



October 7, 2015

Members of the Siting Council
Connecticut Siting Council
Ten Franklin Square
New Britain, CT 06051

RE: Notice of Exempt Modification
389 Forbes Ave
New Haven, CT 06511
N 41.29018
W 72.89528
T-Mobile Site #: CTNH041A_L700

Members of the Siting Council:

On behalf of T-Mobile, SBA Communications is submitting an exempt modification application to the Connecticut Siting council for modification of existing equipment at a tower facility located at 389 Forbes Ave, New Haven, CT.

The 389 Forbes Ave facility consists of a 86.5' Monopole Tower owned and operated by SBA 2012 TC Assets, LLC. In order to accommodate technological changes and enhance system performance in the State of Connecticut, T-Mobile plans to modify the equipment configurations at many of its existing cell sites. Please accept this letter and attachments as notification, pursuant to R.C.S.A. Section 16-50j-73, of construction which constitutes an exempt modification pursuant to R.C.S.A. Section 16-50j-72(b)(2). In compliance with R.C.S.A. Section 16-50j-73, a copy of this letter and attachments is being sent to the chief elected official of the municipality in which the affected cell site is located, Mayor Toni Harp, as well as the property owner, A.F. Forbes, Inc.

As part of T-Mobile's L700 project, T-Mobile desires to upgrade their equipment to meet the new standards of 4G technology. The new equipment will allow customers to download files and browse the internet at a high rate of speed while also allowing their phones to be compatible with the latest 4G technology.

Attached is a summary of the planned modifications, including power density calculations reflecting the change in T-Mobile's operations at the site along with the required fee of \$625.



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

1. The overall height of the structure will be unaffected.
2. The proposed changes will not extend the site boundaries. There will be no effect on the site compound other than the new equipment cabinets.
3. The proposed changes will not increase the noise level at the existing facility by six decibels or more.
4. The changes in radio frequency power density will not increase the calculated "worst case" power density for the combined operations at the site to a level at or above the applicable standard for uncontrolled environments as calculated for a mixed frequency site.

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

Please feel free to call me at 508.251.0720 x 3804 with any questions you may have concerning this matter.

Thank you,

Kri Pelletier
SBA Communications Corporation
33 Boston Post Road West Suite 320
Marlborough, MA 01752
508-251-0720 x 3804 + T
508-251-1755 + F
203-446-7700 + C
kpelletier@sbsite.com



T-Mobile

Equipment Modification

389 Forbes Ave., New Haven, CT 06511
Site number CTNH041A_L700

Tower Owner: SBA 2012 TC Assets, LLC

Equipment Configuration: Monopole

Current and/or approved:

- (3) Ericsson AIR21 B2A/B4P - Panel
- (3) Ericsson AIR21 B4A/B2P - Panel
- (6) Ericsson KRY 112 144/1 - TMA/TTA
- (12) 7/8" Lines
- (1) 1-5/8" Fiber

Final Configuration:

- (3) Ericsson AIR21 B2A/B4P - Panel
- (3) Ericsson AIR21 B4A/B2P - Panel
- (3) Commscope LNX-6515DS-A1M - Panel
- (6) Ericsson KRY 112 144/1 - TMA/TTA
- (3) Ericsson S11B12 - RRU
- (12) 7/8" lines
- (1) 1-5/8" Fiber

Structural Information:

The attached structural analysis demonstrates that the tower and foundation will have adequate structural capacity to accommodate the proposed modifications.

Power Density:

The anticipated Maximum Composite contributions from the T-Mobile facility are 2.62% of the allowable FCC established general public limit. The anticipated composite MPE value for this site assuming all carriers present is 5.23% of the allowable FCC established general public limit sampled at the ground level.

Site Composite MPE%	
Carrier	MPE%
T-Mobile (Per Sector Max)	2.62 %
Sprint	0.00 %
MetroPCS	2.35 %
Clearwire	0.26 %
Site Total MPE %:	5.23 %



October 7, 2015

Mayor Toni Harp
City of New Haven
165 Church Street
New Haven, CT 06510

RE: Telecommunications Facility @ 389 Forbes Ave., New Haven, CT 06511

Dear Mayor Harp,

In order to accommodate technological changes and enhance system performance in the State of Connecticut, T-Mobile will be changing its equipment configuration at certain cell sites.

As required by Regulations of Connecticut State Agencies (R.C.S.A.) Section 16-50j-73, the Connecticut Siting Council has been notified of the changes and will review T-Mobile's proposal. Please accept this letter as notification under Section 16-50j-73 of construction which constitutes an exempt modification pursuant to R.C.S.A. Section 16-50j-72(b)(2).

The accompanying letter to the Siting Council fully describes T-Mobile's proposal for the referenced cell site. However, if you have any questions or require any further information on our plans or the Siting Council's procedures, please call me at 508.251.0720 x 3804.

Thank you,

Kri Pelletier
SBA Communications Company
33 Boston Post Road West Suite 320
Marlborough, MA 01752
508-251-0720 x 3804 + T
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203-446-7700 + C
kpelletier@sbsite.com



October 7, 2015

A.F. Forbes, Inc.
401 Forbes Ave. # 411
New Haven, CT 06512-1619

RE: Telecommunications Facility @ 389 Forbes Ave., New Haven, CT 06511

To Whom It May Concern:

In order to accommodate technological changes and enhance system performance in the State of Connecticut, T-Mobile will be changing its equipment configuration at certain cell sites.

As required by Regulations of Connecticut State Agencies (R.C.S.A.) Section 16-50j-73, the Connecticut Siting Council has been notified of the changes and will review T-Mobile's proposal. Please accept this letter as notification under Section 16-50j-73 of construction which constitutes an exempt modification pursuant to R.C.S.A. Section 16-50j-72(b)(2).

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

T-Mobile Existing Facility

Site ID: CTNH041A

**NH041/ Sprint Forbes_ET
389 Forbes Avenue
New Haven, CT 06512**

October 7, 2015

EBI Project Number: 6215005006

Site Compliance Summary	
Compliance Status:	COMPLIANT
Site total MPE% of FCC general public allowable limit:	5.23 %

October 7, 2015

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

Emissions Analysis for Site: **CTNH041A – NH041/ Sprint Forbes_ET**

EBI Consulting was directed to analyze the proposed T-Mobile facility located at **389 Forbes Avenue, New Haven, CT**, for the purpose of determining whether the emissions from the Proposed T-Mobile Antenna Installation located on this property are within specified federal limits.

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

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

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

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

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

Additional details can be found in FCC OET 65.

CALCULATIONS

Calculations were done for the proposed T-Mobile Wireless antenna facility located at **389 Forbes Avenue, New Haven, CT**, using the equipment information listed below. All calculations were performed per the specifications under FCC OET 65. Since T-Mobile is proposing highly focused directional panel antennas, which project most of the emitted energy out toward the horizon, all calculations were performed assuming a lobe representing the maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB, was focused at the base of the tower. For this report the sample point is the top of a 6 foot person standing at the base of the tower.

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

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

- 6) For the following calculations the sample point was the top of a six foot person standing at the base of the tower. The maximum gain of the antenna per the antenna manufactures supplied specifications minus 10 dB was used in this direction. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.
- 7) The antennas used in this modeling are the **Ericsson AIR21 (B4A/B2P & B2A/B4P)** for 1900 MHz (PCS) and 2100 MHz (AWS) channels and the **Commscope LNX-6515DS-VTM** for 700 MHz channels. This is based on feedback from the carrier with regards to anticipated antenna selection. The **Ericsson AIR21 (B4A/B2P & B2A/B4P)** have a maximum gain of **15.9 dBd** at their main lobe. The **Commscope LNX-6515DS-VTM** has a maximum gain of **14.6 dBd** at its main lobe. The maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB, was used for all calculations. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.
- 8) The antenna mounting height centerline of the proposed antennas is **130 feet** above ground level (AGL).
- 9) Emissions values for additional carriers were taken from the Connecticut Siting Council active database. Values in this database are provided by the individual carriers themselves.

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



T-Mobile Site Inventory and Power Data

Sector:	A	Sector:	B	Sector:	C
Antenna #:	1	Antenna #:	1	Antenna #:	1
Make / Model:	Ericsson AIR21 B4A/B2P	Make / Model:	Ericsson AIR21 B4A/B2P	Make / Model:	Ericsson AIR21 B4A/B2P
Gain:	15.9 dBd	Gain:	15.9 dBd	Gain:	15.9 dBd
Height (AGL):	130	Height (AGL):	130	Height (AGL):	130
Frequency Bands	2100 MHz (AWS)	Frequency Bands	2100 MHz (AWS)	Frequency Bands	2100 MHz (AWS)
Channel Count	2	Channel Count	2	# PCS Channels:	2
Total TX Power:	120	Total TX Power:	120	# AWS Channels:	120
ERP (W):	4,668.54	ERP (W):	4,668.54	ERP (W):	4,668.54
Antenna A1 MPE%	1.09	Antenna B1 MPE%	1.09	Antenna C1 MPE%	1.09
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):	130	Height (AGL):	130	Height (AGL):	130
Frequency Bands	1900 MHz(PCS) / 2100 MHz (AWS)	Frequency Bands	1900 MHz(PCS) / 2100 MHz (AWS)	Frequency Bands	1900 MHz(PCS) / 2100 MHz (AWS)
Channel Count	4	Channel Count	4	Channel Count	4
Total TX Power:	120	Total TX Power:	120	Total TX Power:	120
ERP (W):	4,668.54	ERP (W):	4,668.54	ERP (W):	4,668.54
Antenna A2 MPE%	1.09	Antenna B2 MPE%	1.09	Antenna C2 MPE%	1.09
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):	130	Height (AGL):	130	Height (AGL):	130
Frequency Bands	700 MHz	Frequency Bands	700 MHz	Frequency Bands	700 MHz
Channel Count	1	Channel Count	1	Channel Count	1
Total TX Power:	30	Total TX Power:	30	Total TX Power:	30
ERP (W):	865.21	ERP (W):	865.21	ERP (W):	865.21
Antenna A3 MPE%	0.43	Antenna B3 MPE%	0.43	Antenna C3 MPE%	0.43

Site Composite MPE%	
Carrier	MPE%
T-Mobile (Per Sector Max)	2.62 %
Sprint	0.00 %
MetroPCS	2.35 %
Clearwire	0.26 %
Site Total MPE %:	5.23 %

T-Mobile Sector 1 Total:	2.62 %
T-Mobile Sector 2 Total:	2.62 %
T-Mobile Sector 3 Total:	2.62 %
Site Total:	5.23 %

T-Mobile _per sector	# Channels	Watts ERP (Per Channel)	Height (feet)	Total Power Density ($\mu\text{W}/\text{cm}^2$)	Frequency (MHz)	Allowable MPE ($\mu\text{W}/\text{cm}^2$)	Calculated % MPE
T-Mobile 2100 MHz (AWS) LTE	2	2334.27	130	10.92	2100	1000	1.09 %
T-Mobile 700 MHz LTE	1	865.21	130	2.02	700	467	0.43 %
T-Mobile 1900 MHz (PCS) GSM/UMTS	2	1167.14	130	5.46	1900	1000	0.55 %
T-Mobile 2100 MHz (AWS) UMTS	2	1167.14	130	5.46	2100	1000	0.55 %
						Total:	2.62 %

Summary

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

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

T-Mobile Sector	Power Density Value (%)
Sector 1:	2.62 %
Sector 2:	2.62 %
Sector 3 :	2.62 %
T-Mobile Per Sector Maximum:	2.62 %
Site Total:	5.23 %
Site Compliance Status:	COMPLIANT

The anticipated composite MPE value for this site assuming all carriers present is **5.23%** of the allowable FCC established general public limit sampled at the ground level. This is based upon values listed in the Connecticut Siting Council database for existing carrier emissions.

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



Scott Heffernan
RF Engineering Director

EBI Consulting
21 B Street
Burlington, MA 01803



Tower Engineering Solutions

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

Structural Analysis Report

Existing 86.5 ft. EEI Monopole
Customer Name: SBA Communications Corp
Customer Site Number: CT46149-A
Customer Site Name: Hennessy Property
Carrier Name: T-Mobile
Carrier Site ID / Name: CTNH041A
Site Location: 389 Forbes Ave
New Haven, Connecticut
New Haven County
Latitude: 41.290166
Longitude: -72.895277

Analysis Result:

Max Structural Usage: 96.8% [Pass]
Max Foundation Usage: 68.0% [Pass]
Report Prepared By : Kyle Wyant



Introduction

The purpose of this report is to summarize the analysis results on the 86.5 ft. EEI 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	Engineered Endeavors Incorporated, Project No. 12546, Drawing No. GS55217, dated June 30, 2005; Engineered Endeavors Incorporated, "Structure & Foundation Design Calculations," Job No. 12546-M01, dated June 30, 2005
Foundation Drawing	Engineered Endeavors Incorporated, Project No. 12546, Drawing No. D12546-70.1, dated February 25, 2005
Geotechnical Report	Dr. Clarence Welti, P.E., P.C., "Geotechnical Study for Proposed Sprint Site - CT59XC929," dated March 29, 2004
Modification Drawings	Vertical Solutions, VSI # 090665.04, dated August 11, 2009; Vertical Solutions, VSI # 100722.05, dated July 15, 2010

Analysis Criteria

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

Basic Wind Speed Used in the Analysis:	85 mph (Fastest Mile)
Basic Wind Speed with Ice:	74 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 ¹	Owner
1	85.0	3	Argus LLPX310R	(3) T-Arms	(6) 1/2" (6) 5/16"	Clear Wireless
2		1	DragonWave A-ANT-11G-2-C Dish			
3		1	DragonWave A-ANT-18G-2-C Dish			
4		2	DragonWave A-ANT-23G-1-C Dish			
5		3	Samsung FDD R6 RRHs			
6	72.0	3	RFS APXV18-206517S-C	Direct Mount	(6) 1 5/8"	MetroPCS
7	62.5	3	RFS APXVTM14-C-I20	(3) T-Arms	(3) 1 1/4" (1) 1 5/8" Hybrid	Sprint
8		3	Powerwave P40-16-XLPP-RR-A			
9		3	Alcatel Lucent TD-RRH8x20-25 RRHs			
10		3	Alcatel Lucent 800 MHz RRHs			
11		3	Alcatel Lucent 1900 MHz RRHs			
12		3	RF Filters			
13		3	Alcatel Lucent 800 MHz External Notch Filters			
14	58.0	4	RFS ACU-A20-N RETs	(3) T-Arms	(12) 7/8" (1) 1 5/8" Fiber	T-Mobile
15		3	Ericsson AIR21 B2A/B4P - Panel			
16		3	Ericsson AIR21 B4A/B2P - Panel			
18		6	Ericsson KRY 112 144/1 - TMA/TTA			

1. Transmission lines are installed inside of the pole shafts unless otherwise noted.

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
15	58.0	3	Ericsson AIR21 B2A/B4P - Panel	(3) T-Arms	(12) 7/8" (1) 1 5/8" Fiber	T-Mobile
16		3	Ericsson AIR21 B4A/B2P - Panel			
17		3	Commscope LNX-6515DS-A1M - Panel			
18		6	Ericsson KRY 112 144/1 - TMA/TTA			
19		3	Ericsson S11B12 - RRU			

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

Analysis Results

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

	Pole shafts	Anchor Bolts	Base Plate	Flange Connection @ 66.5'	Flange Connection @ 76.5'
Max. Usage:	96.8%	83.4%	85.1%	31.8%	16.4%
Pass/Fail	Pass	Pass	Pass	Pass	Pass

Foundations

	Moment (Kip-Ft)	Shear (Kips)	Axial (Kips)
Analysis Reactions	670.1	11.2	15.7

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. The maximum twist/sway at the elevation of the proposed equipment is 1.3704 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 and the 2005 Connecticut State Building Code 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 96.8% at 40.0ft

Structure: CT46149-A-SBA
Site Name: Hennessy Property
Height: 86.50 (ft)
Base Elev: 1.500 (ft)

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

9/29/2015

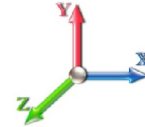
Page: 1



Dead Load Factor: 1.00
Wind Load Factor: 1.00

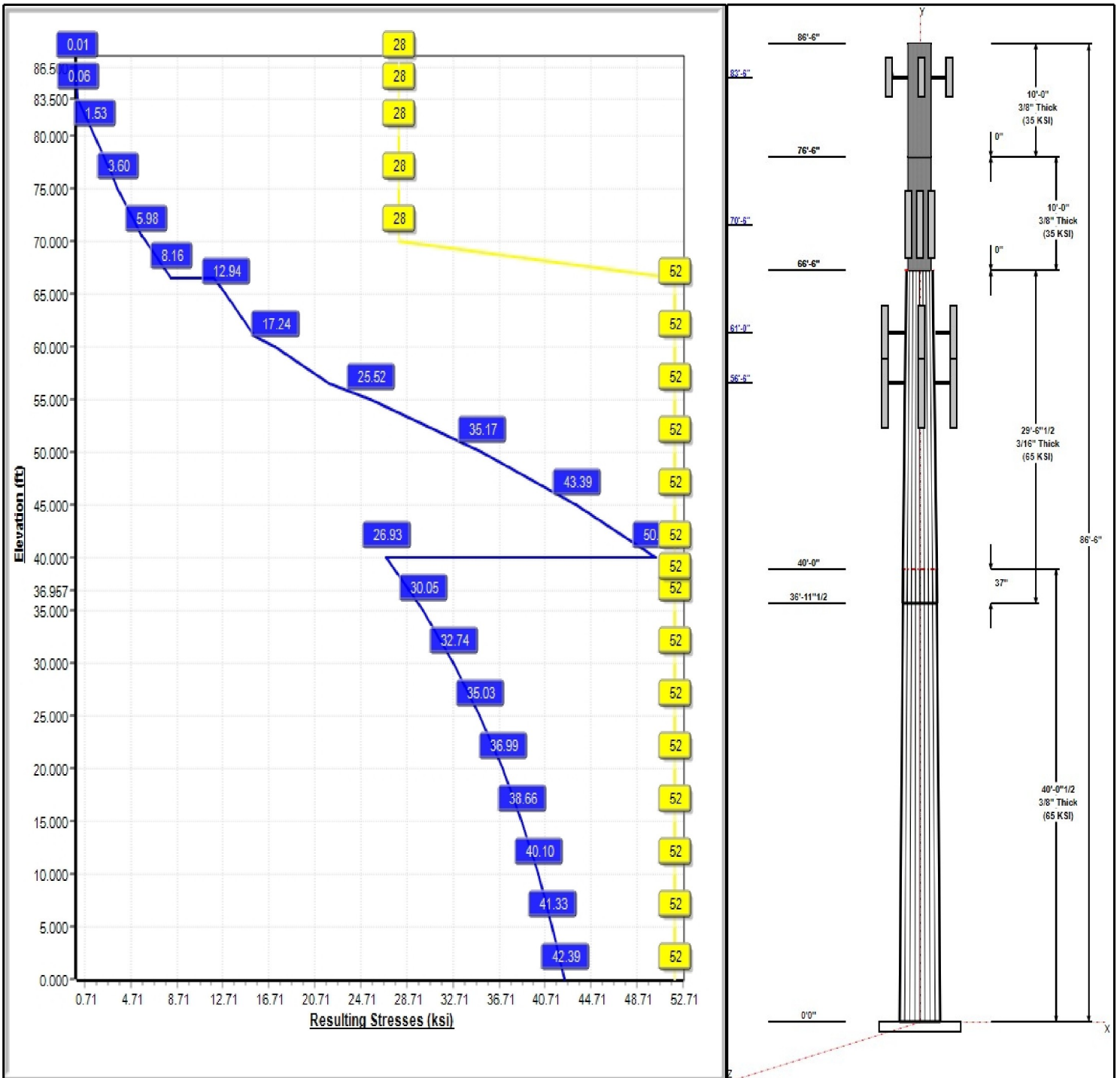
Load Case : 85 mph Wind with 0 in Ice

52 Allowable Stress
50 Resulting Stress



Iterations: 25

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Structure: CT46149-A-SBA

Type: Custom
Site Name: Hennessy Property
Height: 86.50 (ft)
Base Elev: 1.50 (ft)

Base Shape: 18 Sided
Taper: 0.15602

9/29/2015

Page: 2



Shaft Properties

Seq	Length (ft)	Top (in)	Bottom (in)	Thick (in)	Joint Type	Taper	Grade (ksi)
1	40.04	19.75	26.00	0.375		0.15602	65
2	29.54	16.00	20.61	0.188	Slip	0.15602	65
3	10.00	14.00	14.00	0.375	Butt	0.00000	35
4	10.00	14.00	14.00	0.375	Butt	0.00000	35

Discrete Appurtenances

Attach Elev (ft)	Force Elev (ft)	Qty	Description	Carrier
83.50	83.50	3	Argus LLPX310R	Clear Wireless
83.50	83.50	1	DragonWave	Clear Wireless
83.50	83.50	1	DragonWave	Clear Wireless
83.50	83.50	2	DragonWave	Clear Wireless
83.50	83.50	3	Samsung FDD R6 RRHs	Clear Wireless
83.50	83.50	3	T-Arms	Clear Wireless
70.50	70.50	1	Direct Mount	MetroPCS
70.50	70.50	3	RFS APXV18-206517S-C	MetroPCS
61.00	61.00	3	Alcatel Lucent 1900MHz	Sprint
61.00	61.00	3	Alcatel Lucent 800 MHz	Sprint
61.00	61.00	3	Alcatel Lucent	Sprint
61.00	61.00	3	ALU 800MHz External	Sprint
61.00	61.00	3	Powerwave	Sprint
61.00	61.00	3	RF Filters	Sprint
61.00	61.00	4	RFS ACU-A20-N RETs	Sprint
61.00	61.00	3	RFS APXVTM14-C-120	Sprint
61.00	61.00	3	T-Arms	Sprint
56.50	56.50	3	AIR 21, 1.3M, B2A B4P	T-Mobile
56.50	56.50	3	AIR 21, 1.3M, B4A B2P	T-Mobile
56.50	56.50	6	KRY 112 144/1	T-Mobile
56.50	56.50	3	LNx-6515DS-A1M	T-Mobile
56.50	56.50	3	RRUS-11 (19)	T-Mobile
56.50	56.50	3	T-Arms	T-Mobile

Linear Appurtenances

Elev From (ft)	Elev To (ft)	Placement	Description	Carrier
0.00	83.50	Inside	1/2" Coax	Clear Wireless
0.00	83.50	Inside	5/16" Coax	Clear Wireless
0.00	70.50	Inside	1 5/8" Coax	MetroPCS
0.00	61.00	Inside	1 1/4" Coax	Sprint
0.00	61.00	Inside	1 5/8" Coax	Sprint
0.00	56.50	Inside	1 5/8" Fiber	T-Mobile
0.00	56.50	Inside	7/8" Coax	T-Mobile

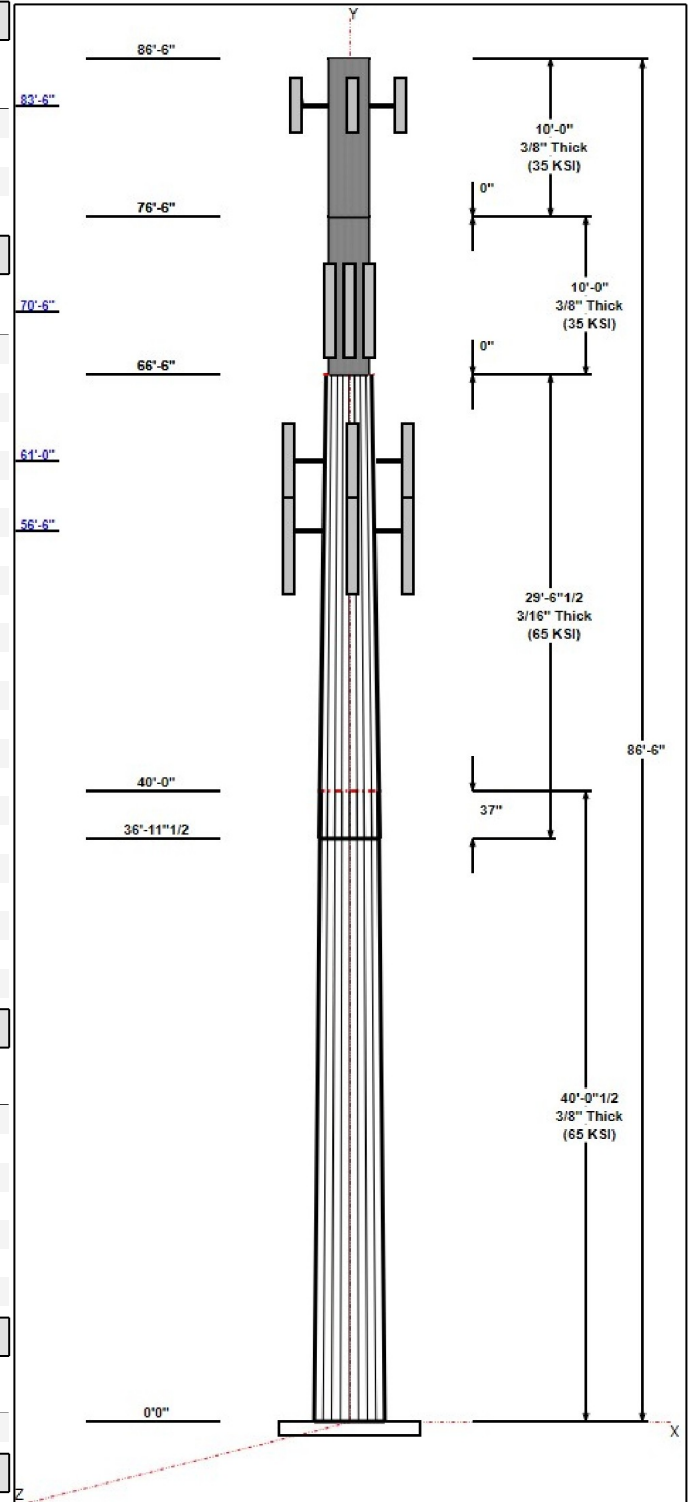
Anchor Bolts

Qty	Specifications	Grade (ksi)	Arrangement
6	2.25" 18J	75.0	Radial

Base Plate

Thickness (in)	Specifications (in)	Grade (ksi)	Geometry
2.0000	39.5	60.0	Round

Reactions



Structure: CT46149-A-SBA

Type: Custom
Site Name: Hennessy Property
Height: 86.50 (ft)
Base Elev: 1.50 (ft)

Base Shape: 18 Sided
Taper: 0.00000

9/29/2015

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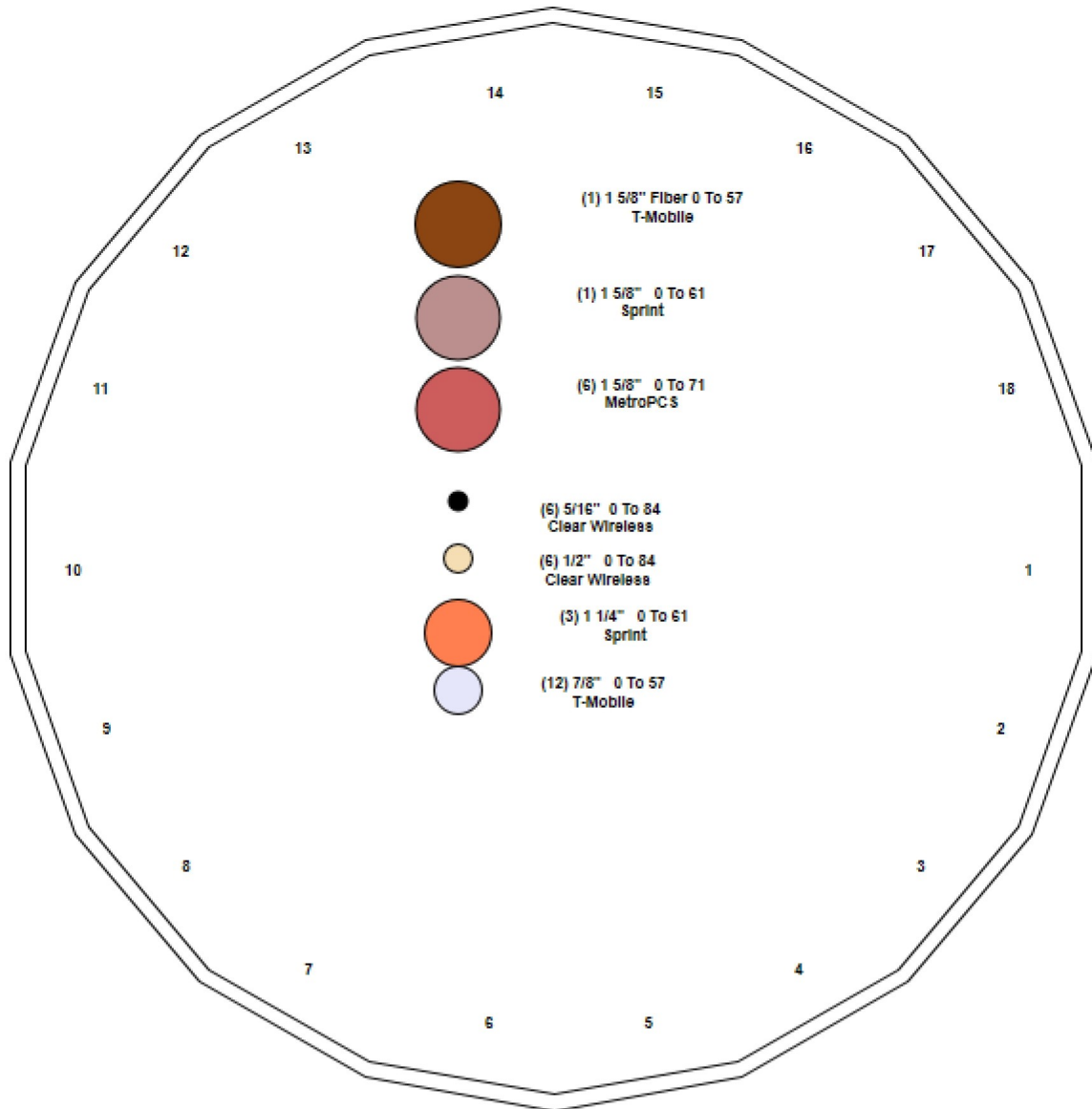
Load Case	Moment	Shear	Axial
85 mph Wind with 0" Ice	670.1	11.2	12.6
73.61 mph Wind with 0.5" Ice	647.1	10.5	15.7
50 mph Wind with 0" Ice	232.1	3.9	12.7

Structure: CT46149-A-SBA - Coax Line Placement

Type: Monopole
Site Name: Hennessy Property
Height: 86.50 (ft)

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Shaft Properties

Structure: CT46149-A-SBA
Site Name: Hennessy Property
Height: 86.50 (ft)
Base Elev: 1.500 (ft)

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

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Sec. No.	Shape	Length (ft)	Thick (in)	Fy (ksi)	Joint Type	Overlap (in)	Weight (lb)
1	18	40.040	0.3750	65		0.00	3,649
2	18	29.543	0.1875	65	Slip	37.00	1,084
3	R	10.000	0.3750	35	Flange	0.00	546
4	R	10.000	0.3750	35	Flange	0.00	546
Total Shaft Weight:							5,825

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	26.00	0.00	30.50	2530.27	10.81	69.33	19.75	40.04	23.06	1094.24	7.877	52.67	0.156015
2	20.61	36.96	12.15	640.36	17.97	109.9	16.00	66.50	9.41	297.27	13.63	85.33	0.156015
3	14.00	66.50	16.05	372.76	0	37.33	14.00	76.50	16.05	372.76	0	37.33	0.000000
4	14.00	76.50	16.05	372.76	0	37.33	14.00	86.50	16.05	372.76	0	37.33	0.000000

Loading Summary

Structure: CT46149-A-SBA
Site Name: Hennessy Property
Height: 86.50 (ft)
Base Elev: 1.500 (ft)

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

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Discrete Appurtenances

No.	Elev (ft)	Description	Qty	No Ice			Ice			Hor. Ecc. (ft)	Vert Ecc (ft)
				Weight (lb)	CaAa (sf)	CaAa Factor	Weight (lb)	CaAa (sf)	CaAa Factor		
1	83.50	Argus LLPX310R	3	28.60	4.83	0.72	54.50	5.360	0.77	0.00	0.00
2	83.50	DragonWave A-ANT-11G-2-C	1	27.00	4.69	0.80	55.10	5.050	0.85	0.00	0.00
3	83.50	DragonWave A-ANT-18G-2-C	1	27.10	4.69	0.80	55.10	5.050	0.85	0.00	0.00
4	83.50	DragonWave A-ANT-23G-1-C	2	15.00	1.61	0.80	25.10	1.830	0.85	0.00	0.00
5	83.50	Samsung FDD R6 RRHs	3	33.00	1.80	0.72	44.50	2.080	0.75	0.00	0.00
6	83.50	T-Arms	3	300.00	5.00	0.67	420.00	10.50	0.67	0.00	0.00
7	70.50	Direct Mount	1	150.00	1.00	1.00	250.00	2.000	1.00	0.00	0.00
8	70.50	RFS APXV18-206517S-C	3	53.00	5.16	0.94	89.00	5.840	0.98	0.00	0.00
9	61.00	Alcatel Lucent 1900MHz RRH	3	44.00	3.80	0.50	75.20	4.200	0.93	0.00	0.00
10	61.00	Alcatel Lucent 800 MHz RRHs	3	53.00	2.49	0.50	74.10	2.820	0.97	0.00	0.00
11	61.00	Alcatel Lucent TD-RRH8x20-25	3	70.00	4.72	0.50	92.00	4.970	0.75	0.00	0.00
12	61.00	ALU 800MHz External Notch Filt	3	8.80	0.78	0.50	13.80	0.960	0.75	0.00	0.00
13	61.00	Powerwave P40-16-XLPP-RR-A	3	53.00	10.50	0.66	0.00	11.23	0.71	0.00	0.00
14	61.00	RF Filters	3	15.50	1.09	0.50	22.00	1.270	0.75	0.00	0.00
15	61.00	RFS ACU-A20-N RETs	4	1.00	0.14	0.79	2.30	0.220	0.84	0.00	0.00
16	61.00	RFS APXVTM14-C-120	3	56.00	6.90	0.79	91.90	7.290	0.84	0.00	0.00
17	61.00	T-Arms	3	400.00	10.00	0.67	480.00	12.50	0.75	0.00	0.00
18	56.50	AIR 21, 1.3M, B2A B4P	3	91.50	6.58	0.86	129.20	6.970	0.91	0.00	0.00
19	56.50	AIR 21, 1.3M, B4A B2P	3	90.40	6.58	0.86	128.10	6.970	0.91	0.00	0.00
20	56.50	KRY 112 144/1	6	11.00	0.41	0.70	14.10	0.550	0.75	0.00	0.00
21	56.50	LNx-6515DS-A1M	3	49.80	11.41	0.84	115.60	12.34	0.89	0.00	0.00
22	56.50	RRUS-11 (19)	3	51.00	3.26	0.74	72.90	3.620	0.79	0.00	0.00
23	56.50	T-Arms	3	400.00	8.00	0.67	500.00	10.50	0.75	0.00	0.00
Totals:			66	5,696.90			7,712.60				

Linear Appurtenances

Bottom Elev. (ft)	Top Elev. (ft)	Description	No Ice		Ice		Exposed
			Weight (lb/ft)	CaAa (sf/ft)	Weight (lb/ft)	CaAa (sf/ft)	
0.00	83.50	(6) 1/2" Coax	0.96	0.00	0.96	0.00	Inside
0.00	83.50	(6) 5/16" Coax	0.48	0.00	0.48	0.00	Inside
0.00	70.50	(6) 1 5/8" Coax	6.24	0.00	6.24	0.00	Inside
0.00	61.00	(3) 1 1/4" Coax	1.98	0.00	1.98	0.00	Inside
0.00	61.00	(1) 1 5/8" Coax	1.04	0.00	1.04	0.00	Inside
0.00	56.50	(1) 1 5/8" Fiber	1.10	0.00	1.10	0.00	Inside
0.00	56.50	(12) 7/8" Coax	6.24	0.00	6.24	0.00	Inside
Totals:			1,159.09		1,159.09		

Shaft Section Properties

Structure: CT46149-A-SBA
Site Name: Hennessy Property
Height: 86.50 (ft)
Base Elev: 1.500 (ft)

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

9/29/2015

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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		0.3750	26.000	30.499	2530.3	10.81	69.33	65	52	0.0
5.00		0.3750	25.220	29.571	2306.2	10.45	67.25	65	52	511.0
10.00		0.3750	24.440	28.642	2095.7	10.08	65.17	65	52	495.2
15.00		0.3750	23.660	27.714	1898.4	9.71	63.09	65	52	479.4
20.00		0.3750	22.880	26.785	1713.9	9.35	61.01	65	52	463.6
25.00		0.3750	22.100	25.857	1541.8	8.98	58.93	65	52	447.8
30.00		0.3750	21.320	24.928	1381.6	8.61	56.85	65	52	432.0
35.00		0.3750	20.539	24.000	1232.9	8.25	54.77	65	52	416.2
36.96	Bot - Section 2	0.3750	20.234	23.637	1177.8	8.10	53.96	65	52	158.6
40.00		0.3750	19.759	23.071	1095.3	7.88	52.69	65	52	366.2
40.04	Top - Section 1	0.1875	20.128	11.867	596.2	17.52	107.35	65	52	4.8
45.00		0.1875	19.354	11.406	529.4	16.79	103.22	65	52	196.4
50.00		0.1875	18.574	10.942	467.4	16.06	99.06	65	52	190.1
55.00		0.1875	17.794	10.478	410.4	15.32	94.90	65	52	182.2
56.50		0.1875	17.560	10.339	394.2	15.10	93.65	65	52	53.1
60.00		0.1875	17.014	10.014	358.2	14.59	90.74	65	52	121.2
61.00		0.1875	16.858	9.921	348.3	14.44	89.91	65	52	33.9
65.00		0.1875	16.234	9.549	310.7	13.86	86.58	65	52	132.5
66.50	Top - Section 2	0.0000	0.000	0.000	0.0	NAN	NAN	0	0	48.4
66.50	Bot - Section 3	0.1875	16.000	9.410	297.3	13.64	85.33	65	52	
70.00		0.3750	14.000	16.052	372.8	0.00	37.33	35	28	191.2
70.50		0.3750	14.000	16.052	372.8	0.00	37.33	35	28	27.3
75.00		0.3750	14.000	16.052	372.8	0.00	37.33	35	28	245.8
76.50	Top - Section 3	0.0000	0.000	0.000	0.0	NAN	NAN	0	0	81.9
76.50	Bot - Section 4	0.3750	14.000	16.052	372.8	0.00	37.33	35	28	
80.00		0.3750	14.000	16.052	372.8	0.00	37.33	35	28	191.2
83.50		0.3750	14.000	16.052	372.8	0.00	37.33	35	28	191.2
85.00		0.3750	14.000	16.052	372.8	0.00	37.33	35	28	81.9
86.50		0.3750	14.000	16.052	372.8	0.00	37.33	35	28	81.9
										5825.2

Wind Loading - Shaft

Structure: CT46149-A-SBA
Site Name: Hennessy Property
Height: 86.50 (ft)
Base Elev: 1.500 (ft)

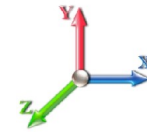
Code: EIA/TIA-222-F
Exposure: C
Gh: 1.69
Struct Class: II

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Load Case: 85 mph Wind with 0" Ice

Dead Load Factor 1.00
Wind Load Factor 1.00



Iterations: 25

Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		0.00	1.00	18.496	31.26	184.17	0.650	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		0.00	1.00	18.496	31.26	178.64	0.650	0.000	5.00	10.671	6.94	216.8	0.0	511.0
10.00		0.00	1.00	18.496	31.26	173.12	0.650	0.000	5.00	10.346	6.72	210.2	0.0	495.2
15.00		0.00	1.00	18.496	31.26	167.59	0.650	0.000	5.00	10.021	6.51	203.6	0.0	479.4
20.00		0.00	1.00	18.496	31.26	162.06	0.650	0.000	5.00	9.696	6.30	197.0	0.0	463.6
25.00		0.00	1.00	18.496	31.26	156.54	0.650	0.000	5.00	9.371	6.09	190.4	0.0	447.8
30.00		0.00	1.00	18.496	31.26	151.01	0.650	0.000	5.00	9.046	5.88	183.8	0.0	432.0
35.00		0.00	1.03	19.036	32.17	147.60	0.650	0.000	5.00	8.721	5.67	182.4	0.0	416.2
36.96 Bot - Section 2		0.00	1.04	19.323	32.66	146.49	0.650	0.000	1.96	3.324	2.16	70.6	0.0	158.6
40.00		0.00	1.07	19.748	33.37	144.62	0.650	0.000	3.04	5.167	3.36	112.1	0.0	366.2
40.04 Top - Section 1		0.00	1.07	19.753	33.38	144.59	0.650	0.000	0.04	0.067	0.04	1.5	0.0	4.8
45.00		0.00	1.10	20.400	34.48	143.98	0.650	0.000	4.96	8.160	5.30	182.9	0.0	196.4
50.00		0.00	1.14	21.004	35.50	140.20	0.650	0.000	5.00	7.902	5.14	182.3	0.0	190.1
55.00		0.00	1.17	21.568	36.45	136.11	0.650	0.000	5.00	7.577	4.92	179.5	0.0	182.2
56.50 Appurtenance(s)		0.00	1.17	21.730	36.72	134.82	0.650	0.000	1.50	2.210	1.44	52.7	0.0	53.1
60.00		0.00	1.19	22.097	37.34	131.73	0.650	0.000	3.50	5.042	3.28	122.4	0.0	121.2
61.00 Appurtenance(s)		0.00	1.20	22.199	37.52	130.82	0.650	0.000	1.00	1.411	0.92	34.4	0.0	33.9
65.00		0.00	1.22	22.596	38.19	127.10	0.650	0.000	4.00	5.515	3.58	136.9	0.0	132.5
66.50 Top - Section 2		0.00	1.23	22.740	38.43	125.66	0.650	0.000	1.50	2.015	1.31	50.3	0.0	48.4
70.00		0.00	1.25	23.068	38.99	110.75	0.590	0.000	3.50	4.083	2.41	93.9	0.0	191.2
70.50 Appurtenance(s)		0.00	1.25	23.114	39.06	110.86	0.590	0.000	0.50	0.583	0.34	13.4	0.0	27.3
75.00		0.00	1.27	23.518	39.75	111.82	0.590	0.000	4.50	5.250	3.10	123.1	0.0	245.8
76.50 Top - Section 3		0.00	1.28	23.649	39.97	112.13	0.590	0.000	1.50	1.750	1.03	41.3	0.0	81.9
80.00		0.00	1.29	23.948	40.47	112.84	0.590	0.000	3.50	4.083	2.41	97.5	0.0	191.2
83.50 Appurtenance(s)		0.00	1.31	24.237	40.96	113.52	0.590	0.000	3.50	4.083	2.41	98.7	0.0	191.2
85.00		0.00	1.32	24.358	41.17	113.80	0.590	0.000	1.50	1.750	1.03	42.5	0.0	81.9
86.50		0.00	1.32	24.478	41.37	114.08	0.590	0.000	1.50	1.750	1.03	42.7	0.0	81.9
Totals:									86.50			3,062.8		5,825.2

Discrete Appurtenance Forces

Structure: CT46149-A-SB
Site Name: Hennessy Property
Height: 86.50 (ft)
Base Elev: 1.500 (ft)

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

9/29/2015

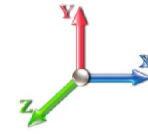
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Load Case: 85 mph Wind with 0" Ice

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations: 25

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	CaAa Factor	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)
1	83.50	DragonWave A-ANT-18G-2-C	1	24.237	40.961	0.80	3.75	27.10	0.000	0.000	153.68	0.00	0.00
2	83.50	Argus LLPX310R	3	24.237	40.961	0.72	10.43	85.80	0.000	0.000	427.33	0.00	0.00
3	83.50	DragonWave A-ANT-11G-2-C	1	24.237	40.961	0.80	3.75	27.00	0.000	0.000	153.68	0.00	0.00
4	83.50	T-Arms	3	24.237	40.961	0.67	10.05	900.00	0.000	0.000	411.65	0.00	0.00
5	83.50	DragonWave A-ANT-23G-1-C	2	24.237	40.961	0.80	2.58	30.00	0.000	0.000	105.51	0.00	0.00
6	83.50	Samsung FDD R6 RRHs	3	24.237	40.961	0.72	3.89	99.00	0.000	0.000	159.25	0.00	0.00
7	70.50	RFS APXV18-206517S-C	3	23.114	39.063	0.94	14.47	159.00	0.000	0.000	565.40	0.00	0.00
8	70.50	Direct Mount	1	23.114	39.063	1.00	1.00	150.00	0.000	0.000	39.06	0.00	0.00
9	61.00	T-Arms	3	22.199	37.516	0.67	20.10	1200.00	0.000	0.000	754.06	0.00	0.00
10	61.00	RFS APXVTM14-C-120	3	22.199	37.516	0.79	16.35	168.00	0.000	0.000	613.49	0.00	0.00
11	61.00	RFS ACU-A20-N RETs	4	22.199	37.516	0.79	0.44	4.00	0.000	0.000	16.60	0.00	0.00
12	61.00	RF Filters	3	22.199	37.516	0.50	1.64	46.50	0.000	0.000	61.34	0.00	0.00
13	61.00	ALU 800MHz External Notch	3	22.199	37.516	0.50	1.17	26.40	0.000	0.000	43.89	0.00	0.00
14	61.00	Alcatel Lucent	3	22.199	37.516	0.50	7.08	210.00	0.000	0.000	265.61	0.00	0.00
15	61.00	Alcatel Lucent 800 MHz	3	22.199	37.516	0.50	3.74	159.00	0.000	0.000	140.12	0.00	0.00
16	61.00	Alcatel Lucent 1900MHz RRH	3	22.199	37.516	0.50	5.70	132.00	0.000	0.000	213.84	0.00	0.00
17	61.00	Powerwave	3	22.199	37.516	0.66	20.79	159.00	0.000	0.000	779.95	0.00	0.00
18	56.50	KRY 112 144/1	6	21.730	36.723	0.70	1.72	66.00	0.000	0.000	63.24	0.00	0.00
19	56.50	AIR 21, 1.3M, B2A B4P	3	21.730	36.723	0.86	16.98	274.50	0.000	0.000	623.43	0.00	0.00
20	56.50	AIR 21, 1.3M, B4A B2P	3	21.730	36.723	0.86	16.98	271.20	0.000	0.000	623.43	0.00	0.00
21	56.50	T-Arms	3	21.730	36.723	0.67	16.08	1200.00	0.000	0.000	590.51	0.00	0.00
22	56.50	LNK-6515DS-A1M	3	21.730	36.723	0.84	28.75	149.40	0.000	0.000	1055.91	0.00	0.00
23	56.50	RRUS-11 (19)	3	21.730	36.723	0.74	7.24	153.00	0.000	0.000	265.77	0.00	0.00
Totals:								5,696.90			8,126.77		

Total Applied Force Summary

Structure: CT46149-A-SB
Site Name: Hennessy Property
Height: 86.50 (ft)
Base Elev: 1.500 (ft)

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

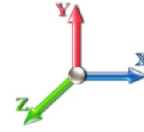
9/29/2015
 Page: 10



Load Case: 85 mph Wind with 0" Ice

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations: 25

Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00		0.00	0.00	0.00	0.00
5.00		216.81	601.21	0.00	0.00
10.00		210.20	585.41	0.00	0.00
15.00		203.60	569.62	0.00	0.00
20.00		197.00	553.82	0.00	0.00
25.00		190.39	538.02	0.00	0.00
30.00		183.79	522.23	0.00	0.00
35.00		182.36	506.43	0.00	0.00
36.96		70.56	193.88	0.00	0.00
40.00		112.08	421.14	0.00	0.00
40.04		1.46	5.48	0.00	0.00
45.00		182.85	285.88	0.00	0.00
50.00		182.32	280.32	0.00	0.00
55.00		179.51	272.42	0.00	0.00
56.50	(21) appurtenances	3275.02	2194.28	0.00	0.00
60.00		122.39	158.64	0.00	0.00
61.00	(28) appurtenances	2923.32	2149.52	0.00	0.00
65.00		136.90	163.22	0.00	0.00
66.50		50.33	59.91	0.00	0.00
70.00		93.92	218.05	0.00	0.00
70.50	(4) appurtenances	617.90	340.15	0.00	0.00
75.00		123.11	252.27	0.00	0.00
76.50		41.27	84.09	0.00	0.00
80.00		97.50	196.21	0.00	0.00
83.50	(13) appurtenances	1509.81	1365.11	0.00	0.00
85.00		42.50	81.93	0.00	0.00
86.50		42.71	81.93	0.00	0.00
Totals:		11,189.61	12,681.16	0.00	0.00

Resulting Forces and Deflections

Structure: CT46149-A-SB
Site Name: Hennessy Property
Height: 86.50 (ft)
Base Elev: 1.500 (ft)

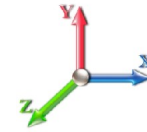
Code: EIA/TIA-222-F
Exposure: C
Gh: 1.69
Struct Class: II

9/29/2015
 Page: 11



Load Case: 85 mph Wind with 0" Ice

Dead Load Factor 1.00
Wind Load Factor 1.00



Iterations: 25

Elev (ft)	Lateral FX (-) (kips)	Axial FY (-) (kips)	Lateral FZ (kips)	Moment MX (ft-kips)	Torsion MY (ft-kips)	Moment MZ (ft-kips)	Deflect X (in)	Deflect Z (in)	Deflect Resultant (in)	Rotation Sway (deg)	Rotation Twist (deg)
0.00	-11.230	-12.645	0.000	0.000	0.000	-670.11	0.000	0.000	0.000	0.000	0.000
5.00	-11.087	-11.975	0.000	0.000	0.000	-613.96	-0.193	0.000	0.193	-0.361	0.000
10.00	-10.943	-11.323	0.000	0.000	0.000	-558.53	-0.765	0.000	0.765	-0.723	0.000
15.00	-10.797	-10.689	0.000	0.000	0.000	-503.81	-1.715	0.000	1.715	-1.083	0.000
20.00	-10.651	-10.074	0.000	0.000	0.000	-449.83	-3.042	0.000	3.042	-1.440	0.000
25.00	-10.503	-9.478	0.000	0.000	0.000	-396.58	-4.739	0.000	4.739	-1.792	0.000
30.00	-10.353	-8.902	0.000	0.000	0.000	-344.06	-6.800	0.000	6.800	-2.133	0.000
35.00	-10.184	-8.364	0.000	0.000	0.000	-292.30	-9.211	0.000	9.211	-2.461	0.000
36.96	-10.127	-8.145	0.000	0.000	0.000	-272.37	-10.246	0.000	10.246	-2.588	0.000
40.00	-10.008	-7.713	0.000	0.000	0.000	-241.55	-11.958	0.000	11.958	-2.777	0.000
40.04	-10.026	-7.682	0.000	0.000	0.000	-241.15	-11.981	0.000	11.981	-2.780	0.000
45.00	-9.877	-7.342	0.000	0.000	0.000	-191.42	-15.020	0.000	15.020	-3.059	0.000
50.00	-9.728	-7.004	0.000	0.000	0.000	-142.04	-18.471	0.000	18.471	-3.507	0.000
55.00	-9.556	-6.709	0.000	0.000	0.000	-93.406	-22.345	0.000	22.345	-3.865	0.000
56.50	-6.150	-4.729	0.000	0.000	0.000	-79.071	-23.573	0.000	23.573	-3.955	0.000
60.00	-6.025	-4.568	0.000	0.000	0.000	-57.546	-26.538	0.000	26.538	-4.127	0.000
61.00	-2.959	-2.631	0.000	0.000	0.000	-51.520	-27.407	0.000	27.407	-4.171	0.000
65.00	-2.814	-2.473	0.000	0.000	0.000	-39.686	-30.964	0.000	30.964	-4.320	0.000
66.50	-2.763	-2.414	0.000	0.000	0.000	-35.465	-32.328	0.000	32.328	-4.371	0.000
70.00	-2.654	-2.201	0.000	0.000	0.000	-25.795	-35.570	0.000	35.570	-4.474	0.000
70.50	-2.013	-1.909	0.000	0.000	0.000	-24.468	-36.038	0.000	36.038	-4.483	0.000
75.00	-1.872	-1.666	0.000	0.000	0.000	-15.408	-40.294	0.000	40.294	-4.552	0.000
76.50	-1.825	-1.584	0.000	0.000	0.000	-12.600	-41.726	0.000	41.726	-4.568	0.000
80.00	-1.712	-1.396	0.000	0.000	0.000	-6.214	-45.081	0.000	45.081	-4.593	0.000
83.50	-0.098	-0.156	0.000	0.000	0.000	-0.221	-48.449	0.000	48.449	-4.602	0.000
85.00	-0.049	-0.078	0.000	0.000	0.000	-0.074	-49.893	0.000	49.893	-4.602	0.000
86.50	-0.043	0.000	0.000	0.000	0.000	0.000	0.000	0.000	51.337	-4.602	0.000

Resulting Stresses

Structure: CT46149-A-SBA
Site Name: Hennessy Property
Height: 86.50 (ft)
Base Elev: 1.500 (ft)

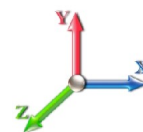
Code: EIA/TIA-222-F
Exposure: C
Gh: 1.69
Struct Class: II

9/29/2015
 Page: 12



Load Case: 85 mph Wind with 0" Ice

Dead Load Factor 1.00
Wind Load Factor 1.00



Iterations: 25

Applied Stresses

Elev (ft)	fa Axial (Y) (ksi)	fvx Shear (X) (ksi)	fvz Shear (Z) (ksi)	fv _t Torsion (ksi)	fbx Bending (X) (ksi)	fbz Bending (Z) (ksi)	fb Combined (ksi)	f _a Allow Stress (ksi)	f/Fb Stress Ratio
0.00	0.41	0.74	0.00	0.00	0.00	41.95	42.39	52.0	0.815
5.00	0.40	0.76	0.00	0.00	0.00	40.91	41.33	52.0	0.795
10.00	0.40	0.77	0.00	0.00	0.00	39.68	40.10	52.0	0.771
15.00	0.39	0.79	0.00	0.00	0.00	38.26	38.66	52.0	0.744
20.00	0.38	0.80	0.00	0.00	0.00	36.59	36.99	52.0	0.712
25.00	0.37	0.82	0.00	0.00	0.00	34.63	35.03	52.0	0.674
30.00	0.36	0.84	0.00	0.00	0.00	32.35	32.74	52.0	0.630
35.00	0.35	0.86	0.00	0.00	0.00	29.67	30.05	52.0	0.578
36.96	0.34	0.86	0.00	0.00	0.00	28.51	28.89	52.0	0.556
40.00	0.33	0.87	0.00	0.00	0.00	26.55	26.93	52.0	0.518
40.04	0.65	1.70	0.00	0.00	0.00	49.61	50.34	52.0	0.968
45.00	0.64	1.75	0.00	0.00	0.00	42.64	43.39	52.0	0.835
50.00	0.64	1.79	0.00	0.00	0.00	34.39	35.17	52.0	0.677
55.00	0.64	1.84	0.00	0.00	0.00	24.68	25.52	52.0	0.491
56.50	0.46	1.20	0.00	0.00	0.00	21.46	22.01	52.0	0.424
60.00	0.46	1.21	0.00	0.00	0.00	16.65	17.24	52.0	0.332
61.00	0.27	0.60	0.00	0.00	0.00	15.19	15.49	52.0	0.298
65.00	0.26	0.59	0.00	0.00	0.00	12.64	12.94	52.0	0.249
66.50	0.26	0.59	0.00	0.00	0.00	11.63	11.93	52.0	0.230
66.50	0.26	0.59	0.00	0.00	0.00	11.63	11.93	52.0	0.157
70.00	0.14	0.33	0.00	0.00	0.00	5.81	5.98	28.0	28.0 0.213
70.50	0.12	0.25	0.00	0.00	0.00	5.51	5.65	28.0	28.0 0.202
75.00	0.10	0.23	0.00	0.00	0.00	3.47	3.60	28.0	28.0 0.129
76.50	0.10	0.23	0.00	0.00	0.00	2.84	2.96	28.0	28.0 0.106
76.50	0.10	0.23	0.00	0.00	0.00	2.84	2.96	28.0	28.0 0.106
80.00	0.09	0.21	0.00	0.00	0.00	1.40	1.53	28.0	28.0 0.055
83.50	0.01	0.01	0.00	0.00	0.00	0.05	0.06	28.0	28.0 0.002
85.00	0.00	0.01	0.00	0.00	0.00	0.02	0.02	28.0	28.0 0.001
86.50	0.00	0.01	0.00	0.00	0.00	0.00	0.01	28.0	28.0 0.000

Wind Loading - Shaft

Structure: CT46149-A-SBA
Site Name: Hennessy Property
Height: 86.50 (ft)
Base Elev: 1.500 (ft)

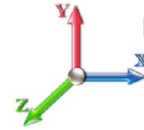
Code: EIA/TIA-222-F
Exposure: C
Gh: 1.69
Struct Class: II

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Load Case: 73.61 mph Wind with 0.5" Ice

Dead Load Factor 1.00
Wind Load Factor 1.00



Iterations: 25

Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		0.00	1.00	13.871	23.44	159.49	0.650	0.500	0.00	0.000	0.00	0.0	0.0	0.0
5.00		0.00	1.00	13.871	23.44	154.70	0.650	0.500	5.00	11.087	7.21	168.9	78.6	589.6
10.00		0.00	1.00	13.871	23.44	149.92	0.650	0.500	5.00	10.762	7.00	164.0	76.2	571.4
15.00		0.00	1.00	13.871	23.44	145.13	0.650	0.500	5.00	10.437	6.78	159.0	73.8	553.2
20.00		0.00	1.00	13.871	23.44	140.35	0.650	0.500	5.00	10.112	6.57	154.1	71.4	535.0
25.00		0.00	1.00	13.871	23.44	135.56	0.650	0.500	5.00	9.787	6.36	149.1	69.0	516.8
30.00		0.00	1.00	13.871	23.44	130.78	0.650	0.500	5.00	9.462	6.15	144.2	66.6	498.7
35.00		0.00	1.03	14.277	24.13	127.82	0.650	0.500	5.00	9.137	5.94	143.3	64.3	480.5
36.96 Bot - Section 2		0.00	1.04	14.491	24.49	126.86	0.650	0.500	1.96	3.487	2.27	55.5	24.8	183.4
40.00		0.00	1.07	14.810	25.03	125.24	0.650	0.500	3.04	5.420	3.52	88.2	38.4	404.6
40.04 Top - Section 1		0.00	1.07	14.814	25.04	125.22	0.650	0.500	0.04	0.070	0.05	1.1	0.5	5.3
45.00		0.00	1.10	15.299	25.86	124.68	0.650	0.500	4.96	8.573	5.57	144.1	60.2	256.6
50.00		0.00	1.14	15.752	26.62	121.42	0.650	0.500	5.00	8.318	5.41	143.9	58.3	248.4
55.00		0.00	1.17	16.175	27.34	117.87	0.650	0.500	5.00	7.993	5.20	142.0	55.9	238.1
56.50 Appurtenance(s)		0.00	1.17	16.296	27.54	116.75	0.650	0.500	1.50	2.335	1.52	41.8	16.5	69.7
60.00		0.00	1.19	16.571	28.01	114.07	0.650	0.500	3.50	5.334	3.47	97.1	37.4	158.6
61.00 Appurtenance(s)		0.00	1.20	16.648	28.14	113.29	0.650	0.500	1.00	1.495	0.97	27.3	10.6	44.5
65.00		0.00	1.22	16.946	28.64	110.07	0.650	0.500	4.00	5.849	3.80	108.9	40.9	173.4
66.50 Top - Section 2		0.00	1.23	17.054	28.82	108.83	0.650	0.500	1.50	2.140	1.39	40.1	15.1	63.5
70.00		0.00	1.25	17.300	29.24	95.91	0.590	0.500	3.50	4.375	2.58	75.5	31.0	222.2
70.50 Appurtenance(s)		0.00	1.25	17.335	29.30	96.00	0.590	0.500	0.50	0.625	0.37	10.8	4.4	31.7
75.00		0.00	1.27	17.638	29.81	96.84	0.590	0.500	4.50	5.625	3.32	98.9	39.9	285.6
76.50 Top - Section 3		0.00	1.28	17.736	29.97	97.11	0.590	0.500	1.50	1.875	1.11	33.2	13.3	95.2
80.00		0.00	1.29	17.960	30.35	97.72	0.590	0.500	3.50	4.375	2.58	78.3	31.0	222.2
83.50 Appurtenance(s)		0.00	1.31	18.177	30.72	98.31	0.590	0.500	3.50	4.375	2.58	79.3	31.0	222.2
85.00		0.00	1.32	18.268	30.87	98.55	0.590	0.500	1.50	1.875	1.11	34.2	13.3	95.2
86.50		0.00	1.32	18.358	31.02	98.80	0.590	0.500	1.50	1.875	1.11	34.3	13.3	95.2
Totals:									86.50			2,417.2		6,860.7

Discrete Appurtenance Forces

Structure: CT46149-A-SB
Site Name: Hennessy Property
Height: 86.50 (ft)
Base Elev: 1.500 (ft)

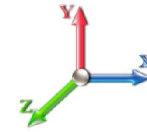
Code: EIA/TIA-222-F
Exposure: C
Gh: 1.69
Struct Class: II

9/29/2015
 Page: 14



Load Case: 73.61 mph Wind with 0.5" Ice

Dead Load Factor 1.00
Wind Load Factor 1.00



Iterations: 25

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	CaAa Factor	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)
1	83.50	DragonWave A-ANT-18G-2-C	1	18.177	30.719	0.85	4.29	55.10	0.000	0.000	131.86	0.00	0.00
2	83.50	Argus LLPX310R	3	18.177	30.719	0.77	12.38	163.50	0.000	0.000	380.35	0.00	0.00
3	83.50	DragonWave A-ANT-11G-2-C	1	18.177	30.719	0.85	4.29	55.10	0.000	0.000	131.86	0.00	0.00
4	83.50	T-Arms	3	18.177	30.719	0.67	21.11	1260.00	0.000	0.000	648.32	0.00	0.00
5	83.50	DragonWave A-ANT-23G-1-C	2	18.177	30.719	0.85	3.11	50.20	0.000	0.000	95.57	0.00	0.00
6	83.50	Samsung FDD R6 RRHs	3	18.177	30.719	0.75	4.68	133.50	0.000	0.000	143.76	0.00	0.00
7	70.50	RFS APXV18-206517S-C	3	17.335	29.296	0.98	17.15	267.00	0.000	0.000	502.48	0.00	0.00
8	70.50	Direct Mount	1	17.335	29.296	1.00	2.00	250.00	0.000	0.000	58.59	0.00	0.00
9	61.00	T-Arms	3	16.648	28.135	0.75	28.13	1440.00	0.000	0.000	791.30	0.00	0.00
10	61.00	RFS APXVTM14-C-120	3	16.648	28.135	0.84	18.37	275.70	0.000	0.000	516.86	0.00	0.00
11	61.00	RFS ACU-A20-N RETs	4	16.648	28.135	0.84	0.74	9.20	0.000	0.000	20.80	0.00	0.00
12	61.00	RF Filters	3	16.648	28.135	0.75	2.86	66.00	0.000	0.000	80.40	0.00	0.00
13	61.00	ALU 800MHz External Notch	3	16.648	28.135	0.75	2.16	41.40	0.000	0.000	60.77	0.00	0.00
14	61.00	Alcatel Lucent	3	16.648	28.135	0.75	11.18	276.00	0.000	0.000	314.62	0.00	0.00
15	61.00	Alcatel Lucent 800 MHz	3	16.648	28.135	0.97	8.21	222.30	0.000	0.000	230.88	0.00	0.00
16	61.00	Alcatel Lucent 1900MHz RRH	3	16.648	28.135	0.93	11.72	225.60	0.000	0.000	329.69	0.00	0.00
17	61.00	Powerwave	3	16.648	28.135	0.71	23.92	0.00	0.000	0.000	672.99	0.00	0.00
18	56.50	KRY 112 144/1	6	16.296	27.541	0.75	2.48	84.60	0.000	0.000	68.16	0.00	0.00
19	56.50	AIR 21, 1.3M, B2A B4P	3	16.296	27.541	0.91	19.03	387.60	0.000	0.000	524.05	0.00	0.00
20	56.50	AIR 21, 1.3M, B4A B2P	3	16.296	27.541	0.91	19.03	384.30	0.000	0.000	524.05	0.00	0.00
21	56.50	T-Arms	3	16.296	27.541	0.75	23.63	1500.00	0.000	0.000	650.65	0.00	0.00
22	56.50	LNx-6515DS-A1M	3	16.296	27.541	0.89	32.95	346.80	0.000	0.000	907.41	0.00	0.00
23	56.50	RRUS-11 (19)	3	16.296	27.541	0.79	8.58	218.70	0.000	0.000	236.28	0.00	0.00
Totals:								7,712.60			8,021.69		

Total Applied Force Summary

Structure: CT46149-A-SB
Site Name: Hennessy Property
Height: 86.50 (ft)
Base Elev: 1.500 (ft)

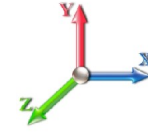
Code: EIA/TIA-222-F
Exposure: C
Gh: 1.69
Struct Class: II

9/29/2015
 Page: 15



Load Case: 73.61 mph Wind with 0.5" Ice

Dead Load Factor 1.00
Wind Load Factor 1.00



Iterations: 25

Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00		0.00	0.00	0.00	0.00
5.00		168.95	679.77	0.00	0.00
10.00		163.99	661.59	0.00	0.00
15.00		159.04	643.41	0.00	0.00
20.00		154.09	625.23	0.00	0.00
25.00		149.13	607.05	0.00	0.00
30.00		144.18	588.87	0.00	0.00
35.00		143.30	570.69	0.00	0.00
36.96		55.51	218.67	0.00	0.00
40.00		88.18	459.50	0.00	0.00
40.04		1.15	5.98	0.00	0.00
45.00		144.08	346.03	0.00	0.00
50.00		143.94	338.57	0.00	0.00
55.00		142.03	328.29	0.00	0.00
56.50	(21) appurtenances	2952.39	3018.73	0.00	0.00
60.00		97.09	196.09	0.00	0.00
61.00	(28) appurtenances	3045.64	2611.42	0.00	0.00
65.00		108.87	204.11	0.00	0.00
66.50		40.08	75.02	0.00	0.00
70.00		75.47	249.05	0.00	0.00
70.50	(4) appurtenances	571.88	552.58	0.00	0.00
75.00		98.92	292.13	0.00	0.00
76.50		33.16	97.38	0.00	0.00
80.00		78.35	227.21	0.00	0.00
83.50	(13) appurtenances	1611.00	1944.61	0.00	0.00
85.00		34.15	95.22	0.00	0.00
86.50		34.32	95.22	0.00	0.00
Totals:		10,438.90	15,732.42	0.00	0.00

Resulting Forces and Deflections

Structure: CT46149-A-SB
Site Name: Hennessy Property
Height: 86.50 (ft)
Base Elev: 1.500 (ft)

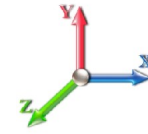
Code: EIA/TIA-222-F
Exposure: C
Gh: 1.69
Struct Class: II

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Load Case: 73.61 mph Wind with 0.5" Ice

Dead Load Factor 1.00
Wind Load Factor 1.00



Iterations: 25

Elev (ft)	Lateral FX (-) (kips)	Axial FY (-) (kips)	Lateral FZ (kips)	Moment MX (ft-kips)	Torsion MY (ft-kips)	Moment MZ (ft-kips)	Deflect X (in)	Deflect Z (in)	Deflect Resultant (in)	Rotation Sway (deg)	Rotation Twist (deg)
0.00	-10.487	-15.700	0.000	0.000	0.000	-647.07	0.000	0.000	0.000	0.000	0.000
5.00	-10.408	-14.957	0.000	0.000	0.000	-594.63	-0.187	0.000	0.187	-0.349	0.000
10.00	-10.325	-14.234	0.000	0.000	0.000	-542.60	-0.740	0.000	0.740	-0.700	0.000
15.00	-10.239	-13.531	0.000	0.000	0.000	-490.97	-1.661	0.000	1.661	-1.051	0.000
20.00	-10.149	-12.848	0.000	0.000	0.000	-439.78	-2.949	0.000	2.949	-1.399	0.000
25.00	-10.056	-12.186	0.000	0.000	0.000	-389.03	-4.599	0.000	4.599	-1.743	0.000
30.00	-9.959	-11.545	0.000	0.000	0.000	-338.75	-6.606	0.000	6.606	-2.079	0.000
35.00	-9.836	-10.943	0.000	0.000	0.000	-288.96	-8.957	0.000	8.957	-2.402	0.000
36.96	-9.800	-10.699	0.000	0.000	0.000	-269.71	-9.968	0.000	9.968	-2.528	0.000
40.00	-9.708	-10.229	0.000	0.000	0.000	-239.89	-11.641	0.000	11.641	-2.716	0.000
40.04	-9.732	-10.198	0.000	0.000	0.000	-239.50	-11.664	0.000	11.664	-2.718	0.000
45.00	-9.635	-9.798	0.000	0.000	0.000	-191.23	-14.638	0.000	14.638	-2.996	0.000
50.00	-9.539	-9.400	0.000	0.000	0.000	-143.06	-18.023	0.000	18.023	-3.445	0.000
55.00	-9.411	-9.046	0.000	0.000	0.000	-95.366	-21.834	0.000	21.834	-3.808	0.000
56.50	-6.277	-6.218	0.000	0.000	0.000	-81.250	-23.045	0.000	23.045	-3.900	0.000
60.00	-6.178	-6.017	0.000	0.000	0.000	-59.282	-25.971	0.000	25.971	-4.077	0.000
61.00	-2.959	-3.625	0.000	0.000	0.000	-53.104	-26.830	0.000	26.830	-4.122	0.000
65.00	-2.842	-3.425	0.000	0.000	0.000	-41.267	-30.348	0.000	30.348	-4.276	0.000
66.50	-2.801	-3.349	0.000	0.000	0.000	-37.004	-31.699	0.000	31.699	-4.330	0.000
70.00	-2.710	-3.104	0.000	0.000	0.000	-27.200	-34.912	0.000	34.912	-4.437	0.000
70.50	-2.099	-2.595	0.000	0.000	0.000	-25.845	-35.377	0.000	35.377	-4.447	0.000
75.00	-1.979	-2.311	0.000	0.000	0.000	-16.399	-39.601	0.000	39.601	-4.520	0.000
76.50	-1.940	-2.215	0.000	0.000	0.000	-13.430	-41.022	0.000	41.022	-4.537	0.000
80.00	-1.844	-1.994	0.000	0.000	0.000	-6.642	-44.356	0.000	44.356	-4.564	0.000
83.50	-0.083	-0.184	0.000	0.000	0.000	-0.188	-47.702	0.000	47.702	-4.573	0.000
85.00	-0.042	-0.092	0.000	0.000	0.000	-0.063	-49.137	0.000	49.137	-4.573	0.000
86.50	-0.034	0.000	0.000	0.000	0.000	0.000	0.000	0.000	50.573	-4.573	0.000

Resulting Stresses

Structure: CT46149-A-SBA
Site Name: Hennessy Property
Height: 86.50 (ft)
Base Elev: 1.500 (ft)

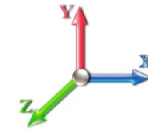
Code: EIA/TIA-222-F
Exposure: C
Gh: 1.69
Struct Class: II

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 Page: 17



Load Case: 73.61 mph Wind with 0.5" Ice

Dead Load Factor 1.00
Wind Load Factor 1.00



Iterations: 25

Applied Stresses

	fa	fvx	fvz	fv _t	fbx	fbz	fb	f _a		
Elev (ft)	Axial (Y) (ksi)	Shear (X) (ksi)	Shear (Z) (ksi)	Torsion (ksi)	Bending (X) (ksi)	Bending (Z) (ksi)	Combined (ksi)	Allow Stress (ksi)	f/Fb	Stress Ratio
0.00	0.51	0.69	0.00	0.00	0.00	40.51	41.04	52.0		0.790
5.00	0.51	0.71	0.00	0.00	0.00	39.62	40.14	52.0		0.772
10.00	0.50	0.73	0.00	0.00	0.00	38.55	39.07	52.0		0.752
15.00	0.49	0.74	0.00	0.00	0.00	37.28	37.79	52.0		0.727
20.00	0.48	0.76	0.00	0.00	0.00	35.77	36.27	52.0		0.698
25.00	0.47	0.78	0.00	0.00	0.00	33.97	34.47	52.0		0.663
30.00	0.46	0.81	0.00	0.00	0.00	31.85	32.34	52.0		0.622
35.00	0.46	0.83	0.00	0.00	0.00	29.33	29.82	52.0		0.574
36.96	0.45	0.84	0.00	0.00	0.00	28.23	28.72	52.0		0.553
40.00	0.44	0.85	0.00	0.00	0.00	26.37	26.85	52.0		0.517
40.04	0.86	1.65	0.00	0.00	0.00	49.27	50.21	52.0		0.966
45.00	0.86	1.70	0.00	0.00	0.00	42.59	43.55	52.0		0.838
50.00	0.86	1.76	0.00	0.00	0.00	34.64	35.63	52.0		0.685
55.00	0.86	1.81	0.00	0.00	0.00	25.19	26.25	52.0		0.505
56.50	0.60	1.22	0.00	0.00	0.00	22.05	22.75	52.0		0.438
60.00	0.60	1.24	0.00	0.00	0.00	17.16	17.89	52.0		0.344
61.00	0.37	0.60	0.00	0.00	0.00	15.66	16.06	52.0		0.309
65.00	0.36	0.60	0.00	0.00	0.00	13.14	13.54	52.0		0.260
66.50	0.36	0.60	0.00	0.00	0.00	12.13	12.53	52.0		0.241
66.50	0.36	0.60	0.00	0.00	0.00	12.13	12.53	52.0		0.165
70.00	0.19	0.34	0.00	0.00	0.00	6.13	6.35	28.0	28.0	0.227
70.50	0.16	0.26	0.00	0.00	0.00	5.82	6.00	28.0	28.0	0.214
75.00	0.14	0.25	0.00	0.00	0.00	3.70	3.86	28.0	28.0	0.138
76.50	0.14	0.24	0.00	0.00	0.00	3.03	3.19	28.0	28.0	0.114
76.50	0.14	0.24	0.00	0.00	0.00	3.03	3.19	28.0	28.0	0.114
80.00	0.12	0.23	0.00	0.00	0.00	1.50	1.67	28.0	28.0	0.060
83.50	0.01	0.01	0.00	0.00	0.00	0.04	0.06	28.0	28.0	0.002
85.00	0.01	0.01	0.00	0.00	0.00	0.01	0.02	28.0	28.0	0.001
86.50	0.00	0.00	0.00	0.00	0.00	0.00	0.01	28.0	28.0	0.000

Wind Loading - Shaft

Structure: CT46149-A-SBA
Site Name: Hennessy Property
Height: 86.50 (ft)
Base Elev: 1.500 (ft)

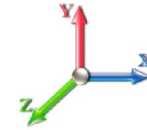
Code: EIA/TIA-222-F
Exposure: C
Gh: 1.69
Struct Class: II

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Load Case: 50 mph Wind with 0" Ice

Dead Load Factor 1.00
Wind Load Factor 1.00



Iterations: 24

Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		0.00	1.00	6.400	10.82	108.33	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	105.08	0.650	0.000	5.00	10.671	6.94	75.0	0.0	511.0
10.00		0.00	1.00	6.400	10.82	101.83	0.650	0.000	5.00	10.346	6.72	72.7	0.0	495.2
15.00		0.00	1.00	6.400	10.82	98.58	0.650	0.000	5.00	10.021	6.51	70.4	0.0	479.4
20.00		0.00	1.00	6.400	10.82	95.33	0.650	0.000	5.00	9.696	6.30	68.2	0.0	463.6
25.00		0.00	1.00	6.400	10.82	92.08	0.650	0.000	5.00	9.371	6.09	65.9	0.0	447.8
30.00		0.00	1.00	6.400	10.82	88.83	0.650	0.000	5.00	9.046	5.88	63.6	0.0	432.0
35.00		0.00	1.03	6.587	11.13	86.82	0.650	0.000	5.00	8.721	5.67	63.1	0.0	416.2
36.96 Bot - Section 2		0.00	1.04	6.686	11.30	86.17	0.650	0.000	1.96	3.324	2.16	24.4	0.0	158.6
40.00		0.00	1.07	6.833	11.55	85.07	0.650	0.000	3.04	5.167	3.36	38.8	0.0	366.2
40.04 Top - Section 1		0.00	1.07	6.835	11.55	85.06	0.650	0.000	0.04	0.067	0.04	0.5	0.0	4.8
45.00		0.00	1.10	7.059	11.93	84.69	0.650	0.000	4.96	8.160	5.30	63.3	0.0	196.4
50.00		0.00	1.14	7.268	12.28	82.47	0.650	0.000	5.00	7.902	5.14	63.1	0.0	190.1
55.00		0.00	1.17	7.463	12.61	80.06	0.650	0.000	5.00	7.577	4.92	62.1	0.0	182.2
56.50 Appurtenance(s)		0.00	1.17	7.519	12.71	79.31	0.650	0.000	1.50	2.210	1.44	18.3	0.0	53.1
60.00		0.00	1.19	7.646	12.92	77.49	0.650	0.000	3.50	5.042	3.28	42.3	0.0	121.2
61.00 Appurtenance(s)		0.00	1.20	7.681	12.98	76.95	0.650	0.000	1.00	1.411	0.92	11.9	0.0	33.9
65.00		0.00	1.22	7.819	13.21	74.76	0.650	0.000	4.00	5.515	3.58	47.4	0.0	132.5
66.50 Top - Section 2		0.00	1.23	7.869	13.30	73.92	0.650	0.000	1.50	2.015	1.31	17.4	0.0	48.4
70.00		0.00	1.25	7.982	13.49	65.15	0.590	0.000	3.50	4.083	2.41	32.5	0.0	191.2
70.50 Appurtenance(s)		0.00	1.25	7.998	13.52	65.21	0.590	0.000	0.50	0.583	0.34	4.7	0.0	27.3
75.00		0.00	1.27	8.138	13.75	65.78	0.590	0.000	4.50	5.250	3.10	42.6	0.0	245.8
76.50 Top - Section 3		0.00	1.28	8.183	13.83	65.96	0.590	0.000	1.50	1.750	1.03	14.3	0.0	81.9
80.00		0.00	1.29	8.286	14.00	66.38	0.590	0.000	3.50	4.083	2.41	33.7	0.0	191.2
83.50 Appurtenance(s)		0.00	1.31	8.387	14.17	66.78	0.590	0.000	3.50	4.083	2.41	34.1	0.0	191.2
85.00		0.00	1.32	8.429	14.24	66.94	0.590	0.000	1.50	1.750	1.03	14.7	0.0	81.9
86.50		0.00	1.32	8.470	14.31	67.11	0.590	0.000	1.50	1.750	1.03	14.8	0.0	81.9
Totals:									86.50			1,059.8		5,825.2

Discrete Appurtenance Forces

Structure: CT46149-A-SB
Site Name: Hennessy Property
Height: 86.50 (ft)
Base Elev: 1.500 (ft)

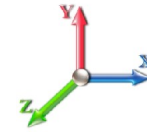
Code: EIA/TIA-222-F
Exposure: C
Gh: 1.69
Struct Class: II

9/29/2015
 Page: 19



Load Case: 50 mph Wind with 0" Ice

Dead Load Factor 1.00
Wind Load Factor 1.00



Iterations: 24

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	CaAa Factor	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)
1	83.50	DragonWave A-ANT-18G-2-C	1	8.387	14.173	0.80	3.75	27.10	0.000	0.000	53.18	0.00	0.00
2	83.50	Argus LLPX310R	3	8.387	14.173	0.72	10.43	85.80	0.000	0.000	147.87	0.00	0.00
3	83.50	DragonWave A-ANT-11G-2-C	1	8.387	14.173	0.80	3.75	27.00	0.000	0.000	53.18	0.00	0.00
4	83.50	T-Arms	3	8.387	14.173	0.67	10.05	900.00	0.000	0.000	142.44	0.00	0.00
5	83.50	DragonWave A-ANT-23G-1-C	2	8.387	14.173	0.80	2.58	30.00	0.000	0.000	36.51	0.00	0.00
6	83.50	Samsung FDD R6 RRHs	3	8.387	14.173	0.72	3.89	99.00	0.000	0.000	55.11	0.00	0.00
7	70.50	RFS APXV18-206517S-C	3	7.998	13.517	0.94	14.47	159.00	0.000	0.000	195.64	0.00	0.00
8	70.50	Direct Mount	1	7.998	13.517	1.00	1.00	150.00	0.000	0.000	13.52	0.00	0.00
9	61.00	T-Arms	3	7.681	12.981	0.67	20.10	1200.00	0.000	0.000	260.92	0.00	0.00
10	61.00	RFS APXVTM14-C-120	3	7.681	12.981	0.79	16.35	168.00	0.000	0.000	212.28	0.00	0.00
11	61.00	RFS ACU-A20-N RETs	4	7.681	12.981	0.79	0.44	4.00	0.000	0.000	5.74	0.00	0.00
12	61.00	RF Filters	3	7.681	12.981	0.50	1.64	46.50	0.000	0.000	21.22	0.00	0.00
13	61.00	ALU 800MHz External Notch	3	7.681	12.981	0.50	1.17	26.40	0.000	0.000	15.19	0.00	0.00
14	61.00	Alcatel Lucent	3	7.681	12.981	0.50	7.08	210.00	0.000	0.000	91.91	0.00	0.00
15	61.00	Alcatel Lucent 800 MHz	3	7.681	12.981	0.50	3.74	159.00	0.000	0.000	48.48	0.00	0.00
16	61.00	Alcatel Lucent 1900MHz RRH	3	7.681	12.981	0.50	5.70	132.00	0.000	0.000	73.99	0.00	0.00
17	61.00	Powerwave	3	7.681	12.981	0.66	20.79	159.00	0.000	0.000	269.88	0.00	0.00
18	56.50	KRY 112 144/1	6	7.519	12.707	0.70	1.72	66.00	0.000	0.000	21.88	0.00	0.00
19	56.50	AIR 21, 1.3M, B2A B4P	3	7.519	12.707	0.86	16.98	274.50	0.000	0.000	215.72	0.00	0.00
20	56.50	AIR 21, 1.3M, B4A B2P	3	7.519	12.707	0.86	16.98	271.20	0.000	0.000	215.72	0.00	0.00
21	56.50	T-Arms	3	7.519	12.707	0.67	16.08	1200.00	0.000	0.000	204.33	0.00	0.00
22	56.50	LNx-6515DS-A1M	3	7.519	12.707	0.84	28.75	149.40	0.000	0.000	365.37	0.00	0.00
23	56.50	RRUS-11 (19)	3	7.519	12.707	0.74	7.24	153.00	0.000	0.000	91.96	0.00	0.00
Totals:								5,696.90			2,812.03		

Total Applied Force Summary

Structure: CT46149-A-SB
Site Name: Hennessy Property
Height: 86.50 (ft)
Base Elev: 1.500 (ft)

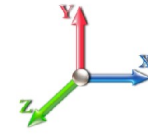
Code: EIA/TIA-222-F
Exposure: C
Gh: 1.69
Struct Class: II

9/29/2015
 Page: 20



Load Case: 50 mph Wind with 0" Ice

Dead Load Factor 1.00
Wind Load Factor 1.00



Iterations: 24

Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00		0.00	0.00	0.00	0.00
5.00		75.02	601.21	0.00	0.00
10.00		72.74	585.41	0.00	0.00
15.00		70.45	569.62	0.00	0.00
20.00		68.16	553.82	0.00	0.00
25.00		65.88	538.02	0.00	0.00
30.00		63.59	522.23	0.00	0.00
35.00		63.10	506.43	0.00	0.00
36.96		24.41	193.88	0.00	0.00
40.00		38.78	421.14	0.00	0.00
40.04		0.50	5.48	0.00	0.00
45.00		63.27	285.88	0.00	0.00
50.00		63.09	280.32	0.00	0.00
55.00		62.11	272.42	0.00	0.00
56.50	(21) appurtenances	1133.23	2194.28	0.00	0.00
60.00		42.35	158.64	0.00	0.00
61.00	(28) appurtenances	1011.53	2149.52	0.00	0.00
65.00		47.37	163.22	0.00	0.00
66.50		17.41	59.91	0.00	0.00
70.00		32.50	218.05	0.00	0.00
70.50	(4) appurtenances	213.81	340.15	0.00	0.00
75.00		42.60	252.27	0.00	0.00
76.50		14.28	84.09	0.00	0.00
80.00		33.74	196.21	0.00	0.00
83.50	(13) appurtenances	522.42	1365.11	0.00	0.00
85.00		14.71	81.93	0.00	0.00
86.50		14.78	81.93	0.00	0.00
Totals:		3,871.84	12,681.16	0.00	0.00

Resulting Forces and Deflections

Structure: CT46149-A-SB
Site Name: Hennessy Property
Height: 86.50 (ft)
Base Elev: 1.500 (ft)

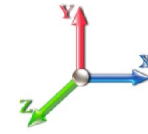
Code: EIA/TIA-222-F
Exposure: C
Gh: 1.69
Struct Class: II

9/29/2015
 Page: 21



Load Case: 50 mph Wind with 0" Ice

Dead Load Factor 1.00
Wind Load Factor 1.00



Iterations: 24

Elev (ft)	Lateral FX (-) (kips)	Axial FY (-) (kips)	Lateral FZ (kips)	Moment MX (ft-kips)	Torsion MY (ft-kips)	Moment MZ (ft-kips)	Deflect X (in)	Deflect Z (in)	Deflect Resultant (in)	Rotation Sway (deg)	Rotation Twist (deg)
0.00	-3.885	-12.677	0.000	0.000	0.000	-232.05	0.000	0.000	0.000	0.000	0.000
5.00	-3.836	-12.067	0.000	0.000	0.000	-212.62	-0.067	0.000	0.067	-0.125	0.000
10.00	-3.786	-11.474	0.000	0.000	0.000	-193.44	-0.265	0.000	0.265	-0.250	0.000
15.00	-3.737	-10.897	0.000	0.000	0.000	-174.51	-0.594	0.000	0.594	-0.375	0.000
20.00	-3.686	-10.335	0.000	0.000	0.000	-155.83	-1.053	0.000	1.053	-0.499	0.000
25.00	-3.636	-9.791	0.000	0.000	0.000	-137.40	-1.642	0.000	1.642	-0.621	0.000
30.00	-3.585	-9.262	0.000	0.000	0.000	-119.22	-2.355	0.000	2.355	-0.739	0.000
35.00	-3.526	-8.752	0.000	0.000	0.000	-101.29	-3.191	0.000	3.191	-0.852	0.000
36.96	-3.507	-8.555	0.000	0.000	0.000	-94.399	-3.550	0.000	3.550	-0.897	0.000
40.00	-3.466	-8.132	0.000	0.000	0.000	-83.726	-4.143	0.000	4.143	-0.962	0.000
40.04	-3.473	-8.124	0.000	0.000	0.000	-83.587	-4.151	0.000	4.151	-0.963	0.000
45.00	-3.422	-7.831	0.000	0.000	0.000	-66.362	-5.204	0.000	5.204	-1.060	0.000
50.00	-3.372	-7.544	0.000	0.000	0.000	-49.251	-6.400	0.000	6.400	-1.215	0.000
55.00	-3.313	-7.269	0.000	0.000	0.000	-32.392	-7.743	0.000	7.743	-1.339	0.000
56.50	-2.132	-5.100	0.000	0.000	0.000	-27.422	-8.169	0.000	8.169	-1.370	0.000
60.00	-2.089	-4.941	0.000	0.000	0.000	-19.959	-9.197	0.000	9.197	-1.430	0.000
61.00	-1.026	-2.817	0.000	0.000	0.000	-17.869	-9.499	0.000	9.499	-1.445	0.000
65.00	-0.976	-2.655	0.000	0.000	0.000	-13.766	-10.732	0.000	10.732	-1.497	0.000
66.50	-0.958	-2.595	0.000	0.000	0.000	-12.302	-11.205	0.000	11.205	-1.515	0.000
70.00	-0.921	-2.378	0.000	0.000	0.000	-8.948	-12.330	0.000	12.330	-1.550	0.000
70.50	-0.698	-2.043	0.000	0.000	0.000	-8.488	-12.492	0.000	12.492	-1.554	0.000
75.00	-0.649	-1.792	0.000	0.000	0.000	-5.345	-13.968	0.000	13.968	-1.577	0.000
76.50	-0.633	-1.708	0.000	0.000	0.000	-4.371	-14.465	0.000	14.465	-1.583	0.000
80.00	-0.594	-1.513	0.000	0.000	0.000	-2.156	-15.629	0.000	15.629	-1.592	0.000
83.50	-0.034	-0.163	0.000	0.000	0.000	-0.076	-16.797	0.000	16.797	-1.595	0.000
85.00	-0.017	-0.081	0.000	0.000	0.000	-0.025	-17.298	0.000	17.298	-1.595	0.000
86.50	-0.015	0.000	0.000	0.000	0.000	0.000	0.000	0.000	17.799	-1.595	0.000

Resulting Stresses

Structure: CT46149-A-SBA
Site Name: Hennessy Property
Height: 86.50 (ft)
Base Elev: 1.500 (ft)

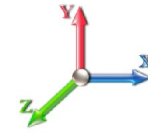
Code: EIA/TIA-222-F
Exposure: C
Gh: 1.69
Struct Class: II

9/29/2015
 Page: 22



Load Case: 50 mph Wind with 0" Ice

Dead Load Factor 1.00
Wind Load Factor 1.00



Iterations: 24

Applied Stresses

Elev (ft)	fa Axial (Y) (ksi)	fvx Shear (X) (ksi)	fvz Shear (Z) (ksi)	fvT Torsion (ksi)	fbx Bending (X) (ksi)	fbz Bending (Z) (ksi)	fb Combined (ksi)	f/Fb Allow Stress (ksi)	f/Fb Stress Ratio
0.00	0.42	0.26	0.00	0.00	0.00	14.53	14.95	52.0	0.288
5.00	0.41	0.26	0.00	0.00	0.00	14.17	14.58	52.0	0.281
10.00	0.40	0.27	0.00	0.00	0.00	13.74	14.15	52.0	0.272
15.00	0.39	0.27	0.00	0.00	0.00	13.25	13.65	52.0	0.263
20.00	0.39	0.28	0.00	0.00	0.00	12.67	13.07	52.0	0.251
25.00	0.38	0.28	0.00	0.00	0.00	12.00	12.39	52.0	0.238
30.00	0.37	0.29	0.00	0.00	0.00	11.21	11.59	52.0	0.223
35.00	0.36	0.30	0.00	0.00	0.00	10.28	10.66	52.0	0.205
36.96	0.36	0.30	0.00	0.00	0.00	9.88	10.26	52.0	0.197
40.00	0.35	0.30	0.00	0.00	0.00	9.20	9.57	52.0	0.184
40.04	0.68	0.59	0.00	0.00	0.00	17.19	17.91	52.0	0.345
45.00	0.69	0.60	0.00	0.00	0.00	14.78	15.50	52.0	0.298
50.00	0.69	0.62	0.00	0.00	0.00	11.93	12.66	52.0	0.244
55.00	0.69	0.64	0.00	0.00	0.00	8.56	9.32	52.0	0.179
56.50	0.49	0.42	0.00	0.00	0.00	7.44	7.97	52.0	0.153
60.00	0.49	0.42	0.00	0.00	0.00	5.78	6.31	52.0	0.121
61.00	0.28	0.21	0.00	0.00	0.00	5.27	5.56	52.0	0.107
65.00	0.28	0.21	0.00	0.00	0.00	4.38	4.67	52.0	0.090
66.50	0.28	0.21	0.00	0.00	0.00	4.03	4.32	52.0	0.083
66.50	0.28	0.21	0.00	0.00	0.00	4.03	4.32	52.0	0.057
70.00	0.15	0.11	0.00	0.00	0.00	2.02	2.17	28.0	28.0 0.078
70.50	0.13	0.09	0.00	0.00	0.00	1.91	2.05	28.0	28.0 0.073
75.00	0.11	0.08	0.00	0.00	0.00	1.20	1.32	28.0	28.0 0.047
76.50	0.11	0.08	0.00	0.00	0.00	0.98	1.10	28.0	28.0 0.039
76.50	0.11	0.08	0.00	0.00	0.00	0.98	1.10	28.0	28.0 0.039
80.00	0.09	0.07	0.00	0.00	0.00	0.49	0.59	28.0	28.0 0.021
83.50	0.01	0.00	0.00	0.00	0.00	0.02	0.03	28.0	28.0 0.001
85.00	0.01	0.00	0.00	0.00	0.00	0.01	0.01	28.0	28.0 0.000
86.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	28.0	28.0 0.000

Final Analysis Summary

Structure: CT46149-A-SBA
Site Name: Hennessy Property
Height: 86.50 (ft)
Base Elev: 1.500 (ft)

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

9/29/2015
 Page: 23



Reactions

Load Case	Shear FX (kips)	Shear FZ (kips)	Axial FY (kips)	Moment MX (ft-kips)	Moment MY (ft-kips)	t MZ (ft-kips)
85 mph Wind with 0" Ice	11.2	0.00	12.65	0.00	0.00	670.11
73.61 mph Wind with 0.5" Ice	10.5	0.00	15.70	0.00	0.00	647.07
50 mph Wind with 0" Ice	3.9	0.00	12.68	0.00	0.00	232.05

Max Stresses

Load Case	fa Axial (Y) (ksi)	fvx Shear (X) (ksi)	fvz Shear (Z) (ksi)	fvz Torsion (ksi)	fbx Bending (X) (ksi)	fbz Bending (Z) (ksi)	Combined Stress (ksi)	Allowable Stress (ksi)	Elev (ft)	Stress Ratio
85 mph Wind with 0" Ice	0.65	1.70	0.00	0.00	0.00	49.61	50.34	52.0	40.04	0.968
73.61 mph Wind with 0.5" Ice	0.86	1.65	0.00	0.00	0.00	49.27	50.21	52.0	40.04	0.966
50 mph Wind with 0" Ice	0.68	0.59	0.00	0.00	0.00	17.19	17.91	52.0	40.04	0.345

Check Soil Capacities:

Allowable Foundation Overturning Resistance (kips-ft.):	1353.0	>	Applied Moment (kips-ft):	818	Usage	0.60	OK!
Factor of Safety of Passive Soil Resistance against Moment:	3.31	OK!					

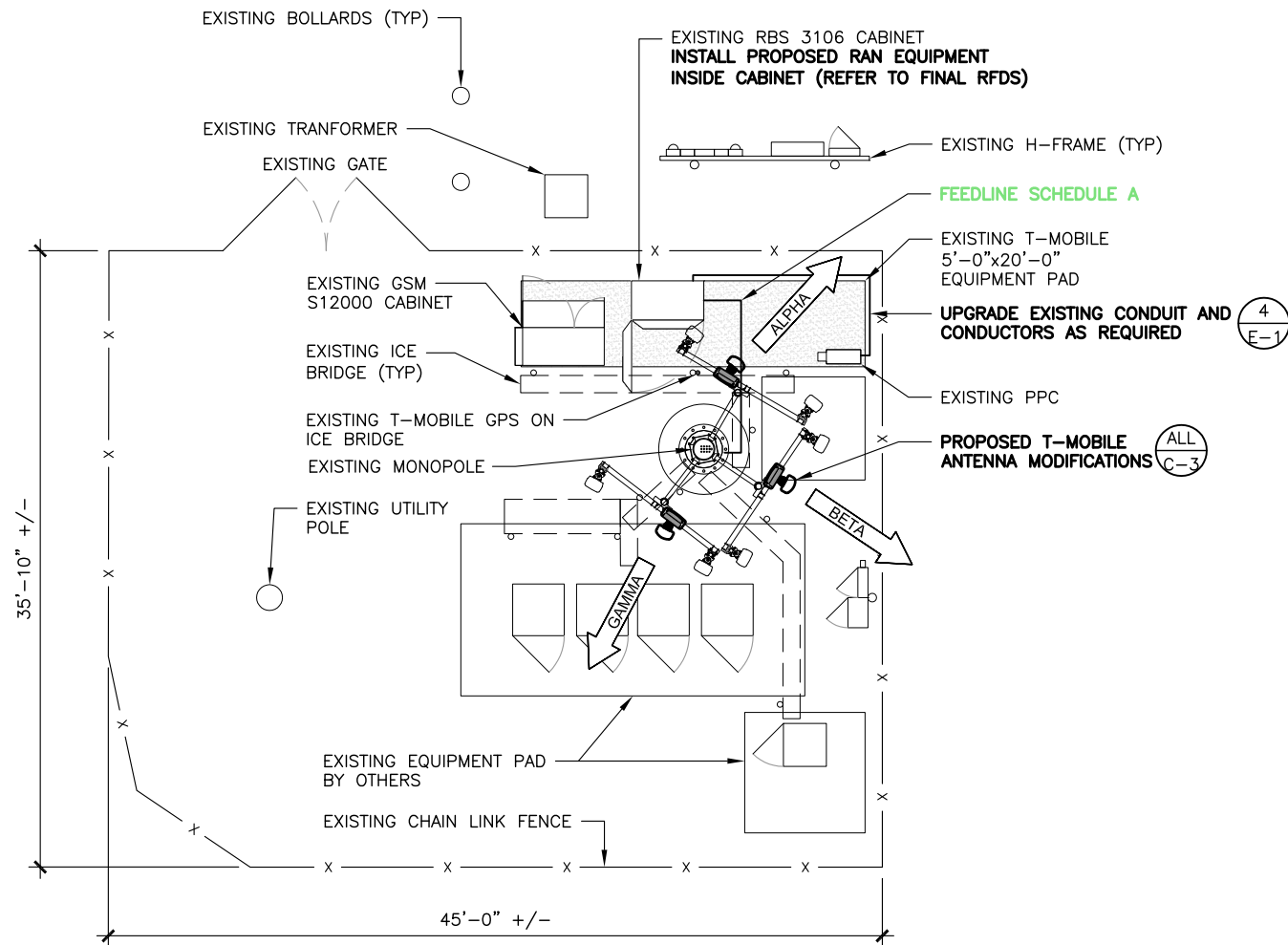
Check the capacities of Reinforceing Concrete:

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:

Vertical Steel Rebar Area (sq. in./each):	0.79	Tie / Stirrup Area (sq. in./each):	0.31		
Calculated Moment Capacity (Mn,Kips-Ft):	1373.7	>	Design Factored Moment (Mu, K-Ft):	927.4	0.68 OK!
Calculated Shear Capacity (Kips):	428.7	>	Design Factored Shear (Kips):	128.7	0.30 OK!
Calculated Tension Capacity (Tn, Kips):	682.6	>	Design Factored Tension (Tu Kips):	0.0	0.00 OK!
Calculated Compression Capacity (Pn, Kips):	4027	>	Design Factored Axial Load (Pu Kips):	20.4	0.01 OK!
Moment & Axial Strength Combination:	0.68	OK!	Max. Allowable Tie/Stirrup Spacing:	12.00	in.
Pier Reinforcement Ratio:	0.006	Reinforcement Ratio is satisfied per ACI			

101030_CT46149-A_Hennessy_Property_CTNH041A.dwg - Sheet: C-1 - User: mwesell - Sep 24, 2015 - 1:56pm



STRUCTURAL NOTES:

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

ANTENNA MOUNT STRUCTURAL ASSESSMENT REQUIREMENT:

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

FEEDLINE SCHEDULE	FEEDLINE DESCRIPTION	LOCATION
A	EXISTING TO REMAIN: (12) 7/8" COAX & (1) 1 1/4" HYBRID FIBER TO T-MOBILE RAD @ 58'	INSIDE POLE
EXISTING T-MOBILE EQUIPMENT FEEDLINE INVENTORY BASED ON OBSERVED FIELD CONDITIONS. RFDS AND FEEDLINE LEASING ENTITLEMENTS MAY DIFFER		

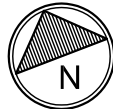
2A
C-1

T-MOBILE FEEDLINES
ROUTED INSIDE TOWER

EXISTING MONOPOLE

1 OVERALL SITE PLAN

SCALE: 11x17 SCALE: 3/32"=1'-0"
22x34 SCALE: 3/16"=1'-0"



SOURCE: B+T 09-10-2015

EXISTING (12) LINES OF 7/8" COAX AND
(1) 1 1/4" HYBRID FIBER TO 58' TO REMAIN.
(REFER TO SBA PROVIDED STRUCTURAL ANALYSIS
FOR SPECIAL CABLE INSTALLATION REQUIREMENTS,
BUNDLING, SHIELDING, MOUNTING AND RELOCATION
OF EXISTING CABLES)

2A FEEDLINE PHOTO DETAIL @ TOWER BASE

SCALE: N.T.S.

EXISTING T-MOBILE GPS ON ICE BRIDGE

EXISTING RBS 3106 CABINET
INSTALL PROPOSED RAN EQUIPMENT
INSIDE CABINET (REFER TO FINAL RFDS)

EXISTING GSM
S12000 CABINET



SOURCE: B+T 09-10-2015

2B EQUIPMENT PHOTO DETAIL

SCALE: N.T.S.



SOURCE: B+T 09-10-2015

3 ELEVATION PHOTO DETAIL

SCALE: N.T.S.



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



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



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

CTNH041A

NH041/SPRINT
FORBES ET

389 FORBES AVE
NEW HAVEN, CT 06511

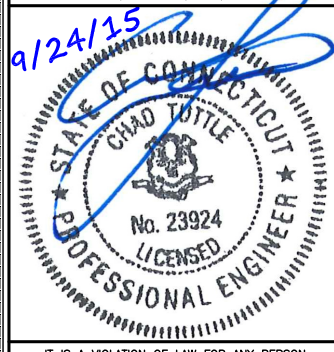
PROJECT NO: 101030.001

CHECKED BY: RCM

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION
0	9/24/15	MEH	CONSTRUCTION

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



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TO ALTER THIS DOCUMENT.

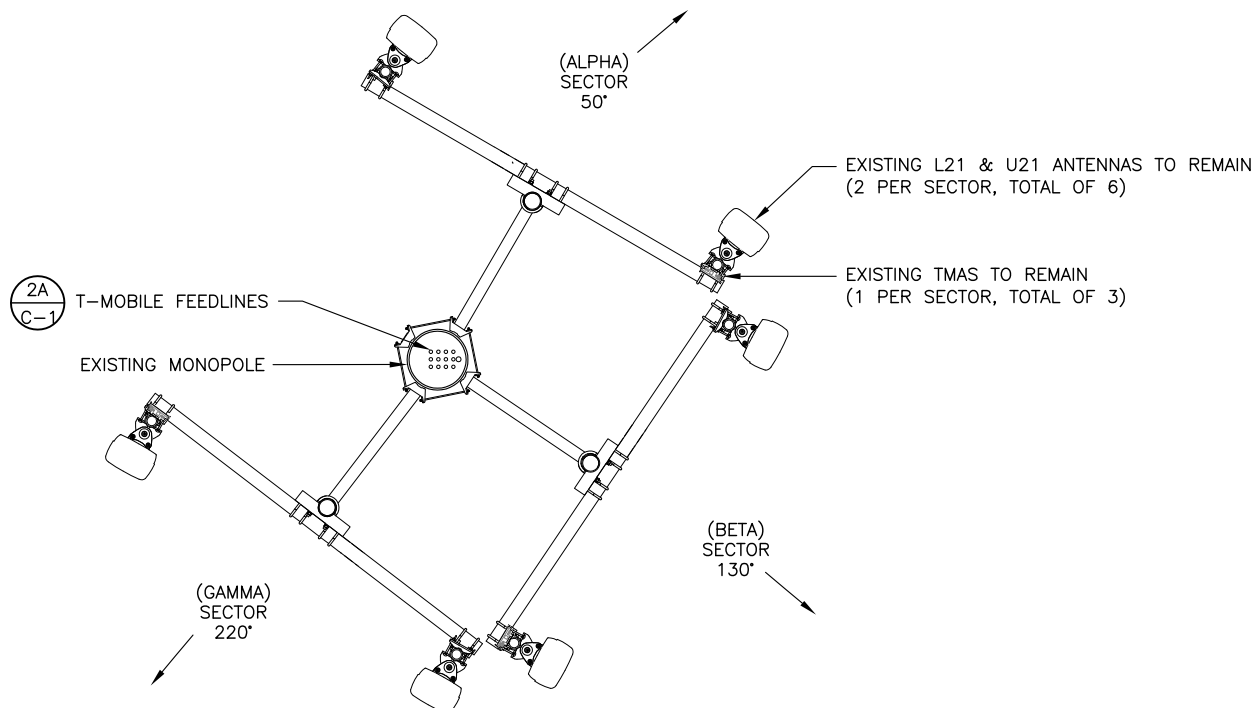
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C-1

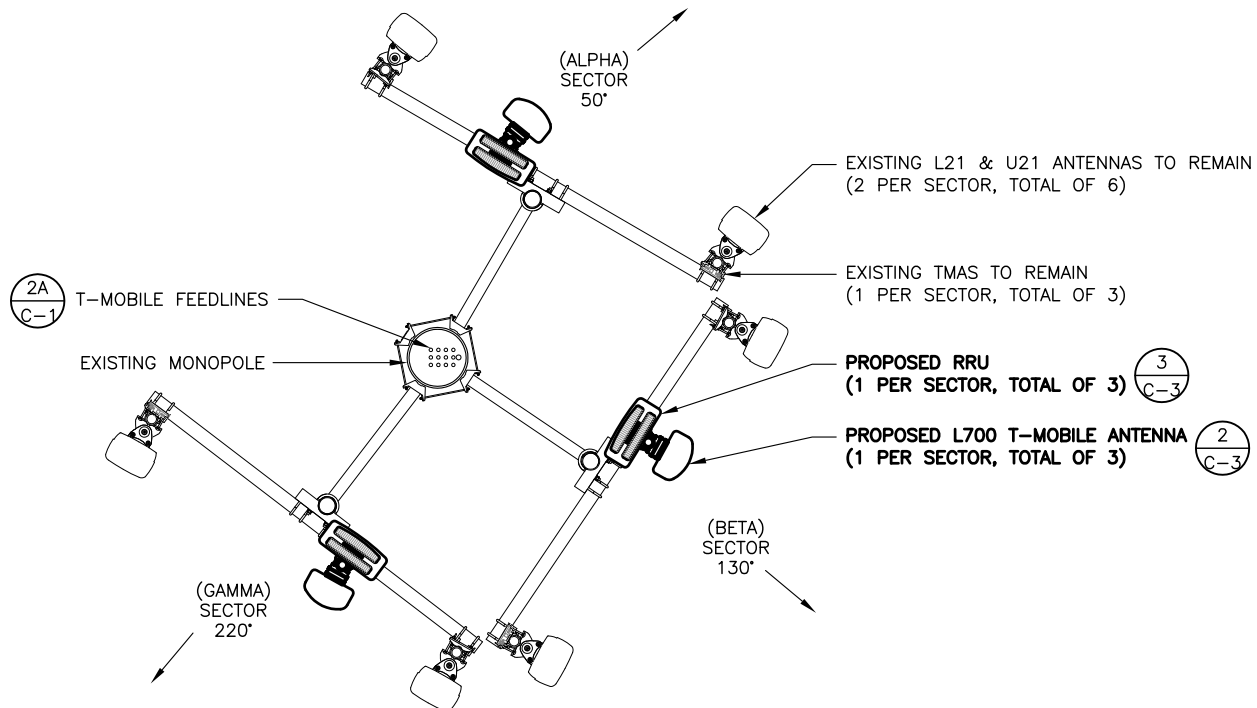
REVISION:

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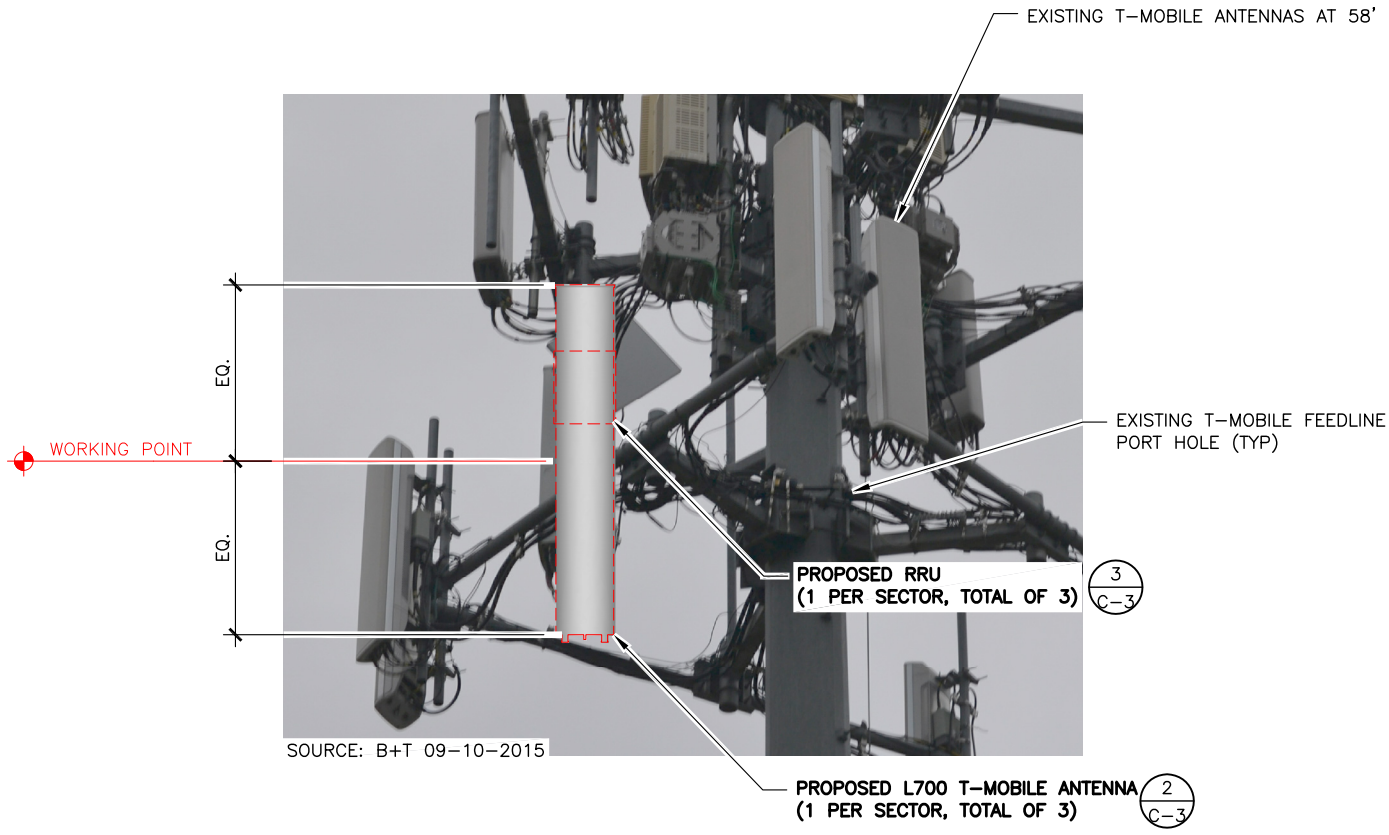
101030_CT46149-A_Hennessy_Property_CTNH041A.dwg -- Sheet:C-2 -- User: mwesell -- Sep 24, 2015 -- 1:56pm



1A EXISTING ANTENNA PLAN
SCALE: 11x17 SCALE: 1/4"=1'-0"
22x34 SCALE: 1/2"=1'-0"
N



1B PROPOSED ANTENNA PLAN
SCALE: 11x17 SCALE: 1/2"=1'-0"
22x34 SCALE: 1"=1'-0"
N



2 ANTENNA MOUNT PHOTO DETAIL
SCALE: N.T.S.

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

SPECIAL WORK NOTE:
GC AND TOWER CREW SHALL CHECK WITH THE RF ENGINEER FOR LATEST RFDS, RAN SCENARIO AND TOWER TOP EQUIPMENT SPECIFICATIONS.



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



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



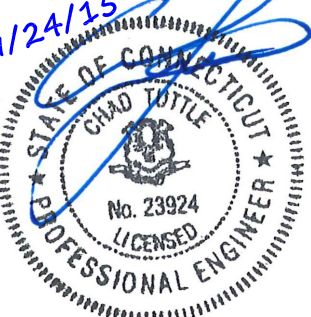
SBA
SBA COMMUNICATIONS CORP.
33 BOSTON POST ROAD WEST, SUITE 320
MARLBOROUGH, MA 01752

CTNH041A
**NH041/SPRINT
FORBES ET**
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NEW HAVEN, CT 06511

PROJECT NO: 101030.001
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REV	DATE	DRWN	DESCRIPTION
0	9/24/15	MEH	CONSTRUCTION

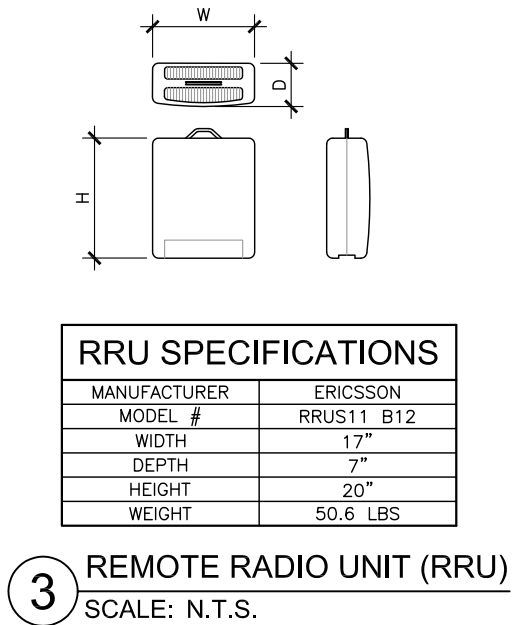
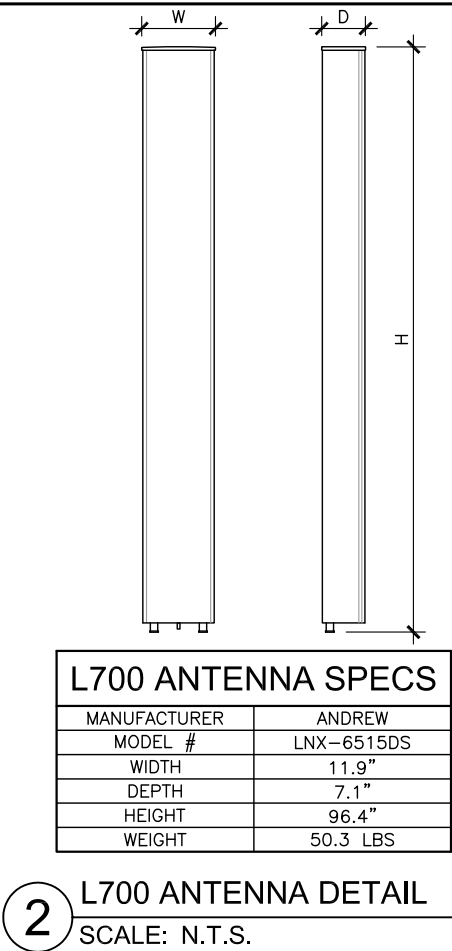
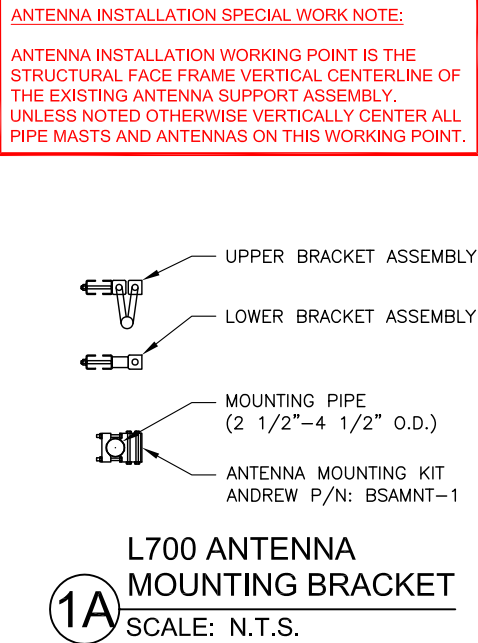
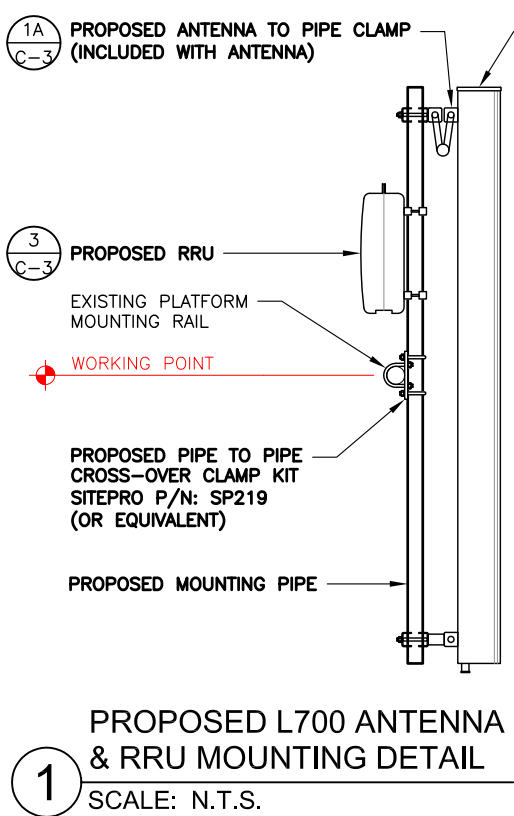
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PEC.0001564
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SHEET NUMBER: **C-2** REVISION: **0**

101030_CT46149-A_Hennessy_Property_CTNH041A.dwg - Sheet:C-3 - User: mwesel - Sep 24, 2015 - 1:56pm



ANTENNA MOUNT STRUCTURAL ASSESSMENT REQUIREMENT:

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

STRUCTURAL NOTES:

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

B+T GRP

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

T-Mobile

T-MOBILE NORTHEAST, LLC

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BLOOMFIELD, CT 06002

SBA

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

CTNH041A

**NH041/SPRINT
FORBES ET**

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NEW HAVEN, CT 06511

PROJECT NO: 101030.001

CHECKED BY: RCM

ISSUED FOR:			
REV	DATE	DRWN	DESCRIPTION
0	9/24/15	MEH	CONSTRUCTION

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

9/24/15

STATE OF CONNECTICUT
CHAD TOTTE
No. 23924
LICENSED PROFESSIONAL ENGINEER

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SHEET NUMBER: C-3

REVISION: 0