



Filed by:

*Kri Pelletier, Property Specialist - SBA Communications
134 Flanders Rd., Suite 125, Westborough, MA 01581
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July 29, 2016

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

Notice of Exempt Modification
49 Brainerd Road, Niantic, CT 06357
41 18 27.3 N
-72 13 26.1 W
T-Mobile#: CTNL805B_L700

Dear Ms. Bachman:

T-Mobile currently maintains six (6) antennas at the 160-foot level of the existing 169-foot Monopole Tower at 49 Brainerd Rd. The tower is owned by SBA Towers V, LLC. The property is owned by Christopher Samuelsen. T-Mobile now intends to install three (3) new L700MHz antennas. These antennas would be installed at the 169-foot level of the tower. T-Mobile's proposed full scope of work is as follows:

Remove:

- None

Remove and Replace:

- None

Install:

- (3) Commscope LNX-6515DS-A1M Panel Antennas
- (3) Ericsson S11B12 RRUs
- (1) Commscope V-Stabilizer VSR-MS-B
- (3) 2" SCH. 40 pipe
- (12) Sitepro SP219 Pipe to Pipe cross-over plates

Existing Equipment to Remain (and Entitlements):

- (3) Ericsson Air21 B2A/B4P Panel Antennas
- (3) Ericsson Air 21 B4A/B2P Panel Antennas
- (12) 1-5/8" coax
- (1) 1-4/8" fiber
- (3) Ericsson KRY 112-114/1 TMA



This facility was approved by the Connecticut Siting Council on March 3, 2011 as found in docket #396. The monopole was not to exceed 170', would provide space to the Town of East Lyme emergency departments at no cost, and was to have all commercial antennas attached via T-Arms. This modification complies with all tower conditions.

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

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

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

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

Sincerely,

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

508.251.0720 x3804 + T
508.366.2610 + F
203.446.7700 + C
kpelletier@sbsite.com

Attachments

cc: Mark C. Nickerson, First Selectman—as elected official
East Lyme Town Hall, 108 Pennsylvania Ave., Niantic, CT 06357
Christopher Samuelson—as property owner
49 Brainerd Road, Niantic, CT 06357



POWER DENSITY

T-Mobile Site Inventory and Power Data

Sector:	A	Sector:	B	Sector:	C
Antenna #:	1	Antenna #:	1	Antenna #:	1
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):	160	Height (AGL):	160	Height (AGL):	160
Frequency Bands:	1900 MHz(PCS) / 2100 MHz (AWS)	Frequency Bands:	1900 MHz(PCS) / 2100 MHz (AWS)	Frequency Bands:	1900 MHz(PCS) / 2100 MHz (AWS)
Channel Count:	2	Channel Count:	2	Channel Count:	2
Total TX Power(W):	120	Total TX Power(W):	120	Total TX Power(W):	120
ERP (W):	4,668.54	ERP (W):	4,668.54	ERP (W):	4,668.54
Antenna A1 MPE%:	0.71	Antenna B1 MPE%:	0.71	Antenna C1 MPE%:	0.71
Antenna #:	2	Antenna #:	2	Antenna #:	2
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):	160	Height (AGL):	160	Height (AGL):	160
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):	120	Total TX Power(W):	120	Total TX Power(W):	120
ERP (W):	4,668.54	ERP (W):	4,668.54	ERP (W):	4,668.54
Antenna A2 MPE%:	0.71	Antenna B2 MPE%:	0.71	Antenna C2 MPE%:	0.71
Antenna #:	3	Antenna #:	3	Antenna #:	3
Make / Model:	CommScope LNX-6515DS-VTM	Make / Model:	CommScope LNX-6515DS-VTM	Make / Model:	CommScope LNX-6515DS-VTM
Gain:	14.6 dBd	Gain:	14.6 dBd	Gain:	14.6 dBd
Height (AGL):	160	Height (AGL):	160	Height (AGL):	160
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%:	0.28	Antenna B3 MPE%:	0.28	Antenna C3 MPE%:	0.28

Site Composite MPE%	
Carrier	MPE%
T-Mobile (Per Sector Max)	1.70 %
AT&T	5.42 %
Verizon Wireless	34.15 %
Site Total MPE %:	41.27 %

T-Mobile Sector A Total:	1.70 %
T-Mobile Sector B Total:	1.70 %
T-Mobile Sector C Total:	1.70 %
Site Total:	41.27 %

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 AWS - 2100 MHz LTE	2	2,334.27	160	7.08	AWS - 2100 MHz	1000	0.71%
T-Mobile PCS - 1950 MHz UMTS	2	1,167.14	160	3.54	PCS - 1950 MHz	1000	0.35%
T-Mobile PCS - 1950 MHz GSM	2	1,167.14	160	3.54	PCS - 1950 MHz	1000	0.35%
T-Mobile 700 MHz LTE	1	865.21	160	1.31	700 MHz	467	0.28%
						Total:	1.70%

49 BRAINERD RD

Location 49 BRAINERD RD

Mblu 07.4/ 21/ / /

Acct# 005680

Owner SAMUELSEN CHRISTOPHER

Assessment \$356,230

Appraisal \$667,800

PID 5939

Building Count 1

Current Value

Appraisal			
Valuation Year	Improvements	Land	Total
2015	\$231,900	\$435,900	\$667,800
Assessment			
Valuation Year	Improvements	Land	Total
2015	\$162,330	\$193,900	\$356,230

Owner of Record

Owner SAMUELSEN CHRISTOPHER
Co-Owner
Address 49 BRAINERD RD
 NIANTIC, CT 06357

Sale Price \$0
Certificate
Book & Page 831/ 222
Sale Date 07/10/2009
Instrument 04

Ownership History

Ownership History					
Owner	Sale Price	Certificate	Book & Page	Instrument	Sale Date
SAMUELSEN CHRISTOPHER & SAMUELSEN CHRISTOPHER	\$560,000		788/ 266	04	10/24/2007
BOUTIN WYNN R			748/ 207	07	07/13/2006
BOUTIN ZACHARY H OR WYNN R			737/ 532	01	04/03/2006
			542/ 147	08	10/01/2001

Building Information

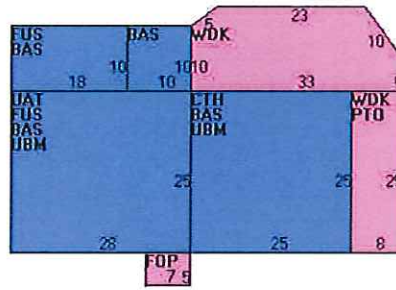
Building 1 : Section 1

Year Built: 1890
Living Area: 2485
Replacement Cost: \$290,654
Building Percent 67
Good:
Replacement Cost
Less Depreciation: \$194,700

Building Layout

Building Attributes

Field	Description
Style	Conventional
Model	Residential
Grade:	Good
Stories:	2 Stories
Occupancy	1
Exterior Wall 1	Wood Shingle
Exterior Wall 2	
Roof Structure:	Gable/Hip
Roof Cover	Asph/F Gls/Cmp
Interior Wall 1	Drywall/Sheet
Interior Wall 2	
Interior Flr 1	Hardwood
Interior Flr 2	Ceram Clay Til
Heat Fuel	Oil
Heat Type:	Hot Water
AC Type:	Central
Total Bedrooms:	4 Bedrooms
Total Bthrms:	2
Total Half Baths:	1
Total Xtra Fixtrs:	
Total Rooms:	8 Rooms
Bath Style:	Modern
Kitchen Style:	Modern



Building Sub-Areas (sq ft)		Legend	
Code	Description	Gross Area	Living Area
BAS	First Floor	1605	1605
FUS	Upper Story, Finished	880	880
CTH	Cathedral Ceiling	625	0
FOP	Porch, Open, Finished	35	0
PTO	Patio	200	0
UAT	Attic, Unfinished	700	0
UBM	Basement, Unfinished	1325	0
WDK	Deck, Wood	599	0
		5969	2485

Extra Features

Extra Features		Legend
No Data for Extra Features		

Land

Land Use

Use Code 1010
Description Single Fam MDL-01
Zone R40
Neighborhood 0060
Alt Land Appr No
Category

Land Line Valuation

Size (Acres) 51.31
Frontage 0
Depth 0
Assessed Value \$193,900
Appraised Value \$435,900

Outbuildings

Outbuildings						Legend
Code	Description	Sub Code	Sub Description	Size	Value	Bldg #
BRN4	1 STY LFT&BSMT			378 S.F.	\$3,400	1

SHP1	WORK SHOP AVE			841 S.F.	\$16,800	1
FGR2	GARAGE-GOOD			841 S.F.	\$16,800	1
SHD1	SHED FRAME			45 S.F.	\$200	1

Valuation History

Appraisal			
Valuation Year	Improvements	Land	Total
2014	\$231,900	\$435,900	\$667,800
2013	\$231,900	\$435,900	\$667,800
2012	\$231,900	\$435,900	\$667,800

Assessment			
Valuation Year	Improvements	Land	Total
2014	\$162,330	\$193,900	\$356,230
2013	\$162,330	\$193,900	\$356,230
2012	\$162,330	\$193,900	\$356,230

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Tower Engineering Solutions

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

Structural Analysis Report

Existing 169 ft SABRE Monopole

Customer Name: SBA Communications Corp

Customer Site Number: CT11794-S

Customer Site Name: East Lyme 1

Carrier Name: T-Mobile

Carrier Site ID / Name: CTNL805B

Site Location: 49 Brainerd Road

Niantic, Connecticut

New Haven County

Latitude: 41.307583

Longitude: -72.223916

Analysis Result:

Max Structural Usage: 97.3% [Pass]

Max Foundation Usage: 66.0% [Pass]

Report Prepared by: Tawfeeq Alajaj



Introduction

The purpose of this report is to summarize the analysis results on the 169 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	Sabre Towers & Poles, Job# 42498. Dated 04/06/2011.
Foundation Drawing	Sabre Towers & Poles, Job# 42498. Dated 04/06/2011.
Geotechnical Report	Tower Engineering Professionals, Project #: 103196.01. Dated 03/18/2011.
Modification Drawings	N/A

Analysis Criteria

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

Basic Wind Speed Used in the Analysis:	85.0 mph (fastest mile)
Basic Wind Speed with Ice:	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	Owner
1	170.0	3	CCI - HPA-65R-BBU-H8 - Panel	(3) Reinforced T-Arms	(6) 1-5/8" (1) 1.496" Fiber (6) 0.645" DC	AT&T
2		3	CCI - HPA-65R-BUU-H6 - Panel			
3		3	Commscope SBNHH-1D65A - Panel			
4		6	Ericsson RRUS 12 RRUs			
5		6	Ericsson RRUS A2 Module			
6		3	Ericsson RRUS-32 RRUs			
7		6	Ericsson RRUS-E2 RRUs			
8		3	Raycap DC6-48-60-18-8F Surge			
9		1	Andrew SBNH-1D6565C - Panel			
10		3	CCI DTMABP7818VG12A TMAs			
11		2	KMW AM-X-CD-14-65-007 - Panel			
12		6	Ericsson RRUS 11 RRUs			
-	160.0	6	Ericsson AIR 21 - Panel	(3) T-Arms	(12) 1 5/8" (1) 1 5/8" Fiber	T-Mobile
-		3	Ericsson KRY 112-114/1 TMAs			
18	147.0	2	Antel LPA-80080/4CF Panel	Low Profile Platform	(10) 1 5/8" (2) 1 5/8" Fiber	Verizon
19		6	Commscope SBNHH-1D65B - Panel			
20		4	Swedcom SC-E 6014 rev2 - Panel			
21		3	ALU RRH2X60-700 RRH			
22		3	ALU RRH2X60-AWS RRH			
23		3	ALU RRH2X60-PCS RRH			
24		6	RFS FD9R6004/2C-3L Diplexers			
25		2	RFS DB-T1-6Z-8AB-OZ			

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
13	160.0	3	Ericsson - Air21 B2A/B4P - Panel	(3) T-Arms	(12) 1 5/8" (1) 1 5/8" Fiber	T-Mobile
14		3	Ericsson - Air21 B4A/B2P - Panel			
15		3	Commscope - LNX-6515DS-A1M - Panel			
16		3	Ericsson KRY 112-114/1 TMAs			
17		3	Ericsson S11B12			

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

Analysis Results

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

	Pole shafts	Anchor Bolts	Base Plate
Max. Usage:	97.3%	82.7%	64.7%
Pass/Fail	Pass	Pass	Pass

Foundations

	Moment (Kip-Ft)	Shear (Kips)
Original Design Reactions	6776.7	55.5
Analysis Reactions	4416.4	33.5
% of Design Reactions	65.2%	60.4%

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 3.0304 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 and/or 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 97.3% at 100.0ft

Structure: CT11794-S-SBA
Site Name: East Lyme 1
Height: 169.00 (ft)
Base Elev: 0.000 (ft)

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

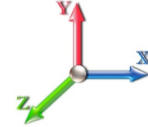
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Dead Load Factor: 1.00
 Wind Load Factor: 1.00

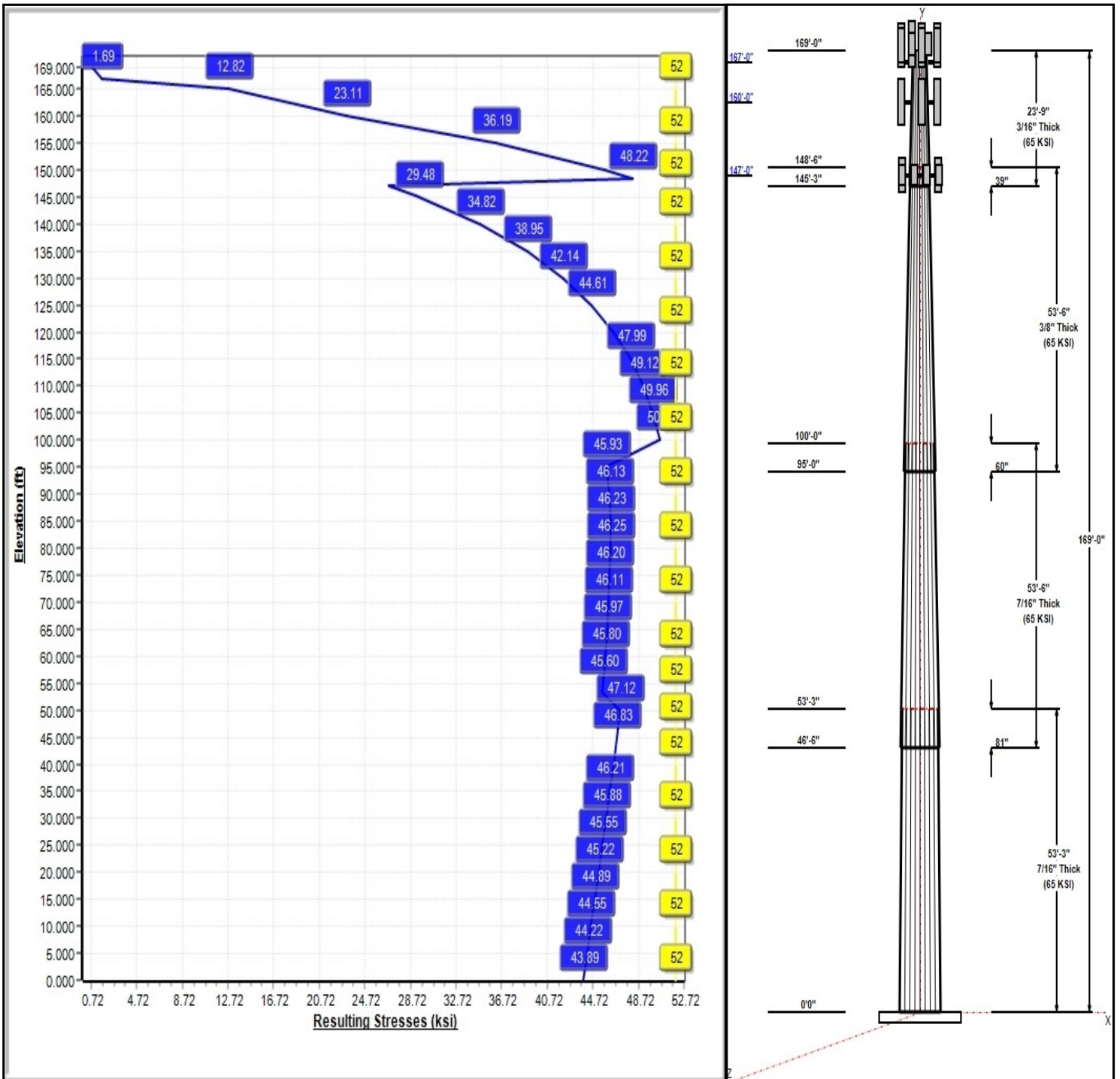
Load Case : 85 mph Wind with 0 in Ice



Iterations: 25

- 52 Allowable Stress
- 51 Resulting Stress

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Structure: CT11794-S-SBA

Type: Tapered
Site Name: East Lyme 1
Height: 169.00 (ft)
Base Elev: 0.00 (ft)

Base Shape: 18 Sided
Taper: 0.27302

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Shaft Properties

Seq	Length (ft)	Top (in)	Bottom (in)	Thick (in)	Joint Type	Taper	Grade (ksi)
1	53.25	45.60	60.14	0.438		0.27302	65
2	53.50	33.71	48.32	0.438	Slip	0.27302	65
3	53.50	21.22	35.83	0.375	Slip	0.27302	65
4	23.75	16.00	22.48	0.188	Slip	0.27302	65

Discrete Appurtenances

Attach Elev (ft)	Force Elev (ft)	Qty	Description	Carrier
169.00	170.00	1	Andrew SBNH-1D6565C	AT&T
169.00	170.00	3	CCI DTMAPB7819VG12A	AT&T
169.00	170.00	6	Ericsson RRUS 11 RRUs	AT&T
169.00	170.00	2	KMW	AT&T
167.00	170.00	3	Commscope	AT&T
167.00	170.00	6	Ericsson RRUS 12 RRUs	AT&T
167.00	170.00	6	Ericsson RRUS A2 Module	AT&T
167.00	170.00	3	Ericsson RRUS-32 RRUs	AT&T
167.00	170.00	6	Ericsson RRUS-E2 RRUs	AT&T
167.00	170.00	3	HPA-65R-BBU-H8	AT&T
167.00	170.00	3	HPA-65R-BUU-H6	AT&T
167.00	170.00	3	Raycap DC6-48-60-18-8F	AT&T
167.00	167.00	3	T-Arm	AT&T
160.00	160.00	3	Air21 B2A/B4P	T-Mobile
160.00	160.00	3	Air21 B4A/B2P	T-Mobile
160.00	160.00	3	Ericsson KRY 112-114/1	T-Mobile
160.00	160.00	3	LNx-6515DS-A1M	T-Mobile
160.00	160.00	3	S11B12	T-Mobile
160.00	160.00	3	T-Arm	T-Mobile
147.00	147.00	3	ALU RRH2X60-700 RRH	Verizon
147.00	147.00	3	ALU RRH2X60-AWS RRH	Verizon
147.00	147.00	3	ALU RRH2X60-PCS RRH	Verizon
147.00	147.00	2	Antel LPA-80080/4CF	Verizon
147.00	147.00	6	Commscope	Verizon
147.00	147.00	6	FD9R6004/2C-3L	Verizon
147.00	147.00	1	Low Profile Platform	Verizon
147.00	147.00	2	RFS DB-T1-6Z-8AB-0Z	Verizon
147.00	147.00	4	Swedcom SC-E 6014 rev2	Verizon

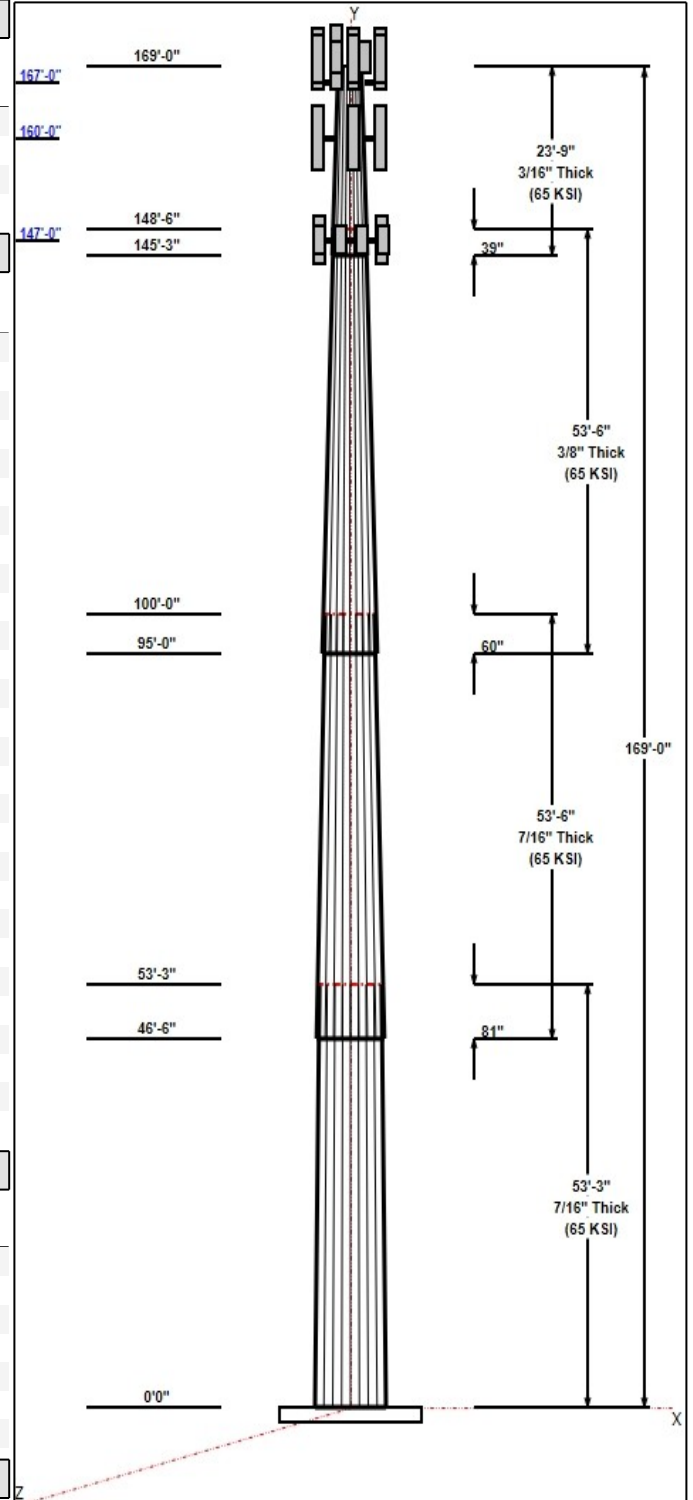
Linear Appurtenances

Elev From (ft)	Elev To (ft)	Placement	Description	Carrier
0.00	170.00	Inside	0.645" DC	AT&T
0.00	170.00	Inside	1 5/8" Coax	AT&T
0.00	170.00	Inside	1.496" Fiber	AT&T
0.00	160.00	Inside	1 5/8" Coax	T-Mobile
0.00	160.00	Inside	1 5/8" Fiber	T-Mobile
0.00	147.00	Inside	1 5/8" Coax	Verizon
0.00	147.00	Inside	1 5/8" Fiber	Verizon

Anchor Bolts

Qty	Specifications	Grade (ksi)	Arrangement
20	2.25" 18J	75.0	Radial

Base Plate



Structure: CT11794-S-SBA

Type: Tapered
Site Name: East Lyme 1
Height: 169.00 (ft)
Base Elev: 0.00 (ft)

Base Shape: 18 Sided
Taper: 0.27302

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Thickness (in)	Specifications (in)	Grade (ksi)	Geometry
2.7500	72.8	50.0	Round

Reactions

Load Case	Moment	Shear	Axial
85 mph Wind with 0" Ice	4416.4	33.5	43.6
73.61 mph Wind with 0.5" Ice	3572.9	26.6	50.6
50 mph Wind with 0" Ice	1531.7	11.6	43.7

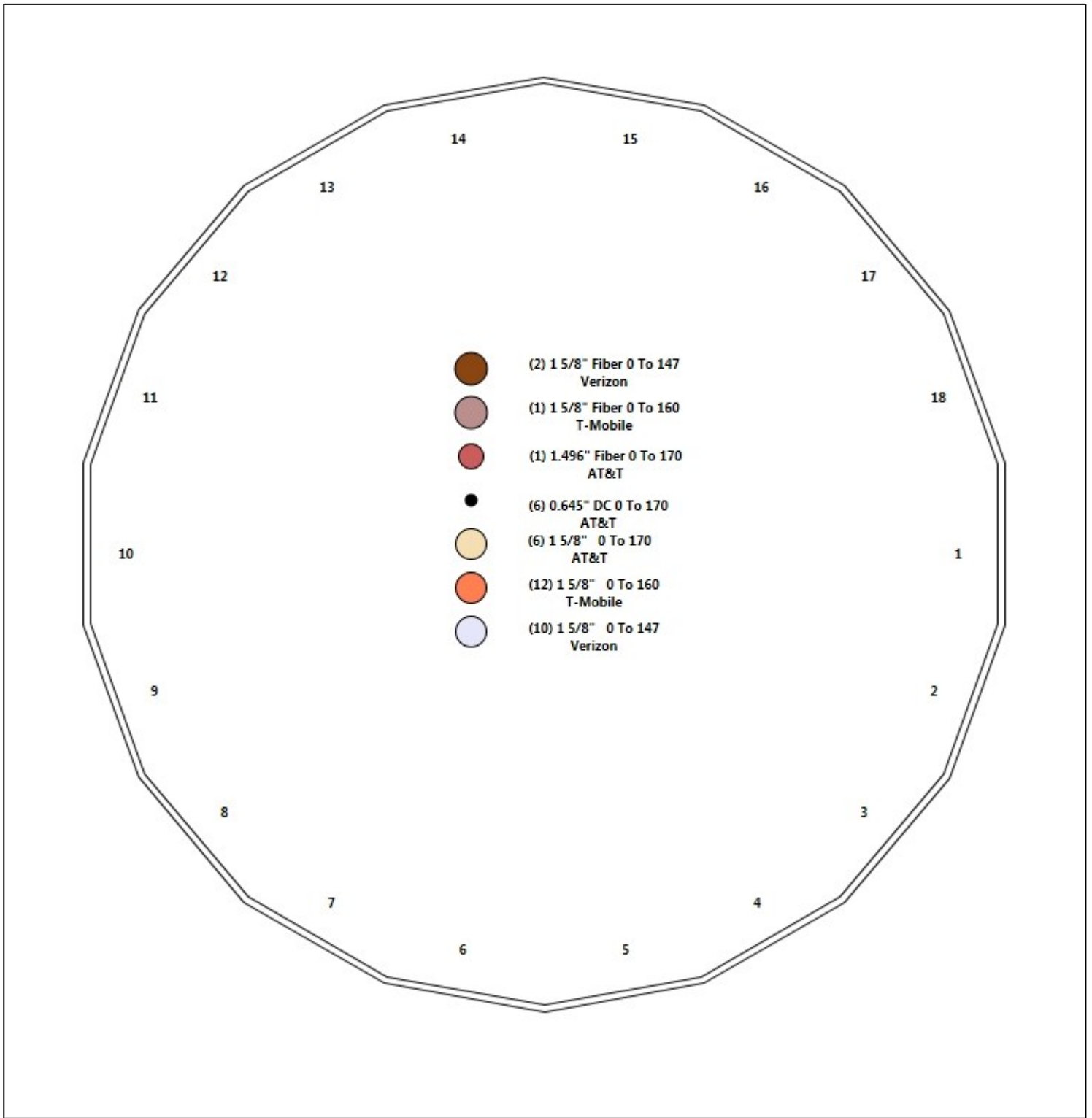
Structure: CT11794-S-SBA - Coax Line Placement

Type: Monopole
Site Name: East Lyme 1
Height: 169.00 (ft)

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Shaft Properties

Structure: CT11794-S-SBA
Site Name: East Lyme 1
Height: 169.00 (ft)
Base Elev: 0.000 (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	53.250	0.4375	65		0.00	13,193
2	18	53.500	0.4375	65	Slip	81.00	10,258
3	18	53.500	0.3750	65	Slip	60.00	6,099
4	18	23.750	0.1875	65	Slip	39.00	916
Total Shaft Weight:							30,466

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	60.14	0.00	82.90	37333.61	22.83	137.46	45.60	53.25	62.71	16162.5	16.97	104.23	0.273018
2	48.32	46.50	66.49	19259.46	18.06	110.44	33.71	100.0	46.21	6464.05	12.18	77.06	0.273018
3	35.83	95.00	42.20	6701.10	15.44	95.54	21.22	148.5	24.81	1362.38	8.57	56.59	0.273018
4	22.48	145.2	13.27	833.42	19.73	119.92	16.00	169.0	9.41	297.27	13.64	85.33	0.273018

Loading Summary

Structure: CT11794-S-SBA
Site Name: East Lyme 1
Height: 169.00 (ft)
Base Elev: 0.000 (ft)

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

7/12/2016
 Page: 6



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	169.00	Andrew SBNH-1D6565C	1	66.10	11.44	0.80	132.00	12.370	0.80	0.00	1.00
2	169.00	CCI DTMABP7819VG12A TMAs	3	19.20	1.14	0.67	26.50	1.360	0.67	0.00	1.00
3	169.00	Ericsson RRUS 11 RRUs	6	50.70	2.94	0.67	66.00	3.140	0.67	0.00	1.00
4	169.00	KMW AM-X-CD-14-65-00T-RET	2	36.40	5.50	0.75	68.30	6.100	0.75	0.00	1.00
5	167.00	Commscope SBNHH-1D65A	3	33.50	6.36	0.83	68.80	6.740	0.83	0.00	3.00
6	167.00	Ericsson RRUS 12 RRUs	6	58.00	3.67	0.50	75.70	3.890	0.50	0.00	3.00
7	167.00	Ericsson RRUS A2 Module	6	21.20	1.86	0.62	31.40	2.150	0.62	0.00	3.00
8	167.00	Ericsson RRUS-32 RRUs	3	77.00	3.87	0.67	103.50	4.300	0.67	0.00	3.00
9	167.00	Ericsson RRUS-E2 RRUs	6	77.00	3.87	0.67	103.50	4.300	0.67	0.00	3.00
10	167.00	HPA-65R-BBU-H8	3	68.00	13.30	0.79	137.00	13.900	0.79	0.00	3.00
11	167.00	HPA-65R-BUU-H6	3	51.00	10.36	0.85	108.40	10.580	0.85	0.00	3.00
12	167.00	Raycap DC6-48-60-18-8F	3	32.80	1.47	1.00	50.50	1.670	1.00	0.00	3.00
13	167.00	T-Arm	3	400.00	14.17	0.75	480.00	12.500	0.75	0.00	0.00
14	160.00	Air21 B2A/B4P	3	91.50	6.58	0.86	129.20	6.970	0.86	0.00	0.00
15	160.00	Air21 B4A/B2P	3	91.50	6.58	0.86	129.20	6.970	0.86	0.00	0.00
16	160.00	Ericsson KRY 112-114/1 TMAs	3	11.00	0.41	0.70	14.10	0.550	0.70	0.00	0.00
17	160.00	LNx-6515DS-A1M	3	49.80	11.41	0.80	115.60	12.340	0.80	0.00	0.00
18	160.00	S11B12	3	51.00	3.31	0.70	67.10	3.520	0.70	0.00	0.00
19	160.00	T-Arm	3	400.00	10.00	0.75	480.00	12.500	0.75	0.00	0.00
20	147.00	ALU RRH2X60-700 RRH	3	60.00	3.96	0.76	80.10	4.230	0.76	0.00	0.00
21	147.00	ALU RRH2X60-AWS RRH	3	60.00	3.96	0.76	80.10	4.230	0.76	0.00	0.00
22	147.00	ALU RRH2X60-PCS RRH	3	55.00	2.57	0.89	70.90	2.760	0.89	0.00	0.00
23	147.00	Antel LPA-80080/4CF ____	2	12.00	6.06	1.70	0.00	6.650	1.70	0.00	0.00
24	147.00	Commscope SBNHH-1D65B	6	50.71	8.33	0.83	87.00	8.800	0.83	0.00	0.00
25	147.00	FD9R6004/2C-3L	6	3.10	0.36	1.00	5.40	0.500	1.00	0.00	0.00
26	147.00	Low Profile Platform	1	1200.00	25.00	1.00	1500.00	31.000	1.00	0.00	0.00
27	147.00	RFS DB-T1-6Z-8AB-0Z	2	18.90	5.60	0.71	46.00	5.870	0.71	0.00	0.00
28	147.00	Swedcom SC-E 6014 rev2	4	15.00	3.55	0.97	42.10	4.060	0.97	0.00	0.00
Totals:			96	7,678.86			10,666.00				

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	170.00	(6) 0.645" DC	2.40	0.00	2.40	0.00	Inside
0.00	170.00	(6) 1 5/8" Coax	6.24	0.00	6.24	0.00	Inside
0.00	170.00	(1) 1.496" Fiber	1.15	0.00	1.15	0.00	Inside
0.00	160.00	(12) 1 5/8" Coax	12.48	0.00	12.48	0.00	Inside
0.00	160.00	(1) 1 5/8" Fiber	1.10	0.00	1.10	0.00	Inside
0.00	147.00	(10) 1 5/8" Coax	10.40	0.00	10.40	0.00	Inside
0.00	147.00	(2) 1 5/8" Fiber	1.10	0.00	1.10	0.00	Inside
Totals:			5,527.60		5,527.60		

Shaft Section Properties

Structure: CT11794-S-SBA

Code: EIA/TIA-222-F

7/12/2016

Site Name: East Lyme 1

Exposure: C

Height: 169.00 (ft)

Gh: 1.69

Base Elev: 0.000 (ft)

Struct Class: II

Page: 7



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		0.4375	60.140	82.901	37333.6	22.83	137.46	65	52	0.0
5.00		0.4375	58.775	81.006	34830.8	22.28	134.34	65	52	1394.4
10.00		0.4375	57.410	79.110	32442.5	21.73	131.22	65	52	1362.1
15.00		0.4375	56.045	77.215	30165.9	21.18	128.10	65	52	1329.8
20.00		0.4375	54.680	75.319	27998.4	20.63	124.98	65	52	1297.6
25.00		0.4375	53.315	73.424	25937.3	20.08	121.86	65	52	1265.3
30.00		0.4375	51.949	71.528	23979.9	19.53	118.74	65	52	1233.1
35.00		0.4375	50.584	69.633	22123.5	18.98	115.62	65	52	1200.8
40.00		0.4375	49.219	67.737	20365.5	18.43	112.50	65	52	1168.6
45.00		0.4375	47.854	65.842	18703.2	17.88	109.38	65	52	1136.3
46.50	Bot - Section 2	0.4375	47.445	65.273	18222.8	17.71	108.44	65	52	334.6
50.00		0.4375	46.489	63.946	17133.9	17.33	106.26	65	52	1553.4
53.25	Top - Section 1	0.4375	46.477	63.929	17120.2	17.32	106.23	65	52	1414.2
55.00		0.4375	45.999	63.266	16592.7	17.13	105.14	65	52	378.7
60.00		0.4375	44.634	61.370	15145.5	16.58	102.02	65	52	1060.3
65.00		0.4375	43.269	59.475	13785.0	16.03	98.90	65	52	1028.0
70.00		0.4375	41.904	57.579	12508.5	15.48	95.78	65	52	995.8
75.00		0.4375	40.539	55.683	11313.4	14.93	92.66	65	52	963.5
80.00		0.4375	39.174	53.788	10196.9	14.38	89.54	65	52	931.3
85.00		0.4375	37.808	51.892	9156.4	13.83	86.42	65	52	899.0
90.00		0.4375	36.443	49.997	8189.2	13.28	83.30	65	52	866.8
95.00	Bot - Section 3	0.4375	35.078	48.101	7292.7	12.73	80.18	65	52	834.5
100.00	Top - Section 2	0.3750	34.463	40.572	5956.5	14.79	91.90	65	52	1506.4
105.00		0.3750	33.098	38.947	5269.1	14.15	88.26	65	52	676.5
110.00		0.3750	31.733	37.323	4636.8	13.51	84.62	65	52	648.8
115.00		0.3750	30.368	35.698	4057.3	12.87	80.98	65	52	621.2
120.00		0.3750	29.003	34.073	3528.1	12.23	77.34	65	52	593.5
125.00		0.3750	27.638	32.448	3047.1	11.58	73.70	65	52	565.9
130.00		0.3750	26.273	30.824	2611.9	10.94	70.06	65	52	538.3
135.00		0.3750	24.908	29.199	2220.3	10.30	66.42	65	52	510.6
140.00		0.3750	23.543	27.574	1869.9	9.66	62.78	65	52	483.0
145.00		0.3750	22.177	25.949	1558.4	9.02	59.14	65	52	455.3
145.25	Bot - Section 4	0.3750	22.109	25.868	1543.8	8.99	58.96	65	52	22.0
147.00		0.3750	21.631	25.300	1444.3	8.76	57.68	65	52	230.5
148.50	Top - Section 3	0.1875	21.597	12.741	737.8	18.90	115.18	65	52	193.5
150.00		0.1875	21.187	12.497	696.3	18.51	113.00	65	52	64.4
155.00		0.1875	19.822	11.685	569.1	17.23	105.72	65	52	205.7
160.00		0.1875	18.457	10.872	458.5	15.95	98.44	65	52	191.9
165.00		0.1875	17.092	10.060	363.2	14.66	91.16	65	52	178.1
167.00		0.1875	16.546	9.735	329.1	14.15	88.25	65	52	67.4
169.00		0.1875	16.000	9.410	297.3	13.64	85.33	65	52	65.1

30466.3

Wind Loading - Shaft

Structure: CT11794-S-SBA
Site Name: East Lyme 1
Height: 169.00 (ft)
Base Elev: 0.000 (ft)

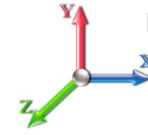
Code: EIA/TIA-222-F
Exposure: C
Gh: 1.69
Struct Class: II

7/12/2016
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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	425.99	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	416.32	0.650	0.000	5.00	24.774	16.10	503.4	0.0	1394.4
10.00		0.00	1.00	18.496	31.26	406.65	0.650	0.000	5.00	24.205	15.73	491.8	0.0	1362.1
15.00		0.00	1.00	18.496	31.26	396.98	0.650	0.000	5.00	23.636	15.36	480.2	0.0	1329.8
20.00		0.00	1.00	18.496	31.26	387.31	0.650	0.000	5.00	23.068	14.99	468.7	0.0	1297.6
25.00		0.00	1.00	18.496	31.26	377.64	0.650	0.000	5.00	22.499	14.62	457.1	0.0	1265.3
30.00		0.00	1.00	18.496	31.26	367.98	0.650	0.000	5.00	21.930	14.25	445.6	0.0	1233.1
35.00		0.00	1.02	18.810	31.79	361.33	0.650	0.000	5.00	21.361	13.88	441.4	0.0	1200.8
40.00		0.00	1.06	19.541	33.02	358.35	0.650	0.000	5.00	20.792	13.52	446.3	0.0	1168.6
45.00		0.00	1.09	20.210	34.15	354.32	0.650	0.000	5.00	20.224	13.15	449.0	0.0	1136.3
46.50	Bot - Section 2	0.00	1.10	20.400	34.48	352.94	0.650	0.000	1.50	5.956	3.87	133.5	0.0	334.6
50.00		0.00	1.13	20.827	35.20	349.44	0.650	0.000	3.50	13.954	9.07	319.3	0.0	1553.4
53.25	Top - Section 1	0.00	1.15	21.206	35.84	345.86	0.650	0.000	3.25	12.708	8.26	296.0	0.0	1414.2
55.00		0.00	1.16	21.402	36.17	350.49	0.650	0.000	1.75	6.743	4.38	158.5	0.0	378.7
60.00		0.00	1.19	21.941	37.08	344.35	0.650	0.000	5.00	18.882	12.27	455.1	0.0	1060.3
65.00		0.00	1.21	22.449	37.94	337.65	0.650	0.000	5.00	18.313	11.90	451.6	0.0	1028.0
70.00		0.00	1.24	22.929	38.75	330.48	0.650	0.000	5.00	17.744	11.53	446.9	0.0	995.8
75.00		0.00	1.26	23.386	39.52	322.88	0.650	0.000	5.00	17.176	11.16	441.2	0.0	963.5
80.00		0.00	1.29	23.821	40.26	314.90	0.650	0.000	5.00	16.607	10.79	434.6	0.0	931.3
85.00		0.00	1.31	24.237	40.96	306.57	0.650	0.000	5.00	16.038	10.42	427.0	0.0	899.0
90.00		0.00	1.33	24.636	41.63	297.92	0.650	0.000	5.00	15.469	10.05	418.6	0.0	866.8
95.00	Bot - Section 3	0.00	1.35	25.020	42.28	288.99	0.650	0.000	5.00	14.900	9.69	409.5	0.0	834.5
100.00	Top - Section 2	0.00	1.37	25.389	42.91	279.78	0.650	0.000	5.00	14.644	9.52	408.4	0.0	1506.4
105.00		0.00	1.39	25.745	43.51	276.60	0.650	0.000	5.00	14.075	9.15	398.1	0.0	676.5
110.00		0.00	1.41	26.090	44.09	266.96	0.650	0.000	5.00	13.506	8.78	387.1	0.0	648.8
115.00		0.00	1.43	26.423	44.66	257.10	0.650	0.000	5.00	12.938	8.41	375.5	0.0	621.2
120.00		0.00	1.45	26.747	45.20	247.04	0.650	0.000	5.00	12.369	8.04	363.4	0.0	593.5
125.00		0.00	1.46	27.060	45.73	236.79	0.650	0.000	5.00	11.800	7.67	350.8	0.0	565.9
130.00		0.00	1.48	27.365	46.25	226.36	0.650	0.000	5.00	11.231	7.30	337.6	0.0	538.3
135.00		0.00	1.50	27.662	46.75	215.76	0.650	0.000	5.00	10.663	6.93	324.0	0.0	510.6
140.00		0.00	1.51	27.951	47.24	205.00	0.650	0.000	5.00	10.094	6.56	309.9	0.0	483.0
145.00		0.00	1.53	28.233	47.71	194.08	0.650	0.000	5.00	9.525	6.19	295.4	0.0	455.3
145.25	Bot - Section 4	0.00	1.53	28.246	47.74	193.53	0.650	0.000	0.25	0.461	0.30	14.3	0.0	22.0
147.00	Appurtenance(s)	0.00	1.53	28.343	47.90	189.67	0.650	0.000	1.75	3.244	2.11	101.0	0.0	230.5
148.50	Top - Section 3	0.00	1.54	28.426	48.04	186.35	0.650	0.000	1.50	2.725	1.77	85.1	0.0	193.5
150.00		0.00	1.54	28.507	48.18	186.32	0.650	0.000	1.50	2.674	1.74	83.7	0.0	64.4
155.00		0.00	1.56	28.776	48.63	175.13	0.650	0.000	5.00	8.544	5.55	270.1	0.0	205.7
160.00	Appurtenance(s)	0.00	1.57	29.038	49.07	163.81	0.650	0.000	5.00	7.975	5.18	254.4	0.0	191.9
165.00		0.00	1.58	29.294	49.51	152.37	0.650	0.000	5.00	7.406	4.81	238.3	0.0	178.1
167.00	Appurtenance(s)	0.00	1.59	29.395	49.68	147.75	0.650	0.000	2.00	2.803	1.82	90.5	0.0	67.4
169.00	Appurtenance(s)	0.00	1.59	29.495	49.85	143.12	0.650	0.000	2.00	2.712	1.76	87.9	0.0	65.1
Totals:									169.00			13,350.8		30,466.3

Discrete Appurtenance Forces

Structure: CT11794-S-SB
Site Name: East Lyme 1
Height: 169.00 (ft)
Base Elev: 0.000 (ft)

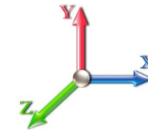
Code: EIA/TIA-222-F
Exposure: C
Gh: 1.69
Struct Class: II

7/12/2016
 Page: 9



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	169.00	Ericsson RRUS 11 RRUs	6	29.545	49.931	0.67	11.82	304.20	0.000	1.000	590.13	0.00	590.13
2	169.00	CCI DTMABP7819VG12A	3	29.545	49.931	0.67	2.29	57.60	0.000	1.000	114.41	0.00	114.41
3	169.00	Andrew SBNH-1D6565C	1	29.545	49.931	0.80	9.15	66.10	0.000	1.000	456.97	0.00	456.97
4	169.00	KMW	2	29.545	49.931	0.75	8.25	72.80	0.000	1.000	411.93	0.00	411.93
5	167.00	Ericsson RRUS-32 RRUs	3	29.545	49.931	0.67	7.78	231.00	0.000	3.000	388.40	0.00	1165.21
6	167.00	Commscope SBNHH-1D65A	3	29.545	49.931	0.83	15.84	100.50	0.000	3.000	790.74	0.00	2372.21
7	167.00	Ericsson RRUS 12 RRUs	6	29.545	49.931	0.50	11.01	348.00	0.000	3.000	549.75	0.00	1649.24
8	167.00	Ericsson RRUS A2 Module	6	29.545	49.931	0.62	6.92	127.20	0.000	3.000	345.49	0.00	1036.46
9	167.00	HPA-65R-BUJ-H6	3	29.545	49.931	0.85	26.42	153.00	0.000	3.000	1319.09	0.00	3957.27
10	167.00	Ericsson RRUS-E2 RRUs	6	29.545	49.931	0.67	15.56	462.00	0.000	3.000	776.80	0.00	2330.41
11	167.00	HPA-65R-BBU-H8	3	29.545	49.931	0.79	31.52	204.00	0.000	3.000	1573.89	0.00	4721.67
12	167.00	Raycap DC6-48-60-18-8F	3	29.545	49.931	1.00	4.41	98.40	0.000	3.000	220.20	0.00	660.59
13	167.00	T-Arm	3	29.395	49.678	0.75	31.88	1200.00	0.000	0.000	1583.86	0.00	0.00
14	160.00	T-Arm	3	29.038	49.074	0.75	22.50	1200.00	0.000	0.000	1104.17	0.00	0.00
15	160.00	S11B12	3	29.038	49.074	0.70	6.95	153.00	0.000	0.000	341.11	0.00	0.00
16	160.00	Ericsson KRY 112-114/1	3	29.038	49.074	0.70	0.86	33.00	0.000	0.000	42.25	0.00	0.00
17	160.00	Air21 B4A/B2P	3	29.038	49.074	0.86	16.98	274.50	0.000	0.000	833.10	0.00	0.00
18	160.00	Air21 B2A/B4P	3	29.038	49.074	0.86	16.98	274.50	0.000	0.000	833.10	0.00	0.00
19	160.00	LNx-6515DS-A1M	3	29.038	49.074	0.80	27.38	149.40	0.000	0.000	1343.84	0.00	0.00
20	147.00	Antel LPA-80080/4CF ___	2	28.343	47.900	1.70	20.60	24.00	0.000	0.000	986.93	0.00	0.00
21	147.00	ALU RRH2X60-700 RRH	3	28.343	47.900	0.76	9.03	180.00	0.000	0.000	432.48	0.00	0.00
22	147.00	ALU RRH2X60-AWS RRH	3	28.343	47.900	0.76	9.03	180.00	0.000	0.000	432.48	0.00	0.00
23	147.00	ALU RRH2X60-PCS RRH	3	28.343	47.900	0.89	6.86	165.00	0.000	0.000	328.69	0.00	0.00
24	147.00	Low Profile Platform	1	28.343	47.900	1.00	25.00	1200.00	0.000	0.000	1197.50	0.00	0.00
25	147.00	Commscope SBNHH-1D65B	6	28.343	47.900	0.83	41.48	304.26	0.000	0.000	1987.06	0.00	0.00
26	147.00	FD9R6004/2C-3L	6	28.343	47.900	1.00	2.16	18.60	0.000	0.000	103.46	0.00	0.00
27	147.00	RFS DB-T1-6Z-8AB-0Z	2	28.343	47.900	0.71	7.95	37.80	0.000	0.000	380.90	0.00	0.00
28	147.00	Swedcom SC-E 6014 rev2	4	28.343	47.900	0.97	13.77	60.00	0.000	0.000	659.78	0.00	0.00

Totals: 7,678.86

20,128.53

Total Applied Force Summary

Structure: CT11794-S-SB
Site Name: East Lyme 1
Height: 169.00 (ft)
Base Elev: 0.000 (ft)

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

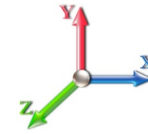
7/12/2016

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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	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		503.35	1568.70	0.00	0.00
10.00		491.80	1536.45	0.00	0.00
15.00		480.24	1504.20	0.00	0.00
20.00		468.68	1471.95	0.00	0.00
25.00		457.13	1439.70	0.00	0.00
30.00		445.57	1407.45	0.00	0.00
35.00		441.37	1375.20	0.00	0.00
40.00		446.33	1342.95	0.00	0.00
45.00		448.98	1310.70	0.00	0.00
46.50		133.47	386.92	0.00	0.00
50.00		319.25	1675.48	0.00	0.00
53.25		296.02	1527.50	0.00	0.00
55.00		158.53	439.74	0.00	0.00
60.00		455.10	1234.62	0.00	0.00
65.00		451.60	1202.37	0.00	0.00
70.00		446.94	1170.12	0.00	0.00
75.00		441.22	1137.87	0.00	0.00
80.00		434.55	1105.62	0.00	0.00
85.00		427.00	1073.37	0.00	0.00
90.00		418.64	1041.12	0.00	0.00
95.00		409.52	1008.87	0.00	0.00
100.00		408.42	1680.73	0.00	0.00
105.00		398.07	850.82	0.00	0.00
110.00		387.09	823.17	0.00	0.00
115.00		375.53	795.53	0.00	0.00
120.00		363.41	767.89	0.00	0.00
125.00		350.77	740.24	0.00	0.00
130.00		337.62	712.60	0.00	0.00
135.00		324.00	684.96	0.00	0.00
140.00		309.92	657.31	0.00	0.00
145.00		295.40	629.67	0.00	0.00
145.25		14.31	30.76	0.00	0.00
147.00	(30) appurtenances	6610.30	2461.20	0.00	0.00
148.50		85.10	228.60	0.00	0.00
150.00		83.74	99.46	0.00	0.00
155.00		270.07	322.56	0.00	0.00
160.00	(18) appurtenances	4751.96	2393.14	0.00	0.00
165.00		238.33	227.02	0.00	0.00
167.00	(36) appurtenances	7638.73	3011.04	0.00	17893.05
169.00	(12) appurtenances	1661.33	585.43	0.00	1573.45
Totals:		33,479.38	43,663.00	0.00	19,466.50

Resulting Forces and Deflections

Structure: CT11794-S-SB
Site Name: East Lyme 1
Height: 169.00 (ft)
Base Elev: 0.000 (ft)

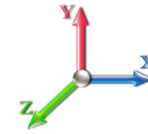
Code: EIA/TIA-222-F
Exposure: C
Gh: 1.69
Struct Class: II

7/12/2016
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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)	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	-33.543	-43.613	0.000	0.000	0.000	-4416.442	0.000	0.000	0.000	0.000	0.000
5.00	-33.160	-41.949	0.000	0.000	0.000	-4248.730	-0.089	0.000	0.089	-0.165	0.000
10.00	-32.784	-40.316	0.000	0.000	0.000	-4082.931	-0.353	0.000	0.353	-0.335	0.000
15.00	-32.413	-38.714	0.000	0.000	0.000	-3919.016	-0.798	0.000	0.798	-0.511	0.000
20.00	-32.048	-37.145	0.000	0.000	0.000	-3756.955	-1.430	0.000	1.430	-0.692	0.000
25.00	-31.689	-35.607	0.000	0.000	0.000	-3596.718	-2.255	0.000	2.255	-0.878	0.000
30.00	-31.337	-34.100	0.000	0.000	0.000	-3438.274	-3.278	0.000	3.278	-1.071	0.000
35.00	-30.983	-32.625	0.000	0.000	0.000	-3281.592	-4.507	0.000	4.507	-1.271	0.000
40.00	-30.619	-31.181	0.000	0.000	0.000	-3126.680	-5.948	0.000	5.948	-1.477	0.000
45.00	-30.206	-29.810	0.000	0.000	0.000	-2973.588	-7.608	0.000	7.608	-1.690	0.000
46.50	-30.119	-29.368	0.000	0.000	0.000	-2928.279	-8.150	0.000	8.150	-1.757	0.000
50.00	-29.820	-27.624	0.000	0.000	0.000	-2822.864	-9.497	0.000	9.497	-1.914	0.000
53.25	-29.524	-26.048	0.000	0.000	0.000	-2725.949	-10.852	0.000	10.852	-2.064	0.000
55.00	-29.418	-25.535	0.000	0.000	0.000	-2674.282	-11.625	0.000	11.625	-2.147	0.000
60.00	-29.011	-24.205	0.000	0.000	0.000	-2527.192	-13.992	0.000	13.992	-2.370	0.000
65.00	-28.602	-22.906	0.000	0.000	0.000	-2382.139	-16.597	0.000	16.597	-2.601	0.000
70.00	-28.192	-21.639	0.000	0.000	0.000	-2239.132	-19.448	0.000	19.448	-2.839	0.000
75.00	-27.782	-20.404	0.000	0.000	0.000	-2098.176	-22.552	0.000	22.552	-3.086	0.000
80.00	-27.373	-19.201	0.000	0.000	0.000	-1959.268	-25.919	0.000	25.919	-3.341	0.000
85.00	-26.967	-18.029	0.000	0.000	0.000	-1822.404	-29.557	0.000	29.557	-3.605	0.000
90.00	-26.563	-16.890	0.000	0.000	0.000	-1687.573	-33.475	0.000	33.475	-3.877	0.000
95.00	-26.163	-15.781	0.000	0.000	0.000	-1554.759	-37.684	0.000	37.684	-4.159	0.000
100.00	-25.702	-14.004	0.000	0.000	0.000	-1423.946	-42.191	0.000	42.191	-4.449	0.000
105.00	-25.309	-13.048	0.000	0.000	0.000	-1295.438	-47.006	0.000	47.006	-4.749	0.000
110.00	-24.925	-12.115	0.000	0.000	0.000	-1168.893	-52.153	0.000	52.153	-5.081	0.000
115.00	-24.545	-11.211	0.000	0.000	0.000	-1044.271	-57.650	0.000	57.650	-5.421	0.000
120.00	-24.172	-10.336	0.000	0.000	0.000	-921.546	-63.504	0.000	63.504	-5.765	0.000
125.00	-23.804	-9.492	0.000	0.000	0.000	-800.688	-69.719	0.000	69.719	-6.112	0.000
130.00	-23.443	-8.680	0.000	0.000	0.000	-681.669	-76.296	0.000	76.296	-6.459	0.000
135.00	-23.088	-7.903	0.000	0.000	0.000	-564.456	-83.230	0.000	83.230	-6.798	0.000
140.00	-22.740	-7.164	0.000	0.000	0.000	-449.015	-90.510	0.000	90.510	-7.123	0.000
145.00	-22.385	-6.519	0.000	0.000	0.000	-335.314	-98.115	0.000	98.115	-7.421	0.000
145.25	-22.373	-6.467	0.000	0.000	0.000	-329.718	-98.504	0.000	98.504	-7.436	0.000
147.00	-15.506	-4.864	0.000	0.000	0.000	-290.566	-101.241	0.000	101.241	-7.536	0.000
148.50	-15.398	-4.627	0.000	0.000	0.000	-267.307	-103.616	0.000	103.616	-7.618	0.000
150.00	-15.323	-4.469	0.000	0.000	0.000	-244.210	-106.015	0.000	106.015	-7.699	0.000
155.00	-15.038	-4.088	0.000	0.000	0.000	-167.596	-114.290	0.000	114.290	-8.119	0.000
160.00	-10.001	-2.360	0.000	0.000	0.000	-92.407	-122.953	0.000	122.953	-8.444	0.000
165.00	-9.736	-2.151	0.000	0.000	0.000	-42.401	-131.890	0.000	131.890	-8.653	0.000
167.00	-1.731	-0.327	0.000	0.000	0.000	-5.035	-135.514	0.000	135.514	-8.704	0.000
169.00	-1.661	0.000	0.000	0.000	0.000	-1.573	0.000	0.000	139.147	-8.710	0.000

Resulting Stresses

Structure: CT11794-S-SBA
Site Name: East Lyme 1
Height: 169.00 (ft)
Base Elev: 0.000 (ft)

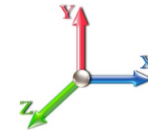
Code: EIA/TIA-222-F
Exposure: C
Gh: 1.69
Struct Class: II

7/12/2016
 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)	fvT Torsion (ksi)	fbx Bending (X) (ksi)	fbz Bending (Z) (ksi)	fb Combined (ksi)	Fb Allow Stress (ksi)	f/Fb Stress Ratio
0.00	0.53	0.82	0.00	0.00	0.00	43.34	43.89	52.0	0.844
5.00	0.52	0.83	0.00	0.00	0.00	43.68	44.22	52.0	0.851
10.00	0.51	0.84	0.00	0.00	0.00	44.02	44.55	52.0	0.857
15.00	0.50	0.85	0.00	0.00	0.00	44.36	44.89	52.0	0.864
20.00	0.49	0.86	0.00	0.00	0.00	44.70	45.22	52.0	0.870
25.00	0.48	0.87	0.00	0.00	0.00	45.04	45.55	52.0	0.876
30.00	0.48	0.88	0.00	0.00	0.00	45.38	45.88	52.0	0.883
35.00	0.47	0.90	0.00	0.00	0.00	45.71	46.21	52.0	0.889
40.00	0.46	0.91	0.00	0.00	0.00	46.04	46.53	52.0	0.895
45.00	0.45	0.92	0.00	0.00	0.00	46.35	46.83	52.0	0.901
46.50	0.45	0.93	0.00	0.00	0.00	46.45	46.93	52.0	0.903
50.00	0.43	0.94	0.00	0.00	0.00	46.66	47.12	52.0	0.907
53.25	0.41	0.93	0.00	0.00	0.00	45.09	45.52	52.0	0.876
55.00	0.40	0.94	0.00	0.00	0.00	45.17	45.60	52.0	0.877
60.00	0.39	0.95	0.00	0.00	0.00	45.38	45.80	52.0	0.881
65.00	0.39	0.97	0.00	0.00	0.00	45.55	45.97	52.0	0.884
70.00	0.38	0.99	0.00	0.00	0.00	45.70	46.11	52.0	0.887
75.00	0.37	1.01	0.00	0.00	0.00	45.81	46.20	52.0	0.889
80.00	0.36	1.03	0.00	0.00	0.00	45.86	46.25	52.0	0.890
85.00	0.35	1.05	0.00	0.00	0.00	45.85	46.23	52.0	0.889
90.00	0.34	1.07	0.00	0.00	0.00	45.75	46.13	52.0	0.887
95.00	0.33	1.10	0.00	0.00	0.00	45.56	45.93	52.0	0.884
100.00	0.35	1.28	0.00	0.00	0.00	50.20	50.59	52.0	0.973
105.00	0.34	1.31	0.00	0.00	0.00	49.58	49.96	52.0	0.961
110.00	0.32	1.35	0.00	0.00	0.00	48.74	49.12	52.0	0.945
115.00	0.31	1.39	0.00	0.00	0.00	47.62	47.99	52.0	0.923
120.00	0.30	1.43	0.00	0.00	0.00	46.15	46.52	52.0	0.895
125.00	0.29	1.48	0.00	0.00	0.00	44.25	44.61	52.0	0.858
130.00	0.28	1.53	0.00	0.00	0.00	41.78	42.14	52.0	0.811
135.00	0.27	1.59	0.00	0.00	0.00	38.58	38.95	52.0	0.749
140.00	0.26	1.66	0.00	0.00	0.00	34.44	34.82	52.0	0.670
145.00	0.25	1.74	0.00	0.00	0.00	29.07	29.48	52.0	0.567
145.25	0.25	1.74	0.00	0.00	0.00	28.77	29.17	52.0	0.561
147.00	0.19	1.24	0.00	0.00	0.00	26.51	26.79	52.0	0.515
148.50	0.36	2.44	0.00	0.00	0.00	47.67	48.22	52.0	0.928
150.00	0.36	2.47	0.00	0.00	0.00	45.27	45.83	52.0	0.882
155.00	0.35	2.59	0.00	0.00	0.00	35.56	36.19	52.0	0.696
160.00	0.22	1.85	0.00	0.00	0.00	22.66	23.11	52.0	0.444
165.00	0.21	1.95	0.00	0.00	0.00	12.16	12.82	52.0	0.247
167.00	0.03	0.36	0.00	0.00	0.00	1.54	1.69	52.0	0.033
169.00	0.00	0.36	0.00	0.00	0.00	0.52	0.80	52.0	0.015

Wind Loading - Shaft

Structure: CT11794-S-SBA
Site Name: East Lyme 1
Height: 169.00 (ft)
Base Elev: 0.000 (ft)

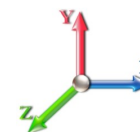
Code: EIA/TIA-222-F
Exposure: C
Gh: 1.69
Struct Class: II

7/12/2016
 Page: 13



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	368.91	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	360.54	0.650	0.500	5.00	25.191	16.37	383.8	182.9	1577.3
10.00		0.00	1.00	13.871	23.44	352.16	0.650	0.500	5.00	24.622	16.00	375.2	178.7	1540.8
15.00		0.00	1.00	13.871	23.44	343.79	0.650	0.500	5.00	24.053	15.63	366.5	174.5	1504.3
20.00		0.00	1.00	13.871	23.44	335.41	0.650	0.500	5.00	23.484	15.26	357.8	170.3	1467.9
25.00		0.00	1.00	13.871	23.44	327.04	0.650	0.500	5.00	22.915	14.90	349.2	166.1	1431.4
30.00		0.00	1.00	13.871	23.44	318.67	0.650	0.500	5.00	22.347	14.53	340.5	161.8	1394.9
35.00		0.00	1.02	14.106	23.84	312.91	0.650	0.500	5.00	21.778	14.16	337.5	157.6	1358.5
40.00		0.00	1.06	14.655	24.77	310.33	0.650	0.500	5.00	21.209	13.79	341.4	153.4	1322.0
45.00		0.00	1.09	15.156	25.61	306.84	0.650	0.500	5.00	20.640	13.42	343.6	149.2	1285.6
46.50	Bot - Section 2	0.00	1.10	15.299	25.86	305.65	0.650	0.500	1.50	6.081	3.95	102.2	44.4	379.0
50.00		0.00	1.13	15.620	26.40	302.61	0.650	0.500	3.50	14.246	9.26	244.4	103.4	1656.8
53.25	Top - Section 1	0.00	1.15	15.903	26.88	299.52	0.650	0.500	3.25	12.978	8.44	226.7	94.2	1508.4
55.00		0.00	1.16	16.051	27.13	303.53	0.650	0.500	1.75	6.889	4.48	121.5	50.2	428.9
60.00		0.00	1.19	16.455	27.81	298.20	0.650	0.500	5.00	19.299	12.54	348.8	139.3	1199.5
65.00		0.00	1.21	16.836	28.45	292.41	0.650	0.500	5.00	18.730	12.17	346.4	135.1	1163.1
70.00		0.00	1.24	17.196	29.06	286.20	0.650	0.500	5.00	18.161	11.80	343.1	130.8	1126.6
75.00		0.00	1.26	17.538	29.64	279.61	0.650	0.500	5.00	17.592	11.43	338.9	126.6	1090.2
80.00		0.00	1.29	17.865	30.19	272.70	0.650	0.500	5.00	17.023	11.07	334.1	122.4	1053.7
85.00		0.00	1.31	18.177	30.72	265.49	0.650	0.500	5.00	16.455	10.70	328.6	118.2	1017.2
90.00		0.00	1.33	18.476	31.22	258.00	0.650	0.500	5.00	15.886	10.33	322.4	114.0	980.8
95.00	Bot - Section 3	0.00	1.35	18.764	31.71	250.26	0.650	0.500	5.00	15.317	9.96	315.7	109.8	944.3
100.00	Top - Section 2	0.00	1.37	19.041	32.18	242.29	0.650	0.500	5.00	15.061	9.79	315.0	107.9	1614.3
105.00		0.00	1.39	19.308	32.63	239.54	0.650	0.500	5.00	14.492	9.42	307.4	103.7	780.1
110.00		0.00	1.41	19.566	33.07	231.19	0.650	0.500	5.00	13.923	9.05	299.3	99.5	748.3
115.00		0.00	1.43	19.816	33.49	222.65	0.650	0.500	5.00	13.354	8.68	290.7	95.2	716.4
120.00		0.00	1.45	20.059	33.90	213.94	0.650	0.500	5.00	12.786	8.31	281.7	91.0	684.6
125.00		0.00	1.46	20.294	34.30	205.06	0.650	0.500	5.00	12.217	7.94	272.3	86.8	652.7
130.00		0.00	1.48	20.523	34.68	196.03	0.650	0.500	5.00	11.648	7.57	262.6	82.6	620.9
135.00		0.00	1.50	20.745	35.06	186.85	0.650	0.500	5.00	11.079	7.20	252.5	78.4	589.0
140.00		0.00	1.51	20.962	35.43	177.53	0.650	0.500	5.00	10.510	6.83	242.0	74.2	557.2
145.00		0.00	1.53	21.173	35.78	168.07	0.650	0.500	5.00	9.942	6.46	231.2	70.0	525.3
145.25	Bot - Section 4	0.00	1.53	21.184	35.80	167.60	0.650	0.500	0.25	0.482	0.31	11.2	3.5	25.5
147.00	Appurtenance(s)	0.00	1.53	21.256	35.92	164.26	0.650	0.500	1.75	3.390	2.20	79.2	24.3	254.8
148.50	Top - Section 3	0.00	1.54	21.318	36.03	161.38	0.650	0.500	1.50	2.850	1.85	66.7	20.5	214.0
150.00		0.00	1.54	21.379	36.13	161.35	0.650	0.500	1.50	2.799	1.82	65.7	20.1	84.5
155.00		0.00	1.56	21.581	36.47	151.66	0.650	0.500	5.00	8.960	5.82	212.4	62.7	268.4
160.00	Appurtenance(s)	0.00	1.57	21.777	36.80	141.86	0.650	0.500	5.00	8.392	5.45	200.7	58.5	250.4
165.00		0.00	1.58	21.969	37.13	131.95	0.650	0.500	5.00	7.823	5.08	188.8	54.3	232.4
167.00	Appurtenance(s)	0.00	1.59	22.045	37.26	127.95	0.650	0.500	2.00	2.970	1.93	71.9	21.0	88.4
169.00	Appurtenance(s)	0.00	1.59	22.120	37.38	123.94	0.650	0.500	2.00	2.879	1.87	70.0	20.4	85.5
Totals:									169.00			10,289.8	34,423.8	

Discrete Appurtenance Forces

Structure: CT11794-S-SB
Site Name: East Lyme 1
Height: 169.00 (ft)
Base Elev: 0.000 (ft)

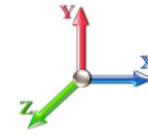
Code: EIA/TIA-222-F
Exposure: C
Gh: 1.69
Struct Class: II

7/12/2016
 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	169.00	Ericsson RRUS 11 RRUs	6	22.158	37.446	0.67	12.62	396.00	0.000	1.000	472.68	0.00	472.68
2	169.00	CCI DTMABP7819VG12A	3	22.158	37.446	0.67	2.73	79.50	0.000	1.000	102.36	0.00	102.36
3	169.00	Andrew SBNH-1D6565C	1	22.158	37.446	0.80	9.90	132.00	0.000	1.000	370.57	0.00	370.57
4	169.00	KMW	2	22.158	37.446	0.75	9.15	136.60	0.000	1.000	342.63	0.00	342.63
5	167.00	Ericsson RRUS-32 RRUs	3	22.158	37.446	0.67	8.64	310.50	0.000	3.000	323.65	0.00	970.95
6	167.00	Commscope SBNHH-1D65A	3	22.158	37.446	0.83	16.78	206.40	0.000	3.000	628.45	0.00	1885.34
7	167.00	Ericsson RRUS 12 RRUs	6	22.158	37.446	0.50	11.67	454.20	0.000	3.000	437.00	0.00	1311.00
8	167.00	Ericsson RRUS A2 Module	6	22.158	37.446	0.62	8.00	188.40	0.000	3.000	299.50	0.00	898.49
9	167.00	HPA-65R-BUJ-H6	3	22.158	37.446	0.85	26.98	325.20	0.000	3.000	1010.27	0.00	3030.80
10	167.00	Ericsson RRUS-E2 RRUs	6	22.158	37.446	0.67	17.29	621.00	0.000	3.000	647.30	0.00	1941.90
11	167.00	HPA-65R-BBU-H8	3	22.158	37.446	0.79	32.94	411.00	0.000	3.000	1233.60	0.00	3700.79
12	167.00	Raycap DC6-48-60-18-8F	3	22.158	37.446	1.00	5.01	151.50	0.000	3.000	187.61	0.00	562.82
13	167.00	T-Arm	3	22.045	37.256	0.75	28.13	1440.00	0.000	0.000	1047.84	0.00	0.00
14	160.00	T-Arm	3	21.777	36.803	0.75	28.13	1440.00	0.000	0.000	1035.10	0.00	0.00
15	160.00	S11B12	3	21.777	36.803	0.70	7.39	201.30	0.000	0.000	272.05	0.00	0.00
16	160.00	Ericsson KRY 112-114/1	3	21.777	36.803	0.70	1.16	42.30	0.000	0.000	42.51	0.00	0.00
17	160.00	Air21 B4A/B2P	3	21.777	36.803	0.86	17.98	387.60	0.000	0.000	661.82	0.00	0.00
18	160.00	Air21 B2A/B4P	3	21.777	36.803	0.86	17.98	387.60	0.000	0.000	661.82	0.00	0.00
19	160.00	LNx-6515DS-A1M	3	21.777	36.803	0.80	29.62	346.80	0.000	0.000	1089.97	0.00	0.00
20	147.00	Antel LPA-80080/4CF	2	21.256	35.923	1.70	22.61	0.00	0.000	0.000	812.22	0.00	0.00
21	147.00	ALU RRH2X60-700 RRH	3	21.256	35.923	0.76	9.64	240.30	0.000	0.000	346.46	0.00	0.00
22	147.00	ALU RRH2X60-AWS RRH	3	21.256	35.923	0.76	9.64	240.30	0.000	0.000	346.46	0.00	0.00
23	147.00	ALU RRH2X60-PCS RRH	3	21.256	35.923	0.89	7.37	212.70	0.000	0.000	264.72	0.00	0.00
24	147.00	Low Profile Platform	1	21.256	35.923	1.00	31.00	1500.00	0.000	0.000	1113.61	0.00	0.00
25	147.00	Commscope SBNHH-1D65B	6	21.256	35.923	0.83	43.82	522.00	0.000	0.000	1574.29	0.00	0.00
26	147.00	FD9R6004/2C-3L	6	21.256	35.923	1.00	3.00	32.40	0.000	0.000	107.77	0.00	0.00
27	147.00	RFS DB-T1-6Z-8AB-0Z	2	21.256	35.923	0.71	8.34	92.00	0.000	0.000	299.43	0.00	0.00
28	147.00	Swedcom SC-E 6014 rev2	4	21.256	35.923	0.97	15.75	168.40	0.000	0.000	565.89	0.00	0.00
Totals:								10,666.00			16,297.56		

Total Applied Force Summary

Structure: CT11794-S-SB
Site Name: East Lyme 1
Height: 169.00 (ft)
Base Elev: 0.000 (ft)

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

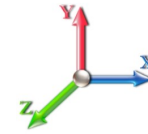
7/12/2016

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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	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		383.84	1751.61	0.00	0.00
10.00		375.17	1715.14	0.00	0.00
15.00		366.51	1678.68	0.00	0.00
20.00		357.84	1642.22	0.00	0.00
25.00		349.17	1605.76	0.00	0.00
30.00		340.51	1569.29	0.00	0.00
35.00		337.47	1532.83	0.00	0.00
40.00		341.43	1496.37	0.00	0.00
45.00		343.65	1459.91	0.00	0.00
46.50		102.20	431.30	0.00	0.00
50.00		244.43	1778.87	0.00	0.00
53.25		226.73	1621.72	0.00	0.00
55.00		121.46	489.95	0.00	0.00
60.00		348.83	1373.89	0.00	0.00
65.00		346.39	1337.43	0.00	0.00
70.00		343.05	1300.96	0.00	0.00
75.00		338.93	1264.50	0.00	0.00
80.00		334.07	1228.04	0.00	0.00
85.00		328.55	1191.58	0.00	0.00
90.00		322.42	1155.11	0.00	0.00
95.00		315.71	1118.65	0.00	0.00
100.00		315.01	1788.61	0.00	0.00
105.00		307.37	954.49	0.00	0.00
110.00		299.26	922.64	0.00	0.00
115.00		290.70	890.78	0.00	0.00
120.00		281.72	858.93	0.00	0.00
125.00		272.35	827.07	0.00	0.00
130.00		262.60	795.21	0.00	0.00
135.00		252.48	763.36	0.00	0.00
140.00		242.02	731.50	0.00	0.00
145.00		231.23	699.65	0.00	0.00
145.25		11.22	34.25	0.00	0.00
147.00	(30) appurtenances	5510.00	3323.95	0.00	0.00
148.50		66.75	249.05	0.00	0.00
150.00		65.74	119.54	0.00	0.00
155.00		212.42	385.27	0.00	0.00
160.00	(18) appurtenances	3964.01	3172.84	0.00	0.00
165.00		188.79	281.30	0.00	0.00
167.00	(36) appurtenances	5887.12	4216.18	0.00	14302.09
169.00	(12) appurtenances	1358.20	849.19	0.00	1288.25
Totals:		26,587.35	50,607.62	0.00	15,590.34

Resulting Forces and Deflections

Structure: CT11794-S-SB
Site Name: East Lyme 1
Height: 169.00 (ft)
Base Elev: 0.000 (ft)

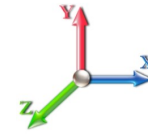
Code: EIA/TIA-222-F
Exposure: C
Gh: 1.69
Struct Class: II

7/12/2016
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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	-26.647	-50.576	0.000	0.000	0.000	-3572.930	0.000	0.000	0.000	0.000	0.000
5.00	-26.377	-48.762	0.000	0.000	0.000	-3439.697	-0.072	0.000	0.072	-0.134	0.000
10.00	-26.110	-46.985	0.000	0.000	0.000	-3307.816	-0.286	0.000	0.286	-0.271	0.000
15.00	-25.848	-45.243	0.000	0.000	0.000	-3177.266	-0.646	0.000	0.646	-0.414	0.000
20.00	-25.590	-43.538	0.000	0.000	0.000	-3048.028	-1.158	0.000	1.158	-0.560	0.000
25.00	-25.335	-41.868	0.000	0.000	0.000	-2920.082	-1.826	0.000	1.826	-0.712	0.000
30.00	-25.085	-40.234	0.000	0.000	0.000	-2793.407	-2.656	0.000	2.656	-0.869	0.000
35.00	-24.834	-38.636	0.000	0.000	0.000	-2667.983	-3.652	0.000	3.652	-1.031	0.000
40.00	-24.574	-37.073	0.000	0.000	0.000	-2543.817	-4.821	0.000	4.821	-1.198	0.000
45.00	-24.268	-35.573	0.000	0.000	0.000	-2420.951	-6.169	0.000	6.169	-1.372	0.000
46.50	-24.211	-35.106	0.000	0.000	0.000	-2384.550	-6.609	0.000	6.609	-1.426	0.000
50.00	-23.993	-33.282	0.000	0.000	0.000	-2299.812	-7.702	0.000	7.702	-1.554	0.000
53.25	-23.773	-31.628	0.000	0.000	0.000	-2221.835	-8.803	0.000	8.803	-1.676	0.000
55.00	-23.705	-31.090	0.000	0.000	0.000	-2180.233	-9.430	0.000	9.430	-1.744	0.000
60.00	-23.409	-29.652	0.000	0.000	0.000	-2061.708	-11.354	0.000	11.354	-1.926	0.000
65.00	-23.110	-28.251	0.000	0.000	0.000	-1944.667	-13.472	0.000	13.472	-2.114	0.000
70.00	-22.810	-26.885	0.000	0.000	0.000	-1829.120	-15.790	0.000	15.790	-2.309	0.000
75.00	-22.510	-25.556	0.000	0.000	0.000	-1715.073	-18.315	0.000	18.315	-2.510	0.000
80.00	-22.210	-24.262	0.000	0.000	0.000	-1602.526	-21.055	0.000	21.055	-2.719	0.000
85.00	-21.911	-23.005	0.000	0.000	0.000	-1491.478	-24.017	0.000	24.017	-2.935	0.000
90.00	-21.614	-21.783	0.000	0.000	0.000	-1381.923	-27.209	0.000	27.209	-3.158	0.000
95.00	-21.320	-20.597	0.000	0.000	0.000	-1273.852	-30.638	0.000	30.638	-3.389	0.000
100.00	-20.975	-18.742	0.000	0.000	0.000	-1167.254	-34.313	0.000	34.313	-3.627	0.000
105.00	-20.687	-17.717	0.000	0.000	0.000	-1062.380	-38.240	0.000	38.240	-3.872	0.000
110.00	-20.404	-16.719	0.000	0.000	0.000	-958.948	-42.439	0.000	42.439	-4.145	0.000
115.00	-20.125	-15.754	0.000	0.000	0.000	-856.928	-46.926	0.000	46.926	-4.423	0.000
120.00	-19.850	-14.822	0.000	0.000	0.000	-756.303	-51.707	0.000	51.707	-4.706	0.000
125.00	-19.578	-13.924	0.000	0.000	0.000	-657.055	-56.784	0.000	56.784	-4.991	0.000
130.00	-19.310	-13.060	0.000	0.000	0.000	-559.166	-62.159	0.000	62.159	-5.275	0.000
135.00	-19.045	-12.234	0.000	0.000	0.000	-462.619	-67.827	0.000	67.827	-5.553	0.000
140.00	-18.783	-11.446	0.000	0.000	0.000	-367.396	-73.780	0.000	73.780	-5.819	0.000
145.00	-18.503	-10.735	0.000	0.000	0.000	-273.484	-79.999	0.000	79.999	-6.063	0.000
145.25	-18.497	-10.686	0.000	0.000	0.000	-268.858	-80.317	0.000	80.317	-6.075	0.000
147.00	-12.675	-7.953	0.000	0.000	0.000	-236.488	-82.555	0.000	82.555	-6.157	0.000
148.50	-12.590	-7.698	0.000	0.000	0.000	-217.476	-84.497	0.000	84.497	-6.224	0.000
150.00	-12.540	-7.539	0.000	0.000	0.000	-198.591	-86.459	0.000	86.459	-6.289	0.000
155.00	-12.324	-7.115	0.000	0.000	0.000	-135.890	-93.225	0.000	93.225	-6.631	0.000
160.00	-8.029	-4.402	0.000	0.000	0.000	-74.272	-100.307	0.000	100.307	-6.893	0.000
165.00	-7.815	-4.133	0.000	0.000	0.000	-34.125	-107.610	0.000	107.610	-7.062	0.000
167.00	-1.453	-0.675	0.000	0.000	0.000	-4.194	-110.571	0.000	110.571	-7.103	0.000
169.00	-1.358	0.000	0.000	0.000	0.000	-1.288	0.000	0.000	113.540	-7.108	0.000

Resulting Stresses

Structure: CT11794-S-SBA
Site Name: East Lyme 1
Height: 169.00 (ft)
Base Elev: 0.000 (ft)

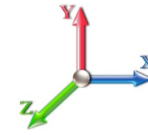
Code: EIA/TIA-222-F
Exposure: C
Gh: 1.69
Struct Class: II

7/12/2016
 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

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	0.65	0.00	0.00	0.00	35.07	35.69	52.0	0.687
5.00	0.60	0.66	0.00	0.00	0.00	35.36	35.98	52.0	0.692
10.00	0.59	0.67	0.00	0.00	0.00	35.66	36.27	52.0	0.698
15.00	0.59	0.67	0.00	0.00	0.00	35.96	36.57	52.0	0.704
20.00	0.58	0.68	0.00	0.00	0.00	36.27	36.86	52.0	0.709
25.00	0.57	0.70	0.00	0.00	0.00	36.57	37.16	52.0	0.715
30.00	0.56	0.71	0.00	0.00	0.00	36.87	37.45	52.0	0.721
35.00	0.55	0.72	0.00	0.00	0.00	37.17	37.74	52.0	0.726
40.00	0.55	0.73	0.00	0.00	0.00	37.46	38.02	52.0	0.732
45.00	0.54	0.74	0.00	0.00	0.00	37.74	38.30	52.0	0.737
46.50	0.54	0.75	0.00	0.00	0.00	37.82	38.38	52.0	0.738
50.00	0.52	0.76	0.00	0.00	0.00	38.02	38.56	52.0	0.742
53.25	0.49	0.75	0.00	0.00	0.00	36.75	37.27	52.0	0.717
55.00	0.49	0.76	0.00	0.00	0.00	36.82	37.34	52.0	0.718
60.00	0.48	0.77	0.00	0.00	0.00	37.02	37.52	52.0	0.722
65.00	0.48	0.78	0.00	0.00	0.00	37.19	37.69	52.0	0.725
70.00	0.47	0.80	0.00	0.00	0.00	37.33	37.82	52.0	0.728
75.00	0.46	0.81	0.00	0.00	0.00	37.44	37.93	52.0	0.730
80.00	0.45	0.83	0.00	0.00	0.00	37.51	37.99	52.0	0.731
85.00	0.44	0.85	0.00	0.00	0.00	37.52	37.99	52.0	0.731
90.00	0.44	0.87	0.00	0.00	0.00	37.47	37.93	52.0	0.730
95.00	0.43	0.89	0.00	0.00	0.00	37.33	37.79	52.0	0.727
100.00	0.46	1.04	0.00	0.00	0.00	41.15	41.65	52.0	0.801
105.00	0.45	1.07	0.00	0.00	0.00	40.66	41.15	52.0	0.792
110.00	0.45	1.10	0.00	0.00	0.00	39.98	40.48	52.0	0.779
115.00	0.44	1.14	0.00	0.00	0.00	39.08	39.57	52.0	0.761
120.00	0.44	1.17	0.00	0.00	0.00	37.88	38.37	52.0	0.738
125.00	0.43	1.22	0.00	0.00	0.00	36.31	36.80	52.0	0.708
130.00	0.42	1.26	0.00	0.00	0.00	34.27	34.76	52.0	0.669
135.00	0.42	1.31	0.00	0.00	0.00	31.62	32.12	52.0	0.618
140.00	0.42	1.37	0.00	0.00	0.00	28.18	28.70	52.0	0.552
145.00	0.41	1.44	0.00	0.00	0.00	23.71	24.25	52.0	0.467
145.25	0.41	1.44	0.00	0.00	0.00	23.46	24.00	52.0	0.462
147.00	0.31	1.01	0.00	0.00	0.00	21.58	21.96	52.0	0.423
148.50	0.60	1.99	0.00	0.00	0.00	38.78	39.54	52.0	0.761
150.00	0.60	2.02	0.00	0.00	0.00	36.82	37.58	52.0	0.723
155.00	0.61	2.13	0.00	0.00	0.00	28.83	29.67	52.0	0.571
160.00	0.40	1.49	0.00	0.00	0.00	18.22	18.80	52.0	0.362
165.00	0.41	1.57	0.00	0.00	0.00	9.78	10.55	52.0	0.203
167.00	0.07	0.30	0.00	0.00	0.00	1.28	1.45	52.0	0.028
169.00	0.00	0.29	0.00	0.00	0.00	0.42	0.66	52.0	0.013

Wind Loading - Shaft

Structure: CT11794-S-SBA
Site Name: East Lyme 1
Height: 169.00 (ft)
Base Elev: 0.000 (ft)

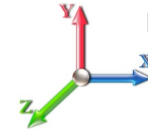
Code: EIA/TIA-222-F
Exposure: C
Gh: 1.69
Struct Class: II

7/12/2016
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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	250.58	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	244.90	0.650	0.000	5.00	24.774	16.10	174.2	0.0	1394.4
10.00		0.00	1.00	6.400	10.82	239.21	0.650	0.000	5.00	24.205	15.73	170.2	0.0	1362.1
15.00		0.00	1.00	6.400	10.82	233.52	0.650	0.000	5.00	23.636	15.36	166.2	0.0	1329.8
20.00		0.00	1.00	6.400	10.82	227.83	0.650	0.000	5.00	23.068	14.99	162.2	0.0	1297.6
25.00		0.00	1.00	6.400	10.82	222.14	0.650	0.000	5.00	22.499	14.62	158.2	0.0	1265.3
30.00		0.00	1.00	6.400	10.82	216.46	0.650	0.000	5.00	21.930	14.25	154.2	0.0	1233.1
35.00		0.00	1.02	6.509	11.00	212.55	0.650	0.000	5.00	21.361	13.88	152.7	0.0	1200.8
40.00		0.00	1.06	6.762	11.43	210.79	0.650	0.000	5.00	20.792	13.52	154.4	0.0	1168.6
45.00		0.00	1.09	6.993	11.82	208.43	0.650	0.000	5.00	20.224	13.15	155.4	0.0	1136.3
46.50	Bot - Section 2	0.00	1.10	7.059	11.93	207.61	0.650	0.000	1.50	5.956	3.87	46.2	0.0	334.6
50.00		0.00	1.13	7.207	12.18	205.55	0.650	0.000	3.50	13.954	9.07	110.5	0.0	1553.4
53.25	Top - Section 1	0.00	1.15	7.338	12.40	203.45	0.650	0.000	3.25	12.708	8.26	102.4	0.0	1414.2
55.00		0.00	1.16	7.406	12.52	206.17	0.650	0.000	1.75	6.743	4.38	54.9	0.0	378.7
60.00		0.00	1.19	7.592	12.83	202.56	0.650	0.000	5.00	18.882	12.27	157.5	0.0	1060.3
65.00		0.00	1.21	7.768	13.13	198.62	0.650	0.000	5.00	18.313	11.90	156.3	0.0	1028.0
70.00		0.00	1.24	7.934	13.41	194.40	0.650	0.000	5.00	17.744	11.53	154.6	0.0	995.8
75.00		0.00	1.26	8.092	13.68	189.93	0.650	0.000	5.00	17.176	11.16	152.7	0.0	963.5
80.00		0.00	1.29	8.242	13.93	185.23	0.650	0.000	5.00	16.607	10.79	150.4	0.0	931.3
85.00		0.00	1.31	8.387	14.17	180.33	0.650	0.000	5.00	16.038	10.42	147.8	0.0	899.0
90.00		0.00	1.33	8.525	14.41	175.25	0.650	0.000	5.00	15.469	10.05	144.9	0.0	866.8
95.00	Bot - Section 3	0.00	1.35	8.657	14.63	169.99	0.650	0.000	5.00	14.900	9.69	141.7	0.0	834.5
100.00	Top - Section 2	0.00	1.37	8.785	14.85	164.58	0.650	0.000	5.00	14.644	9.52	141.3	0.0	1506.4
105.00		0.00	1.39	8.908	15.06	162.71	0.650	0.000	5.00	14.075	9.15	137.7	0.0	676.5
110.00		0.00	1.41	9.028	15.26	157.04	0.650	0.000	5.00	13.506	8.78	133.9	0.0	648.8
115.00		0.00	1.43	9.143	15.45	151.24	0.650	0.000	5.00	12.938	8.41	129.9	0.0	621.2
120.00		0.00	1.45	9.255	15.64	145.32	0.650	0.000	5.00	12.369	8.04	125.7	0.0	593.5
125.00		0.00	1.46	9.363	15.82	139.29	0.650	0.000	5.00	11.800	7.67	121.4	0.0	565.9
130.00		0.00	1.48	9.469	16.00	133.15	0.650	0.000	5.00	11.231	7.30	116.8	0.0	538.3
135.00		0.00	1.50	9.572	16.18	126.92	0.650	0.000	5.00	10.663	6.93	112.1	0.0	510.6
140.00		0.00	1.51	9.672	16.35	120.59	0.650	0.000	5.00	10.094	6.56	107.2	0.0	483.0
145.00		0.00	1.53	9.769	16.51	114.17	0.650	0.000	5.00	9.525	6.19	102.2	0.0	455.3
145.25	Bot - Section 4	0.00	1.53	9.774	16.52	113.84	0.650	0.000	0.25	0.461	0.30	5.0	0.0	22.0
147.00	Appurtenance(s)	0.00	1.53	9.807	16.57	111.57	0.650	0.000	1.75	3.244	2.11	34.9	0.0	230.5
148.50	Top - Section 3	0.00	1.54	9.836	16.62	109.62	0.650	0.000	1.50	2.725	1.77	29.4	0.0	193.5
150.00		0.00	1.54	9.864	16.67	109.60	0.650	0.000	1.50	2.674	1.74	29.0	0.0	64.4
155.00		0.00	1.56	9.957	16.83	103.02	0.650	0.000	5.00	8.544	5.55	93.4	0.0	205.7
160.00	Appurtenance(s)	0.00	1.57	10.048	16.98	96.36	0.650	0.000	5.00	7.975	5.18	88.0	0.0	191.9
165.00		0.00	1.58	10.136	17.13	89.63	0.650	0.000	5.00	7.406	4.81	82.5	0.0	178.1
167.00	Appurtenance(s)	0.00	1.59	10.171	17.19	86.91	0.650	0.000	2.00	2.803	1.82	31.3	0.0	67.4
169.00	Appurtenance(s)	0.00	1.59	10.206	17.25	84.19	0.650	0.000	2.00	2.712	1.76	30.4	0.0	65.1
Totals:									169.00			4,619.7		30,466.3

Discrete Appurtenance Forces

Structure: CT11794-S-SB
Site Name: East Lyme 1
Height: 169.00 (ft)
Base Elev: 0.000 (ft)

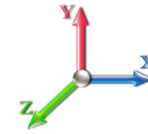
Code: EIA/TIA-222-F
Exposure: C
Gh: 1.69
Struct Class: II

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Load Case: 50 mph Wind with 0" Ice

Dead Load Factor 1.00
Wind Load Factor 1.00



Iterations: 24

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	169.00	Ericsson RRUS 11 RRUs	6	10.223	17.277	0.67	11.82	304.20	0.000	1.000	204.20	0.00	204.20
2	169.00	CCI DTMABP7819VG12A	3	10.223	17.277	0.67	2.29	57.60	0.000	1.000	39.59	0.00	39.59
3	169.00	Andrew SBNH-1D6565C	1	10.223	17.277	0.80	9.15	66.10	0.000	1.000	158.12	0.00	158.12
4	169.00	KMW	2	10.223	17.277	0.75	8.25	72.80	0.000	1.000	142.54	0.00	142.54
5	167.00	Ericsson RRUS-32 RRUs	3	10.223	17.277	0.67	7.78	231.00	0.000	3.000	134.40	0.00	403.19
6	167.00	Commscope SBNHH-1D65A	3	10.223	17.277	0.83	15.84	100.50	0.000	3.000	273.61	0.00	820.83
7	167.00	Ericsson RRUS 12 RRUs	6	10.223	17.277	0.50	11.01	348.00	0.000	3.000	190.22	0.00	570.67
8	167.00	Ericsson RRUS A2 Module	6	10.223	17.277	0.62	6.92	127.20	0.000	3.000	119.55	0.00	358.64
9	167.00	HPA-65R-BUJ-H6	3	10.223	17.277	0.85	26.42	153.00	0.000	3.000	456.43	0.00	1369.30
10	167.00	Ericsson RRUS-E2 RRUs	6	10.223	17.277	0.67	15.56	462.00	0.000	3.000	268.79	0.00	806.37
11	167.00	HPA-65R-BBU-H8	3	10.223	17.277	0.79	31.52	204.00	0.000	3.000	544.60	0.00	1633.80
12	167.00	Raycap DC6-48-60-18-8F	3	10.223	17.277	1.00	4.41	98.40	0.000	3.000	76.19	0.00	228.58
13	167.00	T-Arm	3	10.171	17.190	0.75	31.88	1200.00	0.000	0.000	548.05	0.00	0.00
14	160.00	T-Arm	3	10.048	16.981	0.75	22.50	1200.00	0.000	0.000	382.06	0.00	0.00
15	160.00	S11B12	3	10.048	16.981	0.70	6.95	153.00	0.000	0.000	118.03	0.00	0.00
16	160.00	Ericsson KRY 112-114/1	3	10.048	16.981	0.70	0.86	33.00	0.000	0.000	14.62	0.00	0.00
17	160.00	Air21 B4A/B2P	3	10.048	16.981	0.86	16.98	274.50	0.000	0.000	288.27	0.00	0.00
18	160.00	Air21 B2A/B4P	3	10.048	16.981	0.86	16.98	274.50	0.000	0.000	288.27	0.00	0.00
19	160.00	LNx-6515DS-A1M	3	10.048	16.981	0.80	27.38	149.40	0.000	0.000	465.00	0.00	0.00
20	147.00	Antel LPA-80080/4CF	2	9.807	16.574	1.70	20.60	24.00	0.000	0.000	341.50	0.00	0.00
21	147.00	ALU RRH2X60-700 RRH	3	9.807	16.574	0.76	9.03	180.00	0.000	0.000	149.65	0.00	0.00
22	147.00	ALU RRH2X60-AWS RRH	3	9.807	16.574	0.76	9.03	180.00	0.000	0.000	149.65	0.00	0.00
23	147.00	ALU RRH2X60-PCS RRH	3	9.807	16.574	0.89	6.86	165.00	0.000	0.000	113.73	0.00	0.00
24	147.00	Low Profile Platform	1	9.807	16.574	1.00	25.00	1200.00	0.000	0.000	414.36	0.00	0.00
25	147.00	Commscope SBNHH-1D65B	6	9.807	16.574	0.83	41.48	304.26	0.000	0.000	687.56	0.00	0.00
26	147.00	FD9R6004/2C-3L	6	9.807	16.574	1.00	2.16	18.60	0.000	0.000	35.80	0.00	0.00
27	147.00	RFS DB-T1-6Z-8AB-0Z	2	9.807	16.574	0.71	7.95	37.80	0.000	0.000	131.80	0.00	0.00
28	147.00	Swedcom SC-E 6014 rev2	4	9.807	16.574	0.97	13.77	60.00	0.000	0.000	228.30	0.00	0.00

Totals: 7,678.86

6,964.89

Total Applied Force Summary

Structure: CT11794-S-SB
Site Name: East Lyme 1
Height: 169.00 (ft)
Base Elev: 0.000 (ft)

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

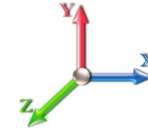
7/12/2016

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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	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		174.17	1568.70	0.00	0.00
10.00		170.17	1536.45	0.00	0.00
15.00		166.17	1504.20	0.00	0.00
20.00		162.17	1471.95	0.00	0.00
25.00		158.18	1439.70	0.00	0.00
30.00		154.18	1407.45	0.00	0.00
35.00		152.72	1375.20	0.00	0.00
40.00		154.44	1342.95	0.00	0.00
45.00		155.35	1310.70	0.00	0.00
46.50		46.19	386.92	0.00	0.00
50.00		110.47	1675.48	0.00	0.00
53.25		102.43	1527.50	0.00	0.00
55.00		54.86	439.74	0.00	0.00
60.00		157.47	1234.62	0.00	0.00
65.00		156.26	1202.37	0.00	0.00
70.00		154.65	1170.12	0.00	0.00
75.00		152.67	1137.87	0.00	0.00
80.00		150.36	1105.62	0.00	0.00
85.00		147.75	1073.37	0.00	0.00
90.00		144.86	1041.12	0.00	0.00
95.00		141.70	1008.87	0.00	0.00
100.00		141.32	1680.73	0.00	0.00
105.00		137.74	850.82	0.00	0.00
110.00		133.94	823.17	0.00	0.00
115.00		129.94	795.53	0.00	0.00
120.00		125.75	767.89	0.00	0.00
125.00		121.37	740.24	0.00	0.00
130.00		116.82	712.60	0.00	0.00
135.00		112.11	684.96	0.00	0.00
140.00		107.24	657.31	0.00	0.00
145.00		102.22	629.67	0.00	0.00
145.25		4.95	30.76	0.00	0.00
147.00	(30) appurtenances	2287.30	2461.20	0.00	0.00
148.50		29.44	228.60	0.00	0.00
150.00		28.97	99.46	0.00	0.00
155.00		93.45	322.56	0.00	0.00
160.00	(18) appurtenances	1644.28	2393.14	0.00	0.00
165.00		82.47	227.02	0.00	0.00
167.00	(36) appurtenances	2643.16	3011.04	0.00	6191.37
169.00	(12) appurtenances	574.85	585.43	0.00	544.45
Totals:		11,584.56	43,663.00	0.00	6,735.81

Resulting Forces and Deflections

Structure: CT11794-S-SB
Site Name: East Lyme 1
Height: 169.00 (ft)
Base Elev: 0.000 (ft)

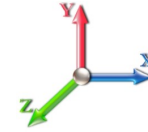
Code: EIA/TIA-222-F
Exposure: C
Gh: 1.69
Struct Class: II

7/12/2016
 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	-11.606	-43.657	0.000	0.000	0.000	-1531.695	0.000	0.000	0.000	0.000	0.000
5.00	-11.474	-42.077	0.000	0.000	0.000	-1473.666	-0.031	0.000	0.031	-0.057	0.000
10.00	-11.344	-40.529	0.000	0.000	0.000	-1416.298	-0.122	0.000	0.122	-0.116	0.000
15.00	-11.216	-39.013	0.000	0.000	0.000	-1359.581	-0.277	0.000	0.277	-0.177	0.000
20.00	-11.090	-37.529	0.000	0.000	0.000	-1303.503	-0.496	0.000	0.496	-0.240	0.000
25.00	-10.967	-36.078	0.000	0.000	0.000	-1248.054	-0.782	0.000	0.782	-0.305	0.000
30.00	-10.845	-34.658	0.000	0.000	0.000	-1193.223	-1.137	0.000	1.137	-0.372	0.000
35.00	-10.724	-33.271	0.000	0.000	0.000	-1138.998	-1.563	0.000	1.563	-0.441	0.000
40.00	-10.599	-31.916	0.000	0.000	0.000	-1085.381	-2.063	0.000	2.063	-0.512	0.000
45.00	-10.456	-30.598	0.000	0.000	0.000	-1032.389	-2.640	0.000	2.640	-0.586	0.000
46.50	-10.427	-30.205	0.000	0.000	0.000	-1016.705	-2.828	0.000	2.828	-0.610	0.000
50.00	-10.324	-28.521	0.000	0.000	0.000	-980.211	-3.295	0.000	3.295	-0.664	0.000
53.25	-10.222	-26.988	0.000	0.000	0.000	-946.658	-3.766	0.000	3.766	-0.716	0.000
55.00	-10.187	-26.539	0.000	0.000	0.000	-928.769	-4.034	0.000	4.034	-0.745	0.000
60.00	-10.047	-25.293	0.000	0.000	0.000	-877.837	-4.856	0.000	4.856	-0.823	0.000
65.00	-9.907	-24.079	0.000	0.000	0.000	-827.602	-5.760	0.000	5.760	-0.903	0.000
70.00	-9.767	-22.897	0.000	0.000	0.000	-778.067	-6.750	0.000	6.750	-0.986	0.000
75.00	-9.627	-21.748	0.000	0.000	0.000	-729.234	-7.828	0.000	7.828	-1.071	0.000
80.00	-9.488	-20.630	0.000	0.000	0.000	-681.100	-8.997	0.000	8.997	-1.160	0.000
85.00	-9.349	-19.545	0.000	0.000	0.000	-633.663	-10.261	0.000	10.261	-1.252	0.000
90.00	-9.212	-18.492	0.000	0.000	0.000	-586.919	-11.623	0.000	11.623	-1.346	0.000
95.00	-9.076	-17.471	0.000	0.000	0.000	-540.861	-13.085	0.000	13.085	-1.444	0.000
100.00	-8.919	-15.779	0.000	0.000	0.000	-495.482	-14.652	0.000	14.652	-1.545	0.000
105.00	-8.786	-14.915	0.000	0.000	0.000	-450.887	-16.326	0.000	16.326	-1.650	0.000
110.00	-8.657	-14.079	0.000	0.000	0.000	-406.956	-18.116	0.000	18.116	-1.765	0.000
115.00	-8.529	-13.270	0.000	0.000	0.000	-363.673	-20.028	0.000	20.028	-1.884	0.000
120.00	-8.404	-12.489	0.000	0.000	0.000	-321.027	-22.066	0.000	22.066	-2.004	0.000
125.00	-8.281	-11.736	0.000	0.000	0.000	-279.009	-24.229	0.000	24.229	-2.125	0.000
130.00	-8.160	-11.012	0.000	0.000	0.000	-237.606	-26.519	0.000	26.519	-2.245	0.000
135.00	-8.041	-10.315	0.000	0.000	0.000	-196.808	-28.935	0.000	28.935	-2.363	0.000
140.00	-7.925	-9.648	0.000	0.000	0.000	-156.602	-31.472	0.000	31.472	-2.477	0.000
145.00	-7.803	-9.017	0.000	0.000	0.000	-116.980	-34.123	0.000	34.123	-2.581	0.000
145.25	-7.800	-8.983	0.000	0.000	0.000	-115.029	-34.258	0.000	34.258	-2.586	0.000
147.00	-5.407	-6.626	0.000	0.000	0.000	-101.379	-35.212	0.000	35.212	-2.621	0.000
148.50	-5.370	-6.396	0.000	0.000	0.000	-93.269	-36.040	0.000	36.040	-2.650	0.000
150.00	-5.347	-6.289	0.000	0.000	0.000	-85.214	-36.877	0.000	36.877	-2.678	0.000
155.00	-5.252	-5.960	0.000	0.000	0.000	-58.482	-39.763	0.000	39.763	-2.824	0.000
160.00	-3.495	-3.647	0.000	0.000	0.000	-32.224	-42.787	0.000	42.787	-2.938	0.000
165.00	-3.403	-3.422	0.000	0.000	0.000	-14.752	-45.906	0.000	45.906	-3.011	0.000
167.00	-0.605	-0.554	0.000	0.000	0.000	-1.754	-47.171	0.000	47.171	-3.028	0.000
169.00	-0.575	0.000	0.000	0.000	0.000	-0.544	0.000	0.000	48.440	-3.030	0.000

Resulting Stresses

Structure: CT11794-S-SBA
Site Name: East Lyme 1
Height: 169.00 (ft)
Base Elev: 0.000 (ft)

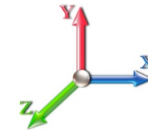
Code: EIA/TIA-222-F
Exposure: C
Gh: 1.69
Struct Class: II

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Load Case: 50 mph Wind with 0" Ice

Dead Load Factor 1.00
Wind Load Factor 1.00



Iterations: 24

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	0.53	0.28	0.00	0.00	0.00	15.03	15.57	52.0	0.299
5.00	0.52	0.29	0.00	0.00	0.00	15.15	15.68	52.0	0.302
10.00	0.51	0.29	0.00	0.00	0.00	15.27	15.79	52.0	0.304
15.00	0.51	0.29	0.00	0.00	0.00	15.39	15.90	52.0	0.306
20.00	0.50	0.30	0.00	0.00	0.00	15.51	16.02	52.0	0.308
25.00	0.49	0.30	0.00	0.00	0.00	15.63	16.13	52.0	0.310
30.00	0.48	0.31	0.00	0.00	0.00	15.75	16.24	52.0	0.312
35.00	0.48	0.31	0.00	0.00	0.00	15.87	16.35	52.0	0.315
40.00	0.47	0.32	0.00	0.00	0.00	15.98	16.46	52.0	0.317
45.00	0.46	0.32	0.00	0.00	0.00	16.09	16.57	52.0	0.319
46.50	0.46	0.32	0.00	0.00	0.00	16.13	16.60	52.0	0.319
50.00	0.45	0.33	0.00	0.00	0.00	16.20	16.66	52.0	0.320
53.25	0.42	0.32	0.00	0.00	0.00	15.66	16.09	52.0	0.310
55.00	0.42	0.32	0.00	0.00	0.00	15.69	16.12	52.0	0.310
60.00	0.41	0.33	0.00	0.00	0.00	15.76	16.18	52.0	0.311
65.00	0.40	0.34	0.00	0.00	0.00	15.83	16.24	52.0	0.312
70.00	0.40	0.34	0.00	0.00	0.00	15.88	16.29	52.0	0.313
75.00	0.39	0.35	0.00	0.00	0.00	15.92	16.32	52.0	0.314
80.00	0.38	0.36	0.00	0.00	0.00	15.94	16.34	52.0	0.314
85.00	0.38	0.36	0.00	0.00	0.00	15.94	16.33	52.0	0.314
90.00	0.37	0.37	0.00	0.00	0.00	15.91	16.30	52.0	0.313
95.00	0.36	0.38	0.00	0.00	0.00	15.85	16.23	52.0	0.312
100.00	0.39	0.44	0.00	0.00	0.00	17.47	17.87	52.0	0.344
105.00	0.38	0.45	0.00	0.00	0.00	17.26	17.66	52.0	0.340
110.00	0.38	0.47	0.00	0.00	0.00	16.97	17.36	52.0	0.334
115.00	0.37	0.48	0.00	0.00	0.00	16.58	16.98	52.0	0.327
120.00	0.37	0.50	0.00	0.00	0.00	16.08	16.47	52.0	0.317
125.00	0.36	0.51	0.00	0.00	0.00	15.42	15.81	52.0	0.304
130.00	0.36	0.53	0.00	0.00	0.00	14.56	14.95	52.0	0.288
135.00	0.35	0.56	0.00	0.00	0.00	13.45	13.84	52.0	0.266
140.00	0.35	0.58	0.00	0.00	0.00	12.01	12.40	52.0	0.239
145.00	0.35	0.61	0.00	0.00	0.00	10.14	10.54	52.0	0.203
145.25	0.35	0.61	0.00	0.00	0.00	10.04	10.44	52.0	0.201
147.00	0.26	0.43	0.00	0.00	0.00	9.25	9.54	52.0	0.184
148.50	0.50	0.85	0.00	0.00	0.00	16.63	17.20	52.0	0.331
150.00	0.50	0.86	0.00	0.00	0.00	15.80	16.37	52.0	0.315
155.00	0.51	0.91	0.00	0.00	0.00	12.41	13.01	52.0	0.250
160.00	0.34	0.65	0.00	0.00	0.00	7.90	8.31	52.0	0.160
165.00	0.34	0.68	0.00	0.00	0.00	4.23	4.72	52.0	0.091
167.00	0.06	0.13	0.00	0.00	0.00	0.54	0.63	52.0	0.012
169.00	0.00	0.12	0.00	0.00	0.00	0.18	0.28	52.0	0.005

Final Analysis Summary

Structure: CT11794-S-SBA
Site Name: East Lyme 1
Height: 169.00 (ft)
Base Elev: 0.000 (ft)

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

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Reactions

Load Case	Shear FX (kips)	Shear FZ (kips)	Axial FY (kips)	Moment MX (ft-kips)	Moment MY (ft-kips)	Moment MZ (ft-kips)
85 mph Wind with 0" Ice	33.5	0.00	43.61	0.00	0.00	4416.44
73.61 mph Wind with 0.5" Ice	26.6	0.00	50.58	0.00	0.00	3572.93
50 mph Wind with 0" Ice	11.6	0.00	43.66	0.00	0.00	1531.70

Max Stresses

Load Case	fa Axial (Y) (ksi)	fvx Shear (X) (ksi)	fvz Shear (Z) (ksi)	fvT Torsion (ksi)	fbx Bending (X) (ksi)	fbz Bending (Z) (ksi)	Combined Stress (ksi)	Allowable Stress (ksi)	Elev (ft)	Stress Ratio
85 mph Wind with 0" Ice	0.35	1.28	0.00	0.00	0.00	50.20	50.59	52.0	100.00	0.973
73.61 mph Wind with 0.5" Ice	0.46	1.04	0.00	0.00	0.00	41.15	41.65	52.0	100.00	0.801
50 mph Wind with 0" Ice	0.39	0.44	0.00	0.00	0.00	17.47	17.87	52.0	100.00	0.344



Monopole Mat Foundation Design

Date

1/20/2016

Customer Name:	Verizon	EIA/TIA Standard:	EIA-222-F
Site Name:		Structure Height (Ft.):	169
Site Number:	CT11794-S-SBA	Engineer Name:	T. Alajaj
Engr. Number:	20096	Engineer Login ID:	

Foundation Info Obtained from:

Drawings/Calculations

Structure Type:

Monopole

Analysis or Design?

Analysis

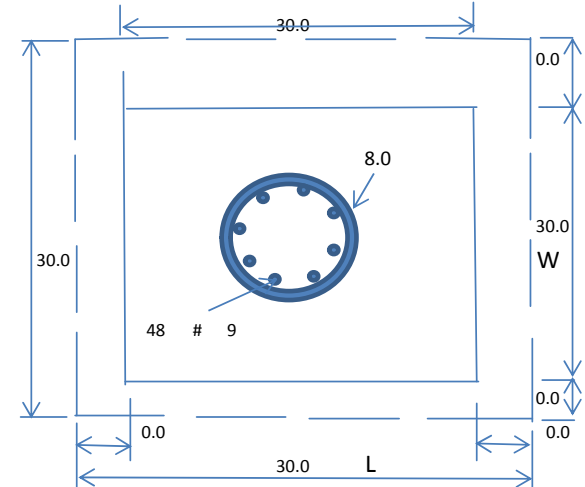
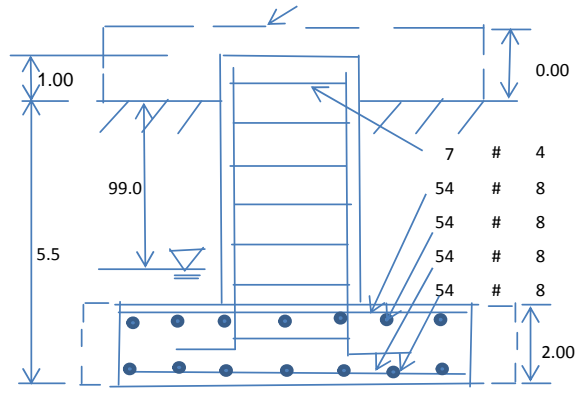
Base Reactions (Unfactored)

Axial Load (Kips):	43.6	Shear Force (Kips):	33.5
Uplift Force (Kips):	0.0	Moment (Kips-ft):	4416.4

Allowable overstress %: 5.0%

Foundation Geometries:

		Mods required -Yes/No ?:	No
Diameter of Pier (ft.):	8.0	Depth of Base BG (ft.):	5.5
Pier Height A. G. (ft.):	1.00	Thickness of Pad (ft):	2.00
Length of Pad (ft.):	30	Width of Pad (ft.):	30
Final Length of pad (ft)	30.0	Final width of pad (ft):	30.0
Control Value for Cell D18:	0	Control Value for Cell F18:	0



Material Properties and Rebar Info:

Concrete Strength (psi):	4000	Steel Elastic Modulus:	29000	ksi
Vertical bar yield (ksi)	60	Tie steel yield (ksi):	60	
Vertical Rebar Size #:	9	Tie / Stirrup Size #:	4	
Qty. of Vertical Rebars:	48	Tie Spacing (in):	12.0	
Pad Rebar Yield (Ksi):	60	Pad Steel Rebar Size (#):	8	
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):	54	Qty. of Rebar in Pad (W):	54	
Rebar at the top of the concrete pad:				
Qty. of Rebar in Pad (L):	54	Qty. of Rebar in Pad (W):	54	

Apply 1.35 factor for e/w Per G: 1.35

Soil Design Parameters:

Soil Unit Weight (pcf):	120.0	Soil Buoyant Weight:	50.0	Pcf
Water Table B.G.S. (ft):	99.0	Unit Weight of Water:	62.4	pcf
Allowable Net Soil Bearing (psf):	15000	Allowable Skin Friction:	0	Psf
Consider Friction for O.T.M. (Y/N):	No	Consider Friction for bearing (Y/N):	No	
Consider soil hori. force for O.T.M.:	No	Reduction factor on the maximum soil bearing pressure:	1.00	
		Angle from Top of Pad:	30	
		Angle from Bottm of Pad:	25	
		Angle from Bottm of Pad:	25	

Foundation Analysis and Design:

Total Dry Soil Volume (cu. Ft.):	2974.07	Total Dry Soil Weight (Kips):	356.89
Total Buoyant Soil Volume (cu. Ft.):	0.00	Total Buoyant Soil Weight (Kips):	0.00
Total Effective Soil Weight (Kips):	356.89	Weight from the Concrete Block at Top (K):	0.00
Total Dry Concrete Volume (cu. Ft.):	2026.19	Total Dry Concrete Weight (Kips):	303.93
Total Buoyant Concrete Volume (cu. Ft.):	0.00	Total Buoyant Concrete Weight (Kips):	0.00
Total Effective Concrete Weight (Kips):	303.93	Total Vertical Load on Base (Kips):	704.43

Check Soil Capacities:

Calculated Maxium Net Soil Pressure under the base (psf):	1739	<	Allowable Soil Bearing (psf):	15000	0.12	OK!
Allowable Foundation Overturning Resistance (SF=1.5, kips-ft.):	7044.3	>	Applied Momnt (kips-ft):	4634	0.66	OK!
Factor of Safety Against Overturning (O. R. Moment/Design Moment):	2.28					OK!

Load/
Capacity
Ratio

Check the capacities of Reinforcing Concrete:

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

Load/
Capacity
Ratio

(1) Concrete Pier:

Vertical Steel Rebar Area (sq. in./each):	1.00	Tie / Stirrup Area (sq. in./each):	0.20		
Calculated Moment Capacity (Mn,Kips-Ft):	9280.8	> Design Factored Moment (Mu, Kips-Ft):	4567.2	0.49	OK!
Calculated Shear Capacity (Kips):	840.3	> Design Factored Shear (Kips):	43.6	0.05	OK!
Calculated Tension Capacity (Tn, Kips):	2592.0	> Design Factored Tension (Tu Kips):	0.0	0.00	OK!
Calculated Compression Capacity (Pn, Kips):	12712.3	> Design Factored Axial Load (Pu Kips):	56.7	0.00	OK!
Moment & Axial Strength Combination:	0.49	OK! Check Tie Spacing (Design/Required):		1	OK!
Pier Reinforcement Ratio:	0.007	Reinforcement Ratio is satisfied per ACI			

(2).Concrete Pad:

One-Way Design Shear Capacity (L-Direction, Kips):	700.1	> One-Way Factored Shear (L-D. Kips):	304.9	0.44	OK!
One-Way Design Shear Capacity (W-Direction, Kips):	700.1	> One-Way Factored Shear (W-D., Kips)	304.9	0.44	OK!
One-Way Design Shear Capacity (Corner-Corner. Kips):	803.4	> One-Way Factored Shear (C-C, Kips):	405.4	0.50	OK!
Lower Steel Pad Reinforcement Ratio (L-Direct.):	0.0058	OK! Lower Steel Pad Reinf. Ratio (W-Direct	0.0058		
Lower Steel Pad Moment Capacity (L-Direction. Kips-ft):	3734.7	> Moment at Bottom (L-Direct. K-Ft):	1089.5	0.29	OK!
Lower Steel Pad Moment Capacity (W-Direction. Kips-ft):	3734.7	> Moment at Bottom (W-Direct. K-Ft):	1089.5	0.29	OK!
Lower Steel Pad Moment Capacity (Corner-Corner,K-ft):	5215.6	> Moment at Bottom (C-C Dir. K-Ft):	1540.7	0.30	OK!
Upper Steel Pad Reinforcement Ratio (L-Direct.):	0.0058	OK! Upper Steel Reinf. Ratio (W-Direct.):	0.0058		
Upper Steel Pad Moment Capacity (L-Direction. Kips-ft):	3734.7	> Moment at the top (L-Dir Kips-Ft):	196.9	0.05	OK!
Upper Steel Pad Moment Capacity (W-Direction. Kips-ft):	3734.7	> Moment at the top (W-Dir Kips-Ft):	196.9	0.05	OK!
Upper Steel Pad Moment Capacity (Corner-Corner. K-ft):	5215.6	> Moment at the top (C-C Direc. K-Ft):	1046.8	0.20	OK!

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

T-Mobile Existing Facility

Site ID: CTNL805B

Amtrak East Lyme
49 Brainerd Road
East Lyme, CT 06357

July 21, 2016

Site Compliance Summary	
Compliance Status:	COMPLIANT
Site total MPE% of FCC general public allowable limit:	41.27 %

July 21, 2016

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

Emissions Analysis for Site: **CTNL805B – Amtrak East Lyme**

EBI Consulting was directed to analyze the proposed T-Mobile facility located at **49 Brainerd Road, East Lyme, 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 1900 MHz (PCS) and 2100 MHz (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 **49 Brainerd Road, East Lyme, 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 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.
- 4) 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
- 5) 1 LTE channel (700 MHz Band) was considered for each sector of the proposed installation. This channel has a transmit power of 30 Watts.

- 6) 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.
- 7) 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.
- 8) The antennas used in this modeling are the **Ericsson AIR21 B2A/B4P** & **Ericsson AIR21 B4A/B2P** 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 B2A/B4P** has a maximum gain of **15.9 dBd** at its main lobe at 1900 MHz and 2100 MHz. The **Ericsson AIR21 B4A/B2P** 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. 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.
- 9) The antenna mounting height centerline of the proposed antennas is **160 feet** above ground level (AGL).
- 10) 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.
- 11) 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 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):	160	Height (AGL):	160	Height (AGL):	160
Frequency Bands	1900 MHz(PCS) / 2100 MHz (AWS)	Frequency Bands	1900 MHz(PCS) / 2100 MHz (AWS)	Frequency Bands	1900 MHz(PCS) / 2100 MHz (AWS)
Channel Count	2	Channel Count	2	Channel Count	2
Total TX Power(W):	120	Total TX Power(W):	120	Total TX Power(W):	120
ERP (W):	4,668.54	ERP (W):	4,668.54	ERP (W):	4,668.54
Antenna A1 MPE%	0.71	Antenna B1 MPE%	0.71	Antenna C1 MPE%	0.71
Antenna #:	2	Antenna #:	2	Antenna #:	2
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):	160	Height (AGL):	160	Height (AGL):	160
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):	120	Total TX Power(W):	120	Total TX Power(W):	120
ERP (W):	4,668.54	ERP (W):	4,668.54	ERP (W):	4,668.54
Antenna A2 MPE%	0.71	Antenna B2 MPE%	0.71	Antenna C2 MPE%	0.71
Antenna #:	3	Antenna #:	3	Antenna #:	3
Make / Model:	Commscope LNX-6515DS-VTM	Make / Model:	Commscope LNX-6515DS-VTM	Make / Model:	Commscope LNX-6515DS-VTM
Gain:	14.6 dBd	Gain:	14.6 dBd	Gain:	14.6 dBd
Height (AGL):	160	Height (AGL):	160	Height (AGL):	160
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%	0.28	Antenna B3 MPE%	0.28	Antenna C3 MPE%	0.28

Site Composite MPE%	
Carrier	MPE%
T-Mobile (Per Sector Max)	1.70 %
AT&T	5.42 %
Verizon Wireless	34.15 %
Site Total MPE %:	41.27 %

T-Mobile Sector A Total:	1.70 %
T-Mobile Sector B Total:	1.70 %
T-Mobile Sector C Total:	1.70 %
Site Total:	41.27 %

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 AWS - 2100 MHz LTE	2	2,334.27	160	7.08	AWS - 2100 MHz	1000	0.71%
T-Mobile PCS - 1950 MHz UMTS	2	1,167.14	160	3.54	PCS - 1950 MHz	1000	0.35%
T-Mobile PCS - 1950 MHz GSM	2	1,167.14	160	3.54	PCS - 1950 MHz	1000	0.35%
T-Mobile 700 MHz LTE	1	865.21	160	1.31	700 MHz	467	0.28%
						Total:	1.70%

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:	1.70 %
Sector B:	1.70 %
Sector C:	1.70 %
T-Mobile Per Sector Maximum:	1.70 %
Site Total:	41.27 %
Site Compliance Status:	COMPLIANT

The anticipated composite MPE value for this site assuming all carriers present is **41.27%** 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.

SITE NAME: AMTRAK EAST LYME

49 BRAINERD RD
EAST LYME CT, 06357

SITE NUMBER: CTNL805B

RF DESIGN GUIDELINE: 702Cu

T-MOBILE TECHNICIAN SITE SAFETY NOTES

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

GENERAL NOTES

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

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

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

SPECIAL STRUCTURAL NOTES

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

STRUCTURAL DESIGNS AND DETAILS FOR ANTENNA MOUNTS AND GLOBAL STRUCTURAL STABILITY ANALYSIS COMPLETED BY HUDSON DESIGN ON BEHALF OF T-MOBILE ARE INCLUSIVE OF THE ENTIRE SUPPORT STRUCTURE, EXISTING ANTENNA MOUNTS AND ALL OTHER ASPECTS OF THE STRUCTURE THAT WILL SUPPORT THE T-MOBILE L-700 EQUIPMENT DEPLOYMENT AS DEPICTED HEREIN.

HUDSON DESIGN ASSUMES THAT THE TOWER IS PROPERLY CONSTRUCTED AND MAINTAINED. ALL STRUCTURAL MEMBERS AND THEIR CONNECTION ARE ASSUMED TO BE IN GOOD CONDITION AND ARE FREE FROM DEFECTS WITH NO DETERIORATION TO ITS MEMBER CAPACITIES



PROJECT SUMMARY

SCOPE OF WORK: UNMANNED TELECOMMUNICATIONS FACILITY T-MOBILE EQUIPMENT MODERNIZATION

ZONING JURISDICTION: BASED ON INFORMATION PROVIDED BY T-MOBILE, REGULATORY COMPLIANCE AND LEGAL COUNSEL, THIS TELECOMMUNICATIONS EQUIPMENT DEPLOYMENT IS CONSIDERED AN ELIGIBLE FACILITY UNDER THE MIDDLE CLASS TAX RELIEF AND JOB CREATION ACT OF 2012, 47 USC 1455(A), SECTION 6409 AND IS SUBJECT TO AN ELIGIBLE FACILITIES REQUEST EXPEDITED REVIEW AND LIMITED/PARTIAL ZONING PRE-EMPTION FOR LOCAL DISCRETIONARY PERMITS (VARIANCE, SPECIAL PERMIT, SITE PLAN REVIEW OR ADMINISTRATIVE REVIEW)..

SITE ADDRESS: 49 BRAINERD RD
EAST LYME CT, 06357

LATITUDE: 41.30259

LONGITUDE: -72.22570

JURISDICTION: NATIONAL, STATE & LOCAL CODES OR ORDINANCES

CURRENT USE: TELECOMMUNICATIONS FACILITY

PROPOSED USE: TELECOMMUNICATIONS FACILITY

TOWER OWNER: SBA TOWERS V, LLC

SBA SITE ID: CT11794-S

SBA SITE NAME: EAST LYME 1

SBA REGIONAL SITE MANAGER: STEPHEN ROTH
PHONE: 860-539-4920
sroth@sbasite.com

APPROVALS

APPROVALS	DATE
PROJECT MANAGER	DATE
CONSTRUCTION	DATE
RF ENGINEERING	DATE
ZONING / SITE ACQ.	DATE
OPERATIONS	DATE
TOWER OWNER	DATE



CALL
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OR CALL 811

UNDERGROUND SERVICE ALERT

DRAWING INDEX

SHEET NO.	DESCRIPTION	REV.
T-1	TITLE SHEET	1
GN-1	GENERAL NOTES	1
A-1	COMPOUND PLAN & ELEVATION	1
A-2	EXISTING & PROPOSED ANTENNA PLANS	1
A-3	EQUIPMENT DETAILS	1
E-1	ONE-LINE DIAGRAM AND GROUNDING DETAILS	1

T-MOBILE NORTHEAST LLC

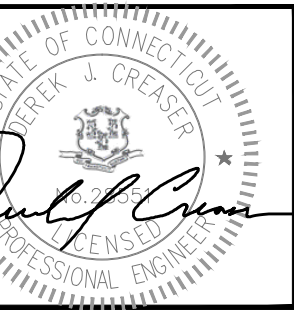
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1600 OSGOOD STREET
BUILDING 20 NORTH, SUITE 3090
N. ANDOVER, MA 01845
TEL: (978) 557-5553
FAX: (978) 336-5586



CHECKED BY: BB

APPROVED BY: DJC

SUBMITTALS

REV.	DATE	DESCRIPTION	BY
1	07/28/16	CONSTRUCTION FINAL	DJM
0	07/26/16	ISSUED FOR CONSTRUCTION	SB

SITE NUMBER:

CTNL805B

SITE NAME:

AMTRAK EAST LYME

SITE ADDRESS:

49 BRAINERD RD
EAST LYME CT, 06357
NEW LONDON COUNTY

SHEET TITLE

TITLE SHEET

SHEET NUMBER

T-1

GROUNDING NOTES

1. THE SUBCONTRACTOR SHALL REVIEW AND INSPECT THE EXISTING FACILITY GROUNDING SYSTEM AND LIGHTNING PROTECTION SYSTEM (AS DESIGNED AND INSTALLED) FOR STRICT COMPLIANCE WITH THE NEC (AS ADOPTED BY THE AHJ), THE SITE-SPECIFIC (UL, LPI, OR NFPA) LIGHTING PROTECTION CODE, AND GENERAL COMPLIANCE WITH TELCORDIA AND TIA GROUNDING STANDARDS. THE SUBCONTRACTOR SHALL REPORT ANY VIOLATIONS OR ADVERSE FINDINGS TO THE CONTRACTOR FOR RESOLUTION.
2. ALL GROUND ELECTRODE SYSTEMS (INCLUDING TELECOMMUNICATION, RADIO, LIGHTNING PROTECTION, AND AC POWER GES'S) SHALL BE BONDED TOGETHER, AT OR BELOW GRADE, BY TWO OR MORE COPPER BONDING CONDUCTORS IN ACCORDANCE WITH THE NEC.
3. THE SUBCONTRACTOR SHALL PERFORM IEEE FALL-OF-POTENTIAL RESISTANCE TO EARTH TESTING (PER IEEE 1100 AND 81) FOR NEW GROUND ELECTRODE SYSTEMS. THE SUBCONTRACTOR SHALL FURNISH AND INSTALL SUPPLEMENTAL GROUND ELECTRODES AS NEEDED TO ACHIEVE A TEST RESULT OF 5 OHMS OR LESS.
4. METAL RACEWAY SHALL NOT BE USED AS THE NEC REQUIRED EQUIPMENT GROUND CONDUCTOR. STRANDED COPPER CONDUCTORS WITH GREEN INSULATION, SIZED IN ACCORDANCE WITH THE NEC, SHALL BE FURNISHED AND INSTALLED WITH THE POWER CIRCUITS TO BTS EQUIPMENT.
5. EACH BTS CABINET FRAME SHALL BE DIRECTLY CONNECTED TO THE MASTER GROUND BAR WITH GREEN INSULATED SUPPLEMENTAL EQUIPMENT GROUND WIRES, 6 AWG STRANDED COPPER OR LARGER FOR INDOOR BTS 2 AWG STRANDED COPPER FOR OUTDOOR BTS.
6. EXOTHERMIC WELDS SHALL BE USED FOR ALL GROUNDING CONNECTIONS BELOW GRADE.
7. APPROVED ANTIOXIDANT COATINGS (I.E., CONDUCTIVE GEL OR PASTE) SHALL BE USED ON ALL COMPRESSION AND BOLTED GROUND CONNECTIONS.
8. ICE BRIDGE BONDING CONDUCTORS SHALL BE EXOTHERMICALLY BONDED OR BOLTED TO GROUND BAR.
9. ALUMINUM CONDUCTOR OR COPPER CLAD STEEL CONDUCTOR SHALL NOT BE USED FOR GROUNDING CONNECTIONS.
10. MISCELLANEOUS ELECTRICAL AND NON-ELECTRICAL METAL BOXES, FRAMES AND SUPPORTS SHALL BE BONDED TO THE GROUND RING, IN ACCORDANCE WITH THE NEC.
11. METAL CONDUIT SHALL BE MADE ELECTRICALLY CONTINUOUS WITH LISTED BONDING FITTINGS OR BY BONDING ACROSS THE DISCONTINUITY WITH 6 AWS COPPER WIRE UL APPROVED GROUNDING TYPE CONDUIT CLAMPS.
12. ALL NEW STRUCTURES WITH A FOUNDATION AND/OR FOOTING HAVING 20 FT. OR MORE OF 1/2 IN. OR GREATER ELECTRICALLY CONDUCTIVE REINFORCING STEEL MUST HAVE IT BONDED TO THE GROUND RING USING AN EXOTHERMIC WELD CONNECTION USING #2 AWG SOLID BARE TINNED COPPER GROUND WIRE, PER NEC 250.50

GENERAL NOTES

1. FOR THE PURPOSE OF CONSTRUCTION DRAWING, THE FOLLOWING DEFINITIONS SHALL APPLY:
 CONTRACTOR – SBA COMMUNICATIONS CORP.
 SUBCONTRACTOR – GENERAL CONTRACTOR (CONSTRUCTION)
 OWNER – T-MOBILE
2. PRIOR TO THE SUBMISSION OF BIDS, THE BIDDING SUBCONTRACTOR SHALL VISIT THE CELL SITE TO FAMILIARIZE WITH THE EXISTING CONDITIONS AND TO CONFIRM THAT THE WORK CAN BE ACCOMPLISHED AS SHOWN ON THE CONSTRUCTION DRAWINGS. ANY DISCREPANCY FOUND SHALL BE BROUGHT TO THE ATTENTION OF CONTRACTOR.
3. ALL MATERIALS FURNISHED AND INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS, AND ORDINANCES. SUBCONTRACTOR SHALL ISSUE ALL APPROPRIATE NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS, AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY REGARDING THE PERFORMANCE OF THE WORK. ALL WORK CARRIED OUT SHALL COMPLY WITH ALL APPLICABLE MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS AND LOCAL JURISDICTIONAL CODES, ORDINANCES AND APPLICABLE REGULATIONS.
4. DRAWINGS PROVIDED HERE ARE NOT TO BE SCALED AND ARE INTENDED TO SHOW OUTLINE ONLY.
5. UNLESS NOTED OTHERWISE, THE WORK SHALL INCLUDE FURNISHING MATERIALS, EQUIPMENT, APPURTENANCES, AND LABOR NECESSARY TO COMPLETE ALL INSTALLATIONS AS INDICATED ON THE DRAWINGS.
6. "KITTING LIST" SUPPLIED WITH THE BID PACKAGE IDENTIFIES ITEMS THAT WILL BE SUPPLIED BY CONTRACTOR. ITEMS NOT INCLUDED IN THE BILL OF MATERIALS AND KITTING LIST SHALL BE SUPPLIED BY THE SUBCONTRACTOR.
7. THE SUBCONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.
8. IF THE SPECIFIED EQUIPMENT CANNOT BE INSTALLED AS SHOWN ON THESE DRAWINGS, THE SUBCONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION SPACE FOR APPROVAL BY THE CONTRACTOR.
9. SUBCONTRACTOR SHALL DETERMINE ACTUAL ROUTING OF CONDUIT, POWER AND T1 CABLES, GROUNDING CABLES AS SHOWN ON THE POWER, GROUNDING AND TELCO PLAN DRAWING. SUBCONTRACTOR SHALL UTILIZE EXISTING TRAYS AND/OR SHALL ADD NEW TRAYS AS NECESSARY. SUBCONTRACTOR SHALL CONFIRM THE ACTUAL ROUTING WITH THE CONTRACTOR.
10. THE SUBCONTRACTOR SHALL PROTECT EXISTING IMPROVEMENTS, PAVEMENTS, CURBS, LANDSCAPING AND STRUCTURES. ANY DAMAGED PART SHALL BE REPAIRED AT SUBCONTRACTOR'S EXPENSE TO THE SATISFACTION OF OWNER.
11. SUBCONTRACTOR SHALL LEGALLY AND PROPERLY DISPOSE OF ALL SCRAP MATERIALS SUCH AS COAXIAL CABLES AND OTHER ITEMS REMOVED FROM THE EXISTING FACILITY. ANTENNAS REMOVED SHALL BE RETURNED TO THE OWNER'S DESIGNATED LOCATION.
12. SUBCONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION.
13. ALL CONCRETE REPAIR WORK SHALL BE DONE IN ACCORDANCE WITH AMERICAN CONCRETE INSTITUTE (ACI) 301.

14. ANY NEW CONCRETE NEEDED FOR THE CONSTRUCTION SHALL BE AIR-ENTRAINED AND SHALL HAVE 4000 PSI STRENGTH AT 28 DAYS. ALL CONCRETE WORK SHALL BE DONE IN ACCORDANCE WITH ACI 318 CODE REQUIREMENTS.
15. ALL STRUCTURAL STEEL WORK SHALL BE DETAILED, FABRICATED AND ERECTED IN ACCORDANCE WITH AISC SPECIFICATIONS. ALL STRUCTURAL STEEL SHALL BE ASTM A36 (Fy = 36 ksi) UNLESS OTHERWISE NOTED. PIPES SHALL BE ASTM A53 TYPE E (Fy = 36 ksi). ALL STEEL EXPOSED TO WEATHER SHALL BE HOT DIPPED GALVANIZED. TOUCHUP ALL SCRATCHES AND OTHER MARKS IN THE FIELD AFTER STEEL IS ERECTED USING A COMPATIBLE ZINC RICH PAINT.
16. CONSTRUCTION SHALL COMPLY WITH L-700 SPECIFICATIONS AND "GENERAL CONSTRUCTION SERVICES FOR CONSTRUCTION OF T-MOBILE SITES."
17. SUBCONTRACTOR SHALL VERIFY ALL EXISTING DIMENSIONS AND CONDITIONS PRIOR TO COMMENCING ANY WORK. ALL DIMENSIONS OF EXISTING CONSTRUCTION SHOWN ON THE DRAWINGS MUST BE VERIFIED. SUBCONTRACTOR SHALL NOTIFY THE CONTRACTOR OF ANY DISCREPANCIES PRIOR TO ORDERING MATERIAL OR PROCEEDING WITH CONSTRUCTION.
18. THE EXISTING CELL SITE IS IN FULL COMMERCIAL OPERATION. ANY CONSTRUCTION WORK BY SUBCONTRACTOR SHALL NOT DISRUPT THE EXISTING NORMAL OPERATION. ANY WORK ON EXISTING EQUIPMENT MUST BE COORDINATED WITH CONTRACTOR. ALSO, WORK SHOULD BE SCHEDULED FOR AN APPROPRIATE MAINTENANCE WINDOW USUALLY IN LOW TRAFFIC PERIODS AFTER MIDNIGHT.
19. SINCE THE CELL SITE IS ACTIVE, ALL SAFETY PRECAUTIONS MUST BE TAKEN WHEN WORKING AROUND HIGH LEVELS OF ELECTROMAGNETIC RADIATION. EQUIPMENT SHOULD BE SHUTDOWN PRIOR TO PERFORMING ANY WORK THAT COULD EXPOSE THE WORKERS TO DANGER. PERSONAL RF EXPOSURE MONITORS ARE ADVISED TO BE WORN TO ALERT OF ANY DANGEROUS EXPOSURE LEVELS.
20. APPLICABLE BUILDING CODES:
 SUBCONTRACTOR'S WORK SHALL COMPLY WITH ALL APPLICABLE NATIONAL, STATE, AND LOCAL CODES AS ADOPTED BY THE LOCAL AUTHORITY HAVING JURISDICTION (AHJ) FOR THE LOCATION. THE EDITION OF THE AHJ ADOPTED CODES AND STANDARDS IN EFFECT ON THE DATE OF CONTRACT AWARD SHALL GOVERN THE DESIGN.
 BUILDING CODE: 2003 IBC WITH 2005 CT SUPPLEMENT, + 2009 & 2013 CT AMENDMENTS
 ELECTRICAL CODE: REFER TO ELECTRICAL DRAWINGS
 LIGHTENING CODE: REFER TO ELECTRICAL DRAWINGS

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

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

AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC) MANUAL OF STEEL CONSTRUCTION, ASD, FOURTEENTH EDITION;

TELECOMMUNICATIONS INDUSTRY ASSOCIATION (TIA) 222-F, STRUCTURAL STANDARDS FOR STEEL

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

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

ABBREVIATIONS					
AGL	ABOVE GRADE LEVEL	EQ	EQUAL	REQ	REQUIRED
AWG	AMERICAN WIRE GAUGE	GC	GENERAL CONTRACTOR	RF	RADIO FREQUENCY
BBU	BATTERY BACKUP UNIT	GRC	GALVANIZED RIGID CONDUIT	TBD	TO BE DETERMINED
BTCW	BARE TINNED SOLID COPPER WIRE	MGB	MASTER GROUND BAR	TBR	TO BE REMOVED
BGR	BURIED GROUND RING	MIN	MINIMUM	TBRR	TO BE REMOVED AND REPLACED
BTS	BASE TRANSCEIVER STATION	P	PROPOSED	TYP	TYPICAL
E	EXISTING	NTS	NOT TO SCALE	UG	UNDER GROUND
EGB	EQUIPMENT GROUND BAR	RAD	RADIATION CENTER LINE (ANTENNA)	VIF	VERIFY IN FIELD
EGR	EQUIPMENT GROUND RING	REF	REFERENCE		

**T-MOBILE
NORTHEAST LLC**

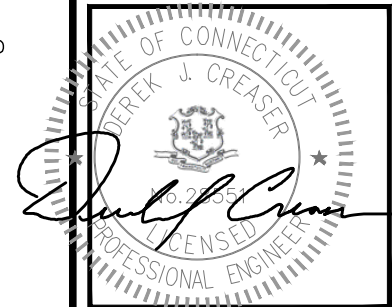
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CHECKED BY: BB

APPROVED BY: DJC

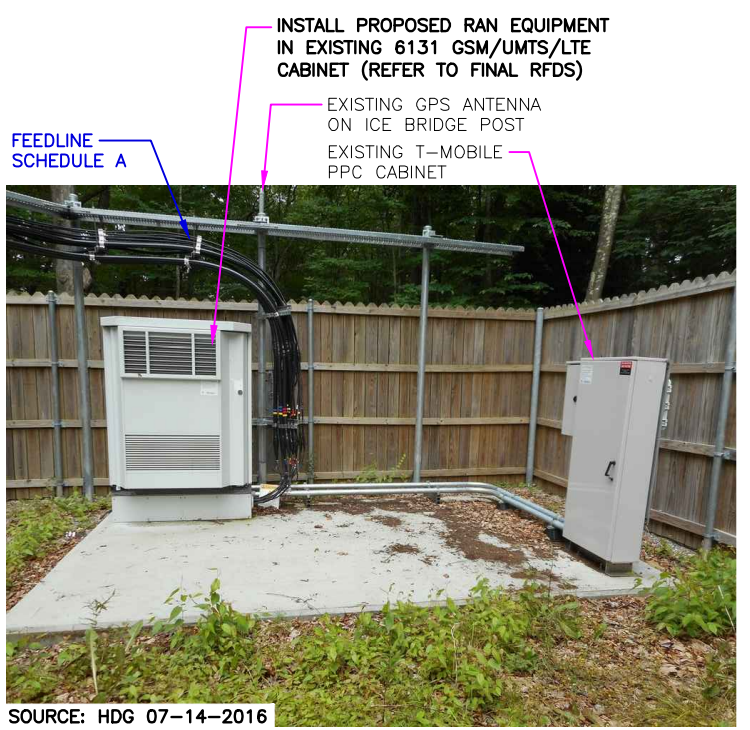
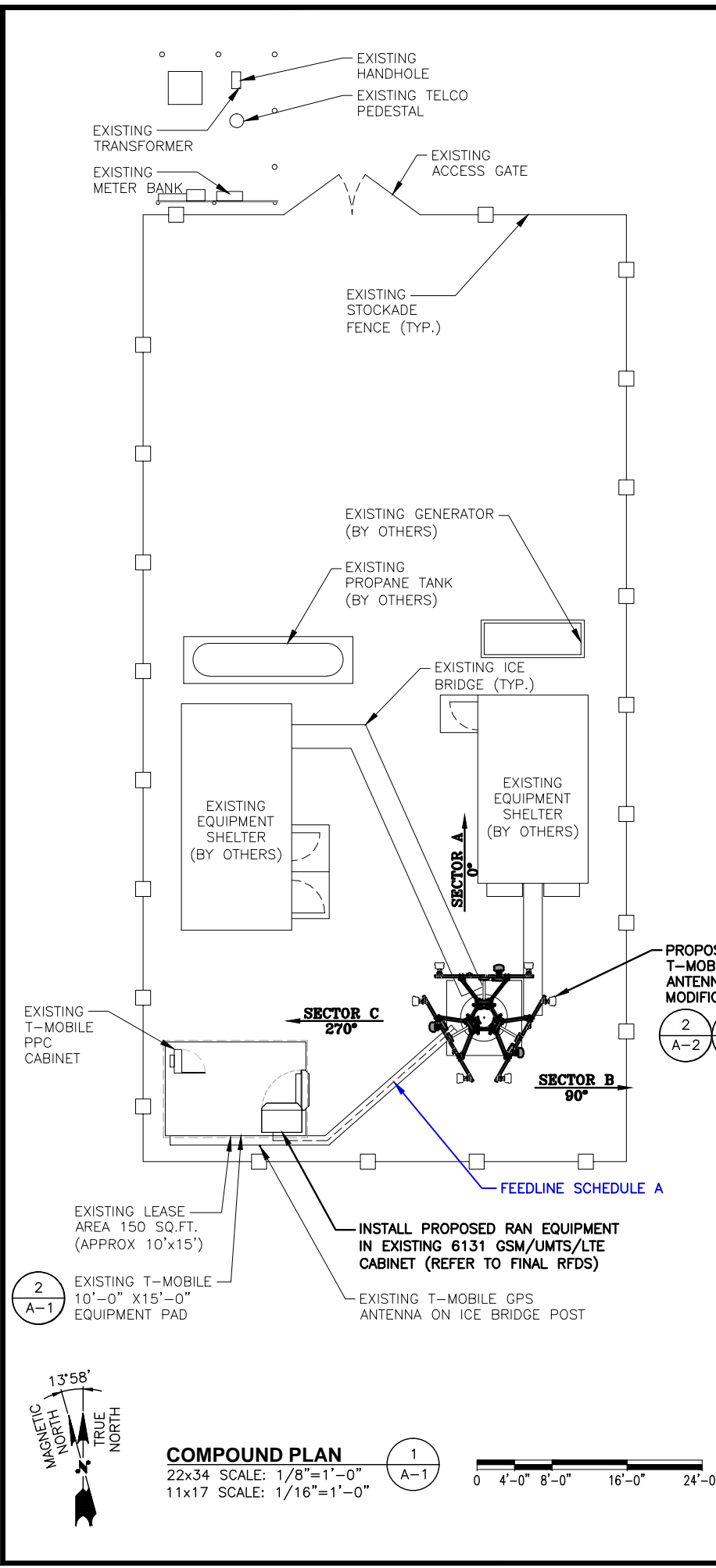
SUBMITTALS

REV.	DATE	DESCRIPTION	BY
1	07/28/16	CONSTRUCTION FINAL	DJM
0	07/26/16	ISSUED FOR CONSTRUCTION	SB

SITE NUMBER:
CTNL805B
 SITE NAME:
AMTRAK EAST LYME
 SITE ADDRESS:
 49 BRAINERD RD
 EAST LYME CT, 06357
 NEW LONDON COUNTY

SHEET TITLE
GENERAL NOTES

SHEET NUMBER
GN-1

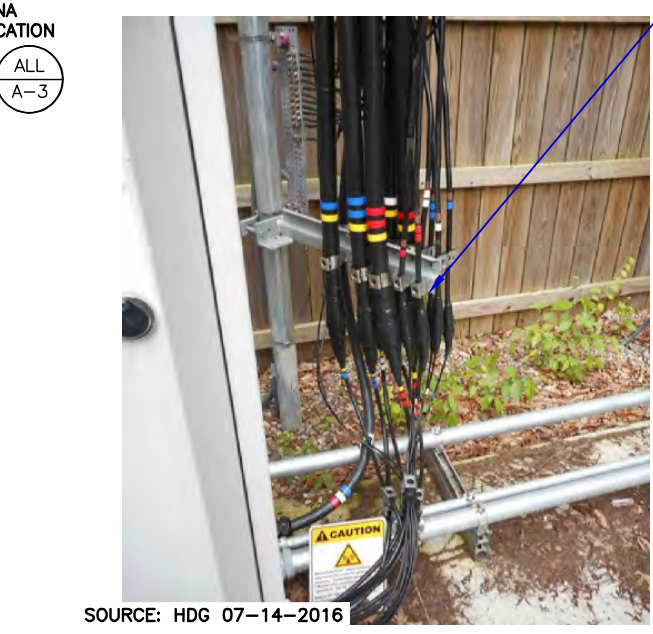


EQUIPMENT PHOTO DETAILS 2A
SCALE: N.T.S. A-1

FEEDLINES

FEEDLINE SCHEDULE	FEEDLINE DESCRIPTION	LOCATION
A	(6) EXISTING ACTIVE 1-5/8" COAX (1) EXISTING ACTIVE 1-5/8" HYBRID TRUNK (6) EXISTING ACTIVE 1/2" LMU	ALONG ICE BRIDGE, INSIDE MONOPOLE

NOTE:
EXISTING T-MOBILE EQUIPMENT FEEDLINE INVENTORY BASED ON OBSERVED FIELD CONDITIONS, RFDS AND FEEDLINE LEASING ENTITLEMENTS MAY DIFFER.



FEEDLINE PHOTO DETAIL 2B
SCALE: N.T.S. A-1

SPECIAL PRE-CONSTRUCTION WORK NOTE:
GENERAL CONTRACTOR SHALL FURNISH AND INSTALL ALL SPECIAL OR SUPPLEMENTAL ADDITIONAL TOWER-MOUNTED EQUIPMENT PER RECOMMENDATIONS FROM SBA-PROVIDED TOWER STRUCTURAL ANALYSIS FOR ANY SPECIAL SHIELDING OF TOWER TOP EQUIPMENT AND FOR ANY SPECIAL FEEDLINE BUNDLING OR RELOCATION.

ANTENNA MOUNT STRUCTURAL ASSESSMENT REQUIREMENT:
ENGINEER OF RECORD HAS MADE A VISUAL ASSESSMENT ONLY OF EXISTING ANTENNA MOUNT ASSEMBLIES, WITHOUT THE BENEFIT OF A RIGOROUS ANTENNA MOUNT STRUCTURAL ANALYSIS AND RECOMMENDS THAT THE EXISTING AND PROPOSED TOWER TOP EQUIPMENT BE INSTALLED AS DEPICTED HEREIN. STRUCTURAL DETAILS AS DEPICTED HEREIN FOR MODIFICATION OF EXISTING ANTENNA MOUNT ASSEMBLIES ARE PRELIMINARY ONLY AND THAT FINAL CONSTRUCTION DETAILS MAY BE SUBJECT TO CHANGE PENDING THE COMPLETION OF A SEPARATE SUPPLEMENTAL ANTENNA MOUNT STRUCTURAL ASSESSMENT, SUPPLEMENTAL STRUCTURAL MAPPING/CONDITIONS ASSESSMENT REPORT AND/OR SUPPLEMENTAL RIGOROUS ANTENNA MOUNT STRUCTURAL ANALYSIS.

STRUCTURAL NOTE:
STRUCTURAL INFORMATION TAKEN FROM STRUCTURAL ANALYSIS REPORT PERFORMED BY TES DATED: JULY 12, 2016

2 A-2 ALL A-3
☉ OF EXISTING T-MOBILE T-ARMS
ELEV. = 160.0'± A.G.L. (SBA*)



ELEVATION PHOTO DETAIL 3
SCALE: N.T.S. A-1

T-MOBILE NORTHEAST LLC

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STATE OF CONNECTICUT
DEREK J. CREASER
No. 2735
LICENSED PROFESSIONAL ENGINEER

CHECKED BY: BB

APPROVED BY: DJC

SUBMITTALS

REV.	DATE	DESCRIPTION	BY
1	07/28/16	CONSTRUCTION FINAL	DJM
0	07/26/16	ISSUED FOR CONSTRUCTION	SB

SITE NUMBER:
CTNL805B

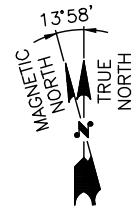
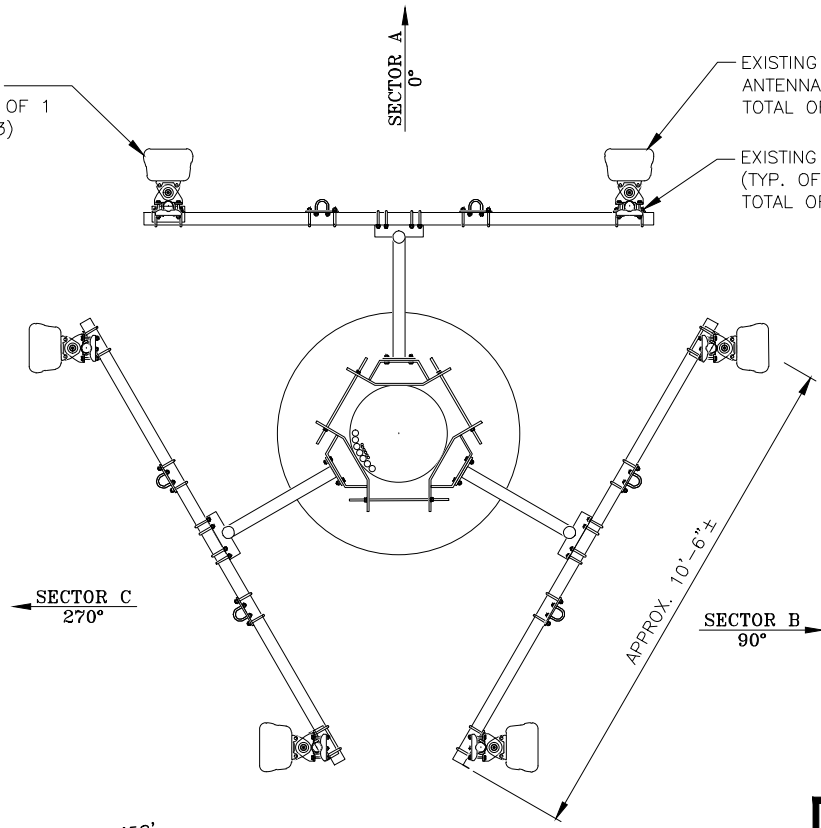
SITE NAME:
AMTRAK EAST LYME

SITE ADDRESS:
49 BRAINERD RD
EAST LYME CT, 06357
NEW LONDON COUNTY

SHEET TITLE
COMPOUND PLAN & ELEVATION

SHEET NUMBER
A-1

EXISTING T-MOBILE AIR21 B2A/B4P ANTENNA (TYP. OF 1 PER SECTOR, TOTAL OF 3) (TO REMAIN)



EXISTING ANTENNA PLAN (1/A-2)
22x34 SCALE: N.T.S.

EXISTING T-MOBILE AIR21 B4A/B2P ANTENNA (TYP. OF 1 PER SECTOR, TOTAL OF 3) (TO REMAIN)
EXISTING T-MOBILE TWIN TMA (TYP. OF 1 PER SECTOR, TOTAL OF 3) (TO REMAIN)

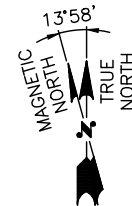
EXISTING T-MOBILE AIR21 B2A/B4P ANTENNA (TYP. OF 1 PER SECTOR, TOTAL OF 3)
PROPOSED 13' LONG 2" SCH. 40 (2.38" O.D.) PIPE TO ACT AS AN UPPER HANDRAIL (TYP. OF 1 PER SECTOR, TOTAL OF 3)

SEE FEEDLINE SCHEDULE A

PROPOSED T-MOBILE L700 ANTENNA ATTACHED TO PROPOSED PIPE MAST (TYP. OF 1 PER SECTOR, TOTAL OF 3)

PROPOSED PIPE TO PIPE CROSS-OVER PLATE (SITEPRO SP219 OR EQUIVALENT) (TYP. OF 4 PER SECTOR, TOTAL OF 12)

STRUCTURAL NOTE:
STRUCTURAL INFORMATION TAKEN FROM STRUCTURAL ANALYSIS REPORT PERFORMED BY TES DATED: JULY 12, 2016



PROPOSED ANTENNA PLAN (2/A-2)
22x34 SCALE: N.T.S.

PROPOSED T-MOBILE RRU ON BACK OF PIPE MAST (TYP. OF 1 PER SECTOR, TOTAL OF 3) (2,5,6/A-3)

EXISTING T-MOBILE AIR21 B4A/B2P ANTENNA (TYP. OF 1 PER SECTOR, TOTAL OF 3)
EXISTING T-MOBILE TWIN TMA (TYP. OF 1 PER SECTOR, TOTAL OF 3)

PROPOSED COMMSCOPE V-STABILIZER PART # VSR-MS-B (7/A-3)

(ALL RF-1) (1,2/A-3)

(3/A-3)

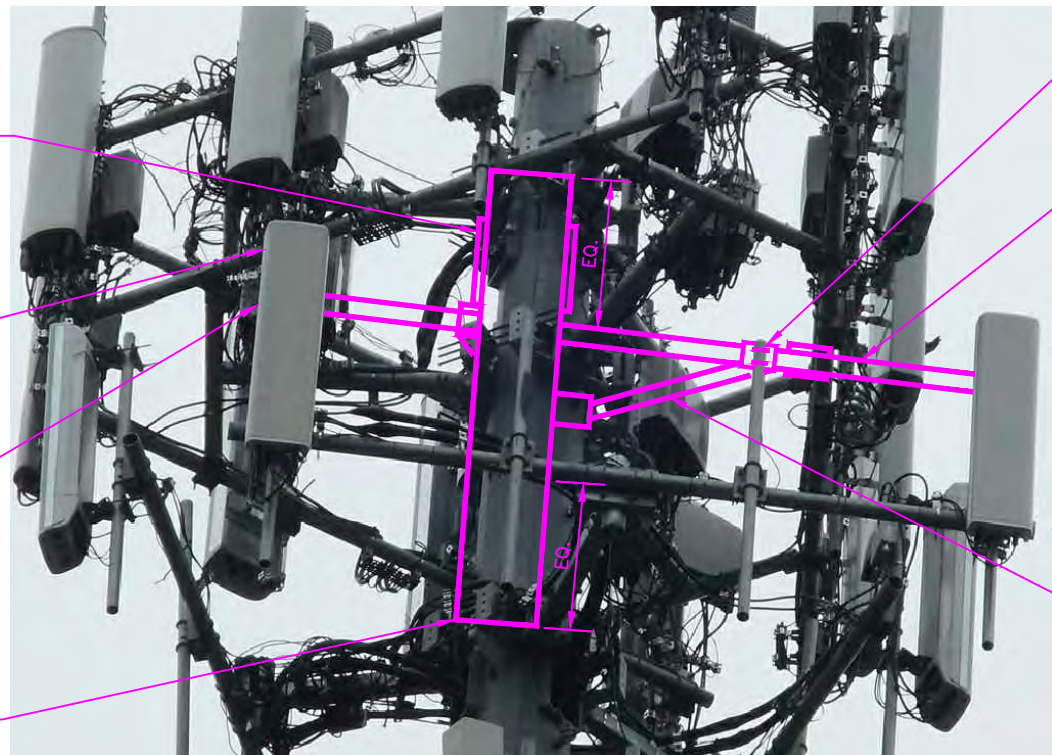
(2/A-2)

(2,5/A-3) PROPOSED T-MOBILE RRU ON BACK OF PROPOSED PIPE MAST (TYP. OF 1 PER SECTOR, TOTAL OF 3)

EXISTING T-MOBILE ANTENNAS (TYP. OF 2 PER SECTOR, TOTAL OF 6)

EXISTING T-MOBILE UMTS TMA (TYP. OF 1 PER SECTOR, TOTAL OF 3)

(1,2/A-3) PROPOSED T-MOBILE L700 ANTENNA ATTACHED TO PROPOSED PIPE MAST (TYP. OF 1 PER SECTOR, TOTAL OF 3)



PROPOSED PIPE TO PIPE CROSS-OVER PLATE (SITEPRO SP219 OR EQUIVALENT) (TYP. OF 4 PER SECTOR, TOTAL OF 12) (3/A-3)

PROPOSED 13' LONG 2" SCH. 40 (2.38" O.D.) PIPE TO ACT AS AN UPPER HANDRAIL (TYP. OF 1 PER SECTOR, TOTAL OF 3) MOUNTED IMMEDIATELY BELOW AIR21 ANTENNA MOUNTING BRACKET.

PROPOSED COMMSCOPE V-STABILIZER PART # VSR-MS-B (7/A-3)

PROPOSED ANTENNA PHOTO DETAIL (3/A-2)
22x34 SCALE: N.T.S.

NOTE:
AT TIME OF CONSTRUCTION, CONTRACTOR TO VERIFY AZIMUTHS OF EXISTING ANTENNAS. IF DIFFERENT FROM RFDS, PLEASE NOTIFY THE RF ENGINEER AND CONSTRUCTION MANAGER WITH ACTUAL AZIMUTH TO ENSURE T-MOBILE'S DATABASE IS ACCURATE AND UP-TO-DATE.

SPECIAL PRE-CONSTRUCTION WORK NOTE:
GENERAL CONTRACTOR SHALL FURNISH AND INSTALL ALL SPECIAL OR SUPPLEMENTAL ADDITIONAL TOWER-MOUNTED EQUIPMENT PER RECOMMENDATIONS FROM SBA-PROVIDED TOWER STRUCTURAL ANALYSIS FOR ANY SPECIAL SHIELDING OF TOWER TOP EQUIPMENT AND FOR ANY SPECIAL FEEDLINE BUNDLING OR RELOCATION.

ANTENNA MOUNT STRUCTURAL ASSESSMENT REQUIREMENT:
ENGINEER OF RECORD HAS MADE A VISUAL ASSESSMENT ONLY OF EXISTING ANTENNA MOUNT ASSEMBLIES, WITHOUT THE BENEFIT OF A RIGOROUS ANTENNA MOUNT STRUCTURAL ANALYSIS AND RECOMMENDS THAT THE EXISTING AND PROPOSED TOWER TOP EQUIPMENT BE INSTALLED AS DEPICTED HEREIN. STRUCTURAL DETAILS AS DEPICTED HEREIN FOR MODIFICATION OF EXISTING ANTENNA MOUNT ASSEMBLIES ARE PRELIMINARY ONLY AND THAT FINAL CONSTRUCTION DETAILS MAY BE SUBJECT TO CHANGE PENDING THE COMPLETION OF A SEPARATE SUPPLEMENTAL ANTENNA MOUNT STRUCTURAL ASSESSMENT, SUPPLEMENTAL STRUCTURAL MAPPING/CONDITIONS ASSESSMENT REPORT AND/OR SUPPLEMENTAL RIGOROUS ANTENNA MOUNT STRUCTURAL ANALYSIS.

T-MOBILE NORTHEAST LLC

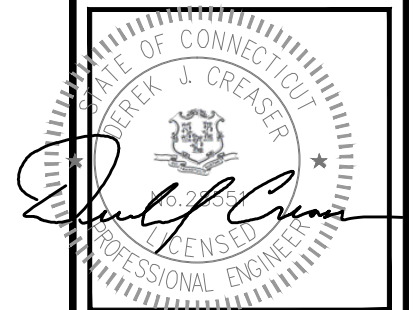
35 GRIFFIN ROAD SOUTH
BLOOMFIELD, CT 06002
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SBA COMMUNICATIONS CORP.
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BUILDING 20 NORTH, SUITE 3090
N. ANDOVER, MA 01845
TEL: (978) 557-5553
FAX: (978) 336-5586



CHECKED BY: BB

APPROVED BY: DJC

SUBMITTALS

REV.	DATE	DESCRIPTION	BY
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0	07/26/16	ISSUED FOR CONSTRUCTION	SB

SITE NUMBER:

CTNL805B

SITE NAME:

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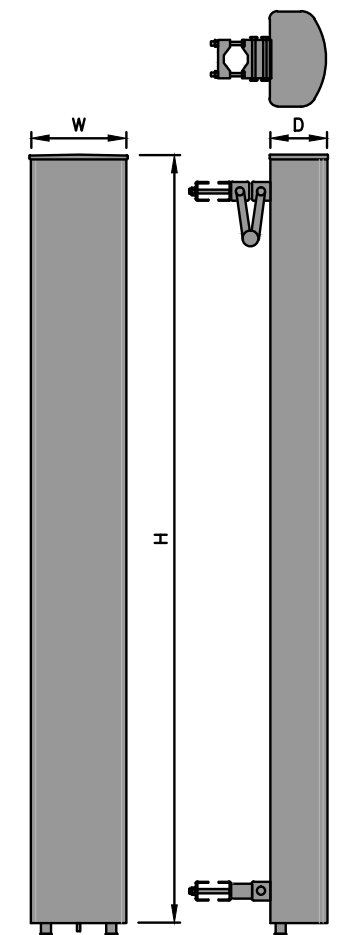
SHEET TITLE

EXISTING &
PROPOSED
ANTENNA PLANS

SHEET NUMBER

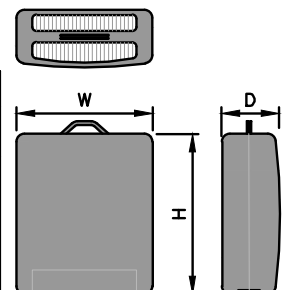
A-2

L700 ANTENNA DIMENSIONS	
MODEL #	LNX-6515DS-A1M
MANUF.	COMMSCOPE
HEIGHT	96.4"
WIDTH	11.9"
DEPTH	7.1"
WEIGHT	50.3 LBS

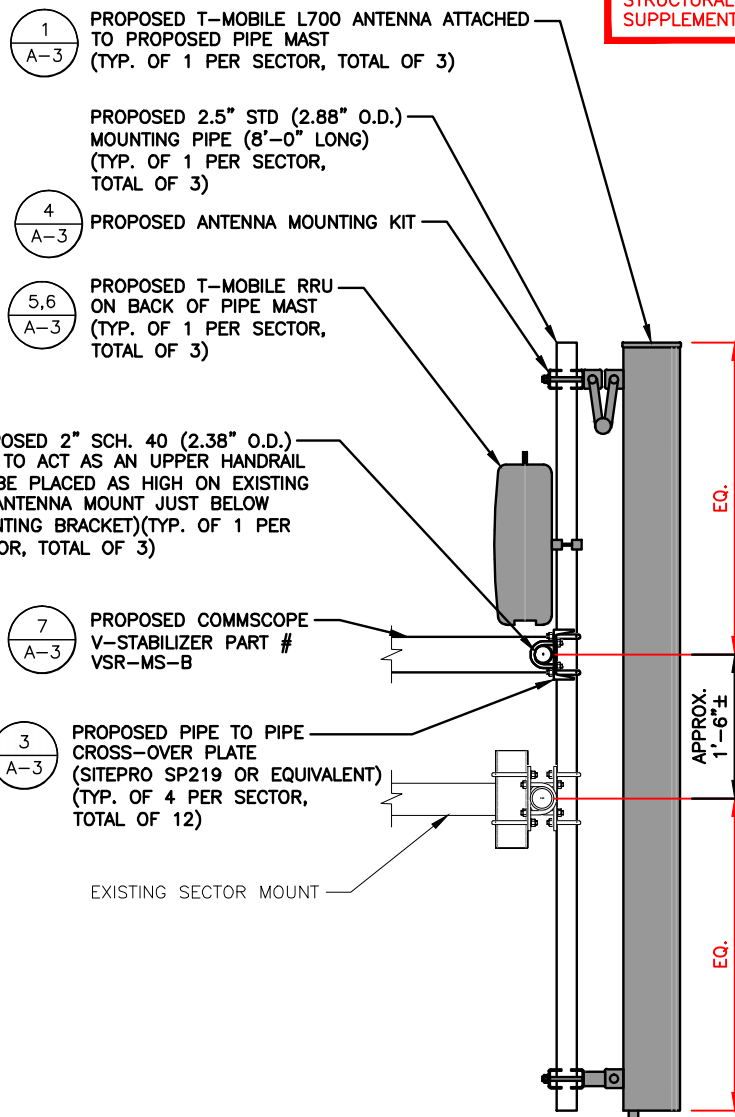


L700 ANTENNA DETAIL (1) A-3
SCALE: N.T.S

RRU DIMENSIONS	
MODEL #	RRU11 B12
MANUF.	ERICSSON
HEIGHT	20"
WIDTH	17"
DEPTH	7"
WEIGHT	50.6 LBS



PROPOSED RRU DETAIL (5) A-3
SCALE: N.T.S



PROPOSED ANTENNA AND RRU MOUNTING DETAIL (2) A-3
SCALE: N.T.S

PROPOSED RRU MOUNT ASSEMBLY (ERICSSON P/N: ESK 107 2840/1-IN)

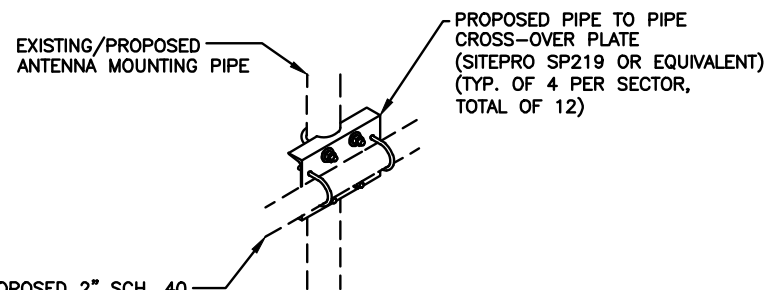


RRU MOUNT ASSEMBLY (6) A-3
SCALE: N.T.S

ANTENNA MOUNT STRUCTURAL ASSESSMENT REQUIREMENT:
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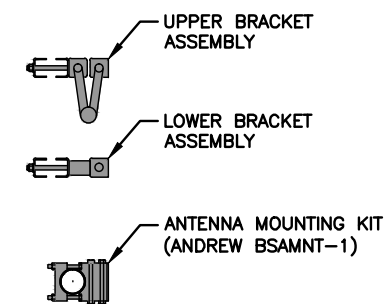
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STRUCTURAL NOTE:
STRUCTURAL INFORMATION TAKEN FROM STRUCTURAL ANALYSIS REPORT PERFORMED BY TES DATED: JULY 12, 2016

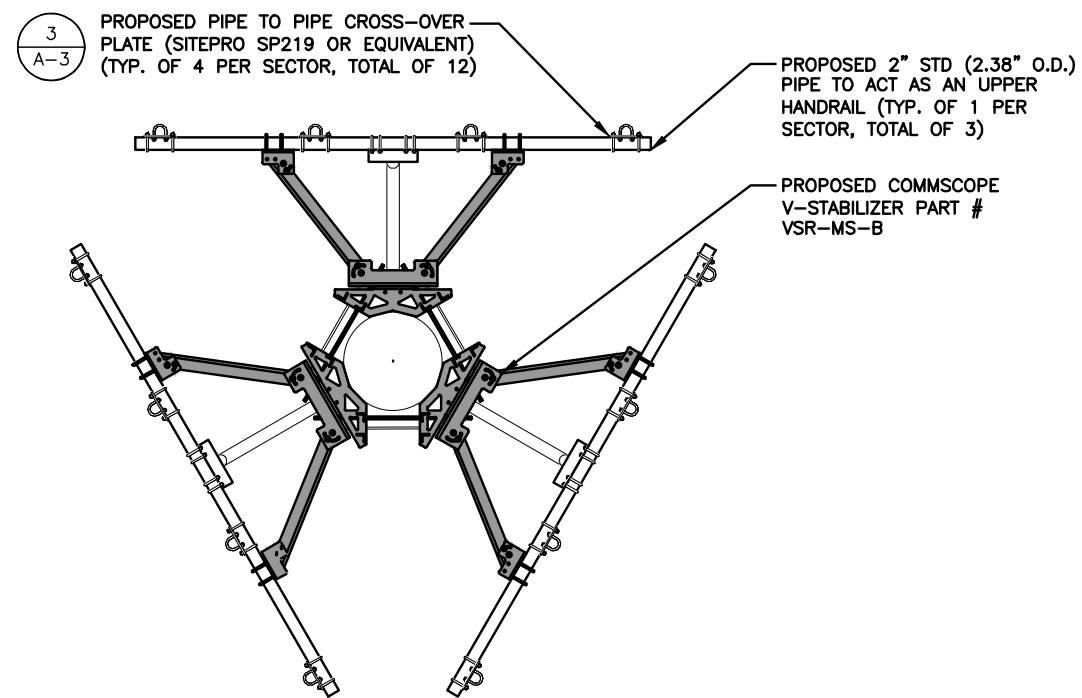


EXISTING/PROPOSED ANTENNA MOUNTING PIPE
PROPOSED 2" SCH. 40 (2.38" O.D.) PIPE TO ACT AS AN UPPER HANDRAIL (TYP. OF 1 PER SECTOR, TOTAL OF 3)

PIPE TO PIPE CROSS-OVER PLATE (3) A-3
SCALE: N.T.S



ANTENNA MOUNTING BRACKET (4) A-3
SCALE: N.T.S



V-STABILIZER MOUNT SUPPORT (7) A-3
SCALE: N.T.S

T-MOBILE NORTHEAST LLC

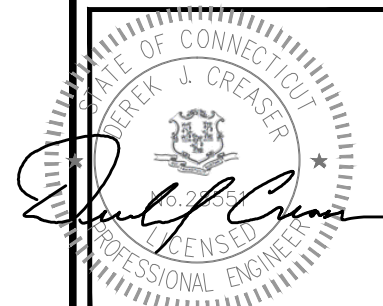
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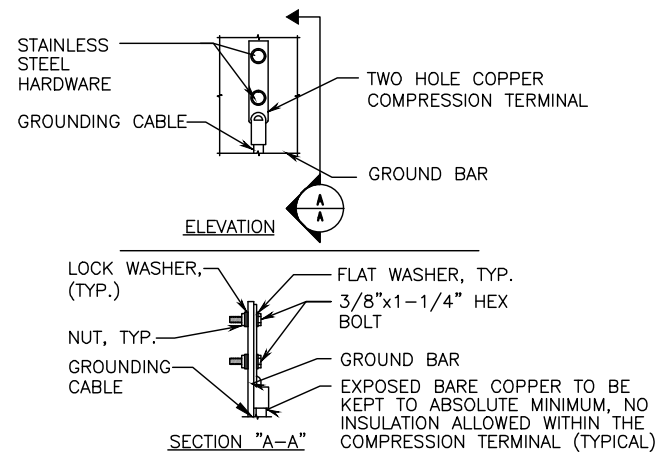
APPROVED BY: DJC

SUBMITTALS			
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CNTL805B
SITE NAME:
AMTRAK EAST LYME
SITE ADDRESS:
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EAST LYME CT, 06357
NEW LONDON COUNTY

SHEET TITLE
EQUIPMENT DETAILS

SHEET NUMBER
A-3

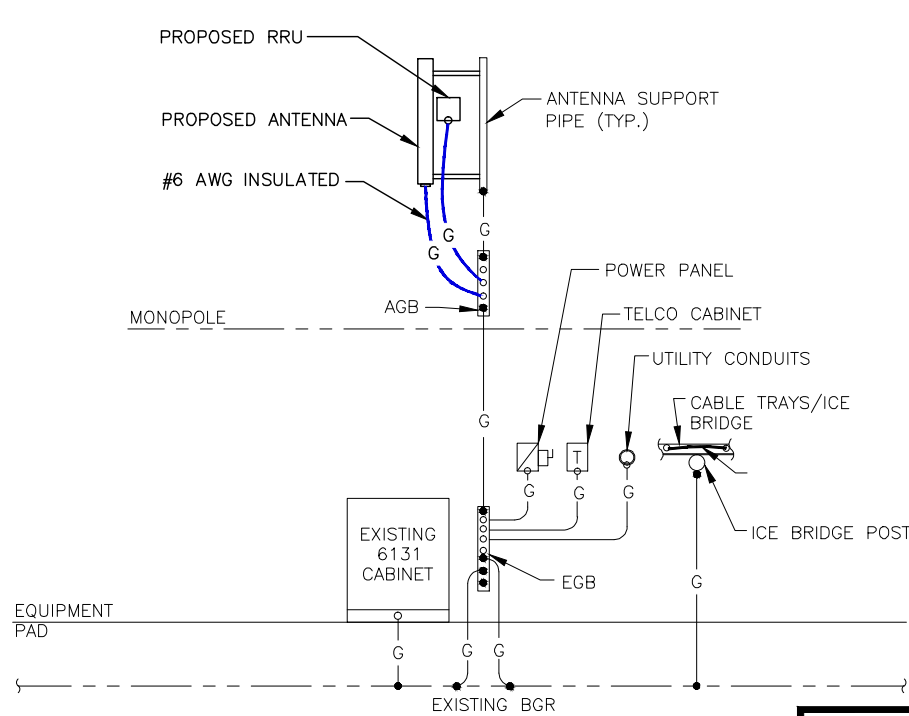


- NOTE:
- "DOUBLING UP" OR "STACKING" OF CONNECTION IS NOT PERMITTED.
 - OXIDE INHIBITING COMPOUND TO BE USED AT ALL LOCATIONS.
 - CADWELD DOWNLEADS FROM UPPER AGB/EGB, LOWER EGB, AND MGB.

TYPICAL GROUND BAR CONNECTION DETAIL

SCALE: N.T.S

1
E-1

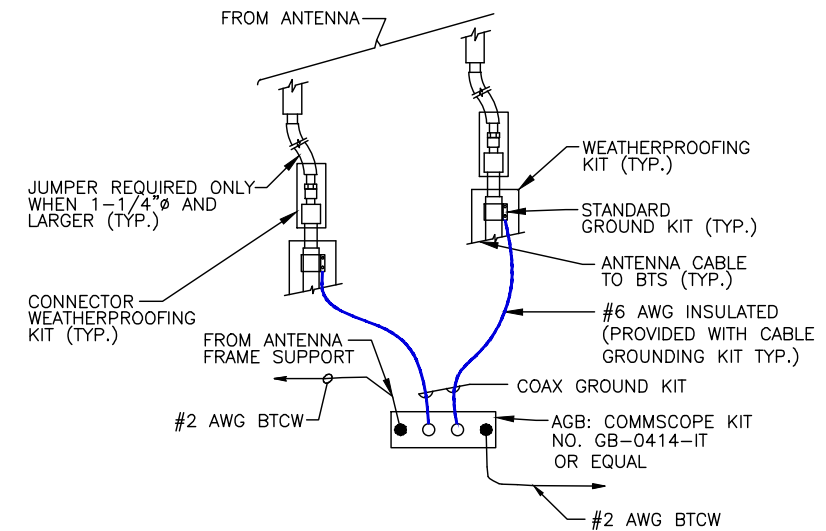


TYPICAL GROUNDING RISER DIAGRAM

SCALE: N.T.S

2
E-1

NOTE: UNLESS OTHERWISE NOTED, ALL GROUNDING CONDUCTORS ARE #2 AWG BTCW

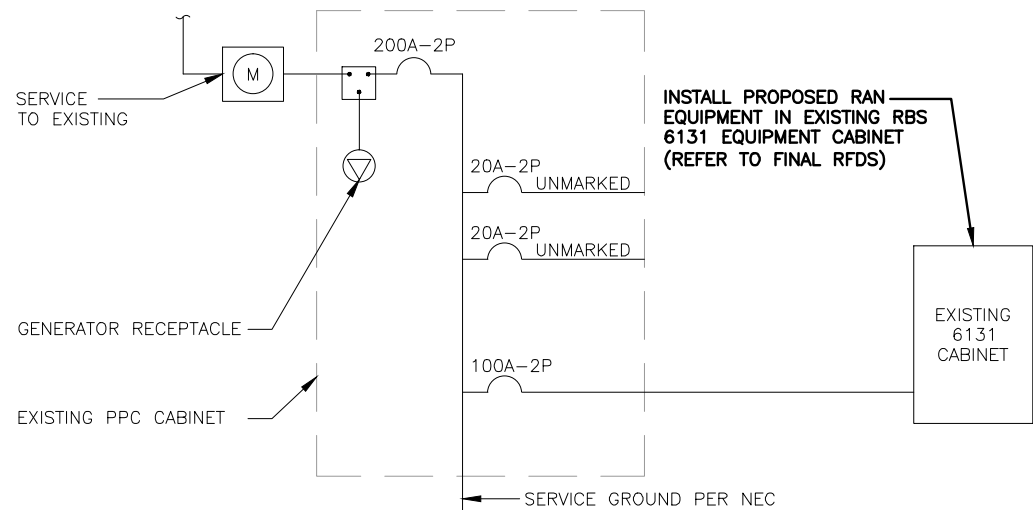


NOTE: INSTALL CABLE GROUND KIT ABOVE HORIZONTAL BEND AND ALWAYS DIRECT GROUND WIRE DOWN TO AGB/EGB.

UPPER MONOPOLE CABLE GROUNDING DETAIL

SCALE: N.T.S

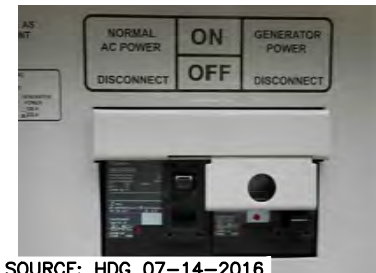
3
E-1



ONE LINE POWER DIAGRAM

SCALE: N.T.S

4
E-1



SOURCE: HDG 07-14-2016

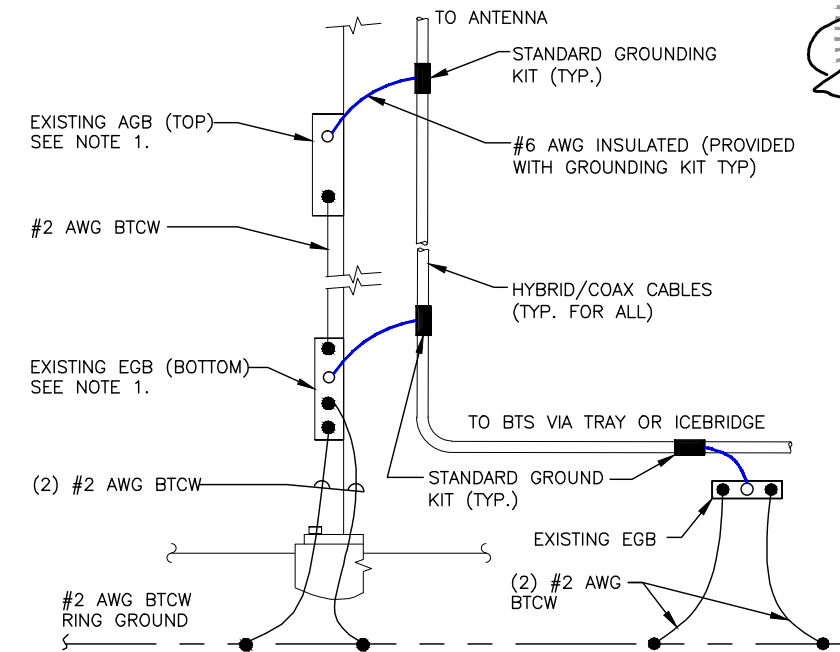


SOURCE: HDG 07-14-2016

PHOTO DETAIL: PPC PANEL

SCALE: N.T.S

5
E-1



NOTE:

- NUMBER OF GROUND BARS MAY VARY DEPENDING ON THE TYPE OF TOWER, ANTENNA LOCATION AND CONNECTION ORIENTATION. PROVIDE ADDITIONAL AGB/EGB AS REQUIRED.
- A SEPARATE GROUND BAR TO BE USED FOR GPS ANTENNA IF REQUIRED.

LOWER MONOPOLE CABLE GROUNDING DETAIL

SCALE: N.T.S

6
E-1

ELECTRICAL LEGEND

A	AMPERE
V	VOLT
KWH	KILOWATT - HOUR
C	CONDUIT
GRC	GALVANIZED RIGID CONDUIT
BTCW	BARE TINNED (SOLID) COPPER WIRE (#2 AWG, UNLESS NOTES OTHERWISE)
G	GROUND
MGB	MASTER GROUND BAR
AGB/EGB	EQUIPMENT GROUND BAR/ANTENNA GROUND BAR
G	GROUND CUPPER WIRE, SIZE AS NOTED
---	EXPOSED WIRING
---	INSULATED GROUNDING CONDUCTOR (#6 AWG STRANDED, UNLESS NOTED OTHERWISE)
○	5/8" x 8" COPPER CLAD STAINLESS STEEL GROUND ROD
●	EXOTHERMIC (CAD WELD) OR MECHANICAL CONNECTION
○	MECHANICAL CONNECTION (COMPRESSION TYPE)
PPC	POWER PROTECTION CABINET
⊗	OMNI-DIRECTIONAL ELECTRONIC MARKER SYSTEM (EMS) BALL

ELECTRICAL & GROUNDING NOTES

- ALL ELECTRICAL WORK SHALL CONFORM TO THE REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE (NEC) AS WELL AS APPLICABLE STATE AND LOCAL CODES.
- ALL ELECTRICAL ITEMS SHALL BE U.L. APPROVED OR LISTED AND PROCURED PER SPECIFICATION REQUIREMENTS.
- THE ELECTRICAL WORK INCLUDES ALL LABOR AND MATERIAL DESCRIBED BY DRAWINGS AND SPECIFICATION INCLUDING INCIDENTAL WORK TO PROVIDE COMPLETE OPERATING AND APPROVED ELECTRICAL SYSTEM.
- GENERAL CONTRACTOR SHALL PAY FEES FOR PERMITS, AND IS RESPONSIBLE FOR OBTAINING SAID PERMITS AND COORDINATION OF INSPECTIONS, ELECTRICAL AND TELCO WIRING OUTSIDE A BUILDING AND EXPOSED TO WEATHER SHALL BE IN WATER TIGHT GALVANIZED RIGID STEEL CONDUITS OR SCHEDULE 80 PVC (AS PERMITTED BY CODE) AND WHERE REQUIRED IN LIQUID TIGHT FLEXIBLE METAL OR NONMETALLIC CONDUITS.
- RIGID STEEL CONDUITS SHALL BE GROUNDED AT BOTH ENDS.
- ELECTRICAL WIRING SHALL BE COPPER WITH TYPE XHHW, THWN, OR THIN INSULATION.
- RUN ELECTRICAL CONDUIT OR CABLE BETWEEN ELECTRICAL ROOM AND PROPOSED CELL SITE POWER PEDESTAL AS INDICATED ON THIS DRAWING. PROVIDE FULL LENGTH PULL ROPE. COORDINATE INSTALLATION WITH UTILITY COMPANY.
- RUN TELCO CONDUIT OR CABLE BETWEEN TELEPHONE UTILITY DEMARCATION POINT AND PROPOSED CELL SITE TELCO CABINET AND BTS CABINET AS INDICATED ON DRAWING A-1. PROVIDE FULL LENGTH PULL ROPE IN INSTALLED TELCO CONDUIT. PROVIDE GREENLEE CONDUIT MEASURING TAPE AT EACH END.
- ALL EQUIPMENT LOCATED OUTSIDE SHALL HAVE NEMA 3R ENCLOSURE.
- GROUNDING SHALL COMPLY WITH NEC ART. 250.
- GROUND COAXIAL CABLE SHIELDS MINIMUM AT BOTH ENDS USING MANUFACTURERS COAX CABLE GROUNDING KITS SUPPLIED BY PROJECT OWNER.

- USE #6 COPPER STRANDED WIRE WITH GREEN COLOR INSULATION FOR ABOVE GRADE GROUNDING (UNLESS OTHERWISE SPECIFIED) AND #2 SOLID TINNED BARE COPPER WIRE FOR BELOW GRADE GROUNDING AS INDICATED ON THE DRAWING.
- ALL GROUND CONNECTIONS TO BE BURIED HYGROUND COMPRESSION TYPE CONNECTORS OR CADWELD EXOTHERMIC WELD. DO NOT ALLOW BARE COPPER WIRE TO BE IN CONTACT WITH GALVANIZED STEEL.
- ROUTE GROUNDING CONDUCTORS ALONG THE SHORTEST AND STRAIGHTEST PATH POSSIBLE, EXCEPT AS OTHERWISE INDICATED. GROUNDING LEADS SHOULD NEVER BE BENT AT RIGHT ANGLE. ALWAYS MAKE AT LEAST 12" RADIUS BENDS. #6 WIRE CAN BE BENT AT 6" RADIUS WHEN NECESSARY. BOND ANY METAL OBJECTS WITHIN 7 FEET OF PROPOSED EQUIPMENT OR CABINET TO MASTER GROUND BAR.
- CONNECTIONS TO MGB SHALL BE ARRANGED IN THREE MAIN GROUPS: SURGE PRODUCERS (COAXIAL CABLE GROUND KITS, TELCO AND POWER PANEL GROUND); (GROUNDING ELECTRODE RING OR BUILDING STEEL); NON-SURGING OBJECTS (EGB GROUND IN BTS UNIT).
- CONNECTIONS TO GROUND BARS SHALL BE MADE WITH TWO HOLE COMPRESSION TYPE COPPER LUGS. APPLY OXIDE INHIBITING COMPOUND TO ALL LOCATIONS.
- APPLY OXIDE INHIBITING COMPOUND TO ALL COMPRESSION TYPE GROUND CONNECTIONS.
- BOND ANTENNA MOUNTING BRACKETS, COAXIAL CABLE GROUND KITS, AND ALNA TO EGB PLACED NEAR THE ANTENNA LOCATION.
- BOND ANTENNA EGB'S AND MGB TO WATER MAIN.
- TEST COMPLETED GROUND SYSTEM AND RECORD RESULTS FOR PROJECT CLOSE-OUT DOCUMENTATION.
- BOND ANY METAL OBJECTS WITHIN 7 FEET OF PROPOSED EQUIPMENT OR CABINET TO MASTER GROUND BAR.
- VERIFY PROPOSED SERVICE UPGRADE WITH LOCAL UTILITY COMPANY PRIOR TO CONSTRUCTION.

T-MOBILE NORTHEAST LLC

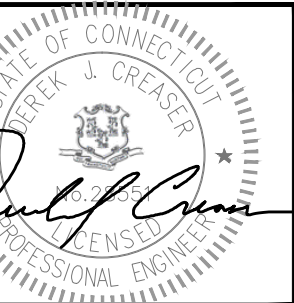
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ONE-LINE DIAGRAM AND GROUNDING DETAILS

SHEET NUMBER

E-1