Filed by:
Kri Pelletier, Property Specialist - SBA Communications
33 Boston Post Road West, Ste 320, Marlborough, MA 01751
508.251.0720 x 3804 - kpelletier@sbasite.com

November 25, 2015

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

Notice of Exempt Modification
160 Wampus Lane, Milford, CT 06460
41.22514 N
73.04238 W
T-Mobile#: CTNH003A_L700

Dear Ms. Bachman:

T-Mobile currently maintains six (6) antennas at the 105-foot level of the existing 120-foot Monopole Tower at 160 Wampus Lane in Milford, Connecticut. The tower is owned by SBA 2012 TC Assets, LLC. The property is owned by Cutting Edge Technologies, LLC. T-Mobile now intends to install three (3) new L700MHz antennas. These antennas would be installed at the 105-foot level of the tower. T-Mobile also intends to:

Remove:

- N/A

Remove and Replace:

- N/A

Install:

- (3) CommScope LNX Panel Antennas
- (3) Ericsson RRUs

Existing Equipment to Remain (Entitlements):

- (1) 3106 Equipment cabinet
- (1) S12000 Equipment Cabinet
- (12) 1-5/8" Coax Lines
- (1) 1-5/8" Hybrid Line (Fiber)
- (6) Ericsson AIR Antennas
- (6) Tower Mounted Amplifiers (3 installed to remain + 3 reserved entitlements)

SBA acquired this site, and does not hold record of the original decision. We are unable to locate same within the CSC's docket database. Town documents reference the approval of 12 antennas per array – 4 arrays per tower. The mounting of antennas is in keeping with all others on the tower, as is the number of proposed antennas at 105-feet by comparison with the other carriers' arrays.

Please accept this letter as notification pursuant to Regulations of Connecticut State Agencies §16-50j-73, for construction that constitutes an exempt modification pursuant to R.C.S.A. §16.50j-72(b)(2). In accordance with R.C.S.A. § 16.50j-73, a copy of this letter is being sent to Benjamin Blake, Mayor for the City of Milford, as well as the property owner. (Separate notice is not being sent to tower owner, as it belongs to SBA.)

The planned modifications to the facility fall squarely within those activities explicitly provided for in R.C.S.A. §16.50j-72(b)(2).

1. The proposed modifications will not result in an increase in the height of the existing structure.
2. The proposed modification will not require the extension of the site boundary.
3. The proposed modifications will not increase noise levels at the facility by six decibels or more, or to levels that exceed state and local criteria.
4. The operation of the replacement antennas will not increase radio frequency emissions at the facility to a level at or above the Federal Communications Commission safety standard.
5. The proposed modification will not cause a change or alteration in the physical or environmental characteristics of the site.
6. The existing structure and its foundation can support the proposed loading with certain modifications. (See attached Modification Drawings.)

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

Sincerely,

Kri Pelletier
Property Specialist
SBA COMMUNICATIONS CORPORATION
33 Boston Post Road West Suite 320
Marlborough MA 01752

508.251.0720 x3804 + T
508.251.1755 + F
203.446.7700 + C
kpelletier@sbasite.com

Attachments

cc: The Honorable Benjamin G. Blake—as elected official
City of Milford, 110 River Street, Milford, CT 06460
Cutting Edge Technologies, LLC—as property owner
160 Wampus Lane, Milford, CT 06460

POWER DENSITY

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):	105	Height (AGL):	105	Height (AGL):	105
Frequency Bands	2100 MHz (AWS)	Frequency Bands	2100 MHz (AWS)	Frequency Bands	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%	1.71	Antenna B1 MPE%	1.71	Antenna C1 MPE%	1.71
Antenna #:	2	Antenna #:	2	Antenna #:	2
Make / Model:	Ericsson AIR21 B2A/B4PD	Make / Model:	Ericsson AIR21 B2A/B4PD	Make / Model:	Ericsson AIR21 B2A/B4PD
Gain:	15.9 dBd	Gain:	15.9 dBd	Gain:	15.9 dBd
Height (AGL):	105	Height (AGL):	105	Height (AGL):	105
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%	1.71	Antenna B2 MPE%	1.71	Antenna C2 MPE%	1.71
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):	105	Height (AGL):	105	Height (AGL):	105
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%	0.68	Antenna B3 MPE%	0.68	Antenna C3 MPE%	0.68

Site Composite MPE%	
Carrier	MPE%
T-Mobile (Per Sector Max)	4.10 %
MetroPCS	0.88 %
Clearwire	0.14 %
Sprint	0.00 %
Site Total MPE %:	5.12 %

T-Mobile Sector 1 Total:	4.10 %
T-Mobile Sector 2 Total:	4.10 %
T-Mobile Sector 3 Total:	4.10 %
Site Total:	5.12 %

T-Mobile _per sector	# Channels	Watts ERP (Per Channel)	Height (feet)	Total Power Density ($\mu W/cm^2$)	Frequency (MHz)	Allowable MPE ($\mu W/cm^2$)	Calculated % MPE
Mobile 2100 MHz (AWS) LTE	2	2334.27	105	17.12	2100	1000	1.71 %
T-Mobile 700 MHz LTE	1	865.21	105	3.17	700	467	0.68 %
ile 1900 MHz (PCS) GSM/UMTS	2	1167.14	105	8.56	1900	1000	0.86 %
obile 2100 MHz (AWS) UMTS	2	1167.14	105	8.56	2100	1000	0.86%
						Total:	4.31%

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

T-Mobile Existing Facility

Site ID: CTNH003A

CTNH003/NextelMilford
160 Wampus Lane
Milford, CT 06460

October 9, 2015

EBI Project Number: 6215005054

Site Compliance Summary	
Compliance Status:	COMPLIANT
Site total MPE% of FCC general public allowable limit:	5.12 %

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

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October 9, 2015

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

Emissions Analysis for Site: **CTNH003A – CTNH003/NextelMilford**

EBI Consulting was directed to analyze the proposed T-Mobile facility located at **160 Wampus Lane, Milford, 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 97-01and ANSI/IEEE Std C95.1. The FCC regulates Maximum Permissible Exposure in units of microwatts per square centimeter (μW/cm2). The number of $\mu W/cm^2$ calculated at each sample point is called the power density. The exposure limit for power density varies depending upon the frequencies being utilized. Wireless Carriers and Paging Services use different frequency bands each with different exposure limits, therefore it is necessary to report results and limits in terms of percent MPE rather than power density.

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

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

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

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 **160 Wampus Lane, Milford, 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 **105 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.

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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):	105	Height (AGL):	105	Height (AGL):	105
Frequency Bands	2100 MHz (AWS)	Frequency Bands	2100 MHz (AWS)	Frequency Bands	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%	1.71	Antenna B1 MPE%	1.71	Antenna C1 MPE%	1.71
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):	105	Height (AGL):	105	Height (AGL):	105
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%	1.71	Antenna B2 MPE%	1.71	Antenna C2 MPE%	1.71
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):	105	Height (AGL):	105	Height (AGL):	105
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%	0.68	Antenna B3 MPE%	0.68	Antenna C3 MPE%	0.68

Site Composite MPE%	
Carrier	**MPE%**
T-Mobile (Per Sector Max)	**4.10 %**
MetroPCS	0.88 %
Clearwire	0.14 %
Sprint	0.00 %
Site Total MPE %:	**5.12 %**

T-Mobile Sector 1 Total:	4.10 %
T-Mobile Sector 2 Total:	4.10 %
T-Mobile Sector 3 Total:	4.10 %
Site Total:	5.12 %

T-Mobile _per sector	# Channels	Watts ERP (Per Channel)	Height (feet)	Total Power Density ($\mu W/cm^2$)	Frequency (MHz)	Allowable MPE ($\mu W/cm^2$)	Calculated % MPE
T-Mobile 2100 MHz (AWS) LTE	**2**	**2334.27**	**105**	**17.12**	**2100**	**1000**	**1.71 %**
T-Mobile 700 MHz LTE	**1**	**865.21**	**105**	**3.17**	**700**	**467**	**0.68 %**
T-Mobile 1900 MHz (PCS) GSM/UMTS	**2**	**1167.14**	**105**	**8.56**	**1900**	**1000**	**0.86 %**
T-Mobile 2100 MHz (AWS) UMTS	**2**	**1167.14**	**105**	**8.56**	**2100**	**1000**	**0.86%**
						Total:	**4.31%**

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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:	4.10 %
Sector 2:	4.10 %
Sector 3 :	4.10 %
T-Mobile Per Sector Maximum:	4.10 %
Site Total:	5.12 %
Site Compliance Status:	**COMPLIANT**

The anticipated composite MPE value for this site assuming all carriers present is **5.12%** 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

Tower Engineering Solutions
Phone (972) 483-0607, Fax (972) 975-9615
8445 Freeport Parkway, Suite 375, Irving, Texas 75063

Post-Mod Structural Analysis Report

Existing 120 ft. Monopole

Customer Name: SBA Communications Corp

Customer Site Number: CT46128-A

Customer Site Name: Milford - West

Carrier Name: T-Mobile

Carrier Site Number: CTNH003A

Carrier Site Name: N/A

Site Location: 160 Wampus Lane

Milford, Connecticut

New Haven County

Latitude: 41.225166

Longitude: -73.042361

Analysis Result:

Max Structural Usage: 99.5% [Pass]

Max Foundation Usage: 77.0% [Pass]

Report Prepared By : Billy Davis

Introduction

The purpose of this report is to summarize the analysis results on the 120 ft. Monopole to support the proposed antennas and transmission lines in addition to those currently installed. Any existing modification listed under Sources of Information was assumed completed and was included in this analysis.

The proposed modification by **TES** listed under Sources of Information was considered completed and was included in this analysis.

Sources of Information

Tower Drawings	Rohn Project #51361AE, dated April 3, 2002
Foundation Drawing	Rohn Project #51361AE, dated April 3, 2002
Geotechnical Report	Clarence Welti Associates Inc. Site #CT-0638, dated June 19 ,2001
Existing Modification	N/A
Proposed Modification	**TES** Job # 18033

Analysis Criteria

The analysis was performed in accordance with the requirements and stipulations of the ANSI/TIA/EIA 222-F**.** In accordance with this standard, the structure was analyzed using **TESPoles,** a proprietary analysis software. The program considers the structure as an elastic 3-D model with second-order effects and temperature effects incorporated in the analysis. The analysis was performed using multiple wind directions.

Basic Wind Speed Used in the Analysis:	85.0 mph (fastest mile)
Basic Wind Speed with Ice:	73.6 mph (fastest mile) with 1/2" radial ice concurrent
Operational Wind Speed:	50.0 mph + 0" Radial ice
Standard/Codes:	ANSI/TIA/EIA 222-F / 2005 Connecticut State Building Code
Basic Wind Speed Used in the Analysis:	85.0 mph (fastest mile)
Basic Wind Speed with Ice:	73.6 mph (fastest mile) with 1/2" radial ice concurrent

Existing Antennas, Mounts and Transmission Lines

The table below summarizes the antennas, mounts and transmission lines that were considered in the analysis as existing on the tower.

Items	Elevation (ft)	Qty.	Antenna Descriptions	Mount Type & Qty.	Transmission Lines	Owner
1	116.5	3	A-ANT-23G-2-C - Dish	Low Profile Platform	(3) 1/2"	Clearwire
2		3	APXVSPP18-C-A20 - Panel		(4) 1-1/4" Hybrid Cable	Sprint
3		3	APXV9TM-14-ALU-I20 - Panel			
4		3	1900MHz RRH			
5		3	800 MHz RRH			
6		3	800 MHz RRH w/ Notch Filter			
7		3	TD-RRH8x20-25-RRH			
8		4	ACU-A20-N			
9	105.0	3	Ericsson AIR B2A/ B4P - Panel	Platform w/ Hand Rail	(12) 1 5/8" (1) 1 5/8" Fiber	T-Mobile
10		3	Ericsson AIR B4A / B2P - Panel			
12		3	Ericsson KRY 112 144/1-TMA			
14	78.0	2	GPS - Whip	(2) Side Arm		Unknown

Proposed Carrier's Final Configuration of Antennas, Mounts and Transmission Lines

Information pertaining to the proposed carrier's final configuration of antennas and transmission lines was provided by SBA Communications Corp. The proposed antennas and lines are listed below.

Items	Elevation (ft)	Qty.	Antenna Descriptions	Mount Type & Qty.	Transmission Lines	Owner
9	105.0	3	Ericsson AIR B2A/ B4P - Panel	Platform w/ Hand Rails	(12) 1 5/8" (1) 1 5/8" Fiber	T-Mobile
10		3	Ericsson AIR B4A / B2P - Panel			
11		3	Commscope - LNX-6515DS-A1M - Panel			
12		6	Ericsson KRY 112 144/1-TMA			
13		3	Ericsson S11B12-RRU			

All transmission lines are considered running inside of the pole shafts.

Analysis Results

The results of the structural analysis, performed for the wind and ice loading and antenna equipment as defined above, are summarized as the following:

	Pole shafts	Anchor Bolts	Base Plate
Max. Usage:	**99.5**	**59.0%**	**84.0%**
Pass/Fail	**Pass**	**Pass**	**Pass**

Foundations

	Moment (Kip-Ft)	Shear (Kips)	Axial (Kips)
Original Design Reactions	1446.0	17.0	30.0
Analysis Reactions	1443.6	15.8	19.1

The foundation has been investigated using the supplied documents and soils report and was found adequate. Therefore, no modification to the foundation will be required.

Operational Condition (Rigidity):

Maximum twist and sway of the microwave dishes under the operational wind speed as specified in the Analysis Criteria are listed in the table below:

Elevation (ft)	Antenna / Dish	Carrier	Twist (deg)	Sway (deg)
116.5	A-ANT-23G-2-C - Dish	Clearwire	0.000	2.148
105.0	Various	T-Mobile	0.000	2.104

It is recommended that the carriers review the twist and sway values of the microwave dishes.

Conclusions

Based on the analysis results, the structure and its foundation will be adequate to safely support the existing and proposed equipment and meet the minimum requirements per the design ANSI/TIA/EIA 222-F standards under a basic wind speed of 85 mph no ice and 74 mph with 1/2" radial ice after the following proposed modification is successfully completed.

- Proposed modification design drawing by **TES** Job # 18033

Pre-Mod Installation Determination

We have also checked this tower to determine if the proposed T-Mobile equipment loading can be installed prior to the completion of the required modifications. We ran a reduced wind loading case as required by TIA-1019 considering a construction period of no more than 6 months.

The tower and foundations passed, so the Carrier can proceed and install their proposed loading prior to the mods completion. Please be aware that this approval is being provided and is based on the method outlined in TIA-1019. This approval is not a blanket approval and there is still a risk that the tower will experience a wind event that cannot be predicted by TIA-1019 or our Engineers. In the event of an unforeseen wind event, Tower Engineering Solutions will not be liable nor responsible for damage to the tower or the Carriers equipment. Additionally, the tower cannot go beyond the 6 month construction period without the modifications being completed. If the modifications cannot be completed within 6 months from the completed installation of the Carrier's proposed equipment, TES must be notified immediately for further review.

Standard Conditions

1. This analysis was performed based on the information supplied to **(TES) Tower Engineering Solutions, LLC.** Verification of the information provided was not included in the Scope of Work for **TES**. The accuracy of the analysis is dependent on the accuracy of the information provided.

2. The analysis is based on the presumption that the tower members and components along with any existing reinforcement items have been correctly and properly designed, manufactured, installed and maintained.

3. All the existing structural members were assumed to be in good condition with no physical damage or deterioration associated with corrosion.

4. An initial tension of 10% of the break strength on all the existing guy wires was assumed in all the structural analyses of guyed towers unless different values were provided by the client. **TES** cannot take responsibility for the deviations in the analysis results because of differences in the initial tension forces of the existing guy wires.

5. Secondary component or connection secondary components, welds and bolts are assumed to be able to carry their intended original design loads. **TES** cannot take responsibility for verification of the adequacy on the connections, bolts and welds present in the structure.

6. The analyses will be performed based on the codes as specified by the client or based on the best knowledge of the engineering staff of **TES**. In the absence of information to the contrary, all work will be performed in accordance with the latest relevant revision of ANSI/TIA-222. If wind speed or/and ice loads are different from the minimum values recommended by the EIA/TIA-222 standard or other codes, **TES** should be notified in writing and the applicable minimum values provided by the client.

7. The configuration of the existing mounts, antennas, coax and other appurtenances were supplied by the customer for the current structural analysis. **TES** has not visited the tower site to verify the adequacy of the information provided. If there is any discrepancy found in the report regarding the existing conditions, **TES** should be notified immediately to evaluate the effect of the discrepancy on the analysis results.

8. The client will assume responsibility for rework associated with the differences in initially provided information, including tower and foundation information, existing and/or proposed equipment and transmission lines.

9. If a feasibility analysis was performed, final acceptance of changed conditions shall be based upon a rigorous structural analysis.

Usage Diagram - Max Stress 99.5% at 0.0ft

Structure:	CT46128-A-SBA	**Code:**	EIA/TIA-222-F	11/3/2015	
Site Name:	Milford - West	**Exposure:**	C		
Height:	120.00 (ft)	**Gh:**	1.69		
Base Elev:	0.000 (ft)			Page: 1	

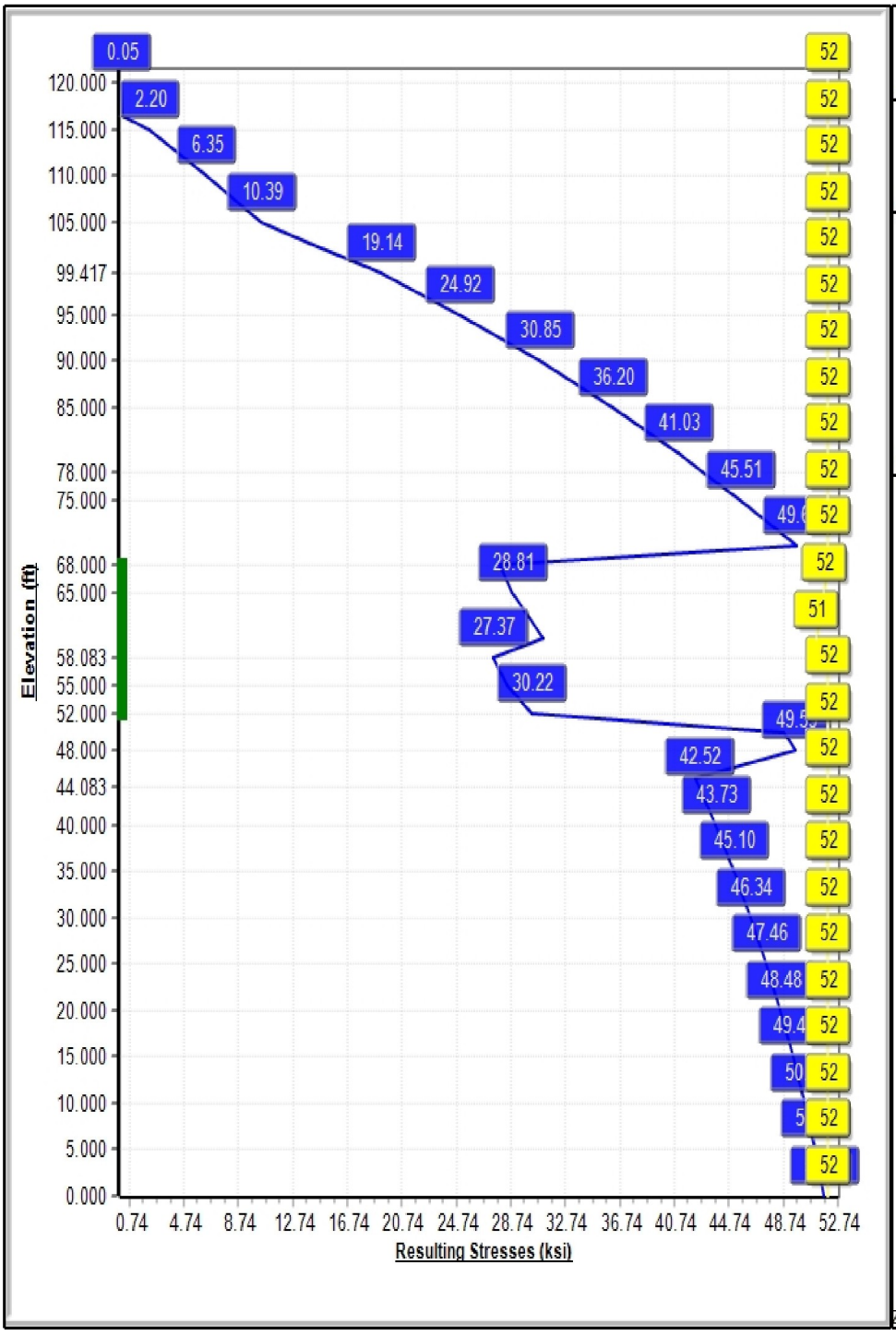
Tower Engineering Solutions

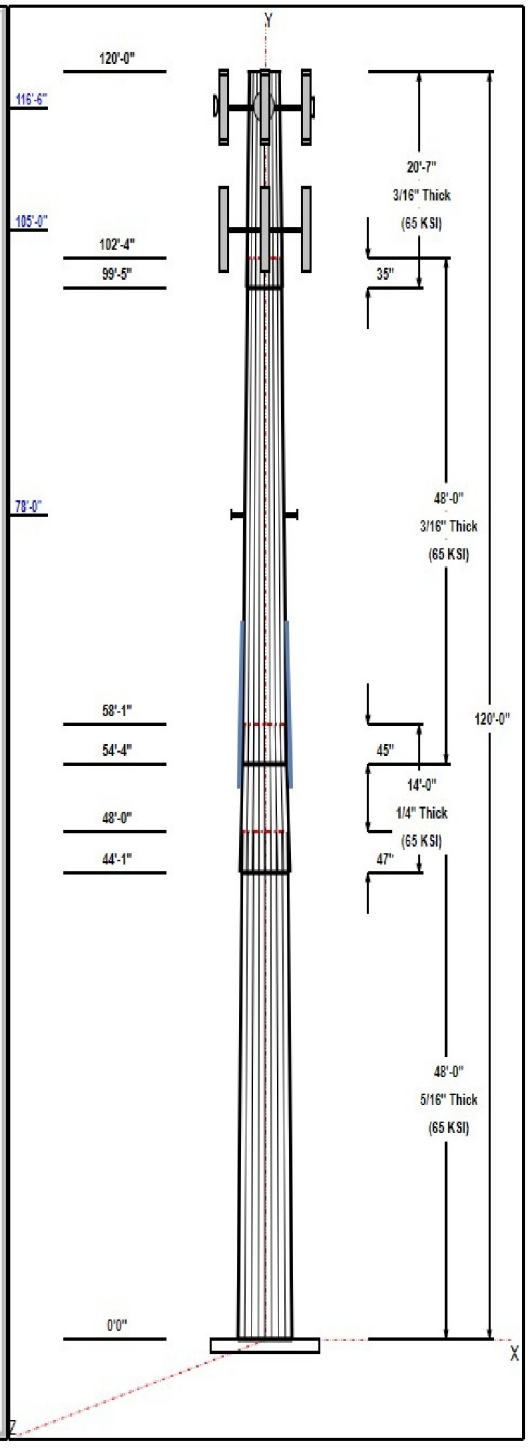
Dead Load Factor: 1.00
Wind Load Factor: 1.00

52 Alllowable Stress
52 Resulting Stress

Load Case : 85 mph Wind with 0 in Ice

Iterations: 25





Structure: CT46128-A-SBA

Type: Tapered
Site Name: Milford - West
Height: 120.00 (ft)
Base Elev: 0.00 (ft)

Base Shape: 18 Sided
Taper: 0.15625

11/3/2015

Tower Engineering Solutions

Shaft Properties

Seq	Length (ft)	Top (in)	Bottom (in)	Thick (in)	Joint Type	Taper	Grade (ksi)
1	48.00	30.00	37.50	0.313		0.15625	65
2	14.00	28.92	31.11	0.250	Slip	0.15625	65
3	48.00	22.39	29.89	0.188	Slip	0.15625	65
4	20.58	20.00	23.22	0.188	Slip	0.15625	65

Discrete Appurtenances

Attach Elev (ft)	Force Elev (ft)	Qty	Description	Carrier
116.50	116.50	3	1900MHz RRH	Sprint
116.50	116.50	3	800 MHz RRH	Sprint
116.50	116.50	3	800 MHz RRH w/ Notch	Sprint
116.50	116.50	3	A-ANT-23G-2-C	Clearwire
116.50	116.50	4	ACU-A20-N	Sprint
116.50	116.50	3	APXV9TM-14-ALU-I20	Sprint
116.50	116.50	3	APXVSPP18-C-A20	Sprint
116.50	116.50	1	Low Profile	Sprint
116.50	116.50	3	TD-RRH8x20-25	Sprint
105.00	105.00	3	AIR B2A/ B4P	T-Mobile
105.00	105.00	3	AIR B4A / B2P	T-Mobile
105.00	105.00	6	KRY 112 144/1	T-Mobile
105.00	105.00	3	LNX-6515DS-A1M	T-Mobile
105.00	105.00	1	Platform w/ Hand Rail	T-Mobile
105.00	105.00	3	S11B12	T-Mobile
78.00	78.00	2	GPS	Unknown
78.00	78.00	2	Side Arm (L. Heavy)	Unknown

Linear Appurtenances

Elev From (ft)	Elev To (ft)	Placement	Description	Carrier
0.00	116.50	Inside	1-1/4" Hybrid Cable	Sprint
0.00	116.50	Inside	1/2" Coax	Clearwire
0.00	105.00	Inside	1 5/8" Coax	T-Mobile
0.00	105.00	Inside	1 5/8" Hybrid Cable	T-Mobile
0.00	100.00	Inside	1/2" Fiber	AT&T
0.00	100.00	Inside	3/4" DC Power	AT&T
0.00	100.00	Inside	3/8" Fiber	AT&T
0.00	88.00	Inside	1 5/8" Coax	Metro PCS
0.00	75.00	Outside	1" Reinforcing plate	

Anchor Bolts

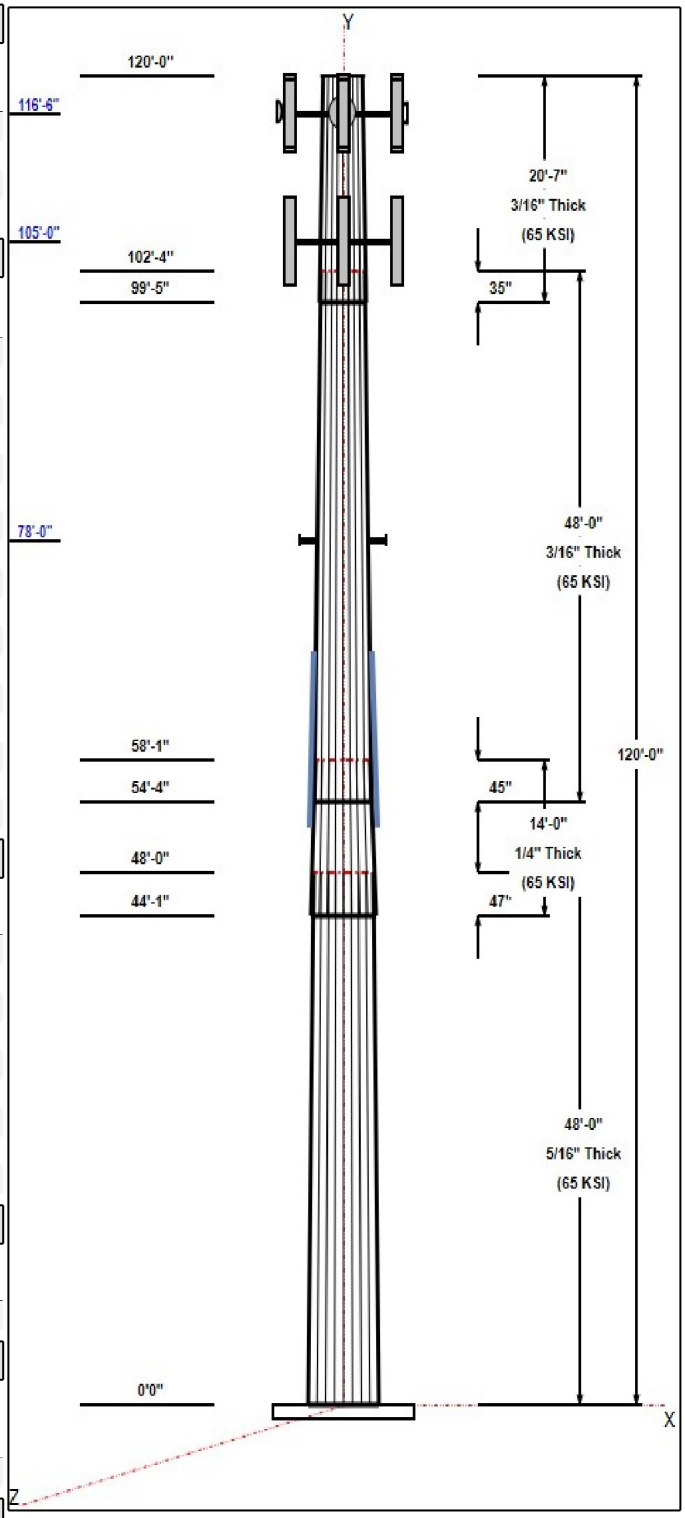
Qty	Specifications	Grade (ksi)	Arrangement
8	2.25" 18J	75.0	Radial

Base Plate

Thickness (in)	Specifications (in)	Grade (ksi)	Geometry
2.0000	49.5	60.0	Round

Reactions

Load Case	Moment	Shear	Axial
85 mph Wind with 0" Ice	1443.6	15.8	19.1
73.61 mph Wind with 0.5" Ice	1213.4	12.9	23.3



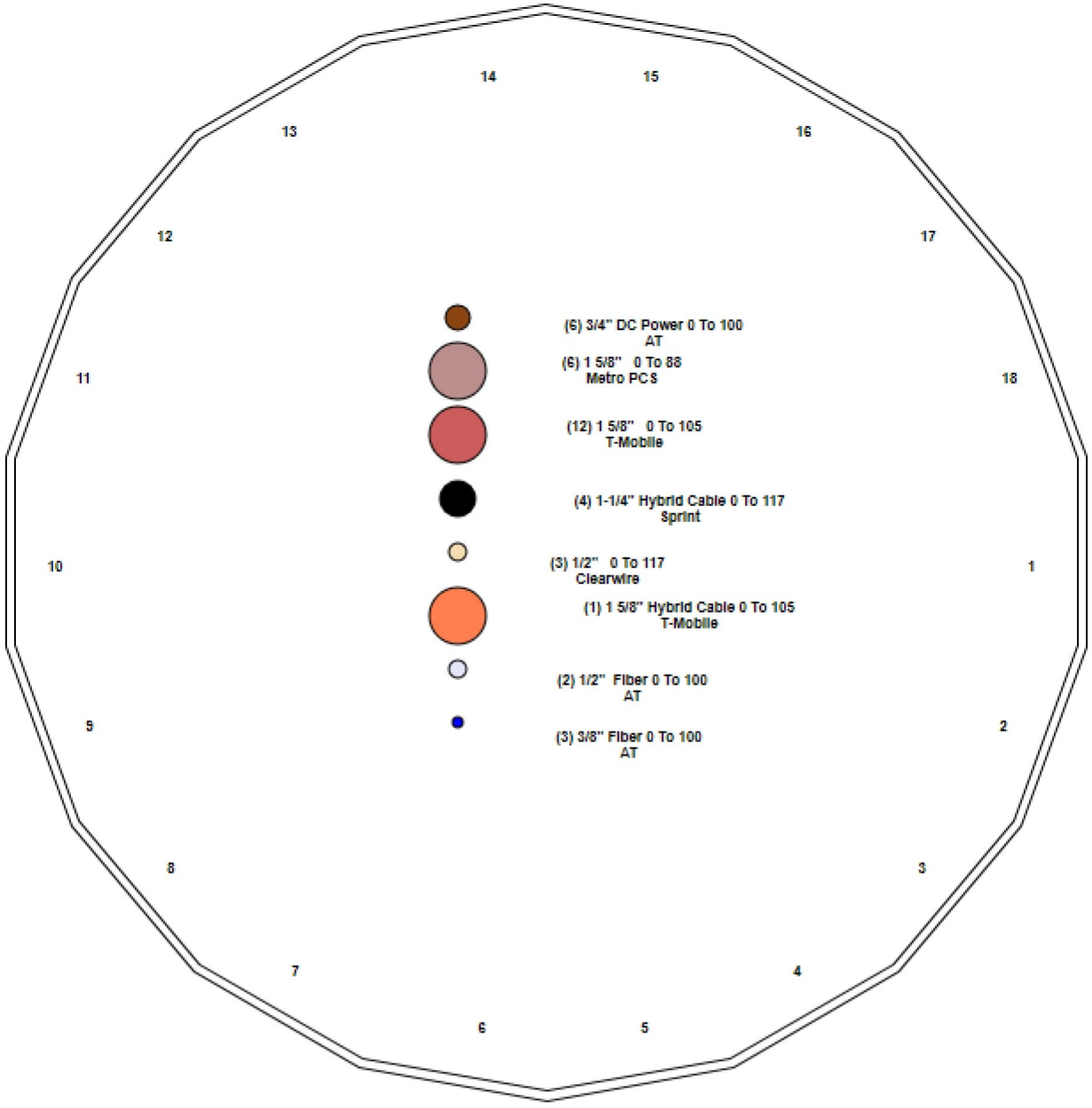
50 mph Wind with 0" Ice	500.3	5.5	19.2

Structure: CT46128-A-SBA - Coax Line Placement

Type: Monopole
Site Name: Milford - West
Height: 120.00 (ft)

11/3/2015

Tower Engineering Solutions



Shaft Properties

Structure:	CT46128-A-SBA	**Code:**	EIA/TIA-222-F	11/3/2015	
Site Name:	Milford - West	**Exposure:**	C		
Height:	120.00 (ft)	**Gh:**	1.69		
Base Elev:	0.000 (ft)	**Struct Class:**	II	Page: 5	

Tower Engineering Solutions

Sec. No.	Shape	Length (ft)	Thick (in)	Fy (ksi)	Joint Type	Overlap (in)	Weight (lb)
1	18	48.000	0.3125	65		0.00	5,417
2	18	14.000	0.2500	65	Slip	47.00	1,125
3	18	48.000	0.1875	65	Slip	45.00	2,522
4	18	20.583	0.1875	65	Slip	35.00	893
					Total Shaft Weight:		**9,957**

	Bottom						Top						
Sec. No.	**Dia (in)**	**Elev (ft)**	**Area (sqin)**	**Ix (in^4)**	**W/t Ratio**	**D/t Ratio**	**Dia (in)**	**Elev (ft)**	**Area (sqin)**	**Ix (in^4)**	**W/t Ratio**	**D/t Ratio**	**Taper**
1	37.50	0.00	36.88	6444.44	19.74	120	30.00	48.00	29.45	3278.80	15.51	96.00	0.156250
2	31.11	44.08	24.49	2946.83	20.53	124.4	28.92	58.08	22.75	2363.58	18.99	115.6	0.156250
3	29.89	54.33	17.67	1969.35	26.69	159.3	22.39	102.3	13.21	822.40	19.64	119.3	0.156250
4	23.22	99.42	13.70	918.23	20.42	123.8	20.00	120.0	11.79	584.74	17.39	106.6	0.156250

Additional Steel

							Intermediate Connectors		Termination Connectors			
Elev From (ft)	**Elev To (ft)**	**Qty**	**Description**	**Fy (ksi)**	**Fu (ksi)**	**Offset (in)**	**Description**	**Spacing (in)**	**Description**	**Spacing (in)**	**Lower Qty**	**Upper Qty**
52.00	68.00	3	LNP LP6X100-G-20TT	65	80	0.00	5/8" Hollo Bolt	24.00	5/8" Hollo Bolt	3.00	8	8

Loading Summary

Structure:	CT46128-A-SBA	**Code:**	EIA/TIA-222-F	11/3/2015	
Site Name:	Milford - West	**Exposure:**	C		
Height:	120.00 (ft)	**Gh:**	1.69		
Base Elev:	0.000 (ft)	**Struct Class:**	II	Page: 6	

Tower Engineering Solutions

Discrete Appurtenances

				No Ice			Ice				
No.	**Elev (ft)**	**Description**	**Qty**	**Weight (lb)**	**CaAa (sf)**	**CaAa Factor**	**Weight (lb)**	**CaAa (sf)**	**CaAa Factor**	**Hor. Ecc. (ft)**	**Vert Ecc (ft)**
1	116.5	1900MHz RRH	3	44.00	3.80	0.50	75.20	4.200	0.50	0.00	0.00
2	116.5	800 MHz RRH	3	53.00	2.49	0.50	74.10	2.820	0.50	0.00	0.00
3	116.5	800 MHz RRH w/ Notch Filter	3	61.80	2.91	0.50	87.80	3.260	0.50	0.00	0.00
4	116.5	A-ANT-23G-2-C	3	27.10	4.69	0.75	55.10	5.050	0.75	0.00	0.00
5	116.5	ACU-A20-N	4	1.00	0.14	0.50	2.30	0.220	0.50	0.00	0.00
6	116.5	APXV9TM-14-ALU-I20	3	63.90	9.93	0.77	120.30	10.83	0.77	0.00	0.00
7	116.5	APXVSPP18-C-A20	3	57.00	8.26	0.83	106.50	9.080	0.83	0.00	0.00
8	116.5	Low Profile Flatform-Round	1	1500.00	21.00	1.00	1800.00	26.00	1.00	0.00	0.00
9	116.5	TD-RRH8x20-25	3	70.00	4.72	0.50	92.00	4.970	0.50	0.00	0.00
10	105.0	AIR B2A/ B4P	3	91.50	6.58	0.86	129.20	6.970	0.86	0.00	0.00
11	105.0	AIR B4A / B2P	3	91.50	6.58	0.86	129.20	6.970	0.86	0.00	0.00
12	105.0	KRY 112 144/1	6	11.00	0.41	0.50	14.10	0.550	0.50	0.00	0.00
13	105.0	LNX-6515DS-A1M	3	49.80	11.41	0.80	115.60	12.34	0.80	0.00	0.00
14	105.0	Platform w/ Hand Rail (round)	1	1400.00	29.00	1.00	1800.00	37.00	1.00	0.00	0.00
15	105.0	S11B12	3	51.00	3.31	0.50	67.10	3.520	0.50	0.00	0.00
16	78.00	GPS	2	10.00	1.00	1.00	18.00	1.250	1.00	0.00	0.00
17	78.00	Side Arm (L. Heavy)	2	120.00	4.00	1.00	150.00	5.000	1.00	0.00	0.00
		Totals:	**49**	**5,211.80**			**7,186.10**				

Linear Appurtenances

			No Ice		Ice		
Bottom Elev. (ft)	**Top Elev. (ft)**	**Description**	**Weight (lb/ft)**	**CaAa (sf/ft)**	**Weight (lb/ft)**	**CaAa (sf/ft)**	**Exposed**
0.00	116.5	(4) 1-1/4" Hybrid Cable	3.82	0.00	3.82	0.00	Inside
0.00	116.5	(3) 1/2" Coax	0.48	0.00	0.48	0.00	Inside
0.00	105.0	(12) 1 5/8" Coax	12.48	0.00	12.48	0.00	Inside
0.00	105.0	(1) 1 5/8" Hybrid Cable	1.10	0.00	1.10	0.00	Inside
0.00	100.0	(2) 1/2" Fiber	0.32	0.00	0.32	0.00	Inside
0.00	100.0	(6) 3/4" DC Power	3.90	0.00	3.90	0.00	Inside
0.00	100.0	(3) 3/8" Fiber	0.18	0.00	0.18	0.00	Inside
0.00	88.00	(6) 1 5/8" Coax	6.24	0.00	6.24	0.00	Inside
0.00	75.00	(3) 1" Reinforcing plate	0.00	0.00	0.00	0.00	Outside
		Totals:	**2,915.50**		**2,915.97**		

Shaft Section Properties

Structure: CT46128-A-SBA
Site Name: Milford - West
Height: 120.00 (ft)
Base Elev: 0.000 (ft)

Code: EIA/TIA-222-F
Exposure: C
Gh: 1.69
Struct Class: II

11/3/2015

Tower Engineering Solutions

Increment Length: 5 (ft)

											Additional Reinforcing			
Elev (ft)	Description	Thick (in)	Flat Dia (in)	Area (in^2)	Ix (in^4)	W/t Ratio	D/t Ratio	Fy (ksi)	Fb (ksi)	Weight (lb)	Area (in^2)	Ixp (in^4)	Iyp (in^4)	Weight (lb)
0.00		0.3125	37.500	36.884	6444.4	19.75	120.00	65	52	0.0	0.00	0.0	0.0	0.0
5.00		0.3125	36.719	36.109	6046.8	19.31	117.50	65	52	620.9				
10.00		0.3125	35.938	35.334	5665.8	18.87	115.00	65	52	607.8				
15.00		0.3125	35.156	34.559	5301.1	18.43	112.50	65	52	594.6				
20.00		0.3125	34.375	33.785	4952.5	17.99	110.00	65	52	581.4				
25.00		0.3125	33.594	33.010	4619.5	17.54	107.50	65	52	568.2				
30.00		0.3125	32.813	32.235	4301.7	17.10	105.00	65	52	555.0				
35.00		0.3125	32.031	31.460	3998.9	16.66	102.50	65	52	541.8				
40.00		0.3125	31.250	30.685	3710.7	16.22	100.00	65	52	528.7				
44.08	Bot - Section 2	0.3125	30.612	30.052	3485.8	15.86	97.96	65	52	422.0				
45.00		0.3125	30.469	29.910	3436.6	15.78	97.50	65	52	169.7				
48.00	Top - Section 1	0.2500	30.500	24.003	2775.0	20.10	122.00	65	52	549.9				
50.00		0.2500	30.188	23.755	2689.9	19.88	120.75	65	52	162.5				
52.00	RB1	0.2500	29.875	23.507	2606.5	19.66	119.50	65	52	160.8	18.00	2636.6	1669.5	122.5
54.33	Bot - Section 3	0.2500	29.510	23.217	2511.5	19.40	118.04	65	52	185.5	18.00	2575.1	1631.0	142.9
55.00		0.2500	29.406	23.135	2484.7	19.33	117.63	65	52	92.6	18.00	2620.6	1659.5	40.8
58.08	Top - Section 2	0.1875	29.299	17.325	1855.1	26.14	156.26	65	52	424.0	18.00	2539.8	1608.8	188.9
60.00		0.1875	29.000	17.146	1798.4	25.86	154.67	65	51	112.4	18.00	2488.4	1575.8	117.4
65.00		0.1875	28.219	16.681	1656.0	25.13	150.50	65	52	287.8	18.00	2361.4	1496.3	306.2
68.00	RT1	0.1875	27.750	16.403	1574.4	24.69	148.00	65	52	168.9	18.00	2286.9	1449.7	183.7
70.00		0.1875	27.438	16.217	1521.4	24.39	146.33	65	52	111.0				
75.00		0.1875	26.656	15.752	1394.3	23.66	142.17	65	52	272.0				
78.00		0.1875	26.188	15.473	1321.5	23.22	139.67	65	52	159.4				
80.00		0.1875	25.875	15.287	1274.4	22.92	138.00	65	52	104.7				
85.00		0.1875	25.094	14.822	1161.6	22.19	133.83	65	52	256.1				
90.00		0.1875	24.313	14.357	1055.7	21.45	129.67	65	52	248.2				
95.00		0.1875	23.531	13.892	956.4	20.72	125.50	65	52	240.3				
99.42	Bot - Section 4	0.1875	22.841	13.481	874.1	20.07	121.82	65	52	205.7				
100.00		0.1875	22.750	13.427	863.6	19.98	121.33	65	52	53.9				
102.33	Top - Section 3	0.1875	22.760	13.433	864.8	19.99	121.39	65	52	213.3				
105.00		0.1875	22.344	13.185	817.8	19.60	119.17	65	52	120.8				
110.00		0.1875	21.563	12.720	734.3	18.87	115.00	65	52	220.4				
115.00		0.1875	20.781	12.255	656.7	18.13	110.83	65	52	212.5				
116.50		0.1875	20.547	12.116	634.5	17.91	109.58	65	52	62.2				
120.00		0.1875	20.000	11.790	584.7	17.40	106.67	65	52	142.4				
									Total Weight	**9957.1**				**1102.5**

Wind Loading - Shaft

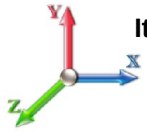
Structure: CT46128-A-SBA
Site Name: Milford - West
Height: 120.00 (ft)
Base Elev: 0.000 (ft)

Code: EIA/TIA-222-F
Exposure: C
Gh: 1.69
Struct Class: II

11/3/2015

Tower Engineering Solutions

Load Case: 85 mph Wind with 0" Ice
Dead Load Factor 1.00
Wind Load Factor 1.00



Iterations: 25

Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		0.00	1.00	18.496	31.26	265.63	0.650	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		0.00	1.00	18.496	31.26	260.09	0.650	0.000	5.00	15.462	10.05	314.2	0.0	620.9
10.00		0.00	1.00	18.496	31.26	254.56	0.650	0.000	5.00	15.137	9.84	307.5	0.0	607.8
15.00		0.00	1.00	18.496	31.26	249.02	0.650	0.000	5.00	14.811	9.63	300.9	0.0	594.6
20.00		0.00	1.00	18.496	31.26	243.49	0.650	0.000	5.00	14.486	9.42	294.3	0.0	581.4
25.00		0.00	1.00	18.496	31.26	237.96	0.650	0.000	5.00	14.160	9.20	287.7	0.0	568.2
30.00		0.00	1.00	18.496	31.26	232.42	0.650	0.000	5.00	13.835	8.99	281.1	0.0	555.0
35.00		0.00	1.02	18.810	31.79	228.80	0.650	0.000	5.00	13.509	8.78	279.1	0.0	541.8
40.00		0.00	1.06	19.541	33.02	227.52	0.650	0.000	5.00	13.184	8.57	283.0	0.0	528.7
44.08	Bot - Section 2	0.00	1.09	20.091	33.95	225.99	0.650	0.000	4.08	10.525	6.84	232.3	0.0	422.0
45.00		0.00	1.09	20.210	34.15	225.60	0.650	0.000	0.92	2.371	1.54	52.6	0.0	169.7
48.00	Top - Section 1	0.00	1.11	20.586	34.79	224.18	0.650	0.000	3.00	7.684	4.99	173.8	0.0	549.9
50.00		0.00	1.13	20.827	35.20	226.91	0.650	0.000	2.00	5.057	3.29	115.7	0.0	162.5
52.00	RB1	0.00	1.14	21.062	35.60	225.82	0.650	0.000	2.00	5.005	3.25	115.8	0.0	405.8
54.33	Bot - Section 3	0.00	1.15	21.328	36.04	224.47	0.650	0.000	2.33	5.774	3.75	135.3	0.0	471.3
55.00		0.00	1.16	21.402	36.17	224.06	0.650	0.000	0.67	1.657	1.08	39.0	0.0	174.3
58.08	Top - Section 2	0.00	1.18	21.739	36.74	222.12	0.650	0.000	3.08	7.590	4.93	181.3	0.0	801.7
60.00		0.00	1.19	21.941	37.08	223.73	0.650	0.000	1.92	4.656	3.03	112.2	0.0	347.2
65.00		0.00	1.21	22.449	37.94	220.21	0.650	0.000	5.00	11.921	7.75	294.0	0.0	900.3
68.00	RT1	0.00	1.23	22.740	38.43	217.95	0.650	0.000	3.00	6.996	4.55	174.8	0.0	536.4
70.00		0.00	1.24	22.929	38.75	216.39	0.650	0.000	2.00	4.599	2.99	115.8	0.0	111.0
75.00		0.00	1.26	23.386	39.52	212.31	0.650	0.000	5.00	11.270	7.33	289.5	0.0	272.0
78.00	Appurtenance(s)	0.00	1.28	23.649	39.97	209.75	0.650	0.000	3.00	6.605	4.29	171.6	0.0	159.4
80.00		0.00	1.29	23.821	40.26	208.00	0.650	0.000	2.00	4.339	2.82	113.5	0.0	104.7
85.00		0.00	1.31	24.237	40.96	203.47	0.650	0.000	5.00	10.618	6.90	282.7	0.0	256.1
90.00		0.00	1.33	24.636	41.63	198.75	0.650	0.000	5.00	10.293	6.69	278.6	0.0	248.2
95.00		0.00	1.35	25.020	42.28	193.86	0.650	0.000	5.00	9.967	6.48	273.9	0.0	240.3
99.42	Bot - Section 4	0.00	1.37	25.347	42.84	189.40	0.650	0.000	4.42	8.534	5.55	237.6	0.0	205.7
100.00		0.00	1.37	25.389	42.91	188.80	0.650	0.000	0.58	1.126	0.73	31.4	0.0	53.9
102.33	Top - Section 3	0.00	1.38	25.557	43.19	186.39	0.650	0.000	2.33	4.461	2.90	125.2	0.0	213.3
105.00	Appurtenance(s)	0.00	1.39	25.745	43.51	186.73	0.650	0.000	2.67	5.012	3.26	141.7	0.0	120.8
110.00		0.00	1.41	26.090	44.09	181.40	0.650	0.000	5.00	9.147	5.95	262.2	0.0	220.4
115.00		0.00	1.43	26.423	44.66	175.94	0.650	0.000	5.00	8.822	5.73	256.1	0.0	212.5
116.50	Appurtenance(s)	0.00	1.43	26.521	44.82	174.28	0.650	0.000	1.50	2.583	1.68	75.3	0.0	62.2
120.00		0.00	1.45	26.747	45.20	170.36	0.650	0.000	3.50	5.913	3.84	173.7	0.0	142.4
								Totals:	**120.00**			**6,803.4**		**12,162.1**

Discrete Appurtenance Forces

Structure:	CT46128-A-SB	**Code:**	EIA/TIA-222-F	11/3/2015	
Site Name:	Milford - West	**Exposure:**	C		
Height:	120.00 (ft)	**Gh:**	1.69		
Base Elev:	0.000 (ft)	**Struct Class:**	II	Page: 9	

Tower Engineering Solutions

Load Case: 85 mph Wind with 0" Ice

Dead Load Factor 1.00

Wind Load Factor 1.00

Iterations: 25

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	CaAa Factor	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)
1	116.50	1900MHz RRH	3	26.521	44.821	0.50	5.70	132.00	0.000	0.000	255.48	0.00	0.00
2	116.50	Low Profile Flatform-Round	1	26.521	44.821	1.00	21.00	1500.00	0.000	0.000	941.24	0.00	0.00
3	116.50	APXVSPP18-C-A20	3	26.521	44.821	0.83	20.57	171.00	0.000	0.000	921.85	0.00	0.00
4	116.50	APXV9TM-14-ALU-I20	3	26.521	44.821	0.77	22.94	191.70	0.000	0.000	1028.12	0.00	0.00
5	116.50	ACU-A20-N	4	26.521	44.821	0.50	0.28	4.00	0.000	0.000	12.55	0.00	0.00
6	116.50	A-ANT-23G-2-C	3	26.521	44.821	0.75	10.55	81.30	0.000	0.000	472.97	0.00	0.00
7	116.50	800 MHz RRH w/ Notch Filter	3	26.521	44.821	0.50	4.37	185.40	0.000	0.000	195.64	0.00	0.00
8	116.50	800 MHz RRH	3	26.521	44.821	0.50	3.74	159.00	0.000	0.000	167.41	0.00	0.00
9	116.50	TD-RRH8x20-25	3	26.521	44.821	0.50	7.08	210.00	0.000	0.000	317.33	0.00	0.00
10	105.00	S11B12	3	25.745	43.510	0.50	4.96	153.00	0.000	0.000	216.03	0.00	0.00
11	105.00	Platform w/ Hand Rail (round)	1	25.745	43.510	1.00	29.00	1400.00	0.000	0.000	1261.78	0.00	0.00
12	105.00	LNX-6515DS-A1M	3	25.745	43.510	0.80	27.38	149.40	0.000	0.000	1191.47	0.00	0.00
13	105.00	KRY 112 144/1	6	25.745	43.510	0.50	1.23	66.00	0.000	0.000	53.52	0.00	0.00
14	105.00	AIR B4A / B2P	3	25.745	43.510	0.86	16.98	274.50	0.000	0.000	738.64	0.00	0.00
15	105.00	AIR B2A/ B4P	3	25.745	43.510	0.86	16.98	274.50	0.000	0.000	738.64	0.00	0.00
16	78.00	Side Arm (L. Heavy)	2	23.649	39.967	1.00	8.00	240.00	0.000	0.000	319.74	0.00	0.00
17	78.00	GPS	2	23.649	39.967	1.00	2.00	20.00	0.000	0.000	79.93	0.00	0.00
						Totals:		**5,211.80**			**8,912.34**		

Total Applied Force Summary

Structure:	CT46128-A-SB	**Code:**	EIA/TIA-222-F	11/3/2015	
Site Name:	Milford - West	**Exposure:**	C		
Height:	120.00 (ft)	**Gh:**	1.69		
Base Elev:	0.000 (ft)	**Struct Class:**	II	Page: 10	

Tower Engineering Solutions

Load Case: 85 mph Wind with 0" Ice

Dead Load Factor 1.00

Wind Load Factor 1.00

Iterations: 25

Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00		0.00	0.00	0.00	0.00
5.00		314.16	763.53	0.00	0.00
10.00		307.55	750.35	0.00	0.00
15.00		300.93	737.16	0.00	0.00
20.00		294.32	723.98	0.00	0.00
25.00		287.70	710.79	0.00	0.00
30.00		281.09	697.61	0.00	0.00
35.00		279.13	684.43	0.00	0.00
40.00		283.00	671.24	0.00	0.00
44.08		232.29	538.40	0.00	0.00
45.00		52.64	195.86	0.00	0.00
48.00		173.75	635.43	0.00	0.00
50.00		115.71	219.54	0.00	0.00
52.00		115.80	340.35	0.00	0.00
54.33		135.27	394.94	0.00	0.00
55.00		38.97	152.44	0.00	0.00
58.08		181.25	700.77	0.00	0.00
60.00		112.22	284.46	0.00	0.00
65.00		293.96	736.60	0.00	0.00
68.00		174.76	438.16	0.00	0.00
70.00		115.84	168.03	0.00	0.00
75.00		289.50	414.53	0.00	0.00
78.00	(4) appurtenances	571.27	504.92	0.00	0.00
80.00		113.53	161.70	0.00	0.00
85.00		282.71	398.71	0.00	0.00
90.00		278.56	378.32	0.00	0.00
95.00		273.95	351.69	0.00	0.00
99.42		237.61	304.08	0.00	0.00
100.00		31.41	66.85	0.00	0.00
102.33		125.24	254.98	0.00	0.00
105.00	(19) appurtenances	4341.80	2485.84	0.00	0.00
110.00		262.15	241.86	0.00	0.00
115.00		256.06	233.95	0.00	0.00
116.50	(26) appurtenances	4387.86	2703.04	0.00	0.00
120.00		173.73	142.36	0.00	0.00
	Totals:	**15,715.72**	**19,186.91**	**0.00**	**0.00**

Resulting Forces and Deflections

Structure:	CT46128-A-SB	**Code:**	EIA/TIA-222-F	11/3/2015	
Site Name:	Milford - West	**Exposure:**	C		
Height:	120.00 (ft)	**Gh:**	1.69		
Base Elev:	0.000 (ft)	**Struct Class:**	II	Page: 11	

Tower Engineering Solutions

Load Case: 85 mph Wind with 0" Ice

Dead Load Factor 1.00

Wind Load Factor 1.00

Iterations: 25

Elev (ft)	Lateral FX (-) (kips)	Axial FY (-) (kips)	Lateral FZ (kips)	Moment MX (ft-kips)	Torsion MY (ft-kips)	Moment MZ (ft-kips)	Deflect X (in)	Deflect Z (in)	Deflect Resultant (in)	Rotation Sway (deg)	Rotation Twist (deg)
0.00	-15.767	-19.143	0.000	0.000	0.000	-1443.5	0.000	0.000	0.000	0.000	0.000
5.00	-15.551	-18.297	0.000	0.000	0.000	-1364.7	-0.166	0.000	0.166	-0.310	0.000
10.00	-15.333	-17.465	0.000	0.000	0.000	-1286.9	-0.657	0.000	0.657	-0.622	0.000
15.00	-15.113	-16.650	0.000	0.000	0.000	-1210.3	-1.476	0.000	1.476	-0.935	0.000
20.00	-14.892	-15.850	0.000	0.000	0.000	-1134.7	-2.623	0.000	2.623	-1.250	0.000
25.00	-14.670	-15.066	0.000	0.000	0.000	-1060.2	-4.101	0.000	4.101	-1.565	0.000
30.00	-14.447	-14.298	0.000	0.000	0.000	-986.94	-5.909	0.000	5.909	-1.880	0.000
35.00	-14.218	-13.546	0.000	0.000	0.000	-914.71	-8.046	0.000	8.046	-2.195	0.000
40.00	-13.972	-12.818	0.000	0.000	0.000	-843.62	-10.511	0.000	10.511	-2.508	0.000
44.08	-13.748	-12.254	0.000	0.000	0.000	-786.57	-12.767	0.000	12.767	-2.763	0.000
45.00	-13.712	-12.031	0.000	0.000	0.000	-773.96	-13.303	0.000	13.303	-2.821	0.000
48.00	-13.537	-11.369	0.000	0.000	0.000	-732.83	-15.136	0.000	15.136	-3.008	0.000
50.00	-13.436	-11.124	0.000	0.000	0.000	-705.75	-16.422	0.000	16.422	-3.133	0.000
52.00	-13.325	-10.762	0.000	0.000	0.000	-678.88	-17.766	0.000	17.766	-3.280	0.000
54.33	-13.179	-10.360	0.000	0.000	0.000	-647.79	-19.393	0.000	19.393	-3.382	0.000
55.00	-13.145	-10.192	0.000	0.000	0.000	-639.01	-19.868	0.000	19.868	-3.412	0.000
58.08	-12.939	-9.480	0.000	0.000	0.000	-598.48	-22.113	0.000	22.113	-3.543	0.000
60.00	-12.834	-9.168	0.000	0.000	0.000	-573.68	-23.551	0.000	23.551	-3.623	0.000
65.00	-12.519	-8.413	0.000	0.000	0.000	-509.50	-27.465	0.000	27.465	-3.851	0.000
68.00	-12.330	-7.964	0.000	0.000	0.000	-471.95	-29.926	0.000	29.926	-3.983	0.000
70.00	-12.236	-7.753	0.000	0.000	0.000	-447.29	-31.611	0.000	31.611	-4.070	0.000
75.00	-11.955	-7.298	0.000	0.000	0.000	-386.11	-36.081	0.000	36.081	-4.459	0.000
78.00	-11.368	-6.803	0.000	0.000	0.000	-350.24	-38.954	0.000	38.954	-4.685	0.000
80.00	-11.270	-6.604	0.000	0.000	0.000	-327.51	-40.946	0.000	40.946	-4.831	0.000
85.00	-10.987	-6.170	0.000	0.000	0.000	-271.16	-46.181	0.000	46.181	-5.165	0.000
90.00	-10.703	-5.768	0.000	0.000	0.000	-216.22	-51.746	0.000	51.746	-5.463	0.000
95.00	-10.417	-5.405	0.000	0.000	0.000	-162.71	-57.601	0.000	57.601	-5.718	0.000
99.42	-10.158	-5.109	0.000	0.000	0.000	-116.70	-62.974	0.000	62.974	-5.902	0.000
100.00	-10.125	-5.037	0.000	0.000	0.000	-110.78	-63.695	0.000	63.695	-5.924	0.000
102.33	-9.980	-4.784	0.000	0.000	0.000	-87.158	-66.605	0.000	66.605	-6.000	0.000
105.00	-5.404	-2.761	0.000	0.000	0.000	-60.545	-69.972	0.000	69.972	-6.068	0.000
110.00	-5.121	-2.543	0.000	0.000	0.000	-33.524	-76.362	0.000	76.362	-6.150	0.000
115.00	-4.842	-2.337	0.000	0.000	0.000	-7.921	-82.816	0.000	82.816	-6.190	0.000
116.50	-0.188	-0.123	0.000	0.000	0.000	-0.658	-84.758	0.000	84.758	-6.192	0.000
120.00	-0.174	0.000	0.000	0.000	0.000	0.000	0.000	0.000	89.289	-6.193	0.000

Resulting Stresses

Structure:	CT46128-A-SBA	**Code:**	EIA/TIA-222-F	11/3/2015	
Site Name:	Milford - West	**Exposure:**	C		
Height:	120.00 (ft)	**Gh:**	1.69		
Base Elev:	0.000 (ft)	**Struct Class:**	II	Page: 12	

Tower Engineering Solutions

Load Case: 85 mph Wind with 0" Ice

Dead Load Factor 1.00

Wind Load Factor 1.00

Iterations: 25

Applied Stresses

Elev (ft)	fa Axial (Y) (ksi)	fvx Shear (X) (ksi)	fvz Shear (Z) (ksi)	fvt Torsion (ksi)	fbx Bending (X) (ksi)	fbz Bending (Z) (ksi)	fb Combined (ksi)	Fb Allow Stress (ksi)	f/Fb Stress Ratio
0.00	0.52	0.86	0.00	0.00	0.00	51.18	51.72	52.0	0.995
5.00	0.51	0.87	0.00	0.00	0.00	50.49	51.02	52.0	0.982
10.00	0.49	0.87	0.00	0.00	0.00	49.73	50.25	52.0	0.967
15.00	0.48	0.88	0.00	0.00	0.00	48.90	49.41	52.0	0.951
20.00	0.47	0.89	0.00	0.00	0.00	47.99	48.48	52.0	0.933
25.00	0.46	0.90	0.00	0.00	0.00	46.98	47.46	52.0	0.913
30.00	0.44	0.90	0.00	0.00	0.00	45.87	46.34	52.0	0.891
35.00	0.43	0.91	0.00	0.00	0.00	44.64	45.10	52.0	0.868
40.00	0.42	0.92	0.00	0.00	0.00	43.29	43.73	52.0	0.841
44.08	0.41	0.92	0.00	0.00	0.00	42.09	42.52	52.0	0.818
45.00	0.40	0.92	0.00	0.00	0.00	41.81	42.24	52.0	0.813
48.00	0.47	1.14	0.00	0.00	0.00	49.07	49.59	52.0	0.954
50.00	0.47	1.14	0.00	0.00	0.00	48.26	48.76	52.0	0.938
52.00	0.46	1.14	0.00	0.00	0.00	29.76	30.22	52.0	0.581
54.33	0.45	1.14	0.00	0.00	0.00	28.96	28.96	52.0	0.557
55.00	0.44	1.15	0.00	0.00	0.00	28.47	28.47	52.0	0.548
58.08	0.55	1.51	0.00	0.00	0.00	27.37	27.37	52.0	0.527
60.00	0.53	1.51	0.00	0.00	0.00	31.12	31.12	51.1	0.609
65.00	0.50	1.51	0.00	0.00	0.00	28.81	28.81	51.7	0.557
68.00	0.49	1.52	0.00	0.00	0.00	27.36	27.85	52.0	0.536
70.00	0.48	1.52	0.00	0.00	0.00	49.15	49.69	52.0	0.956
75.00	0.46	1.53	0.00	0.00	0.00	44.97	45.51	52.0	0.876
78.00	0.44	1.48	0.00	0.00	0.00	42.29	42.80	52.0	0.823
80.00	0.43	1.49	0.00	0.00	0.00	40.51	41.03	52.0	0.789
85.00	0.42	1.49	0.00	0.00	0.00	35.69	36.20	52.0	0.696
90.00	0.40	1.50	0.00	0.00	0.00	30.34	30.85	52.0	0.593
95.00	0.39	1.51	0.00	0.00	0.00	24.39	24.92	52.0	0.479
99.42	0.38	1.52	0.00	0.00	0.00	18.58	19.14	52.0	0.368
100.00	0.38	1.52	0.00	0.00	0.00	17.78	18.35	52.0	0.353
102.33	0.36	1.50	0.00	0.00	0.00	13.98	14.56	52.0	0.280
105.00	0.21	0.83	0.00	0.00	0.00	10.08	10.39	52.0	0.200
110.00	0.20	0.81	0.00	0.00	0.00	6.00	6.35	52.0	0.122
115.00	0.19	0.80	0.00	0.00	0.00	1.53	2.20	52.0	0.042
116.50	0.01	0.03	0.00	0.00	0.00	0.13	0.15	52.0	0.003
120.00	0.00	0.03	0.00	0.00	0.00	0.00	0.05	52.0	0.001

Wind Loading - Shaft

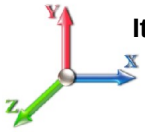
Structure:	CT46128-A-SBA	**Code:**	EIA/TIA-222-F	11/3/2015	
Site Name:	Milford - West	**Exposure:**	C		
Height:	120.00 (ft)	**Gh:**	1.69		
Base Elev:	0.000 (ft)	**Struct Class:**	II	Page: 13	

Tower Engineering Solutions

Load Case: 73.61 mph Wind with 0.5" Ice

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations: 25

Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		0.00	1.00	13.871	23.44	230.03	0.650	0.500	0.00	0.000	0.00	0.0	0.0	0.0
5.00		0.00	1.00	13.871	23.44	225.24	0.650	0.500	5.00	15.879	10.32	242.0	114.8	735.8
10.00		0.00	1.00	13.871	23.44	220.45	0.650	0.500	5.00	15.553	10.11	237.0	112.4	720.2
15.00		0.00	1.00	13.871	23.44	215.65	0.650	0.500	5.00	15.228	9.90	232.0	110.0	704.6
20.00		0.00	1.00	13.871	23.44	210.86	0.650	0.500	5.00	14.902	9.69	227.1	107.6	689.0
25.00		0.00	1.00	13.871	23.44	206.07	0.650	0.500	5.00	14.577	9.47	222.1	105.2	673.4
30.00		0.00	1.00	13.871	23.44	201.28	0.650	0.500	5.00	14.251	9.26	217.2	102.8	657.8
35.00		0.00	1.02	14.106	23.84	198.14	0.650	0.500	5.00	13.926	9.05	215.8	100.4	642.2
40.00		0.00	1.06	14.655	24.77	197.03	0.650	0.500	5.00	13.600	8.84	218.9	98.0	626.6
44.08	Bot - Section 2	0.00	1.09	15.068	25.46	195.71	0.650	0.500	4.08	10.865	7.06	179.8	78.4	500.4
45.00		0.00	1.09	15.156	25.61	195.37	0.650	0.500	0.92	2.448	1.59	40.7	17.8	187.5
48.00	Top - Section 1	0.00	1.11	15.439	26.09	194.14	0.650	0.500	3.00	7.934	5.16	134.5	57.4	607.3
50.00		0.00	1.13	15.620	26.40	196.50	0.650	0.500	2.00	5.224	3.40	89.6	37.9	200.4
52.00	RB1	0.00	1.14	15.796	26.69	195.56	0.650	0.500	2.00	5.172	3.36	89.7	37.5	443.3
54.33	Bot - Section 3	0.00	1.15	15.995	27.03	194.39	0.650	0.500	2.33	5.968	3.88	104.9	43.2	514.5
55.00		0.00	1.16	16.051	27.13	194.04	0.650	0.500	0.67	1.713	1.11	30.2	12.5	186.7
58.08	Top - Section 2	0.00	1.18	16.303	27.55	192.35	0.650	0.500	3.08	7.847	5.10	140.5	56.7	858.4
60.00		0.00	1.19	16.455	27.81	193.75	0.650	0.500	1.92	4.816	3.13	87.0	34.9	382.1
65.00		0.00	1.21	16.836	28.45	190.70	0.650	0.500	5.00	12.337	8.02	228.2	88.6	988.9
68.00	RT1	0.00	1.23	17.054	28.82	188.74	0.650	0.500	3.00	7.246	4.71	135.7	52.3	588.7
70.00		0.00	1.24	17.196	29.06	187.39	0.650	0.500	2.00	4.766	3.10	90.0	34.5	145.5
75.00		0.00	1.26	17.538	29.64	183.86	0.650	0.500	5.00	11.686	7.60	225.1	83.8	355.7
78.00	Appurtenance(s)	0.00	1.28	17.736	29.97	181.64	0.650	0.500	3.00	6.855	4.46	133.6	49.4	208.8
80.00		0.00	1.29	17.865	30.19	180.13	0.650	0.500	2.00	4.505	2.93	88.4	32.6	137.2
85.00		0.00	1.31	18.177	30.72	176.21	0.650	0.500	5.00	11.035	7.17	220.3	79.0	335.1
90.00		0.00	1.33	18.476	31.22	172.12	0.650	0.500	5.00	10.710	6.96	217.4	76.6	324.8
95.00		0.00	1.35	18.764	31.71	167.88	0.650	0.500	5.00	10.384	6.75	214.0	74.2	314.5
99.42	Bot - Section 4	0.00	1.37	19.009	32.12	164.02	0.650	0.500	4.42	8.902	5.79	185.9	63.6	269.3
100.00		0.00	1.37	19.041	32.18	163.50	0.650	0.500	0.58	1.175	0.76	24.6	8.5	62.4
102.33	Top - Section 3	0.00	1.38	19.167	32.39	161.41	0.650	0.500	2.33	4.656	3.03	98.0	33.5	246.8
105.00	Appurtenance(s)	0.00	1.39	19.308	32.63	161.70	0.650	0.500	2.67	5.234	3.40	111.0	37.6	158.4
110.00		0.00	1.41	19.566	33.07	157.09	0.650	0.500	5.00	9.564	6.22	205.6	68.1	288.5
115.00		0.00	1.43	19.816	33.49	152.36	0.650	0.500	5.00	9.238	6.00	201.1	65.7	278.1
116.50	Appurtenance(s)	0.00	1.43	19.890	33.61	150.92	0.650	0.500	1.50	2.708	1.76	59.2	19.5	81.7
120.00		0.00	1.45	20.059	33.90	147.53	0.650	0.500	3.50	6.205	4.03	136.7	44.3	186.6
								Totals:	**120.00**			**5,284.0**		**14,301.2**

Discrete Appurtenance Forces

Structure:	CT46128-A-SB	**Code:**	EIA/TIA-222-F	11/3/2015	
Site Name:	Milford - West	**Exposure:**	C		
Height:	120.00 (ft)	**Gh:**	1.69		
Base Elev:	0.000 (ft)	**Struct Class:**	II	Page: 14	

Tower Engineering Solutions

Load Case: 73.61 mph Wind with 0.5" Ice

Dead Load Factor 1.00

Wind Load Factor 1.00

Iterations: 25

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	CaAa Factor	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)
1	116.50	1900MHz RRH	3	19.890	33.614	0.50	6.30	225.60	0.000	0.000	211.77	0.00	0.00
2	116.50	Low Profile Flatform-Round	1	19.890	33.614	1.00	26.00	1800.00	0.000	0.000	873.96	0.00	0.00
3	116.50	APXVSPP18-C-A20	3	19.890	33.614	0.83	22.61	319.50	0.000	0.000	759.98	0.00	0.00
4	116.50	APXV9TM-14-ALU-I20	3	19.890	33.614	0.77	25.02	360.90	0.000	0.000	840.93	0.00	0.00
5	116.50	ACU-A20-N	4	19.890	33.614	0.50	0.44	9.20	0.000	0.000	14.79	0.00	0.00
6	116.50	A-ANT-23G-2-C	3	19.890	33.614	0.75	11.36	165.30	0.000	0.000	381.94	0.00	0.00
7	116.50	800 MHz RRH w/ Notch Filter	3	19.890	33.614	0.50	4.89	263.40	0.000	0.000	164.37	0.00	0.00
8	116.50	800 MHz RRH	3	19.890	33.614	0.50	4.23	222.30	0.000	0.000	142.19	0.00	0.00
9	116.50	TD-RRH8x20-25	3	19.890	33.614	0.50	7.46	276.00	0.000	0.000	250.59	0.00	0.00
10	105.00	S11B12	3	19.308	32.630	0.50	5.28	201.30	0.000	0.000	172.29	0.00	0.00
11	105.00	Platform w/ Hand Rail (round)	1	19.308	32.630	1.00	37.00	1800.00	0.000	0.000	1207.32	0.00	0.00
12	105.00	LNX-6515DS-A1M	3	19.308	32.630	0.80	29.62	346.80	0.000	0.000	966.38	0.00	0.00
13	105.00	KRY 112 144/1	6	19.308	32.630	0.50	1.65	84.60	0.000	0.000	53.84	0.00	0.00
14	105.00	AIR B4A / B2P	3	19.308	32.630	0.86	17.98	387.60	0.000	0.000	586.78	0.00	0.00
15	105.00	AIR B2A/ B4P	3	19.308	32.630	0.86	17.98	387.60	0.000	0.000	586.78	0.00	0.00
16	78.00	Side Arm (L. Heavy)	2	17.736	29.974	1.00	10.00	300.00	0.000	0.000	299.74	0.00	0.00
17	78.00	GPS	2	17.736	29.974	1.00	2.50	36.00	0.000	0.000	74.93	0.00	0.00
						Totals:		**7,186.10**			**7,588.57**		

Total Applied Force Summary

Structure:	CT46128-A-SB	**Code:**	EIA/TIA-222-F	11/3/2015	
Site Name:	Milford - West	**Exposure:**	C		
Height:	120.00 (ft)	**Gh:**	1.69		
Base Elev:	0.000 (ft)	**Struct Class:**	II	Page: 15	

Tower Engineering Solutions

Load Case: 73.61 mph Wind with 0.5" Ice

Dead Load Factor 1.00

Wind Load Factor 1.00

Iterations: 25

Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00		0.00	0.00	0.00	0.00
5.00		241.95	878.38	0.00	0.00
10.00		236.99	862.78	0.00	0.00
15.00		232.03	847.19	0.00	0.00
20.00		227.07	831.59	0.00	0.00
25.00		222.11	816.00	0.00	0.00
30.00		217.15	800.40	0.00	0.00
35.00		215.79	784.81	0.00	0.00
40.00		218.94	769.22	0.00	0.00
44.08		179.84	616.80	0.00	0.00
45.00		40.75	213.67	0.00	0.00
48.00		134.55	692.83	0.00	0.00
50.00		89.63	257.42	0.00	0.00
52.00		89.74	377.84	0.00	0.00
54.33		104.86	438.16	0.00	0.00
55.00		30.20	164.90	0.00	0.00
58.08		140.53	757.48	0.00	0.00
60.00		87.05	319.36	0.00	0.00
65.00		228.16	825.22	0.00	0.00
68.00		135.75	490.47	0.00	0.00
70.00		90.02	202.51	0.00	0.00
75.00		225.14	498.33	0.00	0.00
78.00	(4) appurtenances	508.23	630.33	0.00	0.00
80.00		88.41	194.25	0.00	0.00
85.00		220.34	477.69	0.00	0.00
90.00		217.36	454.89	0.00	0.00
95.00		214.04	425.84	0.00	0.00
99.42		185.88	367.70	0.00	0.00
100.00		24.58	75.35	0.00	0.00
102.33		98.02	288.47	0.00	0.00
105.00	(19) appurtenances	3684.40	3413.93	0.00	0.00
110.00		205.56	309.94	0.00	0.00
115.00		201.10	299.62	0.00	0.00
116.50	(26) appurtenances	3699.68	3730.33	0.00	0.00
120.00		136.72	186.64	0.00	0.00
	Totals:	**12,872.61**	**23,300.31**	**0.00**	**0.00**

Resulting Forces and Deflections

Structure:	CT46128-A-SB	**Code:**	EIA/TIA-222-F	11/3/2015	
Site Name:	Milford - West	**Exposure:**	C		
Height:	120.00 (ft)	**Gh:**	1.69		
Base Elev:	0.000 (ft)	**Struct Class:**	II	Page: 16	

Tower Engineering Solutions

Load Case: 73.61 mph Wind with 0.5" Ice

Dead Load Factor 1.00

Wind Load Factor 1.00

Iterations: 25

Elev (ft)	Lateral FX (-) (kips)	Axial FY (-) (kips)	Lateral FZ (kips)	Moment MX (ft-kips)	Torsion MY (ft-kips)	Moment MZ (ft-kips)	Deflect X (in)	Deflect Z (in)	Deflect Resultant (in)	Rotation Sway (deg)	Rotation Twist (deg)
0.00	-12.926	-23.270	0.000	0.000	0.000	-1213.4	0.000	0.000	0.000	0.000	0.000
5.00	-12.784	-22.334	0.000	0.000	0.000	-1148.7	-0.139	0.000	0.139	-0.261	0.000
10.00	-12.639	-21.415	0.000	0.000	0.000	-1084.8	-0.553	0.000	0.553	-0.523	0.000
15.00	-12.493	-20.513	0.000	0.000	0.000	-1021.6	-1.242	0.000	1.242	-0.788	0.000
20.00	-12.344	-19.628	0.000	0.000	0.000	-959.20	-2.209	0.000	2.209	-1.054	0.000
25.00	-12.192	-18.760	0.000	0.000	0.000	-897.48	-3.455	0.000	3.455	-1.320	0.000
30.00	-12.038	-17.910	0.000	0.000	0.000	-836.52	-4.980	0.000	4.980	-1.587	0.000
35.00	-11.879	-17.077	0.000	0.000	0.000	-776.33	-6.785	0.000	6.785	-1.854	0.000
40.00	-11.702	-16.267	0.000	0.000	0.000	-716.93	-8.869	0.000	8.869	-2.120	0.000
44.08	-11.534	-15.631	0.000	0.000	0.000	-669.15	-10.776	0.000	10.776	-2.337	0.000
45.00	-11.513	-15.398	0.000	0.000	0.000	-658.58	-11.230	0.000	11.230	-2.386	0.000
48.00	-11.382	-14.685	0.000	0.000	0.000	-624.04	-12.780	0.000	12.780	-2.545	0.000
50.00	-11.310	-14.409	0.000	0.000	0.000	-601.28	-13.869	0.000	13.869	-2.652	0.000
52.00	-11.229	-14.016	0.000	0.000	0.000	-578.66	-15.006	0.000	15.006	-2.777	0.000
54.33	-11.116	-13.572	0.000	0.000	0.000	-552.46	-16.385	0.000	16.385	-2.864	0.000
55.00	-11.093	-13.396	0.000	0.000	0.000	-545.05	-16.786	0.000	16.786	-2.889	0.000
58.08	-10.934	-12.629	0.000	0.000	0.000	-510.85	-18.688	0.000	18.688	-3.001	0.000
60.00	-10.859	-12.290	0.000	0.000	0.000	-489.89	-19.907	0.000	19.907	-3.069	0.000
65.00	-10.616	-11.450	0.000	0.000	0.000	-435.60	-23.225	0.000	23.225	-3.264	0.000
68.00	-10.470	-10.951	0.000	0.000	0.000	-403.75	-25.311	0.000	25.311	-3.378	0.000
70.00	-10.407	-10.717	0.000	0.000	0.000	-382.81	-26.741	0.000	26.741	-3.451	0.000
75.00	-10.197	-10.187	0.000	0.000	0.000	-330.78	-30.534	0.000	30.534	-3.785	0.000
78.00	-9.674	-9.566	0.000	0.000	0.000	-300.18	-32.974	0.000	32.974	-3.978	0.000
80.00	-9.606	-9.344	0.000	0.000	0.000	-280.84	-34.666	0.000	34.666	-4.103	0.000
85.00	-9.393	-8.839	0.000	0.000	0.000	-232.81	-39.116	0.000	39.116	-4.390	0.000
90.00	-9.176	-8.365	0.000	0.000	0.000	-185.84	-43.850	0.000	43.850	-4.646	0.000
95.00	-8.953	-7.929	0.000	0.000	0.000	-139.96	-48.833	0.000	48.833	-4.866	0.000
99.42	-8.747	-7.566	0.000	0.000	0.000	-100.42	-53.407	0.000	53.407	-5.024	0.000
100.00	-8.722	-7.486	0.000	0.000	0.000	-95.321	-54.022	0.000	54.022	-5.042	0.000
102.33	-8.607	-7.198	0.000	0.000	0.000	-74.970	-56.501	0.000	56.501	-5.108	0.000
105.00	-4.636	-4.123	0.000	0.000	0.000	-52.019	-59.368	0.000	59.368	-5.166	0.000
110.00	-4.407	-3.829	0.000	0.000	0.000	-28.840	-64.812	0.000	64.812	-5.237	0.000
115.00	-4.180	-3.548	0.000	0.000	0.000	-6.806	-70.312	0.000	70.312	-5.271	0.000
116.50	-0.153	-0.173	0.000	0.000	0.000	-0.536	-71.966	0.000	71.966	-5.273	0.000
120.00	-0.137	0.000	0.000	0.000	0.000	0.000	0.000	0.000	75.827	-5.274	0.000

Resulting Stresses

Structure:	CT46128-A-SBA	**Code:**	EIA/TIA-222-F	11/3/2015	
Site Name:	Milford - West	**Exposure:**	C		
Height:	120.00 (ft)	**Gh:**	1.69		
Base Elev:	0.000 (ft)	**Struct Class:**	II	Page: 17	

Tower Engineering Solutions

Load Case: 73.61 mph Wind with 0.5" Ice

Dead Load Factor 1.00

Wind Load Factor 1.00

Iterations: 25

	Applied Stresses								
Elev (ft)	**fa Axial (Y) (ksi)**	**fvx Shear (X) (ksi)**	**fvz Shear (Z) (ksi)**	**fvt Torsion (ksi)**	**fbx Bending (X) (ksi)**	**fbz Bending (Z) (ksi)**	**fb Combined (ksi)**	**Fb Allow Stress (ksi)**	**f/Fb Stress Ratio**
0.00	0.63	0.71	0.00	0.00	0.00	43.02	43.67	52.0	0.840
5.00	0.62	0.71	0.00	0.00	0.00	42.50	43.14	52.0	0.830
10.00	0.61	0.72	0.00	0.00	0.00	41.92	42.55	52.0	0.819
15.00	0.59	0.73	0.00	0.00	0.00	41.28	41.89	52.0	0.806
20.00	0.58	0.74	0.00	0.00	0.00	40.56	41.16	52.0	0.792
25.00	0.57	0.74	0.00	0.00	0.00	39.76	40.35	52.0	0.776
30.00	0.56	0.75	0.00	0.00	0.00	38.88	39.45	52.0	0.759
35.00	0.54	0.76	0.00	0.00	0.00	37.89	38.45	52.0	0.740
40.00	0.53	0.77	0.00	0.00	0.00	36.79	37.34	52.0	0.718
44.08	0.52	0.77	0.00	0.00	0.00	35.80	36.35	52.0	0.699
45.00	0.51	0.78	0.00	0.00	0.00	35.57	36.11	52.0	0.695
48.00	0.61	0.96	0.00	0.00	0.00	41.79	42.43	52.0	0.816
50.00	0.61	0.96	0.00	0.00	0.00	41.11	41.75	52.0	0.803
52.00	0.60	0.96	0.00	0.00	0.00	25.37	25.96	52.0	0.500
54.33	0.58	0.96	0.00	0.00	0.00	24.70	24.70	52.0	0.475
55.00	0.58	0.97	0.00	0.00	0.00	24.29	24.29	52.0	0.467
58.08	0.73	1.27	0.00	0.00	0.00	23.36	23.36	52.0	0.449
60.00	0.72	1.28	0.00	0.00	0.00	26.58	26.58	51.1	0.520
65.00	0.69	1.28	0.00	0.00	0.00	24.63	24.63	51.7	0.476
68.00	0.67	1.29	0.00	0.00	0.00	23.41	24.08	52.0	0.463
70.00	0.66	1.29	0.00	0.00	0.00	42.06	42.78	52.0	0.823
75.00	0.65	1.30	0.00	0.00	0.00	38.53	39.24	52.0	0.755
78.00	0.62	1.26	0.00	0.00	0.00	36.24	36.93	52.0	0.710
80.00	0.61	1.27	0.00	0.00	0.00	34.74	35.42	52.0	0.681
85.00	0.60	1.28	0.00	0.00	0.00	30.64	31.32	52.0	0.602
90.00	0.58	1.29	0.00	0.00	0.00	26.08	26.75	52.0	0.515
95.00	0.57	1.30	0.00	0.00	0.00	20.98	21.67	52.0	0.417
99.42	0.56	1.31	0.00	0.00	0.00	15.99	16.70	52.0	0.321
100.00	0.56	1.31	0.00	0.00	0.00	15.30	16.02	52.0	0.308
102.33	0.54	1.29	0.00	0.00	0.00	12.02	12.76	52.0	0.245
105.00	0.31	0.71	0.00	0.00	0.00	8.66	9.06	52.0	0.174
110.00	0.30	0.70	0.00	0.00	0.00	5.16	5.59	52.0	0.108
115.00	0.29	0.69	0.00	0.00	0.00	1.31	2.00	52.0	0.038
116.50	0.01	0.03	0.00	0.00	0.00	0.11	0.13	52.0	0.002
120.00	0.00	0.02	0.00	0.00	0.00	0.00	0.04	52.0	0.001

Wind Loading - Shaft

Structure: CT46128-A-SBA
Site Name: Milford - West
Height: 120.00 (ft)
Base Elev: 0.000 (ft)

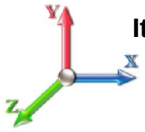
Code: EIA/TIA-222-F
Exposure: C
Gh: 1.69
Struct Class: II

11/3/2015

Tower Engineering Solutions

Load Case: 50 mph Wind with 0" Ice

Dead Load Factor 1.00
Wind Load Factor 1.00



Iterations: 24

Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		0.00	1.00	6.400	10.82	156.25	0.650	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		0.00	1.00	6.400	10.82	152.99	0.650	0.000	5.00	15.462	10.05	108.7	0.0	620.9
10.00		0.00	1.00	6.400	10.82	149.74	0.650	0.000	5.00	15.137	9.84	106.4	0.0	607.8
15.00		0.00	1.00	6.400	10.82	146.48	0.650	0.000	5.00	14.811	9.63	104.1	0.0	594.6
20.00		0.00	1.00	6.400	10.82	143.23	0.650	0.000	5.00	14.486	9.42	101.8	0.0	581.4
25.00		0.00	1.00	6.400	10.82	139.97	0.650	0.000	5.00	14.160	9.20	99.6	0.0	568.2
30.00		0.00	1.00	6.400	10.82	136.72	0.650	0.000	5.00	13.835	8.99	97.3	0.0	555.0
35.00		0.00	1.02	6.509	11.00	134.59	0.650	0.000	5.00	13.509	8.78	96.6	0.0	541.8
40.00		0.00	1.06	6.762	11.43	133.84	0.650	0.000	5.00	13.184	8.57	97.9	0.0	528.7
44.08	Bot - Section 2	0.00	1.09	6.952	11.75	132.94	0.650	0.000	4.08	10.525	6.84	80.4	0.0	422.0
45.00		0.00	1.09	6.993	11.82	132.70	0.650	0.000	0.92	2.371	1.54	18.2	0.0	169.7
48.00	Top - Section 1	0.00	1.11	7.123	12.04	131.87	0.650	0.000	3.00	7.684	4.99	60.1	0.0	549.9
50.00		0.00	1.13	7.207	12.18	133.47	0.650	0.000	2.00	5.057	3.29	40.0	0.0	162.5
52.00	RB1	0.00	1.14	7.288	12.32	132.83	0.650	0.000	2.00	5.005	3.25	40.1	0.0	405.8
54.33	Bot - Section 3	0.00	1.15	7.380	12.47	132.04	0.650	0.000	2.33	5.774	3.75	46.8	0.0	471.3
55.00		0.00	1.16	7.406	12.52	131.80	0.650	0.000	0.67	1.657	1.08	13.5	0.0	174.3
58.08	Top - Section 2	0.00	1.18	7.522	12.71	130.66	0.650	0.000	3.08	7.590	4.93	62.7	0.0	801.7
60.00		0.00	1.19	7.592	12.83	131.61	0.650	0.000	1.92	4.656	3.03	38.8	0.0	347.2
65.00		0.00	1.21	7.768	13.13	129.53	0.650	0.000	5.00	11.921	7.75	101.7	0.0	900.3
68.00	RT1	0.00	1.23	7.869	13.30	128.21	0.650	0.000	3.00	6.996	4.55	60.5	0.0	536.4
70.00		0.00	1.24	7.934	13.41	127.29	0.650	0.000	2.00	4.599	2.99	40.1	0.0	111.0
75.00		0.00	1.26	8.092	13.68	124.89	0.650	0.000	5.00	11.270	7.33	100.2	0.0	272.0
78.00	Appurtenance(s)	0.00	1.28	8.183	13.83	123.38	0.650	0.000	3.00	6.605	4.29	59.4	0.0	159.4
80.00		0.00	1.29	8.242	13.93	122.35	0.650	0.000	2.00	4.339	2.82	39.3	0.0	104.7
85.00		0.00	1.31	8.387	14.17	119.69	0.650	0.000	5.00	10.618	6.90	97.8	0.0	256.1
90.00		0.00	1.33	8.525	14.41	116.91	0.650	0.000	5.00	10.293	6.69	96.4	0.0	248.2
95.00		0.00	1.35	8.657	14.63	114.03	0.650	0.000	5.00	9.967	6.48	94.8	0.0	240.3
99.42	Bot - Section 4	0.00	1.37	8.770	14.82	111.41	0.650	0.000	4.42	8.534	5.55	82.2	0.0	205.7
100.00		0.00	1.37	8.785	14.85	111.06	0.650	0.000	0.58	1.126	0.73	10.9	0.0	53.9
102.33	Top - Section 3	0.00	1.38	8.843	14.95	109.64	0.650	0.000	2.33	4.461	2.90	43.3	0.0	213.3
105.00	Appurtenance(s)	0.00	1.39	8.908	15.06	109.84	0.650	0.000	2.67	5.012	3.26	49.0	0.0	120.8
110.00		0.00	1.41	9.028	15.26	106.71	0.650	0.000	5.00	9.147	5.95	90.7	0.0	220.4
115.00		0.00	1.43	9.143	15.45	103.49	0.650	0.000	5.00	8.822	5.73	88.6	0.0	212.5
116.50	Appurtenance(s)	0.00	1.43	9.177	15.51	102.52	0.650	0.000	1.50	2.583	1.68	26.0	0.0	62.2
120.00		0.00	1.45	9.255	15.64	100.21	0.650	0.000	3.50	5.913	3.84	60.1	0.0	142.4
								Totals:	**120.00**			**2,354.1**		**12,162.1**

Discrete Appurtenance Forces

Structure:	CT46128-A-SB	**Code:**	EIA/TIA-222-F	11/3/2015	
Site Name:	Milford - West	**Exposure:**	C		
Height:	120.00 (ft)	**Gh:**	1.69		
Base Elev:	0.000 (ft)	**Struct Class:**	II	Page: 19	

Tower Engineering Solutions

Load Case: 50 mph Wind with 0" Ice

Dead Load Factor 1.00

Wind Load Factor 1.00

Iterations: 24

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	CaAa Factor	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)
1	116.50	1900MHz RRH	3	9.177	15.509	0.50	5.70	132.00	0.000	0.000	88.40	0.00	0.00
2	116.50	Low Profile Flatform-Round	1	9.177	15.509	1.00	21.00	1500.00	0.000	0.000	325.69	0.00	0.00
3	116.50	APXVSPP18-C-A20	3	9.177	15.509	0.83	20.57	171.00	0.000	0.000	318.98	0.00	0.00
4	116.50	APXV9TM-14-ALU-I20	3	9.177	15.509	0.77	22.94	191.70	0.000	0.000	355.75	0.00	0.00
5	116.50	ACU-A20-N	4	9.177	15.509	0.50	0.28	4.00	0.000	0.000	4.34	0.00	0.00
6	116.50	A-ANT-23G-2-C	3	9.177	15.509	0.75	10.55	81.30	0.000	0.000	163.66	0.00	0.00
7	116.50	800 MHz RRH w/ Notch Filter	3	9.177	15.509	0.50	4.37	185.40	0.000	0.000	67.70	0.00	0.00
8	116.50	800 MHz RRH	3	9.177	15.509	0.50	3.74	159.00	0.000	0.000	57.93	0.00	0.00
9	116.50	TD-RRH8x20-25	3	9.177	15.509	0.50	7.08	210.00	0.000	0.000	109.80	0.00	0.00
10	105.00	S11B12	3	8.908	15.055	0.50	4.96	153.00	0.000	0.000	74.75	0.00	0.00
11	105.00	Platform w/ Hand Rail (round)	1	8.908	15.055	1.00	29.00	1400.00	0.000	0.000	436.60	0.00	0.00
12	105.00	LNX-6515DS-A1M	3	8.908	15.055	0.80	27.38	149.40	0.000	0.000	412.27	0.00	0.00
13	105.00	KRY 112 144/1	6	8.908	15.055	0.50	1.23	66.00	0.000	0.000	18.52	0.00	0.00
14	105.00	AIR B4A / B2P	3	8.908	15.055	0.86	16.98	274.50	0.000	0.000	255.58	0.00	0.00
15	105.00	AIR B2A/ B4P	3	8.908	15.055	0.86	16.98	274.50	0.000	0.000	255.58	0.00	0.00
16	78.00	Side Arm (L. Heavy)	2	8.183	13.829	1.00	8.00	240.00	0.000	0.000	110.64	0.00	0.00
17	78.00	GPS	2	8.183	13.829	1.00	2.00	20.00	0.000	0.000	27.66	0.00	0.00
						Totals:		**5,211.80**			**3,083.86**		

Total Applied Force Summary

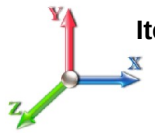
Structure:	CT46128-A-SB	**Code:**	EIA/TIA-222-F	11/3/2015	
Site Name:	Milford - West	**Exposure:**	C		
Height:	120.00 (ft)	**Gh:**	1.69		
Base Elev:	0.000 (ft)	**Struct Class:**	II	Page: 20	

Tower Engineering Solutions

Load Case: 50 mph Wind with 0" Ice

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations: 24

Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00		0.00	0.00	0.00	0.00
5.00		108.71	763.53	0.00	0.00
10.00		106.42	750.35	0.00	0.00
15.00		104.13	737.16	0.00	0.00
20.00		101.84	723.98	0.00	0.00
25.00		99.55	710.79	0.00	0.00
30.00		97.26	697.61	0.00	0.00
35.00		96.58	684.43	0.00	0.00
40.00		97.92	671.24	0.00	0.00
44.08		80.38	538.40	0.00	0.00
45.00		18.21	195.86	0.00	0.00
48.00		60.12	635.43	0.00	0.00
50.00		40.04	219.54	0.00	0.00
52.00		40.07	340.35	0.00	0.00
54.33		46.81	394.94	0.00	0.00
55.00		13.48	152.44	0.00	0.00
58.08		62.72	700.77	0.00	0.00
60.00		38.83	284.46	0.00	0.00
65.00		101.72	736.60	0.00	0.00
68.00		60.47	438.16	0.00	0.00
70.00		40.08	168.03	0.00	0.00
75.00		100.17	414.53	0.00	0.00
78.00	(4) appurtenances	197.67	504.92	0.00	0.00
80.00		39.28	161.70	0.00	0.00
85.00		97.82	398.71	0.00	0.00
90.00		96.39	378.32	0.00	0.00
95.00		94.79	351.69	0.00	0.00
99.42		82.22	304.08	0.00	0.00
100.00		10.87	66.85	0.00	0.00
102.33		43.34	254.98	0.00	0.00
105.00	(19) appurtenances	1502.35	2485.84	0.00	0.00
110.00		90.71	241.86	0.00	0.00
115.00		88.60	233.95	0.00	0.00
116.50	(26) appurtenances	1518.29	2703.04	0.00	0.00
120.00		60.12	142.36	0.00	0.00
	Totals:	**5,437.97**	**19,186.91**	**0.00**	**0.00**

Resulting Forces and Deflections

Structure:	CT46128-A-SB	**Code:**	EIA/TIA-222-F	11/3/2015	
Site Name:	Milford - West	**Exposure:**	C		
Height:	120.00 (ft)	**Gh:**	1.69		
Base Elev:	0.000 (ft)	**Struct Class:**	II	Page: 21	

Tower Engineering Solutions

Load Case: 50 mph Wind with 0" Ice

Dead Load Factor 1.00

Wind Load Factor 1.00

Iterations: 24

Elev (ft)	Lateral FX (-) (kips)	Axial FY (-) (kips)	Lateral FZ (kips)	Moment MX (ft-kips)	Torsion MY (ft-kips)	Moment MZ (ft-kips)	Deflect X (in)	Deflect Z (in)	Deflect Resultant (in)	Rotation Sway (deg)	Rotation Twist (deg)
0.00	-5.455	-19.182	0.000	0.000	0.000	-500.31	0.000	0.000	0.000	0.000	0.000
5.00	-5.380	-18.408	0.000	0.000	0.000	-473.04	-0.057	0.000	0.057	-0.107	0.000
10.00	-5.305	-17.648	0.000	0.000	0.000	-446.14	-0.228	0.000	0.228	-0.216	0.000
15.00	-5.230	-16.902	0.000	0.000	0.000	-419.61	-0.511	0.000	0.511	-0.324	0.000
20.00	-5.154	-16.168	0.000	0.000	0.000	-393.46	-0.909	0.000	0.909	-0.433	0.000
25.00	-5.078	-15.449	0.000	0.000	0.000	-367.69	-1.422	0.000	1.422	-0.543	0.000
30.00	-5.001	-14.743	0.000	0.000	0.000	-342.31	-2.048	0.000	2.048	-0.652	0.000
35.00	-4.923	-14.050	0.000	0.000	0.000	-317.30	-2.790	0.000	2.790	-0.761	0.000
40.00	-4.839	-13.372	0.000	0.000	0.000	-292.68	-3.645	0.000	3.645	-0.870	0.000
44.08	-4.762	-12.831	0.000	0.000	0.000	-272.93	-4.427	0.000	4.427	-0.958	0.000
45.00	-4.750	-12.632	0.000	0.000	0.000	-268.56	-4.613	0.000	4.613	-0.978	0.000
48.00	-4.690	-11.993	0.000	0.000	0.000	-254.31	-5.249	0.000	5.249	-1.043	0.000
50.00	-4.655	-11.770	0.000	0.000	0.000	-244.94	-5.695	0.000	5.695	-1.087	0.000
52.00	-4.617	-11.427	0.000	0.000	0.000	-235.63	-6.161	0.000	6.161	-1.137	0.000
54.33	-4.567	-11.032	0.000	0.000	0.000	-224.85	-6.726	0.000	6.726	-1.173	0.000
55.00	-4.555	-10.877	0.000	0.000	0.000	-221.81	-6.891	0.000	6.891	-1.183	0.000
58.08	-4.485	-10.175	0.000	0.000	0.000	-207.76	-7.670	0.000	7.670	-1.229	0.000
60.00	-4.449	-9.887	0.000	0.000	0.000	-199.17	-8.169	0.000	8.169	-1.257	0.000
65.00	-4.340	-9.149	0.000	0.000	0.000	-176.92	-9.527	0.000	9.527	-1.336	0.000
68.00	-4.275	-8.709	0.000	0.000	0.000	-163.90	-10.381	0.000	10.381	-1.382	0.000
70.00	-4.244	-8.536	0.000	0.000	0.000	-155.35	-10.967	0.000	10.967	-1.412	0.000
75.00	-4.148	-8.116	0.000	0.000	0.000	-134.13	-12.518	0.000	12.518	-1.547	0.000
78.00	-3.945	-7.613	0.000	0.000	0.000	-121.69	-13.516	0.000	13.516	-1.625	0.000
80.00	-3.912	-7.447	0.000	0.000	0.000	-113.80	-14.208	0.000	14.208	-1.676	0.000
85.00	-3.816	-7.044	0.000	0.000	0.000	-94.241	-16.026	0.000	16.026	-1.792	0.000
90.00	-3.719	-6.662	0.000	0.000	0.000	-75.162	-17.960	0.000	17.960	-1.896	0.000
95.00	-3.620	-6.309	0.000	0.000	0.000	-56.569	-19.995	0.000	19.995	-1.985	0.000
99.42	-3.531	-6.006	0.000	0.000	0.000	-40.579	-21.862	0.000	21.862	-2.048	0.000
100.00	-3.520	-5.939	0.000	0.000	0.000	-38.519	-22.113	0.000	22.113	-2.056	0.000
102.33	-3.470	-5.684	0.000	0.000	0.000	-30.307	-23.125	0.000	23.125	-2.082	0.000
105.00	-1.879	-3.254	0.000	0.000	0.000	-21.054	-24.295	0.000	24.295	-2.106	0.000
110.00	-1.781	-3.015	0.000	0.000	0.000	-11.658	-26.517	0.000	26.517	-2.135	0.000
115.00	-1.684	-2.784	0.000	0.000	0.000	-2.754	-28.761	0.000	28.761	-2.148	0.000
116.50	-0.065	-0.140	0.000	0.000	0.000	-0.229	-29.436	0.000	29.436	-2.149	0.000
120.00	-0.060	0.000	0.000	0.000	0.000	0.000	0.000	0.000	31.012	-2.150	0.000

Resulting Stresses

Structure:	CT46128-A-SBA	**Code:**	EIA/TIA-222-F	11/3/2015	
Site Name:	Milford - West	**Exposure:**	C		
Height:	120.00 (ft)	**Gh:**	1.69		
Base Elev:	0.000 (ft)	**Struct Class:**	II	Page: 22	

Tower Engineering Solutions

Load Case: 50 mph Wind with 0" Ice

Dead Load Factor 1.00

Wind Load Factor 1.00

Iterations: 24

Applied Stresses

Elev (ft)	fa Axial (Y) (ksi)	fvx Shear (X) (ksi)	fvz Shear (Z) (ksi)	fvt Torsion (ksi)	fbx Bending (X) (ksi)	fbz Bending (Z) (ksi)	fb Combined (ksi)	Fb Allow Stress (ksi)	f/Fb Stress Ratio
0.00	0.52	0.30	0.00	0.00	0.00	17.74	18.26	52.0	0.351
5.00	0.51	0.30	0.00	0.00	0.00	17.50	18.02	52.0	0.347
10.00	0.50	0.30	0.00	0.00	0.00	17.24	17.75	52.0	0.341
15.00	0.49	0.30	0.00	0.00	0.00	16.95	17.45	52.0	0.336
20.00	0.48	0.31	0.00	0.00	0.00	16.64	17.13	52.0	0.329
25.00	0.47	0.31	0.00	0.00	0.00	16.29	16.77	52.0	0.323
30.00	0.46	0.31	0.00	0.00	0.00	15.91	16.37	52.0	0.315
35.00	0.45	0.32	0.00	0.00	0.00	15.48	15.94	52.0	0.307
40.00	0.44	0.32	0.00	0.00	0.00	15.02	15.46	52.0	0.297
44.08	0.43	0.32	0.00	0.00	0.00	14.60	15.04	52.0	0.289
45.00	0.42	0.32	0.00	0.00	0.00	14.51	14.94	52.0	0.287
48.00	0.50	0.39	0.00	0.00	0.00	17.03	17.54	52.0	0.337
50.00	0.50	0.39	0.00	0.00	0.00	16.75	17.26	52.0	0.332
52.00	0.49	0.40	0.00	0.00	0.00	10.33	10.82	52.0	0.208
54.33	0.48	0.40	0.00	0.00	0.00	10.05	10.05	52.0	0.193
55.00	0.47	0.40	0.00	0.00	0.00	9.88	9.88	52.0	0.190
58.08	0.59	0.52	0.00	0.00	0.00	9.50	9.50	52.0	0.183
60.00	0.58	0.52	0.00	0.00	0.00	10.81	10.81	51.1	0.212
65.00	0.55	0.52	0.00	0.00	0.00	10.00	10.00	51.7	0.193
68.00	0.53	0.53	0.00	0.00	0.00	9.50	10.03	52.0	0.193
70.00	0.53	0.53	0.00	0.00	0.00	17.07	17.62	52.0	0.339
75.00	0.52	0.53	0.00	0.00	0.00	15.62	16.17	52.0	0.311
78.00	0.49	0.51	0.00	0.00	0.00	14.69	15.21	52.0	0.293
80.00	0.49	0.52	0.00	0.00	0.00	14.08	14.59	52.0	0.281
85.00	0.48	0.52	0.00	0.00	0.00	12.40	12.91	52.0	0.248
90.00	0.46	0.52	0.00	0.00	0.00	10.55	11.05	52.0	0.213
95.00	0.45	0.53	0.00	0.00	0.00	8.48	8.98	52.0	0.173
99.42	0.45	0.53	0.00	0.00	0.00	6.46	6.97	52.0	0.134
100.00	0.44	0.53	0.00	0.00	0.00	6.18	6.69	52.0	0.129
102.33	0.42	0.52	0.00	0.00	0.00	4.86	5.36	52.0	0.103
105.00	0.25	0.29	0.00	0.00	0.00	3.50	3.78	52.0	0.073
110.00	0.24	0.28	0.00	0.00	0.00	2.09	2.37	52.0	0.046
115.00	0.23	0.28	0.00	0.00	0.00	0.53	0.90	52.0	0.017
116.50	0.01	0.01	0.00	0.00	0.00	0.05	0.06	52.0	0.001
120.00	0.00	0.01	0.00	0.00	0.00	0.00	0.02	52.0	0.000

Reactions

Load Case	Shear FX (kips)	Shear FZ (kips)	Axial FY (kips)	Moment MX (ft-kips)	Moment MY (ft-kips)	t MZ (ft-kips)
85 mph Wind with 0" Ice	15.8	0.00	19.14	0.00	0.00	1443.57
73.61 mph Wind with 0.5" Ice	12.9	0.00	23.27	0.00	0.00	1213.40
50 mph Wind with 0" Ice	5.5	0.00	19.18	0.00	0.00	500.32

Max Stresses

Load Case	fa Axial (Y) (ksi)	fvx Shear (X) (ksi)	fvz Shear (Z) (ksi)	fvt Torsion (ksi)	fbx Bending (X) (ksi)	fbz Bending (Z) (ksi)	Combined Stress (ksi)	Allowable Stress (ksi)	Elev (ft)	Stress Ratio
85 mph Wind with 0" Ice	0.52	0.86	0.00	0.00	0.00	51.18	51.72	52.0	0.00	0.995
73.61 mph Wind with 0.5" Ice	0.63	0.71	0.00	0.00	0.00	43.02	43.67	52.0	0.00	0.840
50 mph Wind with 0" Ice	0.52	0.30	0.00	0.00	0.00	17.74	18.26	52.0	0.00	0.351

Additional Steel Summary

			Intermediate Connectors				Upper Termination			Lower Termination			Max Member			
Elev From (ft)	Elev To (ft)	Member	VQ/I (lb/in)	V (kips)	Shear Allow (kips)	MQ/I (kips)	Num Reqd	Num Actual	MQ/I (kips)	Num Reqd	Num Actual	MQ/I (kips)	Ta (kips)	Pa (kips)	Ratio
52.0	68.0	(3) LNP-LP6X100-G-20TT	-321.2	-7.71	22.5	147.5	7	8	163.4	2	8	168.0	260.0	257.3	0.653

Base Plate Summary

Structure:	CT46128-A-SB	**Code:**	EIA/TIA-222-F	11/3/2015	
Site Name:	Milford - West	**Exposure:**	C		
Height:	120.00 (ft)	**Gh:**	1.69		
Base Elev:	0.000 (ft)	**Struct Class:**	II	Page: 24	

Tower Engineering Solutions

Reactions

Original Design

Moment (kip-ft):	1446.00
Axial (kip):	30.00
Shear (kip):	17.00

Analysis

Moment (kip-ft):	1443.57
Axial (kip):	23.27
Shear (kip):	15.77
Moment Design %:	99.83

Base Plate

Yield (ksi):	60.00
Width (in):	49.50
Style:	Round
Polygon Sides:	0.00
Clip Length (in):	0.00
Effective Len (in):	17.95
Moment (kip-in):	606.07
Allow Stress (ksi):	60.00
Applied Stress (ksi):	50.66
Stress Ratio:	0.84

Anchor Bolts

Bolt Circle:	43.50
Number Bolts:	8.00
Bolt Type:	2.25" 18J
Bolt Diameter (in):	2.25
Yield (ksi):	75.00
Ultimate (ksi):	100.00
Arrangement:	Radial
Cluster Dist (in):	0.00
Start Angle (deg):	0.00

Compression

Force (kip):	115.64
Allowable (kip):	195.00
Ratio:	0.59

Tension

Force (kip):	109.82
Allowable (kip):	195.00
Ratio:	0.56

Last revised on Oct. 3, 2014

Pier Foundation Design For Monopole

				Date
				11/3/2015
	Customer Name:	**T-Mobile**	**EIA/TIA Standard:**	EIA-222-F
	Site Name:		**Structure Height (Ft.):**	120
	Site Number:	CT46128-A-SBA	**Engineer Name:**	B. Davis
	Engr. Number:	18033	**Engineer Login ID:**	

Foundation Info Obtained from: Drawings/Calculations

Structure Type: Monopole

Analysis or Design? Analysis

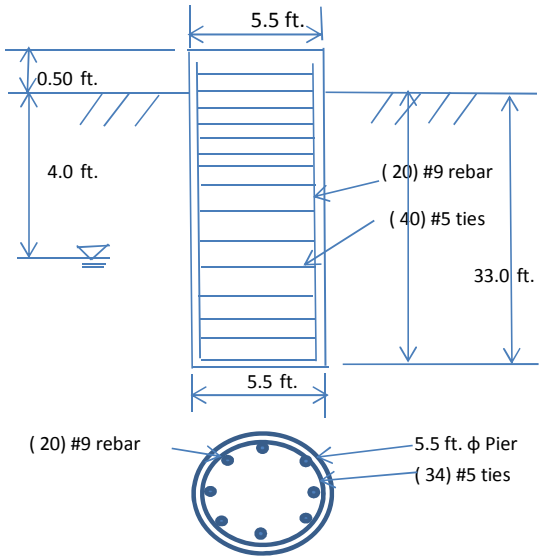
Acceptable overstress (5.0%

Base Reactions (Unfactored)

Axial Load (Kips):	19.1	Shear Force (Kips):	15.8
Uplift Force (Kips):	0.0	Moment (Kips-ft):	1443.6

Foundation Geometries:

Mods required -Yes/No ?:	No			ft.
Diameter of Pier (ft.):	5.5	Depth of Base B. G. S. :	33.0	ft.
Pier Height A. G. (ft.):	0.50			



Monopole Pier Foundation

Material Properties and Reabr Info:

Concrete Strength (psi):	5000	Steel Elastic Modulus:	29000	ksi
Vertical bar yield (ksi)	60	Tie steel yield strength:	60	ksi
Vertical Rebar Size #:	9	Tie / Stirrup Size #:	5	
Qty. of Vertical Rebars:	20	Tie Spacing:	12.0	in.
Concrete Cover (in.):	3	Concrete unit weight:	150.0	pcf

Soil Design Parameters:

Water Table B.G.S. (ft):	4.0	Unit weight of water:	62.4	psf
Ratio of Uplift/Axial Skin Friction:	1.0	Pullout failure Angle:	30	(°)
Skin Frictions are to be obtained from:		Soil Report		

8000

Depth of Layers (ft) Top	Bottom	γ_{soil} (pcf)	ϕ (°)	Cohesion (psf)	Allowable Skin Friction (psf)	Allowable Bearing (psf)	Soil Types					
0.0	15.0	120	0	0	200	0	Sand					
15.0	34.0	120	30	0	500	8000	Sand					
34.0	39.0	120	33	0	500	8000	Sand					

Soil weight Increase Factor for bouyant soils (1.0 to 1.15): 1.1

Foundation Analysis and Design:

Total Dry Soil Volume from Conical Failure (cu. Ft.):	6859	Dry Soil Weight from Conical Failure:	3292	Kips
Total Buoyant Soil Volume from Conical Failure (cu. Ft.):	19486	Buoyant Soil Weight from Conical Failure (K	51559	Kips
Total Dry Concrete Volume (cu. Ft.):	107	Total Dry Concrete Weight:	16.04	Kips
Total Buoyant Concrete Volume (cu. Ft.):	808	Total Buoyant Concrete Weight:	70.76	Kips
Total Effective Concrete Weight (Kips):	76	Total Effective Soil Weight:	2296	Kips
Total Effective Vertical Load on Base (Kips):	2392			

Check Soil Capacities:

					Usage	
Allowable Foundation Overturning Resistance (kips-ft.):	3836.4	>	Applied Momont (kips-ft):	1827	0.48	OK!
Factor of Safety of Passive Soil Resistance against Moment:	4.20	OK!				

Check the capacities of Reinforceing Concrete:

Strength reduction factor (Flexure and axial tension):	0.90	Strength reduction factor (Shear):	0.75	
Strength reduction factor (Axial compresion):	0.65	Wind Load Factor on Concrete Design:	1.30	

Reinforcing Concrete Pier:

					Usage	
Vertical Steel Rebar Area (sq. in./each):	1.00		Tie / Stirrup Area (sq. in./each):	0.31		
Calculated Moment Capacity (Mn,Kips-Ft):	2593	>	Design Factored Moment (Mu, K-Ft):	1991.9	0.77	OK!
Calculated Shear Capacity (Kips):	648.5	>	Design Factored Shear (Kips):	185.5	0.29	OK!
Calculated Tension Capacity (Tn, Kips):	1080.0	>	Design Factored Tension (Tu Kips):	0.0	0.00	OK!
Calculated Compression Capacity (Pn, Kips):	7517	>	Design Factored Axial Load (Pu Kips):	24.8	0.00	OK!
Moment & Axial Strength Combination(Tu/Tn+Mu/Mn):	0.77	OK!	Max. Allowable Tie/Stirrup Spacing:	12.00	in.	
Pier Reinforcement Ratio:	0.006	Reinforcement Ratio is satisfied per ACI				

MODIFICATION AND DESIGN DRAWINGS FOR AN EXISTING 120' ROHN MONOPOLE

PROPOSED CARRIER: T-MOBILE

SBA SITE: CT46128-A / MILFORD - WEST

COORDINATES (LATITUDE: 41.22517°, LONGITUDE: -73.04236°)

COMPLETE FABRICATION DRAWINGS FOR ALL MATERIALS REQUIRED FOR THIS PROJECT ARE AVAILABLE FROM TOWER ENGINEERING SOLUTIONS (TES). PLEASE CONTACT TES FOR MORE INFORMATION.

SHEET	SHEET TITLE	REV
T-1	TITLE SHEET	0
BOM	BILL OF MATERIALS	0
GN-1	GENERAL NOTES	0
A-1	TOWER PROFILE	0
A-2	REINFORCEMENT INTERFACE TYPE B2 TO FOUNDATION DETAILS	0
A-3	REINFORCEMENT ASSEMBLY P6X100-G-20TT (18 SIDE 3 PIECES ON FLAT# 1, 6, AND 13)	0

NOTE:

1. THE MODIFICATION DRAWINGS ARE BASED ON THE **TES** PROJECT NO. 17788, DATED 10/02/2015.

TES
Tower Engineering Solutions
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BOCA RATON, FL 33487
(800)-487-SITE

TES JOB NO: 18033

CUSTOMER SITE NO: CT46128-A

CUSTOMER SITE NAME: MILFORD - WEST

160 WAMPUS LANE
MILFORD, CT 6460

STATE OF CONNECTICUT
HANMING YOU
28931
LICENSED PROFESSIONAL ENGINEER
11/4/15

DRAWN BY:	CP
CHECKED BY:	BD/KMM
DATE:	11/04/15

REV.	DESCRIPTION	BY	DATE
0	FIRST ISSUE	CP	11/04/15

SHEET TITLE: TITLE SHEET

SHEET NUMBER: T-1

REV #: 0

BILL OF MATERIALS

QUANTITY COUNTED	QUANTITY PROVIDED	PART NUMBER	DESCRIPTIONS	LENGTH	SHEET LIST (INSTALLATION)	SHEET LIST (FABRICATE)	PIECE WEIGHT (LBS)	WEIGHT (LB)	NOTES
			MATERIAL & HARDWARE						
3	3	APL-6X100-B2	6" x 1.00" Flat Bar, 5.5" offset, anchor bolt bracket	2'-10"	A-2	APL-6X100-B2	145.9	437.7	Galvanized
3	3	P6X100-G-20TT	6" x 1.00" Flat Bar, 20 ft. Long, Standard, Termination at both ends	20'-0"	A-3	P6X100-G-20TT	408.3	1224.9	Galvanized
3	3	R71-14	Williams 1 3/4" Dia. All-thread Rod (150 ksi) X 12 Ft. Long	12.00		---	108.7	326.2	Galvanized
6	6	R73-14	Williams 1 3/4" Dia. R73 Hex Nuts	---		---	---		Galvanized
6	6	PLW-2	PL 1 1/4" X 3 1/2" FLAT WASHER, A36	---		F-A	4.6	27.6	Galvanized
105	111	HB16-2	Lindapter 5/8" Type HB Hollo-Bolt (HCF)	---		---	---	---	Galvanized
3	5	SHIM-M16-3	1/8" Thick Shim For HB16-2 Hollo-Bolt	---	A-1	F-C	0.2	0.5	Galvanized
3	5	SHIM-M16-2	3/16" Thick Shim For HB16-2 Hollo-Bolt	---	A-1	F-C	0.2	1.1	Galvanized
			Following Items are Non-standard Parts						
			ALL LPXXXX and RLPXXXX PARTS ARE PATENT PENDING AND ARE ALL AVAILABLE FROM METROSITE, LLC. **180 IND PARK BLVD COMMERCE, GA 30529** **OFFICE: (706) 335-7045** **FAX: (706) 335-7056**						
			NOTE: ALL MATERIALS, WHICH WEREN'T LISTED IN THIS SHEET, ARE ASSUMED TO BE PROVIDED BY THE CONTRACTOR.						
						TOTAL WEIGHT (LBS) =		**2017.9**	

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(800)-487-SITE

TES JOB NO:
18033

CUSTOMER SITE NO:
CT46128-A

CUSTOMER SITE NAME:
MILFORD - WEST
160 WAMPUS LANE
MILFORD, CT 6460

DRAWN BY:	CP
CHECKED BY:	BD/KMM
DATE:	11/04/15

REV.	DESCRIPTION	BY	DATE
0	FIRST ISSUE	CP	11/04/15

SHEET TITLE:
BILL OF MATERIALS

SHEET NUMBER: BOM
REV #: 0

GENERAL NOTES

1. ALL WORK SHALL COMPLY WITH THE ANSI/TIA-222-G, TIA-1019-A 2012 AND ANY OTHER GOVERNING BUILDING CODES AND OSHA SAFETY REGULATIONS.
2. ALL WORK INDICATED ON THE DRAWINGS SHALL BE PERFORMED BY QUALIFIED CONTRACTORS EXPERIENCED IN TELECOMMUNICATIONS TOWER, POLE AND FOUNDATION CONSTRUCTION.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DESIGN AND FABRICATION OF ALL MISCELLANEOUS PARTS (SUCH AS SHIMS), TEMPORARY SUPPORTS, AND GUYINGS, ETC., PER TIA-1019-A 2001, TO COMPLETE THE ASSEMBLY AS SHOWN IN THE DRAWINGS.
4. CONTRACTOR SHALL PROCEED WITH THE INSTALLATION WORK CAREFULLY SO THE WORK WILL NOT DAMAGE ANY EXISTING CABLE, EQUIPMENT OR THE STRUCTURE.
5. THE USE OF GAS TORCH OR WELDER, ARE NOT ALLOWED ON ANY TOWER STRUCTURE WITHOUT THE CONSENT OF THE TOWER OWNER.

FABRICATION

1. ALL STEEL SHALL MEET OR EXCEED THE MINIMUM STRENGTH AS SPECIFIED IN THE DRAWINGS. IF YIELD STRENGTH WAS NOT NOTED IN THE DRAWINGS, CONTRACTORS SHALL CONTACT TES FOR DIRECTION.
2. ALL FIELD CUT EDGES SHALL BE GROUND SMOOTH. ALL FIELD CUT AND DRILLED SURFACES SHALL BE REPAIRED WITH A MINIMUM OF TWO COATES OF ZRC GALVILITE COLD GALVANIZING COMPOUND PER ASTM A780 AND MANUFACTURER'S RECOMMENDATIONS.

WELDING

1. ALL WELDING SHALL BE PERFORMED BY AWS CERTIFIED WELDERS AND IN ACCORDANCE WITH THE LATEST EDITION OF THE AWS WELDING CODE D1.1.
2. PRIOR TO FIELD WELDING GALVANIZED MATERIAL, CONTRACTOR SHALL GRIND OFF GALVANIZING APPROX. 0.5" BEYOND THE PROPOSED FIELD WELD SURFACES.
3. AFTER INSPECTION, ALL FIELD WELDED SURFACES SHALL BE REPAIRED WITH A MINIMUM OF TWO COATS OF ZRC GALVILITE COLD GALVANIZING COMPOUND PER ASTM A780 AND MANUFACTURER'S RECOMMENDATIONS.

BOLTED ASSEMBLIES AND TIGHTENING OF CONNECTIONS

1. ALL HIGH STRENGTH BOLTS SHALL CONFORM TO THE PROVISIONS OF THE SPECIFICATIONS FOR STRUCTURAL JOINTS USING A325 OR A490 BOLTS AS APPROVED BY THE RCSC.
2. FLANGE BOLTS SHALL BE TIGHTENED BY THE AISC "TURN-OF-THE-NUT" METHOD. THE FOLLOWING CHART SHOULD BE USED FOR THE "TURN-OF-THE-NUT" TIGHTENING.
3. SPLICE BOLTS AND ALL OTHER BOLTS IN BEARING TYPE CONNECTIONS SHALL BE TIGHTENED TO A SNUG-TIGHT CONDITION.
4. THE SNUG-TIGHT CONDITION IS DEFINED AS THE TIGHTNESS ATTAINED BY EITHER A FEW IMPACTS OF AN IMPACT WRENCH OR THE FULL EFFORT OF AN IRONWORKER WITH AN ORDINARY SPUD WRENCH TO BRING THE CONNECTED PLIES INTO FIRM CONTACT.

WELDING

1. ALL WELDS SHALL BE INSPECTED VISUALLY. A MINIMUM OF 25% OF WELDS SHALL BE INSPECTED WITH DYE PENETRANT OR MAGNETIC PARTICLE TO MEET THE ACCEPTANCE CRITERIA OF AWS D1.1. 100% OF WELDS SHALL BE INSPECTED IF DEFECTS ARE FOUND.
2. WELD INSPECTIONS SHALL BE PERFORMED BY AN AWS CERTIFIED WELD INSPECTOR.

VERIFICATION AND INSPECTION

1. IF APPLICABLE, VERIFICATION INSPECTION TO BE PERFORMED SHALL BE IN ACCORDANCE TO IBC-2012 SECTION 1705 - TABLE 1705.2.2 FOR STEEL CONSTRUCTION OTHER THAN STRUCTURAL STEEL AND TABLE 1705.3 FOR CONCRETE CONSTRUCTION.

TABLE 8.2 NUT ROTATION FROM SNUG-TIGHT CONDITION FOR TURN-OF-NUT PRETENSIONING [a,b]

BOLT LENGTH[c]	DISPOSITION OF OUTER FACE OF BOLTED PARTS		
	BOTH FACES NORMAL TO BOLT AXIS	ONE FACE NORMAL TO BOLT AXIS, OTHER SLOPED NOT MORE THAN 1:20 [d]	BOTH FACES SLOPED NOT MORE THAN 1:20 FROM NORMAL TO BOLT AXIS [d]
NOT MORE THAN $4d_b$	1/3 TURN	1/2 TURN	2/3 TURN
MORE THAN $4d_b$ BUT NOT MORE THAN $8d_b$	1/2 TURN	2/3 TURN	5/6 TURN
MORE THAN $8d_b$ BUT NOT MORE THAN $12d_b$	2/3 TURN	5/6 TURN	1 TURN

[a] NUT ROTATION IS RELATIVE TO BOLT REGARDLESS OF THE ELEMENT (NUT OR BOLT) BEING TURNED. FOR REQUIRED NUT ROTATIONS OF 1/2 TURN AND LESS, THE TOLERANCE IS PLUS OR MINUS 30 DEGREES; FOR REQUIRED NUT ROTATIONS OF 2/3 TURN AND MORE, THE TOLERANCE IS PLUS OR MINUS 45 DEGREES.

[b] APPLICATION ONLY TO JOINTS IN WHICH ALL MATERIAL WITHIN THE GRIP IS STEEL.

[c] WHEN THE BOLT LENGTH EXCEEDS 12d , THE REQUIRED NUT ROTATION SHALL BE DETERMINED BY ACTUAL TESTING IN A SUITABLE TENSION CALIBRATOR THAT SIMULATES THE CONDITIONS OF SOLIDLY FITTING STEEL.

[d] BEVELED WASHER NOT USED.

SPECIFICATION FOR STRUCTURAL JOINTS USING ASTM A325 OR A490 BOLTS, JUNE 30, 2004 RESEARCH COUNCIL ON STRUCTURAL CONNECTIONS

INSTALLATION TORQUE REQUIRED FOR HOLLO BOLTS AND AJAX BOLTS:

1. M16 HOLLO BOLT: 140 FT-LBS
2. M20 AJAX BOLT: 390 FT-LBS

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TES JOB NO: 18033

CUSTOMER SITE NO: CT46128-A

CUSTOMER SITE NAME: MILFORD - WEST

160 WAMPUS LANE
MILFORD, CT 6460

DRAWN BY:	CP
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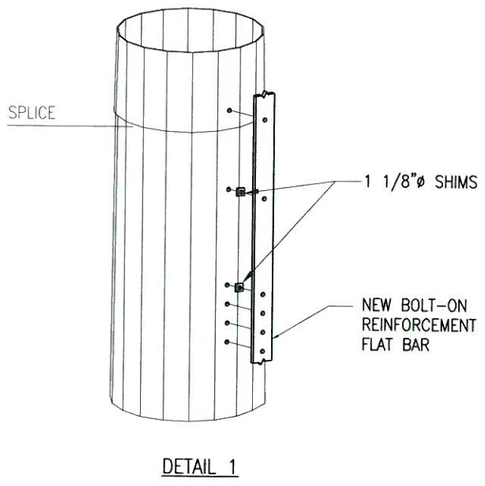
DATE:	11/04/15

REV.	DESCRIPTION	BY	DATE
0	FIRST ISSUE	CP	11/04/15

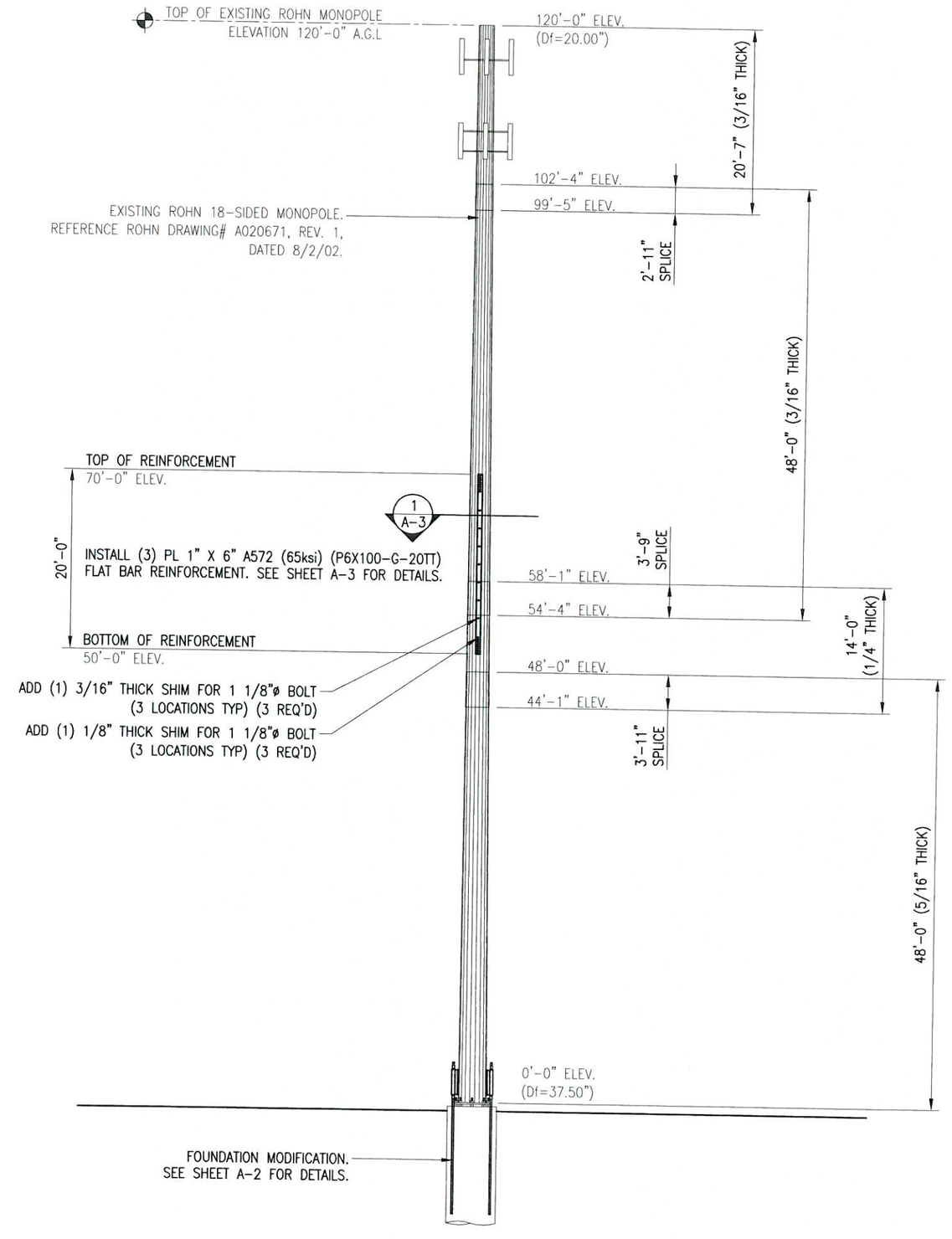
SHEET TITLE: GENERAL NOTES

SHEET NUMBER: GN-1

REV #: 0



DETAIL 1



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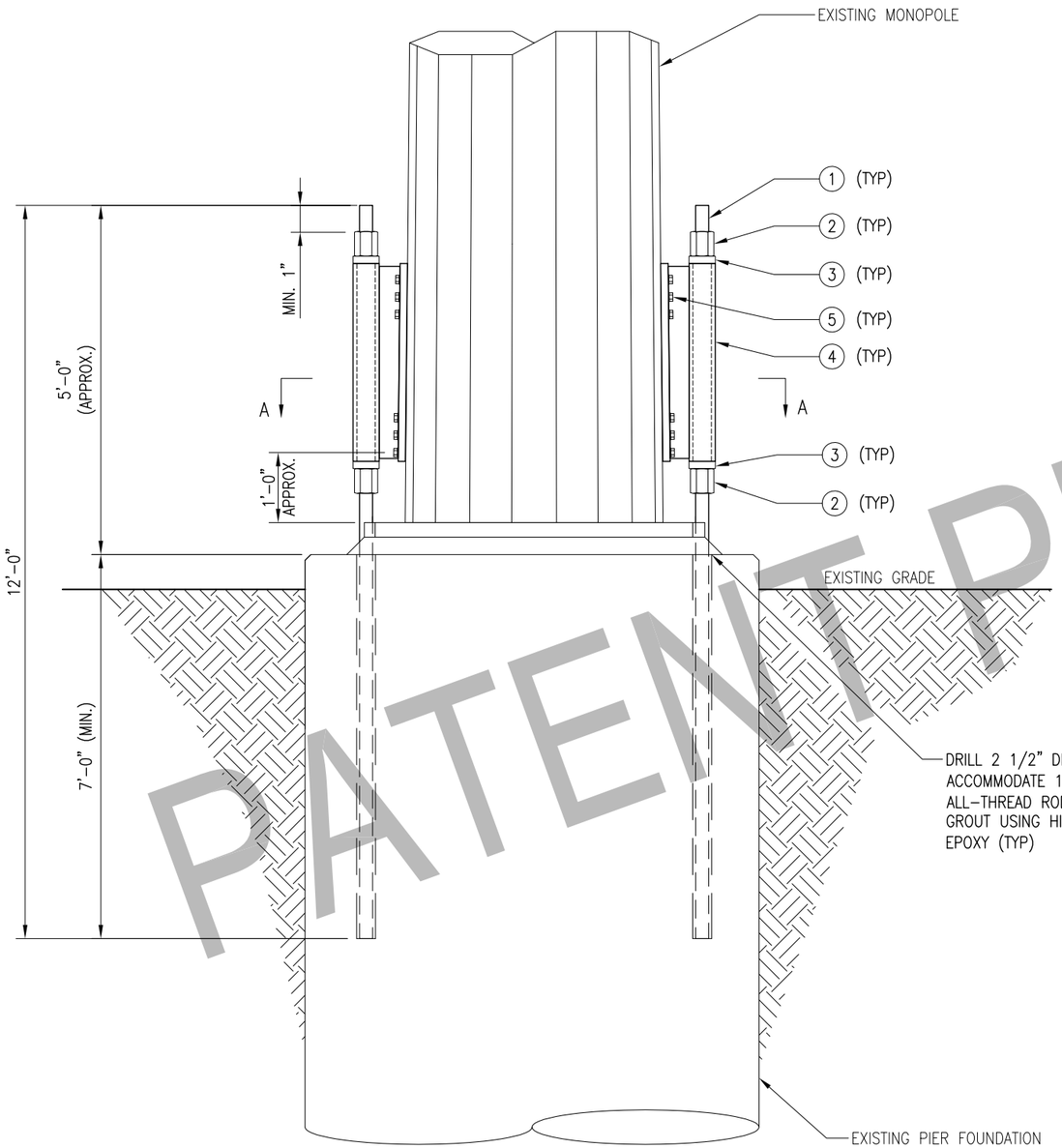
0	FIRST ISSUE	CP	11/04/15

SHEET TITLE:

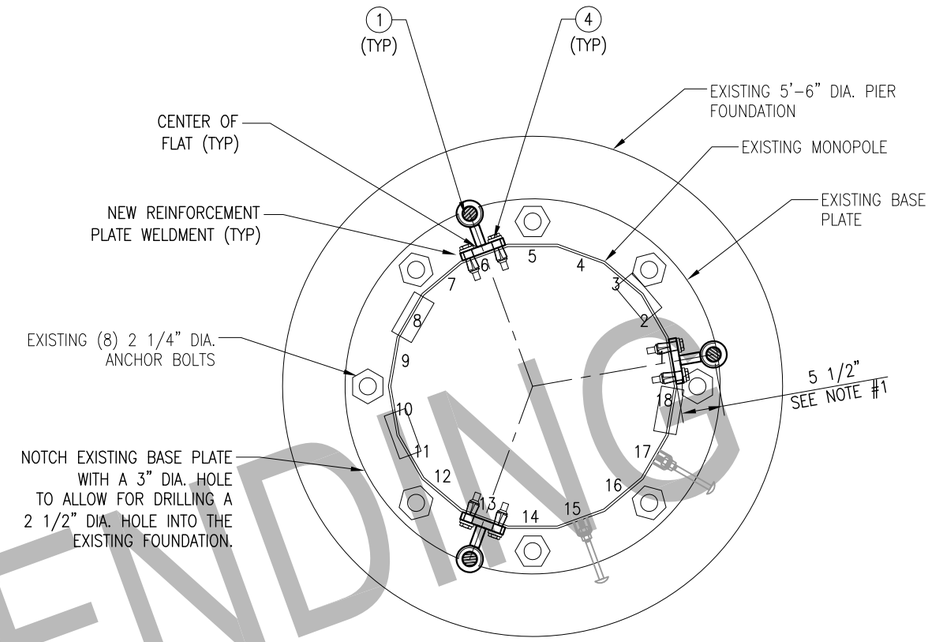
TOWER PROFILE

SHEET NUMBER: A-1

REV #: 0



ELEVATION VIEW



SECTION A-A

INSTALLATION NOTES:

1. USE WELDED REINFORCEMENT BRACKET ASSEMBLY TO SET THE POSITION OF THE ALL-THREAD ROD.
2. DRILL NEW 2 1/2" DIA. HOLES INTO EXISTING FOUNDATION FOR ALL-THREAD ROD.
3. INSTALL REINFORCEMENT BRACKET AND CONFIRM FIT WITH MONOPOLE REINFORCEMENT PLATES.
4. TIGHTEN NUTS ON THE ALL-THREAD ROD LOCKING IT INTO POSITION.
5. APPLY (2) COATS OF ZINC RICH GALVANIZING COMPOUND PER MANUFACTURER'S SPECIFICATIONS TO ALL FIELD CUT AND EXPOSED AREAS.
6. DRILLING CONTRACTOR TO EXERCISE EXTREME CARE TO AVOID DAMAGING THE EXISTING REINFORCING TIES IN THE CONCRETE PIER. IF REBAR IS ENCOUNTERED IN THE CONCRETE WHILE DRILLING, CONTRACTOR TO STOP DRILLING AND INFORM **TES** FOR SOLUTION.

ITEM NO.	QTY.	PART NO.	DESCRIPTION
1	3	R71-14	12'-0" WILLIAMS 1 3/4" DIA. ALL-THREAD ROD (150 KSI)
2	6	R73-14	1 3/4" NUT (WILLIAMS R73-14) (TYP)
3	6	PLW-2	PLATE WASHER 1 1/4" X 3 1/2" X 3 1/2" A36
4	3	APL-6X100-B2	ANCHOR REINFORCEMENT WELDMENT
5	36	HB16-2	LINDAPTER TYPE HB HOLLO-BOLT (HDG)

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TES JOB NO: 18033

CUSTOMER SITE NO: CT46128-A

CUSTOMER SITE NAME: MILFORD - WEST

160 WAMPUS LANE
MILFORD, CT 6460

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DATE:	11/04/15

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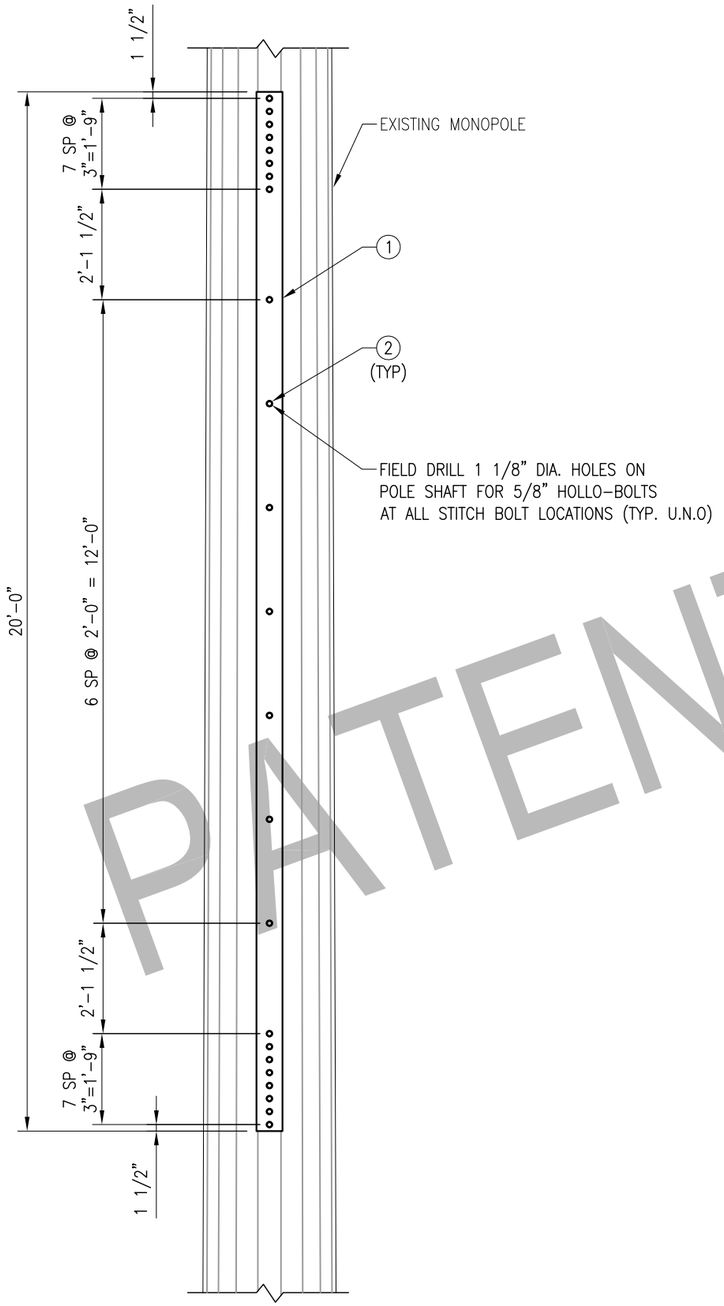
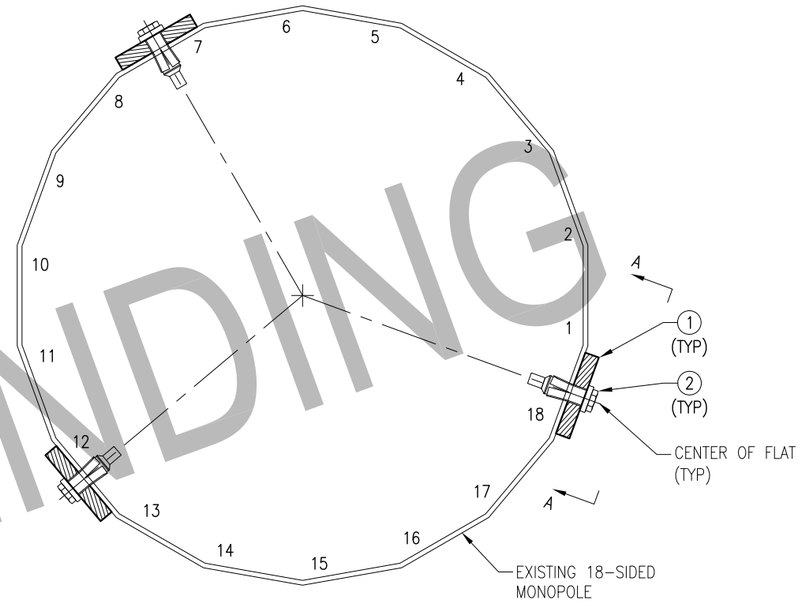
SHEET TITLE:
REINFORCEMENT INTERFACE TYPE B2 TO FOUNDATION DETAILS

SHEET NUMBER: A-2

REV #: 0



A-A
ELEVATION VIEW



1 / A-1 PLAN VIEW

NOTES:
1. REFER TO SHEET A-2 FOR FLAT BAR ORIENTATION.
2. INSTALLATION TORQUE FOR HOLLO-BOLTS:
   M16 HOLLO-BOLTS: 140 FT-LBS

ITEM NO.	QTY.	PART NO.	DESCRIPTION (PER SECTION)
1	3	P6X100-G-20TT	PL 1" X 6" X 20'-0" A572, (65 KSI)
2	69	HB16-2	LINDAPTER TYPE HB HOLLO-BOLT (HDG)

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REV.	DESCRIPTION	BY	DATE
0	FIRST ISSUE	CP	11/04/15

SHEET TITLE:
REINFORCEMENT ASSEMBLY P6X100-G-20TT & (18 SIDE 3 PIECES ON FLAT # 7, 12, AND 18)

SHEET NUMBER: A-3

REV #: 0

SITE NAME: CTNH003/NEXTEL MILFORD

160 WAMPUS LANE
MILFORD, CT 06460
NEW HAVEN COUNTY

SITE NUMBER: CTNH003A

SITE CONFIG: 702Cu

SPECIAL CONSTRUCTION NOTE:

THE T-MOBILE TOWER TOP WORK IS CONTINGENT UPON COMPLETION OF ALL REQUIRED TOWER STRUCTURAL MODIFICATIONS, ENGINEERING CONSTRUCTION CONTROL INSPECTIONS, FINAL ENGINEERING AFFIDAVIT AND ACCEPTANCE/APPROVAL BY SBA COMMUNICATIONS CORP.

PROJECT NOTES

GENERAL NOTES:

THIS DOCUMENT IS THE CREATION, DESIGN, PROPERTY AND COPYRIGHTED WORK OF T–MOBILE. ANY DUPLICATION OR USE WITHOUT EXPRESS WRITTEN CONSENT IS STRICTLY PROHIBITED. DUPLICATION AND USE BY GOVERNMENT AGENCIES FOR THE PURPOSES OF CONDUCTING THEIR LAWFULLY AUTHORIZED REGULATORY AND ADMINISTRATIVE FUNCTIONS IS SPECIFICALLY ALLOWED.

THE FACILITY IS AN UNMANNED PRIVATE AND SECURED EQUIPMENT INSTALLATION. IT IS ONLY ACCESSED BY TRAINED TECHNICIANS FOR PERIODIC, ROUTINE MAINTENANCE AND THEREFORE, DOES NOT REQUIRE ANY WATER OR SANITARY SEWER SERVICE. THE FACILITY IS NOT GOVERNED BY REGULATIONS REQUIRING PUBLIC ACCESS PER ADA REQUIREMENTS.

CONTRACTOR SHALL VERIFY ALL PLANS AND EXISTING DIMENSIONS AND CONDITIONS ON THE JOB SITE AND SHALL IMMEDIATELY NOTIFY THE T–MOBILE NORTHEAST LLC REPRESENTATIVE IN WRITING OF DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR BE RESPONSIBLE FOR SAME.

SPECIAL STRUCTURAL NOTES:

TOWER OWNER SHALL PROVIDE GLOBAL STRUCTURAL STABILITY ANALYSIS OF EXISTING ANTENNA SUPPORT STRUCTURE. GENERAL CONTRACTOR SCOPE OF WORK SHALL INCLUDE ALL REQUIRED STRUCTURAL MODIFICATIONS, RE–BUNDLING OF COAXIAL CABLES OR OTHER SPECIAL MODIFICATIONS AS OUTLINED THEREIN.

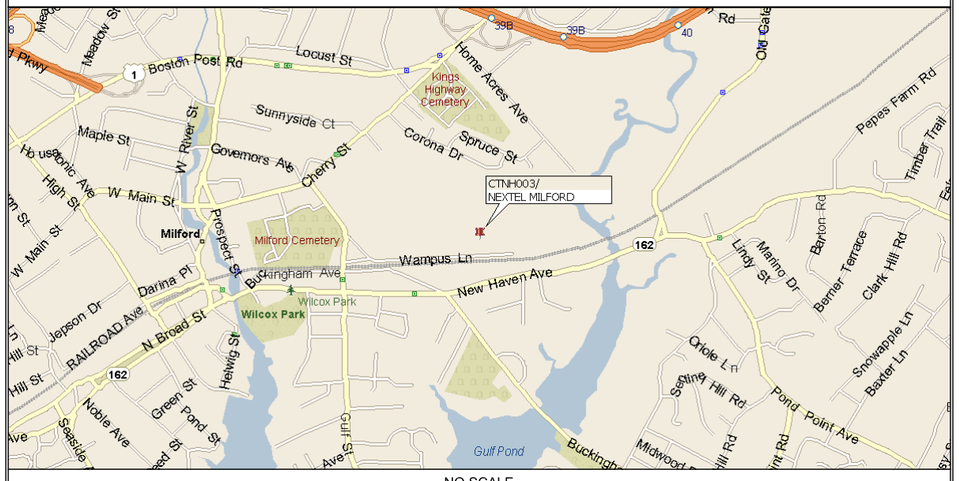
ENGINEER OF RECORD HAS MADE A VISUAL ASSESSMENT ONLY AND HAS DETERMINED THAT THE EXISTING ANTENNA MOUNT SHALL BE REPLACED OR MODIFIED TO ACCOMMODATE ANY ADDITIONAL EQUIPMENT LOAD. STRUCTURAL DESIGNS AND DETAILS AS SHOWN HEREIN FOR STRUCTURAL MODIFICATIONS OF THE EXISTING ANTENNA MOUNT ARE PRELIMINARY ONLY AND FINAL CONSTRUCTION DETAILS ARE SUBJECT TO CHANGE PENDING THE COMPLETION OF AN ANTENNA MOUNT STRUCTURAL ASSESSMENT.

B+T GROUP ASSUMES THAT THE TOWER IS PROPERLY CONSTRUCTED AND MAINTAINED. ALL STRUCTURAL MEMBERS AND THEIR CONNECTIONS ARE ASSUMED TO BE IN GOOD CONDITION AND ARE FREE FROM DEFECTS WITH NO DETERIORATION TO ITS MEMBER CAPACITIES.

T-MOBILE TECHNICIAN SITE SAFETY NOTES

LOCATION	SPECIAL RESTRICTIONS	LOCATION	SPECIAL RESTRICTIONS
SECTOR A:	ACCESS NOT PERMITTED	DIPLEXERS:	UNRESTRICTED
SECTOR B:	ACCESS NOT PERMITTED	RADIO CABINETS:	UNRESTRICTED
SECTOR C:	ACCESS NOT PERMITTED	PPC DISCONNECT:	UNRESTRICTED
RRH:	ACCESS NOT PERMITTED	MAIN CIRCUIT D/C:	UNRESTRICTED
TMA:	ACCESS NOT PERMITTED	NIU/T DEMARC:	UNRESTRICTED
GPS/LMU:	CAUTION: OSHA APPROVED PORTABLE 8' STEP–LADDER REQUIRED	OTHER/SPECIAL:	NONE

LOCATION MAP



NO SCALE

PROJECT INFORMATION

SCOPE OF WORK:	UNMANNED TELECOMMUNICATIONS FACILITY T–MOBILE EQUIPMENT MODERNIZATION
ZONING JURISDICTION: (TOWN OF MILFORD)	BASED ON INFORMATION PROVIDED BY T–MOBILE, THIS TELECOMMUNICATIONS EQUIPMENT DEPLOYMENT IS AN ELIGIBLE FACILITY UNDER THE TAX RELIEF ACT OF 2012, 47 USC 1455(A) AND IS SUBJECT TO AN EXPEDITED ELIGIBLE FACILITIES REQUEST/REVIEW AND ZONING PRE–EMPTION FOR LOCAL DISCRETIONARY PERMITS (VARIANCE, SPECIAL PERMIT, SITE PLAN REVIEW).
SITE ADDRESS:	160 WAMPUS LANE MILFORD, CT 06460
LATITUDE: LONGITUDE:	41.22514° N 73.04238° W
JURISDICTION:	NATIONAL, STATE & LOCAL CODES & ORDINANCES
CURRENT USE:	TELECOMMUNICATIONS FACILITY
PROPOSED USE:	TELECOMMUNICATIONS FACILITY
TOWER OWNER:	SBA 2012 TC ASSETS, LLC
SBA SITE ID:	CT46128–A
SBA SITE NAME:	MILFORD–WEST
SBA REGIONAL SITE MANAGER:	STEPHEN ROTH (860) 539–4920 sroth@sbasite.com

APPROVALS

TITLE	SIGNATURE	DATE
PROJECT MANAGER:		
CONSTRUCTION:		
RF ENGINEERING:		
ZONING/SITE ACQ.:		
OPERATIONS:		
TOWER OWNER:		

ACCEPTANCE DOES NOT CONSTITUTE APPROVAL OF DESIGN, CALCULATIONS, ANALYSIS, TEST METHODS OF MATERIALS DEVELOPED OR SELECTED BY THE SUBCONTRACTOR AND DOES NOT RELIEVE SUBCONTRACTOR FROM FULL COMPLIANCE WITH CONTRACTUAL OBLIGATIONS.

DRAWING INDEX

SHEET #	SHEET DESCRIPTION	REV. #
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SBA COMMUNICATIONS CORP.
33 BOSTON POST ROAD WEST, SUITE 320
MARLBOROUGH, MA 01752

CTNH003A

CTNH003/ NEXTEL MILFORD

160 WAMPUS LANE
MILFORD, CT 06460

PROJECT NO:	101029.001
CHECKED BY:	RCM

ISSUED FOR:

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1	10/14/15	MDW	CONSTRUCTION

B&T ENGINEERING, INC.
PEC.0001564
Expires 2/10/16

10/14/15

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CHAD TUTTLE
No. 23924
LICENSED PROFESSIONAL ENGINEER

SHEET NUMBER:	REVISION:
T-1	1

GROUNDING NOTES:

1. THE SUBCONTRACTOR SHALL REVIEW AND INSPECT THE EXISTING FACILITY GROUNDING SYSTEM AND LIGHTNING PROTECTION SYSTEM (AS DESIGNED AND INSTALLED) FOR STRICT COMPLIANCE WITH THE NEC (AS ADOPTED BY THE AHJ), THE SITE-SPECIFIC (UL, LPI OR NFPA) LIGHTING PROTECTION CODE AND GENERAL COMPLIANCE WITH TELECORDIA AND TIA GROUNDING STANDARDS. THE SUBCONTRACTOR SHALL REPORT ANY VIOLATION OR ADVERSE FINDING TO THE CONTRACTOR FOR RESOLUTION.

2. ALL GROUND ELECTRODE SYSTEMS (INCLUDING TELECOMMUNICATION, RADIO, LIGHTNING PROTECTION AND AC POWER GE'S) SHALL BE BONDED TOGETHER, AT OR BELOW GRADE, BY TWO OR MORE COPPER BONDING CONDUCTORS IN ACCORDANCE WITH THE NEC.

3. THE SUBCONTRACTOR SHALL PERFORM IEEE FALL-OF-POTENTIAL RESISTANCE TO EARTH TESTING (PER IEEE 1100 & 81) FOR NEW GROUND ELECTRODE SYSTEMS. THE SUBCONTRACTOR SHALL FURNISH AND INSTALL SUPPLEMENTAL GROUND ELECTRODES AS NEEDED TO ACHIEVE A TEST RESULT OF 5 OHMS OR LESS.

4. METAL RACEWAY SHALL NOT BE USED AS THE NEC REQUIRED EQUIPMENT GROUND CONDUCTOR. STRANDED COPPER CONDUCTORS WITH GREEN INSULATION, SIZED IN ACCORDANCE WITH THE NEC, SHALL BE FURNISHED AND INSTALLED WITH THE POWER CIRCUITS TO BTS EQUIPMENT.

5. EACH BTS CABINET FRAME SHALL BE DIRECTLY CONNECTED TO THE MASTER GROUND BAR WITH GREEN INSULATED SUPPLEMENTAL EQUIPMENT GROUND WIRES, 6 AWG STRANDED COPPER OR LARGER FOR INDOOR BUS 2 AWG STRANDED COPPER FOR OUTDOOR BTS.

6. EXOTHERMIC WELDS SHALL BE USED FOR ALL GROUNDING CONNECTIONS BELOW GRADE.

7. APPROVED ANTIOXIDANT COATINGS (I.E. CONDUCTIVE GEL OR PASTE) SHALL BE USED ON ALL COMPRESSION AND BOLTED GROUND CONNECTIONS.

8. ICE BRIDGE BONDING CONDUCTORS SHALL BE EXOTHERMICALLY BONDED OR BOLTED TO THE BRIDGE AND THE TOWER GROUND BAR.

9. ALUMINUM CONDUCTOR OR COPPER CLAD STEEL CONDUCTOR SHALL NOT BE USED FOR GROUNDING CONNECTIONS.

10. MISCELLANEOUS ELECTRICAL AND NON-ELECTRICAL METAL BOXES, FRAMES AND SUPPORTS SHALL BE BONDED TO THE GROUND RING, IN ACCORDANCE WITH THE NEC.

11. METAL CONDUIT SHALL BE MADE ELECTRICALLY CONTINUOUS WITH LISTED BONDED FITTINGS OR BY BINDING ACROSS THE DISCONTINUITY WITH 6 AWS COPPER WIRE UL APPROVED GROUNDING TYPE CONDUIT CLAMPS.

12. ALL NEW STRUCTURES WITH A FOUNDATION AND/OR FOOTING HAVING 20' OR MORE OF 1/2" OR GREATER ELECTRICALLY CONDUCTIVE REINFORCING STEEL MUST HAVE IT BONDED TO THE GROUND RING USING AN EXOTHERMIC WELD CONNECTION USING #2 AWG SOLID BAR TINNED COPPER GROUND WIRE, PER NEC 250.50.

GENERAL NOTES:

1. FOR THE PURPOSE OF CONSTRUCTION DRAWINGS, THE FOLLOWING DEFINITIONS SHALL APPLY:
   - CONTRACTOR: SBA COMMUNICATIONS CORP.
   - SUBCONTRACTOR: GENERAL CONTRACTOR (CONSTRUCTION)
   - OWNER: T-MOBILE

2. PRIOR TO THE SUBMISSION OF BIDS, THE BIDDING SUBCONTRACTOR SHALL VISIT THE CELL SITE TO FAMILIARIZE WITH THE EXISTING CONDITIONS AND TO CONFIRM THAT THE WORK CAN BE ACCOMPLISHED AS SHOWN ON THE CONSTRUCTION DRAWINGS. ANY DISCREPANCY FOUND SHALL BE BROUGHT TO THE ATTENTION OF CONTRACTOR.

3. ALL MATERIALS FURNISHED AND INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS AND ORDINANCES. SUBCONTRACTOR SHALL ISSUE ALL APPROPRIATE NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY REGARDING THE PERFORMANCE OF THE WORK. ALL WORK CARRIED OUT SHALL COMPLY WITH ALL APPLICABLE MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS AND LOCAL JURISDICTIONAL CODES, ORDINANCES AND APPLICABLE REGULATIONS.

4. DRAWINGS PROVIDED HERE ARE NOT TO BE SCALED AND ARE INTENDED TO SHOW OUTLINE ONLY.

5. UNLESS NOTED OTHERWISE, THE WORK SHALL INCLUDE FURNISHING MATERIALS, EQUIPMENT, APPURTENANCES AND LABOR NECESSARY TO COMPLETE ALL INSTALLATIONS AS INDICATED ON THE DRAWINGS.

6. "KITTING LIST" SUPPLIED WITH THE BID PACKAGE IDENTIFIES ITEMS THAT WILL BE SUPPLIED BY CONTRACTOR. ITEMS NOT INCLUDED IN THE BILL OF MATERIALS AND KITTING LIST SHALL BE SUPPLIED BY THE SUBCONTRACTOR.

7. THE SUBCONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIAL IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS, UNLESS SPECIFICALLY STATED OTHERWISE.

8. IF THE SPECIFIED EQUIPMENT CANNOT BE INSTALL AS SHOWN ON THESE DRAWINGS, THE SUBCONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION SPACE FOR APPROVAL BY THE CONTRACTOR.

9. SUBCONTRACTOR SHALL DETERMINE ACTUAL ROUTING OF CONDUIT, POWER AND T1 CABLES AND GROUNDING CABLES AS SHOWN ON THE POWER, GROUNDING AND TELCO PLAN DRAWINGS. SUBCONTRACTOR SHALL UTILIZE EXISTING TRAYS AND/OR SHALL ADD NEW TRAYS AS NECESSARY, SUBCONTRACTOR SHALL CONFIRM THE ACTUAL ROUTING WITH THE CONTRACTOR.

10. THE SUBCONTRACTOR SHALL PROTECT EXISTING IMPROVEMENTS, PAVEMENTS, CURBS, LANDSCAPING AND STRUCTURES. ANY DAMAGED PART SHALL BE REPAIRED AT SUBCONTRACTOR'S EXPENSE TO THE SATISFACTION OF OWNER.

11. SUBCONTRACTOR SHALL LEGALLY AND PROPERLY DISPOSE OF ALL SCRAP MATERIALS SUCH AS COAXIAL CABLES AND OTHER ITEMS REMOVED FROM THE EXISTING FACILITY. ANTENNAS REMOVED SHALL BE RETURNED TO THE OWNER'S DESIGNATED LOCATION.

12. SUBCONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION.

13. ALL CONCRETE REPAIR WORK SHALL BE DONE IN ACCORDANCE WITH AMERICAN CONCRETE INSTITUTE (ACI) 301.

14. ANY NEW CONCRETE NEEDED FOR THE CONSTRUCTION SHALL BE AIR-ENTRAINED AND SHALL HAVE 4000 PSI STRENGTH AT 28 DAYS. ALL CONCRETE WORK SHALL BE DONE IN ACCORDANCE WITH ACI 318 CODE REQUIREMENTS.

15. ALL STRUCTURAL STEEL WORK SHALL BE DETAILED, FABRICATED AND ERECTED IN ACCORDANCE WITH AISC SPECIFICATIONS. ALL STRUCTURAL STEEL SHALL BE ASTM A36 (Fy = 36 ksi) UNLESS NOTED OTHERWISE, PIPES SHALL BE ASTM A53 TYPE E (Fy = 36 ksi). ALL STEEL EXPOSED TO WETHER SHALL BE HOT DIPPED GALVANIZED. TOUCH-UP ALL SCRATCHES AND OTHER MARKS IN THE FIELD AFTER STEEL IS ERECTED USING A COMPATIBLE ZINC RICH PAINT.

16. CONSTRUCTION SHALL COMPLY WITH UMTS SPECIFICATIONS AND "GENERAL CONSTRUCTION SERVICES FOR CONSTRUCTION OF T-MOBILE SITES."

17. SUBCONTRACTOR SHALL VERIFY ALL EXISTING DIMENSIONS AND CONDITIONS PRIOR TO COMMENCING ANY WORK. ALL DIMENSIONS OF EXISTING CONSTRUCTION SHOWN ON THE DRAWINGS MUST BE VERIFIED. SUBCONTRACTOR SHALL NOTIFY THE CONTRACTOR OF ANY DISCREPANCIES PRIOR TO ORDERING MATERIAL OR PROCEEDING WITH CONSTRUCTION.

18. THE EXISTING CELL SITE IS IN FULL COMMERCIAL OPERATION. ANY CONSTRUCTION WORK BY SUBCONTRACTOR SHALL NOT DISRUPT THE EXISTING NORMAL OPERATION. ANY WORK ON EXISTING EQUIPMENT MUST BE COORDINATED WITH CONTRACTOR. ALSO, WORK SHOULD BE SCHEDULED FOR AN APPROPRIATE MAINTENANCE WINDOW, USUALLY IN LOW TRAFFIC PERIODS AFTER MIDNIGHT.

19. SINCE THE CELL SITE IS ACTIVE, AL SAFETY PRECAUTIONS MUST BE TAKEN WHEN WORKING AROUND HIGH LEVELS OF ELECTROMAGNETIC RADIATION, EQUIPMENT SHOULD BE SHUTDOWN PRIOR TO PERFORMING ANY WORK THAT COULD EXPOSE THE WORKERS TO DANGER. PERSONAL RF EXPOSURE MONITORS ARE ADVISED TO BE WORN TO ALERT IF ANY DANGEROUS EXPOSURE LEVELS.

20. APPLICABLE BUILDING CODES:
    SUBCONTRACTOR'S WORK SHALL COMPLY WITH ALL APPLICABLE NATIONAL, STATE AND LOCAL CODES AS ADOPTED BY THE LOCAL AUTHORITY HAVING JURISDICTION (AHJ) FOR THE LOCATION. THE EDITION OF THE AHJ ADOPTED CODES AND STANDARDS IN EFFECT ON THE DATE OF CONTRACT AWARD SHALL GOVERN THE DESIGN.
    - BUILDING CODE: IBC 2003 WITH 2005 CT SUPPLEMENT AND 2009 CT AMENDMENTS
    - ELECTRICAL CODE: NEC 2011

    SUBCONTRACTOR'S WORK SHALL COMPLY WITH THE LATEST EDITION OF THE FOLLOWING STANDARDS:

    AMERICAN CONCRETE INSTITUTE (ACI) 318;
    BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE.

    AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC)

    MANUAL OF STEEL CONSTRUCTION; ASD, FOURTEENTH EDITION

    TELECOMMUNICATIONS INDUSTRY ASSOCIATION (TIA) 222-G;
    STRUCTURAL STANDARDS FOR STEEL

    ANTENNA TOWER AND ANTENNA SUPPORTING STRUCTURES;
    REFER TO ELECTRICAL DRAWINGS FOR SPECIFIC ELECTRICAL STANDARDS

FOR ANY CONFLICTS BETWEEN SECTIONS OF LISTED CODES AND STANDARDS REGARDING MATERIAL, METHOD OF CONSTRUCTION OR OTHER REQUIREMENTS, THE MOST RESTRICTIVE REQUIREMENT SHALL GOVERN. WHERE THERE IS CONFLICT BETWEEN A GENERAL REQUIREMENT AND A SPECIFIC REQUIREMENT, THE SPECIFIC REQUIREMENT SHALL GOVERN.

ABBREVIATIONS

AGL	ABOVE GRADE LEVEL	GC	GENERAL CONTRACTOR	REF.	REFERENCE
AWG	AMERICAN WIRE GAUGE	MAX.	MAXIMUM	REQ.	REQUIRED
BCW	BARE COPPER WIRE	MGB	MASTER GROUND BAR	RF	RADIO FREQUENCY
BTS	BASE TRANSCEIVER STATION	MIN.	MINIMUM	T.B.D.	TO BE DETERMINED
(E)	EXISTING	(N)	PROPOSED	T.B.R.	TO BE REMOVED
EG	EQUIPMENT GROUND	N.T.S.	NOT TO SCALE	T.B.R.R.	TO BE REMOVED AND REPLACED
EGR	EQUIPMENT GROUND RING	RE:	REFERENCE	(TYP)	TYPICAL

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B&T ENGINEERING, INC.
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10/14/15

STATE OF CONNECTICUT
CHAD TUTTLE
No. 23924
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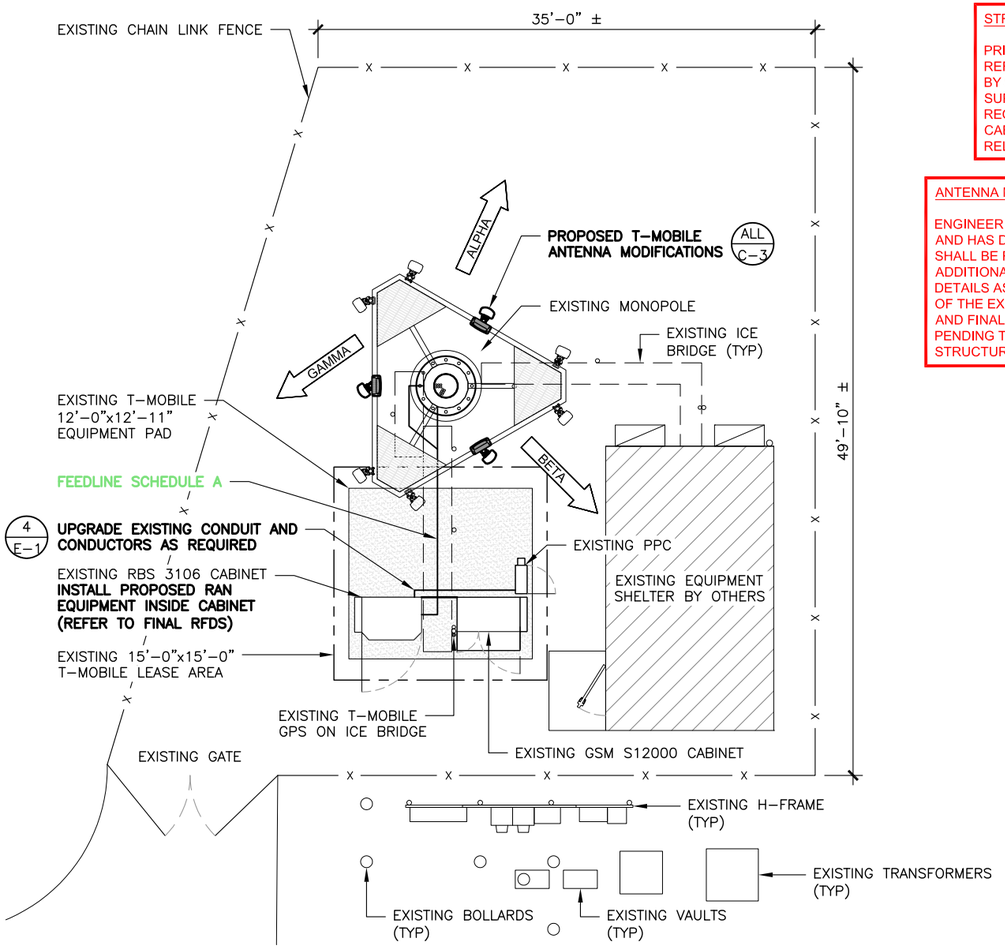


1 OVERALL SITE PLAN

SCALE: 0' 5' 10' 15' 25' — 11x17 SCALE: 3/32"=1'-0" 22x34 SCALE: 3/16"=1'-0"

N

EXISTING (12) LINES OF 1 5/8" COAX AND (1) 1 1/4" HYBRID FIBER TO 105' TO REMAIN. **(REFER TO SBA PROVIDED STRUCTURAL ANALYSIS FOR SPECIAL CABLE INSTALLATION REQUIREMENTS, BUNDLING, SHIELDING, MOUNTING AND RELOCATION OF EXISTING CABLES)**

SOURCE: B+T 09-10-2015

2A FEEDLINE PHOTO DETAIL @ TOWER BASE

SCALE: N.T.S.

STRUCTURAL NOTES:

PRIOR TO COMMENCING CONSTRUCTION, GC SHALL REFER TO TOWER STRUCTURAL ANALYSIS PROVIDED BY SBA TO DETERMINE IF THERE ARE ANY SUPPLEMENTAL OR SPECIAL INSTALLATION REQUIREMENTS FOR TOWER TOP EQUIPMENT AND FOR CABLE BUNDLING, SHIELDING, MOUNTING OR RELOCATION ARRANGEMENTS.

ANTENNA MOUNT STRUCTURAL ASSESSMENT REQUIREMENT:

ENGINEER OF RECORD HAS MADE A VISUAL ASSESSMENT ONLY AND HAS DETERMINED THAT THE EXISTING ANTENNA MOUNT SHALL BE REPLACED OR MODIFIED TO ACCOMMODATE ANY ADDITIONAL EQUIPMENT LOADS. STRUCTURAL DESIGNS AND DETAILS AS SHOWN HEREIN FOR STRUCTURAL MODIFICATIONS OF THE EXISTING ANTENNA MOUNT ARE PRELIMINARY ONLY AND FINAL CONSTRUCTION DETAILS ARE SUBJECT TO CHANGE PENDING THE COMPLETION OF AN ANTENNA MOUNT STRUCTURAL ASSESSMENT.

SPECIAL CONSTRUCTION NOTE:

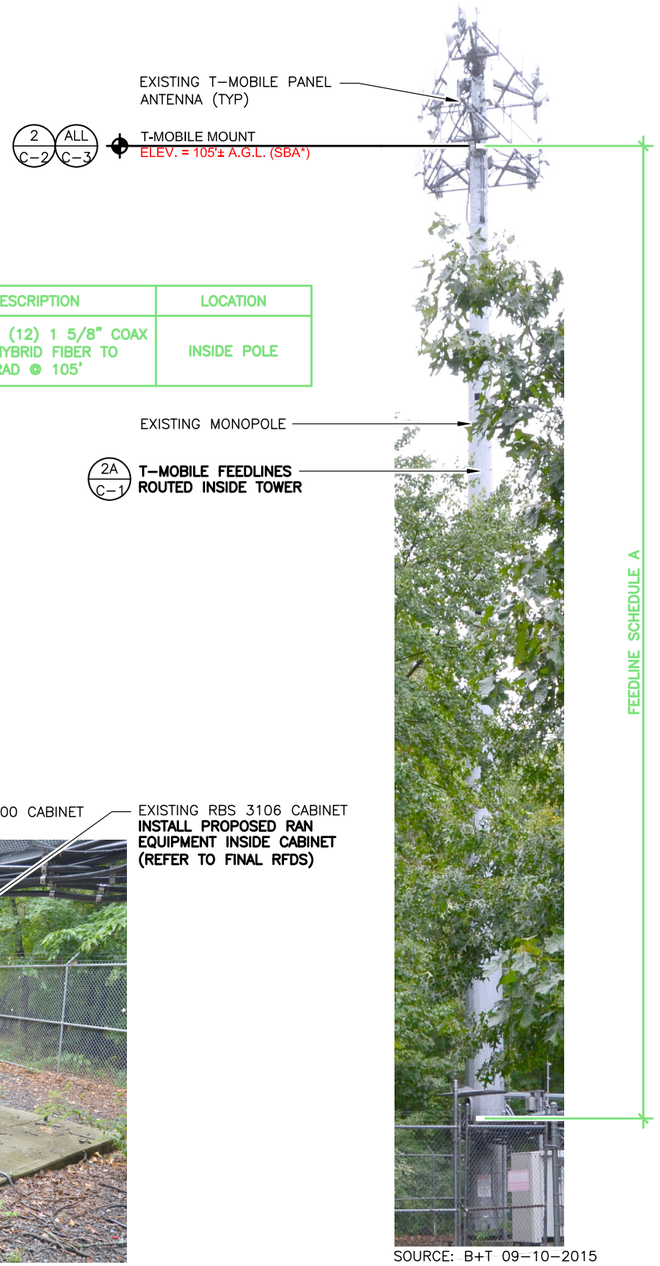
THE T-MOBILE TOWER TOP WORK IS CONTINGENT UPON COMPLETION OF ALL REQUIRED TOWER STRUCTURAL MODIFICATIONS, ENGINEERING CONSTRUCTION CONTROL INSPECTIONS, FINAL ENGINEERING AFFIDAVIT AND ACCEPTANCE/APPROVAL BY SBA COMMUNICATIONS CORP.

FEEDLINE SCHEDULE	FEEDLINE DESCRIPTION	LOCATION
A	EXISTING TO REMAIN: (12) 1 5/8" COAX & (1) 1 1/4" HYBRID FIBER TO T-MOBILE RAD @ 105'	INSIDE POLE

SOURCE: B+T 09-10-2015

2B EQUIPMENT PHOTO DETAIL

SCALE: N.T.S.



SOURCE: B+T 09-10-2015

3 ELEVATION PHOTO DETAIL

SCALE: N.T.S.

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PEC.0001564
Expires 2/10/16

10/14/15

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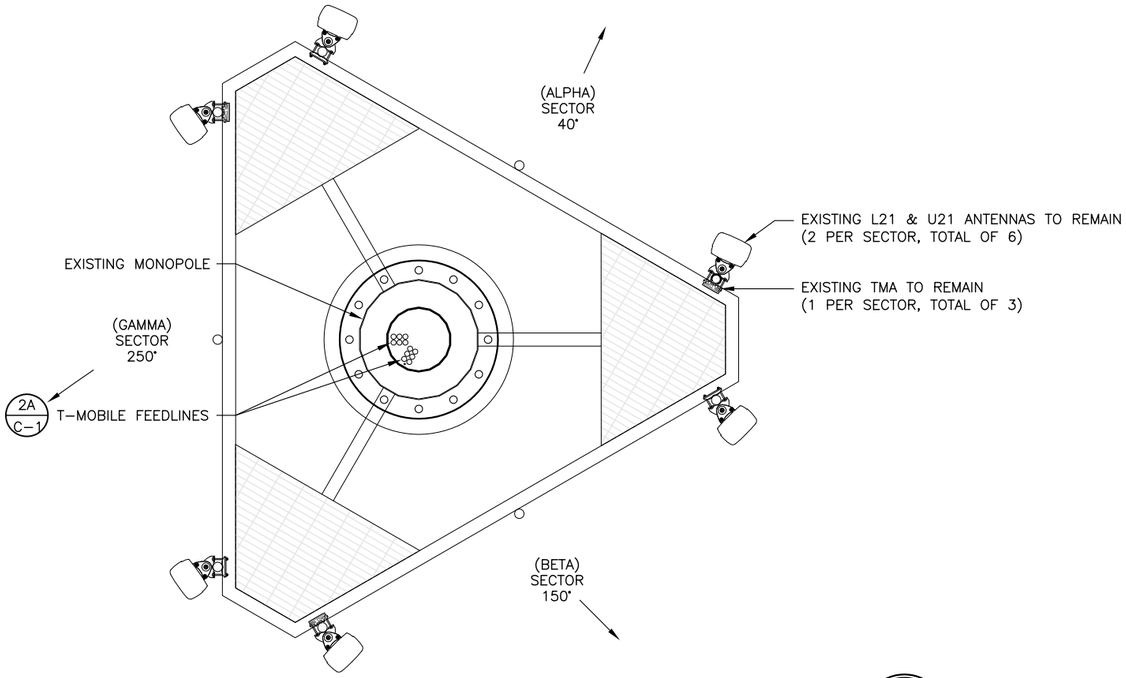
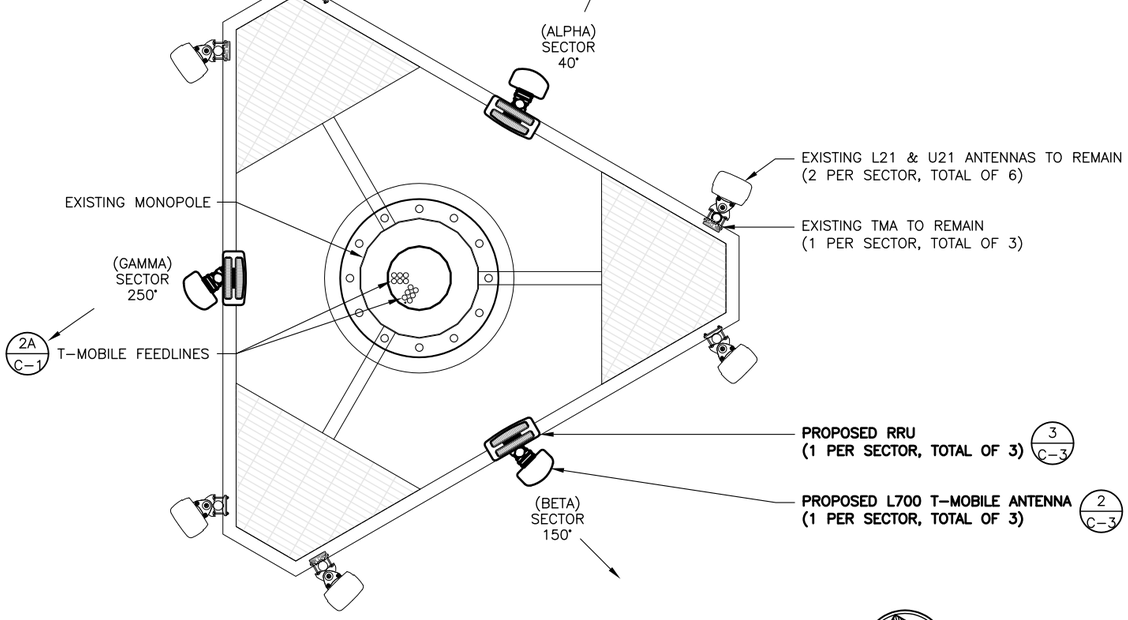
SHEET NUMBER:	REVISION:
C-1	1



1A EXISTING ANTENNA PLAN

SCALE: 0' 1' 4' 10' — 11x17 SCALE: 1/4"=1'-0" / 22x34 SCALE: 1/2"=1'-0"

N



1B PROPOSED ANTENNA PLAN

SCALE: 0' 1' 4' 10' — 11x17 SCALE: 1/4"=1'-0" / 22x34 SCALE: 1/2"=1'-0"

N

STRUCTURAL NOTES:

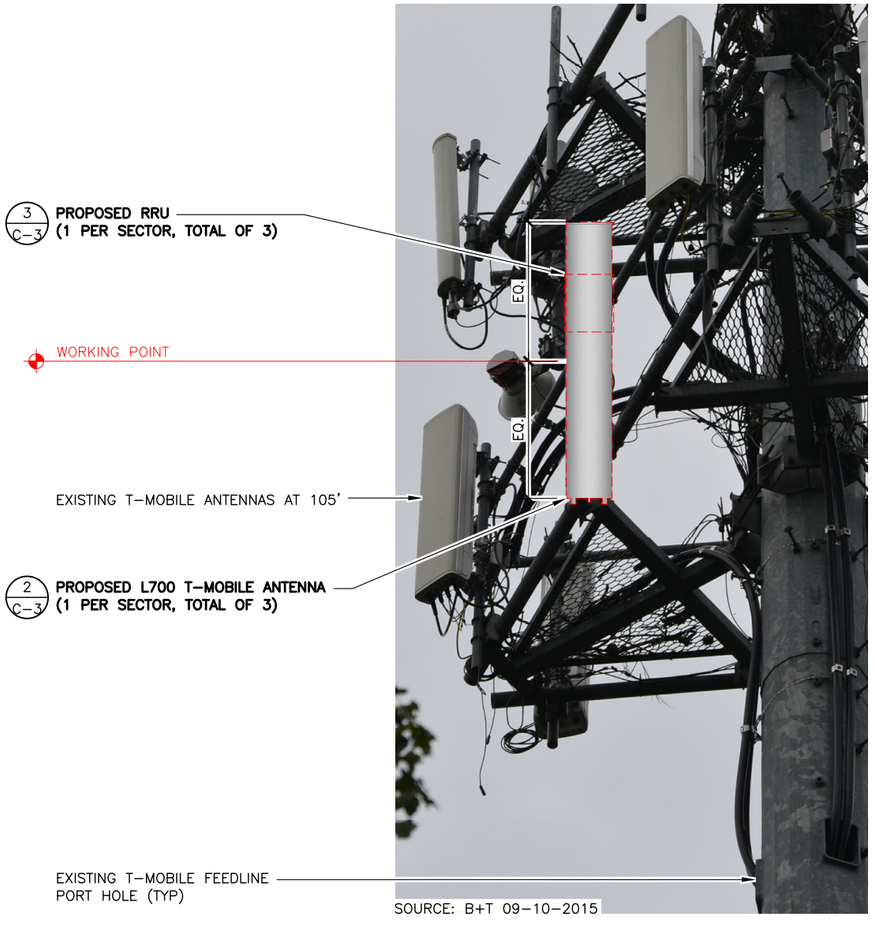
PRIOR TO COMMENCING CONSTRUCTION, GC SHALL REFER TO TOWER STRUCTURAL ANALYSIS PROVIDED BY SBA TO DETERMINE IF THERE ARE ANY SUPPLEMENTAL OR SPECIAL INSTALLATION REQUIREMENTS FOR TOWER TOP EQUIPMENT AND FOR CABLE BUNDLING, SHIELDING, MOUNTING OR RELOCATION ARRANGEMENTS.

ANTENNA INSTALLATION SPECIAL WORK NOTE:

ANTENNA INSTALLATION WORKING POINT IS THE STRUCTURAL FACE FRAME VERTICAL CENTERLINE OF THE EXISTING ANTENNA SUPPORT ASSEMBLY. UNLESS NOTED OTHERWISE, VERTICALLY CENTER ALL PIPE MASTS AND ANTENNAS ON THIS WORKING POINT.

SPECIAL CONSTRUCTION NOTE:

THE T-MOBILE TOWER TOP WORK IS CONTINGENT UPON COMPLETION OF ALL REQUIRED TOWER STRUCTURAL MODIFICATIONS, ENGINEERING CONSTRUCTION CONTROL INSPECTIONS, FINAL ENGINEERING AFFIDAVIT AND ACCEPTANCE/APPROVAL BY SBA COMMUNICATIONS CORP.



SOURCE: B+T 09-10-2015

2 ANTENNA MOUNT PHOTO DETAIL

SCALE: N.T.S.

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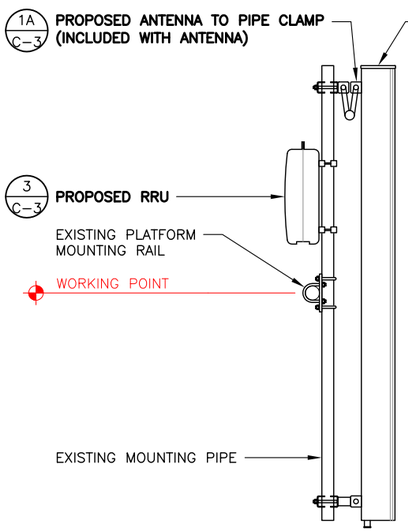
SHEET NUMBER:	REVISION:
C-2	1

101029_CT46128-A_Milford-West_CTNH003A.dwg – Sheet:C-2 – User: mwesel – Oct 14, 2015 – 2:06pm

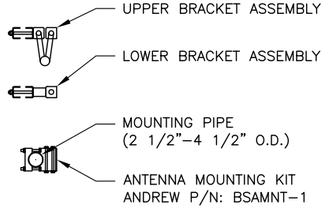


ANTENNA INSTALLATION SPECIAL WORK NOTE:

ANTENNA INSTALLATION WORKING POINT IS THE STRUCTURAL FACE FRAME VERTICAL CENTERLINE OF THE EXISTING ANTENNA SUPPORT ASSEMBLY. UNLESS NOTED OTHERWISE VERTICALLY CENTER ALL PIPE MASTS AND ANTENNAS ON THIS WORKING POINT.

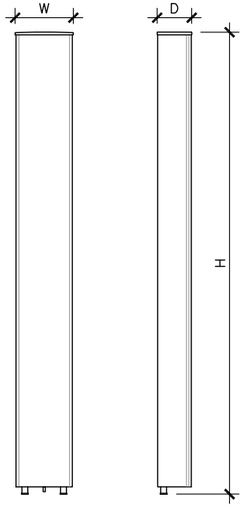
1 PROPOSED L700 ANTENNA & RRU MOUNTING DETAIL

SCALE: N.T.S.



1A L700 ANTENNA MOUNTING BRACKET

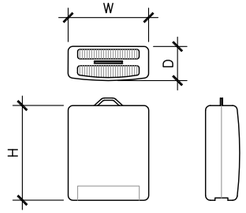
SCALE: N.T.S.



L700 ANTENNA SPECS	
MANUFACTURER	ANDREW
MODEL #	LNX-6515DS
WIDTH	11.9"
DEPTH	7.1"
HEIGHT	96.4"
WEIGHT	50.3 LBS

2 L700 ANTENNA DETAIL

SCALE: N.T.S.



RRU SPECIFICATIONS	
MANUFACTURER	ERICSSON
MODEL #	RRUS11 B12
WIDTH	17"
DEPTH	7"
HEIGHT	20"
WEIGHT	50.6 LBS

3 REMOTE RADIO UNIT (RRU)

SCALE: N.T.S.

ANTENNA MOUNT STRUCTURAL ASSESSMENT REQUIREMENT:

ENGINEER OF RECORD HAD MADE A VISUAL ASSESSMENT ONLY AND DETERMINED THAT THE EXISTING ANTENNA MOUNT SHALL BE REPLACED OR MODIFIED TO ACCOMMODATE ANY ADDITIONAL EQUIPMENT LOADS. STRUCTURAL DESIGNS AND DETAILS AS SHOWN HEREIN FOR STRUCTURAL MODIFICATIONS OF THE EXISTING ANTENNA MOUNT ARE PRELIMINARY ONLY AND FINAL CONSTRUCTION DETAILS ARE SUBJECT TO CHANGE PENDING THE COMPLETION OF AN ANTENNA MOUNT STRUCTURAL ASSESSMENT.

STRUCTURAL NOTES:

PRIOR TO COMMENCING CONSTRUCTION, GC SHALL REFER TO TOWER STRUCTURAL ANALYSIS PROVIDED BY SBA TO DETERMINE IF THERE ARE ANY SUPPLEMENTAL OR SPECIAL INSTALLATION REQUIREMENTS FOR TOWER TOP EQUIPMENT AND FOR CABLE BUNDLING, SHIELDING, MOUNTING OR RELOCATION ARRANGEMENTS.

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SBA COMMUNICATIONS CORP.
33 BOSTON POST ROAD WEST, SUITE 320
MARLBOROUGH, MA 01752

CTNH003A

CTNH003/ NEXTEL MILFORD

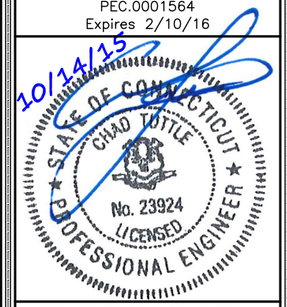
160 WAMPUS LANE
MILFORD, CT 06460

PROJECT NO:	101029.001
CHECKED BY:	RCM

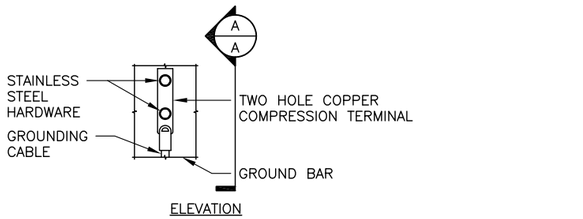
ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION
0	9/14/15	MDW	CONSTRUCTION
1	10/14/15	MDW	CONSTRUCTION

B&T ENGINEERING, INC.
PEC.0001564
Expires 2/10/16

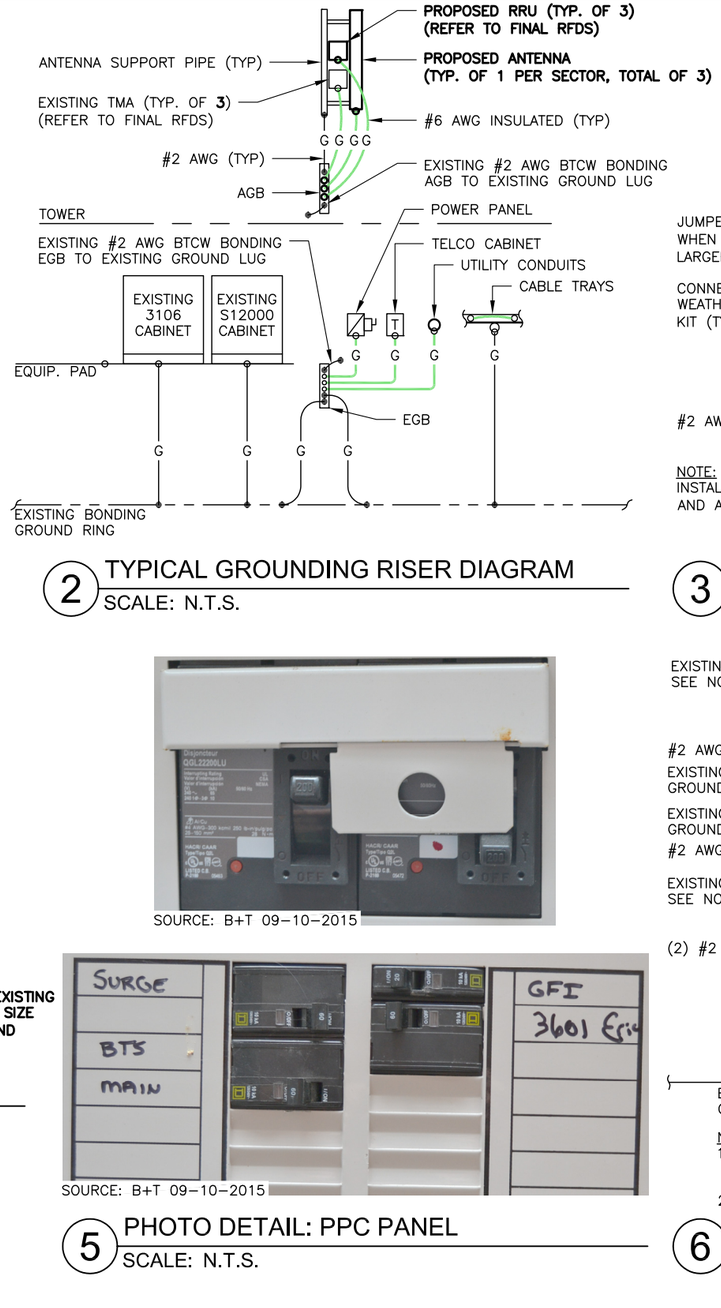


SHEET NUMBER:	REVISION:
C-3	1

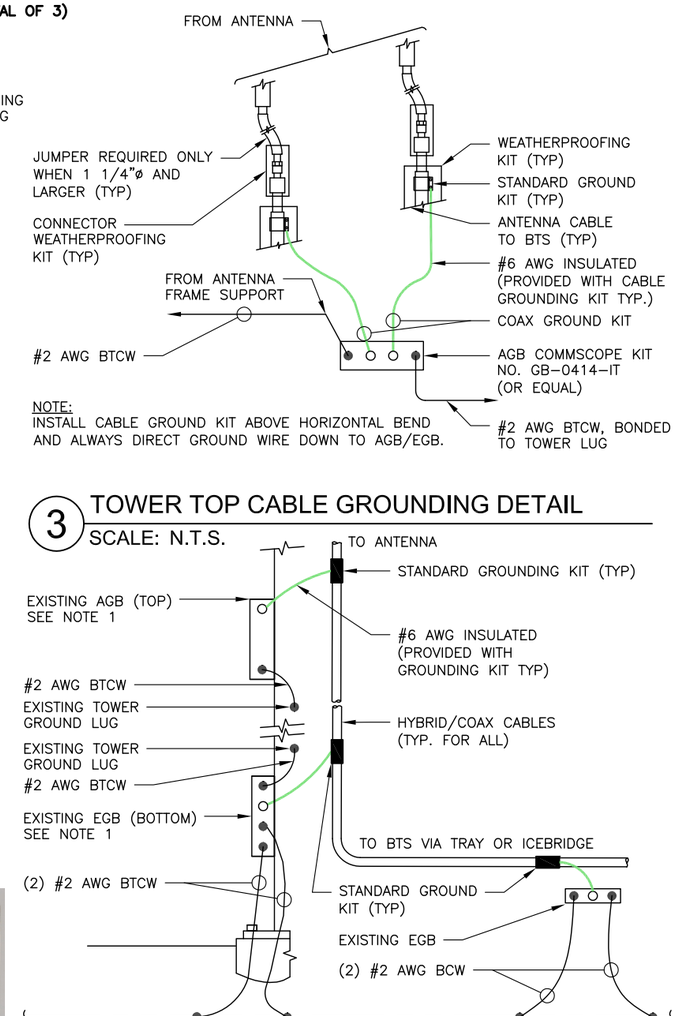


NOTE:
1. "DOUBLING UP" OR "STACKING" OF CONNECTION IS NOT PERMITTED.
2. OXIDE INHIBITING COMPOUND TO BE USED AT ALL LOCATIONS.
3. CADWELD DOWNLEADS FROM UPPER EGB, LOWER EGB AND MGB.

1 TYPICAL GROUND BAR CONNECTION DETAIL
SCALE: N.T.S.

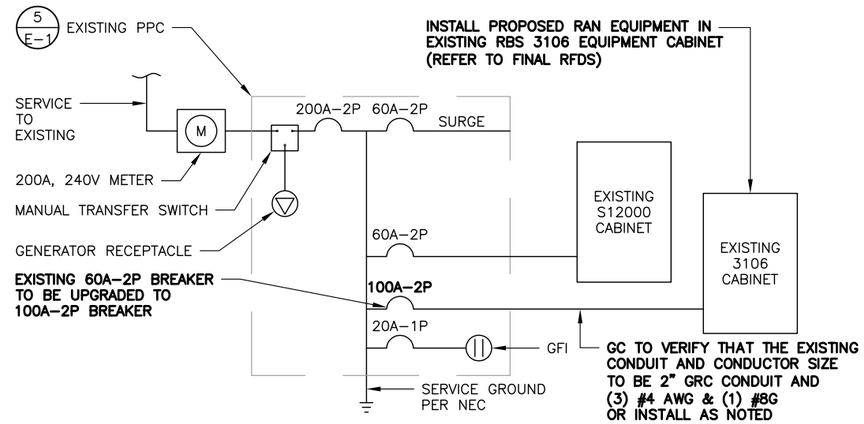


2 TYPICAL GROUNDING RISER DIAGRAM
SCALE: N.T.S.



NOTE:
INSTALL CABLE GROUND KIT ABOVE HORIZONTAL BEND AND ALWAYS DIRECT GROUND WIRE DOWN TO AGB/EGB.

3 TOWER TOP CABLE GROUNDING DETAIL
SCALE: N.T.S.



4 ONE-LINE POWER DIAGRAM
SCALE: N.T.S.

SOURCE: B+T 09-10-2015

SOURCE: B+T 09-10-2015

5 PHOTO DETAIL: PPC PANEL
SCALE: N.T.S.

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

6 TOWER BOTTOM CABLE GROUNDING DETAIL
SCALE: N.T.S.

ELECTRICAL LEGEND

A	AMPERE
BTCW	BARE TINNED (SOLID) COPPER WIRE
C	CONDUIT
GRC	GALVANIZED RIGID CONDUIT
KWH	KILOWATT – HOUR
PPC	POWER PROTECTION CABINET
V	VOLT
	5/8"x8' COPPER CLAD STAINLESS STEEL GROUND ROD
	GROUND
	EXOTHERMIC CONNECTION (CAD WELD) MECHANICAL CONNECTION
AGB/EGB	ANTENNA GROUND BAR/EQUIPMENT GROUND BAR
MGB	MASTER GROUND BAR
G	GROUND COPPER WIRE, SIZED AS NOTED
	EXPOSED WIRING, SIZE AS NOTED
	INSULATED WIRING, SIZE AS NOTED
	OMNI-DIRECTIONAL ELECTRONIC MARKER SYSTEM (EMS) BALL

ELECTRICAL & GROUNDING NOTES

1. ALL ELECTRICAL WORK SHALL CONFORM TO THE REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE (NEC) AS WELL AS APPLICABLE STATE AND LOCAL CODES.
2. ALL ELECTRICAL ITEMS SHALL BE U.L. APPROVED OR LISTED AND PROCURED PER SPECIFICATION REQUIREMENTS.
3. THE ELECTRICAL WORK INCLUDES ALL LABOR AND MATERIAL DESCRIBED BY DRAWINGS AND SPECIFICATIONS INCLUDING INCIDENTAL WORK TO PROVIDE COMPLETE OPERATING AND APPROVED ELECTRICAL SYSTEM.
4. GENERAL CONTRACTOR SHALL PAY FEES FOR PERMITS, AND IS RESPONSIBLE FOR OBTAINING SAID PERMITS AND COORDINATION OF INSPECTIONS.
5. ELECTRICAL AND TELCO WIRING OUTSIDE A BUILDING AND EXPOSED TO WEATHER SHALL BE IN WATER TIGHT GALVANIZED RIGID STEEL CONDUITS OR SCHEDULE 80 PVC (AS PERMITTED BY CODE) AND WHERE REQUIRED IN LIQUID TIGHT FLEXIBLE METAL OR NONMETALLIC CONDUITS.
6. RIGID STEEL CONDUITS SHALL BE GROUNDED AT BOTH ENDS.
7. ELECTRICAL WIRING SHALL BE COPPER WITH TYPE XHHW, THWN, OR THIN INSULATION.
8. RUN ELECTRICAL CONDUIT OR CABLE BETWEEN ELECTRICAL ROOM AND PROPOSED CELL SITE POWER PEDESTAL AS INDICATED ON THIS DRAWING. PROVIDE FULL LENGTH PULL ROPE. COORDINATE INSTALLATION WITH UTILITY COMPANY.
9. RUN TELCO CONDUIT OR CABLE BETWEEN TELEPHONE UTILITY DEMARCATION POINT AND PROPOSED CELL SITE TELCO CABINET AND BTS CABINET AS INDICATED ON DRAWING A-1. PROVIDE FULL LENGTH PULL ROPE IN INSTALLED TELCO CONDUIT. PROVIDE GREENLEE CONDUIT MEASURING TAPE AT EACH END.
10. ALL EQUIPMENT LOCATED OUTSIDE SHALL HAVE NEMA 3R ENCLOSURE.
11. GROUNDING SHALL COMPLY WITH NEC ART. 250.
12. GROUND COAXIAL CABLE SHIELDS MINIMUM AT BOTH ENDS USING MANUFACTURERS COAX CABLE GROUNDING KITS SUPPLIED BY PROJECT OWNER.
13. USE #6 COPPER STRANDED WIRE WITH GREEN COLOR INSULATION FOR ABOVE GRADE GROUNDING (UNLESS OTHERWISE SPECIFIED) AND #2 SOLID TINNED BARE COPPER WIRE FOR BELOW GRADE GROUNDING AS INDICATED ON THE DRAWING.
14. ALL GROUND CONNECTIONS TO BE BURNDY HYGROUND COMPRESSION TYPE CONNECTORS OR CADWELD EXOTHERMIC WELD. DO NOT ALLOW BARE COPPER WIRE TO BE IN CONTACT WITH GALVANIZED STEEL.
15. ROUTE GROUNDING CONDUCTORS ALONG THE SHORTEST AND STRAIGHTEST PATH POSSIBLE, EXCEPT AS OTHERWISE INDICATED. GROUNDING LEADS SHOULD NEVER BE BENT AT RIGHT ANGLE. ALWAYS MAKE AT LEAST 12" RADIUS BENDS. #6 WIRE CAN BE BENT AT 6" RADIUS WHEN NECESSARY. BOND ANY METAL OBJECTS WITHIN 7 FEET OF PROPOSED EQUIPMENT OR CABINET TO MASTER GROUND BAR.
16. CONNECTIONS TO MGB SHALL BE ARRANGED IN THREE MAIN GROUPS: SURGE PRODUCERS (COAXIAL CABLE GROUND KITS, TELCO AND POWER PANEL GROUND); (GROUNDING ELECTRODE RING OR BUILDING STEEL); NON-SURGING OBJECTS (EGB GROUND IN BTS UNIT).
17. CONNECTIONS TO GROUND BARS SHALL BE MADE WITH TWO HOLE COMPRESSION TYPE COPPER LUGS. APPLY OXIDE INHIBITING COMPOUND TO ALL LOCATIONS.
18. APPLY OXIDE INHIBITING COMPOUND TO ALL COMPRESSION TYPE GROUND CONNECTIONS.
19. BOND ANTENNA MOUNTING BRACKETS, COAXIAL CABLE GROUND KITS, AND ALNA TO EGB PLACED NEAR THE ANTENNA LOCATION.
20. BOND ANTENNA EGB'S AND MGB TO WATER MAIN.
21. TEST COMPLETED GROUND SYSTEM AND RECORD RESULTS FOR PROJECT CLOSE-OUT DOCUMENTATION.
22. BOND ANY METAL OBJECTS WITHIN 7 FEET OF PROPOSED EQUIPMENT OR CABINET TO MASTER GROUND BAR.
23. VERIFY PROPOSED SERVICE UPGRADE WITH LOCAL UTILITY COMPANY PRIOR TO CONSTRUCTION.

B+T GRP
1717 S. BOULDER
SUITE 300
TULSA, OK 74119
PH: (918) 587-4630
www.btgrp.com

T-MOBILE NORTHEAST, LLC
35 GRIFFIN ROAD SOUTH
BLOOMFIELD, CT 06002

SBA COMMUNICATIONS CORP.
33 BOSTON POST ROAD WEST, SUITE 320
MARLBOROUGH, MA 01752

CTNH003A

CTNH003/ NEXTEL MILFORD

160 WAMPUS LANE
MILFORD, CT 06460

PROJECT NO:	101029.001
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ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION
0	9/14/15	MDW	CONSTRUCTION
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B&T ENGINEERING, INC.
PEC.0001564
Expires 2/10/16

10/14/15
STATE OF CONNECTICUT
CHAD TUTTLE
No. 23924
LICENSED
PROFESSIONAL ENGINEER

SHEET NUMBER:	REVISION:
E-1	1

STATE OF CONNECTICUT

CONNECTICUT SITING COUNCIL

Ten Franklin Square, New Britain, CT 06051
Phone: (860) 827-2935 Fax: (860) 827-2950
E-Mail: siting.council@ct.gov
www.ct.gov/csc

December 3, 2015

Kri Pelletier
SBA Communications
33 Boston Post Road West
Suite 320
Marlborough, MA 01751

RE: **EM-T-MOBILE-084-151125 -** T-Mobile notice of intent to modify an existing telecommunications facility located at 160 Wampus Lane, Milford, Connecticut.

Dear Ms. Pelletier:

The Connecticut Siting Council (Council) received a notice of intent to modify the above-referenced facility on November 25, 2015.

Council staff has identified the following discrepancies:

- The decision in which the facility was approved and the conditions of approval are not given, and so it is unclear whether this modification would violate the municipality's conditions of approval.
- The Structural Analysis Report has not been stamped by a Professional Engineer.

The rationale for the request for information regarding municipal conditions of approval originates from the FCC Wireless Infrastructure Report and Order for eligible facilities requests to comply with any conditions of the original approval for an existing tower.

Therefore, the notice of intent to modify an existing telecommunications facility is incomplete at this time. This notice of incompletion shall have the effect of tolling the Federal Communications Commission (FCC) 60-day timeframe in accordance with Paragraph 217 of the FCC Wireless Infrastructure Report and Order issued on October 21, 2014 (FCC 14-153).

The Council recommends that T-Mobile provide information to clarify or fulfill the deficiencies noted above.

Thank you for your attention to this matter. Should you have any questions, please feel free to contact me at 860-827-2951.

Very truly yours,

Melanie Bachman
Acting Executive Director

MAB/CH

c: The Honorable Benjamin G. Blake, Mayor, City of Milford
David Sulkis, City Planner, City of Milford

Filed by:
Kri Pelletier, Property Specialist - SBA Communications
33 Boston Post Road West, Ste 320, Marlborough, MA 01751
508.251.0720 x 3804 - kpelletier@sbasite.com

December 15, 2015

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

SUPPLEMENTARY - Notice of Exempt Modification
160 Wampus Lane, Milford, CT 06460
41.22514 N
73.04238 W
T-Mobile#: CTNH003A_L700

Dear Ms. Bachman:

We received the Council's correspondence of December 3, 2015 identifying the following discrepancies with our Notice of Intent to Modify submitted November 25, 2015:

- "The Structural Analysis Report has not been stamped by a Professional Engineer"; and
- "The decision in which the facility was approved and the conditions of approval are not given, and so it is unclear whether this modification would violate the municipality's conditions of approval."

Attached is a Structural Analysis with stamp. We apologize for the oversight.

The facility was first approved by the town with Judicial Ruling IW-JR-01-022, authorizing the construction of a wireless telecommunications facility and associated structures within 50' of wetlands in the Indian River Watershed. The Ruling was issued pursuant to Section 22a-42a of the CT General Statutes and Milford Inland Wetlands Regulations Sections 6-12. This approval contained no restrictions placed on the tower configuration post build.

On June 5, 2001 the Milford Planning & Zoning Board granted approval for Nextel Communications to construct a 120' tall enhanced specialized mobile radio monopole. This approval included the conditions that there would be twelve antennas (four elements) facing in three different directions at the top most portion of the tower. The height of the tower was to allow co-location of three additional lower antenna arrays. This modification complies with the aforementioned conditions.

The initial Building Permit #33671 was issued August 3, 2001 for a new cellular telecommunications facility for Nextel Communications – 120' high.

Please let us know if the Council requires anything further.

Sincerely,

Kri Pelletier
Property Specialist
SBA COMMUNICATIONS CORPORATION
134 Flanders Road, Suite 125
Westborough, MA 01581

508.251.0720 x3804 + T
508.251.1755 + F
203.446.7700 + C
kpelletier@sbasite.com

Attachments

cc: The Honorable Benjamin G. Blake—as elected official
City of Milford, 110 River Street, Milford, CT 06460
Cutting Edge Technologies, LLC—as property owner
160 Wampus Lane, Milford, CT 06460

City of Milford, Connecticut

Founded 1639

INLAND WETLANDS
OFFICE

70 West River Street
Milford, CT 06460-3317
Telephone (203) 783-3256

CERTIFIED MAIL #7000 1670 0011 1309 3698

May 22, 2001

Mr. John Knuff
Hurwitz & Sagarin, L.L.C.
147 North Broad Street
P.O. Box 112
Milford, Connecticut 06460

Re: Jurisdictional Ruling IW-JR-01-022; 166 Wampus Lane, Map 56, Block 813, Parcel 1-B; Nextel Communications. Proposed Wireless Telecommunications Facility with no work proposed within a wetland or 50' review area in the Indian River Watershed. Jurisdictional Ruling to be issued.

Dear Mr. Knuff:

Pursuant to Section 22a-42a of the Connecticut General Statutes and Milford Inland Wetlands Regulations Sections 6-12, this is to inform you that the Milford Inland Wetlands Agency voted to authorize the Designated Agent to issue a Jurisdictional Ruling for your application IW-A-01-022 - 166 Wampus Lane, based on the information in the file, presented at the meeting and the plans entitled "Nextel Communications of the Mid-Atlantic, Inc. DBA Nextel Communications Site Number CT 0638, Milford, 166 Wampus Lane, Milford, CT" by URS Corporation AES, cover & 3 sheets, cover, sheets Z1 & Z2 dated 5/2/01, Boundary & Topographic Survey dated January 2001, last revised 4/12/01". The Agency also moved that the Designated Agent can authorize a reconfigured footprint as discussed at the meeting.

Therefore, I am issuing you this Jurisdictional Ruling allowing the construction of a wirerless telecommunications facility and associated structures as shown on the plans referenced above within 50' of wetlands in the Indian River Watershed.

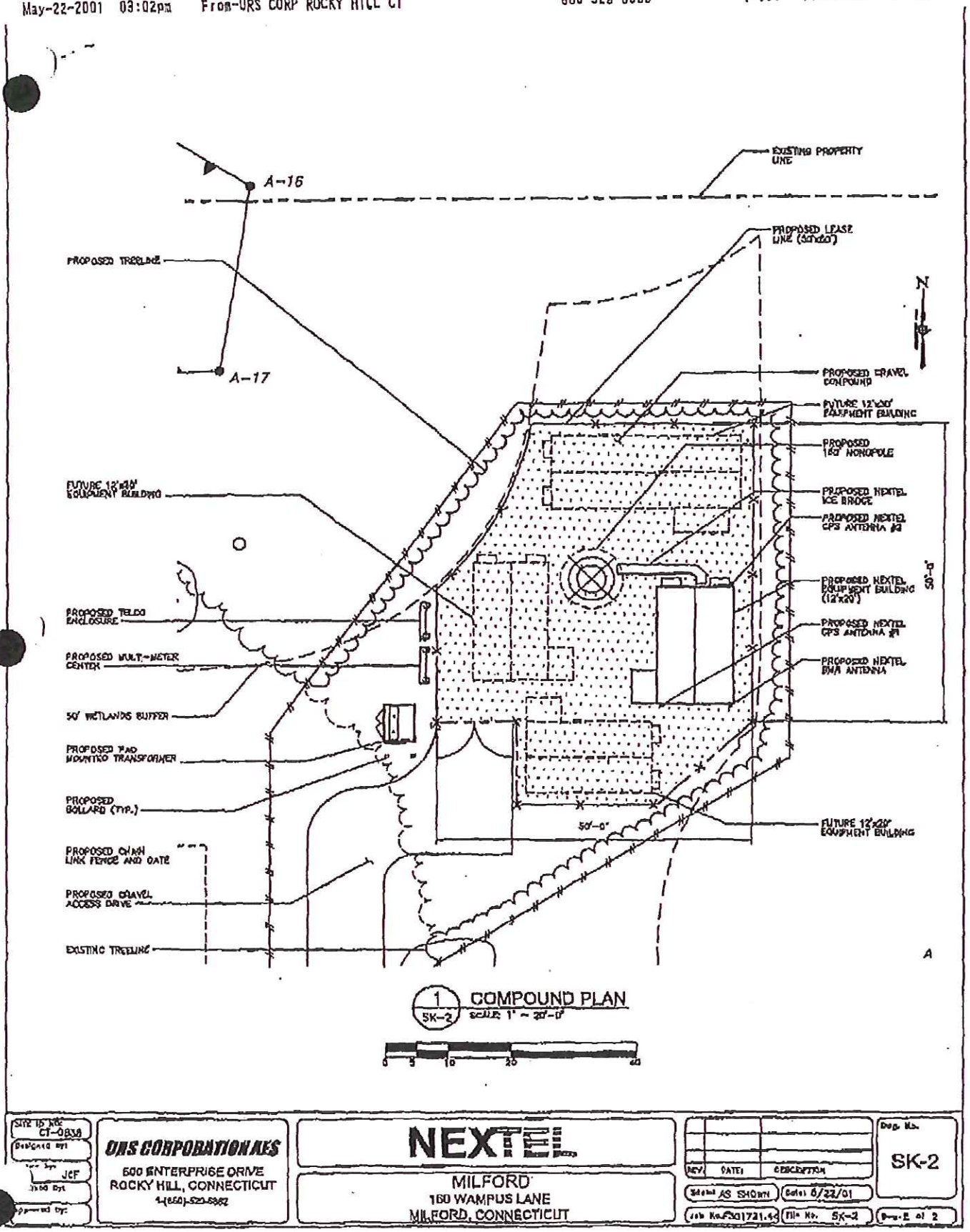
Prior to the start of construction you must install soil erosion and sedimentation controls as required on the plans to prevent erosion into wetlands both on and off site during construction. As soon as the disturbed soils on site are stabilized the soil erosion and sedimentation controls can be removed. At no time during construction can soils be stockpiled or deposited within the wetlands or regulated area on the property.

Should you have any questions concerning this matter, please contact the Inland Wetlands Agency Office at 783-3256.

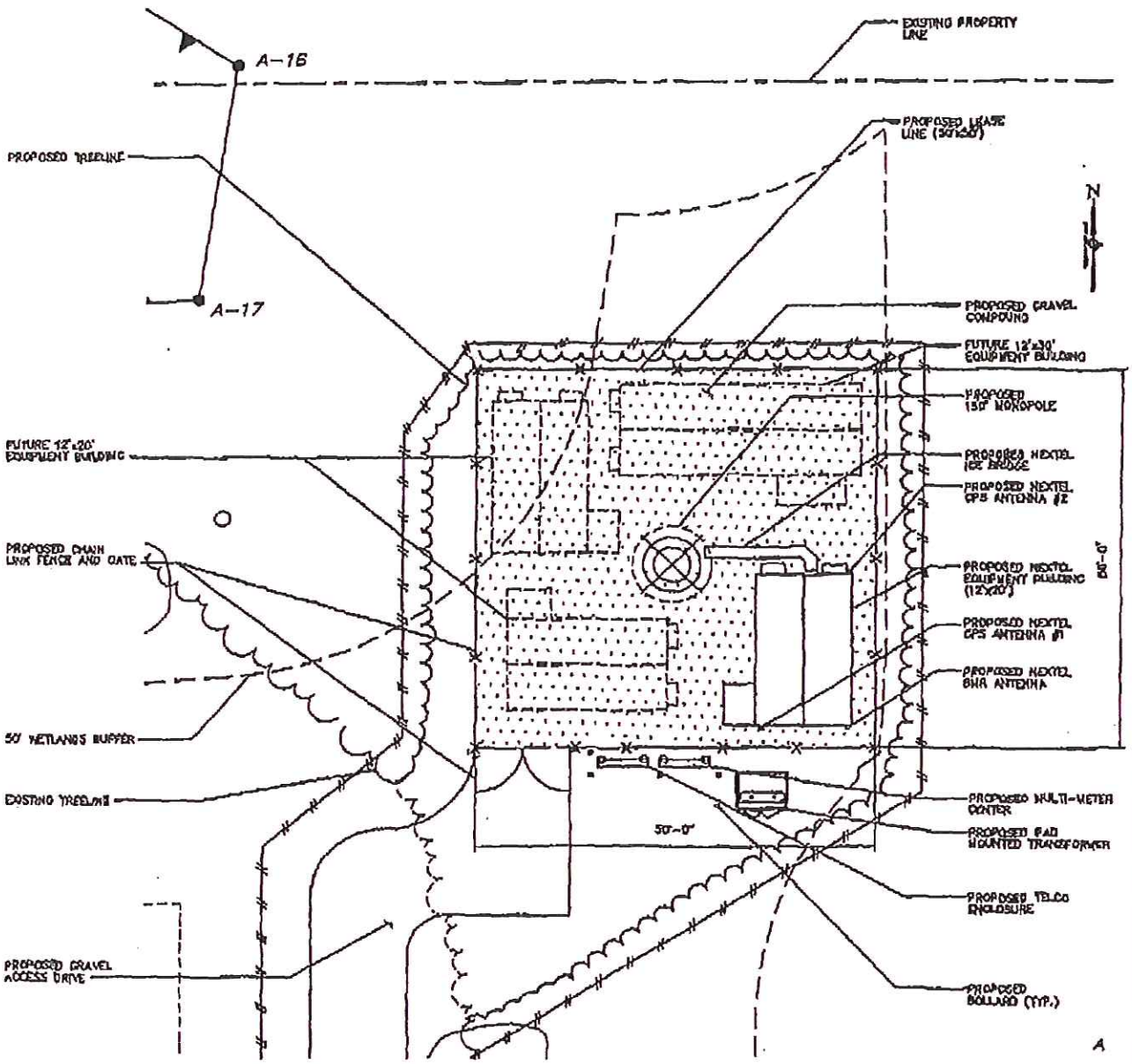
Sincerely,

MaryRose Palumbo
Inland Wetlands Compliance Officer

cc: Planning & Zoning
City Engineer



SITE ID NO: CT-0838	URS CORPORATION AES 500 ENTERPRISE DRIVE ROCKY HILL, CONNECTICUT 1-(860)-529-5566	NEXTEL MILFORD 160 WAMPUS LANE MILFORD, CONNECTICUT	Dwg. No. SK-2
Designed by: JCF		REV. DATE: DESCRIPTION	
Drawn by:		Scale: AS SHOWN Date: 5/22/01	
Approved by:		Job No.: 3031721.43 File No.: SK-2	Page: 2 of 2



1 SK-1 COMPOUND PLAN
SCALE 1" = 20'-0"

0 5 10 20 40

SITE ID NO: CT-0638

URS CORPORATION AES
500 ENTERPRISE DRIVE
ROCKY HILL, CONNECTICUT
1-(800)-529-8532

NEXTEL

MILFORD
160 WAMPUS LANE
MILFORD, CONNECTICUT

REV.	DATE:	DESCRIPTION

Scale: AS SHOWN | Date: 5/22/01
Job No: 38017314.05 | File No.: SK-1 | Dwg. 1 of 2

Dwg. No. SK-1

City of Milford, Connecticut

Founded 1639

PLANNING AND ZONING BOARD
70 West River Street
Milford, Connecticut 06460
Telephone 783-3245

June 6, 2001

Attorney John Knuff
147 North Broad Street
Milford, CT 06460

RE: 166 WAMPUS LANE (NEXTEL)

Dear Mr. Knuff:

At its meeting held on Tuesday, June 5, 2001 the Milford Planning & Zoning Board moved to grant Coastal Area Management Site Plan Review approval to Nextel Communications to construct a 120' tall enhanced specialized mobile radio monopole. This approval shall include 12 antennas (4 elements) facing in 3 different directions) at the top most portion of the tower. The height of the tower will allow co-location of 3 additional (lower) antenna arrays. All work shall be performed in conjunction with the following plan prepared by URS Corporation AES.

Title Sheet (T-1)
Survey dated January 1; revised to April 12, 2001
Site Plan, Legend & Zoning Table (2-1) revised to April 23, 2001
Compound Plan, Tower Elevation & Details (2-2) revised to April 23, 2001

The following city department reports shall apply: Fire Department report dated May 9, 2001 from Edward L. Beatty; Department of Public Works memo from B. C. Kolwicz dated May 15, 2001 and Inland Wetland letter from Mary Rose Palumbo dated May 22, 2001.

Very truly yours,

WADE E. PIERCE
Executive Secretary to the
Planning & Zoning Board

WEP/cv

CITY OF MILFORD, CONN.

BUILDING PERMIT

№ 33671

Estimate cost (structural) - $176,275.00

Fee - $1086.00

Date issued: 08-09-2001

Permission is hereby granted to Cutting Edge Technologies LLC/Owner - Spectrasite Const., Inc./Contractor

to erect a new cellular telecommunications facility for Nextel Communications 120' high

Address 166 Wampus Lane (map 56, block 813, parcel 1B)

as follows: -- Size ..... ft. long, ... ft. wide, ... stories high;

supported on ....., roof covered with .....

walls to be (EXTERIOR) ..... (INTERIOR) ....., No. of house-keeping units .....

Owner Cutting Edge Technologiss LLC

BUILDING DEPARTMENT, CITY OF MILFORD, CONN.

Thomas Rucci/ea Building Inspector

CITY OF MILFORD, CONNECTICUT

Date 8/9/01

Received of URS Corp - CT

One Thousand Seventy one — Dollars $ 1071 —

In payment of BP # 33671

CK # 9069

DEPARTMENT Bldg Insp

BY

WHITE COPY - ORIGINAL

YELLOW COPY - DEPARTMENT COPY

STATE OF CONNECTICUT
CONNECTICUT SITING COUNCIL
Ten Franklin Square, New Britain, CT 06051
Phone: (860) 827-2935 Fax: (860) 827-2950
E-Mail: siting.council@ct.gov
www.ct.gov/csc

December 3, 2015

Kri Pelletier
SBA Communications
33 Boston Post Road West
Suite 320
Marlborough, MA 01751

RE: **EM-T-MOBILE-084-151125** - T-Mobile notice of intent to modify an existing telecommunications facility located at 160 Wampus Lane, Milford, Connecticut.

Dear Ms. Pelletier:

The Connecticut Siting Council (Council) received a notice of intent to modify the above-referenced facility on November 25, 2015.

Council staff has identified the following discrepancies:

- The decision in which the facility was approved and the conditions of approval are not given, and so it is unclear whether this modification would violate the municipality's conditions of approval.
- The Structural Analysis Report has not been stamped by a Professional Engineer.

The rationale for the request for information regarding municipal conditions of approval originates from the FCC Wireless Infrastructure Report and Order for eligible facilities requests to comply with any conditions of the original approval for an existing tower.

Therefore, the notice of intent to modify an existing telecommunications facility is incomplete at this time. This notice of incompletion shall have the effect of tolling the Federal Communications Commission (FCC) 60-day timeframe in accordance with Paragraph 217 of the FCC Wireless Infrastructure Report and Order issued on October 21, 2014 (FCC 14-153).

The Council recommends that T-Mobile provide information to clarify or fulfill the deficiencies noted above.

Thank you for your attention to this matter. Should you have any questions, please feel free to contact me at 860-827-2951.

Very truly yours,

Melanie Bachman
Acting Executive Director

MAB/CH

c: The Honorable Benjamin G. Blake, Mayor, City of Milford
David Sulkis, City Planner, City of Milford

Tower Engineering Solutions
Phone (972) 483-0607, Fax (972) 975-9615
8445 Freeport Parkway, Suite 375, Irving, Texas 75063

Post-Mod Structural Analysis Report

Existing 120 ft. Monopole
Customer Name: SBA Communications Corp
Customer Site Number: CT46128-A
Customer Site Name: Milford - West
Carrier Name: T-Mobile
Carrier Site Number: CTNH003A
Carrier Site Name: N/A
Site Location: 160 Wampus Lane
Milford, Connecticut
New Haven County
Latitude: 41.225166
Longitude: -73.042361

Analysis Result:

Max Structural Usage: 99.5% [Pass]
Max Foundation Usage: 77.0% [Pass]

Report Prepared By : Billy Davis

Introduction

The purpose of this report is to summarize the analysis results on the 120 ft. Monopole to support the proposed antennas and transmission lines in addition to those currently installed. Any existing modification listed under Sources of Information was assumed completed and was included in this analysis.

The proposed modification by **TES** listed under Sources of Information was considered completed and was included in this analysis.

Sources of Information

Tower Drawings	Rohn Project #51361AE, dated April 3, 2002
Foundation Drawing	Rohn Project #51361AE, dated April 3, 2002
Geotechnical Report	Clarence Welti Associates Inc. Site #CT-0638, dated June 19 ,2001
Existing Modification	N/A
Proposed Modification	**TES** Job # 18033

Analysis Criteria

The analysis was performed in accordance with the requirements and stipulations of the ANSI/TIA/EIA 222-F. In accordance with this standard, the structure was analyzed using **TESPoles,** a proprietary analysis software. The program considers the structure as an elastic 3-D model with second-order effects and temperature effects incorporated in the analysis. The analysis was performed using multiple wind directions.

Basic Wind Speed Used in the Analysis:	85.0 mph (fastest mile)
Basic Wind Speed with Ice:	73.6 mph (fastest mile) with 1/2" radial ice concurrent
Operational Wind Speed:	50.0 mph + 0" Radial ice
Standard/Codes:	ANSI/TIA/EIA 222-F / 2005 Connecticut State Building Code
Basic Wind Speed Used in the Analysis:	85.0 mph (fastest mile)
Basic Wind Speed with Ice:	73.6 mph (fastest mile) with 1/2" radial ice concurrent

Existing Antennas, Mounts and Transmission Lines

The table below summarizes the antennas, mounts and transmission lines that were considered in the analysis as existing on the tower.

Items	Elevation (ft)	Qty.	Antenna Descriptions	Mount Type & Qty.	Transmission Lines	Owner
1	116.5	3	A-ANT-23G-2-C - Dish	Low Profile Platform	(3) 1/2"	Clearwire
2		3	APXVSPP18-C-A20 - Panel		(4) 1-1/4" Hybrid Cable	Sprint
3		3	APXV9TM-14-ALU-I20 - Panel			
4		3	1900MHz RRH			
5		3	800 MHz RRH			
6		3	800 MHz RRH w/ Notch Filter			
7		3	TD-RRH8x20-25-RRH			
8		4	ACU-A20-N			
9	105.0	3	Ericsson AIR B2A/ B4P - Panel	Platform w/ Hand Rail	(12) 1 5/8" (1) 1 5/8" Fiber	T-Mobile
10		3	Ericsson AIR B4A / B2P - Panel			
12		3	Ericsson KRY 112 144/1-TMA			
14	78.0	2	GPS - Whip	(2) Side Arm		Unknown

Proposed Carrier's Final Configuration of Antennas, Mounts and Transmission Lines

Information pertaining to the proposed carrier's final configuration of antennas and transmission lines was provided by SBA Communications Corp. The proposed antennas and lines are listed below.

Items	Elevation (ft)	Qty.	Antenna Descriptions	Mount Type & Qty.	Transmission Lines	Owner
9	105.0	3	Ericsson AIR B2A/ B4P - Panel	Platform w/ Hand Rails	(12) 1 5/8" (1) 1 5/8" Fiber	T-Mobile
10		3	Ericsson AIR B4A / B2P - Panel			
11		3	Commscope - LNX-6515DS-A1M - Panel			
12		6	Ericsson KRY 112 144/1-TMA			
13		3	Ericsson S11B12-RRU			

All transmission lines are considered running inside of the pole shafts.

Analysis Results

The results of the structural analysis, performed for the wind and ice loading and antenna equipment as defined above, are summarized as the following:

	Pole shafts	Anchor Bolts	Base Plate
Max. Usage:	**99.5**	**59.0%**	**84.0%**
Pass/Fail	**Pass**	**Pass**	**Pass**

Foundations

	Moment (Kip-Ft)	Shear (Kips)	Axial (Kips)
Original Design Reactions	1446.0	17.0	30.0
Analysis Reactions	1443.6	15.8	19.1

The foundation has been investigated using the supplied documents and soils report and was found adequate. Therefore, no modification to the foundation will be required.

Operational Condition (Rigidity):

Maximum twist and sway of the microwave dishes under the operational wind speed as specified in the Analysis Criteria are listed in the table below:

Elevation (ft)	Antenna / Dish	Carrier	Twist (deg)	Sway (deg)
116.5	A-ANT-23G-2-C - Dish	Clearwire	0.000	2.148
105.0	Various	T-Mobile	0.000	2.104

It is recommended that the carriers review the twist and sway values of the microwave dishes.

Conclusions

Based on the analysis results, the structure and its foundation will be adequate to safely support the existing and proposed equipment and meet the minimum requirements per the design ANSI/TIA/EIA 222-F standards under a basic wind speed of 85 mph no ice and 74 mph with 1/2" radial ice after the following proposed modification is successfully completed.

- Proposed modification design drawing by **TES** Job # 18033

Pre-Mod Installation Determination

We have also checked this tower to determine if the proposed T-Mobile equipment loading can be installed prior to the completion of the required modifications. We ran a reduced wind loading case as required by TIA-1019 considering a construction period of no more than 6 months.

The tower and foundations passed, so the Carrier can proceed and install their proposed loading prior to the mods completion. Please be aware that this approval is being provided and is based on the method outlined in TIA-1019. This approval is not a blanket approval and there is still a risk that the tower will experience a wind event that cannot be predicted by TIA-1019 or our Engineers. In the event of an unforeseen wind event, Tower Engineering Solutions will not be liable nor responsible for damage to the tower or the Carriers equipment. Additionally, the tower cannot go beyond the 6 month construction period without the modifications being completed. If the modifications cannot be completed within 6 months from the completed installation of the Carrier's proposed equipment, TES must be notified immediately for further review.

Standard Conditions

1. This analysis was performed based on the information supplied to **(TES) Tower Engineering Solutions, LLC.** Verification of the information provided was not included in the Scope of Work for **TES**. The accuracy of the analysis is dependent on the accuracy of the information provided.

2. The analysis is based on the presumption that the tower members and components along with any existing reinforcement items have been correctly and properly designed, manufactured, installed and maintained.

3. All the existing structural members were assumed to be in good condition with no physical damage or deterioration associated with corrosion.

4. An initial tension of 10% of the break strength on all the existing guy wires was assumed in all the structural analyses of guyed towers unless different values were provided by the client. **TES** cannot take responsibility for the deviations in the analysis results because of differences in the initial tension forces of the existing guy wires.

5. Secondary component or connection secondary components, welds and bolts are assumed to be able to carry their intended original design loads. **TES** cannot take responsibility for verification of the adequacy on the connections, bolts and welds present in the structure.

6. The analyses will be performed based on the codes as specified by the client or based on the best knowledge of the engineering staff of **TES**. In the absence of information to the contrary, all work will be performed in accordance with the latest relevant revision of ANSI/TIA-222. If wind speed or/and ice loads are different from the minimum values recommended by the EIA/TIA-222 standard or other codes, **TES** should be notified in writing and the applicable minimum values provided by the client.

7. The configuration of the existing mounts, antennas, coax and other appurtenances were supplied by the customer for the current structural analysis. **TES** has not visited the tower site to verify the adequacy of the information provided. If there is any discrepancy found in the report regarding the existing conditions, **TES** should be notified immediately to evaluate the effect of the discrepancy on the analysis results.

8. The client will assume responsibility for rework associated with the differences in initially provided information, including tower and foundation information, existing and/or proposed equipment and transmission lines.

9. If a feasibility analysis was performed, final acceptance of changed conditions shall be based upon a rigorous structural analysis.