			
T9 318.75-312.50	0.02	0.64	A	0.151	2.767	13	0.8	1	2.766	0.11	17.28	C
			B	0.151	2.767		0.8	1	2.766			
			C	0.151	2.767		0.8	1	2.766			
T10 312.50-306.25	0.02	0.64	A	0.151	2.767	13	0.8	1	2.767	0.11	17.21	C
			B	0.151	2.767		0.8	1	2.767			
			C	0.151	2.767		0.8	1	2.767			
T11 306.25-300.00	0.02	0.71	A	0.161	2.73	13	0.8	1	3.192	0.12	18.94	C
			B	0.161	2.73		0.8	1	3.192			
			C	0.161	2.73		0.8	1	3.192			
T12 300.00-293.75	0.12	0.85 TA 0.79	A	0.248	2.445	12	0.8	1	5.750	0.28	45.54	C
			B	0.248	2.445		0.8	1	5.750			
			C	0.248	2.445		0.8	1	5.750			
T13 293.75-287.50	0.12	0.71	A	0.161	2.73	12	0.8	1	3.194	0.23	36.33	C
			B	0.161	2.73		0.8	1	3.194			
			C	0.161	2.73		0.8	1	3.194			
T14 287.50-281.25	0.12	0.61	A	0.147	2.784	12	0.8	1	2.680	0.21	34.05	C
			B	0.147	2.784		0.8	1	2.680			
			C	0.147	2.784		0.8	1	2.680			
T15 281.25-275.00	0.12	0.61	A	0.147	2.784	12	0.8	1	2.681	0.21	33.89	C
			B	0.147	2.784		0.8	1	2.681			
			C	0.147	2.784		0.8	1	2.681			
T16 275.00-268.75	0.12	0.61	A	0.147	2.784	12	0.8	1	2.682	0.21	33.74	C
			B	0.147	2.784		0.8	1	2.682			
			C	0.147	2.784		0.8	1	2.682			
T17 268.75-262.50	0.12	0.61	A	0.147	2.784	12	0.8	1	2.684	0.21	33.58	C
			B	0.147	2.784		0.8	1	2.684			
			C	0.147	2.784		0.8	1	2.684			
T18 262.50-256.25	0.12	0.61	A	0.147	2.784	12	0.8	1	2.685	0.21	33.42	C
			B	0.147	2.784		0.8	1	2.685			
			C	0.147	2.784		0.8	1	2.685			
T19 256.25-250.00	0.12	0.64	A	0.151	2.767	12	0.8	1	2.779	0.21	33.59	C
			B	0.151	2.767		0.8	1	2.779			
			C	0.151	2.767		0.8	1	2.779			
T20 250.00-243.75	0.12	0.71	A	0.161	2.73	12	0.8	1	3.203	0.22	35.14	C
			B	0.161	2.73		0.8	1	3.203			
			C	0.161	2.73		0.8	1	3.203			
T21 243.75-237.50	0.17	0.71	A	0.161	2.73	12	0.8	1	3.205	0.26	41.94	C
			B	0.161	2.73		0.8	1	3.205			
			C	0.161	2.73		0.8	1	3.205			
T22 237.50-231.25	0.23	0.71	A	0.161	2.73	12	0.8	1	3.206	0.33	52.14	C
			B	0.161	2.73		0.8	1	3.206			
			C	0.161	2.73		0.8	1	3.206			

<b>tnxTower</b>  <b>Centek Engineering Inc.</b> 63-2 North Branford Rd. Branford, CT 06405 Phone: (203) 488-0580 FAX: (203) 488-8587	<b>Job</b> 16071.44 - CT2049	<b>Page</b> 66 of 111
	<b>Project</b> 370' Guyed Tower - 689 Old Colchester Road, Montville, CT	<b>Date</b> 11:00:57 11/01/16
	<b>Client</b> AT&T Mobility	<b>Designed by</b> TJL

Section Elevation <i>ft</i>	Add Weight <i>K</i>	Self Weight <i>K</i>	<i>F</i> <i>a</i> <i>c</i> <i>e</i>	<i>e</i>	<i>C<sub>F</sub></i>	<i>q<sub>z</sub></i> <i>psf</i>	<i>D<sub>F</sub></i>	<i>D<sub>R</sub></i>	<i>A<sub>E</sub></i> <i>ft<sup>2</sup></i>	<i>F</i> <i>K</i>	<i>w</i> <i>plf</i>	<i>Ctrl.</i> <i>Face</i>
T23 231.25-225.00	0.23	0.77	A	0.171	2.696	12	0.8	1	3.394	0.33	52.49	C
			B	0.171	2.696		0.8	1	3.394			
			C	0.171	2.696		0.8	1	3.394			
T24 225.00-218.75	0.23	0.95 TA 0.79	A	0.222	2.525	12	0.8	1	5.124	0.36	58.24	C
			B	0.222	2.525		0.8	1	5.124			
			C	0.222	2.525		0.8	1	5.124			
T25 218.75-212.50	0.23	0.61	A	0.15	2.773	12	0.8	1	3.014	0.32	50.64	C
			B	0.15	2.773		0.8	1	3.014			
			C	0.15	2.773		0.8	1	3.014			
T26 212.50-206.25	0.23	0.54	A	0.139	2.811	12	0.8	1	2.591	0.30	47.45	C
			B	0.139	2.811		0.8	1	2.591			
			C	0.139	2.811		0.8	1	2.591			
T27 206.25-200.00	0.23	0.54	A	0.139	2.811	12	0.8	1	2.591	0.29	47.15	C
			B	0.139	2.811		0.8	1	2.591			
			C	0.139	2.811		0.8	1	2.591			
T28 200.00-175.00	0.94	2.28	A	0.159	2.737	11	0.8	1	11.897	1.21	48.45	C
			B	0.159	2.737		0.8	1	11.897			
			C	0.159	2.737		0.8	1	11.897			
T29 175.00-168.75	0.24	0.69	A	0.161	2.731	11	0.8	1	2.990	0.30	48.11	C
			B	0.161	2.731		0.8	1	2.990			
			C	0.161	2.731		0.8	1	2.990			
T30 168.75-162.50	0.24	0.69	A	0.161	2.732	11	0.8	1	2.989	0.30	47.73	C
			B	0.161	2.732		0.8	1	2.989			
			C	0.161	2.732		0.8	1	2.989			
T31 162.50-156.25	0.24	0.69	A	0.157	2.747	11	0.8	1	3.135	0.30	48.02	C
			B	0.157	2.747		0.8	1	3.135			
			C	0.157	2.747		0.8	1	3.135			
T32 156.25-150.00	0.24	0.61	A	0.147	2.784	11	0.8	1	2.715	0.29	46.06	C
			B	0.147	2.784		0.8	1	2.715			
			C	0.147	2.784		0.8	1	2.715			
T33 150.00-125.00	0.96	2.45	A	0.147	2.784	11	0.8	1	10.885	1.14	45.70	C
			B	0.147	2.784		0.8	1	10.885			
			C	0.147	2.784		0.8	1	10.885			
T34 125.00-100.00	0.98	2.84	A	0.218	2.536	10	0.8	1	19.412	1.27	50.90	C
			B	0.218	2.536		0.8	1	19.412			
			C	0.218	2.536		0.8	1	19.412			
T35 100.00-93.75	0.24	1.03 TA 0.79	A	0.228	2.504	10	0.8	1	5.275	0.32	50.53	C
			B	0.228	2.504		0.8	1	5.275			
			C	0.228	2.504		0.8	1	5.275			
T36 93.75-87.50	0.24	0.71	A	0.161	2.73	10	0.8	1	3.252	0.28	44.20	C
			B	0.161	2.73		0.8	1	3.252			
			C	0.161	2.73		0.8	1	3.252			
T37 87.50-81.25	0.25	0.61	A	0.147	2.784	10	0.8	1	2.739	0.27	42.95	C
			B	0.147	2.784		0.8	1	2.739			
			C	0.147	2.784		0.8	1	2.739			
T38 81.25-75.00	0.25	0.61	A	0.147	2.784	9	0.8	1	2.739	0.26	42.26	C
			B	0.147	2.784		0.8	1	2.739			
			C	0.147	2.784		0.8	1	2.739			
T39 75.00-50.00	1.01	2.45	A	0.147	2.784	9	0.8	1	10.954	1.01	40.57	C
			B	0.147	2.784		0.8	1	10.954			
			C	0.147	2.784		0.8	1	10.954			
T40 50.00-25.00	1.02	2.47	A	0.149	2.775	8	0.8	1	11.376	0.93	37.24	C
			B	0.149	2.775		0.8	1	11.376			
			C	0.149	2.775		0.8	1	11.376			
T41 25.00-0.00	0.91	2.45	A	0.147	2.784	7	0.8	1	10.954	0.70	27.80	C
			B	0.147	2.784		0.8	1	10.954			
			C	0.147	2.784		0.8	1	10.954			
Sum Weight:	10.55	42.50								14.13		

<b>tnxTower</b>  <b>Centek Engineering Inc.</b> 63-2 North Branford Rd. Branford, CT 06405 Phone: (203) 488-0580 FAX: (203) 488-8587	<b>Job</b> 16071.44 - CT2049	<b>Page</b> 67 of 111
	<b>Project</b> 370' Guyed Tower - 689 Old Colchester Road, Montville, CT	<b>Date</b> 11:00:57 11/01/16
	<b>Client</b> AT&T Mobility	<b>Designed by</b> TJL

**Tower Forces - Service - Wind 90 To Face**

Section Elevation	Add Weight	Self Weight	F a c e	e	C <sub>F</sub>	q <sub>z</sub>	D <sub>F</sub>	D <sub>R</sub>	A <sub>E</sub>	F	w	Ctrl. Face
ft	K	K				psf			ft <sup>2</sup>	K	plf	
T1 368.75-362.50	0.00	0.68	A	0.215	2.545	13	0.85	1	5.204	0.15	23.76	C
			B	0.215	2.545		0.85	1	5.204			
			C	0.215	2.545		0.85	1	5.204			
T2 362.50-356.25	0.00	1.09	A	0.235	2.484	13	0.85	1	5.756	0.16	25.97	C
			B	0.235	2.484		0.85	1	5.756			
			C	0.235	2.484		0.85	1	5.756			
T3 356.25-350.00	0.01	1.09	A	0.235	2.484	13	0.85	1	5.756	0.17	26.46	C
			B	0.235	2.484		0.85	1	5.756			
			C	0.235	2.484		0.85	1	5.756			
T4 350.00-343.75	0.01	0.77 TA 0.79	A	0.242	2.463	13	0.85	1	5.887	0.18	28.32	C
			B	0.242	2.463		0.85	1	5.887			
			C	0.242	2.463		0.85	1	5.887			
T5 343.75-337.50	0.01	0.61	A	0.15	2.773	13	0.85	1	3.041	0.11	17.62	C
			B	0.15	2.773		0.85	1	3.041			
			C	0.15	2.773		0.85	1	3.041			
T6 337.50-331.25	0.01	0.54	A	0.139	2.811	13	0.85	1	2.569	0.10	15.45	C
			B	0.139	2.811		0.85	1	2.569			
			C	0.139	2.811		0.85	1	2.569			
T7 331.25-325.00	0.01	0.54	A	0.139	2.811	13	0.85	1	2.570	0.10	15.39	C
			B	0.139	2.811		0.85	1	2.570			
			C	0.139	2.811		0.85	1	2.570			
T8 325.00-318.75	0.02	0.64	A	0.152	2.766	13	0.85	1	2.768	0.11	17.35	C
			B	0.152	2.766		0.85	1	2.768			
			C	0.152	2.766		0.85	1	2.768			
T9 318.75-312.50	0.02	0.64	A	0.151	2.767	13	0.85	1	2.766	0.11	17.28	C
			B	0.151	2.767		0.85	1	2.766			
			C	0.151	2.767		0.85	1	2.766			
T10 312.50-306.25	0.02	0.64	A	0.151	2.767	13	0.85	1	2.767	0.11	17.21	C
			B	0.151	2.767		0.85	1	2.767			
			C	0.151	2.767		0.85	1	2.767			
T11 306.25-300.00	0.02	0.71	A	0.161	2.73	13	0.85	1	3.241	0.12	19.17	C
			B	0.161	2.73		0.85	1	3.241			
			C	0.161	2.73		0.85	1	3.241			
T12 300.00-293.75	0.12	0.85 TA 0.79	A	0.248	2.445	12	0.85	1	5.988	0.29	46.53	C
			B	0.248	2.445		0.85	1	5.988			
			C	0.248	2.445		0.85	1	5.988			
T13 293.75-287.50	0.12	0.71	A	0.161	2.73	12	0.85	1	3.243	0.23	36.55	C
			B	0.161	2.73		0.85	1	3.243			
			C	0.161	2.73		0.85	1	3.243			
T14 287.50-281.25	0.12	0.61	A	0.147	2.784	12	0.85	1	2.680	0.21	34.05	C
			B	0.147	2.784		0.85	1	2.680			
			C	0.147	2.784		0.85	1	2.680			
T15 281.25-275.00	0.12	0.61	A	0.147	2.784	12	0.85	1	2.681	0.21	33.89	C
			B	0.147	2.784		0.85	1	2.681			
			C	0.147	2.784		0.85	1	2.681			
T16 275.00-268.75	0.12	0.61	A	0.147	2.784	12	0.85	1	2.682	0.21	33.74	C
			B	0.147	2.784		0.85	1	2.682			
			C	0.147	2.784		0.85	1	2.682			
T17 268.75-262.50	0.12	0.61	A	0.147	2.784	12	0.85	1	2.684	0.21	33.58	C
			B	0.147	2.784		0.85	1	2.684			
			C	0.147	2.784		0.85	1	2.684			
T18 262.50-256.25	0.12	0.61	A	0.147	2.784	12	0.85	1	2.685	0.21	33.42	C
			B	0.147	2.784		0.85	1	2.685			
			C	0.147	2.784		0.85	1	2.685			

<b>tnxTower</b>  <b>Centek Engineering Inc.</b> 63-2 North Branford Rd. Branford, CT 06405 Phone: (203) 488-0580 FAX: (203) 488-8587	<b>Job</b> 16071.44 - CT2049	<b>Page</b> 68 of 111
	<b>Project</b> 370' Guyed Tower - 689 Old Colchester Road, Montville, CT	<b>Date</b> 11:00:57 11/01/16
	<b>Client</b> AT&T Mobility	<b>Designed by</b> TJL

Section Elevation <i>ft</i>	Add Weight <i>K</i>	Self Weight <i>K</i>	<i>F</i> <i>a</i> <i>c</i> <i>e</i>	<i>e</i>	<i>C<sub>F</sub></i>	<i>q<sub>z</sub></i> <i>psf</i>	<i>D<sub>F</sub></i>	<i>D<sub>R</sub></i>	<i>A<sub>E</sub></i> <i>ft<sup>2</sup></i>	<i>F</i> <i>K</i>	<i>w</i> <i>plf</i>	<i>Ctrl.</i> <i>Face</i>
T19 256.25-250.00	0.12	0.64	C	0.147	2.784		0.85	1	2.685			
			A	0.151	2.767	12	0.85	1	2.779	0.21	33.59	C
			B	0.151	2.767		0.85	1	2.779			
T20 250.00-243.75	0.12	0.71	C	0.151	2.767		0.85	1	2.779			
			A	0.161	2.73	12	0.85	1	3.253	0.22	35.36	C
			B	0.161	2.73		0.85	1	3.253			
T21 243.75-237.50	0.17	0.71	C	0.161	2.73		0.85	1	3.253			
			A	0.161	2.73	12	0.85	1	3.254	0.26	42.16	C
			B	0.161	2.73		0.85	1	3.254			
T22 237.50-231.25	0.23	0.71	C	0.161	2.73		0.85	1	3.254			
			A	0.161	2.73	12	0.85	1	3.256	0.33	52.36	C
			B	0.161	2.73		0.85	1	3.256			
T23 231.25-225.00	0.23	0.77	C	0.161	2.73		0.85	1	3.256			
			A	0.171	2.696	12	0.85	1	3.443	0.33	52.70	C
			B	0.171	2.696		0.85	1	3.443			
T24 225.00-218.75	0.23	0.95 TA 0.79	C	0.171	2.696		0.85	1	3.443			
			A	0.222	2.525	12	0.85	1	5.331	0.37	59.07	C
			B	0.222	2.525		0.85	1	5.331			
T25 218.75-212.50	0.23	0.61	C	0.222	2.525		0.85	1	5.331			
			A	0.15	2.773	12	0.85	1	3.064	0.32	50.85	C
			B	0.15	2.773		0.85	1	3.064			
T26 212.50-206.25	0.23	0.54	C	0.15	2.773		0.85	1	3.064			
			A	0.139	2.811	12	0.85	1	2.591	0.30	47.45	C
			B	0.139	2.811		0.85	1	2.591			
T27 206.25-200.00	0.23	0.54	C	0.139	2.811		0.85	1	2.591			
			A	0.139	2.811	12	0.85	1	2.591	0.29	47.15	C
			B	0.139	2.811		0.85	1	2.591			
T28 200.00-175.00	0.94	2.28	C	0.139	2.811		0.85	1	2.591			
			A	0.159	2.737	11	0.85	1	11.897	1.21	48.45	C
			B	0.159	2.737		0.85	1	11.897			
T29 175.00-168.75	0.24	0.69	C	0.159	2.737		0.85	1	11.897			
			A	0.161	2.731	11	0.85	1	2.990	0.30	48.11	C
			B	0.161	2.731		0.85	1	2.990			
T30 168.75-162.50	0.24	0.69	C	0.161	2.731		0.85	1	2.990			
			A	0.161	2.732	11	0.85	1	2.989	0.30	47.73	C
			B	0.161	2.732		0.85	1	2.989			
T31 162.50-156.25	0.24	0.69	C	0.161	2.732		0.85	1	2.989			
			A	0.157	2.747	11	0.85	1	3.185	0.30	48.22	C
			B	0.157	2.747		0.85	1	3.185			
T32 156.25-150.00	0.24	0.61	C	0.157	2.747		0.85	1	3.185			
			A	0.147	2.784	11	0.85	1	2.715	0.29	46.06	C
			B	0.147	2.784		0.85	1	2.715			
T33 150.00-125.00	0.96	2.45	C	0.147	2.784		0.85	1	2.715			
			A	0.147	2.784	11	0.85	1	10.885	1.14	45.70	C
			B	0.147	2.784		0.85	1	10.885			
T34 125.00-100.00	0.98	2.84	C	0.147	2.784		0.85	1	10.885			
			A	0.218	2.536	10	0.85	1	20.043	1.29	51.46	C
			B	0.218	2.536		0.85	1	20.043			
T35 100.00-93.75	0.24	1.03 TA 0.79	C	0.218	2.536		0.85	1	20.043			
			A	0.228	2.504	10	0.85	1	5.482	0.32	51.23	C
			B	0.228	2.504		0.85	1	5.482			
T36 93.75-87.50	0.24	0.71	C	0.228	2.504		0.85	1	5.482			
			A	0.161	2.73	10	0.85	1	3.301	0.28	44.38	C
			B	0.161	2.73		0.85	1	3.301			
T37 87.50-81.25	0.25	0.61	C	0.161	2.73		0.85	1	3.301			
			A	0.147	2.784	10	0.85	1	2.739	0.27	42.95	C
			B	0.147	2.784		0.85	1	2.739			
T38 81.25-75.00	0.25	0.61	C	0.147	2.784		0.85	1	2.739			
			A	0.147	2.784	9	0.85	1	2.739	0.26	42.26	C
			B	0.147	2.784		0.85	1	2.739			

<b>tnxTower</b>  <b>Centek Engineering Inc.</b> 63-2 North Branford Rd. Branford, CT 06405 Phone: (203) 488-0580 FAX: (203) 488-8587	<b>Job</b> 16071.44 - CT2049	<b>Page</b> 69 of 111
	<b>Project</b> 370' Guyed Tower - 689 Old Colchester Road, Montville, CT	<b>Date</b> 11:00:57 11/01/16
	<b>Client</b> AT&T Mobility	<b>Designed by</b> TJL

Section Elevation ft	Add Weight K	Self Weight K	F a c e	e	C <sub>F</sub>	q <sub>z</sub> psf	D <sub>F</sub>	D <sub>R</sub>	A <sub>E</sub> ft <sup>2</sup>	F K	w plf	Ctrl. Face
T39 75.00-50.00	1.01	2.45	C A B C	0.147 0.147 0.147 0.147	2.784 2.784 2.784 2.784	9	0.85 0.85 0.85 0.85	1 1 1 1	2.739 10.954 10.954 10.954	1.01	40.57	C
T40 50.00-25.00	1.02	2.47	A B C	0.149 0.149 0.149	2.775 2.775 2.775	8	0.85 0.85 0.85	1 1 1	11.425 11.425 11.425	0.93	37.27	C
T41 25.00-0.00	0.91	2.45	A B C	0.147 0.147 0.147	2.784 2.784 2.784	7	0.85 0.85 0.85	1 1 1	10.954 10.954 10.954	0.70	27.80	C
Sum Weight:	10.55	42.50								14.20		

**Force Totals (Does not include forces on guys)**

Load Case	Vertical Forces K	Sum of Forces X K	Sum of Forces Z K	Sum of Torques kip-ft
Leg Weight	29.84			
Bracing Weight	12.66			
Total Member Self-Weight	42.50			
Guy Weight	11.91			
Total Weight	71.68			
Wind 0 deg - No Ice		-0.06	-61.50	-1.87
Wind 30 deg - No Ice		30.17	-52.68	-0.82
Wind 60 deg - No Ice		52.13	-30.27	0.41
Wind 90 deg - No Ice		60.44	0.06	1.61
Wind 120 deg - No Ice		52.93	30.80	2.45
Wind 150 deg - No Ice		30.27	52.74	2.44
Wind 180 deg - No Ice		0.06	60.65	1.88
Wind 210 deg - No Ice		-30.17	52.68	0.82
Wind 240 deg - No Ice		-52.87	30.70	-0.58
Wind 270 deg - No Ice		-60.44	-0.06	-1.61
Wind 300 deg - No Ice		-52.19	-30.37	-2.30
Wind 330 deg - No Ice		-30.27	-52.74	-2.44
Member Ice	45.34			
Guy Ice	47.42			
Total Weight Ice	239.32			
Wind 0 deg - Ice		0.01	-26.36	-0.98
Wind 30 deg - Ice		13.10	-22.74	-0.34
Wind 60 deg - Ice		22.64	-13.11	0.39
Wind 90 deg - Ice		26.18	-0.01	1.03
Wind 120 deg - Ice		22.76	13.17	1.39
Wind 150 deg - Ice		13.08	22.73	1.37
Wind 180 deg - Ice		-0.01	26.21	0.98
Wind 210 deg - Ice		-13.10	22.74	0.34
Wind 240 deg - Ice		-22.77	13.19	-0.41
Wind 270 deg - Ice		-26.18	0.01	-1.03
Wind 300 deg - Ice		-22.64	-13.10	-1.38
Wind 330 deg - Ice		-13.08	-22.73	-1.37
Total Weight	71.68			
Wind 0 deg - Service		-0.02	-20.08	-0.61
Wind 30 deg - Service		9.85	-17.20	-0.27
Wind 60 deg - Service		17.02	-9.89	0.14



<b>tnxTower</b>  <b>Centek Engineering Inc.</b> 63-2 North Branford Rd. Branford, CT 06405 Phone: (203) 488-0580 FAX: (203) 488-8587	<b>Job</b> 16071.44 - CT2049	<b>Page</b> 70 of 111
	<b>Project</b> 370' Guyed Tower - 689 Old Colchester Road, Montville, CT	<b>Date</b> 11:00:57 11/01/16
	<b>Client</b> AT&T Mobility	<b>Designed by</b> TJL

Load Case	Vertical Forces K	Sum of Forces X K	Sum of Forces Z K	Sum of Torques kip-ft
Wind 90 deg - Service		19.74	0.02	0.53
Wind 120 deg - Service		17.28	10.06	0.80
Wind 150 deg - Service		9.88	17.22	0.80
Wind 180 deg - Service		0.02	19.80	0.62
Wind 210 deg - Service		-9.85	17.20	0.27
Wind 240 deg - Service		-17.26	10.02	-0.19
Wind 270 deg - Service		-19.74	-0.02	-0.53
Wind 300 deg - Service		-17.04	-9.92	-0.75
Wind 330 deg - Service		-9.88	-17.22	-0.80

## 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 60 deg - No Ice+1.0 Guy
5	1.2 Dead+1.6 Wind 90 deg - No Ice+1.0 Guy
6	1.2 Dead+1.6 Wind 120 deg - No Ice+1.0 Guy
7	1.2 Dead+1.6 Wind 150 deg - No Ice+1.0 Guy
8	1.2 Dead+1.6 Wind 180 deg - No Ice+1.0 Guy
9	1.2 Dead+1.6 Wind 210 deg - No Ice+1.0 Guy
10	1.2 Dead+1.6 Wind 240 deg - No Ice+1.0 Guy
11	1.2 Dead+1.6 Wind 270 deg - No Ice+1.0 Guy
12	1.2 Dead+1.6 Wind 300 deg - No Ice+1.0 Guy
13	1.2 Dead+1.6 Wind 330 deg - No Ice+1.0 Guy
14	1.2 Dead+1.0 Ice+1.0 Temp+Guy
15	1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp+1.0 Guy
16	1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp+1.0 Guy
17	1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp+1.0 Guy
18	1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp+1.0 Guy
19	1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp+1.0 Guy
20	1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp+1.0 Guy
21	1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp+1.0 Guy
22	1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp+1.0 Guy
23	1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp+1.0 Guy
24	1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp+1.0 Guy
25	1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp+1.0 Guy
26	1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp+1.0 Guy
27	Dead+Wind 0 deg - Service+Guy
28	Dead+Wind 30 deg - Service+Guy
29	Dead+Wind 60 deg - Service+Guy
30	Dead+Wind 90 deg - Service+Guy
31	Dead+Wind 120 deg - Service+Guy
32	Dead+Wind 150 deg - Service+Guy
33	Dead+Wind 180 deg - Service+Guy
34	Dead+Wind 210 deg - Service+Guy
35	Dead+Wind 240 deg - Service+Guy
36	Dead+Wind 270 deg - Service+Guy
37	Dead+Wind 300 deg - Service+Guy
38	Dead+Wind 330 deg - Service+Guy

<b>tnxTower</b>  <b>Centek Engineering Inc.</b> 63-2 North Branford Rd. Branford, CT 06405 Phone: (203) 488-0580 FAX: (203) 488-8587	<b>Job</b> 16071.44 - CT2049	<b>Page</b> 71 of 111
	<b>Project</b> 370' Guyed Tower - 689 Old Colchester Road, Montville, CT	<b>Date</b> 11:00:57 11/01/16
	<b>Client</b> AT&T Mobility	<b>Designed by</b> TJL

## Maximum Member Forces

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
T1	368.75 - 362.5	Leg	Max Tension	12	0.34	-0.00	-0.00
			Max. Compression	23	-1.67	0.00	0.02
			Max. Mx	5	-0.11	0.27	0.00
			Max. My	12	0.28	0.01	-0.20
			Max. Vy	6	-0.12	-0.00	0.00
		Diagonal	Max. Vx	2	0.19	-0.00	-0.00
			Max Tension	8	0.37	0.00	0.00
			Max. Compression	2	-0.45	0.00	0.00
			Max. Mx	24	0.04	0.02	0.00
			Max. My	2	-0.42	0.01	0.00
		Top Girt	Max. Vy	18	-0.03	0.02	-0.00
			Max. Vx	7	-0.00	0.00	0.00
			Max Tension	2	0.11	0.00	0.00
			Max. Compression	12	-0.09	0.00	0.00
			Max. Mx	14	0.01	0.08	0.00
			Max. My	5	-0.08	0.00	-0.00
			Max. Vy	14	-0.06	0.00	0.00
T2	362.5 - 356.25	Leg	Max. Vx	5	0.00	0.00	0.00
			Max Tension	12	0.92	0.01	-0.20
			Max. Compression	23	-2.35	0.06	-0.13
			Max. Mx	11	-0.51	1.41	-0.01
			Max. My	6	-1.66	-0.21	-0.97
		Diagonal	Max. Vy	11	-0.32	1.41	-0.01
			Max. Vx	7	0.22	-0.10	-0.96
			Max Tension	12	0.92	0.00	0.00
			Max. Compression	6	-1.33	0.00	0.00
			Max. Mx	24	-0.07	-0.05	0.00
		Top Girt	Max. My	6	-0.20	-0.02	0.01
			Max. Vy	24	0.05	-0.05	0.00
			Max. Vx	6	0.00	0.00	0.00
			Max Tension	8	0.32	0.00	0.00
			Max. Compression	10	-0.17	0.00	0.00
			Max. Mx	14	0.21	0.08	0.00
			Max. My	5	0.22	0.00	-0.00
T3	356.25 - 350	Leg	Max. Vy	14	0.07	0.00	0.00
			Max. Vx	5	0.00	0.00	0.00
			Max Tension	8	6.18	-0.07	-0.66
			Max. Compression	6	-9.20	-0.40	-0.80
			Max. Mx	5	-0.82	2.29	-0.01
		Diagonal	Max. My	7	-7.48	-0.10	1.53
			Max. Vy	11	2.97	1.41	-0.01
			Max. Vx	7	-2.00	-0.10	-0.96
			Max Tension	6	5.77	0.00	0.00
			Max. Compression	12	-5.45	0.00	0.00
		Top Girt	Max. Mx	7	-0.55	-0.06	-0.01
			Max. My	6	-4.44	-0.00	-0.09
			Max. Vy	25	0.05	-0.05	-0.00
			Max. Vx	6	0.02	-0.00	-0.09
			Max Tension	6	1.33	0.00	0.00
			Max. Compression	4	-1.28	0.00	0.00
			Max. Mx	14	0.32	0.08	0.00
T4	350 - 343.75	Leg	Max. My	5	-1.11	0.00	-0.00
			Max. Vy	14	-0.07	0.00	0.00
			Max. Vx	5	0.00	0.00	0.00
			Max Tension	12	5.30	0.43	0.78
			Max. Compression	2	-8.09	0.02	0.17
		Top Girt	Max. Mx	5	-1.54	-1.35	-0.02
			Max. Vy	14	-0.07	0.00	0.00
			Max. Vx	5	0.00	0.00	0.00
			Max Tension	7	-6.74	-0.19	-0.94

<b>tnxTower</b>  <b>Centek Engineering Inc.</b> 63-2 North Branford Rd. Branford, CT 06405 Phone: (203) 488-0580 FAX: (203) 488-8587	<b>Job</b> 16071.44 - CT2049	<b>Page</b> 72 of 111
	<b>Project</b> 370' Guyed Tower - 689 Old Colchester Road, Montville, CT	<b>Date</b> 11:00:57 11/01/16
	<b>Client</b> AT&T Mobility	<b>Designed by</b> TJJ

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Vy	5	-0.74	-1.35	-0.02
			Max. Vx	2	0.83	0.00	0.78
		Diagonal	Max Tension	5	3.66	0.00	0.00
			Max. Compression	5	-4.05	0.00	0.00
			Max. Mx	21	-0.20	0.04	-0.00
			Max. My	5	-4.02	0.02	0.01
			Max. Vy	21	-0.03	0.04	-0.00
			Max. Vx	5	-0.00	0.02	0.01
		Top Girt	Max Tension	8	9.83	0.00	0.00
			Max. Compression	6	-6.79	0.00	0.00
			Max. Mx	14	2.21	0.08	0.00
			Max. My	5	2.10	0.00	0.00
			Max. Vy	14	-0.06	0.00	0.00
			Max. Vx	5	-0.00	0.00	0.00
		Guy A	Bottom Tension	8	22.75		
			Top Tension	8	23.31		
			Top Cable Vert	8	19.63		
			Top Cable Norm	8	12.57		
			Top Cable Tan	8	0.02		
			Bot Cable Vert	8	-18.28		
			Bot Cable Norm	8	13.55		
			Bot Cable Tan	8	0.02		
		Guy B	Bottom Tension	12	23.15		
			Top Tension	12	23.70		
			Top Cable Vert	12	19.81		
			Top Cable Norm	12	13.01		
			Top Cable Tan	12	0.02		
			Bot Cable Vert	12	-18.47		
			Bot Cable Norm	12	13.96		
			Bot Cable Tan	12	0.02		
		Guy C	Bottom Tension	4	23.06		
			Top Tension	4	23.62		
			Top Cable Vert	4	19.90		
			Top Cable Norm	4	12.73		
			Top Cable Tan	4	0.02		
			Bot Cable Vert	4	-18.53		
			Bot Cable Norm	4	13.73		
			Bot Cable Tan	4	0.02		
		Torque Arm Top	Max Tension	11	22.28	0.00	0.00
			Max. Compression	1	0.00	0.00	0.00
			Max. Mx	23	17.66	0.13	0.00
			Max. My	5	22.05	0.00	-0.00
			Max. Vy	23	-0.09	0.00	0.00
			Max. Vx	5	0.00	0.00	0.00
		Torque Arm Bottom	Max Tension	1	0.00	0.00	0.00
			Max. Compression	4	-24.72	0.00	0.00
			Max. Mx	23	-20.47	0.19	0.00
			Max. My	5	-8.54	0.00	0.00
			Max. Vy	23	0.09	0.00	0.00
			Max. Vx	5	-0.00	0.00	0.00
T5	343.75 - 337.5	Leg	Max Tension	1	0.00	0.00	0.00
			Max. Compression	17	-41.64	0.02	-0.00
			Max. Mx	11	-17.69	0.28	0.19
			Max. My	10	-34.99	0.24	-0.24
			Max. Vy	11	0.10	0.28	-0.21
			Max. Vx	3	0.08	-0.10	0.21
		Diagonal	Max Tension	11	4.65	0.00	0.00
		Top Girt	Max Tension	1	0.00	0.00	0.00
			Max. Compression	8	-4.28	0.00	0.00
			Max. Mx	14	-2.39	0.08	0.00
			Max. My	5	-2.61	0.00	0.00

<b>tnxTower</b>  <b>Centek Engineering Inc.</b> 63-2 North Branford Rd. Branford, CT 06405 Phone: (203) 488-0580 FAX: (203) 488-8587	<b>Job</b>	16071.44 - CT2049	<b>Page</b>	73 of 111
	<b>Project</b>	370' Guyed Tower - 689 Old Colchester Road, Montville, CT	<b>Date</b>	11:00:57 11/01/16
	<b>Client</b>	AT&T Mobility	<b>Designed by</b>	TJL

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
T6	337.5 - 331.25	Leg	Max. Vy	14	0.06	0.00	0.00
			Max. Vx	5	-0.00	0.00	0.00
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	17	-42.52	-0.01	0.00
			Max. Mx	5	-40.44	0.08	-0.02
			Max. My	3	-31.08	-0.02	-0.06
			Max. Vy	11	-0.06	0.05	-0.02
		Diagonal Top Girt	Max. Vx	2	-0.05	0.00	0.04
			Max Tension	10	4.37	0.00	0.00
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	4	-3.09	0.00	0.00
			Max. Mx	14	-2.70	0.03	0.00
			Max. My	5	-2.89	0.00	0.00
			Max. Vy	14	-0.03	0.00	0.00
T7	331.25 - 325	Leg	Max. Vx	5	-0.00	0.00	0.00
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	17	-43.29	0.02	0.01
			Max. Mx	5	-13.19	0.07	0.03
			Max. My	3	-32.37	0.02	-0.08
			Max. Vy	11	0.06	0.05	-0.02
			Max. Vx	2	0.06	0.00	0.04
		Diagonal Top Girt	Max Tension	10	4.04	0.00	0.00
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	4	-2.99	0.00	0.00
			Max. Mx	14	-2.57	0.03	0.00
			Max. My	5	-2.96	0.00	-0.00
			Max. Vy	14	0.03	0.00	0.00
			Max. Vx	5	0.00	0.00	0.00
T8	325 - 318.75	Leg	Max Tension	1	0.00	0.00	0.00
			Max. Compression	25	-45.26	0.01	0.00
			Max. Mx	5	-43.11	-0.07	-0.00
			Max. My	3	-35.38	-0.04	-0.08
			Max. Vy	4	-0.20	0.03	-0.05
			Max. Vx	9	-0.29	-0.04	0.04
			Diagonal Top Girt	Max Tension	6	4.44	0.00
		Max Tension		1	0.00	0.00	0.00
		Max. Compression		4	-3.60	0.00	0.00
		Max. Mx		14	-3.11	0.03	0.00
		Max. My		5	-3.56	0.00	-0.00
		Max. Vy		14	-0.03	0.00	0.00
		Max. Vx		5	0.00	0.00	0.00
		T9	318.75 - 312.5	Leg	Max Tension	1	0.00
Max. Compression	25				-45.48	-0.05	-0.03
Max. Mx	11				-42.90	-0.19	-0.00
Max. My	8				-42.32	-0.00	0.18
Max. Vy	11				0.09	0.07	-0.00
Max. Vx	8				-0.09	-0.01	-0.07
Diagonal Top Girt	Max Tension				5	4.46	0.00
	Max Tension			1	0.00	0.00	0.00
	Max. Compression			12	-4.09	0.00	0.00
	Max. Mx			14	-3.62	0.03	0.00
	Max. My			5	-4.07	0.00	-0.00
	Max. Vy			14	-0.03	0.00	0.00
	Max. Vx			5	0.00	0.00	0.00
T10	312.5 - 306.25			Leg	Max Tension	1	0.00
		Max. Compression	25		-46.00	0.13	0.07
		Max. Mx	5		-41.75	-0.74	0.01
		Max. My	8		-41.17	0.00	-0.76
		Max. Vy	11		-0.19	0.74	0.03
		Diagonal	Max. Vx	8	0.19	0.00	-0.76
			Max Tension	5	4.80	0.00	0.00

<b>tnxTower</b>  <b>Centek Engineering Inc.</b> 63-2 North Branford Rd. Branford, CT 06405 Phone: (203) 488-0580 FAX: (203) 488-8587	<b>Job</b>	16071.44 - CT2049	<b>Page</b>	74 of 111
	<b>Project</b>	370' Guyed Tower - 689 Old Colchester Road, Montville, CT	<b>Date</b>	11:00:57 11/01/16
	<b>Client</b>	AT&T Mobility	<b>Designed by</b>	TJL

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft				
T11	306.25 - 300	Top Girt	Max Tension	1	0.00	0.00	0.00				
			Max. Compression	13	-4.09	0.00	0.00				
			Max. Mx	14	-3.72	0.03	0.00				
			Max. My	5	-4.07	0.00	-0.00				
			Max. Vy	14	0.03	0.00	0.00				
		T12	300 - 293.75	Leg	Max. Vx	5	0.00	0.00	0.00		
					Max Tension	1	0.00	0.00	0.00		
					Max. Compression	25	-48.69	0.21	0.14		
					Max. Mx	5	-41.52	1.67	0.00		
					Max. My	8	-33.63	0.09	1.69		
				T12	300 - 293.75	Diagonal	Max. Vy	11	1.88	0.74	0.03
							Max. Vx	2	1.91	0.05	0.69
							Max Tension	12	9.13	0.00	0.00
							Max. Compression	12	-5.94	0.00	0.00
Max. Mx	14						-4.16	0.08	0.00		
T12	300 - 293.75					Top Girt	Max. My	5	-5.76	0.00	-0.00
							Max. Vy	14	-0.06	0.00	0.00
							Max. Vx	5	0.00	0.00	0.00
							Max Tension	1	0.00	0.00	0.00
		Max. Compression	25				-40.13	0.02	-0.00		
		T12	300 - 293.75			Leg	Max. Mx	5	-32.21	-1.37	0.00
							Max. My	8	-23.52	0.09	-1.30
							Max. Vy	5	-0.67	-1.37	0.00
							Max. Vx	8	-0.68	0.09	-1.30
				Max Tension	5		3.12	0.00	0.00		
				T12	300 - 293.75	Diagonal	Max. Compression	8	-7.80	0.00	0.00
							Max. Mx	22	-1.93	0.05	-0.00
							Max. My	5	-7.43	0.01	0.01
							Max. Vy	22	-0.03	0.05	-0.00
Max. Vx	5						-0.00	0.01	0.01		
T12	300 - 293.75					Top Girt	Max Tension	8	12.08	0.00	0.00
							Max. Compression	6	-9.12	0.00	0.00
							Max. Mx	14	1.21	0.08	0.00
							Max. My	5	10.27	0.00	-0.00
		Max. Vy	14				0.06	0.00	0.00		
		T12	300 - 293.75			Guy A	Max. Vx	5	0.00	0.00	0.00
							Bottom Tension	8	25.62		
							Top Tension	8	26.10		
							Top Cable Vert	8	21.46		
				Top Cable Norm	8		14.84				
				T12	300 - 293.75	Guy A	Top Cable Tan	8	0.01		
							Bot Cable Vert	8	-20.30		
							Bot Cable Norm	8	15.63		
							Bot Cable Tan	8	0.02		
Bottom Tension	12						25.61				
T12	300 - 293.75					Guy B	Top Tension	12	26.07		
							Top Cable Vert	12	21.46		
							Top Cable Norm	12	14.81		
							Top Cable Tan	12	0.01		
		Bot Cable Vert	12				-20.32				
		T12	300 - 293.75			Guy B	Bot Cable Norm	12	15.58		
							Bot Cable Tan	12	0.02		
							Bottom Tension	4	25.54		
							Top Tension	4	26.02		
				Top Cable Vert	4		21.43				
				T12	300 - 293.75	Guy C	Top Cable Norm	4	14.76		
							Top Cable Tan	4	0.02		
							Bot Cable Vert	4	-20.25		
							Bot Cable Norm	4	15.55		
Bot Cable Tan	4						0.02				

<b>tnxTower</b>  <b>Centek Engineering Inc.</b> 63-2 North Branford Rd. Branford, CT 06405 Phone: (203) 488-0580 FAX: (203) 488-8587	<b>Job</b> 16071.44 - CT2049	<b>Page</b> 75 of 111
	<b>Project</b> 370' Guyed Tower - 689 Old Colchester Road, Montville, CT	<b>Date</b> 11:00:57 11/01/16
	<b>Client</b> AT&T Mobility	<b>Designed by</b> TJJ

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft		
T13	293.75 - 287.5	Torque Arm Top	Max Tension	5	23.42	0.00	0.00		
			Max. Compression	1	0.00	0.00	0.00		
			Max. Mx	23	16.39	0.13	0.00		
			Max. My	5	23.42	0.00	-0.00		
			Max. Vy	23	0.09	0.00	0.00		
			Max. Vx	5	0.00	0.00	0.00		
		Torque Arm Bottom	Max Tension	1	0.00	0.00	0.00	0.00	
			Max. Compression	8	-28.07	0.00	0.00		
			Max. Mx	23	-19.17	0.19	0.00		
			Max. My	24	-13.65	0.00	-0.00		
			Max. Vy	23	-0.09	0.00	0.00		
			Max. Vx	24	-0.00	0.00	0.00		
		T14	287.5 - 281.25	Leg	Max Tension	1	0.00	0.00	0.00
					Max. Compression	12	-89.43	0.01	-0.03
					Max. Mx	4	-39.18	0.14	0.01
					Max. My	8	-40.72	-0.01	0.09
Diagonal Top Girt	Max. Vy			5	-0.07	-0.13	-0.07		
	Max. Vx			8	0.07	-0.01	-0.04		
	Max Tension			5	6.90	0.00	0.00		
	Max Tension			1	0.00	0.00	0.00		
	Max. Compression			4	-3.06	0.00	0.00		
	Max. Mx			14	-0.83	0.08	0.00		
T15	281.25 - 275			Leg	Max. My	5	-2.68	0.00	-0.00
					Max. Vy	14	-0.06	0.00	0.00
					Max. Vx	5	0.00	0.00	0.00
					Max Tension	1	0.00	0.00	0.00
		Diagonal Top Girt	Max. Compression	12	-94.49	-0.07	0.00		
			Max. Mx	11	-92.36	-0.14	0.04		
			Max. My	2	-83.84	0.00	-0.13		
			Max. Vy	5	-0.08	-0.08	0.05		
			Max. Vx	8	-0.07	-0.01	-0.04		
			Max Tension	5	5.56	0.00	0.00		
T16	275 - 268.75	Leg	Max Tension	1	0.00	0.00	0.00		
			Max. Compression	5	-3.88	0.00	0.00		
			Max. Mx	14	-2.54	0.03	0.00		
			Max. My	5	-3.42	0.00	-0.00		
		Diagonal Top Girt	Max. Vy	14	-0.03	0.00	0.00		
			Max. Vx	5	0.00	0.00	0.00		
			Max Tension	2	1.90	0.03	-0.11		
			Max. Compression	12	-98.78	-0.03	-0.03		
			Max. Mx	5	-6.49	0.18	0.01		
			Max. My	2	-86.80	0.00	-0.16		
Leg	Max. Vy	11	-0.06	-0.06	0.02				
	Max. Vx	8	0.06	0.00	0.03				
	Max Tension	5	4.34	0.00	0.00				
	Max Tension	1	0.00	0.00	0.00				
	Max. Compression	5	-3.13	0.00	0.00				
	Max. Mx	14	-2.01	0.03	0.00				
	Max. My	5	-2.81	0.00	-0.00				
	Max. Vy	14	0.03	0.00	0.00				
Diagonal Top Girt	Max. Vx	5	0.00	0.00	0.00				
	Max Tension	2	6.07	0.01	-0.07				
	Max. Compression	12	-101.79	-0.05	-0.03				
	Max. Mx	5	-98.21	0.14	0.01				
	Max. My	2	-89.55	-0.01	-0.16				
	Max. Vy	5	0.05	0.06	0.03				
	Max. Vx	2	0.06	-0.01	-0.06				
	Max Tension	6	3.55	0.00	0.00				
Leg	Max Tension	1	0.00	0.00	0.00				
	Max. Compression	4	-2.96	0.00	0.00				
	Max. Mx	14	-2.01	0.03	0.00				

<b>tnxTower</b>  <b>Centek Engineering Inc.</b> 63-2 North Branford Rd. Branford, CT 06405 Phone: (203) 488-0580 FAX: (203) 488-8587	<b>Job</b> 16071.44 - CT2049	<b>Page</b> 76 of 111
	<b>Project</b> 370' Guyed Tower - 689 Old Colchester Road, Montville, CT	<b>Date</b> 11:00:57 11/01/16
	<b>Client</b> AT&T Mobility	<b>Designed by</b> TJL

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft	
T17	268.75 - 262.5	Leg	Max. My	24	-1.97	0.00	0.00	
			Max. Vy	14	0.03	0.00	0.00	
			Max. Vx	24	-0.00	0.00	0.00	
			Max Tension	2	8.59	0.01	-0.08	
			Max. Compression	8	-103.43	-0.01	0.06	
			Max. Mx	11	-1.65	-0.15	0.04	
			Max. My	2	-91.19	-0.00	-0.17	
			Max. Vy	5	-0.06	0.06	0.03	
			Max. Vx	8	-0.06	0.00	0.04	
			Diagonal Top Girt	Max Tension	6	3.02	0.00	0.00
				Max Tension	1	0.00	0.00	0.00
				Max. Compression	8	-2.98	0.00	0.00
				Max. Mx	14	-2.00	0.03	0.00
				Max. My	26	-1.94	0.00	0.00
Max. Vy	14	-0.03		0.00	0.00			
T18	262.5 - 256.25	Leg	Max. Vx	26	-0.00	0.00	0.00	
			Max Tension	2	9.56	0.01	-0.11	
			Max. Compression	8	-103.48	-0.03	0.02	
			Max. Mx	5	-100.07	0.14	0.01	
			Max. My	2	-91.69	-0.00	-0.15	
			Max. Vy	11	-0.06	-0.00	0.01	
			Max. Vx	8	0.07	-0.02	-0.02	
			Diagonal Top Girt	Max Tension	13	2.66	0.00	0.00
				Max Tension	1	0.00	0.00	0.00
				Max. Compression	8	-2.94	0.00	0.00
				Max. Mx	14	-1.96	0.03	0.00
				Max. My	26	-1.91	0.00	0.00
				Max. Vy	14	0.03	0.00	0.00
			T19	256.25 - 250	Leg	Max. Vx	26	0.00
Max Tension	2	7.16				0.02	-0.01	
Max. Compression	8	-103.13				-0.04	0.18	
Max. Mx	5	-71.65				0.23	0.01	
Max. My	2	7.00				0.04	-0.26	
Max. Vy	11	0.08				-0.00	0.01	
Max. Vx	8	-0.09				-0.02	-0.02	
Diagonal Top Girt	Max Tension	2				3.90	0.00	0.00
	Max Tension	1				0.00	0.00	0.00
	Max. Compression	8				-3.59	0.00	0.00
	Max. Mx	14				-2.40	0.03	0.00
	Max. My	26				-2.32	0.00	0.00
	Max. Vy	14				0.03	0.00	0.00
T20	250 - 243.75	Leg				Max. Vx	26	0.00
			Max Tension	2	4.32	0.04	-0.26	
			Max. Compression	8	-100.19	0.02	-0.53	
			Max. Mx	5	-72.96	-0.63	-0.01	
			Max. My	2	4.16	-0.02	0.56	
			Max. Vy	5	0.17	-0.63	-0.01	
			Max. Vx	13	0.19	-0.10	-0.19	
			Diagonal Top Girt	Max Tension	10	4.48	0.00	0.00
				Max Tension	1	0.00	0.00	0.00
				Max. Compression	8	-4.35	0.00	0.00
				Max. Mx	14	-2.97	0.08	0.00
				Max. My	26	-2.87	0.00	0.00
				Max. Vy	14	-0.06	0.00	0.00
			T21	243.75 - 237.5	Leg	Max. Vx	26	-0.00
Max Tension	1	0.00				0.00	0.00	
Max. Compression	7	-96.22				-0.14	-0.22	
Max. Mx	11	-75.12				-1.66	-0.01	
Max. My	13	-94.33				0.24	-1.41	
Max. Vy	5	-1.84				-0.63	-0.01	
Max. Vx	7	-1.52				-0.20	-0.50	

<b>tnxTower</b>  <b>Centek Engineering Inc.</b> 63-2 North Branford Rd. Branford, CT 06405 Phone: (203) 488-0580 FAX: (203) 488-8587	<b>Job</b>	16071.44 - CT2049	<b>Page</b>	77 of 111
	<b>Project</b>	370' Guyed Tower - 689 Old Colchester Road, Montville, CT	<b>Date</b>	11:00:57 11/01/16
	<b>Client</b>	AT&T Mobility	<b>Designed by</b>	TJL

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
T22	237.5 - 231.25	Diagonal	Max Tension	13	10.09	0.00	0.00
			Top Girt	Max Tension	1	0.00	0.00
		Leg	Max. Compression	6	-5.35	0.00	0.00
			Max. Mx	14	-3.00	0.07	0.00
			Max. My	26	-3.42	0.00	-0.00
			Max. Vy	14	-0.06	0.00	0.00
			Max. Vx	26	0.00	0.00	0.00
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	21	-89.26	-0.00	-0.08
			Max. Mx	5	-77.99	-0.32	0.01
			Max. My	8	-54.09	0.02	-0.28
			Max. Vy	6	-0.09	-0.15	-0.05
		Max. Vx	13	0.12	0.11	0.23	
		Diagonal	Max Tension	13	13.00	0.00	0.00
Top Girt	Max Tension		1	0.00	0.00	0.00	
T23	231.25 - 225	Diagonal	Max. Compression	13	-7.25	0.00	0.00
			Top Girt	Max. Mx	14	-2.89	0.07
		Leg	Max. My	13	-7.25	0.00	-0.00
			Max. Vy	14	-0.06	0.00	0.00
			Max. Vx	13	0.00	0.00	0.00
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	24	-88.23	0.13	0.01
			Max. Mx	12	-66.07	0.61	0.24
			Max. My	8	-66.31	0.08	-0.62
			Max. Vy	11	-0.13	0.45	0.03
			Max. Vx	13	-0.15	0.28	0.47
			Max Tension	13	14.04	0.00	0.00
		Diagonal	Max Tension	1	0.00	0.00	0.00
			Top Girt	Max. Compression	13	-8.40	0.00
T24	225 - 218.75	Diagonal	Max. Mx	23	-3.51	0.07	0.00
			Top Girt	Max. My	13	-8.40	0.00
		Leg	Max. Vy	23	0.06	0.00	0.00
			Max. Vx	13	0.00	0.00	0.00
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	23	-66.04	0.06	-0.03
			Max. Mx	12	-46.01	0.61	0.24
			Max. My	8	-46.53	0.08	-0.62
			Max. Vy	11	0.47	0.61	0.01
			Max. Vx	8	-0.48	0.08	-0.62
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	13	-14.39	0.00	0.00
		Diagonal	Max. Mx	13	-3.22	-0.09	0.01
			Top Girt	Max. My	11	-12.30	0.02
Guy A	Max. Vy	22	0.05	-0.08	0.00		
	Max. Vx	11	0.01	0.00	0.00		
	Max Tension	8	16.23	0.00	0.00		
	Max. Compression	2	-7.32	0.00	0.00		
	Max. Mx	14	4.78	0.07	0.00		
	Max. My	13	0.73	0.00	-0.00		
	Max. Vy	14	0.06	0.00	0.00		
	Max. Vx	13	0.00	0.00	0.00		
	Bottom Tension	8	22.63				
	Top Tension	8	22.89				
Guy B	Top Cable Vert	8	16.73				
	Top Cable Norm	8	15.63				
	Top Cable Tan	8	0.01				
	Bot Cable Vert	8	-16.00				
	Bot Cable Norm	8	16.00				
	Bot Cable Tan	8	0.01				
	Bottom Tension	12	22.67				
	Top Tension	12	22.92				



<b>tnxTower</b>  <b>Centek Engineering Inc.</b> 63-2 North Branford Rd. Branford, CT 06405 Phone: (203) 488-0580 FAX: (203) 488-8587	<b>Job</b> 16071.44 - CT2049	<b>Page</b> 78 of 111
	<b>Project</b> 370' Guyed Tower - 689 Old Colchester Road, Montville, CT	<b>Date</b> 11:00:57 11/01/16
	<b>Client</b> AT&T Mobility	<b>Designed by</b> TJL

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Top Cable Vert	12	16.71		
			Top Cable Norm	12	15.69		
			Top Cable Tan	12	0.01		
			Bot Cable Vert	12	-15.99		
			Bot Cable Norm	12	16.06		
			Bot Cable Tan	12	0.01		
		Guy C	Bottom Tension	4	22.38		
			Top Tension	4	22.65		
			Top Cable Vert	4	16.62		
			Top Cable Norm	4	15.38		
			Top Cable Tan	4	0.01		
			Bot Cable Vert	4	-15.88		
			Bot Cable Norm	4	15.77		
			Bot Cable Tan	4	0.01		
		Torque Arm Top	Max Tension	11	21.91	0.00	0.00
			Max. Compression	1	0.00	0.00	0.00
			Max. Mx	14	12.09	0.13	0.00
			Max. My	13	4.74	0.00	-0.00
			Max. Vy	14	-0.08	0.00	0.00
			Max. Vx	13	0.00	0.00	0.00
		Torque Arm Bottom	Max Tension	1	0.00	0.00	0.00
			Max. Compression	5	-23.03	0.00	0.00
			Max. Mx	15	-14.30	0.18	0.00
			Max. My	26	-9.26	0.00	0.00
			Max. Vy	15	-0.08	0.00	0.00
			Max. Vx	26	-0.00	0.00	0.00
T25	218.75 - 212.5	Leg	Max Tension	1	0.00	0.00	0.00
			Max. Compression	25	-111.44	-0.05	-0.02
			Max. Mx	5	-107.14	-0.49	-0.18
			Max. My	7	-94.33	-0.19	-0.39
			Max. Vy	5	-0.17	-0.49	-0.18
			Max. Vx	2	0.14	-0.01	0.37
		Diagonal	Max Tension	5	7.75	0.00	0.00
		Top Girt	Max Tension	23	5.77	0.00	0.00
			Max. Compression	1	0.00	0.00	0.00
			Max. Mx	14	4.79	0.07	0.00
			Max. My	13	2.58	0.00	-0.00
			Max. Vy	14	0.06	0.00	0.00
			Max. Vx	13	0.00	0.00	0.00
T26	212.5 - 206.25	Leg	Max Tension	1	0.00	0.00	0.00
			Max. Compression	25	-113.86	-0.01	-0.00
			Max. Mx	5	-112.25	0.22	0.04
			Max. My	2	-109.77	0.02	-0.21
			Max. Vy	5	0.08	0.04	0.03
			Max. Vx	13	-0.07	-0.02	-0.05
		Diagonal	Max Tension	5	6.15	0.00	0.00
		Top Girt	Max Tension	1	0.00	0.00	0.00
			Max. Compression	5	-4.36	0.00	0.00
			Max. Mx	14	-1.06	0.03	0.00
			Max. My	13	-1.98	0.00	-0.00
			Max. Vy	14	0.03	0.00	0.00
			Max. Vx	13	0.00	0.00	0.00
T27	206.25 - 200	Leg	Max Tension	1	0.00	0.00	0.00
			Max. Compression	3	-116.12	0.01	-0.09
			Max. Mx	5	-115.67	0.16	-0.02
			Max. My	2	-111.67	0.01	-0.15
			Max. Vy	11	-0.07	-0.02	0.01
			Max. Vx	13	0.06	-0.02	-0.05
		Diagonal	Max Tension	5	4.06	0.00	0.00
		Top Girt	Max Tension	1	0.00	0.00	0.00
			Max. Compression	5	-3.26	0.00	0.00

<b>tnxTower</b>  <b>Centek Engineering Inc.</b> 63-2 North Branford Rd. Branford, CT 06405 Phone: (203) 488-0580 FAX: (203) 488-8587	<b>Job</b> 16071.44 - CT2049	<b>Page</b> 79 of 111
	<b>Project</b> 370' Guyed Tower - 689 Old Colchester Road, Montville, CT	<b>Date</b> 11:00:57 11/01/16
	<b>Client</b> AT&T Mobility	<b>Designed by</b> TJL

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
T28	200 - 175	Leg	Max. Mx	14	-0.92	0.03	0.00
			Max. My	13	-1.66	0.00	-0.00
			Max. Vy	14	-0.03	0.00	0.00
			Max. Vx	13	0.00	0.00	0.00
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	25	-117.98	-0.02	-0.07
			Max. Mx	6	-108.47	0.52	0.34
			Max. My	2	-109.25	-0.16	-0.72
			Max. Vy	6	-0.57	-0.24	-0.03
			Max. Vx	7	-0.64	0.02	-0.13
			Max Tension	3	6.44	0.00	0.00
			Max Tension	25	2.04	0.00	0.00
		Diagonal Horizontal	Max. Compression	13	-3.20	0.00	0.00
			Max. Mx	14	1.77	0.03	0.00
			Max. My	6	1.95	0.00	-0.00
			Max. Vy	14	-0.03	0.00	0.00
			Max. Vx	6	0.00	0.00	0.00
			Max Tension	25	2.04	0.00	0.00
		Secondary Horizontal	Max. Compression	25	-2.04	0.00	0.00
			Max. Mx	14	1.77	0.03	0.00
			Max. My	6	1.95	0.00	-0.00
			Max. Vy	14	-0.03	0.00	0.00
			Max. Vx	6	0.00	0.00	0.00
			Max Tension	1	0.00	0.00	0.00
Top Girt	Max. Compression		4	-2.27	0.00	0.00	
	Max. Mx		14	-0.88	0.03	0.00	
	Max. My		13	-1.63	0.00	-0.00	
	Max. Vy		14	-0.03	0.00	0.00	
	Max. Vx		13	0.00	0.00	0.00	
	Max Tension		1	0.00	0.00	0.00	
T29	175 - 168.75	Leg	Max. Compression	25	-116.74	-0.08	-0.04
			Max. Mx	11	-47.29	0.43	0.05
			Max. My	8	-70.29	-0.02	-0.52
			Max. Vy	11	0.15	0.43	0.05
			Max. Vx	8	-0.15	-0.02	-0.52
			Max Tension	1	0.00	0.00	0.00
		Diagonal Top Girt	Max. Compression	3	-4.67	0.00	0.00
			Max. Mx	14	-1.55	0.03	0.00
			Max. My	6	-3.94	0.00	-0.00
			Max. Vy	14	-0.03	0.00	0.00
			Max. Vx	6	0.00	0.00	0.00
			Max Tension	1	0.00	0.00	0.00
T30	168.75 - 162.5	Leg	Max. Compression	23	-115.68	0.11	-0.03
			Max. Mx	11	-95.17	0.51	-0.03
			Max. My	8	-87.39	-0.03	-0.52
			Max. Vy	5	0.17	-0.51	-0.03
			Max. Vx	8	0.16	-0.03	-0.52
			Max Tension	1	0.00	0.00	0.00
		Diagonal Top Girt	Max. Compression	3	-5.81	0.00	0.00
			Max. Mx	14	-2.65	0.03	0.00
			Max. My	6	-4.64	0.00	-0.00
			Max. Vy	14	0.03	0.00	0.00
			Max. Vx	6	0.00	0.00	0.00
			Max Tension	1	0.00	0.00	0.00
T31	162.5 - 156.25	Leg	Max. Compression	24	-123.46	-0.07	-0.01
			Max. Mx	11	-105.32	0.51	-0.03
			Max. My	8	-97.63	-0.03	-0.52
			Max. Vy	5	-0.18	-0.51	-0.03
			Max. Vx	1	0.00	0.00	0.00
			Max Tension	1	0.00	0.00	0.00

<b>tnxTower</b>  <b>Centek Engineering Inc.</b> 63-2 North Branford Rd. Branford, CT 06405 Phone: (203) 488-0580 FAX: (203) 488-8587	<b>Job</b>	16071.44 - CT2049	<b>Page</b>	80 of 111
	<b>Project</b>	370' Guyed Tower - 689 Old Colchester Road, Montville, CT	<b>Date</b>	11:00:57 11/01/16
	<b>Client</b>	AT&T Mobility	<b>Designed by</b>	TJL

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Vx	8	-0.16	-0.03	-0.52
		Diagonal	Max Tension	7	5.06	0.00	0.00
		Top Girt	Max Tension	2	6.98	0.00	0.00
			Max. Compression	4	-2.05	0.00	0.00
			Max. Mx	14	2.28	0.07	0.00
			Max. My	6	0.49	0.00	-0.00
			Max. Vy	14	0.06	0.00	0.00
			Max. Vx	6	0.00	0.00	0.00
		Guy A	Bottom Tension	9	24.04		
			Top Tension	9	24.23		
			Top Cable Vert	9	15.78		
			Top Cable Norm	9	18.38		
			Top Cable Tan	9	0.06		
			Bot Cable Vert	9	-15.24		
			Bot Cable Norm	9	18.59		
			Bot Cable Tan	9	0.23		
		Guy B	Bottom Tension	13	24.01		
			Top Tension	13	24.20		
			Top Cable Vert	13	15.80		
			Top Cable Norm	13	18.32		
			Top Cable Tan	13	0.05		
			Bot Cable Vert	13	-15.28		
			Bot Cable Norm	13	18.52		
			Bot Cable Tan	13	0.22		
		Guy C	Bottom Tension	3	23.99		
			Top Tension	3	24.19		
			Top Cable Vert	3	15.74		
			Top Cable Norm	3	18.37		
			Top Cable Tan	3	0.06		
			Bot Cable Vert	3	-15.18		
			Bot Cable Norm	3	18.58		
			Bot Cable Tan	3	0.23		
T32	156.25 - 150	Leg	Max Tension	1	0.00	0.00	0.00
			Max. Compression	24	-125.34	0.00	0.00
			Max. Mx	5	-111.11	0.22	0.02
			Max. My	2	-111.24	-0.03	-0.21
			Max. Vy	5	0.09	-0.02	-0.01
			Max. Vx	2	-0.07	-0.00	0.02
		Diagonal	Max Tension	7	3.91	0.00	0.00
		Top Girt	Max Tension	1	0.00	0.00	0.00
			Max. Compression	7	-2.80	0.00	0.00
			Max. Mx	14	-1.04	0.03	0.00
			Max. My	6	-2.29	0.00	-0.00
			Max. Vy	14	-0.03	0.00	0.00
			Max. Vx	6	0.00	0.00	0.00
T33	150 - 125	Leg	Max Tension	1	0.00	0.00	0.00
			Max. Compression	17	-128.49	0.02	-0.02
			Max. Mx	6	-48.35	0.25	0.04
			Max. My	2	-114.32	0.01	-0.29
			Max. Vy	10	0.12	0.03	-0.03
			Max. Vx	3	0.15	-0.01	0.02
		Diagonal	Max Tension	6	5.36	0.00	0.00
		Horizontal	Max Tension	17	2.23	0.00	0.00
			Max. Compression	6	-3.07	0.00	0.00
			Max. Mx	14	2.03	0.03	0.00
			Max. My	6	1.97	0.00	-0.00
			Max. Vy	14	0.02	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	4	-2.10	0.00	0.00
			Max. Mx	14	-0.94	0.03	0.00

<b>tnxTower</b>  <b>Centek Engineering Inc.</b> 63-2 North Branford Rd. Branford, CT 06405 Phone: (203) 488-0580 FAX: (203) 488-8587	<b>Job</b>	16071.44 - CT2049	<b>Page</b>	81 of 111
	<b>Project</b>	370' Guyed Tower - 689 Old Colchester Road, Montville, CT	<b>Date</b>	11:00:57 11/01/16
	<b>Client</b>	AT&T Mobility	<b>Designed by</b>	TJL

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
T34	125 - 100	Leg	Max. My	6	-1.94	0.00	-0.00
			Max. Vy	14	0.02	0.00	0.00
			Max. Vx	6	0.00	0.00	0.00
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	16	-128.60	0.01	-0.03
			Max. Mx	11	-82.50	0.60	-0.15
			Max. My	2	-95.85	0.04	0.65
			Max. Vy	5	0.17	-0.60	-0.15
			Max. Vx	2	-0.18	0.04	0.65
			Max Tension	5	12.65	0.00	0.00
		Diagonal Horizontal	Max Tension	16	2.23	0.00	0.00
			Max. Compression	5	-7.41	0.00	0.00
			Max. Mx	14	2.14	0.03	0.00
			Max. My	6	1.93	0.00	0.00
		Top Girt	Max. Vy	14	-0.02	0.00	0.00
			Max. Vx	6	-0.00	0.00	0.00
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	6	-4.09	0.00	0.00
			Max. Mx	14	-1.36	0.03	0.00
			Max. My	6	-4.09	0.00	0.00
T35	100 - 93.75	Leg	Max. Vy	14	-0.02	0.00	0.00
			Max. Vx	6	-0.00	0.00	0.00
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	25	-104.48	0.03	0.03
			Max. Mx	11	-55.59	0.60	-0.15
			Max. My	2	-69.92	0.04	0.65
			Max. Vy	5	-0.41	-0.60	-0.15
			Max. Vx	2	0.44	0.04	0.65
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	22	-15.29	0.00	0.00
		Diagonal	Max. Mx	25	-14.06	-0.09	0.00
			Max. My	11	-13.74	0.01	0.02
			Max. Vy	25	0.05	-0.09	0.00
			Max. Vx	11	0.01	0.00	0.00
		Top Girt	Max Tension	12	15.28	0.00	0.00
			Max. Compression	2	-4.88	0.00	0.00
		Guy A	Max. Mx	14	8.08	0.07	0.00
			Max. My	6	10.38	0.00	-0.00
			Max. Vy	14	0.06	0.00	0.00
			Max. Vx	6	0.00	0.00	0.00
Bottom Tension	7		13.69				
Top Tension	7		13.76				
Top Cable Vert	7		6.54				
Top Cable Norm	7		12.11				
Top Cable Tan	7		0.04				
Bot Cable Vert	7		-6.29				
Guy B	Bot Cable Norm	7	12.16				
	Bot Cable Tan	7	0.11				
	Bottom Tension	13	13.77				
	Top Tension	13	13.83				
	Top Cable Vert	13	6.49				
	Top Cable Norm	13	12.22				
	Top Cable Tan	13	0.04				
	Bot Cable Vert	13	-6.25				
Guy C	Bot Cable Norm	13	12.27				
	Bot Cable Tan	13	0.11				
	Bottom Tension	5	13.61				
	Top Tension	5	13.68				
	Top Cable Vert	5	6.55				
	Top Cable Norm	5	12.01				
	Top Cable Tan	5	0.03				

<b>tnxTower</b>  <b>Centek Engineering Inc.</b> 63-2 North Branford Rd. Branford, CT 06405 Phone: (203) 488-0580 FAX: (203) 488-8587	<b>Job</b> 16071.44 - CT2049	<b>Page</b> 82 of 111
	<b>Project</b> 370' Guyed Tower - 689 Old Colchester Road, Montville, CT	<b>Date</b> 11:00:57 11/01/16
	<b>Client</b> AT&T Mobility	<b>Designed by</b> TJL

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft	
T36	93.75 - 87.5	Torque Arm Top	Bot Cable Vert	5	-6.29			
			Bot Cable Norm	5	12.06			
			Bot Cable Tan	5	0.10			
			Max Tension	11	14.54	0.00	0.00	
			Max. Compression	2	-1.30	0.00	0.00	
			Max. Mx	23	8.81	0.12	0.00	
			Max. My	6	11.24	0.00	-0.00	
			Max. Vy	23	-0.08	0.00	0.00	
			Max. Vx	6	0.00	0.00	0.00	
			Torque Arm Bottom	Max Tension	6	1.63	0.00	0.00
				Max. Compression	5	-11.30	0.00	0.00
				Max. Mx	22	-5.97	0.17	0.00
		Max. My		6	1.63	0.00	-0.00	
		Max. Vy		22	-0.08	0.00	0.00	
		Max. Vx		6	0.00	0.00	0.00	
		Leg	Max Tension	1	0.00	0.00	0.00	
			Max. Compression	15	-138.69	0.03	-0.02	
			Max. Mx	11	-98.09	0.36	-0.07	
			Max. My	8	-87.85	0.00	-0.30	
			Max. Vy	6	0.12	0.05	0.03	
			Max. Vx	8	0.14	-0.03	-0.03	
			Diagonal Top Girt	Max Tension	11	6.19	0.00	0.00
				Max Tension	21	8.08	0.00	0.00
				Max. Compression	1	0.00	0.00	0.00
Max. Mx	14			7.68	0.07	0.00		
Max. My	6			5.34	0.00	0.00		
Max. Vy	14			0.06	0.00	0.00		
T37	87.5 - 81.25	Leg	Max. Vx	6	-0.00	0.00	0.00	
			Max Tension	1	0.00	0.00	0.00	
			Max. Compression	15	-139.53	-0.01	-0.01	
			Max. Mx	12	-97.41	0.11	0.06	
			Max. My	7	-104.85	-0.00	-0.12	
			Max. Vy	11	0.08	0.10	0.05	
		Diagonal Top Girt	Max. Vx	7	-0.07	-0.00	-0.12	
			Max Tension	11	4.52	0.00	0.00	
			Max Tension	1	0.00	0.00	0.00	
			Max. Compression	11	-3.34	0.00	0.00	
			Max. Mx	14	-0.82	0.03	0.00	
			Max. My	6	-2.94	0.00	0.00	
T38	81.25 - 75	Leg	Max. Vy	14	-0.02	0.00	0.00	
			Max. Vx	6	-0.00	0.00	0.00	
			Max Tension	1	0.00	0.00	0.00	
			Max. Compression	15	-140.86	0.00	-0.01	
			Max. Mx	5	-91.72	0.12	-0.01	
			Max. My	7	-104.28	0.01	0.09	
		Diagonal Top Girt	Max. Vy	5	0.06	0.01	0.01	
			Max. Vx	7	0.05	-0.00	-0.01	
			Max Tension	12	2.94	0.00	0.00	
			Max Tension	1	0.00	0.00	0.00	
			Max. Compression	11	-2.32	0.00	0.00	
			Max. Mx	14	-0.49	0.03	0.00	
T39	75 - 50	Leg	Max. My	6	-2.06	0.00	0.00	
			Max. Vy	14	0.02	0.00	0.00	
			Max. Vx	6	-0.00	0.00	0.00	
			Max Tension	1	0.00	0.00	0.00	
			Max. Compression	26	-143.47	0.04	0.13	
			Max. Mx	5	-99.55	-0.61	-0.10	
		Diagonal	Max. My	2	-106.06	-0.06	0.55	
			Max. Vy	5	0.17	-0.61	-0.10	
			Max. Vx	13	0.17	0.01	0.03	
			Max Tension	3	4.90	0.00	0.00	

<b>tnxTower</b>  <b>Centek Engineering Inc.</b> 63-2 North Branford Rd. Branford, CT 06405 Phone: (203) 488-0580 FAX: (203) 488-8587	<b>Job</b> 16071.44 - CT2049	<b>Page</b> 83 of 111
	<b>Project</b> 370' Guyed Tower - 689 Old Colchester Road, Montville, CT	<b>Date</b> 11:00:57 11/01/16
	<b>Client</b> AT&T Mobility	<b>Designed by</b> TJJ

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft	
T40	50 - 25	Horizontal	Max Tension	26	2.49	0.00	0.00	
			Max. Compression	6	-2.77	0.00	0.00	
			Max. Mx	14	2.38	0.03	0.00	
			Max. My	6	1.91	0.00	0.00	
			Max. Vy	14	0.02	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	4	-1.59	0.00	0.00	
			Max. Mx	14	-0.48	0.03	0.00	
			Max. My	6	-1.46	0.00	0.00	
			Max. Vy	14	0.02	0.00	0.00	
			Max. Vx	6	-0.00	0.00	0.00	
		Leg	Max Tension	1	0.00	0.00	0.00	
			Max. Compression	18	-150.54	0.00	-0.00	
			Max. Mx	5	-105.87	-0.61	-0.10	
			Max. My	2	-110.81	-0.06	0.55	
			Max. Vy	5	-0.16	-0.61	-0.10	
			Max. Vx	2	0.14	-0.06	0.55	
			Diagonal	Max Tension	11	5.27	0.00	0.00
				Max Tension	18	2.61	0.00	0.00
				Max. Compression	11	-2.97	0.00	0.00
				Max. Mx	14	2.48	0.03	0.00
				Max. My	6	2.01	0.00	0.00
				Max. Vy	14	-0.02	0.00	0.00
			Horizontal	Max. Vx	6	-0.00	0.00	0.00
				Max Tension	6	4.59	0.00	0.00
				Max. Compression	4	-0.90	0.00	0.00
				Max. Mx	14	2.35	-0.04	0.00
				Max. My	6	0.38	0.00	-0.00
				Max. Vy	14	0.03	0.00	0.00
		Top Girt	Max. Vx	6	0.00	0.00	0.00	
			Bottom Tension	9	12.84			
			Top Tension	9	12.88			
			Top Cable Vert	9	5.64			
			Top Cable Norm	9	11.58			
			Top Cable Tan	9	0.00			
			Bot Cable Vert	9	-5.51			
			Bot Cable Norm	9	11.60			
			Bot Cable Tan	9	0.06			
			Bottom Tension	11	12.59			
			Top Tension	11	12.63			
			Top Cable Vert	11	5.12			
Guy B	Top Cable Norm	11	11.54					
	Top Cable Tan	11	0.00					
	Bot Cable Vert	11	-4.99					
	Bot Cable Norm	11	11.56					
	Bot Cable Tan	11	0.07					
	Bottom Tension	3	13.01					
	Top Tension	3	13.04					
	Top Cable Vert	3	5.85					
	Top Cable Norm	3	11.66					
	Top Cable Tan	3	0.00					
	Bot Cable Vert	3	-5.72					
	Bot Cable Norm	3	11.68					
Guy C	Bot Cable Tan	3	0.06					
	Max Tension	1	0.00	0.00	0.00			
	Max. Compression	17	-151.68	-0.11	0.06			
	Max. Mx	18	-151.26	-1.82	0.96			
	Max. My	21	-150.28	-0.03	-1.96			
	Max. Vy	18	0.38	-1.82	0.96			
Leg	Max. Vx	21	0.40	-0.03	-1.96			

<b>tnxTower</b>  <b>Centek Engineering Inc.</b> 63-2 North Branford Rd. Branford, CT 06405 Phone: (203) 488-0580 FAX: (203) 488-8587	<b>Job</b> 16071.44 - CT2049	<b>Page</b> 84 of 111
	<b>Project</b> 370' Guyed Tower - 689 Old Colchester Road, Montville, CT	<b>Date</b> 11:00:57 11/01/16
	<b>Client</b> AT&T Mobility	<b>Designed by</b> TJL

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
		Diagonal	Max Tension	3	3.40	0.00	0.00
		Horizontal	Max Tension	17	2.63	0.00	0.00
			Max. Compression	17	-2.63	0.00	0.00
			Max. Mx	14	2.55	0.02	0.00
			Max. My	6	2.01	0.00	0.00
			Max. Vy	14	-0.02	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	4	-1.52	0.00	0.00
			Max. Mx	14	-0.25	0.02	0.00
			Max. My	6	-1.18	0.00	0.00
			Max. Vy	14	-0.02	0.00	0.00
			Max. Vx	6	-0.00	0.00	0.00
		Base Beam	Max Tension	6	0.04	-314.61	-0.01
			Max. Compression	4	-3.06	1.55	0.00
			Max. Mx	19	-150.14	-431.42	-0.87
			Max. My	6	-109.80	-315.31	2.40
			Max. Vy	15	-150.15	-431.42	1.29
			Max. Vx	6	-0.83	-315.17	-2.40

### Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
Guy C @ 251.45 ft Elev -12.2 ft Azimuth 240 deg	Max. Vert	10	-6.68	-3.11	1.79
	Max. H <sub>x</sub>	10	-6.68	-3.11	1.79
	Max. H <sub>z</sub>	3	-34.67	-21.79	13.59
	Min. Vert	4	-36.22	-23.26	13.45
	Min. H <sub>x</sub>	4	-36.22	-23.26	13.45
	Min. H <sub>z</sub>	10	-6.68	-3.11	1.79
Guy B @ 247.51 ft Elev 1.81 ft Azimuth 120 deg	Max. Vert	6	-6.16	2.92	1.68
	Max. H <sub>x</sub>	12	-36.03	23.61	13.65
	Max. H <sub>z</sub>	13	-34.36	22.07	13.72
	Min. Vert	12	-36.03	23.61	13.65
	Min. H <sub>x</sub>	6	-6.16	2.92	1.68
	Min. H <sub>z</sub>	6	-6.16	2.92	1.68
Guy A @ 247.15 ft Elev -5.8 ft Azimuth 0 deg	Max. Vert	2	-6.52	-0.00	-3.48
	Max. H <sub>x</sub>	11	-22.55	1.85	-15.92
	Max. H <sub>z</sub>	2	-6.52	-0.00	-3.48
	Min. Vert	8	-36.51	0.00	-27.05
	Min. H <sub>x</sub>	5	-22.37	-1.85	-15.80
	Min. H <sub>z</sub>	8	-36.51	0.00	-27.05
Guy C @ 227.42 ft Elev -10.07 ft Azimuth 240 deg	Max. Vert	10	-5.82	-2.93	1.69
	Max. H <sub>x</sub>	10	-5.82	-2.93	1.69

<b>tnxTower</b>  <b>Centek Engineering Inc.</b> 63-2 North Branford Rd. Branford, CT 06405 Phone: (203) 488-0580 FAX: (203) 488-8587	<b>Job</b>	16071.44 - CT2049	<b>Page</b>	85 of 111
	<b>Project</b>	370' Guyed Tower - 689 Old Colchester Road, Montville, CT	<b>Date</b>	11:00:57 11/01/16
	<b>Client</b>	AT&T Mobility	<b>Designed by</b>	TJL

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
Guy B @ 219.43 ft Elev 1.23 ft Azimuth 120 deg	Max. H <sub>z</sub>	3	-70.08	-51.98	31.57
	Min. Vert	4	-71.86	-53.95	31.16
	Min. H <sub>x</sub>	4	-71.86	-53.95	31.16
	Min. H <sub>z</sub>	10	-5.82	-2.93	1.69
	Max. Vert	6	-5.47	2.73	1.58
	Guy A @ 224.79 ft Elev -5.41 ft Azimuth 0 deg	Max. H <sub>x</sub>	12	-71.92	54.28
Max. H <sub>z</sub>		13	-69.77	52.04	31.58
Min. Vert		12	-71.92	54.28	31.34
Min. H <sub>x</sub>		6	-5.47	2.73	1.58
Min. H <sub>z</sub>		6	-5.47	2.73	1.58
Max. Vert		2	-5.62	-0.00	-3.26
Guy C @ 206.73 ft Elev -8.98 ft Azimuth 240 deg	Max. H <sub>x</sub>	11	-38.70	2.74	-32.77
	Max. H <sub>z</sub>	2	-5.62	-0.00	-3.26
	Min. Vert	8	-72.30	0.01	-62.97
	Min. H <sub>x</sub>	5	-38.33	-2.74	-32.46
	Min. H <sub>z</sub>	8	-72.30	0.01	-62.97
	Max. Vert	10	-0.23	-0.28	0.16
Guy B @ 193.65 ft Elev 0.72 ft Azimuth 120 deg	Max. H <sub>x</sub>	10	-0.23	-0.28	0.16
	Max. H <sub>z</sub>	3	-27.45	-36.23	21.42
	Min. Vert	3	-27.45	-36.23	21.42
	Min. H <sub>x</sub>	5	-27.31	-36.50	20.53
	Min. H <sub>z</sub>	10	-0.23	-0.28	0.16
	Max. Vert	6	-0.22	0.27	0.15
Guy A @ 201.41 ft Elev -4.96 ft Azimuth 0 deg	Max. H <sub>x</sub>	11	-27.31	36.76	20.69
	Max. H <sub>z</sub>	13	-27.34	36.36	21.46
	Min. Vert	13	-27.34	36.36	21.46
	Min. H <sub>x</sub>	6	-0.22	0.27	0.15
	Min. H <sub>z</sub>	6	-0.22	0.27	0.15
	Max. Vert	2	-0.23	-0.00	-0.32
Guy C @ 114.41 ft Elev -5.4 ft Azimuth 240 deg	Max. H <sub>x</sub>	11	-14.35	0.92	-22.17
	Max. H <sub>z</sub>	2	-0.23	-0.00	-0.32
	Min. Vert	9	-27.43	0.43	-42.19
	Min. H <sub>x</sub>	5	-14.20	-0.92	-21.94
	Min. H <sub>z</sub>	9	-27.43	0.43	-42.19
	Max. Vert	10	-0.03	-0.09	0.05
Guy B @ 115.63 ft Elev 0.5 ft	Max. H <sub>x</sub>	10	-0.03	-0.09	0.05
	Max. H <sub>z</sub>	3	-5.72	-10.09	5.90
	Min. Vert	3	-5.72	-10.09	5.90
	Min. H <sub>x</sub>	5	-5.71	-10.14	5.78
	Min. H <sub>z</sub>	10	-0.03	-0.09	0.05
	Max. Vert	6	-0.04	0.11	0.06



<b>tnxTower</b>  <b>Centek Engineering Inc.</b> 63-2 North Branford Rd. Branford, CT 06405 Phone: (203) 488-0580 FAX: (203) 488-8587	<b>Job</b> 16071.44 - CT2049	<b>Page</b> 86 of 111
	<b>Project</b> 370' Guyed Tower - 689 Old Colchester Road, Montville, CT	<b>Date</b> 11:00:57 11/01/16
	<b>Client</b> AT&T Mobility	<b>Designed by</b> TJL

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
Azimuth 120 deg	Max. H <sub>x</sub>	11	-4.99	10.04	5.72
	Max. H <sub>z</sub>	13	-4.98	9.95	5.81
	Min. Vert	11	-4.99	10.04	5.72
	Min. H <sub>x</sub>	6	-0.04	0.11	0.06
	Min. H <sub>z</sub>	6	-0.04	0.11	0.06
Guy A @ 114.04 ft Elev -3.6 ft Azimuth 0 deg	Max. Vert	2	-0.03	-0.00	-0.11
Mast	Max. H <sub>x</sub>	11	-2.89	0.13	-6.08
	Max. H <sub>z</sub>	2	-0.03	-0.00	-0.11
	Min. Vert	9	-5.51	0.06	-11.60
	Min. H <sub>x</sub>	5	-2.86	-0.13	-6.03
	Min. H <sub>z</sub>	9	-5.51	0.06	-11.60
	Max. Vert	19	450.17	-0.41	0.22
	Max. H <sub>x</sub>	12	300.38	1.14	0.74
	Max. H <sub>z</sub>	12	300.38	1.14	0.74
	Max. M <sub>x</sub>	1	0.00	-0.04	0.05
	Max. M <sub>z</sub>	1	0.00	-0.04	0.05
	Max. Torsion	1	0.00	-0.04	0.05
	Min. Vert	1	197.99	-0.04	0.05
	Min. H <sub>x</sub>	4	298.54	-1.20	0.66
	Min. H <sub>z</sub>	8	299.88	-0.10	-1.25
	Min. M <sub>x</sub>	1	0.00	-0.04	0.05
Min. M <sub>z</sub>	1	0.00	-0.04	0.05	
Min. Torsion	1	0.00	-0.04	0.05	

### Tower Mast Reaction Summary

Load Combination	Vertical K	Shear <sub>x</sub> K	Shear <sub>z</sub> K	Overturning Moment, M <sub>x</sub> kip-ft	Overturning Moment, M <sub>z</sub> kip-ft	Torque kip-ft
Dead Only	197.99	0.04	-0.05	0.00	0.00	0.00
1.2 Dead+1.6 Wind 0 deg - No Ice+1.0 Guy	329.42	-0.02	-0.39	0.00	0.00	0.00
1.2 Dead+1.6 Wind 30 deg - No Ice+1.0 Guy	318.03	0.88	-0.43	0.00	0.00	0.00
1.2 Dead+1.6 Wind 60 deg - No Ice+1.0 Guy	298.54	1.20	-0.66	0.00	0.00	0.00
1.2 Dead+1.6 Wind 90 deg - No Ice+1.0 Guy	316.89	0.83	-0.56	0.00	0.00	0.00
1.2 Dead+1.6 Wind 120 deg - No Ice+1.0 Guy	328.85	0.33	0.13	0.00	0.00	0.00
1.2 Dead+1.6 Wind 150 deg - No Ice+1.0 Guy	317.52	-0.02	0.90	0.00	0.00	0.00
1.2 Dead+1.6 Wind 180 deg - No Ice+1.0 Guy	299.88	0.10	1.25	0.00	0.00	0.00
1.2 Dead+1.6 Wind 210 deg - No Ice+1.0 Guy	318.23	0.11	0.89	0.00	0.00	0.00
1.2 Dead+1.6 Wind 240 deg - No Ice+1.0 Guy	328.64	-0.33	0.12	0.00	0.00	0.00
1.2 Dead+1.6 Wind 270 deg - No Ice+1.0 Guy	317.69	-0.83	-0.60	0.00	0.00	0.00
1.2 Dead+1.6 Wind 300 deg - No Ice+1.0 Guy	300.38	-1.14	-0.74	0.00	0.00	0.00
1.2 Dead+1.6 Wind 330 deg - No Ice+1.0 Guy	318.12	-0.88	-0.49	0.00	0.00	0.00

<b>tnxTower</b>  <b>Centek Engineering Inc.</b> 63-2 North Branford Rd. Branford, CT 06405 Phone: (203) 488-0580 FAX: (203) 488-8587	<b>Job</b> 16071.44 - CT2049	<b>Page</b> 87 of 111
	<b>Project</b> 370' Guyed Tower - 689 Old Colchester Road, Montville, CT	<b>Date</b> 11:00:57 11/01/16
	<b>Client</b> AT&T Mobility	<b>Designed by</b> TJJ

Load Combination	Vertical K	Shear <sub>x</sub> K	Shear <sub>z</sub> K	Overturning Moment, M <sub>x</sub> kip-ft	Overturning Moment, M <sub>z</sub> kip-ft	Torque kip-ft
No Ice+1.0 Guy						
1.2 Dead+1.0 Ice+1.0 Temp+Guy	440.87	0.18	-0.38	0.00	0.00	0.00
1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp+1.0 Guy	450.16	0.16	-0.63	0.00	0.00	0.00
1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp+1.0 Guy	449.11	0.16	-0.59	0.00	0.00	0.00
1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp+1.0 Guy	448.56	0.25	-0.40	0.00	0.00	0.00
1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp+1.0 Guy	449.17	0.37	-0.23	0.00	0.00	0.00
1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp+1.0 Guy	450.17	0.41	-0.22	0.00	0.00	0.00
1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp+1.0 Guy	449.50	0.39	-0.24	0.00	0.00	0.00
1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp+1.0 Guy	448.95	0.20	-0.26	0.00	0.00	0.00
1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp+1.0 Guy	449.31	-0.01	-0.25	0.00	0.00	0.00
1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp+1.0 Guy	450.15	-0.05	-0.25	0.00	0.00	0.00
1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp+1.0 Guy	449.45	-0.04	-0.28	0.00	0.00	0.00
1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp+1.0 Guy	449.10	0.06	-0.45	0.00	0.00	0.00
1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp+1.0 Guy	449.57	0.15	-0.62	0.00	0.00	0.00
Dead+Wind 0 deg - Service+Guy	200.81	0.03	-0.58	0.00	0.00	0.00
Dead+Wind 30 deg - Service+Guy	200.61	0.27	-0.50	0.00	0.00	0.00
Dead+Wind 60 deg - Service+Guy	200.60	0.46	-0.29	0.00	0.00	0.00
Dead+Wind 90 deg - Service+Guy	200.50	0.55	-0.03	0.00	0.00	0.00
Dead+Wind 120 deg - Service+Guy	200.57	0.50	0.21	0.00	0.00	0.00
Dead+Wind 150 deg - Service+Guy	200.69	0.32	0.38	0.00	0.00	0.00
Dead+Wind 180 deg - Service+Guy	200.87	0.04	0.44	0.00	0.00	0.00
Dead+Wind 210 deg - Service+Guy	200.85	-0.24	0.38	0.00	0.00	0.00
Dead+Wind 240 deg - Service+Guy	200.96	-0.42	0.21	0.00	0.00	0.00
Dead+Wind 270 deg - Service+Guy	201.07	-0.48	-0.03	0.00	0.00	0.00
Dead+Wind 300 deg - Service+Guy	201.20	-0.39	-0.30	0.00	0.00	0.00
Dead+Wind 330 deg - Service+Guy	201.01	-0.20	-0.51	0.00	0.00	0.00

## Solution Summary

Load Comb.	Sum of Applied Forces			Sum of Reactions			% Error
	PX K	PY K	PZ K	PX K	PY K	PZ K	
1	0.00	-71.68	0.00	0.01	71.68	0.00	0.008%

<b>tnxTower</b>  <b>Centek Engineering Inc.</b> 63-2 North Branford Rd. Branford, CT 06405 Phone: (203) 488-0580 FAX: (203) 488-8587	<b>Job</b> 16071.44 - CT2049	<b>Page</b> 88 of 111
	<b>Project</b> 370' Guyed Tower - 689 Old Colchester Road, Montville, CT	<b>Date</b> 11:00:57 11/01/16
	<b>Client</b> AT&T Mobility	<b>Designed by</b> TJL

Load Comb.	Sum of Applied Forces			Sum of Reactions			% Error
	PX K	PY K	PZ K	PX K	PY K	PZ K	
2	-0.12	-84.56	-120.40	0.12	84.56	120.39	0.003%
3	59.23	-83.68	-103.29	-59.23	83.68	103.28	0.002%
4	102.43	-82.78	-59.40	-102.44	82.78	59.40	0.002%
5	118.68	-83.74	0.12	-118.68	83.74	-0.12	0.003%
6	103.76	-84.67	60.31	-103.76	84.67	-60.31	0.004%
7	59.46	-83.69	-103.44	-59.45	83.69	-103.44	0.003%
8	0.12	-82.69	119.04	-0.13	82.69	-119.04	0.002%
9	-59.23	-83.58	103.29	59.22	83.58	-103.29	0.002%
10	-103.61	-84.48	60.09	103.61	84.48	-60.08	0.003%
11	-118.68	-83.52	-0.12	118.68	83.52	0.13	0.002%
12	-102.58	-82.59	-59.63	102.59	82.59	59.63	0.002%
13	-59.46	-83.57	-103.44	59.46	83.57	103.43	0.002%
14	0.00	-251.27	0.00	-0.00	251.27	0.00	0.000%
15	-0.01	-251.99	-42.70	0.01	251.99	42.70	0.001%
16	21.24	-251.30	-36.85	-21.24	251.30	36.85	0.001%
17	36.78	-250.60	-21.26	-36.78	250.60	21.26	0.000%
18	42.50	-251.34	0.01	-42.50	251.34	-0.01	0.001%
19	36.93	-252.07	21.36	-36.93	252.07	-21.36	0.001%
20	21.26	-251.31	36.88	-21.26	251.31	-36.88	0.001%
21	0.01	-250.54	42.56	-0.01	250.54	-42.55	0.000%
22	-21.24	-251.24	36.85	21.23	251.24	-36.85	0.001%
23	-36.90	-251.94	21.34	36.90	251.94	-21.34	0.000%
24	-42.50	-251.19	-0.01	42.50	251.19	0.01	0.001%
25	-36.80	-250.47	-21.29	36.80	250.47	21.29	0.001%
26	-21.26	-251.23	-36.88	21.26	251.23	36.88	0.001%
27	-0.03	-71.87	-24.57	0.03	71.87	24.57	0.001%
28	12.09	-71.69	-21.08	-12.09	71.69	21.08	0.001%
29	20.91	-71.50	-12.12	-20.90	71.50	12.12	0.004%
30	24.22	-71.70	0.03	-24.22	71.70	-0.02	0.001%
31	21.18	-71.89	12.31	-21.18	71.89	-12.31	0.001%
32	12.13	-71.69	21.11	-12.13	71.69	-21.11	0.001%
33	0.03	-71.48	24.29	-0.03	71.48	-24.29	0.004%
34	-12.09	-71.67	21.08	12.09	71.67	-21.08	0.001%
35	-21.15	-71.85	12.26	21.14	71.85	-12.26	0.001%
36	-24.22	-71.65	-0.03	24.22	71.65	0.03	0.001%
37	-20.94	-71.46	-12.17	20.93	71.46	12.17	0.004%
38	-12.13	-71.66	-21.11	12.13	71.66	21.11	0.001%

### Non-Linear Convergence Results

Load Combination	Converged?	Number of Cycles	Displacement Tolerance	Force Tolerance
1	Yes	7	0.00000001	0.00004465
2	Yes	14	0.00004933	0.00007490
3	Yes	14	0.00000001	0.00005466
4	Yes	11	0.00000001	0.00005315
5	Yes	14	0.00004387	0.00006220
6	Yes	14	0.00005662	0.00008304
7	Yes	14	0.00004612	0.00006380
8	Yes	11	0.00000001	0.00005745
9	Yes	14	0.00000001	0.00004925
10	Yes	14	0.00004424	0.00006789
11	Yes	14	0.00000001	0.00004897
12	Yes	10	0.00000001	0.00005597
13	Yes	14	0.00000001	0.00005580
14	Yes	9	0.00000001	0.00003020

<b>tnxTower</b>  <b>Centek Engineering Inc.</b> 63-2 North Branford Rd. Branford, CT 06405 Phone: (203) 488-0580 FAX: (203) 488-8587	<b>Job</b>	16071.44 - CT2049	<b>Page</b>	89 of 111
	<b>Project</b>	370' Guyed Tower - 689 Old Colchester Road, Montville, CT	<b>Date</b>	11:00:57 11/01/16
	<b>Client</b>	AT&T Mobility	<b>Designed by</b>	TJL

15	Yes	11	0.00000001	0.00009197
16	Yes	11	0.00000001	0.00006702
17	Yes	11	0.00000001	0.00001701
18	Yes	11	0.00000001	0.00005994
19	Yes	11	0.00000001	0.00008593
20	Yes	11	0.00000001	0.00005744
21	Yes	11	0.00000001	0.00001779
22	Yes	11	0.00000001	0.00007531
23	Yes	12	0.00000001	0.00003203
24	Yes	11	0.00000001	0.00007287
25	Yes	10	0.00000001	0.00005249
26	Yes	11	0.00000001	0.00006275
27	Yes	9	0.00000001	0.00005147
28	Yes	9	0.00000001	0.00003730
29	Yes	8	0.00000001	0.00005356
30	Yes	9	0.00000001	0.00003294
31	Yes	9	0.00000001	0.00004702
32	Yes	9	0.00000001	0.00003266
33	Yes	8	0.00000001	0.00005115
34	Yes	9	0.00000001	0.00003872
35	Yes	9	0.00000001	0.00005252
36	Yes	9	0.00000001	0.00003744
37	Yes	8	0.00000001	0.00004830
38	Yes	9	0.00000001	0.00003607

### Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T1	368.75 - 362.5	1.695	33	0.0526	0.1014
T2	362.5 - 356.25	1.739	33	0.0526	0.1014
T3	356.25 - 350	1.783	33	0.0527	0.1018
T4	350 - 343.75	1.827	33	0.0538	0.0993
T5	343.75 - 337.5	1.876	33	0.0546	0.0986
T6	337.5 - 331.25	1.925	33	0.0532	0.0859
T7	331.25 - 325	1.971	33	0.0516	0.0721
T8	325 - 318.75	2.014	33	0.0500	0.0589
T9	318.75 - 312.5	2.053	33	0.0486	0.0507
T10	312.5 - 306.25	2.091	33	0.0472	0.0428
T11	306.25 - 300	2.127	33	0.0460	0.0348
T12	300 - 293.75	2.152	33	0.0454	0.0268
T13	293.75 - 287.5	2.193	33	0.0448	0.0265
T14	287.5 - 281.25	2.234	33	0.0412	0.0228
T15	281.25 - 275	2.270	33	0.0370	0.0177
T16	275 - 268.75	2.298	33	0.0323	0.0134
T17	268.75 - 262.5	2.319	33	0.0273	0.0096
T18	262.5 - 256.25	2.331	33	0.0222	0.0080
T19	256.25 - 250	2.335	33	0.0171	0.0121
T20	250 - 243.75	2.331	33	0.0122	0.0151
T21	243.75 - 237.5	2.320	33	0.0086	0.0160
T22	237.5 - 231.25	2.297	33	0.0114	0.0204
T23	231.25 - 225	2.266	33	0.0133	0.0254
T24	225 - 218.75	2.238	33	0.0134	0.0277
T25	218.75 - 212.5	2.224	33	0.0132	0.0280
T26	212.5 - 206.25	2.215	33	0.0164	0.0394
T27	206.25 - 200	2.198	33	0.0203	0.0512
T28	200 - 175	2.173	33	0.0248	0.0629
T29	175 - 168.75	1.988	29	0.0416	0.0988
T30	168.75 - 162.5	1.930	29	0.0435	0.0984

<b>tnxTower</b>  <b>Centek Engineering Inc.</b> 63-2 North Branford Rd. Branford, CT 06405 Phone: (203) 488-0580 FAX: (203) 488-8587	<b>Job</b> 16071.44 - CT2049	<b>Page</b> 90 of 111
	<b>Project</b> 370' Guyed Tower - 689 Old Colchester Road, Montville, CT	<b>Date</b> 11:00:57 11/01/16
	<b>Client</b> AT&T Mobility	<b>Designed by</b> TJL

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T31	162.5 - 156.25	1.869	29	0.0442	0.0978
T32	156.25 - 150	1.821	29	0.0456	0.0956
T33	150 - 125	1.769	29	0.0475	0.0922
T34	125 - 100	1.497	29	0.0567	0.0639
T35	100 - 93.75	1.180	29	0.0564	0.0494
T36	93.75 - 87.5	1.110	29	0.0543	0.0496
T37	87.5 - 81.25	1.045	29	0.0538	0.0567
T38	81.25 - 75	0.979	29	0.0539	0.0673
T39	75 - 50	0.910	29	0.0543	0.0769
T40	50 - 25	0.605	29	0.0557	0.1031
T41	25 - 0	0.327	29	0.0581	0.1174

### Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
370.00	Search Antenna	33	1.695	0.0526	0.1014	290649
355.00	8' Dish	33	1.792	0.0528	0.1013	553824
350.00	Guy	33	1.827	0.0538	0.0993	62234
325.00	10' x 3" Dia Omni	33	2.014	0.0500	0.0589	137780
305.00	QUAD656C0000	33	2.132	0.0458	0.0329	52532
300.00	Guy	33	2.152	0.0454	0.0268	25464
250.00	20' x 3" Dia Omni	33	2.331	0.0122	0.0151	67897
242.50	(2) 7770.00	33	2.317	0.0087	0.0165	33890
225.00	Guy	33	2.238	0.0134	0.0277	32586
200.00	Yagi	33	2.173	0.0248	0.0629	39413
180.00	(4) Yagi	29	2.032	0.0391	0.0959	92916
162.50	Guy	29	1.869	0.0442	0.0978	29673
148.00	Yagi	29	1.751	0.0483	0.0907	65067
140.00	Yagi	29	1.671	0.0514	0.0822	72844
125.00	Yagi	29	1.497	0.0567	0.0639	95377
100.00	Guy	29	1.180	0.0564	0.0494	71250
88.00	X-Style	29	1.050	0.0538	0.0559	404221
62.00	Yagi	29	0.752	0.0552	0.0927	833863
50.00	Guy	29	0.605	0.0557	0.1031	86454
40.00	Yagi	29	0.493	0.0565	0.1095	339881

### Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T1	368.75 - 362.5	17.855	6	0.2639	0.6844
T2	362.5 - 356.25	18.195	6	0.2641	0.6847
T3	356.25 - 350	18.538	6	0.2650	0.6863
T4	350 - 343.75	18.877	6	0.2705	0.6741
T5	343.75 - 337.5	19.249	6	0.2745	0.6707
T6	337.5 - 331.25	19.620	6	0.2667	0.5967
T7	331.25 - 325	19.975	6	0.2571	0.5171
T8	325 - 318.75	20.312	6	0.2462	0.4406
T9	318.75 - 312.5	20.628	6	0.2361	0.3927

<b>tnxTower</b>  <b>Centek Engineering Inc.</b> 63-2 North Branford Rd. Branford, CT 06405 Phone: (203) 488-0580 FAX: (203) 488-8587	<b>Job</b> 16071.44 - CT2049	<b>Page</b> 91 of 111
	<b>Project</b> 370' Guyed Tower - 689 Old Colchester Road, Montville, CT	<b>Date</b> 11:00:57 11/01/16
	<b>Client</b> AT&T Mobility	<b>Designed by</b> TJL

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T10	312.5 - 306.25	20.925	6	0.2260	0.3461
T11	306.25 - 300	21.210	6	0.2159	0.2998
T12	300 - 293.75	21.438	6	0.2087	0.2530
T13	293.75 - 287.5	21.728	6	0.2008	0.2516
T14	287.5 - 281.25	22.014	6	0.1776	0.2215
T15	281.25 - 275	22.277	6	0.1649	0.1738
T16	275 - 268.75	22.488	6	0.1542	0.1424
T17	268.75 - 262.5	22.648	6	0.1429	0.1197
T18	262.5 - 256.25	22.754	6	0.1310	0.0999
T19	256.25 - 250	22.807	6	0.1191	0.0835
T20	250 - 243.75	22.806	6	0.1096	0.0737
T21	243.75 - 237.5	22.756	6	0.1312	0.0739
T22	237.5 - 231.25	22.619	6	0.1489	0.1043
T23	231.25 - 225	22.415	6	0.1593	0.1725
T24	225 - 218.75	22.236	6	0.1599	0.1977
T25	218.75 - 212.5	22.104	6	0.1584	0.1990
T26	212.5 - 206.25	22.002	6	0.1747	0.2882
T27	206.25 - 200	21.837	6	0.1945	0.3816
T28	200 - 175	21.598	6	0.2299	0.4615
T29	175 - 168.75	19.906	6	0.3729	0.6991
T30	168.75 - 162.5	19.375	6	0.3945	0.6940
T31	162.5 - 156.25	18.818	6	0.4101	0.6871
T32	156.25 - 150	18.318	6	0.4284	0.6735
T33	150 - 125	17.775	6	0.4491	0.6509
T34	125 - 100	15.120	6	0.5310	0.4865
T35	100 - 93.75	12.071	6	0.5538	0.3623
T36	93.75 - 87.5	11.359	6	0.5473	0.3630
T37	87.5 - 81.25	10.675	6	0.5494	0.4122
T38	81.25 - 75	9.986	6	0.5537	0.4883
T39	75 - 50	9.270	6	0.5592	0.5440
T40	50 - 25	6.159	6	0.5723	0.7031
T41	25 - 0	3.245	6	0.5897	0.8227

### Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
370.00	Search Antenna	6	17.855	0.2639	0.6844	16527
355.00	8' Dish	6	18.605	0.2657	0.6839	15830
350.00	Guy	6	18.877	0.2705	0.6741	12711
325.00	10' x 3" Dia Omni	6	20.312	0.2462	0.4406	9967
305.00	QUAD656C0000	6	21.258	0.2142	0.2888	9293
300.00	Guy	6	21.438	0.2087	0.2530	4674
250.00	20' x 3" Dia Omni	6	22.806	0.1096	0.0737	10010
242.50	(2) 7770.00	6	22.736	0.1351	0.0678	4747
225.00	Guy	6	22.236	0.1599	0.1977	5832
200.00	Yagi	6	21.598	0.2299	0.4615	5244
180.00	(4) Yagi	6	20.308	0.3497	0.6805	13373
162.50	Guy	6	18.818	0.4101	0.6871	4730
148.00	Yagi	6	17.589	0.4561	0.6413	9378
140.00	Yagi	6	16.796	0.4843	0.5938	10638
125.00	Yagi	6	15.120	0.5310	0.4865	14413
100.00	Guy	6	12.071	0.5538	0.3623	11792
88.00	X-Style	6	10.730	0.5490	0.4067	49351
62.00	Yagi	6	7.660	0.5671	0.6342	104005
50.00	Guy	6	6.159	0.5723	0.7031	12491

<b>tnxTower</b>  <b>Centek Engineering Inc.</b> 63-2 North Branford Rd. Branford, CT 06405 Phone: (203) 488-0580 FAX: (203) 488-8587	<b>Job</b> 16071.44 - CT2049	<b>Page</b> 92 of 111
	<b>Project</b> 370' Guyed Tower - 689 Old Colchester Road, Montville, CT	<b>Date</b> 11:00:57 11/01/16
	<b>Client</b> AT&T Mobility	<b>Designed by</b> TJL

Elevation	Appurtenance	Gov. Load Comb.	Deflection	Tilt	Twist	Radius of Curvature
ft			in	°	°	ft
40.00	Yagi	6	4.988	0.5785	0.7531	40993

### Bolt Design Data

Section No.	Elevation ft	Component Type	Bolt Grade	Bolt Size in	Number Of Bolts	Maximum Load per Bolt K	Allowable Load K	Ratio Load Allowable	Allowable Ratio	Criteria	
T1	368.75	Leg	A325N	0.7500	6	0.09	29.82	0.003	✓	1	Bolt Tension
		Diagonal	A325N	0.5000	2	0.22	7.95	0.028	✓	1	Bolt Shear
		Top Girt	A325N	0.6250	2	0.06	24.85	0.002	✓	1	Bolt Shear
T2	362.5	Diagonal	A325N	0.5000	2	0.66	15.90	0.042	✓	1	Bolt Shear
		Top Girt	A325N	0.5000	2	0.16	15.90	0.010	✓	1	Bolt Shear
T3	356.25	Diagonal	A325N	0.5000	2	2.88	15.90	0.181	✓	1	Bolt Shear
		Top Girt	A325N	0.5000	2	0.67	15.90	0.042	✓	1	Bolt Shear
T4	350	Leg	A325N	0.7500	6	0.88	29.82	0.030	✓	1	Bolt Tension
		Diagonal	A325N	0.6250	2	2.02	12.43	0.163	✓	1	Bolt Shear
		Top Girt	A325N	0.6250	2	4.91	24.85	0.198	✓	1	Bolt Shear
T5	343.75	Diagonal	A325N	0.5000	2	2.33	7.95	0.293	✓	1	Bolt Shear
		Top Girt	A325N	0.6250	2	2.14	24.85	0.086	✓	1	Bolt Shear
T6	337.5	Diagonal	A325N	0.5000	2	2.19	7.95	0.275	✓	1	Bolt Shear
		Top Girt	A325N	0.5000	2	1.54	7.95	0.194	✓	1	Bolt Shear
T7	331.25	Diagonal	A325N	0.5000	2	2.02	7.95	0.254	✓	1	Bolt Shear
		Top Girt	A325N	0.5000	2	1.49	7.95	0.188	✓	1	Bolt Shear
T8	325	Leg	A325N	0.7500	6	2.51	29.82	0.084	✓	1	Bolt Tension
		Diagonal	A325N	0.5000	2	2.22	7.95	0.279	✓	1	Bolt Shear
		Top Girt	A325N	0.5000	2	1.80	7.95	0.226	✓	1	Bolt Shear
T9	318.75	Diagonal	A325N	0.5000	2	2.23	7.95	0.281	✓	1	Bolt Shear
		Top Girt	A325N	0.5000	2	2.05	7.95	0.257	✓	1	Bolt Shear
T10	312.5	Diagonal	A325N	0.5000	2	2.40	7.95	0.302	✓	1	Bolt Shear
		Top Girt	A325N	0.5000	2	2.04	7.95	0.257	✓	1	Bolt Shear
T11	306.25	Diagonal	A325N	0.5000	2	4.56	7.95	0.574	✓	1	Bolt Shear
		Top Girt	A325N	0.6250	2	2.97	24.85	0.119	✓	1	Bolt Shear
T12	300	Leg	A325N	0.7500	6	2.23	29.82	0.075	✓	1	Bolt Tension
		Diagonal	A325N	0.6250	2	3.90	12.43	0.314	✓	1	Bolt Shear
		Top Girt	A325N	0.6250	2	6.04	24.85	0.243	✓	1	Bolt Shear
T13	293.75	Diagonal	A325N	0.5000	2	3.45	7.95	0.434	✓	1	Bolt Shear
		Top Girt	A325N	0.6250	2	1.53	24.85	0.062	✓	1	Bolt Shear
T14	287.5	Diagonal	A325N	0.5000	2	2.78	7.95	0.350	✓	1	Bolt Shear
		Top Girt	A325N	0.5000	2	1.94	7.95	0.244	✓	1	Bolt Shear

<b>tnxTower</b>  <b>Centek Engineering Inc.</b> 63-2 North Branford Rd. Branford, CT 06405 Phone: (203) 488-0580 FAX: (203) 488-8587	<b>Job</b> 16071.44 - CT2049	<b>Page</b> 93 of 111
	<b>Project</b> 370' Guyed Tower - 689 Old Colchester Road, Montville, CT	<b>Date</b> 11:00:57 11/01/16
	<b>Client</b> AT&T Mobility	<b>Designed by</b> TJL

Section No.	Elevation ft	Component Type	Bolt Grade	Bolt Size in	Number Of Bolts	Maximum Load per Bolt K	Allowable Load K	Ratio Load Allowable	Allowable Ratio	Criteria
T15	281.25	Diagonal	A325N	0.5000	2	2.17	7.95	0.273 ✓	1	Bolt Shear
		Top Girt	A325N	0.6250	2	1.56	12.43	0.126 ✓✓	1	Bolt Shear
T16	275	Leg	A325N	0.7500	6	5.65	29.82	0.190 ✓✓	1	Bolt Tension
		Diagonal	A325N	0.5000	2	1.77	7.95	0.223 ✓✓	1	Bolt Shear
		Top Girt	A325N	0.5000	2	1.48	7.95	0.186 ✓✓	1	Bolt Shear
T17	268.75	Diagonal	A325N	0.5000	2	1.51	7.95	0.190 ✓✓	1	Bolt Shear
		Top Girt	A325N	0.5000	2	1.49	7.95	0.187 ✓✓	1	Bolt Shear
T18	262.5	Diagonal	A325N	0.5000	2	1.33	7.95	0.167 ✓✓	1	Bolt Shear
		Top Girt	A325N	0.5000	2	1.47	7.95	0.185 ✓✓	1	Bolt Shear
T19	256.25	Diagonal	A325N	0.5000	2	1.95	7.95	0.245 ✓✓	1	Bolt Shear
		Top Girt	A325N	0.5000	2	1.79	7.95	0.225 ✓✓	1	Bolt Shear
T20	250	Leg	A325N	0.7500	6	5.57	29.82	0.187 ✓✓	1	Bolt Tension
		Diagonal	A325N	0.5000	2	2.24	7.95	0.282 ✓✓	1	Bolt Shear
		Top Girt	A325N	0.5000	2	2.18	15.90	0.137 ✓✓	1	Bolt Shear
T21	243.75	Diagonal	A325N	0.5000	2	5.05	7.95	0.635 ✓✓	1	Bolt Shear
		Top Girt	A325N	0.6250	2	2.68	24.85	0.108 ✓✓	1	Bolt Shear
T22	237.5	Diagonal	A325X	0.5000	2	6.50	9.72	0.669 ✓✓	1	Bolt Shear
		Top Girt	A325N	0.6250	2	3.62	24.85	0.146 ✓✓	1	Bolt Shear
T23	231.25	Diagonal	A325X	0.5000	2	7.02	9.72	0.722 ✓✓	1	Bolt Shear
		Top Girt	A325N	0.6250	2	4.20	24.85	0.169 ✓✓	1	Bolt Shear
T24	225	Leg	A325N	0.7500	6	3.67	29.82	0.123 ✓✓	1	Bolt Tension
		Diagonal	A325N	0.6250	2	7.19	24.85	0.289 ✓✓	1	Bolt Shear
		Top Girt	A325N	0.6250	2	8.12	24.85	0.327 ✓✓	1	Bolt Shear
T25	218.75	Diagonal	A325N	0.5000	2	3.87	7.95	0.487 ✓✓	1	Bolt Shear
		Top Girt	A325N	0.6250	2	2.88	24.85	0.116 ✓✓	1	Bolt Shear
T26	212.5	Diagonal	A325N	0.5000	2	3.07	7.95	0.387 ✓✓	1	Bolt Shear
		Top Girt	A325N	0.5000	2	2.18	7.95	0.274 ✓✓	1	Bolt Shear
T27	206.25	Diagonal	A325N	0.5000	2	2.03	7.95	0.256 ✓✓	1	Bolt Shear
		Top Girt	A325N	0.5000	2	1.63	7.95	0.205 ✓✓	1	Bolt Shear
T28	200	Leg	A325N	0.7500	6	6.54	29.82	0.219 ✓✓	1	Bolt Tension
		Diagonal	A325N	0.5000	2	3.22	7.95	0.405 ✓✓	1	Bolt Shear
		Horizontal	A325N	0.6250	2	1.60	12.43	0.129 ✓✓	1	Bolt Shear
		Top Girt	A325N	0.5000	2	1.14	7.95	0.143 ✓✓	1	Bolt Shear
T29	175	Leg	A325N	0.7500	6	6.49	29.82	0.217 ✓✓	1	Bolt Tension
		Diagonal	A325N	0.5000	2	4.41	7.95	0.555 ✓✓	1	Bolt Shear
		Top Girt	A325N	0.5000	2	2.33	7.95	0.293 ✓✓	1	Bolt Shear
T30	168.75	Diagonal	A325N	0.5000	2	4.87	7.95	0.612 ✓✓	1	Bolt Shear
		Top Girt	A325N	0.5000	2	2.90	7.95	0.365 ✓✓	1	Bolt Shear
T31	162.5	Diagonal	A325N	0.5000	2	2.53	7.95	0.318 ✓✓	1	Bolt Shear
		Top Girt	A325N	0.5000	2	3.49	15.90	0.219 ✓✓	1	Bolt Shear



<b>tnxTower</b>  <b>Centek Engineering Inc.</b> 63-2 North Branford Rd. Branford, CT 06405 Phone: (203) 488-0580 FAX: (203) 488-8587	<b>Job</b>	16071.44 - CT2049	<b>Page</b>	94 of 111	
	<b>Project</b>	370' Guyed Tower - 689 Old Colchester Road, Montville, CT		<b>Date</b>	11:00:57 11/01/16
	<b>Client</b>	AT&T Mobility		<b>Designed by</b>	TJL

Section No.	Elevation ft	Component Type	Bolt Grade	Bolt Size in	Number Of Bolts	Maximum Load per Bolt K	Allowable Load K	Ratio Load Allowable	Allowable Ratio	Criteria
T32	156.25	Diagonal	A325N	0.5000	2	1.96	7.95	0.246	✓	1 Bolt Shear
		Top Girt	A325N	0.5000	2	1.40	7.95	0.176	✓	1 Bolt Shear
T33	150	Leg	A325N	0.7500	6	7.07	29.82	0.237	✓	1 Bolt Tension
		Diagonal	A325N	0.5000	2	2.68	7.95	0.337	✓	1 Bolt Shear
		Horizontal	A325N	0.6250	2	1.54	12.43	0.124	✓	1 Bolt Shear
		Top Girt	A325N	0.5000	2	1.05	7.95	0.132	✓	1 Bolt Shear
T34	125	Leg	A325N	0.7500	6	7.14	29.82	0.240	✓	1 Bolt Tension
		Diagonal	A325N	0.6250	2	6.32	10.44	0.606	✓	1 Member Bearing
		Horizontal	A325N	0.6250	2	3.70	12.43	0.298	✓	1 Bolt Shear
		Top Girt	A325N	0.6250	2	2.04	12.43	0.165	✓	1 Bolt Shear
T35	100	Leg	A325N	0.7500	6	5.80	29.82	0.195	✓	1 Bolt Tension
		Diagonal	A325N	0.6250	2	7.65	24.85	0.308	✓	1 Bolt Shear
		Top Girt	A325N	0.6250	2	7.64	24.85	0.307	✓	1 Bolt Shear
T36	93.75	Diagonal	A325N	0.5000	2	3.09	7.95	0.389	✓	1 Bolt Shear
		Top Girt	A325N	0.5000	2	4.04	15.90	0.254	✓	1 Bolt Shear
T37	87.5	Diagonal	A325N	0.5000	2	2.26	7.95	0.284	✓	1 Bolt Shear
		Top Girt	A325N	0.5000	2	1.67	7.95	0.210	✓	1 Bolt Shear
T38	81.25	Diagonal	A325N	0.5000	2	1.47	7.95	0.185	✓	1 Bolt Shear
		Top Girt	A325N	0.5000	2	1.16	7.95	0.146	✓	1 Bolt Shear
T39	75	Leg	A325N	0.7500	6	7.88	29.82	0.264	✓	1 Bolt Tension
		Diagonal	A325N	0.5000	2	2.45	7.95	0.308	✓	1 Bolt Shear
		Horizontal	A325N	0.6250	2	1.39	12.43	0.112	✓	1 Bolt Shear
		Top Girt	A325N	0.5000	2	0.80	7.95	0.100	✓	1 Bolt Shear
T40	50	Leg	A325N	0.7500	6	8.17	29.82	0.274	✓	1 Bolt Tension
		Diagonal	A325N	0.5000	2	2.64	7.95	0.332	✓	1 Bolt Shear
		Horizontal	A325N	0.6250	2	1.48	12.43	0.119	✓	1 Bolt Shear
		Top Girt	A325N	0.5000	2	2.29	7.95	0.289	✓	1 Bolt Shear
T41	25	Leg	A325N	0.7500	6	8.41	29.82	0.282	✓	1 Bolt Tension
		Diagonal	A325N	0.5000	2	1.70	7.95	0.214	✓	1 Bolt Shear
		Horizontal	A325N	0.6250	2	1.31	12.43	0.106	✓	1 Bolt Shear
		Top Girt	A325N	0.5000	2	0.76	7.95	0.096	✓	1 Bolt Shear

### Guy Design Data

Section No.	Elevation ft	Size	Initial Tension K	Breaking Load K	Actual $T_u$ K	Allowable $\phi T_n$ K	Required S.F.	Actual S.F.
T4	350.00 (A) (679)	7/8 EHS	7.97	79.70	23.31	47.82	1.000	2.051 ✓

<b>Job</b>	16071.44 - CT2049	<b>Page</b>	95 of 111
<b>Project</b>	370' Guyed Tower - 689 Old Colchester Road, Montville, CT	<b>Date</b>	11:00:57 11/01/16
<b>Client</b>	AT&T Mobility	<b>Designed by</b>	TJL

Section No.	Elevation ft	Size	Initial Tension K	Breaking Load K	Actual $T_u$ K	Allowable $\phi T_n$ K	Required S.F.	Actual S.F.
	350.00 (A) (680)	7/8 EHS	7.97	79.70	23.24	47.82	1.000	2.057 ✓
	350.00 (B) (673)	7/8 EHS	7.97	79.70	22.59	47.82	1.000	2.117 ✓
	350.00 (B) (674)	7/8 EHS	7.97	79.70	23.70	47.82	1.000	2.018 ✓
	350.00 (C) (667)	7/8 EHS	7.97	79.70	23.63	47.82	1.000	2.024 ✓
	350.00 (C) (668)	7/8 EHS	7.97	79.70	22.61	47.82	1.000	2.115 ✓
T12	300.00 (A) (697)	7/8 EHS	7.97	79.70	26.10	47.82	1.000	1.832 ✓
	300.00 (A) (698)	7/8 EHS	7.97	79.70	25.97	47.82	1.000	1.841 ✓
	300.00 (B) (691)	7/8 EHS	7.97	79.70	25.62	47.82	1.000	1.867 ✓
	300.00 (B) (692)	7/8 EHS	7.97	79.70	26.07	47.82	1.000	1.834 ✓
	300.00 (C) (685)	7/8 EHS	7.97	79.70	26.02	47.82	1.000	1.838 ✓
	300.00 (C) (686)	7/8 EHS	7.97	79.70	25.69	47.82	1.000	1.861 ✓
T24	225.00 (A) (715)	3/4 EHS	5.83	58.30	22.61	34.98	1.000	1.547 ✓
	225.00 (A) (716)	3/4 EHS	5.83	58.30	22.89	34.98	1.000	1.528 ✓
	225.00 (B) (709)	3/4 EHS	5.83	58.30	22.92	34.98	1.000	1.526 ✓
	225.00 (B) (710)	3/4 EHS	5.83	58.30	22.46	34.98	1.000	1.558 ✓
	225.00 (C) (703)	3/4 EHS	5.83	58.30	22.59	34.98	1.000	1.548 ✓
	225.00 (C) (704)	3/4 EHS	5.83	58.30	22.65	34.98	1.000	1.545 ✓
T31	162.50 (A) (723)	3/4 EHS	5.83	58.30	24.23	34.98	1.000	1.444 ✓
	162.50 (B) (722)	3/4 EHS	5.83	58.30	24.20	34.98	1.000	1.446 ✓
	162.50 (C) (721)	3/4 EHS	5.83	58.30	24.19	34.98	1.000	1.446 ✓
T35	100.00 (A) (736)	9/16 EHS	3.50	35.00	13.55	21.00	1.000	1.550 ✓
	100.00 (A) (737)	9/16 EHS	3.50	35.00	13.76	21.00	1.000	1.526 ✓
	100.00 (B) (730)	9/16 EHS	3.50	35.00	13.83	21.00	1.000	1.518 ✓
	100.00 (B) (731)	9/16 EHS	3.50	35.00	12.92	21.00	1.000	1.625 ✓
	100.00 (C) (724)	9/16 EHS	3.50	35.00	13.15	21.00	1.000	1.597 ✓
	100.00 (C) (725)	9/16 EHS	3.50	35.00	13.68	21.00	1.000	1.535 ✓
T40	50.00 (A) (744)	9/16 EHS	3.50	35.00	12.88	21.00	1.000	1.630 ✓
	50.00 (B) (743)	9/16 EHS	3.50	35.00	12.63	21.00	1.000	1.663 ✓
	50.00 (C) (742)	9/16 EHS	3.50	35.00	13.04	21.00	1.000	1.610 ✓

<b>tnxTower</b>  <b>Centek Engineering Inc.</b> 63-2 North Branford Rd. Branford, CT 06405 Phone: (203) 488-0580 FAX: (203) 488-8587	<b>Job</b> 16071.44 - CT2049	<b>Page</b> 96 of 111
	<b>Project</b> 370' Guyed Tower - 689 Old Colchester Road, Montville, CT	<b>Date</b> 11:00:57 11/01/16
	<b>Client</b> AT&T Mobility	<b>Designed by</b> TJL

## Compression Checks

### Leg Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L <sub>u</sub> ft	Kl/r K=1.00	A in <sup>2</sup>	Mast Stability Index	P <sub>u</sub> K	φP <sub>n</sub> K	Ratio P <sub>u</sub> / φP <sub>n</sub>
T1	368.75 - 362.5	2 3/4	6.25	6.25	109.1 K=1.00	5.9396	1.00	-1.67	102.85	0.016 <sup>1</sup>
T2	362.5 - 356.25	2 3/4	6.25	6.25	109.1 K=1.00	5.9396	1.00	-2.35	102.85	0.023 <sup>1</sup>
T3	356.25 - 350	2 3/4	6.25	6.25	109.1 K=1.00	5.9396	1.00	-9.20	102.85	0.089 <sup>1</sup>
T4	350 - 343.75	3	6.25	6.25	100.0 K=1.00	7.0686	1.00	-8.09	135.28	0.060 <sup>1</sup>
T5	343.75 - 337.5	3	6.25	6.25	100.0 K=1.00	7.0686	1.00	-41.64	135.28	0.308 <sup>1</sup>
T6	337.5 - 331.25	3	6.25	6.25	100.0 K=1.00	7.0686	1.00	-42.52	135.28	0.314 <sup>1</sup>
T7	331.25 - 325	3	6.25	6.25	100.0 K=1.00	7.0686	1.00	-43.29	135.28	0.320 <sup>1</sup>
T8	325 - 318.75	3 1/4	6.25	6.25	92.3 K=1.00	8.2958	1.00	-45.26	171.63	0.264 <sup>1</sup>
T9	318.75 - 312.5	3 1/4	6.25	6.25	92.3 K=1.00	8.2958	1.00	-45.48	171.63	0.265 <sup>1</sup>
T10	312.5 - 306.25	3 1/4	6.25	6.25	92.3 K=1.00	8.2958	1.00	-46.00	171.63	0.268 <sup>1</sup>
T11	306.25 - 300	3 1/4	6.25	6.25	92.3 K=1.00	8.2958	1.00	-48.69	171.63	0.284 <sup>1</sup>
T12	300 - 293.75	3 1/4	6.25	6.25	92.3 K=1.00	8.2958	1.00	-40.13	171.63	0.234 <sup>1</sup>
T13	293.75 - 287.5	3 1/4	6.25	6.25	92.3 K=1.00	8.2958	1.00	-89.43	171.63	0.521 <sup>1</sup>
T14	287.5 - 281.25	3 1/4	6.25	6.25	92.3 K=1.00	8.2958	1.00	-94.49	171.63	0.551 <sup>1</sup>
T15	281.25 - 275	3 1/4	6.25	6.25	92.3 K=1.00	8.2958	1.00	-98.78	171.63	0.576 <sup>1</sup>
T16	275 - 268.75	3 1/4	6.25	6.25	92.3 K=1.00	8.2958	1.00	-101.79	171.63	0.593 <sup>1</sup>
T17	268.75 - 262.5	3 1/4	6.25	6.25	92.3 K=1.00	8.2958	1.00	-103.44	171.63	0.603 <sup>1</sup>
T18	262.5 - 256.25	3 1/4	6.25	6.25	92.3 K=1.00	8.2958	1.00	-103.47	171.63	0.603 <sup>1</sup>
T19	256.25 - 250	3 1/4	6.25	6.25	92.3 K=1.00	8.2958	1.00	-103.13	171.63	0.601 <sup>1</sup>
T20	250 - 243.75	3 1/4	6.25	6.25	92.3 K=1.00	8.2958	1.00	-100.19	171.63	0.584 <sup>1</sup>
T21	243.75 - 237.5	3 1/4	6.25	6.25	92.3 K=1.00	8.2958	1.00	-96.22	171.63	0.561 <sup>1</sup>
T22	237.5 - 231.25	3 1/4	6.25	6.25	92.3 K=1.00	8.2958	1.00	-89.26	171.63	0.520 <sup>1</sup>
T23	231.25 - 225	3 1/4	6.25	6.25	92.3	8.2958	1.00	-88.23	171.63	0.514 <sup>1</sup>

<b>tnxTower</b>  <b>Centek Engineering Inc.</b> 63-2 North Branford Rd. Branford, CT 06405 Phone: (203) 488-0580 FAX: (203) 488-8587	<b>Job</b> 16071.44 - CT2049	<b>Page</b> 97 of 111
	<b>Project</b> 370' Guyed Tower - 689 Old Colchester Road, Montville, CT	<b>Date</b> 11:00:57 11/01/16
	<b>Client</b> AT&T Mobility	<b>Designed by</b> TJJ

Section No.	Elevation ft	Size	L ft	L <sub>u</sub> ft	Kl/r	A in <sup>2</sup>	Mast Stability Index	P <sub>u</sub> K	φP <sub>n</sub> K	Ratio $\frac{P_u}{\phi P_n}$
T24	225 - 218.75	3	6.25	6.25	K=1.00 100.0	7.0686	1.00	-66.04	135.28	0.488 <sup>1</sup>
T25	218.75 - 212.5	3	6.25	6.25	K=1.00 100.0	7.0686	1.00	-111.44	135.28	0.824 <sup>1</sup>
T26	212.5 - 206.25	3	6.25	6.25	K=1.00 100.0	7.0686	1.00	-113.86	135.28	0.842 <sup>1</sup>
T27	206.25 - 200	3	6.25	6.25	K=1.00 100.0	7.0686	1.00	-116.11	135.28	0.858 <sup>1</sup>
T28	200 - 175	3	25.00	3.13	K=1.00 50.0	7.0686	1.00	-117.98	200.78	0.588 <sup>1</sup>
T29	175 - 168.75	3 1/4	6.25	6.25	K=1.00 92.3	8.2958	1.00	-116.74	171.63	0.680 <sup>1</sup>
T30	168.75 - 162.5	3 1/4	6.25	6.25	K=1.00 92.3	8.2958	1.00	-115.68	171.63	0.674 <sup>1</sup>
T31	162.5 - 156.25	3 1/4	6.25	6.25	K=1.00 92.3	8.2958	1.00	-123.46	171.63	0.719 <sup>1</sup>
T32	156.25 - 150	3 1/4	6.25	6.25	K=1.00 92.3	8.2958	1.00	-125.34	171.63	0.730 <sup>1</sup>
T33	150 - 125	3 1/4	25.00	6.25	K=1.00 92.3	8.2958	1.00	-128.49	171.63	0.749 <sup>1</sup>
T34	125 - 100	3 1/4	25.00	6.25	K=1.00 92.3	8.2958	1.00	-128.60	171.63	0.749 <sup>1</sup>
T35	100 - 93.75	3 1/4	6.25	6.25	K=1.00 92.3	8.2958	1.00	-104.48	171.63	0.609 <sup>1</sup>
T36	93.75 - 87.5	3 1/4	6.25	6.25	K=1.00 92.3	8.2958	1.00	-138.69	171.63	0.808 <sup>1</sup>
T37	87.5 - 81.25	3 1/4	6.25	6.25	K=1.00 92.3	8.2958	1.00	-139.53	171.63	0.813 <sup>1</sup>
T38	81.25 - 75	3 1/4	6.25	6.25	K=1.00 92.3	8.2958	1.00	-140.86	171.63	0.821 <sup>1</sup>
T39	75 - 50	3 1/4	25.00	6.25	K=1.00 92.3	8.2958	1.00	-143.47	171.63	0.836 <sup>1</sup>
T40	50 - 25	3 1/4	25.00	6.25	K=1.00 92.3	8.2958	1.00	-150.54	171.63	0.877 <sup>1</sup>
T41	25 - 0	3 1/4	25.00	6.25	K=1.00 92.3	8.2958	1.00	-151.68	171.63	0.884 <sup>1</sup>

<sup>1</sup> P<sub>u</sub> / φP<sub>n</sub> controls

### Diagonal Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L <sub>u</sub> ft	Kl/r	A in <sup>2</sup>	P <sub>u</sub> K	φP <sub>n</sub> K	Ratio $\frac{P_u}{\phi P_n}$
T1	368.75 - 362.5	L2 1/2x2 1/2x1/4	8.00	3.65	96.9 K=1.09	1.1900	-0.45	23.51	0.019 <sup>1</sup>
T2	362.5 - 356.25	2L3x3x5/16	8.00	3.65	47.5 K=1.00	3.5500	-1.33	102.12	0.013 <sup>1</sup>

<b>tnxTower</b>  <b>Centek Engineering Inc.</b> 63-2 North Branford Rd. Branford, CT 06405 Phone: (203) 488-0580 FAX: (203) 488-8587	<b>Job</b> 16071.44 - CT2049	<b>Page</b> 98 of 111
	<b>Project</b> 370' Guyed Tower - 689 Old Colchester Road, Montville, CT	<b>Date</b> 11:00:57 11/01/16
	<b>Client</b> AT&T Mobility	<b>Designed by</b> TJJ

Section No.	Elevation ft	Size	L ft	L <sub>u</sub> ft	Kl/r	A in <sup>2</sup>	P <sub>u</sub> K	φP <sub>n</sub> K	Ratio $\frac{P_u}{\phi P_n}$
T3	356.25 - 350	2L3x3x5/16	8.00	3.65	47.5 K=1.00	3.5500	-5.45	102.12	0.053 <sup>1</sup>
T4	350 - 343.75	L3x2 1/2x1/4	8.00	3.62	91.7 K=1.11	1.3100	-4.05	27.26	0.149 <sup>1</sup>
T12	300 - 293.75	L3x2 1/2x1/4	8.00	3.59	91.1 K=1.12	1.3100	-7.80	27.41	0.285 <sup>1</sup>
T24	225 - 218.75	2L2 1/2x2 1/2x1/4	8.00	3.60	56.2 K=1.00	2.3800	-14.39	65.28	0.220 <sup>1</sup>
T35	100 - 93.75	2L2 1/2x2 1/2x1/4	8.00	3.59	56.0 K=1.00	2.3800	-15.29	65.39	0.234 <sup>1</sup>

<sup>1</sup> P<sub>u</sub> / φP<sub>n</sub> controls

### Horizontal Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L <sub>u</sub> ft	Kl/r	A in <sup>2</sup>	P <sub>u</sub> K	φP <sub>n</sub> K	Ratio $\frac{P_u}{\phi P_n}$
T28	200 - 175	P1.25x.14	5.00	4.75	105.6 K=1.00	0.6685	-3.20	12.04	0.266 <sup>1</sup>
T33	150 - 125	P1.25x.14	5.00	4.73	105.2 K=1.00	0.6685	-3.07	12.10	0.254 <sup>1</sup>
T34	125 - 100	P1.25x.14	5.00	4.73	105.2 K=1.00	0.6685	-7.41	12.10	0.612 <sup>1</sup>
T39	75 - 50	P1.25x.14	5.00	4.73	105.2 K=1.00	0.6685	-2.77	12.10	0.229 <sup>1</sup>
T40	50 - 25	P1.25x.14	5.00	4.73	105.2 K=1.00	0.6685	-2.97	12.10	0.245 <sup>1</sup>
T41	25 - 0	P1.25x.14	5.00	4.73	105.2 K=1.00	0.6685	-2.63	12.10	0.217 <sup>1</sup>

<sup>1</sup> P<sub>u</sub> / φP<sub>n</sub> controls

### Secondary Horizontal Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L <sub>u</sub> ft	Kl/r	A in <sup>2</sup>	P <sub>u</sub> K	φP <sub>n</sub> K	Ratio $\frac{P_u}{\phi P_n}$
T28	200 - 175	P1.25x.14	5.00	4.75	105.6 K=1.00	0.6685	-2.04	12.04	0.170 <sup>1</sup>

<sup>1</sup> P<sub>u</sub> / φP<sub>n</sub> controls

<b>tnxTower</b>  <b>Centek Engineering Inc.</b> 63-2 North Branford Rd. Branford, CT 06405 Phone: (203) 488-0580 FAX: (203) 488-8587	<b>Job</b> 16071.44 - CT2049	<b>Page</b> 99 of 111
	<b>Project</b> 370' Guyed Tower - 689 Old Colchester Road, Montville, CT	<b>Date</b> 11:00:57 11/01/16
	<b>Client</b> AT&T Mobility	<b>Designed by</b> TJL

### Top Girt Design Data (Compression)

Section No.	Elevation <i>ft</i>	Size	<i>L</i> <i>ft</i>	<i>L<sub>u</sub></i> <i>ft</i>	<i>Kl/r</i>	<i>A</i> <i>in<sup>2</sup></i>	<i>P<sub>u</sub></i> <i>K</i>	$\phi P_n$ <i>K</i>	Ratio $\frac{P_u}{\phi P_n}$
T1	368.75 - 362.5	2L2 1/2x2x1/4	5.00	4.38	67.0 K=1.00	2.1300	-0.09	54.50	0.002 <sup>1</sup>
T2	362.5 - 356.25	2L2 1/2x3x1/4	5.00	4.44	70.7 K=1.00	2.6300	-0.17	65.49	0.003 <sup>1</sup>
T3	356.25 - 350	2L2 1/2x3x1/4	5.00	4.44	70.7 K=1.00	2.6300	-1.28	65.49	0.020 <sup>1</sup>
T4	350 - 343.75	2L2 1/2x2x1/4	5.00	4.38	67.0 K=1.00	2.1300	-6.79	54.50	0.125 <sup>1</sup>
T5	343.75 - 337.5	2L2 1/2x2x1/4	5.00	4.35	66.6 K=1.00	2.1300	-4.28	54.62	0.078 <sup>1</sup>
T6	337.5 - 331.25	P1.25x.14	5.00	4.75	105.6 K=1.00	0.6685	-3.09	12.04	0.256 <sup>1</sup>
T7	331.25 - 325	P1.25x.14	5.00	4.75	105.6 K=1.00	0.6685	-2.99	12.04	0.248 <sup>1</sup>
T8	325 - 318.75	P1.25x.14	5.00	4.75	105.6 K=1.00	0.6685	-3.60	12.04	0.299 <sup>1</sup>
T9	318.75 - 312.5	P1.25x.14	5.00	4.73	105.2 K=1.00	0.6685	-4.09	12.10	0.338 <sup>1</sup>
T10	312.5 - 306.25	P1.25x.14	5.00	4.73	105.2 K=1.00	0.6685	-4.09	12.10	0.338 <sup>1</sup>
T11	306.25 - 300	2L2 1/2x2x1/4	5.00	4.33	66.3 K=1.00	2.1300	-5.94	54.74	0.108 <sup>1</sup>
T12	300 - 293.75	2L2 1/2x2x1/4	5.00	4.33	66.3 K=1.00	2.1300	-9.12	54.74	0.167 <sup>1</sup>
T13	293.75 - 287.5	2L2 1/2x2x1/4	5.00	4.33	66.3 K=1.00	2.1300	-3.06	54.74	0.056 <sup>1</sup>
T14	287.5 - 281.25	P1.25x.14	5.00	4.73	105.2 K=1.00	0.6685	-3.88	12.10	0.321 <sup>1</sup>
T15	281.25 - 275	P1.25x.14	5.00	4.73	105.2 K=1.00	0.6685	-3.13	12.10	0.258 <sup>1</sup>
T16	275 - 268.75	P1.25x.14	5.00	4.73	105.2 K=1.00	0.6685	-2.96	12.10	0.245 <sup>1</sup>
T17	268.75 - 262.5	P1.25x.14	5.00	4.73	105.2 K=1.00	0.6685	-2.98	12.10	0.246 <sup>1</sup>
T18	262.5 - 256.25	P1.25x.14	5.00	4.73	105.2 K=1.00	0.6685	-2.94	12.10	0.243 <sup>1</sup>
T19	256.25 - 250	P1.25x.14	5.00	4.73	105.2 K=1.00	0.6685	-3.59	12.10	0.296 <sup>1</sup>
T20	250 - 243.75	2L2 1/2x2x1/4	5.00	4.40	67.3 K=1.00	2.1300	-4.35	54.38	0.080 <sup>1</sup>
T21	243.75 - 237.5	2L2 1/2x2x1/4	5.00	4.33	66.3 K=1.00	2.1300	-5.35	54.74	0.098 <sup>1</sup>
T22	237.5 - 231.25	2L2 1/2x2x1/4	5.00	4.33	66.3 K=1.00	2.1300	-7.25	54.74	0.132 <sup>1</sup>
T23	231.25 - 225	2L2 1/2x2x1/4	5.00	4.33	66.3 K=1.00	2.1300	-8.40	54.74	0.154 <sup>1</sup>
T24	225 - 218.75	2L2 1/2x2x1/4	5.00	4.33	66.3 K=1.00	2.1300	-7.32	54.74	0.134 <sup>1</sup>
T26	212.5 - 206.25	P1.25x.14	5.00	4.75	105.6 K=1.00	0.6685	-4.36	12.04	0.362 <sup>1</sup>

<b>tnxTower</b>  <b>Centek Engineering Inc.</b> 63-2 North Branford Rd. Branford, CT 06405 Phone: (203) 488-0580 FAX: (203) 488-8587	<b>Job</b> 16071.44 - CT2049	<b>Page</b> 100 of 111
	<b>Project</b> 370' Guyed Tower - 689 Old Colchester Road, Montville, CT	<b>Date</b> 11:00:57 11/01/16
	<b>Client</b> AT&T Mobility	<b>Designed by</b> TJL

Section No.	Elevation ft	Size	L ft	L <sub>u</sub> ft	Kl/r	A in <sup>2</sup>	P <sub>u</sub> K	φP <sub>n</sub> K	Ratio $\frac{P_u}{\phi P_n}$
T27	206.25 - 200	P1.25x.14	5.00	4.75	105.6 K=1.00	0.6685	-3.26	12.04	0.271 <sup>1</sup> ✓
T28	200 - 175	P1.25x.14	5.00	4.75	105.6 K=1.00	0.6685	-2.27	12.04	0.189 <sup>1</sup> ✓
T29	175 - 168.75	P1.25x.14	5.00	4.75	105.6 K=1.00	0.6685	-4.67	12.04	0.388 <sup>1</sup> ✓
T30	168.75 - 162.5	P1.25x.14	5.00	4.73	105.2 K=1.00	0.6685	-5.81	12.10	0.480 <sup>1</sup> ✓
T31	162.5 - 156.25	2L2 1/2x2x1/4	5.00	4.40	67.3 K=1.00	2.1300	-2.05	54.38	0.038 <sup>1</sup> ✓
T32	156.25 - 150	P1.25x.14	5.00	4.73	105.2 K=1.00	0.6685	-2.80	12.10	0.232 <sup>1</sup> ✓
T33	150 - 125	P1.25x.14	5.00	4.73	105.2 K=1.00	0.6685	-2.10	12.10	0.174 <sup>1</sup> ✓
T34	125 - 100	P1.25x.14	5.00	4.73	105.2 K=1.00	0.6685	-4.09	12.10	0.338 <sup>1</sup> ✓
T35	100 - 93.75	2L2 1/2x2x1/4	5.00	4.33	66.3 K=1.00	2.1300	-4.88	54.74	0.089 <sup>1</sup> ✓
T37	87.5 - 81.25	P1.25x.14	5.00	4.73	105.2 K=1.00	0.6685	-3.34	12.10	0.276 <sup>1</sup> ✓
T38	81.25 - 75	P1.25x.14	5.00	4.73	105.2 K=1.00	0.6685	-2.32	12.10	0.192 <sup>1</sup> ✓
T39	75 - 50	P1.25x.14	5.00	4.73	105.2 K=1.00	0.6685	-1.59	12.10	0.132 <sup>1</sup> ✓
T40	50 - 25	L2 1/2x2x1/4	5.00	4.40	122.7 K=0.99	1.0600	-0.90	15.54	0.058 <sup>1</sup> ✓
T41	25 - 0	P1.25x.14	5.00	4.73	105.2 K=1.00	0.6685	-1.52	12.10	0.126 <sup>1</sup> ✓

<sup>1</sup> P<sub>u</sub> / φP<sub>n</sub> controls

### Torque-Arm Top Design Data

Section No.	Elevation ft	Size	L ft	L <sub>u</sub> ft	Kl/r	A in <sup>2</sup>	P <sub>u</sub> K	φP <sub>n</sub> K	Ratio $\frac{P_u}{\phi P_n}$
T35	100 - 93.75 (726)	2L3x2 1/2x1/4	6.03	5.89	74.8 K=1.00	2.6300	-1.20	63.46	0.019 <sup>1</sup> ✓
T35	100 - 93.75 (727)	2L3x2 1/2x1/4	6.03	5.89	74.8 K=1.00	2.6300	-1.22	63.46	0.019 <sup>1</sup> ✓
T35	100 - 93.75 (732)	2L3x2 1/2x1/4	6.03	5.89	74.8 K=1.00	2.6300	-1.14	63.46	0.018 <sup>1</sup> ✓
T35	100 - 93.75 (733)	2L3x2 1/2x1/4	6.03	5.89	74.8 K=1.00	2.6300	-1.30	63.46	0.020 <sup>1</sup> ✓
T35	100 - 93.75 (738)	2L3x2 1/2x1/4	6.03	5.89	74.8 K=1.00	2.6300	-1.30	63.46	0.021 <sup>1</sup> ✓
T35	100 - 93.75 (739)	2L3x2 1/2x1/4	6.03	5.89	74.8 K=1.00	2.6300	-1.16	63.46	0.018 <sup>1</sup> ✓

<b>tnxTower</b>  <b>Centek Engineering Inc.</b> 63-2 North Branford Rd. Branford, CT 06405 Phone: (203) 488-0580 FAX: (203) 488-8587	<b>Job</b> 16071.44 - CT2049	<b>Page</b> 101 of 111
	<b>Project</b> 370' Guyed Tower - 689 Old Colchester Road, Montville, CT	<b>Date</b> 11:00:57 11/01/16
	<b>Client</b> AT&T Mobility	<b>Designed by</b> TJL

<sup>1</sup>  $P_u / \phi P_n$  controls

### Torque-Arm Bottom Design Data

Section No.	Elevation <i>ft</i>	Size	<i>L</i> <i>ft</i>	<i>L<sub>u</sub></i> <i>ft</i>	<i>Kl/r</i>	<i>A</i> <i>in<sup>2</sup></i>	<i>P<sub>u</sub></i> <i>K</i>	$\phi P_n$ <i>K</i>	Ratio $\frac{P_u}{\phi P_n}$
T4	350 - 343.75 (671)	2L3x2 1/2x1/4	8.68	8.50	108.0 K=1.00	2.6300	-24.01	46.13	0.521 <sup>1</sup> ✓
T4	350 - 343.75 (672)	2L3x2 1/2x1/4	8.68	8.50	108.0 K=1.00	2.6300	-24.47	46.13	0.530 <sup>1</sup> ✓
T4	350 - 343.75 (677)	2L3x2 1/2x1/4	8.68	8.50	108.0 K=1.00	2.6300	-24.72	46.13	0.536 <sup>1</sup> ✓
T4	350 - 343.75 (678)	2L3x2 1/2x1/4	8.68	8.50	108.0 K=1.00	2.6300	-24.70	46.13	0.536 <sup>1</sup> ✓
T4	350 - 343.75 (683)	2L3x2 1/2x1/4	8.68	8.50	108.0 K=1.00	2.6300	-24.11	46.13	0.523 <sup>1</sup> ✓
T4	350 - 343.75 (684)	2L3x2 1/2x1/4	8.68	8.50	108.0 K=1.00	2.6300	-24.55	46.13	0.532 <sup>1</sup> ✓
T12	300 - 293.75 (689)	2L3x2 1/2x1/4	8.68	8.49	107.8 K=1.00	2.6300	-27.71	46.23	0.599 <sup>1</sup> ✓
T12	300 - 293.75 (690)	2L3x2 1/2x1/4	8.68	8.49	107.8 K=1.00	2.6300	-28.07	46.23	0.607 <sup>1</sup> ✓
T12	300 - 293.75 (695)	2L3x2 1/2x1/4	8.68	8.49	107.8 K=1.00	2.6300	-28.01	46.23	0.606 <sup>1</sup> ✓
T12	300 - 293.75 (696)	2L3x2 1/2x1/4	8.68	8.49	107.8 K=1.00	2.6300	-28.04	46.23	0.607 <sup>1</sup> ✓
T12	300 - 293.75 (701)	2L3x2 1/2x1/4	8.68	8.49	107.8 K=1.00	2.6300	-27.72	46.23	0.600 <sup>1</sup> ✓
T12	300 - 293.75 (702)	2L3x2 1/2x1/4	8.68	8.49	107.8 K=1.00	2.6300	-28.03	46.23	0.606 <sup>1</sup> ✓
T24	225 - 218.75 (707)	2L3x2 1/2x1/4	8.68	8.50	108.0 K=1.00	2.6300	-22.66	46.13	0.491 <sup>1</sup> ✓
T24	225 - 218.75 (708)	2L3x2 1/2x1/4	8.68	8.50	108.0 K=1.00	2.6300	-22.73	46.13	0.493 <sup>1</sup> ✓
T24	225 - 218.75 (713)	2L3x2 1/2x1/4	8.68	8.50	108.0 K=1.00	2.6300	-23.03	46.13	0.499 <sup>1</sup> ✓
T24	225 - 218.75 (714)	2L3x2 1/2x1/4	8.68	8.50	108.0 K=1.00	2.6300	-23.02	46.13	0.499 <sup>1</sup> ✓
T24	225 - 218.75 (719)	2L3x2 1/2x1/4	8.68	8.50	108.0 K=1.00	2.6300	-22.07	46.13	0.478 <sup>1</sup> ✓
T24	225 - 218.75 (720)	2L3x2 1/2x1/4	8.68	8.50	108.0 K=1.00	2.6300	-22.12	46.13	0.479 <sup>1</sup> ✓
T35	100 - 93.75 (728)	2L3x2 1/2x1/4	8.68	8.49	107.8 K=1.00	2.6300	-10.59	46.23	0.229 <sup>1</sup> ✓
T35	100 - 93.75 (729)	2L3x2 1/2x1/4	8.68	8.49	107.8 K=1.00	2.6300	-10.55	46.23	0.228 <sup>1</sup> ✓
T35	100 - 93.75 (734)	2L3x2 1/2x1/4	8.68	8.49	107.8 K=1.00	2.6300	-11.30	46.23	0.244 <sup>1</sup> ✓
T35	100 - 93.75 (735)	2L3x2 1/2x1/4	8.68	8.49	107.8 K=1.00	2.6300	-11.19	46.23	0.242 <sup>1</sup> ✓
T35	100 - 93.75 (740)	2L3x2 1/2x1/4	8.68	8.49	107.8 K=1.00	2.6300	-10.24	46.23	0.222 <sup>1</sup> ✓



<b>tnxTower</b>  <b>Centek Engineering Inc.</b> 63-2 North Branford Rd. Branford, CT 06405 Phone: (203) 488-0580 FAX: (203) 488-8587	<b>Job</b> 16071.44 - CT2049	<b>Page</b> 102 of 111
	<b>Project</b> 370' Guyed Tower - 689 Old Colchester Road, Montville, CT	<b>Date</b> 11:00:57 11/01/16
	<b>Client</b> AT&T Mobility	<b>Designed by</b> TJL

Section No.	Elevation ft	Size	L ft	L <sub>u</sub> ft	Kl/r	A in <sup>2</sup>	P <sub>u</sub> K	φP <sub>n</sub> K	Ratio $\frac{P_u}{\phi P_n}$
T35	100 - 93.75 (741)	2L3x2 1/2x1/4	8.68	8.49	107.8 K=1.00	2.6300	-10.32	46.23	0.223 <sup>1</sup> ✓ ✓

<sup>1</sup> P<sub>u</sub> / φP<sub>n</sub> controls

### Tension Checks

### Leg Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L <sub>u</sub> ft	Kl/r	A in <sup>2</sup>	P <sub>u</sub> K	φP <sub>n</sub> K	Ratio $\frac{P_u}{\phi P_n}$
T1	368.75 - 362.5	2 3/4	6.25	6.25	109.1	5.9396	0.34	192.44	0.002 <sup>1</sup> ✓
T2	362.5 - 356.25	2 3/4	6.25	6.25	109.1	5.9396	0.92	192.44	0.005 <sup>1</sup> ✓
T3	356.25 - 350	2 3/4	6.25	6.25	109.1	5.9396	6.18	192.44	0.032 <sup>1</sup> ✓
T4	350 - 343.75	3	6.25	6.25	100.0	7.0686	5.30	229.02	0.023 <sup>1</sup> ✓
T15	281.25 - 275	3 1/4	6.25	6.25	92.3	8.2958	1.90	268.78	0.007 <sup>1</sup> ✓
T16	275 - 268.75	3 1/4	6.25	6.25	92.3	8.2958	6.07	268.78	0.023 <sup>1</sup> ✓
T17	268.75 - 262.5	3 1/4	6.25	6.25	92.3	8.2958	8.59	268.78	0.032 <sup>1</sup> ✓
T18	262.5 - 256.25	3 1/4	6.25	6.25	92.3	8.2958	9.56	268.78	0.036 <sup>1</sup> ✓
T19	256.25 - 250	3 1/4	6.25	6.25	92.3	8.2958	7.16	268.78	0.027 <sup>1</sup> ✓
T20	250 - 243.75	3 1/4	6.25	6.25	92.3	8.2958	4.32	268.78	0.016 <sup>1</sup> ✓

<sup>1</sup> P<sub>u</sub> / φP<sub>n</sub> controls

### Diagonal Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L <sub>u</sub> ft	Kl/r	A in <sup>2</sup>	P <sub>u</sub> K	φP <sub>n</sub> K	Ratio $\frac{P_u}{\phi P_n}$
T1	368.75 - 362.5	L2 1/2x2 1/2x1/4	8.00	3.65	59.6	0.7753	0.37	33.73	0.011 <sup>1</sup> ✓
T2	362.5 - 356.25	2L3x3x5/16	8.00	3.65	49.7	2.3695	0.92	103.08	0.009 <sup>1</sup> ✓

<b>tnxTower</b>  <b>Centek Engineering Inc.</b> 63-2 North Branford Rd. Branford, CT 06405 Phone: (203) 488-0580 FAX: (203) 488-8587	<b>Job</b> 16071.44 - CT2049	<b>Page</b> 103 of 111
	<b>Project</b> 370' Guyed Tower - 689 Old Colchester Road, Montville, CT	<b>Date</b> 11:00:57 11/01/16
	<b>Client</b> AT&T Mobility	<b>Designed by</b> TJL

Section No.	Elevation ft	Size	L ft	L <sub>u</sub> ft	Kl/r	A in <sup>2</sup>	P <sub>u</sub> K	φP <sub>n</sub> K	Ratio $\frac{P_u}{\phi P_n}$
T3	356.25 - 350	2L3x3x5/16	8.00	3.65	49.7	2.3695	5.77	103.08	0.056 <sup>1</sup>
T4	350 - 343.75	L3x2 1/2x1/4	8.00	3.62	61.0	0.8419	3.66	36.62	0.100 <sup>1</sup>
T5	343.75 - 337.5	5/8	8.00	7.60	584.0	0.3068	4.65	9.94	0.468 <sup>1</sup>
T6	337.5 - 331.25	5/8	8.00	7.60	584.0	0.3068	4.37	9.94	0.440 <sup>1</sup>
T7	331.25 - 325	5/8	8.00	7.60	584.0	0.3068	4.04	9.94	0.406 <sup>1</sup>
T8	325 - 318.75	3/4	8.00	7.59	485.6	0.4418	4.44	14.31	0.310 <sup>1</sup>
T9	318.75 - 312.5	3/4	8.00	7.57	484.5	0.4418	4.46	14.31	0.312 <sup>1</sup>
T10	312.5 - 306.25	3/4	8.00	7.57	484.5	0.4418	4.80	14.31	0.335 <sup>1</sup>
T11	306.25 - 300	3/4	8.00	7.57	484.5	0.4418	9.13	14.31	0.638 <sup>1</sup>
T12	300 - 293.75	L3x2 1/2x1/4	8.00	3.59	60.4	0.8419	3.12	36.62	0.085 <sup>1</sup>
T13	293.75 - 287.5	3/4	8.00	7.57	484.5	0.4418	6.90	14.31	0.482 <sup>1</sup>
T14	287.5 - 281.25	5/8	8.00	7.57	581.4	0.3068	5.56	9.94	0.559 <sup>1</sup>
T15	281.25 - 275	5/8	8.00	7.57	581.4	0.3068	4.34	9.94	0.436 <sup>1</sup>
T16	275 - 268.75	5/8	8.00	7.57	581.4	0.3068	3.55	9.94	0.357 <sup>1</sup>
T17	268.75 - 262.5	5/8	8.00	7.57	581.4	0.3068	3.02	9.94	0.303 <sup>1</sup>
T18	262.5 - 256.25	5/8	8.00	7.57	581.4	0.3068	2.66	9.94	0.268 <sup>1</sup>
T19	256.25 - 250	3/4	8.00	7.57	484.5	0.4418	3.90	14.31	0.272 <sup>1</sup>
T20	250 - 243.75	3/4	8.00	7.57	484.5	0.4418	4.48	14.31	0.313 <sup>1</sup>
T21	243.75 - 237.5	3/4	8.00	7.57	484.5	0.4418	10.09	14.31	0.705 <sup>1</sup>
T22	237.5 - 231.25	3/4	8.00	7.57	484.5	0.4418	13.00	14.31	0.908 <sup>1</sup>
T23	231.25 - 225	1	8.00	7.57	363.4	0.7854	14.04	25.45	0.552 <sup>1</sup>
T25	218.75 - 212.5	5/8	8.00	7.60	584.0	0.3068	7.75	9.94	0.780 <sup>1</sup>
T26	212.5 - 206.25	5/8	8.00	7.60	584.0	0.3068	6.15	9.94	0.619 <sup>1</sup>
T27	206.25 - 200	5/8	8.00	7.60	584.0	0.3068	4.06	9.94	0.409 <sup>1</sup>
T28	200 - 175	5/8	8.00	7.60	584.0	0.3068	6.44	9.94	0.648 <sup>1</sup>
T29	175 - 168.75	1	8.00	7.59	364.2	0.7854	8.82	25.45	0.347 <sup>1</sup>

<b>tnxTower</b>  <b>Centek Engineering Inc.</b> 63-2 North Branford Rd. Branford, CT 06405 Phone: (203) 488-0580 FAX: (203) 488-8587	<b>Job</b> 16071.44 - CT2049	<b>Page</b> 104 of 111
	<b>Project</b> 370' Guyed Tower - 689 Old Colchester Road, Montville, CT	<b>Date</b> 11:00:57 11/01/16
	<b>Client</b> AT&T Mobility	<b>Designed by</b> TJL

Section No.	Elevation ft	Size	L ft	L <sub>u</sub> ft	Kl/r	A in <sup>2</sup>	P <sub>u</sub> K	φP <sub>n</sub> K	Ratio $\frac{P_u}{\phi P_n}$
T30	168.75 - 162.5	1	8.00	7.57	363.4	0.7854	9.74	25.45	0.383 <sup>1</sup>
T31	162.5 - 156.25	5/8	8.00	7.57	581.4	0.3068	5.06	9.94	0.509 <sup>1</sup>
T32	156.25 - 150	5/8	8.00	7.57	581.4	0.3068	3.91	9.94	0.394 <sup>1</sup>
T33	150 - 125	5/8	8.00	7.57	581.4	0.3068	5.36	9.94	0.539 <sup>1</sup>
T34	125 - 100	L2 1/2x2 1/2x3/16	8.00	7.17	116.8	0.5710	12.65	24.84	0.509 <sup>1</sup>
T36	93.75 - 87.5	3/4	8.00	7.57	484.5	0.4418	6.19	14.31	0.432 <sup>1</sup>
T37	87.5 - 81.25	5/8	8.00	7.57	581.4	0.3068	4.52	9.94	0.455 <sup>1</sup>
T38	81.25 - 75	5/8	8.00	7.57	581.4	0.3068	2.94	9.94	0.296 <sup>1</sup>
T39	75 - 50	5/8	8.00	7.57	581.4	0.3068	4.90	9.94	0.493 <sup>1</sup>
T40	50 - 25	5/8	8.00	7.57	581.4	0.3068	5.27	9.94	0.530 <sup>1</sup>
T41	25 - 0	5/8	8.00	7.57	581.4	0.3068	3.40	9.94	0.342 <sup>1</sup>

<sup>1</sup> P<sub>u</sub> / φP<sub>n</sub> controls

### Horizontal Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L <sub>u</sub> ft	Kl/r	A in <sup>2</sup>	P <sub>u</sub> K	φP <sub>n</sub> K	Ratio $\frac{P_u}{\phi P_n}$
T28	200 - 175	P1.25x.14	5.00	4.75	105.6	0.6685	2.04	21.66	0.094 <sup>1</sup>
T33	150 - 125	P1.25x.14	5.00	4.73	105.2	0.6685	2.23	21.66	0.103 <sup>1</sup>
T34	125 - 100	P1.25x.14	5.00	4.73	105.2	0.6685	2.23	21.66	0.103 <sup>1</sup>
T39	75 - 50	P1.25x.14	5.00	4.73	105.2	0.6685	2.49	21.66	0.115 <sup>1</sup>
T40	50 - 25	P1.25x.14	5.00	4.73	105.2	0.6685	2.61	21.66	0.120 <sup>1</sup>
T41	25 - 0	P1.25x.14	5.00	4.73	105.2	0.6685	2.63	21.66	0.121 <sup>1</sup>

<sup>1</sup> P<sub>u</sub> / φP<sub>n</sub> controls

### Secondary Horizontal Design Data (Tension)

<b>tnxTower</b>  <b>Centek Engineering Inc.</b> 63-2 North Branford Rd. Branford, CT 06405 Phone: (203) 488-0580 FAX: (203) 488-8587	<b>Job</b> 16071.44 - CT2049	<b>Page</b> 105 of 111
	<b>Project</b> 370' Guyed Tower - 689 Old Colchester Road, Montville, CT	<b>Date</b> 11:00:57 11/01/16
	<b>Client</b> AT&T Mobility	<b>Designed by</b> TJL

Section No.	Elevation ft	Size	L ft	L <sub>u</sub> ft	Kl/r	A in <sup>2</sup>	P <sub>u</sub> K	φP <sub>n</sub> K	Ratio $\frac{P_u}{\phi P_n}$
T28	200 - 175	P1.25x.14	5.00	4.75	105.6	0.6685	2.04	21.66	0.094 <sup>1</sup> 

<sup>1</sup> P<sub>u</sub> / φP<sub>n</sub> controls

### Top Girt Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L <sub>u</sub> ft	Kl/r	A in <sup>2</sup>	P <sub>u</sub> K	φP <sub>n</sub> K	Ratio $\frac{P_u}{\phi P_n}$
T1	368.75 - 362.5	2L2 1/2x2x1/4	5.00	4.38	73.0	1.3162	0.11	57.26	0.002 <sup>1</sup> 
T2	362.5 - 356.25	2L2 1/2x3x1/4	5.00	4.44	76.0	1.7381	0.32	75.61	0.004 <sup>1</sup> 
T3	356.25 - 350	2L2 1/2x3x1/4	5.00	4.44	76.0	1.7381	1.33	75.61	0.018 <sup>1</sup> 
T4	350 - 343.75	2L2 1/2x2x1/4	5.00	4.38	73.0	1.3162	9.83	57.26	0.172 <sup>1</sup> 
T12	300 - 293.75	2L2 1/2x2x1/4	5.00	4.33	72.4	1.3162	12.07	57.26	0.211 <sup>1</sup> 
T24	225 - 218.75	2L2 1/2x2x1/4	5.00	4.33	72.4	1.3162	16.23	57.26	0.284 <sup>1</sup> 
T25	218.75 - 212.5	2L2 1/2x2x1/4	5.00	4.35	72.7	1.3162	5.77	57.26	0.101 <sup>1</sup> 
T31	162.5 - 156.25	2L2 1/2x2x1/4	5.00	4.40	72.4	1.3631	6.98	59.30	0.118 <sup>1</sup> 
T35	100 - 93.75	2L2 1/2x2x1/4	5.00	4.33	72.4	1.3162	15.28	57.26	0.267 <sup>1</sup> 
T36	93.75 - 87.5	2L2 1/2x2x1/4	5.00	4.40	72.4	1.3631	8.08	59.30	0.136 <sup>1</sup> 
T40	50 - 25	L2 1/2x2x1/4	5.00	4.40	95.8	0.6778	4.59	29.48	0.156 <sup>1</sup> 

<sup>1</sup> P<sub>u</sub> / φP<sub>n</sub> controls

### Torque-Arm Top Design Data

Section No.	Elevation ft	Size	L ft	L <sub>u</sub> ft	Kl/r	A in <sup>2</sup>	P <sub>u</sub> K	φP <sub>n</sub> K	Ratio $\frac{P_u}{\phi P_n}$
T4	350 - 343.75 (669)	2L3x2 1/2x1/4	6.03	5.91	75.1	2.6300	20.93	85.21	0.246 <sup>1</sup> 
T4	350 - 343.75 (670)	2L3x2 1/2x1/4	6.03	5.91	75.1	2.6300	22.05	85.21	0.259 <sup>1</sup> 
T4	350 - 343.75 (675)	2L3x2 1/2x1/4	6.03	5.91	75.1	2.6300	20.47	85.21	0.240 <sup>1</sup> 

<b>tnxTower</b>  <b>Centek Engineering Inc.</b> 63-2 North Branford Rd. Branford, CT 06405 Phone: (203) 488-0580 FAX: (203) 488-8587	<b>Job</b> 16071.44 - CT2049	<b>Page</b> 106 of 111
	<b>Project</b> 370' Guyed Tower - 689 Old Colchester Road, Montville, CT	<b>Date</b> 11:00:57 11/01/16
	<b>Client</b> AT&T Mobility	<b>Designed by</b> TJL

Section No.	Elevation ft	Size	L ft	L <sub>u</sub> ft	Kl/r	A in <sup>2</sup>	P <sub>u</sub> K	φP <sub>n</sub> K	Ratio $\frac{P_u}{\phi P_n}$
T4	350 - 343.75 (676)	2L3x2 1/2x1/4	6.03	5.91	75.1	2.6300	20.19	85.21	0.237 <sup>1</sup>
T4	350 - 343.75 (681)	2L3x2 1/2x1/4	6.03	5.91	75.1	2.6300	20.81	85.21	0.244 <sup>1</sup>
T4	350 - 343.75 (682)	2L3x2 1/2x1/4	6.03	5.91	75.1	2.6300	22.28	85.21	0.262 <sup>1</sup>
T12	300 - 293.75 (687)	2L3x2 1/2x1/4	6.03	5.89	74.8	2.6300	22.76	85.21	0.267 <sup>1</sup>
T12	300 - 293.75 (688)	2L3x2 1/2x1/4	6.03	5.89	74.8	2.6300	23.42	85.21	0.275 <sup>1</sup>
T12	300 - 293.75 (693)	2L3x2 1/2x1/4	6.03	5.89	74.8	2.6300	22.68	85.21	0.266 <sup>1</sup>
T12	300 - 293.75 (694)	2L3x2 1/2x1/4	6.03	5.89	74.8	2.6300	22.93	85.21	0.269 <sup>1</sup>
T12	300 - 293.75 (699)	2L3x2 1/2x1/4	6.03	5.89	74.8	2.6300	23.01	85.21	0.270 <sup>1</sup>
T12	300 - 293.75 (700)	2L3x2 1/2x1/4	6.03	5.89	74.8	2.6300	23.41	85.21	0.275 <sup>1</sup>
T24	225 - 218.75 (705)	2L3x2 1/2x1/4	6.03	5.89	74.8	2.6300	21.78	85.21	0.256 <sup>1</sup>
T24	225 - 218.75 (706)	2L3x2 1/2x1/4	6.03	5.89	74.8	2.6300	21.73	85.21	0.255 <sup>1</sup>
T24	225 - 218.75 (711)	2L3x2 1/2x1/4	6.03	5.89	74.8	2.6300	21.87	85.21	0.257 <sup>1</sup>
T24	225 - 218.75 (712)	2L3x2 1/2x1/4	6.03	5.89	74.8	2.6300	21.71	85.21	0.255 <sup>1</sup>
T24	225 - 218.75 (717)	2L3x2 1/2x1/4	6.03	5.89	74.8	2.6300	21.83	85.21	0.256 <sup>1</sup>
T24	225 - 218.75 (718)	2L3x2 1/2x1/4	6.03	5.89	74.8	2.6300	21.91	85.21	0.257 <sup>1</sup>
T35	100 - 93.75 (726)	2L3x2 1/2x1/4	6.03	5.89	74.8	2.6300	14.00	85.21	0.164 <sup>1</sup>
T35	100 - 93.75 (727)	2L3x2 1/2x1/4	6.03	5.89	74.8	2.6300	13.96	85.21	0.164 <sup>1</sup>
T35	100 - 93.75 (732)	2L3x2 1/2x1/4	6.03	5.89	74.8	2.6300	14.54	85.21	0.171 <sup>1</sup>
T35	100 - 93.75 (733)	2L3x2 1/2x1/4	6.03	5.89	74.8	2.6300	14.35	85.21	0.168 <sup>1</sup>
T35	100 - 93.75 (738)	2L3x2 1/2x1/4	6.03	5.89	74.8	2.6300	13.63	85.21	0.160 <sup>1</sup>
T35	100 - 93.75 (739)	2L3x2 1/2x1/4	6.03	5.89	74.8	2.6300	13.75	85.21	0.161 <sup>1</sup>

<sup>1</sup> P<sub>u</sub> / φP<sub>n</sub> controls

### Torque-Arm Bottom Design Data

<b>tnxTower</b>  <b>Centek Engineering Inc.</b> 63-2 North Branford Rd. Branford, CT 06405 Phone: (203) 488-0580 FAX: (203) 488-8587	<b>Job</b> 16071.44 - CT2049	<b>Page</b> 107 of 111
	<b>Project</b> 370' Guyed Tower - 689 Old Colchester Road, Montville, CT	<b>Date</b> 11:00:57 11/01/16
	<b>Client</b> AT&T Mobility	<b>Designed by</b> TJL

Section No.	Elevation ft	Size	L ft	L <sub>u</sub> ft	Kl/r	A in <sup>2</sup>	P <sub>u</sub> K	φP <sub>n</sub> K	Ratio P <sub>u</sub> / φP <sub>n</sub>
T35	100 - 93.75 (728)	2L3x2 1/2x1/4	8.68	8.49	107.8	2.6300	1.18	85.21	0.014 <sup>1</sup>
T35	100 - 93.75 (729)	2L3x2 1/2x1/4	8.68	8.49	107.8	2.6300	1.35	85.21	0.016 <sup>1</sup>
T35	100 - 93.75 (734)	2L3x2 1/2x1/4	8.68	8.49	107.8	2.6300	1.61	85.21	0.019 <sup>1</sup>
T35	100 - 93.75 (735)	2L3x2 1/2x1/4	8.68	8.49	107.8	2.6300	1.63	85.21	0.019 <sup>1</sup>
T35	100 - 93.75 (740)	2L3x2 1/2x1/4	8.68	8.49	107.8	2.6300	1.20	85.21	0.014 <sup>1</sup>
T35	100 - 93.75 (741)	2L3x2 1/2x1/4	8.68	8.49	107.8	2.6300	1.35	85.21	0.016 <sup>1</sup>

<sup>1</sup> P<sub>u</sub> / φP<sub>n</sub> controls

### Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	φP <sub>allow</sub> K	% Capacity	Pass Fail
T1	368.75 - 362.5	Leg	2 3/4	1	-1.67	102.85	1.6	Pass
T2	362.5 - 356.25	Leg	2 3/4	13	-2.35	102.85	2.3	Pass
T3	356.25 - 350	Leg	2 3/4	26	-9.20	102.85	8.9	Pass
T4	350 - 343.75	Leg	3	39	-8.09	135.28	6.0	Pass
T5	343.75 - 337.5	Leg	3	49	-41.64	135.28	30.8	Pass
T6	337.5 - 331.25	Leg	3	61	-42.52	135.28	31.4	Pass
T7	331.25 - 325	Leg	3	73	-43.29	135.28	32.0	Pass
T8	325 - 318.75	Leg	3 1/4	86	-45.26	171.63	26.4	Pass
T9	318.75 - 312.5	Leg	3 1/4	98	-45.48	171.63	26.5	Pass
T10	312.5 - 306.25	Leg	3 1/4	110	-46.00	171.63	26.8	Pass
T11	306.25 - 300	Leg	3 1/4	122	-48.69	171.63	28.4	Pass
T12	300 - 293.75	Leg	3 1/4	134	-40.13	171.63	23.4	Pass
T13	293.75 - 287.5	Leg	3 1/4	146	-89.43	171.63	52.1	Pass
T14	287.5 - 281.25	Leg	3 1/4	158	-94.49	171.63	55.1	Pass
T15	281.25 - 275	Leg	3 1/4	170	-98.78	171.63	57.6	Pass
T16	275 - 268.75	Leg	3 1/4	182	-101.79	171.63	59.3	Pass
T17	268.75 - 262.5	Leg	3 1/4	195	-103.44	171.63	60.3	Pass
T18	262.5 - 256.25	Leg	3 1/4	207	-103.47	171.63	60.3	Pass
T19	256.25 - 250	Leg	3 1/4	219	-103.13	171.63	60.1	Pass
T20	250 - 243.75	Leg	3 1/4	231	-100.19	171.63	58.4	Pass
T21	243.75 - 237.5	Leg	3 1/4	243	-96.22	171.63	56.1	Pass
T22	237.5 - 231.25	Leg	3 1/4	255	-89.26	171.63	52.0	Pass
T23	231.25 - 225	Leg	3 1/4	266	-88.23	171.63	51.4	Pass
T24	225 - 218.75	Leg	3	278	-66.04	135.28	48.8	Pass
T25	218.75 - 212.5	Leg	3	290	-111.44	135.28	82.4	Pass
T26	212.5 - 206.25	Leg	3	302	-113.86	135.28	84.2	Pass
T27	206.25 - 200	Leg	3	313	-116.11	135.28	85.8	Pass
T28	200 - 175	Leg	3	326	-117.98	200.78	58.8	Pass
T29	175 - 168.75	Leg	3 1/4	377	-116.74	171.63	68.0	Pass
T30	168.75 - 162.5	Leg	3 1/4	389	-115.68	171.63	67.4	Pass
T31	162.5 - 156.25	Leg	3 1/4	401	-123.46	171.63	71.9	Pass
T32	156.25 - 150	Leg	3 1/4	413	-125.34	171.63	73.0	Pass
T33	150 - 125	Leg	3 1/4	424	-128.49	171.63	74.9	Pass
T34	125 - 100	Leg	3 1/4	463	-128.60	171.63	74.9	Pass
T35	100 - 93.75	Leg	3 1/4	502	-104.48	171.63	60.9	Pass

<p style="text-align: center;"><b>tnxTower</b></p> <p style="text-align: center;"><b>Centek Engineering Inc.</b> 63-2 North Branford Rd. Branford, CT 06405 Phone: (203) 488-0580 FAX: (203) 488-8587</p>	<p style="text-align: center;"><b>Job</b></p> <p style="text-align: center;">16071.44 - CT2049</p>	<p style="text-align: center;"><b>Page</b></p> <p style="text-align: center;">108 of 111</p>
	<p style="text-align: center;"><b>Project</b></p> <p style="text-align: center;">370' Guyed Tower - 689 Old Colchester Road, Montville, CT</p>	<p style="text-align: center;"><b>Date</b></p> <p style="text-align: center;">11:00:57 11/01/16</p>
	<p style="text-align: center;"><b>Client</b></p> <p style="text-align: center;">AT&amp;T Mobility</p>	<p style="text-align: center;"><b>Designed by</b></p> <p style="text-align: center;">TJL</p>

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	$\phi P_{allow}$ K	% Capacity	Pass Fail
T36	93.75 - 87.5	Leg	3 1/4	514	-138.69	171.63	80.8	Pass
T37	87.5 - 81.25	Leg	3 1/4	526	-139.53	171.63	81.3	Pass
T38	81.25 - 75	Leg	3 1/4	538	-140.86	171.63	82.1	Pass
T39	75 - 50	Leg	3 1/4	550	-143.47	171.63	83.6	Pass
T40	50 - 25	Leg	3 1/4	589	-150.54	171.63	87.7	Pass
T41	25 - 0	Leg	3 1/4	628	-151.68	171.63	88.4	Pass
T1	368.75 - 362.5	Diagonal	L2 1/2x2 1/2x1/4	11	-0.45	23.51	1.9	Pass
T2	362.5 - 356.25	Diagonal	2L3x3x5/16	20	-1.33	102.12	1.3	Pass
T3	356.25 - 350	Diagonal	2L3x3x5/16	34	5.77	103.08	4.2 (b)	Pass
T4	350 - 343.75	Diagonal	L3x2 1/2x1/4	43	-4.05	27.26	5.6	Pass
T5	343.75 - 337.5	Diagonal	5/8	55	4.65	9.94	18.1 (b)	Pass
T6	337.5 - 331.25	Diagonal	5/8	67	4.37	9.94	14.9	Pass
T7	331.25 - 325	Diagonal	5/8	79	4.04	9.94	16.3 (b)	Pass
T8	325 - 318.75	Diagonal	3/4	92	4.44	14.31	46.8	Pass
T9	318.75 - 312.5	Diagonal	3/4	108	4.46	14.31	44.0	Pass
T10	312.5 - 306.25	Diagonal	3/4	120	4.80	14.31	40.6	Pass
T11	306.25 - 300	Diagonal	3/4	129	9.13	14.31	31.0	Pass
T12	300 - 293.75	Diagonal	L3x2 1/2x1/4	142	-7.80	27.41	31.2	Pass
T13	293.75 - 287.5	Diagonal	3/4	152	6.90	14.31	33.5	Pass
T14	287.5 - 281.25	Diagonal	5/8	164	5.56	9.94	63.8	Pass
T15	281.25 - 275	Diagonal	5/8	176	4.34	9.94	28.5	Pass
T16	275 - 268.75	Diagonal	5/8	188	3.55	9.94	48.2	Pass
T17	268.75 - 262.5	Diagonal	5/8	200	3.02	9.94	55.9	Pass
T18	262.5 - 256.25	Diagonal	5/8	215	2.66	9.94	43.6	Pass
T19	256.25 - 250	Diagonal	3/4	225	3.90	14.31	35.7	Pass
T20	250 - 243.75	Diagonal	3/4	236	4.48	14.31	30.3	Pass
T21	243.75 - 237.5	Diagonal	3/4	249	10.09	14.31	26.8	Pass
T22	237.5 - 231.25	Diagonal	3/4	261	13.00	14.31	27.2	Pass
T23	231.25 - 225	Diagonal	1	273	14.04	25.45	70.5	Pass
T24	225 - 218.75	Diagonal	2L2 1/2x2 1/2x1/4	284	-14.39	65.28	55.2	Pass
T25	218.75 - 212.5	Diagonal	5/8	296	7.75	9.94	72.2 (b)	Pass
T26	212.5 - 206.25	Diagonal	5/8	308	6.15	9.94	28.9 (b)	Pass
T27	206.25 - 200	Diagonal	5/8	320	4.06	9.94	78.0	Pass
T28	200 - 175	Diagonal	5/8	336	6.44	9.94	61.9	Pass
T29	175 - 168.75	Diagonal	1	387	8.82	25.45	40.9	Pass
T30	168.75 - 162.5	Diagonal	1	399	9.74	25.45	64.8	Pass
T31	162.5 - 156.25	Diagonal	5/8	408	5.06	9.94	34.7	Pass
T32	156.25 - 150	Diagonal	5/8	420	3.91	9.94	55.5 (b)	Pass
T33	150 - 125	Diagonal	5/8	430	5.36	9.94	38.3	Pass
T34	125 - 100	Diagonal	L2 1/2x2 1/2x3/16	469	12.65	24.84	61.2 (b)	Pass
T35	100 - 93.75	Diagonal	2L2 1/2x2 1/2x1/4	511	-15.29	65.39	50.9	Pass
T36	93.75 - 87.5	Diagonal	3/4	520	6.19	14.31	39.4	Pass
T37	87.5 - 81.25	Diagonal	5/8	532	4.52	9.94	60.6 (b)	Pass
T38	81.25 - 75	Diagonal	5/8	544	2.94	9.94	23.4	Pass
T39	75 - 50	Diagonal	5/8	561	4.90	9.94	30.8 (b)	Pass
T40	50 - 25	Diagonal	5/8	622	5.27	9.94	43.2	Pass
T41	25 - 0	Diagonal	5/8	639	3.40	9.94	34.2	Pass
T28	200 - 175	Horizontal	P1.25x.14	338	-3.20	12.04	26.6	Pass
T33	150 - 125	Horizontal	P1.25x.14	436	-3.07	12.10	25.4	Pass
T34	125 - 100	Horizontal	P1.25x.14	475	-7.41	12.10	61.2	Pass

<b>tnxTower</b>  <b>Centek Engineering Inc.</b> 63-2 North Branford Rd. Branford, CT 06405 Phone: (203) 488-0580 FAX: (203) 488-8587	<b>Job</b> 16071.44 - CT2049	<b>Page</b> 109 of 111
	<b>Project</b> 370' Guyed Tower - 689 Old Colchester Road, Montville, CT	<b>Date</b> 11:00:57 11/01/16
	<b>Client</b> AT&T Mobility	<b>Designed by</b> TJL

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	$\phi P_{allow}$ K	% Capacity	Pass Fail
T39	75 - 50	Horizontal	P1.25x.14	563	-2.77	12.10	22.9	Pass
T40	50 - 25	Horizontal	P1.25x.14	619	-2.97	12.10	24.5	Pass
T41	25 - 0	Horizontal	P1.25x.14	651	-2.63	12.10	21.7	Pass
T28	200 - 175	Secondary Horizontal	P1.25x.14	340	-2.04	12.04	17.0	Pass
T1	368.75 - 362.5	Top Girt	2L2 1/2x2x1/4	4	0.11	57.26	0.3	Pass
T2	362.5 - 356.25	Top Girt	2L2 1/2x3x1/4	16	0.32	75.61	0.4	Pass
							1.0 (b)	
T3	356.25 - 350	Top Girt	2L2 1/2x3x1/4	29	-1.28	65.49	2.0	Pass
							4.2 (b)	
T4	350 - 343.75	Top Girt	2L2 1/2x2x1/4	40	9.83	57.26	17.2	Pass
							19.8 (b)	
T5	343.75 - 337.5	Top Girt	2L2 1/2x2x1/4	52	-4.28	54.62	7.8	Pass
							8.6 (b)	
T6	337.5 - 331.25	Top Girt	P1.25x.14	65	-3.09	12.04	25.6	Pass
T7	331.25 - 325	Top Girt	P1.25x.14	77	-2.99	12.04	24.8	Pass
T8	325 - 318.75	Top Girt	P1.25x.14	89	-3.60	12.04	29.9	Pass
T9	318.75 - 312.5	Top Girt	P1.25x.14	102	-4.09	12.10	33.8	Pass
T10	312.5 - 306.25	Top Girt	P1.25x.14	114	-4.09	12.10	33.8	Pass
T11	306.25 - 300	Top Girt	2L2 1/2x2x1/4	126	-5.94	54.74	10.8	Pass
							11.9 (b)	
T12	300 - 293.75	Top Girt	2L2 1/2x2x1/4	136	12.07	57.26	21.1	Pass
							24.3 (b)	
T13	293.75 - 287.5	Top Girt	2L2 1/2x2x1/4	149	-3.06	54.74	5.6	Pass
							6.2 (b)	
T14	287.5 - 281.25	Top Girt	P1.25x.14	160	-3.88	12.10	32.1	Pass
T15	281.25 - 275	Top Girt	P1.25x.14	172	-3.13	12.10	25.8	Pass
T16	275 - 268.75	Top Girt	P1.25x.14	185	-2.96	12.10	24.5	Pass
T17	268.75 - 262.5	Top Girt	P1.25x.14	196	-2.98	12.10	24.6	Pass
T18	262.5 - 256.25	Top Girt	P1.25x.14	208	-2.94	12.10	24.3	Pass
T19	256.25 - 250	Top Girt	P1.25x.14	220	-3.59	12.10	29.6	Pass
T20	250 - 243.75	Top Girt	2L2 1/2x2x1/4	232	-4.35	54.38	8.0	Pass
							13.7 (b)	
T21	243.75 - 237.5	Top Girt	2L2 1/2x2x1/4	245	-5.35	54.74	9.8	Pass
							10.8 (b)	
T22	237.5 - 231.25	Top Girt	2L2 1/2x2x1/4	257	-7.25	54.74	13.2	Pass
							14.6 (b)	
T23	231.25 - 225	Top Girt	2L2 1/2x2x1/4	269	-8.40	54.74	15.4	Pass
							16.9 (b)	
T24	225 - 218.75	Top Girt	2L2 1/2x2x1/4	280	16.23	57.26	28.4	Pass
							32.7 (b)	
T25	218.75 - 212.5	Top Girt	2L2 1/2x2x1/4	293	5.77	57.26	10.1	Pass
							11.6 (b)	
T26	212.5 - 206.25	Top Girt	P1.25x.14	304	-4.36	12.04	36.2	Pass
T27	206.25 - 200	Top Girt	P1.25x.14	316	-3.26	12.04	27.1	Pass
T28	200 - 175	Top Girt	P1.25x.14	329	-2.27	12.04	18.9	Pass
T29	175 - 168.75	Top Girt	P1.25x.14	381	-4.67	12.04	38.8	Pass
T30	168.75 - 162.5	Top Girt	P1.25x.14	393	-5.81	12.10	48.0	Pass
T31	162.5 - 156.25	Top Girt	2L2 1/2x2x1/4	403	6.98	59.30	11.8	Pass
							21.9 (b)	
T32	156.25 - 150	Top Girt	P1.25x.14	416	-2.80	12.10	23.2	Pass
T33	150 - 125	Top Girt	P1.25x.14	428	-2.10	12.10	17.4	Pass
T34	125 - 100	Top Girt	P1.25x.14	466	-4.09	12.10	33.8	Pass
T35	100 - 93.75	Top Girt	2L2 1/2x2x1/4	507	15.28	57.26	26.7	Pass
							30.7 (b)	
T36	93.75 - 87.5	Top Girt	2L2 1/2x2x1/4	517	8.08	59.30	13.6	Pass
							25.4 (b)	
T37	87.5 - 81.25	Top Girt	P1.25x.14	529	-3.34	12.10	27.6	Pass
T38	81.25 - 75	Top Girt	P1.25x.14	541	-2.32	12.10	19.2	Pass
T39	75 - 50	Top Girt	P1.25x.14	554	-1.59	12.10	13.2	Pass
T40	50 - 25	Top Girt	L2 1/2x2x1/4	594	4.59	29.48	15.6	Pass
							28.9 (b)	



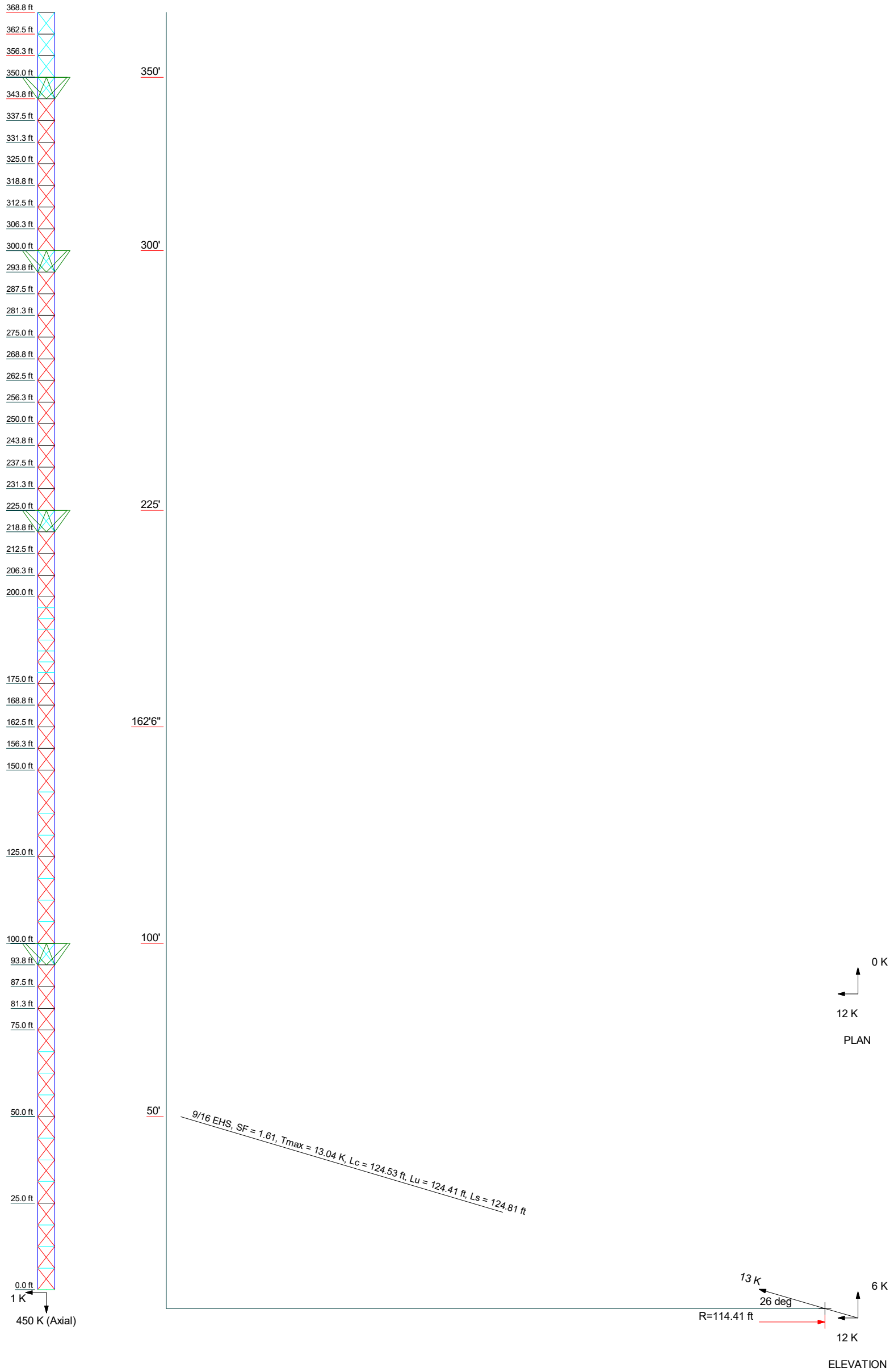
<b>tnxTower</b>  <b>Centek Engineering Inc.</b> 63-2 North Branford Rd. Branford, CT 06405 Phone: (203) 488-0580 FAX: (203) 488-8587	<b>Job</b> 16071.44 - CT2049	<b>Page</b> 110 of 111
	<b>Project</b> 370' Guyed Tower - 689 Old Colchester Road, Montville, CT	<b>Date</b> 11:00:57 11/01/16
	<b>Client</b> AT&T Mobility	<b>Designed by</b> TJL

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	$\phi P_{allow}$ K	% Capacity	Pass Fail
T41	25 - 0	Top Girt	P1.25x.14	632	-1.52	12.10	12.6	Pass
T4	350 - 343.75	Guy A@350	7/8	679	23.31	47.82	48.7	Pass
T12	300 - 293.75	Guy A@300	7/8	697	26.10	47.82	54.6	Pass
T24	225 - 218.75	Guy A@225	3/4	716	22.89	34.98	65.4	Pass
T31	162.5 - 156.25	Guy A@162.5	3/4	723	24.23	34.98	69.3	Pass
T35	100 - 93.75	Guy A@100	9/16	737	13.76	21.00	65.5	Pass
T40	50 - 25	Guy A@50	9/16	744	12.88	21.00	61.3	Pass
T4	350 - 343.75	Guy B@350	7/8	674	23.70	47.82	49.6	Pass
T12	300 - 293.75	Guy B@300	7/8	692	26.07	47.82	54.5	Pass
T24	225 - 218.75	Guy B@225	3/4	709	22.92	34.98	65.5	Pass
T31	162.5 - 156.25	Guy B@162.5	3/4	722	24.20	34.98	69.2	Pass
T35	100 - 93.75	Guy B@100	9/16	730	13.83	21.00	65.9	Pass
T40	50 - 25	Guy B@50	9/16	743	12.63	21.00	60.1	Pass
T4	350 - 343.75	Guy C@350	7/8	667	23.63	47.82	49.4	Pass
T12	300 - 293.75	Guy C@300	7/8	685	26.02	47.82	54.4	Pass
T24	225 - 218.75	Guy C@225	3/4	704	22.65	34.98	64.7	Pass
T31	162.5 - 156.25	Guy C@162.5	3/4	721	24.19	34.98	69.1	Pass
T35	100 - 93.75	Guy C@100	9/16	725	13.68	21.00	65.1	Pass
T40	50 - 25	Guy C@50	9/16	742	13.04	21.00	62.1	Pass
T4	350 - 343.75	Torque Arm Top@350	2L3x2 1/2x1/4	682	22.28	85.21	26.2	Pass
T12	300 - 293.75	Torque Arm Top@300	2L3x2 1/2x1/4	688	23.42	85.21	27.5	Pass
T24	225 - 218.75	Torque Arm Top@225	2L3x2 1/2x1/4	718	21.91	85.21	25.7	Pass
T35	100 - 93.75	Torque Arm Top@100	2L3x2 1/2x1/4	732	14.54	85.21	17.1	Pass
T4	350 - 343.75	Torque Arm Bottom@350	2L3x2 1/2x1/4	677	-24.72	46.13	53.6	Pass
T12	300 - 293.75	Torque Arm Bottom@300	2L3x2 1/2x1/4	690	-28.07	46.23	60.7	Pass
T24	225 - 218.75	Torque Arm Bottom@225	2L3x2 1/2x1/4	713	-23.03	46.13	49.9	Pass
T35	100 - 93.75	Torque Arm Bottom@100	2L3x2 1/2x1/4	734	-11.30	46.23	24.4	Pass
							Summary	
						Leg (T41)	88.4	Pass
						Diagonal (T22)	90.8	Pass
						Horizontal (T34)	61.2	Pass
						Secondary Horizontal (T28)	17.0	Pass
						Top Girt (T30)	48.0	Pass
						Guy A (T31)	69.3	Pass
						Guy B (T31)	69.2	Pass
						Guy C (T31)	69.1	Pass
						Torque Arm Top (T12)	27.5	Pass
						Torque Arm Bottom (T12)	60.7	Pass
						Bolt Checks	72.2	Pass
						<b>RATING =</b>	<b>90.8</b>	<b>Pass</b>

<p><b>tnxTower</b></p> <p><b>Centek Engineering Inc.</b> 63 2 North Branford Rd.</p>	<p><b>Job</b></p> <p>16071.44 - CT2049</p>	<p><b>Page</b></p> <p>111 of 111</p>
<p>Program Version: 7.5.1 Rohn Tower Phone: (203) 488-0580 FAX: (203) 488-8587</p>	<p><b>Project</b></p> <p>370' Guyed Tower - 689 Old Colchester Road, Montville, CT</p> <p><b>Client</b></p> <p>100.WI/44_Montville CT2049/04 Structural/Backup Documentation/Rev (1)/tnx AT&amp;T Mobility</p>	<p><b>Date</b></p> <p>11:00:57 11/01/16</p> <p><b>Designed by</b></p> <p>370' Guyed TJL</p>

**Guy Tensions and Tower Reactions**  
 TIA-222-G - 105 mph/50 mph 0.7500 in Ice Exposure C

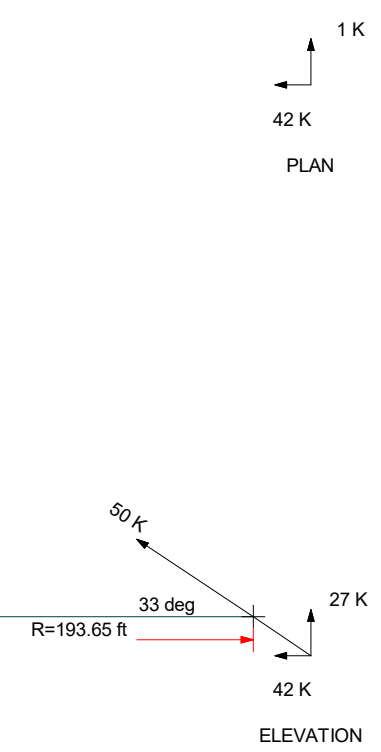
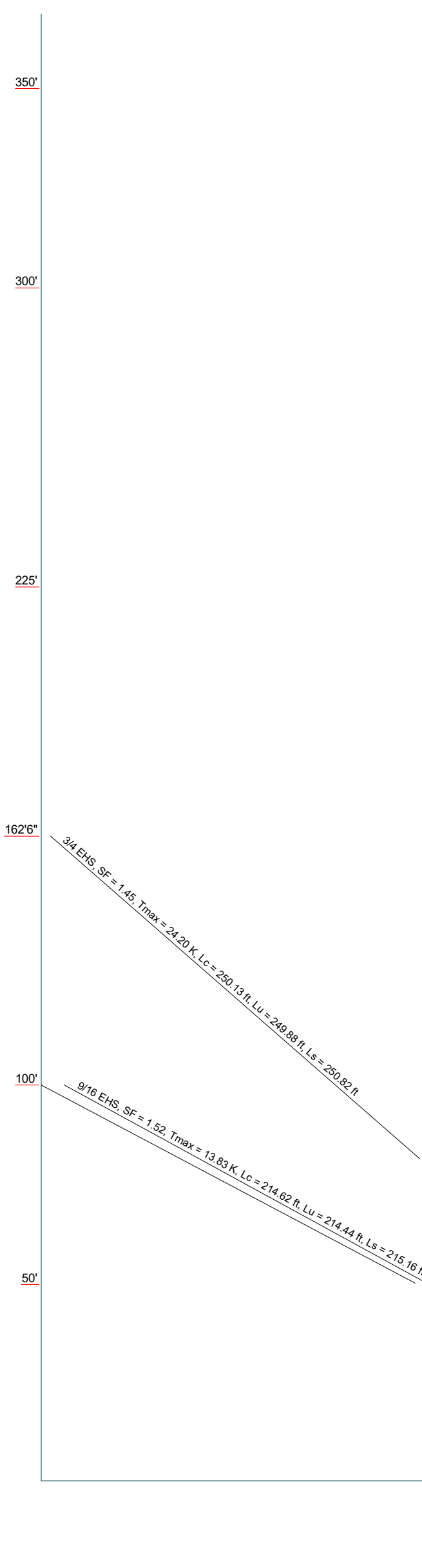
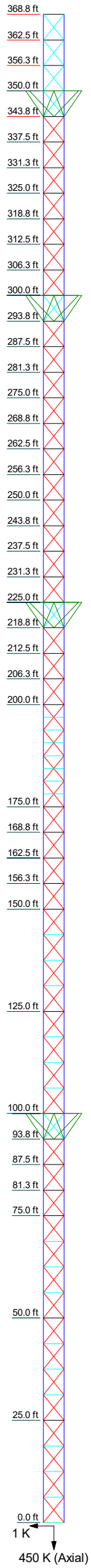
**Maximum Values**  
 Anchor 'C' @ 114.41 ft Azimuth 240 deg Elev -5.4 ft  
 Plane through centroid of tower



<b>Centek Engineering Inc.</b> 63-2 North Branford Rd. Branford, CT 06405 Phone: (203) 488-0580 FAX: (203) 488-8587	Job: <b>16071.44 - CT2049</b>
	Project: <b>370' Guyed Tower - 689 Old Colchester Road, Montville, CT</b>
	Client: AT&T Mobility
	Code: TIA-222-G
	Date: 11/01/16
Path:	Drawn by: T.J.L.
App'd:	Scale: NTS
DWG No. E-6	Rev:

**Guy Tensions and Tower Reactions**  
 TIA-222-G - 105 mph/50 mph 0.7500 in Ice Exposure C

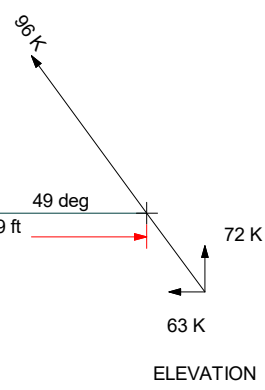
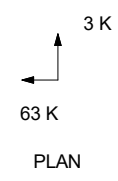
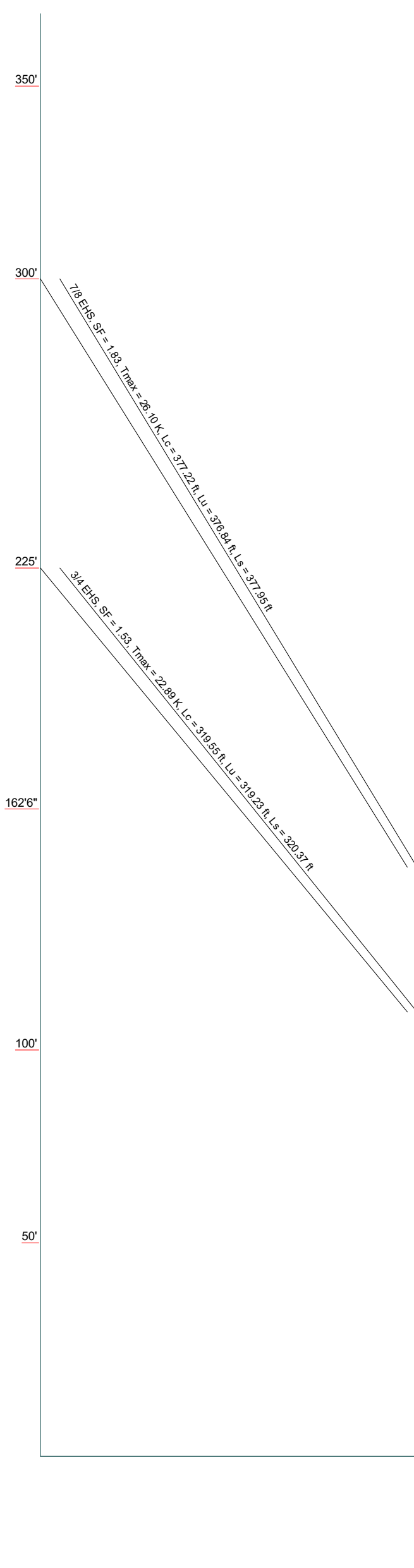
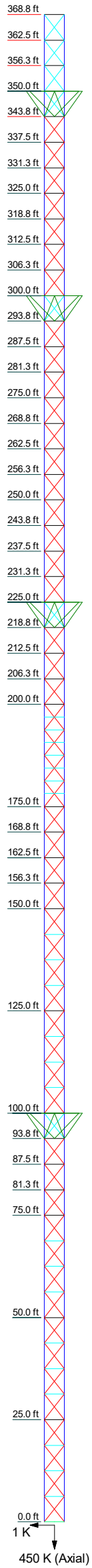
**Maximum Values**  
 Anchor 'B'@193.65 ft Azimuth 120 deg Elev 0.72 ft  
 Plane through centroid of tower



<b>Centek Engineering Inc.</b> 63-2 North Branford Rd. Branford, CT 06405 Phone: (203) 488-0580 FAX: (203) 488-8587	Job: <b>16071.44 - CT2049</b>
	Project: <b>370' Guyed Tower - 689 Old Colchester Road, Montville, CT</b>
	Client: AT&T Mobility      Drawn by: T.J.L.      App'd:
	Code: TIA-222-G      Date: 11/01/16      Scale: NTS
	Path:
Dwg No. E-6	

**Guy Tensions and Tower Reactions**  
 TIA-222-G - 105 mph/50 mph 0.7500 in Ice Exposure C

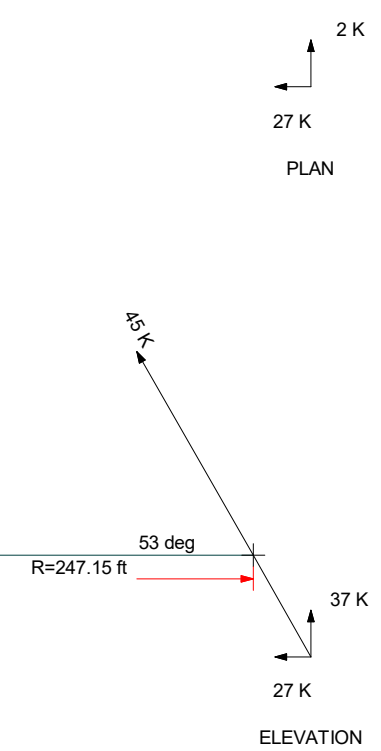
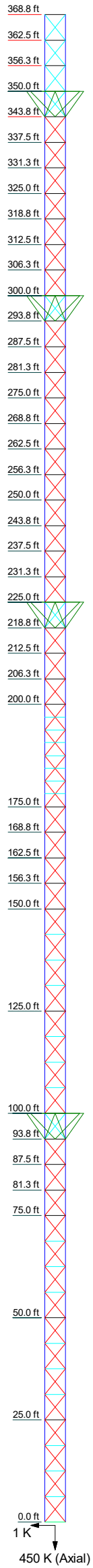
**Maximum Values**  
 Anchor 'A'@224.79 ft Azimuth 0 deg Elev -5.41 ft  
 Plane through centroid of tower



<b>Centek Engineering Inc.</b> 63-2 North Branford Rd. Branford, CT 06405 Phone: (203) 488-0580 FAX: (203) 488-8587	<b>Job: 16071.44 - CT2049</b>		
	Project: <b>370' Guyed Tower - 689 Old Colchester Road, Montville, CT</b>		
	Client: AT&T Mobility	Drawn by: T.J.L.	App'd:
	Code: TIA-222-G	Date: 11/01/16	Scale: NTS
	Path:	Dwg No. E-6	

**Guy Tensions and Tower Reactions**  
**TIA-222-G - 105 mph/50 mph 0.7500 in Ice Exposure C**

**Maximum Values**  
**Anchor 'A'@247.15 ft Azimuth 0 deg Elev -5.8 ft**  
**Plane through centroid of tower**



<b>Centek Engineering Inc.</b> 63-2 North Branford Rd. Branford, CT 06405 Phone: (203) 488-0580 FAX: (203) 488-8587	<b>Job: 16071.44 - CT2049</b>		
	<b>Project: 370' Guyed Tower - 689 Old Colchester Road, Montville, CT</b>		
	Client: AT&T Mobility	Drawn by: T.JL	App'd:
	Code: TIA-222-G	Date: 11/01/16	Scale: NTS
	Path:	Dwg No. E-6	

**Guyed Tower Base Foundation:**

**Input Data:**

Tower Data

Shear Force = Shear := 1-kip (User Input from tnxTower)  
 Axial Force = Axial := 450-kip (User Input from tnxTower)  
 Tower Height =  $H_t := 370\text{-ft}$  (User Input)

Footing Data:

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

Material Properties:

Concrete Compressive Strength =  $f_c := 3000\text{-psi}$  (User Input)  
 Steel Reinforcement Yield Strength =  $f_y := 60000\text{-psi}$  (User Input)  
 Internal Friction Angle of Soil =  $\Phi_s := 30\text{-deg}$  (User Input)  
 Ultimate Soil Bearing Capacity =  $q_s := 16000\text{-psf}$  (User Input)  
 Unit Weight of Soil =  $\gamma_{soil} := 120\text{-pcf}$  (User Input)  
 Unit Weight of Concrete =  $\gamma_{conc} := 150\text{-pcf}$  (User Input)  
 Foundation Bouyancy = Bouyancy := 0 (User Input) (Yes=1 / No=0)  
 Depth to Neglect =  $n := 0\text{-ft}$  (User Input)  
 Cohesion of Clay Type Soil =  $c := 0\text{-ksf}$  (User Input) (Use 0 for Sandy Soil)  
 Seismic Zone Factor =  $Z := 2$  (User Input)  
 Coefficient of Friction Between Concrete =  $\mu := 0.45$  (User Input)

**Calculated Factors:**

Coefficient of Lateral Soil Pressure =  $K_p := \frac{1 + \sin(\Phi_s)}{1 - \sin(\Phi_s)} = 3$

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

### Stability of Footing:

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

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

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

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

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

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

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

$T_p := \text{if}[n < (D_f - T_f), T_f \cdot (D_f - n)] = 2$

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

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

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

Total Weight =  $WT_{tot} := WT_c + \text{Axial} = 468.75\text{-kip}$

Soil/Concrete Friction Resistance =  $Sl_2 := \mu \cdot WT_{tot} = 210.94\text{-kips}$

Total Sliding Resistance =  $Sl_{tot} := Sl_1 + Sl_2 = 223.54\text{-kips}$

Sliding Resistance Ratio =  $\text{Sliding\_Resistance\_ratio} := \frac{0.75Sl_{tot}}{\text{Shear}} = 167.65$

$\text{Sliding\_Resistance\_Check} := \text{if}\left[\left(\frac{\text{Shear}}{0.75Sl_{tot}} < 1.0\right), \text{"Okay"}, \text{"No Good"}\right]$

Sliding\_Resistance\_Check = "Okay"

### Bearing Pressure Caused by Footing:

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

Maximum Pressure in Mat =  $P_{max} := \frac{WT_{tot}}{A_{mat}} = 9.57\text{-ksf}$

$\text{Max\_Pressure\_Check} := \text{if}(P_{max} < 0.6q_s, \text{"Okay"}, \text{"No Good"})$

Max\_Pressure\_Check = "Okay"



**Job :** AT&T ~ CT2049: 370-ft Guyed Lattice Tower  
**Address:** 689 Old Colchester Rd., Montville, CT  
**Description:** Guy Anchor Evaluation

**Project No.** 16071.44  
**Computed by** TJL  
**Checked by** CFC

**Sheet** 1 of 2  
**Date** 11/1/16  
**Date**

**CHECK UPLIFT RESISTANCE**

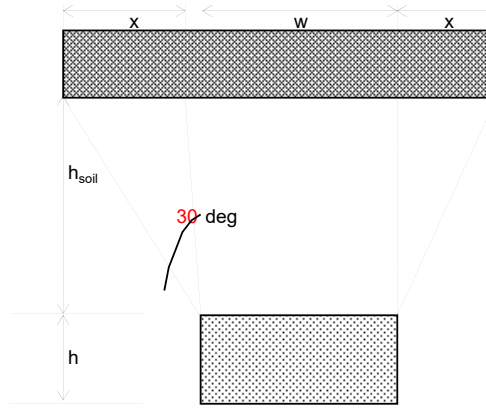
**ANCHOR (C) AT 114.41ft RADIUS**

**RESULTS FROM COMPUTER ANALYSIS:**

Uplift = 6 kips  
 Sliding = 12 kips  
 Wdepth = 50 ft

**CONCRETE PARAMETERS:**

$\gamma_{conc} = 150$  pcf  
 $\gamma_{conc.sub} = 87.6$  pcf  
 $w = 4$  ft  
 $h = 3$  ft  
 $d = 10$  ft  
 Vol. = 120.00 ft<sup>3</sup>  
 Vol.sub = 0.00 ft<sup>3</sup>  
 $Wc = 18.00$  kips  
 $\phi = 0.90$   
 16.20



**Foundation Section**

**SOIL PARAMETERS:**

$\gamma_{soil} = 120$  pcf  
 $\gamma_{soil.sub} = 57.6$  pcf  
 $h_{soil} = 3.5$  ft  
 $x = 2.02$  ft

**Soil Weight (W<sub>r</sub>):**

B1 = 40.00  
 B2 = 40.00  
 B3 = 112.91

W.soil = 30.82 kips  
 W.soil.sub = 0.00 kips  
 Total = 30.82 kips  
 $\phi = 0.75$   
 23.11

**SF AGAINST SLIDING**

8.14 > 1 OK

**GUY ANCHORS AGAINST UPLIFT ARE ADEQUATE**

**Job :** AT&T ~ CT2049: 370-ft Guyed Lattice Tower  
**Address:** 689 Old Colchester Rd., Montville, CT  
**Description:** Guy Anchor Evaluation

**Project No.** 16071.44  
**Computed by** TJL  
**Checked by** CFC

**Sheet** 2 of 2  
**Date** 11/1/16  
**Date**

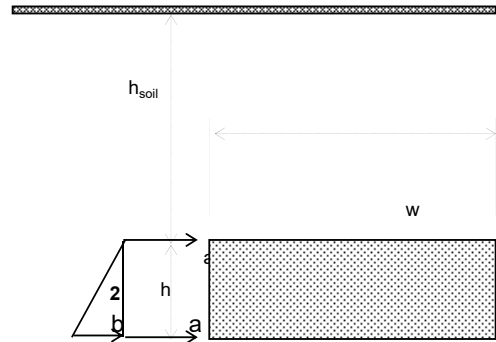
**CHECK SLIDING RESISTANCE**

**SOIL PARAMETERS**

$\gamma_{soil} = 120$  pcf  
 $\gamma_{soil} = 57.6$  pcf  
 $h_{soil} = 3.5$  ft  
 $h = 3$  ft  
 $\phi = 30$  degrees

**ANCHOR PARAMETERS**

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



**Foundation Elevation View**

$K_p = 3.00$

**HORIZONTAL FORCES**

**RESIST TO SLIDING =**

1.26 ksf  
 2.34 ksf  
 54.00 k

**SOIL & CONCRETE WEIGHT =**  
**UPLIFT REACTIONS =**  
**SUM =**

$W_r + W_c = 39.31$  k  
 -6 k  
33.31 k

**COEF. OF FRICTION, (0.45) =**  
**RESIST TO SLIDING =**  
**SUM =**

14.99 k  
 54.00 k  
68.99 k

**SF AGAINST SLIDING**

$SF = 5.7 > 1$  **OK**

**GUY ANCHORS AGAINST SLIDING ARE ADEQUATE**

**CHECK UPLIFT RESISTANCE**

**ANCHOR (B) AT 193.65ft RADIUS**

**RESULTS FROM COMPUTER ANALYSIS:**

Uplift = 27 kips  
 Sliding = 42 kips  
 Wdepth = 50 ft

**CONCRETE PARAMETERS:**

$\gamma_{conc} = 150$  pcf  
 $\gamma_{conc.sub} = 87.6$  pcf  
 $w = 4$  ft  
 $h = 4$  ft  
 $d = 10$  ft  
 Vol. = 160.00 ft<sup>3</sup>  
 Vol.sub = 0.00 ft<sup>3</sup>  
 $Wc = 24.00$  kips  
 $\phi = 0.90$   
 21.60

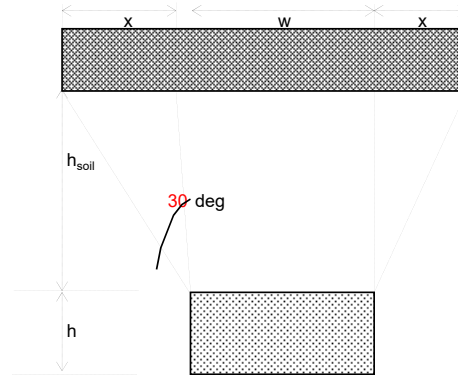
**SOIL PARAMETERS:**

$\gamma_{soil} = 120$  pcf  
 $\gamma_{soil.sub} = 57.6$  pcf  
 $h_{soil} = 6$  ft  
 $x = 3.46$  ft

Soil Weight (Wr):

B1 = 40.00  
 B2 = 40.00  
 B3 = 184.99

W.soil = 74.64 kips  
 W.soil.sub = 0.00 kips  
 Total = 74.64 kips  
 $\phi = 0.75$   
 55.98



**Foundation Section**

**SF AGAINST SLIDING**

3.65 > 1 OK

**GUY ANCHORS AGAINST UPLIFT ARE ADEQUATE**

**Job :** AT&T ~ CT2049: 370-ft Guyed Lattice Tower  
**Address:** 689 Old Colchester Rd., Montville, CT  
**Description:** Guy Anchor Evaluation

**Project No.** 16071.44  
**Computed by** TJL  
**Checked by** CFC

**Sheet** 2 of 2  
**Date** 11/1/16  
**Date**

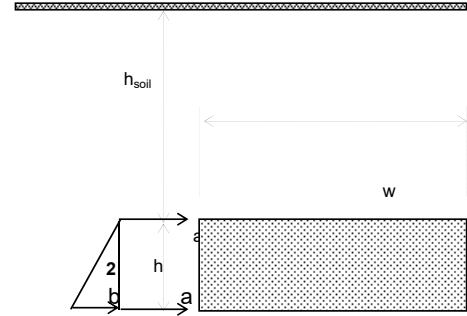
**CHECK SLIDING RESISTANCE**

**SOIL PARAMETERS**

$\gamma_{soil} = 120$  pcf  
 $\gamma_{soil} = 57.6$  pcf  
 $h_{soil} = 6$  ft  
 $h = 4$  ft  
 $\phi = 30$  degrees

**ANCHOR PARAMETERS**

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



**Foundation Elevation View**

$K_p = 3.00$

**HORIZONTAL FORCES**

**RESIST TO SLIDING =**

2.16 ksf  
 3.60 ksf  
 115.20 k

**SOIL & CONCRETE WEIGHT =**  
**UPLIFT REACTIONS =**  
**SUM =**

$W_r + W_c = 77.58$  k  
 -27 k  
50.58 k

**COEF. OF FRICTION, (0.45) =**  
**RESIST TO SLIDING =**  
**SUM =**

22.76 k  
 115.20 k  
137.96 k

**SF AGAINST SLIDING**

$SF = 3.3 > 1$  **OK**

**GUY ANCHORS AGAINST SLIDING ARE ADEQUATE**

**Job :** AT&T ~ CT2049: 370-ft Guyed Lattice Tower  
**Address:** 689 Old Colchester Rd., Montville, CT  
**Description:** Guy Anchor Evaluation

**Project No.** 16071.44  
**Computed by** T.J.L.  
**Checked by** C.F.C.

**Sheet** 1 of 2  
**Date** 11/1/16  
**Date**

**CHECK UPLIFT RESISTANCE**

**ANCHOR (A) AT 224.79ft RADIUS**

**RESULTS FROM COMPUTER ANALYSIS:**

Uplift = 72 kips  
 Sliding = 63 kips  
 Wdepth = 50 ft

**CONCRETE PARAMETERS:**

$\gamma_{conc} = 150$  pcf  
 $\gamma_{conc.sub} = 87.6$  pcf  
 $w = 6$  ft  
 $h = 4$  ft  
 $d = 16$  ft  
 Vol. = 384.00 ft<sup>3</sup>  
 Vol.sub = 0.00 ft<sup>3</sup>  
 $Wc = 57.60$  kips  
 $\phi = 0.90$   
 51.84

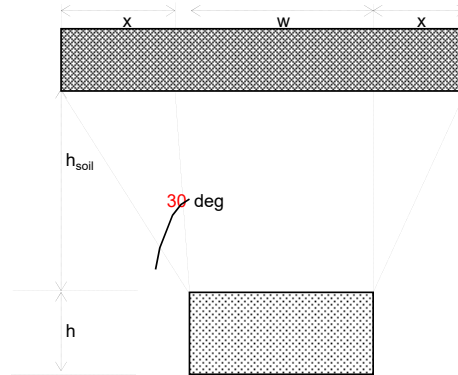
**SOIL PARAMETERS:**

$\gamma_{soil} = 120$  pcf  
 $\gamma_{soil.sub} = 57.6$  pcf  
 $h_{soil} = 6$  ft  
 $x = 3.46$  ft

Soil Weight (Wr):

B1 = 96.00  
 B2 = 96.00  
 B3 = 296.42

W.soil = 134.67 kips  
 W.soil.sub = 0.00 kips  
 Total = 134.67 kips  
 $\phi = 0.75$   
 101.00



**Foundation Section**

**SF AGAINST SLIDING**

2.67 > 1 OK

**GUY ANCHORS AGAINST UPLIFT ARE ADEQUATE**

**Job :** AT&T ~ CT2049: 370-ft Guyed Lattice Tower  
**Address:** 689 Old Colchester Rd., Montville, CT  
**Description:** Guy Anchor Evaluation

**Project No.** 16071.44  
**Computed by** TJL  
**Checked by** CFC

**Sheet** 2 of 2  
**Date** 11/1/16

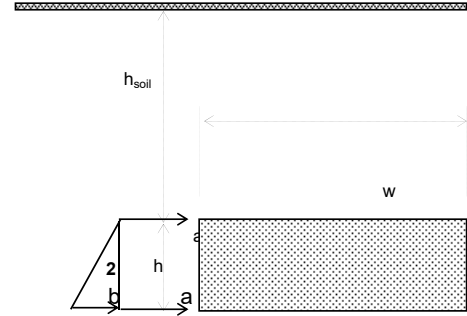
**CHECK SLIDING RESISTANCE**

**SOIL PARAMETERS**

$\gamma_{soil} = 120$  pcf  
 $\gamma_{soil} = 57.6$  pcf  
 $h_{soil} = 6$  ft  
 $h = 4$  ft  
 $\phi = 30$  degrees

**ANCHOR PARAMETERS**

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



**Foundation Elevation View**

$K_p = 3.00$

**HORIZONTAL FORCES**

**RESIST TO SLIDING =**

2.16 ksf  
 3.60 ksf  
 184.32 k

**SOIL & CONCRETE WEIGHT =**  
**UPLIFT REACTIONS =**  
**SUM =**

$W_r + W_c = 152.84$  k  
 -72 k  
80.84 k

**COEF. OF FRICTION, (0.45) =**  
**RESIST TO SLIDING =**  
**SUM =**

36.38 k  
 184.32 k  
220.70 k

**SF AGAINST SLIDING**

$SF = 3.5 > 1$  **OK**

**GUY ANCHORS AGAINST SLIDING ARE ADEQUATE**

**Job :** AT&T ~ CT2049: 370-ft Guyed Lattice Tower  
**Address:** 689 Old Colchester Rd., Montville, CT  
**Description:** Guy Anchor Evaluation

**Project No.** 16071.44  
**Computed by** T.J.L.  
**Checked by** C.F.C.

**Sheet** 1 of 2  
**Date** 11/1/16  
**Date**

**CHECK UPLIFT RESISTANCE**

**ANCHOR (A) AT 247.15ft RADIUS**

**RESULTS FROM COMPUTER ANALYSIS:**

Uplift = 37 kips  
 Sliding = 27 kips  
 Wdepth = 50 ft

**CONCRETE PARAMETERS:**

$\gamma_{conc} = 150$  pcf  
 $\gamma_{conc.sub} = 87.6$  pcf  
 $w = 4$  ft  
 $h = 3$  ft  
 $d = 12$  ft  
 Vol. = 144.00 ft<sup>3</sup>  
 Vol.sub = 0.00 ft<sup>3</sup>  
 $W_c = 21.60$  kips  
 $\phi = 0.90$   
 19.44

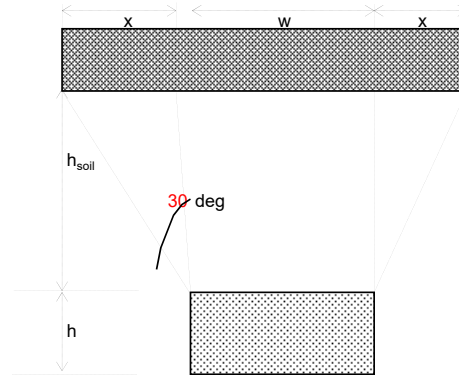
**SOIL PARAMETERS:**

$\gamma_{soil} = 120$  pcf  
 $\gamma_{soil.sub} = 57.6$  pcf  
 $h_{soil} = 6.75$  ft  
 $x = 3.90$  ft

Soil Weight (W<sub>r</sub>):

B1 = 48.00  
 B2 = 48.00  
 B3 = 233.46

W.soil = 104.58 kips  
 W.soil.sub = 0.00 kips  
 Total = 104.58 kips  
 $\phi = 0.75$   
 78.43



**Foundation Section**

**SF AGAINST SLIDING**

3.41 > 1 OK

→ **GUY ANCHORS AGAINST UPLIFT ARE ADEQUATE**

**Job :** AT&T ~ CT2049: 370-ft Guyed Lattice Tower  
**Address:** 689 Old Colchester Rd., Montville, CT  
**Description:** Guy Anchor Evaluation

**Project No.** 16071.44  
**Computed by** TJL  
**Checked by** CFC

**Sheet** 2 of 2  
**Date** 11/1/16  
**Date**

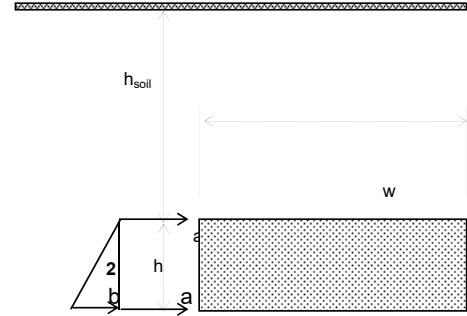
**CHECK SLIDING RESISTANCE**

**SOIL PARAMETERS**

$\gamma_{soil} = 120$  pcf  
 $\gamma_{soil} = 57.6$  pcf  
 $h_{soil} = 6.75$  ft  
 $h = 3$  ft  
 $\phi = 30$  degrees

**ANCHOR PARAMETERS**

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



**Foundation Elevation View**

$K_p = 3.00$

**HORIZONTAL FORCES**

**RESIST TO SLIDING =**

2.43 ksf  
 3.51 ksf  
 106.92 k

**SOIL & CONCRETE WEIGHT =**  
**UPLIFT REACTIONS =**  
**SUM =**

$W_r + W_c = 97.87$  k  
 -37 k  
60.87 k

**COEF. OF FRICTION, (0.45) =**  
**RESIST TO SLIDING =**  
**SUM =**

27.39 k  
 106.92 k  
134.31 k

**SF AGAINST SLIDING**

$SF = 5.0 > 1$  **OK**

→ **GUY ANCHORS AGAINST SLIDING ARE ADEQUATE**



























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

ANTENNA COMMON FIELDS	ANTENNA POSITION 1	ANTENNA POSITION 2	ANTENNA POSITION 3	ANTENNA POSITION 4	ANTENNA POSITION 5	ANTENNA POSITION 6	ANTENNA POSITION 7
Existing Antenna?							
ANTENNA MAKE - MODEL	HPA-65R-BUU-H6						
ANTENNA VENDOR	CCI Products						
ANTENNA SIZE (H x W x D)	72X14.8X9						
ANTENNA WEIGHT	51						
AZIMUTH	70						
MAGNETIC DECLINATION							
RADIATION CENTER (feet)	240						
ANTENNA TIP HEIGHT	243						
MECHANICAL DOWNTILT	0						
FEEDER AMOUNT							
VERTICAL SEPARATION from ANTENNA ABOVE (TIP to TIP)							
VERTICAL SEPARATION from ANTENNA BELOW (TIP to TIP)							
HORIZONTAL SEPARATION from CLOSEST ANTENNA to LEFT (CENTERLINE to CENTERLINE)							
HORIZONTAL SEPARATION from CLOSEST ANTENNA to RIGHT (CENTERLINE to CENTERLINE)							
HORIZONTAL SEPARATION from ANOTHER ANTENNA (which antenna # / # of inches)							
Antenna RET Motor (QTY/MODEL)	Internal						
SURGE ARRESTOR (QTY/MODEL)							
DIPLEXER (QTY/MODEL)							
DUPLEXER (QTY/MODEL)							
Antenna RET CONTROL UNIT (QTY/MODEL)							
DC BLOCK (QTY/MODEL)							
TMA/LNA (QTY/MODEL)							
CURRENT INJECTORS FOR TMA (QTY/MODEL)							
PDU FOR TMA (QTY/MODEL)							
FILTER (QTY/MODEL)							
SQUID (QTY/MODEL)							
FIBER TRUNK (QTY/MODEL)							
DC TRUNK (QTY/MODEL)							
RRH - 700 band (QTY/MODEL)							
RRH - 850 band (QTY/MODEL)							
RRH - 1900 band (QTY/MODEL)	1	RRUS-32 B2					
RRH - AWS band (QTY/MODEL)							
RRH - WCS band (QTY/MODEL)							
Additional RRH #1 - any band (QTY/MODEL)							
Additional RRH #2 - any band (QTY/MODEL)							
Additional Component 1 (QTY/MODEL)							
Additional Component 2 (QTY/MODEL)							
Additional Component 3 (QTY/MODEL)							
Local Market Note 1	Bronze Standard- Replace existing LTE BB Antenna with Hex Port Antenna, no position change- Add RRUS-32 B2- DUL to DUS upgrade- Add XMU						
Local Market Note 2							
Local Market Note 3	Baseband Config - 1 DUS + XMU DUS-1 - 7A:7B:7C:X1P1:X1P2_ XMU-1 - PB:PA2B:PA:PA2A:PC:PA2C_.....D1E:D1D						

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

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

ANTENNA COMMON FIELDS	ANTENNA POSITION 1	ANTENNA POSITION 2	ANTENNA POSITION 3	ANTENNA POSITION 4	ANTENNA POSITION 5	ANTENNA POSITION 6	ANTENNA POSITION 7
Existing Antenna?							
ANTENNA MAKE - MODEL	HPA-65R-BUU-H8						
ANTENNA VENDOR	CCI Products						
ANTENNA SIZE (H x W x D)	92.4X14.8X7.4						
ANTENNA WEIGHT	88						
AZIMUTH	190						
MAGNETIC DECLINATION							
RADIATION CENTER (feet)	240						
ANTENNA TIP HEIGHT	248						
MECHANICAL DOWNTILT	0						
FEEDER AMOUNT							
VERTICAL SEPARATION from ANTENNA ABOVE (TIP to TIP)							
VERTICAL SEPARATION from ANTENNA BELOW (TIP to TIP)							
HORIZONTAL SEPARATION from CLOSEST ANTENNA to LEFT (CENTERLINE to CENTERLINE)							
HORIZONTAL SEPARATION from CLOSEST ANTENNA to RIGHT (CENTERLINE to CENTERLINE)							
HORIZONTAL SEPARATION from ANOTHER ANTENNA (which antenna # / # of inches)							
Antenna RET Motor (QTY/MODEL)	Internal						
SURGE ARRESTOR (QTY/MODEL)							
DIPLEXER (QTY/MODEL)							
DUPLEXER (QTY/MODEL)							
Antenna RET CONTROL UNIT (QTY/MODEL)							
DC BLOCK (QTY/MODEL)							
TMA/LNA (QTY/MODEL)							
CURRENT INJECTORS FOR TMA (QTY/MODEL)							
PDU FOR TMA (QTY/MODEL)							
FILTER (QTY/MODEL)							
SQUID (QTY/MODEL)							
FIBER TRUNK (QTY/MODEL)							
DC TRUNK (QTY/MODEL)							
RRH - 700 band (QTY/MODEL)							
RRH - 850 band (QTY/MODEL)							
RRH - 1900 band (QTY/MODEL)	1	RRUS-32 B2					
RRH - AWS band (QTY/MODEL)							
RRH - WCS band (QTY/MODEL)							
Additional RRH #1 - any band (QTY/MODEL)							
Additional RRH #2 - any band (QTY/MODEL)							
Additional Component 1 (QTY/MODEL)							
Additional Component 2 (QTY/MODEL)							
Additional Component 3 (QTY/MODEL)							
Local Market Note 1	Bronze Standard- Replace existing LTE BB Antenna with Hex Port Antenna, no position change- Add RRUS-32 B2- DUL to DUS upgrade- Add XMU						
Local Market Note 2							
Local Market Note 3	Baseband Config - 1 DUS + XMU DUS-1 - 7A:7B:7C:X1P1:X1P2_ XMU-1 - PB:PA2B:PA:PA2A:PC:PA2C_.....D1E:D1D						

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

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

ANTENNA COMMON FIELDS	ANTENNA POSITION 1	ANTENNA POSITION 2	ANTENNA POSITION 3	ANTENNA POSITION 4	ANTENNA POSITION 5	ANTENNA POSITION 6	ANTENNA POSITION 7
Existing Antenna?							
ANTENNA MAKE - MODEL	HPA-65R-BUU-H8						
ANTENNA VENDOR	CCI Products						
ANTENNA SIZE (H x W x D)	92.4X14.8X7.4						
ANTENNA WEIGHT	68						
AZIMUTH	310						
MAGNETIC DECLINATION							
RADIATION CENTER (feet)	240						
ANTENNA TIP HEIGHT	248						
MECHANICAL DOWNTILT	0						
FEEDER AMOUNT							
VERTICAL SEPARATION from ANTENNA ABOVE (TIP to TIP)							
VERTICAL SEPARATION from ANTENNA BELOW (TIP to TIP)							
HORIZONTAL SEPARATION from CLOSEST ANTENNA to LEFT (CENTERLINE to CENTERLINE)							
HORIZONTAL SEPARATION from CLOSEST ANTENNA to RIGHT (CENTERLINE to CENTERLINE)							
HORIZONTAL SEPARATION from ANOTHER ANTENNA (which antenna # / # of inches)							
Antenna RET Motor (QTY/MODEL)	Internal						
SURGE ARRESTOR (QTY/MODEL)							
DIPLEXER (QTY/MODEL)							
DUPLEXER (QTY/MODEL)							
Antenna RET CONTROL UNIT (QTY/MODEL)							
DC BLOCK (QTY/MODEL)							
TMA/LNA (QTY/MODEL)							
CURRENT INJECTORS FOR TMA (QTY/MODEL)							
PDU FOR TMAS (QTY/MODEL)							
FILTER (QTY/MODEL)							
SQUID (QTY/MODEL)							
FIBER TRUNK (QTY/MODEL)							
DC TRUNK (QTY/MODEL)							
RRH - 700 band (QTY/MODEL)							
RRH - 850 band (QTY/MODEL)							
RRH - 1900 band (QTY/MODEL)	1	RRUS-32 B2					
RRH - AWS band (QTY/MODEL)							
RRH - WCS band (QTY/MODEL)							
Additional RRH #1 - any band (QTY/MODEL)							
Additional RRH #2 - any band (QTY/MODEL)							
Additional Component 1 (QTY/MODEL)							
Additional Component 2 (QTY/MODEL)							
Additional Component 3 (QTY/MODEL)							
Local Market Note 1	Bronze Standard- Replace existing LTE BB Antenna with Hex Port Antenna, no position change- Add RRUS-32 B2- DUL to DUS upgrade- Add XMU						
Local Market Note 2							
Local Market Note 3	Baseband Config - 1 DUS + XMU DUS-1 - 7A:7B:7C:X1P1:X1P2_ XMU-1 - PB:PA2B:PA:PA2A:PC:PA2C_.....D1E:D1D						

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

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

ANTENNA COMMON FIELDS	ANTENNA POSITION 1		ANTENNA POSITION 2		ANTENNA POSITION 3		ANTENNA POSITION 4		ANTENNA POSITION 5		ANTENNA POSITION 6		ANTENNA POSITION 7	
ANTENNA MAKE - MODEL	HPA-65R-BUU-H6				7770		7770							
ANTENNA VENDOR	CCI Products				Powerwave		Powerwave							
ANTENNA SIZE (H x W x D)	72X14.8X9				55X11X5		55X11X5							
ANTENNA WEIGHT	51				35		35							
AZIMUTH	70				143		143							
MAGNETIC DECLINATION														
RADIATION CENTER (feet)	240				240		240							
ANTENNA TIP HEIGHT	243				242		242							
MECHANICAL DOWNTILT	0				0		0							
FEEDER AMOUNT					2		2							
VERTICAL SEPARATION from ANTENNA ABOVE (TIP to TIP)														
VERTICAL SEPARATION from ANTENNA BELOW (TIP to TIP)														
HORIZONTAL SEPARATION from CLOSEST ANTENNA to LEFT (CENTERLINE to CENTERLINE)														
HORIZONTAL SEPARATION from CLOSEST ANTENNA to RIGHT (CENTERLINE to CENTERLINE)														
HORIZONTAL SEPARATION from ANOTHER ANTENNA (which antenna # / # of inches)														
Antenna RET Motor (QTY/MODEL)	Internal				2		Powerwave 7020		2		Powerwave 7020			
SURGE ARRESTOR (QTY/MODEL)	1 DC/Fiber Squid						1		POLYPHASER 1000860					
DIPLEXER (QTY/MODEL)					2		Powerwave / LGP 13519		4		Powerwave / LGP 13519			
DUPLEXER (QTY/MODEL)														
Antenna RET CONTROL UNIT (QTY/MODEL)	LTE RRH						1		Powerwave 7070					
DC BLOCK (QTY/MODEL)														
TMA/LNA (QTY/MODEL)					2		Powerwave / LGP 21401 (Dual Band - 850 Bypass)							
CURRENT INJECTORS FOR TMA (QTY/MODEL)					2		POLYPHASER 1000860							
PDU FOR TMA (QTY/MODEL)					1		LGP 12104 (1900 AND 850 Bypass TMA)							
FILTER (QTY/MODEL)														
SQUID (QTY/MODEL)														
FIBER TRUNK (QTY/MODEL)														
DC TRUNK (QTY/MODEL)														
RRH - 700 band (QTY/MODEL)	1 RRUS-11													
RRH - 850 band (QTY/MODEL)														
RRH - 1900 band (QTY/MODEL)	1 RRUS-32 B2													
RRH - AWS band (QTY/MODEL)														
RRH - WCS band (QTY/MODEL)														
Additional RRH #1 - any band (QTY/MODEL)														
Additional RRH #2 - any band (QTY/MODEL)														
Additional Component 1 (QTY/MODEL)							2		Pwav 1001983 (1) & 1001940 (1)					
Additional Component 2 (QTY/MODEL)														
Additional Component 3 (QTY/MODEL)														
Local Market Note 1	Bronze Standard- Replace existing LTE BB Antenna with Hex Port Antenna, no position change- Add RRUS-32 B2- DUL to DUS upgrade- Add XMU													
Local Market Note 2														
Local Market Note 3	Baseband Config - 1 DUS + XMU DUS-1 - 7A-7B-7C:X1P1:X1P2_ XMU-1 - PB-PA2B-PA-PA2A-PC-PA2C_...D1E:D1D													

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

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

ANTENNA COMMON FIELDS		ANTENNA POSITION 1		ANTENNA POSITION 2		ANTENNA POSITION 3		ANTENNA POSITION 4		ANTENNA POSITION 5		ANTENNA POSITION 6		ANTENNA POSITION 7	
ANTENNA MAKE - MODEL		HPA-65R-BUU-H8				7770		7770							
ANTENNA VENDOR		CCI Products				Powerwave		Powerwave							
ANTENNA SIZE (H x W x D)		92.4X14.8X7.4				55X11X5		55X11X5							
ANTENNA WEIGHT		68				35		35							
AZIMUTH		190				263		263							
MAGNETIC DECLINATION															
RADIATION CENTER (feet)		240				240		240							
ANTENNA TIP HEIGHT		248				242		242							
MECHANICAL DOWNTILT		0				2		2							
FEEDER AMOUNT						2		2							
VERTICAL SEPARATION from ANTENNA ABOVE (TIP to TIP)															
VERTICAL SEPARATION from ANTENNA BELOW (TIP to TIP)															
HORIZONTAL SEPARATION from CLOSEST ANTENNA to LEFT (CENTERLINE to CENTERLINE)															
HORIZONTAL SEPARATION from CLOSEST ANTENNA to RIGHT (CENTERLINE to CENTERLINE)															
HORIZONTAL SEPARATION from ANOTHER ANTENNA (which antenna # / # of inches)															
Antenna RET Motor (QTY/MODEL)		Internal				2		Powerwave 7020				Powerwave 7020			
SURGE ARRESTOR (QTY/MODEL)								1				POLYPHASER 1000860			
DIPLEXER (QTY/MODEL)						2		Powerwave / LGP 13519		4		Powerwave / LGP 13519			
DIPLEXER (QTY/MODEL)															
Antenna RET CONTROL UNIT (QTY/MODEL)		LTE RRH													
DC BLOCK (QTY/MODEL)															
TMA/LNA (QTY/MODEL)						2		Powerwave / LGP 21401 (Dual Band - 850 Bypass)							
CURRENT INJECTORS FOR TMA (QTY/MODEL)						2		POLYPHASER 1000860							
PDU FOR TMA5 (QTY/MODEL)															
FILTER (QTY/MODEL)															
SQUID (QTY/MODEL)															
FIBER TRUNK (QTY/MODEL)															
DC TRUNK (QTY/MODEL)															
RRH - 700 band (QTY/MODEL)		1		RRUS-11											
RRH - 850 band (QTY/MODEL)															
RRH - 1900 band (QTY/MODEL)		1		RRUS-32 B2											
RRH - AWS band (QTY/MODEL)															
RRH - WCS band (QTY/MODEL)															
Additional RRH #1 - any band (QTY/MODEL)															
Additional RRH #2 - any band (QTY/MODEL)															
Additional Component 1 (QTY/MODEL)								2		Pwav 1001983 (1) & 1001940 (1)					
Additional Component 2 (QTY/MODEL)															
Additional Component 3 (QTY/MODEL)															
Local Market Note 1		Bronze Standard- Replace existing LTE BB Antenna with Hex Port Antenna, no position change- Add RRU32 B2- DUL to DUS upgrade- Add XMU													
Local Market Note 2															
Local Market Note 3		Baseband Config - 1 DUS + XMU DUS-1 - 7A-7B-7C:X1P1:X1P2:_XMU-1 - PB:PA2B:PA:PA2A:PC:PA2C:.....D1E:D1D													

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

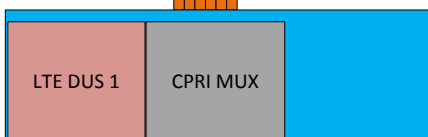
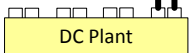
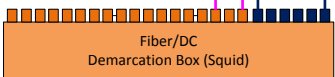
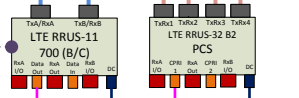
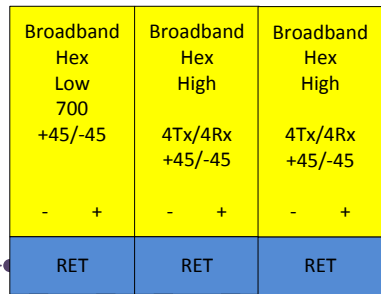


Section 17C - FINAL SECTOR/CELL INFORMATION - SECTOR C

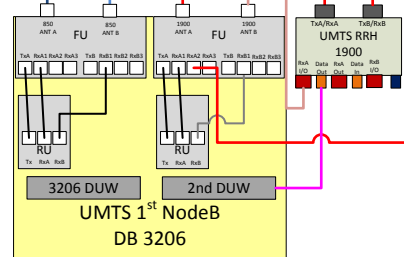
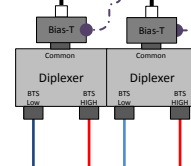
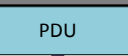
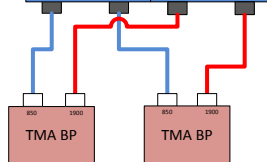
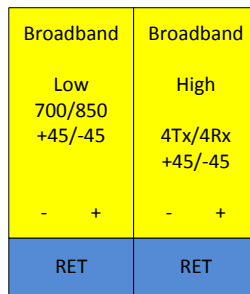
ANTENNA COMMON FIELDS	ANTENNA POSITION 1	ANTENNA POSITION 2	ANTENNA POSITION 3	ANTENNA POSITION 4	ANTENNA POSITION 5	ANTENNA POSITION 6	ANTENNA POSITION 7
ANTENNA MAKE - MODEL	HPA-65R-BUU-H8		7770	7770			
ANTENNA VENDOR	CCI Products		Powerwave	Powerwave			
ANTENNA SIZE (H x W x D)	92.4X14.8X7.4		55X11X5	55X11X5			
ANTENNA WEIGHT	68		35	35			
AZIMUTH	310		23	23			
MAGNETIC DECLINATION							
RADIATION CENTER (feet)	240		240	240			
ANTENNA TIP HEIGHT	248		242	242			
MECHANICAL DOWNTILT	0		2	2			
FEEDER AMOUNT			2	2			
VERTICAL SEPARATION from ANTENNA ABOVE (TIP to TIP)							
VERTICAL SEPARATION from ANTENNA BELOW (TIP to TIP)							
HORIZONTAL SEPARATION from CLOSEST ANTENNA to LEFT (CENTERLINE to CENTERLINE)							
HORIZONTAL SEPARATION from CLOSEST ANTENNA to RIGHT (CENTERLINE to CENTERLINE)							
HORIZONTAL SEPARATION from ANOTHER ANTENNA (which antenna # / # of inches)							
Antenna RET Motor (QTY/MODEL)	Internal		2	Powerwave 7020	2	Powerwave 7020	
SURGE ARRESTOR (QTY/MODEL)				1		POLYPHASER 1000860	
DIPLEXER (QTY/MODEL)			2	Powerwave / LGP 13519	4	Powerwave / LGP 13519	
DUPLEXER (QTY/MODEL)							
Antenna RET CONTROL UNIT (QTY/MODEL)	LTE RRH						
DC BLOCK (QTY/MODEL)							
TMA/LNA (QTY/MODEL)			2	Powerwave / LGP 21401 (Dual Band - 850 Bypass)			
CURRENT INJECTORS FOR TMA (QTY/MODEL)			2	POLYPHASER 1000860			
PDU FOR TMA (QTY/MODEL)							
FILTER (QTY/MODEL)							
SQUID (QTY/MODEL)							
FIBER TRUNK (QTY/MODEL)							
DC TRUNK (QTY/MODEL)							
RRH - 700 band (QTY/MODEL)	1	RRUS-11					
RRH - 850 band (QTY/MODEL)							
RRH - 1900 band (QTY/MODEL)	1	RRUS-32 B2					
RRH - AWS band (QTY/MODEL)							
RRH - WCS band (QTY/MODEL)							
Additional RRH #1 - any band (QTY/MODEL)							
Additional RRH #2 - any band (QTY/MODEL)							
Additional Component 1 (QTY/MODEL)				2		Pwav 1001983 (1) & 1001940 (1)	
Additional Component 2 (QTY/MODEL)							
Additional Component 3 (QTY/MODEL)							
Local Market Note 1	Bronze Standard- Replace existing LTE BB Antenna with Hex Port Antenna, no position change- Add RRU-32 B2- DUL to DUS upgrade- Add XMU						
Local Market Note 2							
Local Market Note 3	Baseband Config - 1 DUS + XMU DUS-1 - 7A-7B-7C:X1P1:X1P2_ XMU-1 - PB-PA2B-PA-PA2A-PC-PA2C_ _ _ _ _D1E:D1D						

PORT SPECIFIC FIELDS	PORT NUMBER	USEID (CSSng)	USEID (Atoll)	ATOLL TXID	ATOLL CELL ID	TX/RX ?	TECHNOLOGY/FREQUENCY	ANTENNA ATOLL	ANTENNA GAIN	ELECTRICAL AZIMUTH	ELECTRICAL TILT	RRH LOCATION (Top/Bottom/Integrated/None)	FEEDERS TYPE	FEEDER LENGTH (feet)	RXAIT KIT MODULE?	TRIPLEXER or LLC (QTY)	TRIPLEXER or LLC (MODEL)	SCPA/MCPA MODULE?	HATCHPLATE POWER (Watts)	ERP (Watts)	Antenna RET Name	CABLE NUMBER	CABLE ID (CSSNG)
ANTENNA POSITION 1	PORT 1	65064.C.700.4G.1	65064.C.700.4G.1	CTL02049_7C_1	CTL02049_7C_1		LTE 700	HPA-65R-BUU-H8_719MHz_06DT	15	310	6	Top	Fiber	0						1475.7065		17	
	PORT 3	65064.C.1900.4G.1mp1	65064.C.1900.4G.1	CTL02049_9C_1	CTL02049_9C_1		LTE 1900	HPA-65R-BUU-H8_1930MHz_03DT	17.1	310	3	Top	Fiber	0						2421.029		17	
ANTENNA POSITION 3	PORT 1	65064.C.850.3G.1	65064.C.850.3G.1	CTV20493	CTV20493		UMTS 850	7770.00.850.04	13.5	23	4	None	Andrew 1-5/8 (850)	295						225.94		21	
	PORT 3	65064.C.1900.3G.1	65064.C.1900.3G.1	CTU20499	CTU20499		UMTS 1900	7770.00.1900.00	15.5	23	0	None	Andrew 1-5/8 (1900)	295						269.15		22	
ANTENNA POSITION 4	PORT 1		65064.C.850.25G.1	319G20493	319G20493		GSM 850	7770.00.850.04	13.5	23	4	None	Andrew 1-5/8 (850)	295						225.94		23	

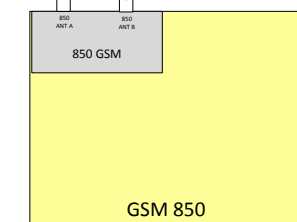
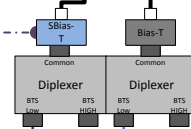
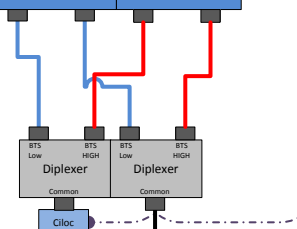
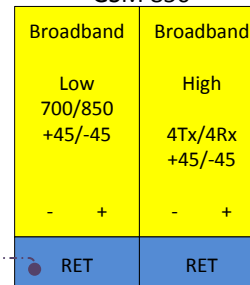
**Antenna 1**  
 LTE 700 BC / PCS



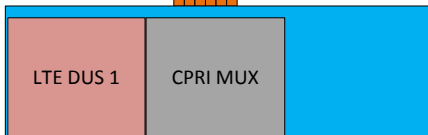
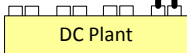
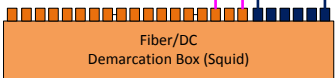
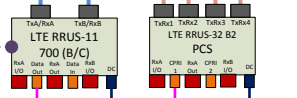
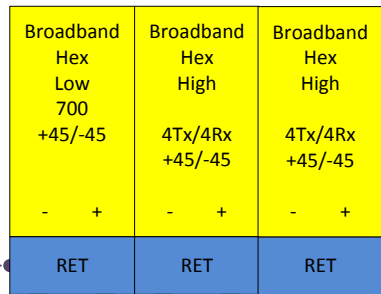
**Antenna 3**  
 UMTS DB



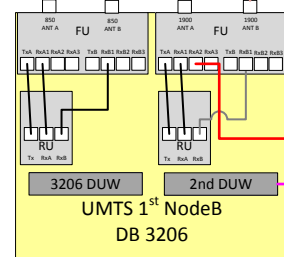
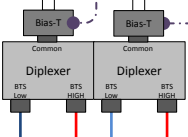
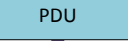
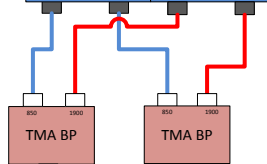
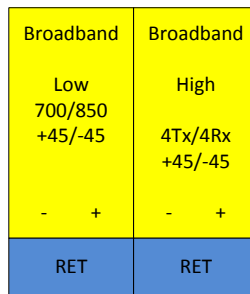
**Antenna 4**  
 GSM 850



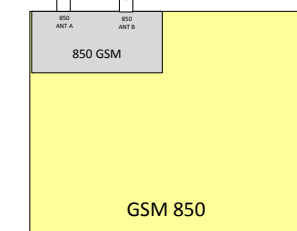
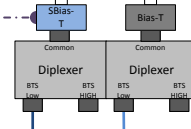
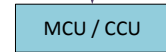
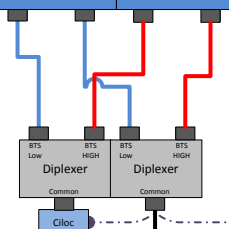
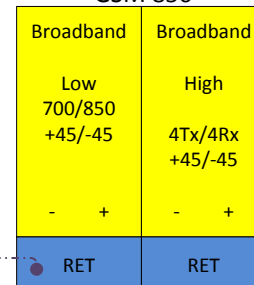
**Antenna 1**  
 LTE 700 BC / PCS



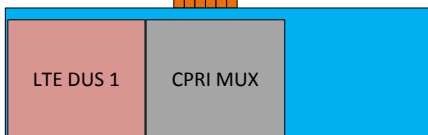
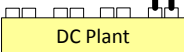
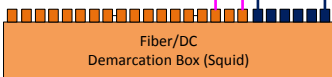
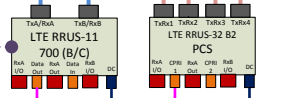
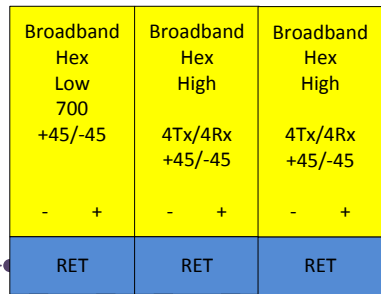
**Antenna 3**  
 UMTS DB



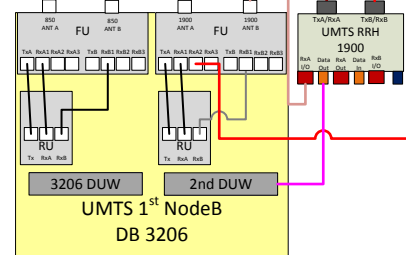
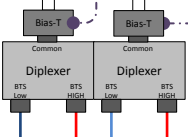
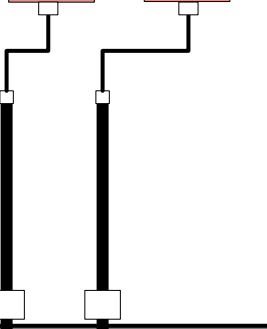
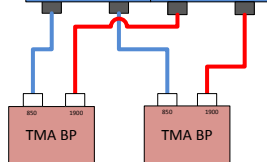
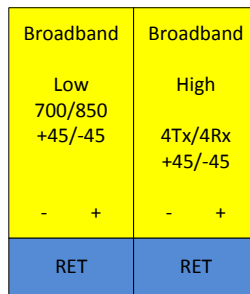
**Antenna 4**  
 GSM 850



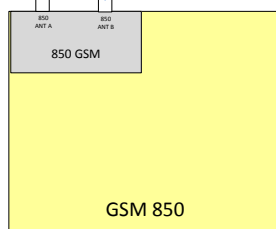
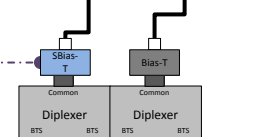
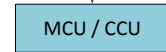
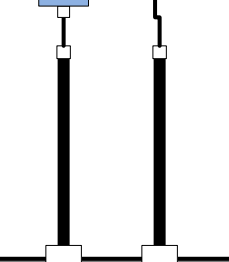
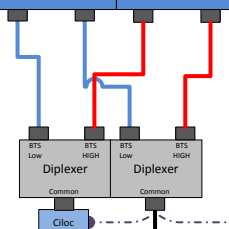
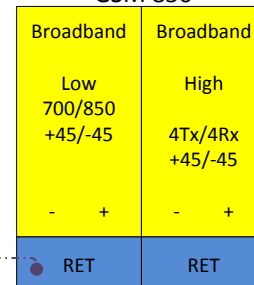
**Antenna 1**  
 LTE 700 BC / PCS



**Antenna 3**  
 UMTS DB



**Antenna 4**  
 GSM 850

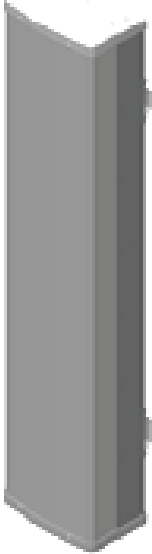


WORKFLOW SUMMARY

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

## HexPORT Multi-Band ANTENNA

### Model HPA-65R-BUU-H6



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

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

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

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

### Hexport Multi-Band Antenna Array

#### Benefits

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

#### Features

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

#### Applications

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



# HexPORT Multi-Band ANTENNA

## Model HPA-65R-BUU-H6

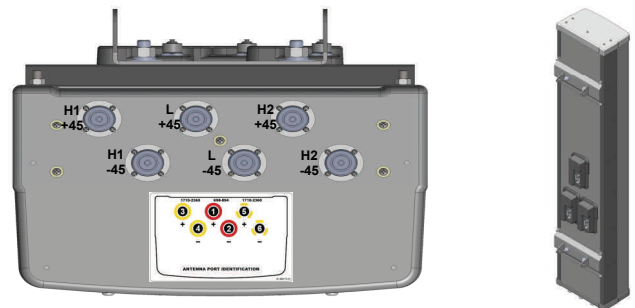
### HPA-65R Multi-Band Antenna

#### Electrical Specifications

Frequency Range	2 X Low Band Ports which cover the full range from 698-894 MHz		4 X High Band Ports which cover the full range from 1710-2360 MHz			
	698-806 MHz	824-894 MHz	1850-1990 MHz	1710-1755/2110-2170 MHz	2305-2360 MHz	
Gain	14.1 dBi	14.8 dBi	16.9 dBi	16.3 dBi	17.2 dBi	17.4 dBi
Azimuth Beamwidth (-3dB)	66°	65°	61°	66°	62°	57°
Elevation Beamwidth (-3dB)	12.5°	10.5°	5.7°	6.3°	5.1°	4.5°
Electrical Downtilt	0° to 10°	0° to 10°	0° to 8°	0° to 8°	0° to 8°	0° to 8°
Elevation Sidelobes (1st Upper)	< -17 dB	< -19 dB	< -19 dB	< -18 dB	< -18 dB	< -17 dB
Front-to-Back Ratio @180°	> 30 dB	> 30 dB	> 30 dB	> 30 dB	> 30 dB	> 30 dB
Front-to-Back Ratio over ± 20°	> 30 dB	> 30 dB	> 30 dB	> 30 dB	> 30 dB	> 30 dB
Cross-Polar Discrimination (at Peak)	> 25 dB	> 20 dB	> 25 dB	> 25 dB	> 25 dB	> 25 dB
Cross-Polar Discrimination (at ± 60°)	> 17 dB	> 14 dB	> 17 dB	> 17 dB	> 17 dB	> 17 dB
Cross-Polar Port-to-Port Isolation	> 25 dB	> 24 dB	> 26 dB	> 25 dB	> 26 dB	> 26 dB
VSWR	< 1.5:1	< 1.5:1	< 1.5:1	< 1.5:1	< 1.5:1	< 1.5:1
Passive Intermodulation (2x20W)	≤ -150dBc	≤ -150dBc	≤ -150dBc	≤ -150dBc	≤ -150dBc	≤ -150dBc
Input Power	500 Watts CW	500 Watts CW	300 Watts CW	300 Watts CW	300 Watts CW	300 Watts CW
Polarization	Dual Pol 45°	Dual Pol 45°	Dual Pol 45°	Dual Pol 45°	Dual Pol 45°	Dual Pol 45°
Input Impedance	50 Ohms	50 Ohms	50 Ohms	50 Ohms	50 Ohms	50 Ohms
Lightning Protection	DC Ground	DC Ground	DC Ground	DC Ground	DC Ground	DC Ground

#### Mechanical Specifications

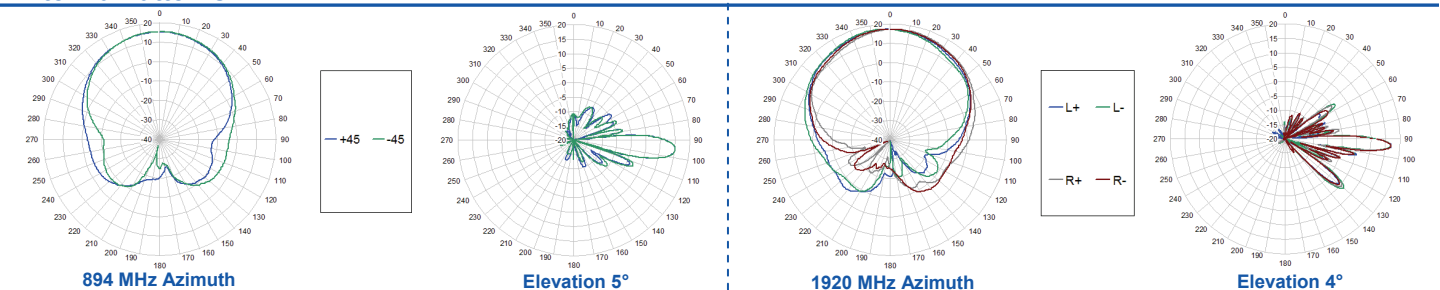
Dimensions (LxWxD)	72.0 x 14.8 x 9.0 inches (1828 x 376 x 229 mm)
Survival Wind Speed	> 150 mph
Front Wind Load	247 lbs (1099 N) @ 100 mph (161 kph)
Side Wind Load	165 lbs (735 N) @ 100 mph (161 kph)
Equivalent Flat Plate Area	9.7 ft <sup>2</sup> (0.90 m <sup>2</sup> )
Weight (without Mounting)	51 lbs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



#### Antenna Patterns\*

#### Bottom View

#### Rear View



\*Typical antenna patterns. For detail information on antenna pattern, please contact us at [info@cciproducts.com](mailto:info@cciproducts.com). All specifications are subject to change without notice.

## HexPORT Multi-Band ANTENNA

### Model HPA-65R-BUU-H8



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

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

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

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

### Hexport Multi-Band Antenna Array

#### Benefits

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

#### Features

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

#### Applications

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





# HexPORT Multi-Band ANTENNA

## Model HPA-65R-BUU-H8

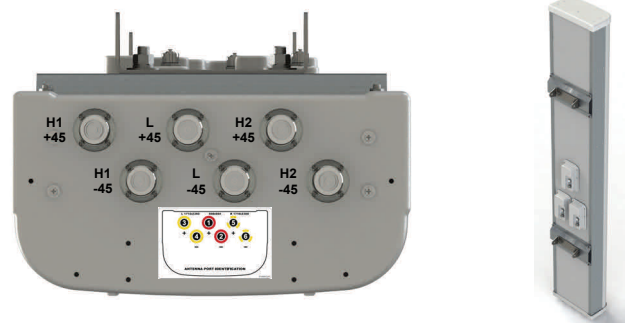
### HPA-65R Multi-Band Antenna

#### Electrical Specifications

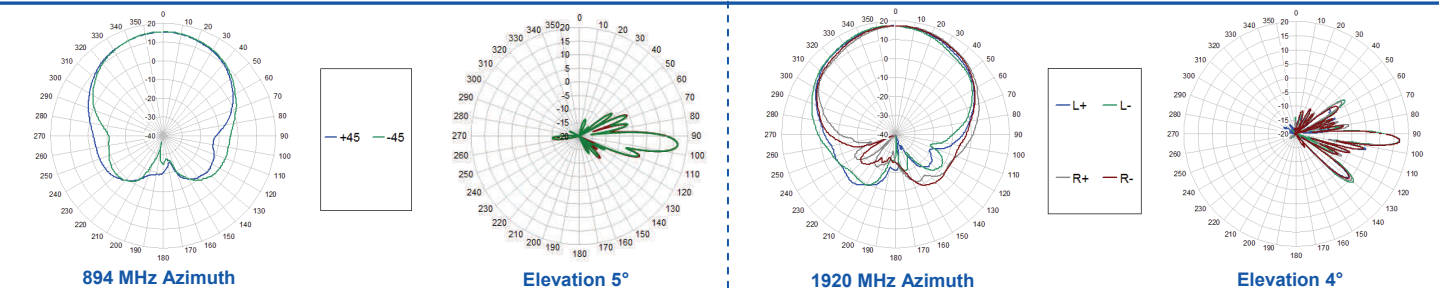
Frequency Range	2 X Low Band Ports which cover the full range from 698-894 MHz		4 X High Band Ports which cover the full range from 1710-2360 MHz			
	698-806 MHz	824-894 MHz	1850-1990 MHz	1710-1755/2110-2170 MHz	2305-2360 MHz	
Gain	15.3 dBi	16.2 dBi	17.1 dBi	16.3 dBi	17.4 dBi	17.7 dBi
Azimuth Beamwidth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

#### Mechanical Specifications

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



#### Antenna Patterns\*



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