6/24/2016

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

Notice of Exempt Modification
723 Farmington Avenue, New Britain, CT 06053
N 41.69849300
W -72.78582000

Dear Ms. Bachman:

T-Mobile currently maintains 9 antennas at the 88-foot level of the existing 119-foot monopole at 723 Farmington Avenue, New Britain, CT 06053. The tower is owned by SBA Properties, LLC. T-Mobile now intends to replace the 3 existing antennas with 3 new antennas, for a total of 9 antennas. These antennas would be installed at the 99-foot level of the tower. The Structural Analysis is passing with a structural usage of 97.8% and a foundation usage of 97%

This facility was approved by the City of New Britain however they have no record of the original zoning dockets number. Please see the attached email from 6/23/2016 provided by the City of New Britain Building Department Plan Review Technician, Scott P. Suydam, for confirmation.

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. g 16-50j-73, a copy of this letter is being sent to Erin Stewart, Mayor, for the City of New Britain, as well as the tower owner.

The planned modifications to the facility fall squarely within those activities explicitly provided fox its R.C.S:A. ~ 16-50j-72(b)(2}.

1. The proposed modifications will not result in an increase in the height of the existing structure.

2. The proposed modifications will not require the extension of the site boundary.

3. The proposed modifications will not increase noise levels at the facility by six decibels ox more, or to levels that exceed state and local criteria.

4. The operation of the replacement antennas will not increase radio frequency emissions at the facility to a level at or above the Federal Communications Commission safety standard,

5. The proposed modifications wall not cause a change or alteration in the physical ox environmental characteristics of the site.

6. The existing structure and its foundation can support the proposed loading

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

Sincerely,

Gregg Shappy
10 Industrial Ave.
Suite 3
Mahwah, NJ 07430
(845) 553-2045
gshappy@transcendwireless.com

Attachments
cc: Erin Stewart – City of New Britain Mayor
Michael Villa - SBA

EBI Consulting
environmental | engineering | due diligence

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

T-Mobile Existing Facility

Site ID: CTHA105A

HA105/SBA Stanley_FT
723 Farmington Avenue
New Britain, CT 06053

June 22, 2016

EBI Project Number: 6216002937

Site Compliance Summary	
Compliance Status:	COMPLIANT
Site total MPE% of FCC general public allowable limit:	21.64 %

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

EBI Consulting
environmental | engineering | due diligence

June 22, 2016

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

Emissions Analysis for Site: **CTHA105A – HA105/SBA Stanley_FT**

EBI Consulting was directed to analyze the proposed T-Mobile facility located at **723 Farmington Avenue, New Britain, 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 1900 MHz (PCS) and 2100 MHz (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 **723 Farmington Avenue, New Britain, 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 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 (PCS Band - 1900 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.

3) 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.

4) 2 LTE channels (PCS Band - 1900 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 60 Watts per Channel.

5) 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

6) 1 LTE channel (700 MHz Band) was considered for each sector of the proposed installation. This channel has a transmit power of 30 Watts.

7) Since the 2100 MHz UMTS radios are ground mounted there are additional cabling losses accounted for. For each ground mounted 2100 MHz UMTS RF path 2.08 dB of additional cable loss was factored into the calculations. This is based on manufacturers Specifications for 120 feet of 7/8" coax cable on each path.

8) 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.

9) For the following calculations the sample point was the top of a 6-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.

10) The antennas used in this modeling are the **Ericsson AIR32 B66Aa/B2A** & **Ericsson AIR21 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 AIR32 B66Aa/B2A** has a maximum gain of **15.9 dBd** at its main lobe at 1900 MHz and 2100 MHz. The **Ericsson AIR21 B2A/B4P** has a maximum gain of **15.9 dBd** at its main lobe at 1900 MHz and 2100 MHz. The **Commscope LNX-6515DS-VTM** has a maximum gain of **14.6 dBd** at its main lobe at 700 MHz. 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.

11) The antenna mounting height centerline of the proposed antennas is **88 feet** above ground level (AGL).

12) 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.

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

T-Mobile Site Inventory and Power Data

Sector:	A	Sector:	B	Sector:	C
Antenna #:	**1**	Antenna #:	**1**	Antenna #:	**1**
Make / Model:	Ericsson AIR32 B66Aa/B2A	Make / Model:	Ericsson AIR32 B66Aa/B2A	Make / Model:	Ericsson AIR32 B66Aa/B2A
Gain:	15.9 dBd	Gain:	15.9 dBd	Gain:	15.9 dBd
Height (AGL):	88	Height (AGL):	88	Height (AGL):	88
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(W):	240	Total TX Power(W):	240	Total TX Power(W):	240
ERP (W):	9,337.08	ERP (W):	9,337.08	ERP (W):	9,337.08
Antenna A1 MPE%	4.99	Antenna B1 MPE%	4.99	Antenna C1 MPE%	4.99
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):	88	Height (AGL):	88	Height (AGL):	88
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	6	Channel Count	6	Channel Count	6
Total TX Power(W):	180	Total TX Power(W):	180	Total TX Power(W):	180
ERP (W):	6,114.48	ERP (W):	6,114.48	ERP (W):	6,114.48
Antenna A2 MPE%	3.27	Antenna B2 MPE%	3.27	Antenna C2 MPE%	3.27
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):	88	Height (AGL):	88	Height (AGL):	88
Frequency Bands	700 MHz	Frequency Bands	700 MHz	Frequency Bands	700 MHz
Channel Count	1	Channel Count	1	Channel Count	1
Total TX Power(W):	30	Total TX Power(W):	30	Total TX Power(W):	30
ERP (W):	865.21	ERP (W):	865.21	ERP (W):	865.21
Antenna A3 MPE%	0.99	Antenna B3 MPE%	0.99	Antenna C3 MPE%	0.99

Site Composite MPE%	
Carrier	**MPE%**
T-Mobile (Per Sector Max)	**9.25 %**
Sprint	0.03 %
Clearwire	0.17 %
MetroPCS	2.35 %
AT&T	5.55 %
Verizon Wireless	4.29 %
Site Total MPE %:	**21.64 %**

T-Mobile Sector A Total:	9.25 %
T-Mobile Sector B Total:	9.25 %
T-Mobile Sector C Total:	9.25 %
Site Total:	21.64 %

T-Mobile _Max 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	2,334.27	88	24.96	AWS - 2100 MHz	1000	2.50%
T-Mobile 1900 MHz (PCS) LTE	2	2,334.27	88	24.96	PCS - 1900 MHz	1000	2.50%
T-Mobile 2100 MHz (AWS) UMTS	2	722.97	88	7.73	AWS - 2100 MHz	1000	0.77%
T-Mobile 1900 MHz (PCS) UMTS	2	1,167.14	88	12.48	PCS - 1950 MHz	1000	1.25%
T-Mobile 1900 MHz (PCS) GSM	2	1,167.14	88	12.48	PCS - 1950 MHz	1000	1.25%
T-Mobile 700 MHz LTE	1	865.21	88	4.63	700 MHz	467	0.99%
						Total*:	**9.25 %**

NOTE: Totals may vary by 0.01% due to summing of remainders

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 A:	9.25 %
Sector B:	9.25 %
Sector C:	9.25 %
T-Mobile Per Sector Maximum:	9.25 %
Site Total:	21.64 %
Site Compliance Status:	**COMPLIANT**

The anticipated composite MPE value for this site assuming all carriers present is **21.64%** 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.

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

Structural Analysis Report

Existing 119 ft SABRE Monopole

Customer Name: SBA Communications Corp

Customer Site Number: CT08558-B

Customer Site Name: New Britain 3, CT

Carrier Name: T-Mobile

Carrier Site ID / Name: CTHA105A

Site Location: 723 Farmington Ave

New Britain, Connecticut

Hartford County

Latitude: 41.698414

Longitude: -72.785944

Analysis Result:

Max Structural Usage: 97.8% [Pass]

Max Foundation Usage: 97% [Pass]

Report Prepared By : Jie Chen

6/14/16

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

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Introduction

The purpose of this report is to summarize the analysis results on the 119 ft SABRE Monopole to support the proposed antennas and transmission lines in addition to those currently installed. Any modification listed under Sources of Information was assumed completed and was included in this analysis.

Sources of Information

Tower Drawings	Original Tower drawings by Sabre, Job# 06-08008, dated 08/1/2005
Foundation Drawing	Original Foundation drawings by Sabre, Job# 06-08008, dated 08/1/2005
Geotechnical Report	Geotechnical Report prepared by DR. Clarence Welti, dated 07/7/2005
Modification Drawings	N/A

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:	80.0 mph (fastest mile)
Basic Wind Speed with Ice:	69 mph (fastest mile) with 1/2" radial ice concurrent
Operational Wind Speed:	50 mph + 0" Radial ice
Standard/Codes:	ANSI/TIA/EIA 222-F / 2005 Connecticut State Building Code

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	118.0	3	Kathrein 800 10735V01 Panels	(3) T-Arms	(12) 1 5/8" (1) 1 5/8" Hybrid*	Verizon
2		3	Antel BXA-171063-12BF Panels			
3		3	Antel BXA-171063-8BF Panels			
4		3	Antel BXA-70063-6BF Panels			
5		1	RFS DB-T1-6Z-8AB-0Z Dist. Box			
6		6	RFS FD9R6004/2C-3L Diplexers			
7		3	ALU RRH2x40-AWS RRU's			
8	108.0	3	ALU 1900MHz RRU's	(3) T-Arms	(4) 1-1/4" Hybrid (3) 1/2" (6) 5/16"	Clearwire/ Sprint
9		3	ALU 800 MHz Filters			
10		3	ALU 800 MHz RRU's			
11		3	Kathrein 840 10054 Panels			
12		4	RFS ACU-A20-N RET's			
13		2	RFS APXVSPP18-C-A20 Panels			
14		3	RFS APXVTM14-C-120 Panels			
15		2	DragonwaveHorizon ODU Radios			
16		1	Powerwave P40-16-XLPP-RR-A Panels			
17		3	ALU TD-RRH8x20-25 RRU's			
18		2	Andrew VHLP2.5 Dishes			
19	98.0	3	Cci Antennas OPA-65R-LCUU-H6 - Panel	(3) Commscope T-Arms	(12) 1 5/8" (3) 3/4" DC (1) 3/8" Fiber	AT&T
20		6	Powerwave 7770 - Panel			
21		9	Powerwave 21401 TMA			
22		6	Ericsson RRUS11			
23		3	Ericsson RRUS A2			
24		3	Ericsson RRU-12			
25		6	Powerwave 13519 Diplexer			
-	88.0	3	Ericsson AIR 21 B2A/B4P - Panel	(3) T-Arms	(12) 1 5/8" (1) 1 5/8" Fiber	T-Mobile
-		3	Commscope LNX-6515DS-A1M - Panel			
-		3	AIR 21 B4A/B2P - Panel			
-		3	Ericsson Double TMA 17/21 – TMA			
-		3	Ericcson RRUS11 B12 – RRU			
31	78.0	3	RFS APXV18-206517S-C Panels	(3) T-Arms	(6) 1-5/8"	Pocket

*Verizon (1)1-5/8" Hybrid cable of Verizon is installed outside the pole shaft.

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
26	88.0	3	Ericsson AIR 21 B2A/B4P - Panel	(3) T-Arms	(12) 1 5/8" (1) 1 5/8" Fiber (1) 1 5/8" Hybrid	T-Mobile
27		3	Commscope LNX-6515DS-A1M - Panel			
28		3	Ericsson AIR 32 - Panel			
29		3	Ericsson Double TMA 17/21 – TMA			
30		3	Ericcson RRUS11 B12 – RRU			

The proposed (1) 1 5/8" Hybrid can be installed inside or outside of the pole shafts. If installed outside, the lines shall be strapped tightly to the face 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:	**97.8%**	**87.4%**	**82.5%**
Pass/Fail	**Pass**	**Pass**	**Pass**

Foundations

	Moment (Kip-Ft)	Shear (Kips)
Original Design Reactions	2356.0	24.7
Analysis Reactions	2261.7	25.1

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):

Operational characteristics of the tower are found to be within the limits prescribed by ANSI/TIA/EIA 222-F for the installed antennas. Maximum twist/sway at the elevation of the proposed equipment is 1.6956 degrees under the operational wind speed as specified in the Analysis Criteria.

Conclusions

Based on the analysis results, the existing structure and its foundation were found to be adequate to safely support the existing and proposed equipment and meet the minimum requirements per the ANSI/TIA/EIA 222-F Standard under the design basic wind speed as specified in the Analysis Criteria.

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 97.8% at 0.0ft

Structure:	CT08558-B-SBA	**Code:**	EIA/TIA-222-F	6/14/2016
Site Name:	New Britain 3, CT	**Exposure:**	C	
Height:	119.00 (ft)	**Gh:**	1.69	
Base Elev:	0.000 (ft)			Page: 1

Tower Engineering Solutions

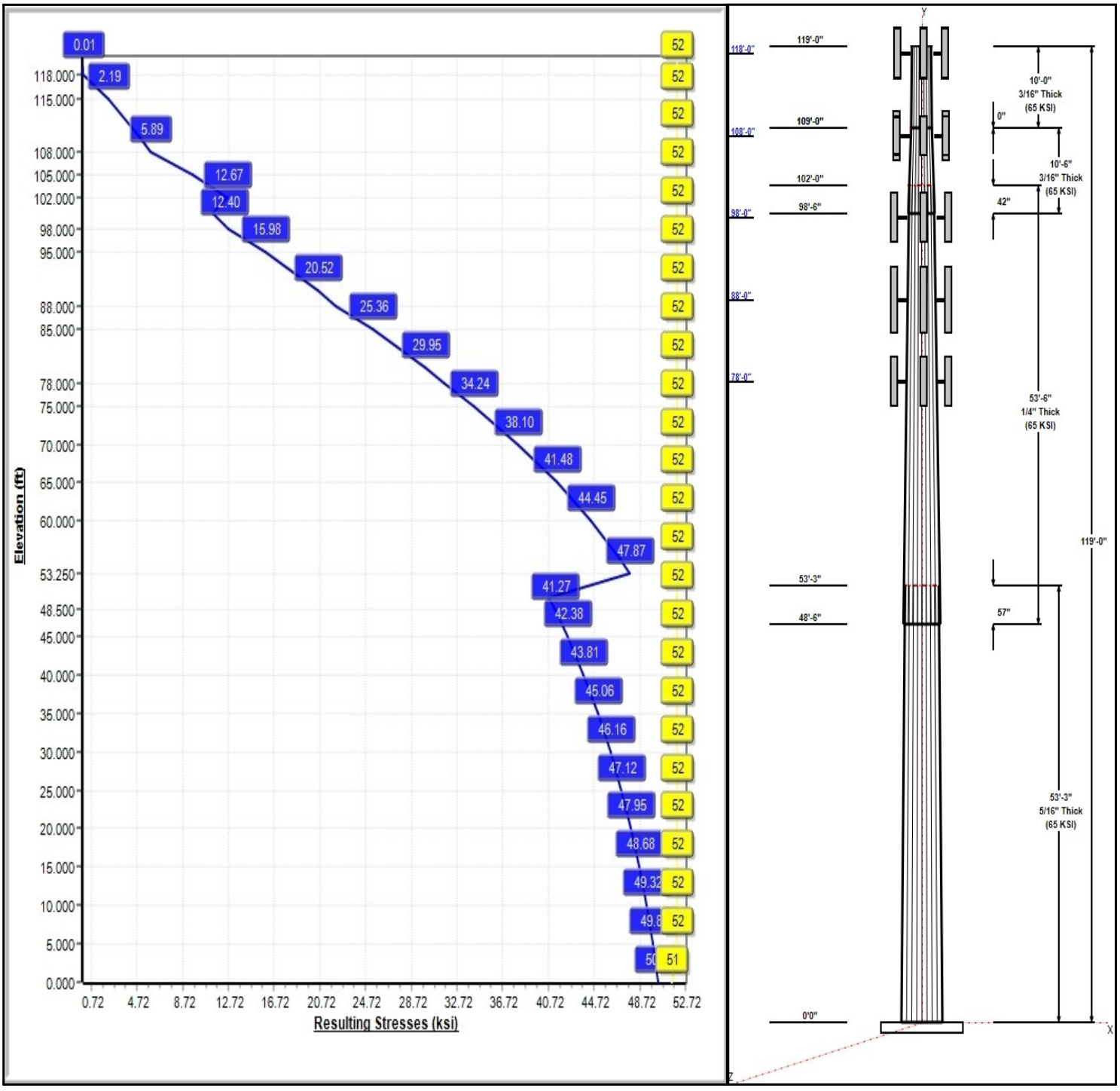
Dead Load Factor:	1.00
Wind Load Factor:	1.00

51 Alllowable Stress

50 Resulting Stress

Load Case : 80 mph Wind with 0 in Ice

Iterations: 23



Structure: CT08558-B-SBA

Type: Tapered
Site Name: New Britain 3, CT
Height: 119.00 (ft)
Base Elev: 0.00 (ft)

Base Shape: 18 Sided
Taper: 0.22164

6/14/2016

Tower Engineering Solutions

Shaft Properties

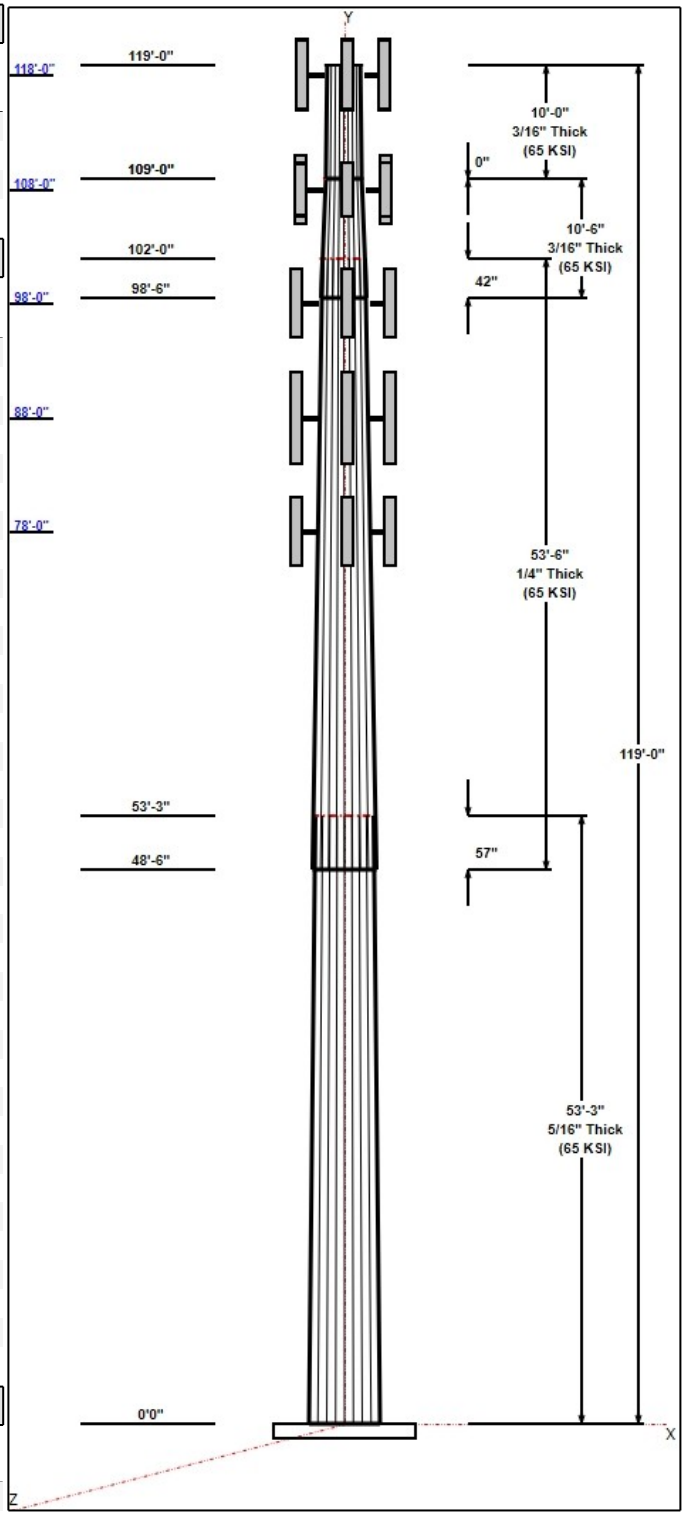
Seq	Length (ft)	Top (in)	Bottom (in)	Thick (in)	Joint Type	Taper	Grade (ksi)
1	53.25	35.70	47.50	0.313		0.22164	65
2	53.50	25.39	37.25	0.250	Slip	0.22164	65
3	10.50	24.22	26.54	0.188	Slip	0.22164	65
4	10.00	22.00	24.22	0.188	Butt	0.22164	65

Discrete Appurtenances

Attach Elev (ft)	Force Elev (ft)	Qty	Description	Carrier
118.00	118.00	3	800 10735	Verizon
118.00	118.00	3	BXA-171063-12BF	Verizon
118.00	118.00	3	BXA-171063-8BF	Verizon
118.00	118.00	3	BXA-70063-6BF	Verizon
118.00	118.00	1	DB-B1-6Z-8AB-0Z Dist.	Verizon
118.00	118.00	6	FD9R6004/2C-3L (3.1 lbs)	Verizon
118.00	118.00	3	RRH2x40-AWS	Verizon
118.00	118.00	3	T-Arms	Verizon
108.00	108.00	3	1900MHz RRH	Clearwire/Sprint
108.00	108.00	3	800 MHz Filters	Clearwire/Sprint
108.00	108.00	3	800 MHz RRH	Clearwire/Sprint
108.00	108.00	3	840 10054	Clearwire/Sprint
108.00	108.00	4	ACU-A20-N	Clearwire/Sprint
108.00	108.00	2	APXVSPP18-C	Clearwire/Sprint
108.00	108.00	3	APXVTM14-C-120	Clearwire/Sprint
108.00	108.00	2	Horizon	Clearwire/Sprint
108.00	108.00	1	P40-16-XLPP-RR-A	Clearwire/Sprint
108.00	108.00	3	T-Arms	Clearwire/Sprint
108.00	108.00	3	TD-RRH8x20-25	Clearwire/Sprint
108.00	108.00	2	VHLP2.5	Clearwire/Sprint
98.00	98.00	6	13519	AT&T
98.00	98.00	9	21401	AT&T
98.00	98.00	6	7770	AT&T
98.00	98.00	3	OPA-65R-LCUU-H6	AT&T
98.00	98.00	6	RRUS 11	AT&T
98.00	98.00	3	RRUS 12	AT&T
98.00	98.00	3	RRUS A2 Module	AT&T
98.00	98.00	3	T-Arms	AT&T
88.00	88.00	3	AIR 32	T-Mobile
88.00	88.00	3	AIR B2A B4P	T-Mobile
88.00	88.00	3	Double TMA 17/21	T-Mobile
88.00	88.00	3	LNX-6515DS-A1M	T-Mobile
88.00	88.00	3	RRUS11 B12	T-Mobile
88.00	88.00	3	T-Arms	T-Mobile
78.00	78.00	3	APXV18-206517S-C	Pocket
78.00	78.00	3	T-Arms	Pocket

Linear Appurtenances

Elev From (ft)	Elev To (ft)	Placement	Description	Carrier
0.00	118.00	Inside	1 5/8" Coax	Verizon
0.00	118.00	Outside	1 5/8" Hybrid	Verizon
0.00	108.00	Inside	1-1/4" Hybrid	Clearwire/Sprint
0.00	108.00	Inside	1/2" Coax	Clearwire/Sprint
0.00	108.00	Inside	5/16" Coax	Clearwire/Sprint
0.00	98.00	Inside	1 5/8" Coax	AT&T



0.00	98.00	Inside	3/4" DC	AT&T
0.00	98.00	Inside	3/8" Fiber	AT&T
0.00	88.00	Inside	1 5/8" Coax	T-Mobile
0.00	88.00	Inside	1 5/8" Fiber	T-Mobile
0.00	88.00	Outside	1 5/8" Hybrid	T-Mobile
0.00	78.00	Inside	1 5/8" Coax	Pocket

Anchor Bolts

Qty	Specifications	Grade (ksi)	Arrangement
12	2.25" 18J	75.0	Cluster

Base Plate

Thickness (in)	Specifications (in)	Grade (ksi)	Geometry
2.7500	52.0	60.0	Clipped

Reactions

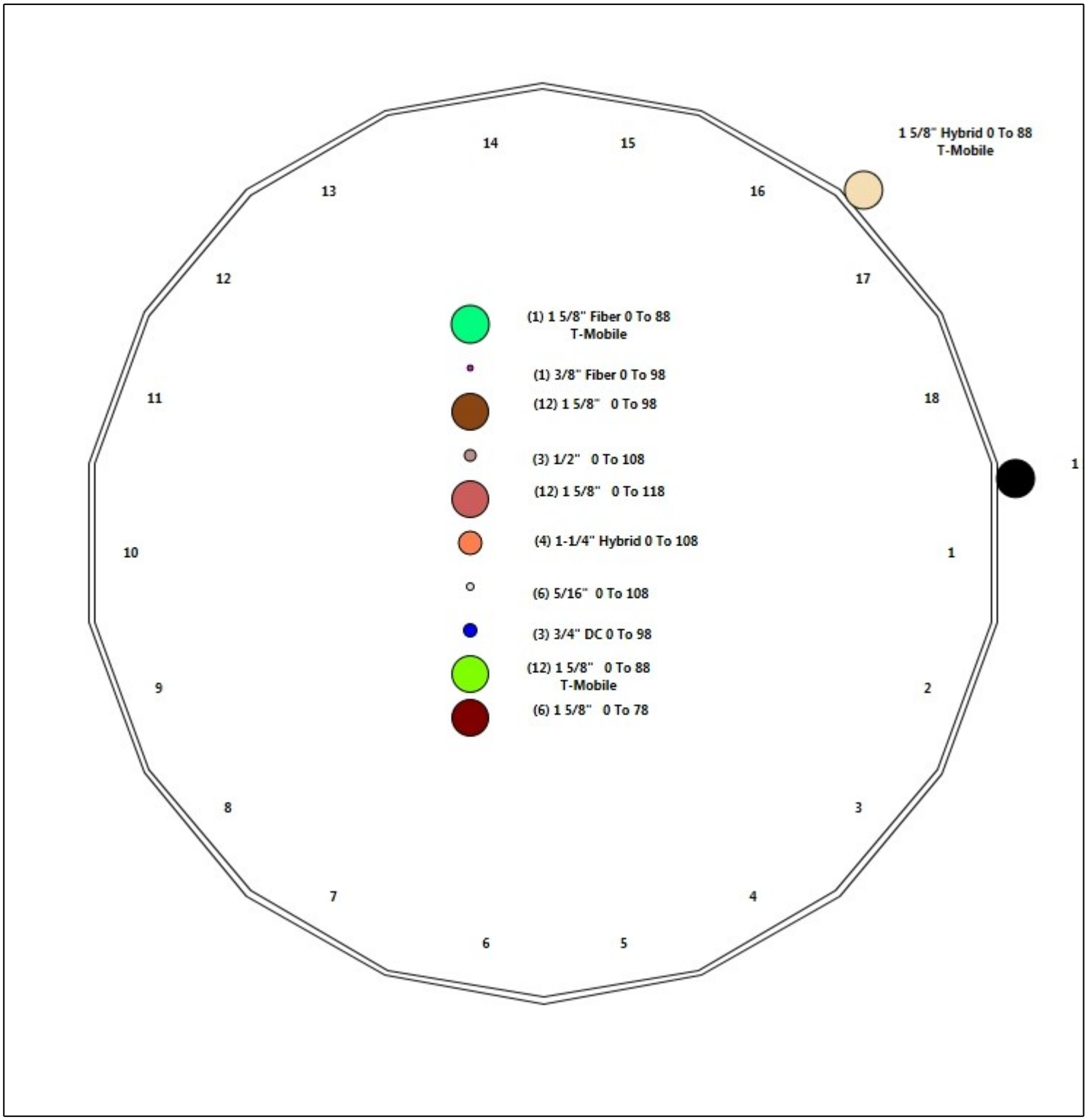
Load Case	Moment	Shear	Axial
80 mph Wind with 0" Ice	2261.7	25.1	28.5
69.28 mph Wind with 0.5" Ice	1853.6	19.9	34.0
50 mph Wind with 0" Ice	884.4	9.8	28.5

Structure: CT08558-B-SBA - Coax Line Placement

Type: Monopole
Site Name: New Britain 3, CT
Height: 119.00 (ft)

6/14/2016

Tower Engineering Solutions



Shaft Properties

Structure:	CT08558-B-SBA	**Code:**	EIA/TIA-222-F	6/14/2016	
Site Name:	New Britain 3, CT	**Exposure:**	C		
Height:	119.00 (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	53.250	0.3125	65		0.00	7,420
2	18	53.500	0.2500	65	Slip	57.00	4,488
3	18	10.500	0.1875	65	Slip	42.00	536
4	18	10.000	0.1875	65	Flange	0.00	464
					Total Shaft Weight:		**12,908**

	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	47.50	0.00	46.80	13166.65	25.39	152.00	35.70	53.25	35.10	5552.15	18.73	114.23	0.221639
2	37.25	48.50	29.36	5078.18	24.86	149.00	25.39	102.0	19.95	1593.41	16.50	101.57	0.221639
3	26.54	98.50	15.68	1376.54	23.55	141.57	24.22	109.0	14.30	1043.15	21.36	129.15	0.221639
4	24.22	109.0	14.30	1043.15	21.36	129.15	22.00	119.0	12.98	780.30	19.28	117.33	0.221639

Loading Summary

Structure:	CT08558-B-SBA	**Code:**	EIA/TIA-222-F	6/14/2016	
Site Name:	New Britain 3, CT	**Exposure:**	C		
Height:	119.00 (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	118.00	800 10735	3	28.70	8.80	0.66	71.80	9.670	0.66	0.00	0.00
2	118.00	BXA-171063-12BF	3	15.00	4.73	0.84	42.20	5.400	0.84	0.00	0.00
3	118.00	BXA-171063-8BF	3	10.50	2.94	0.84	29.30	3.410	0.84	0.00	0.00
4	118.00	BXA-70063-6BF	3	17.00	7.73	0.70	57.60	8.540	0.70	0.00	0.00
5	118.00	DB-B1-6Z-8AB-0Z Dist. Box	1	21.40	4.78	0.91	51.10	5.040	0.91	0.00	0.00
6	118.00	FD9R6004/2C-3L (3.1 lbs)	6	3.10	0.36	0.75	5.40	0.500	0.75	0.00	0.00
7	118.00	RRH2x40-AWS	3	44.00	2.52	0.82	61.40	2.870	0.82	0.00	0.00
8	118.00	T-Arms	3	400.00	10.00	0.75	480.00	12.500	0.75	0.00	0.00
9	108.00	1900MHz RRH	3	44.00	3.80	0.88	75.20	4.200	0.88	0.00	0.00
10	108.00	800 MHz Filters	3	61.80	2.91	0.93	87.80	3.260	0.93	0.00	0.00
11	108.00	800 MHz RRH	3	53.00	2.49	0.92	74.10	2.820	0.92	0.00	0.00
12	108.00	840 10054	3	35.00	5.18	0.61	59.10	5.720	0.61	0.00	0.00
13	108.00	ACU-A20-N	4	1.00	0.14	0.79	2.30	0.220	0.79	0.00	0.00
14	108.00	APXVSPP18-C	2	57.00	8.26	0.83	106.50	9.080	0.83	0.00	0.00
15	108.00	APXVTM14-C-120	3	56.00	6.90	0.79	91.90	7.290	0.79	0.00	0.00
16	108.00	Horizon	2	10.60	0.43	1.00	17.00	0.580	1.00	0.00	0.00
17	108.00	P40-16-XLPP-RR-A	1	53.00	10.50	0.66	0.00	11.230	0.66	0.00	0.00
18	108.00	T-Arms	3	400.00	10.00	0.75	480.00	12.500	0.75	0.00	0.00
19	108.00	TD-RRH8x20-25	3	70.00	4.72	0.69	92.00	4.970	0.69	0.00	0.00
20	108.00	VHLP2.5	2	47.60	8.43	1.00	97.00	8.920	1.00	0.00	0.00
21	98.00	13519	6	5.30	0.34	0.67	8.00	0.470	0.67	0.00	0.00
22	98.00	21401	9	14.10	1.29	0.67	21.20	1.530	0.67	0.00	0.00
23	98.00	7770	6	35.00	5.88	0.73	0.00	6.530	0.73	0.00	0.00
24	98.00	OPA-65R-LCUU-H6	3	80.00	10.36	0.79	134.00	10.850	0.79	0.00	0.00
25	98.00	RRUS 11	6	50.70	2.94	0.76	66.00	3.140	0.76	0.00	0.00
26	98.00	RRUS 12	3	58.00	3.67	0.70	75.70	3.890	0.70	0.00	0.00
27	98.00	RRUS A2 Module	3	21.20	1.86	0.62	31.40	2.150	0.62	0.00	0.00
28	98.00	T-Arms	3	400.00	10.00	0.75	480.00	12.500	0.75	0.00	0.00
29	88.00	AIR 32	3	132.20	7.10	0.87	173.30	7.500	0.87	0.00	0.00
30	88.00	AIR B2A B4P	3	91.50	6.58	0.86	129.20	6.970	0.86	0.00	0.00
31	88.00	Double TMA 17/21	3	11.00	0.41	0.69	14.50	0.620	0.69	0.00	0.00
32	88.00	LNX-6515DS-A1M	3	49.80	11.41	0.80	115.60	12.340	0.80	0.00	0.00
33	88.00	RRUS11 B12	3	50.00	3.21	0.67	80.00	3.570	0.67	0.00	0.00
34	88.00	T-Arms	3	400.00	10.00	0.75	480.00	12.500	0.75	0.00	0.00
35	78.00	APXV18-206517S-C	3	26.40	5.16	0.74	53.00	5.840	0.74	0.00	0.00
36	78.00	T-Arms	3	400.00	10.00	0.75	480.00	12.500	0.75	0.00	0.00
		Totals:	**120**	**9,865.60**			**13,015.80**				

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	118.00	(12) 1 5/8" Coax	12.48	0.00	0.00	0.00	Inside
0.00	118.00	(1) 1 5/8" Hybrid	1.10	0.16	0.00	0.00	Outside
0.00	108.00	(4) 1-1/4" Hybrid	3.82	0.00	0.00	0.00	Inside

Discrete Appurtenances

No.	Elev (ft)	Description	Qty	No Ice Weight (lb)	No Ice CaAa (sf)	No Ice CaAa Factor	Ice Weight (lb)	Ice CaAa (sf)	Ice CaAa Factor	Hor. Ecc. (ft)	Vert Ecc (ft)
0.00	108.00	(3) 1/2" Coax		0.96	0.00		0.00	0.00	Inside		
0.00	108.00	(6) 5/16" Coax		0.08	0.00		0.00	0.00	Inside		
0.00	98.00	(12) 1 5/8" Coax		12.48	0.00		0.00	0.00	Inside		
0.00	98.00	(3) 3/4" DC		1.20	0.00		0.00	0.00	Inside		
0.00	98.00	(1) 3/8" Fiber		0.06	0.00		0.00	0.00	Inside		
0.00	88.00	(12) 1 5/8" Coax		12.48	0.00		0.00	0.00	Inside		
0.00	88.00	(1) 1 5/8" Fiber		1.10	0.00		0.00	0.00	Inside		
0.00	88.00	(1) 1 5/8" Hybrid		1.10	0.16		0.00	0.00	Outside		
0.00	78.00	(6) 1 5/8" Coax		12.48	0.00		0.00	0.00	Inside		
		Totals:		**5,738.69**			**0.00**				

Shaft Section Properties

Structure: CT08558-B-SBA
Site Name: New Britain 3, CT
Height: 119.00 (ft)
Base Elev: 0.000 (ft)

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

6/14/2016

Tower Engineering Solutions

Increment Length: 5 (ft)

Elev (ft)	Description	Thick (in)	Dia (in)	Area (in^2)	Ix (in^4)	W/t Ratio	D/t Ratio	Fy (ksi)	Fb (ksi)	Weight (lb)
0.00		0.3125	47.500	46.802	13166.7	25.39	152.00	65	51	0.0
5.00		0.3125	46.392	45.703	12260.6	24.77	148.45	65	52	786.9
10.00		0.3125	45.284	44.604	11397.1	24.14	144.91	65	52	768.2
15.00		0.3125	44.175	43.505	10575.2	23.52	141.36	65	52	749.5
20.00		0.3125	43.067	42.406	9793.7	22.89	137.82	65	52	730.8
25.00		0.3125	41.959	41.307	9051.7	22.26	134.27	65	52	712.1
30.00		0.3125	40.851	40.208	8348.2	21.64	130.72	65	52	693.4
35.00		0.3125	39.743	39.108	7682.1	21.01	127.18	65	52	674.7
40.00		0.3125	38.634	38.009	7052.4	20.39	123.63	65	52	656.0
45.00		0.3125	37.526	36.910	6458.1	19.76	120.08	65	52	637.3
48.50	Bot - Section 2	0.3125	36.751	36.141	6062.6	19.33	117.60	65	52	435.0
50.00		0.3125	36.418	35.811	5898.2	19.14	116.54	65	52	332.8
53.25	Top - Section 1	0.2500	36.198	28.524	4656.9	24.12	144.79	65	52	710.7
55.00		0.2500	35.810	28.216	4507.8	23.85	143.24	65	52	168.9
60.00		0.2500	34.702	27.336	4099.4	23.06	138.81	65	52	472.6
65.00		0.2500	33.593	26.457	3716.4	22.28	134.37	65	52	457.6
70.00		0.2500	32.485	25.578	3358.0	21.50	129.94	65	52	442.7
75.00		0.2500	31.377	24.698	3023.4	20.72	125.51	65	52	427.7
78.00		0.2500	30.712	24.171	2833.8	20.25	122.85	65	52	249.4
80.00		0.2500	30.269	23.819	2711.9	19.94	121.08	65	52	163.3
85.00		0.2500	29.161	22.940	2422.5	19.16	116.64	65	52	397.8
88.00		0.2500	28.496	22.412	2259.2	18.69	113.98	65	52	231.5
90.00		0.2500	28.053	22.061	2154.5	18.38	112.21	65	52	151.3
95.00		0.2500	26.944	21.181	1907.0	17.59	107.78	65	52	367.9
98.00		0.2500	26.279	20.654	1768.0	17.12	105.12	65	52	213.5
98.50	Bot - Section 3	0.2500	26.169	20.566	1745.5	17.05	104.67	65	52	35.1
100.00		0.2500	25.836	20.302	1679.2	16.81	103.34	65	52	183.8
102.00	Top - Section 2	0.1875	25.768	15.223	1258.5	22.82	137.43	65	52	241.5
105.00		0.1875	25.103	14.827	1162.9	22.20	133.88	65	52	153.4
108.00		0.1875	24.438	14.432	1072.3	21.57	130.34	65	52	149.3
109.00	Top - Section 3	0.0000	0.000	0.000	0.0	NAN	NAN	0	0	48.9
109.00	Bot - Section 4	0.1875	24.216	14.300	1043.1	21.36	129.15	65	52	
110.00		0.1875	23.995	14.168	1014.5	21.15	127.97	65	52	48.4
115.00		0.1875	22.887	13.508	879.4	20.11	122.06	65	52	235.4
118.00		0.1875	22.222	13.113	804.3	19.49	118.52	65	52	135.9
119.00		0.1875	22.000	12.981	780.3	19.28	117.33	65	52	44.4
										12908.1

Wind Loading - Shaft

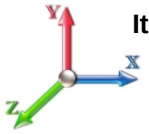
Structure: CT08558-B-SBA
Site Name: New Britain 3, CT
Height: 119.00 (ft)
Base Elev: 0.000 (ft)

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

6/14/2016

Tower Engineering Solutions

Load Case: 80 mph Wind with 0" Ice
Dead Load Factor 1.00
Wind Load Factor 1.00



Iterations: 23

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	16.384	27.69	316.67	0.650	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		0.00	1.00	16.384	27.69	309.28	0.650	0.000	5.00	19.561	12.71	352.1	0.0	786.9
10.00		0.00	1.00	16.384	27.69	301.89	0.650	0.000	5.00	19.099	12.41	343.7	0.0	768.2
15.00		0.00	1.00	16.384	27.69	294.50	0.650	0.000	5.00	18.637	12.11	335.4	0.0	749.5
20.00		0.00	1.00	16.384	27.69	287.11	0.650	0.000	5.00	18.176	11.81	327.1	0.0	730.8
25.00		0.00	1.00	16.384	27.69	279.73	0.650	0.000	5.00	17.714	11.51	318.8	0.0	712.1
30.00		0.00	1.00	16.384	27.69	272.34	0.650	0.000	5.00	17.252	11.21	310.5	0.0	693.4
35.00		0.00	1.02	16.662	28.16	267.19	0.650	0.000	5.00	16.790	10.91	307.3	0.0	674.7
40.00		0.00	1.06	17.310	29.25	264.74	0.650	0.000	5.00	16.329	10.61	310.5	0.0	656.0
45.00		0.00	1.09	17.902	30.25	261.51	0.650	0.000	5.00	15.867	10.31	312.0	0.0	637.3
48.50	Bot - Section 2	0.00	1.12	18.289	30.91	258.86	0.650	0.000	3.50	10.832	7.04	217.6	0.0	435.0
50.00		0.00	1.13	18.449	31.18	257.64	0.650	0.000	1.50	4.636	3.01	93.9	0.0	332.8
53.25	Top - Section 1	0.00	1.15	18.784	31.75	254.82	0.650	0.000	3.25	9.901	6.44	204.3	0.0	710.7
55.00		0.00	1.16	18.959	32.04	256.81	0.650	0.000	1.75	5.251	3.41	109.3	0.0	168.9
60.00		0.00	1.19	19.436	32.85	251.97	0.650	0.000	5.00	14.690	9.55	313.6	0.0	472.6
65.00		0.00	1.21	19.885	33.61	246.73	0.650	0.000	5.00	14.228	9.25	310.8	0.0	457.6
70.00		0.00	1.24	20.311	34.33	241.13	0.650	0.000	5.00	13.766	8.95	307.2	0.0	442.7
75.00		0.00	1.26	20.715	35.01	235.21	0.650	0.000	5.00	13.305	8.65	302.8	0.0	427.7
78.00	Appurtenance(s)	0.00	1.28	20.949	35.40	231.52	0.650	0.000	3.00	7.761	5.04	178.6	0.0	249.4
80.00		0.00	1.29	21.101	35.66	229.00	0.650	0.000	2.00	5.082	3.30	117.8	0.0	163.3
85.00		0.00	1.31	21.469	36.28	222.54	0.650	0.000	5.00	12.381	8.05	292.0	0.0	397.8
88.00	Appurtenance(s)	0.00	1.32	21.683	36.64	218.55	0.650	0.000	3.00	7.207	4.68	171.7	0.0	231.5
90.00		0.00	1.33	21.823	36.88	215.84	0.650	0.000	2.00	4.712	3.06	113.0	0.0	151.3
95.00		0.00	1.35	22.163	37.45	208.92	0.650	0.000	5.00	11.458	7.45	278.9	0.0	367.9
98.00	Appurtenance(s)	0.00	1.36	22.360	37.79	204.67	0.650	0.000	3.00	6.653	4.32	163.4	0.0	213.5
98.50	Bot - Section 3	0.00	1.37	22.393	37.84	203.96	0.650	0.000	0.50	1.093	0.71	26.9	0.0	35.1
100.00		0.00	1.37	22.490	38.01	201.80	0.650	0.000	1.50	3.297	2.14	81.5	0.0	183.8
102.00	Top - Section 2	0.00	1.38	22.617	38.22	198.90	0.650	0.000	2.00	4.332	2.82	107.6	0.0	241.5
105.00		0.00	1.39	22.806	38.54	197.44	0.650	0.000	3.00	6.359	4.13	159.3	0.0	153.4
108.00	Appurtenance(s)	0.00	1.40	22.990	38.85	192.99	0.650	0.000	3.00	6.193	4.03	156.4	0.0	149.3
109.00	Top - Section 3	0.00	1.41	23.051	38.96	191.49	0.650	0.000	1.00	2.027	1.32	51.3	0.0	48.9
110.00		0.00	1.41	23.111	39.06	189.99	0.650	0.000	1.00	2.009	1.31	51.0	0.0	48.4
115.00		0.00	1.43	23.406	39.56	182.37	0.650	0.000	5.00	9.767	6.35	251.1	0.0	235.4
118.00	Appurtenance(s)	0.00	1.44	23.579	39.85	177.72	0.650	0.000	3.00	5.639	3.67	146.0	0.0	135.9
119.00		0.00	1.44	23.636	39.94	176.16	0.650	0.000	1.00	1.843	1.20	47.8	0.0	44.4
								Totals:	**119.00**			**7,171.4**		**12,908.1**

Discrete Appurtenance Forces

Structure:	CT08558-B-SB	**Code:**	EIA/TIA-222-F	6/14/2016	
Site Name:	New Britain 3, CT	**Exposure:**	C		
Height:	119.00 (ft)	**Gh:**	1.69		
Base Elev:	0.000 (ft)	**Struct Class:**	II	Page: 10	

Tower Engineering Solutions

Load Case: 80 mph Wind with 0" Ice

Dead Load Factor 1.00

Wind Load Factor 1.00

Iterations: 23

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	118.00	RRH2x40-AWS	3	23.579	39.848	0.82	6.20	132.00	0.000	0.000	247.03	0.00	0.00
2	118.00	FD9R6004/2C-3L (3.1 lbs)	6	23.579	39.848	0.75	1.62	18.60	0.000	0.000	64.55	0.00	0.00
3	118.00	DB-B1-6Z-8AB-0Z Dist. Box	1	23.579	39.848	0.91	4.35	21.40	0.000	0.000	173.33	0.00	0.00
4	118.00	BXA-70063-6BF	3	23.579	39.848	0.70	16.23	51.00	0.000	0.000	646.86	0.00	0.00
5	118.00	BXA-171063-8BF	3	23.579	39.848	0.84	7.41	31.50	0.000	0.000	295.23	0.00	0.00
6	118.00	BXA-171063-12BF	3	23.579	39.848	0.84	11.92	45.00	0.000	0.000	474.98	0.00	0.00
7	118.00	800 10735	3	23.579	39.848	0.66	17.42	86.10	0.000	0.000	694.32	0.00	0.00
8	118.00	T-Arms	3	23.579	39.848	0.75	22.50	1200.00	0.000	0.000	896.59	0.00	0.00
9	108.00	ACU-A20-N	4	22.990	38.853	0.79	0.44	4.00	0.000	0.000	17.19	0.00	0.00
10	108.00	APXVSPP18-C	2	22.990	38.853	0.83	13.71	114.00	0.000	0.000	532.74	0.00	0.00
11	108.00	APXVTM14-C-120	3	22.990	38.853	0.79	16.35	168.00	0.000	0.000	635.36	0.00	0.00
12	108.00	840 10054	3	22.990	38.853	0.61	9.48	105.00	0.000	0.000	368.30	0.00	0.00
13	108.00	800 MHz RRH	3	22.990	38.853	0.92	6.87	159.00	0.000	0.000	267.01	0.00	0.00
14	108.00	VHLP2.5	2	22.990	38.853	1.00	16.86	95.20	0.000	0.000	655.06	0.00	0.00
15	108.00	Horizon	2	22.990	38.853	1.00	0.86	21.20	0.000	0.000	33.41	0.00	0.00
16	108.00	P40-16-XLPP-RR-A	1	22.990	38.853	0.66	6.93	53.00	0.000	0.000	269.25	0.00	0.00
17	108.00	T-Arms	3	22.990	38.853	0.75	22.50	1200.00	0.000	0.000	874.19	0.00	0.00
18	108.00	TD-RRH8x20-25	3	22.990	38.853	0.69	9.77	210.00	0.000	0.000	379.61	0.00	0.00
19	108.00	800 MHz Filters	3	22.990	38.853	0.93	8.12	185.40	0.000	0.000	315.44	0.00	0.00
20	108.00	1900MHz RRH	3	22.990	38.853	0.88	10.03	132.00	0.000	0.000	389.77	0.00	0.00
21	98.00	OPA-65R-LCUU-H6	3	22.360	37.789	0.79	24.55	240.00	0.000	0.000	927.84	0.00	0.00
22	98.00	21401	9	22.360	37.789	0.67	7.78	126.90	0.000	0.000	293.95	0.00	0.00
23	98.00	7770	6	22.360	37.789	0.73	25.75	210.00	0.000	0.000	973.24	0.00	0.00
24	98.00	13519	6	22.360	37.789	0.67	1.37	31.80	0.000	0.000	51.65	0.00	0.00
25	98.00	RRUS 12	3	22.360	37.789	0.70	7.71	174.00	0.000	0.000	291.24	0.00	0.00
26	98.00	RRUS A2 Module	3	22.360	37.789	0.62	3.46	63.60	0.000	0.000	130.74	0.00	0.00
27	98.00	T-Arms	3	22.360	37.789	0.75	22.50	1200.00	0.000	0.000	850.26	0.00	0.00
28	98.00	RRUS 11	6	22.360	37.789	0.76	13.41	304.20	0.000	0.000	506.62	0.00	0.00
29	88.00	Double TMA 17/21	3	21.683	36.645	0.69	0.85	33.00	0.000	0.000	31.10	0.00	0.00
30	88.00	AIR 32	3	21.683	36.645	0.87	18.53	396.60	0.000	0.000	679.06	0.00	0.00
31	88.00	AIR B2A B4P	3	21.683	36.645	0.86	16.98	274.50	0.000	0.000	622.10	0.00	0.00
32	88.00	RRUS11 B12	3	21.683	36.645	0.67	6.45	150.00	0.000	0.000	236.44	0.00	0.00
33	88.00	LNX-6515DS-A1M	3	21.683	36.645	0.80	27.38	149.40	0.000	0.000	1003.48	0.00	0.00
34	88.00	T-Arms	3	21.683	36.645	0.75	22.50	1200.00	0.000	0.000	824.51	0.00	0.00
35	78.00	T-Arms	3	20.949	35.403	0.75	22.50	1200.00	0.000	0.000	796.57	0.00	0.00
36	78.00	APXV18-206517S-C	3	20.949	35.403	0.74	11.46	79.20	0.000	0.000	405.55	0.00	0.00
						Totals:		**9,865.60**			**16,854.58**		

Total Applied Force Summary

Structure:	CT08558-B-SB	**Code:**	EIA/TIA-222-F	6/14/2016	
Site Name:	New Britain 3, CT	**Exposure:**	C		
Height:	119.00 (ft)	**Gh:**	1.69		
Base Elev:	0.000 (ft)	**Struct Class:**	II	Page: 11	

Tower Engineering Solutions

Load Case: 80 mph Wind with 0" Ice

Dead Load Factor 1.00

Wind Load Factor 1.00

Iterations: 23

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		396.35	1083.62	0.00	0.00
10.00		388.04	1064.92	0.00	0.00
15.00		379.73	1046.22	0.00	0.00
20.00		371.42	1027.52	0.00	0.00
25.00		363.11	1008.82	0.00	0.00
30.00		354.80	990.12	0.00	0.00
35.00		352.37	971.42	0.00	0.00
40.00		357.29	952.72	0.00	0.00
45.00		360.44	934.01	0.00	0.00
48.50		252.24	642.68	0.00	0.00
50.00		108.91	421.81	0.00	0.00
53.25		237.32	903.53	0.00	0.00
55.00		127.29	272.78	0.00	0.00
60.00		366.19	769.26	0.00	0.00
65.00		364.57	754.30	0.00	0.00
70.00		362.07	739.34	0.00	0.00
75.00		358.77	724.38	0.00	0.00
78.00	(6) appurtenances	1414.72	1706.65	0.00	0.00
80.00		140.61	257.01	0.00	0.00
85.00		350.05	632.06	0.00	0.00
88.00	(18) appurtenances	3603.53	2575.55	0.00	0.00
90.00		124.77	215.68	0.00	0.00
95.00		308.91	528.73	0.00	0.00
98.00	(39) appurtenances	4207.09	2660.56	0.00	0.00
98.50		29.91	44.28	0.00	0.00
100.00		90.58	211.50	0.00	0.00
102.00		119.85	278.34	0.00	0.00
105.00		177.80	208.69	0.00	0.00
108.00	(32) appurtenances	4912.38	2651.45	0.00	0.00
109.00		57.57	62.46	0.00	0.00
110.00		57.25	62.01	0.00	0.00
115.00		282.77	303.34	0.00	0.00
118.00	(25) appurtenances	3658.07	1762.22	0.00	0.00
119.00		47.84	44.39	0.00	0.00
	Totals:	**25,084.61**	**28,512.36**	**0.00**	**0.00**

Resulting Forces and Deflections

Structure:	CT08558-B-SB	**Code:**	EIA/TIA-222-F	6/14/2016	
Site Name:	New Britain 3, CT	**Exposure:**	C		
Height:	119.00 (ft)	**Gh:**	1.69		
Base Elev:	0.000 (ft)	**Struct Class:**	II	Page: 12	

Tower Engineering Solutions

Load Case: 80 mph Wind with 0" Ice

Dead Load Factor 1.00

Wind Load Factor 1.00

Iterations: 23

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	-25.144	-28.459	0.000	0.000	0.000	-2261.655	0.000	0.000	0.000	0.000	0.000
5.00	-24.860	-27.273	0.000	0.000	0.000	-2135.937	-0.128	0.000	0.128	-0.238	0.000
10.00	-24.575	-26.106	0.000	0.000	0.000	-2011.642	-0.506	0.000	0.506	-0.478	0.000
15.00	-24.291	-24.961	0.000	0.000	0.000	-1888.767	-1.138	0.000	1.138	-0.722	0.000
20.00	-24.008	-23.836	0.000	0.000	0.000	-1767.312	-2.026	0.000	2.026	-0.967	0.000
25.00	-23.725	-22.731	0.000	0.000	0.000	-1647.275	-3.173	0.000	3.173	-1.215	0.000
30.00	-23.441	-21.647	0.000	0.000	0.000	-1528.655	-4.580	0.000	4.580	-1.465	0.000
35.00	-23.152	-20.585	0.000	0.000	0.000	-1411.450	-6.249	0.000	6.249	-1.716	0.000
40.00	-22.850	-19.545	0.000	0.000	0.000	-1295.690	-8.181	0.000	8.181	-1.966	0.000
45.00	-22.525	-18.541	0.000	0.000	0.000	-1181.441	-10.375	0.000	10.375	-2.216	0.000
48.50	-22.286	-17.860	0.000	0.000	0.000	-1102.606	-12.066	0.000	12.066	-2.392	0.000
50.00	-22.196	-17.397	0.000	0.000	0.000	-1069.177	-12.830	0.000	12.830	-2.469	0.000
53.25	-21.954	-16.458	0.000	0.000	0.000	-997.042	-14.567	0.000	14.567	-2.630	0.000
55.00	-21.868	-16.119	0.000	0.000	0.000	-958.623	-15.548	0.000	15.548	-2.718	0.000
60.00	-21.539	-15.263	0.000	0.000	0.000	-849.287	-18.548	0.000	18.548	-3.003	0.000
65.00	-21.202	-14.430	0.000	0.000	0.000	-741.595	-21.843	0.000	21.843	-3.279	0.000
70.00	-20.857	-13.621	0.000	0.000	0.000	-635.590	-25.420	0.000	25.420	-3.543	0.000
75.00	-20.496	-12.853	0.000	0.000	0.000	-531.306	-29.264	0.000	29.264	-3.790	0.000
78.00	-18.992	-11.207	0.000	0.000	0.000	-469.820	-31.691	0.000	31.691	-3.931	0.000
80.00	-18.862	-10.911	0.000	0.000	0.000	-431.837	-33.357	0.000	33.357	-4.022	0.000
85.00	-18.495	-10.257	0.000	0.000	0.000	-337.527	-37.678	0.000	37.678	-4.224	0.000
88.00	-14.721	-7.935	0.000	0.000	0.000	-282.042	-40.367	0.000	40.367	-4.333	0.000
90.00	-14.595	-7.702	0.000	0.000	0.000	-252.600	-42.195	0.000	42.195	-4.400	0.000
95.00	-14.259	-7.173	0.000	0.000	0.000	-179.624	-46.880	0.000	46.880	-4.543	0.000
98.00	-9.856	-4.850	0.000	0.000	0.000	-136.848	-49.756	0.000	49.756	-4.614	0.000
98.50	-9.825	-4.805	0.000	0.000	0.000	-131.920	-50.240	0.000	50.240	-4.625	0.000
100.00	-9.720	-4.596	0.000	0.000	0.000	-117.183	-51.696	0.000	51.696	-4.655	0.000
102.00	-9.581	-4.321	0.000	0.000	0.000	-97.743	-53.653	0.000	53.653	-4.691	0.000
105.00	-9.390	-4.121	0.000	0.000	0.000	-69.000	-56.613	0.000	56.613	-4.736	0.000
108.00	-4.275	-1.885	0.000	0.000	0.000	-40.831	-59.601	0.000	59.601	-4.776	0.000
109.00	-4.213	-1.826	0.000	0.000	0.000	-36.556	-60.601	0.000	60.601	-4.787	0.000
110.00	-4.151	-1.768	0.000	0.000	0.000	-32.343	-61.604	0.000	61.604	-4.796	0.000
115.00	-3.845	-1.488	0.000	0.000	0.000	-11.586	-66.640	0.000	66.640	-4.827	0.000
118.00	-0.051	-0.040	0.000	0.000	0.000	-0.051	-69.672	0.000	69.672	-4.833	0.000
119.00	-0.048	0.000	0.000	0.000	0.000	0.000	0.000	0.000	70.683	-4.833	0.000

Resulting Stresses

Structure:	CT08558-B-SBA	**Code:**	EIA/TIA-222-F	6/14/2016	
Site Name:	New Britain 3, CT	**Exposure:**	C		
Height:	119.00 (ft)	**Gh:**	1.69		
Base Elev:	0.000 (ft)	**Struct Class:**	II	Page: 13	

Tower Engineering Solutions

Load Case: 80 mph Wind with 0" Ice

Dead Load Factor 1.00

Wind Load Factor 1.00

Iterations: 23

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	0.61	1.08	0.00	0.00	0.00	49.71	50.35	51.5	0.978
5.00	0.60	1.10	0.00	0.00	0.00	49.24	49.87	52.0	0.959
10.00	0.59	1.11	0.00	0.00	0.00	48.70	49.32	52.0	0.949
15.00	0.57	1.13	0.00	0.00	0.00	48.07	48.68	52.0	0.937
20.00	0.56	1.14	0.00	0.00	0.00	47.35	47.95	52.0	0.923
25.00	0.55	1.16	0.00	0.00	0.00	46.52	47.12	52.0	0.906
30.00	0.54	1.18	0.00	0.00	0.00	45.57	46.16	52.0	0.888
35.00	0.53	1.19	0.00	0.00	0.00	44.49	45.06	52.0	0.867
40.00	0.51	1.21	0.00	0.00	0.00	43.25	43.81	52.0	0.843
45.00	0.50	1.23	0.00	0.00	0.00	41.83	42.38	52.0	0.815
48.50	0.49	1.24	0.00	0.00	0.00	40.72	41.27	52.0	0.794
50.00	0.49	1.25	0.00	0.00	0.00	40.22	40.76	52.0	0.784
53.25	0.58	1.55	0.00	0.00	0.00	47.22	47.87	52.0	0.921
55.00	0.57	1.56	0.00	0.00	0.00	46.40	47.05	52.0	0.905
60.00	0.56	1.59	0.00	0.00	0.00	43.80	44.45	52.0	0.855
65.00	0.55	1.62	0.00	0.00	0.00	40.84	41.48	52.0	0.798
70.00	0.53	1.64	0.00	0.00	0.00	37.46	38.10	52.0	0.733
75.00	0.52	1.67	0.00	0.00	0.00	33.59	34.24	52.0	0.659
78.00	0.46	1.58	0.00	0.00	0.00	31.02	31.61	52.0	0.608
80.00	0.46	1.60	0.00	0.00	0.00	29.37	29.95	52.0	0.576
85.00	0.45	1.62	0.00	0.00	0.00	24.75	25.36	52.0	0.488
88.00	0.35	1.32	0.00	0.00	0.00	21.67	22.15	52.0	0.426
90.00	0.35	1.33	0.00	0.00	0.00	20.04	20.52	52.0	0.395
95.00	0.34	1.36	0.00	0.00	0.00	15.46	15.98	52.0	0.307
98.00	0.23	0.96	0.00	0.00	0.00	12.39	12.74	52.0	0.245
98.50	0.23	0.96	0.00	0.00	0.00	12.05	12.40	52.0	0.238
100.00	0.23	0.96	0.00	0.00	0.00	10.98	11.34	52.0	0.218
102.00	0.28	1.27	0.00	0.00	0.00	12.19	12.67	52.0	0.244
105.00	0.28	1.28	0.00	0.00	0.00	9.07	9.61	52.0	0.185
108.00	0.13	0.60	0.00	0.00	0.00	5.67	5.89	52.0	0.113
109.00	0.13	0.59	0.00	0.00	0.00	5.17	5.40	52.0	0.104
109.00	0.13	0.59	0.00	0.00	0.00	5.17	5.40	52.0	0.104
110.00	0.12	0.59	0.00	0.00	0.00	4.66	4.89	52.0	0.094
115.00	0.11	0.57	0.00	0.00	0.00	1.84	2.19	52.0	0.042
118.00	0.00	0.01	0.00	0.00	0.00	0.01	0.02	52.0	0.000
119.00	0.00	0.01	0.00	0.00	0.00	0.00	0.01	52.0	0.000

Wind Loading - Shaft

Structure: CT08558-B-SBA
Site Name: New Britain 3, CT
Height: 119.00 (ft)
Base Elev: 0.000 (ft)

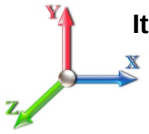
Code: EIA/TIA-222-F
Exposure: C
Gh: 1.69
Struct Class: II

6/14/2016

Tower Engineering Solutions

Load Case: 69.28 mph Wind with 0.5" Ice

Dead Load Factor 1.00
Wind Load Factor 1.00



Iterations: 23

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	12.287	20.77	274.23	0.650	0.500	0.00	0.000	0.00	0.0	0.0	0.0
5.00		0.00	1.00	12.287	20.77	267.84	0.650	0.500	5.00	19.977	12.99	269.6	144.7	931.6
10.00		0.00	1.00	12.287	20.77	261.44	0.650	0.500	5.00	19.516	12.69	263.4	141.3	909.5
15.00		0.00	1.00	12.287	20.77	255.04	0.650	0.500	5.00	19.054	12.39	257.2	137.9	887.4
20.00		0.00	1.00	12.287	20.77	248.64	0.650	0.500	5.00	18.592	12.08	250.9	134.4	865.3
25.00		0.00	1.00	12.287	20.77	242.24	0.650	0.500	5.00	18.130	11.78	244.7	131.0	843.2
30.00		0.00	1.00	12.287	20.77	235.85	0.650	0.500	5.00	17.669	11.48	238.5	127.6	821.0
35.00		0.00	1.02	12.496	21.12	231.38	0.650	0.500	5.00	17.207	11.18	236.2	124.2	798.9
40.00		0.00	1.06	12.982	21.94	229.26	0.650	0.500	5.00	16.745	10.88	238.8	120.8	776.8
45.00		0.00	1.09	13.426	22.69	226.47	0.650	0.500	5.00	16.283	10.58	240.2	117.3	754.7
48.50	Bot - Section 2	0.00	1.12	13.716	23.18	224.17	0.650	0.500	3.50	11.124	7.23	167.6	80.5	515.5
50.00		0.00	1.13	13.836	23.38	223.11	0.650	0.500	1.50	4.761	3.09	72.4	34.6	367.4
53.25	Top - Section 1	0.00	1.15	14.087	23.81	220.68	0.650	0.500	3.25	10.172	6.61	157.4	73.6	784.3
55.00		0.00	1.16	14.218	24.03	222.39	0.650	0.500	1.75	5.396	3.51	84.3	39.2	208.2
60.00		0.00	1.19	14.576	24.63	218.21	0.650	0.500	5.00	15.107	9.82	241.9	108.6	581.2
65.00		0.00	1.21	14.913	25.20	213.67	0.650	0.500	5.00	14.645	9.52	239.9	105.2	562.8
70.00		0.00	1.24	15.232	25.74	208.82	0.650	0.500	5.00	14.183	9.22	237.3	101.8	544.4
75.00		0.00	1.26	15.536	26.26	203.69	0.650	0.500	5.00	13.721	8.92	234.2	98.4	526.1
78.00	Appurtenance(s)	0.00	1.28	15.711	26.55	200.50	0.650	0.500	3.00	8.011	5.21	138.3	57.8	307.2
80.00		0.00	1.29	15.825	26.74	198.32	0.650	0.500	2.00	5.248	3.41	91.2	38.0	201.3
85.00		0.00	1.31	16.101	27.21	192.72	0.650	0.500	5.00	12.798	8.32	226.4	91.5	489.3
88.00	Appurtenance(s)	0.00	1.32	16.262	27.48	189.26	0.650	0.500	3.00	7.457	4.85	133.2	53.7	285.2
90.00		0.00	1.33	16.366	27.66	186.92	0.650	0.500	2.00	4.879	3.17	87.7	35.2	186.6
95.00		0.00	1.35	16.621	28.09	180.92	0.650	0.500	5.00	11.874	7.72	216.8	84.7	452.5
98.00	Appurtenance(s)	0.00	1.36	16.769	28.34	177.24	0.650	0.500	3.00	6.903	4.49	127.2	49.6	263.1
98.50	Bot - Section 3	0.00	1.37	16.794	28.38	176.63	0.650	0.500	0.50	1.134	0.74	20.9	8.2	43.3
100.00		0.00	1.37	16.866	28.50	174.76	0.650	0.500	1.50	3.422	2.22	63.4	24.7	208.6
102.00	Top - Section 2	0.00	1.38	16.962	28.67	172.25	0.650	0.500	2.00	4.498	2.92	83.8	32.4	273.9
105.00		0.00	1.39	17.103	28.90	170.99	0.650	0.500	3.00	6.609	4.30	124.2	47.4	200.8
108.00	Appurtenance(s)	0.00	1.40	17.241	29.14	167.13	0.650	0.500	3.00	6.443	4.19	122.0	46.2	195.5
109.00	Top - Section 3	0.00	1.41	17.287	29.21	165.83	0.650	0.500	1.00	2.111	1.37	40.1	15.3	64.1
110.00		0.00	1.41	17.332	29.29	164.53	0.650	0.500	1.00	2.092	1.36	39.8	15.1	63.6
115.00		0.00	1.43	17.554	29.67	157.93	0.650	0.500	5.00	10.184	6.62	196.4	72.2	307.6
118.00	Appurtenance(s)	0.00	1.44	17.683	29.88	153.91	0.650	0.500	3.00	5.889	3.83	114.4	42.1	177.9
119.00		0.00	1.44	17.726	29.96	152.55	0.650	0.500	1.00	1.926	1.25	37.5	13.9	58.3
								Totals:	**119.00**			**5,537.7**		**15,457.0**

Discrete Appurtenance Forces

Structure:	CT08558-B-SB	**Code:**	EIA/TIA-222-F	6/14/2016	
Site Name:	New Britain 3, CT	**Exposure:**	C		
Height:	119.00 (ft)	**Gh:**	1.69		
Base Elev:	0.000 (ft)	**Struct Class:**	II	Page: 15	

Tower Engineering Solutions

Load Case: 69.28 mph Wind with 0.5" Ice

Dead Load Factor 1.00

Wind Load Factor 1.00

Iterations: 23

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	118.00	RRH2x40-AWS	3	17.683	29.885	0.82	7.06	184.20	0.000	0.000	210.99	0.00	0.00
2	118.00	FD9R6004/2C-3L (3.1 lbs)	6	17.683	29.885	0.75	2.25	32.40	0.000	0.000	67.24	0.00	0.00
3	118.00	DB-B1-6Z-8AB-0Z Dist. Box	1	17.683	29.885	0.91	4.59	51.10	0.000	0.000	137.06	0.00	0.00
4	118.00	BXA-70063-6BF	3	17.683	29.885	0.70	17.93	172.80	0.000	0.000	535.95	0.00	0.00
5	118.00	BXA-171063-8BF	3	17.683	29.885	0.84	8.59	87.90	0.000	0.000	256.80	0.00	0.00
6	118.00	BXA-171063-12BF	3	17.683	29.885	0.84	13.61	126.60	0.000	0.000	406.67	0.00	0.00
7	118.00	800 10735	3	17.683	29.885	0.66	19.15	215.40	0.000	0.000	572.19	0.00	0.00
8	118.00	T-Arms	3	17.683	29.885	0.75	28.13	1440.00	0.000	0.000	840.50	0.00	0.00
9	108.00	ACU-A20-N	4	17.241	29.138	0.79	0.70	9.20	0.000	0.000	20.26	0.00	0.00
10	108.00	APXVSPP18-C	2	17.241	29.138	0.83	15.07	213.00	0.000	0.000	439.19	0.00	0.00
11	108.00	APXVTM14-C-120	3	17.241	29.138	0.79	17.28	275.70	0.000	0.000	503.43	0.00	0.00
12	108.00	840 10054	3	17.241	29.138	0.61	10.47	177.30	0.000	0.000	305.00	0.00	0.00
13	108.00	800 MHz RRH	3	17.241	29.138	0.92	7.78	222.30	0.000	0.000	226.79	0.00	0.00
14	108.00	VHLP2.5	2	17.241	29.138	1.00	17.84	194.00	0.000	0.000	519.82	0.00	0.00
15	108.00	Horizon	2	17.241	29.138	1.00	1.16	34.00	0.000	0.000	33.80	0.00	0.00
16	108.00	P40-16-XLPP-RR-A	1	17.241	29.138	0.66	7.41	0.00	0.000	0.000	215.96	0.00	0.00
17	108.00	T-Arms	3	17.241	29.138	0.75	28.13	1440.00	0.000	0.000	819.51	0.00	0.00
18	108.00	TD-RRH8x20-25	3	17.241	29.138	0.69	10.29	276.00	0.000	0.000	299.77	0.00	0.00
19	108.00	800 MHz Filters	3	17.241	29.138	0.93	9.10	263.40	0.000	0.000	265.02	0.00	0.00
20	108.00	1900MHz RRH	3	17.241	29.138	0.88	11.09	225.60	0.000	0.000	323.08	0.00	0.00
21	98.00	OPA-65R-LCUU-H6	3	16.769	28.340	0.79	25.71	402.00	0.000	0.000	728.75	0.00	0.00
22	98.00	21401	9	16.769	28.340	0.67	9.23	190.80	0.000	0.000	261.46	0.00	0.00
23	98.00	7770	6	16.769	28.340	0.73	28.60	0.00	0.000	0.000	810.57	0.00	0.00
24	98.00	13519	6	16.769	28.340	0.67	1.89	48.00	0.000	0.000	53.55	0.00	0.00
25	98.00	RRUS 12	3	16.769	28.340	0.70	8.17	227.10	0.000	0.000	231.51	0.00	0.00
26	98.00	RRUS A2 Module	3	16.769	28.340	0.62	4.00	94.20	0.000	0.000	113.33	0.00	0.00
27	98.00	T-Arms	3	16.769	28.340	0.75	28.13	1440.00	0.000	0.000	797.07	0.00	0.00
28	98.00	RRUS 11	6	16.769	28.340	0.76	14.32	396.00	0.000	0.000	405.79	0.00	0.00
29	88.00	Double TMA 17/21	3	16.262	27.482	0.69	1.28	43.50	0.000	0.000	35.27	0.00	0.00
30	88.00	AIR 32	3	16.262	27.482	0.87	19.57	519.90	0.000	0.000	537.96	0.00	0.00
31	88.00	AIR B2A B4P	3	16.262	27.482	0.86	17.98	387.60	0.000	0.000	494.20	0.00	0.00
32	88.00	RRUS11 B12	3	16.262	27.482	0.67	7.18	240.00	0.000	0.000	197.20	0.00	0.00
33	88.00	LNX-6515DS-A1M	3	16.262	27.482	0.80	29.62	346.80	0.000	0.000	813.91	0.00	0.00
34	88.00	T-Arms	3	16.262	27.482	0.75	28.13	1440.00	0.000	0.000	772.93	0.00	0.00
35	78.00	T-Arms	3	15.711	26.551	0.75	28.13	1440.00	0.000	0.000	746.74	0.00	0.00
36	78.00	APXV18-206517S-C	3	15.711	26.551	0.74	12.96	159.00	0.000	0.000	344.23	0.00	0.00
						Totals:		**13,015.80**			**14,343.51**		

Total Applied Force Summary

Structure:	CT08558-B-SB	**Code:**	EIA/TIA-222-F	6/14/2016	
Site Name:	New Britain 3, CT	**Exposure:**	C		
Height:	119.00 (ft)	**Gh:**	1.69		
Base Elev:	0.000 (ft)	**Struct Class:**	II	Page: 16	

Tower Engineering Solutions

Load Case: 69.28 mph Wind with 0.5" Ice

Iterations: 23

Dead Load Factor 1.00

Wind Load Factor 1.00

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		269.65	1217.32	0.00	0.00
10.00		263.41	1195.20	0.00	0.00
15.00		257.18	1173.08	0.00	0.00
20.00		250.95	1150.95	0.00	0.00
25.00		244.72	1128.83	0.00	0.00
30.00		238.48	1106.71	0.00	0.00
35.00		236.19	1084.59	0.00	0.00
40.00		238.79	1062.47	0.00	0.00
45.00		240.15	1040.35	0.00	0.00
48.50		167.60	715.44	0.00	0.00
50.00		72.36	453.15	0.00	0.00
53.25		157.41	969.98	0.00	0.00
55.00		84.28	308.14	0.00	0.00
60.00		241.88	866.88	0.00	0.00
65.00		239.91	848.50	0.00	0.00
70.00		237.32	830.12	0.00	0.00
75.00		234.17	811.74	0.00	0.00
78.00	(6) appurtenances	1229.23	2077.63	0.00	0.00
80.00		91.24	290.59	0.00	0.00
85.00		226.36	712.58	0.00	0.00
88.00	(18) appurtenances	2984.67	3396.94	0.00	0.00
90.00		87.72	248.72	0.00	0.00
95.00		216.80	607.92	0.00	0.00
98.00	(39) appurtenances	3529.19	3154.44	0.00	0.00
98.50		20.93	51.96	0.00	0.00
100.00		63.41	234.58	0.00	0.00
102.00		83.82	308.56	0.00	0.00
105.00		124.17	252.79	0.00	0.00
108.00	(32) appurtenances	4093.65	3578.02	0.00	0.00
109.00		40.08	76.62	0.00	0.00
110.00		39.83	76.03	0.00	0.00
115.00		196.37	370.00	0.00	0.00
118.00	(25) appurtenances	3141.80	2525.79	0.00	0.00
119.00		37.50	58.28	0.00	0.00
	Totals:	**19,881.22**	**33,984.93**	**0.00**	**0.00**

Resulting Forces and Deflections

Structure:	CT08558-B-SB	**Code:**	EIA/TIA-222-F	6/14/2016	
Site Name:	New Britain 3, CT	**Exposure:**	C		
Height:	119.00 (ft)	**Gh:**	1.69		
Base Elev:	0.000 (ft)	**Struct Class:**	II	Page: 17	

Tower Engineering Solutions

Load Case: 69.28 mph Wind with 0.5" Ice

Dead Load Factor 1.00

Wind Load Factor 1.00

Iterations: 23

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	-19.940	-33.950	0.000	0.000	0.000	-1853.565	0.000	0.000	0.000	0.000	0.000
5.00	-19.780	-32.666	0.000	0.000	0.000	-1753.870	-0.105	0.000	0.105	-0.195	0.000
10.00	-19.620	-31.404	0.000	0.000	0.000	-1654.974	-0.415	0.000	0.415	-0.393	0.000
15.00	-19.459	-30.165	0.000	0.000	0.000	-1556.878	-0.934	0.000	0.934	-0.593	0.000
20.00	-19.297	-28.948	0.000	0.000	0.000	-1459.588	-1.664	0.000	1.664	-0.796	0.000
25.00	-19.134	-27.755	0.000	0.000	0.000	-1363.106	-2.608	0.000	2.608	-1.001	0.000
30.00	-18.971	-26.585	0.000	0.000	0.000	-1267.436	-3.768	0.000	3.768	-1.208	0.000
35.00	-18.802	-25.437	0.000	0.000	0.000	-1172.584	-5.144	0.000	5.144	-1.416	0.000
40.00	-18.624	-24.314	0.000	0.000	0.000	-1078.574	-6.739	0.000	6.739	-1.624	0.000
45.00	-18.424	-23.225	0.000	0.000	0.000	-985.456	-8.552	0.000	8.552	-1.832	0.000
48.50	-18.274	-22.482	0.000	0.000	0.000	-920.972	-9.951	0.000	9.951	-1.979	0.000
50.00	-18.225	-22.000	0.000	0.000	0.000	-893.561	-10.583	0.000	10.583	-2.043	0.000
53.25	-18.070	-21.003	0.000	0.000	0.000	-834.333	-12.021	0.000	12.021	-2.178	0.000
55.00	-18.031	-20.649	0.000	0.000	0.000	-802.712	-12.834	0.000	12.834	-2.252	0.000
60.00	-17.834	-19.720	0.000	0.000	0.000	-712.560	-15.321	0.000	15.321	-2.491	0.000
65.00	-17.631	-18.813	0.000	0.000	0.000	-623.390	-18.056	0.000	18.056	-2.723	0.000
70.00	-17.420	-17.931	0.000	0.000	0.000	-535.238	-21.027	0.000	21.027	-2.944	0.000
75.00	-17.192	-17.084	0.000	0.000	0.000	-448.139	-24.224	0.000	24.224	-3.153	0.000
78.00	-15.873	-15.052	0.000	0.000	0.000	-396.566	-26.244	0.000	26.244	-3.272	0.000
80.00	-15.798	-14.732	0.000	0.000	0.000	-364.820	-27.631	0.000	27.631	-3.348	0.000
85.00	-15.561	-13.999	0.000	0.000	0.000	-285.832	-31.231	0.000	31.231	-3.519	0.000
88.00	-12.384	-10.779	0.000	0.000	0.000	-239.150	-33.472	0.000	33.472	-3.612	0.000
90.00	-12.298	-10.516	0.000	0.000	0.000	-214.382	-34.997	0.000	34.997	-3.669	0.000
95.00	-12.058	-9.905	0.000	0.000	0.000	-152.893	-38.905	0.000	38.905	-3.790	0.000
98.00	-8.330	-6.988	0.000	0.000	0.000	-116.721	-41.306	0.000	41.306	-3.850	0.000
98.50	-8.308	-6.935	0.000	0.000	0.000	-112.556	-41.709	0.000	41.709	-3.859	0.000
100.00	-8.232	-6.701	0.000	0.000	0.000	-100.094	-42.926	0.000	42.926	-3.885	0.000
102.00	-8.131	-6.394	0.000	0.000	0.000	-83.631	-44.559	0.000	44.559	-3.917	0.000
105.00	-7.994	-6.145	0.000	0.000	0.000	-59.237	-47.032	0.000	47.032	-3.955	0.000
108.00	-3.663	-2.858	0.000	0.000	0.000	-35.255	-49.528	0.000	49.528	-3.990	0.000
109.00	-3.618	-2.784	0.000	0.000	0.000	-31.591	-50.364	0.000	50.364	-3.998	0.000
110.00	-3.574	-2.710	0.000	0.000	0.000	-27.973	-51.202	0.000	51.202	-4.006	0.000
115.00	-3.353	-2.354	0.000	0.000	0.000	-10.101	-55.411	0.000	55.411	-4.033	0.000
118.00	-0.041	-0.055	0.000	0.000	0.000	-0.041	-57.946	0.000	57.946	-4.038	0.000
119.00	-0.037	0.000	0.000	0.000	0.000	0.000	0.000	0.000	58.791	-4.038	0.000

Resulting Stresses

Structure:	CT08558-B-SBA	**Code:**	EIA/TIA-222-F	6/14/2016	
Site Name:	New Britain 3, CT	**Exposure:**	C		
Height:	119.00 (ft)	**Gh:**	1.69		
Base Elev:	0.000 (ft)	**Struct Class:**	II	Page: 18	

Tower Engineering Solutions

Load Case: 69.28 mph Wind with 0.5" Ice

Dead Load Factor 1.00

Wind Load Factor 1.00

Iterations: 23

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	0.73	0.86	0.00	0.00	0.00	40.74	41.49	51.5	0.806
5.00	0.71	0.87	0.00	0.00	0.00	40.43	41.17	52.0	0.792
10.00	0.70	0.89	0.00	0.00	0.00	40.06	40.80	52.0	0.785
15.00	0.69	0.90	0.00	0.00	0.00	39.62	40.35	52.0	0.776
20.00	0.68	0.92	0.00	0.00	0.00	39.10	39.82	52.0	0.766
25.00	0.67	0.93	0.00	0.00	0.00	38.50	39.20	52.0	0.754
30.00	0.66	0.95	0.00	0.00	0.00	37.79	38.48	52.0	0.740
35.00	0.65	0.97	0.00	0.00	0.00	36.96	37.65	52.0	0.724
40.00	0.64	0.99	0.00	0.00	0.00	36.00	36.68	52.0	0.706
45.00	0.63	1.01	0.00	0.00	0.00	34.89	35.56	52.0	0.684
48.50	0.62	1.02	0.00	0.00	0.00	34.01	34.68	52.0	0.667
50.00	0.61	1.03	0.00	0.00	0.00	33.61	34.27	52.0	0.659
53.25	0.74	1.28	0.00	0.00	0.00	39.51	40.31	52.0	0.775
55.00	0.73	1.29	0.00	0.00	0.00	38.85	39.65	52.0	0.763
60.00	0.72	1.31	0.00	0.00	0.00	36.75	37.54	52.0	0.722
65.00	0.71	1.34	0.00	0.00	0.00	34.33	35.12	52.0	0.676
70.00	0.70	1.37	0.00	0.00	0.00	31.55	32.34	52.0	0.622
75.00	0.69	1.40	0.00	0.00	0.00	28.34	29.13	52.0	0.560
78.00	0.62	1.32	0.00	0.00	0.00	26.19	26.91	52.0	0.518
80.00	0.62	1.34	0.00	0.00	0.00	24.81	25.53	52.0	0.491
85.00	0.61	1.37	0.00	0.00	0.00	20.96	21.70	52.0	0.418
88.00	0.48	1.11	0.00	0.00	0.00	18.38	18.96	52.0	0.365
90.00	0.48	1.12	0.00	0.00	0.00	17.01	17.59	52.0	0.338
95.00	0.47	1.15	0.00	0.00	0.00	13.16	13.77	52.0	0.265
98.00	0.34	0.81	0.00	0.00	0.00	10.57	11.00	52.0	0.212
98.50	0.34	0.81	0.00	0.00	0.00	10.28	10.71	52.0	0.206
100.00	0.33	0.82	0.00	0.00	0.00	9.38	9.82	52.0	0.189
102.00	0.42	1.08	0.00	0.00	0.00	10.43	11.01	52.0	0.212
105.00	0.41	1.09	0.00	0.00	0.00	7.79	8.42	52.0	0.162
108.00	0.20	0.51	0.00	0.00	0.00	4.90	5.17	52.0	0.099
109.00	0.19	0.51	0.00	0.00	0.00	4.47	4.75	52.0	0.091
109.00	0.19	0.51	0.00	0.00	0.00	4.47	4.75	52.0	0.091
110.00	0.19	0.51	0.00	0.00	0.00	4.03	4.31	52.0	0.083
115.00	0.17	0.50	0.00	0.00	0.00	1.60	1.98	52.0	0.038
118.00	0.00	0.01	0.00	0.00	0.00	0.01	0.02	52.0	0.000
119.00	0.00	0.01	0.00	0.00	0.00	0.00	0.01	52.0	0.000

Wind Loading - Shaft

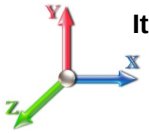
Structure: CT08558-B-SBA
Site Name: New Britain 3, CT
Height: 119.00 (ft)
Base Elev: 0.000 (ft)

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

6/14/2016

Tower Engineering Solutions

Load Case: 50 mph Wind with 0" Ice
Dead Load Factor 1.00
Wind Load Factor 1.00



Iterations: 23

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	197.92	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	193.30	0.650	0.000	5.00	19.561	12.71	137.5	0.0	786.9
10.00		0.00	1.00	6.400	10.82	188.68	0.650	0.000	5.00	19.099	12.41	134.3	0.0	768.2
15.00		0.00	1.00	6.400	10.82	184.06	0.650	0.000	5.00	18.637	12.11	131.0	0.0	749.5
20.00		0.00	1.00	6.400	10.82	179.45	0.650	0.000	5.00	18.176	11.81	127.8	0.0	730.8
25.00		0.00	1.00	6.400	10.82	174.83	0.650	0.000	5.00	17.714	11.51	124.5	0.0	712.1
30.00		0.00	1.00	6.400	10.82	170.21	0.650	0.000	5.00	17.252	11.21	121.3	0.0	693.4
35.00		0.00	1.02	6.509	11.00	166.99	0.650	0.000	5.00	16.790	10.91	120.0	0.0	674.7
40.00		0.00	1.06	6.762	11.43	165.46	0.650	0.000	5.00	16.329	10.61	121.3	0.0	656.0
45.00		0.00	1.09	6.993	11.82	163.44	0.650	0.000	5.00	15.867	10.31	121.9	0.0	637.3
48.50	Bot - Section 2	0.00	1.12	7.144	12.07	161.79	0.650	0.000	3.50	10.832	7.04	85.0	0.0	435.0
50.00		0.00	1.13	7.207	12.18	161.02	0.650	0.000	1.50	4.636	3.01	36.7	0.0	332.8
53.25	Top - Section 1	0.00	1.15	7.338	12.40	159.26	0.650	0.000	3.25	9.901	6.44	79.8	0.0	710.7
55.00		0.00	1.16	7.406	12.52	160.50	0.650	0.000	1.75	5.251	3.41	42.7	0.0	168.9
60.00		0.00	1.19	7.592	12.83	157.48	0.650	0.000	5.00	14.690	9.55	122.5	0.0	472.6
65.00		0.00	1.21	7.768	13.13	154.21	0.650	0.000	5.00	14.228	9.25	121.4	0.0	457.6
70.00		0.00	1.24	7.934	13.41	150.71	0.650	0.000	5.00	13.766	8.95	120.0	0.0	442.7
75.00		0.00	1.26	8.092	13.68	147.01	0.650	0.000	5.00	13.305	8.65	118.3	0.0	427.7
78.00	Appurtenance(s)	0.00	1.28	8.183	13.83	144.70	0.650	0.000	3.00	7.761	5.04	69.8	0.0	249.4
80.00		0.00	1.29	8.242	13.93	143.13	0.650	0.000	2.00	5.082	3.30	46.0	0.0	163.3
85.00		0.00	1.31	8.387	14.17	139.09	0.650	0.000	5.00	12.381	8.05	114.1	0.0	397.8
88.00	Appurtenance(s)	0.00	1.32	8.470	14.31	136.59	0.650	0.000	3.00	7.207	4.68	67.1	0.0	231.5
90.00		0.00	1.33	8.525	14.41	134.90	0.650	0.000	2.00	4.712	3.06	44.1	0.0	151.3
95.00		0.00	1.35	8.657	14.63	130.57	0.650	0.000	5.00	11.458	7.45	109.0	0.0	367.9
98.00	Appurtenance(s)	0.00	1.36	8.735	14.76	127.92	0.650	0.000	3.00	6.653	4.32	63.8	0.0	213.5
98.50	Bot - Section 3	0.00	1.37	8.747	14.78	127.47	0.650	0.000	0.50	1.093	0.71	10.5	0.0	35.1
100.00		0.00	1.37	8.785	14.85	126.12	0.650	0.000	1.50	3.297	2.14	31.8	0.0	183.8
102.00	Top - Section 2	0.00	1.38	8.835	14.93	124.31	0.650	0.000	2.00	4.332	2.82	42.0	0.0	241.5
105.00		0.00	1.39	8.908	15.06	123.40	0.650	0.000	3.00	6.359	4.13	62.2	0.0	153.4
108.00	Appurtenance(s)	0.00	1.40	8.980	15.18	120.62	0.650	0.000	3.00	6.193	4.03	61.1	0.0	149.3
109.00	Top - Section 3	0.00	1.41	9.004	15.22	119.68	0.650	0.000	1.00	2.027	1.32	20.1	0.0	48.9
110.00		0.00	1.41	9.028	15.26	118.74	0.650	0.000	1.00	2.009	1.31	19.9	0.0	48.4
115.00		0.00	1.43	9.143	15.45	113.98	0.650	0.000	5.00	9.767	6.35	98.1	0.0	235.4
118.00	Appurtenance(s)	0.00	1.44	9.211	15.57	111.08	0.650	0.000	3.00	5.639	3.67	57.0	0.0	135.9
119.00		0.00	1.44	9.233	15.60	110.10	0.650	0.000	1.00	1.843	1.20	18.7	0.0	44.4
								Totals:	**119.00**			**2,801.3**		**12,908.1**

Discrete Appurtenance Forces

Structure:	CT08558-B-SB	**Code:**	EIA/TIA-222-F	6/14/2016	
Site Name:	New Britain 3, CT	**Exposure:**	C		
Height:	119.00 (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: 23

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	118.00	RRH2x40-AWS	3	9.211	15.566	0.82	6.20	132.00	0.000	0.000	96.50	0.00	0.00
2	118.00	FD9R6004/2C-3L (3.1 lbs)	6	9.211	15.566	0.75	1.62	18.60	0.000	0.000	25.22	0.00	0.00
3	118.00	DB-B1-6Z-8AB-0Z Dist. Box	1	9.211	15.566	0.91	4.35	21.40	0.000	0.000	67.71	0.00	0.00
4	118.00	BXA-70063-6BF	3	9.211	15.566	0.70	16.23	51.00	0.000	0.000	252.68	0.00	0.00
5	118.00	BXA-171063-8BF	3	9.211	15.566	0.84	7.41	31.50	0.000	0.000	115.32	0.00	0.00
6	118.00	BXA-171063-12BF	3	9.211	15.566	0.84	11.92	45.00	0.000	0.000	185.54	0.00	0.00
7	118.00	800 10735	3	9.211	15.566	0.66	17.42	86.10	0.000	0.000	271.22	0.00	0.00
8	118.00	T-Arms	3	9.211	15.566	0.75	22.50	1200.00	0.000	0.000	350.23	0.00	0.00
9	108.00	ACU-A20-N	4	8.980	15.177	0.79	0.44	4.00	0.000	0.000	6.71	0.00	0.00
10	108.00	APXVSPP18-C	2	8.980	15.177	0.83	13.71	114.00	0.000	0.000	208.10	0.00	0.00
11	108.00	APXVTM14-C-120	3	8.980	15.177	0.79	16.35	168.00	0.000	0.000	248.19	0.00	0.00
12	108.00	840 10054	3	8.980	15.177	0.61	9.48	105.00	0.000	0.000	143.87	0.00	0.00
13	108.00	800 MHz RRH	3	8.980	15.177	0.92	6.87	159.00	0.000	0.000	104.30	0.00	0.00
14	108.00	VHLP2.5	2	8.980	15.177	1.00	16.86	95.20	0.000	0.000	255.88	0.00	0.00
15	108.00	Horizon	2	8.980	15.177	1.00	0.86	21.20	0.000	0.000	13.05	0.00	0.00
16	108.00	P40-16-XLPP-RR-A	1	8.980	15.177	0.66	6.93	53.00	0.000	0.000	105.18	0.00	0.00
17	108.00	T-Arms	3	8.980	15.177	0.75	22.50	1200.00	0.000	0.000	341.48	0.00	0.00
18	108.00	TD-RRH8x20-25	3	8.980	15.177	0.69	9.77	210.00	0.000	0.000	148.28	0.00	0.00
19	108.00	800 MHz Filters	3	8.980	15.177	0.93	8.12	185.40	0.000	0.000	123.22	0.00	0.00
20	108.00	1900MHz RRH	3	8.980	15.177	0.88	10.03	132.00	0.000	0.000	152.25	0.00	0.00
21	98.00	OPA-65R-LCUU-H6	3	8.735	14.761	0.79	24.55	240.00	0.000	0.000	362.44	0.00	0.00
22	98.00	21401	9	8.735	14.761	0.67	7.78	126.90	0.000	0.000	114.82	0.00	0.00
23	98.00	7770	6	8.735	14.761	0.73	25.75	210.00	0.000	0.000	380.17	0.00	0.00
24	98.00	13519	6	8.735	14.761	0.67	1.37	31.80	0.000	0.000	20.18	0.00	0.00
25	98.00	RRUS 12	3	8.735	14.761	0.70	7.71	174.00	0.000	0.000	113.77	0.00	0.00
26	98.00	RRUS A2 Module	3	8.735	14.761	0.62	3.46	63.60	0.000	0.000	51.07	0.00	0.00
27	98.00	T-Arms	3	8.735	14.761	0.75	22.50	1200.00	0.000	0.000	332.13	0.00	0.00
28	98.00	RRUS 11	6	8.735	14.761	0.76	13.41	304.20	0.000	0.000	197.90	0.00	0.00
29	88.00	Double TMA 17/21	3	8.470	14.314	0.69	0.85	33.00	0.000	0.000	12.15	0.00	0.00
30	88.00	AIR 32	3	8.470	14.314	0.87	18.53	396.60	0.000	0.000	265.26	0.00	0.00
31	88.00	AIR B2A B4P	3	8.470	14.314	0.86	16.98	274.50	0.000	0.000	243.01	0.00	0.00
32	88.00	RRUS11 B12	3	8.470	14.314	0.67	6.45	150.00	0.000	0.000	92.36	0.00	0.00
33	88.00	LNX-6515DS-A1M	3	8.470	14.314	0.80	27.38	149.40	0.000	0.000	391.98	0.00	0.00
34	88.00	T-Arms	3	8.470	14.314	0.75	22.50	1200.00	0.000	0.000	322.07	0.00	0.00
35	78.00	T-Arms	3	8.183	13.829	0.75	22.50	1200.00	0.000	0.000	311.16	0.00	0.00
36	78.00	APXV18-206517S-C	3	8.183	13.829	0.74	11.46	79.20	0.000	0.000	158.42	0.00	0.00
						Totals:		**9,865.60**			**6,583.82**		

Total Applied Force Summary

Structure:	CT08558-B-SB	**Code:**	EIA/TIA-222-F	6/14/2016	
Site Name:	New Britain 3, CT	**Exposure:**	C		
Height:	119.00 (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: 23

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		154.83	1083.62	0.00	0.00
10.00		151.58	1064.92	0.00	0.00
15.00		148.33	1046.22	0.00	0.00
20.00		145.09	1027.52	0.00	0.00
25.00		141.84	1008.82	0.00	0.00
30.00		138.59	990.12	0.00	0.00
35.00		137.64	971.42	0.00	0.00
40.00		139.57	952.72	0.00	0.00
45.00		140.80	934.01	0.00	0.00
48.50		98.53	642.68	0.00	0.00
50.00		42.54	421.81	0.00	0.00
53.25		92.70	903.53	0.00	0.00
55.00		49.72	272.78	0.00	0.00
60.00		143.04	769.26	0.00	0.00
65.00		142.41	754.30	0.00	0.00
70.00		141.43	739.34	0.00	0.00
75.00		140.15	724.38	0.00	0.00
78.00	(6) appurtenances	552.62	1706.65	0.00	0.00
80.00		54.93	257.01	0.00	0.00
85.00		136.74	632.06	0.00	0.00
88.00	(18) appurtenances	1407.63	2575.55	0.00	0.00
90.00		48.74	215.68	0.00	0.00
95.00		120.67	528.73	0.00	0.00
98.00	(39) appurtenances	1643.39	2660.56	0.00	0.00
98.50		11.68	44.28	0.00	0.00
100.00		35.38	211.50	0.00	0.00
102.00		46.82	278.34	0.00	0.00
105.00		69.45	208.69	0.00	0.00
108.00	(32) appurtenances	1918.90	2651.45	0.00	0.00
109.00		22.49	62.46	0.00	0.00
110.00		22.36	62.01	0.00	0.00
115.00		110.46	303.34	0.00	0.00
118.00	(25) appurtenances	1428.93	1762.22	0.00	0.00
119.00		18.69	44.39	0.00	0.00
	Totals:	**9,798.68**	**28,512.36**	**0.00**	**0.00**

Resulting Forces and Deflections

Structure: CT08558-B-SB
Site Name: New Britain 3, CT
Height: 119.00 (ft)
Base Elev: 0.000 (ft)

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

6/14/2016

Tower Engineering Solutions

Load Case: 50 mph Wind with 0" Ice
Dead Load Factor 1.00
Wind Load Factor 1.00

Iterations: 23

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	-9.822	-28.504	0.000	0.000	0.000	-884.376	0.000	0.000	0.000	0.000	0.000
5.00	-9.711	-27.405	0.000	0.000	0.000	-835.267	-0.050	0.000	0.050	-0.093	0.000
10.00	-9.600	-26.325	0.000	0.000	0.000	-786.713	-0.198	0.000	0.198	-0.187	0.000
15.00	-9.490	-25.263	0.000	0.000	0.000	-738.712	-0.445	0.000	0.445	-0.282	0.000
20.00	-9.380	-24.221	0.000	0.000	0.000	-691.264	-0.792	0.000	0.792	-0.378	0.000
25.00	-9.270	-23.197	0.000	0.000	0.000	-644.366	-1.241	0.000	1.241	-0.475	0.000
30.00	-9.160	-22.193	0.000	0.000	0.000	-598.018	-1.791	0.000	1.791	-0.573	0.000
35.00	-9.048	-21.207	0.000	0.000	0.000	-552.219	-2.444	0.000	2.444	-0.671	0.000
40.00	-8.931	-20.241	0.000	0.000	0.000	-506.979	-3.200	0.000	3.200	-0.769	0.000
45.00	-8.805	-19.297	0.000	0.000	0.000	-462.323	-4.058	0.000	4.058	-0.867	0.000
48.50	-8.712	-18.648	0.000	0.000	0.000	-431.506	-4.720	0.000	4.720	-0.936	0.000
50.00	-8.678	-18.220	0.000	0.000	0.000	-418.438	-5.019	0.000	5.019	-0.966	0.000
53.25	-8.584	-17.311	0.000	0.000	0.000	-390.235	-5.698	0.000	5.698	-1.029	0.000
55.00	-8.551	-17.028	0.000	0.000	0.000	-375.214	-6.082	0.000	6.082	-1.063	0.000
60.00	-8.425	-16.246	0.000	0.000	0.000	-332.457	-7.256	0.000	7.256	-1.175	0.000
65.00	-8.295	-15.479	0.000	0.000	0.000	-290.335	-8.546	0.000	8.546	-1.283	0.000
70.00	-8.162	-14.729	0.000	0.000	0.000	-248.863	-9.946	0.000	9.946	-1.386	0.000
75.00	-8.022	-13.998	0.000	0.000	0.000	-208.055	-11.451	0.000	11.451	-1.483	0.000
78.00	-7.434	-12.301	0.000	0.000	0.000	-183.990	-12.401	0.000	12.401	-1.538	0.000
80.00	-7.384	-12.038	0.000	0.000	0.000	-169.123	-13.054	0.000	13.054	-1.574	0.000
85.00	-7.242	-11.402	0.000	0.000	0.000	-132.201	-14.746	0.000	14.746	-1.653	0.000
88.00	-5.765	-8.866	0.000	0.000	0.000	-110.476	-15.799	0.000	15.799	-1.696	0.000
90.00	-5.716	-8.647	0.000	0.000	0.000	-98.946	-16.515	0.000	16.515	-1.722	0.000
95.00	-5.585	-8.118	0.000	0.000	0.000	-70.366	-18.350	0.000	18.350	-1.778	0.000
98.00	-3.861	-5.510	0.000	0.000	0.000	-53.611	-19.477	0.000	19.477	-1.806	0.000
98.50	-3.848	-5.465	0.000	0.000	0.000	-51.681	-19.666	0.000	19.666	-1.810	0.000
100.00	-3.808	-5.254	0.000	0.000	0.000	-45.908	-20.237	0.000	20.237	-1.822	0.000
102.00	-3.753	-4.976	0.000	0.000	0.000	-38.293	-21.003	0.000	21.003	-1.836	0.000
105.00	-3.679	-4.769	0.000	0.000	0.000	-27.033	-22.163	0.000	22.163	-1.854	0.000
108.00	-1.675	-2.181	0.000	0.000	0.000	-15.997	-23.333	0.000	23.333	-1.869	0.000
109.00	-1.651	-2.119	0.000	0.000	0.000	-14.322	-23.725	0.000	23.725	-1.873	0.000
110.00	-1.627	-2.058	0.000	0.000	0.000	-12.672	-24.118	0.000	24.118	-1.877	0.000
115.00	-1.506	-1.758	0.000	0.000	0.000	-4.539	-26.091	0.000	26.091	-1.889	0.000
118.00	-0.020	-0.044	0.000	0.000	0.000	-0.020	-27.279	0.000	27.279	-1.891	0.000
119.00	-0.019	0.000	0.000	0.000	0.000	0.000	0.000	0.000	27.675	-1.891	0.000

Resulting Stresses

Structure:	CT08558-B-SBA	**Code:**	EIA/TIA-222-F	6/14/2016	
Site Name:	New Britain 3, CT	**Exposure:**	C		
Height:	119.00 (ft)	**Gh:**	1.69		
Base Elev:	0.000 (ft)	**Struct Class:**	II	Page: 23	

Tower Engineering Solutions

Load Case: 50 mph Wind with 0" Ice

Dead Load Factor 1.00

Wind Load Factor 1.00

Iterations: 23

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	0.61	0.42	0.00	0.00	0.00	19.44	20.06	51.5	0.390
5.00	0.60	0.43	0.00	0.00	0.00	19.26	19.87	52.0	0.382
10.00	0.59	0.43	0.00	0.00	0.00	19.04	19.65	52.0	0.378
15.00	0.58	0.44	0.00	0.00	0.00	18.80	19.40	52.0	0.373
20.00	0.57	0.45	0.00	0.00	0.00	18.52	19.11	52.0	0.368
25.00	0.56	0.45	0.00	0.00	0.00	18.20	18.78	52.0	0.361
30.00	0.55	0.46	0.00	0.00	0.00	17.83	18.40	52.0	0.354
35.00	0.54	0.47	0.00	0.00	0.00	17.41	17.97	52.0	0.346
40.00	0.53	0.47	0.00	0.00	0.00	16.92	17.47	52.0	0.336
45.00	0.52	0.48	0.00	0.00	0.00	16.37	16.91	52.0	0.325
48.50	0.52	0.49	0.00	0.00	0.00	15.94	16.47	52.0	0.317
50.00	0.51	0.49	0.00	0.00	0.00	15.74	16.27	52.0	0.313
53.25	0.61	0.61	0.00	0.00	0.00	18.48	19.12	52.0	0.368
55.00	0.60	0.61	0.00	0.00	0.00	18.16	18.79	52.0	0.362
60.00	0.59	0.62	0.00	0.00	0.00	17.15	17.77	52.0	0.342
65.00	0.59	0.63	0.00	0.00	0.00	15.99	16.61	52.0	0.320
70.00	0.58	0.64	0.00	0.00	0.00	14.67	15.28	52.0	0.294
75.00	0.57	0.65	0.00	0.00	0.00	13.16	13.77	52.0	0.265
78.00	0.51	0.62	0.00	0.00	0.00	12.15	12.70	52.0	0.244
80.00	0.51	0.62	0.00	0.00	0.00	11.50	12.05	52.0	0.232
85.00	0.50	0.64	0.00	0.00	0.00	9.70	10.25	52.0	0.197
88.00	0.40	0.52	0.00	0.00	0.00	8.49	8.93	52.0	0.172
90.00	0.39	0.52	0.00	0.00	0.00	7.85	8.29	52.0	0.159
95.00	0.38	0.53	0.00	0.00	0.00	6.06	6.51	52.0	0.125
98.00	0.27	0.38	0.00	0.00	0.00	4.86	5.16	52.0	0.099
98.50	0.27	0.38	0.00	0.00	0.00	4.72	5.03	52.0	0.097
100.00	0.26	0.38	0.00	0.00	0.00	4.30	4.61	52.0	0.089
102.00	0.33	0.50	0.00	0.00	0.00	4.78	5.18	52.0	0.100
105.00	0.32	0.50	0.00	0.00	0.00	3.56	3.97	52.0	0.076
108.00	0.15	0.23	0.00	0.00	0.00	2.22	2.41	52.0	0.046
109.00	0.15	0.23	0.00	0.00	0.00	2.03	2.21	52.0	0.043
109.00	0.15	0.23	0.00	0.00	0.00	2.03	2.21	52.0	0.043
110.00	0.15	0.23	0.00	0.00	0.00	1.83	2.01	52.0	0.039
115.00	0.13	0.22	0.00	0.00	0.00	0.72	0.93	52.0	0.018
118.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	52.0	0.000
119.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	52.0	0.000

Final Analysis Summary

Structure:	CT08558-B-SBA	**Code:**	EIA/TIA-222-F	6/14/2016	
Site Name:	New Britain 3, CT	**Exposure:**	C		
Height:	119.00 (ft)	**Gh:**	1.69		
Base Elev:	0.000 (ft)	**Struct Class:**	II	Page: 24	

Tower Engineering Solutions

Reactions

Load Case	Shear FX (kips)	Shear FZ (kips)	Axial FY (kips)	Moment MX (ft-kips)	Moment MY (ft-kips)	Moment MZ (ft-kips)
80 mph Wind with 0" Ice	25.1	0.00	28.46	0.00	0.00	2261.65
69.28 mph Wind with 0.5" Ice	19.9	0.00	33.95	0.00	0.00	1853.57
50 mph Wind with 0" Ice	9.8	0.00	28.50	0.00	0.00	884.38

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
80 mph Wind with 0" Ice	0.61	1.08	0.00	0.00	0.00	49.71	50.35	51.5	0.00	0.978
69.28 mph Wind with 0.5" Ice	0.73	0.86	0.00	0.00	0.00	40.74	41.49	51.5	0.00	0.806
50 mph Wind with 0" Ice	0.61	0.42	0.00	0.00	0.00	19.44	20.06	51.5	0.00	0.390

Monopole Mat Foundation Design

			Date: 6/14/2016
Customer Name:	T-Mobile	**EIA/TIA Standard:**	EIA-222-F
Site Name:		**Structure Height (Ft.):**	119
Site Number:	CT08558-B-SBA	**Engineer Name:**	J. Chen
Engr. Number:	23330	**Engineer Login ID:**	

Foundation Info Obtained from: Drawings/Calculations

Structure Type: Monopole

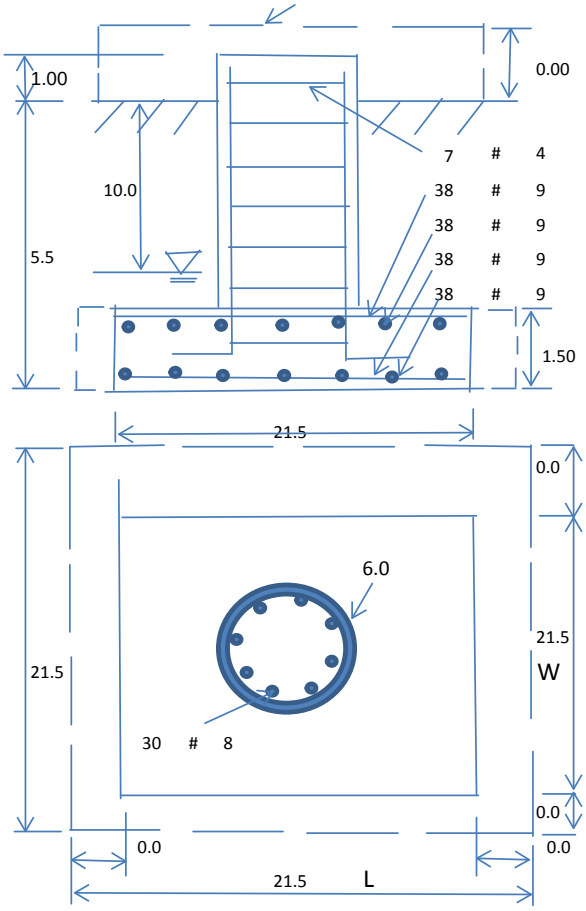
Analysis or Design? Analysis

Base Reactions (Unfactored)

Axial Load (Kips):	34.0	Shear Force (Kips):	25.1
Uplift Force (Kips):	0.0	Moment (Kips-ft):	2261.7
Allowable overstress %:	5.0%		

Foundation Geometries:

		Mods required -Yes/No ?:	No
Diameter of Pier (ft.):	6.0	Depth of Base BG (ft.):	5.5
Pier Height A. G. (ft.):	1.00	Thickness of Pad (ft):	1.50
Length of Pad (ft.):	21.5	Width of Pad (ft.):	21.5
Final Length of pad (ft)	21.5	Final width of pad (ft):	21.5
Control Value for Cell D18:	0	Control Value for Cell F18:	0



Material Properties and Reabr Info:

Concrete Strength (psi):	4000	Steel Elastic Modulus:	29000	ksi
Vertical bar yield (ksi)	60	Tie steel yield (ksi):	60	
Vertical Rebar Size #:	8	Tie / Stirrup Size #:	4	
Qty. of Vertical Rebars:	30	Tie Spacing (in):	12.0	
Pad Rebar Yield (Ksi):	60	Pad Steel Rebar Size (#):	9	
Concrete Cover (in.):	3	Unit Weight of Concrete:	150.0	pcf
Rebar at the bottom of the concrete pad:				
Qty. of Rebar in Pad (L):	38	Qty. of Rebar in Pad (W):	38	
Rebar at the top of the concrete pad:				
Qty. of Rebar in Pad (L):	38	Qty. of Rebar in Pad (W):	38	
Apply 1.35 factor for e/w Per G:	1.35			

Soil Design Parameters:

Soil Unit Weight (pcf):	125.0	Soil Buoyant Weight:	50.0	Pcf		
Water Table B.G.S. (ft):	10.0	Unit Weight of Water:	62.4	pcf	Angle from Top of Pad:	30
Allowable Net Soil Bearing (psf):	12000	Allowable Skin Friction:	0	Psf	Angle from Bottm of Pad:	25
Consider Friction for O.T.M. (Y/N):	No	Consider Friction for bearing (Y/N):	No		Angle from Bottm of Pad:	25
Consider soil hori. force for O.T.M.:	No	Reduction factor on the maximum soil bearing pressure:	1.00			

Foundation Analysis and Design:

Total Dry Soil Volume (cu. Ft.):	1735.90	Total Dry Soil Weight (Kips):	216.99
Total Buoyant Soil Volume (cu. Ft.):	0.00	Total Buoyant Soil Weight (Kips):	0.00
Total Effective Soil Weight (Kips):	216.99	Weight from the Concrete Block at Top (K):	0.00
Total Dry Concrete Volume (cu. Ft.):	834.75	Total Dry Concrete Weight (Kips):	125.21
Total Buoyant Concrete Volume (cu. Ft.):	0.00	Total Buoyant Concrete Weight (Kips):	0.00
Total Effective Concrete Weight (Kips):	125.21	Total Vertical Load on Base (Kips):	376.20

Check Soil Capacities:

				Load/ Capacity Ratio	
Calculated Maxium Net Soil Pressure under the base (psf):	2926	<	Allowable Soil Bearing (psf): 12000	0.24	OK!
Allowable Foundation Overturning Resistance (SF=1.5, kips-ft.):	2696.1	>	Applied Momont (kips-ft): 2425	0.90	OK!
Factor of Safety Against Overturning (O. R. Moment/Design Moment):	1.67	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		
				Load/ Capacity Ratio	
(1) Concrete Pier:					
Vertical Steel Rebar Area (sq. in./each):	0.79	Tie / Stirrup Area (sq. in./each):	0.20		
Calculated Moment Capacity (Mn,Kips-Ft):	3392.5 >	Design Factored Moment (Mu, Kips-Ft	3103.4	0.91	OK!
Calculated Shear Capacity (Kips):	501.5 >	Design Factored Shear (Kips):	32.6	0.07	OK!
Calculated Tension Capacity (Tn, Kips):	1279.8 >	Design Factored Tension (Tu Kips):	0.0	0.00	OK!
Calculated Compression Capacity (Pn, Kips):	7156.5 >	Design Factored Axial Load (Pu Kips):	44.2	0.01	OK!
Moment & Axial Strength Combination(Pu/Pn+Mu/Mn):	0.92 OK!	Check Tie Spacing (Design/Required):		1	OK!
Pier Reinforcement Ratio:	0.006	Reinforcement Ratio is satisfied per ACI			
(2).Concrete Pad:					
One-Way Design Shear Capacity (L-Direction, Kips):	353.4 >	One-Way Factored Shear (L-D. Kips):	239.1	0.68	OK!
One-Way Design Shear Capacity (W-Direction, Kips):	353.4 >	One-Way Factored Shear (W-D., Kips)	239.1	0.68	OK!
One-Way Design Shear Capacity (Corner-Corner. Kips):	401.1 >	One-Way Factored Shear (C-C, Kips):	322.4	0.80	OK!
Lower Steel Pad Reinforcement Ratio (L-Direct.):	0.0102 OK!	Lower Steel Pad Reinf. Ratio (W-Direc	0.0102		
Lower Steel Pad Moment Capacity (L-Direction. Kips-ft):	2246.6 >	Moment at Bottom (L-Direct. K-Ft):	602.1	0.27	OK!
Lower Steel Pad Moment Capacity (W-Direction. Kips-ft):	2246.6 >	Moment at Bottom (W-Direct. K-Ft):	602.1	0.27	OK!
Lower Steel Pad Moment Capacity (Corner-Corner,K-ft):	3099.9 >	Moment at Bottom (C-C Dir. K-Ft):	851.5	0.27	OK!
Upper Steel Pad Reinforcement Ratio (L-Direct.):	0.0102 OK!	Upper Steel Reinf. Ratio (W-Direct.):	0.0102		
Upper Steel Pad Moment Capacity (L-Direction. Kips-ft):	2246.6 >	Moment at the top (L-Dir Kips-Ft):	148.4	0.07	OK!
Upper Steel Pad Moment Capacity (W-Direction. Kips-ft):	2246.6 >	Moment at the top (W-Dir Kips-Ft):	148.4	0.07	OK!
Upper Steel Pad Moment Capacity (Corner-Corner. K-ft):	3099.9 >	Moment at the top (C-C Direc. K-Ft):	513.4	0.17	OK!

Pier Foundation Design For Monopole

				Date
				6/14/2016
	Customer Name:	**T-Mobile**	**EIA/TIA Standard:**	EIA-222-F
	Site Name:		**Structure Height (Ft.):**	119
	Site Number:	CT08558-B-SBA	**Engineer Name:**	J. Chen
	Engr. Number:	23330	**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):	34.0	Shear Force (Kips):	25.1
Uplift Force (Kips):	0.0	Moment (Kips-ft):	2261.7

Foundation Geometries:

Mods required -Yes/No ?:	No			ft.
Diameter of Pier (ft.):	6.0	Depth of Base B. G. S. :	24.0	ft.
Pier Height A. G. (ft.):	1.00			

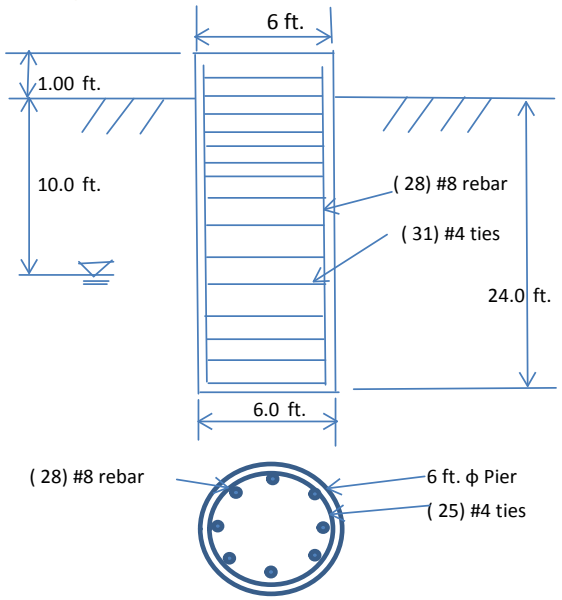
Material Properties and Reabr Info:

Concrete Strength (psi):	4000	Steel Elastic Modulus:	29000	ksi
Vertical bar yield (ksi)	60	Tie steel yield strength:	60	ksi
Vertical Rebar Size #:	8	Tie / Stirrup Size #:	4	
Qty. of Vertical Rebars:	28	Tie Spacing:	12.0	in.
Concrete Cover (in.):	3	Concrete unit weight:	150.0	pcf

Soil Design Parameters:

Water Table B.G.S. (ft):	10.0	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



Monopole Pier Foundation

Depth of Layers (ft) Top	Depth of Layers (ft) Bottom	γ_{soil} (pcf)	ϕ (°)	Cohesion (psf)	Allowable Skin Friction (psf)	Allowable Bearing (psf)	Soil Types					
0.0	2.0	135	0	0	0	0	Sand					
2.0	10.0	135	34	0	0	0	Sand					
10.0	25.0	137	34	0	0	0	Sand					
25.0	30.0	137	34	0	0	0	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.):	5907	Dry Soil Weight from Conical Failure:	797	Kips
Total Buoyant Soil Volume from Conical Failure (cu. Ft.):	2024	Buoyant Soil Weight from Conical Failure (Ki	194	Kips
Total Dry Concrete Volume (cu. Ft.):	311	Total Dry Concrete Weight:	46.7	Kips
Total Buoyant Concrete Volume (cu. Ft.):	395.8	Total Buoyant Concrete Weight:	34.68	Kips
Total Effective Concrete Weight (Kips):	81.3	Total Effective Soil Weight:	991.0	Kips
Total Effective Vertical Load on Base (Kips):	39.3			

Check Soil Capacities:

					Usage	
Allowable Foundation Overturning Resistance (kips-ft.):	4210.5	>	Applied Momont (kips-ft):	2679	0.64	OK!
Factor of Safety of Passive Soil Resistance against Moment:	3.14	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):	0.79		Tie / Stirrup Area (sq. in./each):	0.20		
Calculated Moment Capacity (Mn,Kips-Ft):	3165	>	Design Factored Moment (Mu, K-Ft):	3070.4	0.97	OK!
Calculated Shear Capacity (Kips):	785.6	>	Design Factored Shear (Kips):	328.0	0.42	OK!
Calculated Tension Capacity (Tn, Kips):	1194.5	>	Design Factored Tension (Tu Kips):	0.0	0.00	OK!
Calculated Compression Capacity (Pn, Kips):	7159	>	Design Factored Axial Load (Pu Kips):	44.2	0.01	OK!
Moment & Axial Strength Combination(Tu/Tn+Mu/Mn):	0.98	OK!	Max. Allowable Tie/Stirrup Spacing:	12.00	in.	
Pier Reinforcement Ratio:	0.005	Reinforcement Ratio is satisfied per ACI				

Transcend Wireless

Shappy, Gregg <gshappy@transcendwireless.com>

723 Farmington Ave Cell tower

1 message

Scott Suydam <Scott.Suydam@newbritainct.gov> Thu, Jun 23, 2016 at 12:38 PM
To: "gshappy@transcendwireless.com" <gshappy@transcendwireless.com>

Greg, While looking through all files I have located for723 Farmington Ave. I did not find any Zoning Board of Appeals dockets.

Scott P.Suydam

Plan Review Technician

Building Department City of New Britain

27 W. Main St. Rm 404

New Britain, CT. 06051

860-612-5017 OFFICE

860-612-4212 FAX

T-MOBILE NORTHEAST LLC

SITE #: CTHA105A

SITE NAME: HA105/SBA STANLEY_FT

SITE ADDRESS:

723 FARMINGTON AVENUE

NEW BRITAIN, CT 06053

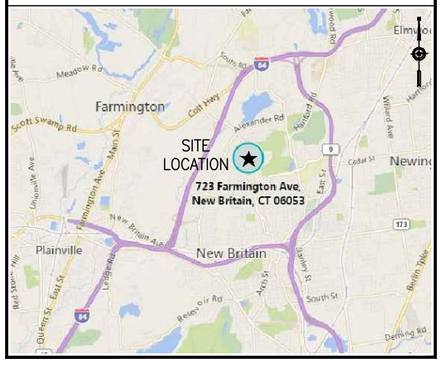
EXISTING WIRELESS BROADBAND FACILITY MODIFICATION

CONSTRUCTION DRAWINGS

(EXISITING CONFIGURATION 702CU)

(PROPOSED CONFIGURATION 792DB)

VICINITY MAP



DO NOT SCALE DRAWINGS

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

CALL BEFORE YOU DIG:

WWW.CBYD.COM

CALL 800 922 4455, OR 811

CALL THREE WORKING DAYS PRIOR TO DIGGING

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

COLOR CODE FOR UTILITY LOCATIONS

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

GENERAL NOTES

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

PROJECT INFORMATION

SITE NUMBER:	CTHA105A
SITE NAME:	HA105/SBA STANLEY_FT
SITE ADDRESS:	723 FARMINGTON AVENUE NEW BRITAIN, CT 06053
LAT./LONG.:	N 41.69849300 –72.78582000
PROPERTY OWNER:	SPRINT
APPLICANT:	T–MOBILE NORTHEAST, LLC. 35 GRIFFIN ROAD SOUTH BLOOMFIELD, CT 06002 (860) 692–7100
PROJECT MANAGER	TRANSCEND WIRELESS LLC 10 INDUSTRIAL AVE, SUITE #3 MAHWAH, NJ 07430

PROJECT DESCRIPTION

T–MOBILE NORTHEAST LLC PROPOSES THE MODIFICATION OF AN EXISTING WIRELESS BROABAND FACILITY CONSISTING OF REPLACEMENT OF 3 EXISTING AIR21 ANTENNAS WITH (3) AIR32 ANTENNAS, ADD (1) (6×12) FIBER TRUNK AND UPGRADE CIRCUIT BREAKER TO 100 AMPS.

SHEET INDEX

SHEET	DESCRIPTION
T–1	TITLE SHEET
N–1	CONTRACTOR'S NOTES
A–1	SITE PLAN
A–2	ELEVATION AND ANTENNA PLAN AND DETAILS
E–1	GROUNDING AND POWER ONE LINE DIAGRAM

T-MOBILE NORTHEAST, LLC
35 GRIFFIN ROAD SOUTH
BLOOMFIELD, CT 06002
OFFICE: (860) 692-7100
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Transcend Wireless
10 INDUSTRIAL AVE
MAHWAH NJ 07430
TRANSCEND@TRANSCENDWIRELESS.COM
TELEPHONE:(201) 684–0066

SUBMITTALS

DATE	DESCRIPTION	REVISION
05/05/16	ISSUED FOR REVIEW	A

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

PROJECT NO:	CTHA105A
DRAWN BY:	MS
CHECKED BY:	SM

PROFESSIONAL SEAL

SITE NUMBER
CTHA105A
SITE NAME
HA105/SBA STANLEY_FT
SITE ADDRESS
723 FARMINGTON AVENUE
NEW BRITAIN, CT 06053

SHEET TITLE
TITLE SHEET

SHEET NUMBER
T-1

ELECTRICAL NOTES:

WORK INCLUDED

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

GENERAL REQUIREMENTS

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

GUARANTEE

1. GUARANTEE MATERIALS, PARTS AND LABOR FOR WORK FOR ONE YEAR FROM THE DATE OF ISSUANCE OF OCCUPANCY PERMIT. DURING THAT PERIOD, MAKE GOOD FAULTS OR IMPERFECTIONS THAT MAY ARISE DUE TO DEFECTS OR OMISSIONS IN MATERIALS OR WORKMANSHIP WITH NO ADDITIONAL COMPENSATION AND AS DIRECTED BY ARCHITECT.

CLEANING

1. REMOVE ALL CONSTRUCTION DEBRIS RESULTING FROM THE WORK.
2. CLEAN EQUIPMENT AND SYSTEMS FOLLOWING THE COMPLETION OF THE PROJECT TO THE SATISFACTION OF THE ENGINEER.

COORDINATION AND SUPERVISION

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

SUBMITTALS

1. AS-BUILT DRAWINGS:
   A. UPON COMPLETION OF THE WORK, FURNISH TO THE OWNER "AS-BUILT" DRAWINGS.
2. SERVICE MANUALS:
   A. UPON COMPLETION OF THE WORK, FULLY INSTRUCT T-MOBILE AS TO THE OPERATION AND MAINTENANCE OF ALL MATERIAL, EQUIPMENT AND SYSTEMS.
   B. PROVIDE 3 COMPLETE BOUND SETS OF INSTRUCTIONS FOR OPERATING AND MAINTAINING ALL SYSTEMS AND EQUIPMENT.

CUTTING AND PATCHING

1. PROVIDE ALL CUTTING, DRILLING, ROUGH AND FINISH PATCHING REQUIRED TO COMPLETE THE WORK.
2. OBTAIN OWNER APPROVAL PRIOR TO CUTTING THROUGH FLOORS OR WALLS FOR PIPING OR CONDUIT.

TESTS, INSPECTION AND APPROVAL

1. BEFORE ENERGIZING ANY ELECTRICAL INSTALLATION, INSPECT EACH UNIT IN DETAIL. TIGHTEN ALL BOLTS AND CONNECTIONS (TORQUE-TIGHTEN WHERE REQUIRED) AND DETERMINE THAT ALL COMPONENTS ARE ALIGNED, AND THE EQUIPMENT IS IN SAFE, OPERATIONAL CONDITION.
2. PROVIDE THE COMPLETE ELECTRICAL SYSTEM FREE OF GROUND FAULTS AND SHORT CIRCUITS SUCH THAT THE SYSTEM WILL OPERATE SATISFACTORILY UNDER FULL LOAD CONDITIONS, WITHOUT EXCESSIVE HEATING AT ANY POINT IN THE SYSTEM.

SPECIAL REQUIREMENTS

1. DO NOT LEAVE ANY WORK INCOMPLETE NOR ANY HAZARDOUS SITUATIONS CREATED WHICH WILL AFFECT THE LIFE OR SAFETY OF THE PUBLIC AND/OR BUILDING OCCUPANTS. DO NOT INTERFERE WITH OR CUTOFF ANY OF THE EXISTING SERVICES WITHOUT THE OWNER'S WRITTEN PERMISSION.
2. WHEN NECESSARY TO TEMPORARILY DISCONNECT ANY EXISTING BUILDING UTILITIES AND SERVICE SYSTEMS, INCLUDING FEEDER OR BRANCH CIRCUITING SUPPLYING EXISTING FACILITIES, CONFER WITH THE OWNER AND ARRANGE THE PERIOD OF INTERRUPTION FOR A TIME MUTUALLY AGREED UPON. SHUTDOWN NOTE: SCHEDULE AND NOTIFY OWNER 48 HOURS PRIOR TO SHUTDOWN. ALL SHUTDOWN WORK TO BE SCHEDULED AT A TIME CONVENIENT TO OWNER.

GROUNDING

1. ROUTE ALL GROUNDING CONDUCTORS AS SHOWN ON CONDUIT/GROUNDING RISER.
2. ROUTE 500 KCMIL CU. THHN CONDUCTOR FROM THE MGB LOCATION TO BUILDING STEEL. VERIFY BUILDING STEEL IS EFFECTIVELY GROUNDED PER NEC TO THE MAIN SERVICE GROUNDING ELECTRODE CONDUCTOR (GEC).
3. MAKE ALL GROUND CONNECTIONS FROM MGB TO ELECTRICAL EQUIPMENT WITH 2 HOLE, CRIMP TYPE, BURNDY COMPRESSION TERMINATIONS, SIZED AS REQUIRED.
4. USE 1 HOLE, CRIMP TYPE, BURNDY COMPRESSIONS TERMINATIONS, SIZED AS REQUIRED, AT EQUIPMENT GROUND CONNECTIONS.
5. HIRE AN INDEPENDENT LAB TO PERFORM THE SPECIFIED OHMS TESTING. PROVIDE 4 SETS OF THE CERTIFIED DOCUMENTS TO THE OWNER FOR VERIFICATION PRIOR TO THE PROJECT COMPLETION.

RACEWAYS

1. ALL WIRING TO BE INSTALLED IN CONDUIT SYSTEMS IN ACCORDANCE WITH THE FOLLOWING:
   A. EXTERIOR FEEDERS AND CONTROL, WHERE UNDERGROUND, TO BE IN SCH 40 PVC.
   B. EXTERIOR, ABOVE GROUND POWER CONDUITS TO BE GALVANIZED RIGID STEEL (RGS).
   C. ALL TELECOMMUNICATION CONDUITS, INTERIOR/EXTERIOR, TO BE EMT.
   D. INSTALL PULL ROPES IN ALL NEW EMPTY CONDUITS INSTALLED ON THIS PROJECT.
   E. ALL TELECOM CONDUITS AND PULL BOXES INSTALLED ON THIS PROJECT TO BE LABELED "T-MOBILE". OWNER WILL PROVIDE LABELS FOR CONTRACTOR TO INSTALL.
   F. INTERIOR FEEDERS TO BE INSTALLED IN E.M.T. WITH STEEL COMPRESSION FITTINGS.
   G. MINIMUM SIZE CONDUIT TO BE ¾" TRADE SIZE UNLESS OTHERWISE INDICATED ON THE DRAWINGS.
   H. FINAL CONNECTIONS TO MOTORS AND VIBRATING EQUIPMENT TO BE INSTALLED IN LIQUID-TIGHT FLEXIBLE METAL CONDUIT.
   I. CONDUIT TO BE RUN CONCEALED IN CEILINGS, FINISHED AREAS OR DRYWALL PARTITIONS, UNLESS OTHERWISE NOTED.
   J. THE ROUTING OF CONDUITS INDICATED ON THE DRAWINGS IS DIAGRAMMATIC. BEFORE INSTALLING ANY WORK, EXAMINE THE WORKING LAYOUTS AND SHOP DRAWINGS OF THE OTHER TRADES TO DETERMINE THE EXACT LOCATIONS AND CLEARANCES.
   K. ALL EXTERIOR MOUNTING HARDWARE TO BE GALVANIZED STEEL. COORDINATE WITH BUILDING ENGINEER PRIOR TO ATTACHING TO BUILDING STRUCTURE.
   L. PENETRATIONS OF WALLS, FLOORS AND ROOFS, FOR THE PASSAGE OF ELECTRICAL RACEWAYS, TO BE PROPERLY SEALED AFTER INSTALLATION OF RACEWAYS SO AS TO MAINTAIN THE STRUCTURAL OR WATERPROOF INTEGRITY OF THE WALL, FLOOR OR ROOF SYSTEM TO BE PENETRATED. SEAL ALL CONDUIT PENETRATIONS THROUGH FIRE OR SMOKE RATED WALLS, CEILINGS OR SMOKE TIGHT CORRIDOR PARTITIONS TO MAINTAIN PROPER RATING OF WALL OR CEILING.
   M. PROVIDE ALL CONDUIT ENDS WITH INSULATED METALLIC GROUNDING BUSHINGS.
   N. CONDUIT TO BE SUPPORTED AT MAXIMUM DISTANCE OF 8'-0", OR AS REQUIRED BY NEC, IN HORIZONTAL AND VERTICAL DIRECTIONS.
   O. PROVIDE STAINLESS STEEL BLANK COVER PLATES FOR ALL JUNCTION BOXES AND/OR OUTLET BOXES NOT USED IN EXPOSED AREAS. PROVIDE ALL OTHER UNUSED BOXES WITH STANDARD STEEL COVER PLATES.
   P. WHERE APPLICABLE, PROVIDE ROOFTOP CONDUIT SUPPORT SYSTEM, CONFORMING TO ROOFTOP WARRANTY REQUIREMENTS, PER BUILDING.

WIRES AND CABLES

1. CONTRACTOR TO COORDINATE WITH EQUIPMENT SUPPLIER AND VENDOR FOR EXACT EQUIPMENT OVER-CURRENT PROTECTION VOLTAGE, WIRE SIZE AND PLUG CONFIGURATION, IF APPLICABLE, PRIOR TO BID.
2. ALL EQUIPMENT/DEVICES TO BE PROVIDED WITH INSULATED GROUND CONDUCTOR.
3. ALL WIRE AND CABLE TO BE 600VOLT, COPPER, WITH THWN/THHN INSULATION, EXCEPT AS NOTED.
4. WIRE FOR POWER AND LIGHTING WILL NOT BE LESS THAN NO. 12AWG. ALL WIRE NO. 8 AND LARGER TO BE STRANDED.
5. CONTROL WIRING IS NOT TO BE LESS THAN NO. 14AWG, FLEXIBLE IN SINGLE CONDUCTORS OR MULTI-CONDUCTOR CABLES. CONTROL WIRING WILL CONSIST OF MULTI-CONDUCTOR CABLES WHEREVER POSSIBLE. CABLES TO BE PROVIDED WITH AN OVERALL FLAME-RETARDANT, EXTRUDED JACKET AND RATED FOR PLENUM USE. ALL CONTROL WIRE TO BE 600VOLT RATED.
6. WIRE PREVIOUSLY PULLED INTO CONDUIT IS CONSIDERED USED AND IS NOT TO BE RE-PULLED.
7. HOME RUNS AND BRANCH CIRCUIT WIRING FOR 20A, 120V CIRCUITS:

LENGTH (FT.)	HOME RUN WIRE SIZE
0 TO 50	NO. 12
51 TO 100	NO. 10
101 TO 150	NO. 8

8. VOLTAGE DROP IS NOT TO EXCEED 3%.
9. MAKE ALL CONNECTIONS WITH UL APPROVED, SOLDERLESS, PRESSURE TYPE INSULATED CONNECTORS: SCOTCHLOK OR AND APPROVED EQUAL.

WIRING DEVICES

1. ALL RECEPTACLES INSTALLED IN THIS PROJECT TO BE GROUNDING TYPE, WITH GROUNDING PIN SLOT CONNECTED TO DEVICE GROUND SCREW FOR GROUND WIRE CONNECTION.

DISCONNECT SWITCHES AND FUSES

1. DISCONNECT SWITCHES TO BE VOLTAGE-RATED TO SUIT THE CHARACTERISTICS OF THE SYSTEM FROM WHICH THEY ARE SUPPLIED.
2. PROVIDE HEAVY-DUTY, METAL-ENCLOSED, EXTERNALLY-OPERATED DISCONNECT SWITCHES, FUSED OR UNFUSED, OF SUCH TYPE AND SIZE AS REQUIRED TO PROPERLY PROTECT OR DISCONNECT THE LOAD FOR WHICH THEY ARE INTENDED.
3. PROVIDE NEMA 1 DISCONNECT SWITCHES FOR INTERIOR INSTALLATION, NEMA 3R FOR EXTERIOR INSTALLATION.
4. DISCONNECT SWITCHES TO BE MANUFACTURED BY:
   A. GENERAL ELECTRIC COMPANY
   B. SQUARE-D
5. PROVIDE RK-1 TYPE FUSES, UNLESS NOTED OTHERWISE.

INSTALLATION

1. INSTALL DISCONNECT SWITCHES WHERE INDICATED ON DRAWINGS.
2. INSTALL FUSES IN FUSIBLE DISCONNECT SWITCHES. FUSES MUST MATCH IN TYPE AND RATING.
3. FUSES TO BE MOUNTED SO THAT THE LABELS SHOWING THEIR RATINGS CAN BE READ WITHOUT REQUIRING FUSE REMOVAL.
4. FURNISH AND DEPOSIT SPARE FUSES AT THE JOB SITE AS FOLLOWS:
   A. THREE SPARES FOR EACH TYPE AND SIZE, IN EXCESS OF 60A, USED FOR INITIAL FUSING.
   B. TEN PERCENT SPARES FOR EACH TYPE AND SIZE, UP TO AND INCLUDING 60A, USED FOR INITIAL FUSING. IN NO CASE WILL LESS THAN THREE FUSES OF ONE PARTICULAR TYPE AND SIZE BE FURNISHED.

GENERAL NOTES:

INTENT

1. THESE SPECIFICATIONS AND CONSTRUCTION DRAWINGS ACCOMPANYING THEM DESCRIBE THE WORK TO BE DONE AND THE MATERIALS TO BE FURNISHED FOR CONSTRUCTION.
2. THE DRAWINGS AND SPECIFICATIONS ARE INTENDED TO BE FULLY EXPLANATORY AND SUPPLEMENTARY. HOWEVER, SHOULD ANYTHING BE SHOWN, INDICATED, OR SPECIFIED ON ONE AND NOT THE OTHER, IT SHALL BE DONE THE SAME AS IF SHOWN, INDICATED OR SPECIFIED IN BOTH
3. THE INTENTION OF THE DOCUMENTS IS TO INCLUDE ALL LABOR AND MATERIALS REASONABLY NECESSARY FOR THE PROPER EXECUTION AND COMPLETION OF THE WORK AS STIPULATED IN THE CONTRACT.
4. THE PURPOSE OF THE SPECIFICATIONS IS TO INTERPRET THE INTENT OF THE DRAWINGS AND TO DESIGNATE THE METHOD OF THE PROCEDURE, TYPE AND QUALITY OF MATERIALS REQUIRED TO COMPLETE THE WORK.
5. MINOR DEVIATIONS FROM THE DESIGN LAYOUT ARE ANTICIPATED AND SHALL BE CONSIDERED AS PART OF THE WORK. NO CHANGES THAT ALTER THE CHARACTER OF THE WORK WILL BE MADE OR PERMITTED BY THE OWNER WITHOUT ISSUING A CHANGE ORDER.

CONFLICTS

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFICATIONS OF ALL MEASUREMENTS AT THE SITE BEFORE ORDERING ANY MATERIALS OR DOING ANY WORK. NO EXTRA CHARGE OR COMPENSATION SHALL BE ALLOWED DUE TO DIFFERENCE BETWEEN ACTUAL DIMENSIONS AND DIMENSIONS INDICATED ON THE CONSTRUCTION DRAWINGS. ANY SUCH DISCREPANCY IN DIMENSION WHICH MAY BE FOUND SHALL BE SUBMITTED TO THE OWNER FOR CONSIDERATION BEFORE THE CONTRACTOR PROCEEDS WITH THE WORK IN THE AFFECTED AREAS.
2. THE BIDDER, IF AWARDED THE CONTRACT, WILL NOT BE ALLOWED ANY EXTRA COMPENSATION BY REASON OF ANY MATTER OR THING CONCERNING SUCH BIDDER MIGHT HAVE FULLY INFORMED THEMSELVES PRIOR TO THE BIDDING.
3. NO PLEA OF IGNORANCE OF CONDITIONS THAT EXIST, OR OF DIFFICULTIES OR CONDITIONS THAT MAY BE ENCOUNTERED, OR OF ANY OTHER RELEVANT MATTER CONCERNING THE WORK TO BE PERFORMED IN THE EXECUTION OF THE WORK WILL BE ACCEPTED AS AN EXCUSE FOR ANY FAILURE OR OMISSION ON THE PART OF THE CONTRACTOR TO FULFILL EVERY DETAIL OF ALL THE REQUIREMENTS OF THE CONTRACT DOCUMENTS GOVERNING THE WORK.

CONTRACTS AND WARRANTIES

1. CONTRACTOR IS RESPONSIBLE FOR APPLICATION AND PAYMENT OF CONTRACTOR LICENSES AND BONDS.
2. SEE MASTER CONTRACTION SERVICES AGREEMENT FOR ADDITIONAL DETAILS.

STORAGE

1. ALL MATERIALS MUST BE STORED IN A LEVEL AND DRY FASHION AND IN A MANNER THAT DOES NOT NECESSARILY OBSTRUCT THE FLOW OF OTHER WORK. ANY STORAGE METHOD MUST MEET ALL RECOMMENDATIONS OF THE ASSOCIATED MANUFACTURER.

CLEANUP

1. THE CONTRACTORS SHALL, AT ALL TIMES, KEEP THE SITE FREE FROM ACCUMULATION OF WASTE MATERIALS OR RUBBISH CAUSED BY THEIR EMPLOYEES AT WORK AND AT THE COMPLETION OF THE WORK. THEY SHALL REMOVE ALL RUBBISH FROM AND ABOUT THE BUILDING AREA, INCLUDING ALL THEIR TOOLS, SCAFFOLDING AND SURPLUS MATERIALS AND SHALL LEAVE THEIR WORK CLEAN AND READY TO USE.
2. EXTERIOR
   A. VISUALLY INSPECT EXTERIOR SURFACES AND REMOVE ALL TRACES OF SOIL, WASTE MATERIALS, SMUDGES AND OTHER FOREIGN MATTER.
   B. REMOVE ALL TRACES OF SPLASHED MATERIALS FROM ADJACENT SURFACES.
   C. IF NECESSARY, TO ACHIEVE A UNIFORM DEGREE OF CLEANLINESS, HOSE DOWN THE EXTERIOR OF THE STRUCTURE.
3. INTERIOR
   A. VISUALLY INSPECT INTERIOR SURFACE AND REMOVE ALL TRACES OF SOIL, WASTE MATERIALS, SMUDGES AND OTHER FOREIGN MATTER FROM WALLS, FLOOR, AND CEILING.
   B. REMOVE ALL TRACES OF SPLASHED MATERIALS FROM ADJACENT SURFACES.
   C. REMOVE PAINT DROPPINGS, SPOTS, STAINS, AND DIRT FROM FINISHED SURFACES.

CHANGE ORDER PROCEDURE:

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

RELATED DOCUMENTS AND COORDINATION

1. GENERAL CARPENTRY, ELECTRICAL AND ANTENNA DRAWINGS ARE INTERRELATED. IN PERFORMANCE OF THE WORK, THE CONTRACTOR MUST REFER TO ALL DRAWINGS. ALL COORDINATION TO BE THE RESPONSIBILITY OF THE CONTRACTOR.

SHOP DRAWINGS

1. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS AS REQUIRED AND LISTED IN THESE SPECIFICATIONS TO THE OWNER FOR APPROVAL.
2. ALL SHOP DRAWINGS SHALL BE REVIEWED, CHECKED AND CORRECTED BY CONTRACTOR PRIOR TO SUBMITTAL TO THE OWNER.

PRODUCTS AND SUBSTITUTIONS

1. SUBMIT 3 COPIES OF EACH REQUEST FOR SUBSTITUTION. IN EACH REQUEST, IDENTIFY THE PRODUCT OR FABRICATION OR INSTALLATION METHOD TO BE REPLACED BY THE SUBSTITUTION. INCLUDE RELATED SPECIFICATION SECTION AND DRAWING NUMBERS AND COMPLETE DOCUMENTATION SHOWING COMPLIANCE WITH THE REQUIREMENTS FOR SUBSTITUTIONS.
2. SUBMIT ALL NECESSARY PRODUCT DATA AND CUT SHEETS WHICH PROPERLY INDICATE AND DESCRIBE THE ITEMS, PRODUCTS AND MATERIALS BEING INSTALLED. THE CONTRACTOR SHALL, IF DEEMED NECESSARY BY THE OWNER, SUBMIT ACTUAL SAMPLES TO THE OWNER FOR APPROVAL IN LIEU OF CUT SHEETS.

QUALITY ASSURANCE

1. ALL WORK SHALL BE IN ACCORDANCE WITH APPLICABLE LOCAL, STATE AND FEDERAL REGULATIONS. THESE SHALL INCLUDE, BUT NOT BE LIMITED TO THE APPLICABLE CODES SET FORTH BY THE LOCAL GOVERNING BODY. SEE "CODE COMPLIANCE" T-1.

ADMINISTRATION

1. BEFORE THE COMMENCEMENT OF ANY WORK, THE CONTRACTOR WILL ASSIGN A PROJECT MANAGER WHO WILL ACT AS A SINGLE POINT OF CONTACT FOR ALL PERSONNEL INVOLVED IN THIS PROJECT. THIS PROJECT MANAGER WILL DEVELOP A MASTER SCHEDULE FOR THE PROJECT WHICH WILL BE SUBMITTED TO THE OWNER PRIOR TO THE COMMENCEMENT OF ANY WORK.
2. SUBMIT A BAR TYPE PROGRESS CHART, NOT MORE THAN 3 DAYS AFTER THE DATE ESTABLISHED FOR COMMENCEMENT OF THE WORK ON THE SCHEDULE, INDICATING A TIME BAR FOR EACH MAJOR CATEGORY OR UNIT OF WORK TO BE PERFORMED AT THE SITE, PROPERLY SEQUENCED AND COORDINATED WITH OTHER ELEMENTS OF WORK AND SHOWING COMPLETION OF THE WORK SUFFICIENTLY IN ADVANCE OF THE DATE ESTABLISHED FOR SUBSTANTIAL COMPLETION OF THE WORK.
3. PRIOR TO COMMENCING CONSTRUCTION, THE OWNER SHALL SCHEDULE AN ON-SITE MEETING WITH ALL MAJOR PARTIES. THIS WOULD INCLUDE, BUT NOT LIMITED TO, THE OWNER, PROJECT MANAGER, CONTRACTOR, LAND OWNER REPRESENTATIVE, LOCAL TELEPHONE COMPANY, TOWER ERECTION FOREMAN (IF SUBCONTRACTED).
4. CONTRACTOR SHALL BE EQUIPPED WITH SOME MEANS OF CONSTANT COMMUNICATIONS, SUCH AS A MOBILE PHONE OR A BEEPER. THIS EQUIPMENT WILL NOT BE SUPPLIED BY THE OWNER, NOR WILL WIRELESS SERVICE BE ARRANGED.
5. DURING CONSTRUCTION, CONTRACTOR MUST ENSURE THAT EMPLOYEES AND SUBCONTRACTORS WEAR HARD HATS AT ALL TIMES. CONTRACTOR WILL COMPLY WITH ALL WPCS SAFETY REQUIREMENTS IN THEIR AGREEMENT.
6. PROVIDE WRITTEN DAILY UPDATES ON SITE PROGRESS TO THE OWNER.
7. COMPLETE INVENTORY OF CONSTRUCTION MATERIALS AND EQUIPMENT IS REQUIRED PRIOR TO START OF CONSTRUCTION.
8. NOTIFY THE OWNER/PROJECT MANAGER IN WRITING NO LESS THAN 48 HOURS IN ADVANCE OF CONCRETE POURS, TOWER ERECTIONS, AND EQUIPMENT CABINET PLACEMENTS.

INSURANCE AND BONDS

1. CONTRACTOR, AT THEIR OWN EXPENSE, SHALL CARRY AND MAINTAIN, FOR THE DURATION OF THE PROJECT, ALL INSURANCE, AS REQUIRED AND LISTED, AND SHALL NOT COMMENCE WITH THEIR WORK UNTIL THEY HAVE PRESENTED AN ORIGINAL CERTIFICATE OF INSURANCE STATING ALL COVERAGES TO THE OWNER. REFER TO THE MASTER AGREEMENT FOR REQUIRED INSURANCE LIMITS.
2. THE OWNER SHALL BE NAMED AS AN ADDITIONAL INSURED ON ALL POLICIES.
3. CONTRACTOR MUST PROVIDE PROOF OF INSURANCE.

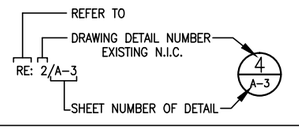
ARCHITECTURAL SYMBOLS

STORAGE

38

3

DETAIL REFERENCE KEY



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SUBMITTALS

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

PROJECT NO:	CTHA105A
DRAWN BY:	MS
CHECKED BY:	SM

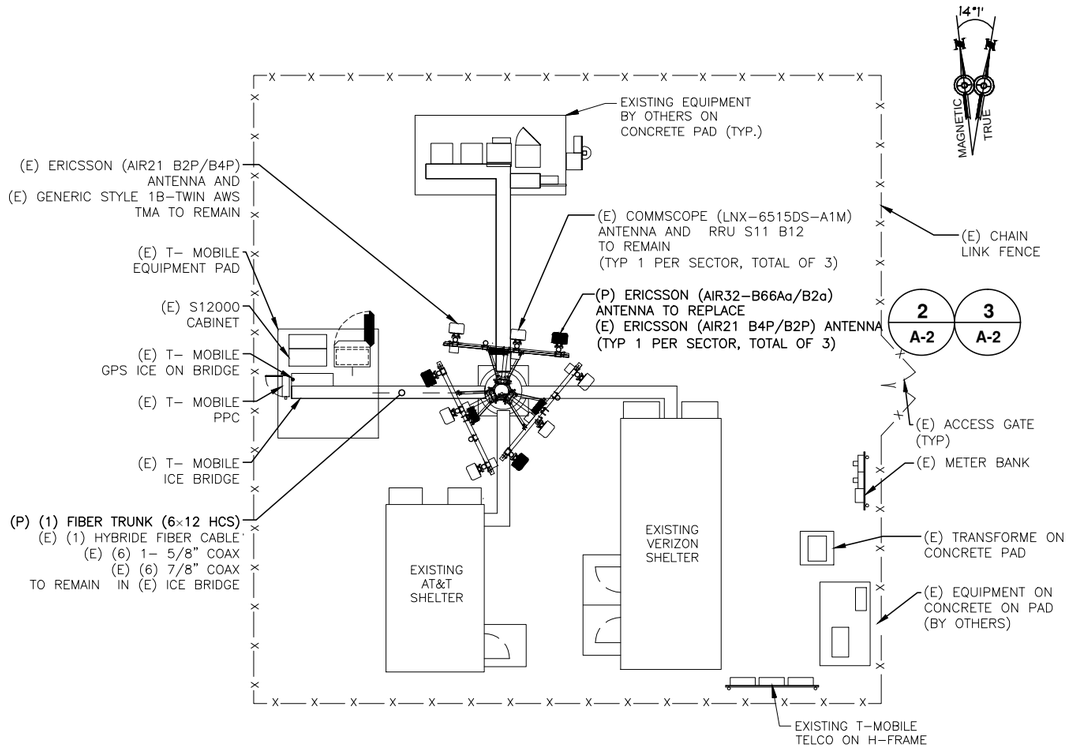
PROFESSIONAL SEAL

SITE NUMBER
CTHA105A
SITE NAME
HA105/SBA STANLEY_FT
SITE ADDRESS
723 FARMINGTON AVENUE
NEW BRITAIN, CT 06053

SHEET TITLE
CONTRACTOR'S NOTES

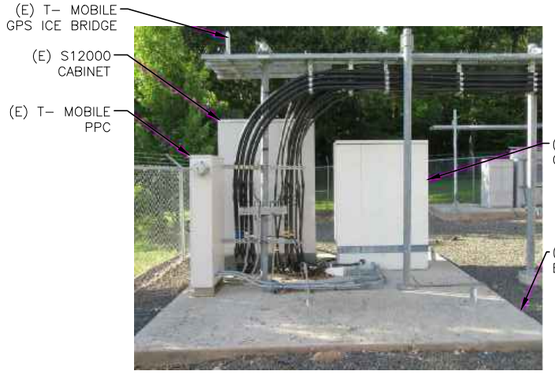
SHEET NUMBER
N-1

FINAL DESIGN PENDING STRUCTURAL EVALUATION



SITE PLAN 1 / A-1

SCALE: N.T.S



EQUIPMENT PHOTO DETAIL 2 / A-1

SCALE: N.T.S

GENERAL SITE NOTES

1. SITE INFORMATION WAS OBTAINED FROM A FIELD INVESTIGATION PERFORMED BY ATLANTIS GROUP, INC. CONTRACTOR TO FIELD VERIFY DIMENSIONS AS NECESSARY BEFORE CONSTRUCTION.

2. THE PROPOSED DEVELOPMENT DOES NOT INCLUDE SIGNS OF ADVERTISING.

3. THE PROPOSED DEVELOPMENT IS UNMANNED AND THEREFORE DOES NOT REQUIRE A MEANS OF WATER SUPPLY OR SEWAGE DISPOSAL.

4. NO LANDSCAPING WORK IS PROPOSED IN CONJUNCTION WITH THIS DEVELOPMENT OTHER THAN THAT WHICH IS SHOWN.

5. THE PROPOSED DEVELOPMENT DOES NOT INCLUDE OUTDOOR STORAGE OR ANY SOLID WASTE RECEPTACLES.

6. UTILITIES SHOWN ON PLAN ARE TAKEN FROM OWNERS RECORDS AND FIELD LOCATION OF VISIBLE SURFACE FEATURES. THE EXISTENCE, EXTENT AND EXACT HORIZONTAL AND VERTICAL LOCATIONS OF UTILITIES HAS NOT BEEN VERIFIED. ANY CONTRACTOR PERFORMING WORK ON THIS SITE MUST CONTACT CALL BEFORE YOU DIG THREE WORKING DAYS PRIOR TO COMMENCING WORK.

7. ALL OBSOLETE OR UNUSED FACILITIES SHALL BE REMOVED WITHIN 12 MONTHS OF CESSATION OF OPERATIONS.

SITE LEGEND

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

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HA105/SBA STANLEY_FT

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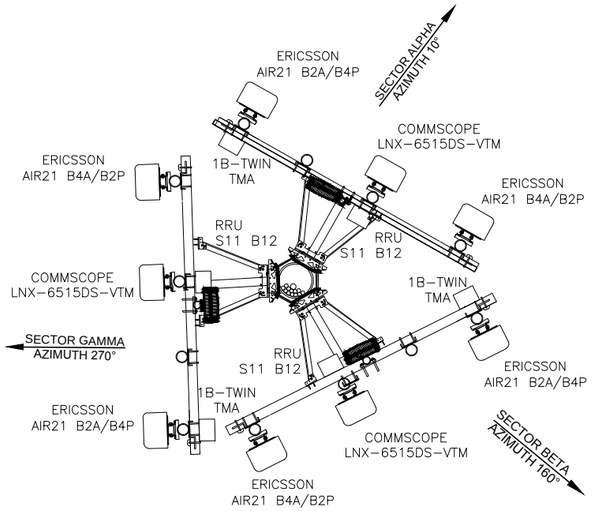
SHEET TITLE
SITE PLAN

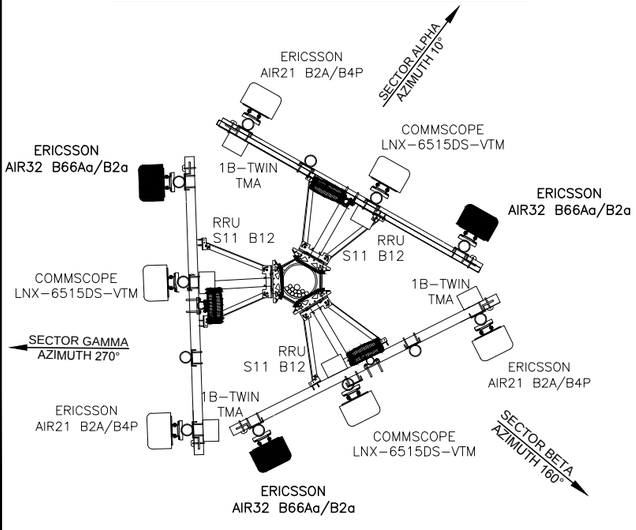
SHEET NUMBER
A-1

FINAL DESIGN PENDING STRUCTURAL EVALUATION

EXISTING ANTENNA CONFIGURATION



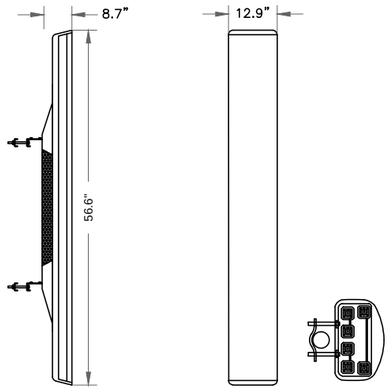
PROPOSED ANTENNA CONFIGURATION



ANTENNA PLAN

SCALE: N.T.S

1 / A-2

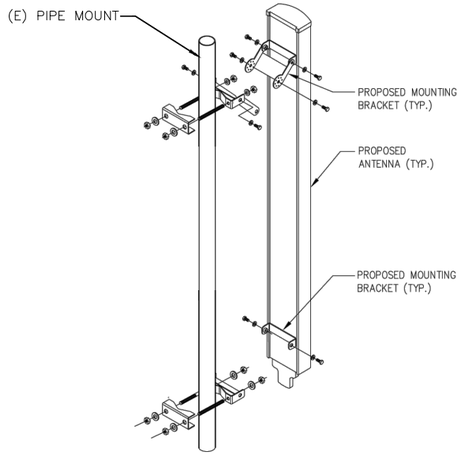


MANUFACTURER: ERICSSON
MODEL NO.: AIR32-B66Aa/B2a
DIMENSIONS – HxWxD, (IN) 56.6x12.9x8.7
WEIGHT – 132.2 LB

ERICSSON AIR32- B66Aa/B2a ANTENNA DETAIL

SCALE: N.T.S

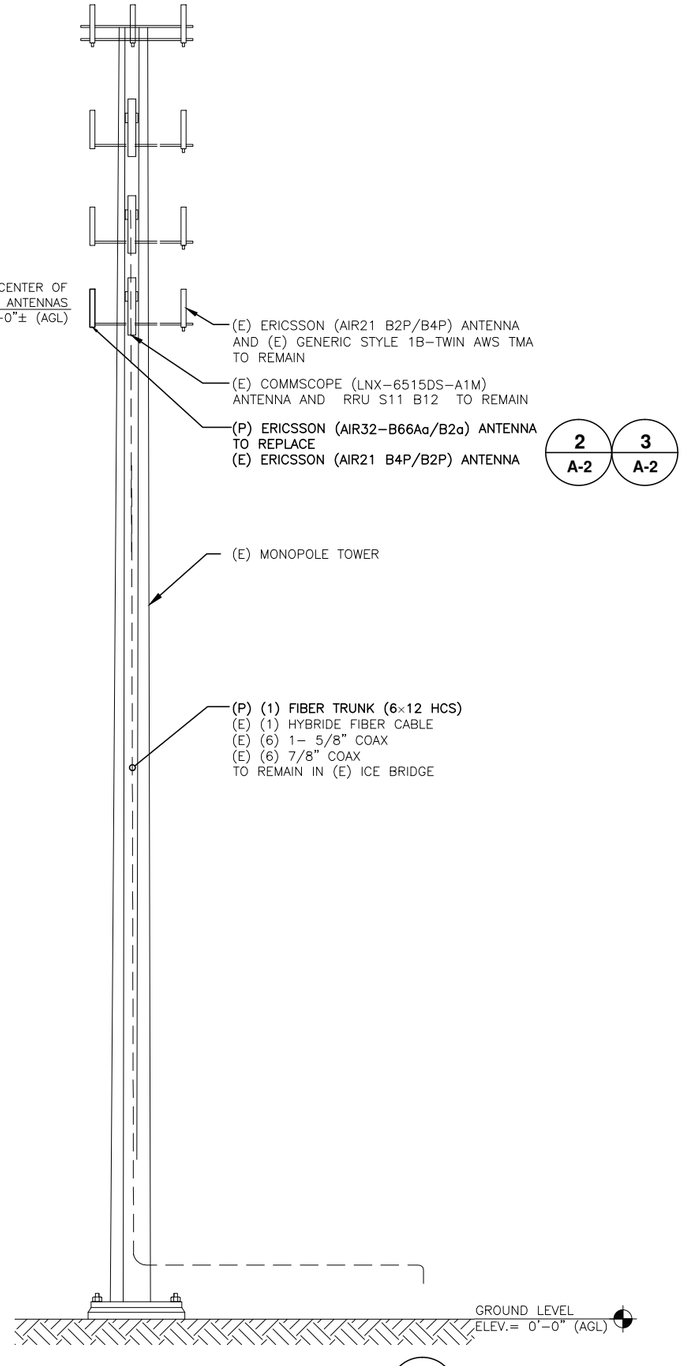
2 / A-2



MOUNTING DETAIL

SCALE: N.T.S

3 / A-2



2 / A-2 — 3 / A-2

ELEVATION

SCALE: N.T.S

2 / A-2

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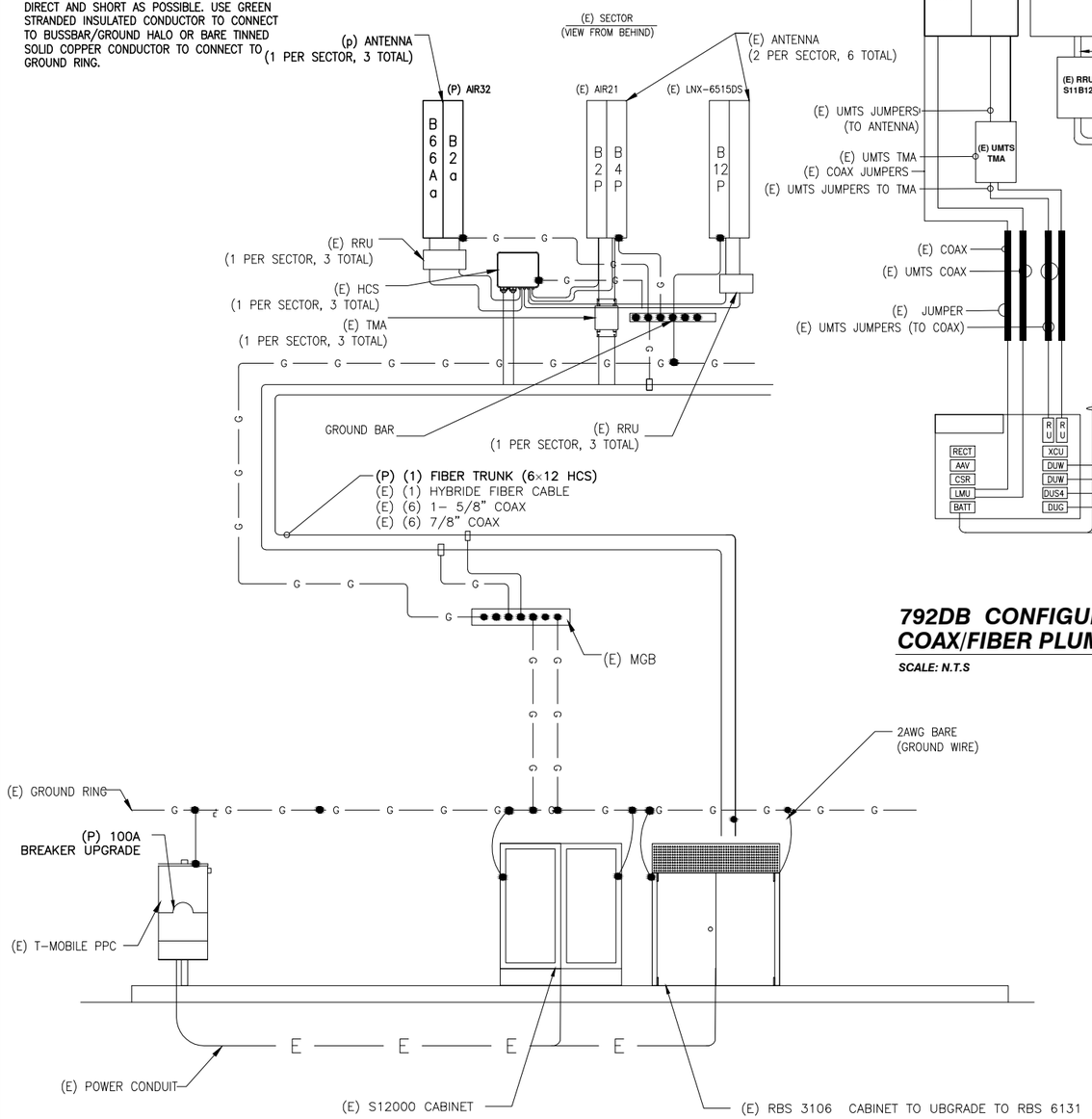
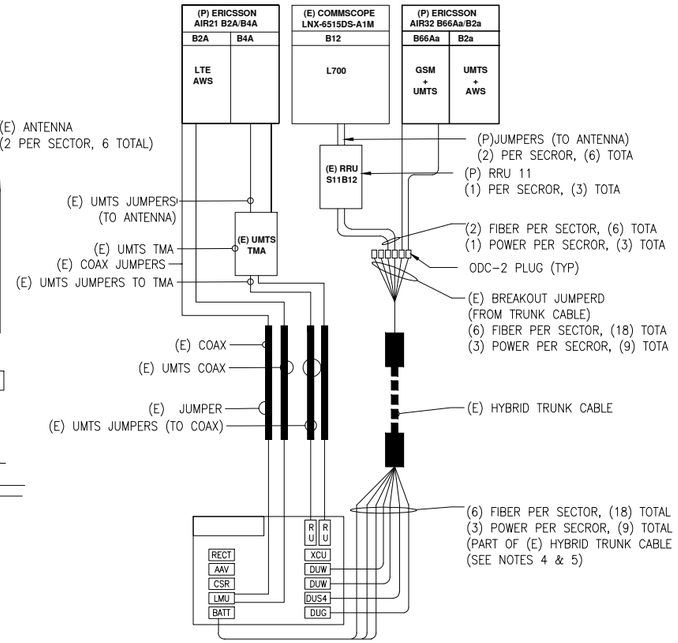
SHEET TITLE
ELEVATION

SHEET NUMBER
A-2

NOTES:
A. PROVIDE #2AWG GROUNDING CONDUCTOR, U.O.N.
B. DO NOT INSTALL GROUND KIT AT BEND. DIRECT GROUND WIRE DOWN TO ANTENNA BUSSBAR.
C. PROVIDE GROUNDING ELECTRODES IN QUANTITY, TYPE AND SIZE AS INDICATED ON SITE GROUNDING PLAN.
D. ADD COAX GROUND KIT CONNECTION TO BUSSBAR WHEN LENGTH OF COAX RUN (FROM EQUIPMENT TO ANTENNA) IS GREATER THAN 20'-0".
E. GROUND HCS BOX W/ #2AWG GROUNDING CONDUCTOR ATTACHED TO GOOD GROUND AS DIRECT AND SHORT AS POSSIBLE. USE GREEN STRANDED INSULATED CONDUCTOR TO CONNECT TO BUSSBAR/GROUND HALO OR BARE TINNED SOLID COPPER CONDUCTOR TO CONNECT TO GROUND RING.

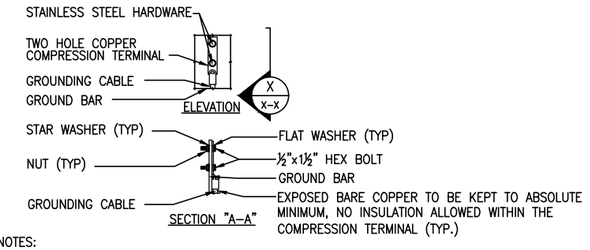


GROUNDING DIGRAM
SCALE: N.T.S — 1 / E-1

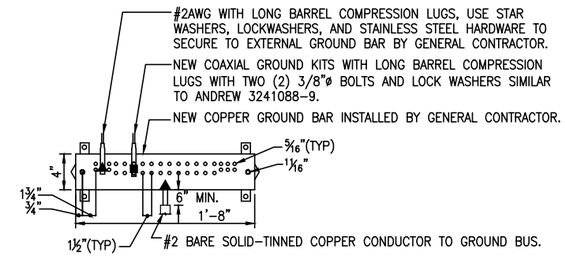


792DB CONFIGURATION
COAX/FIBER PLUMBING DIAGRAM
SCALE: N.T.S — 2 / E-1

(E) BREAKOUT JUMPERS
(FROM TRUNK CABLE)
(6) FIBER PER SECTOR, (18) TOTAL
(3) POWER PER SECTOR, (9) TOTAL



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



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

TYPICAL GROUND BAR CONNECTIONS DETAIL
SCALE: N.T.S — 3 / E-1

TRUNK FIBER NOTES:
1. IN GENERAL THIS CABLE WILL HANDLE SIMILARLY TO 7/8" COAXIAL CABLE, AND SIMILAR INSTALLATION TECHNIQUES APPLY. ALL CABLES ARE INDIVIDUALLY SERIALIZED, BE SURE TO WRITE DOWN THE CABLE SERIAL NUMBER FOR FUTURE REFERENCE.
2. THE TERMINATED FIBER ENDS (THE BROKEN OUT FIBERS PLUS CONNECTORS) HOWEVER ARE FRAGILE, AND THESE MUST BE PROTECTED DURING THE INSTALLATION PROCESS.
3. LEAVE THE PROTECTIVE TUBE AND SOCK AROUND THE FIBER TAILS AND CONNECTORS IN PLACE DURING HOISTING AND SECURING THE CABLE. REMOVE THIS ONLY JUST PRIOR TO MAKING THE FINAL CONNECTIONS TO THE OVP BOX.
4. DO NOT BEND THE FIBER ENDS (IN THE ORANGE FURCATION TUBES) TIGHTER THAN ¾" (19MM) BEND RADIUS, ELSE THERE IS A RISK OF BREAKING THE GLASS FIBERS.
5. BE SURE THAT THE LACE UP ENDS AND FIBER CONNECTORS ARE NOT DAMAGED BY ATTACHMENT OF A HOISTING GRIP OR DURING THE HOISTING PROCESS. ATTACH A HOISTING GRIP ON THE JACKETED CABLE NO LESS THAN 6 INCHES BELOW THE FIBER BREAKOUT POINT. IF A HOISTING GRIP IS NOT EASILY ATTACHED, USE A SIMPLE LINE ATTACHED BELOW THE FIBER BREAK-OUT POINT (I.E. AT THE CABLE OUTER JACKET). PREVENT THE FIBER TAILS (IN PROTECTIVE TUBE) AT THE CABLE END FROM UNDUE MOVEMENT DURING HOISTING BY SECURING THE PROTECTIVE TUBE (WITH OUTER SOCK) TO THE HOISTING LINE.
6. DURING HOISTING ENSURE THAT THERE IS A FREE PATH AND THAT THE CABLE, AND ESPECIALLY THE FIBER ENDS, WILL NOT BE SNAGGED ON TOWER MEMBERS OR OTHER OBSTACLES.
7. INSTALLATION TEMPERATURE RANGE IS -22F TO 158F (-30C TO +70C).
8. MINIMUM CABLE BEND RADII ARE 22.2" (565MM) LOADED (WITH TENSION ON THE CABLE) AND 11.1" (280MM) UNLOADED.
9. MAXIMUM CABLE TENSILE LOAD IS 3560 N (800 LB) SHORT TERM (DURING INSTALLATION) AND 1070 N (240 LB) LONG TERM.
10. COMMSCOPE NON LACE UP GRIP RECOMMENDED FOR MONOPOLE INSTALLATIONS.
11. MAXIMUM HANGER SPACING 3FT (0.9 M).

HYBRID FIBER/POWER JUMPER NOTES:
1. IN GENERAL THIS CABLE WILL HANDLE SIMILARLY TO A 3/8" COAXIAL CABLE.
2. THE TERMINATED FIBER ENDS HOWEVER ARE FRAGILE AND MUST BE PROTECTED DURING INSTALLATION. LEAVE THE PACKAGING AROUND THE FIBER ENDS IN PLACE UNTIL READY TO CONNECT THE JUMPER BETWEEN OVP AND RRU OR BBU.
3. DO NOT BEND THE FIBER BREAKOUT CABLE (BETWEEN THE MAIN CABLE AND THE FIBER CONNECTOR) TIGHTER THAN ¾" (19MM) RADIUS, ELSE THERE IS A RISK OF BREAKING THE GLASS.
4. ATTACH THE MAIN CABLE SECURELY TO THE STRUCTURE OR EQUIPMENT USING HANGERS AND/OR CABLE TIES TO PREVENT STRAIN ON CONNECTIONS FROM MOVEMENT IN WIND OR SNOW/ICE CONDITIONS.
5. ENSURE THE LC FIBER CONNECTORS ARE SEATED FIRMLY IN PANEL IN OVP OR IN EQUIPMENT.
6. INSTALLATION TEMPERATURE RANGE IS -22F TO 158F (-30C TO 70C).
7. MINIMUM CABLE BEND RADII ARE 10.3 INCH (265MM) LOADED (WITH TENSION ON THE CABLE) AND 5.2 INCH (130MM) UNLOADED.
8. MAXIMUM CABLE TENSILE LOAD IS 350 LB (1560N) SHORT TERM (DURING INSTALLATION) AND 105 LB (470N) LONG TERM.
9. STANDARD LENGTHS AVAILABLE ARE 6 FEET, 15 FEET AND 20 FEET

COAX/FIBER NOTES
SCALE: N.T.S — 4 / E-1

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SHEET TITLE
GROUNDING AND ONE LINE DIAGRAM
COAX/FIBER DIAGRAM

SHEET NUMBER
E-1