



10 Industrial Ave, Suite 3
Mahwah, NJ 07430
Phone: (908)447-4716
Kyle Richers
Real Estate Consultant

November 3, 2015

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

CC to Property Owner
American Tower Corporation
10 Presidential Way, Woburn, MA 01801

RE: T-Mobile Northeast LLC (“T-Mobile”) notice of intent to modify an existing telecommunications facility located at 1320 Chopsey Hill Road, Bridgeport, CT 06610. Known to T-Mobile as site CT11680A.

Dear Ms. Bachman:

In order to accommodate technological changes, implement Code Division Multiple Access (“CDMA”) and/or Long Term Evolution (“LTE”) capabilities, and enhance system performance in the state of Connecticut, T-Mobile plans to modify the equipment configurations at many of its existing cell sites. Please accept this letter and attachments as notification, pursuant to R.C.S.A. Section 16-50j-73, of construction which constitutes an exempt modification pursuant to R.C.S.A. Section 16-50j-72(b)(2). In compliance with R.C.S.A. Section 16-50j-73, a copy of this letter and its attachments is being sent to the chief elected official of the municipality in which affected cell site is located.

CDMA employs Spread-Spectrum technology and special coding scheme to allow multiple users to be multiplexed over the same physical channel.

LTE is a new high-performance air interface for cellular mobile communications. It is designed to increase the capacity and speed of mobile telephone networks.

Attached is a summary of the planned modifications, including power density calculations reflecting the change in T-Mobile's operations at the site. Also included is documentation of the structural sufficiency of the tower to accommodate the revised antenna configuration.

The changes to the facility do not constitute modification as defined Connecticut General Statutes ("C.G.S.") Section 16-50i(d) because the general physical characteristics of the facility will not be significantly changed or altered. Rather, the planned changes to the facility fall squarely within those activities explicitly provided for the R.C.S.A. Section 16-50j-72(b)(2).

1. The height of the overall structure will not be affected.
2. The proposed changes will not extend the site boundaries. There will be no effect on the site compound.
3. The proposed changes will not increase the noise level at the existing facility by 6 decibels or more.
4. Radio Frequency power density may increase due to the use of one or more CDMA transmissions. Moreover, LTE will utilize additional radio frequencies newly licensed by the FCC for cellular mobile communications. However, the changes will not increase the calculated "worst case" power density for the combined operations at the site to a level at or above the applicable standard for uncontrolled environments as calculated for a mixed frequency site.

For the foregoing reasons T-Mobile respectfully submits that the proposed changes at the referenced site constitute exempt modifications under R.C.S.A. Section 16-50j-72(b)(2).

Please feel free to call me at (908)-447-4716 or email krichers@transcendwireless.com with questions concerning this matter. Thank you for your consideration.

Sincerely,

Kyle Richers
Real Estate Consultant

SECURE DOCUMENT



SECURE DOCUMENT

SECURE DOCUMENT



SECURE DOCUMENT

SECURE DOCUMENT



SECURE DOCUMENT

SECURE DOCUMENT



SECURE DOCUMENT

SECURE DOCUMENT



SECURE DOCUMENT

ENDORSE CHECK HERE
X

DO NOT WRITE / SIGN / STAMP BELOW THIS LINE

DEPOSITORY BANK ENDORSEMENT

Please look for the following check security features before accepting this document. If not present, do not negotiate the document.

- Fluorescent artificial watermark should appear on the back of this check when it is held at a 45 degree angle or viewed under a UV light.
- Warning Bands
- Enhanced laid lines on the back of this check should be in complete alignment or the check is not authentic.
- Microprinting - under magnification on the front of this check should read: "7-MOBILE"
- Thermochromic heat sensitive "Secure" mark on back of check turns from orange to yellow when rubbed.

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

T-Mobile Existing Facility

Site ID: CT11680A

Bridgeport North
1320 Chopsey Hill Road
Bridgeport, CT 06610

November 2, 2015

EBI Project Number: 6215005469

| Site Compliance Summary | |
|--|------------------|
| Compliance Status: | COMPLIANT |
| Site total MPE% of FCC general public allowable limit: | 7.24 % |

November 2, 2015

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

Emissions Analysis for Site: **CT11680A – Bridgeport North**

EBI Consulting was directed to analyze the proposed T-Mobile facility located at **1320 Chopsey Hill Road, Bridgeport, CT**, for the purpose of determining whether the emissions from the Proposed T-Mobile Antenna Installation located on this property are within specified federal limits.

All information used in this report was analyzed as a percentage of current Maximum Permissible Exposure (% MPE) as listed in the FCC OET Bulletin 65 Edition 97-01 and ANSI/IEEE Std C95.1. The FCC regulates Maximum Permissible Exposure in units of microwatts per square centimeter ($\mu\text{W}/\text{cm}^2$). The number of $\mu\text{W}/\text{cm}^2$ calculated at each sample point is called the power density. The exposure limit for power density varies depending upon the frequencies being utilized. Wireless Carriers and Paging Services use different frequency bands each with different exposure limits, therefore it is necessary to report results and limits in terms of percent MPE rather than power density.

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

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

Public exposure to radio frequencies is regulated and enforced in units of microwatts per square centimeter ($\mu\text{W}/\text{cm}^2$). The general population exposure limit for the 700 MHz Band is approximately 467 $\mu\text{W}/\text{cm}^2$, and the general population exposure limit for the PCS and AWS bands is 1000 $\mu\text{W}/\text{cm}^2$. Because each carrier will be using different frequency bands, and each frequency band has different exposure limits, it is necessary to report percent of MPE rather than power density.

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

Additional details can be found in FCC OET 65.

CALCULATIONS

Calculations were done for the proposed T-Mobile Wireless antenna facility located at **1320 Chopsey Hill Road, Bridgeport, CT**, using the equipment information listed below. All calculations were performed per the specifications under FCC OET 65. Since T-Mobile is proposing highly focused directional panel antennas, which project most of the emitted energy out toward the horizon, all calculations were performed assuming a lobe representing the maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB, was focused at the base of the tower. For this report the sample point is the top of a 6 foot person standing at the base of the tower.

For all calculations, all equipment was calculated using the following assumptions:

- 1) 2 GSM / UMTS channels (PCS Band - 1900 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel
- 2) 2 UMTS channels (AWS Band – 2100 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.
- 3) 2 LTE channels (AWS Band – 2100 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 60 Watts per Channel.
- 4) 1 LTE channel (700 MHz Band) was considered for each sector of the proposed installation. This channel has a transmit power of 30 Watts.
- 5) All radios at the proposed installation were considered to be running at full power and were uncombined in their RF transmissions paths per carrier prescribed configuration. Per FCC OET Bulletin No. 65 - Edition 97-01 recommendations to achieve the maximum anticipated value at each sample point, all power levels emitting from the proposed antenna installation are increased by a factor of 2.56 to account for possible in-phase reflections from the surrounding environment. This is rarely the case, and if so, is never continuous.

- 6) For the following calculations the sample point was the top of a six foot person standing at the base of the tower. The maximum gain of the antenna per the antenna manufactures supplied specifications minus 10 dB was used in this direction. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.
- 7) The antennas used in this modeling are the **Ericsson AIR21 (B4A/B2P & B2A/B4P)** for 1900 MHz (PCS) and 2100 MHz (AWS) channels and the **Commscope LNX-6515DS-VTM** for 700 MHz channels. This is based on feedback from the carrier with regards to anticipated antenna selection. The **Ericsson AIR21 (B4A/B2P & B2A/B4P)** have a maximum gain of **15.9 dBd** at their main lobe. The **Commscope LNX-6515DS-VTM** has a maximum gain of **14.6 dBd** at its main lobe. The maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB, was used for all calculations. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.
- 8) The antenna mounting height centerline of the proposed antennas is **202 feet** above ground level (AGL).
- 9) Emissions values for additional carriers were taken from the Connecticut Siting Council active database. Values in this database are provided by the individual carriers themselves.

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

T-Mobile Site Inventory and Power Data

| Sector: | A | Sector: | B | Sector: | C |
|-----------------|--------------------------------|-----------------|--------------------------------|-----------------|--------------------------------|
| Antenna #: | 1 | Antenna #: | 1 | Antenna #: | 1 |
| Make / Model: | Ericsson AIR21 B4A/B2P | Make / Model: | Ericsson AIR21 B4A/B2P | Make / Model: | Ericsson AIR21 B4A/B2P |
| Gain: | 15.9 dBd | Gain: | 15.9 dBd | Gain: | 15.9 dBd |
| Height (AGL): | 202 | Height (AGL): | 202 | Height (AGL): | 202 |
| Frequency Bands | 1900 MHz(PCS) / 2100 MHz (AWS) | Frequency Bands | 1900 MHz(PCS) / 2100 MHz (AWS) | Frequency Bands | 1900 MHz(PCS) / 2100 MHz (AWS) |
| Channel Count | 2 | Channel Count | 2 | # PCS Channels: | 2 |
| Total TX Power: | 120 | Total TX Power: | 120 | # AWS Channels: | 120 |
| ERP (W): | 4,668.54 | ERP (W): | 4,668.54 | ERP (W): | 4,668.54 |
| Antenna A1 MPE% | 0.44 | Antenna B1 MPE% | 0.44 | Antenna C1 MPE% | 0.44 |
| Antenna #: | 2 | Antenna #: | 2 | Antenna #: | 2 |
| Make / Model: | Ericsson AIR21 B2A/B4P | Make / Model: | Ericsson AIR21 B2A/B4P | Make / Model: | Ericsson AIR21 B2A/B4P |
| Gain: | 15.9 dBd | Gain: | 15.9 dBd | Gain: | 15.9 dBd |
| Height (AGL): | 202 | Height (AGL): | 202 | Height (AGL): | 202 |
| Frequency Bands | 1900 MHz(PCS) / 2100 MHz (AWS) | Frequency Bands | 1900 MHz(PCS) / 2100 MHz (AWS) | Frequency Bands | 1900 MHz(PCS) / 2100 MHz (AWS) |
| Channel Count | 4 | Channel Count | 4 | Channel Count | 4 |
| Total TX Power: | 120 | Total TX Power: | 120 | Total TX Power: | 120 |
| ERP (W): | 4,668.54 | ERP (W): | 4,668.54 | ERP (W): | 4,668.54 |
| Antenna A2 MPE% | 0.44 | Antenna B2 MPE% | 0.44 | Antenna C2 MPE% | 0.44 |
| Antenna #: | 3 | Antenna #: | 3 | Antenna #: | 3 |
| Make / Model: | Commscope LNX-6515DS-VTM | Make / Model: | Commscope LNX-6515DS-VTM | Make / Model: | Commscope LNX-6515DS-VTM |
| Gain: | 14.6 dBd | Gain: | 14.6 dBd | Gain: | 14.6 dBd |
| Height (AGL): | 202 | Height (AGL): | 202 | Height (AGL): | 202 |
| Frequency Bands | 700 MHz | Frequency Bands | 700 MHz | Frequency Bands | 700 MHz |
| Channel Count | 1 | Channel Count | 1 | Channel Count | 1 |
| Total TX Power: | 30 | Total TX Power: | 30 | Total TX Power: | 30 |
| ERP (W): | 865.21 | ERP (W): | 865.21 | ERP (W): | 865.21 |
| Antenna A3 MPE% | 0.17 | Antenna B3 MPE% | 0.17 | Antenna C3 MPE% | 0.17 |

| Site Composite MPE% | |
|---------------------------|---------------|
| Carrier | MPE% |
| T-Mobile (Per Sector Max) | 1.05 % |
| Marcus | 0.25 % |
| AT&T | 0.37 % |
| Red Star | 0.06 % |
| MetroCall | 0.40 % |
| Clinton Tower | 0.41 % |
| AAT | 0.37 % |
| Nextel | 0.15 % |
| Verizon Wireless | 1.48 % |
| Clearwire | 0.05 |
| Sprint | 0.86 |
| Sprint MW | 1.30 |
| MetroPCS | 0.49 |
| Site Total MPE %: | 7.24 % |

| | |
|--------------------------|---------------|
| T-Mobile Sector 1 Total: | 1.05 % |
| T-Mobile Sector 2 Total: | 1.05 % |
| T-Mobile Sector 3 Total: | 1.05 % |
| Site Total: | 7.24 % |



EBI Consulting

environmental | engineering | due diligence

| T-Mobile _per sector | # Channels | Watts ERP (Per Channel) | Height (feet) | Total Power Density ($\mu\text{W}/\text{cm}^2$) | Frequency (MHz) | Allowable MPE ($\mu\text{W}/\text{cm}^2$) | Calculated % MPE |
|----------------------------------|------------|-------------------------|---------------|---|-----------------|---|------------------|
| T-Mobile 2100 MHz (AWS) LTE | 2 | 2334.27 | 202 | 4.37 | 2100 | 1000 | 0.44 % |
| T-Mobile 1900 MHz (PCS) GSM/UMTS | 2 | 1167.14 | 202 | 2.18 | 1900 | 1000 | 0.22 % |
| T-Mobile 2100 MHz (AWS) UMTS | 2 | 1167.14 | 202 | 2.18 | 2100 | 1000 | 0.22 % |
| T-Mobile 700 MHz LTE | 1 | 865.21 | 202 | 0.81 | 700 | 467 | 0.17 % |
| | | | | | | Total: | 1.05% |

Summary

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

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

| T-Mobile Sector | Power Density Value (%) |
|------------------------------|-------------------------|
| Sector 1: | 1.05 % |
| Sector 2: | 1.05 % |
| Sector 3 : | 1.05 % |
| T-Mobile Per Sector Maximum: | 1.05 % |
| | |
| Site Total: | 7.24 % |
| | |
| Site Compliance Status: | COMPLIANT |

The anticipated composite MPE value for this site assuming all carriers present is **7.24%** of the allowable FCC established general public limit sampled at the ground level. This is based upon values listed in the Connecticut Siting Council database for existing carrier emissions.

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



Scott Heffernan
RF Engineering Director

EBI Consulting
21 B Street
Burlington, MA 01803

**STRUCTURAL ANALYSIS REPORT
SELF SUPPORT TOWER**



Prepared For:

• • **T** • • **Mobile** •

**35 Griffin Road South
Bloomfield, CT 06002**



Site ID: CT11680A

Site Name: Bridgeport North

1320 Chopsey Hill Road

Bridgeport, CT, 06610

October 23, 2015

Submitted By:

Atlantis Group, Inc.

1340 Centre Street, Suite 212

Newton, Massachusetts 02459

Phone: 617-965-0789, Fax: 617-213-5056

**STRUCTURAL ANALYSIS REPORT
SELF SUPPORT TOWER**



Prepared For:



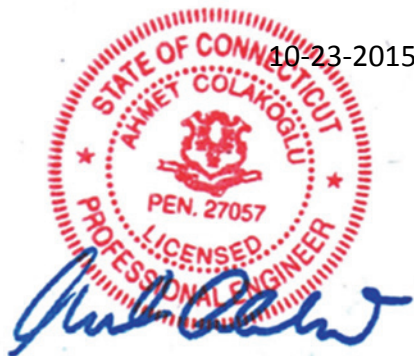
**35 Griffin Road South
Bloomfield, CT 06002**

RESULT: PASS

**Site ID: CT11680A
Site Name: Bridgeport North
1320 Chopsey Hill Road
Bridgeport, CT, 06610**

Prepared By:

**Destek Engineering, LLC
Professional Engineering Corporation
License # PEC 001429**



Ahmet Colakoglu, P.E.
Connecticut Professional Engineer
License No: 27057

CONTENTS

1.0 – SUBJECT AND REFERENCES

1.1 – STRUCTURE

2.0 – EXISTING AND PROPOSED APPURTENANCES

3.0 – CODES AND LOADING

4.0 – STANDARD CONDITIONS FOR ENGINEERING SERVICES ON EXISTING
STRUCTURES

5.0 – ANALYSIS AND ASSUMPTIONS

6.0 – RESULTS AND CONCLUSION

APPENDICES

A –SOFTWARE OUTPUT

1.0 SUBJECT AND REFERENCES

The purpose of this analysis is to evaluate the structural capacity of the wireless telecommunication installation on the existing self support tower, located 1320 at Chopsey Hill Road, Bridgeport, CT, 06610 for additions and alterations proposed by T-Mobile.

The structural analysis is based on the following documentation provided to Destek Engineering, LLC (Destek):

- Structural Analysis for CT11680A prepared by GlenMartin Holding Inc., dated 04/05/2013.
- Network Modernization RFDS v3.0 provided by T-Mobile.

1.1 STRUCTURE

The subject structure is a 3-sided, 240'-0" tall self-support tower formed by (9) 20' sections and (2) 30' sections. Single pipe legs are K-braced with single angle diagonals. The tower is 10.93' wide at the top and 40.33' wide at the base. Please refer to the software output in Appendix A for tower geometry, member sizes, and other details.

2.0 EXISTING AND PROPOSED APPURTENANCES

Proposed changes to the antennas are tabulated below:

Existing Configuration of T-Mobile Appurtenances:

| Rad Center (ft) | Antenna & TMA | Mount Type | Feedlines |
|-----------------|--|-------------------|---------------------------------|
| 202.0 | (3) AIR21 B4A/B12P (3) AIR21 B2A/B4P (3) dd B4 TMA | (3) Sector Mounts | (12) 1-5/8" (9) Fiber Cables |

Proposed and Final Configuration of T-Mobile Appurtenances:

| Rad Center (ft) | Antenna & TMA | Mount Type | Feedlines |
|-----------------|--|-------------------|---------------------------------|
| 202.0 | (3) AIR21 B4A/B12P (3) AIR21 B2A/B4P (3) LNX-6515DS-VTM (3) dd B4 TMA (3) RRUS11 B12 | (3) Sector Mounts | (6) 1-5/8" (15) Fiber Cables |

Existing Appurtenances by Others:

| Rad Center (ft) | Antenna & TMA | Mount Type | Feedlines |
|------------------------|---|---|--|
| 240.0 | (1) 5/8x5' Lightning Rod (1) Flash Beacon Lighting (1) 3" Dia 10' Omni | (1) Pipe Mount (1) 2' Side Arm Mount | (1) 1-1/4" (1) 1" Conduit |
| 235.0 | (1) 3" Dia 8' Omni | (1) 2' Side Arm Mount | - |
| 230.0 | (1) 4" Dia 8' Omni (1) 3" Dia 8' Omni | (3) 2' Side Arm Mounts | (2) 7/8" |
| 223.0 | (1) 4"x 12' Omni | (1) 2' Side Arm Mount | (1) 1-1/4" |
| 212.0 | (6) HBX-6515DS-VTM | (3) 10' Sector Frames | (12) 1-5/8" |
| 196.0 | (1) 3' Yagi | (1) Pipe Mount | (1) 7/8" |
| 187.0 | (1) VHLP800-11 (2) 2' HP Dishw/Shroud | (3) Pipe Mounts | (4) 1/2" |
| 180.6 | (2) APXVSPP 18-C-A20 (1) APXV9ERR 18-C (6) 1900MHz 2x40W RRU (3) LLPX310R (3) Notch Filters (3) DAP Heads | (3) 10' Sector Frames | (6) 1-5/8" (3) 1-1/4" (2) 2" Rigid Conduit |
| 174.0 | (2) 950F65T4E-M (4) 5'x5"x2" PCS panels | (3) 10' Sector Frames | (6) 1-5/8" |
| 164.0 | (12) LGP21901 Diplexer (6) RRU 11 (12) LGP 21401 (6)7770 (3) P65-16-XLH-RR (1) DC6-48-60-18-8F | (3) 10' Sector Frames | (12) 1-5/8" (3) 3/8" (1) 1-1/4" |
| 155.0 | (3) BXA-80063/6 (3) BXA-171063-8CF (3) BXA-70063-6CF-2 (6) FD9R6001/2C-3L Diplexer (6) ALU RRH2x40 AWS (1) DB T1 6Z 8AB OZ (3) MGD3-800 | (3) 10' Sector Frames | (12) 1-5/8" (1) Hybrid Cable |
| 140.0 | (3) Small Light | - | - |
| 137.0 | (1) 1.5" Dia 8" Omni | (1) 2' Side Arm Mount | - |
| 132.0 | (1) 4' Yagi | (1) 2' Side Arm Mount | (1) 1/2" |

| | | | |
|-------|----------------------|-----------------------|------------|
| 118.0 | (1) 2" Dia 10" Omni | (1) 2' Side Arm Mount | (1) 7/8" |
| 108.0 | (1) 3" Dia 10" Omni | (1) 2' Side Arm Mount | (1) 1-1/4" |
| 99.0 | (1) 3' Yagi | (1) 2' Side Arm Mount | (1) 1/2" |
| 80.0 | - | (1) Side Arm Mount | - |
| 22.0 | (2) 3' HP w/o Radome | (1) Pipe Mount | (1) 1/2" |
| 20.0 | (1) GPS Unit | - | - |
| 8.0 | (1) GPS Unit | - | - |

3.0 CODES AND LOADING

The tower was analyzed per *TIA/EIA-222-F* as referenced by *2005 Connecticut State Building Code with* all of the adopted Addendums and Supplements, International Code Council. The following wind loading was used in compliance with the standard for Fairfield County:

- Basic wind speed 85 mph without ice (W)
- Basic wind speed 38 mph with 3/4" radial escalating ice (W_i)

The following load combinations were used with wind blowing at 0°, 60° and 90°, measured from a line normal to the face of the tower.

- $D + W_o$
- $D + W_i + I$

D: Dead Load

W_o : Wind Load, without ice

W_i : Wind Load with ice

I: Ice Gravity Load

4.0 STANDARD CONDITIONS FOR ENGINEERING SERVICES ON EXISTING STRUCTURES

The analysis is based on the information provided to Destek and is assumed to be current and correct. Unless otherwise noted, the structure and the foundation system are assumed to be in good condition, free of defects and can achieve theoretical strength.

It is assumed that the structure has been maintained and shall be maintained during its service. The superstructure and the foundation system are assumed to be designed with proper engineering practice and fabricated, constructed and erected in accordance with the design documents. Destek will accept no liability which may arise due to any existing deficiency in design, material, fabrication, erection, construction, etc. or lack of maintenance.

The analysis results presented in this report are only applicable for the previously mentioned existing and proposed additions and alterations. Any deviation of the proposed equipment and placement, etc., will require Destek to generate an additional structural analysis.

5.0 **ANALYSIS AND ASSUMPTIONS**

The tower was analyzed by utilizing tnxTower, a non-linear, three-dimensional, finite element-analysis software package, a product of Tower Numerics, Inc. Software output for this analysis is provided in Appendix A of this report.

6.0 **RESULTS AND CONCLUSION**

Based on an analysis per *TIA/EIA-222-F*, the existing tower is found to have **adequate** structural capacity for the proposed modifications by T-Mobile. For the aforementioned load combinations and as a maximum, the tower diagonals between 30 feet and 60 feet are stressed to **99.9%** of capacity. Maximum usage of the tower legs and horizontals are **47.2%** and **95.6%**.

The tower foundation could not be analyzed due to lack of information.

Reactions:

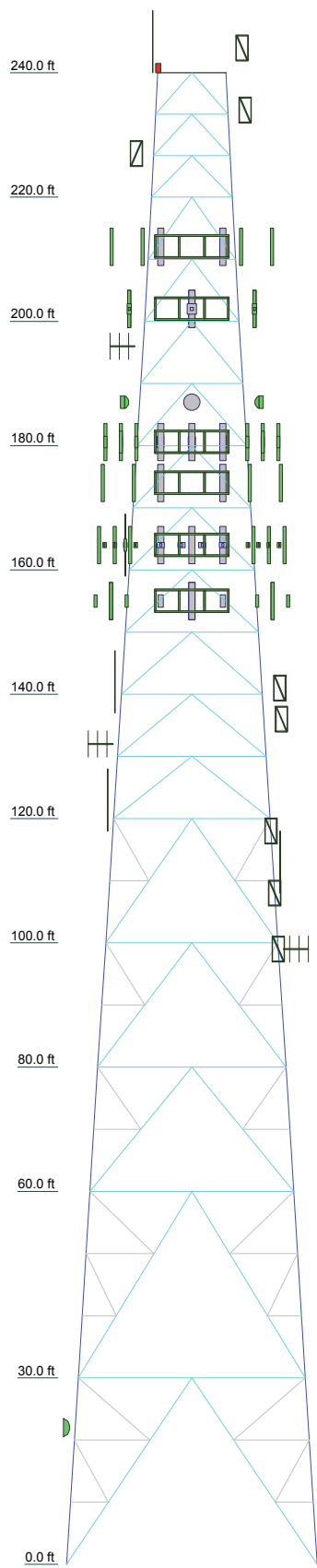
| Maximums | Destek Analysis |
|-------------------------|------------------------|
| Base Compression (kips) | 316.1 |
| Base Uplift (kips) | 249.4 |
| Base Shear (kips) | 47.7 |
| Base Moment (kip-ft) | 9993 |

Therefore, the proposed additions and alterations by T-Mobile can be implemented as intended with the conditions outlined in this report.

Should you have any questions about this report, please contact Ahmet Colakoglu at (770) 693-0835 or acolakoglu@destekengineering.com.

APPENDIX A
SOFTWARE OUTPUT

| | | | | | | | | | | | |
|------------------|-----------------------------|---------|--------|-----------|---------|-----------|--------|---------|-----------|--------|-------------|
| Section | T11 | T10 | T9 | T8 | T7 | T6 | T5 | T4 | T3 | T2 | T1 |
| Legs | P10x.5 | | | ROHN 8 EH | P8x.5 | ROHN 8 EH | | | P8x.5 | | |
| Leg Grade | | | | A572-50 | A572-50 | | | | | | |
| Diagonals | P3STDw/L2.5x2.5x3/8 | | | | B | P3x.216 | A | | P2.5x.203 | | P2x.154 |
| Diagonal Grade | | | | | N.A. | | | | | | |
| Top Girts | | | | | | | | | | | P2x.154 |
| Horizontals | P3.5x.226 | | | | | | | | | | |
| Red. Horizontals | | | | | | | | | | | |
| Red. Diagonals | P1.5STD with half 2STD Pipe | | | | | | | | | | |
| Red. Hips | | | | | | | | | | | |
| Inner Bracing | | | | | | | | | | | |
| Face Width (ft) | 40.33 | 36.58 | 32.83 | 27.68 | 25.18 | 22.68 | 20.18 | 17.68 | 15.18 | 12.93 | 10.93 |
| # Panels @ (ft) | 2 @ 30 | 2 @ 30 | 3 @ 20 | 3 @ 20 | 3 @ 20 | 3 @ 20 | 3 @ 20 | 10 @ 10 | 4 @ 10 | 3 @ 10 | 3 @ 6.66667 |
| Weight (lb) | 64615.5 | 11327.8 | 9947.9 | 8406.7 | 5441.5 | 5206.8 | 5525.3 | 4426.6 | 4019.7 | 3836.2 | 3074.1 |



SHEAR
24796 lb

38 mph

SHEAR
81698 lb

REA

DESIGNED APPURTENANCE LOADING

| TYPE | ELEVATION | TYPE | ELEVATION |
|-----------------------|-----------|-------------------------|-----------|
| 5/8"x8" Lighting Rod | 240 | LLPX310R | 180.6 |
| Flash Beacon Lighting | 240 | (2) 950F65T4E-M | 174 |
| 3' Dia 10' Omni | 240 | (2) 5'x5"x2" PCS panels | 174 |
| 4"x4"pipe mount | 240 | (2) 5'x5"x2" PCS panels | 174 |
| 2' Side Arm Mount | 240 | 10' Sector Frames | 174 |
| 3' Dia 8' Omni | 235 | (4) LGP21901 | 164 |
| 2' Side Arm Mount | 235 | DC6-48-60-18-8F | 164 |
| 4' Dia 8' Omni | 230 | 10' Sector Frames | 164 |
| 3' Dia 8' Omni | 230 | 4" Dia 20' Omni | 164 |
| 2' Side Arm Mount | 230 | (2) 7770.00 | 164 |
| 2' Side Arm Mount | 230 | (2) 7770.00 | 164 |
| 2' Side Arm Mount | 230 | (2) 7770.00 | 164 |
| 4' Dia 12' Omni | 223 | P65-16-XLH-RR | 164 |
| 2' Side Arm Mount | 223 | P65-16-XLH-RR | 164 |
| (2) HBX-6516DS-VTM | 212 | P65-16-XLH-RR | 164 |
| (2) HBX-6516DS-VTM | 212 | (2) RRU 11 Single | 164 |
| (2) HBX-6516DS-VTM | 212 | (2) RRU 11 Single | 164 |
| 10' Sector Frames | 212 | (2) RRU 11 Single | 164 |
| AIR21 B2A/B4P | 202 | (4) LGP21401 | 164 |
| AIR21 B2A/B4P | 202 | (4) LGP21401 | 164 |
| AIR21 B2A/B4P | 202 | (4) LGP21401 | 164 |
| AIR21 B4A/B2P | 202 | (4) LGP21901 | 164 |
| AIR21 B4A/B2P | 202 | (4) LGP21901 | 164 |
| AIR21 B4A/B2P | 202 | 10' Sector Frames | 155 |
| LNX-6515DS-VTM | 202 | BXA-80063/6 | 155 |
| LNX-6515DS-VTM | 202 | BXA-80063/6 | 155 |
| LNX-6515DS-VTM | 202 | BXA-171063-8BF | 155 |
| RRUS 11 B12 | 202 | BXA-80063/6 | 155 |
| RRUS 11 B12 | 202 | BXA-171063-8BF | 155 |
| RRUS 11 B12 | 202 | BXA-171063-8BF | 155 |
| dd B4 TMA | 202 | BXA-70063-6CF-2 | 155 |
| dd B4 TMA | 202 | BXA-70063-6CF-2 | 155 |
| dd B4 TMA | 202 | BXA-70063-6CF-2 | 155 |
| 10' Sector Frames | 202 | MGD3-800 | 155 |
| 3' Yagi | 196 | MGD3-800 | 155 |
| 4"x4"pipe mount | 196 | MGD3-800 | 155 |
| 4"x4"pipe mount | 187 | (2) FD9R6004/2C-3L | 155 |
| 4"x4"pipe mount | 187 | (2) FD9R6004/2C-3L | 155 |
| VHLPX800-11 | 187 | (2) FD9R6004/2C-3L | 155 |
| 2' Dish | 187 | (2) RRH2x40-AWS | 155 |
| 2' Dish | 187 | (2) RRH2x40-AWS | 155 |
| Dap Head | 180.6 | (2) RRH2x40-AWS | 155 |
| Dap Head | 180.6 | DB T1 6Z 8AB OZ | 155 |
| Dap Head | 180.6 | Small Light | 140 |
| 800MHZ 2X50W RRH | 180.6 | Small Light | 140 |
| Notch Filters | 180.6 | Small Light | 140 |
| Notch Filters | 180.6 | 1.5' Dia 8' Omni | 137 |
| Notch Filters | 180.6 | 2' Side Arm Mount | 137 |
| 10' Sector Frames | 180.6 | 2' Side Arm Mount | 132 |
| (2) RR90-11-00DBL | 180.6 | 4' Yagi | 132 |
| (2) RR90-11-00DBL | 180.6 | 2' Side Arm Mount | 118 |
| (2) RR90-11-00DBL | 180.6 | 2' Dia 10' Omni | 118 |
| APXVSPP18-C-A20 | 180.6 | 3' Dia 10' Omni | 108 |
| APXVSPP18-C-A20 | 180.6 | 2' Side Arm Mount | 108 |
| APXV9ERR18-C | 180.6 | 3' Yagi | 99 |
| (2) PCS 1900MHz 2x40W | 180.6 | 2' Side Arm Mount | 99 |
| (2) PCS 1900MHz 2x40W | 180.6 | Side Arm Mount | 80 |
| (2) PCS 1900MHz 2x40W | 180.6 | 3' dish w/o radome | 22 |
| 800MHZ 2X50W RRH | 180.6 | 4"x4"pipe mount | 22 |
| 800MHZ 2X50W RRH | 180.6 | GPS | 20 |
| LLPX310R | 180.6 | GPS | 8 |
| LLPX310R | 180.6 | | |

SYMBOL LIST

| MARK | SIZE | MARK | SIZE |
|------|-----------------------------|------|-----------------------|
| A | P2.5STD w/Half HSS3.5"x0.3" | B | P2.5STDw/L2.5x2.5x3/8 |

MATERIAL STRENGTH

| GRADE | Fy | Fu | GRADE | Fy | Fu |
|---------|--------|--------|-------|----|----|
| A572-50 | 50 ksi | 65 ksi | | | |

TOWER DESIGN NOTES

1. Tower is located in Fairfield County, Connecticut.
2. Tower designed for a 85 mph basic wind in accordance with the TIA/EIA-222-F Standard.
3. Tower is also designed for a 38 mph basic wind with 0.75 in ice. Ice is considered to increase in thickness with height.
4. Deflections are based upon a 50 mph wind.

| | |
|--|--|
| Destek Engineering, LLC 1281 Kennestone Circle, Suite 100 Marietta, GA 30066 Phone: (770) 693 0835 FAX: | Job: CT11680A Project: 1517045 |
| | Client: T-Mobile Code: TIA/EIA-222-F Path: Y:\2015\17 - Atlantis\1517045 - CT11680A\Tnx\CT11680A.eri |

| | | |
|---|-------------------------------|---|
| tnxTower Destek Engineering, LLC 1281 Kennestone Circle, Suite 100 Marietta, GA 30066 Phone: (770) 693 0835 FAX: | Job CT11680A | Page 1 of 58 |
| | Project 1517045 | Date 16:33:57 10/23/15 |
| | Client T-Mobile | Designed by Ahmet Colakoglu |

Tower Input Data

The main tower is a 3x free standing tower with an overall height of 240.00 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 10.93 ft at the top and 40.33 ft at the base.

This tower is designed using the TIA/EIA-222-F standard.

The following design criteria apply:

Tower is located in Fairfield County, Connecticut.

Basic wind speed of 85 mph.

Nominal ice thickness of 0.7500 in.

Ice thickness is considered to increase with height.

Ice density of 56 pcf.

A wind speed of 38 mph is used in combination with ice.

Temperature drop of 50 °F.

Deflections calculated using a wind speed of 50 mph.

A non-linear (P-delta) analysis was used.

Pressures are calculated at each section.

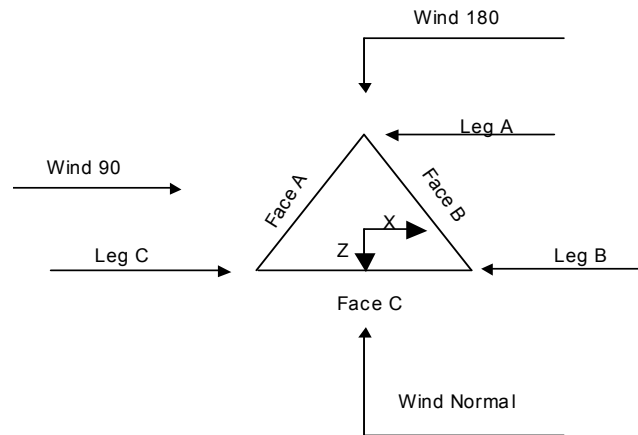
Stress ratio used in tower member design is 1.333.

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

Options

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

| | | |
|---|---------------------------|---------------------------------------|
| tnxTower Destek Engineering, LLC 1281 Kennestone Circle, Suite 100 Marietta, GA 30066 Phone: (770) 693 0835 FAX: | Job CT11680A | Page 2 of 58 |
| | Project 1517045 | Date 16:33:57 10/23/15 |
| | Client T-Mobile | Designed by Ahmet Colakoglu |



Triangular Tower

Tower Section Geometry

| Tower Section | Tower Elevation | Assembly Database | Description | Section Width | Number of Sections | Section Length |
|---------------|-----------------|-------------------|-------------|---------------|--------------------|----------------|
| | <i>ft</i> | | | <i>ft</i> | | <i>ft</i> |
| T1 | 240.00-220.00 | | | 10.93 | 1 | 20.00 |
| T2 | 220.00-200.00 | | | 12.93 | 1 | 20.00 |
| T3 | 200.00-180.00 | | | 15.18 | 1 | 20.00 |
| T4 | 180.00-160.00 | | | 17.68 | 1 | 20.00 |
| T5 | 160.00-140.00 | | | 20.18 | 1 | 20.00 |
| T6 | 140.00-120.00 | | | 22.68 | 1 | 20.00 |
| T7 | 120.00-100.00 | | | 25.18 | 1 | 20.00 |
| T8 | 100.00-80.00 | | | 27.68 | 1 | 20.00 |
| T9 | 80.00-60.00 | | | 30.33 | 1 | 20.00 |
| T10 | 60.00-30.00 | | | 32.83 | 1 | 30.00 |
| T11 | 30.00-0.00 | | | 36.58 | 1 | 30.00 |

Tower Section Geometry (cont'd)

| Tower Section | Tower Elevation | Diagonal Spacing | Bracing Type | Has K Brace End Panels | Has Horizontals | Top Girt Offset | Bottom Girt Offset |
|---------------|-----------------|------------------|--------------|------------------------|-----------------|-----------------|--------------------|
| | <i>ft</i> | <i>ft</i> | | | | <i>in</i> | <i>in</i> |
| T1 | 240.00-220.00 | 6.67 | K Brace Down | No | Yes | 0.0000 | 0.0000 |
| T2 | 220.00-200.00 | 10.00 | K Brace Down | No | Yes | 0.0000 | 0.0000 |
| T3 | 200.00-180.00 | 10.00 | K Brace Down | No | Yes | 0.0000 | 0.0000 |
| T4 | 180.00-160.00 | 10.00 | K Brace Down | No | Yes | 0.0000 | 0.0000 |

| | | | | |
|---|----------------|----------|--------------------|-------------------|
| tnxTower Destek Engineering, LLC 1281 Kennestone Circle, Suite 100 Marietta, GA 30066 Phone: (770) 693 0835 FAX: | Job | CT11680A | Page | 3 of 58 |
| | Project | 1517045 | Date | 16:33:57 10/23/15 |
| | Client | T-Mobile | Designed by | Ahmet Colakoglu |

| Tower Section | Tower Elevation | Diagonal Spacing | Bracing Type | Has K Brace End Panels | Has Horizontals | Top Girt Offset | Bottom Girt Offset |
|---------------|-----------------|------------------|--------------|------------------------|-----------------|-----------------|--------------------|
| | ft | ft | | | | in | in |
| T5 | 160.00-140.00 | 10.00 | K Brace Down | No | Yes | 0.0000 | 0.0000 |
| T6 | 140.00-120.00 | 10.00 | K Brace Down | No | Yes | 0.0000 | 0.0000 |
| T7 | 120.00-100.00 | 20.00 | K1 Down | No | Yes | 0.0000 | 0.0000 |
| T8 | 100.00-80.00 | 20.00 | K1 Down | No | Yes | 0.0000 | 0.0000 |
| T9 | 80.00-60.00 | 20.00 | K1 Down | No | Yes | 0.0000 | 0.0000 |
| T10 | 60.00-30.00 | 30.00 | K2 Down | No | Yes | 0.0000 | 0.0000 |
| T11 | 30.00-0.00 | 30.00 | K2 Down | No | Yes | 0.0000 | 0.0000 |

Tower Section Geometry (cont'd)

| Tower Elevation | Leg Type | Leg Size | Leg Grade | Diagonal Type | Diagonal Size | Diagonal Grade |
|------------------|----------|-----------|------------------|-----------------|-----------------------------|------------------|
| ft | | | | | | |
| T1 240.00-220.00 | Pipe | P8x.5 | A572-50 (50 ksi) | Pipe | P2x.154 | A572-50 (50 ksi) |
| T2 220.00-200.00 | Pipe | P8x.5 | A572-50 (50 ksi) | Pipe | P2.5x.203 | A572-50 (50 ksi) |
| T3 200.00-180.00 | Pipe | P8x.5 | A572-50 (50 ksi) | Pipe | P2.5x.203 | A572-50 (50 ksi) |
| T4 180.00-160.00 | Pipe | P8x.5 | A572-50 (50 ksi) | Pipe | P2.5x.203 | A572-50 (50 ksi) |
| T5 160.00-140.00 | Pipe | ROHN 8 EH | A572-50 (50 ksi) | Arbitrary Shape | P2.5STD w/Half HSS3.5"x0.3" | A572-50 (50 ksi) |
| T6 140.00-120.00 | Pipe | P8x.5 | A572-50 (50 ksi) | Pipe | P3x.216 | A572-50 (50 ksi) |
| T7 120.00-100.00 | Pipe | P8x.5 | A572-50 (50 ksi) | Arbitrary Shape | P2.5STDw/L2.5x2.5x3/8 | A572-50 (50 ksi) |
| T8 100.00-80.00 | Pipe | ROHN 8 EH | A572-50 (50 ksi) | Pipe | P3x.216 | A572-50 (50 ksi) |
| T9 80.00-60.00 | Pipe | P10x.5 | A572-50 (50 ksi) | Pipe | P3x.216 | A572-50 (50 ksi) |
| T10 60.00-30.00 | Pipe | P10x.5 | A572-50 (50 ksi) | Pipe | P3x.216 | A572-50 (50 ksi) |
| T11 30.00-0.00 | Pipe | P10x.5 | A572-50 (50 ksi) | Arbitrary Shape | P3STDw/L2.5x2.5x3/8 | A572-50 (50 ksi) |

Tower Section Geometry (cont'd)

| Tower Elevation | No. of Mid Girts | Mid Girt Type | Mid Girt Size | Mid Girt Grade | Horizontal Type | Horizontal Size | Horizontal Grade |
|------------------|------------------|---------------|---------------|----------------|-----------------|-----------------|------------------|
| ft | | | | | | | |
| T1 240.00-220.00 | None | Flat Bar | | A36 (36 ksi) | Pipe | P2x.154 | A572-50 (50 ksi) |
| T2 220.00-200.00 | None | Flat Bar | | A36 (36 ksi) | Pipe | P2x.154 | A572-50 (50 ksi) |
| T3 200.00-180.00 | None | Flat Bar | | A36 (36 ksi) | Pipe | P2x.154 | A572-50 (50 ksi) |
| T4 180.00-160.00 | None | Flat Bar | | A36 (36 ksi) | Pipe | P2.5x.203 | A572-50 (50 ksi) |
| T5 160.00-140.00 | None | Flat Bar | | A36 (36 ksi) | Pipe | P2.5x.203 | A572-50 (50 ksi) |

| | | | | |
|---|----------------|----------|--------------------|-------------------|
| tnxTower Destek Engineering, LLC 1281 Kennestone Circle, Suite 100 Marietta, GA 30066 Phone: (770) 693 0835 FAX: | Job | CT11680A | Page | 4 of 58 |
| | Project | 1517045 | Date | 16:33:57 10/23/15 |
| | Client | T-Mobile | Designed by | Ahmet Colakoglu |

| Tower Elevation ft | No. of Mid Girts | Mid Girt Type | Mid Girt Size | Mid Girt Grade | Horizontal Type | Horizontal Size | Horizontal Grade |
|-----------------------|------------------|---------------|---------------|-----------------|-----------------|-----------------|---------------------|
| T6 140.00-120.00 | None | Flat Bar | | A36 (36 ksi) | Pipe | P2.5x.203 | A572-50 (50 ksi) |
| T7 120.00-100.00 | None | Flat Bar | | A36 (36 ksi) | Pipe | P2.5x.203 | A572-50 (50 ksi) |
| T8 100.00-80.00 | None | Flat Bar | | A36 (36 ksi) | Pipe | P3x.216 | A572-50 (50 ksi) |
| T9 80.00-60.00 | None | Flat Bar | | A36 (36 ksi) | Pipe | P3x.216 | A572-50 (50 ksi) |
| T10 60.00-30.00 | None | Flat Bar | | A36 (36 ksi) | Pipe | P3x.216 | A572-50 (50 ksi) |
| T11 30.00-0.00 | None | Flat Bar | | A36 (36 ksi) | Pipe | P3.5x.226 | A572-50 (50 ksi) |

Tower Section Geometry (cont'd)

| Tower Elevation ft | Secondary Horizontal Type | Secondary Horizontal Size | Secondary Horizontal Grade | Inner Bracing Type | Inner Bracing Size | Inner Bracing Grade |
|-----------------------|---------------------------|---------------------------|----------------------------|--------------------|--------------------|---------------------|
| T1 240.00-220.00 | Solid Round | | A572-50 (50 ksi) | Equal Angle | L2x2x1/8 | A572-50 (50 ksi) |
| T2 220.00-200.00 | Solid Round | | A572-50 (50 ksi) | Equal Angle | L2x2x1/8 | A572-50 (50 ksi) |
| T3 200.00-180.00 | Solid Round | | A572-50 (50 ksi) | Equal Angle | L2 1/2x2 1/2x3/16 | A572-50 (50 ksi) |
| T4 180.00-160.00 | Solid Round | | A572-50 (50 ksi) | Equal Angle | L3x3x3/16 | A572-50 (50 ksi) |
| T5 160.00-140.00 | Solid Round | | A572-50 (50 ksi) | Equal Angle | L3 1/2x3 1/2x1/4 | A572-50 (50 ksi) |
| T6 140.00-120.00 | Solid Round | | A572-50 (50 ksi) | Equal Angle | L3 1/2x3 1/2x1/4 | A572-50 (50 ksi) |
| T7 120.00-100.00 | Solid Round | | A572-50 (50 ksi) | Pipe | P2x.154 | A572-50 (50 ksi) |
| T8 100.00-80.00 | Solid Round | | A572-50 (50 ksi) | Pipe | P3x.216 | A572-50 (50 ksi) |
| T9 80.00-60.00 | Solid Round | | A572-50 (50 ksi) | Pipe | P3x.216 | A572-50 (50 ksi) |
| T10 60.00-30.00 | Solid Round | | A572-50 (50 ksi) | Pipe | P3x.216 | A572-50 (50 ksi) |
| T11 30.00-0.00 | Solid Round | | A572-50 (50 ksi) | Pipe | P3x.216 | A572-50 (50 ksi) |

Tower Section Geometry (cont'd)

| Tower Elevation ft | Redundant Bracing Grade | Redundant Type | Redundant Size | K Factor |
|-----------------------|-------------------------|---|----------------------|-------------|
| T7 120.00-100.00 | A36 (36 ksi) | Horizontal (1) Diagonal (1) Hip (1) | Pipe Pipe Pipe | 1 1 1 |

| | | | | |
|---|----------------|----------|--------------------|-------------------|
| tnxTower Destek Engineering, LLC 1281 Kennestone Circle, Suite 100 Marietta, GA 30066 Phone: (770) 693 0835 FAX: | Job | CT11680A | Page | 5 of 58 |
| | Project | 1517045 | Date | 16:33:57 10/23/15 |
| | Client | T-Mobile | Designed by | Ahmet Colakoglu |

| Tower Elevation | Redundant Bracing Grade | Redundant Type | Redundant Size | K Factor | |
|--------------------|-------------------------|----------------|-----------------|-----------------------------|---|
| ft | | | | | |
| T8 100.00-80.00 | A36 (36 ksi) | Hip Diagonal | P2.5x.203 | 1 | |
| | | Horizontal (1) | Pipe | P1.5x.145 | 1 |
| | | Diagonal (1) | Pipe | P2x.154 | 1 |
| | | Hip (1) | Pipe | P1.5x.145 | 1 |
| T9 80.00-60.00 | A36 (36 ksi) | Hip Diagonal | P2.5x.203 | 1 | |
| | | Horizontal (1) | Pipe | P1.5x.145 | 1 |
| | | Diagonal (1) | Pipe | P2x.154 | 1 |
| | | Hip (1) | Pipe | P1.5x.145 | 1 |
| T10 60.00-30.00 | A36 (36 ksi) | Hip Diagonal | P3.5x0.216 | 1 | |
| | | Horizontal (1) | Pipe | P1.5x.145 | 1 |
| | | Horizontal (2) | | P2x.154 | |
| | | Diagonal (1) | Pipe | P1.5x.145 | 1 |
| | | Diagonal (2) | | P2x.154 | |
| | | Hip (1) | Pipe | P1.5x.145 | 1 |
| T11 30.00-0.00 | A36 (36 ksi) | Hip (2) | | P1.5x.145 | |
| | | Hip Diagonal | | P3.5x0.216 | 1 |
| | | Horizontal (1) | Pipe | P1.5x.145 | 1 |
| | | Horizontal (2) | | P2x.154 | |
| | | Diagonal (1) | Arbitrary Shape | P1.5STD with half 2STD Pipe | 1 |
| | | Diagonal (2) | | Pipe 2.5STD | |
| | | Hip (1) | Pipe | P1.5x.145 | 1 |
| | | Hip (2) | | P2x.154 | |
| | | Hip Diagonal | | P3.5x0.216 | 1 |

Tower Section Geometry (cont'd)

| Tower Elevation | Gusset Area (per face) | Gusset Thickness | Gusset Grade | Adjust. Factor A_f | Adjust. Factor A_r | Weight Mult. | Double Angle Stitch Bolt Spacing Diagonals in | Double Angle Stitch Bolt Spacing Horizontals in |
|---------------------|------------------------|------------------|-----------------|----------------------|----------------------|--------------|---|---|
| ft | ft ² | in | | | | | | |
| T1 240.00-220.00 | 0.00 | 0.0000 | A36 (36 ksi) | 1 | 1 | 1 | 36.0000 | 36.0000 |
| T2 220.00-200.00 | 0.00 | 0.0000 | A36 (36 ksi) | 1 | 1 | 1 | 36.0000 | 36.0000 |
| T3 200.00-180.00 | 0.00 | 0.0000 | A36 (36 ksi) | 1 | 1 | 1 | 36.0000 | 36.0000 |
| T4 180.00-160.00 | 0.00 | 0.0000 | A36 (36 ksi) | 1 | 1 | 1 | 36.0000 | 36.0000 |
| T5 160.00-140.00 | 0.00 | 0.0000 | A36 (36 ksi) | 1 | 1 | 1 | 36.0000 | 36.0000 |
| T6 140.00-120.00 | 0.00 | 0.0000 | A36 (36 ksi) | 1 | 1 | 1 | 36.0000 | 36.0000 |
| T7 120.00-100.00 | 0.00 | 0.0000 | A36 (36 ksi) | 1 | 1 | 1 | 36.0000 | 36.0000 |
| T8 100.00-80.00 | 0.00 | 0.0000 | A36 (36 ksi) | 1 | 1 | 1 | 36.0000 | 36.0000 |
| T9 80.00-60.00 | 0.00 | 0.0000 | A36 (36 ksi) | 1 | 1 | 1 | 36.0000 | 36.0000 |
| T10 60.00-30.00 | 0.00 | 0.0000 | A36 (36 ksi) | 1 | 1 | 1 | 36.0000 | 36.0000 |
| T11 30.00-0.00 | 0.00 | 0.0000 | A36 (36 ksi) | 1 | 1 | 1 | 36.0000 | 36.0000 |

| | | | | |
|---|----------------|----------|--------------------|-------------------|
| tnxTower Destek Engineering, LLC 1281 Kennestone Circle, Suite 100 Marietta, GA 30066 Phone: (770) 693 0835 FAX: | Job | CT11680A | Page | 7 of 58 |
| | Project | 1517045 | Date | 16:33:57 10/23/15 |
| | Client | T-Mobile | Designed by | Ahmet Colakoglu |

| Tower Elevation ft | Leg | | Diagonal | | Top Girt | | Bottom Girt | | Mid Girt | | Long Horizontal | | Short Horizontal | |
|-----------------------|---------------------------|---|---------------------------|------|---------------------------|------|---------------------------|------|---------------------------|------|---------------------------|------|---------------------------|------|
| | Net Width Deduct in | U | Net Width Deduct in | U | Net Width Deduct in | U | Net Width Deduct in | U | Net Width Deduct in | U | Net Width Deduct in | U | Net Width Deduct in | U |
| T10 60.00-30.00 | 0.0000 | 1 | 0.0000 | 0.75 | 0.0000 | 0.75 | 0.0000 | 0.75 | 0.0000 | 0.75 | 0.0000 | 0.75 | 0.0000 | 0.75 |
| T11 30.00-0.00 | 0.0000 | 1 | 0.0000 | 0.75 | 0.0000 | 0.75 | 0.0000 | 0.75 | 0.0000 | 0.75 | 0.0000 | 0.75 | 0.0000 | 0.75 |

Tower Section Geometry (cont'd)

| Tower Elevation ft | Leg Connection Type | Leg | | Diagonal | | Top Girt | | Bottom Girt | | Mid Girt | | Long Horizontal | | Short Horizontal | |
|-----------------------|------------------------|-----------------|-----|-----------------|-----|-----------------|-----|-----------------|-----|-----------------|-----|-----------------|-----|------------------|-----|
| | | Bolt Size in | No. | Bolt Size in | No. | Bolt Size in | No. | Bolt Size in | No. | Bolt Size in | No. | Bolt Size in | No. | Bolt Size in | No. |
| T1 240.00-220.00 | Flange | 1.0000 A325N | 8 | 0.6250 A325N | 3 | 0.6250 A325N | 2 | 0.6250 A325N | 0 | 0.6250 A325N | 0 | 0.6250 A325N | 2 | 0.6250 A325N | 0 |
| T2 220.00-200.00 | Flange | 1.0000 A325N | 8 | 0.6250 A325N | 3 | 0.6250 A325N | 2 | 0.6250 A325N | 0 | 0.6250 A325N | 0 | 0.6250 A325N | 2 | 0.6250 A325N | 0 |
| T3 200.00-180.00 | Flange | 1.0000 A325N | 8 | 0.6250 A325N | 3 | 0.6250 A325N | 2 | 0.6250 A325N | 0 | 0.6250 A325N | 0 | 0.6250 A325N | 2 | 0.6250 A325N | 0 |
| T4 180.00-160.00 | Flange | 1.0000 A325N | 8 | 0.6250 A325N | 3 | 0.6250 A325N | 2 | 0.6250 A325N | 0 | 0.6250 A325N | 0 | 0.6250 A325N | 2 | 0.6250 A325N | 0 |
| T5 160.00-140.00 | Flange | 1.0000 A325N | 8 | 0.6250 A325N | 3 | 0.6250 A325N | 2 | 0.6250 A325N | 0 | 0.6250 A325N | 0 | 0.6250 A325N | 2 | 0.6250 A325N | 0 |
| T6 140.00-120.00 | Flange | 1.0000 A325N | 8 | 0.6250 A325N | 3 | 0.6250 A325N | 2 | 0.6250 A325N | 0 | 0.6250 A325N | 0 | 0.6250 A325N | 2 | 0.6250 A325N | 0 |
| T7 120.00-100.00 | Flange | 1.0000 A325N | 8 | 0.7500 A325N | 3 | 0.7500 A325N | 2 | 0.6250 A325N | 0 | 0.6250 A325N | 0 | 0.7500 A325N | 2 | 0.6250 A325N | 0 |
| T8 100.00-80.00 | Flange | 1.0000 A325N | 12 | 0.7500 A325N | 3 | 0.7500 A325N | 2 | 0.6250 A325N | 0 | 0.6250 A325N | 0 | 0.7500 A325N | 2 | 0.6250 A325N | 0 |
| T9 80.00-60.00 | Flange | 1.0000 A325N | 12 | 0.7500 A325N | 3 | 0.7500 A325N | 2 | 0.6250 A325N | 0 | 0.6250 A325N | 0 | 0.7500 A325N | 2 | 0.6250 A325N | 0 |
| T10 60.00-30.00 | Flange | 1.0000 A325N | 12 | 0.7500 A325N | 3 | 0.7500 A325N | 2 | 0.6250 A325N | 0 | 0.6250 A325N | 0 | 0.7500 A325N | 2 | 0.6250 A325N | 0 |
| T11 30.00-0.00 | Flange | 0.7500 A325N | 0 | 0.7500 A325N | 3 | 0.7500 A325N | 2 | 0.6250 A325N | 0 | 0.6250 A325N | 0 | 0.7500 A325N | 2 | 0.6250 A325N | 0 |

Feed Line/Linear Appurtenances - Entered As Round Or Flat

| Description | Face or Leg | Allow Shield | Component Type | Placement ft | Face Offset in | Lateral Offset (Frac FW) | # | # Per Row | Clear Spacing in | Width or Diameter in | Perimeter in | Weight plf |
|------------------|-------------------|-----------------|-------------------|-----------------|----------------------|--------------------------------|----|-----------------|------------------------|----------------------------|-----------------|---------------|
| LDF6-50A(1-1/4") | C | Yes | Ar (CfAe) | 240.00 - 5.00 | 0.0000 | 0.49 | 1 | 1 | 1.5500 | 1.5500 | | 0.66 |
| LDF5-50A(7/8") | A | Yes | Ar (CfAe) | 230.00 - 5.00 | 0.0000 | -0.48 | 2 | 2 | 0.5000 | 1.0900 | | 0.33 |
| LDF6-50A(1-1/4") | C | Yes | Ar (CfAe) | 223.00 - 5.00 | 0.0000 | 0.47 | 1 | 1 | 1.5500 | 1.5500 | | 0.66 |
| LDF7-50A(1-5/8") | A | Yes | Ar (CfAe) | 212.00 - 5.00 | 0.0000 | 0.4 | 12 | 6 | 0.5000 | 1.9800 | | 0.82 |
| LDF5-50A(7/8") | A | Yes | Ar (CfAe) | 196.00 - 5.00 | 0.0000 | -0.46 | 1 | 1 | 1.0900 | 1.0900 | | 0.33 |

| | | | | |
|---|----------------|----------|--------------------|-------------------|
| tnxTower Destek Engineering, LLC 1281 Kennestone Circle, Suite 100 Marietta, GA 30066 Phone: (770) 693 0835 FAX: | Job | CT11680A | Page | 8 of 58 |
| | Project | 1517045 | Date | 16:33:57 10/23/15 |
| | Client | T-Mobile | Designed by | Ahmet Colakoglu |

| 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 |
|------------------------|-------------|--------------|----------------|---------------|----------------|--------------------------|----|-----------|------------------|----------------------|--------------|------------|
| 8") | | | | | | | | | | | | |
| LDF4P-50A(1/2") | B | Yes | Ar (CfAe) | 187.00 - 5.00 | 0.0000 | 0.25 | 4 | 4 | 0.5000 | 0.6300 | | 0.15 |
| LDF7-50A(1-5/8") | C | Yes | Ar (CfAe) | 180.60 - 5.00 | 0.0000 | 0.4 | 6 | 6 | 0.5000 | 1.9800 | | 0.82 |
| 2' Rigid Conduit | B | Yes | Ar (CfAe) | 180.60 - 5.00 | 0.0000 | 0.3 | 2 | 2 | 1.0000 2.0000 | 2.0000 | | 2.80 |
| LDF6-50A(1-1/4") | C | Yes | Ar (CfAe) | 180.60 - 5.00 | 0.0000 | 0.25 | 3 | 3 | 1.5500 | 1.5500 | | 0.66 |
| LDF7-50A(1-5/8") | B | Yes | Ar (CfAe) | 174.00 - 5.00 | 0.0000 | 0.45 | 6 | 6 | 0.5000 | 1.9800 | | 0.82 |
| LDF6-50A(1-1/4") | C | Yes | Ar (CfAe) | 164.00 - 5.00 | 0.0000 | 0.35 | 1 | 1 | 1.5500 | 1.5500 | | 0.66 |
| LDF7-50A(1-5/8") | A | Yes | Ar (CfAe) | 164.00 - 5.00 | 0.0000 | 0.45 | 12 | 6 | 0.5000 | 1.9800 | | 0.82 |
| LDF2-50A(3/8") | A | Yes | Ar (CfAe) | 164.00 - 5.00 | 0.0000 | 0.35 | 3 | 3 | 0.4400 | 0.4400 | | 0.08 |
| LDF7-50A(1-5/8") | A | Yes | Ar (CfAe) | 155.00 - 5.00 | 0.0000 | -0.35 | 12 | 6 | 0.5000 | 1.9800 | | 0.82 |
| LDF7-50A(1-5/8") | A | Yes | Ar (CfAe) | 155.00 - 5.00 | 0.0000 | -0.43 | 1 | 1 | 1.9800 | 1.9800 | | 0.82 |
| LDF4P-50A(1/2") | B | Yes | Ar (CfAe) | 132.00 - 5.00 | 0.0000 | 0.49 | 1 | 1 | 0.6300 | 0.6300 | | 0.15 |
| LDF5-50A(7/8") | C | Yes | Ar (CfAe) | 118.00 - 5.00 | 0.0000 | 0.2 | 1 | 1 | 1.0900 | 1.0900 | | 0.33 |
| LDF6-50A(1-1/4") | C | Yes | Ar (CfAe) | 108.00 - 5.00 | 0.0000 | 0.42 | 1 | 1 | 1.5500 | 1.5500 | | 0.66 |
| LDF4P-50A(1/2") | B | Yes | Ar (CfAe) | 99.00 - 5.00 | 0.0000 | 0.48 | 1 | 1 | 0.6300 | 0.6300 | | 0.15 |
| LDF4P-50A(1/2") | A | Yes | Ar (CfAe) | 20.00 - 5.00 | 0.0000 | -0.5 | 1 | 1 | 0.6300 | 0.6300 | | 0.15 |
| Cat 5 | A | Yes | Ar (CfAe) | 22.00 - 0.00 | 0.0000 | -0.49 | 1 | 1 | 0.3750 | 0.3750 | | 0.10 |
| LDF4P-50A(1/2") | A | Yes | Ar (CfAe) | 8.00 - 5.00 | 0.0000 | -0.48 | 4 | 4 | 0.6300 | 0.6300 | | 0.15 |
| **** | | | | | | | | | | | | |
| LDF7-50A(1-5/8") | B | Yes | Ar (CfAe) | 202.00 - 5.00 | 0.0000 | -0.45 | 6 | 6 | 0.5000 | 1.9800 | | 0.82 |
| LDF7-50A(1-5/8") | B | Yes | Ar (CfAe) | 202.00 - 5.00 | 0.0000 | -0.43 | 1 | 1 | 1.9800 | 1.9800 | | 0.82 |
| **** | | | | | | | | | | | | |
| Feedline Ladder (Rail) | C | Yes | Af (CfAe) | 240.00 - 5.00 | 0.0000 | 0.4 | 2 | 2 | 24.0000 | 1.7500 | 7.0000 | 3.00 |
| Feedline Ladder (Rail) | A | Yes | Af (CfAe) | 202.00 - 5.00 | 0.0000 | -0.4 | 2 | 2 | 24.0000 | 1.7500 | 7.0000 | 3.00 |
| Feedline Ladder (Rail) | A | Yes | Af (CfAe) | 202.00 - 5.00 | 0.0000 | 0.4 | 2 | 2 | 24.0000 | 1.7500 | 7.0000 | 3.00 |
| Feedline Ladder (Rail) | B | Yes | Af (CfAe) | 202.00 - 5.00 | 0.0000 | -0.4 | 2 | 2 | 24.0000 | 1.7500 | 7.0000 | 3.00 |
| Feedline Ladder (Rail) | B | Yes | Af (CfAe) | 202.00 - 5.00 | 0.0000 | 0.4 | 2 | 2 | 24.0000 | 1.7500 | 7.0000 | 3.00 |

Feed Line/Linear Appurtenances Section Areas

| Tower Section | Tower Elevation ft | Face | A _R ft ² | A _F ft ² | C _A A _A In Face ft ² | C _A A _A Out Face ft ² | Weight lb |
|---------------|--------------------|------|--------------------------------|--------------------------------|---|--|-----------|
| T1 | 240.00-220.00 | A | 1.817 | 0.000 | 0.000 | 0.000 | 6.60 |

| | | | | |
|---|----------------|----------|--------------------|-------------------|
| tnxTower Destek Engineering, LLC 1281 Kennestone Circle, Suite 100 Marietta, GA 30066 Phone: (770) 693 0835 FAX: | Job | CT11680A | Page | 9 of 58 |
| | Project | 1517045 | Date | 16:33:57 10/23/15 |
| | Client | T-Mobile | Designed by | Ahmet Colakoglu |

| Tower Section | Tower Elevation ft | Face | A_R ft ² | A_F ft ² | C_{AA} In Face ft ² | C_{AA} Out Face ft ² | Weight lb |
|---------------|-----------------------|------|--------------------------|--------------------------|--|---|--------------|
| | | B | 0.000 | 0.000 | 0.000 | 0.000 | 0.00 |
| | | C | 2.971 | 5.833 | 0.000 | 0.000 | 135.18 |
| T2 | 220.00-200.00 | A | 15.513 | 1.167 | 0.000 | 0.000 | 155.28 |
| | | B | 2.310 | 1.167 | 0.000 | 0.000 | 35.48 |
| | | C | 5.167 | 5.833 | 0.000 | 0.000 | 146.40 |
| T3 | 200.00-180.00 | A | 24.887 | 11.667 | 0.000 | 0.000 | 455.28 |
| | | B | 24.770 | 11.667 | 0.000 | 0.000 | 362.36 |
| | | C | 5.993 | 5.833 | 0.000 | 0.000 | 150.54 |
| T4 | 180.00-160.00 | A | 29.650 | 11.667 | 0.000 | 0.000 | 496.92 |
| | | B | 47.827 | 11.667 | 0.000 | 0.000 | 547.68 |
| | | C | 33.233 | 5.833 | 0.000 | 0.000 | 287.04 |
| T5 | 160.00-140.00 | A | 64.575 | 11.667 | 0.000 | 0.000 | 818.10 |
| | | B | 53.767 | 11.667 | 0.000 | 0.000 | 577.20 |
| | | C | 35.300 | 5.833 | 0.000 | 0.000 | 297.60 |
| T6 | 140.00-120.00 | A | 70.350 | 11.667 | 0.000 | 0.000 | 871.40 |
| | | B | 54.397 | 11.667 | 0.000 | 0.000 | 579.00 |
| | | C | 35.300 | 5.833 | 0.000 | 0.000 | 297.60 |
| T7 | 120.00-100.00 | A | 70.350 | 11.667 | 0.000 | 0.000 | 871.40 |
| | | B | 54.817 | 11.667 | 0.000 | 0.000 | 580.20 |
| | | C | 37.968 | 5.833 | 0.000 | 0.000 | 308.82 |
| T8 | 100.00-80.00 | A | 70.350 | 11.667 | 0.000 | 0.000 | 871.40 |
| | | B | 55.814 | 11.667 | 0.000 | 0.000 | 583.05 |
| | | C | 39.700 | 5.833 | 0.000 | 0.000 | 317.40 |
| T9 | 80.00-60.00 | A | 70.350 | 11.667 | 0.000 | 0.000 | 871.40 |
| | | B | 55.867 | 11.667 | 0.000 | 0.000 | 583.20 |
| | | C | 39.700 | 5.833 | 0.000 | 0.000 | 317.40 |
| T10 | 60.00-30.00 | A | 105.525 | 17.500 | 0.000 | 0.000 | 1307.10 |
| | | B | 83.800 | 17.500 | 0.000 | 0.000 | 874.80 |
| | | C | 59.550 | 8.750 | 0.000 | 0.000 | 476.10 |
| T11 | 30.00-0.00 | A | 90.043 | 14.583 | 0.000 | 0.000 | 1095.50 |
| | | B | 69.833 | 14.583 | 0.000 | 0.000 | 729.00 |
| | | C | 49.625 | 7.292 | 0.000 | 0.000 | 396.75 |

Feed Line/Linear Appurtenances Section Areas - With Ice

| Tower Section | Tower Elevation ft | Face or Leg | Ice Thickness in | A_R ft ² | A_F ft ² | C_{AA} In Face ft ² | C_{AA} Out Face ft ² | Weight lb |
|---------------|-----------------------|-------------|---------------------|--------------------------|--------------------------|--|---|--------------|
| T1 | 240.00-220.00 | A | 0.947 | 2.486 | 1.325 | 0.000 | 0.000 | 44.98 |
| | | B | | 0.000 | 0.000 | 0.000 | 0.000 | 0.00 |
| | | C | | 6.600 | 10.041 | 0.000 | 0.000 | 357.48 |
| T2 | 220.00-200.00 | A | 0.936 | 8.791 | 17.049 | 0.000 | 0.000 | 554.80 |
| | | B | | 1.284 | 4.066 | 0.000 | 0.000 | 104.74 |
| | | C | | 11.410 | 9.996 | 0.000 | 0.000 | 413.81 |
| T3 | 200.00-180.00 | A | 0.925 | 15.206 | 43.208 | 0.000 | 0.000 | 1353.52 |
| | | B | | 14.408 | 42.686 | 0.000 | 0.000 | 1082.39 |
| | | C | | 11.697 | 10.876 | 0.000 | 0.000 | 428.83 |
| T4 | 180.00-160.00 | A | 0.913 | 18.088 | 47.819 | 0.000 | 0.000 | 1500.83 |
| | | B | | 27.598 | 65.566 | 0.000 | 0.000 | 1661.18 |
| | | C | | 24.349 | 40.891 | 0.000 | 0.000 | 1056.72 |
| T5 | 160.00-140.00 | A | 0.899 | 35.404 | 82.078 | 0.000 | 0.000 | 2640.37 |
| | | B | | 29.274 | 71.645 | 0.000 | 0.000 | 1765.92 |
| | | C | | 28.624 | 40.831 | 0.000 | 0.000 | 1098.63 |
| T6 | 140.00-120.00 | A | 0.884 | 38.196 | 87.109 | 0.000 | 0.000 | 2801.99 |
| | | B | | 31.417 | 71.509 | 0.000 | 0.000 | 1766.83 |
| | | C | | 28.369 | 40.763 | 0.000 | 0.000 | 1084.53 |
| T7 | 120.00-100.00 | A | 0.867 | 37.787 | 86.953 | 0.000 | 0.000 | 2771.68 |
| | | B | | 32.665 | 71.353 | 0.000 | 0.000 | 1756.71 |

| | | | | |
|---|----------------|----------|--------------------|-------------------|
| tnxTower Destek Engineering, LLC 1281 Kennestone Circle, Suite 100 Marietta, GA 30066 Phone: (770) 693 0835 FAX: | Job | CT11680A | Page | 10 of 58 |
| | Project | 1517045 | Date | 16:33:57 10/23/15 |
| | Client | T-Mobile | Designed by | Ahmet Colakoglu |

| Tower Section | Tower Elevation ft | Face or Leg | Ice Thickness in | A_R ft ² | A_F ft ² | $C_A A_A$ In Face ft ² | $C_A A_A$ Out Face ft ² | Weight lb |
|---------------|-----------------------|-------------|---------------------|--------------------------|--------------------------|---|--|--------------|
| T8 | 100.00-80.00 | C | | 34.500 | 40.685 | 0.000 | 0.000 | 1137.45 |
| | | A | 0.846 | 37.306 | 86.770 | 0.000 | 0.000 | 2736.29 |
| | | B | | 35.929 | 71.170 | 0.000 | 0.000 | 1760.08 |
| T9 | 80.00-60.00 | C | | 37.772 | 40.593 | 0.000 | 0.000 | 1159.09 |
| | | A | 0.821 | 36.719 | 86.546 | 0.000 | 0.000 | 2693.48 |
| | | B | | 35.536 | 70.946 | 0.000 | 0.000 | 1725.95 |
| T10 | 60.00-30.00 | C | | 37.186 | 40.481 | 0.000 | 0.000 | 1132.81 |
| | | A | 0.778 | 53.595 | 129.254 | 0.000 | 0.000 | 3933.18 |
| | | B | | 51.820 | 105.854 | 0.000 | 0.000 | 2499.60 |
| T11 | 30.00-0.00 | C | | 54.295 | 60.440 | 0.000 | 0.000 | 1633.70 |
| | | A | 0.750 | 50.466 | 108.341 | 0.000 | 0.000 | 3278.51 |
| | | B | | 42.354 | 87.896 | 0.000 | 0.000 | 2033.78 |
| | | C | | 57.125 | 37.292 | 0.000 | 0.000 | 1283.59 |

Feed Line Shielding

| Section | Elevation ft | Face | A_R ft ² | A_R Ice ft ² | A_F ft ² | A_F Ice ft ² |
|---------|-----------------|------|--------------------------|---------------------------------|--------------------------|---------------------------------|
| T1 | 240.00-220.00 | A | 0.134 | 0.504 | 0.000 | 0.000 |
| | | B | 0.000 | 0.000 | 0.000 | 0.000 |
| | | C | 0.648 | 2.479 | 0.000 | 0.000 |
| T2 | 220.00-200.00 | A | 1.008 | 2.691 | 0.000 | 0.000 |
| | | B | 0.210 | 0.591 | 0.000 | 0.000 |
| | | C | 0.665 | 2.407 | 0.000 | 0.000 |
| T3 | 200.00-180.00 | A | 2.074 | 5.998 | 0.000 | 0.000 |
| | | B | 2.067 | 5.872 | 0.000 | 0.000 |
| | | C | 0.671 | 2.363 | 0.000 | 0.000 |
| T4 | 180.00-160.00 | A | 2.406 | 6.663 | 0.000 | 0.000 |
| | | B | 3.465 | 9.258 | 0.000 | 0.000 |
| | | C | 2.275 | 6.406 | 0.000 | 0.000 |
| T5 | 160.00-140.00 | A | 1.827 | 4.732 | 3.003 | 6.423 |
| | | B | 1.568 | 4.086 | 2.577 | 5.548 |
| | | C | 0.985 | 2.783 | 1.620 | 3.778 |
| T6 | 140.00-120.00 | A | 5.051 | 12.319 | 0.000 | 0.000 |
| | | B | 4.068 | 10.186 | 0.000 | 0.000 |
| | | C | 2.533 | 6.777 | 0.000 | 0.000 |
| T7 | 120.00-100.00 | A | 2.946 | 8.356 | 2.121 | 4.413 |
| | | B | 2.388 | 7.010 | 1.720 | 3.702 |
| | | C | 1.573 | 5.011 | 1.133 | 2.646 |
| T8 | 100.00-80.00 | A | 5.351 | 13.330 | 0.000 | 0.000 |
| | | B | 4.403 | 11.560 | 0.000 | 0.000 |
| | | C | 2.971 | 8.368 | 0.000 | 0.000 |
| T9 | 80.00-60.00 | A | 5.149 | 12.591 | 0.000 | 0.000 |
| | | B | 4.240 | 10.926 | 0.000 | 0.000 |
| | | C | 2.859 | 7.886 | 0.000 | 0.000 |
| T10 | 60.00-30.00 | A | 7.567 | 18.558 | 0.000 | 0.000 |
| | | B | 6.231 | 16.074 | 0.000 | 0.000 |
| | | C | 4.201 | 11.580 | 0.000 | 0.000 |
| T11 | 30.00-0.00 | A | 4.751 | 11.748 | 1.840 | 3.677 |
| | | B | 3.834 | 9.689 | 1.485 | 3.033 |
| | | C | 2.585 | 6.956 | 1.001 | 2.177 |

| | | |
|---|---------------------------|---------------------------------------|
| tnxTower Destek Engineering, LLC 1281 Kennestone Circle, Suite 100 Marietta, GA 30066 Phone: (770) 693 0835 FAX: | Job CT11680A | Page 11 of 58 |
| | Project 1517045 | Date 16:33:57 10/23/15 |
| | Client T-Mobile | Designed by Ahmet Colakoglu |

Feed Line Center of Pressure

| Section | Elevation | CP _x | CP _z | CP _x Ice | CP _z Ice |
|---------|---------------|-----------------|-----------------|------------------------|------------------------|
| | ft | in | in | in | in |
| T1 | 240.00-220.00 | -4.2947 | 2.8264 | -4.4593 | 2.9787 |
| T2 | 220.00-200.00 | -6.9983 | -3.4397 | -7.1258 | -0.9518 |
| T3 | 200.00-180.00 | -6.2698 | -17.3797 | -6.7997 | -11.9567 |
| T4 | 180.00-160.00 | -5.3970 | -8.0618 | -6.7434 | -5.3876 |
| T5 | 160.00-140.00 | -9.6133 | -10.6837 | -10.5722 | -6.8551 |
| T6 | 140.00-120.00 | -11.9371 | -10.6396 | -11.8628 | -6.3181 |
| T7 | 120.00-100.00 | -13.4262 | -10.7878 | -13.3151 | -5.5496 |
| T8 | 100.00-80.00 | -14.2895 | -10.6783 | -13.5525 | -4.6267 |
| T9 | 80.00-60.00 | -14.3926 | -10.7578 | -13.8840 | -4.8569 |
| T10 | 60.00-30.00 | -15.7165 | -11.7454 | -15.0638 | -5.4967 |
| T11 | 30.00-0.00 | -15.6792 | -10.6811 | -17.2403 | -3.3973 |

Discrete Tower Loads

| Description | Face or Leg | Offset Type | Offsets: Horz Lateral Vert ft ft ft | Azimuth Adjustment ° | Placement ft | C _A A _A Front ft ² | C _A A _A Side ft ² | Weight lb | |
|-----------------------|-------------|-------------|---|-------------------------|-----------------|---|--|--------------|--------|
| ***240ft*** | | | | | | | | | |
| 5/8"x8' Lighting Rod | B | From Leg | 0.00 | 0.0000 | 240.00 | No Ice | 0.50 | 0.50 | 10.00 |
| | | | 0.00 | | | 1/2" Ice | 1.31 | 1.31 | 15.56 |
| | | | 5.00 | | | 1" Ice | 2.12 | 2.12 | 21.12 |
| | | | | | | 2" Ice | 3.74 | 3.74 | 32.24 |
| | | | | | | 4" Ice | 6.98 | 6.98 | 54.48 |
| Flash Beacon Lighting | C | From Leg | 0.00 | 0.0000 | 240.00 | No Ice | 2.70 | 2.70 | 50.00 |
| | | | 0.00 | | | 1/2" Ice | 3.10 | 3.10 | 70.00 |
| | | | 0.00 | | | 1" Ice | 3.50 | 3.50 | 90.00 |
| | | | | | | 2" Ice | 4.30 | 4.30 | 130.00 |
| | | | | | | 4" Ice | 5.90 | 5.90 | 210.00 |
| 3' Dia 10' Omni | C | From Leg | 1.00 | 0.0000 | 240.00 | No Ice | 3.00 | 3.00 | 25.00 |
| | | | 0.00 | | | 1/2" Ice | 4.03 | 4.03 | 46.79 |
| | | | 5.00 | | | 1" Ice | 5.06 | 5.06 | 68.58 |
| | | | | | | 2" Ice | 7.12 | 7.12 | 112.16 |
| | | | | | | 4" Ice | 11.24 | 11.24 | 199.32 |
| 4"x4'pipe mount | C | From Leg | 0.00 | 0.0000 | 240.00 | No Ice | 1.21 | 1.21 | 43.20 |
| | | | 0.00 | | | 1/2" Ice | 1.47 | 1.47 | 54.83 |
| | | | 0.00 | | | 1" Ice | 1.73 | 1.73 | 66.46 |
| | | | | | | 2" Ice | 2.25 | 2.25 | 89.72 |
| | | | | | | 4" Ice | 3.29 | 3.29 | 136.24 |
| 2' Side Arm Mount | B | From Leg | 3.00 | 0.0000 | 240.00 | No Ice | 2.00 | 2.00 | 50.00 |
| | | | 0.00 | | | 1/2" Ice | 3.00 | 3.00 | 100.00 |
| | | | 4.00 | | | 1" Ice | 4.00 | 4.00 | 150.00 |
| | | | | | | 2" Ice | 6.00 | 6.00 | 250.00 |
| | | | | | | 4" Ice | 10.00 | 10.00 | 450.00 |
| ***235ft*** | | | | | | | | | |
| 3' Dia 8' Omni | A | From Leg | 3.00 | 0.0000 | 235.00 | No Ice | 2.40 | 2.40 | 20.00 |
| | | | 0.00 | | | 1/2" Ice | 3.19 | 3.19 | 37.51 |
| | | | 4.00 | | | 1" Ice | 5.06 | 5.06 | 68.58 |
| | | | | | | 2" Ice | 7.12 | 7.12 | 112.16 |
| | | | | | | 4" Ice | 11.24 | 11.24 | 199.32 |

| | | | | |
|---|----------------|----------|--------------------|-------------------|
| tnxTower Destek Engineering, LLC 1281 Kennestone Circle, Suite 100 Marietta, GA 30066 Phone: (770) 693 0835 FAX: | Job | CT11680A | Page | 12 of 58 |
| | Project | 1517045 | Date | 16:33:57 10/23/15 |
| | Client | T-Mobile | Designed by | Ahmet Colakoglu |

| <i>Description</i> | <i>Face or Leg</i> | <i>Offset Type</i> | <i>Offsets: Horz Lateral Vert</i> <i>ft ft ft</i> | <i>Azimuth Adjustment</i> <i>°</i> | <i>Placement</i> <i>ft</i> | <i>C_AA_{Front}</i> <i>ft²</i> | <i>C_AA_{Side}</i> <i>ft²</i> | <i>Weight</i> <i>lb</i> |
|--------------------|--------------------|--------------------|--|---------------------------------------|-------------------------------|--|---|---|
| 3' Dia 8' Omni | A | From Leg | 3.00 0.00 4.00 | 0.0000 | 230.00 | No Ice 2.40 1/2" Ice 3.19 1" Ice 5.06 2" Ice 7.12 4" Ice 11.24 | 2.40 3.19 5.06 7.12 11.24 | 20.00 37.51 68.58 112.16 199.32 |
| 4' Dia 8' Omni | B | From Leg | 3.00 0.00 4.00 | 0.0000 | 230.00 | No Ice 2.40 1/2" Ice 3.19 1" Ice 5.06 2" Ice 7.12 4" Ice 11.24 | 2.40 3.19 5.06 7.12 11.24 | 20.00 37.51 68.58 112.16 199.32 |
| 4' Dia 12' Omni | C | From Leg | 3.00 0.00 4.00 | 0.0000 | 223.00 | No Ice 3.60 1/2" Ice 4.83 1" Ice 5.06 2" Ice 7.12 4" Ice 11.24 | 3.60 4.83 5.06 7.12 11.24 | 30.00 56.06 68.58 112.16 199.32 |
| 2' Side Arm Mount | C | From Leg | 3.00 0.00 4.00 | 0.0000 | 235.00 | No Ice 2.00 1/2" Ice 3.00 1" Ice 4.00 2" Ice 6.00 4" Ice 10.00 | 2.00 3.00 4.00 6.00 10.00 | 50.00 100.00 150.00 250.00 450.00 |
| ***230ft*** | | | | | | | | |
| 2' Side Arm Mount | A | From Leg | 3.00 0.00 4.00 | 0.0000 | 230.00 | No Ice 2.00 1/2" Ice 3.00 1" Ice 4.00 2" Ice 6.00 4" Ice 10.00 | 2.00 3.00 4.00 6.00 10.00 | 50.00 100.00 150.00 250.00 450.00 |
| 2' Side Arm Mount | A | From Leg | 3.00 0.00 4.00 | 0.0000 | 230.00 | No Ice 2.00 1/2" Ice 3.00 1" Ice 4.00 2" Ice 6.00 4" Ice 10.00 | 2.00 3.00 4.00 6.00 10.00 | 50.00 100.00 150.00 250.00 450.00 |
| 2' Side Arm Mount | B | From Leg | 3.00 0.00 4.00 | 0.0000 | 230.00 | No Ice 2.00 1/2" Ice 3.00 1" Ice 4.00 2" Ice 6.00 4" Ice 10.00 | 2.00 3.00 4.00 6.00 10.00 | 50.00 100.00 150.00 250.00 450.00 |
| ***223ft*** | | | | | | | | |
| 2' Side Arm Mount | C | From Leg | 3.00 0.00 4.00 | 0.0000 | 223.00 | No Ice 2.00 1/2" Ice 3.00 1" Ice 4.00 2" Ice 6.00 4" Ice 10.00 | 2.00 3.00 4.00 6.00 10.00 | 50.00 100.00 150.00 250.00 450.00 |
| ***212ft*** | | | | | | | | |
| (2) HBX-6516DS-VTM | A | From Leg | 4.00 0.00 0.00 | 0.0000 | 212.00 | No Ice 3.36 1/2" Ice 3.69 1" Ice 4.07 2" Ice 4.87 4" Ice 6.58 | 1.99 2.30 2.62 3.29 4.76 | 9.90 29.12 52.50 112.55 291.21 |
| (2) HBX-6516DS-VTM | B | From Leg | 4.00 0.00 0.00 | 0.0000 | 212.00 | No Ice 3.36 1/2" Ice 3.69 1" Ice 4.07 2" Ice 4.87 4" Ice 6.58 | 1.99 2.30 2.62 3.29 4.76 | 9.90 29.12 52.50 112.55 291.21 |
| (2) HBX-6516DS-VTM | C | From Leg | 4.00 0.00 0.00 | 0.0000 | 212.00 | No Ice 3.36 1/2" Ice 3.69 1" Ice 4.07 2" Ice 4.87 | 1.99 2.30 2.62 3.29 | 9.90 29.12 52.50 112.55 |

| | | | | |
|---|----------------|----------|--------------------|-------------------|
| tnxTower Destek Engineering, LLC 1281 Kennestone Circle, Suite 100 Marietta, GA 30066 Phone: (770) 693 0835 FAX: | Job | CT11680A | Page | 13 of 58 |
| | Project | 1517045 | Date | 16:33:57 10/23/15 |
| | Client | T-Mobile | Designed by | Ahmet Colakoglu |

| <i>Description</i> | <i>Face or Leg</i> | <i>Offset Type</i> | <i>Offsets: Horz Lateral Vert</i> <i>ft ft ft</i> | <i>Azimuth Adjustment</i> <i>°</i> | <i>Placement</i> <i>ft</i> | <i>C_AA_{Front}</i> <i>ft²</i> | <i>C_AA_{Side}</i> <i>ft²</i> | <i>Weight</i> <i>lb</i> |
|---|--------------------|--------------------|--|---------------------------------------|-------------------------------|--|---|---|
| 10' Sector Frames | C | None | | 0.0000 | 212.00 | 4" Ice 6.58 No Ice 23.00 1/2" Ice 34.00 1" Ice 45.00 2" Ice 67.00 4" Ice 111.00 | 4.76 23.00 34.00 45.00 67.00 111.00 | 291.21 700.00 1000.00 1300.00 1900.00 3100.00 |
| ***196ft*** 3' Yagi | C | From Leg | 1.50 0.00 0.00 | 0.0000 | 196.00 | 4" Ice 15.76 No Ice 2.08 1/2" Ice 3.79 1" Ice 5.50 2" Ice 8.92 4" Ice 15.76 | 15.76 2.08 3.79 5.50 8.92 15.76 | 196.47 30.95 51.64 72.33 113.71 196.47 |
| 4"x4'pipe mount | C | From Leg | 0.00 0.00 0.00 | 0.0000 | 196.00 | 4" Ice 15.76 No Ice 1.21 1/2" Ice 1.47 1" Ice 1.73 2" Ice 2.25 4" Ice 3.29 | 15.76 1.21 1.47 1.73 2.25 3.29 | 196.47 43.20 54.83 66.46 89.72 136.24 |
| ***187ft*** ***223ft*** 4"x4'pipe mount | B | From Leg | 0.00 0.00 0.00 | 0.0000 | 187.00 | 4" Ice 3.29 No Ice 1.21 1/2" Ice 1.47 1" Ice 1.73 2" Ice 2.25 4" Ice 3.29 | 3.29 1.21 1.47 1.73 2.25 3.29 | 136.24 43.20 54.83 66.46 89.72 136.24 |
| 4"x4'pipe mount | C | From Leg | 0.00 0.00 0.00 | 0.0000 | 187.00 | 4" Ice 3.29 No Ice 1.21 1/2" Ice 1.47 1" Ice 1.73 2" Ice 2.25 4" Ice 3.29 | 3.29 1.21 1.47 1.73 2.25 3.29 | 136.24 43.20 54.83 66.46 89.72 136.24 |
| ***180ft*** 10' Sector Frames | C | None | | 0.0000 | 180.60 | 4" Ice 111.00 No Ice 23.00 1/2" Ice 34.00 1" Ice 45.00 2" Ice 67.00 4" Ice 111.00 | 111.00 23.00 34.00 45.00 67.00 111.00 | 3100.00 700.00 1000.00 1300.00 1900.00 3100.00 |
| (2) RR90-11-00DBL | A | From Leg | 3.00 0.00 0.00 | 0.0000 | 180.60 | 4" Ice 8.99 No Ice 5.60 1/2" Ice 5.99 1" Ice 6.40 2" Ice 7.22 4" Ice 8.99 | 6.40 3.27 3.63 4.00 4.76 6.40 | 21.00 21.00 55.48 94.50 186.93 434.78 |
| (2) RR90-11-00DBL | B | From Leg | 3.00 0.00 0.00 | 0.0000 | 180.60 | 4" Ice 8.99 No Ice 5.60 1/2" Ice 5.99 1" Ice 6.40 2" Ice 7.22 4" Ice 8.99 | 6.40 3.27 3.63 4.00 4.76 6.40 | 21.00 21.00 55.48 94.50 186.93 434.78 |
| (2) RR90-11-00DBL | C | From Leg | 3.00 0.00 0.00 | 0.0000 | 180.60 | 4" Ice 8.99 No Ice 5.60 1/2" Ice 5.99 1" Ice 6.40 2" Ice 7.22 4" Ice 8.99 | 6.40 3.27 3.63 4.00 4.76 6.40 | 21.00 21.00 55.48 94.50 186.93 434.78 |
| APXVSP18-C-A20 | A | From Leg | 3.00 0.00 0.00 | 0.0000 | 180.60 | 4" Ice 8.99 No Ice 8.26 1/2" Ice 8.81 1" Ice 9.36 2" Ice 10.50 4" Ice 12.88 | 6.40 5.28 5.74 6.20 7.14 9.27 | 434.78 57.00 106.52 162.12 292.33 634.27 |
| APXVSP18-C-A20 | B | From Leg | 3.00 0.00 | 0.0000 | 180.60 | 4" Ice 8.99 No Ice 8.26 1/2" Ice 8.81 | 6.40 5.28 5.74 | 434.78 57.00 106.52 |

| | | | | |
|---|----------------|----------|--------------------|-------------------|
| tnxTower Destek Engineering, LLC 1281 Kennestone Circle, Suite 100 Marietta, GA 30066 Phone: (770) 693 0835 FAX: | Job | CT11680A | Page | 14 of 58 |
| | Project | 1517045 | Date | 16:33:57 10/23/15 |
| | Client | T-Mobile | Designed by | Ahmet Colakoglu |

| <i>Description</i> | <i>Face or Leg</i> | <i>Offset Type</i> | <i>Offsets: Horz Lateral Vert</i> <i>ft ft ft</i> | <i>Azimuth Adjustment</i> <i>°</i> | <i>Placement</i> <i>ft</i> | <i>C_AA_A Front</i> <i>ft²</i> | <i>C_AA_A Side</i> <i>ft²</i> | <i>Weight</i> <i>lb</i> |
|-----------------------|--------------------|--------------------|--|---------------------------------------|-------------------------------|--|---|----------------------------|
| | | | 0.00 | | | 1" Ice 9.36 | 6.20 | 162.12 |
| | | | | | | 2" Ice 10.50 | 7.14 | 292.33 |
| | | | | | | 4" Ice 12.88 | 9.27 | 634.27 |
| APXV9ERR18-C | C | From Leg | 3.00 | 0.0000 | 180.60 | No Ice 8.26 | 5.84 | 62.00 |
| | | | 0.00 | | | 1/2" Ice 8.81 | 6.30 | 114.13 |
| | | | 0.00 | | | 1" Ice 9.36 | 6.76 | 172.40 |
| | | | | | | 2" Ice 10.50 | 7.71 | 308.14 |
| | | | | | | 4" Ice 12.88 | 9.99 | 661.88 |
| (2) PCS 1900MHz 2x40W | A | From Leg | 3.00 | 0.0000 | 180.60 | No Ice 2.74 | 1.46 | 44.10 |
| | | | 0.00 | | | 1/2" Ice 2.97 | 1.65 | 62.38 |
| | | | 0.00 | | | 1" Ice 3.21 | 1.84 | 83.55 |
| | | | | | | 2" Ice 3.71 | 2.27 | 135.35 |
| | | | | | | 4" Ice 4.82 | 3.22 | 282.19 |
| (2) PCS 1900MHz 2x40W | B | From Leg | 3.00 | 0.0000 | 180.60 | No Ice 2.74 | 1.46 | 44.10 |
| | | | 0.00 | | | 1/2" Ice 2.97 | 1.65 | 62.38 |
| | | | 0.00 | | | 1" Ice 3.21 | 1.84 | 83.55 |
| | | | | | | 2" Ice 3.71 | 2.27 | 135.35 |
| | | | | | | 4" Ice 4.82 | 3.22 | 282.19 |
| (2) PCS 1900MHz 2x40W | C | From Leg | 3.00 | 0.0000 | 180.60 | No Ice 2.74 | 1.46 | 44.10 |
| | | | 0.00 | | | 1/2" Ice 2.97 | 1.65 | 62.38 |
| | | | 0.00 | | | 1" Ice 3.21 | 1.84 | 83.55 |
| | | | | | | 2" Ice 3.71 | 2.27 | 135.35 |
| | | | | | | 4" Ice 4.82 | 3.22 | 282.19 |
| 800MHZ 2X50W RRH | A | From Leg | 3.00 | 0.0000 | 180.60 | No Ice 2.49 | 2.07 | 53.00 |
| | | | 0.00 | | | 1/2" Ice 2.71 | 2.27 | 74.19 |
| | | | 0.00 | | | 1" Ice 2.93 | 2.48 | 98.39 |
| | | | | | | 2" Ice 3.41 | 2.93 | 156.61 |
| | | | | | | 4" Ice 4.46 | 3.93 | 317.77 |
| 800MHZ 2X50W RRH | B | From Leg | 3.00 | 0.0000 | 180.60 | No Ice 2.49 | 2.07 | 53.00 |
| | | | 0.00 | | | 1/2" Ice 2.71 | 2.27 | 74.19 |
| | | | 0.00 | | | 1" Ice 2.93 | 2.48 | 98.39 |
| | | | | | | 2" Ice 3.41 | 2.93 | 156.61 |
| | | | | | | 4" Ice 4.46 | 3.93 | 317.77 |
| 800MHZ 2X50W RRH | C | From Leg | 3.00 | 0.0000 | 180.60 | No Ice 2.49 | 2.07 | 53.00 |
| | | | 0.00 | | | 1/2" Ice 2.71 | 2.27 | 74.19 |
| | | | 0.00 | | | 1" Ice 2.93 | 2.48 | 98.39 |
| | | | | | | 2" Ice 3.41 | 2.93 | 156.61 |
| | | | | | | 4" Ice 4.46 | 3.93 | 317.77 |
| Notch Filters | A | From Leg | 3.00 | 0.0000 | 180.60 | No Ice 0.87 | 0.42 | 9.00 |
| | | | 0.00 | | | 1/2" Ice 0.99 | 0.52 | 15.75 |
| | | | 0.00 | | | 1" Ice 1.11 | 0.62 | 22.50 |
| | | | | | | 2" Ice 1.35 | 0.82 | 36.00 |
| | | | | | | 4" Ice 1.83 | 1.22 | 63.00 |
| Notch Filters | B | From Leg | 3.00 | 0.0000 | 180.60 | No Ice 0.87 | 0.42 | 9.00 |
| | | | 0.00 | | | 1/2" Ice 0.99 | 0.52 | 15.75 |
| | | | 0.00 | | | 1" Ice 1.11 | 0.62 | 22.50 |
| | | | | | | 2" Ice 1.35 | 0.82 | 36.00 |
| | | | | | | 4" Ice 1.83 | 1.22 | 63.00 |
| Notch Filters | C | From Leg | 3.00 | 0.0000 | 180.60 | No Ice 0.87 | 0.42 | 9.00 |
| | | | 0.00 | | | 1/2" Ice 0.99 | 0.52 | 15.75 |
| | | | 0.00 | | | 1" Ice 1.11 | 0.62 | 22.50 |
| | | | | | | 2" Ice 1.35 | 0.82 | 36.00 |
| | | | | | | 4" Ice 1.83 | 1.22 | 63.00 |
| LLPX310R | A | From Leg | 3.00 | 0.0000 | 180.60 | No Ice 4.84 | 1.96 | 28.66 |
| | | | 0.00 | | | 1/2" Ice 5.19 | 2.23 | 54.63 |
| | | | 0.00 | | | 1" Ice 5.55 | 2.50 | 84.59 |
| | | | | | | 2" Ice 6.30 | 3.13 | 157.22 |

| | | | | |
|---|----------------|----------|--------------------|-------------------|
| tnxTower Destek Engineering, LLC 1281 Kennestone Circle, Suite 100 Marietta, GA 30066 Phone: (770) 693 0835 FAX: | Job | CT11680A | Page | 15 of 58 |
| | Project | 1517045 | Date | 16:33:57 10/23/15 |
| | Client | T-Mobile | Designed by | Ahmet Colakoglu |

| Description | Face or Leg | Offset Type | Offsets: | | | Azimuth Adjustment | Placement | C _{AA} Front | C _{AA} Side | Weight |
|-------------------------|-------------|-------------|----------|---------|--------|--------------------|-----------|-----------------------|----------------------|--------|
| | | | Horz | Lateral | Vert | | | | | |
| LLPX310R | B | From Leg | 3.00 | 0.0000 | 180.60 | 4" Ice | 7.91 | 4.55 | 358.87 | |
| | | | | | | No Ice | 4.84 | 1.96 | 28.66 | |
| | | | | | | 1/2" Ice | 5.19 | 2.23 | 54.63 | |
| | | | | | | 1" Ice | 5.55 | 2.50 | 84.59 | |
| | | | | | | 2" Ice | 6.30 | 3.13 | 157.22 | |
| LLPX310R | C | From Leg | 3.00 | 0.0000 | 180.60 | 4" Ice | 7.91 | 4.55 | 358.87 | |
| | | | | | | No Ice | 4.84 | 1.96 | 28.66 | |
| | | | | | | 1/2" Ice | 5.19 | 2.23 | 54.63 | |
| | | | | | | 1" Ice | 5.55 | 2.50 | 84.59 | |
| | | | | | | 2" Ice | 6.30 | 3.13 | 157.22 | |
| Dap Head | A | From Leg | 2.00 | 0.0000 | 180.60 | 4" Ice | 7.91 | 4.55 | 358.87 | |
| | | | | | | No Ice | 3.54 | 2.27 | 45.00 | |
| | | | | | | 1/2" Ice | 3.80 | 2.51 | 70.00 | |
| | | | | | | 1" Ice | 4.06 | 2.75 | 95.00 | |
| | | | | | | 2" Ice | 4.58 | 3.23 | 145.00 | |
| Dap Head | B | From Leg | 2.00 | 0.0000 | 180.60 | 4" Ice | 5.62 | 4.19 | 245.00 | |
| | | | | | | No Ice | 3.54 | 2.27 | 45.00 | |
| | | | | | | 1/2" Ice | 3.80 | 2.51 | 70.00 | |
| | | | | | | 1" Ice | 4.06 | 2.75 | 95.00 | |
| | | | | | | 2" Ice | 4.58 | 3.23 | 145.00 | |
| Dap Head | C | From Leg | 2.00 | 0.0000 | 180.60 | 4" Ice | 5.62 | 4.19 | 245.00 | |
| | | | | | | No Ice | 3.54 | 2.27 | 45.00 | |
| | | | | | | 1/2" Ice | 3.80 | 2.51 | 70.00 | |
| | | | | | | 1" Ice | 4.06 | 2.75 | 95.00 | |
| | | | | | | 2" Ice | 4.58 | 3.23 | 145.00 | |
| ***174ft*** | | | | | | | | | | |
| (2) 950F65T4E-M | A | From Leg | 3.00 | 0.0000 | 174.00 | 4" Ice | 5.62 | 4.19 | 245.00 | |
| | | | | | | No Ice | 6.42 | 4.24 | 16.00 | |
| | | | | | | 1/2" Ice | 6.88 | 4.62 | 56.06 | |
| | | | | | | 1" Ice | 7.35 | 5.01 | 101.36 | |
| | | | | | | 2" Ice | 8.33 | 5.89 | 208.50 | |
| (2) 5'x5"x2" PCS panels | B | From Leg | 3.00 | 0.0000 | 174.00 | 4" Ice | 10.37 | 7.83 | 494.33 | |
| | | | | | | No Ice | 3.26 | 1.67 | 20.00 | |
| | | | | | | 1/2" Ice | 3.64 | 2.16 | 66.14 | |
| | | | | | | 1" Ice | 4.02 | 2.65 | 112.28 | |
| | | | | | | 2" Ice | 4.78 | 3.63 | 204.56 | |
| (2) 5'x5"x2" PCS panels | C | From Leg | 3.00 | 0.0000 | 174.00 | 4" Ice | 6.30 | 5.59 | 389.12 | |
| | | | | | | No Ice | 3.26 | 1.67 | 20.00 | |
| | | | | | | 1/2" Ice | 3.64 | 2.16 | 66.14 | |
| | | | | | | 1" Ice | 4.02 | 2.65 | 112.28 | |
| | | | | | | 2" Ice | 4.78 | 3.63 | 204.56 | |
| 10' Sector Frames | C | None | | 0.0000 | 174.00 | 4" Ice | 6.30 | 5.59 | 389.12 | |
| | | | | | | No Ice | 23.00 | 23.00 | 700.00 | |
| | | | | | | 1/2" Ice | 34.00 | 34.00 | 1000.00 | |
| | | | | | | 1" Ice | 45.00 | 45.00 | 1300.00 | |
| | | | | | | 2" Ice | 67.00 | 67.00 | 1900.00 | |
| ***164ft*** | | | | | | | | | | |
| 4" Dia 20' Omni | C | From Leg | 1.00 | 0.0000 | 164.00 | 4" Ice | 20.00 | 20.00 | 415.00 | |
| | | | | | | No Ice | 4.00 | 4.00 | 55.00 | |
| | | | | | | 1/2" Ice | 6.00 | 6.00 | 100.00 | |
| | | | | | | 1" Ice | 8.00 | 8.00 | 145.00 | |
| | | | | | | 2" Ice | 12.00 | 12.00 | 235.00 | |
| (2) 7770.00 | A | From Leg | 3.00 | 0.0000 | 164.00 | 4" Ice | 20.00 | 20.00 | 415.00 | |
| | | | | | | No Ice | 5.88 | 2.93 | 35.00 | |
| | | | | | | 1/2" Ice | 6.31 | 3.27 | 67.63 | |
| | | | | | | 1" Ice | 6.75 | 3.63 | 105.06 | |
| | | | | | | 2" Ice | 7.66 | 4.35 | 195.09 | |

| | | | | | | | | |
|---|----------------|--|----------|--|--------------------|--|-------------------|--|
| tnxTower Destek Engineering, LLC 1281 Kennestone Circle, Suite 100 Marietta, GA 30066 Phone: (770) 693 0835 FAX: | Job | | CT11680A | | Page | | 16 of 58 | |
| | Project | | 1517045 | | Date | | 16:33:57 10/23/15 | |
| | Client | | T-Mobile | | Designed by | | Ahmet Colakoglu | |

| Description | Face or Leg | Offset Type | Offsets: | | Azimuth Adjustment | Placement | C _{AA} Front | C _{AA} Side | Weight |
|-------------------|-------------|-------------|--------------|--------|--------------------|-----------|-----------------------|----------------------|--------|
| | | | Horz Lateral | Vert | | | | | |
| (2) 7770.00 | B | From Leg | 3.00 | 0.0000 | 164.00 | 4" Ice | 9.58 | 6.06 | 441.26 |
| | | | | | | No Ice | 5.88 | 2.93 | 35.00 |
| | | | | | | 1/2" Ice | 6.31 | 3.27 | 67.63 |
| | | | | | | 1" Ice | 6.75 | 3.63 | 105.06 |
| | | | | | | 2" Ice | 7.66 | 4.35 | 195.09 |
| (2) 7770.00 | C | From Leg | 3.00 | 0.0000 | 164.00 | 4" Ice | 9.58 | 6.06 | 441.26 |
| | | | | | | No Ice | 5.88 | 2.93 | 35.00 |
| | | | | | | 1/2" Ice | 6.31 | 3.27 | 67.63 |
| | | | | | | 1" Ice | 6.75 | 3.63 | 105.06 |
| | | | | | | 2" Ice | 7.66 | 4.35 | 195.09 |
| P65-16-XLH-RR | A | From Leg | 3.00 | 0.0000 | 164.00 | 4" Ice | 9.58 | 6.06 | 441.26 |
| | | | | | | No Ice | 8.40 | 4.70 | 53.00 |
| | | | | | | 1/2" Ice | 8.95 | 5.15 | 100.28 |
| | | | | | | 1" Ice | 9.51 | 5.60 | 153.59 |
| | | | | | | 2" Ice | 10.65 | 6.53 | 279.07 |
| P65-16-XLH-RR | B | From Leg | 3.00 | 0.0000 | 164.00 | 4" Ice | 13.03 | 8.52 | 610.93 |
| | | | | | | No Ice | 8.40 | 4.70 | 53.00 |
| | | | | | | 1/2" Ice | 8.95 | 5.15 | 100.28 |
| | | | | | | 1" Ice | 9.51 | 5.60 | 153.59 |
| | | | | | | 2" Ice | 10.65 | 6.53 | 279.07 |
| P65-16-XLH-RR | C | From Leg | 3.00 | 0.0000 | 164.00 | 4" Ice | 13.03 | 8.52 | 610.93 |
| | | | | | | No Ice | 8.40 | 4.70 | 53.00 |
| | | | | | | 1/2" Ice | 8.95 | 5.15 | 100.28 |
| | | | | | | 1" Ice | 9.51 | 5.60 | 153.59 |
| | | | | | | 2" Ice | 10.65 | 6.53 | 279.07 |
| (2) RRU 11 Single | A | From Leg | 2.00 | 0.0000 | 164.00 | 4" Ice | 13.03 | 8.52 | 610.93 |
| | | | | | | No Ice | 2.94 | 1.52 | 54.00 |
| | | | | | | 1/2" Ice | 3.17 | 1.68 | 75.64 |
| | | | | | | 1" Ice | 9.51 | 5.60 | 153.59 |
| | | | | | | 2" Ice | 10.65 | 6.53 | 279.07 |
| (2) RRU 11 Single | B | From Leg | 2.00 | 0.0000 | 164.00 | 4" Ice | 13.03 | 8.52 | 610.93 |
| | | | | | | No Ice | 2.94 | 1.52 | 54.00 |
| | | | | | | 1/2" Ice | 3.17 | 1.68 | 75.64 |
| | | | | | | 1" Ice | 9.51 | 5.60 | 153.59 |
| | | | | | | 2" Ice | 10.65 | 6.53 | 279.07 |
| (2) RRU 11 Single | C | From Leg | 2.00 | 0.0000 | 164.00 | 4" Ice | 13.03 | 8.52 | 610.93 |
| | | | | | | No Ice | 2.94 | 1.52 | 54.00 |
| | | | | | | 1/2" Ice | 3.17 | 1.68 | 75.64 |
| | | | | | | 1" Ice | 9.51 | 5.60 | 153.59 |
| | | | | | | 2" Ice | 10.65 | 6.53 | 279.07 |
| (4) LGP21401 | A | From Leg | 2.00 | 0.0000 | 164.00 | 4" Ice | 13.03 | 8.52 | 610.93 |
| | | | | | | No Ice | 1.29 | 0.23 | 14.10 |
| | | | | | | 1/2" Ice | 1.45 | 0.31 | 21.26 |
| | | | | | | 1" Ice | 1.61 | 0.40 | 30.32 |
| | | | | | | 2" Ice | 1.97 | 0.61 | 54.89 |
| (4) LGP21401 | B | From Leg | 2.00 | 0.0000 | 164.00 | 4" Ice | 2.79 | 1.12 | 135.29 |
| | | | | | | No Ice | 1.29 | 0.23 | 14.10 |
| | | | | | | 1/2" Ice | 1.45 | 0.31 | 21.26 |
| | | | | | | 1" Ice | 1.61 | 0.40 | 30.32 |
| | | | | | | 2" Ice | 1.97 | 0.61 | 54.89 |
| (4) LGP21401 | C | From Leg | 2.00 | 0.0000 | 164.00 | 4" Ice | 2.79 | 1.12 | 135.29 |
| | | | | | | No Ice | 1.29 | 0.23 | 14.10 |
| | | | | | | 1/2" Ice | 1.45 | 0.31 | 21.26 |
| | | | | | | 1" Ice | 1.61 | 0.40 | 30.32 |
| | | | | | | 2" Ice | 1.97 | 0.61 | 54.89 |
| (4) LGP21901 | A | From Leg | 2.00 | 0.0000 | 164.00 | 4" Ice | 2.79 | 1.12 | 135.29 |
| | | | | | | No Ice | 0.27 | 0.18 | 5.50 |

| | | | | |
|---|----------------|----------|--------------------|-------------------|
| tnxTower Destek Engineering, LLC 1281 Kennestone Circle, Suite 100 Marietta, GA 30066 Phone: (770) 693 0835 FAX: | Job | CT11680A | Page | 17 of 58 |
| | Project | 1517045 | Date | 16:33:57 10/23/15 |
| | Client | T-Mobile | Designed by | Ahmet Colakoglu |

| Description | Face or Leg | Offset Type | Offsets: Horz Lateral Vert ft ft ft | Azimuth Adjustment ° | Placement ft | C _{AA} Front ft ² | C _{AA} Side ft ² | Weight lb | |
|-------------------|-------------|-------------|--|-------------------------|-----------------|--|---|--------------|---------|
| | | | 0.00 | | | 1/2" Ice | 0.34 | 0.25 | 7.92 |
| | | | 0.00 | | | 1" Ice | 0.43 | 0.32 | 11.41 |
| | | | | | | 2" Ice | 0.62 | 0.49 | 22.43 |
| | | | | | | 4" Ice | 1.10 | 0.94 | 66.02 |
| (4) LGP21901 | B | From Leg | 2.00 | 0.0000 | 164.00 | No Ice | 0.27 | 0.18 | 5.50 |
| | | | 0.00 | | | 1/2" Ice | 0.34 | 0.25 | 7.92 |
| | | | 0.00 | | | 1" Ice | 0.43 | 0.32 | 11.41 |
| | | | | | | 2" Ice | 0.62 | 0.49 | 22.43 |
| | | | | | | 4" Ice | 1.10 | 0.94 | 66.02 |
| (4) LGP21901 | C | From Leg | 2.00 | 0.0000 | 164.00 | No Ice | 0.27 | 0.18 | 5.50 |
| | | | 0.00 | | | 1/2" Ice | 0.34 | 0.25 | 7.92 |
| | | | 0.00 | | | 1" Ice | 0.43 | 0.32 | 11.41 |
| | | | | | | 2" Ice | 0.62 | 0.49 | 22.43 |
| | | | | | | 4" Ice | 1.10 | 0.94 | 66.02 |
| DC6-48-60-18-8F | C | From Leg | 1.00 | 0.0000 | 164.00 | No Ice | 2.57 | 2.57 | 18.90 |
| | | | 0.00 | | | 1/2" Ice | 2.80 | 2.80 | 41.46 |
| | | | 0.00 | | | 1" Ice | 3.04 | 3.04 | 67.19 |
| | | | | | | 2" Ice | 3.54 | 3.54 | 128.96 |
| | | | | | | 4" Ice | 4.66 | 4.66 | 299.16 |
| 10' Sector Frames | C | None | | 0.0000 | 164.00 | No Ice | 23.00 | 23.00 | 700.00 |
| | | | | | | 1/2" Ice | 34.00 | 34.00 | 1000.00 |
| | | | | | | 1" Ice | 45.00 | 45.00 | 1300.00 |
| | | | | | | 2" Ice | 67.00 | 67.00 | 1900.00 |
| | | | | | | 4" Ice | 111.00 | 111.00 | 3100.00 |
| ***155ft*** | | | | | | | | | |
| BXA-80063/6 | A | From Leg | 3.00 | 0.0000 | 155.00 | No Ice | 7.74 | 3.76 | 14.90 |
| | | | 0.00 | | | 1/2" Ice | 8.28 | 4.20 | 55.55 |
| | | | 0.00 | | | 1" Ice | 8.83 | 4.64 | 102.03 |
| | | | | | | 2" Ice | 9.94 | 5.54 | 213.22 |
| | | | | | | 4" Ice | 12.29 | 7.44 | 513.99 |
| BXA-80063/6 | B | From Leg | 3.00 | 0.0000 | 155.00 | No Ice | 7.74 | 3.76 | 14.90 |
| | | | 0.00 | | | 1/2" Ice | 8.28 | 4.20 | 55.55 |
| | | | 0.00 | | | 1" Ice | 8.83 | 4.64 | 102.03 |
| | | | | | | 2" Ice | 9.94 | 5.54 | 213.22 |
| | | | | | | 4" Ice | 12.29 | 7.44 | 513.99 |
| BXA-80063/6 | C | From Leg | 3.00 | 0.0000 | 155.00 | No Ice | 7.74 | 3.76 | 14.90 |
| | | | 0.00 | | | 1/2" Ice | 8.28 | 4.20 | 55.55 |
| | | | 0.00 | | | 1" Ice | 8.83 | 4.64 | 102.03 |
| | | | | | | 2" Ice | 9.94 | 5.54 | 213.22 |
| | | | | | | 4" Ice | 12.29 | 7.44 | 513.99 |
| BXA-171063-8BF | A | From Leg | 3.00 | 0.0000 | 155.00 | No Ice | 2.94 | 2.16 | 10.50 |
| | | | 0.00 | | | 1/2" Ice | 3.26 | 2.46 | 29.28 |
| | | | 0.00 | | | 1" Ice | 3.60 | 2.77 | 52.05 |
| | | | | | | 2" Ice | 4.36 | 3.41 | 110.38 |
| | | | | | | 4" Ice | 5.98 | 4.94 | 283.58 |
| BXA-171063-8BF | B | From Leg | 3.00 | 0.0000 | 155.00 | No Ice | 2.94 | 2.16 | 10.50 |
| | | | 0.00 | | | 1/2" Ice | 3.26 | 2.46 | 29.28 |
| | | | 0.00 | | | 1" Ice | 3.60 | 2.77 | 52.05 |
| | | | | | | 2" Ice | 4.36 | 3.41 | 110.38 |
| | | | | | | 4" Ice | 5.98 | 4.94 | 283.58 |
| BXA-171063-8BF | C | From Leg | 3.00 | 0.0000 | 155.00 | No Ice | 2.94 | 2.16 | 10.50 |
| | | | 0.00 | | | 1/2" Ice | 3.26 | 2.46 | 29.28 |
| | | | 0.00 | | | 1" Ice | 3.60 | 2.77 | 52.05 |
| | | | | | | 2" Ice | 4.36 | 3.41 | 110.38 |
| | | | | | | 4" Ice | 5.98 | 4.94 | 283.58 |
| BXA-70063-6CF-2 | A | From Leg | 3.00 | 0.0000 | 155.00 | No Ice | 7.73 | 4.16 | 17.00 |
| | | | 0.00 | | | 1/2" Ice | 8.27 | 4.60 | 59.49 |

| | | | | |
|---|----------------|----------|--------------------|-------------------|
| tnxTower Destek Engineering, LLC 1281 Kennestone Circle, Suite 100 Marietta, GA 30066 Phone: (770) 693 0835 FAX: | Job | CT11680A | Page | 18 of 58 |
| | Project | 1517045 | Date | 16:33:57 10/23/15 |
| | Client | T-Mobile | Designed by | Ahmet Colakoglu |

| Description | Face or Leg | Offset Type | Offsets: Horz Lateral Vert ft ft ft | Azimuth Adjustment ° | Placement ft | C _A A _{Front} ft ² | C _A A _{Side} ft ² | Weight lb |
|--------------------|-------------|-------------|--|-------------------------|-----------------|--|---|--------------|
| | | | 0.00 | | | 1" Ice 8.81 | 5.04 | 107.83 |
| | | | | | | 2" Ice 9.93 | 5.95 | 222.88 |
| | | | | | | 4" Ice 12.27 | 7.86 | 531.85 |
| BXA-70063-6CF-2 | B | From Leg | 3.00 | 0.0000 | 155.00 | No Ice 7.73 | 4.16 | 17.00 |
| | | | 0.00 | | | 1/2" Ice 8.27 | 4.60 | 59.49 |
| | | | 0.00 | | | 1" Ice 8.81 | 5.04 | 107.83 |
| | | | | | | 2" Ice 9.93 | 5.95 | 222.88 |
| | | | | | | 4" Ice 12.27 | 7.86 | 531.85 |
| BXA-70063-6CF-2 | C | From Leg | 3.00 | 0.0000 | 155.00 | No Ice 7.73 | 4.16 | 17.00 |
| | | | 0.00 | | | 1/2" Ice 8.27 | 4.60 | 59.49 |
| | | | 0.00 | | | 1" Ice 8.81 | 5.04 | 107.83 |
| | | | | | | 2" Ice 9.93 | 5.95 | 222.88 |
| | | | | | | 4" Ice 12.27 | 7.86 | 531.85 |
| MGD3-800 | A | From Leg | 3.00 | 0.0000 | 155.00 | No Ice 3.23 | 2.37 | 15.00 |
| | | | 0.00 | | | 1/2" Ice 3.57 | 2.70 | 35.03 |
| | | | 0.00 | | | 1" Ice 8.81 | 5.04 | 107.83 |
| | | | | | | 2" Ice 9.93 | 5.95 | 222.88 |
| | | | | | | 4" Ice 12.27 | 7.86 | 531.85 |
| MGD3-800 | B | From Leg | 3.00 | 0.0000 | 155.00 | No Ice 3.23 | 2.37 | 15.00 |
| | | | 0.00 | | | 1/2" Ice 3.57 | 2.70 | 35.03 |
| | | | 0.00 | | | 1" Ice 8.81 | 5.04 | 107.83 |
| | | | | | | 2" Ice 9.93 | 5.95 | 222.88 |
| | | | | | | 4" Ice 12.27 | 7.86 | 531.85 |
| MGD3-800 | C | From Leg | 3.00 | 0.0000 | 155.00 | No Ice 3.23 | 2.37 | 15.00 |
| | | | 0.00 | | | 1/2" Ice 3.57 | 2.70 | 35.03 |
| | | | 0.00 | | | 1" Ice 8.81 | 5.04 | 107.83 |
| | | | | | | 2" Ice 9.93 | 5.95 | 222.88 |
| | | | | | | 4" Ice 12.27 | 7.86 | 531.85 |
| (2) FD9R6004/2C-3L | A | From Leg | 3.00 | 0.0000 | 155.00 | No Ice 0.37 | 0.08 | 3.10 |
| | | | 0.00 | | | 1/2" Ice 0.45 | 0.14 | 5.40 |
| | | | 0.00 | | | 1" Ice 0.54 | 0.20 | 8.79 |
| | | | | | | 2" Ice 0.75 | 0.34 | 19.61 |
| | | | | | | 4" Ice 1.28 | 0.74 | 62.87 |
| (2) FD9R6004/2C-3L | B | From Leg | 3.00 | 0.0000 | 155.00 | No Ice 0.37 | 0.08 | 3.10 |
| | | | 0.00 | | | 1/2" Ice 0.45 | 0.14 | 5.40 |
| | | | 0.00 | | | 1" Ice 0.54 | 0.20 | 8.79 |
| | | | | | | 2" Ice 0.75 | 0.34 | 19.61 |
| | | | | | | 4" Ice 1.28 | 0.74 | 62.87 |
| (2) FD9R6004/2C-3L | C | From Leg | 3.00 | 0.0000 | 155.00 | No Ice 0.37 | 0.08 | 3.10 |
| | | | 0.00 | | | 1/2" Ice 0.45 | 0.14 | 5.40 |
| | | | 0.00 | | | 1" Ice 0.54 | 0.20 | 8.79 |
| | | | | | | 2" Ice 0.75 | 0.34 | 19.61 |
| | | | | | | 4" Ice 1.28 | 0.74 | 62.87 |
| (2) RRH2x40-AWS | A | From Leg | 3.00 | 0.0000 | 155.00 | No Ice 2.52 | 1.59 | 44.00 |
| | | | 0.00 | | | 1/2" Ice 2.75 | 1.80 | 61.40 |
| | | | 0.00 | | | 1" Ice 2.99 | 2.01 | 81.69 |
| | | | | | | 2" Ice 3.50 | 2.46 | 131.76 |
| | | | | | | 4" Ice 4.61 | 3.48 | 275.24 |
| (2) RRH2x40-AWS | B | From Leg | 3.00 | 0.0000 | 155.00 | No Ice 2.52 | 1.59 | 44.00 |
| | | | 0.00 | | | 1/2" Ice 2.75 | 1.80 | 61.40 |
| | | | 0.00 | | | 1" Ice 2.99 | 2.01 | 81.69 |
| | | | | | | 2" Ice 3.50 | 2.46 | 131.76 |
| | | | | | | 4" Ice 4.61 | 3.48 | 275.24 |
| (2) RRH2x40-AWS | C | From Leg | 3.00 | 0.0000 | 155.00 | No Ice 2.52 | 1.59 | 44.00 |
| | | | 0.00 | | | 1/2" Ice 2.75 | 1.80 | 61.40 |
| | | | 0.00 | | | 1" Ice 2.99 | 2.01 | 81.69 |
| | | | | | | 2" Ice 3.50 | 2.46 | 131.76 |

| | | | | |
|---|----------------|----------|--------------------|-------------------|
| tnxTower Destek Engineering, LLC 1281 Kennestone Circle, Suite 100 Marietta, GA 30066 Phone: (770) 693 0835 FAX: | Job | CT11680A | Page | 19 of 58 |
| | Project | 1517045 | Date | 16:33:57 10/23/15 |
| | Client | T-Mobile | Designed by | Ahmet Colakoglu |

| Description | Face or Leg | Offset Type | Offsets: | | Azimuth Adjustment | Placement | C _{AA} Front | C _{AA} Side | Weight |
|-------------------|-------------|-------------|----------|----------|--------------------|-----------|-----------------------|----------------------|--------|
| | | | Horz | Vert | | | | | |
| | | | Lateral | | ° | ft | ft ² | ft ² | lb |
| DB T1 6Z 8AB OZ | C | From Leg | 1.00 | 0.0000 | 155.00 | 4" Ice | 4.61 | 3.48 | 275.24 |
| | | | 0.00 | No Ice | | 5.60 | 2.33 | 44.00 | |
| | | | 0.00 | 1/2" Ice | | 5.92 | 2.56 | 80.13 | |
| | | | | 1" Ice | | 6.24 | 2.79 | 116.26 | |
| | | | | 2" Ice | | 6.88 | 3.25 | 188.52 | |
| 10' Sector Frames | C | None | | 0.0000 | 155.00 | 4" Ice | 8.16 | 4.17 | 333.04 |
| | | | | No Ice | | 23.00 | 23.00 | 700.00 | |
| | | | | 1/2" Ice | | 34.00 | 34.00 | 1000.00 | |
| | | | | 1" Ice | | 45.00 | 45.00 | 1300.00 | |
| | | | | 2" Ice | | 67.00 | 67.00 | 1900.00 | |
| | | 4" Ice | 111.00 | 111.00 | 3100.00 | | | | |
| ***140ft*** | | | | | | | | | |
| Small Light | A | From Leg | 0.50 | 0.0000 | 140.00 | No Ice | 0.13 | 0.13 | 2.00 |
| | | | 0.00 | 1/2" Ice | | 0.19 | 0.19 | 4.01 | |
| | | | 0.00 | 1" Ice | | 0.25 | 0.25 | 6.02 | |
| | | | | 2" Ice | | 0.37 | 0.37 | 10.04 | |
| | | | | 4" Ice | | 0.61 | 0.61 | 18.08 | |
| Small Light | B | From Leg | 0.50 | 0.0000 | 140.00 | No Ice | 0.13 | 0.13 | 2.00 |
| | | | 0.00 | 1/2" Ice | | 0.19 | 0.19 | 4.01 | |
| | | | 0.00 | 1" Ice | | 0.25 | 0.25 | 6.02 | |
| | | | | 2" Ice | | 0.37 | 0.37 | 10.04 | |
| | | | | 4" Ice | | 0.61 | 0.61 | 18.08 | |
| Small Light | C | From Leg | 0.50 | 0.0000 | 140.00 | No Ice | 0.13 | 0.13 | 2.00 |
| | | | 0.00 | 1/2" Ice | | 0.19 | 0.19 | 4.01 | |
| | | | 0.00 | 1" Ice | | 0.25 | 0.25 | 6.02 | |
| | | | | 2" Ice | | 0.37 | 0.37 | 10.04 | |
| | | | | 4" Ice | | 0.61 | 0.61 | 18.08 | |
| ***137ft*** | | | | | | | | | |
| 1.5' Dia 8' Omni | C | From Leg | 1.00 | 0.0000 | 137.00 | No Ice | 2.00 | 2.00 | 5.00 |
| | | | 0.00 | 1/2" Ice | | 3.03 | 3.03 | 18.00 | |
| | | | 5.00 | 1" Ice | | 5.06 | 5.06 | 68.58 | |
| | | | | 2" Ice | | 7.12 | 7.12 | 112.16 | |
| | | | | 4" Ice | | 11.24 | 11.24 | 199.32 | |
| 2' Side Arm Mount | B | From Leg | 3.00 | 0.0000 | 137.00 | No Ice | 2.00 | 2.00 | 50.00 |
| | | | 0.00 | 1/2" Ice | | 3.00 | 3.00 | 100.00 | |
| | | | 4.00 | 1" Ice | | 4.00 | 4.00 | 150.00 | |
| | | | | 2" Ice | | 6.00 | 6.00 | 250.00 | |
| | | | | 4" Ice | | 10.00 | 10.00 | 450.00 | |
| ***132ft*** | | | | | | | | | |
| 2' Side Arm Mount | B | From Leg | 3.00 | 0.0000 | 132.00 | No Ice | 2.00 | 2.00 | 50.00 |
| | | | 0.00 | 1/2" Ice | | 3.00 | 3.00 | 100.00 | |
| | | | 4.00 | 1" Ice | | 4.00 | 4.00 | 150.00 | |
| | | | | 2" Ice | | 6.00 | 6.00 | 250.00 | |
| | | | | 4" Ice | | 10.00 | 10.00 | 450.00 | |
| 4' Yagi | C | From Leg | 1.00 | 0.0000 | 132.00 | No Ice | 2.08 | 2.08 | 30.95 |
| | | | 0.00 | 1/2" Ice | | 3.79 | 3.79 | 51.64 | |
| | | | 0.00 | 1" Ice | | 5.50 | 5.50 | 72.33 | |
| | | | | 2" Ice | | 8.92 | 8.92 | 113.71 | |
| | | | | 4" Ice | | 15.76 | 15.76 | 196.47 | |
| ***118ft*** | | | | | | | | | |
| 2' Side Arm Mount | B | From Leg | 0.00 | 0.0000 | 118.00 | No Ice | 2.00 | 2.00 | 50.00 |
| | | | 0.00 | 1/2" Ice | | 3.00 | 3.00 | 100.00 | |
| | | | 0.00 | 1" Ice | | 4.00 | 4.00 | 150.00 | |
| | | | | 2" Ice | | 6.00 | 6.00 | 250.00 | |
| | | | | 4" Ice | | 10.00 | 10.00 | 450.00 | |
| 2' Dia 10' Omni | C | From Leg | 1.00 | 0.0000 | 118.00 | No Ice | 3.00 | 2.00 | 10.00 |
| | | | 0.00 | 1/2" Ice | | 4.03 | 3.03 | 25.00 | |

| | | | | |
|---|----------------|----------|--------------------|-------------------|
| tnxTower Destek Engineering, LLC 1281 Kennestone Circle, Suite 100 Marietta, GA 30066 Phone: (770) 693 0835 FAX: | Job | CT11680A | Page | 20 of 58 |
| | Project | 1517045 | Date | 16:33:57 10/23/15 |
| | Client | T-Mobile | Designed by | Ahmet Colakoglu |

| Description | Face or Leg | Offset Type | Offsets: | | Azimuth Adjustment | Placement | C _{AA} Front | C _{AA} Side | Weight |
|--------------------------|-------------|-------------|----------|---------|--------------------|-----------|-----------------------|----------------------|--------|
| | | | Horz | Lateral | | | | | |
| | | | | 5.00 | | | | | |
| | | | | | | 1" Ice | 5.06 | 5.06 | 68.58 |
| | | | | | | 2" Ice | 7.12 | 7.12 | 112.16 |
| | | | | | | 4" Ice | 11.24 | 11.24 | 199.32 |
| ***108ft*** | | | | | | | | | |
| 3' Dia 10' Omni | B | From Leg | 1.00 | | 0.0000 | 108.00 | No Ice | 3.00 | 25.00 |
| | | | 0.00 | | | | 1/2" Ice | 4.03 | 46.79 |
| | | | 5.00 | | | | 1" Ice | 5.06 | 68.58 |
| | | | | | | | 2" Ice | 7.12 | 112.16 |
| | | | | | | | 4" Ice | 11.24 | 199.32 |
| 2' Side Arm Mount | B | From Leg | 0.00 | | 0.0000 | 108.00 | No Ice | 2.00 | 50.00 |
| | | | 0.00 | | | | 1/2" Ice | 3.00 | 100.00 |
| | | | 0.00 | | | | 1" Ice | 4.00 | 150.00 |
| | | | | | | | 2" Ice | 6.00 | 250.00 |
| | | | | | | | 4" Ice | 10.00 | 450.00 |
| ***99ft*** | | | | | | | | | |
| 3' Yagi | B | From Leg | 1.00 | | 0.0000 | 99.00 | No Ice | 2.08 | 30.95 |
| | | | 0.00 | | | | 1/2" Ice | 3.79 | 51.64 |
| | | | 0.00 | | | | 1" Ice | 5.50 | 72.33 |
| | | | | | | | 2" Ice | 8.92 | 113.71 |
| | | | | | | | 4" Ice | 15.76 | 196.47 |
| 2' Side Arm Mount | B | From Leg | 0.00 | | 0.0000 | 99.00 | No Ice | 2.00 | 50.00 |
| | | | 0.00 | | | | 1/2" Ice | 3.00 | 100.00 |
| | | | 0.00 | | | | 1" Ice | 4.00 | 150.00 |
| | | | | | | | 2" Ice | 6.00 | 250.00 |
| | | | | | | | 4" Ice | 10.00 | 450.00 |
| ***80ft*** | | | | | | | | | |
| Side Arm Mount | C | None | | | 0.0000 | 80.00 | No Ice | 6.00 | 100.00 |
| | | | | | | | 1/2" Ice | 8.00 | 150.00 |
| | | | | | | | 1" Ice | 4.00 | 150.00 |
| | | | | | | | 2" Ice | 6.00 | 250.00 |
| | | | | | | | 4" Ice | 10.00 | 450.00 |
| ***22ft*** | | | | | | | | | |
| 4"x4'pipe mount | C | None | | | 0.0000 | 22.00 | No Ice | 1.21 | 43.20 |
| | | | | | | | 1/2" Ice | 1.47 | 54.83 |
| | | | | | | | 1" Ice | 1.73 | 66.46 |
| | | | | | | | 2" Ice | 2.25 | 89.72 |
| | | | | | | | 4" Ice | 3.29 | 136.24 |
| ***20ft*** | | | | | | | | | |
| GPS | C | None | | | 0.0000 | 20.00 | No Ice | 1.80 | 15.00 |
| | | | | | | | 1/2" Ice | 2.30 | 19.50 |
| | | | | | | | 1" Ice | 0.71 | 18.88 |
| | | | | | | | 2" Ice | 1.17 | 39.30 |
| | | | | | | | 4" Ice | 2.35 | 118.42 |
| ***8ft*** | | | | | | | | | |
| GPS | C | None | | | 0.0000 | 8.00 | No Ice | 1.80 | 15.00 |
| | | | | | | | 1/2" Ice | 2.30 | 19.50 |
| | | | | | | | 1" Ice | 0.71 | 18.88 |
| | | | | | | | 2" Ice | 1.17 | 39.30 |
| | | | | | | | 4" Ice | 2.35 | 118.42 |
| *****202ft T Mobile***** | | | | | | | | | |
| AIR21 B2A/B4P | A | From Leg | 3.00 | | 0.0000 | 202.00 | No Ice | 6.53 | 70.00 |
| | | | 0.00 | | | | 1/2" Ice | 6.98 | 111.90 |
| | | | 0.00 | | | | 1" Ice | 7.43 | 158.93 |
| | | | | | | | 2" Ice | 8.37 | 269.11 |
| | | | | | | | 4" Ice | 10.34 | 559.48 |
| AIR21 B2A/B4P | B | From Leg | 3.00 | | 0.0000 | 202.00 | No Ice | 6.53 | 70.00 |

| | | | | |
|---|----------------|----------|--------------------|-------------------|
| tnxTower Destek Engineering, LLC 1281 Kennestone Circle, Suite 100 Marietta, GA 30066 Phone: (770) 693 0835 FAX: | Job | CT11680A | Page | 21 of 58 |
| | Project | 1517045 | Date | 16:33:57 10/23/15 |
| | Client | T-Mobile | Designed by | Ahmet Colakoglu |

| Description | Face or Leg | Offset Type | Offsets: Horz Lateral Vert ft ft ft | Azimuth Adjustment ° | Placement ft | C _A A _{Front} ft ² | C _A A _{Side} ft ² | Weight lb | |
|----------------|-------------|-------------|--|-------------------------|-----------------|--|---|--------------|--------|
| | | | 0.00 | | | 1/2" Ice | 6.98 | 4.77 | 111.90 |
| | | | 0.00 | | | 1" Ice | 7.43 | 5.20 | 158.93 |
| | | | | | | 2" Ice | 8.37 | 6.08 | 269.11 |
| | | | | | | 4" Ice | 10.34 | 7.95 | 559.48 |
| AIR21 B2A/B4P | C | From Leg | 3.00 | 0.0000 | 202.00 | No Ice | 6.53 | 4.36 | 70.00 |
| | | | 0.00 | | | 1/2" Ice | 6.98 | 4.77 | 111.90 |
| | | | 0.00 | | | 1" Ice | 7.43 | 5.20 | 158.93 |
| | | | | | | 2" Ice | 8.37 | 6.08 | 269.11 |
| | | | | | | 4" Ice | 10.34 | 7.95 | 559.48 |
| AIR21 B4A/B2P | A | From Leg | 3.00 | 0.0000 | 202.00 | No Ice | 6.53 | 4.36 | 105.00 |
| | | | 0.00 | | | 1/2" Ice | 6.98 | 4.77 | 146.90 |
| | | | 0.00 | | | 1" Ice | 7.43 | 5.20 | 193.93 |
| | | | | | | 2" Ice | 8.37 | 6.08 | 304.11 |
| | | | | | | 4" Ice | 10.34 | 7.95 | 594.48 |
| AIR21 B4A/B2P | B | From Leg | 3.00 | 0.0000 | 202.00 | No Ice | 6.53 | 4.36 | 105.00 |
| | | | 0.00 | | | 1/2" Ice | 6.98 | 4.77 | 146.90 |
| | | | 0.00 | | | 1" Ice | 7.43 | 5.20 | 193.93 |
| | | | | | | 2" Ice | 8.37 | 6.08 | 304.11 |
| | | | | | | 4" Ice | 10.34 | 7.95 | 594.48 |
| AIR21 B4A/B2P | C | From Leg | 3.00 | 0.0000 | 202.00 | No Ice | 6.53 | 4.36 | 105.00 |
| | | | 0.00 | | | 1/2" Ice | 6.98 | 4.77 | 146.90 |
| | | | 0.00 | | | 1" Ice | 7.43 | 5.20 | 193.93 |
| | | | | | | 2" Ice | 8.37 | 6.08 | 304.11 |
| | | | | | | 4" Ice | 10.34 | 7.95 | 594.48 |
| LNX-6515DS-VTM | A | From Leg | 3.00 | 0.0000 | 202.00 | No Ice | 11.41 | 7.70 | 50.27 |
| | | | 0.00 | | | 1/2" Ice | 12.03 | 8.29 | 115.98 |
| | | | 0.00 | | | 1" Ice | 12.65 | 8.89 | 189.36 |
| | | | | | | 2" Ice | 13.98 | 10.11 | 359.93 |
| | | | | | | 4" Ice | 17.00 | 12.65 | 801.67 |
| LNX-6515DS-VTM | B | From Leg | 3.00 | 0.0000 | 202.00 | No Ice | 11.41 | 7.70 | 50.27 |
| | | | 0.00 | | | 1/2" Ice | 12.03 | 8.29 | 115.98 |
| | | | 0.00 | | | 1" Ice | 12.65 | 8.89 | 189.36 |
| | | | | | | 2" Ice | 13.98 | 10.11 | 359.93 |
| | | | | | | 4" Ice | 17.00 | 12.65 | 801.67 |
| LNX-6515DS-VTM | C | From Leg | 3.00 | 0.0000 | 202.00 | No Ice | 11.41 | 7.70 | 50.27 |
| | | | 0.00 | | | 1/2" Ice | 12.03 | 8.29 | 115.98 |
| | | | 0.00 | | | 1" Ice | 12.65 | 8.89 | 189.36 |
| | | | | | | 2" Ice | 13.98 | 10.11 | 359.93 |
| | | | | | | 4" Ice | 17.00 | 12.65 | 801.67 |
| RRUS 11 B12 | A | From Leg | 3.00 | 0.0000 | 202.00 | No Ice | 3.31 | 1.36 | 50.70 |
| | | | 0.00 | | | 1/2" Ice | 3.55 | 1.54 | 71.57 |
| | | | 0.00 | | | 1" Ice | 3.80 | 1.73 | 95.49 |
| | | | | | | 2" Ice | 4.33 | 2.13 | 153.24 |
| | | | | | | 4" Ice | 5.50 | 3.04 | 313.85 |
| RRUS 11 B12 | B | From Leg | 3.00 | 0.0000 | 202.00 | No Ice | 3.31 | 1.36 | 50.70 |
| | | | 0.00 | | | 1/2" Ice | 3.55 | 1.54 | 71.57 |
| | | | 0.00 | | | 1" Ice | 3.80 | 1.73 | 95.49 |
| | | | | | | 2" Ice | 4.33 | 2.13 | 153.24 |
| | | | | | | 4" Ice | 5.50 | 3.04 | 313.85 |
| RRUS 11 B12 | C | From Leg | 3.00 | 0.0000 | 202.00 | No Ice | 3.31 | 1.36 | 50.70 |
| | | | 0.00 | | | 1/2" Ice | 3.55 | 1.54 | 71.57 |
| | | | 0.00 | | | 1" Ice | 3.80 | 1.73 | 95.49 |
| | | | | | | 2" Ice | 4.33 | 2.13 | 153.24 |
| | | | | | | 4" Ice | 5.50 | 3.04 | 313.85 |
| dd B4 TMA | A | From Leg | 3.00 | 0.0000 | 202.00 | No Ice | 0.64 | 0.52 | 22.43 |
| | | | 0.00 | | | 1/2" Ice | 0.82 | 0.71 | 31.53 |
| | | | 0.00 | | | 1" Ice | 1.00 | 0.91 | 43.17 |

| | | | | |
|---|----------------|----------|--------------------|-------------------|
| tnxTower Destek Engineering, LLC 1281 Kennestone Circle, Suite 100 Marietta, GA 30066 Phone: (770) 693 0835 FAX: | Job | CT11680A | Page | 22 of 58 |
| | Project | 1517045 | Date | 16:33:57 10/23/15 |
| | Client | T-Mobile | Designed by | Ahmet Colakoglu |

| Description | Face or Leg | Offset Type | Offsets: Horz Lateral Vert ft ft ft | Azimuth Adjustment ° | Placement ft | C _A A _{Front} ft ² | C _A A _{Side} ft ² | Weight lb |
|-------------------|-------------|-------------|--|-------------------------|-----------------|--|---|--------------|
| dd B4 TMA | B | From Leg | 3.00 0.00 0.00 | 0.0000 | 202.00 | 2" Ice | 1.43 | 73.26 |
| | | | | | | 4" Ice | 2.47 | 178.83 |
| | | | | | | No Ice | 0.64 | 22.43 |
| | | | | | | 1/2" Ice | 0.82 | 31.53 |
| | | | | | | 1" Ice | 1.00 | 43.17 |
| dd B4 TMA | C | From Leg | 3.00 0.00 0.00 | 0.0000 | 202.00 | 2" Ice | 1.43 | 73.26 |
| | | | | | | 4" Ice | 2.47 | 178.83 |
| | | | | | | No Ice | 0.64 | 22.43 |
| | | | | | | 1/2" Ice | 0.82 | 31.53 |
| | | | | | | 1" Ice | 1.00 | 43.17 |
| 10' Sector Frames | C | None | | 0.0000 | 202.00 | 2" Ice | 1.43 | 73.26 |
| | | | | | | 4" Ice | 2.47 | 178.83 |
| | | | | | | No Ice | 23.00 | 700.00 |
| | | | | | | 1/2" Ice | 34.00 | 1000.00 |
| | | | | | | 1" Ice | 45.00 | 1300.00 |
| | | | | | | 2" Ice | 67.00 | 1900.00 |
| | | | | | | 4" Ice | 111.00 | 3100.00 |

Dishes

| Description | Face or Leg | Dish Type | Offset Type | Offsets: Horz Lateral Vert ft ft ft | Azimuth Adjustment ° | 3 dB Beam Width ° | Elevation ft | Outside Diameter ft | Aperture Area ft ² | Weight lb | |
|--------------------|-------------|--------------------------|-------------|--|-------------------------|----------------------|-----------------|------------------------|----------------------------------|--------------|--------|
| 3' dish w/o radome | C | Paraboloid w/o Radome | From Leg | 1.00 0.00 0.00 | 0.0000 | | 22.00 | 3.00 | No Ice | 7.07 | 50.00 |
| | | | | | | | | | 1/2" Ice | 7.47 | 88.35 |
| | | | | | | | | | 1" Ice | 7.87 | 126.70 |
| | | | | | | | | | 2" Ice | 8.67 | 203.40 |
| | | | | | | | | | 4" Ice | 10.27 | 356.80 |
| VHLPX800-11 | A | Paraboloid w/Shroud (HP) | From Leg | 2.00 0.00 0.00 | 0.0000 | | 187.00 | 2.80 | No Ice | 6.16 | 49.00 |
| | | | | | | | | | 1/2" Ice | 6.53 | 82.52 |
| | | | | | | | | | 1" Ice | 6.90 | 116.04 |
| | | | | | | | | | 2" Ice | 7.65 | 183.07 |
| | | | | | | | | | 4" Ice | 9.13 | 317.15 |
| 2' Dish | B | Paraboloid w/Shroud (HP) | From Leg | 2.00 0.00 0.00 | 0.0000 | | 187.00 | 2.00 | No Ice | 3.14 | 27.00 |
| | | | | | | | | | 1/2" Ice | 3.41 | 45.00 |
| | | | | | | | | | 1" Ice | 3.68 | 65.00 |
| | | | | | | | | | 2" Ice | 4.21 | 100.00 |
| | | | | | | | | | 4" Ice | 5.28 | 170.00 |
| 2' Dish | C | Paraboloid w/Shroud (HP) | From Leg | 2.00 0.00 0.00 | 0.0000 | | 187.00 | 2.00 | No Ice | 3.14 | 27.00 |
| | | | | | | | | | 1/2" Ice | 3.41 | 45.00 |
| | | | | | | | | | 1" Ice | 3.68 | 65.00 |
| | | | | | | | | | 2" Ice | 4.21 | 100.00 |
| | | | | | | | | | 4" Ice | 5.28 | 170.00 |

Tower Pressures - No Ice

| | | |
|---|---------------------------|---------------------------------------|
| tnxTower Destek Engineering, LLC 1281 Kennestone Circle, Suite 100 Marietta, GA 30066 Phone: (770) 693 0835 FAX: | Job CT11680A | Page 23 of 58 |
| | Project 1517045 | Date 16:33:57 10/23/15 |
| | Client T-Mobile | Designed by Ahmet Colakoglu |

$$G_H = 1.102$$

| Section Elevation ft | z ft | K_Z | q_z psf | A_G ft ² | F a c e | A_F ft ² | A_R ft ² | A_{leg} ft ² | Leg % | C_{AA} In Face ft ² | C_{AA} Out Face ft ² |
|-------------------------|---------|-------|--------------|--------------------------|---------|--------------------------|--------------------------|------------------------------|-------|--|---|
| T1 240.00-220.00 | 230.00 | 1.741 | 32 | 252.993 | A | 0.000 | 47.070 | 28.798 | 61.18 | 0.000 | 0.000 |
| | | | | | B | 0.000 | 45.387 | | 63.45 | 0.000 | 0.000 |
| | | | | | C | 5.833 | 47.710 | | 53.78 | 0.000 | 0.000 |
| T2 220.00-200.00 | 210.00 | 1.697 | 31 | 295.498 | A | 1.167 | 59.665 | 28.811 | 47.36 | 0.000 | 0.000 |
| | | | | | B | 1.167 | 47.259 | | 59.49 | 0.000 | 0.000 |
| | | | | | C | 5.833 | 49.661 | | 51.92 | 0.000 | 0.000 |
| T3 200.00-180.00 | 190.00 | 1.649 | 30 | 343.003 | A | 11.667 | 69.680 | 28.825 | 35.43 | 0.000 | 0.000 |
| | | | | | B | 11.667 | 69.570 | | 35.48 | 0.000 | 0.000 |
| | | | | | C | 5.833 | 52.189 | | 49.68 | 0.000 | 0.000 |
| T4 180.00-160.00 | 170.00 | 1.597 | 30 | 393.003 | A | 11.667 | 77.412 | 28.825 | 32.36 | 0.000 | 0.000 |
| | | | | | B | 11.667 | 94.530 | | 27.14 | 0.000 | 0.000 |
| | | | | | C | 5.833 | 81.126 | | 33.15 | 0.000 | 0.000 |
| T5 160.00-140.00 | 150.00 | 1.541 | 29 | 443.003 | A | 25.472 | 101.198 | 28.825 | 22.76 | 0.000 | 0.000 |
| | | | | | B | 25.898 | 90.648 | | 24.73 | 0.000 | 0.000 |
| | | | | | C | 21.022 | 72.764 | | 30.73 | 0.000 | 0.000 |
| T6 140.00-120.00 | 130.00 | 1.48 | 27 | 493.003 | A | 11.667 | 122.886 | 28.825 | 21.42 | 0.000 | 0.000 |
| | | | | | B | 11.667 | 107.915 | | 24.10 | 0.000 | 0.000 |
| | | | | | C | 5.833 | 90.353 | | 29.97 | 0.000 | 0.000 |
| T7 120.00-100.00 | 110.00 | 1.411 | 26 | 543.003 | A | 23.511 | 115.601 | 28.825 | 20.72 | 0.000 | 0.000 |
| | | | | | B | 23.913 | 97.014 | | 23.84 | 0.000 | 0.000 |
| | | | | | C | 18.667 | 77.368 | | 30.01 | 0.000 | 0.000 |
| T8 100.00-80.00 | 90.00 | 1.332 | 25 | 594.507 | A | 11.667 | 131.203 | 28.834 | 20.18 | 0.000 | 0.000 |
| | | | | | B | 11.667 | 113.801 | | 22.98 | 0.000 | 0.000 |
| | | | | | C | 5.833 | 95.305 | | 28.51 | 0.000 | 0.000 |
| T9 80.00-60.00 | 70.00 | 1.24 | 23 | 649.552 | A | 11.667 | 142.290 | 35.927 | 23.34 | 0.000 | 0.000 |
| | | | | | B | 11.667 | 123.814 | | 26.52 | 0.000 | 0.000 |
| | | | | | C | 5.833 | 104.127 | | 32.67 | 0.000 | 0.000 |
| T10 60.00-30.00 | 45.00 | 1.093 | 20 | 1068.07 | A | 17.500 | 212.630 | 53.890 | 23.42 | 0.000 | 0.000 |
| | | | | 7 | B | 17.500 | 187.049 | | 26.35 | 0.000 | 0.000 |
| | | | | | C | 8.750 | 159.636 | | 32.00 | 0.000 | 0.000 |
| T11 30.00-0.00 | 15.00 | 1 | 18 | 1180.57 | A | 33.580 | 187.043 | 53.890 | 24.43 | 0.000 | 0.000 |
| | | | | 7 | B | 33.935 | 162.154 | | 27.48 | 0.000 | 0.000 |
| | | | | | C | 27.127 | 137.597 | | 32.72 | 0.000 | 0.000 |

Tower Pressure - With Ice

$$G_H = 1.102$$

| Section Elevation ft | z ft | K_Z | q_z psf | t_z in | A_G ft ² | F a c e | A_F ft ² | A_R ft ² | A_{leg} ft ² | Leg % | C_{AA} In Face ft ² | C_{AA} Out Face ft ² |
|-------------------------|---------|-------|--------------|-------------|--------------------------|---------|--------------------------|--------------------------|------------------------------|-------|--|---|
| T1 240.00-220.00 | 230.00 | 1.741 | 6 | 0.9468 | 256.153 | A | 1.325 | 66.917 | 35.120 | 51.46 | 0.000 | 0.000 |
| | | | | | | B | 0.000 | 64.935 | | 54.09 | 0.000 | 0.000 |
| | | | | | | C | 10.041 | 69.056 | | 44.40 | 0.000 | 0.000 |
| T2 220.00-200.00 | 210.00 | 1.697 | 6 | 0.9365 | 298.624 | A | 17.049 | 68.860 | 35.067 | 40.82 | 0.000 | 0.000 |
| | | | | | | B | 4.066 | 63.453 | | 51.94 | 0.000 | 0.000 |
| | | | | | | C | 9.996 | 71.763 | | 42.89 | 0.000 | 0.000 |
| T3 200.00-180.00 | 190.00 | 1.649 | 6 | 0.9253 | 346.093 | A | 43.208 | 74.683 | 35.010 | 29.70 | 0.000 | 0.000 |
| | | | | | | B | 42.686 | 74.011 | | 30.00 | 0.000 | 0.000 |
| | | | | | | C | 10.876 | 74.809 | | 40.86 | 0.000 | 0.000 |
| T4 180.00-160.00 | 170.00 | 1.597 | 6 | 0.9130 | 396.052 | A | 47.819 | 81.252 | 34.928 | 27.06 | 0.000 | 0.000 |
| | | | | | | B | 65.566 | 88.166 | | 22.72 | 0.000 | 0.000 |
| | | | | | | C | 40.891 | 87.770 | | 27.15 | 0.000 | 0.000 |

| | | |
|---|---------------------------|---------------------------------------|
| tnxTower Destek Engineering, LLC 1281 Kennestone Circle, Suite 100 Marietta, GA 30066 Phone: (770) 693 0835 FAX: | Job CT11680A | Page 24 of 58 |
| | Project 1517045 | Date 16:33:57 10/23/15 |
| | Client T-Mobile | Designed by Ahmet Colakoglu |

| Section Elevation ft | z ft | K _Z | q _z psf | t _z in | A _G ft ² | F a c e | A _F ft ² | A _R ft ² | A _{leg} ft ² | Leg % | C _A A _A In Face ft ² | C _A A _A Out Face ft ² |
|-------------------------|---------|----------------|-----------------------|----------------------|-----------------------------------|---------|-----------------------------------|-----------------------------------|-------------------------------------|-------|---|--|
| T5 160.00-140.00 | 150.00 | 1.541 | 6 | 0.8994 | 446.007 | A | 98.222 | 81.156 | 34.837 | 19.42 | 0.000 | 0.000 |
| | | | | | | B | 88.665 | 75.671 | | 21.20 | 0.000 | 0.000 |
| | | | | | | C | 59.620 | 76.324 | | 25.63 | 0.000 | 0.000 |
| T6 140.00-120.00 | 130.00 | 1.48 | 5 | 0.8841 | 495.956 | A | 87.109 | 105.092 | 34.734 | 18.07 | 0.000 | 0.000 |
| | | | | | | B | 71.509 | 100.446 | | 20.20 | 0.000 | 0.000 |
| | | | | | | C | 40.763 | 100.807 | | 24.54 | 0.000 | 0.000 |
| T7 120.00-100.00 | 110.00 | 1.411 | 5 | 0.8666 | 545.897 | A | 101.070 | 97.043 | 34.617 | 17.47 | 0.000 | 0.000 |
| | | | | | | B | 86.181 | 87.479 | | 19.93 | 0.000 | 0.000 |
| | | | | | | C | 56.569 | 85.523 | | 24.36 | 0.000 | 0.000 |
| T8 100.00-80.00 | 90.00 | 1.332 | 5 | 0.8460 | 597.333 | A | 86.770 | 117.002 | 34.490 | 16.93 | 0.000 | 0.000 |
| | | | | | | B | 71.170 | 111.338 | | 18.90 | 0.000 | 0.000 |
| | | | | | | C | 40.593 | 110.315 | | 22.86 | 0.000 | 0.000 |
| T9 80.00-60.00 | 70.00 | 1.24 | 5 | 0.8208 | 652.293 | A | 86.546 | 128.395 | 41.413 | 19.27 | 0.000 | 0.000 |
| | | | | | | B | 70.946 | 121.676 | | 21.50 | 0.000 | 0.000 |
| | | | | | | C | 40.481 | 119.164 | | 25.94 | 0.000 | 0.000 |
| T10 60.00-30.00 | 45.00 | 1.093 | 4 | 0.7784 | 1071.977 | A | 129.254 | 189.340 | 61.694 | 19.36 | 0.000 | 0.000 |
| | | | | | | B | 105.854 | 182.548 | | 21.39 | 0.000 | 0.000 |
| | | | | | | C | 60.440 | 182.014 | | 25.45 | 0.000 | 0.000 |
| T11 30.00-0.00 | 15.00 | 1 | 4 | 0.7500 | 1184.335 | A | 131.394 | 172.029 | 61.409 | 20.24 | 0.000 | 0.000 |
| | | | | | | B | 111.593 | 157.979 | | 22.78 | 0.000 | 0.000 |
| | | | | | | C | 61.845 | 167.487 | | 26.78 | 0.000 | 0.000 |

Tower Pressure - Service

$G_H = 1.102$

| Section Elevation ft | z ft | K _Z | q _z psf | A _G ft ² | F a c e | A _F ft ² | A _R ft ² | A _{leg} ft ² | Leg % | C _A A _A In Face ft ² | C _A A _A Out Face ft ² |
|-------------------------|---------|----------------|-----------------------|-----------------------------------|---------|-----------------------------------|-----------------------------------|-------------------------------------|-------|---|--|
| T1 240.00-220.00 | 230.00 | 1.741 | 11 | 252.993 | A | 0.000 | 47.070 | 28.798 | 61.18 | 0.000 | 0.000 |
| | | | | | B | 0.000 | 45.387 | | 63.45 | 0.000 | 0.000 |
| | | | | | C | 5.833 | 47.710 | | 53.78 | 0.000 | 0.000 |
| T2 220.00-200.00 | 210.00 | 1.697 | 11 | 295.498 | A | 1.167 | 59.665 | 28.811 | 47.36 | 0.000 | 0.000 |
| | | | | | B | 1.167 | 47.259 | | 59.49 | 0.000 | 0.000 |
| | | | | | C | 5.833 | 49.661 | | 51.92 | 0.000 | 0.000 |
| T3 200.00-180.00 | 190.00 | 1.649 | 11 | 343.003 | A | 11.667 | 69.680 | 28.825 | 35.43 | 0.000 | 0.000 |
| | | | | | B | 11.667 | 69.570 | | 35.48 | 0.000 | 0.000 |
| | | | | | C | 5.833 | 52.189 | | 49.68 | 0.000 | 0.000 |
| T4 180.00-160.00 | 170.00 | 1.597 | 10 | 393.003 | A | 11.667 | 77.412 | 28.825 | 32.36 | 0.000 | 0.000 |
| | | | | | B | 11.667 | 94.530 | | 27.14 | 0.000 | 0.000 |
| | | | | | C | 5.833 | 81.126 | | 33.15 | 0.000 | 0.000 |
| T5 160.00-140.00 | 150.00 | 1.541 | 10 | 443.003 | A | 25.472 | 101.198 | 28.825 | 22.76 | 0.000 | 0.000 |
| | | | | | B | 25.898 | 90.648 | | 24.73 | 0.000 | 0.000 |
| | | | | | C | 21.022 | 72.764 | | 30.73 | 0.000 | 0.000 |
| T6 140.00-120.00 | 130.00 | 1.48 | 9 | 493.003 | A | 11.667 | 122.886 | 28.825 | 21.42 | 0.000 | 0.000 |
| | | | | | B | 11.667 | 107.915 | | 24.10 | 0.000 | 0.000 |
| | | | | | C | 5.833 | 90.353 | | 29.97 | 0.000 | 0.000 |
| T7 120.00-100.00 | 110.00 | 1.411 | 9 | 543.003 | A | 23.511 | 115.601 | 28.825 | 20.72 | 0.000 | 0.000 |
| | | | | | B | 23.913 | 97.014 | | 23.84 | 0.000 | 0.000 |
| | | | | | C | 18.667 | 77.368 | | 30.01 | 0.000 | 0.000 |
| T8 100.00-80.00 | 90.00 | 1.332 | 9 | 594.507 | A | 11.667 | 131.203 | 28.834 | 20.18 | 0.000 | 0.000 |
| | | | | | B | 11.667 | 113.801 | | 22.98 | 0.000 | 0.000 |
| | | | | | C | 5.833 | 95.305 | | 28.51 | 0.000 | 0.000 |
| T9 80.00-60.00 | 70.00 | 1.24 | 8 | 649.552 | A | 11.667 | 142.290 | 35.927 | 23.34 | 0.000 | 0.000 |

| | | | | |
|---|----------------|----------|--------------------|-------------------|
| tnxTower Destek Engineering, LLC 1281 Kennestone Circle, Suite 100 Marietta, GA 30066 Phone: (770) 693 0835 FAX: | Job | CT11680A | Page | 25 of 58 |
| | Project | 1517045 | Date | 16:33:57 10/23/15 |
| | Client | T-Mobile | Designed by | Ahmet Colakoglu |

| Section Elevation | z | K _Z | q _z | A _G | F _a | A _F | A _R | A _{leg} | Leg % | C _A A _A In Face | C _A A _A Out Face |
|--------------------|-------|----------------|----------------|-----------------|----------------|-----------------|-----------------|------------------|-------|---------------------------------------|--|
| ft | ft | | psf | ft ² | c | ft ² | ft ² | ft ² | | ft ² | ft ² |
| T10 60.00-30.00 | 45.00 | 1.093 | 7 | 1068.07 | B | 11.667 | 123.814 | 53.890 | 26.52 | 0.000 | 0.000 |
| | | | | | C | 5.833 | 104.127 | | 32.67 | 0.000 | 0.000 |
| | | | | | A | 17.500 | 212.630 | | 23.42 | 0.000 | 0.000 |
| T11 30.00-0.00 | 15.00 | 1 | 6 | 1180.57 | B | 17.500 | 187.049 | 53.890 | 26.35 | 0.000 | 0.000 |
| | | | | | C | 8.750 | 159.636 | | 32.00 | 0.000 | 0.000 |
| | | | | | A | 33.580 | 187.043 | | 24.43 | 0.000 | 0.000 |
| | | | | | B | 33.935 | 162.154 | | 27.48 | 0.000 | 0.000 |
| | | | | | C | 27.127 | 137.597 | | 32.72 | 0.000 | 0.000 |

Tower Forces - No Ice - Wind Normal To Face

| Section Elevation | Add Weight | Self Weight | F _a | e | C _F | R _R | D _F | D _R | A _E | F | w | Ctrl. Face |
|---------------------|------------|-------------|----------------|-------|----------------|----------------|----------------|----------------|-------------------|----------|--------|------------|
| ft | lb | lb | c | | | | | | ft ² | lb | plf | |
| T1 240.00-220.00 | 141.78 | 3674.12 | A | 0.186 | 2.643 | 0.588 | 1 | 1 | 27.661 | 3097.08 | 154.85 | C |
| | | | B | 0.179 | 2.666 | 0.586 | 1 | 1 | 26.615 | | | |
| | | | C | 0.212 | 2.558 | 0.593 | 1 | 1 | 34.118 | | | |
| T2 220.00-200.00 | 337.16 | 3836.24 | A | 0.206 | 2.577 | 0.592 | 1 | 1 | 36.465 | 3249.14 | 162.46 | A |
| | | | B | 0.164 | 2.721 | 0.584 | 1 | 1 | 28.752 | | | |
| | | | C | 0.188 | 2.637 | 0.588 | 1 | 1 | 35.033 | | | |
| T3 200.00-180.00 | 968.18 | 4019.74 | A | 0.237 | 2.477 | 0.599 | 1 | 1 | 53.383 | 4443.14 | 222.16 | A |
| | | | B | 0.237 | 2.478 | 0.599 | 1 | 1 | 53.312 | | | |
| | | | C | 0.169 | 2.702 | 0.585 | 1 | 1 | 36.343 | | | |
| T4 180.00-160.00 | 1331.64 | 4426.65 | A | 0.227 | 2.509 | 0.596 | 1 | 1 | 57.820 | 5347.75 | 267.39 | B |
| | | | B | 0.27 | 2.378 | 0.607 | 1 | 1 | 69.069 | | | |
| | | | C | 0.221 | 2.526 | 0.595 | 1 | 1 | 54.101 | | | |
| T5 160.00-140.00 | 1692.90 | 5525.30 | A | 0.286 | 2.334 | 0.612 | 1 | 1 | 87.375 | 6406.28 | 320.31 | A |
| | | | B | 0.263 | 2.399 | 0.605 | 1 | 1 | 80.767 | | | |
| | | | C | 0.212 | 2.557 | 0.593 | 1 | 1 | 64.160 | | | |
| T6 140.00-120.00 | 1748.00 | 5266.76 | A | 0.273 | 2.371 | 0.608 | 1 | 1 | 86.380 | 6174.50 | 308.72 | A |
| | | | B | 0.243 | 2.46 | 0.6 | 1 | 1 | 76.416 | | | |
| | | | C | 0.195 | 2.612 | 0.589 | 1 | 1 | 59.089 | | | |
| T7 120.00-100.00 | 1760.42 | 5441.47 | A | 0.256 | 2.419 | 0.603 | 1 | 1 | 93.273 | 6486.67 | 324.33 | A |
| | | | B | 0.223 | 2.522 | 0.595 | 1 | 1 | 81.665 | | | |
| | | | C | 0.177 | 2.675 | 0.586 | 1 | 1 | 64.001 | | | |
| T8 100.00-80.00 | 1771.85 | 5405.66 | A | 0.24 | 2.467 | 0.599 | 1 | 1 | 90.317 | 6048.28 | 302.41 | A |
| | | | B | 0.211 | 2.56 | 0.593 | 1 | 1 | 79.119 | | | |
| | | | C | 0.17 | 2.699 | 0.585 | 1 | 1 | 61.564 | | | |
| T9 80.00-60.00 | 1772.00 | 6343.78 | A | 0.237 | 2.477 | 0.599 | 1 | 1 | 96.849 | 6061.17 | 303.06 | A |
| | | | B | 0.209 | 2.568 | 0.592 | 1 | 1 | 84.988 | | | |
| | | | C | 0.169 | 2.702 | 0.585 | 1 | 1 | 66.708 | | | |
| T10 60.00-30.00 | 2658.00 | 9347.92 | A | 0.215 | 2.545 | 0.594 | 1 | 1 | 143.733 | 8146.73 | 271.56 | A |
| | | | B | 0.192 | 2.625 | 0.589 | 1 | 1 | 127.617 | | | |
| | | | C | 0.158 | 2.744 | 0.583 | 1 | 1 | 101.766 | | | |
| T11 30.00-0.00 | 2221.25 | 11327.82 | A | 0.187 | 2.64 | 0.588 | 1 | 1 | 143.526 | 7723.71 | 257.46 | A |
| | | | B | 0.166 | 2.713 | 0.584 | 1 | 1 | 128.644 | | | |
| | | | C | 0.14 | 2.81 | 0.58 | 1 | 1 | 106.924 | | | |
| Sum Weight: | 16403.18 | 64615.46 | | | | | | OTM | 7076.21 kip-ft | 63184.45 | | |

Tower Forces - No Ice - Wind 60 To Face

| | | |
|---|---------------------------|---------------------------------------|
| tnxTower Destek Engineering, LLC 1281 Kennestone Circle, Suite 100 Marietta, GA 30066 Phone: (770) 693 0835 FAX: | Job CT11680A | Page 26 of 58 |
| | Project 1517045 | Date 16:33:57 10/23/15 |
| | Client T-Mobile | Designed by Ahmet Colakoglu |

| Section Elevation ft | Add Weight lb | Self Weight lb | F a c e | e | C _F | R _R | D _F | D _R | A _E ft ² | F lb | w plf | Ctrl. Face |
|-------------------------|------------------|-------------------|---------|-------|----------------|----------------|----------------|----------------|-----------------------------------|----------|----------|------------|
| T1 240.00-220.00 | 141.78 | 3674.12 | A | 0.186 | 2.643 | 0.588 | 0.8 | 1 | 27.661 | 2991.17 | 149.56 | C |
| | | | B | 0.179 | 2.666 | 0.586 | 0.8 | 1 | 26.615 | | | |
| | | | C | 0.212 | 2.558 | 0.593 | 0.8 | 1 | 32.951 | | | |
| T2 220.00-200.00 | 337.16 | 3836.24 | A | 0.206 | 2.577 | 0.592 | 0.8 | 1 | 36.232 | 3228.35 | 161.42 | A |
| | | | B | 0.164 | 2.721 | 0.584 | 0.8 | 1 | 28.518 | | | |
| | | | C | 0.188 | 2.637 | 0.588 | 0.8 | 1 | 33.867 | | | |
| T3 200.00-180.00 | 968.18 | 4019.74 | A | 0.237 | 2.477 | 0.599 | 0.8 | 1 | 51.050 | 4248.93 | 212.45 | A |
| | | | B | 0.237 | 2.478 | 0.599 | 0.8 | 1 | 50.978 | | | |
| | | | C | 0.169 | 2.702 | 0.585 | 0.8 | 1 | 35.176 | | | |
| T4 180.00-160.00 | 1331.64 | 4426.65 | A | 0.227 | 2.509 | 0.596 | 0.8 | 1 | 55.486 | 5167.08 | 258.35 | B |
| | | | B | 0.27 | 2.378 | 0.607 | 0.8 | 1 | 66.735 | | | |
| | | | C | 0.221 | 2.526 | 0.595 | 0.8 | 1 | 52.934 | | | |
| T5 160.00-140.00 | 1692.90 | 5525.30 | A | 0.286 | 2.334 | 0.612 | 0.8 | 1 | 82.280 | 6032.75 | 301.64 | A |
| | | | B | 0.263 | 2.399 | 0.605 | 0.8 | 1 | 75.588 | | | |
| | | | C | 0.212 | 2.557 | 0.593 | 0.8 | 1 | 59.956 | | | |
| T6 140.00-120.00 | 1748.00 | 5266.76 | A | 0.273 | 2.371 | 0.608 | 0.8 | 1 | 84.047 | 6007.71 | 300.39 | A |
| | | | B | 0.243 | 2.46 | 0.6 | 0.8 | 1 | 74.083 | | | |
| | | | C | 0.195 | 2.612 | 0.589 | 0.8 | 1 | 57.922 | | | |
| T7 120.00-100.00 | 1760.42 | 5441.47 | A | 0.256 | 2.419 | 0.603 | 0.8 | 1 | 88.571 | 6159.65 | 307.98 | A |
| | | | B | 0.223 | 2.522 | 0.595 | 0.8 | 1 | 76.882 | | | |
| | | | C | 0.177 | 2.675 | 0.586 | 0.8 | 1 | 60.267 | | | |
| T8 100.00-80.00 | 1771.85 | 5405.66 | A | 0.24 | 2.467 | 0.599 | 0.8 | 1 | 87.983 | 5892.02 | 294.60 | A |
| | | | B | 0.211 | 2.56 | 0.593 | 0.8 | 1 | 76.785 | | | |
| | | | C | 0.17 | 2.699 | 0.585 | 0.8 | 1 | 60.397 | | | |
| T9 80.00-60.00 | 1772.00 | 6343.78 | A | 0.237 | 2.477 | 0.599 | 0.8 | 1 | 94.516 | 5915.15 | 295.76 | A |
| | | | B | 0.209 | 2.568 | 0.592 | 0.8 | 1 | 82.655 | | | |
| | | | C | 0.169 | 2.702 | 0.585 | 0.8 | 1 | 65.541 | | | |
| T10 60.00-30.00 | 2658.00 | 9347.92 | A | 0.215 | 2.545 | 0.594 | 0.8 | 1 | 140.233 | 7948.35 | 264.95 | A |
| | | | B | 0.192 | 2.625 | 0.589 | 0.8 | 1 | 124.117 | | | |
| | | | C | 0.158 | 2.744 | 0.583 | 0.8 | 1 | 100.016 | | | |
| T11 30.00-0.00 | 2221.25 | 11327.82 | A | 0.187 | 2.64 | 0.588 | 0.8 | 1 | 136.810 | 7362.29 | 245.41 | A |
| | | | B | 0.166 | 2.713 | 0.584 | 0.8 | 1 | 121.857 | | | |
| | | | C | 0.14 | 2.81 | 0.58 | 0.8 | 1 | 101.498 | | | |
| Sum Weight: | 16403.18 | 64615.46 | | | | | | OTM | 6827.55 kip-ft | 60953.47 | | |

Tower Forces - No Ice - Wind 90 To Face

| Section Elevation ft | Add Weight lb | Self Weight lb | F a c e | e | C _F | R _R | D _F | D _R | A _E ft ² | F lb | w plf | Ctrl. Face |
|-------------------------|------------------|-------------------|---------|-------|----------------|----------------|----------------|----------------|-----------------------------------|---------|----------|------------|
| T1 240.00-220.00 | 141.78 | 3674.12 | A | 0.186 | 2.643 | 0.588 | 0.85 | 1 | 27.661 | 3017.65 | 150.88 | C |
| | | | B | 0.179 | 2.666 | 0.586 | 0.85 | 1 | 26.615 | | | |
| | | | C | 0.212 | 2.558 | 0.593 | 0.85 | 1 | 33.243 | | | |
| T2 220.00-200.00 | 337.16 | 3836.24 | A | 0.206 | 2.577 | 0.592 | 0.85 | 1 | 36.290 | 3233.55 | 161.68 | A |
| | | | B | 0.164 | 2.721 | 0.584 | 0.85 | 1 | 28.577 | | | |
| | | | C | 0.188 | 2.637 | 0.588 | 0.85 | 1 | 34.158 | | | |
| T3 200.00-180.00 | 968.18 | 4019.74 | A | 0.237 | 2.477 | 0.599 | 0.85 | 1 | 51.633 | 4297.49 | 214.87 | A |
| | | | B | 0.237 | 2.478 | 0.599 | 0.85 | 1 | 51.562 | | | |
| | | | C | 0.169 | 2.702 | 0.585 | 0.85 | 1 | 35.468 | | | |
| T4 180.00-160.00 | 1331.64 | 4426.65 | A | 0.227 | 2.509 | 0.596 | 0.85 | 1 | 56.070 | 5212.25 | 260.61 | B |
| | | | B | 0.27 | 2.378 | 0.607 | 0.85 | 1 | 67.319 | | | |
| | | | C | 0.221 | 2.526 | 0.595 | 0.85 | 1 | 53.226 | | | |
| T5 160.00-140.00 | 1692.90 | 5525.30 | A | 0.286 | 2.334 | 0.612 | 0.85 | 1 | 83.554 | 6126.13 | 306.31 | A |
| | | | B | 0.263 | 2.399 | 0.605 | 0.85 | 1 | 76.883 | | | |

| | | | | |
|---|----------------|----------|--------------------|-------------------|
| tnxTower Destek Engineering, LLC 1281 Kennestone Circle, Suite 100 Marietta, GA 30066 Phone: (770) 693 0835 FAX: | Job | CT11680A | Page | 27 of 58 |
| | Project | 1517045 | Date | 16:33:57 10/23/15 |
| | Client | T-Mobile | Designed by | Ahmet Colakoglu |

| Section Elevation | Add Weight | Self Weight | F a c e | e | C _F | R _R | D _F | D _R | A _E | F | w | Ctrl. Face |
|---------------------|------------|-------------|---------|-------|----------------|----------------|----------------|----------------|-------------------|----------|--------|------------|
| ft | lb | lb | | | | | | | ft ² | lb | plf | |
| T6 140.00-120.00 | 1748.00 | 5266.76 | C | 0.212 | 2.557 | 0.593 | 0.85 | 1 | 61.007 | 6049.40 | 302.47 | A |
| | | | A | 0.273 | 2.371 | 0.608 | 0.85 | 1 | 84.630 | | | |
| | | | B | 0.243 | 2.46 | 0.6 | 0.85 | 1 | 74.666 | | | |
| T7 120.00-100.00 | 1760.42 | 5441.47 | C | 0.195 | 2.612 | 0.589 | 0.85 | 1 | 58.214 | 6241.41 | 312.07 | A |
| | | | A | 0.256 | 2.419 | 0.603 | 0.85 | 1 | 89.747 | | | |
| | | | B | 0.223 | 2.522 | 0.595 | 0.85 | 1 | 78.078 | | | |
| T8 100.00-80.00 | 1771.85 | 5405.66 | C | 0.177 | 2.675 | 0.586 | 0.85 | 1 | 61.201 | 5931.09 | 296.55 | A |
| | | | A | 0.24 | 2.467 | 0.599 | 0.85 | 1 | 88.567 | | | |
| | | | B | 0.211 | 2.56 | 0.593 | 0.85 | 1 | 77.369 | | | |
| T9 80.00-60.00 | 1772.00 | 6343.78 | C | 0.17 | 2.699 | 0.585 | 0.85 | 1 | 60.689 | 5951.65 | 297.58 | A |
| | | | A | 0.237 | 2.477 | 0.599 | 0.85 | 1 | 95.099 | | | |
| | | | B | 0.209 | 2.568 | 0.592 | 0.85 | 1 | 83.238 | | | |
| T10 60.00-30.00 | 2658.00 | 9347.92 | C | 0.169 | 2.702 | 0.585 | 0.85 | 1 | 65.833 | 7997.95 | 266.60 | A |
| | | | A | 0.215 | 2.545 | 0.594 | 0.85 | 1 | 141.108 | | | |
| | | | B | 0.192 | 2.625 | 0.589 | 0.85 | 1 | 124.992 | | | |
| T11 30.00-0.00 | 2221.25 | 11327.82 | C | 0.158 | 2.744 | 0.583 | 0.85 | 1 | 100.454 | 7452.65 | 248.42 | A |
| | | | A | 0.187 | 2.64 | 0.588 | 0.85 | 1 | 138.489 | | | |
| | | | B | 0.166 | 2.713 | 0.584 | 0.85 | 1 | 123.554 | | | |
| Sum Weight: | 16403.18 | 64615.46 | | 0.14 | 2.81 | 0.58 | 0.85 | 1 | 102.854 | 61511.21 | | |
| | | | | | | | | OTM | 6889.72 kip-ft | | | |

Tower Forces - With Ice - Wind Normal To Face

| Section Elevation | Add Weight | Self Weight | F a c e | e | C _F | R _R | D _F | D _R | A _E | F | w | Ctrl. Face |
|---------------------|------------|-------------|---------|-------|----------------|----------------|----------------|----------------|-----------------|---------|--------|------------|
| ft | lb | lb | | | | | | | ft ² | lb | plf | |
| T1 240.00-220.00 | 402.46 | 5592.44 | A | 0.266 | 2.389 | 0.606 | 1 | 1 | 41.890 | 850.67 | 42.53 | C |
| | | | B | 0.254 | 2.427 | 0.603 | 1 | 1 | 39.141 | | | |
| | | | C | 0.309 | 2.273 | 0.619 | 1 | 1 | 52.761 | | | |
| T2 220.00-200.00 | 1073.35 | 5621.40 | A | 0.288 | 2.329 | 0.612 | 1 | 1 | 59.206 | 953.17 | 47.66 | A |
| | | | B | 0.226 | 2.511 | 0.596 | 1 | 1 | 41.888 | | | |
| | | | C | 0.274 | 2.368 | 0.608 | 1 | 1 | 53.644 | | | |
| T3 200.00-180.00 | 2864.74 | 5933.55 | A | 0.341 | 2.194 | 0.629 | 1 | 1 | 90.197 | 1328.92 | 66.45 | A |
| | | | B | 0.337 | 2.202 | 0.628 | 1 | 1 | 89.164 | | | |
| | | | C | 0.248 | 2.445 | 0.601 | 1 | 1 | 55.855 | | | |
| T4 180.00-160.00 | 4218.73 | 6544.18 | A | 0.326 | 2.229 | 0.624 | 1 | 1 | 98.534 | 1665.53 | 83.28 | B |
| | | | B | 0.388 | 2.088 | 0.647 | 1 | 1 | 122.596 | | | |
| | | | C | 0.325 | 2.232 | 0.624 | 1 | 1 | 95.644 | | | |
| T5 160.00-140.00 | 5504.93 | 8201.89 | A | 0.402 | 2.06 | 0.652 | 1 | 1 | 151.176 | 1954.87 | 97.74 | A |
| | | | B | 0.368 | 2.13 | 0.639 | 1 | 1 | 137.037 | | | |
| | | | C | 0.305 | 2.283 | 0.617 | 1 | 1 | 106.741 | | | |
| T6 140.00-120.00 | 5653.35 | 7772.56 | A | 0.388 | 2.089 | 0.647 | 1 | 1 | 155.061 | 1952.36 | 97.62 | A |
| | | | B | 0.347 | 2.179 | 0.631 | 1 | 1 | 134.922 | | | |
| | | | C | 0.285 | 2.335 | 0.612 | 1 | 1 | 102.412 | | | |
| T7 120.00-100.00 | 5665.83 | 8202.87 | A | 0.363 | 2.142 | 0.637 | 1 | 1 | 162.903 | 2005.02 | 100.25 | A |
| | | | B | 0.318 | 2.249 | 0.622 | 1 | 1 | 140.559 | | | |
| | | | C | 0.26 | 2.407 | 0.605 | 1 | 1 | 108.272 | | | |
| T8 100.00-80.00 | 5655.46 | 7827.08 | A | 0.341 | 2.192 | 0.629 | 1 | 1 | 160.405 | 1907.97 | 95.40 | A |
| | | | B | 0.306 | 2.281 | 0.618 | 1 | 1 | 139.933 | | | |
| | | | C | 0.253 | 2.43 | 0.603 | 1 | 1 | 107.064 | | | |
| T9 80.00-60.00 | 5552.25 | 8945.18 | A | 0.33 | 2.22 | 0.625 | 1 | 1 | 166.842 | 1870.72 | 93.54 | A |
| | | | B | 0.295 | 2.309 | 0.614 | 1 | 1 | 145.713 | | | |
| | | | C | 0.245 | 2.453 | 0.601 | 1 | 1 | 112.045 | | | |
| T10 | 8066.48 | 13019.88 | A | 0.297 | 2.303 | 0.615 | 1 | 1 | 245.707 | 2519.06 | 83.97 | A |

| | | |
|---|---------------------------|---------------------------------------|
| tnxTower Destek Engineering, LLC 1281 Kennestone Circle, Suite 100 Marietta, GA 30066 Phone: (770) 693 0835 FAX: | Job CT11680A | Page 28 of 58 |
| | Project 1517045 | Date 16:33:57 10/23/15 |
| | Client T-Mobile | Designed by Ahmet Colakoglu |

| Section Elevation | Add Weight | Self Weight | F a c e | e | C _F | R _R | D _F | D _R | A _E | F | w | Ctrl. Face |
|-------------------|------------|-------------|---------|-------|----------------|----------------|----------------|----------------|-------------------|----------|-------|------------|
| ft | lb | lb | | | | | | | ft ² | lb | plf | |
| 60.00-30.00 | | | B | 0.269 | 2.382 | 0.607 | 1 | 1 | 216.645 | | | |
| | | | C | 0.226 | 2.511 | 0.596 | 1 | 1 | 168.936 | | | |
| T11 | 6595.88 | 16076.25 | A | 0.256 | 2.419 | 0.603 | 1 | 1 | 235.209 | 2317.66 | 77.26 | A |
| 30.00-0.00 | | | B | 0.228 | 2.506 | 0.596 | 1 | 1 | 205.816 | | | |
| | | | C | 0.194 | 2.617 | 0.589 | 1 | 1 | 160.515 | | | |
| Sum Weight: | 51253.46 | 93737.25 | | | | | | OTM | 2149.83 kip-ft | 19325.95 | | |

Tower Forces - With Ice - Wind 60 To Face

| Section Elevation | Add Weight | Self Weight | F a c e | e | C _F | R _R | D _F | D _R | A _E | F | w | Ctrl. Face |
|-------------------|------------|-------------|---------|-------|----------------|----------------|----------------|----------------|-------------------|----------|-------|------------|
| ft | lb | lb | | | | | | | ft ² | lb | plf | |
| T1 | 402.46 | 5592.44 | A | 0.266 | 2.389 | 0.606 | 0.8 | 1 | 41.625 | 818.30 | 40.91 | C |
| 240.00-220.00 | | | B | 0.254 | 2.427 | 0.603 | 0.8 | 1 | 39.141 | | | |
| | | | C | 0.309 | 2.273 | 0.619 | 0.8 | 1 | 50.753 | | | |
| T2 | 1073.35 | 5621.40 | A | 0.288 | 2.329 | 0.612 | 0.8 | 1 | 55.796 | 898.27 | 44.91 | A |
| 220.00-200.00 | | | B | 0.226 | 2.511 | 0.596 | 0.8 | 1 | 41.075 | | | |
| | | | C | 0.274 | 2.368 | 0.608 | 0.8 | 1 | 51.644 | | | |
| T3 | 2864.74 | 5933.55 | A | 0.341 | 2.194 | 0.629 | 0.8 | 1 | 81.555 | 1201.60 | 60.08 | A |
| 200.00-180.00 | | | B | 0.337 | 2.202 | 0.628 | 0.8 | 1 | 80.627 | | | |
| | | | C | 0.248 | 2.445 | 0.601 | 0.8 | 1 | 53.680 | | | |
| T4 | 4218.73 | 6544.18 | A | 0.326 | 2.229 | 0.624 | 0.8 | 1 | 88.970 | 1487.38 | 74.37 | B |
| 180.00-160.00 | | | B | 0.388 | 2.088 | 0.647 | 0.8 | 1 | 109.482 | | | |
| | | | C | 0.325 | 2.232 | 0.624 | 0.8 | 1 | 87.466 | | | |
| T5 | 5504.93 | 8201.89 | A | 0.402 | 2.06 | 0.652 | 0.8 | 1 | 131.532 | 1700.84 | 85.04 | A |
| 160.00-140.00 | | | B | 0.368 | 2.13 | 0.639 | 0.8 | 1 | 119.304 | | | |
| | | | C | 0.305 | 2.283 | 0.617 | 0.8 | 1 | 94.817 | | | |
| T6 | 5653.35 | 7772.56 | A | 0.388 | 2.089 | 0.647 | 0.8 | 1 | 137.639 | 1733.00 | 86.65 | A |
| 140.00-120.00 | | | B | 0.347 | 2.179 | 0.631 | 0.8 | 1 | 120.620 | | | |
| | | | C | 0.285 | 2.335 | 0.612 | 0.8 | 1 | 94.259 | | | |
| T7 | 5665.83 | 8202.87 | A | 0.363 | 2.142 | 0.637 | 0.8 | 1 | 142.689 | 1756.22 | 87.81 | A |
| 120.00-100.00 | | | B | 0.318 | 2.249 | 0.622 | 0.8 | 1 | 123.323 | | | |
| | | | C | 0.26 | 2.407 | 0.605 | 0.8 | 1 | 96.958 | | | |
| T8 | 5655.46 | 7827.08 | A | 0.341 | 2.192 | 0.629 | 0.8 | 1 | 143.051 | 1701.55 | 85.08 | A |
| 100.00-80.00 | | | B | 0.306 | 2.281 | 0.618 | 0.8 | 1 | 125.699 | | | |
| | | | C | 0.253 | 2.43 | 0.603 | 0.8 | 1 | 98.945 | | | |
| T9 | 5552.25 | 8945.18 | A | 0.33 | 2.22 | 0.625 | 0.8 | 1 | 149.532 | 1676.64 | 83.83 | A |
| 80.00-60.00 | | | B | 0.295 | 2.309 | 0.614 | 0.8 | 1 | 131.523 | | | |
| | | | C | 0.245 | 2.453 | 0.601 | 0.8 | 1 | 103.949 | | | |
| T10 | 8066.48 | 13019.88 | A | 0.297 | 2.303 | 0.615 | 0.8 | 1 | 219.857 | 2254.03 | 75.13 | A |
| 60.00-30.00 | | | B | 0.269 | 2.382 | 0.607 | 0.8 | 1 | 195.474 | | | |
| | | | C | 0.226 | 2.511 | 0.596 | 0.8 | 1 | 156.848 | | | |
| T11 | 6595.88 | 16076.25 | A | 0.256 | 2.419 | 0.603 | 0.8 | 1 | 208.931 | 2058.72 | 68.62 | A |
| 30.00-0.00 | | | B | 0.228 | 2.506 | 0.596 | 0.8 | 1 | 183.497 | | | |
| | | | C | 0.194 | 2.617 | 0.589 | 0.8 | 1 | 148.146 | | | |
| Sum Weight: | 51253.46 | 93737.25 | | | | | | OTM | 1934.42 kip-ft | 17286.55 | | |

Tower Forces - With Ice - Wind 90 To Face

| | | | | |
|---|----------------|----------|--------------------|-------------------|
| tnxTower Destek Engineering, LLC 1281 Kennestone Circle, Suite 100 Marietta, GA 30066 Phone: (770) 693 0835 FAX: | Job | CT11680A | Page | 29 of 58 |
| | Project | 1517045 | Date | 16:33:57 10/23/15 |
| | Client | T-Mobile | Designed by | Ahmet Colakoglu |

| Section Elevation | Add Weight | Self Weight | F a c e | e | C _F | R _R | D _F | D _R | A _E | F | w | Ctrl. Face |
|---------------------|------------|-------------|---------|-------|----------------|----------------|----------------|----------------|-------------------|----------|-------|------------|
| ft | lb | lb | | | | | | | ft ² | lb | plf | |
| T1 240.00-220.00 | 402.46 | 5592.44 | A | 0.266 | 2.389 | 0.606 | 0.85 | 1 | 41.691 | 826.39 | 41.32 | C |
| | | | B | 0.254 | 2.427 | 0.603 | 0.85 | 1 | 39.141 | | | |
| | | | C | 0.309 | 2.273 | 0.619 | 0.85 | 1 | 51.255 | | | |
| T2 220.00-200.00 | 1073.35 | 5621.40 | A | 0.288 | 2.329 | 0.612 | 0.85 | 1 | 56.648 | 912.00 | 45.60 | A |
| | | | B | 0.226 | 2.511 | 0.596 | 0.85 | 1 | 41.278 | | | |
| | | | C | 0.274 | 2.368 | 0.608 | 0.85 | 1 | 52.144 | | | |
| T3 200.00-180.00 | 2864.74 | 5933.55 | A | 0.341 | 2.194 | 0.629 | 0.85 | 1 | 83.716 | 1233.43 | 61.67 | A |
| | | | B | 0.337 | 2.202 | 0.628 | 0.85 | 1 | 82.761 | | | |
| | | | C | 0.248 | 2.445 | 0.601 | 0.85 | 1 | 54.224 | | | |
| T4 180.00-160.00 | 4218.73 | 6544.18 | A | 0.326 | 2.229 | 0.624 | 0.85 | 1 | 91.361 | 1531.91 | 76.60 | B |
| | | | B | 0.388 | 2.088 | 0.647 | 0.85 | 1 | 112.761 | | | |
| | | | C | 0.325 | 2.232 | 0.624 | 0.85 | 1 | 89.511 | | | |
| T5 160.00-140.00 | 5504.93 | 8201.89 | A | 0.402 | 2.06 | 0.652 | 0.85 | 1 | 136.443 | 1764.35 | 88.22 | A |
| | | | B | 0.368 | 2.13 | 0.639 | 0.85 | 1 | 123.737 | | | |
| | | | C | 0.305 | 2.283 | 0.617 | 0.85 | 1 | 97.798 | | | |
| T6 140.00-120.00 | 5653.35 | 7772.56 | A | 0.388 | 2.089 | 0.647 | 0.85 | 1 | 141.995 | 1787.84 | 89.39 | A |
| | | | B | 0.347 | 2.179 | 0.631 | 0.85 | 1 | 124.195 | | | |
| | | | C | 0.285 | 2.335 | 0.612 | 0.85 | 1 | 96.297 | | | |
| T7 120.00-100.00 | 5665.83 | 8202.87 | A | 0.363 | 2.142 | 0.637 | 0.85 | 1 | 147.743 | 1818.42 | 90.92 | A |
| | | | B | 0.318 | 2.249 | 0.622 | 0.85 | 1 | 127.632 | | | |
| | | | C | 0.26 | 2.407 | 0.605 | 0.85 | 1 | 99.787 | | | |
| T8 100.00-80.00 | 5655.46 | 7827.08 | A | 0.341 | 2.192 | 0.629 | 0.85 | 1 | 147.390 | 1753.16 | 87.66 | A |
| | | | B | 0.306 | 2.281 | 0.618 | 0.85 | 1 | 129.257 | | | |
| | | | C | 0.253 | 2.43 | 0.603 | 0.85 | 1 | 100.975 | | | |
| T9 80.00-60.00 | 5552.25 | 8945.18 | A | 0.33 | 2.22 | 0.625 | 0.85 | 1 | 153.860 | 1725.16 | 86.26 | A |
| | | | B | 0.295 | 2.309 | 0.614 | 0.85 | 1 | 135.071 | | | |
| | | | C | 0.245 | 2.453 | 0.601 | 0.85 | 1 | 105.973 | | | |
| T10 60.00-30.00 | 8066.48 | 13019.88 | A | 0.297 | 2.303 | 0.615 | 0.85 | 1 | 226.319 | 2320.29 | 77.34 | A |
| | | | B | 0.269 | 2.382 | 0.607 | 0.85 | 1 | 200.767 | | | |
| | | | C | 0.226 | 2.511 | 0.596 | 0.85 | 1 | 159.870 | | | |
| T11 30.00-0.00 | 6595.88 | 16076.25 | A | 0.256 | 2.419 | 0.603 | 0.85 | 1 | 215.500 | 2123.46 | 70.78 | A |
| | | | B | 0.228 | 2.506 | 0.596 | 0.85 | 1 | 189.077 | | | |
| | | | C | 0.194 | 2.617 | 0.589 | 0.85 | 1 | 151.238 | | | |
| Sum Weight: | 51253.46 | 93737.25 | | | | | | OTM | 1988.27 kip-ft | 17796.40 | | |

Tower Forces - Service - Wind Normal To Face

| Section Elevation | Add Weight | Self Weight | F a c e | e | C _F | R _R | D _F | D _R | A _E | F | w | Ctrl. Face |
|---------------------|------------|-------------|---------|-------|----------------|----------------|----------------|----------------|-----------------|---------|--------|------------|
| ft | lb | lb | | | | | | | ft ² | lb | plf | |
| T1 240.00-220.00 | 141.78 | 3674.12 | A | 0.186 | 2.643 | 0.588 | 1 | 1 | 27.661 | 1071.65 | 53.58 | C |
| | | | B | 0.179 | 2.666 | 0.586 | 1 | 1 | 26.615 | | | |
| | | | C | 0.212 | 2.558 | 0.593 | 1 | 1 | 34.118 | | | |
| T2 220.00-200.00 | 337.16 | 3836.24 | A | 0.206 | 2.577 | 0.592 | 1 | 1 | 36.465 | 1124.27 | 56.21 | A |
| | | | B | 0.164 | 2.721 | 0.584 | 1 | 1 | 28.752 | | | |
| | | | C | 0.188 | 2.637 | 0.588 | 1 | 1 | 35.033 | | | |
| T3 200.00-180.00 | 968.18 | 4019.74 | A | 0.237 | 2.477 | 0.599 | 1 | 1 | 53.383 | 1537.42 | 76.87 | A |
| | | | B | 0.237 | 2.478 | 0.599 | 1 | 1 | 53.312 | | | |
| | | | C | 0.169 | 2.702 | 0.585 | 1 | 1 | 36.343 | | | |
| T4 180.00-160.00 | 1331.64 | 4426.65 | A | 0.227 | 2.509 | 0.596 | 1 | 1 | 57.820 | 1850.43 | 92.52 | B |
| | | | B | 0.27 | 2.378 | 0.607 | 1 | 1 | 69.069 | | | |
| | | | C | 0.221 | 2.526 | 0.595 | 1 | 1 | 54.101 | | | |
| T5 160.00-140.00 | 1692.90 | 5525.30 | A | 0.286 | 2.334 | 0.612 | 1 | 1 | 87.375 | 2216.70 | 110.84 | A |
| | | | B | 0.263 | 2.399 | 0.605 | 1 | 1 | 80.767 | | | |

| | | | | |
|---|----------------|----------|--------------------|-------------------|
| tnxTower Destek Engineering, LLC 1281 Kennestone Circle, Suite 100 Marietta, GA 30066 Phone: (770) 693 0835 FAX: | Job | CT11680A | Page | 30 of 58 |
| | Project | 1517045 | Date | 16:33:57 10/23/15 |
| | Client | T-Mobile | Designed by | Ahmet Colakoglu |

| Section Elevation | Add Weight | Self Weight | F a c e | e | C _F | R _R | D _F | D _R | A _E | F | w | Ctrl. Face |
|---------------------|------------|-------------|---------|-------|----------------|----------------|----------------|----------------|-------------------|----------|--------|------------|
| ft | lb | lb | | | | | | | ft ² | lb | plf | |
| T6 140.00-120.00 | 1748.00 | 5266.76 | C | 0.212 | 2.557 | 0.593 | 1 | 1 | 64.160 | 2136.50 | 106.83 | A |
| | | | A | 0.273 | 2.371 | 0.608 | 1 | 1 | 86.380 | | | |
| | | | B | 0.243 | 2.46 | 0.6 | 1 | 1 | 76.416 | | | |
| T7 120.00-100.00 | 1760.42 | 5441.47 | C | 0.195 | 2.612 | 0.589 | 1 | 1 | 59.089 | 2244.52 | 112.23 | A |
| | | | A | 0.256 | 2.419 | 0.603 | 1 | 1 | 93.273 | | | |
| | | | B | 0.223 | 2.522 | 0.595 | 1 | 1 | 81.665 | | | |
| T8 100.00-80.00 | 1771.85 | 5405.66 | C | 0.177 | 2.675 | 0.586 | 1 | 1 | 64.001 | 2092.83 | 104.64 | A |
| | | | A | 0.24 | 2.467 | 0.599 | 1 | 1 | 90.317 | | | |
| | | | B | 0.211 | 2.56 | 0.593 | 1 | 1 | 79.119 | | | |
| T9 80.00-60.00 | 1772.00 | 6343.78 | C | 0.17 | 2.699 | 0.585 | 1 | 1 | 61.564 | 2097.29 | 104.86 | A |
| | | | A | 0.237 | 2.477 | 0.599 | 1 | 1 | 96.849 | | | |
| | | | B | 0.209 | 2.568 | 0.592 | 1 | 1 | 84.988 | | | |
| T10 60.00-30.00 | 2658.00 | 9347.92 | C | 0.169 | 2.702 | 0.585 | 1 | 1 | 66.708 | 2818.94 | 93.96 | A |
| | | | A | 0.215 | 2.545 | 0.594 | 1 | 1 | 143.733 | | | |
| | | | B | 0.192 | 2.625 | 0.589 | 1 | 1 | 127.617 | | | |
| T11 30.00-0.00 | 2221.25 | 11327.82 | C | 0.158 | 2.744 | 0.583 | 1 | 1 | 101.766 | 2672.56 | 89.09 | A |
| | | | A | 0.187 | 2.64 | 0.588 | 1 | 1 | 143.526 | | | |
| | | | B | 0.166 | 2.713 | 0.584 | 1 | 1 | 128.644 | | | |
| Sum Weight: | 16403.18 | 64615.46 | | | | | | OTM | 2448.51 kip-ft | 21863.13 | | |

Tower Forces - Service - Wind 60 To Face

| Section Elevation | Add Weight | Self Weight | F a c e | e | C _F | R _R | D _F | D _R | A _E | F | w | Ctrl. Face |
|---------------------|------------|-------------|---------|-------|----------------|----------------|----------------|----------------|-----------------|---------|--------|------------|
| ft | lb | lb | | | | | | | ft ² | lb | plf | |
| T1 240.00-220.00 | 141.78 | 3674.12 | A | 0.186 | 2.643 | 0.588 | 0.8 | 1 | 27.661 | 1035.01 | 51.75 | C |
| | | | B | 0.179 | 2.666 | 0.586 | 0.8 | 1 | 26.615 | | | |
| | | | C | 0.212 | 2.558 | 0.593 | 0.8 | 1 | 32.951 | | | |
| T2 220.00-200.00 | 337.16 | 3836.24 | A | 0.206 | 2.577 | 0.592 | 0.8 | 1 | 36.232 | 1117.08 | 55.85 | A |
| | | | B | 0.164 | 2.721 | 0.584 | 0.8 | 1 | 28.518 | | | |
| | | | C | 0.188 | 2.637 | 0.588 | 0.8 | 1 | 33.867 | | | |
| T3 200.00-180.00 | 968.18 | 4019.74 | A | 0.237 | 2.477 | 0.599 | 0.8 | 1 | 51.050 | 1470.22 | 73.51 | A |
| | | | B | 0.237 | 2.478 | 0.599 | 0.8 | 1 | 50.978 | | | |
| | | | C | 0.169 | 2.702 | 0.585 | 0.8 | 1 | 35.176 | | | |
| T4 180.00-160.00 | 1331.64 | 4426.65 | A | 0.227 | 2.509 | 0.596 | 0.8 | 1 | 55.486 | 1787.92 | 89.40 | B |
| | | | B | 0.27 | 2.378 | 0.607 | 0.8 | 1 | 66.735 | | | |
| | | | C | 0.221 | 2.526 | 0.595 | 0.8 | 1 | 52.934 | | | |
| T5 160.00-140.00 | 1692.90 | 5525.30 | A | 0.286 | 2.334 | 0.612 | 0.8 | 1 | 82.280 | 2087.46 | 104.37 | A |
| | | | B | 0.263 | 2.399 | 0.605 | 0.8 | 1 | 75.588 | | | |
| | | | C | 0.212 | 2.557 | 0.593 | 0.8 | 1 | 59.956 | | | |
| T6 140.00-120.00 | 1748.00 | 5266.76 | A | 0.273 | 2.371 | 0.608 | 0.8 | 1 | 84.047 | 2078.79 | 103.94 | A |
| | | | B | 0.243 | 2.46 | 0.6 | 0.8 | 1 | 74.083 | | | |
| | | | C | 0.195 | 2.612 | 0.589 | 0.8 | 1 | 57.922 | | | |
| T7 120.00-100.00 | 1760.42 | 5441.47 | A | 0.256 | 2.419 | 0.603 | 0.8 | 1 | 88.571 | 2131.37 | 106.57 | A |
| | | | B | 0.223 | 2.522 | 0.595 | 0.8 | 1 | 76.882 | | | |
| | | | C | 0.177 | 2.675 | 0.586 | 0.8 | 1 | 60.267 | | | |
| T8 100.00-80.00 | 1771.85 | 5405.66 | A | 0.24 | 2.467 | 0.599 | 0.8 | 1 | 87.983 | 2038.76 | 101.94 | A |
| | | | B | 0.211 | 2.56 | 0.593 | 0.8 | 1 | 76.785 | | | |
| | | | C | 0.17 | 2.699 | 0.585 | 0.8 | 1 | 60.397 | | | |
| T9 80.00-60.00 | 1772.00 | 6343.78 | A | 0.237 | 2.477 | 0.599 | 0.8 | 1 | 94.516 | 2046.76 | 102.34 | A |
| | | | B | 0.209 | 2.568 | 0.592 | 0.8 | 1 | 82.655 | | | |
| | | | C | 0.169 | 2.702 | 0.585 | 0.8 | 1 | 65.541 | | | |
| T10 | 2658.00 | 9347.92 | A | 0.215 | 2.545 | 0.594 | 0.8 | 1 | 140.233 | 2750.30 | 91.68 | A |

| | | |
|---|---------------------------|---------------------------------------|
| tnxTower Destek Engineering, LLC 1281 Kennestone Circle, Suite 100 Marietta, GA 30066 Phone: (770) 693 0835 FAX: | Job CT11680A | Page 31 of 58 |
| | Project 1517045 | Date 16:33:57 10/23/15 |
| | Client T-Mobile | Designed by Ahmet Colakoglu |

| Section Elevation ft | Add Weight lb | Self Weight lb | F a c e | e | C _F | R _R | D _F | D _R | A _E ft ² | F lb | w plf | Ctrl. Face |
|-------------------------|------------------|-------------------|---------|-------|----------------|----------------|----------------|----------------|-----------------------------------|----------|----------|------------|
| 60.00-30.00 | | | B | 0.192 | 2.625 | 0.589 | 0.8 | 1 | 124.117 | | | |
| | | | C | 0.158 | 2.744 | 0.583 | 0.8 | 1 | 100.016 | | | |
| T11 | 2221.25 | 11327.82 | A | 0.187 | 2.64 | 0.588 | 0.8 | 1 | 136.810 | 2547.51 | 84.92 | A |
| 30.00-0.00 | | | B | 0.166 | 2.713 | 0.584 | 0.8 | 1 | 121.857 | | | |
| | | | C | 0.14 | 2.81 | 0.58 | 0.8 | 1 | 101.498 | | | |
| Sum Weight: | 16403.18 | 64615.46 | | | | | | OTM | 2362.48 kip-ft | 21091.17 | | |

Tower Forces - Service - Wind 90 To Face

| Section Elevation ft | Add Weight lb | Self Weight lb | F a c e | e | C _F | R _R | D _F | D _R | A _E ft ² | F lb | w plf | Ctrl. Face |
|-------------------------|------------------|-------------------|---------|-------|----------------|----------------|----------------|----------------|-----------------------------------|----------|----------|------------|
| T1 | 141.78 | 3674.12 | A | 0.186 | 2.643 | 0.588 | 0.85 | 1 | 27.661 | 1044.17 | 52.21 | C |
| 240.00-220.00 | | | B | 0.179 | 2.666 | 0.586 | 0.85 | 1 | 26.615 | | | |
| | | | C | 0.212 | 2.558 | 0.593 | 0.85 | 1 | 33.243 | | | |
| T2 | 337.16 | 3836.24 | A | 0.206 | 2.577 | 0.592 | 0.85 | 1 | 36.290 | 1118.87 | 55.94 | A |
| 220.00-200.00 | | | B | 0.164 | 2.721 | 0.584 | 0.85 | 1 | 28.577 | | | |
| | | | C | 0.188 | 2.637 | 0.588 | 0.85 | 1 | 34.158 | | | |
| T3 | 968.18 | 4019.74 | A | 0.237 | 2.477 | 0.599 | 0.85 | 1 | 51.633 | 1487.02 | 74.35 | A |
| 200.00-180.00 | | | B | 0.237 | 2.478 | 0.599 | 0.85 | 1 | 51.562 | | | |
| | | | C | 0.169 | 2.702 | 0.585 | 0.85 | 1 | 35.468 | | | |
| T4 | 1331.64 | 4426.65 | A | 0.227 | 2.509 | 0.596 | 0.85 | 1 | 56.070 | 1803.55 | 90.18 | B |
| 180.00-160.00 | | | B | 0.27 | 2.378 | 0.607 | 0.85 | 1 | 67.319 | | | |
| | | | C | 0.221 | 2.526 | 0.595 | 0.85 | 1 | 53.226 | | | |
| T5 | 1692.90 | 5525.30 | A | 0.286 | 2.334 | 0.612 | 0.85 | 1 | 83.554 | 2119.77 | 105.99 | A |
| 160.00-140.00 | | | B | 0.263 | 2.399 | 0.605 | 0.85 | 1 | 76.883 | | | |
| | | | C | 0.212 | 2.557 | 0.593 | 0.85 | 1 | 61.007 | | | |
| T6 | 1748.00 | 5266.76 | A | 0.273 | 2.371 | 0.608 | 0.85 | 1 | 84.630 | 2093.22 | 104.66 | A |
| 140.00-120.00 | | | B | 0.243 | 2.46 | 0.6 | 0.85 | 1 | 74.666 | | | |
| | | | C | 0.195 | 2.612 | 0.589 | 0.85 | 1 | 58.214 | | | |
| T7 | 1760.42 | 5441.47 | A | 0.256 | 2.419 | 0.603 | 0.85 | 1 | 89.747 | 2159.66 | 107.98 | A |
| 120.00-100.00 | | | B | 0.223 | 2.522 | 0.595 | 0.85 | 1 | 78.078 | | | |
| | | | C | 0.177 | 2.675 | 0.586 | 0.85 | 1 | 61.201 | | | |
| T8 | 1771.85 | 5405.66 | A | 0.24 | 2.467 | 0.599 | 0.85 | 1 | 88.567 | 2052.28 | 102.61 | A |
| 100.00-80.00 | | | B | 0.211 | 2.56 | 0.593 | 0.85 | 1 | 77.369 | | | |
| | | | C | 0.17 | 2.699 | 0.585 | 0.85 | 1 | 60.689 | | | |
| T9 | 1772.00 | 6343.78 | A | 0.237 | 2.477 | 0.599 | 0.85 | 1 | 95.099 | 2059.40 | 102.97 | A |
| 80.00-60.00 | | | B | 0.209 | 2.568 | 0.592 | 0.85 | 1 | 83.238 | | | |
| | | | C | 0.169 | 2.702 | 0.585 | 0.85 | 1 | 65.833 | | | |
| T10 | 2658.00 | 9347.92 | A | 0.215 | 2.545 | 0.594 | 0.85 | 1 | 141.108 | 2767.46 | 92.25 | A |
| 60.00-30.00 | | | B | 0.192 | 2.625 | 0.589 | 0.85 | 1 | 124.992 | | | |
| | | | C | 0.158 | 2.744 | 0.583 | 0.85 | 1 | 100.454 | | | |
| T11 | 2221.25 | 11327.82 | A | 0.187 | 2.64 | 0.588 | 0.85 | 1 | 138.489 | 2578.77 | 85.96 | A |
| 30.00-0.00 | | | B | 0.166 | 2.713 | 0.584 | 0.85 | 1 | 123.554 | | | |
| | | | C | 0.14 | 2.81 | 0.58 | 0.85 | 1 | 102.854 | | | |
| Sum Weight: | 16403.18 | 64615.46 | | | | | | OTM | 2383.99 kip-ft | 21284.16 | | |

Force Totals

| | | | | |
|--|----------------|----------|--------------------|-------------------|
| <p>tnxTower</p> <p>Destek Engineering, LLC 1281 Kennestone Circle, Suite 100 Marietta, GA 30066 Phone: (770) 693 0835 FAX:</p> | Job | CT11680A | Page | 32 of 58 |
| | Project | 1517045 | Date | 16:33:57 10/23/15 |
| | Client | T-Mobile | Designed by | Ahmet Colakoglu |

| Load Case | Vertical Forces lb | Sum of Forces X lb | Sum of Forces Z lb | Sum of Overturning Moments, M_x kip-ft | Sum of Overturning Moments, M_z kip-ft | Sum of Torques kip-ft |
|--------------------------|-----------------------|--------------------------|--------------------------|---|---|--------------------------|
| Leg Weight | 34080.31 | | | | | |
| Bracing Weight | 30535.16 | | | | | |
| Total Member Self-Weight | 64615.46 | | | -39.08 | 35.32 | |
| Total Weight | 90122.57 | | | -39.08 | 35.32 | |
| Wind 0 deg - No Ice | | 238.06 | -81661.12 | -10396.60 | 24.08 | -64.56 |
| Wind 30 deg - No Ice | | 40157.39 | -69283.68 | -8852.06 | -5057.73 | -76.52 |
| Wind 60 deg - No Ice | | 68861.68 | -39822.97 | -5105.63 | -8719.37 | -70.52 |
| Wind 90 deg - No Ice | | 80021.61 | -196.26 | -54.45 | -10132.90 | -46.86 |
| Wind 120 deg - No Ice | | 70754.34 | 40668.60 | 5138.20 | -8924.66 | -8.60 |
| Wind 150 deg - No Ice | | 39870.33 | 69214.65 | 8773.82 | -5036.41 | 32.22 |
| Wind 180 deg - No Ice | | -73.91 | 79410.00 | 10075.75 | 42.96 | 63.20 |
| Wind 210 deg - No Ice | | -40001.65 | 69325.18 | 8782.26 | 5120.35 | 77.99 |
| Wind 240 deg - No Ice | | -70712.60 | 40919.38 | 5154.12 | 9000.39 | 73.16 |
| Wind 270 deg - No Ice | | -79954.52 | 26.23 | -37.54 | 10202.07 | 45.42 |
| Wind 300 deg - No Ice | | -68708.32 | -39649.09 | -5091.40 | 8780.63 | 7.32 |
| Wind 330 deg - No Ice | | -39901.10 | -69167.82 | -8843.51 | 5112.32 | -32.25 |
| Member Ice | 29121.79 | | | | | |
| Total Weight Ice | 165099.43 | | | -114.47 | 126.93 | |
| Wind 0 deg - Ice | | 49.27 | -24795.33 | -3239.62 | 124.78 | -19.99 |
| Wind 30 deg - Ice | | 11663.47 | -20150.18 | -2681.87 | -1355.83 | -18.35 |
| Wind 60 deg - Ice | | 19716.55 | -11399.34 | -1571.72 | -2392.06 | -13.27 |
| Wind 90 deg - Ice | | 23266.82 | -40.44 | -117.56 | -2835.10 | -5.44 |
| Wind 120 deg - Ice | | 21476.37 | 12364.37 | 1448.00 | -2576.70 | 4.89 |
| Wind 150 deg - Ice | | 11604.77 | 20137.73 | 2453.23 | -1351.62 | 13.48 |
| Wind 180 deg - Ice | | -13.68 | 22751.66 | 2796.57 | 128.29 | 18.06 |
| Wind 210 deg - Ice | | -11629.18 | 20159.35 | 2454.76 | 1607.85 | 18.67 |
| Wind 240 deg - Ice | | -21464.97 | 12414.68 | 1450.94 | 2831.36 | 15.09 |
| Wind 270 deg - Ice | | -23252.27 | 3.11 | -114.48 | 3088.64 | 5.12 |
| Wind 300 deg - Ice | | -19685.64 | -11365.70 | -1569.14 | 2644.17 | -4.80 |
| Wind 330 deg - Ice | | -11611.97 | -20127.41 | -2680.30 | 1606.71 | -13.49 |
| Total Weight | 90122.57 | | | -39.08 | 35.32 | |
| Wind 0 deg - Service | | 82.37 | -28256.44 | -3578.88 | -3.85 | -22.34 |
| Wind 30 deg - Service | | 13895.29 | -23973.59 | -3044.44 | -1762.26 | -26.48 |
| Wind 60 deg - Service | | 23827.57 | -13779.57 | -1748.10 | -3029.26 | -24.40 |
| Wind 90 deg - Service | | 27689.14 | -67.91 | -0.29 | -3518.38 | -16.21 |
| Wind 120 deg - Service | | 24482.47 | 14072.18 | 1796.48 | -3100.30 | -2.98 |
| Wind 150 deg - Service | | 13795.96 | 23949.71 | 3054.48 | -1754.88 | 11.15 |
| Wind 180 deg - Service | | -25.57 | 27477.51 | 3504.97 | 2.68 | 21.87 |
| Wind 210 deg - Service | | -13841.40 | 23987.95 | 3057.40 | 1759.56 | 26.99 |
| Wind 240 deg - Service | | -24468.03 | 14158.96 | 1801.99 | 3102.14 | 25.31 |
| Wind 270 deg - Service | | -27665.92 | 9.08 | 5.57 | 3517.95 | 15.71 |
| Wind 300 deg - Service | | -23774.50 | -13719.41 | -1743.18 | 3026.10 | 2.53 |
| Wind 330 deg - Service | | -13806.61 | -23933.50 | -3041.48 | 1756.79 | -11.16 |

Load Combinations

| Comb. No. | Description |
|-----------|----------------------------|
| 1 | Dead Only |
| 2 | Dead+Wind 0 deg - No Ice |
| 3 | Dead+Wind 30 deg - No Ice |
| 4 | Dead+Wind 60 deg - No Ice |
| 5 | Dead+Wind 90 deg - No Ice |
| 6 | Dead+Wind 120 deg - No Ice |
| 7 | Dead+Wind 150 deg - No Ice |
| 8 | Dead+Wind 180 deg - No Ice |

| | | | | |
|--|----------------|----------|--------------------|-------------------|
| <p>tnxTower</p> <p>Destek Engineering, LLC 1281 Kennestone Circle, Suite 100 Marietta, GA 30066 Phone: (770) 693 0835 FAX:</p> | Job | CT11680A | Page | 33 of 58 |
| | Project | 1517045 | Date | 16:33:57 10/23/15 |
| | Client | T-Mobile | Designed by | Ahmet Colakoglu |

| <i>Comb. No.</i> | <i>Description</i> |
|------------------|-----------------------------|
| 9 | Dead+Wind 210 deg - No Ice |
| 10 | Dead+Wind 240 deg - No Ice |
| 11 | Dead+Wind 270 deg - No Ice |
| 12 | Dead+Wind 300 deg - No Ice |
| 13 | Dead+Wind 330 deg - No Ice |
| 14 | Dead+Ice+Temp |
| 15 | Dead+Wind 0 deg+Ice+Temp |
| 16 | Dead+Wind 30 deg+Ice+Temp |
| 17 | Dead+Wind 60 deg+Ice+Temp |
| 18 | Dead+Wind 90 deg+Ice+Temp |
| 19 | Dead+Wind 120 deg+Ice+Temp |
| 20 | Dead+Wind 150 deg+Ice+Temp |
| 21 | Dead+Wind 180 deg+Ice+Temp |
| 22 | Dead+Wind 210 deg+Ice+Temp |
| 23 | Dead+Wind 240 deg+Ice+Temp |
| 24 | Dead+Wind 270 deg+Ice+Temp |
| 25 | Dead+Wind 300 deg+Ice+Temp |
| 26 | Dead+Wind 330 deg+Ice+Temp |
| 27 | Dead+Wind 0 deg - Service |
| 28 | Dead+Wind 30 deg - Service |
| 29 | Dead+Wind 60 deg - Service |
| 30 | Dead+Wind 90 deg - Service |
| 31 | Dead+Wind 120 deg - Service |
| 32 | Dead+Wind 150 deg - Service |
| 33 | Dead+Wind 180 deg - Service |
| 34 | Dead+Wind 210 deg - Service |
| 35 | Dead+Wind 240 deg - Service |
| 36 | Dead+Wind 270 deg - Service |
| 37 | Dead+Wind 300 deg - Service |
| 38 | Dead+Wind 330 deg - Service |

Maximum Member Forces

| <i>Section No.</i> | <i>Elevation ft</i> | <i>Component Type</i> | <i>Condition</i> | <i>Gov. Load Comb.</i> | <i>Force lb</i> | <i>Major Axis Moment kip-ft</i> | <i>Minor Axis Moment kip-ft</i> |
|--------------------|---------------------|-----------------------|------------------|------------------------|-----------------|---------------------------------|---------------------------------|
| T1 | 240 - 220 | Leg | Max Tension | 12 | 955.52 | 0.01 | -0.00 |
| | | | Max. Compression | 10 | -3522.64 | 0.26 | -0.04 |
| | | | Max. Mx | 8 | 147.48 | 0.37 | 0.01 |
| | | | Max. My | 5 | -433.78 | -0.02 | -0.49 |
| | | | Max. Vy | 4 | -222.36 | 0.00 | -0.00 |
| | | | Max. Vx | 7 | -304.96 | -0.00 | -0.00 |
| | | Diagonal | Max Tension | 3 | 1457.83 | 0.00 | 0.00 |
| | | | Max. Compression | 3 | -1558.19 | 0.00 | 0.00 |
| | | | Max. Mx | 26 | 317.60 | 0.06 | 0.00 |
| | | | Max. My | 10 | -5.47 | 0.00 | -0.00 |
| | | | Max. Vy | 26 | -24.27 | 0.00 | 0.00 |
| | | | Max. Vx | 10 | -0.04 | 0.00 | 0.00 |
| | | Horizontal | Max Tension | 3 | 1058.33 | -0.02 | -0.00 |
| | | | Max. Compression | 2 | -1042.22 | -0.02 | -0.00 |
| | | | Max. Mx | 25 | 40.85 | -0.04 | -0.00 |
| | | | Max. My | 2 | -7.97 | -0.02 | 0.00 |
| | | | Max. Vy | 25 | -28.74 | -0.04 | -0.00 |
| | | | Max. Vx | 2 | -0.48 | -0.02 | 0.00 |
| | | Top Girt | Max Tension | 12 | 327.71 | -0.01 | 0.00 |
| | | | Max. Compression | 6 | -349.33 | -0.01 | -0.00 |
| | | | Max. Mx | 21 | -66.58 | -0.03 | -0.00 |
| Max. My | 2 | | 67.33 | -0.01 | 0.00 | | |
| Max. Vy | 21 | | -25.56 | -0.03 | -0.00 | | |

| | | | | |
|---|----------------|----------|--------------------|-------------------|
| tnxTower Destek Engineering, LLC 1281 Kennestone Circle, Suite 100 Marietta, GA 30066 Phone: (770) 693 0835 FAX: | Job | CT11680A | Page | 34 of 58 |
| | Project | 1517045 | Date | 16:33:57 10/23/15 |
| | Client | T-Mobile | Designed by | Ahmet Colakoglu |

| Section No. | Elevation ft | Component Type | Condition | Gov. Load Comb. | Force lb | Major Axis Moment kip-ft | Minor Axis Moment kip-ft | |
|---------------|------------------|----------------|------------------|------------------|-----------|--------------------------|--------------------------|-------|
| T2 | 220 - 200 | Inner Bracing | Max. Vx | 2 | -0.20 | -0.01 | 0.00 | |
| | | | Max Tension | 6 | 6.05 | 0.00 | 0.00 | |
| | | | Max. Compression | 6 | -6.05 | 0.00 | 0.00 | |
| | | | Max. Mx | 14 | -2.71 | -0.03 | 0.00 | |
| | | | Max. My | 25 | -3.18 | 0.00 | 0.00 | |
| | | | Max. Vy | 14 | -18.28 | 0.00 | 0.00 | |
| | | Leg | Max. Vx | 25 | 0.02 | 0.00 | 0.00 | |
| | | | Max Tension | 12 | 4959.54 | -0.71 | 0.00 | |
| | | | Max. Compression | 10 | -11060.14 | 0.60 | -0.06 | |
| | | | Max. Mx | 8 | 4891.59 | 1.30 | -0.01 | |
| | | | Max. My | 3 | -2284.79 | -0.05 | 1.39 | |
| | | | Max. Vy | 4 | 1014.93 | -0.67 | 0.06 | |
| | | | Diagonal | Max. Vx | 13 | -979.30 | -0.04 | 0.55 |
| | | | | Max Tension | 3 | 4289.59 | 0.00 | 0.00 |
| | | | | Max. Compression | 3 | -4435.50 | 0.00 | 0.00 |
| | | | | Max. Mx | 26 | 1031.94 | 0.12 | 0.00 |
| | | | | Max. My | 10 | 74.36 | 0.00 | -0.00 |
| | | | | Max. Vy | 26 | -38.64 | 0.00 | 0.00 |
| | | | Horizontal | Max. Vx | 10 | 0.09 | 0.00 | 0.00 |
| | | | | Max Tension | 8 | 2637.62 | 0.00 | 0.00 |
| | | | | Max. Compression | 2 | -2676.06 | -0.02 | -0.00 |
| | | | | Max. Mx | 25 | 118.83 | -0.05 | -0.00 |
| | | | | Max. My | 6 | -6.67 | -0.02 | 0.01 |
| | | | | Max. Vy | 25 | -32.88 | -0.05 | -0.00 |
| Inner Bracing | Max. Vx | 2 | | -0.90 | -0.02 | 0.01 | | |
| | Max Tension | 10 | | 0.23 | 0.00 | 0.00 | | |
| | Max. Compression | 25 | | -5.21 | 0.00 | 0.00 | | |
| | Max. Mx | 14 | | -4.39 | -0.04 | 0.00 | | |
| | Max. My | 15 | | -3.55 | 0.00 | -0.00 | | |
| | Max. Vy | 14 | | 20.74 | 0.00 | 0.00 | | |
| T3 | 200 - 180 | Leg | Max. Vx | 15 | -0.02 | 0.00 | 0.00 | |
| | | | Max Tension | 12 | 16411.72 | -0.28 | -0.02 | |
| | | | Max. Compression | 10 | -26834.08 | 0.72 | -0.11 | |
| | | | Max. Mx | 8 | 15087.60 | -0.80 | -0.03 | |
| | | | Max. My | 11 | -5693.46 | -0.04 | -0.68 | |
| | | | Max. Vy | 8 | 1430.41 | -0.80 | -0.03 | |
| | | Diagonal | Max. Vx | 5 | -1397.48 | -0.04 | 0.68 | |
| | | | Max Tension | 9 | 6795.99 | 0.00 | 0.00 | |
| | | | Max. Compression | 9 | -6981.98 | 0.00 | 0.00 | |
| | | | Max. Mx | 26 | 1569.77 | 0.15 | 0.00 | |
| | | | Max. My | 10 | 288.53 | 0.00 | -0.00 | |
| | | | Max. Vy | 26 | -44.70 | 0.00 | 0.00 | |
| | | Horizontal | Max. Vx | 10 | 0.09 | 0.00 | 0.00 | |
| | | | Max Tension | 9 | 4565.39 | 0.00 | 0.00 | |
| | | | Max. Compression | 3 | -4523.31 | -0.03 | -0.00 | |
| | | | Max. Mx | 25 | 232.11 | -0.06 | -0.00 | |
| | | | Max. My | 6 | -6.67 | -0.03 | 0.01 | |
| | | | Max. Vy | 25 | -38.14 | -0.06 | -0.00 | |
| | | | Inner Bracing | Max. Vx | 6 | -1.10 | -0.03 | 0.01 |
| | | | | Max Tension | 6 | 0.09 | 0.00 | 0.00 |
| | | | | Max. Compression | 25 | -6.65 | 0.00 | 0.00 |
| | | | | Max. Mx | 14 | -5.74 | -0.07 | 0.00 |
| | | | | Max. My | 10 | -0.20 | 0.00 | -0.00 |
| | | | | Max. Vy | 14 | 32.76 | 0.00 | 0.00 |
| T4 | 180 - 160 | Leg | Max. Vx | 10 | 0.04 | 0.00 | 0.00 | |
| | | | Max Tension | 12 | 33177.64 | -0.87 | -0.01 | |
| | | | Max. Compression | 2 | -49190.84 | 2.36 | 0.15 | |
| | | | Max. Mx | 4 | 31715.18 | -2.50 | 0.11 | |
| | | | Max. My | 13 | -8384.19 | -0.08 | 2.32 | |
| | | | Max. Vy | 4 | 971.82 | -2.50 | 0.11 | |
| | | | Max. Vx | 7 | 949.34 | -0.07 | -2.32 | |

| | | | | |
|---|----------------|----------|--------------------|-------------------|
| tnxTower Destek Engineering, LLC 1281 Kennestone Circle, Suite 100 Marietta, GA 30066 Phone: (770) 693 0835 FAX: | Job | CT11680A | Page | 35 of 58 |
| | Project | 1517045 | Date | 16:33:57 10/23/15 |
| | Client | T-Mobile | Designed by | Ahmet Colakoglu |

| Section No. | Elevation ft | Component Type | Condition | Gov. Load Comb. | Force lb | Major Axis Moment kip-ft | Minor Axis Moment kip-ft | |
|---------------|------------------|------------------|------------------|------------------|-----------|--------------------------|--------------------------|-------|
| T5 | 160 - 140 | Diagonal | Max Tension | 9 | 10542.98 | 0.00 | 0.00 | |
| | | | Max. Compression | 9 | -10804.89 | 0.00 | 0.00 | |
| | | | Max. Mx | 26 | 2546.37 | 0.18 | 0.00 | |
| | | | Max. My | 10 | 393.70 | 0.00 | -0.00 | |
| | | | Max. Vy | 26 | -50.65 | 0.00 | 0.00 | |
| | | | Max. Vx | 10 | 0.09 | 0.00 | 0.00 | |
| | | | Horizontal | Max Tension | 9 | 7586.05 | 0.00 | 0.00 |
| | | | | Max. Compression | 9 | -7526.19 | -0.07 | 0.00 |
| | | | | Max. Mx | 25 | 374.22 | -0.12 | -0.00 |
| | | | | Max. My | 2 | 612.95 | -0.06 | 0.02 |
| | | Max. Vy | | 25 | -59.85 | -0.12 | -0.00 | |
| | | Max. Vx | | 2 | -1.90 | -0.05 | 0.02 | |
| | | Inner Bracing | Max Tension | 6 | 1.06 | 0.00 | 0.00 | |
| | | | Max. Compression | 25 | -8.74 | 0.00 | 0.00 | |
| | | | Max. Mx | 14 | -7.24 | -0.10 | 0.00 | |
| | | | Max. My | 2 | 0.86 | 0.00 | -0.00 | |
| | | | Max. Vy | 14 | 43.74 | 0.00 | 0.00 | |
| | | | Max. Vx | 2 | 0.05 | 0.00 | 0.00 | |
| | | Leg | Max Tension | 12 | 56920.64 | -0.83 | -0.01 | |
| | | | Max. Compression | 2 | -79037.92 | -0.08 | 0.01 | |
| | | | Max. Mx | 4 | 43259.87 | -2.50 | 0.11 | |
| | | | Max. My | 13 | -8901.37 | -0.08 | 2.32 | |
| | | | Max. Vy | 4 | -803.56 | -2.50 | 0.11 | |
| | | | Max. Vx | 5 | 776.71 | -0.06 | 2.29 | |
| | | | Diagonal | Max Tension | 9 | 13840.56 | 0.00 | 0.00 |
| | | | | Max. Compression | 9 | -14285.43 | 0.00 | 0.00 |
| | | | | Max. Mx | 26 | 3313.00 | 0.36 | 0.00 |
| | | | | Max. My | 15 | -172.58 | 0.00 | 0.02 |
| | | | | Max. Vy | 26 | -94.45 | 0.00 | 0.00 |
| | | | Horizontal | Max. Vx | 15 | -4.61 | 0.00 | 0.00 |
| | | | | Max Tension | 9 | 10593.15 | 0.00 | 0.00 |
| | | | | Max. Compression | 9 | -10414.40 | -0.08 | -0.00 |
| Max. Mx | 25 | | | 537.16 | -0.15 | -0.01 | | |
| Max. My | 6 | | | 1280.28 | -0.07 | 0.02 | | |
| Inner Bracing | Max. Vy | 25 | -67.13 | -0.15 | -0.01 | | | |
| | Max. Vx | 10 | -2.06 | -0.07 | 0.02 | | | |
| | Max Tension | 1 | 0.00 | 0.00 | 0.00 | | | |
| | Max. Compression | 25 | -12.35 | 0.00 | 0.00 | | | |
| | Max. Mx | 14 | -10.65 | -0.17 | 0.00 | | | |
| | Max. My | 2 | -1.10 | 0.00 | -0.00 | | | |
| | Max. Vy | 14 | -63.66 | 0.00 | 0.00 | | | |
| | Max. Vx | 2 | 0.09 | 0.00 | 0.00 | | | |
| | Leg | Max Tension | 12 | 84533.47 | -0.57 | 0.00 | | |
| | | Max. Compression | 2 | -112204.58 | -0.24 | 0.21 | | |
| Max. Mx | | 21 | 1586.09 | -0.86 | -0.07 | | | |
| Max. My | | 11 | -13786.87 | -0.44 | -2.74 | | | |
| Max. Vy | | 8 | 225.63 | -0.57 | -0.01 | | | |
| Max. Vx | | 5 | -402.52 | -0.43 | 2.74 | | | |
| Diagonal | | Max Tension | 9 | 14406.54 | 0.00 | 0.00 | | |
| | | Max. Compression | 9 | -14852.60 | 0.00 | 0.00 | | |
| | | Max. Mx | 26 | 3432.12 | 0.31 | 0.00 | | |
| | | Max. My | 10 | 583.26 | 0.00 | -0.00 | | |
| | | Max. Vy | 26 | -77.63 | 0.00 | 0.00 | | |
| | | Max. Vx | 10 | 0.09 | 0.00 | 0.00 | | |
| Horizontal | Max Tension | 9 | 11558.97 | 0.00 | 0.00 | | | |
| | Max. Compression | 9 | -11282.97 | -0.11 | -0.00 | | | |
| | Max. Mx | 25 | 698.44 | -0.18 | -0.01 | | | |
| | Max. My | 6 | 634.19 | -0.09 | 0.02 | | | |
| | Max. Vy | 25 | -74.24 | -0.18 | -0.01 | | | |
| | Max. Vx | 10 | -1.74 | -0.09 | 0.02 | | | |
| | Inner Bracing | Max Tension | 1 | 0.00 | 0.00 | 0.00 | | |

| | | | | |
|---|----------------|----------|--------------------|-------------------|
| tnxTower Destek Engineering, LLC 1281 Kennestone Circle, Suite 100 Marietta, GA 30066 Phone: (770) 693 0835 FAX: | Job | CT11680A | Page | 36 of 58 |
| | Project | 1517045 | Date | 16:33:57 10/23/15 |
| | Client | T-Mobile | Designed by | Ahmet Colakoglu |

| Section No. | Elevation ft | Component Type | Condition | Gov. Load Comb. | Force lb | Major Axis Moment kip-ft | Minor Axis Moment kip-ft | |
|-----------------------------|------------------|-----------------------|------------------|------------------|------------|--------------------------|--------------------------|-------|
| T7 | 120 - 100 | Leg | Max. Compression | 17 | -11.55 | 0.00 | 0.00 | |
| | | | Max. Mx | 14 | -10.09 | -0.21 | 0.00 | |
| | | | Max. My | 2 | -1.37 | 0.00 | -0.00 | |
| | | | Max. Vy | 14 | 70.34 | 0.00 | 0.00 | |
| | | | Max. Vx | 2 | 0.09 | 0.00 | 0.00 | |
| | | | Max Tension | 12 | 97216.17 | -0.60 | -0.03 | |
| | | | Max. Compression | 2 | -128430.43 | -2.62 | 0.28 | |
| | | | Max. Mx | 2 | -127920.77 | 3.12 | -0.20 | |
| | | | Max. My | 5 | -15764.78 | -0.83 | 3.40 | |
| | | | Max. Vy | 2 | 703.36 | 3.12 | -0.20 | |
| | | | Max. Vx | 5 | -693.84 | -0.83 | 3.40 | |
| | | | Max Tension | 3 | 21475.84 | 0.00 | 0.00 | |
| | | Diagonal | Max. Compression | 9 | -22122.97 | 0.00 | 0.00 | |
| | | | Max. Mx | 23 | -250.14 | -0.20 | 0.00 | |
| | | | Max. My | 10 | 18427.42 | -0.09 | 0.06 | |
| | | | Max. Vy | 23 | -83.19 | -0.20 | 0.00 | |
| | | | Max. Vx | 9 | -7.31 | -0.11 | 0.06 | |
| | | | Max Tension | 9 | 12268.62 | 0.00 | 0.00 | |
| | | | Horizontal | Max. Compression | 9 | -12322.84 | -0.12 | -0.00 |
| | | | | Max. Mx | 25 | -772.45 | -0.21 | -0.01 |
| | | | | Max. My | 10 | 1578.22 | -0.10 | 0.02 |
| | | | | Max. Vy | 25 | 77.85 | -0.21 | -0.01 |
| | | | | Max. Vx | 10 | -1.62 | -0.10 | 0.02 |
| | | | | Max Tension | 2 | 2228.82 | 0.00 | 0.00 |
| | | Redund Horz 1 Bracing | Max. Compression | 2 | -2228.82 | 0.00 | 0.00 | |
| | | | Max. Mx | 14 | 429.43 | 0.03 | 0.00 | |
| | | | Max. My | 3 | 82.11 | 0.00 | 0.00 | |
| | | | Max. Vy | 14 | -17.78 | 0.00 | 0.00 | |
| | | | Max. Vx | 3 | -0.00 | 0.00 | 0.00 | |
| | | | Max Tension | 2 | 2036.08 | 0.00 | 0.00 | |
| | | Redund Diag 1 Bracing | Max. Compression | 2 | -2036.08 | 0.00 | 0.00 | |
| | | | Max. Mx | 26 | 914.52 | 0.05 | 0.00 | |
| Max. My | 9 | | 1768.96 | 0.00 | -0.00 | | | |
| Max. Vy | 26 | | -16.08 | 0.00 | 0.00 | | | |
| Max. Vx | 9 | | 0.04 | 0.00 | 0.00 | | | |
| Max Tension | 1 | | 0.00 | 0.00 | 0.00 | | | |
| Redund Hip 1 Bracing | Max. Compression | 9 | -35.56 | 0.00 | 0.00 | | | |
| | Max. Mx | 14 | -13.70 | 0.03 | 0.00 | | | |
| | Max. My | 9 | -7.08 | 0.00 | -0.00 | | | |
| | Max. Vy | 14 | -17.78 | 0.00 | 0.00 | | | |
| | Max. Vx | 9 | 0.00 | 0.00 | 0.00 | | | |
| | Max Tension | 9 | 76.33 | 0.00 | 0.00 | | | |
| Redund Hip Diagonal Bracing | Max. Compression | 17 | -56.23 | 0.00 | 0.00 | | | |
| | Max. Mx | 15 | 50.65 | 0.21 | 0.00 | | | |
| | Max. My | 5 | 25.92 | 0.00 | 0.00 | | | |
| | Max. Vy | 15 | -55.08 | 0.00 | 0.00 | | | |
| | Max. Vx | 5 | -0.06 | 0.00 | 0.00 | | | |
| | Max Tension | 9 | 1.36 | 0.00 | 0.00 | | | |
| | Inner Bracing | Max. Compression | 9 | -18.36 | 0.00 | 0.00 | | |
| | | Max. Mx | 14 | -10.12 | 0.14 | 0.00 | | |
| | | Max. My | 2 | -1.78 | 0.00 | 0.00 | | |
| | | Max. Vy | 14 | -44.62 | 0.00 | 0.00 | | |
| | | Max. Vx | 2 | 0.06 | 0.00 | 0.00 | | |
| | | Max Tension | 12 | 123663.84 | 0.95 | -0.04 | | |
| T8 | 100 - 80 | Leg | Max. Compression | 2 | -160393.53 | -2.35 | 0.45 | |
| | | | Max. Mx | 2 | -159924.46 | 3.36 | -0.31 | |
| | | | Max. My | 5 | -18318.89 | -0.97 | 4.83 | |
| | | | Max. Vy | 5 | -18318.89 | -0.97 | 4.83 | |

| | | | | |
|---|----------------|----------|--------------------|-------------------|
| tnxTower Destek Engineering, LLC 1281 Kennestone Circle, Suite 100 Marietta, GA 30066 Phone: (770) 693 0835 FAX: | Job | CT11680A | Page | 37 of 58 |
| | Project | 1517045 | Date | 16:33:57 10/23/15 |
| | Client | T-Mobile | Designed by | Ahmet Colakoglu |

| Section No. | Elevation ft | Component Type | Condition | Gov. Load Comb. | Force lb | Major Axis Moment kip-ft | Minor Axis Moment kip-ft |
|-------------|--------------|-----------------------------|------------------|-----------------|------------|--------------------------|--------------------------|
| | | | Max. Vy | 2 | -682.10 | 3.36 | -0.31 |
| | | | Max. Vx | 5 | -917.22 | -0.97 | 4.83 |
| | | Diagonal | Max Tension | 3 | 21403.87 | 0.00 | 0.00 |
| | | | Max. Compression | 9 | -22007.50 | 0.00 | 0.00 |
| | | | Max. Mx | 23 | -371.96 | -0.14 | -0.01 |
| | | | Max. My | 4 | -18407.64 | -0.10 | -0.08 |
| | | | Max. Vy | 23 | -56.91 | -0.14 | -0.01 |
| | | | Max. Vx | 4 | -6.53 | 0.00 | 0.00 |
| | | Horizontal | Max Tension | 9 | 12986.67 | 0.00 | 0.00 |
| | | | Max. Compression | 9 | -13118.39 | -0.19 | 0.00 |
| | | | Max. Mx | 25 | -925.68 | -0.31 | -0.01 |
| | | | Max. My | 6 | 1311.74 | -0.15 | 0.03 |
| | | | Max. Vy | 25 | 106.19 | -0.31 | -0.01 |
| | | | Max. Vx | 10 | -2.24 | -0.15 | 0.03 |
| | | Redund Horz 1 Bracing | Max Tension | 2 | 2784.18 | 0.00 | 0.00 |
| | | | Max. Compression | 2 | -2784.18 | 0.00 | 0.00 |
| | | | Max. Mx | 14 | 501.93 | 0.03 | 0.00 |
| | | | Max. My | 10 | 2774.42 | 0.00 | 0.00 |
| | | | Max. Vy | 14 | -19.23 | 0.00 | 0.00 |
| | | | Max. Vx | 10 | -0.00 | 0.00 | 0.00 |
| | | Redund Diag 1 Bracing | Max Tension | 2 | 2374.33 | 0.00 | 0.00 |
| | | | Max. Compression | 2 | -2374.33 | 0.00 | 0.00 |
| | | | Max. Mx | 26 | 1034.44 | 0.06 | 0.00 |
| | | | Max. My | 9 | 2058.47 | 0.00 | -0.00 |
| | | | Max. Vy | 26 | -21.93 | 0.00 | 0.00 |
| | | | Max. Vx | 9 | 0.04 | 0.00 | 0.00 |
| | | Redund Hip 1 Bracing | Max Tension | 1 | 0.00 | 0.00 | 0.00 |
| | | | Max. Compression | 9 | -43.59 | 0.00 | 0.00 |
| | | | Max. Mx | 14 | -10.49 | 0.03 | 0.00 |
| | | | Max. My | 2 | -33.53 | 0.00 | -0.00 |
| | | | Max. Vy | 14 | 19.23 | 0.00 | 0.00 |
| | | | Max. Vx | 2 | 0.00 | 0.00 | 0.00 |
| | | Redund Hip Diagonal Bracing | Max Tension | 9 | 92.42 | 0.00 | 0.00 |
| | | | Max. Compression | 18 | -57.68 | 0.00 | 0.00 |
| | | | Max. Mx | 15 | 52.08 | 0.24 | 0.00 |
| | | | Max. My | 2 | 39.06 | 0.00 | 0.00 |
| | | | Max. Vy | 15 | 59.75 | 0.00 | 0.00 |
| | | | Max. Vx | 2 | -0.05 | 0.00 | 0.00 |
| | | Inner Bracing | Max Tension | 9 | 2.38 | 0.00 | 0.00 |
| | | | Max. Compression | 9 | -24.93 | 0.00 | 0.00 |
| | | | Max. Mx | 14 | -12.19 | 0.29 | 0.00 |
| | | | Max. My | 2 | -3.48 | 0.00 | 0.00 |
| | | | Max. Vy | 14 | -83.56 | 0.00 | 0.00 |
| | | | Max. Vx | 2 | -0.11 | 0.00 | 0.00 |
| T9 | 80 - 60 | Leg | Max Tension | 12 | 149297.20 | 0.43 | -0.05 |
| | | | Max. Compression | 2 | -191896.55 | -1.38 | 0.59 |
| | | | Max. Mx | 2 | -191303.90 | 3.65 | -0.49 |
| | | | Max. My | 5 | -21124.24 | -1.26 | 7.70 |
| | | | Max. Vy | 2 | -693.54 | 3.65 | -0.49 |
| | | | Max. Vx | 5 | -1349.56 | -1.26 | 7.70 |
| | | Diagonal | Max Tension | 3 | 22550.27 | 0.00 | 0.00 |
| | | | Max. Compression | 3 | -23093.80 | -0.11 | -0.07 |
| | | | Max. Mx | 22 | -3482.99 | -0.15 | -0.02 |
| | | | Max. My | 4 | -18989.30 | -0.12 | -0.07 |
| | | | Max. Vy | 23 | -60.93 | -0.15 | -0.01 |
| | | | Max. Vx | 10 | 5.75 | 0.00 | 0.00 |
| | | Horizontal | Max Tension | 9 | 14474.70 | 0.00 | 0.00 |

| | | | | |
|---|----------------|----------|--------------------|-------------------|
| tnxTower Destek Engineering, LLC 1281 Kennestone Circle, Suite 100 Marietta, GA 30066 Phone: (770) 693 0835 FAX: | Job | CT11680A | Page | 38 of 58 |
| | Project | 1517045 | Date | 16:33:57 10/23/15 |
| | Client | T-Mobile | Designed by | Ahmet Colakoglu |

| Section No. | Elevation ft | Component Type | Condition | Gov. Load Comb. | Force lb | Major Axis Moment kip-ft | Minor Axis Moment kip-ft |
|-----------------------|------------------|-----------------------------|------------------|-----------------|------------|--------------------------|--------------------------|
| T10 | 60 - 30 | Redund Horz 1 Bracing | Max. Compression | 9 | -14424.44 | -0.23 | -0.00 |
| | | | Max. Mx | 25 | -1080.43 | -0.36 | -0.01 |
| | | | Max. My | 6 | 906.28 | -0.20 | 0.03 |
| | | | Max. Vy | 25 | 114.12 | -0.36 | -0.01 |
| | | | Max. Vx | 10 | -1.97 | -0.20 | 0.03 |
| | | | Max Tension | 2 | 3330.22 | 0.00 | 0.00 |
| | | | Max. Compression | 2 | -3330.22 | 0.00 | 0.00 |
| | | | Max. Mx | 14 | 575.61 | 0.04 | 0.00 |
| | | | Max. My | 11 | 2878.32 | 0.00 | -0.00 |
| | | | Max. Vy | 14 | -20.66 | 0.00 | 0.00 |
| | | | Max. Vx | 11 | 0.00 | 0.00 | 0.00 |
| | | | Max Tension | 2 | 2676.38 | 0.00 | 0.00 |
| | | Redund Diag 1 Bracing | Max. Compression | 2 | -2676.38 | 0.00 | 0.00 |
| | | | Max. Mx | 26 | 1145.09 | 0.07 | 0.00 |
| | | | Max. My | 9 | 2316.76 | 0.00 | -0.00 |
| | | | Max. Vy | 26 | -23.93 | 0.00 | 0.00 |
| | | | Max. Vx | 9 | 0.04 | 0.00 | 0.00 |
| | | | Max Tension | 1 | 0.00 | 0.00 | 0.00 |
| | | Redund Hip 1 Bracing | Max. Compression | 9 | -40.65 | 0.00 | 0.00 |
| | | | Max. Mx | 14 | -10.49 | 0.04 | 0.00 |
| | | | Max. My | 14 | -20.66 | 0.00 | 0.00 |
| | | | Max. Vy | 2 | 0.00 | 0.00 | 0.00 |
| | | | Max. Vx | 9 | 96.29 | 0.00 | 0.00 |
| | | Redund Hip Diagonal Bracing | Max. Compression | 18 | -69.22 | 0.00 | 0.00 |
| | | | Max. Mx | 15 | 61.97 | 0.34 | 0.00 |
| | | | Max. My | 2 | 49.31 | 0.00 | 0.00 |
| | | | Max. Vy | 15 | -80.51 | 0.00 | 0.00 |
| | | | Max. Vx | 2 | -0.05 | 0.00 | 0.00 |
| | | Inner Bracing | Max Tension | 9 | 2.21 | 0.00 | 0.00 |
| | | | Max. Compression | 9 | -25.10 | 0.00 | 0.00 |
| | | | Max. Mx | 14 | -12.20 | 0.34 | 0.00 |
| | | | Max. My | 2 | -4.95 | 0.00 | 0.00 |
| | | | Max. Vy | 14 | -90.35 | 0.00 | 0.00 |
| | | | Max. Vx | 2 | -0.10 | 0.00 | 0.00 |
| | | | Max Tension | 12 | 175513.84 | -1.03 | -0.06 |
| | | | Max. Compression | 2 | -224225.90 | -1.59 | 1.27 |
| | | Diagonal | Max. Mx | 2 | -223650.11 | 5.56 | -0.64 |
| | | | Max. My | 5 | -24665.52 | -1.96 | 13.41 |
| | | | Max. Vy | 2 | 795.87 | 5.56 | -0.64 |
| | | | Max. Vx | 5 | -1966.27 | -1.96 | 13.41 |
| | | | Max Tension | 9 | 29811.77 | 0.00 | 0.00 |
| | | | Max. Compression | 9 | -30337.89 | -0.11 | 0.07 |
| Horizontal | Max. Mx | 3 | -30185.76 | -0.12 | 0.10 | | |
| | Max. My | 3 | -29929.26 | 0.01 | -0.17 | | |
| | Max. Vy | 16 | 44.09 | -0.10 | 0.03 | | |
| | Max. Vx | 3 | 23.38 | 0.01 | -0.17 | | |
| | Max Tension | 9 | 15586.32 | 0.00 | 0.00 | | |
| | Max. Compression | 9 | -15633.84 | -0.27 | 0.00 | | |
| Redund Horz 1 Bracing | Max. Mx | 25 | -1254.06 | -0.42 | -0.01 | | |
| | Max. My | 6 | 1084.61 | -0.22 | 0.03 | | |
| | Max. Vy | 25 | 121.20 | -0.42 | -0.01 | | |
| | Max. Vx | 10 | -1.83 | -0.22 | 0.03 | | |
| | Max Tension | 2 | 3891.27 | 0.00 | 0.00 | | |
| | Max. Compression | 2 | -3891.27 | 0.00 | 0.00 | | |
| Max. Mx | 14 | 797.93 | 0.02 | 0.00 | | | |
| Max. Vy | 14 | -14.41 | 0.00 | 0.00 | | | |

| | | | | |
|---|----------------|----------|--------------------|-------------------|
| tnxTower Destek Engineering, LLC 1281 Kennestone Circle, Suite 100 Marietta, GA 30066 Phone: (770) 693 0835 FAX: | Job | CT11680A | Page | 39 of 58 |
| | Project | 1517045 | Date | 16:33:57 10/23/15 |
| | Client | T-Mobile | Designed by | Ahmet Colakoglu |

| Section No. | Elevation ft | Component Type | Condition | Gov. Load Comb. | Force lb | Major Axis Moment kip-ft | Minor Axis Moment kip-ft |
|-------------|--------------|-----------------------------|------------------|-----------------|------------|--------------------------|--------------------------|
| | | Redund Horz 2 Bracing | Max. Vx | 2 | 0.00 | 0.00 | 0.00 |
| | | | Max Tension | 2 | 3891.27 | 0.00 | 0.00 |
| | | Redund Horz 2 Bracing | Max. Compression | 2 | -3891.27 | 0.00 | 0.00 |
| | | | Max. Mx | 14 | 797.93 | 0.10 | 0.00 |
| | | | Max. My | 2 | 3891.27 | 0.00 | 0.00 |
| | | | Max. Vy | 14 | -36.42 | 0.00 | 0.00 |
| | | | Max. Vx | 2 | -0.00 | 0.00 | 0.00 |
| | | | Max Tension | 2 | 3953.55 | 0.00 | 0.00 |
| | | Redund Diag 1 Bracing | Max. Compression | 2 | -3953.55 | 0.00 | 0.00 |
| | | | Max. Mx | 22 | 1652.62 | 0.04 | 0.00 |
| | | | Max. My | 9 | 3418.69 | 0.00 | -0.00 |
| | | | Max. Vy | 22 | -12.82 | 0.00 | 0.00 |
| | | | Max. Vx | 9 | -0.02 | 0.00 | 0.00 |
| | | | Max Tension | 2 | 2555.50 | 0.00 | 0.00 |
| | | Redund Diag 2 Bracing | Max. Compression | 2 | -2555.50 | 0.00 | 0.00 |
| | | | Max. Mx | 15 | 1206.87 | 0.12 | 0.00 |
| | | | Max. My | 3 | 2219.07 | 0.00 | 0.00 |
| | | | Max. Vy | 15 | -34.38 | 0.00 | 0.00 |
| | | | Max. Vx | 3 | -0.03 | 0.00 | 0.00 |
| | | | Max Tension | 9 | 9.64 | 0.00 | 0.00 |
| | | Redund Hip 1 Bracing | Max. Compression | 9 | -102.97 | 0.00 | 0.00 |
| | | | Max. Mx | 14 | -6.02 | 0.02 | 0.00 |
| | | | Max. Vy | 14 | -14.41 | 0.00 | 0.00 |
| | | | Max. Vx | 9 | 0.00 | 0.00 | 0.00 |
| | | Redund Hip 2 Bracing | Max Tension | 4 | 14.41 | 0.00 | 0.00 |
| | | | Max. Compression | 4 | -48.30 | 0.00 | 0.00 |
| | | | Max. Mx | 14 | -10.85 | 0.08 | 0.00 |
| | | | Max. My | 10 | -28.50 | 0.00 | 0.00 |
| | | | Max. Vy | 14 | -28.82 | 0.00 | 0.00 |
| | | Redund Hip Diagonal Bracing | Max. Vx | 10 | -0.00 | 0.00 | 0.00 |
| | | | Max Tension | 9 | 226.10 | 0.00 | 0.00 |
| | | | Max. Compression | 5 | -90.86 | 0.00 | 0.00 |
| | | | Max. Mx | 15 | 56.67 | 0.38 | 0.00 |
| | | | Max. My | 5 | 6.45 | 0.00 | 0.00 |
| | | Inner Bracing | Max. Vy | 15 | -85.82 | 0.00 | 0.00 |
| | | | Max. Vx | 5 | -0.06 | 0.00 | 0.00 |
| | | | Max Tension | 8 | 14.18 | 0.00 | 0.00 |
| | | | Max. Compression | 4 | -35.36 | 0.00 | 0.00 |
| | | | Max. Mx | 14 | -11.08 | 0.39 | 0.00 |
| | | Leg | Max. My | 2 | 2.02 | 0.00 | 0.00 |
| | | | Max. Vy | 14 | 95.63 | 0.00 | 0.00 |
| | | | Max. Vx | 2 | -0.09 | 0.00 | 0.00 |
| T11 | 30 - 0 | | Max Tension | 12 | 212582.12 | -2.34 | -0.13 |
| | | | Max. Compression | 2 | -271016.85 | -0.00 | 0.00 |
| | | | Max. Mx | 2 | -270370.42 | 9.32 | -0.42 |
| | | | Max. My | 5 | -27309.32 | -1.96 | 13.40 |
| | | | Max. Vy | 2 | 1020.40 | 9.32 | -0.42 |
| | | | Max. Vx | 5 | 1745.01 | -1.96 | 13.40 |
| | | | Max Tension | 9 | 30768.77 | -0.23 | 0.16 |
| | | Diagonal | Max. Compression | 9 | -32228.63 | 0.00 | 0.00 |
| | | | Max. Mx | 4 | 23658.10 | -0.27 | 0.12 |
| | | | Max. My | 3 | -31191.28 | 0.08 | -0.18 |
| | | | Max. Vy | 22 | 87.40 | -0.20 | 0.00 |
| | | | Max. Vx | 3 | 25.63 | -0.20 | 0.10 |
| | | Horizontal | Max Tension | 9 | 16904.32 | 0.00 | 0.00 |

| | | | | |
|---|----------------|----------|--------------------|-------------------|
| tnxTower Destek Engineering, LLC 1281 Kennestone Circle, Suite 100 Marietta, GA 30066 Phone: (770) 693 0835 FAX: | Job | CT11680A | Page | 40 of 58 |
| | Project | 1517045 | Date | 16:33:57 10/23/15 |
| | Client | T-Mobile | Designed by | Ahmet Colakoglu |

| Section No. | Elevation ft | Component Type | Condition | Gov. Load Comb. | Force lb | Major Axis Moment kip-ft | Minor Axis Moment kip-ft |
|-------------|--------------|-----------------------------|------------------|-----------------|-----------|--------------------------|--------------------------|
| | | | Max. Compression | 9 | -17681.58 | -0.40 | 0.00 |
| | | | Max. Mx | 25 | 1532.07 | -0.57 | -0.01 |
| | | | Max. My | 6 | 1833.97 | -0.33 | 0.04 |
| | | | Max. Vy | 25 | -154.52 | -0.57 | -0.01 |
| | | | Max. Vx | 10 | -2.26 | -0.33 | 0.04 |
| | | Redund Horz 1 Bracing | Max Tension | 2 | 4703.30 | 0.00 | 0.00 |
| | | | Max. Compression | 2 | -4703.30 | 0.00 | 0.00 |
| | | | Max. Mx | 21 | 1499.20 | 0.02 | 0.00 |
| | | | Max. Vy | 21 | 15.69 | 0.00 | 0.00 |
| | | | Max. Vx | 2 | 0.00 | 0.00 | 0.00 |
| | | Redund Horz 2 Bracing | Max Tension | 2 | 4703.30 | 0.00 | 0.00 |
| | | | Max. Compression | 2 | -4703.30 | 0.00 | 0.00 |
| | | | Max. Mx | 18 | 1826.78 | 0.12 | 0.00 |
| | | | Max. Vy | 18 | -39.75 | 0.00 | 0.00 |
| | | | Max. Vx | 3 | -0.00 | 0.00 | 0.00 |
| | | Redund Diag 1 Bracing | Max Tension | 2 | 4399.14 | 0.00 | 0.00 |
| | | | Max. Compression | 2 | -4399.14 | 0.00 | 0.00 |
| | | | Max. Mx | 15 | 2060.36 | 0.07 | 0.00 |
| | | | Max. My | 16 | 350.32 | 0.00 | 0.00 |
| | | | Max. Vy | 15 | -23.10 | 0.00 | 0.00 |
| | | | Max. Vx | 16 | 1.75 | 0.00 | 0.00 |
| | | Redund Diag 2 Bracing | Max Tension | 2 | 2949.97 | 0.00 | 0.00 |
| | | | Max. Compression | 2 | -2949.97 | 0.00 | 0.00 |
| | | | Max. Mx | 15 | 1381.64 | 0.18 | 0.00 |
| | | | Max. My | 22 | 518.12 | 0.00 | -0.01 |
| | | | Max. Vy | 15 | 46.60 | 0.00 | 0.00 |
| | | | Max. Vx | 22 | -2.23 | 0.00 | 0.00 |
| | | Redund Hip 1 Bracing | Max Tension | 9 | 5.52 | 0.00 | 0.00 |
| | | | Max. Compression | 9 | -91.20 | 0.00 | 0.00 |
| | | | Max. Mx | 14 | -11.39 | 0.02 | 0.00 |
| | | | Max. Vy | 14 | -15.69 | 0.00 | 0.00 |
| | | | Max. Vx | 6 | -0.00 | 0.00 | 0.00 |
| | | Redund Hip 2 Bracing | Max Tension | 4 | 3.55 | 0.00 | 0.00 |
| | | | Max. Compression | 4 | -34.26 | 0.00 | 0.00 |
| | | | Max. Mx | 14 | -18.22 | 0.12 | 0.00 |
| | | | Max. Vy | 14 | -39.75 | 0.00 | 0.00 |
| | | | Max. Vx | 10 | -0.00 | 0.00 | 0.00 |
| | | Redund Hip Diagonal Bracing | Max Tension | 9 | 166.04 | 0.00 | 0.00 |
| | | | Max. Compression | 5 | -78.82 | 0.00 | 0.00 |
| | | | Max. Mx | 24 | 56.29 | 0.45 | 0.00 |
| | | | Max. My | 2 | 25.44 | 0.00 | 0.00 |
| | | | Max. Vy | 24 | -94.01 | 0.00 | 0.00 |
| | | | Max. Vx | 2 | -0.03 | 0.00 | 0.00 |
| | | Inner Bracing | Max Tension | 11 | 8.17 | 0.00 | 0.00 |
| | | | Max. Compression | 3 | -29.22 | 0.00 | 0.00 |
| | | | Max. Mx | 14 | -14.88 | 0.48 | 0.00 |
| | | | Max. My | 2 | 5.34 | 0.00 | 0.00 |
| | | | Max. Vy | 14 | -104.96 | 0.00 | 0.00 |
| | | | Max. Vx | 2 | -0.06 | 0.00 | 0.00 |

| | | |
|---|---------------------------|---------------------------------------|
| tnxTower Destek Engineering, LLC 1281 Kennestone Circle, Suite 100 Marietta, GA 30066 Phone: (770) 693 0835 FAX: | Job CT11680A | Page 41 of 58 |
| | Project 1517045 | Date 16:33:57 10/23/15 |
| | Client T-Mobile | Designed by Ahmet Colakoglu |

Maximum Reactions

| Location | Condition | Gov. Load Comb. | Vertical lb | Horizontal, X lb | Horizontal, Z lb |
|----------|---------------------|-----------------|-------------|------------------|------------------|
| Leg C | Max. Vert | 10 | 315426.57 | 40748.64 | -24749.58 |
| | Max. H _x | 10 | 315426.57 | 40748.64 | -24749.58 |
| | Max. H _z | 3 | -212341.56 | -28224.37 | 22862.23 |
| | Min. Vert | 4 | -248097.47 | -35459.24 | 21635.38 |
| | Min. H _x | 4 | -248097.47 | -35459.24 | 21635.38 |
| | Min. H _z | 9 | 272979.03 | 32620.48 | -25270.14 |
| Leg B | Max. Vert | 6 | 313317.01 | -41161.97 | -23873.39 |
| | Max. H _x | 12 | -249411.71 | 35843.83 | 20802.63 |
| | Max. H _z | 13 | -213575.00 | 28893.05 | 21447.57 |
| | Min. Vert | 12 | -249411.71 | 35843.83 | 20802.63 |
| | Min. H _x | 6 | 313317.01 | -41161.97 | -23873.39 |
| | Min. H _z | 6 | 313317.01 | -41161.97 | -23873.39 |
| Leg A | Max. Vert | 2 | 316142.06 | -965.88 | 47657.57 |
| | Max. H _x | 11 | 31118.50 | 9692.89 | 2673.67 |
| | Max. H _z | 2 | 316142.06 | -965.88 | 47657.57 |
| | Min. Vert | 8 | -247286.89 | 913.81 | -41448.33 |
| | Min. H _x | 5 | 31603.68 | -9760.16 | 2789.45 |
| | Min. H _z | 8 | -247286.89 | 913.81 | -41448.33 |

Tower Mast Reaction Summary

| Load Combination | Vertical lb | Shear _x lb | Shear _z lb | Overturning Moment, M _x kip-ft | Overturning Moment, M _z kip-ft | Torque kip-ft |
|----------------------------|-------------|-----------------------|-----------------------|---|---|---------------|
| Dead Only | 90122.57 | 0.00 | 0.00 | -39.10 | 35.31 | 0.00 |
| Dead+Wind 0 deg - No Ice | 90122.57 | 238.07 | -81660.36 | -9992.60 | 24.14 | -64.61 |
| Dead+Wind 30 deg - No Ice | 90122.57 | 40157.08 | -69283.01 | -8511.65 | -4861.08 | -76.59 |
| Dead+Wind 60 deg - No Ice | 90122.57 | 68861.11 | -39822.59 | -4911.00 | -8381.95 | -70.60 |
| Dead+Wind 90 deg - No Ice | 90122.57 | 80020.92 | -196.26 | -54.58 | -9739.68 | -46.92 |
| Dead+Wind 120 deg - No Ice | 90122.57 | 70753.70 | 40668.22 | 4936.11 | -8574.66 | -8.63 |
| Dead+Wind 150 deg - No Ice | 90122.57 | 39869.96 | 69214.04 | 8433.30 | -4839.70 | 32.24 |
| Dead+Wind 180 deg - No Ice | 90122.57 | -73.89 | 79409.33 | 9686.17 | 43.08 | 63.26 |
| Dead+Wind 210 deg - No Ice | 90122.57 | -40001.25 | 69324.61 | 8441.72 | 4923.86 | 78.06 |
| Dead+Wind 240 deg - No Ice | 90122.57 | -70711.93 | 40919.05 | 4952.03 | 8650.55 | 73.23 |
| Dead+Wind 270 deg - No Ice | 90122.57 | -79953.80 | 26.22 | -37.64 | 9808.95 | 45.48 |
| Dead+Wind 300 deg - No Ice | 90122.57 | -68707.74 | -39648.76 | -4896.68 | 8443.23 | 7.34 |
| Dead+Wind 330 deg - No Ice | 90122.57 | -39900.76 | -69167.20 | -8503.05 | 4915.79 | -32.26 |
| Dead+Ice+Temp | 165099.43 | 0.04 | 0.04 | -114.55 | 126.99 | 0.00 |
| Dead+Wind 0 deg+Ice+Temp | 165099.43 | 49.29 | -24794.92 | -3112.60 | 125.07 | -20.04 |
| Dead+Wind 30 deg+Ice+Temp | 165099.43 | 11663.31 | -20149.84 | -2581.20 | -1297.25 | -18.42 |
| Dead+Wind 60 deg+Ice+Temp | 165099.43 | 19716.25 | -11399.13 | -1515.52 | -2293.90 | -13.34 |
| Dead+Wind 90 deg+Ice+Temp | 165099.43 | 23266.47 | -40.42 | -117.81 | -2718.12 | -5.49 |
| Dead+Wind 120 deg+Ice+Temp | 165099.43 | 21476.06 | 12364.19 | 1384.07 | -2466.12 | 4.87 |
| Dead+Wind 150 deg+Ice+Temp | 165099.43 | 11604.61 | 20137.42 | 2351.91 | -1292.97 | 13.50 |
| Dead+Wind 180 deg+Ice+Temp | 165099.43 | -13.66 | 22751.31 | 2683.31 | 128.61 | 18.11 |
| Dead+Wind 210 deg+Ice+Temp | 165099.43 | -11628.97 | 20159.04 | 2353.54 | 1549.88 | 18.74 |
| Dead+Wind 240 deg+Ice+Temp | 165099.43 | -21464.62 | 12414.50 | 1387.02 | 2721.41 | 15.17 |
| Dead+Wind 270 deg+Ice+Temp | 165099.43 | -23251.88 | 3.12 | -114.74 | 2972.26 | 5.17 |
| Dead+Wind 300 deg+Ice+Temp | 165099.43 | -19685.31 | -11365.50 | -1512.92 | 2546.61 | -4.78 |
| Dead+Wind 330 deg+Ice+Temp | 165099.43 | -11611.77 | -20127.07 | -2579.55 | 1548.64 | -13.50 |
| Dead+Wind 0 deg - Service | 90122.57 | 82.38 | -28256.19 | -3483.25 | 31.47 | -22.36 |
| Dead+Wind 30 deg - Service | 90122.57 | 13895.17 | -23973.37 | -2970.81 | -1658.91 | -26.50 |
| Dead+Wind 60 deg - Service | 90122.57 | 23827.37 | -13779.45 | -1724.90 | -2877.22 | -24.43 |
| Dead+Wind 90 deg - Service | 90122.57 | 27688.90 | -67.91 | -44.47 | -3347.01 | -16.24 |

| | | | | |
|---|----------------|----------|--------------------|-------------------|
| tnxTower Destek Engineering, LLC 1281 Kennestone Circle, Suite 100 Marietta, GA 30066 Phone: (770) 693 0835 FAX: | Job | CT11680A | Page | 42 of 58 |
| | Project | 1517045 | Date | 16:33:57 10/23/15 |
| | Client | T-Mobile | Designed by | Ahmet Colakoglu |

| Load Combination | Vertical lb | Shear _x lb | Shear _z lb | Overturning Moment, M _x kip-ft | Overturning Moment, M _z kip-ft | Torque kip-ft |
|-----------------------------|----------------|--------------------------|--------------------------|--|--|------------------|
| Dead+Wind 120 deg - Service | 90122.57 | 24482.26 | 14072.05 | 1682.40 | -2943.88 | -2.99 |
| Dead+Wind 150 deg - Service | 90122.57 | 13795.84 | 23949.50 | 2892.50 | -1651.52 | 11.15 |
| Dead+Wind 180 deg - Service | 90122.57 | -25.57 | 27477.27 | 3326.03 | 38.04 | 21.89 |
| Dead+Wind 210 deg - Service | 90122.57 | -13841.27 | 23987.75 | 2895.43 | 1726.89 | 27.01 |
| Dead+Wind 240 deg - Service | 90122.57 | -24467.80 | 14158.84 | 1687.92 | 3016.41 | 25.34 |
| Dead+Wind 270 deg - Service | 90122.57 | -27665.67 | 9.08 | -38.60 | 3417.24 | 15.73 |
| Dead+Wind 300 deg - Service | 90122.57 | -23774.30 | -13719.29 | -1719.99 | 2944.74 | 2.53 |
| Dead+Wind 330 deg - Service | 90122.57 | -13806.49 | -23933.28 | -2967.85 | 1724.10 | -11.16 |

Solution Summary

| Load Comb. | Sum of Applied Forces | | | Sum of Reactions | | | % Error |
|------------|-----------------------|------------|-----------|------------------|-----------|-----------|---------|
| | PX lb | PY lb | PZ lb | PX lb | PY lb | PZ lb | |
| 1 | -0.00 | -90122.57 | -0.00 | -0.00 | 90122.57 | -0.00 | 0.000% |
| 2 | 238.06 | -90122.57 | -81661.12 | -238.07 | 90122.57 | 81660.36 | 0.001% |
| 3 | 40157.39 | -90122.57 | -69283.68 | -40157.08 | 90122.57 | 69283.01 | 0.001% |
| 4 | 68861.68 | -90122.57 | -39822.97 | -68861.11 | 90122.57 | 39822.59 | 0.001% |
| 5 | 80021.61 | -90122.57 | -196.26 | -80020.92 | 90122.57 | 196.26 | 0.001% |
| 6 | 70754.34 | -90122.57 | 40668.60 | -70753.70 | 90122.57 | -40668.22 | 0.001% |
| 7 | 39870.33 | -90122.57 | 69214.65 | -39869.96 | 90122.57 | -69214.04 | 0.001% |
| 8 | -73.91 | -90122.57 | 79410.00 | 73.89 | 90122.57 | -79409.33 | 0.001% |
| 9 | -40001.65 | -90122.57 | 69325.18 | 40001.25 | 90122.57 | -69324.61 | 0.001% |
| 10 | -70712.60 | -90122.57 | 40919.38 | 70711.93 | 90122.57 | -40919.05 | 0.001% |
| 11 | -79954.52 | -90122.57 | 26.23 | 79953.80 | 90122.57 | -26.22 | 0.001% |
| 12 | -68708.32 | -90122.57 | -39649.09 | 68707.74 | 90122.57 | 39648.76 | 0.001% |
| 13 | -39901.10 | -90122.57 | -69167.82 | 39900.76 | 90122.57 | 69167.20 | 0.001% |
| 14 | -0.00 | -165099.43 | -0.00 | -0.04 | 165099.43 | -0.04 | 0.000% |
| 15 | 49.27 | -165099.43 | -24795.33 | -49.29 | 165099.43 | 24794.92 | 0.000% |
| 16 | 11663.47 | -165099.43 | -20150.18 | -11663.31 | 165099.43 | 20149.84 | 0.000% |
| 17 | 19716.55 | -165099.43 | -11399.34 | -19716.25 | 165099.43 | 11399.13 | 0.000% |
| 18 | 23266.82 | -165099.43 | -40.44 | -23266.47 | 165099.43 | 40.42 | 0.000% |
| 19 | 21476.37 | -165099.43 | 12364.37 | -21476.06 | 165099.43 | -12364.19 | 0.000% |
| 20 | 11604.77 | -165099.43 | 20137.73 | -11604.61 | 165099.43 | -20137.42 | 0.000% |
| 21 | -13.68 | -165099.43 | 22751.66 | 13.66 | 165099.43 | -22751.31 | 0.000% |
| 22 | -11629.18 | -165099.43 | 20159.35 | 11628.97 | 165099.43 | -20159.04 | 0.000% |
| 23 | -21464.97 | -165099.43 | 12414.68 | 21464.62 | 165099.43 | -12414.50 | 0.000% |
| 24 | -23252.27 | -165099.43 | 3.11 | 23251.88 | 165099.43 | -3.12 | 0.000% |
| 25 | -19685.64 | -165099.43 | -11365.70 | 19685.31 | 165099.43 | 11365.50 | 0.000% |
| 26 | -11611.97 | -165099.43 | -20127.41 | 11611.77 | 165099.43 | 20127.07 | 0.000% |
| 27 | 82.37 | -90122.57 | -28256.44 | -82.38 | 90122.57 | 28256.19 | 0.000% |
| 28 | 13895.29 | -90122.57 | -23973.59 | -13895.17 | 90122.57 | 23973.37 | 0.000% |
| 29 | 23827.57 | -90122.57 | -13779.57 | -23827.37 | 90122.57 | 13779.45 | 0.000% |
| 30 | 27689.14 | -90122.57 | -67.91 | -27688.90 | 90122.57 | 67.91 | 0.000% |
| 31 | 24482.47 | -90122.57 | 14072.18 | -24482.26 | 90122.57 | -14072.05 | 0.000% |
| 32 | 13795.96 | -90122.57 | 23949.71 | -13795.84 | 90122.57 | -23949.50 | 0.000% |
| 33 | -25.57 | -90122.57 | 27477.51 | 25.57 | 90122.57 | -27477.27 | 0.000% |
| 34 | -13841.40 | -90122.57 | 23987.95 | 13841.27 | 90122.57 | -23987.75 | 0.000% |
| 35 | -24468.03 | -90122.57 | 14158.96 | 24467.80 | 90122.57 | -14158.84 | 0.000% |
| 36 | -27665.92 | -90122.57 | 9.08 | 27665.67 | 90122.57 | -9.08 | 0.000% |
| 37 | -23774.50 | -90122.57 | -13719.41 | 23774.30 | 90122.57 | 13719.29 | 0.000% |
| 38 | -13806.61 | -90122.57 | -23933.50 | 13806.49 | 90122.57 | 23933.28 | 0.000% |

Non-Linear Convergence Results

| | | | | |
|---|----------------|----------|--------------------|-------------------|
| tnxTower Destek Engineering, LLC 1281 Kennestone Circle, Suite 100 Marietta, GA 30066 Phone: (770) 693 0835 FAX: | Job | CT11680A | Page | 43 of 58 |
| | Project | 1517045 | Date | 16:33:57 10/23/15 |
| | Client | T-Mobile | Designed by | Ahmet Colakoglu |

| <i>Load Combination</i> | <i>Converged?</i> | <i>Number of Cycles</i> | <i>Displacement Tolerance</i> | <i>Force Tolerance</i> |
|-------------------------|-------------------|-------------------------|-------------------------------|------------------------|
| 1 | Yes | 6 | 0.0000001 | 0.0000001 |
| 2 | Yes | 7 | 0.0000001 | 0.00008755 |
| 3 | Yes | 7 | 0.0000001 | 0.00008364 |
| 4 | Yes | 7 | 0.0000001 | 0.00007581 |
| 5 | Yes | 7 | 0.0000001 | 0.00007991 |
| 6 | Yes | 7 | 0.0000001 | 0.00008692 |
| 7 | Yes | 7 | 0.0000001 | 0.00008228 |
| 8 | Yes | 7 | 0.0000001 | 0.00007527 |
| 9 | Yes | 7 | 0.0000001 | 0.00008065 |
| 10 | Yes | 7 | 0.0000001 | 0.00008714 |
| 11 | Yes | 7 | 0.0000001 | 0.00008212 |
| 12 | Yes | 7 | 0.0000001 | 0.00007515 |
| 13 | Yes | 7 | 0.0000001 | 0.00008010 |
| 14 | Yes | 6 | 0.0000001 | 0.00001465 |
| 15 | Yes | 7 | 0.0000001 | 0.00010837 |
| 16 | Yes | 7 | 0.0000001 | 0.00010420 |
| 17 | Yes | 7 | 0.0000001 | 0.00009944 |
| 18 | Yes | 7 | 0.0000001 | 0.00009838 |
| 19 | Yes | 7 | 0.0000001 | 0.00010121 |
| 20 | Yes | 7 | 0.0000001 | 0.00009822 |
| 21 | Yes | 7 | 0.0000001 | 0.00009803 |
| 22 | Yes | 7 | 0.0000001 | 0.00010201 |
| 23 | Yes | 7 | 0.0000001 | 0.00010686 |
| 24 | Yes | 7 | 0.0000001 | 0.00010433 |
| 25 | Yes | 7 | 0.0000001 | 0.00010301 |
| 26 | Yes | 7 | 0.0000001 | 0.00010487 |
| 27 | Yes | 7 | 0.0000001 | 0.00007630 |
| 28 | Yes | 7 | 0.0000001 | 0.00007478 |
| 29 | Yes | 7 | 0.0000001 | 0.00007208 |
| 30 | Yes | 7 | 0.0000001 | 0.00007321 |
| 31 | Yes | 7 | 0.0000001 | 0.00007550 |
| 32 | Yes | 7 | 0.0000001 | 0.00007394 |
| 33 | Yes | 7 | 0.0000001 | 0.00007189 |
| 34 | Yes | 7 | 0.0000001 | 0.00007375 |
| 35 | Yes | 7 | 0.0000001 | 0.00007603 |
| 36 | Yes | 7 | 0.0000001 | 0.00007417 |
| 37 | Yes | 7 | 0.0000001 | 0.00007175 |
| 38 | Yes | 7 | 0.0000001 | 0.00007366 |

Maximum Tower Deflections - Service Wind

| <i>Section No.</i> | <i>Elevation ft</i> | <i>Horz. Deflection in</i> | <i>Gov. Load Comb.</i> | <i>Tilt °</i> | <i>Twist °</i> |
|--------------------|---------------------|----------------------------|------------------------|---------------|----------------|
| T1 | 240 - 220 | 2.526 | 27 | 0.0606 | 0.0246 |
| T2 | 220 - 200 | 2.265 | 27 | 0.0608 | 0.0241 |
| T3 | 200 - 180 | 1.996 | 27 | 0.0606 | 0.0229 |
| T4 | 180 - 160 | 1.715 | 27 | 0.0597 | 0.0210 |
| T5 | 160 - 140 | 1.430 | 27 | 0.0575 | 0.0187 |
| T6 | 140 - 120 | 1.160 | 27 | 0.0532 | 0.0168 |
| T7 | 120 - 100 | 0.899 | 27 | 0.0473 | 0.0144 |
| T8 | 100 - 80 | 0.681 | 27 | 0.0400 | 0.0123 |
| T9 | 80 - 60 | 0.482 | 27 | 0.0318 | 0.0099 |
| T10 | 60 - 30 | 0.310 | 35 | 0.0247 | 0.0075 |
| T11 | 30 - 0 | 0.090 | 31 | 0.0135 | 0.0029 |

| | | |
|---|-------------------------------|---|
| tnxTower Destek Engineering, LLC 1281 Kennestone Circle, Suite 100 Marietta, GA 30066 Phone: (770) 693 0835 FAX: | Job CT11680A | Page 44 of 58 |
| | Project 1517045 | Date 16:33:57 10/23/15 |
| | Client T-Mobile | Designed by Ahmet Colakoglu |

Critical Deflections and Radius of Curvature - Service Wind

| <i>Elevation</i> | <i>Appurtenance</i> | <i>Gov. Load</i> | <i>Deflection</i> | <i>Tilt</i> | <i>Twist</i> | <i>Radius of Curvature</i> |
|------------------|----------------------|------------------|-------------------|-------------|--------------|----------------------------|
| <i>ft</i> | | <i>Comb.</i> | <i>in</i> | <i>°</i> | <i>°</i> | <i>ft</i> |
| 240.00 | 5/8"x8' Lighting Rod | 27 | 2.526 | 0.0606 | 0.0246 | Inf |
| 235.00 | 3' Dia 8' Omni | 27 | 2.461 | 0.0607 | 0.0245 | Inf |
| 230.00 | 3' Dia 8' Omni | 27 | 2.396 | 0.0607 | 0.0244 | 960882 |
| 223.00 | 4' Dia 12' Omni | 27 | 2.305 | 0.0608 | 0.0242 | 566540 |
| 212.00 | (2) HBX-6516DS-VTM | 27 | 2.159 | 0.0608 | 0.0237 | 434378 |
| 202.00 | AIR21 B2A/B4P | 27 | 2.023 | 0.0607 | 0.0230 | 388267 |
| 196.00 | 3' Yagi | 27 | 1.941 | 0.0605 | 0.0225 | 381186 |
| 187.00 | VHLPX800-11 | 27 | 1.815 | 0.0602 | 0.0217 | 380068 |
| 180.60 | 10' Sector Frames | 27 | 1.724 | 0.0598 | 0.0210 | 419325 |
| 174.00 | (2) 950F65T4E-M | 27 | 1.629 | 0.0592 | 0.0203 | Inf |
| 164.00 | 4" Dia 20' Omni | 27 | 1.486 | 0.0581 | 0.0191 | 216698 |
| 155.00 | BXA-80063/6 | 27 | 1.361 | 0.0566 | 0.0182 | 241882 |
| 140.00 | Small Light | 27 | 1.160 | 0.0532 | 0.0168 | 525756 |
| 137.00 | 1.5' Dia 8' Omni | 27 | 1.120 | 0.0524 | 0.0165 | Inf |
| 132.00 | 2' Side Arm Mount | 27 | 1.053 | 0.0510 | 0.0159 | 240394 |
| 118.00 | 2' Side Arm Mount | 27 | 0.875 | 0.0466 | 0.0142 | 78952 |
| 108.00 | 3' Dia 10' Omni | 27 | 0.764 | 0.0431 | 0.0131 | 172541 |
| 99.00 | 3' Yagi | 27 | 0.671 | 0.0396 | 0.0122 | 917816 |
| 80.00 | Side Arm Mount | 27 | 0.482 | 0.0318 | 0.0099 | 130303 |
| 22.00 | 3' dish w/o radome | 31 | 0.055 | 0.0101 | 0.0019 | 73347 |
| 20.00 | GPS | 31 | 0.048 | 0.0092 | 0.0017 | 80681 |
| 8.00 | GPS | 31 | 0.016 | 0.0037 | 0.0006 | 201703 |

Maximum Tower Deflections - Design Wind

| <i>Section No.</i> | <i>Elevation</i> | <i>Horz. Deflection</i> | <i>Gov. Load</i> | <i>Tilt</i> | <i>Twist</i> |
|--------------------|------------------|-------------------------|------------------|-------------|--------------|
| | <i>ft</i> | <i>in</i> | <i>Comb.</i> | <i>°</i> | <i>°</i> |
| T1 | 240 - 220 | 7.245 | 2 | 0.1733 | 0.0712 |
| T2 | 220 - 200 | 6.500 | 2 | 0.1737 | 0.0696 |
| T3 | 200 - 180 | 5.730 | 2 | 0.1733 | 0.0661 |
| T4 | 180 - 160 | 4.926 | 2 | 0.1707 | 0.0605 |
| T5 | 160 - 140 | 4.108 | 2 | 0.1643 | 0.0541 |
| T6 | 140 - 120 | 3.337 | 2 | 0.1520 | 0.0486 |
| T7 | 120 - 100 | 2.587 | 2 | 0.1352 | 0.0416 |
| T8 | 100 - 80 | 1.963 | 2 | 0.1144 | 0.0354 |
| T9 | 80 - 60 | 1.391 | 2 | 0.0908 | 0.0283 |
| T10 | 60 - 30 | 0.894 | 10 | 0.0706 | 0.0214 |
| T11 | 30 - 0 | 0.258 | 6 | 0.0386 | 0.0082 |

Critical Deflections and Radius of Curvature - Design Wind

| <i>Elevation</i> | <i>Appurtenance</i> | <i>Gov. Load</i> | <i>Deflection</i> | <i>Tilt</i> | <i>Twist</i> | <i>Radius of Curvature</i> |
|------------------|----------------------|------------------|-------------------|-------------|--------------|----------------------------|
| <i>ft</i> | | <i>Comb.</i> | <i>in</i> | <i>°</i> | <i>°</i> | <i>ft</i> |
| 240.00 | 5/8"x8' Lighting Rod | 2 | 7.245 | 0.1733 | 0.0712 | 676147 |
| 235.00 | 3' Dia 8' Omni | 2 | 7.060 | 0.1734 | 0.0709 | 676147 |

| | | | | |
|---|----------------|----------|--------------------|-------------------|
| tnxTower Destek Engineering, LLC 1281 Kennestone Circle, Suite 100 Marietta, GA 30066 Phone: (770) 693 0835 FAX: | Job | CT11680A | Page | 45 of 58 |
| | Project | 1517045 | Date | 16:33:57 10/23/15 |
| | Client | T-Mobile | Designed by | Ahmet Colakoglu |

| Elevation | Appurtenance | Gov. Load Comb. | Deflection in | Tilt ° | Twist ° | Radius of Curvature ft |
|-----------|--------------------|-----------------|---------------|--------|---------|------------------------|
| 230.00 | 3' Dia 8' Omni | 2 | 6.874 | 0.1736 | 0.0705 | 338074 |
| 223.00 | 4' Dia 12' Omni | 2 | 6.613 | 0.1737 | 0.0699 | 199336 |
| 212.00 | (2) HBX-6516DS-VTM | 2 | 6.196 | 0.1737 | 0.0684 | 153714 |
| 202.00 | AIR21 B2A/B4P | 2 | 5.808 | 0.1734 | 0.0665 | 137753 |
| 196.00 | 3' Yagi | 2 | 5.572 | 0.1730 | 0.0651 | 135274 |
| 187.00 | VHLPX800-11 | 2 | 5.212 | 0.1719 | 0.0627 | 135153 |
| 180.60 | 10' Sector Frames | 2 | 4.951 | 0.1708 | 0.0607 | 149752 |
| 174.00 | (2) 950F65T4E-M | 2 | 4.679 | 0.1693 | 0.0586 | Inf |
| 164.00 | 4" Dia 20' Omni | 2 | 4.269 | 0.1660 | 0.0553 | 75685 |
| 155.00 | BXA-80063/6 | 2 | 3.912 | 0.1618 | 0.0527 | 85026 |
| 140.00 | Small Light | 2 | 3.337 | 0.1520 | 0.0486 | 193404 |
| 137.00 | 1.5' Dia 8' Omni | 2 | 3.221 | 0.1497 | 0.0476 | Inf |
| 132.00 | 2' Side Arm Mount | 2 | 3.028 | 0.1458 | 0.0459 | 85446 |
| 118.00 | 2' Side Arm Mount | 2 | 2.519 | 0.1333 | 0.0409 | 27509 |
| 108.00 | 3' Dia 10' Omni | 2 | 2.202 | 0.1232 | 0.0379 | 60798 |
| 99.00 | 3' Yagi | 2 | 1.933 | 0.1132 | 0.0351 | 365185 |
| 80.00 | Side Arm Mount | 2 | 1.391 | 0.0908 | 0.0283 | 45484 |
| 22.00 | 3' dish w/o radome | 6 | 0.157 | 0.0288 | 0.0055 | 25465 |
| 20.00 | GPS | 6 | 0.136 | 0.0263 | 0.0049 | 28011 |
| 8.00 | GPS | 6 | 0.045 | 0.0107 | 0.0018 | 70027 |

Bolt Design Data

| Section No. | Elevation ft | Component Type | Bolt Grade | Bolt Size in | Number Of Bolts | Maximum Load per Bolt lb | Allowable Load lb | Ratio Load Allowable | Allowable Ratio | Criteria | |
|-------------|--------------|----------------|------------|--------------|-----------------|--------------------------|-------------------|----------------------|-----------------|----------|--------------|
| T1 | 240 | Leg | A325N | 1.0000 | 8 | 119.44 | 34557.50 | 0.003 | ✓ | 1.333 | Bolt Tension |
| | | Diagonal | A325N | 0.6250 | 3 | 519.40 | 6442.72 | 0.081 | ✓ | 1.333 | Bolt Shear |
| | | Horizontal | A325N | 0.6250 | 2 | 529.17 | 6442.72 | 0.082 | ✓ | 1.333 | Bolt Shear |
| | | Top Girt | A325N | 0.6250 | 2 | 174.67 | 6442.72 | 0.027 | ✓ | 1.333 | Bolt Shear |
| T2 | 220 | Leg | A325N | 1.0000 | 8 | 619.94 | 34556.50 | 0.018 | ✓ | 1.333 | Bolt Tension |
| | | Diagonal | A325N | 0.6250 | 3 | 1478.50 | 6442.72 | 0.229 | ✓ | 1.333 | Bolt Shear |
| | | Horizontal | A325N | 0.6250 | 2 | 1338.03 | 6442.72 | 0.208 | ✓ | 1.333 | Bolt Shear |
| T3 | 200 | Leg | A325N | 1.0000 | 8 | 2051.47 | 34555.50 | 0.059 | ✓ | 1.333 | Bolt Tension |
| | | Diagonal | A325N | 0.6250 | 3 | 2327.33 | 6442.72 | 0.361 | ✓ | 1.333 | Bolt Shear |
| | | Horizontal | A325N | 0.6250 | 2 | 2282.70 | 6442.72 | 0.354 | ✓ | 1.333 | Bolt Shear |
| T4 | 180 | Leg | A325N | 1.0000 | 8 | 4147.21 | 34556.60 | 0.120 | ✓ | 1.333 | Bolt Tension |
| | | Diagonal | A325N | 0.6250 | 3 | 3601.63 | 6442.72 | 0.559 | ✓ | 1.333 | Bolt Shear |
| | | Horizontal | A325N | 0.6250 | 2 | 3793.02 | 6442.72 | 0.589 | ✓ | 1.333 | Bolt Shear |
| T5 | 160 | Leg | A325N | 1.0000 | 8 | 7115.08 | 34557.50 | 0.206 | ✓ | 1.333 | Bolt Tension |
| | | Diagonal | A325N | 0.6250 | 3 | 4761.81 | 6442.72 | 0.739 | ✓ | 1.333 | Bolt Shear |
| | | Horizontal | A325N | 0.6250 | 2 | 5296.58 | 6442.72 | 0.822 | ✓ | 1.333 | Bolt Shear |
| T6 | 140 | Leg | A325N | 1.0000 | 8 | 10566.70 | 34557.50 | 0.306 | ✓ | 1.333 | Bolt Tension |
| | | Diagonal | A325N | 0.6250 | 3 | 4950.87 | 6442.72 | 0.768 | ✓ | 1.333 | Bolt Shear |
| | | Horizontal | A325N | 0.6250 | 2 | 5779.49 | 6442.72 | 0.897 | ✓ | 1.333 | Bolt Shear |

| | | |
|---|---------------------------|---------------------------------------|
| tnxTower Destek Engineering, LLC 1281 Kennestone Circle, Suite 100 Marietta, GA 30066 Phone: (770) 693 0835 FAX: | Job CT11680A | Page 46 of 58 |
| | Project 1517045 | Date 16:33:57 10/23/15 |
| | Client T-Mobile | Designed by Ahmet Colakoglu |

| Section No. | Elevation ft | Component Type | Bolt Grade | Bolt Size in | Number Of Bolts | Maximum Load per Bolt lb | Allowable Load lb | Ratio Load Allowable | Allowable Ratio | Criteria |
|-------------|-----------------|----------------|------------|-----------------|-----------------|-----------------------------|----------------------|-------------------------|-----------------|--------------------|
| T7 | 120 | Leg | A325N | 1.0000 | 8 | 12101.90 | 34557.30 | 0.350 | ✓ | 1.333 Bolt Tension |
| | | Diagonal | A325N | 0.7500 | 3 | 7374.32 | 9277.52 | 0.795 | ✓ | 1.333 Bolt Shear |
| | | Horizontal | A325N | 0.7500 | 2 | 6161.42 | 9277.52 | 0.664 | ✓ | 1.333 Bolt Shear |
| T8 | 100 | Leg | A325N | 1.0000 | 12 | 10267.20 | 34557.50 | 0.297 | ✓ | 1.333 Bolt Tension |
| | | Diagonal | A325N | 0.7500 | 3 | 7335.83 | 9277.52 | 0.791 | ✓ | 1.333 Bolt Shear |
| | | Horizontal | A325N | 0.7500 | 2 | 6559.19 | 9277.52 | 0.707 | ✓ | 1.333 Bolt Shear |
| T9 | 80 | Leg | A325N | 1.0000 | 12 | 12399.50 | 34557.50 | 0.359 | ✓ | 1.333 Bolt Tension |
| | | Diagonal | A325N | 0.7500 | 3 | 7697.93 | 9277.52 | 0.830 | ✓ | 1.333 Bolt Shear |
| | | Horizontal | A325N | 0.7500 | 2 | 7237.35 | 9277.52 | 0.780 | ✓ | 1.333 Bolt Shear |
| T10 | 60 | Leg | A325N | 1.0000 | 12 | 14463.20 | 34557.50 | 0.419 | ✓ | 1.333 Bolt Tension |
| | | Diagonal | A325N | 0.7500 | 3 | 10112.60 | 9277.52 | 1.090 | ✓ | 1.333 Bolt Shear |
| | | Horizontal | A325N | 0.7500 | 2 | 7816.92 | 9277.52 | 0.843 | ✓ | 1.333 Bolt Shear |
| T11 | 30 | Diagonal | A325N | 0.7500 | 3 | 10742.90 | 9277.52 | 1.158 | ✓ | 1.333 Bolt Shear |
| | | Horizontal | A325N | 0.7500 | 2 | 8840.79 | 9277.52 | 0.953 | ✓ | 1.333 Bolt Shear |

Compression Checks

Leg Design Data (Compression)

| Section No. | Elevation ft | Size | L ft | L _a ft | Kl/r | F _a ksi | A in ² | Actual P lb | Allow. P _a lb | Ratio P P _a |
|-------------|-----------------|-----------|---------|----------------------|----------------|-----------------------|----------------------|----------------|-----------------------------|---------------------------|
| T1 | 240 - 220 | P8x.5 | 20.03 | 6.68 | 27.8 K=1.00 | 27.415 | 12.7627 | -3522.64 | 349895.00 | 0.010 |
| T2 | 220 - 200 | P8x.5 | 20.04 | 10.02 | 41.8 K=1.00 | 25.579 | 12.7627 | -11060.10 | 326464.00 | 0.034 |
| T3 | 200 - 180 | P8x.5 | 20.05 | 10.03 | 41.8 K=1.00 | 25.576 | 12.7627 | -26834.10 | 326426.00 | 0.082 |
| T4 | 180 - 160 | P8x.5 | 20.05 | 10.03 | 41.8 K=1.00 | 25.576 | 12.7627 | -49190.80 | 326426.00 | 0.151 |
| T5 | 160 - 140 | ROHN 8 EH | 20.05 | 10.03 | 41.8 K=1.00 | 25.576 | 12.7627 | -79037.90 | 326426.00 | 0.242 |
| T6 | 140 - 120 | P8x.5 | 20.05 | 10.03 | 41.8 K=1.00 | 25.576 | 12.7627 | -112205.00 | 326426.00 | 0.344 |
| T7 | 120 - 100 | P8x.5 | 20.05 | 10.03 | 41.8 K=1.00 | 25.576 | 12.7627 | -128430.00 | 326426.00 | 0.393 |
| T8 | 100 - 80 | ROHN 8 EH | 20.06 | 10.03 | 41.8 K=1.00 | 25.575 | 12.7627 | -160394.00 | 326401.00 | 0.491 |
| T9 | 80 - 60 | P10x.5 | 20.05 | 10.03 | 33.2 K=1.00 | 26.753 | 16.1007 | -191897.00 | 430750.00 | 0.445 |
| T10 | 60 - 30 | P10x.5 | 30.08 | 10.03 | 33.2 K=1.00 | 26.753 | 16.1007 | -224226.00 | 430750.00 | 0.521 |

| | | |
|---|---------------------------|---------------------------------------|
| tnxTower Destek Engineering, LLC 1281 Kennestone Circle, Suite 100 Marietta, GA 30066 Phone: (770) 693 0835 FAX: | Job CT11680A | Page 47 of 58 |
| | Project 1517045 | Date 16:33:57 10/23/15 |
| | Client T-Mobile | Designed by Ahmet Colakoglu |

| Section No. | Elevation ft | Size | L ft | L _u ft | Kl/r | F _a ksi | A in ² | Actual P lb | Allow. P _a lb | Ratio P/P _a |
|-------------|-----------------|--------|---------|----------------------|----------------|-----------------------|----------------------|----------------|-----------------------------|---------------------------|
| T11 | 30 - 0 | P10x.5 | 30.08 | 10.03 | 33.2 K=1.00 | 26.753 | 16.1007 | -271017.00 | 430750.00 | 0.629 ✓ |

Diagonal Design Data (Compression)

| Section No. | Elevation ft | Size | L ft | L _u ft | Kl/r | F _a ksi | A in ² | Actual P lb | Allow. P _a lb | Ratio P/P _a |
|-------------|-----------------|--------------------------------|---------|----------------------|-----------------|-----------------------|----------------------|----------------|-----------------------------|---------------------------|
| T1 | 240 - 220 | P2x.154 | 9.29 | 8.77 | 133.7 K=1.00 | 8.349 | 1.0745 | -1558.19 | 8971.26 | 0.174 ✓ |
| T2 | 220 - 200 | P2.5x.203 | 12.56 | 11.96 | 151.5 K=1.00 | 6.503 | 1.7040 | -4435.50 | 11080.90 | 0.400 ✓ |
| T3 | 200 - 180 | P2.5x.203 | 13.35 | 12.81 | 162.2 K=1.00 | 5.673 | 1.7040 | -6981.98 | 9666.72 | 0.722 ✓ |
| T4 | 180 - 160 | P2.5x.203 | 14.21 | 13.70 | 173.6 K=1.00 | 4.956 | 1.7040 | -10804.90 | 8445.30 | 1.279 ✓ |
| T5 | 160 - 140 | P2.5STD w/Half HSS3.5"x0.3" | 15.12 | 14.64 | 189.1 K=1.00 | 4.175 | 3.0094 | -14285.40 | 12563.80 | 1.137 ✓ |
| T6 | 140 - 120 | P3x.216 | 16.08 | 15.62 | 161.1 K=1.00 | 5.752 | 2.2285 | -14852.60 | 12818.50 | 1.159 ✓ |
| T7 | 120 - 100 | P2.5STDw/L2.5x2.5x3/8 | 24.33 | 12.17 | 157.5 K=1.02 | 6.019 | 3.3188 | -22123.00 | 19974.80 | 1.108 ✓ |
| T8 | 100 - 80 | P3x.216 | 25.11 | 12.56 | 129.5 K=1.00 | 8.907 | 2.2285 | -22007.50 | 19848.10 | 1.109 ✓ |
| T9 | 80 - 60 | P3x.216 | 25.88 | 12.94 | 133.5 K=1.00 | 8.383 | 2.2285 | -23093.80 | 18680.50 | 1.236 ✓ |
| T10 | 60 - 30 | P3x.216 | 35.15 | 11.72 | 120.8 K=1.00 | 10.226 | 2.2285 | -30337.90 | 22788.60 | 1.331 ✓ |
| T11 | 30 - 0 | P3STDw/L2.5x2.5x3/8 | 36.16 | 12.05 | 137.8 K=1.02 | 7.859 | 3.8041 | -32228.60 | 29898.20 | 1.078 ✓ |

Horizontal Design Data (Compression)

| Section No. | Elevation ft | Size | L ft | L _u ft | Kl/r | F _a ksi | A in ² | Actual P lb | Allow. P _a lb | Ratio P/P _a |
|-------------|-----------------|-----------|---------|----------------------|-----------------|-----------------------|----------------------|----------------|-----------------------------|---------------------------|
| T1 | 240 - 220 | P2x.154 | 12.26 | 5.77 | 88.0 K=1.00 | 17.365 | 1.0745 | -1042.22 | 18659.20 | 0.056 ✓ |
| T2 | 220 - 200 | P2x.154 | 14.06 | 6.67 | 101.7 K=1.00 | 14.320 | 1.0745 | -2676.06 | 15387.30 | 0.174 ✓ |
| T3 | 200 - 180 | P2x.154 | 16.43 | 7.86 | 119.8 K=1.00 | 10.412 | 1.0745 | -4523.31 | 11187.60 | 0.404 ✓ |
| T4 | 180 - 160 | P2.5x.203 | 18.93 | 9.11 | 115.3 K=1.00 | 11.227 | 1.7040 | -7526.19 | 19130.80 | 0.393 ✓ |
| T5 | 160 - 140 | P2.5x.203 | 21.43 | 10.36 | 131.2 K=1.00 | 8.680 | 1.7040 | -10414.40 | 14791.10 | 0.704 ✓ |
| T6 | 140 - 120 | P2.5x.203 | 23.93 | 11.61 | 147.0 | 6.911 | 1.7040 | -11283.00 | 11776.50 | 0.958 ✓ |

| | | |
|---|---------------------------|---------------------------------------|
| tnxTower Destek Engineering, LLC 1281 Kennestone Circle, Suite 100 Marietta, GA 30066 Phone: (770) 693 0835 FAX: | Job CT11680A | Page 48 of 58 |
| | Project 1517045 | Date 16:33:57 10/23/15 |
| | Client T-Mobile | Designed by Ahmet Colakoglu |

| Section No. | Elevation ft | Size | L ft | L _u ft | Kl/r | F _a ksi | A in ² | Actual P lb | Allow. P _a lb | Ratio $\frac{P}{P_a}$ |
|-------------|-----------------|-----------|---------|----------------------|-----------------|-----------------------|----------------------|----------------|-----------------------------|--------------------------|
| T7 | 120 - 100 | P2.5x.203 | 25.18 | 12.23 | K=1.00 154.9 | 6.223 | 1.7040 | -12322.80 | 10603.70 | 1.162 |
| T8 | 100 - 80 | P3x.216 | 27.68 | 13.48 | K=1.00 139.0 | 7.726 | 2.2285 | -13118.40 | 17217.40 | 0.762 |
| T9 | 80 - 60 | P3x.216 | 30.33 | 14.81 | K=1.00 152.7 | 6.405 | 2.2285 | -14424.40 | 14273.60 | 1.011 |
| T10 | 60 - 30 | P3x.216 | 32.83 | 15.97 | K=1.00 164.7 | 5.507 | 2.2285 | -15633.80 | 12272.60 | 1.274 |
| T11 | 30 - 0 | P3.5x.226 | 36.58 | 17.84 | K=1.00 160.2 | 5.821 | 2.6795 | -17681.60 | 15596.50 | 1.134 |

Top Girt Design Data (Compression)

| Section No. | Elevation ft | Size | L ft | L _u ft | Kl/r | F _a ksi | A in ² | Actual P lb | Allow. P _a lb | Ratio $\frac{P}{P_a}$ |
|-------------|-----------------|---------|---------|----------------------|----------------|-----------------------|----------------------|----------------|-----------------------------|--------------------------|
| T1 | 240 - 220 | P2x.154 | 10.93 | 5.11 | 77.8 K=1.00 | 19.441 | 1.0745 | -349.33 | 20890.30 | 0.017 |

Redundant Horizontal (1) Design Data (Compression)

| Section No. | Elevation ft | Size | L ft | L _u ft | Kl/r | F _a ksi | A in ² | Actual P lb | Allow. P _a lb | Ratio $\frac{P}{P_a}$ |
|-------------|-----------------|-----------|---------|----------------------|-----------------|-----------------------|----------------------|----------------|-----------------------------|--------------------------|
| T7 | 120 - 100 | P1.5x.145 | 6.30 | 5.94 | 114.4 K=1.00 | 11.071 | 0.7995 | -2228.82 | 8850.55 | 0.252 |
| T8 | 100 - 80 | P1.5x.145 | 6.92 | 6.56 | 126.4 K=1.00 | 9.339 | 0.7995 | -2784.18 | 7466.41 | 0.373 |
| T9 | 80 - 60 | P1.5x.145 | 7.58 | 7.13 | 137.5 K=1.00 | 7.897 | 0.7995 | -3330.22 | 6313.43 | 0.527 |
| T10 | 60 - 30 | P1.5x.145 | 5.47 | 5.02 | 96.8 K=1.00 | 13.375 | 0.7995 | -3891.27 | 10693.00 | 0.364 |
| T11 | 30 - 0 | P1.5x.145 | 6.10 | 5.65 | 108.9 K=1.00 | 11.823 | 0.7995 | -4703.30 | 9451.96 | 0.498 |

Redundant Horizontal (2) Design Data (Compression)

| Section No. | Elevation ft | Size | L ft | L _u ft | Kl/r | F _a ksi | A in ² | Actual P lb | Allow. P _a lb | Ratio $\frac{P}{P_a}$ |
|-------------|-----------------|---------|---------|----------------------|-----------------|-----------------------|----------------------|----------------|-----------------------------|--------------------------|
| T10 | 60 - 30 | P2x.154 | 10.94 | 10.50 | 160.0 K=1.00 | 5.833 | 1.0745 | -3891.27 | 6267.56 | 0.621 |
| T11 | 30 - 0 | P2x.154 | 12.19 | 11.75 | 179.1 | 4.657 | 1.0745 | -4703.30 | 5004.50 | 0.940 |

| | | |
|---|---------------------------|---------------------------------------|
| tnxTower Destek Engineering, LLC 1281 Kennestone Circle, Suite 100 Marietta, GA 30066 Phone: (770) 693 0835 FAX: | Job CT11680A | Page 49 of 58 |
| | Project 1517045 | Date 16:33:57 10/23/15 |
| | Client T-Mobile | Designed by Ahmet Colakoglu |

| Section No. | Elevation ft | Size | L ft | L _u ft | Kl/r | F _a ksi | A in ² | Actual P lb | Allow. P _a lb | Ratio $\frac{P}{P_a}$ |
|-------------|-----------------|------|---------|----------------------|------|-----------------------|----------------------|----------------|-----------------------------|--------------------------|
| K=1.00 | | | | | | | | | | ✓ |

Redundant Diagonal (1) Design Data (Compression)

| Section No. | Elevation ft | Size | L ft | L _u ft | Kl/r | F _a ksi | A in ² | Actual P lb | Allow. P _a lb | Ratio $\frac{P}{P_a}$ |
|-------------|-----------------|--------------------------------|---------|----------------------|-----------------|-----------------------|----------------------|----------------|-----------------------------|--------------------------|
| T7 | 120 - 100 | P1.5x.145 | 11.50 | 10.77 | 207.7 K=1.00 | 3.463 | 0.7995 | -2036.08 | 2768.65 | 0.735 ✓ |
| T8 | 100 - 80 | P2x.154 | 11.80 | 11.13 | 169.6 K=1.00 | 5.190 | 1.0745 | -2374.33 | 5577.17 | 0.426 ✓ |
| T9 | 80 - 60 | P2x.154 | 12.19 | 11.56 | 176.2 K=1.00 | 4.809 | 1.0745 | -2676.38 | 5167.32 | 0.518 ✓ |
| T10 | 60 - 30 | P1.5x.145 | 11.12 | 10.09 | 194.5 K=1.00 | 3.945 | 0.7995 | -3953.55 | 3154.25 | 1.253 ✓ |
| T11 | 30 - 0 | P1.5STD with half 2STD Pipe | 11.40 | 10.47 | 212.0 K=1.00 | 3.322 | 1.4449 | -4399.14 | 4799.94 | 0.916 ✓ |

Redundant Diagonal (2) Design Data (Compression)

| Section No. | Elevation ft | Size | L ft | L _u ft | Kl/r | F _a ksi | A in ² | Actual P lb | Allow. P _a lb | Ratio $\frac{P}{P_a}$ |
|-------------|-----------------|-------------|---------|----------------------|-----------------|-----------------------|----------------------|----------------|-----------------------------|--------------------------|
| T10 | 60 - 30 | P2x.154 | 14.37 | 13.75 | 209.6 K=1.00 | 3.398 | 1.0745 | -2555.50 | 3651.70 | 0.700 ✓ |
| T11 | 30 - 0 | Pipe 2.5STD | 15.30 | 14.70 | 185.3 K=1.00 | 4.347 | 1.5948 | -2949.97 | 6932.99 | 0.425 ✓ |

Redundant Hip (1) Design Data (Compression)

| Section No. | Elevation ft | Size | L ft | L _u ft | Kl/r | F _a ksi | A in ² | Actual P lb | Allow. P _a lb | Ratio $\frac{P}{P_a}$ |
|-------------|-----------------|-----------|---------|----------------------|-----------------|-----------------------|----------------------|----------------|-----------------------------|--------------------------|
| T7 | 120 - 100 | P1.5x.145 | 6.30 | 6.30 | 121.3 K=1.00 | 10.091 | 0.7995 | -35.56 | 8067.38 | 0.004 ✓ |
| T8 | 100 - 80 | P1.5x.145 | 6.92 | 6.92 | 133.4 K=1.00 | 8.395 | 0.7995 | -43.59 | 6711.05 | 0.006 ✓ |
| T9 | 80 - 60 | P1.5x.145 | 7.58 | 7.58 | 146.1 K=1.00 | 6.992 | 0.7995 | -40.65 | 5589.56 | 0.007 ✓ |
| T10 | 60 - 30 | P1.5x.145 | 5.47 | 5.47 | 105.5 K=1.00 | 12.275 | 0.7995 | -102.97 | 9813.06 | 0.010 ✓ |
| T11 | 30 - 0 | P1.5x.145 | 6.10 | 6.10 | 117.5 K=1.00 | 10.637 | 0.7995 | -91.20 | 8503.78 | 0.011 ✓ |

| | | |
|---|---------------------------|---------------------------------------|
| tnxTower Destek Engineering, LLC 1281 Kennestone Circle, Suite 100 Marietta, GA 30066 Phone: (770) 693 0835 FAX: | Job CT11680A | Page 50 of 58 |
| | Project 1517045 | Date 16:33:57 10/23/15 |
| | Client T-Mobile | Designed by Ahmet Colakoglu |

Redundant Hip (2) Design Data (Compression)

| Section No. | Elevation ft | Size | L ft | L _u ft | Kl/r | F _a ksi | A in ² | Actual P lb | Allow. P _a lb | Ratio $\frac{P}{P_a}$ |
|-------------|-----------------|-----------|---------|----------------------|-----------------|-----------------------|----------------------|----------------|-----------------------------|--------------------------|
| T10 | 60 - 30 | P1.5x.145 | 10.94 | 10.94 | 210.9 K=1.00 | 3.357 | 0.7995 | -48.30 | 2683.51 | 0.018 |
| T11 | 30 - 0 | P2x.154 | 12.19 | 12.19 | 185.9 K=1.00 | 4.321 | 1.0745 | -34.26 | 4643.58 | 0.007 |

Redundant Hip Diagonal Design Data (Compression)

| Section No. | Elevation ft | Size | L ft | L _u ft | Kl/r | F _a ksi | A in ² | Actual P lb | Allow. P _a lb | Ratio $\frac{P}{P_a}$ |
|-------------|-----------------|------------|---------|----------------------|-----------------|-----------------------|----------------------|----------------|-----------------------------|--------------------------|
| T7 | 120 - 100 | P2.5x.203 | 15.08 | 15.08 | 190.9 K=1.00 | 4.096 | 1.7040 | -52.84 | 6979.27 | 0.008* |
| T8 | 100 - 80 | P2.5x.203 | 15.92 | 15.92 | 201.6 K=1.00 | 3.673 | 1.7040 | -52.68 | 6259.27 | 0.008* |
| T9 | 80 - 60 | P3.5x0.216 | 16.81 | 16.81 | 173.3 K=1.00 | 4.970 | 2.2285 | -64.72 | 11076.30 | 0.006* |
| T10 | 60 - 30 | P3.5x0.216 | 17.80 | 17.80 | 183.6 K=1.00 | 4.430 | 2.2285 | -65.81 | 9872.27 | 0.007* |
| T11 | 30 - 0 | P3.5x0.216 | 19.19 | 19.19 | 197.9 K=1.00 | 3.812 | 2.2285 | -64.95 | 8494.79 | 0.008* |

* DL controls

Inner Bracing Design Data (Compression)

| Section No. | Elevation ft | Size | L ft | L _u ft | Kl/r | F _a ksi | A in ² | Actual P lb | Allow. P _a lb | Ratio $\frac{P}{P_a}$ |
|-------------|-----------------|-------------------|---------|----------------------|-----------------|-----------------------|----------------------|----------------|-----------------------------|--------------------------|
| T1 | 240 - 220 | L2x2x1/8 | 5.47 | 5.47 | 165.0 K=1.00 | 5.487 | 0.4844 | -6.05 | 2658.01 | 0.002 |
| T2 | 220 - 200 | L2x2x1/8 | 7.03 | 7.03 | 212.1 K=1.00 | 3.319 | 0.4844 | -4.40 | 1607.44 | 0.003* |
| T3 | 200 - 180 | L2 1/2x2 1/2x3/16 | 8.22 | 8.22 | 199.2 K=1.00 | 3.765 | 0.9020 | -5.76 | 3396.18 | 0.002* |
| T4 | 180 - 160 | L3x3x3/16 | 9.47 | 9.47 | 190.6 K=1.00 | 4.112 | 1.0900 | -7.28 | 4481.94 | 0.002* |
| T5 | 160 - 140 | L3 1/2x3 1/2x1/4 | 10.72 | 10.72 | 185.3 K=1.00 | 4.350 | 1.6900 | -10.69 | 7352.08 | 0.001* |
| T6 | 140 - 120 | L3 1/2x3 1/2x1/4 | 11.97 | 11.97 | 206.9 K=1.00 | 3.489 | 1.6900 | -10.14 | 5896.15 | 0.002* |
| T7 | 120 - 100 | P2x.154 | 12.59 | 12.59 | 191.9 K=1.00 | 4.053 | 1.0745 | -18.36 | 4355.58 | 0.004 |

| | | | | |
|---|----------------|----------|--------------------|-------------------|
| tnxTower Destek Engineering, LLC 1281 Kennestone Circle, Suite 100 Marietta, GA 30066 Phone: (770) 693 0835 FAX: | Job | CT11680A | Page | 51 of 58 |
| | Project | 1517045 | Date | 16:33:57 10/23/15 |
| | Client | T-Mobile | Designed by | Ahmet Colakoglu |

| Section No. | Elevation ft | Size | L ft | L _u ft | Kl/r | F _a ksi | A in ² | Actual P lb | Allow. P _a lb | Ratio P/P _a |
|-------------|-----------------|---------|---------|----------------------|-----------------|-----------------------|----------------------|----------------|-----------------------------|---------------------------|
| T8 | 100 - 80 | P3x.216 | 13.84 | 13.84 | 142.7 K=1.00 | 7.330 | 2.2285 | -24.93 | 16334.80 | 0.002 |
| T9 | 80 - 60 | P3x.216 | 15.16 | 15.16 | 156.4 K=1.00 | 6.105 | 2.2285 | -25.10 | 13605.10 | 0.002 |
| T10 | 60 - 30 | P3x.216 | 16.41 | 16.41 | 169.3 K=1.00 | 5.211 | 2.2285 | -35.36 | 11611.90 | 0.003 |
| T11 | 30 - 0 | P3x.216 | 18.29 | 18.29 | 188.6 K=1.00 | 4.197 | 2.2285 | -29.22 | 9353.18 | 0.003 |

* DL controls

Tension Checks

Leg Design Data (Tension)

| Section No. | Elevation ft | Size | L ft | L _u ft | Kl/r | F _a ksi | A in ² | Actual P lb | Allow. P _a lb | Ratio P/P _a |
|-------------|-----------------|-----------|---------|----------------------|------|-----------------------|----------------------|----------------|-----------------------------|---------------------------|
| T1 | 240 - 220 | P8x.5 | 20.03 | 6.68 | 27.8 | 30.000 | 12.7627 | 955.52 | 382882.00 | 0.002 |
| T2 | 220 - 200 | P8x.5 | 20.04 | 10.02 | 41.8 | 30.000 | 12.7627 | 4959.54 | 382882.00 | 0.013 |
| T3 | 200 - 180 | P8x.5 | 20.05 | 10.03 | 41.8 | 30.000 | 12.7627 | 16411.70 | 382882.00 | 0.043 |
| T4 | 180 - 160 | P8x.5 | 20.05 | 10.03 | 41.8 | 30.000 | 12.7627 | 33177.60 | 382882.00 | 0.087 |
| T5 | 160 - 140 | ROHN 8 EH | 20.05 | 10.03 | 41.8 | 30.000 | 12.7627 | 56920.60 | 382882.00 | 0.149 |
| T6 | 140 - 120 | P8x.5 | 20.05 | 10.03 | 41.8 | 30.000 | 12.7627 | 84533.50 | 382882.00 | 0.221 |
| T7 | 120 - 100 | P8x.5 | 20.05 | 10.03 | 41.8 | 30.000 | 12.7627 | 97216.20 | 382882.00 | 0.254 |
| T8 | 100 - 80 | ROHN 8 EH | 20.06 | 10.03 | 41.8 | 30.000 | 12.7627 | 123664.00 | 382882.00 | 0.323 |
| T9 | 80 - 60 | P10x.5 | 20.05 | 10.03 | 33.2 | 30.000 | 16.1007 | 149297.00 | 483020.00 | 0.309 |
| T10 | 60 - 30 | P10x.5 | 30.08 | 10.03 | 33.2 | 30.000 | 16.1007 | 175514.00 | 483020.00 | 0.363 |
| T11 | 30 - 0 | P10x.5 | 30.08 | 10.03 | 33.2 | 30.000 | 16.1007 | 212582.00 | 483020.00 | 0.440 |

Diagonal Design Data (Tension)

| | | |
|---|---------------------------|---------------------------------------|
| tnxTower Destek Engineering, LLC 1281 Kennestone Circle, Suite 100 Marietta, GA 30066 Phone: (770) 693 0835 FAX: | Job CT11680A | Page 52 of 58 |
| | Project 1517045 | Date 16:33:57 10/23/15 |
| | Client T-Mobile | Designed by Ahmet Colakoglu |

| Section No. | Elevation ft | Size | L ft | L _u ft | Kl/r | F _a ksi | A in ² | Actual P lb | Allow. P _a lb | Ratio $\frac{P}{P_a}$ |
|-------------|-----------------|--------------------------------|---------|----------------------|-------|-----------------------|----------------------|----------------|-----------------------------|--------------------------|
| T1 | 240 - 220 | P2x.154 | 9.29 | 8.77 | 133.7 | 30.000 | 1.0745 | 1457.83 | 32235.90 | 0.045 |
| T2 | 220 - 200 | P2.5x.203 | 12.56 | 11.96 | 151.5 | 30.000 | 1.7040 | 4289.59 | 51121.50 | 0.084 |
| T3 | 200 - 180 | P2.5x.203 | 13.35 | 12.81 | 162.2 | 30.000 | 1.7040 | 6795.99 | 51121.50 | 0.133 |
| T4 | 180 - 160 | P2.5x.203 | 14.21 | 13.70 | 173.6 | 30.000 | 1.7040 | 10543.00 | 51121.50 | 0.206 |
| T5 | 160 - 140 | P2.5STD w/Half HSS3.5"x0.3" | 15.12 | 14.64 | 189.1 | 30.000 | 3.0094 | 13840.60 | 90282.00 | 0.153 |
| T6 | 140 - 120 | P3x.216 | 16.08 | 15.62 | 161.1 | 30.000 | 2.2285 | 14406.50 | 66854.10 | 0.215 |
| T7 | 120 - 100 | P2.5STDw/L2.5x2.5x3/8 | 24.33 | 12.17 | 154.9 | 30.000 | 3.3188 | 21475.80 | 99564.00 | 0.216 |
| T8 | 100 - 80 | P3x.216 | 25.11 | 12.56 | 129.5 | 30.000 | 2.2285 | 21403.90 | 66854.10 | 0.320 |
| T9 | 80 - 60 | P3x.216 | 25.88 | 12.94 | 133.5 | 30.000 | 2.2285 | 22550.30 | 66854.10 | 0.337 |
| T10 | 60 - 30 | P3x.216 | 35.15 | 11.72 | 120.8 | 30.000 | 2.2285 | 29811.80 | 66854.10 | 0.446 |
| T11 | 30 - 0 | P3STDw/L2.5x2.5x3/8 | 36.16 | 12.05 | 135.4 | 30.000 | 3.8041 | 30768.80 | 114123.00 | 0.270 |

Horizontal Design Data (Tension)

| Section No. | Elevation ft | Size | L ft | L _u ft | Kl/r | F _a ksi | A in ² | Actual P lb | Allow. P _a lb | Ratio $\frac{P}{P_a}$ |
|-------------|-----------------|-----------|---------|----------------------|-------|-----------------------|----------------------|----------------|-----------------------------|--------------------------|
| T1 | 240 - 220 | P2x.154 | 12.26 | 5.77 | 88.0 | 30.000 | 1.0745 | 1058.33 | 32235.90 | 0.033 |
| T2 | 220 - 200 | P2x.154 | 14.06 | 6.67 | 101.7 | 30.000 | 1.0745 | 2637.62 | 32235.90 | 0.082 |
| T3 | 200 - 180 | P2x.154 | 16.43 | 7.86 | 119.8 | 30.000 | 1.0745 | 4565.40 | 32235.90 | 0.142 |
| T4 | 180 - 160 | P2.5x.203 | 18.93 | 9.11 | 115.3 | 30.000 | 1.7040 | 7586.05 | 51121.50 | 0.148 |
| T5 | 160 - 140 | P2.5x.203 | 21.43 | 10.36 | 131.2 | 30.000 | 1.7040 | 10593.20 | 51121.50 | 0.207 |
| T6 | 140 - 120 | P2.5x.203 | 23.93 | 11.61 | 147.0 | 30.000 | 1.7040 | 11559.00 | 51121.50 | 0.226 |
| T7 | 120 - 100 | P2.5x.203 | 25.18 | 12.23 | 154.9 | 30.000 | 1.7040 | 12268.60 | 51121.50 | 0.240 |
| T8 | 100 - 80 | P3x.216 | 27.68 | 13.48 | 139.0 | 30.000 | 2.2285 | 12986.70 | 66854.10 | 0.194 |
| T9 | 80 - 60 | P3x.216 | 30.33 | 14.81 | 152.7 | 30.000 | 2.2285 | 14474.70 | 66854.10 | 0.217 |
| T10 | 60 - 30 | P3x.216 | 32.83 | 15.97 | 164.7 | 30.000 | 2.2285 | 15586.30 | 66854.10 | 0.233 |
| T11 | 30 - 0 | P3.5x.226 | 36.58 | 17.84 | 160.2 | 30.000 | 2.6795 | 16904.30 | 80386.20 | 0.210 |

| | | | | |
|---|----------------|----------|--------------------|-------------------|
| tnxTower Destek Engineering, LLC 1281 Kennestone Circle, Suite 100 Marietta, GA 30066 Phone: (770) 693 0835 FAX: | Job | CT11680A | Page | 53 of 58 |
| | Project | 1517045 | Date | 16:33:57 10/23/15 |
| | Client | T-Mobile | Designed by | Ahmet Colakoglu |

| Section No. | Elevation ft | Size | L ft | L _u ft | Kl/r | F _a ksi | A in ² | Actual P lb | Allow. P _a lb | Ratio P P _a |
|-------------|-----------------|------|---------|----------------------|------|-----------------------|----------------------|----------------|-----------------------------|---------------------------|
|-------------|-----------------|------|---------|----------------------|------|-----------------------|----------------------|----------------|-----------------------------|---------------------------|

Top Girt Design Data (Tension)

| Section No. | Elevation ft | Size | L ft | L _u ft | Kl/r | F _a ksi | A in ² | Actual P lb | Allow. P _a lb | Ratio P P _a |
|-------------|-----------------|---------|---------|----------------------|------|-----------------------|----------------------|----------------|-----------------------------|---------------------------|
| T1 | 240 - 220 | P2x.154 | 10.93 | 5.11 | 77.8 | 30.000 | 1.0745 | 327.71 | 32235.90 | 0.010 |

Redundant Horizontal (1) Design Data (Tension)

| Section No. | Elevation ft | Size | L ft | L _u ft | Kl/r | F _a ksi | A in ² | Actual P lb | Allow. P _a lb | Ratio P P _a |
|-------------|-----------------|-----------|---------|----------------------|-------|-----------------------|----------------------|----------------|-----------------------------|---------------------------|
| T7 | 120 - 100 | P1.5x.145 | 6.30 | 5.94 | 114.4 | 21.600 | 0.7995 | 2228.82 | 17268.30 | 0.129 |
| T8 | 100 - 80 | P1.5x.145 | 6.92 | 6.56 | 126.4 | 21.600 | 0.7995 | 2784.18 | 17268.30 | 0.161 |
| T9 | 80 - 60 | P1.5x.145 | 7.58 | 7.13 | 137.5 | 21.600 | 0.7995 | 3330.22 | 17268.30 | 0.193 |
| T10 | 60 - 30 | P1.5x.145 | 5.47 | 5.02 | 96.8 | 21.600 | 0.7995 | 3891.27 | 17268.30 | 0.225 |
| T11 | 30 - 0 | P1.5x.145 | 6.10 | 5.65 | 108.9 | 21.600 | 0.7995 | 4703.30 | 17268.30 | 0.272 |

Redundant Horizontal (2) Design Data (Tension)

| Section No. | Elevation ft | Size | L ft | L _u ft | Kl/r | F _a ksi | A in ² | Actual P lb | Allow. P _a lb | Ratio P P _a |
|-------------|-----------------|---------|---------|----------------------|-------|-----------------------|----------------------|----------------|-----------------------------|---------------------------|
| T10 | 60 - 30 | P2x.154 | 10.94 | 10.50 | 160.0 | 21.600 | 1.0745 | 3891.27 | 23209.90 | 0.168 |
| T11 | 30 - 0 | P2x.154 | 12.19 | 11.75 | 179.1 | 21.600 | 1.0745 | 4703.30 | 23209.90 | 0.203 |

Redundant Diagonal (1) Design Data (Tension)

| Section No. | Elevation ft | Size | L ft | L _u ft | Kl/r | F _a ksi | A in ² | Actual P lb | Allow. P _a lb | Ratio P P _a |
|-------------|-----------------|-----------|---------|----------------------|-------|-----------------------|----------------------|----------------|-----------------------------|---------------------------|
| T7 | 120 - 100 | P1.5x.145 | 11.50 | 10.77 | 207.7 | 21.600 | 0.7995 | 2036.08 | 17268.30 | 0.118 |

| | | | | |
|---|----------------|----------|--------------------|-------------------|
| tnxTower Destek Engineering, LLC 1281 Kennestone Circle, Suite 100 Marietta, GA 30066 Phone: (770) 693 0835 FAX: | Job | CT11680A | Page | 54 of 58 |
| | Project | 1517045 | Date | 16:33:57 10/23/15 |
| | Client | T-Mobile | Designed by | Ahmet Colakoglu |

| Section No. | Elevation ft | Size | L ft | L _u ft | Kl/r | F _a ksi | A in ² | Actual P lb | Allow. P _a lb | Ratio $\frac{P}{P_a}$ |
|-------------|-----------------|-----------------------------|---------|----------------------|-------|-----------------------|----------------------|----------------|-----------------------------|--------------------------|
| T8 | 100 - 80 | P2x.154 | 11.80 | 11.13 | 169.6 | 21.600 | 1.0745 | 2374.33 | 23209.90 | 0.102 |
| T9 | 80 - 60 | P2x.154 | 12.19 | 11.56 | 176.2 | 21.600 | 1.0745 | 2676.38 | 23209.90 | 0.115 |
| T10 | 60 - 30 | P1.5x.145 | 11.12 | 10.09 | 194.5 | 21.600 | 0.7995 | 3953.55 | 17268.30 | 0.229 |
| T11 | 30 - 0 | P1.5STD with half 2STD Pipe | 11.40 | 10.47 | 212.0 | 21.600 | 1.4449 | 4399.14 | 31209.80 | 0.141 |

Redundant Diagonal (2) Design Data (Tension)

| Section No. | Elevation ft | Size | L ft | L _u ft | Kl/r | F _a ksi | A in ² | Actual P lb | Allow. P _a lb | Ratio $\frac{P}{P_a}$ |
|-------------|-----------------|-------------|---------|----------------------|-------|-----------------------|----------------------|----------------|-----------------------------|--------------------------|
| T10 | 60 - 30 | P2x.154 | 14.37 | 13.75 | 209.6 | 21.600 | 1.0745 | 2555.50 | 23209.90 | 0.110 |
| T11 | 30 - 0 | Pipe 2.5STD | 15.30 | 14.70 | 185.3 | 21.600 | 1.5948 | 2949.97 | 34448.10 | 0.086 |

Redundant Hip (1) Design Data (Tension)

| Section No. | Elevation ft | Size | L ft | L _u ft | Kl/r | F _a ksi | A in ² | Actual P lb | Allow. P _a lb | Ratio $\frac{P}{P_a}$ |
|-------------|-----------------|-----------|---------|----------------------|-------|-----------------------|----------------------|----------------|-----------------------------|--------------------------|
| T10 | 60 - 30 | P1.5x.145 | 5.47 | 5.47 | 105.5 | 21.600 | 0.7995 | 9.64 | 17268.30 | 0.001 |
| T11 | 30 - 0 | P1.5x.145 | 6.10 | 6.10 | 117.5 | 21.600 | 0.7995 | 5.51 | 17268.30 | 0.000 |

Redundant Hip (2) Design Data (Tension)

| Section No. | Elevation ft | Size | L ft | L _u ft | Kl/r | F _a ksi | A in ² | Actual P lb | Allow. P _a lb | Ratio $\frac{P}{P_a}$ |
|-------------|-----------------|-----------|---------|----------------------|-------|-----------------------|----------------------|----------------|-----------------------------|--------------------------|
| T10 | 60 - 30 | P1.5x.145 | 10.94 | 10.94 | 210.9 | 21.600 | 0.7995 | 14.41 | 17268.30 | 0.001 |
| T11 | 30 - 0 | P2x.154 | 12.19 | 12.19 | 185.9 | 21.600 | 1.0745 | 3.55 | 23209.90 | 0.000 |

Redundant Hip Diagonal Design Data (Tension)

| | | | | |
|---|----------------|----------|--------------------|-------------------|
| tnxTower Destek Engineering, LLC 1281 Kennestone Circle, Suite 100 Marietta, GA 30066 Phone: (770) 693 0835 FAX: | Job | CT11680A | Page | 55 of 58 |
| | Project | 1517045 | Date | 16:33:57 10/23/15 |
| | Client | T-Mobile | Designed by | Ahmet Colakoglu |

| Section No. | Elevation ft | Size | L ft | L _u ft | Kl/r | F _a ksi | A in ² | Actual P lb | Allow. P _a lb | Ratio P/P _a |
|-------------|-----------------|------------|---------|----------------------|-------|-----------------------|----------------------|----------------|-----------------------------|---------------------------|
| T7 | 120 - 100 | P2.5x.203 | 15.08 | 15.08 | 190.9 | 21.600 | 1.7040 | 76.33 | 36807.50 | 0.002 |
| T8 | 100 - 80 | P2.5x.203 | 15.92 | 15.92 | 201.6 | 21.600 | 1.7040 | 92.42 | 36807.50 | 0.003 |
| T9 | 80 - 60 | P3.5x0.216 | 16.81 | 16.81 | 173.3 | 21.600 | 2.2285 | 96.29 | 48134.90 | 0.002 |
| T10 | 60 - 30 | P3.5x0.216 | 14.04 | 14.04 | 144.8 | 21.600 | 2.2285 | 226.10 | 48134.90 | 0.005 |
| T11 | 30 - 0 | P3.5x0.216 | 14.82 | 14.82 | 152.8 | 21.600 | 2.2285 | 166.04 | 48134.90 | 0.003 |

Inner Bracing Design Data (Tension)

| Section No. | Elevation ft | Size | L ft | L _u ft | Kl/r | F _a ksi | A in ² | Actual P lb | Allow. P _a lb | Ratio P/P _a |
|-------------|-----------------|-------------------|---------|----------------------|-------|-----------------------|----------------------|----------------|-----------------------------|---------------------------|
| T1 | 240 - 220 | L2x2x1/8 | 5.47 | 5.47 | 104.7 | 30.000 | 0.4844 | 6.05 | 14531.30 | 0.000 |
| T2 | 220 - 200 | L2x2x1/8 | 7.03 | 7.03 | 134.7 | 30.000 | 0.4844 | 0.23 | 14531.30 | 0.000 |
| T3 | 200 - 180 | L2 1/2x2 1/2x3/16 | 7.59 | 7.59 | 117.1 | 30.000 | 0.9020 | 0.09 | 27060.00 | 0.000 |
| T4 | 180 - 160 | L3x3x3/16 | 8.84 | 8.84 | 113.0 | 30.000 | 1.0900 | 1.06 | 32700.00 | 0.000 |
| T7 | 120 - 100 | P2x.154 | 12.59 | 12.59 | 191.9 | 30.000 | 1.0745 | 1.36 | 32235.90 | 0.000 |
| T8 | 100 - 80 | P3x.216 | 13.84 | 13.84 | 142.7 | 30.000 | 2.2285 | 2.38 | 66854.10 | 0.000 |
| T9 | 80 - 60 | P3x.216 | 15.16 | 15.16 | 156.4 | 30.000 | 2.2285 | 2.21 | 66854.10 | 0.000 |
| T10 | 60 - 30 | P3x.216 | 16.41 | 16.41 | 169.3 | 30.000 | 2.2285 | 14.18 | 66854.10 | 0.000 |
| T11 | 30 - 0 | P3x.216 | 18.29 | 18.29 | 188.6 | 30.000 | 2.2285 | 8.17 | 66854.10 | 0.000 |

Section Capacity Table

| Section No. | Elevation ft | Component Type | Size | Critical Element | P lb | SF*P _{allow} lb | % Capacity | Pass Fail |
|-------------|-----------------|----------------|-----------|------------------|------------|-----------------------------|------------|-----------|
| T1 | 240 - 220 | Leg | P8x.5 | 1 | -3522.64 | 466410.02 | 0.8 | Pass |
| T2 | 220 - 200 | Leg | P8x.5 | 40 | -11060.10 | 435176.49 | 2.5 | Pass |
| T3 | 200 - 180 | Leg | P8x.5 | 67 | -26834.10 | 435125.84 | 6.2 | Pass |
| T4 | 180 - 160 | Leg | P8x.5 | 96 | -49190.80 | 435125.84 | 11.3 | Pass |
| T5 | 160 - 140 | Leg | ROHN 8 EH | 123 | -79037.90 | 435125.84 | 18.2 | Pass |
| T6 | 140 - 120 | Leg | P8x.5 | 150 | -112205.00 | 435125.84 | 25.8 | Pass |
| T7 | 120 - 100 | Leg | P8x.5 | 177 | -128430.00 | 435125.84 | 29.5 | Pass |
| T8 | 100 - 80 | Leg | ROHN 8 EH | 210 | -160394.00 | 435092.51 | 36.9 | Pass |
| T9 | 80 - 60 | Leg | P10x.5 | 243 | -191897.00 | 574189.73 | 33.4 | Pass |

| | | |
|--|--|--|
| <p style="text-align: center;">tnxTower</p> <p style="text-align: center;">Destek Engineering, LLC 1281 Kennestone Circle, Suite 100 Marietta, GA 30066 Phone: (770) 693 0835 FAX:</p> | <p style="text-align: center;">Job</p> <p style="text-align: center;">CT11680A</p> | <p style="text-align: center;">Page</p> <p style="text-align: center;">56 of 58</p> |
| | <p style="text-align: center;">Project</p> <p style="text-align: center;">1517045</p> | <p style="text-align: center;">Date</p> <p style="text-align: center;">16:33:57 10/23/15</p> |
| | <p style="text-align: center;">Client</p> <p style="text-align: center;">T-Mobile</p> | <p style="text-align: center;">Designed by</p> <p style="text-align: center;">Ahmet Colakoglu</p> |

| Section No. | Elevation ft | Component Type | Size | Critical Element | P lb | SF*P _{allow} lb | % Capacity | Pass Fail |
|-------------|--------------|-----------------------|-----------------------------|------------------|------------|--------------------------|------------|-----------|
| T10 | 60 - 30 | Leg | P10x.5 | 276 | -224226.00 | 574189.73 | 39.1 | Pass |
| T11 | 30 - 0 | Leg | P10x.5 | 327 | -271017.00 | 574189.73 | 47.2 | Pass |
| T1 | 240 - 220 | Diagonal | P2x.154 | 14 | -1558.19 | 11958.69 | 13.0 | Pass |
| T2 | 220 - 200 | Diagonal | P2.5x.203 | 50 | -4435.50 | 14770.84 | 30.0 | Pass |
| T3 | 200 - 180 | Diagonal | P2.5x.203 | 78 | -6981.98 | 12885.74 | 54.2 | Pass |
| T4 | 180 - 160 | Diagonal | P2.5x.203 | 105 | -10804.90 | 11257.58 | 96.0 | Pass |
| T5 | 160 - 140 | Diagonal | P2.5STD w/Half HSS3.5"x0.3" | 132 | -14285.40 | 16747.54 | 85.3 | Pass |
| T6 | 140 - 120 | Diagonal | P3x.216 | 159 | -14852.60 | 17087.06 | 86.9 | Pass |
| T7 | 120 - 100 | Diagonal | P2.5STDw/L2.5x2.5x3/8 | 198 | -22123.00 | 26626.41 | 83.1 | Pass |
| T8 | 100 - 80 | Diagonal | P3x.216 | 231 | -22007.50 | 26457.52 | 83.2 | Pass |
| T9 | 80 - 60 | Diagonal | P3x.216 | 261 | -23093.80 | 24901.11 | 92.7 | Pass |
| T10 | 60 - 30 | Diagonal | P3x.216 | 309 | -30337.90 | 30377.20 | 99.9 | Pass |
| T11 | 30 - 0 | Diagonal | P3STDw/L2.5x2.5x3/8 | 360 | -32228.60 | 39854.30 | 80.9 | Pass |
| | | | | | | | 86.9 (b) | |
| T1 | 240 - 220 | Horizontal | P2x.154 | 13 | -1042.22 | 24872.71 | 4.2 | Pass |
| | | | | | | | 6.2 (b) | |
| T2 | 220 - 200 | Horizontal | P2x.154 | 49 | -2676.06 | 20511.27 | 13.0 | Pass |
| | | | | | | | 15.6 (b) | |
| T3 | 200 - 180 | Horizontal | P2x.154 | 76 | -4523.31 | 14913.07 | 30.3 | Pass |
| T4 | 180 - 160 | Horizontal | P2.5x.203 | 103 | -7526.19 | 25501.36 | 29.5 | Pass |
| | | | | | | | 44.2 (b) | |
| T5 | 160 - 140 | Horizontal | P2.5x.203 | 130 | -10414.40 | 19716.53 | 52.8 | Pass |
| | | | | | | | 61.7 (b) | |
| T6 | 140 - 120 | Horizontal | P2.5x.203 | 157 | -11283.00 | 15698.07 | 71.9 | Pass |
| T7 | 120 - 100 | Horizontal | P2.5x.203 | 194 | -12322.80 | 14134.73 | 87.2 | Pass |
| T8 | 100 - 80 | Horizontal | P3x.216 | 227 | -13118.40 | 22950.79 | 57.2 | Pass |
| T9 | 80 - 60 | Horizontal | P3x.216 | 260 | -14424.40 | 19026.71 | 75.8 | Pass |
| T10 | 60 - 30 | Horizontal | P3x.216 | 303 | -15633.80 | 16359.37 | 95.6 | Pass |
| T11 | 30 - 0 | Horizontal | P3.5x.226 | 354 | -17681.60 | 20790.13 | 85.0 | Pass |
| T1 | 240 - 220 | Top Girt | P2x.154 | 4 | -349.33 | 27846.77 | 1.3 | Pass |
| | | | | | | | 2.0 (b) | |
| T7 | 120 - 100 | Redund Horz 1 Bracing | P1.5x.145 | 190 | -2228.82 | 11797.78 | 18.9 | Pass |
| T8 | 100 - 80 | Redund Horz 1 Bracing | P1.5x.145 | 223 | -2784.18 | 9952.72 | 28.0 | Pass |
| T9 | 80 - 60 | Redund Horz 1 Bracing | P1.5x.145 | 256 | -3330.22 | 8415.80 | 39.6 | Pass |
| T10 | 60 - 30 | Redund Horz 1 Bracing | P1.5x.145 | 305 | -3891.27 | 14253.77 | 27.3 | Pass |
| T11 | 30 - 0 | Redund Horz 1 Bracing | P1.5x.145 | 346 | -4703.30 | 12599.46 | 37.3 | Pass |
| T10 | 60 - 30 | Redund Horz 2 Bracing | P2x.154 | 296 | -3891.27 | 8354.66 | 46.6 | Pass |
| T11 | 30 - 0 | Redund Horz 2 Bracing | P2x.154 | 347 | -4703.30 | 6671.00 | 70.5 | Pass |
| T7 | 120 - 100 | Redund Diag 1 Bracing | P1.5x.145 | 191 | -2036.08 | 3690.61 | 55.2 | Pass |
| T8 | 100 - 80 | Redund Diag 1 Bracing | P2x.154 | 224 | -2374.33 | 7434.37 | 31.9 | Pass |
| T9 | 80 - 60 | Redund Diag 1 Bracing | P2x.154 | 257 | -2676.38 | 6888.04 | 38.9 | Pass |
| T10 | 60 - 30 | Redund Diag 1 Bracing | P1.5x.145 | 307 | -3953.55 | 4204.62 | 94.0 | Pass |
| T11 | 30 - 0 | Redund Diag 1 Bracing | P1.5STD with half 2STD Pipe | 358 | -4399.14 | 6398.32 | 68.8 | Pass |
| T10 | 60 - 30 | Redund Diag 2 Bracing | P2x.154 | 298 | -2555.50 | 4867.72 | 52.5 | Pass |
| T11 | 30 - 0 | Redund Diag 2 Bracing | Pipe 2.5STD | 349 | -2949.97 | 9241.68 | 31.9 | Pass |
| T7 | 120 - 100 | Redund Hip 1 Bracing | P1.5x.145 | 201 | -35.56 | 10753.82 | 0.3 | Pass |

| | | | | |
|---|----------------|----------|--------------------|-------------------|
| tnxTower Destek Engineering, LLC 1281 Kennestone Circle, Suite 100 Marietta, GA 30066 Phone: (770) 693 0835 FAX: | Job | CT11680A | Page | 57 of 58 |
| | Project | 1517045 | Date | 16:33:57 10/23/15 |
| | Client | T-Mobile | Designed by | Ahmet Colakoglu |

| Section No. | Elevation ft | Component Type | Size | Critical Element | P lb | SF*P _{allow} lb | % Capacity | Pass Fail | |
|-------------|--------------|-----------------------------|-------------------|------------------|---------|--------------------------|-----------------------------|-----------|------|
| T8 | 100 - 80 | Redund Hip 1 Bracing | P1.5x.145 | 234 | -43.59 | 8945.83 | 0.5 | Pass | |
| T9 | 80 - 60 | Redund Hip 1 Bracing | P1.5x.145 | 267 | -40.65 | 7450.88 | 0.5 | Pass | |
| T10 | 60 - 30 | Redund Hip 1 Bracing | P1.5x.145 | 314 | -102.97 | 13080.81 | 0.8 | Pass | |
| T11 | 30 - 0 | Redund Hip 1 Bracing | P1.5x.145 | 365 | -91.20 | 11335.54 | 0.8 | Pass | |
| T10 | 60 - 30 | Redund Hip 2 Bracing | P1.5x.145 | 319 | -48.30 | 3577.12 | 1.4 | Pass | |
| T11 | 30 - 0 | Redund Hip 2 Bracing | P2x.154 | 370 | -34.26 | 6189.89 | 0.6 | Pass | |
| T7 | 120 - 100 | Redund Hip Diagonal Bracing | P2.5x.203 | 193 | -52.84 | 6979.27 | 0.8 | Pass | |
| T8 | 100 - 80 | Redund Hip Diagonal Bracing | P2.5x.203 | 226 | -52.68 | 6259.27 | 0.8 | Pass | |
| T9 | 80 - 60 | Redund Hip Diagonal Bracing | P3.5x0.216 | 259 | -64.72 | 11076.30 | 0.6 | Pass | |
| T10 | 60 - 30 | Redund Hip Diagonal Bracing | P3.5x0.216 | 302 | -65.81 | 9872.27 | 0.7 | Pass | |
| T11 | 30 - 0 | Redund Hip Diagonal Bracing | P3.5x0.216 | 353 | -64.95 | 8494.79 | 0.8 | Pass | |
| T1 | 240 - 220 | Inner Bracing | L2x2x1/8 | 16 | -2.71 | 2111.45 | 0.4 | Pass | |
| T2 | 220 - 200 | Inner Bracing | L2x2x1/8 | 54 | -4.40 | 1607.44 | 0.4 | Pass | |
| T3 | 200 - 180 | Inner Bracing | L2 1/2x2 1/2x3/16 | 79 | -5.74 | 3396.18 | 0.3 | Pass | |
| T4 | 180 - 160 | Inner Bracing | L3x3x3/16 | 107 | -7.28 | 4481.94 | 0.4 | Pass | |
| T5 | 160 - 140 | Inner Bracing | L3 1/2x3 1/2x1/4 | 134 | -10.69 | 7352.08 | 0.4 | Pass | |
| T6 | 140 - 120 | Inner Bracing | L3 1/2x3 1/2x1/4 | 160 | -10.09 | 5896.15 | 0.4 | Pass | |
| T7 | 120 - 100 | Inner Bracing | P2x.154 | 207 | -15.34 | 5805.99 | 0.3 | Pass | |
| T8 | 100 - 80 | Inner Bracing | P3x.216 | 239 | -24.93 | 21774.29 | 0.3 | Pass | |
| T9 | 80 - 60 | Inner Bracing | P3x.216 | 271 | -22.44 | 18135.60 | 0.3 | Pass | |
| T10 | 60 - 30 | Inner Bracing | P3x.216 | 324 | -35.36 | 15478.66 | 0.4 | Pass | |
| T11 | 30 - 0 | Inner Bracing | P3x.216 | 375 | -29.22 | 12467.79 | 0.4 | Pass | |
| | | | | | | | Summary | | |
| | | | | | | | Leg (T11) | 47.2 | Pass |
| | | | | | | | Diagonal (T10) | 99.9 | Pass |
| | | | | | | | Horizontal (T10) | 95.6 | Pass |
| | | | | | | | Top Girt (T1) | 2.0 | Pass |
| | | | | | | | Redund Horz 1 Bracing (T9) | 39.6 | Pass |
| | | | | | | | Redund Horz 2 Bracing (T11) | 70.5 | Pass |
| | | | | | | | Redund Diag 1 Bracing (T10) | 94.0 | Pass |
| | | | | | | | Redund Diag 2 Bracing (T10) | 52.5 | Pass |
| | | | | | | | Redund Hip 1 Bracing (T11) | 0.8 | Pass |
| | | | | | | | Redund Hip 2 Bracing | 1.4 | Pass |

| | | | | |
|---|----------------|----------|--------------------|-------------------|
| tnxTower Destek Engineering, LLC 1281 Kennestone Circle, Suite 100 Marietta, GA 30066 Phone: (770) 693 0835 FAX: | Job | CT11680A | Page | 58 of 58 |
| | Project | 1517045 | Date | 16:33:57 10/23/15 |
| | Client | T-Mobile | Designed by | Ahmet Colakoglu |

| Section No. | Elevation ft | Component Type | Size | Critical Element | P lb | SF*P _{allow} lb | % Capacity | Pass Fail |
|-------------|--------------|----------------|------|------------------|------|--------------------------|-------------|-------------|
| | | | | | | (T10) | | |
| | | | | | | Redund Hip Diagonal | 0.8 | Pass |
| | | | | | | Bracing (T8) Inner | 0.4 | Pass |
| | | | | | | Bracing (T2) | | |
| | | | | | | Bolt Checks | 86.9 | Pass |
| | | | | | | RATING = | 99.9 | Pass |



T-MOBILE NORTHEAST LLC

SITE #: CT11680A

SITE NAME: BRIDGEPORT NORTH

SITE ADDRESS:

1320 CHOPSEY HILL ROAD

BRIDGEPORT, CT 06610

WIRELESS BROADBAND FACILITY

CONSTRUCTION DRAWINGS

(702CU CONFIGURATION)



T-MOBILE NORTHEAST, LLC
35 GRIFFIN ROAD SOUTH
BLOOMFIELD, CT 06002
OFFICE: (860) 692-7100
FAX: (860) 692-7159



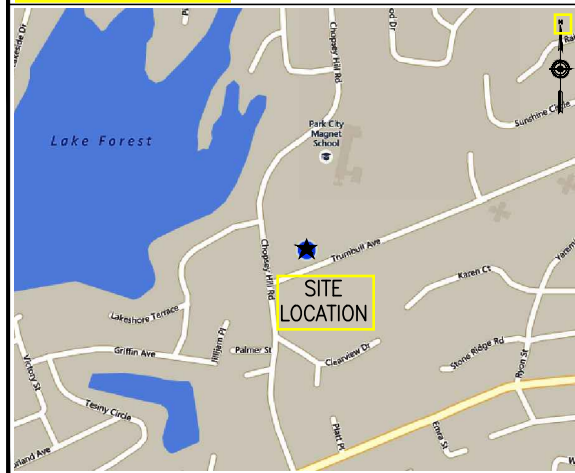
1340 Centre Street, Suite 212
Newton Center, MA 02459
Office: 617-965-0789
Fax: 617-213-5056

| SUBMITTALS | | | |
|------------|-------------------|----------|---|
| DATE | DESCRIPTION | REVISION | |
| 10/20/15 | ISSUED FOR REVIEW | A | 0 |
| 10/26/15 | FINAL CD | | 0 |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |

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

PROJECT NO: CT11680A
DRAWN BY: MS
CHECKED BY: SM

VICINITY MAP



DO NOT SCALE DRAWINGS

CONTRACTOR SHALL VERIFY PLANS AND EXISTING DIMENSIONS AND CONDITIONS ON THE JOB SITE AND SHALL IMMEDIATELY NOTIFY THE ARCHITECT IN WRITING OF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR BE RESPONSIBLE FOR SAME.

CALL BEFORE YOU DIG:
WWW.CBYD.COM
CALL 800 922 4455, OR 811
CALL THREE WORKING DAYS PRIOR TO DIGGING

SAFETY PRECAUTIONS SHALL BE IMPLEMENTED BY CONTRACTOR(S) AT ALL TRENCHING IN ACCORDANCE WITH CURRENT OSHA STANDARDS.

COLOR CODE FOR UTILITY LOCATIONS

| | | |
|-------------------|-----------------------------|----------|
| ELECTRIC - RED | SEWER - GREEN | - PINK |
| GAS/OIL - YELLOW | SURVEY - PINK | - WHITE |
| TEL/CATV - ORANGE | PROPOSED EXCAVATION - WHITE | - PURPLE |
| WATER - BLUE | RECLAIMED WATER - PURPLE | |

GENERAL NOTES

- THE CONTRACTOR SHALL GIVE ALL NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY, MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS, AND LOCAL AND STATE JURISDICTIONAL CODES BEARING ON THE PERFORMANCE OF THE WORK. THE WORK PERFORMED ON THE PROJECT AND THE MATERIALS INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS AND ORDINANCES.
- THE ARCHITECT/ENGINEER HAVE MADE EVERY EFFORT TO SET FORTH IN THE CONSTRUCTION AND CONSTRUCT DOCUMENTS THE COMPLETE SCOPE OF WORK. THE CONTRACTOR BIDDING THE JOB IS NEVERTHELESS CAUTIONED THAT MINOR OMISSIONS OR ERRORS IN THE DRAWINGS AND OR SPECIFICATIONS SHALL NOT EXCUSE SAID CONTRACTOR FROM COMPLETING THE PROJECT AND IMPROVEMENTS IN ACCORDANCE WITH THE INTENT OF THESE DOCUMENTS.
- THE CONTRACTOR OR BIDDER SHALL BEAR THE RESPONSIBILITY OF NOTIFYING (IN WRITING) THE T-MOBILE REPRESENTATIVE OF ANY CONFLICTS, ERRORS, OR OMISSIONS PRIOR TO THE SUBMISSION OF THE CONTRACTOR'S PROPOSAL OR PERFORMANCE OF WORK. IN THE EVENT OF DISCREPANCIES, THE CONTRACTOR SHALL PRICE THE MORE COSTLY OR EXPENSIVE WORK, UNLESS DIRECTED IN WRITING OTHERWISE.
- THE SCOPE OF WORK SHALL INCLUDE FURNISHING OF ALL MATERIALS, EQUIPMENT, LABOR AND ALL OTHER MATERIALS AND LABOR DEEMED NECESSARY TO COMPLETE THE WORK/PROJECT AS DESCRIBED HEREIN.
- THE CONTRACTOR SHALL VISIT THE JOB SITE PRIOR TO THE SUBMISSION OF BIDS OR PERFORMING WORK TO FAMILIARIZE HIMSELF WITH THE FIELD CONDITIONS AND TO VERIFY THAT THE PROJECT CAN BE CONSTRUCTED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
- THE CONTRACTOR SHALL OBTAIN AUTHORIZATION TO PROCEED WITH CONSTRUCTION PRIOR TO STARTING WORK ON ANY ITEM NOT CLEARLY DEFINED BY THE CONSTRUCTION DRAWINGS/CONTRACT DOCUMENTS.
- THE CONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS ACCORDING TO THE MANUFACTURER'S/VENDOR'S SPECIFICATIONS UNLESS NOTED OTHERWISE OR WHERE LOCAL CODES OR ORDINANCES TAKE PRECEDENCE.
- THE CONTRACTOR SHALL PROVIDE A FULL SET OF CONSTRUCTION DOCUMENTS AT THE SITE UPDATED WITH THE LATEST REVISIONS AND ADDENDUM OR CLARIFICATIONS AVAILABLE FOR THE USE BY ALL PERSONNEL INVOLVED WITH THE PROJECT.
- THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE PROJECT DESCRIBED HEREIN. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, AND PROCEDURES AND FOR COORDINATING ALL PORTIONS OF THE WORK UNDER CONTRACT.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ANY PERMITS AND INSPECTIONS WHICH ARE REQUIRED FOR THE WORK BY THE ARCHITECT/ENGINEER, THE STATE, COUNTY, OR LOCAL GOVERNMENT AUTHORITY.
- THE CONTRACTOR SHALL MAKE NECESSARY PROVISIONS TO PROTECT EXISTING IMPROVEMENTS, EASEMENTS, PAVING, CURBING, ETC., DURING CONSTRUCTION. UPON COMPLETION OF WORK, THE CONTRACTOR SHALL REPAIR ANY DAMAGE THAT MAY HAVE OCCURRED DUE TO CONSTRUCTION ON OR ABOUT THE PROPERTY.
- THE CONTRACTOR SHALL KEEP THE GENERAL WORK AREA CLEAN AND HAZARD FREE DURING CONSTRUCTION AND DISPOSE OF ALL DIRT, DEBRIS, RUBBISH AND REMOVE EQUIPMENT NOT SPECIFIED AS REMAINING ON PROPERTY. PREMISES SHALL BE LEFT IN CLEAN CONDITION AND FREE FROM PAINT SPOTS, DUST, OR SMUDGES OF ANY NATURE.
- THE CONTRACTOR SHALL COMPLY WITH ALL OSHA REQUIREMENTS, AS WELL AS THE LATEST EDITIONS OF ANY PERTINENT STATE SAFETY REGULATIONS.
- THE CONTRACTOR SHALL NOTIFY THE T-MOBILE REPRESENTATIVE WHERE A CONFLICT OCCURS ON ANY OF THE CONTRACT DOCUMENTS. THE CONTRACTOR IS NOT TO ORDER MATERIAL OR CONSTRUCT ANY PORTION OF THE WORK THAT IS IN CONFLICT UNTIL CONFLICT IS RESOLVED BY THE T-MOBILE REPRESENTATIVE.
- THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS, ELEVATIONS, PROPERTY LINES, ETC., ON THE JOB.
- THE CONTRACTOR SHALL RETURN ALL DISTURBED AREAS TO THEIR ORIGINAL CONDITION AT THE COMPLETION OF WORK.
- REFER TO STRUCTURAL ANALYSIS DOCUMENT ENTITLED, "STRUCTURAL ANALYSIS REPORT - SELF SUPPORT TOWER" PREPARED BY ATLANTIS GROUP, INC., "T-MOBILE SITE ID CT11680A", DATED OCTOBER 23, 2015.

SITE INFORMATION

SITE NUMBER: CT11680A
 SITE NAME: BRIDGEPORT NORTH
 SITE ADDRESS: 1320 CHOPSEY HILL ROAD
 BRIDGEPORT, CT 06610
 LAT./LONG.: N 41.21692 / W -73.20121
 JURISDICTION: TOWN OF BRIDGEPORT , CT
 PROPERTY OWNER: UNISON

PROJECT SUB-CONTRACTORS

APPLICANT: T-MOBILE NORTHEAST, LLC.
 35 GRIFFIN ROAD SOUTH
 BLOOMFIELD, CT 06002
 (860) 692-7100

PROJECT MANAGER: TRANSCEND WIRELESS LLC
 10 INDUSTRIAL AVE, SUITE #3
 MAHWAH, NJ 07430

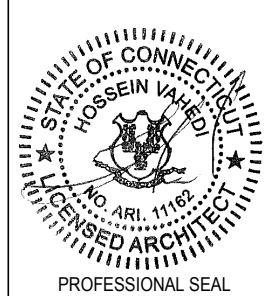
ARCHITECT/ENGINEER: ATLANTIS GROUP INC.
 1340 CENTRE STREET SUITE 212
 NEWTON CENTER, MA 02459
 (617) 965-0789

CODE COMPLIANCE

CONNECTICUT STATE BUILDING CODE
 2005 CONNECTICUT BUILDING CODE WITH 2013 AMENDMENT
 2011 NATIONAL ELECTRICAL CODE.
 CONSTRUCTION TYPE: 2B USE GROUP: N/A

SHEET INDEX

| SHEET | DESCRIPTION |
|-------|--------------------------------------|
| T-1 | TITLE SHEET |
| N-1 | GENERAL AND ELECTRICAL NOTES |
| A-1 | SITE PLAN |
| A-2 | ELEVATION |
| A-3 | ANTENNA PLAN AND DETAILS |
| E-1 | GROUNDING AND POWER ONE LINE DIAGRAM |
| E-2 | GROUNDING DETAILS |
| | |
| | |
| | |
| | |
| | |
| | |
| | |
| | |



THIS DOCUMENT IS THE CREATION, DESIGN, PROPERTY AND COPYRIGHTED WORK OF T-MOBILE. ANY DUPLICATION OR USE WITHOUT EXPRESS WRITTEN CONSENT IS STRICTLY PROHIBITED.

SITE NAME
CT11680A

SITE NAME
BRIDGEPORT NORTH

SITE ADDRESS
1320 CHOPSEY HILL ROAD
BRIDGEPORT, CT 06610

SHEET TITLE
TITLE SHEET

SHEET NUMBER
T-1

REFER TO STRUCTURAL ANALYSIS DOCUMENT ENTITLED, "STRUCTURAL ANALYSIS REPORT – SELF SUPPORT TOWER" PREPARED BY ATLANTIS GROUP, INC., "T-MOBILE SITE ID CT11680A", DATED OCTOBER 23, 2015.

2
A-3

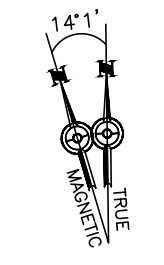
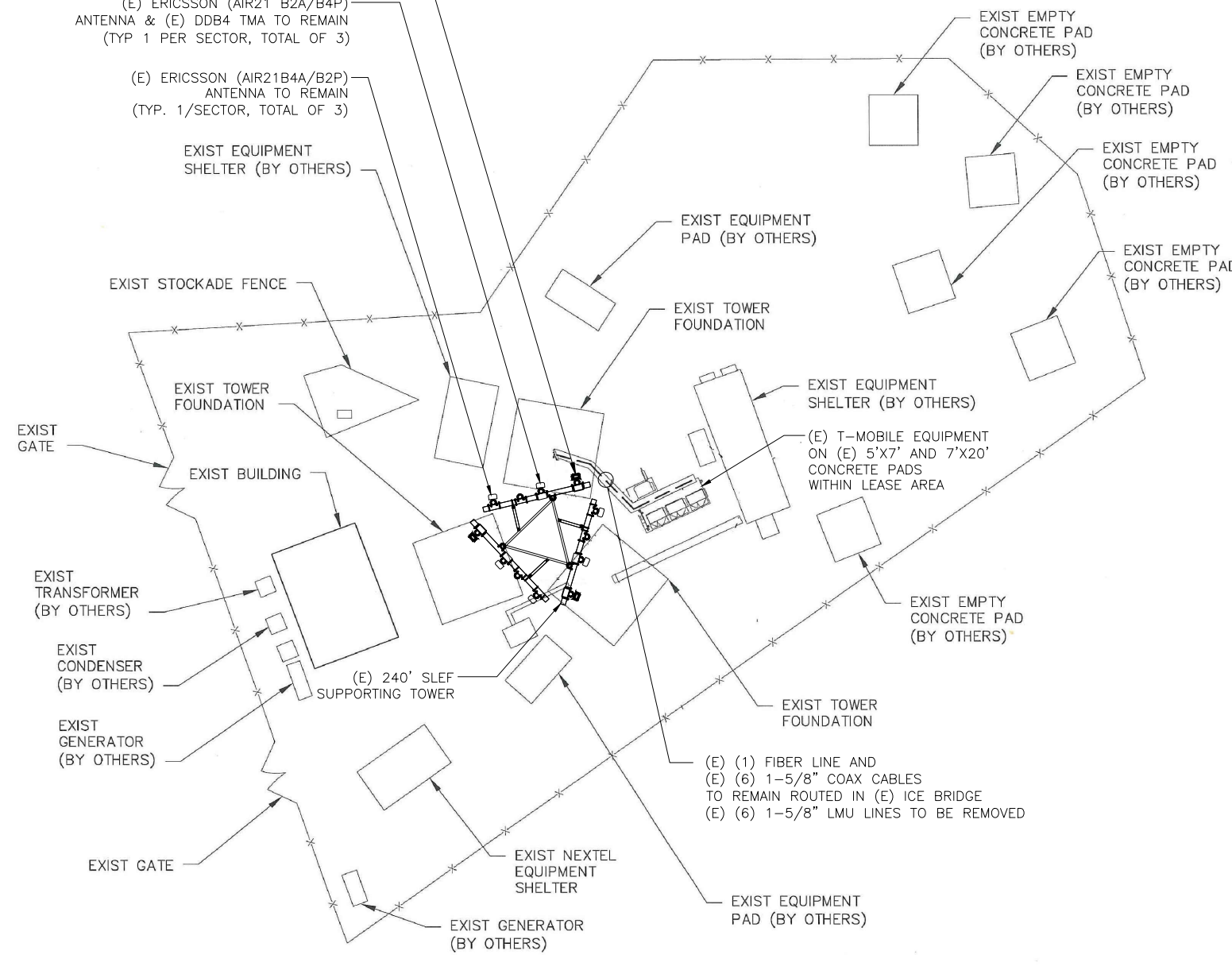
3
A-3

(P) COMMSCOPE (LNx-6515DS-VTM) ANTENNA AND (S11 B12) RRU ON (E) EMPTY PIPE MAST (TYP 1 PER SECTOR, TOTAL OF 3)

(E) ERICSSON (AIR21 B2A/B4P) ANTENNA & (E) DDB4 TMA TO REMAIN (TYP 1 PER SECTOR, TOTAL OF 3)

(E) ERICSSON (AIR21B4A/B2P) ANTENNA TO REMAIN (TYP. 1/SECTOR, TOTAL OF 3)

EXIST EQUIPMENT SHELTER (BY OTHERS)



GENERAL SITE NOTES

1. SITE INFORMATION WAS OBTAINED FROM A FIELD INVESTIGATION PERFORMED BY ATLANTIS GROUP, INC. CONTRACTOR TO FIELD VERIFY DIMENSIONS AS NECESSARY BEFORE CONSTRUCTION.
2. THE PROPOSED DEVELOPMENT DOES NOT INCLUDE SIGNS OF ADVERTISING.
3. THE PROPOSED DEVELOPMENT IS UNMANNED AND THEREFORE DOES NOT REQUIRE A MEANS OF WATER SUPPLY OR SEWAGE DISPOSAL.
4. NO LANDSCAPING WORK IS PROPOSED IN CONJUNCTION WITH THIS DEVELOPMENT OTHER THAN THAT WHICH IS SHOWN.
5. THE PROPOSED DEVELOPMENT DOES NOT INCLUDE OUTDOOR STORAGE OR ANY SOLID WASTE RECEPTACLES.
6. UTILITIES SHOWN ON PLAN ARE TAKEN FROM OWNERS RECORDS AND FIELD LOCATION OF VISIBLE SURFACE FEATURES. THE EXISTENCE, EXTENT AND EXACT HORIZONTAL AND VERTICAL LOCATIONS OF UTILITIES HAS NOT BEEN VERIFIED. ANY CONTRACTOR PERFORMING WORK ON THIS SITE MUST CONTACT CALL BEFORE YOU DIG THREE WORKING DAYS PRIOR TO COMMENCING WORK.
7. ALL OBSOLETE OR UNUSED FACILITIES SHALL BE REMOVED WITHIN 12 MONTHS OF CESSATION OF OPERATIONS.

SITE LEGEND

- SITE PROPERTY LINE
- STREET OR ROAD
- x-x-x- CHAIN LINK FENCE
- o— OPAQUE WOODEN FENCE
- o— BOARD ON BOARD FENCE
- (tree symbols) DECIDUOUS TREES/SHRUBS
- (tree symbols) EVERGREEN TREES/SHRUBS
- ~~~~~ TREE LINE
- ⊗ UTILITY POLE
- (E) EXISTING
- (N) NEW
- (P) PROPOSED
- (F) FUTURE
- (tower symbol) PROP. LTE ANTENNA
- (tower symbol) PROP. UMTS/GSM ANTENNA
- (tower symbol) EX. GSM ANTENNA
- (tower symbol) EX. UMTS ANTENNA

T-Mobile

T-MOBILE NORTHEAST, LLC
 35 GRIFFIN ROAD SOUTH
 BLOOMFIELD, CT 06002
 OFFICE: (860) 692-7100
 FAX: (860) 692-7159

ATLANTIS GROUP

1340 Centre Street, Suite 212
 Newton Center, MA 02459
 Office: 617-965-0789
 Fax: 617-213-5056

SUBMITTALS

| DATE | DESCRIPTION | REVISION |
|----------|-------------------|----------|
| 10/20/15 | ISSUED FOR REVIEW | A |
| 10/28/15 | FINAL CD | 0 |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |

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

PROJECT NO: CT11680A
 DRAWN BY: MS
 CHECKED BY: SM



THIS DOCUMENT IS THE CREATION, DESIGN, PROPERTY AND COPYRIGHTED WORK OF T-MOBILE. ANY DUPLICATION OR USE WITHOUT EXPRESS WRITTEN CONSENT IS STRICTLY PROHIBITED.

SITE NAME
CT11680A
 SITE NAME
BRIDGEPORT NORTH
 SITE ADDRESS
 1320 CHOPSEY HILL ROAD
 BRIDGEPORT, CT 06610

SHEET TITLE
 ELEVATION

SHEET NUMBER
A-1

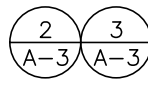
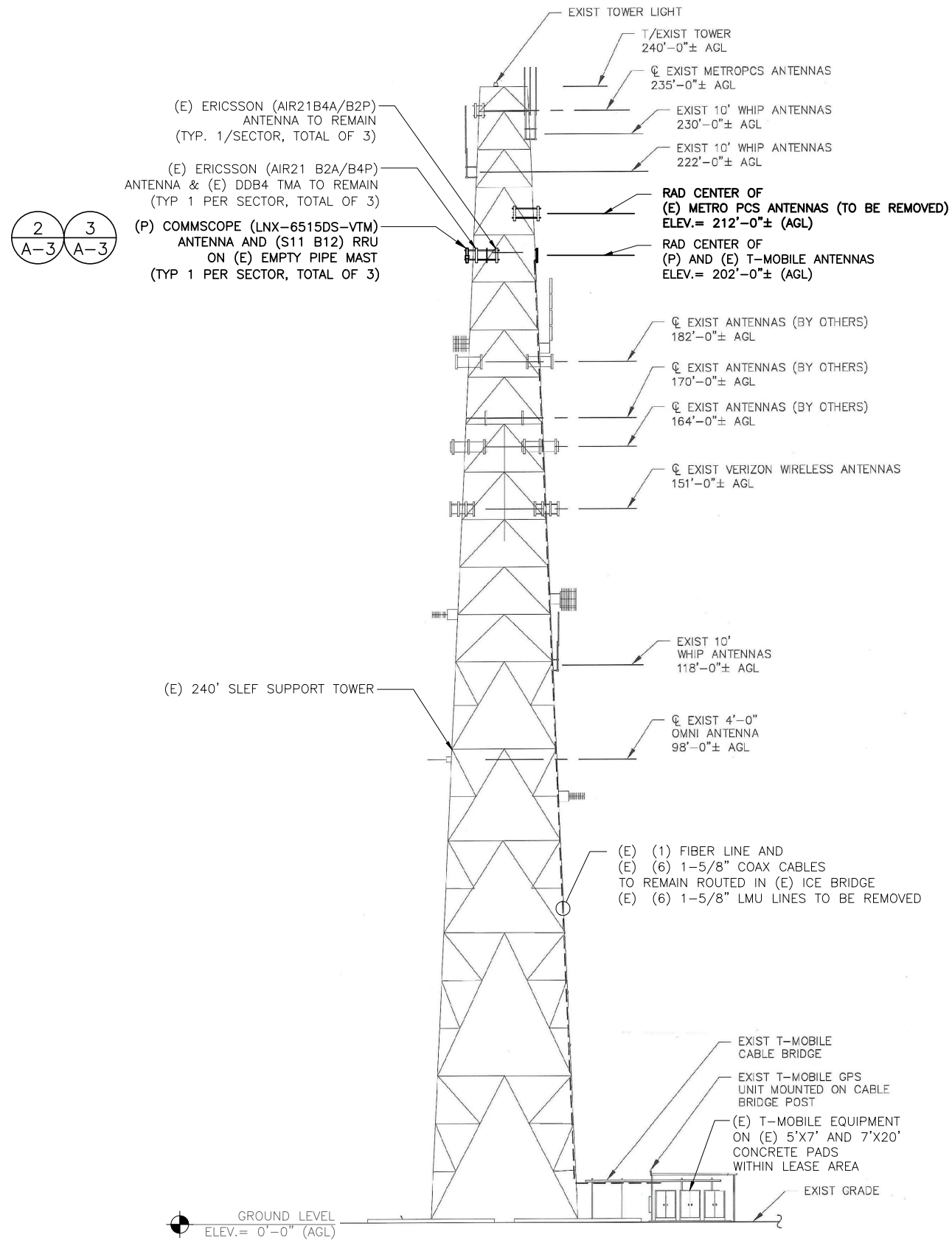
SITE PLAN

SCALE: 1" = 20'-0" (11x17)
 1" = 10'-0" (24x36)



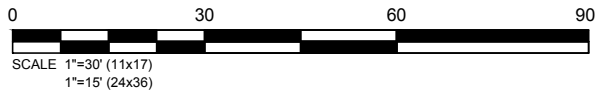
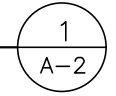
1
A-2

REFER TO STRUCTURAL ANALYSIS DOCUMENT ENTITLED,
 "STRUCTURAL ANALYSIS REPORT - SELF SUPPORT TOWER"
 PREPARED BY ATLANTIS GROUP, INC., "T-MOBILE SITE ID
 CT11680A", DATED OCTOBER 23, 2015.



ELEVATION

SCALE: 1" = 30'-0" (11x17)
 1" = 15'-0" (24x36)



T-MOBILE NORTHEAST, LLC
 35 GRIFFIN ROAD SOUTH
 BLOOMFIELD, CT 06002
 OFFICE: (860) 692-7100
 FAX: (860) 692-7159



ATLANTIS GROUP
 1340 Centre Street, Suite 212
 Newton Center, MA 02459
 Office: 617-965-0789
 Fax: 617-213-5056

SUBMITTALS

| DATE | DESCRIPTION | REVISION |
|----------|-------------------|----------|
| 10/20/15 | ISSUED FOR REVIEW | A |
| 10/26/15 | FINAL CD | 0 |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |

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

PROJECT NO: CT11680A
 DRAWN BY: MS
 CHECKED BY: SM



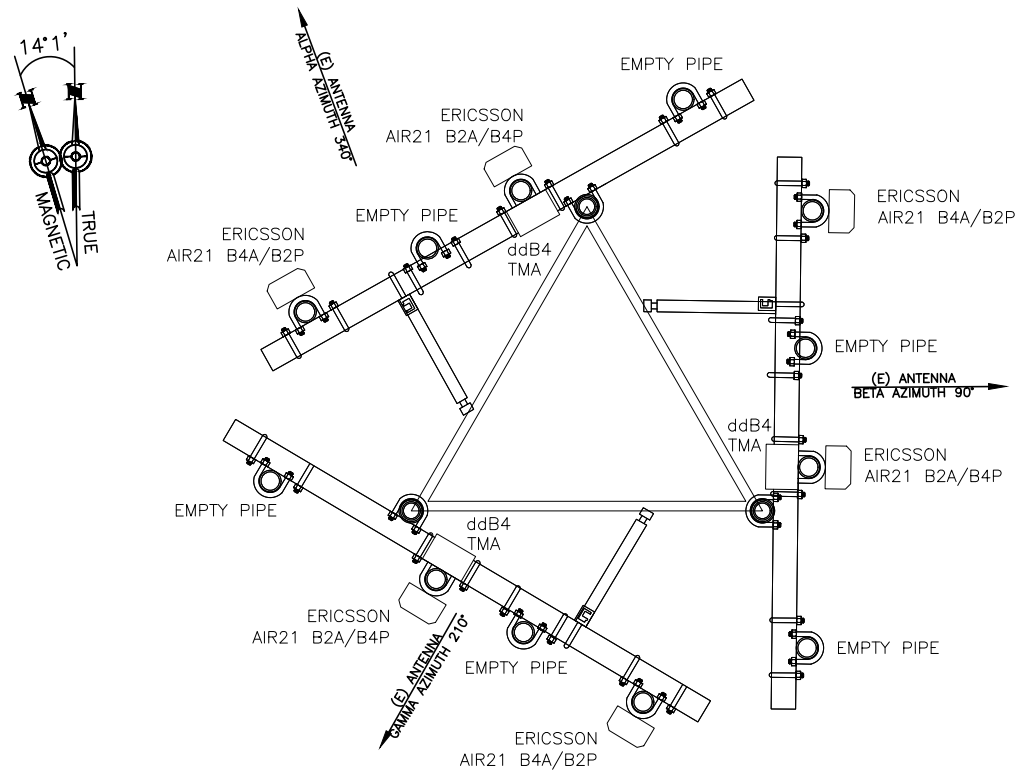
THIS DOCUMENT IS THE CREATION,
 DESIGN, PROPERTY AND COPYRIGHTED
 WORK OF T-MOBILE. ANY DUPLICATION
 OR USE WITHOUT EXPRESS WRITTEN
 CONSENT IS STRICTLY PROHIBITED.

SITE NAME
CT11680A
 SITE NAME
BRIDGEPORT NORTH
 SITE ADDRESS
1320 CHOPSEY HILL ROAD
BRIDGEPORT, CT 06610

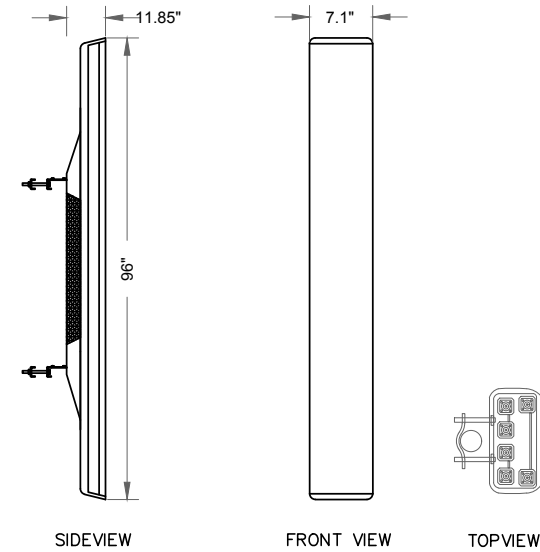
SHEET TITLE
**ANTENNA PLAN AND
 DETAILS**

SHEET NUMBER
A-2

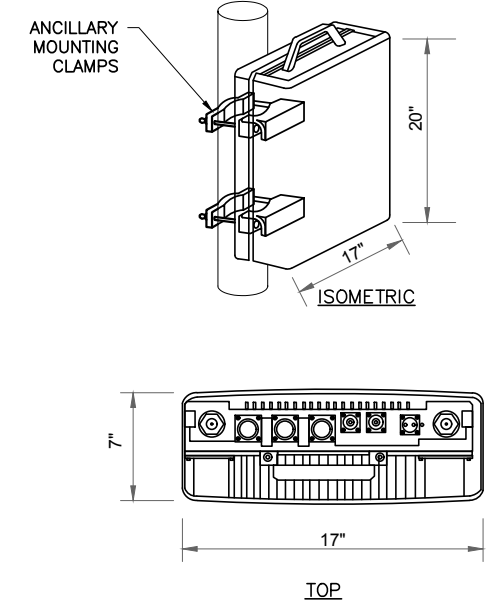
EXISTING ANTENNA PLAN



REFER TO STRUCTURAL ANALYSIS DOCUMENT ENTITLED, "STRUCTURAL ANALYSIS REPORT - SELF SUPPORT TOWER" PREPARED BY ATLANTIS GROUP, INC., "T-MOBILE SITE ID CT11680A", DATED OCTOBER 23, 2015.



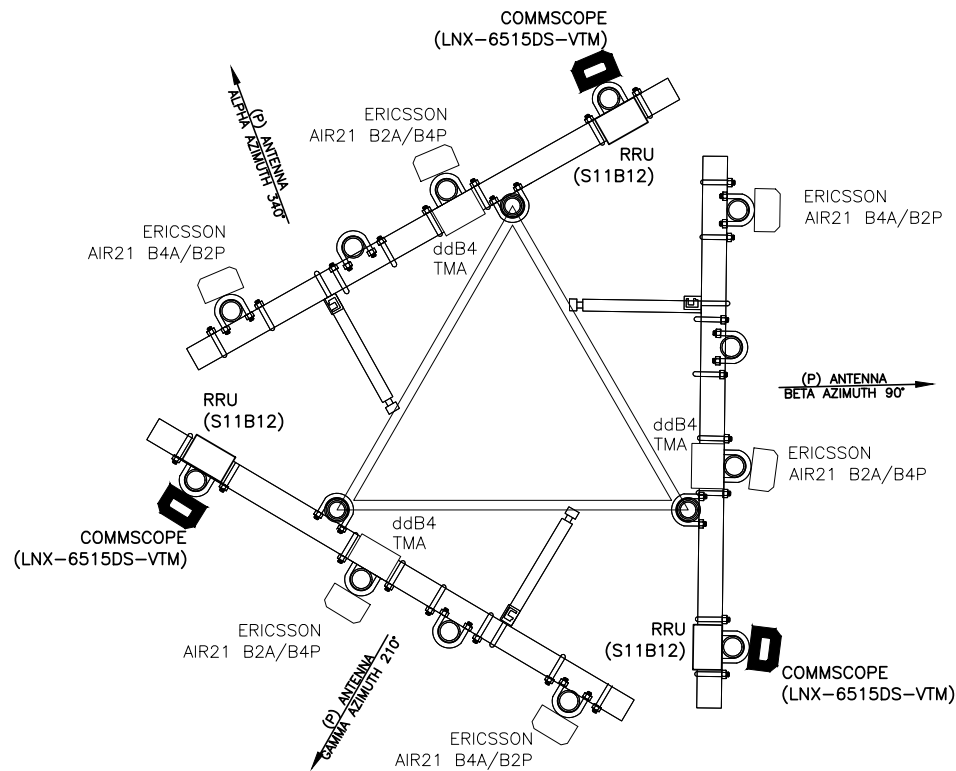
MANUFACTURER: COMMSCOPE
 MODEL NO.: LNX-6515DS-VTM
 DIMENSIONS - HxWxD, (IN) 96x11.85x7.1



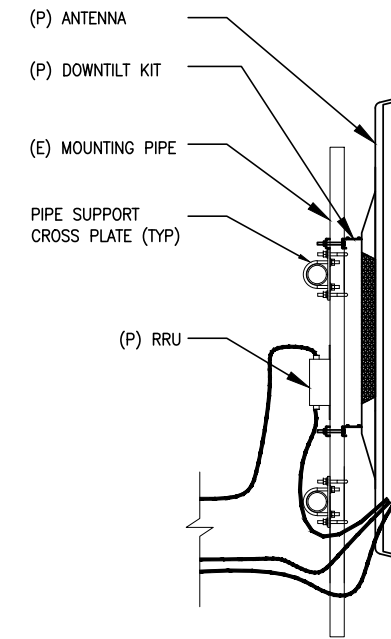
COMMSCOPE ANTENNA DETAIL 2
 SCALE: N.T.S. A-3

RRUS 11 B12 DETAILS 3
 SCALE: N.T.S. A-3

FINAL ANTENNA PLAN



ANTENNA PLAN 1
 SCALE: N.T.S. A-3



ANTENNA MOUNT DETAIL 4
 SCALE: N.T.S. A-3

T-Mobile
T-MOBILE NORTHEAST, LLC
 35 GRIFFIN ROAD SOUTH
 BLOOMFIELD, CT 06002
 OFFICE: (860) 692-7100
 FAX: (860) 692-7159

ATLANTIS GROUP
 1340 Centre Street, Suite 212
 Newton Center, MA 02459
 Office: 617-965-0789
 Fax: 617-213-5056

SUBMITTALS

| DATE | DESCRIPTION | REVISION |
|----------|-------------------|----------|
| 10/20/15 | ISSUED FOR REVIEW | A |
| 10/26/15 | FINAL CD | 0 |

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

PROJECT NO: CT11680A
 DRAWN BY: MS
 CHECKED BY: SM

PROFESSIONAL SEAL

THIS DOCUMENT IS THE CREATION, DESIGN, PROPERTY AND COPYRIGHTED WORK OF T-MOBILE. ANY DUPLICATION OR USE WITHOUT EXPRESS WRITTEN CONSENT IS STRICTLY PROHIBITED.

SITE NAME
CT11680A
 SITE NAME
BRIDGEPORT NORTH
 SITE ADDRESS
 1320 CHOPSEY HILL ROAD
 BRIDGEPORT, CT 06610

SHEET TITLE
ANTENNA PLAN AND DETAILS

SHEET NUMBER
A-3



T-MOBILE NORTHEAST, LLC
 35 GRIFFIN ROAD SOUTH
 BLOOMFIELD, CT 06002
 OFFICE: (860) 692-7100
 FAX: (860) 692-7159



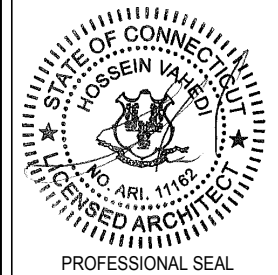
ATLANTIS GROUP
 1340 Centre Street, Suite 212
 Newton Center, MA 02459
 Office: 617-965-0789
 Fax: 617-213-5056

SUBMITTALS

| DATE | DESCRIPTION | REVISION |
|----------|-------------------|----------|
| 10/20/15 | ISSUED FOR REVIEW | A |
| 10/28/15 | FINAL CD | 0 |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |

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

PROJECT NO: CT11680A
 DRAWN BY: MS
 CHECKED BY: SM

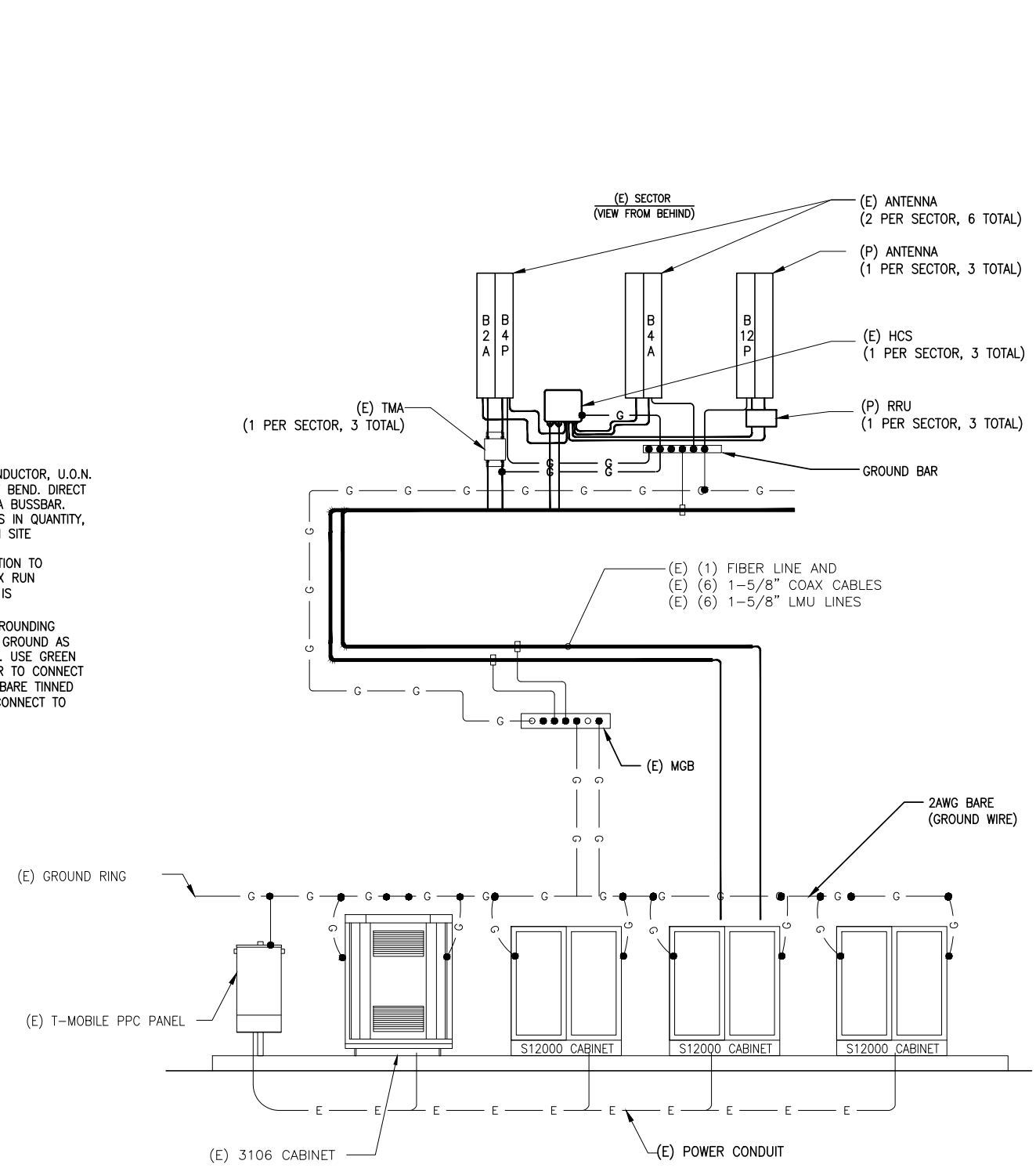


THIS DOCUMENT IS THE CREATION, DESIGN, PROPERTY AND COPYRIGHTED WORK OF T-MOBILE. ANY DUPLICATION OR USE WITHOUT EXPRESS WRITTEN CONSENT IS STRICTLY PROHIBITED.

SITE NAME
CT11680A
 SITE NAME
BRIDGEPORT NORTH
 SITE ADDRESS
**1320 CHOPSEY HILL ROAD
 BRIDGEPORT, CT 06610**

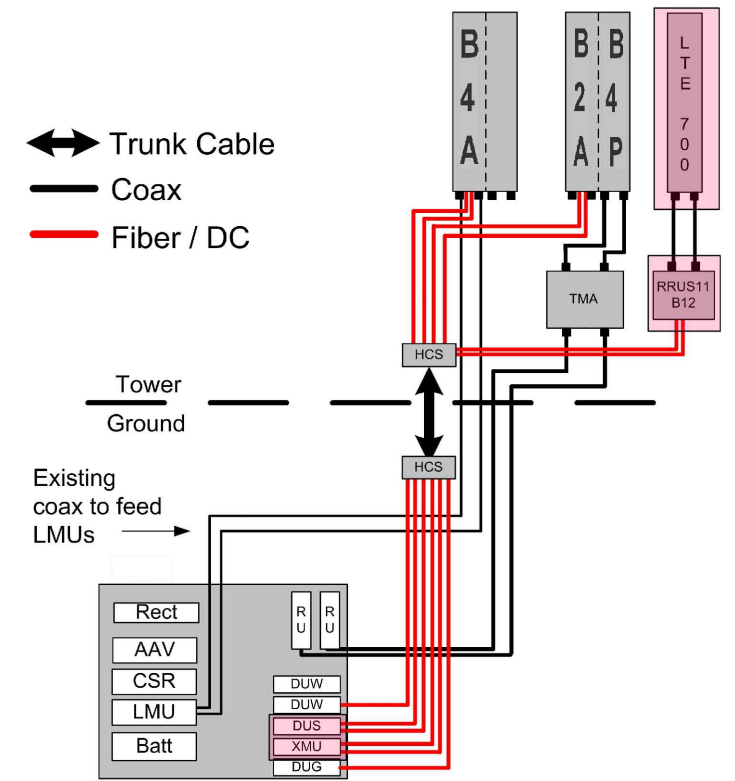
SHEET TITLE
**GROUNDING DIAGRAM
 AND
 POWER ONE
 LINE DIAGRAM**

SHEET NUMBER
E-1



GROUNDING DIAGRAM 1
 SCALE: N.T.S. E-1

↔ Trunk Cable
 — Coax
 — Fiber / DC



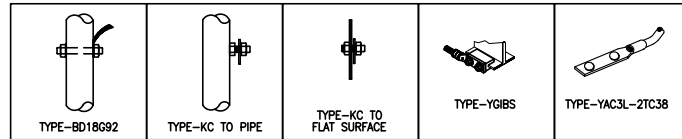
TRUNK FIBER NOTES:

1. IN GENERAL THIS CABLE WILL HANDLE SIMILARLY TO 7/8" COAXIAL CABLE, AND SIMILAR INSTALLATION TECHNIQUES APPLY. ALL CABLES ARE INDIVIDUALLY SERIALIZED, BE SURE TO WRITE DOWN THE CABLE SERIAL NUMBER FOR FUTURE REFERENCE.
2. THE TERMINATED FIBER ENDS (THE BROKEN OUT FIBERS PLUS CONNECTORS) HOWEVER ARE FRAGILE, AND THESE MUST BE PROTECTED DURING THE INSTALLATION PROCESS.
3. LEAVE THE PROTECTIVE TUBE AND SOCK AROUND THE FIBER TAILS AND CONNECTORS IN PLACE DURING HOISTING AND SECURING THE CABLE. REMOVE THIS ONLY JUST PRIOR TO MAKING THE FINAL CONNECTIONS TO THE OVP BOX.
4. DO NOT BEND THE FIBER ENDS (IN THE ORANGE FURCATION TUBES) TIGHTER THAN 3/4" (19MM) BEND RADIUS, ELSE THERE IS A RISK OF BREAKING THE GLASS FIBERS.
5. BE SURE THAT THE LACE UP ENDS AND FIBER CONNECTORS ARE NOT DAMAGED BY ATTACHMENT OF A HOISTING GRIP OR DURING THE HOISTING PROCESS. ATTACH A HOISTING GRIP ON THE JACKETED CABLE NO LESS THAN 6 INCHES BELOW THE FIBER BREAKOUT POINT. IF A HOISTING GRIP IS NOT EASILY ATTACHED, USE A SIMPLE LINE ATTACHED BELOW THE FIBER BREAK-OUT POINT (I.E. AT THE CABLE OUTER JACKET). PREVENT THE FIBER TAILS (IN PROTECTIVE TUBE) AT THE CABLE END FROM UNDUE MOVEMENT DURING HOISTING BY SECURING THE PROTECTIVE TUBE (WITH OUTER SOCK) TO THE HOISTING LINE.
6. DURING HOISTING ENSURE THAT THERE IS A FREE PATH AND THAT THE CABLE, AND ESPECIALLY THE FIBER ENDS, WILL NOT BE SNAGGED ON TOWER MEMBERS OR OTHER OBSTACLES.
7. INSTALLATION TEMPERATURE RANGE IS -22F TO 158F (-30C TO +70C).
8. MINIMUM CABLE BEND RADII ARE 22.2" (565MM) LOADED (WITH TENSION ON THE CABLE) AND 11.1" (280MM) UNLOADED.
9. MAXIMUM CABLE TENSILE LOAD IS 3560 N (800 LB) SHORT TERM (DURING INSTALLATION) AND 1070 N (240 LB) LONG TERM.
10. COMMSCOPE NON LACE UP GRIP RECOMMENDED FOR MONOPOLE INSTALLATIONS.
11. MAXIMUM HANGER SPACING 3FT (0.9 M).

HYBRID FIBER/POWER JUMPER NOTES:

1. IN GENERAL THIS CABLE WILL HANDLE SIMILARLY TO A 3/8" COAXIAL CABLE.
2. THE TERMINATED FIBER ENDS HOWEVER ARE FRAGILE AND MUST BE PROTECTED DURING INSTALLATION. LEAVE THE PACKAGING AROUND THE FIBER ENDS IN PLACE UNTIL READY TO CONNECT THE JUMPER BETWEEN OVP AND RRU OR BBU.
3. DO NOT BEND THE FIBER BREAKOUT CABLE (BETWEEN THE MAIN CABLE AND THE FIBER CONNECTOR) TIGHTER THAN 3/4" (19MM) RADIUS, ELSE THERE IS A RISK OF BREAKING THE GLASS.
4. ATTACH THE MAIN CABLE SECURELY TO THE STRUCTURE OR EQUIPMENT USING HANGERS AND/OR CABLE TIES TO PREVENT STRAIN ON CONNECTIONS FROM MOVEMENT IN WIND OR SNOW/ICE CONDITIONS.
5. ENSURE THE LC FIBER CONNECTORS ARE SEATED FIRMLY IN PANEL IN OVP OR IN EQUIPMENT.
6. INSTALLATION TEMPERATURE RANGE IS -22F TO 158F (-30C TO 70C).
7. MINIMUM CABLE BEND RADII ARE 10.3 INCH (265MM) LOADED (WITH TENSION ON THE CABLE) AND 5.2 INCH (130MM) UNLOADED.
8. MAXIMUM CABLE TENSILE LOAD IS 350 LB (1560N) SHORT TERM (DURING INSTALLATION) AND 105 LB (470N) LONG TERM.
9. STANDARD LENGTHS AVAILABLE ARE 6 FEET, 15 FEET AND 20 FEET

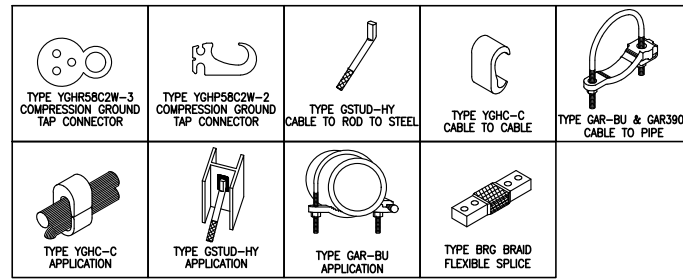
**702CU CONFIGURATION
 COAX/FIBER PLUMBING DIAGRAM** 2
 SCALE: N.T.S. E-1



BURNDY GROUNDING DETAILS

SCALE: N.T.S

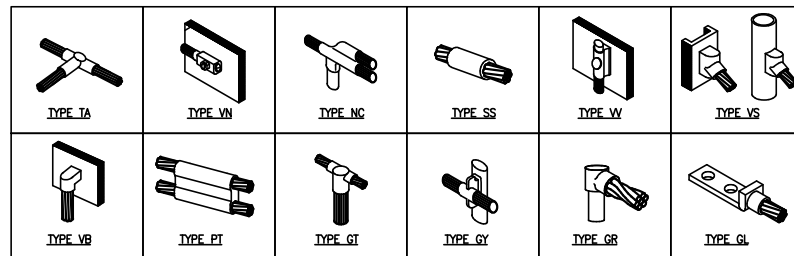
1
E-2



BURNDY GROUNDING PRODUCTS

SCALE: N.T.S

2
E-2



CADWELD GROUNDING CONNECTION PRODUCTS

SCALE: N.T.S

3
E-2

TERMINATION TYPES:

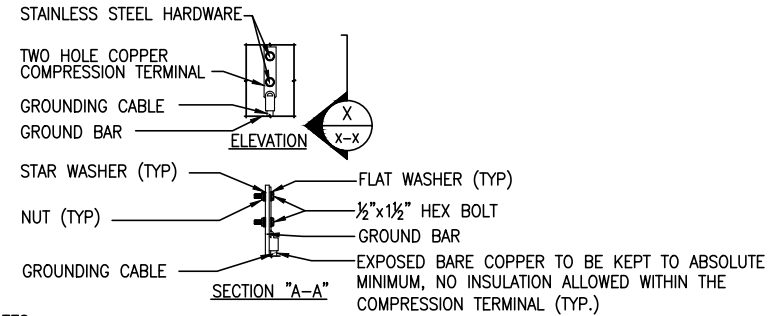
- A. MECHANICAL COMPRESSION LUG
- B. DOUBLE BARRELL COMPRESSION CONNECTOR
- C. EXOTHERMIC TERMINATION
- D. BEAM CLAMP

| | SOLID #2 TINNED COPPER | #6 GROUND LEAD | #2/0 STRANDED MAIN DOWN CONDUCTOR | MASTER GRND BAR | STRUCTURAL OR TOWER STEEL | BLDG SERVICE ENTR OR GROUND RING | GROUND ROD |
|---|------------------------|----------------|-----------------------------------|-----------------|---------------------------|----------------------------------|------------|
| SOLID #2 TINNED COPPER | B OR C | B OR C | | C | A, C, OR D | | C |
| #6 GROUND LEAD | B OR C | | | A | A, C, OR D | | |
| #2/0 STRANDED GRNDG ELECTRODE CONDUCTOR | | | A | A, C, OR D | A | | |
| MASTER GROUND BAR | C | A | A | | | | |
| STRUCTURAL OR TOWER STEEL | A, C, OR D | A, C, OR D | A, C, OR D | | | | |
| GROUND RING | C | | C | | | | C |

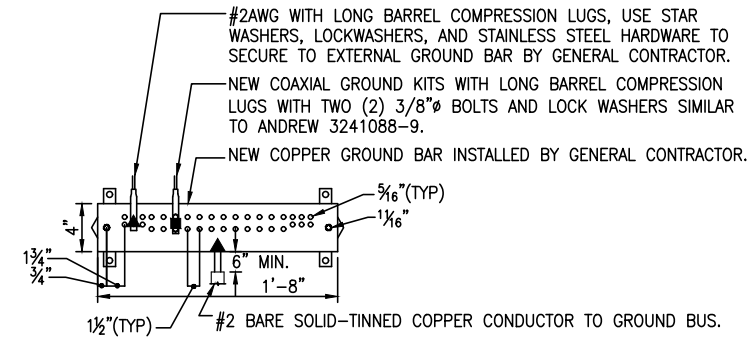
GROUNDING TERMINATION MATRIX

SCALE: N.T.S

7
E-2



- NOTES:
- OXIDE INHIBITING COMPOUND TO BE USED AT ALL LOCATIONS.

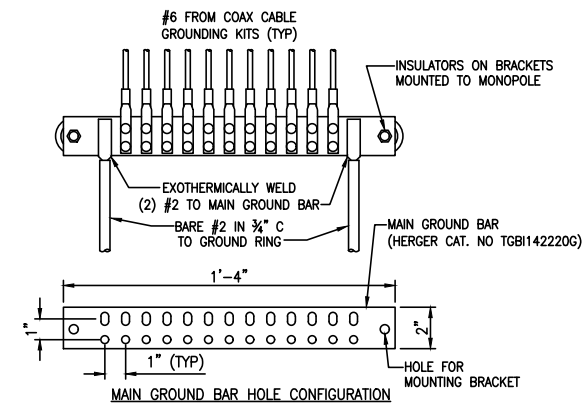


- NOTES:
- ALL HARDWARE STAINLESS STEEL COAT ALL SURFACES WITH KOPR-SHIELD BEFORE MATING.
 - FOR GROUND BOND TO STEEL ONLY: INSERT A TOOTH WASHER BETWEEN LUG AND STEEL, COAT ALL SURFACES WITH KOPR-SHIELD.
 - ALL HOLES ARE COUNTERSUNK $\frac{1}{16}$ ".

TYPICAL GROUND BAR CONNECTIONS DETAIL

SCALE: N.T.S

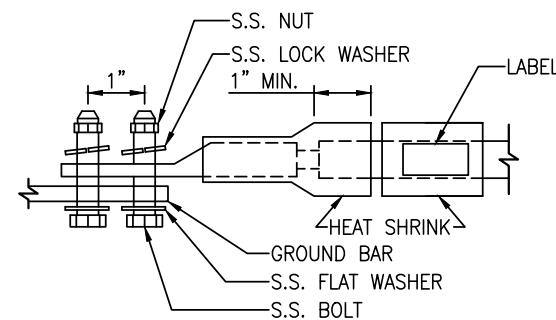
4
E-2



GROUND BAR DETAIL

SCALE: N.T.S

5
E-2



- LUG NOTES:
- ALL HARDWARE IS 18-8 STAINLESS STEEL, INCLUDING LOCK WASHERS.
 - ALL HARDWARE SHALL BE S.S. $\frac{3}{8}$ "Ø OR LARGER.
 - FOR GROUND BOND TO STEEL ONLY: INSERT A DRAGON TOOTH WASHER BETWEEN LUG AND STEEL. COAT ALL SURFACES WITH ANTI-OXIDIZATION COMPOUND PRIOR TO MATING.

GROUND BAR DETAIL

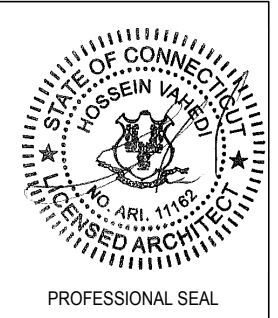
SCALE: N.T.S

6
E-2

| SUBMITTALS | | |
|------------|-------------------|----------|
| DATE | DESCRIPTION | REVISION |
| 10/20/15 | ISSUED FOR REVIEW | A |
| 10/26/15 | FINAL CD | 0 |

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

PROJECT NO: CT11680A
DRAWN BY: MS
CHECKED BY: SM



THIS DOCUMENT IS THE CREATION, DESIGN, PROPERTY AND COPYRIGHTED WORK OF T-MOBILE. ANY DUPLICATION OR USE WITHOUT EXPRESS WRITTEN CONSENT IS STRICTLY PROHIBITED.

SITE NAME
CT11680A
SITE NAME
BRIDGEPORT NORTH
SITE ADDRESS
1320 CHOPSEY HILL ROAD
BRIDGEPORT, CT 06610

SHEET TITLE
GROUNDING DETAILS

SHEET NUMBER
E-2