



10 INDUSTRIAL AVE,  
SUITE 3  
MAHWAH NJ 07430

PHONE: 201.684.0055  
FAX: 201.684.0066

October 28, 2016

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

Notice of Exempt Modification  
77 Springbrook Road, Old Saybrook, CT 06475  
Latitude- 41.31390000  
Longitude- -72.36420000

Dear Ms. Bachman,

T-Mobile currently maintains (6) antennas at the 163' level of the existing 176' monopole located at 77 Springbrook Road in Old Saybrook, Connecticut. The tower is owned by American Tower Corporation. The property is owned by Crossroads Communications of Old Saybrook LLC. T-Mobile now intends to install (3) new 700 MHz antennas. These antennas would be installed at the same 163' level of the tower.

This facility was approved by the Town of Old Saybrook on April 28, 2008. The approval did not come with conditions. The approval is included with this application.

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 Carl Fortuna, First Selectman of the Town of Old Saybrook, as well as the property owner and tower owner.

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 modification will not result in an increase in the height of the existing structure
2. The proposed modifications will not require the extension of the site boundary.
3. The proposed modifications will not increase noise levels at the facility by six decibels 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 telecommunications facility constitute an exempt modification under R.C.S.A. 16-50j-72(b)(2).

Sincerely,

*Kyle Richers*

Kyle Richers  
Transcend Wireless  
10 Industrial Ave., Suite 3  
Mahwah, New Jersey 07430  
908-447-4716  
[krichers@transcendwireless.com](mailto:krichers@transcendwireless.com)

Attachments:

cc: Carl Fortuna- as elected official  
American Tower Corporation- tower owner  
Crossroads Communications of Old Saybrook LLC- property owner



**Property Information**

**Property ID** 058/017-0001  
**Location** 77 SPRINGBROOK RD  
**Owner** CROSSROADS COMMUNICATIONS OF OLD



**MAP FOR REFERENCE ONLY  
NOT A LEGAL DOCUMENT**

Town of Old Saybrook, CT makes no claims and no warranties, expressed or implied, concerning the validity or accuracy of the GIS data presented on this map.

Properties updated 10/27/2016

# 77 SPRINGBROOK RD

**Location** 77 SPRINGBROOK RD

**MBLU** 058/ 017/ 0001/ /

**Acct#** 00598500

**Owner** CROSSROADS  
COMMUNICATIONS OF OLD

**Assessment** \$227,200

**Appraisal** \$324,600

**PID** 6223

**Building Count** 1

## Current Value

Appraisal			
Valuation Year	Improvements	Land	Total
2015	\$106,700	\$217,900	\$324,600

Assessment			
Valuation Year	Improvements	Land	Total
2015	\$74,700	\$152,500	\$227,200

## Owner of Record

**Owner** CROSSROADS COMMUNICATIONS OF OLD  
**Co-Owner** SAYBROOK LLC  
**Address** 157 NORTH SEIR HILL RD  
NORWALK, CT 06850

**Sale Price** \$275,000  
**Certificate**  
**Book & Page** 0339/0287  
**Sale Date** 10/28/1996

## Ownership History

Ownership History				
Owner	Sale Price	Certificate	Book & Page	Sale Date
CROSSROADS COMMUNICATIONS OF OLD	\$275,000		0339/0287	10/28/1996

## Building Information

### Building 1 : Section 1

**Year Built:** 1956  
**Living Area:** 2,044

Building Attributes	
Field	Description
STYLE	Office Bldg
MODEL	Commercial
Stories:	1

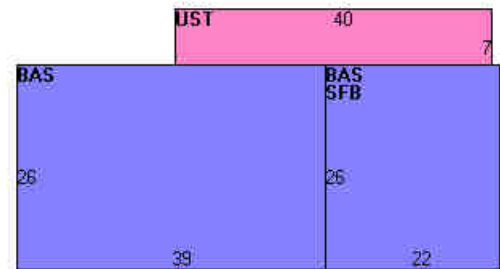
Occupancy	1
Exterior Wall 1	Aluminum Sidng
Exterior Wall 2	
Roof Structure	Gable/Hip
Roof Cover	Asph/F Gls/Cmp
Interior Wall 1	Plywood Panel
Interior Wall 2	Drywall/Sheet
Interior Floor 1	Carpet
Interior Floor 2	
Heating Fuel	Oil
Heating Type	Forced Air-Duc
AC Type	Central
Bldg Use	RAD/TV TR
Total Rooms	
Total Bedrms	00
Total Baths	0
1st Floor Use:	4330
Heat/AC	NONE
Frame Type	WOOD FRAME
Baths/Plumbing	AVERAGE
Ceiling/Wall	CEIL & WALLS
Rooms/Prtns	AVERAGE
Wall Height	8
% Comn Wall	0

### Building Photo



(http://images.vgsi.com/photos/OldSaybrookCTPhotos//\00\00\

### Building Layout



Building Sub-Areas (sq ft)		Legend	
Code	Description	Gross Area	Living Area
BAS	First Floor	1,586	1,586
SFB	Bsmt, Above grade-Finished	572	458
UST	Utility, Storage, Unfinished	280	0
		2,438	2,044

### Extra Features

Extra Features	Legend
No Data for Extra Features	

### Land

#### Land Use

Use Code 4330

#### Land Line Valuation

Size (Acres) 0.46

**Description** RAD/TV TR  
**Zone** B2

**Depth** 0  
**Assessed Value** \$152,500  
**Appraised Value** \$217,900

### Outbuildings

<b>Outbuildings</b>	<b><u>Legend</u></b>
No Data for Outbuildings	

### Valuation History

<b>Appraisal</b>			
<b>Valuation Year</b>	<b>Improvements</b>	<b>Land</b>	<b>Total</b>
2014	\$313,000	\$217,900	\$530,900
2013	\$313,000	\$217,900	\$530,900
2012	\$242,700	\$212,300	\$455,000

<b>Assessment</b>			
<b>Valuation Year</b>	<b>Improvements</b>	<b>Land</b>	<b>Total</b>
2014	\$219,100	\$152,500	\$371,600
2013	\$219,100	\$152,500	\$371,600
2012	\$169,900	\$148,600	\$318,500

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TOWN OF OLD SAYBROOK, CONNECTICUT

302 Main Street, Old Saybrook, CT 06475 Phone - 860-395-3130, Fax - 860-395-1216

FOR OFFICE USE :

MAP: 58 LOT: 17-1 Building Permit # 24780  
FM# 2899 ZC# 05-05-6 Date Received: 4.21.08  
FLOOD ZONE:

APPLICATION FOR PLAN EXAMINATION AND BUILDING PERMIT:

LOCATION: 77 SPRINGBROOK ROAD, OLD SAYBROOK, CT

TYPE OF IMPROVEMENT: Construction of a 175' tower w/ Verizon  
Collocation and demo of existing Guyed Tower

ROOFING -- # SQUARES RIP - YES NO

PROPOSED USE: Communications / Commercial  
(Residence, Store, Commercial, etc.)

INCLUDE SITE PLAN FOR ALL NEW CONSTRUCTION

COST:

Improvement: \$ 138,000  
Electrical: \$ 12,000 CRS# - Lic Provided when  
Pulling Elect. Permit  
Plumbing: \$  
Heating, A.C.: \$

TOTAL: \$ 150,000

OWNER OR LESSEE National Tower for Crossroads Communications of Old Saybrook, LLC  
Mailing Address: Park Place West, 352 Park St. Suite 101  
North Reading, MA 01864 Phone# 781-389-6909

CONTRACTOR: Bell Atlantic Inc. / Verizon  
Address: 99 East River Drive, 9th Floor, East Hartford CT 06108

LICENSE NUMBER 900296 Phone# 860-982-4246

CERTIFICATION

I hereby certify that I am the owner of record of the named property, or that the proposed work is authorized by the owner of record and that I have been authorized by the owner to make this application as his authorized agent and I agree to conform to all applicable laws of this jurisdiction. In addition, if a permit for work described in this application is issued, I certify that the code official or the code official's authorized representative shall have the authority to enter areas covered by such permit at any reasonable hour to enforce provisions of the code(s) applicable to such permit.

Any application for which a permit has not been issued within 120 days of the date of application shall be considered void and any fees associated with that application will be forfeited.

Signature of Applicant: [Signature] Phone# 781-389-6909

Address: 352 Park Street, Suite 101  
North Reading MA 01864

FOR OFFICE USE: BUILDING PERMIT FEES 1539 PAID ISSUED ON:

(Includes \$.16 per \$1000 educational training fee)

APPROVED BY: [Signature] 4/28/08 Building Official/Date

NOTE: No Accessory Structures Included in this permit

TYPE: 2B USE GROUP: B SEASONAL:  
NOTE: WORK MUST BEGIN WITHIN 180 CALENDAR DAYS

OVER FOR ADDITIONAL INFORMATION

ORIGINAL

[Signature] SFM H

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

T-Mobile Existing Facility

Site ID: CTHA540A

Crown Old Saybrook Monopole  
85 Springbrook Road  
Old Saybrook, CT 06475

**October 13, 2016**

**EBI Project Number: 6216004578**

Site Compliance Summary	
Compliance Status:	<b>COMPLIANT</b>
Site total MPE% of FCC general public allowable limit:	<b>2.64 %</b>



October 13, 2016

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

Emissions Analysis for Site: **CTHA540A – Crown Old Saybrook Monopole**

EBI Consulting was directed to analyze the proposed T-Mobile facility located at **85 Springbrook Road, Old Saybrook, 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 **85 Springbrook Road, Old Saybrook, 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 UMTS channels (PCS Band - 1900 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.
- 2) 2 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
- 3) 1 LTE channel (700 MHz Band) was considered for each sector of the proposed installation. This channel has a transmit power of 30 Watts.
- 4) Since the 700 MHz radios are ground mounted there are additional cabling losses accounted for. For each ground mounted 700 MHz RF path an additional 0.98 dB of cable loss was factored into the calculations. This is based on manufacturers Specifications for 175 feet of 1-5/8” coax cable on each path.

- 5) All radios at the proposed installation were considered to be running at full power and were uncombined in their RF transmissions paths per carrier prescribed configuration. Per FCC OET Bulletin No. 65 - Edition 97-01 recommendations to achieve the maximum anticipated value at each sample point, all power levels emitting from the proposed antenna installation are increased by a factor of 2.56 to account for possible in-phase reflections from the surrounding environment. This is rarely the case, and if so, is never continuous.
- 6) For the following calculations the sample point was the top of a 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.
- 7) The antennas used in this modeling are the **Ericsson AIR21 B4A/B2P & Ericsson AIR21 B2A/B4P** for 1900 MHz (PCS) and 2100 MHz (AWS) channels and the **Commscope LNX-6515DS-VTM** for 700 MHz channels. This is based on feedback from the carrier with regards to anticipated antenna selection. The **Ericsson AIR21 B4A/B2P** has a maximum gain of **15.9 dBd** at its main lobe at 1900 MHz and 2100 MHz. The **Ericsson AIR21 B2A/B4P** has a maximum gain of **15.9 dBd** at its main lobe at 1900 MHz and 2100 MHz. The **Commscope LNX-6515DS-VTM** has a maximum gain of **14.6 dBd** at its main lobe. The maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB, was used for all calculations. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.
- 8) The antenna mounting height centerline of the proposed antennas is **162 feet** above ground level (AGL).
- 9) Emissions values for additional carriers were taken from the Connecticut Siting Council active database. Values in this database are provided by the individual carriers themselves.
- 10) All calculations were done with respect to uncontrolled / general public threshold limits.

### T-Mobile Site Inventory and Power Data

Sector:	A	Sector:	B	Sector:	C
Antenna #:	1	Antenna #:	1	Antenna #:	1
Make / Model:	Ericsson AIR21 B4A/B2P	Make / Model:	Ericsson AIR21 B4A/B2P	Make / Model:	Ericsson AIR21 B4A/B2P
Gain:	15.9 dBd	Gain:	15.9 dBd	Gain:	15.9 dBd
Height (AGL):	162	Height (AGL):	162	Height (AGL):	162
Frequency Bands	2100 MHz (AWS)	Frequency Bands	2100 MHz (AWS)	Frequency Bands	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%	0.69	Antenna B1 MPE%	0.69	Antenna C1 MPE%	0.69
Antenna #:	2	Antenna #:	2	Antenna #:	2
Make / Model:	Ericsson AIR21 B2A/B4P	Make / Model:	Ericsson AIR21 B2A/B4P	Make / Model:	Ericsson AIR21 B2A/B4P
Gain:	15.9 dBd	Gain:	15.9 dBd	Gain:	15.9 dBd
Height (AGL):	162	Height (AGL):	162	Height (AGL):	162
Frequency Bands	1900 MHz (PCS)	Frequency Bands	1900 MHz (PCS)	Frequency Bands	1900 MHz (PCS)
Channel Count	2	Channel Count	2	Channel Count	2
Total TX Power(W):	60	Total TX Power(W):	60	Total TX Power(W):	60
ERP (W):	2,334.27	ERP (W):	2,334.27	ERP (W):	2,334.27
Antenna A2 MPE%	0.34	Antenna B2 MPE%	0.34	Antenna C2 MPE%	0.34
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):	162	Height (AGL):	162	Height (AGL):	162
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):	690.43	ERP (W):	690.43	ERP (W):	690.43
Antenna A3 MPE%	0.22	Antenna B3 MPE%	0.22	Antenna C3 MPE%	0.22

Site Composite MPE%	
Carrier	MPE%
T-Mobile (Per Sector Max)	1.25 %
Verizon Wireless	1.39 %
<b>Site Total MPE %:</b>	<b>2.64 %</b>

T-Mobile Sector A Total:	1.25 %
T-Mobile Sector B Total:	1.25 %
T-Mobile Sector C Total:	1.25 %
<b>Site Total:</b>	<b>2.64 %</b>

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	162	6.90	AWS - 2100 MHz	1000	0.69%
T-Mobile PCS - 1950 MHz UMTS	2	1,167.14	162	3.45	PCS - 1950 MHz	1000	0.34%
T-Mobile 700 MHz LTE	1	690.43	162	1.02	700 MHz	467	0.22%
						<b>Total:</b>	<b>1.25%</b>

## 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:	1.25 %
Sector B:	1.25 %
Sector C:	1.25 %
T-Mobile Per Sector Maximum:	1.25 %
Site Total:	2.64 %
Site Compliance Status:	<b>COMPLIANT</b>

The anticipated composite MPE value for this site assuming all carriers present is **2.64%** of the allowable FCC established general public limit sampled at the ground level. This is based upon values listed in the Connecticut Siting Council database for existing carrier emissions.

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



**AMERICAN TOWER®**  
CORPORATION

This report was prepared for American Tower Corporation by



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## Structural Analysis Report

**Structure** : 175 ft Monopole  
**ATC Site Name** : Old Saybrook, CT  
**ATC Site Number** : 370625  
**Engineering Number** : OAA686891\_C3\_01  
**Proposed Carrier** : T-Mobile  
**Carrier Site Name** : N/A  
**Carrier Site Number** : CTHA540A  
**Site Location** : 77 Springbrook Road  
Old Saybrook, CT 06475-0000  
41.313833,-72.364028  
**County** : Middlesex  
**Date** : October 5, 2016  
**Max Usage** : 76%  
**Result** : Pass

Prepared By:  
Zachary A. Medoff

**COA: PEC.0001553**



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## Introduction

The purpose of this report is to summarize results of a structural analysis performed on the 175 ft monopole to reflect the change in loading by T-Mobile.

## Supporting Documents

<b>Tower Drawings</b>	DaVinci, Valmont Job #08242-1120, dated April 17, 2008
<b>Foundation Drawing</b>	DaVinci, Valmont Job #08242-1120, dated April 17, 2008
<b>Geotechnical Report</b>	JGI Eastern Project #J2085121, dated March 12, 2008

## Analysis

The tower was analyzed using American Tower Corporation's tower analysis software. This program considers an elastic three-dimensional model and second-order effects per ANSI/TIA-222.

<b>Basic Wind Speed:</b>	105 mph (3-Second Gust, $V_{asd}$ ) / 135 mph (3-Second Gust, $V_{ult}$ )
<b>Basic Wind Speed w/ Ice:</b>	50 mph (3-Second Gust) w/ 3/4" radial ice concurrent
<b>Code:</b>	ANSI/TIA-222-G / 2012 IBC / 2016 Connecticut State Building Code
<b>Structure Class:</b>	II
<b>Exposure Category:</b>	C
<b>Topographic Category:</b>	1
<b>Crest Height:</b>	0 ft
<b>Spectral Response:</b>	$S_s = 0.17$ , $S_1 = 0.06$
<b>Site Class:</b>	D - Stiff Soil

## Conclusion

Based on the analysis results, the structure meets the requirements per the applicable codes listed above. The tower and foundation can support the equipment as described in this report.

If you have any questions or require additional information, please contact American Tower via email at [Engineering@americantower.com](mailto:Engineering@americantower.com). Please include the American Tower site name, site number, and engineering number in the subject line for any questions.





**Existing and Reserved Equipment**

Elevation <sup>1</sup> (ft)		Qty	Antenna	Mount Type	Lines	Carrier
Mount	RAD					
175.0	175.0	3	Alcatel-Lucent RRH2x60 700	Platform w/ Handrails	(18) 1 5/8" Coax (2) 1 5/8" Fiber	Verizon
		3	Alcatel-Lucent PCS B25 RRH2x60/4x30			
		3	Alcatel-Lucent RRH4X45-B66 w/ Solar Shield			
		2	RFS DB-T1-6Z-8AB-0Z			
		3	Antel BXA-70063/6CF			
		3	Antel BXA-80080/6CF			
		6	Andrew SBNHH-1D65B			
162.0	162.0	3	Ericsson AIR 21, 1.3M, B2A B4P	T-Arms	(12) 1 5/8" Coax (1) 1 5/8" Hybriflex	T-Mobile
		3	Ericsson AIR 21, 1.3M, B4A B2P			
152.0	152.0	3	RFS APXV18-206517S-C	Flush	(6) 1 5/8" Coax	Metro PCS
102.0	102.0	1	Andrew DB589	Side Arm	(1) 7/8" Coax	American Messaging
1.0	1.0	1	4' Dish w/ Radome	Leg	(1) 0.28" RG-6	

**Equipment to be Removed**

Elevation <sup>1</sup> (ft)		Qty	Antenna	Mount Type	Lines	Carrier
Mount	RAD					
No loading considered as to be removed						

**Proposed Equipment**

Elevation <sup>1</sup> (ft)		Qty	Antenna	Mount Type	Lines	Carrier
Mount	RAD					
162.0	162.0	3	Andrew LNX-6515DS-A1M	T-Arms	-	T-Mobile

<sup>1</sup>Mount elevation is defined as height above bottom of steel structure to the bottom of mount, RAD elevation is defined as center of antenna above ground level (AGL).



**Structure Usages**

Structural Component	Controlling Usage	Pass/Fail
Anchor Bolts	46%	Pass
Shaft	76%	Pass
Base Plate	58%	Pass

**Foundations**

Reaction Component	Original Design Reactions	Factored Design Reactions*	Analysis Reactions	% of Design
Moment (Kips-Ft)	5,400.0	5,400.0	4,059.9	75%
Shear (Kips)	48.0	48.0	35.4	74%

\* The design reactions are factored by 1.35 per ANSI/TIA-222-G, Sec. 15.5.1

The structure base reactions resulting from this analysis are acceptable when compared to those shown on the original structure drawings, therefore no modification or reinforcement of the foundation will be required.

**Deflection and Sway\***

Antenna Elevation (ft)	Antenna	Carrier	Deflection (ft)	Sway (Rotation) (°)
162.0	Andrew LNX-6515DS-A1M	T-Mobile	1.627	1.308
1.0	4' Dish w/ Radome	American Messaging	0.000	0.006

\*Deflection and Sway was evaluated considering a design wind speed of 60 mph (3-Second Gust) per ANSI/TIA-222-G



## Standard Conditions

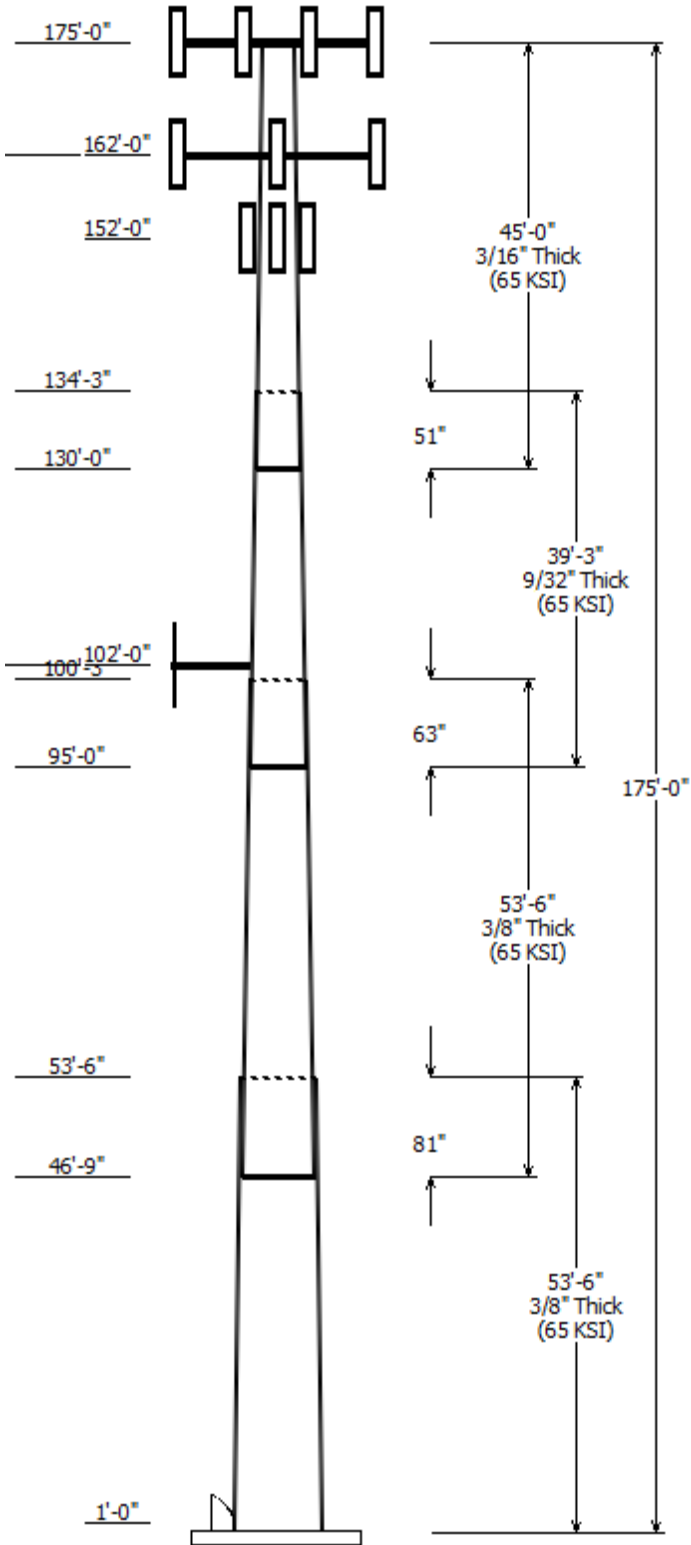
All engineering services are performed on the basis that the information used is current and correct. This information may consist of, but is not necessary limited, to:

- Information supplied by the client regarding the structure itself, antenna, mounts and feed line loading on the structure and its components, or other relevant information.
- Information from drawings in the possession of American Tower Corporation, or generated by field inspections or measurements of the structure.

It is the responsibility of the client to ensure that the information provided to A.T. Engineering Service, PLLC and used in the performance of our engineering services is correct and complete. In the absence of information to the contrary, we assume that all structures were constructed in accordance with the drawings and specifications and that their capacity has not significantly changed from the "as new" condition.

Unless explicitly agreed by both the client and American Tower Corporation, all services will be performed in accordance with the current revision of ANSI/TIA -222. The design basic wind speed will be determined based on the minimum basic wind speed as prescribed in ANSI/TIA-222. Although every effort is taken to ensure that the loading considered is adequate to meet the requirements of all applicable regulatory entities, we can provide no assurance to meet any other local and state codes or requirements. If wind and ice loads or other relevant parameters are to be different from the minimum values recommended by the codes, the client shall specify the exact requirement.

All services are performed, results obtained, and recommendations made in accordance with generally accepted engineering principles and practices. A.T. Engineering Service, PLLC is not responsible for the conclusions, opinions and recommendations made by others based on the information we supply.



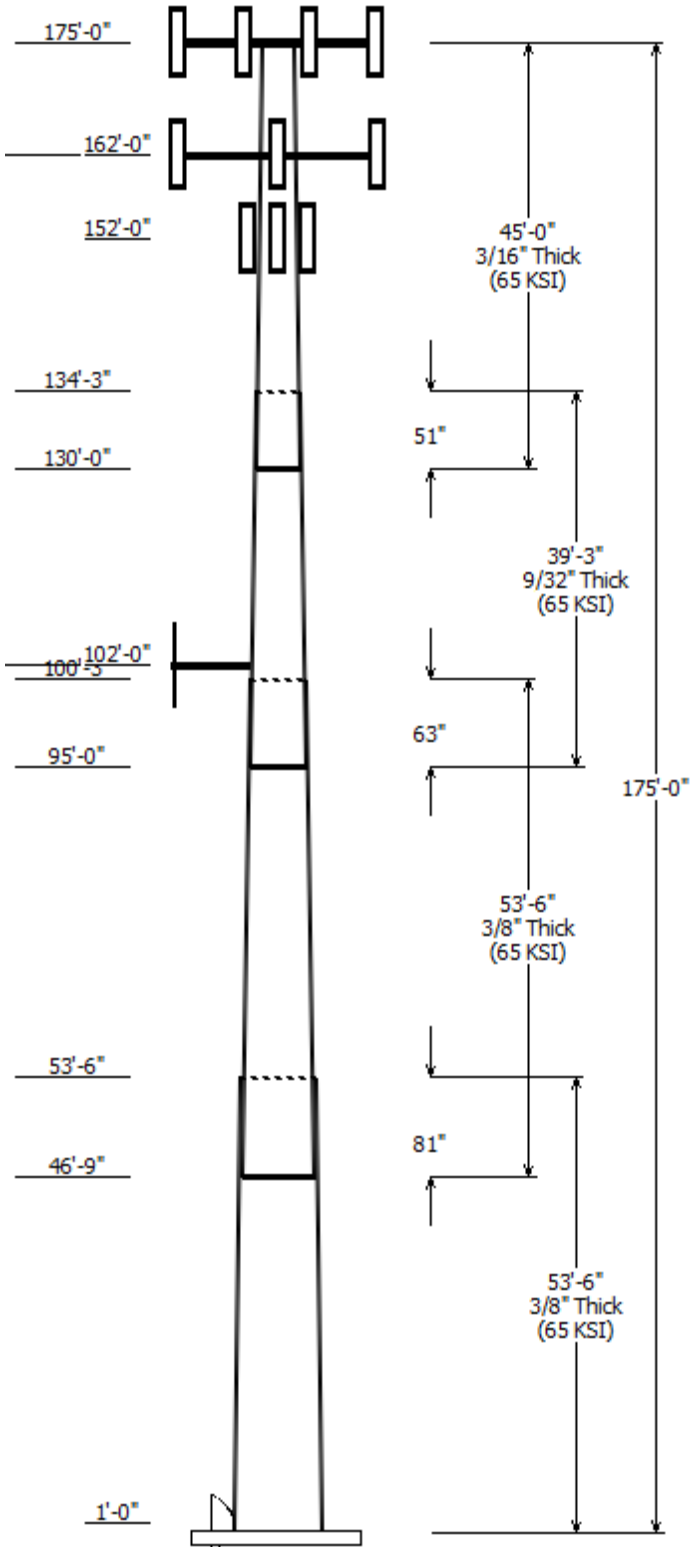
Job Information	
Pole :	370625
Code:	ANSI/TIA-222-G
Description :	
Client :	T- Mobile
Struct Class :	II
Location :	Old Saybrook, CT
Shape :	18 Sides
Exposure :	C
Height :	175.00 (ft)
Topo :	1
Base Elev (ft):	0.00
Taper:	0.265014(in/ft)

Sections Properties							
Shaft Section	Length (ft)	Diameter (in)		Thick Joint (in)	Overlap Length (in)	Steel Taper (in/ft)	Grade (ksi)
		Across Top	Across Bottom				
1	53.500	50.51	64.69	0.375	0.000	0.265000	65
2	53.500	38.87	53.05	0.375	81.000	0.265000	65
3	39.250	30.42	40.82	0.281	63.000	0.265000	65
4	45.000	20.00	31.92	0.188	51.000	0.265000	65

Discrete Appurtenance			
Attach Elev (ft)	Force Elev (ft)	Qty	Description
175.000	175.000	3	Alcatel-Lucent RRH4X45-B66
175.000	175.000	1	Flat Platform w/ Handrails
175.000	175.000	3	Antel BXA-80080/6CF
175.000	175.000	6	Andrew SBNHH-1D65B
175.000	175.000	3	Antel BXA-70063/6CF
175.000	175.000	2	RFS DB-T1-6Z-8AB-0Z
175.000	175.000	3	Alcatel-Lucent PCS B25
175.000	175.000	3	Alcatel-Lucent RRH2x60 700
162.000	162.000	3	Andrew LNX-6515DS-A1M
162.000	162.000	3	Ericsson AIR 21, 1.3M, B4A B2P
162.000	162.000	3	Ericsson AIR 21, 1.3M, B2A B4P
162.000	162.000	3	Round T-Arms
152.000	152.000	3	RFS APXV18-206517S-C
102.000	102.000	1	Round Side Arm
102.000	102.000	1	Andrew DB589
1.000	1.000	1	4' Dish w/ Radome

Linear Appurtenance			
Elev (ft) From	To	Description	Exposed To Wind
0.000	1.000	0.28" RG-6	No
0.000	102.0	7/8" Coax	Yes
0.000	152.0	1 5/8" Coax	No
0.000	162.0	1 5/8" Coax	No
0.000	162.0	1 5/8" Hybriflex	No
0.000	175.0	1 5/8" Coax	No
0.000	175.0	1 5/8" Fiber	No

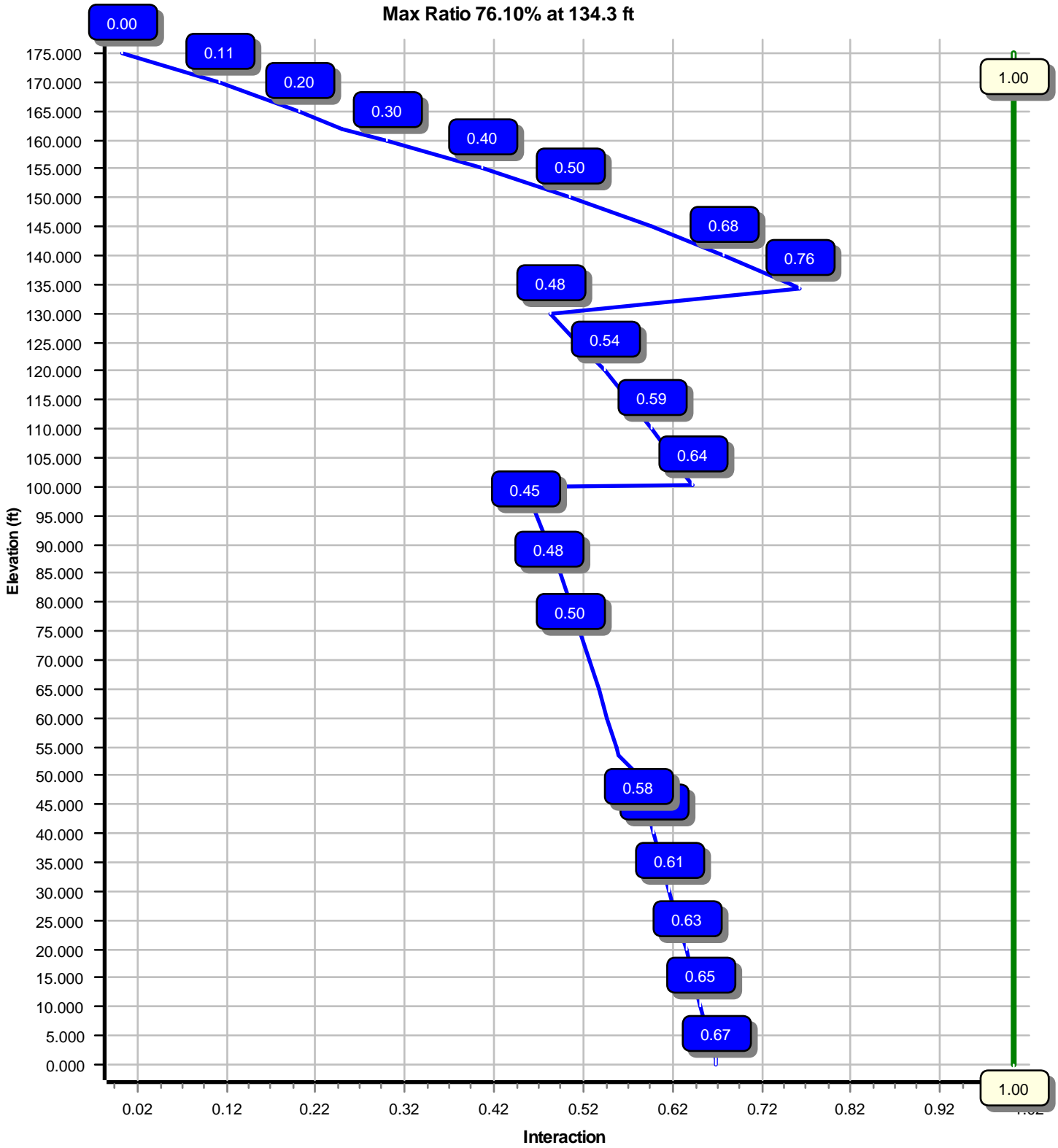
Load Cases	
1.2D + 1.6W	105 mph with No Ice
0.9D + 1.6W	105 mph with No Ice (Reduced DL)
1.2D + 1.0Di + 1.0Wi	50 mph with 0.75 in Radial Ice
(1.2 + 0.2Sds) * DL + E	Seismic Equivalent Lateral Forces Method
(1.2 + 0.2Sds) * DL + E	Seismic Equivalent Modal Analysis Method
(0.9 - 0.2Sds) * DL + E	Seismic (Reduced DL) Equivalent Lateral
(0.9 - 0.2Sds) * DL + E	Seismic (Reduced DL) Equivalent Modal
1.0D + 1.0W	Serviceability 60 mph



Reactions			
Load Case	Moment (kip-ft)	Shear (kip)	Axial (kip)
1.2D + 1.6W	4059.91	35.37	47.25
0.9D + 1.6W	4026.38	35.37	35.44
1.2D + 1.0Di + 1.0Wi	958.67	8.67	69.82
(1.2 + 0.2Sds) * DL + E ELFM	207.27	1.54	48.29
(1.2 + 0.2Sds) * DL + E EMAM	277.13	2.10	48.29
(0.9 - 0.2Sds) * DL + E ELFM	205.25	1.54	33.81
(0.9 - 0.2Sds) * DL + E EMAM	274.17	2.10	33.81
1.0D + 1.0W	825.05	7.22	39.39

Dish Deflections			
Load Case	Attach Elev (ft)	Deflection (in)	Rotation (deg)
1.0D + 1.0W	1.00	0.001	0.006

Load Case : 1.2D + 1.6W  
Max Ratio 76.10% at 134.3 ft



Site Number: 370625

Code: ANSI/TIA-222-G

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Site Name: Old Saybrook, CT

Engineering Number: OAA686891\_C3\_01

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Customer: T- Mobile

Analysis Parameters

Location:	Middlesex County, CT	Height (ft):	175
Code:	ANSI/TIA-222-G	Base Diameter (in):	64.69
Shape:	18 Sides	Top Diameter (in):	20.00
Pole Type:	Taper	Taper (in/ft) :	0.265
Pole Manufacturer:	Valmont		

Ice & Wind Parameters

Structure Class:	II	Design Wind Speed Without Ice:	105 mph
Exposure Category:	C	Design Wind Speed With Ice:	50 mph
Topographic Category:	1	Operational Wind Speed:	60 mph
Crest Height:	0.0 ft	Design Ice Thickness:	1.00 in

Seismic Parameters

Analysis Method:	Equivalent Modal Analysis & Equivalent Lateral Force Methods		
Site Class:	D - Stiff Soil		
Period Based on Rayleigh Method (sec):	2.13		
T <sub>L</sub> (sec):	16	p:	1.3
S <sub>s</sub> :	0.165	S <sub>1</sub> :	0.059
F <sub>a</sub> :	1.600	F <sub>v</sub> :	2.400
S <sub>ds</sub> :	0.176	S <sub>d1</sub> :	0.094
		C <sub>s</sub> :	0.030
		C <sub>s</sub> Max:	0.030
		C <sub>s</sub> Min:	0.030

Load Cases

1.2D + 1.6W	105 mph with No Ice
0.9D + 1.6W	105 mph with No Ice (Reduced DL)
1.2D + 1.0Di + 1.0Wi	50 mph with 0.75 in Radial Ice
(1.2 + 0.2S <sub>ds</sub> ) * DL + E ELFM	Seismic Equivalent Lateral Forces Method
(1.2 + 0.2S <sub>ds</sub> ) * DL + E EMAM	Seismic Equivalent Modal Analysis Method
(0.9 - 0.2S <sub>ds</sub> ) * DL + E ELFM	Seismic (Reduced DL) Equivalent Lateral Forces Method
(0.9 - 0.2S <sub>ds</sub> ) * DL + E EMAM	Seismic (Reduced DL) Equivalent Modal Analysis Method
1.0D + 1.0W	Serviceability 60 mph

Site Number: 370625

Code: ANSI/TIA-222-G

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Site Name: Old Saybrook, CT

Engineering Number: OAA686891\_C3\_01

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Customer: T-Mobile

**Shaft Section Properties**

Sect Info	Length (ft)	Thick (in)	Fy (ksi)	Joint Type	Joint Len (in)	Weight (lb)	Bottom						Top						
							Dia (in)	Elev (ft)	Area (in <sup>2</sup> )	Ix (in <sup>4</sup> )	W/t Ratio	D/t Ratio	Dia (in)	Elev (ft)	Area (in <sup>2</sup> )	Ix (in <sup>4</sup> )	W/t Ratio	D/t Ratio	Taper (in/ft)
1-18	53.500	0.3750	65		0.00	12,399	64.69	0.00	76.55	40004.8	28.65	172.51	50.51	53.50	59.67	18951.5	21.99	134.70	0.265014
2-18	53.500	0.3750	65	Slip	81.00	9,877	53.05	46.75	62.69	21978.8	23.18	141.47	38.87	100.25	45.82	8579.6	16.51	103.66	0.265014
3-18	39.250	0.2813	65	Slip	63.00	4,214	40.82	95.00	36.19	7517.0	23.83	145.16	30.42	134.25	26.91	3088.9	17.31	108.18	0.265014
4-18	45.000	0.1875	65	Slip	51.00	2,349	31.92	130.00	18.89	2403.8	28.26	170.27	20.00	175.00	11.79	584.7	17.04	106.67	0.265014
Shaft Weight						28,839													

**Discrete Appurtenance Properties**

Attach Elev (ft)	Description	Qty	Weight (lb)	No Ice EPAa (sf)	Orientation Factor	Weight (lb)	Ice EPAa (sf)	Orientation Factor	Distance From Face (ft)	Vert Ecc (ft)
175.00	Alcatel-Lucent PCS B25	3	55.00	2.200	0.67	141.32	2.841	0.67	0.000	0.000
175.00	Alcatel-Lucent RRH2x60 700	3	56.70	2.150	0.67	139.52	2.785	0.67	0.000	0.000
175.00	Alcatel-Lucent RRH4X45-B66	3	64.00	2.660	0.67	141.70	3.390	0.67	0.000	0.000
175.00	Andrew SBNHH-1D65B	6	50.70	8.170	0.83	257.56	9.497	0.83	0.000	0.000
175.00	Antel BXA-70063/6CF	3	17.00	7.570	0.75	187.37	8.855	0.75	0.000	0.000
175.00	Antel BXA-80080/6CF	3	22.00	7.780	0.75	196.82	9.075	0.75	0.000	0.000
175.00	Flat Platform w/ Handrails	1	2000.00	42.400	1.00	3,444.12	63.711	1.00	0.000	0.000
175.00	RFS DB-T1-6Z-8AB-OZ	2	44.00	4.800	0.67	190.12	5.687	0.67	0.000	0.000
162.00	Andrew LNX-6515DS-A1M	3	49.80	11.440	0.84	315.60	13.115	0.84	0.000	0.000
162.00	Ericsson AIR 21, 1.3M, B2A	3	90.40	6.580	0.83	259.69	7.185	0.83	0.000	0.000
162.00	Ericsson AIR 21, 1.3M, B4A	3	91.50	6.580	0.82	260.03	7.140	0.82	0.000	0.000
162.00	Round T-Arms	3	250.00	9.700	0.67	460.91	18.020	0.67	0.000	0.000
152.00	RFS APXV18-206517S-C	3	26.40	5.170	0.80	144.16	6.410	0.80	0.000	0.000
102.00	Andrew DB589	1	11.50	1.380	1.00	90.36	4.469	1.00	0.000	0.000
102.00	Round Side Arm	1	150.00	5.200	1.00	220.47	7.817	1.00	0.000	0.000
1.00	4' Dish w/ Radome	1	120.00	10.850	1.00	300.85	11.753	1.00	0.000	0.000
Totals		42	4842.10			12,722.70			Number of Loadings : 16	

**Linear Appurtenance Properties**

Elev From (ft)	Elev To (ft)	Qty	Description	Coax Diameter (in)	Coax Weight (lb/ft)	Flat	Projected Width (in)	Exposed To Wind	Carrier
0.00	175.00	18	1 5/8" Coax	1.98	0.82	N	0.00	N	Verizon
0.00	175.00	2	1 5/8" Fiber	1.63	1.61	N	0.00	N	Verizon
0.00	162.00	12	1 5/8" Coax	1.98	0.82	N	0.00	N	T-Mobile
0.00	162.00	1	1 5/8" Hybriflex	1.98	1.30	N	0.00	N	T-Mobile
0.00	152.00	6	1 5/8" Coax	1.98	0.82	N	0.00	N	Metro PCS
0.00	102.00	1	7/8" Coax	1.09	0.33	N	1.09	Y	American Messaging
0.00	1.00	1	0.28" RG-6	0.28	0.03	N	0.00	N	American Messaging



Site Number: 370625

Code: ANSI/TIA-222-G

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Site Name: Old Saybrook, CT

Engineering Number: OAA686891\_C3\_01

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Customer: T-Mobile

Segment Properties (Max Len : 5. ft)

Seg Top Elev (ft)	Description	Thick (in)	Flat Dia (in)	Area (in <sup>2</sup> )	Ix (in <sup>4</sup> )	W/t Ratio	D/t Ratio	F'y (ksi)	S (in <sup>3</sup> )	Z (in <sup>3</sup> )	Weight (lb)
0.00		0.3750	64.690	76.548	40,004.8	28.65	172.51	67.7	1218.	0.0	0.0
1.00		0.3750	64.425	76.233	39,512.3	28.53	171.80	67.8	1208.	0.0	259.9
5.00		0.3750	63.365	74.971	37,582.8	28.03	168.97	68.4	1168.	0.0	1,029.0
10.00		0.3750	62.040	73.394	35,260.5	27.41	165.44	69.2	1119.	0.0	1,262.1
15.00		0.3750	60.715	71.817	33,036.0	26.79	161.91	69.9	1071.	0.0	1,235.3
20.00		0.3750	59.390	70.240	30,907.0	26.16	158.37	70.6	1025.	0.0	1,208.5
25.00		0.3750	58.065	68.663	28,871.5	25.54	154.84	71.4	979.4	0.0	1,181.6
30.00		0.3750	56.740	67.086	26,927.4	24.92	151.31	72.1	934.7	0.0	1,154.8
35.00		0.3750	55.415	65.508	25,072.6	24.29	147.77	72.8	891.2	0.0	1,128.0
40.00		0.3750	54.089	63.931	23,305.0	23.67	144.24	73.6	848.6	0.0	1,101.1
45.00		0.3750	52.764	62.354	21,622.4	23.05	140.70	74.3	807.1	0.0	1,074.3
46.75	Bot - Section 2	0.3750	52.301	61.802	21,053.3	22.83	139.47	74.6	792.9	0.0	369.7
50.00		0.3750	51.439	60.777	20,022.9	22.42	137.17	75.0	766.7	0.0	1,365.5
53.50	Top - Section 1	0.3750	51.262	60.566	19,814.8	22.34	136.70	75.1	761.3	0.0	1,445.2
55.00		0.3750	50.864	60.093	19,354.0	22.15	135.64	75.3	749.4	0.0	307.9
60.00		0.3750	49.539	58.516	17,869.9	21.53	132.10	76.1	710.5	0.0	1,009.0
65.00		0.3750	48.214	56.938	16,463.6	20.91	128.57	76.8	672.6	0.0	982.2
70.00		0.3750	46.889	55.361	15,133.1	20.28	125.04	77.5	635.7	0.0	955.3
75.00		0.3750	45.564	53.784	13,876.2	19.66	121.50	78.3	599.8	0.0	928.5
80.00		0.3750	44.239	52.207	12,691.0	19.04	117.97	79.0	565.0	0.0	901.7
85.00		0.3750	42.914	50.630	11,575.3	18.42	114.44	79.7	531.3	0.0	874.8
90.00		0.3750	41.589	49.053	10,526.9	17.79	110.90	80.5	498.5	0.0	848.0
95.00	Bot - Section 3	0.3750	40.264	47.476	9,543.8	17.17	107.37	81.2	466.9	0.0	821.2
100.0		0.3750	38.939	45.899	8,624.0	16.55	103.84	81.9	436.2	0.0	1,400.0
100.2	Top - Section 2	0.2813	39.435	34.951	6,769.4	22.96	140.21	74.4	338.1	0.0	68.8
102.0		0.2813	38.971	34.537	6,531.7	22.67	138.56	74.7	330.1	0.0	206.9
105.0		0.2813	38.176	33.827	6,137.3	22.17	135.74	75.3	316.6	0.0	348.9
110.0		0.2813	36.851	32.644	5,515.7	21.34	131.03	76.3	294.8	0.0	565.5
115.0		0.2813	35.526	31.461	4,937.6	20.51	126.31	77.3	273.7	0.0	545.3
120.0		0.2813	34.201	30.278	4,401.4	19.68	121.60	78.3	253.5	0.0	525.2
125.0		0.2813	32.876	29.096	3,905.4	18.85	116.89	79.2	234.0	0.0	505.1
130.0	Bot - Section 4	0.2813	31.551	27.913	3,448.2	18.02	112.18	80.2	215.3	0.0	485.0
134.2	Top - Section 3	0.1875	30.799	18.217	2,156.8	27.20	164.26	69.4	137.9	0.0	664.7
135.0		0.1875	30.601	18.099	2,115.1	27.01	163.20	69.6	136.1	0.0	46.3
140.0		0.1875	29.276	17.310	1,850.5	25.77	156.14	71.1	124.5	0.0	301.2
145.0		0.1875	27.950	16.522	1,608.9	24.52	149.07	72.6	113.4	0.0	287.8
150.0		0.1875	26.625	15.733	1,389.4	23.28	142.00	74.0	102.8	0.0	274.4
152.0		0.1875	26.095	15.418	1,307.5	22.78	139.18	74.6	98.7	0.0	106.0
155.0		0.1875	25.300	14.945	1,190.8	22.03	134.93	75.5	92.7	0.0	155.0
160.0		0.1875	23.975	14.156	1,012.1	20.78	127.87	77.0	83.1	0.0	247.6
162.0		0.1875	23.445	13.841	945.9	20.28	125.04	77.5	79.5	0.0	95.3
165.0		0.1875	22.650	13.368	852.2	19.54	120.80	78.4	74.1	0.0	138.9
170.0		0.1875	21.325	12.579	710.1	18.29	113.73	79.9	65.6	0.0	220.7
175.0		0.1875	20.000	11.790	584.7	17.04	106.67	81.4	57.6	0.0	207.3
28,839.5											

<b>Load Case:</b> 1.2D + 1.6W	105 mph with No Ice	24 Iterations
Gust Response Factor :1.10		Wind Importance Factor :1.00
Dead Load Factor :1.20		
Wind Load Factor :1.60		

**Applied Segment Forces Summary**

Seg Elev (ft)	Description	Shaft Forces		Discrete Forces			Linear Forces		Sum of Forces				
		Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Torsion MY (lb-ft)	Moment MZ (lb)
0.00		71.2	0.0					0.0	0.0	71.2	0.0	0.0	0.0
1.00	Appertunance(s)	353.2	311.9	435.2	0.0	0.0	144.0	0.0	41.3	788.4	497.2	0.0	0.0
5.00		627.8	1,234.8					0.0	165.0	627.8	1,399.8	0.0	0.0
10.00		684.4	1,514.6					0.0	206.2	684.4	1,720.8	0.0	0.0
15.00		680.2	1,482.4					0.0	206.2	680.2	1,688.6	0.0	0.0
20.00		694.0	1,450.2					0.0	206.2	694.0	1,656.4	0.0	0.0
25.00		711.5	1,418.0					0.0	206.2	711.5	1,624.2	0.0	0.0
30.00		722.7	1,385.8					0.0	206.2	722.7	1,592.0	0.0	0.0
35.00		729.3	1,353.6					0.0	206.2	729.3	1,559.8	0.0	0.0
40.00		732.2	1,321.4					0.0	206.2	732.2	1,527.6	0.0	0.0
45.00		494.6	1,289.2					0.0	206.2	494.6	1,495.4	0.0	0.0
46.75	Bot - Section 2	369.2	443.6					0.0	72.2	369.2	515.8	0.0	0.0
50.00		499.9	1,638.6					0.0	134.0	499.9	1,772.6	0.0	0.0
53.50	Top - Section 1	369.5	1,734.2					0.0	144.4	369.5	1,878.5	0.0	0.0
55.00		477.6	369.5					0.0	61.9	477.6	431.4	0.0	0.0
60.00		730.5	1,210.8					0.0	206.2	730.5	1,417.0	0.0	0.0
65.00		723.1	1,178.6					0.0	206.2	723.1	1,384.8	0.0	0.0
70.00		714.3	1,146.4					0.0	206.2	714.3	1,352.6	0.0	0.0
75.00		704.3	1,114.2					0.0	206.2	704.3	1,320.4	0.0	0.0
80.00		693.2	1,082.0					0.0	206.2	693.2	1,288.2	0.0	0.0
85.00		681.0	1,049.8					0.0	206.2	681.0	1,256.0	0.0	0.0
90.00		668.0	1,017.6					0.0	206.2	668.0	1,223.8	0.0	0.0
95.00	Bot - Section 3	658.7	985.4					0.0	206.2	658.7	1,191.6	0.0	0.0
100.00		344.3	1,680.1					0.0	206.2	344.3	1,886.3	0.0	0.0
100.25	Top - Section 2	129.2	82.5					0.0	10.3	129.2	92.8	0.0	0.0
102.00	Appertunance(s)	304.4	248.3	394.6	0.0	0.0	193.8	0.0	72.2	699.0	514.2	0.0	0.0
105.00		504.3	418.7					0.0	122.5	504.3	541.3	0.0	0.0
110.00		617.5	678.6					0.0	204.2	617.5	882.8	0.0	0.0
115.00		600.9	654.4					0.0	204.2	600.9	858.6	0.0	0.0
120.00		583.7	630.3					0.0	204.2	583.7	834.5	0.0	0.0
125.00		565.9	606.1					0.0	204.2	565.9	810.4	0.0	0.0
130.00	Bot - Section 4	510.6	582.0					0.0	204.2	510.6	786.2	0.0	0.0
134.25	Top - Section 3	272.4	797.6					0.0	173.6	272.4	971.2	0.0	0.0
135.00		303.2	55.6					0.0	30.6	303.2	86.2	0.0	0.0
140.00		516.1	361.5					0.0	204.2	516.1	565.7	0.0	0.0
145.00		496.4	345.4					0.0	204.2	496.4	549.6	0.0	0.0
150.00		337.7	329.3					0.0	204.2	337.7	533.5	0.0	0.0
152.00	Appertunance(s)	233.0	127.2	809.4	0.0	0.0	95.0	0.0	81.7	1,042.4	303.9	0.0	0.0
155.00		361.2	186.0					0.0	104.8	361.2	290.8	0.0	0.0
160.00		308.7	297.1					0.0	174.7	308.7	471.8	0.0	0.0
162.00	Appertunance(s)	212.1	114.3	4,214.0	0.0	0.0	1,734.1	0.0	69.9	4,426.1	1,918.3	0.0	0.0
165.00		327.2	166.7					0.0	64.7	327.2	231.4	0.0	0.0
170.00		391.6	264.9					0.0	107.9	391.6	372.8	0.0	0.0
175.00	Appertunance(s)	190.3	248.8	7,674.1	0.0	0.0	3,611.2	0.0	107.9	7,864.4	3,967.8	0.0	0.0
<b>Totals:</b>										35,428.2	47,264.7	0.00	0.00

Site Number: 370625

Code: ANSI/TIA-222-G

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Site Name: Old Saybrook, CT

Engineering Number: OAA686891\_C3\_01

10/5/2016 10:16:37 PM

Customer: T- Mobile

Load Case: 1.2D + 1.6W

105 mph with No Ice

24 Iterations

Gust Response Factor :1.10

Wind Importance Factor :1.00

Dead Load Factor :1.20

Wind Load Factor :1.60

Calculated Forces

Seg	Pu	Vu	Tu	Mu	Mu	Resultant	phi	phi	phi	phi	Total		
Elev	FY (-)	FX (-)	MY	MZ	MX	Moment	Pn	Vn	Tn	Mn	Deflect	Rotation	Ratio
(ft)	(kips)	(kips)	(ft-kips)	(ft-kips)	(ft-kips)	(ft-kips)	(kips)	(kips)	(ft-kips)	(ft-kips)	(in)	(deg)	
0.00	-47.25	-35.37	0.00	-4,059.91	0.00	4,059.91	4,663.96	2,331.98	12,350.3	6,184.38	0.00	0.00	0.667
1.00	-46.71	-34.64	0.00	-4,024.54	0.00	4,024.54	4,654.80	2,327.40	12,275.0	6,146.65	0.00	-0.03	0.665
5.00	-45.24	-34.11	0.00	-3,885.99	0.00	3,885.99	4,617.32	2,308.66	11,973.5	5,995.65	0.08	-0.14	0.658
10.00	-43.44	-33.53	0.00	-3,715.44	0.00	3,715.44	4,568.59	2,284.30	11,596.4	5,806.85	0.30	-0.29	0.650
15.00	-41.67	-32.95	0.00	-3,547.79	0.00	3,547.79	4,517.79	2,258.89	11,219.5	5,618.13	0.68	-0.43	0.641
20.00	-39.93	-32.34	0.00	-3,383.06	0.00	3,383.06	4,464.90	2,232.45	10,843.2	5,429.68	1.22	-0.58	0.632
25.00	-38.23	-31.72	0.00	-3,221.34	0.00	3,221.34	4,409.93	2,204.97	10,467.7	5,241.66	1.91	-0.73	0.623
30.00	-36.56	-31.07	0.00	-3,062.76	0.00	3,062.76	4,352.89	2,176.44	10,093.5	5,054.25	2.76	-0.89	0.615
35.00	-34.93	-30.41	0.00	-2,907.42	0.00	2,907.42	4,293.76	2,146.88	9,720.79	4,867.62	3.78	-1.05	0.606
40.00	-33.34	-29.74	0.00	-2,755.36	0.00	2,755.36	4,232.55	2,116.28	9,349.96	4,681.93	4.96	-1.21	0.597
45.00	-31.80	-29.28	0.00	-2,606.64	0.00	2,606.64	4,169.26	2,084.63	8,981.38	4,497.36	6.31	-1.37	0.587
46.75	-31.25	-28.94	0.00	-2,555.40	0.00	2,555.40	4,146.62	2,073.31	8,852.97	4,433.06	6.83	-1.43	0.584
50.00	-29.43	-28.46	0.00	-2,461.34	0.00	2,461.34	4,103.90	2,051.95	8,615.37	4,314.09	7.84	-1.54	0.578
53.50	-27.52	-28.08	0.00	-2,361.75	0.00	2,361.75	4,094.98	2,047.49	8,566.54	4,289.64	9.01	-1.66	0.557
55.00	-27.05	-27.64	0.00	-2,319.64	0.00	2,319.64	4,074.88	2,037.44	8,457.42	4,234.99	9.55	-1.71	0.555
60.00	-25.58	-26.94	0.00	-2,181.45	0.00	2,181.45	4,006.53	2,003.26	8,095.71	4,053.87	11.43	-1.88	0.545
65.00	-24.14	-26.24	0.00	-2,046.77	0.00	2,046.77	3,936.09	1,968.05	7,737.41	3,874.46	13.49	-2.05	0.535
70.00	-22.74	-25.54	0.00	-1,915.58	0.00	1,915.58	3,863.58	1,931.79	7,382.86	3,696.92	15.72	-2.22	0.524
75.00	-21.37	-24.85	0.00	-1,787.86	0.00	1,787.86	3,788.99	1,894.50	7,032.42	3,521.44	18.14	-2.39	0.514
80.00	-20.04	-24.17	0.00	-1,663.61	0.00	1,663.61	3,712.32	1,856.16	6,686.41	3,348.18	20.74	-2.57	0.502
85.00	-18.74	-23.49	0.00	-1,542.78	0.00	1,542.78	3,633.57	1,816.78	6,345.19	3,177.31	23.52	-2.75	0.491
90.00	-17.48	-22.82	0.00	-1,425.34	0.00	1,425.34	3,552.73	1,776.37	6,009.09	3,009.01	26.50	-2.93	0.479
95.00	-16.25	-22.15	0.00	-1,311.27	0.00	1,311.27	3,469.82	1,734.91	5,678.46	2,843.45	29.67	-3.12	0.466
100.00	-14.35	-21.72	0.00	-1,200.53	0.00	1,200.53	3,384.83	1,692.41	5,353.64	2,680.80	33.03	-3.30	0.452
100.25	-14.25	-21.60	0.00	-1,195.10	0.00	1,195.10	2,340.16	1,170.08	3,767.44	1,886.52	33.20	-3.31	0.640
102.00	-13.74	-20.90	0.00	-1,157.31	0.00	1,157.31	2,323.07	1,161.53	3,695.31	1,850.40	34.43	-3.38	0.632
105.00	-13.16	-20.41	0.00	-1,094.62	0.00	1,094.62	2,293.18	1,146.59	3,572.27	1,788.79	36.60	-3.53	0.618
110.00	-12.24	-19.78	0.00	-992.60	0.00	992.60	2,241.70	1,120.85	3,369.07	1,687.04	40.43	-3.77	0.594
115.00	-11.34	-19.18	0.00	-893.67	0.00	893.67	2,188.14	1,094.07	3,168.50	1,586.61	44.50	-4.01	0.569
120.00	-10.47	-18.58	0.00	-797.80	0.00	797.80	2,132.50	1,066.25	2,970.92	1,487.67	48.84	-4.26	0.541
125.00	-9.63	-17.99	0.00	-704.91	0.00	704.91	2,074.78	1,037.39	2,776.66	1,390.39	53.42	-4.50	0.512
130.00	-8.82	-17.45	0.00	-614.95	0.00	614.95	2,014.98	1,007.49	2,586.06	1,294.95	58.26	-4.74	0.480
134.25	-7.84	-17.12	0.00	-540.77	0.00	540.77	1,137.98	568.99	1,433.87	718.00	62.57	-4.94	0.761
135.00	-7.73	-16.83	0.00	-527.93	0.00	527.93	1,134.17	567.08	1,419.73	710.92	63.35	-4.98	0.750
140.00	-7.12	-16.31	0.00	-443.77	0.00	443.77	1,107.59	553.79	1,325.68	663.83	68.74	-5.31	0.676
145.00	-6.54	-15.80	0.00	-362.23	0.00	362.23	1,078.93	539.46	1,232.17	617.00	74.46	-5.62	0.594
150.00	-5.99	-15.43	0.00	-283.25	0.00	283.25	1,048.18	524.09	1,139.55	570.62	80.49	-5.90	0.503
152.00	-5.76	-14.37	0.00	-252.40	0.00	252.40	1,035.30	517.65	1,102.82	552.23	82.98	-6.01	0.463
155.00	-5.46	-14.00	0.00	-209.29	0.00	209.29	1,015.36	507.68	1,048.15	524.85	86.80	-6.16	0.405
160.00	-5.00	-13.65	0.00	-139.29	0.00	139.29	980.46	490.23	958.32	479.87	93.36	-6.37	0.296
162.00	-3.57	-9.04	0.00	-111.99	0.00	111.99	965.91	482.96	922.90	462.14	96.04	-6.44	0.246
165.00	-3.36	-8.70	0.00	-84.86	0.00	84.86	943.48	471.74	870.40	435.85	100.11	-6.53	0.199
170.00	-3.03	-8.27	0.00	-41.36	0.00	41.36	904.41	452.21	784.74	392.95	107.00	-6.64	0.109
175.00	0.00	-7.86	0.00	0.00	0.00	0.00	863.27	431.63	701.67	351.36	113.96	-6.68	0.000

<b>Load Case:</b> 0.9D + 1.6W	105 mph with No Ice (Reduced DL)	24 Iterations
Gust Response Factor :1.10		Wind Importance Factor :1.00
Dead Load Factor :0.90		
Wind Load Factor :1.60		

**Applied Segment Forces Summary**

Seg Elev (ft)	Description	Shaft Forces		Discrete Forces			Linear Forces		Sum of Forces				
		Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Torsion MY (lb-ft)	Moment MZ (lb)
0.00		71.2	0.0					0.0	0.0	71.2	0.0	0.0	0.0
1.00	Appertunance(s)	353.2	233.9	435.2	0.0	0.0	108.0	0.0	31.0	788.4	372.9	0.0	0.0
5.00		627.8	926.1					0.0	123.7	627.8	1,049.9	0.0	0.0
10.00		684.4	1,135.9					0.0	154.7	684.4	1,290.6	0.0	0.0
15.00		680.2	1,111.8					0.0	154.7	680.2	1,266.4	0.0	0.0
20.00		694.0	1,087.6					0.0	154.7	694.0	1,242.3	0.0	0.0
25.00		711.5	1,063.5					0.0	154.7	711.5	1,218.1	0.0	0.0
30.00		722.7	1,039.3					0.0	154.7	722.7	1,194.0	0.0	0.0
35.00		729.3	1,015.2					0.0	154.7	729.3	1,169.8	0.0	0.0
40.00		732.2	991.0					0.0	154.7	732.2	1,145.7	0.0	0.0
45.00		494.6	966.9					0.0	154.7	494.6	1,121.5	0.0	0.0
46.75	Bot - Section 2	369.2	332.7					0.0	54.1	369.2	386.8	0.0	0.0
50.00		499.9	1,228.9					0.0	100.5	499.9	1,329.5	0.0	0.0
53.50	Top - Section 1	369.5	1,300.6					0.0	108.3	369.5	1,408.9	0.0	0.0
55.00		477.6	277.1					0.0	46.4	477.6	323.5	0.0	0.0
60.00		730.5	908.1					0.0	154.7	730.5	1,062.8	0.0	0.0
65.00		723.1	883.9					0.0	154.7	723.1	1,038.6	0.0	0.0
70.00		714.3	859.8					0.0	154.7	714.3	1,014.5	0.0	0.0
75.00		704.3	835.6					0.0	154.7	704.3	990.3	0.0	0.0
80.00		693.2	811.5					0.0	154.7	693.2	966.2	0.0	0.0
85.00		681.0	787.3					0.0	154.7	681.0	942.0	0.0	0.0
90.00		668.0	763.2					0.0	154.7	668.0	917.9	0.0	0.0
95.00	Bot - Section 3	658.7	739.0					0.0	154.7	658.7	893.7	0.0	0.0
100.00		344.3	1,260.0					0.0	154.7	344.3	1,414.7	0.0	0.0
100.25	Top - Section 2	129.2	61.9					0.0	7.7	129.2	69.6	0.0	0.0
102.00	Appertunance(s)	304.4	186.2	394.6	0.0	0.0	145.3	0.0	54.1	699.0	385.7	0.0	0.0
105.00		504.3	314.0					0.0	91.9	504.3	406.0	0.0	0.0
110.00		617.5	508.9					0.0	153.2	617.5	662.1	0.0	0.0
115.00		600.9	490.8					0.0	153.2	600.9	644.0	0.0	0.0
120.00		583.7	472.7					0.0	153.2	583.7	625.9	0.0	0.0
125.00		565.9	454.6					0.0	153.2	565.9	607.8	0.0	0.0
130.00	Bot - Section 4	510.6	436.5					0.0	153.2	510.6	589.7	0.0	0.0
134.25	Top - Section 3	272.4	598.2					0.0	130.2	272.4	728.4	0.0	0.0
135.00		303.2	41.7					0.0	23.0	303.2	64.7	0.0	0.0
140.00		516.1	271.1					0.0	153.2	516.1	424.3	0.0	0.0
145.00		496.4	259.0					0.0	153.2	496.4	412.2	0.0	0.0
150.00		337.7	247.0					0.0	153.2	337.7	400.1	0.0	0.0
152.00	Appertunance(s)	233.0	95.4	809.4	0.0	0.0	71.3	0.0	61.3	1,042.4	228.0	0.0	0.0
155.00		361.2	139.5					0.0	78.6	361.2	218.1	0.0	0.0
160.00		308.7	222.8					0.0	131.0	308.7	353.8	0.0	0.0
162.00	Appertunance(s)	212.1	85.7	4,214.0	0.0	0.0	1,300.6	0.0	52.4	4,426.1	1,438.7	0.0	0.0
165.00		327.2	125.0					0.0	48.5	327.2	173.5	0.0	0.0
170.00		391.6	198.7					0.0	80.9	391.6	279.6	0.0	0.0
175.00	Appertunance(s)	190.3	186.6	7,674.1	0.0	0.0	2,708.4	0.0	80.9	7,864.4	2,975.9	0.0	0.0
<b>Totals:</b>										35,428.2	35,448.5	0.00	0.00

Site Number: 370625

Code: ANSI/TIA-222-G

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Site Name: Old Saybrook, CT

Engineering Number: OAA686891\_C3\_01

10/5/2016 10:16:38 PM

Customer: T-Mobile

Load Case: 0.9D + 1.6W

105 mph with No Ice (Reduced DL)

24 Iterations

Gust Response Factor :1.10

Wind Importance Factor :1.00

Dead Load Factor :0.90

Wind Load Factor :1.60

Calculated Forces

Seg	Pu	Vu	Tu	Mu	Mu	Resultant	phi	phi	phi	phi	Total		
Elev	FY (-)	FX (-)	MY	MZ	MX	Moment	Pn	Vn	Tn	Mn	Deflect	Rotation	Ratio
(ft)	(kips)	(kips)	(ft-kips)	(ft-kips)	(ft-kips)	(ft-kips)	(kips)	(kips)	(ft-kips)	(ft-kips)	(in)	(deg)	
0.00	-35.44	-35.37	0.00	-4,026.38	0.00	4,026.38	4,663.96	2,331.98	12,350.3	6,184.38	0.00	0.00	0.659
1.00	-35.02	-34.62	0.00	-3,991.01	0.00	3,991.01	4,654.80	2,327.40	12,275.0	6,146.65	0.00	-0.03	0.657
5.00	-33.90	-34.07	0.00	-3,852.53	0.00	3,852.53	4,617.32	2,308.66	11,973.5	5,995.65	0.08	-0.14	0.650
10.00	-32.53	-33.46	0.00	-3,682.20	0.00	3,682.20	4,568.59	2,284.30	11,596.4	5,806.85	0.30	-0.28	0.641
15.00	-31.18	-32.85	0.00	-3,514.90	0.00	3,514.90	4,517.79	2,258.89	11,219.5	5,618.13	0.68	-0.43	0.633
20.00	-29.86	-32.22	0.00	-3,350.65	0.00	3,350.65	4,464.90	2,232.45	10,843.2	5,429.68	1.21	-0.58	0.624
25.00	-28.57	-31.57	0.00	-3,189.53	0.00	3,189.53	4,409.93	2,204.97	10,467.7	5,241.66	1.89	-0.73	0.615
30.00	-27.30	-30.91	0.00	-3,031.66	0.00	3,031.66	4,352.89	2,176.44	10,093.5	5,054.25	2.74	-0.88	0.606
35.00	-26.06	-30.23	0.00	-2,877.11	0.00	2,877.11	4,293.76	2,146.88	9,720.79	4,867.62	3.74	-1.04	0.597
40.00	-24.85	-29.55	0.00	-2,725.95	0.00	2,725.95	4,232.55	2,116.28	9,349.96	4,681.93	4.92	-1.20	0.588
45.00	-23.68	-29.07	0.00	-2,578.22	0.00	2,578.22	4,169.26	2,084.63	8,981.38	4,497.36	6.26	-1.36	0.579
46.75	-23.26	-28.73	0.00	-2,527.34	0.00	2,527.34	4,146.62	2,073.31	8,852.97	4,433.06	6.76	-1.42	0.576
50.00	-21.89	-28.24	0.00	-2,433.97	0.00	2,433.97	4,103.90	2,051.95	8,615.37	4,314.09	7.77	-1.53	0.570
53.50	-20.45	-27.86	0.00	-2,335.14	0.00	2,335.14	4,094.98	2,047.49	8,566.54	4,289.64	8.93	-1.64	0.550
55.00	-20.09	-27.41	0.00	-2,293.35	0.00	2,293.35	4,074.88	2,037.44	8,457.42	4,234.99	9.46	-1.70	0.547
60.00	-18.97	-26.70	0.00	-2,156.29	0.00	2,156.29	4,006.53	2,003.26	8,095.71	4,053.87	11.32	-1.86	0.537
65.00	-17.88	-26.00	0.00	-2,022.77	0.00	2,022.77	3,936.09	1,968.05	7,737.41	3,874.46	13.36	-2.03	0.527
70.00	-16.82	-25.30	0.00	-1,892.78	0.00	1,892.78	3,863.58	1,931.79	7,382.86	3,696.92	15.57	-2.20	0.517
75.00	-15.78	-24.60	0.00	-1,766.30	0.00	1,766.30	3,788.99	1,894.50	7,032.42	3,521.44	17.96	-2.37	0.506
80.00	-14.77	-23.91	0.00	-1,643.29	0.00	1,643.29	3,712.32	1,856.16	6,686.41	3,348.18	20.53	-2.54	0.495
85.00	-13.79	-23.23	0.00	-1,523.73	0.00	1,523.73	3,633.57	1,816.78	6,345.19	3,177.31	23.29	-2.72	0.484
90.00	-12.84	-22.56	0.00	-1,407.56	0.00	1,407.56	3,552.73	1,776.37	6,009.09	3,009.01	26.23	-2.90	0.472
95.00	-11.91	-21.90	0.00	-1,294.76	0.00	1,294.76	3,469.82	1,734.91	5,678.46	2,843.45	29.37	-3.08	0.459
100.00	-10.48	-21.49	0.00	-1,185.28	0.00	1,185.28	3,384.83	1,692.41	5,353.64	2,680.80	32.69	-3.27	0.445
100.25	-10.40	-21.36	0.00	-1,179.91	0.00	1,179.91	2,340.16	1,170.08	3,767.44	1,886.52	32.86	-3.28	0.630
102.00	-10.02	-20.66	0.00	-1,142.52	0.00	1,142.52	2,323.07	1,161.53	3,695.31	1,850.40	34.08	-3.34	0.622
105.00	-9.57	-20.17	0.00	-1,080.53	0.00	1,080.53	2,293.18	1,146.59	3,572.27	1,788.79	36.23	-3.49	0.609
110.00	-8.87	-19.55	0.00	-979.69	0.00	979.69	2,241.70	1,120.85	3,369.07	1,687.04	40.01	-3.73	0.585
115.00	-8.19	-18.94	0.00	-881.95	0.00	881.95	2,188.14	1,094.07	3,168.50	1,586.61	44.04	-3.97	0.560
120.00	-7.53	-18.34	0.00	-787.25	0.00	787.25	2,132.50	1,066.25	2,970.92	1,487.67	48.32	-4.21	0.533
125.00	-6.89	-17.76	0.00	-695.53	0.00	695.53	2,074.78	1,037.39	2,776.66	1,390.39	52.85	-4.45	0.504
130.00	-6.28	-17.23	0.00	-606.72	0.00	606.72	2,014.98	1,007.49	2,586.06	1,294.95	57.64	-4.69	0.472
134.25	-5.54	-16.91	0.00	-533.48	0.00	533.48	1,137.98	568.99	1,433.87	718.00	61.89	-4.89	0.749
135.00	-5.45	-16.62	0.00	-520.80	0.00	520.80	1,134.17	567.08	1,419.73	710.92	62.66	-4.92	0.738
140.00	-4.99	-16.10	0.00	-437.70	0.00	437.70	1,107.59	553.79	1,325.68	663.83	67.99	-5.24	0.665
145.00	-4.54	-15.59	0.00	-357.22	0.00	357.22	1,078.93	539.46	1,232.17	617.00	73.64	-5.55	0.584
150.00	-4.13	-15.23	0.00	-279.29	0.00	279.29	1,048.18	524.09	1,139.55	570.62	79.60	-5.83	0.494
152.00	-3.98	-14.17	0.00	-248.84	0.00	248.84	1,035.30	517.65	1,102.82	552.23	82.06	-5.94	0.455
155.00	-3.75	-13.80	0.00	-206.31	0.00	206.31	1,015.36	507.68	1,048.15	524.85	85.84	-6.09	0.398
160.00	-3.40	-13.47	0.00	-137.30	0.00	137.30	980.46	490.23	958.32	479.87	92.32	-6.29	0.290
162.00	-2.45	-8.91	0.00	-110.36	0.00	110.36	965.91	482.96	922.90	462.14	94.97	-6.36	0.242
165.00	-2.30	-8.57	0.00	-83.63	0.00	83.63	943.48	471.74	870.40	435.85	98.99	-6.45	0.195
170.00	-2.05	-8.15	0.00	-40.77	0.00	40.77	904.41	452.21	784.74	392.95	105.79	-6.55	0.106
175.00	0.00	-7.86	0.00	0.00	0.00	0.00	863.27	431.63	701.67	351.36	112.67	-6.59	0.000

<b>Load Case:</b> 1.2D + 1.0Di + 1.0Wi	50 mph with 0.75 in Radial Ice	23 Iterations
Gust Response Factor :1.10	Ice Dead Load Factor :1.00	Wind Importance Factor :1.00
Dead Load Factor :1.20		Ice Importance Factor :1.00
Wind Load Factor :1.00		

**Applied Segment Forces Summary**

Seg Elev (ft)	Description	Shaft Forces		Discrete Forces			Linear Forces		Sum of Forces				
		Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Torsion MY (lb-ft)	Moment MZ (lb)
0.00		19.2	0.0					0.0	0.0	19.2	0.0	0.0	0.0
1.00	Appertunance(s)	95.6	392.8	66.8	0.0	0.0	233.2	0.0	43.4	162.5	669.4	0.0	0.0
5.00		170.6	1,616.6					0.0	176.2	170.6	1,792.8	0.0	0.0
10.00		186.6	2,027.8					0.0	222.4	186.6	2,250.2	0.0	0.0
15.00		186.0	2,011.7					0.0	223.8	186.0	2,235.5	0.0	0.0
20.00		190.2	1,986.3					0.0	224.8	190.2	2,211.1	0.0	0.0
25.00		195.4	1,956.1					0.0	225.6	195.4	2,181.7	0.0	0.0
30.00		198.8	1,922.9					0.0	226.2	198.8	2,149.1	0.0	0.0
35.00		201.0	1,887.5					0.0	226.8	201.0	2,114.3	0.0	0.0
40.00		202.2	1,850.6					0.0	227.3	202.2	2,077.8	0.0	0.0
45.00		136.8	1,812.5					0.0	227.7	136.8	2,040.2	0.0	0.0
46.75	Bot - Section 2	102.2	626.6					0.0	79.8	102.2	706.4	0.0	0.0
50.00		138.5	1,979.6					0.0	148.3	138.5	2,127.9	0.0	0.0
53.50	Top - Section 1	102.5	2,097.7					0.0	159.9	102.5	2,257.5	0.0	0.0
55.00		132.7	524.9					0.0	68.6	132.7	593.4	0.0	0.0
60.00		203.2	1,718.6					0.0	228.8	203.2	1,947.4	0.0	0.0
65.00		201.6	1,677.5					0.0	229.1	201.6	1,906.6	0.0	0.0
70.00		199.6	1,635.9					0.0	229.4	199.6	1,865.3	0.0	0.0
75.00		197.2	1,593.8					0.0	229.7	197.2	1,823.5	0.0	0.0
80.00		194.6	1,551.4					0.0	229.9	194.6	1,781.3	0.0	0.0
85.00		191.7	1,508.6					0.0	230.2	191.7	1,738.8	0.0	0.0
90.00		188.5	1,465.4					0.0	230.4	188.5	1,695.9	0.0	0.0
95.00	Bot - Section 3	186.3	1,422.0					0.0	230.7	186.3	1,652.7	0.0	0.0
100.00		97.5	2,111.1					0.0	230.9	97.5	2,342.0	0.0	0.0
100.25	Top - Section 2	36.6	104.1					0.0	11.5	36.6	115.6	0.0	0.0
102.00	Appertunance(s)	86.4	397.8	104.4	0.0	0.0	318.1	0.0	80.9	190.9	796.7	0.0	0.0
105.00		143.5	670.6					0.0	122.5	143.5	793.1	0.0	0.0
110.00		176.2	1,086.0					0.0	204.2	176.2	1,290.2	0.0	0.0
115.00		172.0	1,049.7					0.0	204.2	172.0	1,253.9	0.0	0.0
120.00		167.7	1,013.2					0.0	204.2	167.7	1,217.4	0.0	0.0
125.00		163.3	976.5					0.0	204.2	163.3	1,180.7	0.0	0.0
130.00	Bot - Section 4	147.8	939.7					0.0	204.2	147.8	1,143.9	0.0	0.0
134.25	Top - Section 3	79.0	1,095.9					0.0	173.6	79.0	1,269.5	0.0	0.0
135.00		88.3	108.0					0.0	30.6	88.3	138.7	0.0	0.0
140.00		150.8	697.3					0.0	204.2	150.8	901.6	0.0	0.0
145.00		145.8	668.1					0.0	204.2	145.8	872.3	0.0	0.0
150.00		99.6	638.7					0.0	204.2	99.6	842.9	0.0	0.0
152.00	Appertunance(s)	69.1	249.0	142.2	0.0	0.0	448.3	0.0	81.7	211.3	779.0	0.0	0.0
155.00		107.5	363.7					0.0	104.8	107.5	468.5	0.0	0.0
160.00		92.2	579.5					0.0	174.7	92.2	754.3	0.0	0.0
162.00	Appertunance(s)	63.7	225.2	768.0	0.0	0.0	3,985.7	0.0	69.9	831.7	4,280.8	0.0	0.0
165.00		98.9	328.0					0.0	64.7	98.9	392.8	0.0	0.0
170.00		119.2	519.9					0.0	107.9	119.2	627.8	0.0	0.0
175.00	Appertunance(s)	58.2	489.9	1,416.5	0.0	0.0	7,941.7	0.0	107.9	1,474.7	8,539.5	0.0	0.0
<b>Totals:</b>										<b>8,682.49</b>	<b>69,820.0</b>	<b>0.00</b>	<b>0.00</b>

Site Number: 370625

Code: ANSI/TIA-222-G

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Site Name: Old Saybrook, CT

Engineering Number: OAA686891\_C3\_01

10/5/2016 10:16:40 PM

Customer: T- Mobile

Load Case: 1.2D + 1.0Di + 1.0Wi

50 mph with 0.75 in Radial Ice

23 Iterations

Gust Response Factor :1.10

Ice Dead Load Factor :1.00

Wind Importance Factor :1.00

Dead Load Factor :1.20

Ice Importance Factor :1.00

Wind Load Factor :1.00

Calculated Forces

Seg	Pu	Vu	Tu	Mu	Mu	Resultant	phi	phi	phi	phi	Total		
Elev	FY (-)	FX (-)	MY	MZ	MX	Moment	Pn	Vn	Tn	Mn	Deflect	Rotation	Ratio
(ft)	(kips)	(kips)	(ft-kips)	(ft-kips)	(ft-kips)	(ft-kips)	(kips)	(kips)	(ft-kips)	(ft-kips)	(in)	(deg)	
0.00	-69.82	-8.67	0.00	-958.67	0.00	958.67	4,663.96	2,331.98	12,350.3	6,184.38	0.00	0.00	0.170
1.00	-69.15	-8.52	0.00	-950.00	0.00	950.00	4,654.80	2,327.40	12,275.0	6,146.65	0.00	-0.01	0.169
5.00	-67.35	-8.39	0.00	-915.90	0.00	915.90	4,617.32	2,308.66	11,973.5	5,995.65	0.02	-0.03	0.167
10.00	-65.10	-8.24	0.00	-873.96	0.00	873.96	4,568.59	2,284.30	11,596.4	5,806.85	0.07	-0.07	0.165
15.00	-62.86	-8.09	0.00	-832.76	0.00	832.76	4,517.79	2,258.89	11,219.5	5,618.13	0.16	-0.10	0.162
20.00	-60.64	-7.93	0.00	-792.33	0.00	792.33	4,464.90	2,232.45	10,843.2	5,429.68	0.29	-0.14	0.160
25.00	-58.45	-7.77	0.00	-752.67	0.00	752.67	4,409.93	2,204.97	10,467.7	5,241.66	0.45	-0.17	0.157
30.00	-56.30	-7.60	0.00	-713.84	0.00	713.84	4,352.89	2,176.44	10,093.5	5,054.25	0.65	-0.21	0.154
35.00	-54.18	-7.42	0.00	-675.87	0.00	675.87	4,293.76	2,146.88	9,720.79	4,867.62	0.89	-0.25	0.151
40.00	-52.10	-7.24	0.00	-638.76	0.00	638.76	4,232.55	2,116.28	9,349.96	4,681.93	1.17	-0.28	0.149
45.00	-50.06	-7.12	0.00	-602.54	0.00	602.54	4,169.26	2,084.63	8,981.38	4,497.36	1.48	-0.32	0.146
46.75	-49.35	-7.03	0.00	-590.09	0.00	590.09	4,146.62	2,073.31	8,852.97	4,433.06	1.60	-0.33	0.145
50.00	-47.22	-6.90	0.00	-567.24	0.00	567.24	4,103.90	2,051.95	8,615.37	4,314.09	1.84	-0.36	0.143
53.50	-44.96	-6.80	0.00	-543.10	0.00	543.10	4,094.98	2,047.49	8,566.54	4,289.64	2.11	-0.39	0.138
55.00	-44.37	-6.68	0.00	-532.90	0.00	532.90	4,074.88	2,037.44	8,457.42	4,234.99	2.24	-0.40	0.137
60.00	-42.41	-6.49	0.00	-499.50	0.00	499.50	4,006.53	2,003.26	8,095.71	4,053.87	2.67	-0.44	0.134
65.00	-40.51	-6.30	0.00	-467.04	0.00	467.04	3,936.09	1,968.05	7,737.41	3,874.46	3.15	-0.48	0.131
70.00	-38.64	-6.11	0.00	-435.53	0.00	435.53	3,863.58	1,931.79	7,382.86	3,696.92	3.67	-0.51	0.128
75.00	-36.81	-5.92	0.00	-404.97	0.00	404.97	3,788.99	1,894.50	7,032.42	3,521.44	4.23	-0.55	0.125
80.00	-35.03	-5.74	0.00	-375.35	0.00	375.35	3,712.32	1,856.16	6,686.41	3,348.18	4.84	-0.59	0.122
85.00	-33.29	-5.55	0.00	-346.66	0.00	346.66	3,633.57	1,816.78	6,345.19	3,177.31	5.48	-0.63	0.118
90.00	-31.59	-5.36	0.00	-318.92	0.00	318.92	3,552.73	1,776.37	6,009.09	3,009.01	6.17	-0.68	0.115
95.00	-29.94	-5.18	0.00	-292.10	0.00	292.10	3,469.82	1,734.91	5,678.46	2,843.45	6.90	-0.72	0.111
100.00	-27.59	-5.06	0.00	-266.20	0.00	266.20	3,384.83	1,692.41	5,353.64	2,680.80	7.67	-0.76	0.107
100.25	-27.48	-5.03	0.00	-264.93	0.00	264.93	2,340.16	1,170.08	3,767.44	1,886.52	7.71	-0.76	0.152
102.00	-26.68	-4.84	0.00	-256.13	0.00	256.13	2,323.07	1,161.53	3,695.31	1,850.40	7.99	-0.78	0.150
105.00	-25.89	-4.70	0.00	-241.62	0.00	241.62	2,293.18	1,146.59	3,572.27	1,788.79	8.49	-0.81	0.146
110.00	-24.60	-4.53	0.00	-218.10	0.00	218.10	2,241.70	1,120.85	3,369.07	1,687.04	9.36	-0.86	0.140
115.00	-23.34	-4.36	0.00	-195.45	0.00	195.45	2,188.14	1,094.07	3,168.50	1,586.61	10.30	-0.91	0.134
120.00	-22.12	-4.19	0.00	-173.64	0.00	173.64	2,132.50	1,066.25	2,970.92	1,487.67	11.28	-0.97	0.127
125.00	-20.94	-4.03	0.00	-152.67	0.00	152.67	2,074.78	1,037.39	2,776.66	1,390.39	12.33	-1.02	0.120
130.00	-19.80	-3.88	0.00	-132.52	0.00	132.52	2,014.98	1,007.49	2,586.06	1,294.95	13.42	-1.07	0.112
134.25	-18.53	-3.78	0.00	-116.04	0.00	116.04	1,137.98	568.99	1,433.87	718.00	14.40	-1.12	0.178
135.00	-18.39	-3.70	0.00	-113.21	0.00	113.21	1,134.17	567.08	1,419.73	710.92	14.57	-1.12	0.175
140.00	-17.49	-3.56	0.00	-94.68	0.00	94.68	1,107.59	553.79	1,325.68	663.83	15.79	-1.19	0.158
145.00	-16.61	-3.41	0.00	-76.90	0.00	76.90	1,078.93	539.46	1,232.17	617.00	17.08	-1.26	0.140
150.00	-15.77	-3.30	0.00	-59.85	0.00	59.85	1,048.18	524.09	1,139.55	570.62	18.43	-1.32	0.120
152.00	-14.99	-3.08	0.00	-53.25	0.00	53.25	1,035.30	517.65	1,102.82	552.23	18.99	-1.34	0.111
155.00	-14.53	-2.97	0.00	-44.01	0.00	44.01	1,015.36	507.68	1,048.15	524.85	19.84	-1.38	0.098
160.00	-13.77	-2.87	0.00	-29.15	0.00	29.15	980.46	490.23	958.32	479.87	21.31	-1.42	0.075
162.00	-9.51	-1.93	0.00	-23.41	0.00	23.41	965.91	482.96	922.90	462.14	21.91	-1.43	0.061
165.00	-9.12	-1.83	0.00	-17.61	0.00	17.61	943.48	471.74	870.40	435.85	22.81	-1.45	0.050
170.00	-8.50	-1.69	0.00	-8.47	0.00	8.47	904.41	452.21	784.74	392.95	24.35	-1.47	0.031
175.00	0.00	-1.47	0.00	0.00	0.00	0.00	863.27	431.63	701.67	351.36	25.90	-1.48	0.000

<b>Load Case: 1.0D + 1.0W</b>	<b>Serviceability 60 mph</b>	<b>23 Iterations</b>
Gust Response Factor :1.10		Wind Importance Factor :1.00
Dead Load Factor :1.00		
Wind Load Factor :1.00		

Applied Segment Forces Summary

Seg Elev (ft)	Description	Shaft Forces		Discrete Forces			Linear Forces		Sum of Forces				
		Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Torsion MY (lb-ft)	Moment MZ (lb)
0.00		14.5	0.0					0.0	0.0	14.5	0.0	0.0	0.0
1.00	Appertunance(s)	72.1	259.9	88.8	0.0	0.0	120.0	0.0	34.4	160.9	414.3	0.0	0.0
5.00		128.1	1,029.0					0.0	137.5	128.1	1,166.5	0.0	0.0
10.00		139.7	1,262.1					0.0	171.9	139.7	1,434.0	0.0	0.0
15.00		138.8	1,235.3					0.0	171.9	138.8	1,407.2	0.0	0.0
20.00		141.6	1,208.5					0.0	171.9	141.6	1,380.3	0.0	0.0
25.00		145.2	1,181.6					0.0	171.9	145.2	1,353.5	0.0	0.0
30.00		147.5	1,154.8					0.0	171.9	147.5	1,326.7	0.0	0.0
35.00		148.8	1,128.0					0.0	171.9	148.8	1,299.8	0.0	0.0
40.00		149.4	1,101.1					0.0	171.9	149.4	1,273.0	0.0	0.0
45.00		100.9	1,074.3					0.0	171.9	100.9	1,246.2	0.0	0.0
46.75	Bot - Section 2	75.4	369.7					0.0	60.1	75.4	429.8	0.0	0.0
50.00		102.0	1,365.5					0.0	111.7	102.0	1,477.2	0.0	0.0
53.50	Top - Section 1	75.4	1,445.2					0.0	120.3	75.4	1,565.5	0.0	0.0
55.00		97.5	307.9					0.0	51.6	97.5	359.5	0.0	0.0
60.00		149.1	1,009.0					0.0	171.9	149.1	1,180.8	0.0	0.0
65.00		147.6	982.2					0.0	171.9	147.6	1,154.0	0.0	0.0
70.00		145.8	955.3					0.0	171.9	145.8	1,127.2	0.0	0.0
75.00		143.7	928.5					0.0	171.9	143.7	1,100.3	0.0	0.0
80.00		141.5	901.7					0.0	171.9	141.5	1,073.5	0.0	0.0
85.00		139.0	874.8					0.0	171.9	139.0	1,046.7	0.0	0.0
90.00		136.3	848.0					0.0	171.9	136.3	1,019.8	0.0	0.0
95.00	Bot - Section 3	134.4	821.2					0.0	171.9	134.4	993.0	0.0	0.0
100.00		70.3	1,400.0					0.0	171.9	70.3	1,571.9	0.0	0.0
100.25	Top - Section 2	26.4	68.8					0.0	8.6	26.4	77.4	0.0	0.0
102.00	Appertunance(s)	62.1	206.9	80.5	0.0	0.0	161.5	0.0	60.1	142.7	428.5	0.0	0.0
105.00		102.9	348.9					0.0	102.1	102.9	451.1	0.0	0.0
110.00		126.0	565.5					0.0	170.2	126.0	735.7	0.0	0.0
115.00		122.6	545.3					0.0	170.2	122.6	715.5	0.0	0.0
120.00		119.1	525.2					0.0	170.2	119.1	695.4	0.0	0.0
125.00		115.5	505.1					0.0	170.2	115.5	675.3	0.0	0.0
130.00	Bot - Section 4	104.2	485.0					0.0	170.2	104.2	655.2	0.0	0.0
134.25	Top - Section 3	55.6	664.7					0.0	144.7	55.6	809.4	0.0	0.0
135.00		61.9	46.3					0.0	25.5	61.9	71.9	0.0	0.0
140.00		105.3	301.2					0.0	170.2	105.3	471.4	0.0	0.0
145.00		101.3	287.8					0.0	170.2	101.3	458.0	0.0	0.0
150.00		68.9	274.4					0.0	170.2	68.9	444.6	0.0	0.0
152.00	Appertunance(s)	47.6	106.0	165.2	0.0	0.0	79.2	0.0	68.1	212.7	253.3	0.0	0.0
155.00		73.7	155.0					0.0	87.4	73.7	242.3	0.0	0.0
160.00		63.0	247.6					0.0	145.6	63.0	393.2	0.0	0.0
162.00	Appertunance(s)	43.3	95.3	860.0	0.0	0.0	1,445.1	0.0	58.2	903.3	1,598.6	0.0	0.0
165.00		66.8	138.9					0.0	53.9	66.8	192.8	0.0	0.0
170.00		79.9	220.7					0.0	89.9	79.9	310.6	0.0	0.0
175.00	Appertunance(s)	38.8	207.3	1,566.1	0.0	0.0	3,009.3	0.0	89.9	1,605.0	3,306.5	0.0	0.0
<b>Totals:</b>										7,230.26	39,387.3	0.00	0.00



Site Number: 370625

Code: ANSI/TIA-222-G

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Site Name: Old Saybrook, CT

Engineering Number: OAA686891\_C3\_01

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Customer: T- Mobile

Load Case: 1.0D + 1.0W

Serviceability 60 mph

23 Iterations

Gust Response Factor :1.10

Wind Importance Factor :1.00

Dead Load Factor :1.00

Wind Load Factor :1.00

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-39.39	-7.22	0.00	-825.05	0.00	825.05	4,663.96	2,331.98	12,350.3	6,184.38	0.00	0.00	0.142
1.00	-38.97	-7.07	0.00	-817.83	0.00	817.83	4,654.80	2,327.40	12,275.0	6,146.65	0.00	-0.01	0.141
5.00	-37.80	-6.95	0.00	-789.57	0.00	789.57	4,617.32	2,308.66	11,973.5	5,995.65	0.02	-0.03	0.140
10.00	-36.36	-6.83	0.00	-754.79	0.00	754.79	4,568.59	2,284.30	11,596.4	5,806.85	0.06	-0.06	0.138
15.00	-34.95	-6.71	0.00	-720.63	0.00	720.63	4,517.79	2,258.89	11,219.5	5,618.13	0.14	-0.09	0.136
20.00	-33.57	-6.58	0.00	-687.07	0.00	687.07	4,464.90	2,232.45	10,843.2	5,429.68	0.25	-0.12	0.134
25.00	-32.21	-6.45	0.00	-654.15	0.00	654.15	4,409.93	2,204.97	10,467.7	5,241.66	0.39	-0.15	0.132
30.00	-30.88	-6.32	0.00	-621.89	0.00	621.89	4,352.89	2,176.44	10,093.5	5,054.25	0.56	-0.18	0.130
35.00	-29.58	-6.18	0.00	-590.29	0.00	590.29	4,293.76	2,146.88	9,720.79	4,867.62	0.77	-0.21	0.128
40.00	-28.30	-6.04	0.00	-559.38	0.00	559.38	4,232.55	2,116.28	9,349.96	4,681.93	1.01	-0.25	0.126
45.00	-27.06	-5.95	0.00	-529.15	0.00	529.15	4,169.26	2,084.63	8,981.38	4,497.36	1.28	-0.28	0.124
46.75	-26.63	-5.88	0.00	-518.75	0.00	518.75	4,146.62	2,073.31	8,852.97	4,433.06	1.39	-0.29	0.123
50.00	-25.15	-5.78	0.00	-499.64	0.00	499.64	4,103.90	2,051.95	8,615.37	4,314.09	1.59	-0.31	0.122
53.50	-23.58	-5.70	0.00	-479.41	0.00	479.41	4,094.98	2,047.49	8,566.54	4,289.64	1.83	-0.34	0.118
55.00	-23.22	-5.61	0.00	-470.86	0.00	470.86	4,074.88	2,037.44	8,457.42	4,234.99	1.94	-0.35	0.117
60.00	-22.04	-5.47	0.00	-442.80	0.00	442.80	4,006.53	2,003.26	8,095.71	4,053.87	2.32	-0.38	0.115
65.00	-20.88	-5.33	0.00	-415.46	0.00	415.46	3,936.09	1,968.05	7,737.41	3,874.46	2.74	-0.42	0.113
70.00	-19.75	-5.18	0.00	-388.83	0.00	388.83	3,863.58	1,931.79	7,382.86	3,696.92	3.19	-0.45	0.110
75.00	-18.65	-5.04	0.00	-362.92	0.00	362.92	3,788.99	1,894.50	7,032.42	3,521.44	3.68	-0.49	0.108
80.00	-17.57	-4.90	0.00	-337.71	0.00	337.71	3,712.32	1,856.16	6,686.41	3,348.18	4.21	-0.52	0.106
85.00	-16.52	-4.76	0.00	-313.20	0.00	313.20	3,633.57	1,816.78	6,345.19	3,177.31	4.78	-0.56	0.103
90.00	-15.50	-4.63	0.00	-289.38	0.00	289.38	3,552.73	1,776.37	6,009.09	3,009.01	5.38	-0.60	0.101
95.00	-14.51	-4.49	0.00	-266.25	0.00	266.25	3,469.82	1,734.91	5,678.46	2,843.45	6.03	-0.63	0.098
100.00	-12.94	-4.41	0.00	-243.79	0.00	243.79	3,384.83	1,692.41	5,353.64	2,680.80	6.71	-0.67	0.095
100.25	-12.86	-4.38	0.00	-242.68	0.00	242.68	2,340.16	1,170.08	3,767.44	1,886.52	6.74	-0.67	0.134
102.00	-12.43	-4.24	0.00	-235.02	0.00	235.02	2,323.07	1,161.53	3,695.31	1,850.40	6.99	-0.69	0.132
105.00	-11.98	-4.14	0.00	-222.30	0.00	222.30	2,293.18	1,146.59	3,572.27	1,788.79	7.43	-0.72	0.130
110.00	-11.24	-4.01	0.00	-201.60	0.00	201.60	2,241.70	1,120.85	3,369.07	1,687.04	8.21	-0.77	0.125
115.00	-10.52	-3.89	0.00	-181.53	0.00	181.53	2,188.14	1,094.07	3,168.50	1,586.61	9.04	-0.81	0.119
120.00	-9.83	-3.77	0.00	-162.08	0.00	162.08	2,132.50	1,066.25	2,970.92	1,487.67	9.92	-0.86	0.114
125.00	-9.15	-3.65	0.00	-143.23	0.00	143.23	2,074.78	1,037.39	2,776.66	1,390.39	10.85	-0.91	0.107
130.00	-8.49	-3.54	0.00	-124.97	0.00	124.97	2,014.98	1,007.49	2,586.06	1,294.95	11.84	-0.96	0.101
134.25	-7.68	-3.48	0.00	-109.91	0.00	109.91	1,137.98	568.99	1,433.87	718.00	12.71	-1.00	0.160
135.00	-7.61	-3.42	0.00	-107.31	0.00	107.31	1,134.17	567.08	1,419.73	710.92	12.87	-1.01	0.158
140.00	-7.14	-3.31	0.00	-90.21	0.00	90.21	1,107.59	553.79	1,325.68	663.83	13.97	-1.08	0.142
145.00	-6.68	-3.21	0.00	-73.64	0.00	73.64	1,078.93	539.46	1,232.17	617.00	15.13	-1.14	0.126
150.00	-6.23	-3.14	0.00	-57.59	0.00	57.59	1,048.18	524.09	1,139.55	570.62	16.36	-1.20	0.107
152.00	-5.98	-2.92	0.00	-51.32	0.00	51.32	1,035.30	517.65	1,102.82	552.23	16.86	-1.22	0.099
155.00	-5.74	-2.85	0.00	-42.56	0.00	42.56	1,015.36	507.68	1,048.15	524.85	17.64	-1.25	0.087
160.00	-5.35	-2.78	0.00	-28.33	0.00	28.33	980.46	490.23	958.32	479.87	18.98	-1.29	0.065
162.00	-3.77	-1.84	0.00	-22.77	0.00	22.77	965.91	482.96	922.90	462.14	19.52	-1.31	0.053
165.00	-3.58	-1.77	0.00	-17.26	0.00	17.26	943.48	471.74	870.40	435.85	20.35	-1.33	0.043
170.00	-3.27	-1.68	0.00	-8.41	0.00	8.41	904.41	452.21	784.74	392.95	21.75	-1.35	0.025
175.00	0.00	-1.60	0.00	0.00	0.00	0.00	863.27	431.63	701.67	351.36	23.17	-1.36	0.000

### Equivalent Lateral Forces Method Analysis

(Based on ASCE7-10 Chapters 11, 12, 15)

Spectral Response Acceleration for Short Period ( $S_s$ ):	0.17
Spectral Response Acceleration at 1.0 Second Period ( $S_1$ ):	0.06
Long-Period Transition Period ( $T_L$ ):	16
Importance Factor ( $I_E$ ):	1.00
Site Coefficient $F_a$ :	1.60
Site Coefficient $F_v$ :	2.40
Response Modification Coefficient (R):	1.50
Design Spectral Response Acceleration at Short Period ( $S_{ds}$ ):	0.18
Design Spectral Response Acceleration at 1.0 Second Period ( $S_{d1}$ ):	0.09
Seismic Response Coefficient ( $C_s$ ):	0.03
Upper Limit $C_s$	0.03
Lower Limit $C_s$	0.03
Period based on Rayleigh Method (sec):	2.13
Redundancy Factor ( $\rho$ ):	1.30
Seismic Force Distribution Exponent (k):	1.82
Total Unfactored Dead Load:	39.39 k
Seismic Base Shear (E):	1.54 k

Load Case (1.2 + 0.2Sds) \* DL + E ELFM

Seismic Equivalent Lateral Forces Method

Segment	Height Above Base (ft)	Weight (lb)	$W_z$ (lb-ft)	$C_{vx}$	Horizontal Force (lb)	Vertical Force (lb)
43	172.50	297	3,429	0.023	35	367
42	167.50	311	3,397	0.023	35	384
41	163.50	193	2,018	0.014	21	238
40	161.00	154	1,562	0.011	16	190
39	157.50	393	3,845	0.026	40	486
38	153.50	242	2,262	0.015	23	299
37	151.00	174	1,577	0.011	16	215
36	147.50	445	3,860	0.026	40	549
35	142.50	458	3,735	0.025	39	566
34	137.50	471	3,603	0.024	37	582
33	134.63	72	529	0.004	5	89
32	132.13	809	5,754	0.039	60	1,000
31	127.50	655	4,366	0.029	45	809
30	122.50	675	4,184	0.028	43	834
29	117.50	695	3,995	0.027	41	859
28	112.50	716	3,799	0.026	39	884
27	107.50	736	3,596	0.024	37	909
26	103.50	451	2,058	0.014	21	557
25	101.13	267	1,168	0.008	12	330
24	100.13	77	332	0.002	3	96
23	97.50	1,572	6,435	0.043	67	1,942
22	92.50	993	3,694	0.025	38	1,227
21	87.50	1,020	3,430	0.023	35	1,260

Site Number: 370625

Code: ANSI/TIA-222-G

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Site Name: Old Saybrook, CT

Engineering Number: OAA686891\_C3\_01

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Customer: T-Mobile

20	82.50	1,047	3,164	0.021	33	1,293
19	77.50	1,074	2,896	0.020	30	1,326
18	72.50	1,100	2,630	0.018	27	1,359
17	67.50	1,127	2,366	0.016	24	1,392
16	62.50	1,154	2,107	0.014	22	1,425
15	57.50	1,181	1,853	0.012	19	1,459
14	54.25	359	507	0.003	5	444
13	51.75	1,565	2,028	0.014	21	1,934
12	48.38	1,477	1,693	0.011	18	1,825
11	45.88	430	447	0.003	5	531
10	42.50	1,246	1,129	0.008	12	1,539
9	37.50	1,273	919	0.006	10	1,572
8	32.50	1,300	724	0.005	7	1,606
7	27.50	1,327	545	0.004	6	1,639
6	22.50	1,353	386	0.003	4	1,672
5	17.50	1,380	250	0.002	3	1,705
4	12.50	1,407	138	0.001	1	1,738
3	7.50	1,434	56	0.000	1	1,771
2	3.00	1,167	9	0.000	0	1,441
1	0.50	294	0	0.000	0	364
Alcatel-Lucent RRH2x	175.00	170	2,014	0.014	21	210
Alcatel-Lucent PCS B	175.00	165	1,954	0.013	20	204
Alcatel-Lucent RRH4X	175.00	165	1,954	0.013	20	204
RFS DB-T1-6Z-8AB-0Z	175.00	88	1,042	0.007	11	109
Antel BXA-70063/6CF	175.00	51	604	0.004	6	63
Antel BXA-80080/6CF	175.00	66	782	0.005	8	82
Andrew SBNHH-1D65B	175.00	304	3,603	0.024	37	376
Flat Platform w/ Han	175.00	2,000	23,685	0.160	245	2,470
Ericsson AIR 21, 1.3	162.00	271	2,792	0.019	29	335
Ericsson AIR 21, 1.3	162.00	275	2,826	0.019	29	339
Round T-Arms	162.00	750	7,720	0.052	80	926
Andrew LNX-6515DS-A1	162.00	149	1,538	0.010	16	185
RFS APXV18-206517S-C	152.00	79	726	0.005	8	98
Andrew DB589	102.00	12	51	0.000	1	14
Round Side Arm	102.00	150	666	0.004	7	185
4' Dish w/ Radome	1.00	120	0	0.000	0	148
		39,387	148,435	1.000	1,536	48,651

Load Case (0.9 - 0.2Sds) \* DL + E EFLM

Seismic (Reduced DL) Equivalent Lateral Forces Method

Segment	Height Above Base (ft)	Weight (lb)	W <sub>z</sub> (lb-ft)	C <sub>vx</sub>	Horizontal Force (lb)	Vertical Force (lb)
43	172.50	297	3,429	0.023	35	257
42	167.50	311	3,397	0.023	35	269
41	163.50	193	2,018	0.014	21	167
40	161.00	154	1,562	0.011	16	133
39	157.50	393	3,845	0.026	40	340
38	153.50	242	2,262	0.015	23	210
37	151.00	174	1,577	0.011	16	151
36	147.50	445	3,860	0.026	40	384
35	142.50	458	3,735	0.025	39	396
34	137.50	471	3,603	0.024	37	408
33	134.63	72	529	0.004	5	62
32	132.13	809	5,754	0.039	60	700
31	127.50	655	4,366	0.029	45	567
30	122.50	675	4,184	0.028	43	584
29	117.50	695	3,995	0.027	41	601
28	112.50	716	3,799	0.026	39	619
27	107.50	736	3,596	0.024	37	636
26	103.50	451	2,058	0.014	21	390

Site Number: 370625

Code: ANSI/TIA-222-G

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Site Name: Old Saybrook, CT

Engineering Number: OAA686891\_C3\_01

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Customer: T-Mobile

25	101.13	267	1,168	0.008	12	231
24	100.13	77	332	0.002	3	67
23	97.50	1,572	6,435	0.043	67	1,359
22	92.50	993	3,694	0.025	38	859
21	87.50	1,020	3,430	0.023	35	882
20	82.50	1,047	3,164	0.021	33	905
19	77.50	1,074	2,896	0.020	30	928
18	72.50	1,100	2,630	0.018	27	952
17	67.50	1,127	2,366	0.016	24	975
16	62.50	1,154	2,107	0.014	22	998
15	57.50	1,181	1,853	0.012	19	1,021
14	54.25	359	507	0.003	5	311
13	51.75	1,565	2,028	0.014	21	1,354
12	48.38	1,477	1,693	0.011	18	1,277
11	45.88	430	447	0.003	5	372
10	42.50	1,246	1,129	0.008	12	1,078
9	37.50	1,273	919	0.006	10	1,101
8	32.50	1,300	724	0.005	7	1,124
7	27.50	1,327	545	0.004	6	1,147
6	22.50	1,353	386	0.003	4	1,170
5	17.50	1,380	250	0.002	3	1,194
4	12.50	1,407	138	0.001	1	1,217
3	7.50	1,434	56	0.000	1	1,240
2	3.00	1,167	9	0.000	0	1,009
1	0.50	294	0	0.000	0	255
Alcatel-Lucent RRH2x	175.00	170	2,014	0.014	21	147
Alcatel-Lucent PCS B	175.00	165	1,954	0.013	20	143
Alcatel-Lucent RRH4X	175.00	165	1,954	0.013	20	143
RFS DB-T1-6Z-8AB-0Z	175.00	88	1,042	0.007	11	76
Antel BXA-70063/6CF	175.00	51	604	0.004	6	44
Antel BXA-80080/6CF	175.00	66	782	0.005	8	57
Andrew SBNHH-1D65B	175.00	304	3,603	0.024	37	263
Flat Platform w/ Han	175.00	2,000	23,685	0.160	245	1,730
Ericsson AIR 21, 1.3	162.00	271	2,792	0.019	29	235
Ericsson AIR 21, 1.3	162.00	275	2,826	0.019	29	237
Round T-Arms	162.00	750	7,720	0.052	80	649
Andrew LNX-6515DS-A1	162.00	149	1,538	0.010	16	129
RFS APXV18-206517S-C	152.00	79	726	0.005	8	68
Andrew DB589	102.00	12	51	0.000	1	10
Round Side Arm	102.00	150	666	0.004	7	130
4' Dish w/ Radome	1.00	120	0	0.000	0	104
		39,387	148,435	1.000	1,536	34,062

Load Case (1.2 + 0.2Sds) \* DL + E ELFM

Seismic Equivalent Lateral Forces Method

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-48.29	-1.54	0.00	-207.27	0.00	207.27	4,663.96	2,331.98	12,350.3	6,184.38	0.00	0.00	0.044
1.00	-46.70	-1.54	0.00	-205.74	0.00	205.74	4,654.80	2,327.40	12,275.0	6,146.65	0.00	0.00	0.044
5.00	-44.93	-1.54	0.00	-199.58	0.00	199.58	4,617.32	2,308.66	11,973.5	5,995.65	0.00	-0.01	0.043
10.00	-43.19	-1.55	0.00	-191.86	0.00	191.86	4,568.59	2,284.30	11,596.4	5,806.85	0.02	-0.01	0.042
15.00	-41.48	-1.55	0.00	-184.13	0.00	184.13	4,517.79	2,258.89	11,219.5	5,618.13	0.04	-0.02	0.042
20.00	-39.81	-1.55	0.00	-176.38	0.00	176.38	4,464.90	2,232.45	10,843.2	5,429.68	0.06	-0.03	0.041
25.00	-38.17	-1.55	0.00	-168.63	0.00	168.63	4,409.93	2,204.97	10,467.7	5,241.66	0.10	-0.04	0.041
30.00	-36.57	-1.55	0.00	-160.88	0.00	160.88	4,352.89	2,176.44	10,093.5	5,054.25	0.14	-0.05	0.040
35.00	-34.99	-1.54	0.00	-153.15	0.00	153.15	4,293.76	2,146.88	9,720.79	4,867.62	0.20	-0.05	0.040
40.00	-33.45	-1.53	0.00	-145.45	0.00	145.45	4,232.55	2,116.28	9,349.96	4,681.93	0.26	-0.06	0.039
45.00	-32.92	-1.53	0.00	-137.80	0.00	137.80	4,169.26	2,084.63	8,981.38	4,497.36	0.33	-0.07	0.039
46.75	-31.10	-1.51	0.00	-135.12	0.00	135.12	4,146.62	2,073.31	8,852.97	4,433.06	0.35	-0.07	0.038
50.00	-29.17	-1.49	0.00	-130.20	0.00	130.20	4,103.90	2,051.95	8,615.37	4,314.09	0.41	-0.08	0.037
53.50	-28.72	-1.49	0.00	-124.98	0.00	124.98	4,094.98	2,047.49	8,566.54	4,289.64	0.47	-0.09	0.036
55.00	-27.26	-1.47	0.00	-122.75	0.00	122.75	4,074.88	2,037.44	8,457.42	4,234.99	0.50	-0.09	0.036
60.00	-25.84	-1.45	0.00	-115.40	0.00	115.40	4,006.53	2,003.26	8,095.71	4,053.87	0.59	-0.10	0.035
65.00	-24.44	-1.43	0.00	-108.15	0.00	108.15	3,936.09	1,968.05	7,737.41	3,874.46	0.70	-0.11	0.034
70.00	-23.08	-1.40	0.00	-101.02	0.00	101.02	3,863.58	1,931.79	7,382.86	3,696.92	0.82	-0.12	0.033
75.00	-21.76	-1.37	0.00	-94.02	0.00	94.02	3,788.99	1,894.50	7,032.42	3,521.44	0.95	-0.13	0.032
80.00	-20.47	-1.34	0.00	-87.17	0.00	87.17	3,712.32	1,856.16	6,686.41	3,348.18	1.08	-0.13	0.032
85.00	-19.21	-1.30	0.00	-80.48	0.00	80.48	3,633.57	1,816.78	6,345.19	3,177.31	1.23	-0.14	0.031
90.00	-17.98	-1.26	0.00	-73.96	0.00	73.96	3,552.73	1,776.37	6,009.09	3,009.01	1.39	-0.15	0.030
95.00	-16.04	-1.20	0.00	-67.64	0.00	67.64	3,469.82	1,734.91	5,678.46	2,843.45	1.55	-0.16	0.028
100.00	-15.94	-1.19	0.00	-61.66	0.00	61.66	3,384.83	1,692.41	5,353.64	2,680.80	1.73	-0.17	0.028
100.25	-15.61	-1.18	0.00	-61.36	0.00	61.36	2,340.16	1,170.08	3,767.44	1,886.52	1.74	-0.17	0.039
102.00	-14.86	-1.15	0.00	-59.30	0.00	59.30	2,323.07	1,161.53	3,695.31	1,850.40	1.80	-0.18	0.038
105.00	-13.95	-1.11	0.00	-55.84	0.00	55.84	2,293.18	1,146.59	3,572.27	1,788.79	1.91	-0.18	0.037
110.00	-13.06	-1.07	0.00	-50.28	0.00	50.28	2,241.70	1,120.85	3,369.07	1,687.04	2.11	-0.20	0.036
115.00	-12.20	-1.03	0.00	-44.91	0.00	44.91	2,188.14	1,094.07	3,168.50	1,586.61	2.33	-0.21	0.034
120.00	-11.37	-0.99	0.00	-39.74	0.00	39.74	2,132.50	1,066.25	2,970.92	1,487.67	2.55	-0.22	0.032
125.00	-10.56	-0.94	0.00	-34.80	0.00	34.80	2,074.78	1,037.39	2,776.66	1,390.39	2.79	-0.23	0.030
130.00	-9.56	-0.88	0.00	-30.09	0.00	30.09	2,014.98	1,007.49	2,586.06	1,294.95	3.04	-0.25	0.028
134.25	-9.47	-0.88	0.00	-26.35	0.00	26.35	1,137.98	568.99	1,433.87	718.00	3.26	-0.25	0.045
135.00	-8.89	-0.84	0.00	-25.70	0.00	25.70	1,134.17	567.08	1,419.73	710.92	3.30	-0.26	0.044
140.00	-8.32	-0.80	0.00	-21.51	0.00	21.51	1,107.59	553.79	1,325.68	663.83	3.58	-0.27	0.040
145.00	-7.77	-0.76	0.00	-17.52	0.00	17.52	1,078.93	539.46	1,232.17	617.00	3.88	-0.29	0.036
150.00	-7.56	-0.74	0.00	-13.74	0.00	13.74	1,048.18	524.09	1,139.55	570.62	4.18	-0.30	0.031
152.00	-7.16	-0.71	0.00	-12.25	0.00	12.25	1,035.30	517.65	1,102.82	552.23	4.31	-0.31	0.029
155.00	-6.68	-0.67	0.00	-10.13	0.00	10.13	1,015.36	507.68	1,048.15	524.85	4.51	-0.31	0.026
160.00	-6.49	-0.65	0.00	-6.79	0.00	6.79	980.46	490.23	958.32	479.87	4.84	-0.32	0.021
162.00	-4.47	-0.47	0.00	-5.49	0.00	5.49	965.91	482.96	922.90	462.14	4.98	-0.33	0.017
165.00	-4.08	-0.43	0.00	-4.09	0.00	4.09	943.48	471.74	870.40	435.85	5.19	-0.33	0.014
170.00	-3.71	-0.39	0.00	-1.95	0.00	1.95	904.41	452.21	784.74	392.95	5.54	-0.34	0.009
175.00	0.00	-0.37	0.00	0.00	0.00	0.00	863.27	431.63	701.67	351.36	5.89	-0.34	0.000

Load Case (0.9 - 0.2Sds) \* DL + E ELM

Seismic (Reduced DL) Equivalent Lateral Forces Method

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-33.81	-1.54	0.00	-205.25	0.00	205.25	4,663.96	2,331.98	12,350.3	6,184.38	0.00	0.00	0.040
1.00	-32.69	-1.54	0.00	-203.72	0.00	203.72	4,654.80	2,327.40	12,275.0	6,146.65	0.00	0.00	0.040
5.00	-31.45	-1.54	0.00	-197.56	0.00	197.56	4,617.32	2,308.66	11,973.5	5,995.65	0.00	-0.01	0.040
10.00	-30.24	-1.54	0.00	-189.86	0.00	189.86	4,568.59	2,284.30	11,596.4	5,806.85	0.02	-0.01	0.039
15.00	-29.04	-1.54	0.00	-182.15	0.00	182.15	4,517.79	2,258.89	11,219.5	5,618.13	0.03	-0.02	0.039
20.00	-27.87	-1.54	0.00	-174.43	0.00	174.43	4,464.90	2,232.45	10,843.2	5,429.68	0.06	-0.03	0.038
25.00	-26.73	-1.54	0.00	-166.71	0.00	166.71	4,409.93	2,204.97	10,467.7	5,241.66	0.10	-0.04	0.038
30.00	-25.60	-1.54	0.00	-159.01	0.00	159.01	4,352.89	2,176.44	10,093.5	5,054.25	0.14	-0.05	0.037
35.00	-24.50	-1.53	0.00	-151.33	0.00	151.33	4,293.76	2,146.88	9,720.79	4,867.62	0.19	-0.05	0.037
40.00	-23.42	-1.52	0.00	-143.68	0.00	143.68	4,232.55	2,116.28	9,349.96	4,681.93	0.25	-0.06	0.036
45.00	-23.05	-1.52	0.00	-136.09	0.00	136.09	4,169.26	2,084.63	8,981.38	4,497.36	0.32	-0.07	0.036
46.75	-21.77	-1.50	0.00	-133.43	0.00	133.43	4,146.62	2,073.31	8,852.97	4,433.06	0.35	-0.07	0.035
50.00	-20.42	-1.48	0.00	-128.56	0.00	128.56	4,103.90	2,051.95	8,615.37	4,314.09	0.40	-0.08	0.035
53.50	-20.11	-1.47	0.00	-123.38	0.00	123.38	4,094.98	2,047.49	8,566.54	4,289.64	0.46	-0.09	0.034
55.00	-19.09	-1.46	0.00	-121.17	0.00	121.17	4,074.88	2,037.44	8,457.42	4,234.99	0.49	-0.09	0.033
60.00	-18.09	-1.44	0.00	-113.89	0.00	113.89	4,006.53	2,003.26	8,095.71	4,053.87	0.59	-0.10	0.033
65.00	-17.11	-1.41	0.00	-106.71	0.00	106.71	3,936.09	1,968.05	7,737.41	3,874.46	0.69	-0.11	0.032
70.00	-16.16	-1.39	0.00	-99.66	0.00	99.66	3,863.58	1,931.79	7,382.86	3,696.92	0.81	-0.11	0.031
75.00	-15.23	-1.36	0.00	-92.73	0.00	92.73	3,788.99	1,894.50	7,032.42	3,521.44	0.94	-0.12	0.030
80.00	-14.33	-1.32	0.00	-85.95	0.00	85.95	3,712.32	1,856.16	6,686.41	3,348.18	1.07	-0.13	0.030
85.00	-13.45	-1.29	0.00	-79.34	0.00	79.34	3,633.57	1,816.78	6,345.19	3,177.31	1.22	-0.14	0.029
90.00	-12.59	-1.25	0.00	-72.90	0.00	72.90	3,552.73	1,776.37	6,009.09	3,009.01	1.37	-0.15	0.028
95.00	-11.23	-1.18	0.00	-66.65	0.00	66.65	3,469.82	1,734.91	5,678.46	2,843.45	1.53	-0.16	0.027
100.00	-11.16	-1.18	0.00	-60.75	0.00	60.75	3,384.83	1,692.41	5,353.64	2,680.80	1.71	-0.17	0.026
100.25	-10.93	-1.17	0.00	-60.45	0.00	60.45	2,340.16	1,170.08	3,767.44	1,886.52	1.72	-0.17	0.037
102.00	-10.40	-1.14	0.00	-58.41	0.00	58.41	2,323.07	1,161.53	3,695.31	1,850.40	1.78	-0.17	0.036
105.00	-9.76	-1.10	0.00	-55.00	0.00	55.00	2,293.18	1,146.59	3,572.27	1,788.79	1.89	-0.18	0.035
110.00	-9.14	-1.06	0.00	-49.51	0.00	49.51	2,241.70	1,120.85	3,369.07	1,687.04	2.09	-0.19	0.033
115.00	-8.54	-1.02	0.00	-44.21	0.00	44.21	2,188.14	1,094.07	3,168.50	1,586.61	2.30	-0.21	0.032
120.00	-7.96	-0.97	0.00	-39.12	0.00	39.12	2,132.50	1,066.25	2,970.92	1,487.67	2.52	-0.22	0.030
125.00	-7.39	-0.93	0.00	-34.25	0.00	34.25	2,074.78	1,037.39	2,776.66	1,390.39	2.76	-0.23	0.028
130.00	-6.69	-0.87	0.00	-29.60	0.00	29.60	2,014.98	1,007.49	2,586.06	1,294.95	3.00	-0.24	0.026
134.25	-6.63	-0.86	0.00	-25.92	0.00	25.92	1,137.98	568.99	1,433.87	718.00	3.22	-0.25	0.042
135.00	-6.22	-0.82	0.00	-25.27	0.00	25.27	1,134.17	567.08	1,419.73	710.92	3.26	-0.25	0.041
140.00	-5.83	-0.79	0.00	-21.15	0.00	21.15	1,107.59	553.79	1,325.68	663.83	3.54	-0.27	0.037
145.00	-5.44	-0.74	0.00	-17.22	0.00	17.22	1,078.93	539.46	1,232.17	617.00	3.83	-0.28	0.033
150.00	-5.29	-0.73	0.00	-13.50	0.00	13.50	1,048.18	524.09	1,139.55	570.62	4.13	-0.30	0.029
152.00	-5.01	-0.70	0.00	-12.04	0.00	12.04	1,035.30	517.65	1,102.82	552.23	4.26	-0.30	0.027
155.00	-4.67	-0.66	0.00	-9.95	0.00	9.95	1,015.36	507.68	1,048.15	524.85	4.45	-0.31	0.024
160.00	-4.54	-0.64	0.00	-6.67	0.00	6.67	980.46	490.23	958.32	479.87	4.78	-0.32	0.019
162.00	-3.13	-0.46	0.00	-5.39	0.00	5.39	965.91	482.96	922.90	462.14	4.91	-0.32	0.015
165.00	-2.86	-0.42	0.00	-4.02	0.00	4.02	943.48	471.74	870.40	435.85	5.12	-0.33	0.012
170.00	-2.60	-0.38	0.00	-1.92	0.00	1.92	904.41	452.21	784.74	392.95	5.46	-0.33	0.008
175.00	0.00	-0.37	0.00	0.00	0.00	0.00	863.27	431.63	701.67	351.36	5.81	-0.33	0.000

### Equivalent Modal Forces Analysis

(Based on ASCE7-10 Chapters 11, 12 & 15 and ANSI/TIA-G, section 2.7)

Spectral Response Acceleration for Short Period ( $S_s$ ):	0.17
Spectral Response Acceleration at 1.0 Second Period ( $S_1$ ):	0.06
Importance Factor ( $I_E$ ):	1.00
Site Coefficient $F_a$ :	1.60
Site Coefficient $F_v$ :	2.40
Response Modification Coefficient (R):	1.50
Design Spectral Response Acceleration at Short Period ( $S_{ds}$ ):	0.18
Design Spectral Response Acceleration at 1.0 Second Period ( $S_{d1}$ ):	0.09
Period Based on Rayleigh Method (sec):	2.13
Redundancy Factor ( $p$ ):	1.30

Load Case (1.2 + 0.2Sds) \* DL + E EMAM

Seismic Equivalent Modal Analysis Method

Segment	Height Above Base (ft)	Weight (lb)	a	b	c	Saz	Horizontal Force (lb)	Vertical Force (lb)
43	172.50	297	1.836	1.709	1.041	0.306	79	367
42	167.50	311	1.731	1.245	0.864	0.248	67	384
41	163.50	193	1.650	0.941	0.740	0.205	34	238
40	161.00	154	1.600	0.778	0.670	0.181	24	190
39	157.50	393	1.531	0.580	0.580	0.149	51	486
38	153.50	242	1.454	0.394	0.490	0.115	24	299
37	151.00	174	1.407	0.298	0.439	0.096	14	215
36	147.50	445	1.343	0.184	0.375	0.072	28	549
35	142.50	458	1.253	0.061	0.296	0.041	16	566
34	137.50	471	1.167	-0.024	0.231	0.016	7	582
33	134.63	72	1.119	-0.059	0.198	0.004	0	89
32	132.13	809	1.077	-0.082	0.173	-0.005	-3	1,000
31	127.50	655	1.003	-0.109	0.133	-0.018	-10	809
30	122.50	675	0.926	-0.121	0.098	-0.027	-16	834
29	117.50	695	0.852	-0.119	0.070	-0.032	-19	859
28	112.50	716	0.781	-0.108	0.049	-0.031	-19	884
27	107.50	736	0.713	-0.091	0.032	-0.026	-17	909
26	103.50	451	0.661	-0.074	0.023	-0.020	-8	557
25	101.13	267	0.631	-0.064	0.018	-0.015	-3	330
24	100.13	77	0.619	-0.060	0.017	-0.013	-1	96
23	97.50	1,572	0.587	-0.048	0.013	-0.007	-10	1,942
22	92.50	993	0.528	-0.026	0.008	0.005	4	1,227
21	87.50	1,020	0.472	-0.006	0.006	0.016	14	1,260
20	82.50	1,047	0.420	0.012	0.006	0.026	23	1,293
19	77.50	1,074	0.371	0.027	0.008	0.033	31	1,326
18	72.50	1,100	0.324	0.039	0.010	0.039	37	1,359
17	67.50	1,127	0.281	0.049	0.014	0.043	42	1,392
16	62.50	1,154	0.241	0.057	0.018	0.044	44	1,425
15	57.50	1,181	0.204	0.062	0.023	0.045	46	1,459
14	54.25	359	0.182	0.065	0.026	0.045	14	444
13	51.75	1,565	0.165	0.067	0.028	0.045	61	1,934
12	48.38	1,477	0.144	0.068	0.031	0.044	57	1,825
11	45.88	430	0.130	0.069	0.033	0.044	16	531
10	42.50	1,246	0.111	0.070	0.036	0.043	47	1,539

Site Number: 370625

Code: ANSI/TIA-222-G

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Site Name: Old Saybrook, CT

Engineering Number: OAA686891\_C3\_01

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Customer: T-Mobile

9	37.50	1,273	0.087	0.071	0.039	0.042	47	1,572
8	32.50	1,300	0.065	0.072	0.041	0.041	47	1,606
7	27.50	1,327	0.047	0.071	0.042	0.040	46	1,639
6	22.50	1,353	0.031	0.068	0.041	0.038	45	1,672
5	17.50	1,380	0.019	0.063	0.037	0.036	43	1,705
4	12.50	1,407	0.010	0.054	0.031	0.031	38	1,738
3	7.50	1,434	0.003	0.039	0.022	0.024	30	1,771
2	3.00	1,167	0.001	0.019	0.010	0.012	12	1,441
1	0.50	294	0.000	0.003	0.002	0.002	1	364
Alcatel-Lucent RRH2x	175.00	170	1.890	1.980	1.140	0.337	50	210
Alcatel-Lucent PCS B	175.00	165	1.890	1.980	1.140	0.337	48	204
Alcatel-Lucent RRH4X	175.00	165	1.890	1.980	1.140	0.337	48	204
RFS DB-T1-6Z-8AB-OZ	175.00	88	1.890	1.980	1.140	0.337	26	109
Antel BXA-70063/6CF	175.00	51	1.890	1.980	1.140	0.337	15	63
Antel BXA-80080/6CF	175.00	66	1.890	1.980	1.140	0.337	19	82
Andrew SBNHH-1D65B	175.00	304	1.890	1.980	1.140	0.337	89	376
Flat Platform w/ Han	175.00	2,000	1.890	1.980	1.140	0.337	584	2,470
Ericsson AIR 21, 1.3	162.00	271	1.620	0.841	0.697	0.190	45	335
Ericsson AIR 21, 1.3	162.00	275	1.620	0.841	0.697	0.190	45	339
Round T-Arms	162.00	750	1.620	0.841	0.697	0.190	124	926
Andrew LNX-6515DS-A1	162.00	149	1.620	0.841	0.697	0.190	25	185
RFS APXV18-206517S-C	152.00	79	1.426	0.335	0.459	0.103	7	98
Andrew DB589	102.00	12	0.642	-0.068	0.020	-0.017	0	14
Round Side Arm	102.00	150	0.642	-0.068	0.020	-0.017	-2	185
4' Dish w/ Radome	1.00	120	0.000	0.007	0.004	0.005	0	148
		39,387	52.087	25.652	19.473	5.510	2,105	48,651

Load Case (0.9 - 0.2Sds) \* DL + E EMAM

Seismic (Reduced DL) Equivalent Modal Analysis Method

Segment	Height Above Base (ft)	Weight (lb)	a	b	c	Saz	Horizontal Force (lb)	Vertical Force (lb)
43	172.50	297	1.836	1.709	1.041	0.306	79	257
42	167.50	311	1.731	1.245	0.864	0.248	67	269
41	163.50	193	1.650	0.941	0.740	0.205	34	167
40	161.00	154	1.600	0.778	0.670	0.181	24	133
39	157.50	393	1.531	0.580	0.580	0.149	51	340
38	153.50	242	1.454	0.394	0.490	0.115	24	210
37	151.00	174	1.407	0.298	0.439	0.096	14	151
36	147.50	445	1.343	0.184	0.375	0.072	28	384
35	142.50	458	1.253	0.061	0.296	0.041	16	396
34	137.50	471	1.167	-0.024	0.231	0.016	7	408
33	134.63	72	1.119	-0.059	0.198	0.004	0	62
32	132.13	809	1.077	-0.082	0.173	-0.005	-3	700
31	127.50	655	1.003	-0.109	0.133	-0.018	-10	567
30	122.50	675	0.926	-0.121	0.098	-0.027	-16	584
29	117.50	695	0.852	-0.119	0.070	-0.032	-19	601
28	112.50	716	0.781	-0.108	0.049	-0.031	-19	619
27	107.50	736	0.713	-0.091	0.032	-0.026	-17	636
26	103.50	451	0.661	-0.074	0.023	-0.020	-8	390
25	101.13	267	0.631	-0.064	0.018	-0.015	-3	231
24	100.13	77	0.619	-0.060	0.017	-0.013	-1	67
23	97.50	1,572	0.587	-0.048	0.013	-0.007	-10	1,359
22	92.50	993	0.528	-0.026	0.008	0.005	4	859
21	87.50	1,020	0.472	-0.006	0.006	0.016	14	882
20	82.50	1,047	0.420	0.012	0.006	0.026	23	905
19	77.50	1,074	0.371	0.027	0.008	0.033	31	928
18	72.50	1,100	0.324	0.039	0.010	0.039	37	952
17	67.50	1,127	0.281	0.049	0.014	0.043	42	975
16	62.50	1,154	0.241	0.057	0.018	0.044	44	998



Site Number: 370625

Code: ANSI/TIA-222-G

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Site Name: Old Saybrook, CT

Engineering Number: OAA686891\_C3\_01

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Customer: T-Mobile

15	57.50	1,181	0.204	0.062	0.023	0.045	46	1,021
14	54.25	359	0.182	0.065	0.026	0.045	14	311
13	51.75	1,565	0.165	0.067	0.028	0.045	61	1,354
12	48.38	1,477	0.144	0.068	0.031	0.044	57	1,277
11	45.88	430	0.130	0.069	0.033	0.044	16	372
10	42.50	1,246	0.111	0.070	0.036	0.043	47	1,078
9	37.50	1,273	0.087	0.071	0.039	0.042	47	1,101
8	32.50	1,300	0.065	0.072	0.041	0.041	47	1,124
7	27.50	1,327	0.047	0.071	0.042	0.040	46	1,147
6	22.50	1,353	0.031	0.068	0.041	0.038	45	1,170
5	17.50	1,380	0.019	0.063	0.037	0.036	43	1,194
4	12.50	1,407	0.010	0.054	0.031	0.031	38	1,217
3	7.50	1,434	0.003	0.039	0.022	0.024	30	1,240
2	3.00	1,167	0.001	0.019	0.010	0.012	12	1,009
1	0.50	294	0.000	0.003	0.002	0.002	1	255
Alcatel-Lucent RRH2x	175.00	170	1.890	1.980	1.140	0.337	50	147
Alcatel-Lucent PCS B	175.00	165	1.890	1.980	1.140	0.337	48	143
Alcatel-Lucent RRH4X	175.00	165	1.890	1.980	1.140	0.337	48	143
RFS DB-T1-6Z-8AB-0Z	175.00	88	1.890	1.980	1.140	0.337	26	76
Antel BXA-70063/6CF	175.00	51	1.890	1.980	1.140	0.337	15	44
Antel BXA-80080/6CF	175.00	66	1.890	1.980	1.140	0.337	19	57
Andrew SBNHH-1D65B	175.00	304	1.890	1.980	1.140	0.337	89	263
Flat Platform w/ Han	175.00	2,000	1.890	1.980	1.140	0.337	584	1,730
Ericsson AIR 21, 1.3	162.00	271	1.620	0.841	0.697	0.190	45	235
Ericsson AIR 21, 1.3	162.00	275	1.620	0.841	0.697	0.190	45	237
Round T-Arms	162.00	750	1.620	0.841	0.697	0.190	124	649
Andrew LNX-6515DS-A1	162.00	149	1.620	0.841	0.697	0.190	25	129
RFS APXV18-206517S-C	152.00	79	1.426	0.335	0.459	0.103	7	68
Andrew DB589	102.00	12	0.642	-0.068	0.020	-0.017	0	10
Round Side Arm	102.00	150	0.642	-0.068	0.020	-0.017	-2	130
4' Dish w/ Radome	1.00	120	0.000	0.007	0.004	0.005	0	104
		39,387	52.087	25.652	19.473	5.510	2,105	34,062

Load Case (1.2 + 0.2Sds) \* DL + E EMAM

Seismic Equivalent Modal Analysis Method

Calculated Forces

Seg	Pu	Vu	Tu	Mu	Mu	Resultant	phi	phi	phi	phi	Total		
Elev	FY (-)	FX (-)	MY	MZ	MX	Moment	Pn	Vn	Tn	Mn	Deflect	Rotation	Ratio
(ft)	(kips)	(kips)	(ft-kips)	(ft-kips)	(ft-kips)	(ft-kips)	(kips)	(kips)	(ft-kips)	(ft-kips)	(in)	(deg)	
0.00	-48.29	-2.10	0.00	-277.13	0.00	277.13	4,663.96	2,331.98	12,350.3	6,184.38	0.00	0.00	0.055
1.00	-46.70	-2.10	0.00	-275.03	0.00	275.03	4,654.80	2,327.40	12,275.0	6,146.65	0.00	0.00	0.055
5.00	-44.93	-2.07	0.00	-266.65	0.00	266.65	4,617.32	2,308.66	11,973.5	5,995.65	0.01	-0.01	0.054
10.00	-43.19	-2.04	0.00	-256.29	0.00	256.29	4,568.59	2,284.30	11,596.4	5,806.85	0.02	-0.02	0.054
15.00	-41.48	-2.00	0.00	-246.08	0.00	246.08	4,517.79	2,258.89	11,219.5	5,618.13	0.05	-0.03	0.053
20.00	-39.81	-1.97	0.00	-236.06	0.00	236.06	4,464.90	2,232.45	10,843.2	5,429.68	0.08	-0.04	0.052
25.00	-38.17	-1.93	0.00	-226.23	0.00	226.23	4,409.93	2,204.97	10,467.7	5,241.66	0.13	-0.05	0.052
30.00	-36.57	-1.88	0.00	-216.60	0.00	216.60	4,352.89	2,176.44	10,093.5	5,054.25	0.19	-0.06	0.051
35.00	-34.99	-1.84	0.00	-207.17	0.00	207.17	4,293.76	2,146.88	9,720.79	4,867.62	0.26	-0.07	0.051
40.00	-33.45	-1.80	0.00	-197.96	0.00	197.96	4,232.55	2,116.28	9,349.96	4,681.93	0.34	-0.08	0.050
45.00	-32.92	-1.79	0.00	-188.95	0.00	188.95	4,169.26	2,084.63	8,981.38	4,497.36	0.44	-0.10	0.050
46.75	-31.10	-1.73	0.00	-185.82	0.00	185.82	4,146.62	2,073.31	8,852.97	4,433.06	0.47	-0.10	0.049
50.00	-29.16	-1.67	0.00	-180.20	0.00	180.20	4,103.90	2,051.95	8,615.37	4,314.09	0.55	-0.11	0.049
53.50	-28.72	-1.66	0.00	-174.35	0.00	174.35	4,094.98	2,047.49	8,566.54	4,289.64	0.63	-0.12	0.048
55.00	-27.26	-1.61	0.00	-171.86	0.00	171.86	4,074.88	2,037.44	8,457.42	4,234.99	0.67	-0.12	0.047
60.00	-25.84	-1.57	0.00	-163.78	0.00	163.78	4,006.53	2,003.26	8,095.71	4,053.87	0.80	-0.13	0.047
65.00	-24.44	-1.53	0.00	-155.92	0.00	155.92	3,936.09	1,968.05	7,737.41	3,874.46	0.95	-0.15	0.046
70.00	-23.08	-1.50	0.00	-148.26	0.00	148.26	3,863.58	1,931.79	7,382.86	3,696.92	1.11	-0.16	0.046
75.00	-21.76	-1.47	0.00	-140.77	0.00	140.77	3,788.99	1,894.50	7,032.42	3,521.44	1.28	-0.17	0.046
80.00	-20.46	-1.45	0.00	-133.43	0.00	133.43	3,712.32	1,856.16	6,686.41	3,348.18	1.47	-0.19	0.045
85.00	-19.20	-1.43	0.00	-126.20	0.00	126.20	3,633.57	1,816.78	6,345.19	3,177.31	1.67	-0.20	0.045
90.00	-17.98	-1.43	0.00	-119.03	0.00	119.03	3,552.73	1,776.37	6,009.09	3,009.01	1.89	-0.22	0.045
95.00	-16.04	-1.44	0.00	-111.89	0.00	111.89	3,469.82	1,734.91	5,678.46	2,843.45	2.13	-0.23	0.044
100.00	-15.94	-1.44	0.00	-104.71	0.00	104.71	3,384.83	1,692.41	5,353.64	2,680.80	2.38	-0.25	0.044
100.25	-15.61	-1.44	0.00	-104.35	0.00	104.35	2,340.16	1,170.08	3,767.44	1,886.52	2.39	-0.25	0.062
102.00	-14.85	-1.45	0.00	-101.83	0.00	101.83	2,323.07	1,161.53	3,695.31	1,850.40	2.49	-0.26	0.061
105.00	-13.94	-1.47	0.00	-97.48	0.00	97.48	2,293.18	1,146.59	3,572.27	1,788.79	2.65	-0.27	0.061
110.00	-13.06	-1.49	0.00	-90.14	0.00	90.14	2,241.70	1,120.85	3,369.07	1,687.04	2.94	-0.29	0.059
115.00	-12.20	-1.51	0.00	-82.71	0.00	82.71	2,188.14	1,094.07	3,168.50	1,586.61	3.26	-0.31	0.058
120.00	-11.36	-1.52	0.00	-75.18	0.00	75.18	2,132.50	1,066.25	2,970.92	1,487.67	3.60	-0.34	0.056
125.00	-10.55	-1.53	0.00	-67.57	0.00	67.57	2,074.78	1,037.39	2,776.66	1,390.39	3.96	-0.36	0.054
130.00	-9.55	-1.53	0.00	-59.91	0.00	59.91	2,014.98	1,007.49	2,586.06	1,294.95	4.35	-0.38	0.051
134.25	-9.47	-1.53	0.00	-53.39	0.00	53.39	1,137.98	568.99	1,433.87	718.00	4.70	-0.40	0.083
135.00	-8.88	-1.53	0.00	-52.24	0.00	52.24	1,134.17	567.08	1,419.73	710.92	4.76	-0.40	0.081
140.00	-8.32	-1.51	0.00	-44.61	0.00	44.61	1,107.59	553.79	1,325.68	663.83	5.20	-0.44	0.075
145.00	-7.77	-1.48	0.00	-37.06	0.00	37.06	1,078.93	539.46	1,232.17	617.00	5.68	-0.47	0.067
150.00	-7.55	-1.47	0.00	-29.65	0.00	29.65	1,048.18	524.09	1,139.55	570.62	6.19	-0.50	0.059
152.00	-7.15	-1.44	0.00	-26.71	0.00	26.71	1,035.30	517.65	1,102.82	552.23	6.40	-0.51	0.055
155.00	-6.67	-1.38	0.00	-22.41	0.00	22.41	1,015.36	507.68	1,048.15	524.85	6.72	-0.53	0.049
160.00	-6.48	-1.36	0.00	-15.49	0.00	15.49	980.46	490.23	958.32	479.87	7.29	-0.55	0.039
162.00	-4.46	-1.07	0.00	-12.77	0.00	12.77	965.91	482.96	922.90	462.14	7.52	-0.56	0.032
165.00	-4.07	-1.00	0.00	-9.57	0.00	9.57	943.48	471.74	870.40	435.85	7.87	-0.57	0.026
170.00	-3.71	-0.92	0.00	-4.58	0.00	4.58	904.41	452.21	784.74	392.95	8.47	-0.58	0.016
175.00	0.00	-0.88	0.00	0.00	0.00	0.00	863.27	431.63	701.67	351.36	9.08	-0.58	0.000

Load Case (0.9 - 0.2Sds) \* DL + E EMAM

Seismic (Reduced DL) Equivalent Modal Analysis Method

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-33.81	-2.10	0.00	-274.17	0.00	274.17	4,663.96	2,331.98	12,350.3	6,184.38	0.00	0.00	0.052
1.00	-32.69	-2.09	0.00	-272.07	0.00	272.07	4,654.80	2,327.40	12,275.0	6,146.65	0.00	0.00	0.051
5.00	-31.45	-2.07	0.00	-263.69	0.00	263.69	4,617.32	2,308.66	11,973.5	5,995.65	0.01	-0.01	0.051
10.00	-30.24	-2.04	0.00	-253.35	0.00	253.35	4,568.59	2,284.30	11,596.4	5,806.85	0.02	-0.02	0.050
15.00	-29.04	-2.00	0.00	-243.17	0.00	243.17	4,517.79	2,258.89	11,219.5	5,618.13	0.05	-0.03	0.050
20.00	-27.87	-1.96	0.00	-233.19	0.00	233.19	4,464.90	2,232.45	10,843.2	5,429.68	0.08	-0.04	0.049
25.00	-26.72	-1.91	0.00	-223.41	0.00	223.41	4,409.93	2,204.97	10,467.7	5,241.66	0.13	-0.05	0.049
30.00	-25.60	-1.87	0.00	-213.83	0.00	213.83	4,352.89	2,176.44	10,093.5	5,054.25	0.19	-0.06	0.048
35.00	-24.50	-1.83	0.00	-204.48	0.00	204.48	4,293.76	2,146.88	9,720.79	4,867.62	0.26	-0.07	0.048
40.00	-23.42	-1.78	0.00	-195.34	0.00	195.34	4,232.55	2,116.28	9,349.96	4,681.93	0.34	-0.08	0.047
45.00	-23.05	-1.77	0.00	-186.41	0.00	186.41	4,169.26	2,084.63	8,981.38	4,497.36	0.43	-0.10	0.047
46.75	-21.77	-1.71	0.00	-183.31	0.00	183.31	4,146.62	2,073.31	8,852.97	4,433.06	0.47	-0.10	0.047
50.00	-20.42	-1.65	0.00	-177.74	0.00	177.74	4,103.90	2,051.95	8,615.37	4,314.09	0.54	-0.11	0.046
53.50	-20.11	-1.64	0.00	-171.95	0.00	171.95	4,094.98	2,047.49	8,566.54	4,289.64	0.62	-0.12	0.045
55.00	-19.09	-1.60	0.00	-169.49	0.00	169.49	4,074.88	2,037.44	8,457.42	4,234.99	0.66	-0.12	0.045
60.00	-18.09	-1.55	0.00	-161.51	0.00	161.51	4,006.53	2,003.26	8,095.71	4,053.87	0.79	-0.13	0.044
65.00	-17.11	-1.51	0.00	-153.75	0.00	153.75	3,936.09	1,968.05	7,737.41	3,874.46	0.94	-0.14	0.044
70.00	-16.16	-1.48	0.00	-146.18	0.00	146.18	3,863.58	1,931.79	7,382.86	3,696.92	1.09	-0.16	0.044
75.00	-15.23	-1.45	0.00	-138.80	0.00	138.80	3,788.99	1,894.50	7,032.42	3,521.44	1.27	-0.17	0.043
80.00	-14.33	-1.42	0.00	-131.56	0.00	131.56	3,712.32	1,856.16	6,686.41	3,348.18	1.45	-0.18	0.043
85.00	-13.44	-1.41	0.00	-124.44	0.00	124.44	3,633.57	1,816.78	6,345.19	3,177.31	1.65	-0.20	0.043
90.00	-12.58	-1.41	0.00	-117.38	0.00	117.38	3,552.73	1,776.37	6,009.09	3,009.01	1.87	-0.21	0.043
95.00	-11.23	-1.41	0.00	-110.35	0.00	110.35	3,469.82	1,734.91	5,678.46	2,843.45	2.10	-0.23	0.042
100.00	-11.16	-1.42	0.00	-103.27	0.00	103.27	3,384.83	1,692.41	5,353.64	2,680.80	2.35	-0.25	0.042
100.25	-10.93	-1.42	0.00	-102.92	0.00	102.92	2,340.16	1,170.08	3,767.44	1,886.52	2.36	-0.25	0.059
102.00	-10.40	-1.43	0.00	-100.43	0.00	100.43	2,323.07	1,161.53	3,695.31	1,850.40	2.45	-0.25	0.059
105.00	-9.76	-1.45	0.00	-96.14	0.00	96.14	2,293.18	1,146.59	3,572.27	1,788.79	2.62	-0.26	0.058
110.00	-9.14	-1.47	0.00	-88.91	0.00	88.91	2,241.70	1,120.85	3,369.07	1,687.04	2.91	-0.29	0.057
115.00	-8.54	-1.49	0.00	-81.59	0.00	81.59	2,188.14	1,094.07	3,168.50	1,586.61	3.22	-0.31	0.055
120.00	-7.95	-1.50	0.00	-74.16	0.00	74.16	2,132.50	1,066.25	2,970.92	1,487.67	3.55	-0.33	0.054
125.00	-7.39	-1.51	0.00	-66.66	0.00	66.66	2,074.78	1,037.39	2,776.66	1,390.39	3.91	-0.35	0.052
130.00	-6.69	-1.51	0.00	-59.10	0.00	59.10	2,014.98	1,007.49	2,586.06	1,294.95	4.29	-0.38	0.049
134.25	-6.62	-1.51	0.00	-52.67	0.00	52.67	1,137.98	568.99	1,433.87	718.00	4.64	-0.40	0.079
135.00	-6.22	-1.51	0.00	-51.54	0.00	51.54	1,134.17	567.08	1,419.73	710.92	4.70	-0.40	0.078
140.00	-5.82	-1.49	0.00	-44.01	0.00	44.01	1,107.59	553.79	1,325.68	663.83	5.14	-0.43	0.072
145.00	-5.43	-1.46	0.00	-36.56	0.00	36.56	1,078.93	539.46	1,232.17	617.00	5.60	-0.46	0.064
150.00	-5.28	-1.45	0.00	-29.25	0.00	29.25	1,048.18	524.09	1,139.55	570.62	6.11	-0.49	0.056
152.00	-5.00	-1.42	0.00	-26.36	0.00	26.36	1,035.30	517.65	1,102.82	552.23	6.31	-0.50	0.053
155.00	-4.66	-1.36	0.00	-22.11	0.00	22.11	1,015.36	507.68	1,048.15	524.85	6.64	-0.52	0.047
160.00	-4.53	-1.34	0.00	-15.29	0.00	15.29	980.46	490.23	958.32	479.87	7.19	-0.54	0.036
162.00	-3.12	-1.05	0.00	-12.61	0.00	12.61	965.91	482.96	922.90	462.14	7.42	-0.55	0.031
165.00	-2.85	-0.99	0.00	-9.45	0.00	9.45	943.48	471.74	870.40	435.85	7.77	-0.56	0.025
170.00	-2.59	-0.90	0.00	-4.52	0.00	4.52	904.41	452.21	784.74	392.95	8.36	-0.57	0.014
175.00	0.00	-0.88	0.00	0.00	0.00	0.00	863.27	431.63	701.67	351.36	8.96	-0.58	0.000

Site Number: 370625

Code: ANSI/TIA-222-G

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Site Name: Old Saybrook, CT

Engineering Number: OAA686891\_C3\_01

10/5/2016 10:16:42 PM

Customer: T-Mobile

### Analysis Summary

Load Case	Reactions						Max Usage	
	Shear FX (kips)	Shear FZ (kips)	Axial FY (kips)	Moment MX (ft-kips)	Moment MY (ft-kips)	Moment MZ (ft-kips)	Elev (ft)	Interaction Ratio
1.2D + 1.6W	35.37	0.00	47.25	0.00	0.00	4059.91	134.25	0.76
0.9D + 1.6W	35.37	0.00	35.44	0.00	0.00	4026.38	134.25	0.75
1.2D + 1.0Di + 1.0Wi	8.67	0.00	69.82	0.00	0.00	958.67	134.25	0.18
(1.2 + 0.2Sds) * DL + E ELFM	1.54	0.00	48.29	0.00	0.00	207.27	134.25	0.05
(1.2 + 0.2Sds) * DL + E EMAM	2.10	0.00	48.29	0.00	0.00	277.13	134.25	0.08
(0.9 - 0.2Sds) * DL + E ELFM	1.54	0.00	33.81	0.00	0.00	205.25	134.25	0.04
(0.9 - 0.2Sds) * DL + E EMAM	2.10	0.00	33.81	0.00	0.00	274.17	134.25	0.08
1.0D + 1.0W	7.22	0.00	39.39	0.00	0.00	825.05	134.25	0.16

Site Number: 370625

Code: ANSI/TIA-222-G

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Site Name: Old Saybrook, CT

Engineering Number: OAA686891\_C3\_01

10/5/2016 10:16:42 PM

Customer: T-Mobile

## Base Summary

### Reactions

Original Design			Analysis			Moment Design %
Moment (kip-ft)	Axial (kip)	Shear (kip)	Moment (kip-ft)	Axial (kip)	Shear (kip)	
5,400.00	52.00	48.00	4,059.91	69.82	35.37	75.18

### Base Plate

Yield (ksi)	Thick (in)	Width (in)	Style	Poly Sides	Clip Len (in)	Effective Len (in)	Mu (kip-in)	Phi Mn (kip-in)	Ratio
50.0	2.750	72.000	Clipped	0	16.00	8.555	422.83	727.84	0.58

### Anchor Bolts

Bolt Circle	Num Bolts	Bolt Type	Bolt Dia (in)	Yield (ksi)	Ultimate (ksi)	Arrange	Cluster Dist (in)	Start Angle (deg)	Compression			Tension		
									Force (kip)	Allow (kip)	Ratio	Force (kip)	Allow (kip)	Ratio
72.00	24	2.25" 18J	2.25	75.00	100.00	Clustered	6.00	45.0	115.68	260.00	0.46	109.87	260.00	0.43

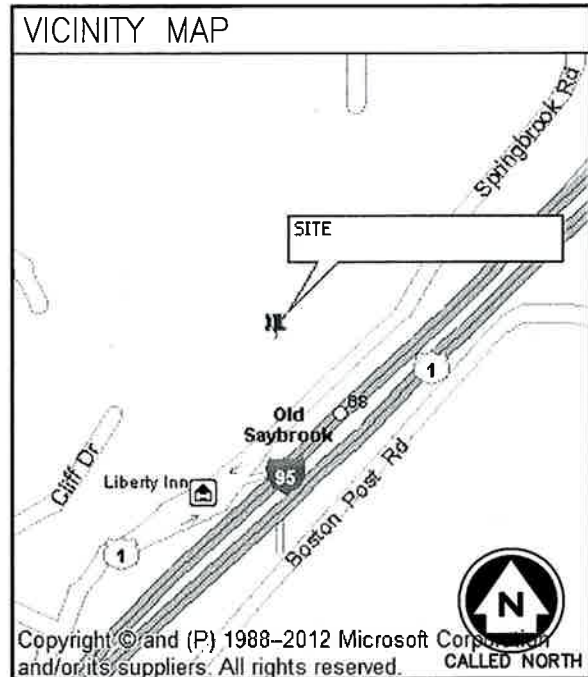
# T-MOBILE NORTHEAST LLC

## CTHA540A

### CROWN OLD SAYBROOK MONOPOLE

85 SPRINGBROOK RD  
 OLD SAYBROOK, CT 06475

(705A CONFIGURATION)



**DO NOT SCALE DRAWINGS**

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

**CALL:**  
**'CALL BEFORE YOU DIG'**  
 WWW.CBYD.COM  
 CALL 811 OR 1-800-822-4455

CALL THREE WORKING DAYS PRIOR TO DIGGING  
 SAFETY PRECAUTIONS SHALL BE IMPLEMENTED BY CONTRACTOR AT ALL TRENCHING IN ACCORDANCE WITH CURRENT OSHA STANDARDS.

**COLOR CODE FOR UTILITY LOCATIONS**

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

#### GENERAL NOTES

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

#### PROJECT SUMMARY

SITE NUMBER:	CTHA540A	APPLICANT:	T-MOBILE NORTHEAST LLC
SITE NAME:	CROWN OLD SAYBROOK MONOPOLE		103 MONARCH DRIVE
SITE ADDRESS:	85 SPRINGBROOK RD	PROJECT MANAGER:	LIVERPOOL, NY 13088
	OLD SAYBROOK, CT 06475		TRANSCEND WIRELESS
TOWER OWNER:	AMERICAN TOWER CORPORATION		10 INDUSTRIAL AVE, SUITE 3
			MAHWAH, NJ 07430
PARCEL:	TBD	CONTACT:	JAMIE MARCHINI
ZONING:	TBD		(973) 885-0660
JURISDICTION:	TBD	ARCHITECT/ENGINEER:	INFINIGY ENGINEERING
LAT./LONG.:	N 41.31390000° / W 72.36420000°		1033 WATERVLIET SHAKER ROAD
CONSTRUCTION TYPE:	L700 UPGRADE		ALBANY, NY 12205
		CONTACT:	ALEX WELLER
			518-690-0790

#### PROJECT DESCRIPTION

<input checked="" type="checkbox"/> EXISTING MONOPOLE	<input type="checkbox"/> EXISTING CABINET(S)	<input checked="" type="checkbox"/> OUTDOOR
<input type="checkbox"/> EXISTING GUYED TOWER	<input checked="" type="checkbox"/> EXISTING BBU	<input type="checkbox"/> INDOOR
<input type="checkbox"/> EXISTING TRANSMISSION TOWER	<input checked="" type="checkbox"/> EXISTING 6201 ODE	<input checked="" type="checkbox"/> EXISTING CONCRETE PAD
<input type="checkbox"/> EXISTING BILLBOARD	<input checked="" type="checkbox"/> EXISTING ALU CABINET	<input type="checkbox"/> EXISTING STEEL PLATFORM
<input type="checkbox"/> EXISTING ROOFTOP	<input type="checkbox"/> SITE SUPPORT KIT	<input checked="" type="checkbox"/> EXISTING PPC
<input type="checkbox"/> EXISTING FLAGPOLE	<input type="checkbox"/> SITE SUPPORT CABINET	<input type="checkbox"/> PANELBOARD
<input type="checkbox"/> EXISTING FORT WORTH	<input checked="" type="checkbox"/> GPS	

T-MOBILE NORTHEAST LLC PROPOSES THE MODIFICATION OF AN UNMANNED WIRELESS BROADBAND FACILITY. ADDITION OF PROPOSED LTE PANEL ANTENNAS, AND COAX. REUSE EXISTING FIBER/HYBRID CABLES AND EQUIPMENT CABINETS.

#### SHEET INDEX

SHEET	DESCRIPTION	REVISION
T-1	TITLE SHEET	B
C-1	SITE PLAN	B
C-2	COMPOUND PLAN & ELEVATION	B
C-3	ANTENNA DETAIL & RF SCHEDULE	B
C-4	ANTENNA ORIENTATION	B
E-1	GROUNDING AND POWER DIAGRAMS	B
E-2	COAX/FIBER PLUMBING DIAGRAM	B
N-1	GENERAL AND ELECTRICAL NOTES	B

**T-Mobile**  
 T-MOBILE NORTHEAST LLC  
 103 MONARCH DRIVE  
 LIVERPOOL, NY 13088

**INFINIGY**  
 1033 Waterliet Shaker Rd  
 Albany, NY 12205  
 Office: (518) 690-0790  
 Fax: (518) 690-0790

SUBMITTALS		
DATE	DESCRIPTION	REVISION
10/17/18	FOR REVIEW	A
10/28/18	FOR PERMIT	B

DEPT.	DATE	APP'D	REVISIONS
RFE			
RF MAN.			
ZONING			
OPS			
CONSTR.			
SITE NO.			

PROJECT NO: 428-000  
 DRAWN BY: JLM  
 CHECKED BY: ASW



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SITE NUMBER:  
**CTHA540A**

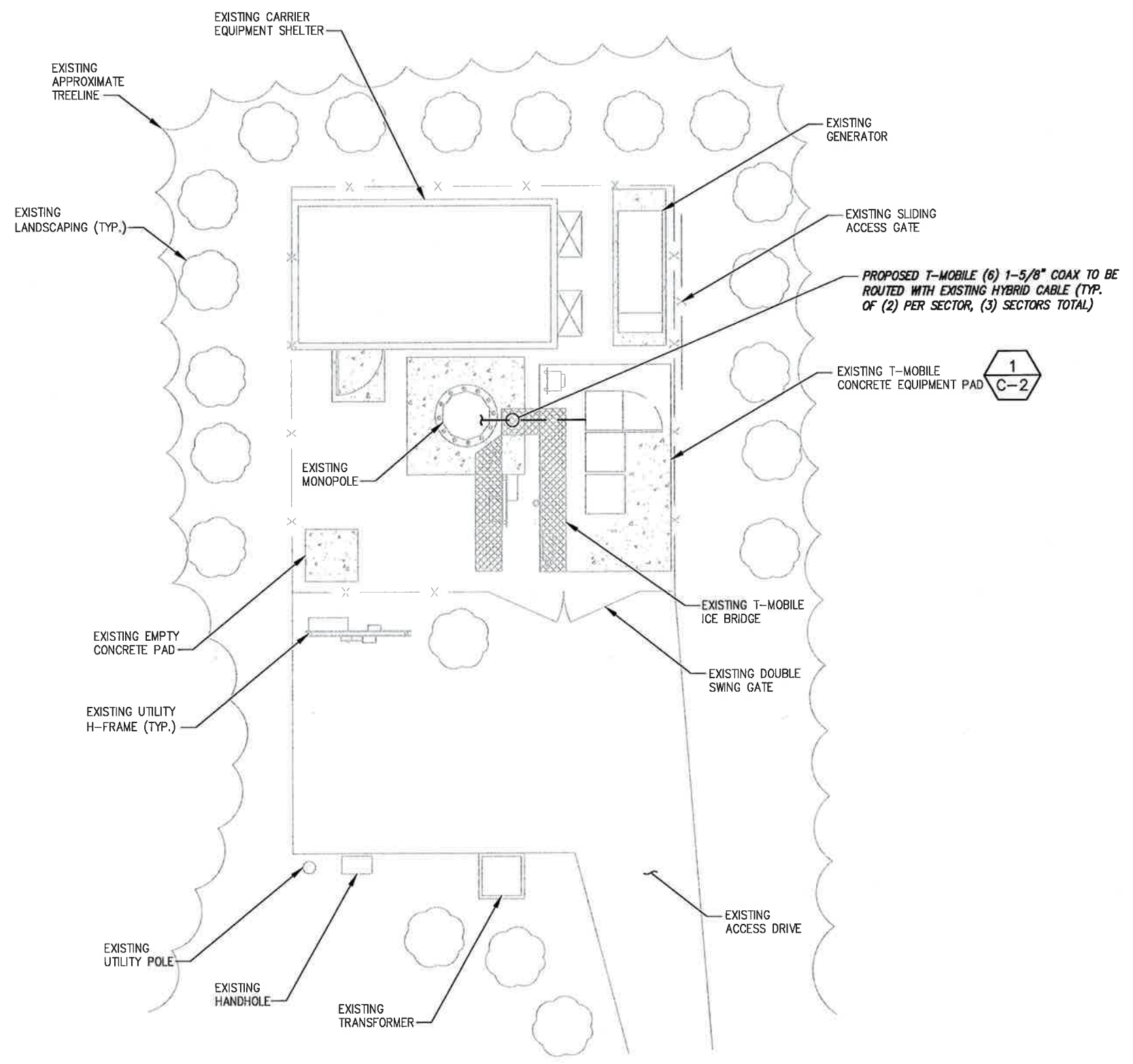
SITE NAME:  
 CROWN OLD SAYBROOK MONOPOLE  
 85 SPRINGBROOK  
 OLD SAYBROOK, CT 06475

SHEET TITLE  
**TITLE SHEET**

SHEET NUMBER  
**T-1**

SHEET 1 OF 8 SHEETS





- GENERAL SITE NOTES:**
1. A COMPLETE BOUNDARY SURVEY OF THE HOST PARCEL HAS NOT BEEN PERFORMED BY INFINIGY. BOUNDARY INFORMATION IF SHOWN WAS OBTAINED FROM INFORMATION PROVIDED BY OTHERS. PROPERTY IS SUBJECT TO ALL EASEMENTS AND RESTRICTIONS OF RECORD.
  2. BASEMAPPING INFORMATION BASED ON PROVIDED INFORMATION.
  3. CONTRACTOR TO FIELD VERIFY DIMENSIONS AS NECESSARY BEFORE CONSTRUCTION.
  4. THE PROPOSED DEVELOPMENT DOES NOT INCLUDE SIGNS OF ADVERTISING.
  5. THE PROPOSED DEVELOPMENT IS UNMANNED AND THEREFORE DOES NOT REQUIRE A MEANS OF WATER SUPPLY OR SEWAGE DISPOSAL.
  6. NO LANDSCAPING WORK IS PROPOSED IN CONJUNCTION WITH THIS DEVELOPMENT OTHER THAN THAT WHICH IS SHOWN.
  7. THE PROPOSED DEVELOPMENT DOES NOT INCLUDE OUTDOOR STORAGE OR ANY SOLID WASTE RECEPTACLES.
  8. UTILITIES SHOWN ON PLAN ARE TAKEN FROM OWNERS RECORDS AND FIELD LOCATION OF VISIBLE SURFACE FEATURES. THE EXISTENCE, EXTENT AND EXACT HORIZONTAL AND VERTICAL LOCATIONS OF UTILITIES HAS NOT BEEN VERIFIED. ANY CONTRACTOR PERFORMING WORK ON THIS SITE MUST CONTACT MISS UTILITY AT LEAST 48 HOURS PRIOR TO COMMENCING WORK.
  9. ALL OBSOLETE OR UNUSED FACILITIES SHALL BE REMOVED WITHIN 12 MONTHS OF CESSATION OF OPERATIONS.

**SITE LEGEND**

- SITE PROPERTY LINE
- STREET OR ROAD
- x - x - CHAIN LINK FENCE
- OPAQUE WOODEN FENCE
- TREES/SHRUBS
- ~ TREE LINE
- ⊗ UTILITY POLE
- (E) EXISTING
- (N) NEW
- (P) PROPOSED
- (F) FUTURE

**T-Mobile**  
 T-MOBILE NORTHEAST LLC  
 103 MONARCH DRIVE  
 LIVERPOOL, NY 13088

**INFINIGY**  
 1033 Watervliet Shaker Rd  
 Albany, NY 12205  
 Office # (518) 694-0790  
 Fax # (518) 694-0793

**SUBMITTALS**

DATE	DESCRIPTION	REVISION
10/17/18	FOR REVIEW	A
10/28/18	FOR PERMIT	B

DEPT.	DATE	APP'D	REVISIONS
R/E			
RF MAN			
ZONING			
OPS			
CONSTR.			
SITE AC.			

PROJECT NO: 428-000  
 DRAWN BY: JLM  
 CHECKED BY: ASW



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 85 SPRINGBROOK  
 OLD SAYBROOK, CT 06475

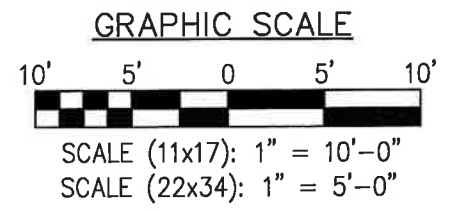
SHEET TITLE  
**SITE PLAN**

SHEET NUMBER  
**C-1**

SHEET 2 OF 8 SHEETS

**1** SITE PLAN  
 SCALE: AS NOTED

CALLLED NORTH



STRUCTURAL & MOUNT ANALYSIS HAS NOT BEEN COMPLETED AT TIME OF ISSUANCE OF THESE DRAWINGS. STRUCTURAL & MOUNT ANALYSIS MUST BE COMPLETED PRIOR TO INSTALLATION. INFINIGY HAS NOT EVALUATED THE EXISTING OR PROPOSED CONDITIONS AND ASSUMES NO LIABILITY.

**SUBMITTALS**

DATE	DESCRIPTION	REVISION
10/17/16	FOR REVIEW	A
10/28/16	FOR PERMIT	B

DEPT.	DATE	APP'D	REVISIONS
REF.			
RF. MAN.			
ZONING			
GPS			
CONSTR.			
SITE AC.			

PROJECT NO: 428-000  
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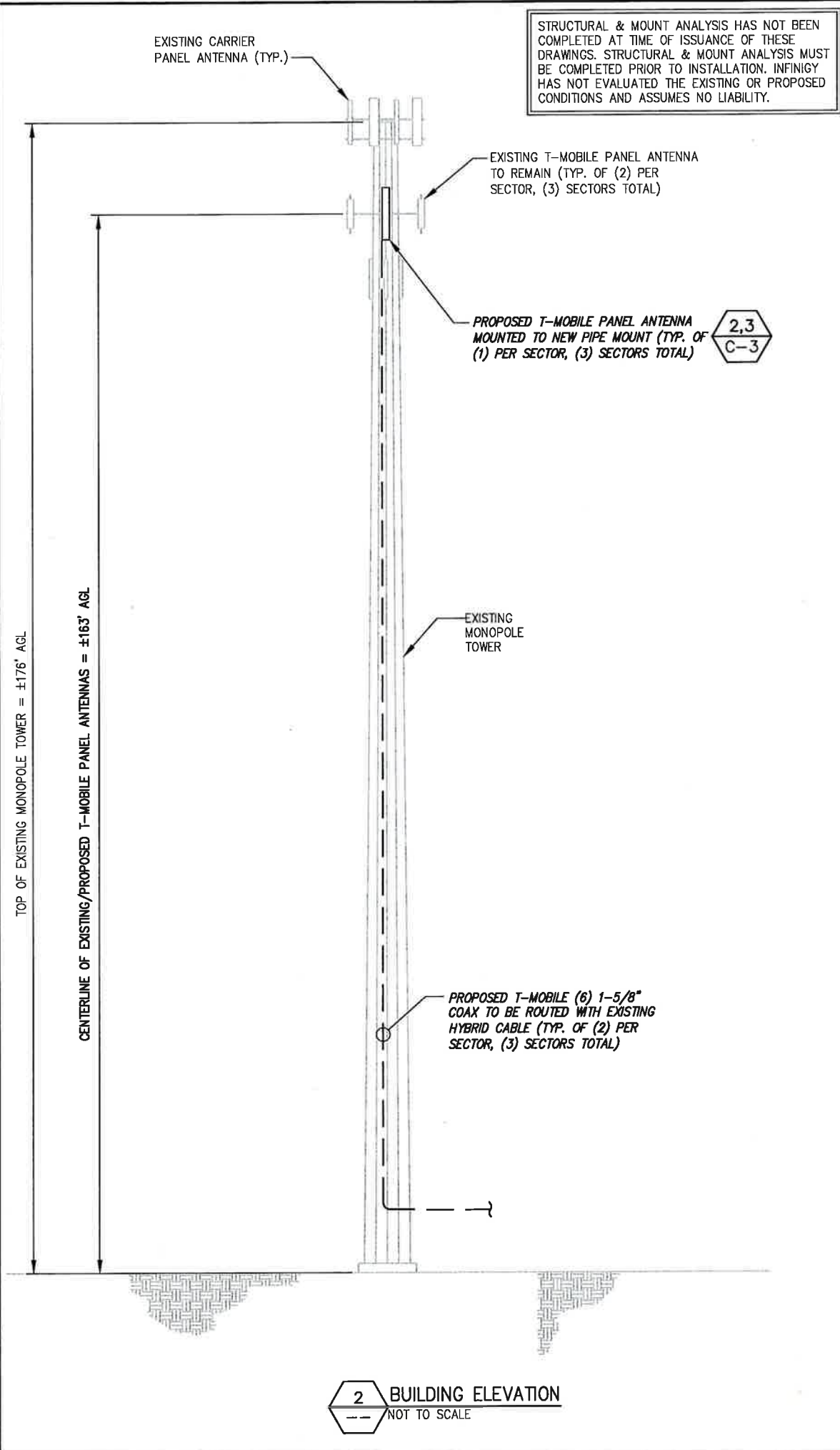
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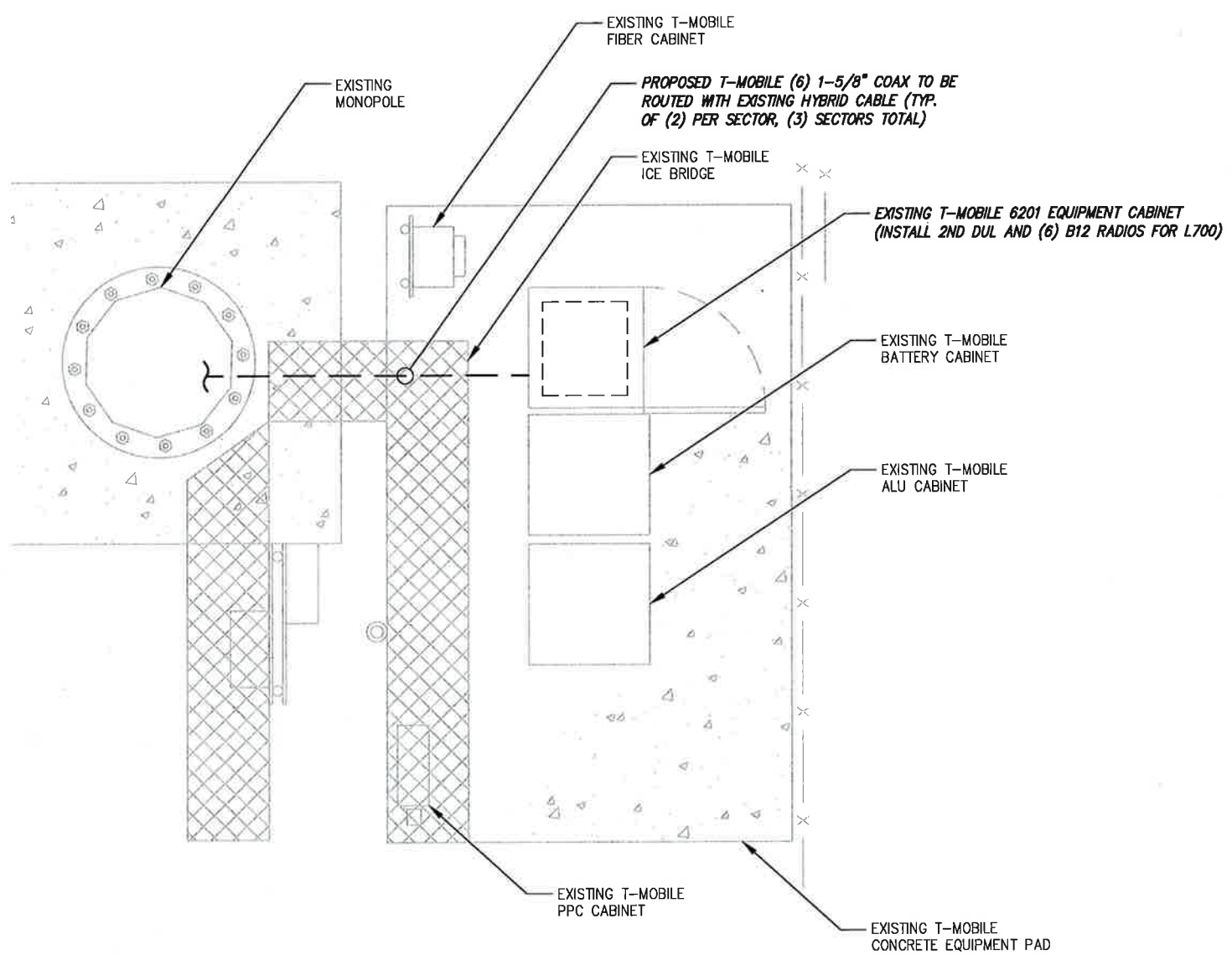
SITE NUMBER: CTHA540A  
 SITE NAME: CROWN OLD SAYBROOK MONOPOLE  
 85 SPRINGBROOK  
 OLD SAYBROOK, CT 06475

SHEET TITLE  
**COMPOUND PLAN & ELEVATION**

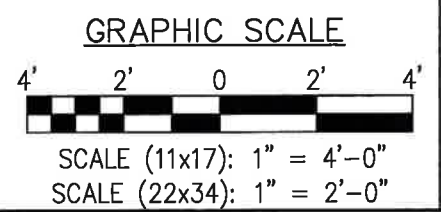
SHEET NUMBER  
**C-2**  
 SHEET 3 OF 8 SHEETS



**2 BUILDING ELEVATION**  
 NOT TO SCALE



**1 EQUIPMENT PLAN**  
 SCALE: AS NOTED



TOP OF EXISTING MONOPOLE TOWER = ±176' AGL  
 CENTERLINE OF EXISTING/PROPOSED T-MOBILE PANEL ANTENNAS = ±163' AGL



**RF SYSTEM SCHEDULE (705A CONFIGURATION)**

SECTOR	TECHNOLOGY	ANTENNA PORT	BAND	ANTENNA MODEL #	VENDOR	QTY (REMOVED)	QTY (NEW)	AZIMUTH	M-TILT	E-TILT	ANTENNA CENTERLINE	TMA MODEL #	VENDOR	RRU MODEL #	VENDOR	CABLE LENGTH	CABLE DIAMETER	CABLE QTY.	CABLE TYPE	CABLE MODEL #	VENDOR	CABLE TAGGING	COLOR CODING	JUMPER TYPE	JUMPER TAGGING	COLOR CODING
A	U1900	P1/P2	B2A	AIR21 B2A/B4P	ERICSSON	0	0	100°	0°	2°	163'-0"	-	-	-	-	EXISTING	1-5/8"	1	HYBRID	MASTERLINE EXTREME HYBRID (9/18)	ERICSSON	FIBER 1	0	FIBER	---	-
	L700	P3	B12P	LNX-6515DS-A1M	COMMSCOPE	0	1	100°	0°	2°	163'-0"	-	-	-	-	±175'	1-5/8"	2	COAX	TBD	ERICSSON	L700	Y	COAX	---	-
	L2100	P4/P5	B4P	AIR21 B4A/B2P	ERICSSON	0	0	100°	0°	2°	163'-0"	-	-	-	-	(ANTENNA CONNECTED VIA EXISTING HYBRID CABLE)						FIBER	---	-		
B	U1900	P1/P2	B2A	AIR21 B2A/B4P	ERICSSON	0	0	195°	0°	2°	163'-0"	-	-	-	-	(ANTENNA CONNECTED VIA EXISTING HYBRID CABLE)						FIBER	---	-		
	L700	P3	B12P	LNX-6515DS-A1M	COMMSCOPE	0	1	195°	0°	2°	163'-0"	-	-	-	-	±175'	1-5/8"	2	COAX	TBD	ERICSSON	L700	Y	COAX	---	-
	L2100	P4/P5	B4P	AIR21 B4A/B2P	ERICSSON	0	0	195°	0°	2°	163'-0"	-	-	-	-	(ANTENNA CONNECTED VIA EXISTING HYBRID CABLE)						FIBER	---	-		
C	U1900	P1/P2	B2A	AIR21 B2A/B4P	ERICSSON	0	0	350°	0°	2°	163'-0"	-	-	-	-	(ANTENNA CONNECTED VIA EXISTING HYBRID CABLE)						FIBER	---	-		
	L700	P3	B12P	LNX-6515DS-A1M	COMMSCOPE	0	1	350°	0°	2°	163'-0"	-	-	-	-	±175'	1-5/8"	2	COAX	TBD	ERICSSON	L700	Y	COAX	---	-
	L2100	P4/P5	B4P	AIR21 B4A/B2P	ERICSSON	0	0	350°	0°	2°	163'-0"	-	-	-	-	(ANTENNA CONNECTED VIA EXISTING HYBRID CABLE)						FIBER	---	-		

**KEY**

EXISTING	R - RED - GSM
PROPOSED	G - GREEN - UMS 1900
FIBER CONNECTION	B - BLUE - UMS AWS
	Y - YELLOW - LTE
	O - ORANGE - FIBER CABLE

**1 RF SCHEDULE**  
 NOT TO SCALE

**SUBMITTALS**

DATE	DESCRIPTION	REVISION
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10/28/18	FOR PERMIT	B

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

PROJECT NO: 428-000  
 DRAWN BY: JLM  
 CHECKED BY: ASW



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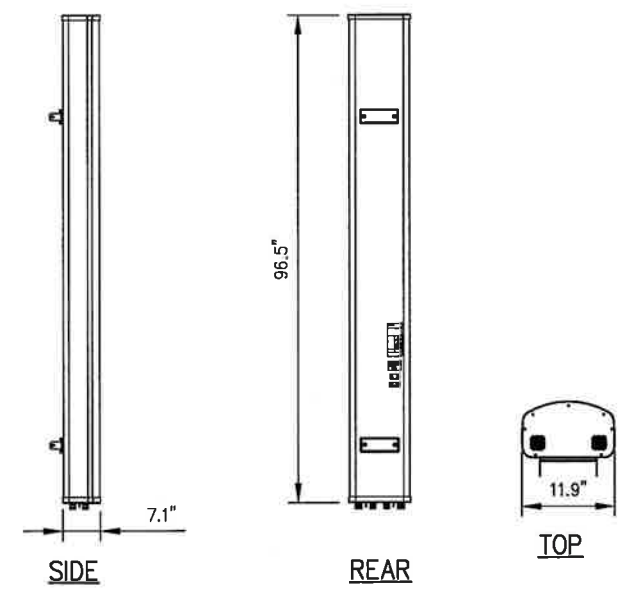
SITE NUMBER: CTHA540A  
 SITE NAME: CROWN OLD SAYBROOK MONOPOLE  
 85 SPRINGBROOK  
 OLD SAYBROOK, CT 06475

SHEET TITLE  
**ANTENNA DETAIL & RF SCHEDULE**

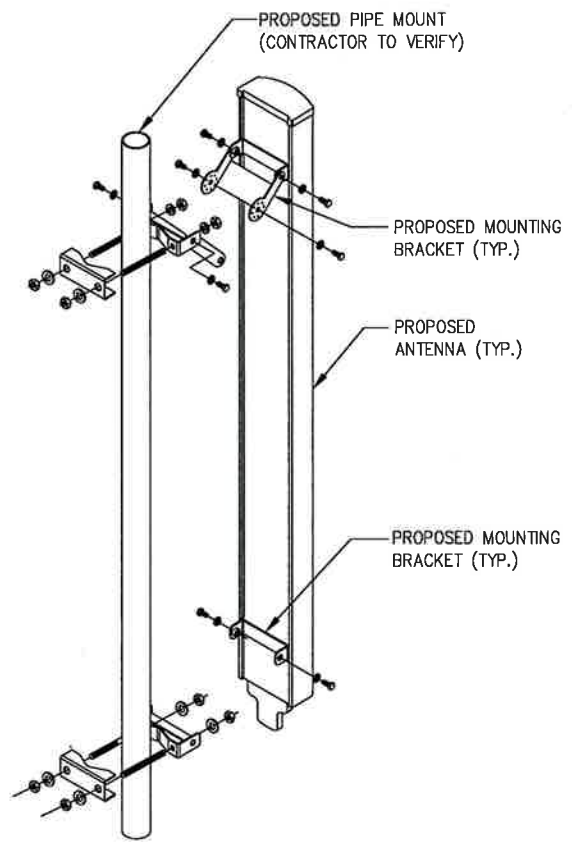
SHEET NUMBER  
**C-3**  
 SHEET 4 OF 8 SHEETS

**COMMSCOPE MODEL NO.: LNX-6515DS-A1M**

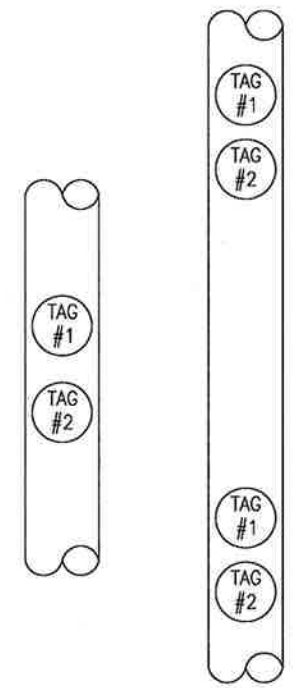
RADOME MATERIAL:	FIBERGLASS, UV RESISTANT
RADOME COLOR:	LIGHT GRAY
DIMENSIONS, HxWxD:	96.5" x 11.9" x 7.1"
WEIGHT, W/	49.6 LBS (19.8 kg)
PRE-MOUNTED BRACKETS:	7-16 DIN FEMALE
CONNECTOR:	



**2 ANTENNA DETAIL**  
 NOT TO SCALE

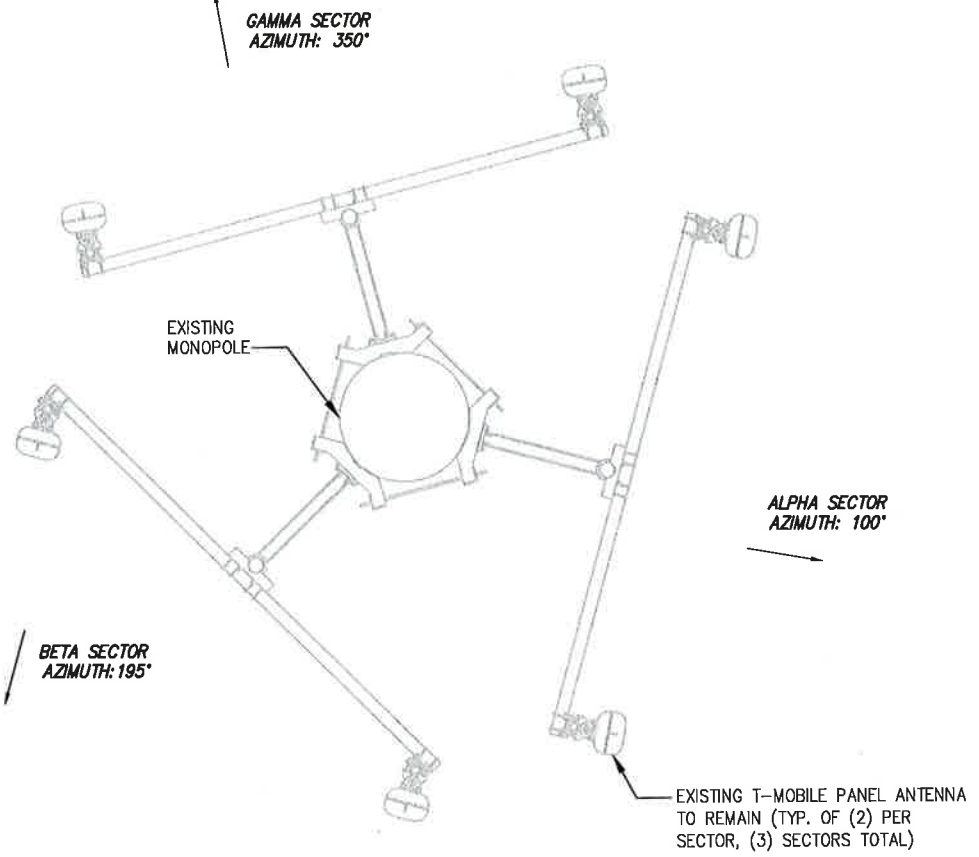


**3 MOUNTING DETAIL**  
 NOT TO SCALE



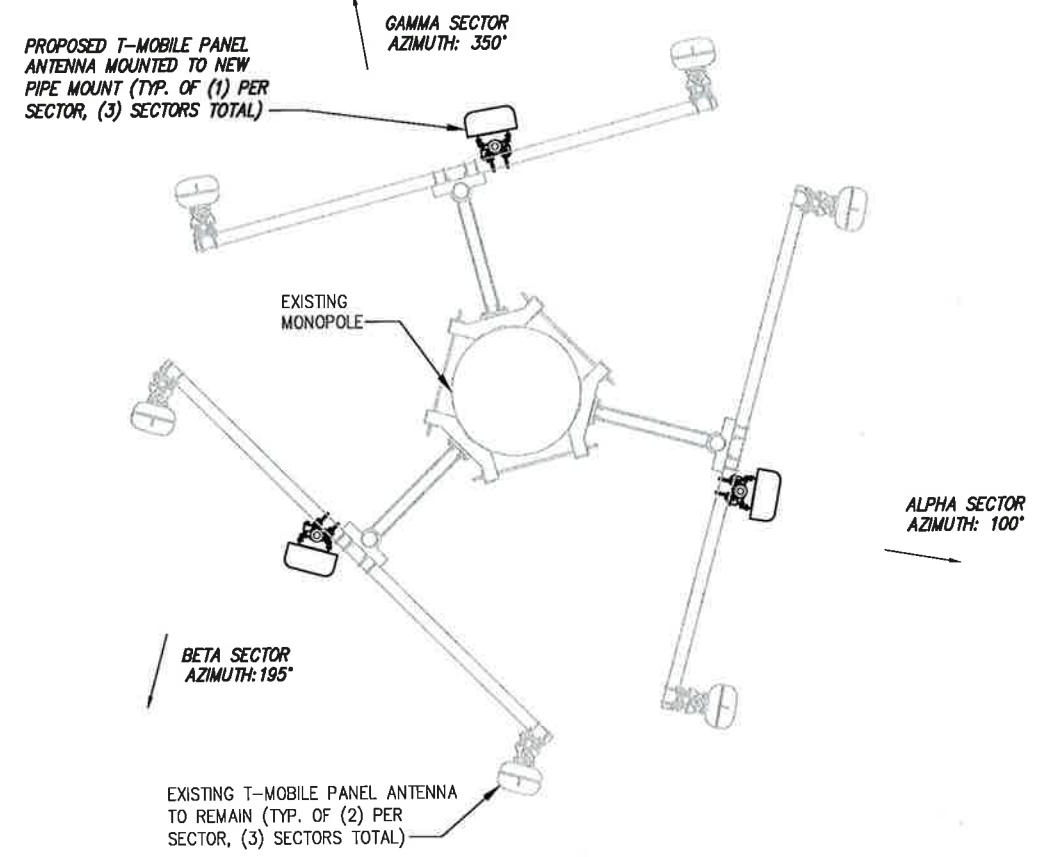
- METALLIC TAG NOTES:**
- TWO METALLIC TAGS SHALL BE ATTACHED AT EACH END OF EVERY CABLE LONGER THAN (3) THREE FEET.
  - CABLES LESS THAN (3) THREE FEET WILL HAVE TWO METALLIC TAGS ATTACHED AT THE CENTER OF THE CABLE.
  - TAGS WILL BE FASTENED WITH STAINLESS STEEL ZIP TIES APPROPRIATE FOR CABLE DIAMETER.
  - STANDARDIZED METALLIC TAG KITS WILL BE ASSEMBLED WITH TAGS ALREADY ENGRAVED TO ACCOMMODATE ALL CONFIGURATIONS.

**4 METALLIC TAG DETAIL**  
 NOT TO SCALE



**1** EXISTING ANTENNA ORIENTATION PLAN  
NOT TO SCALE

CALLED NORTH



**2** PROPOSED ANTENNA ORIENTATION PLAN  
NOT TO SCALE

CALLED NORTH

**STRUCTURAL NOTES:**

- SPECIFICATIONS / CODES:**
  - CONCRETE WORK SHALL BE PERFORMED IN ACCORDANCE WITH LATEST EDITION OF THE ACI CODE.
  - STEEL WORK SHALL BE PERFORMED IN ACCORDANCE WITH AISC STEEL CONSTRUCTION MANUAL, 9TH EDITION.
  - WELDING SHALL BE PERFORMED IN ACCORDANCE WITH AMERICAN WELDING SOCIETY (AWS) D1.1-92 "STRUCTURAL WELDING" CODE-STEEL.
  - REINFORCING STEEL SHALL BE PLACED IN ACCORDANCE WITH THE CONCRETE REINFORCING STEEL INSTITUTE (CRSI), "MANUAL OF STANDARD PRACTICE."
- MATERIALS:**
  - CONCRETE:  $f'_c$  - 3000psi. (MIN. U.N.O.)
  - REINFORCING STEEL: ASTM A615, GRADE 60.
  - WIRE MESH: ASTM A185.
  - STRUCTURAL STEEL: ASTM A36.
  - ELECTRODES FOR WELDING: E 70xx.
  - GALVANIZING: ASTM A153 (BOLTS) OR ASTM A123 (SHAPES, PLATES).
  - EXPANSION BOLTS: HILTI KWIK BOLT II, STAINLESS STEEL, 3/4"Øx43/4" EMBEDMENT OR AN APPROVED EQUAL.



SUBMITTALS		
DATE	DESCRIPTION	REVISION
10/17/16	FOR REVIEW	A
10/28/16	FOR PERMIT	B

DEPT.	DATE	APP'D	REVISIONS
R/E			
R/F MAN.			
ZONING			
OPS			
CONSTR.			
SITE AC.			

PROJECT NO: 428-000  
DRAWN BY: JLM  
CHECKED BY: ASW



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NOTE: IF DRAWINGS ARE 22"x34" USE GRAPHICAL SCALE AND/OR 1/2 TIMES OF THE NOTED SCALE.

SITE NUMBER:  
**CTHA540A**

SITE NAME:  
CROWN OLD SAYBROOK MONOPOLE  
85 SPRINGBROOK  
OLD SAYBROOK, CT 06475

SHEET TITLE  
**ANTENNA ORIENTATION**

SHEET NUMBER  
**C-4**

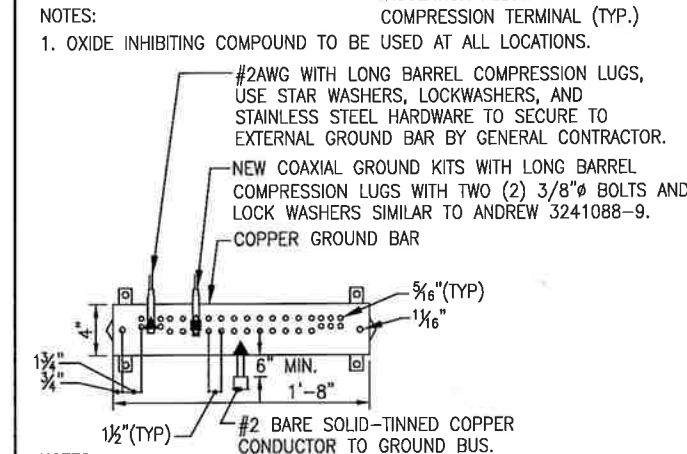
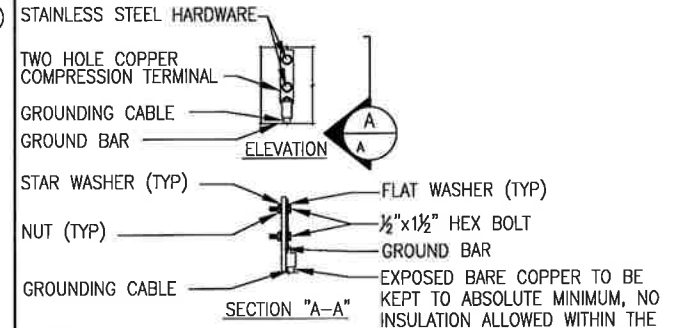
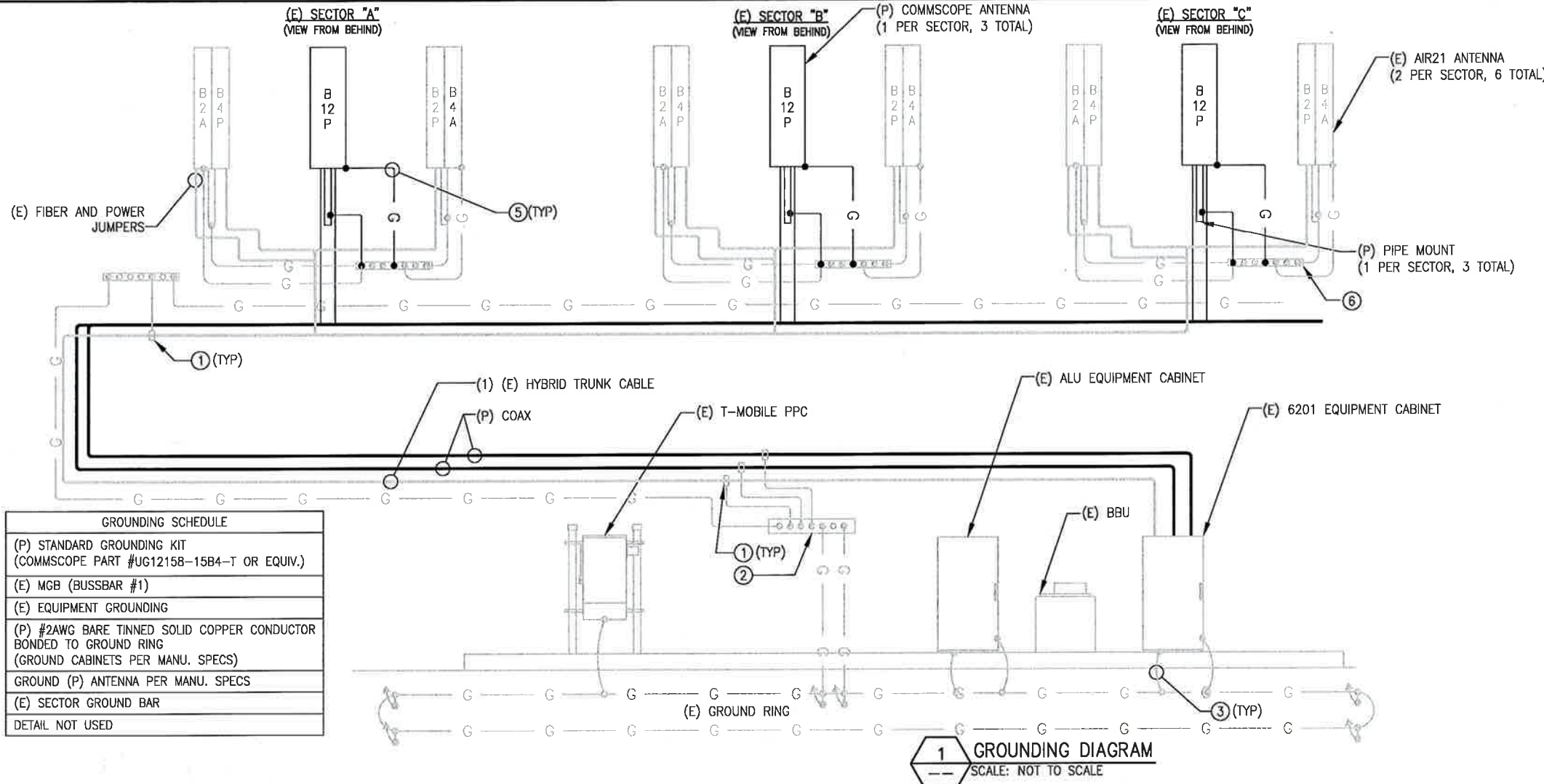
SHEET 5 OF 8 SHEETS

**3** DETAIL NOT USED  
NOT TO SCALE

**4** DETAIL NOT USED  
NOT TO SCALE

**5** DETAIL NOT USED  
NOT TO SCALE



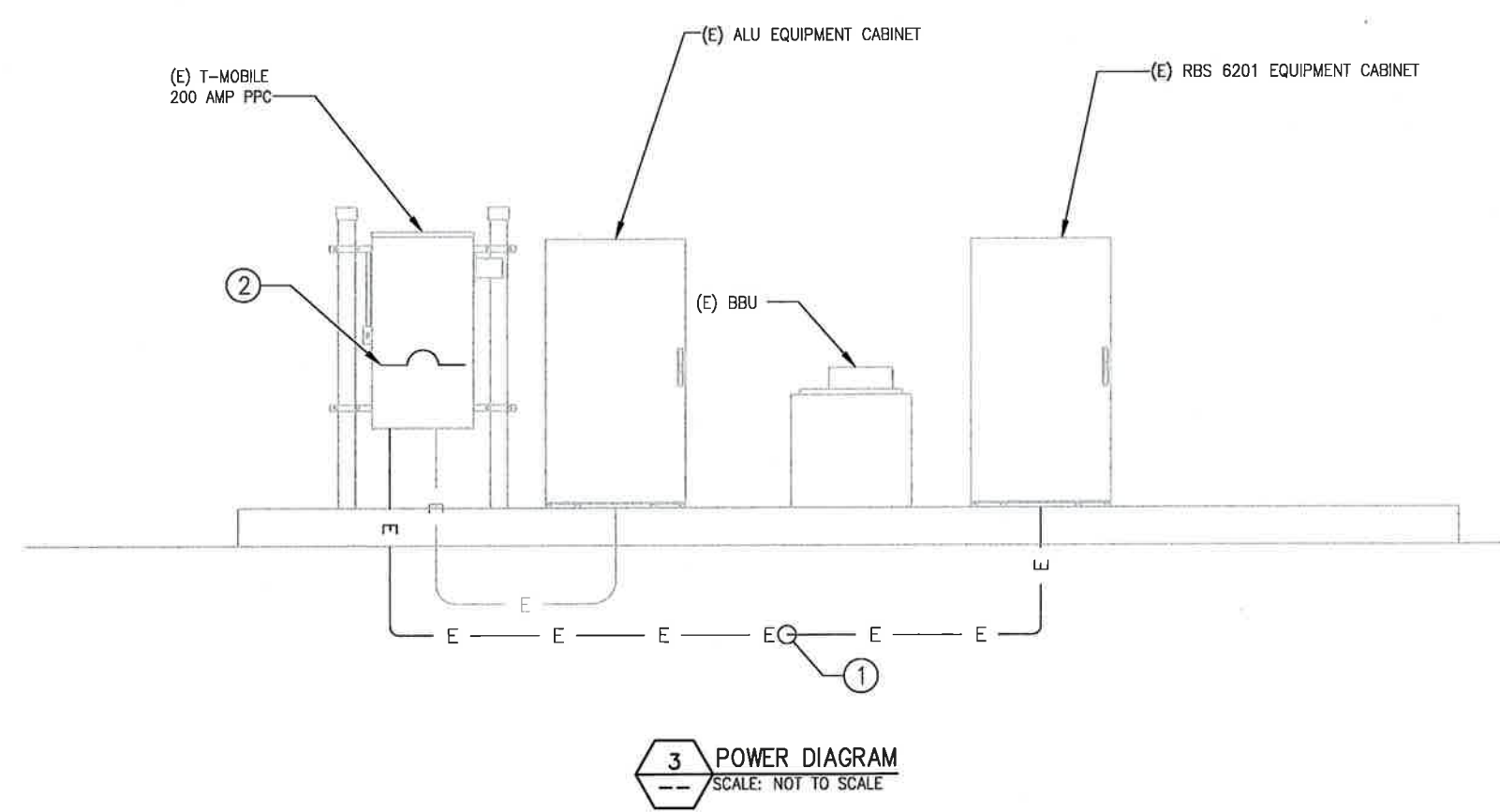


NOTES:  
 1. OXIDE INHIBITING COMPOUND TO BE USED AT ALL LOCATIONS.  
 2. ALL HARDWARE STAINLESS STEEL COAT ALL SURFACES WITH KOPR-SHIELD BEFORE MATING.  
 3. FOR GROUND BOND TO STEEL ONLY: INSERT A TOOTH WASHER BETWEEN LUG AND STEEL, COAT ALL SURFACES WITH KOPR-SHIELD.  
 4. ALL HOLES ARE COUNTERSUNK 1/8".

2 GROUND BAR CONNECTION DETAILS  
 --- SCALE: NOT TO SCALE

GROUNDING SCHEDULE	
1	(P) STANDARD GROUNDING KIT (COMMSCOPE PART #UG12158-15B4-T OR EQUIV.)
2	(E) MGB (BUSSBAR #1)
3	(E) EQUIPMENT GROUNDING
4	(P) #2AWG BARE TINNED SOLID COPPER CONDUCTOR BONDED TO GROUND RING (GROUND CABINETS PER MANU. SPECS)
5	GROUND (P) ANTENNA PER MANU. SPECS
6	(E) SECTOR GROUND BAR
7	DETAIL NOT USED

CONDUIT SCHEDULE	
1	(P) POWER CONDUIT UPGRADE
2	(P) BREAKER FOR 6201 EQUIPMENT CABINET



NOTE:  
 INFINIGY HAS NOT CONDUCTED AN ELECTRICAL LOAD STUDY FOR THIS SITE. CONTRACTOR IS TO VERIFY EXISTING ELECTRICAL LOADING PRIOR TO CONSTRUCTION TO ENSURE EXISTING INCOMING SERVICE CAPACITY. ALL ELECTRICAL INSTALLATION IS TO COMPLY WITH NEC, ADOPTED VERSION.

CONTRACTOR NOTE:  
 CONTRACTOR TO VERIFY THAT THE EXISTING CONDUITS AND WIRE SIZES ARE ADEQUATE FOR THE PROPOSED LOADING IN ACCORDANCE WITH NEC AND INCLUDE ELECTRICAL UPGRADES IN THE SCOPE OF WORK AS REQUIRED.



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 SITE NAME:  
 CROWN OLD SAYBROOK MONOPOLE  
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SHEET TITLE  
**GROUNDING & POWER DIAGRAMS**

SHEET NUMBER  
**E-1**  
 SHEET 6 OF 8 SHEETS

SUBMITTALS		
DATE	DESCRIPTION	REVISION
10/17/16	FOR REVIEW	A
10/28/16	FOR PERMIT	B

DEPT.	DATE	APP'D	REVISIONS
R/E			
RF MAN.			
ZONING			
OPS			
CONSTR.			
SITE AC.			

PROJECT NO: 428-000  
 DRAWN BY: JLM  
 CHECKED BY: ASW



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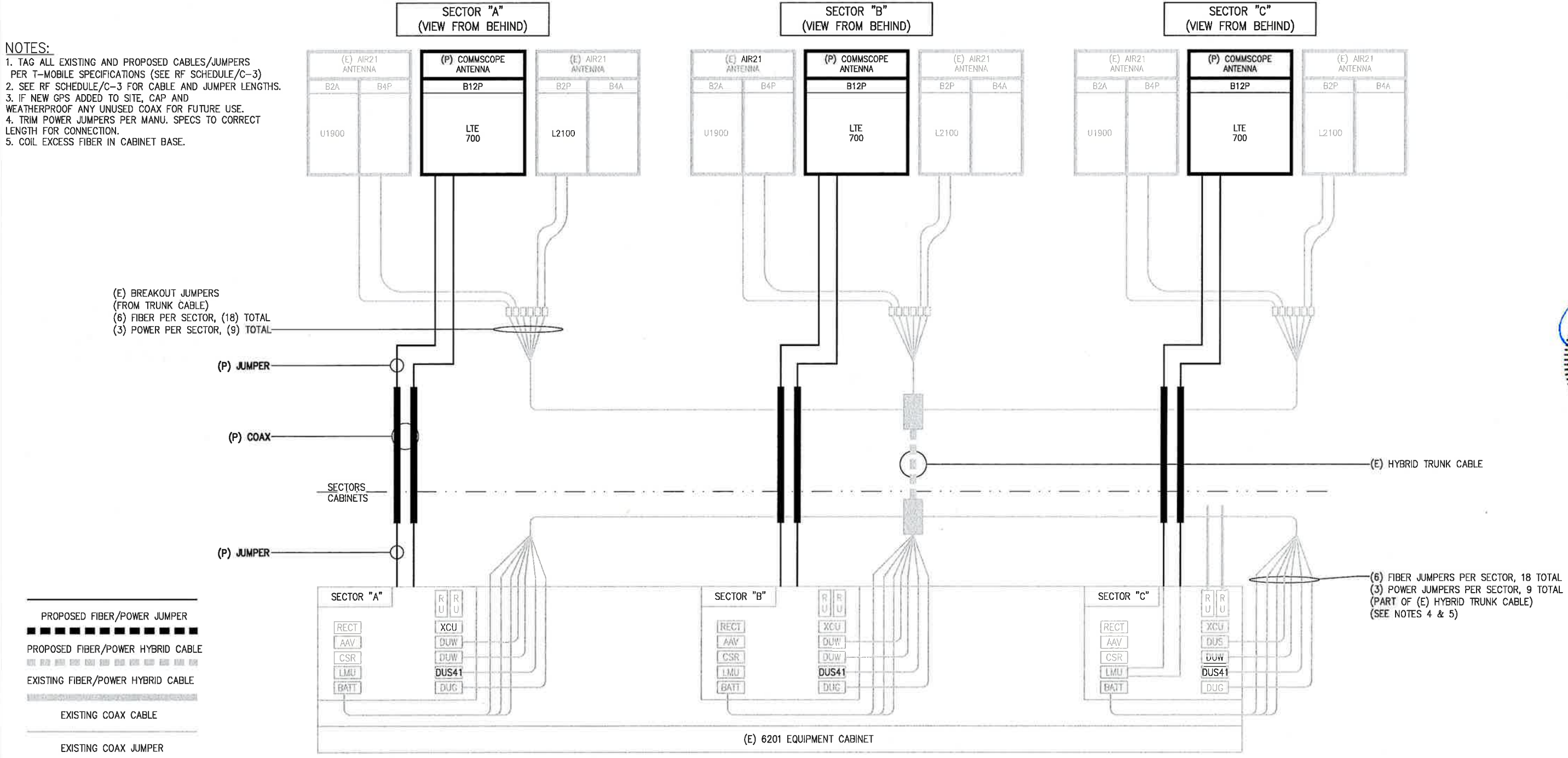
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SITE NUMBER: CTHA540A  
 SITE NAME: CROWN OLD SAYBROOK MONOPOLE  
 85 SPRINGBROOK  
 OLD SAYBROOK, CT 06475

SHEET TITLE  
**COAX/FIBER PLUMBING DIAGRAM**

SHEET NUMBER  
**E-2**  
 SHEET 7 OF 8 SHEETS

- NOTES:**
- TAG ALL EXISTING AND PROPOSED CABLES/JUMPERS PER T-MOBILE SPECIFICATIONS (SEE RF SCHEDULE/C-3)
  - SEE RF SCHEDULE/C-3 FOR CABLE AND JUMPER LENGTHS.
  - IF NEW GPS ADDED TO SITE, CAP AND WEATHERPROOF ANY UNUSED COAX FOR FUTURE USE.
  - TRIM POWER JUMPERS PER MANU. SPECS TO CORRECT LENGTH FOR CONNECTION.
  - COIL EXCESS FIBER IN CABINET BASE.



**1 705A CONFIGURATION COAX/FIBER PLUMBING DIAGRAM**  
 NOT TO SCALE



