



December 19, 2014

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

Re: Notice of Exempt Modification – Antenna Swap
Property Address: 29 Mahoney Road, Colchester, CT 06415 (the
“Property”)
Applicant: New Cingular Wireless PCS, LLC (“AT&T”)

Dear Ms. Bachman:

AT&T dba New Cingular Wireless PCS, LLC currently maintains nine (9) wireless telecommunication antennas, all at the 160 foot level on and existing 180 foot tower at the above referenced address. The tower is owned by SBA Properties, Inc. The Council approved AT&T’s/New Cingular Wireless use of the tower in the following prior decisions; Dockets No. EM-CING-028-121015A , EM-CING-028-080903, EM-CING-137-028-013-054-061122 and EM-AT&T-028-020510. AT&T now intends to replace three (3) KMW AM-X-CD-14-00T-RET panel antennas and three (3) Powerwave 7770 panel antennas with six (6) model CCI HPA-65R-BUU-H8 and add an additional three (3) CCI OPA-65R-LCUU-H8 while retaining three (3) Powerwave 7770 (for a total of twelve panel antennas) at the 160 foot level. Included in Attachment 1 are specifications for the replacement antennas.

Please accept this application as notification pursuant to R.C.S.A. §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 Stan Soby, First Selectman for the town of Colchester, CT. A copy of this letter is also being sent to SBA Properties, Inc. the owner of the property where the tower is located.

The planned modifications to the facility fall squarely within those activities explicitly provided for in R.C.S.A. §16-50j-72(b)(2).

1. The proposed modifications will not result in an increase in height of the existing tower. AT&T’s replacement antennas will be installed at the 160 foot level of the 180 foot tower.



smartlink

2. The proposed modifications will not involve any changes to ground-mounted equipment and, therefore, will not require an extension of the site boundary.
3. The proposed modifications will not increase the noise levels at the facility by six decibels or more, or to levels that exceed state and local criteria.
4. The operation of the modified facility will not increase radio frequency (RF) emissions at the facility to a level at or above the Federal Communications Commission (FCC) safety standard. A cumulative worst-case RF emissions calculation for AT&T's modified facility is provided in the General Power Density table included in Attachment 2.
5. The proposed modifications will not cause a change or alteration in the physical or environmental characteristics of the site.
6. The tower and its foundation can support AT&T's proposed modifications. (See Structural Analysis Report included in Attachment 3).

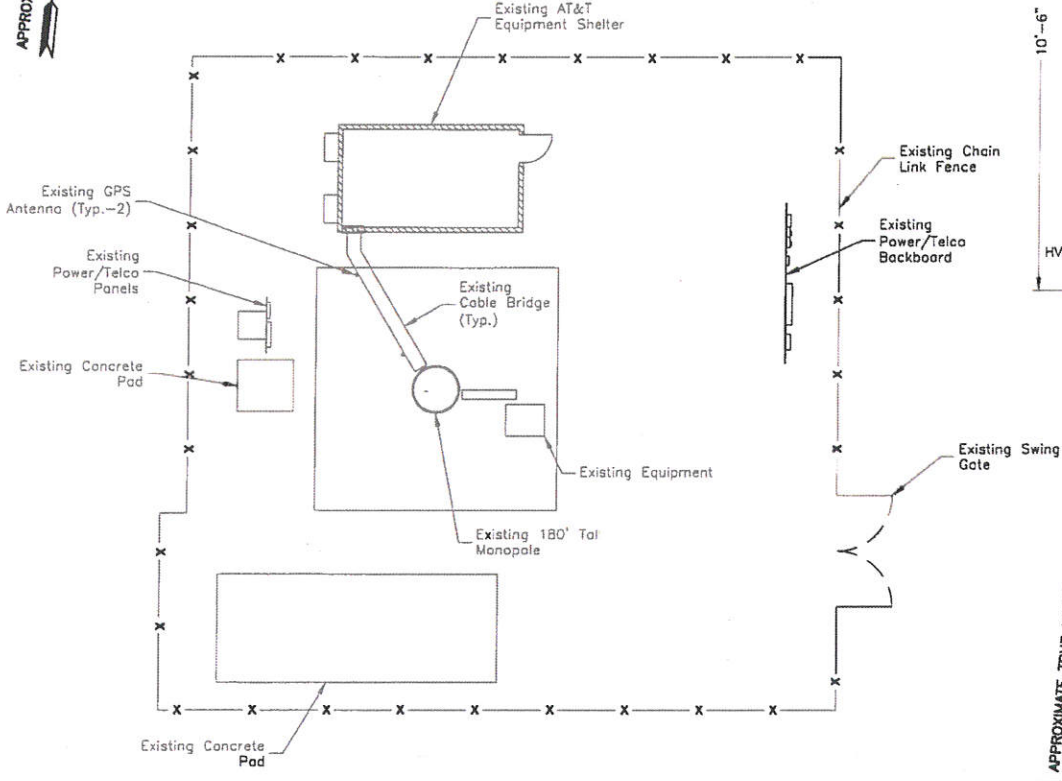
For the foregoing reasons, AT&T respectfully submits that the proposed modifications to the above referenced telecommunications facility constitutes an exempt modification under R.C.S.A. §16-50j-72(b)(2).

Sincerely,

Adam F. Brailard

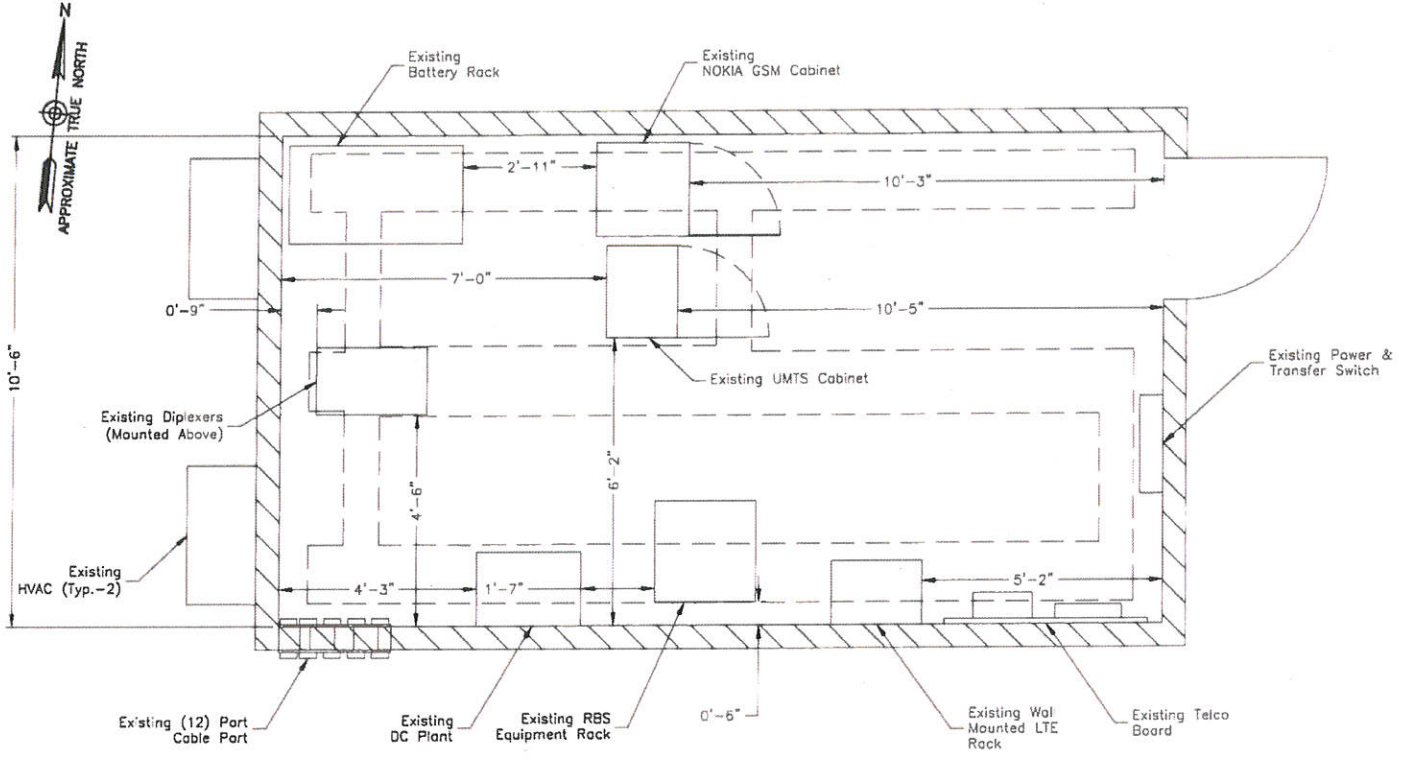
cc: SBA Properties, Inc. PO BOX 101667 Atlanta, GA 30392
Town of Colchester ATT: Stan Soby 127 Norwich Avenue, Suite 201. Colchester, CT 06415

TAB 1

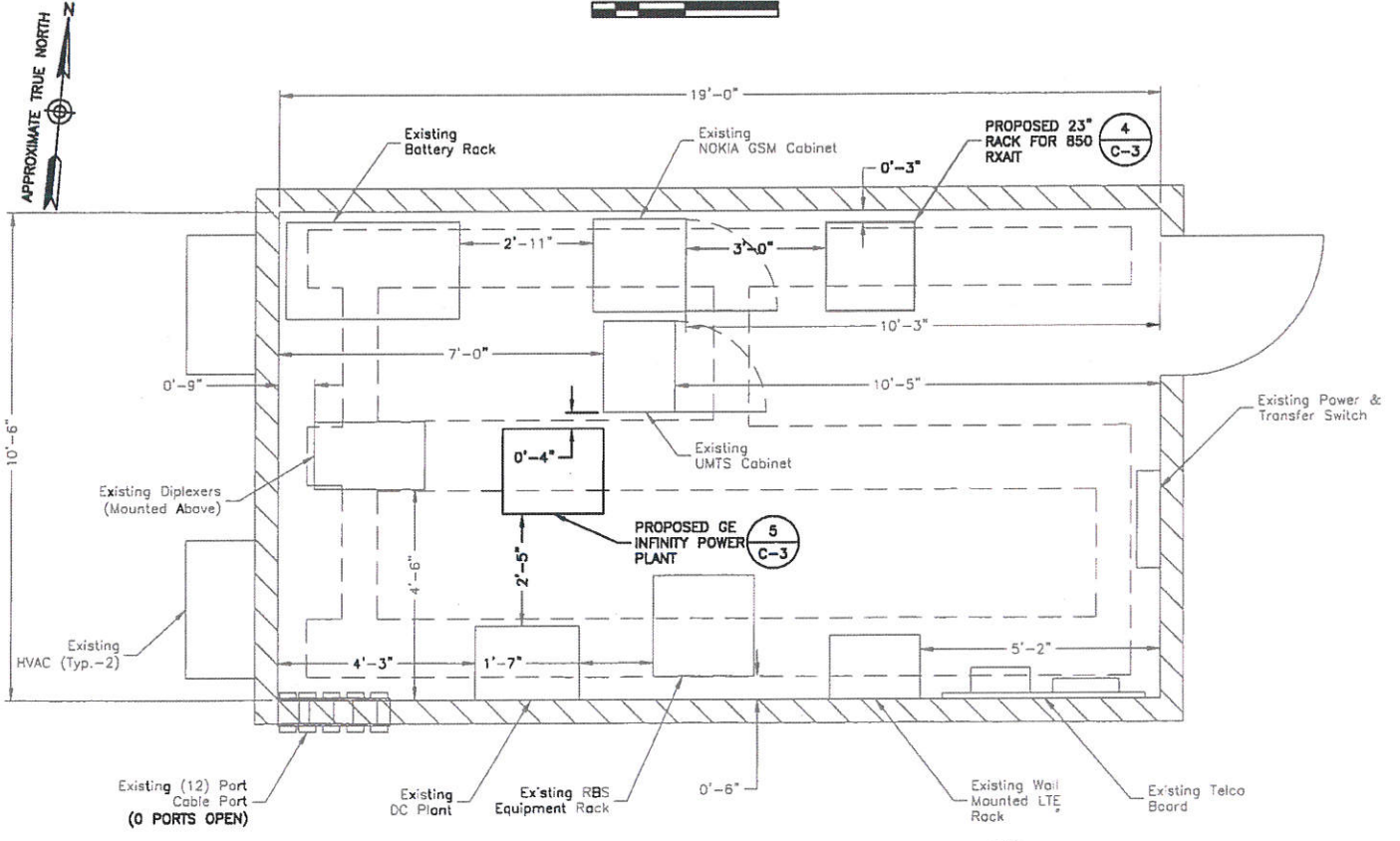


SITE PLAN
 HORIZONTAL SCALE: 1/4"=1' FOR 11"x17"
 1/2"=1' FOR 22"x34"

- NOTES:**
1. NORTH SHOWN AS APPROXIMATE.
 2. MOUNT ALL ANTENNAS COAX SURGE ARRESTORS, RRUS, ETC. IN ACCORDANCE WITH STRUCTURAL ANALYSIS.
 3. NOT ALL INFORMATION IS SHOWN FOR CLARITY.



EXISTING EQUIPMENT PLAN
 SCALE: 1/4"=1' FOR 11"x17"
 1/2"=1' FOR 22"x34"



PROPOSED EQUIPMENT PLAN
 SCALE: 1/4"=1' FOR 11"x17"
 1/2"=1' FOR 22"x34"



500 ENTERPRISE DRIVE SUITE 3A
 ROCKY HILL, CT 06067



1997 ANNAPOLIS EXCHANGE PARKWAY
 SUITE 200
 ANNAPOLIS, MD 21401

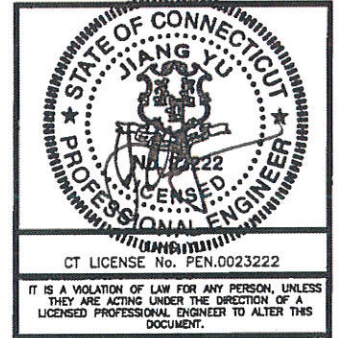
**CT2149
 COLCHESTER 2**

CONSTRUCTION DRAWINGS

Q2	09/08/14	ISSUED AS REV Q2
Q	09/04/14	ISSUED AS REV Q



Dewberry Engineers Inc.
 800 PARSIPPANY ROAD
 SUITE 301
 PARSIPPANY, NJ 07054
 PHONE: 973.739.9400
 FAX: 973.739.9710

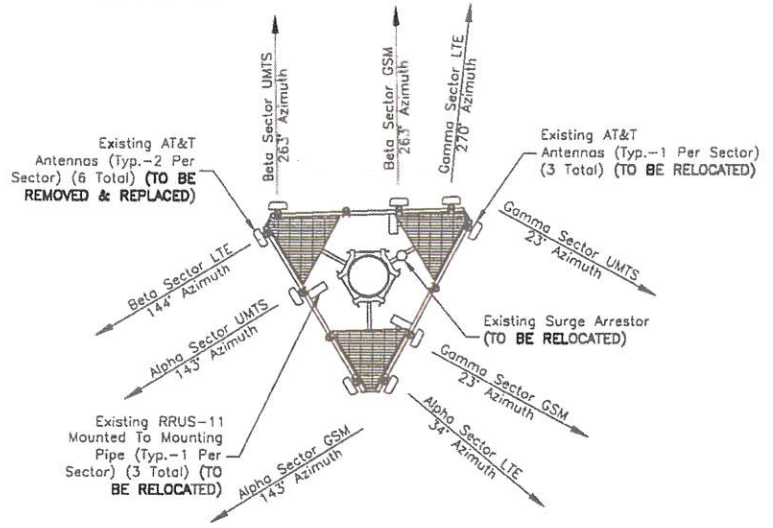


DRAWN BY:	FG
REVIEWED BY:	PD
CHECKED BY:	GHN
PROJECT NUMBER:	50063024
JOB NUMBER:	50063037
SITE ADDRESS:	

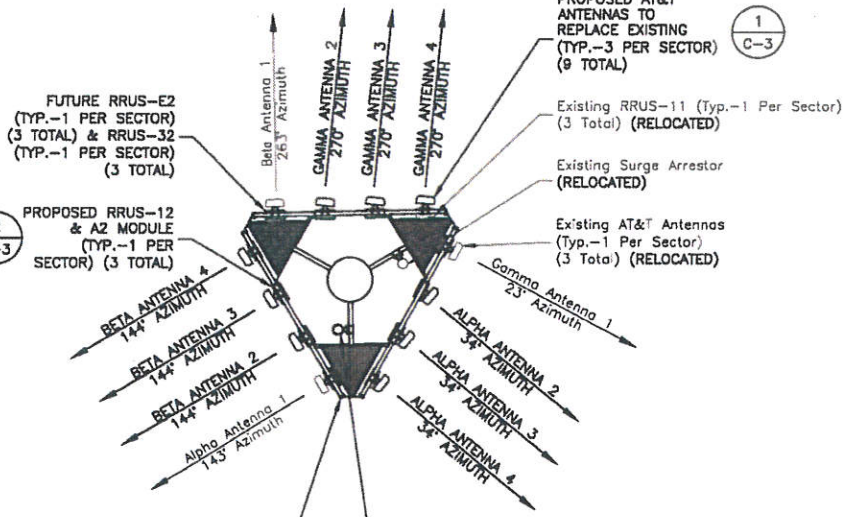
29 MAHONEY ROAD
 COLCHESTER, CT 06415
 NEW LONDON COUNTY

SHEET TITLE	SITE PLAN & EQUIPMENT PLANS
SHEET NUMBER	

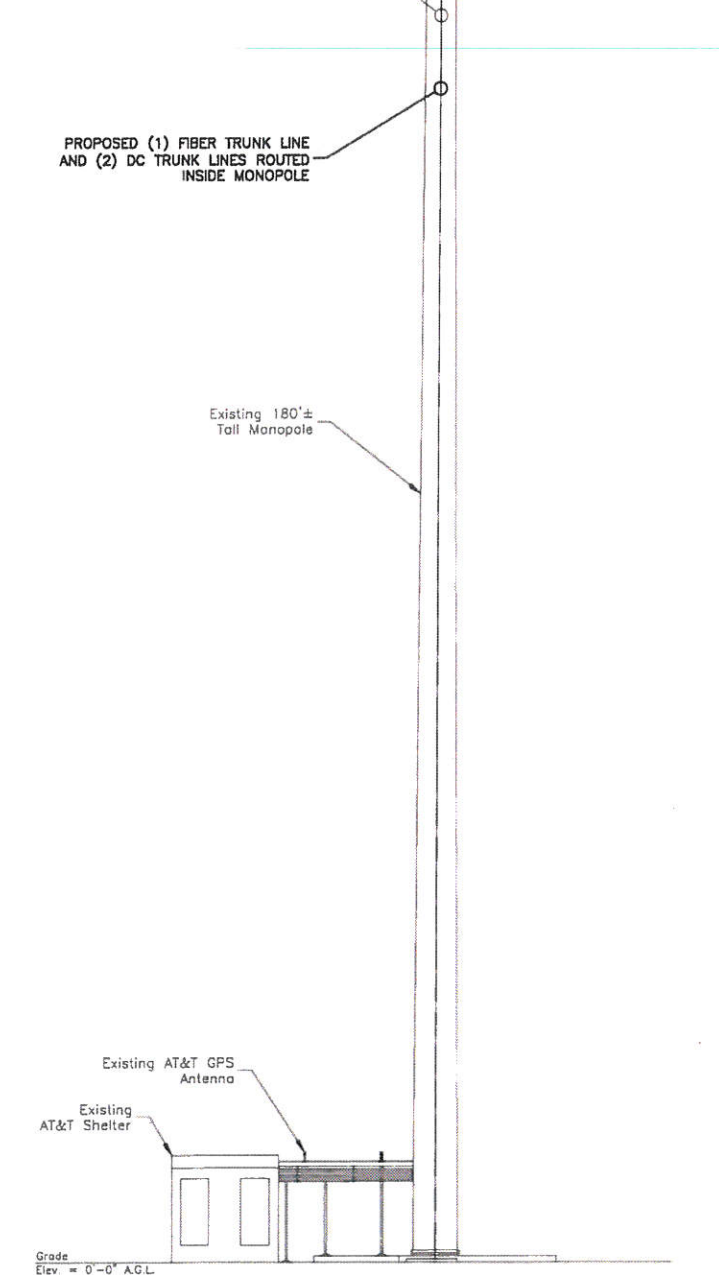
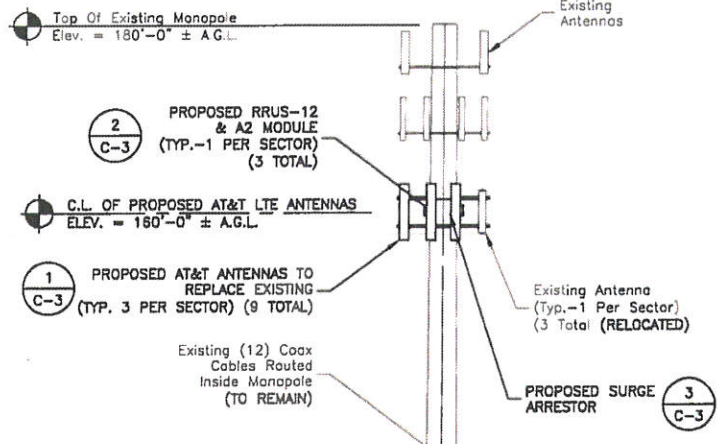
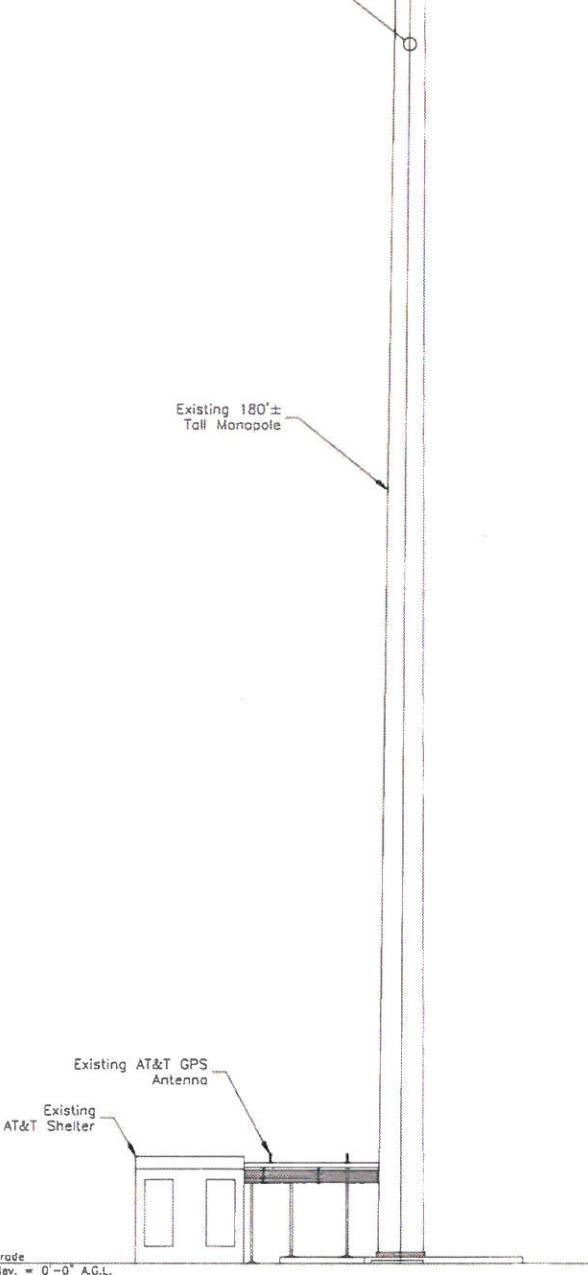
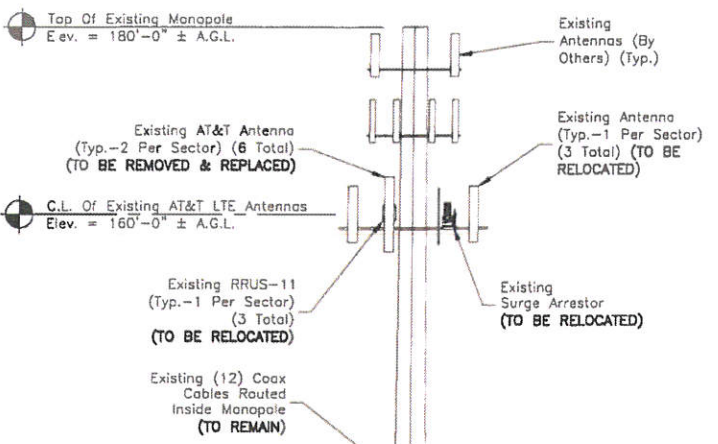
C-1



EXISTING ANTENNA LAYOUT
SCALE: N.T.S. (1)



PROPOSED ANTENNA LAYOUT
SCALE: N.T.S. (2)



NOTES:

- 1. PRIOR TO START OF ANY WORK, A PASSING STRUCTURAL ANALYSIS SHALL BE PROVIDED BY A CONNECTICUT LICENSED P.E. CONTRACTOR TO OBTAIN A COPY BEFORE STARTING ANY WORK.
- 2. ALL ANTENNAS, COAX, SURGE ARRESTORS, RRUS, ETC. TO BE INSTALLED IN ACCORDANCE WITH STRUCTURAL ANALYSIS AND FINAL AT&T RF DATA SHEET.



500 ENTERPRISE DRIVE SUITE 3A
ROCKY HILL, CT 06067



1997 ANNAPOLIS EXCHANGE PARKWAY
SUITE 200
ANNAPOLIS, MD 21401

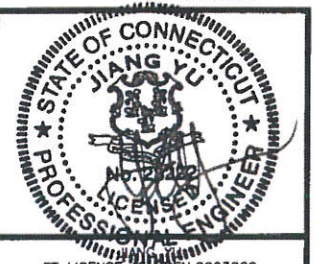
**CT2149
COLCHESTER 2**

CONSTRUCTION DRAWINGS

NO.	DATE	ISSUED AS
02	09/08/14	ISSUED AS REV C2
03	08/04/14	ISSUED AS REV Q



Dewberry Engineers Inc.
600 PARSIPPANY ROAD
SUITE 301
PARSIPPANY, NJ 07054
PHONE: 973.739.9400
FAX: 973.739.9710



CT LICENSE NO. PEN.0023222
IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER TO ALTER THIS DOCUMENT.

DRAWN BY:	FG
REVIEWED BY:	PD
CHECKED BY:	GHN
PROJECT NUMBER:	50063024
JOB NUMBER:	50083037
SITE ADDRESS:	

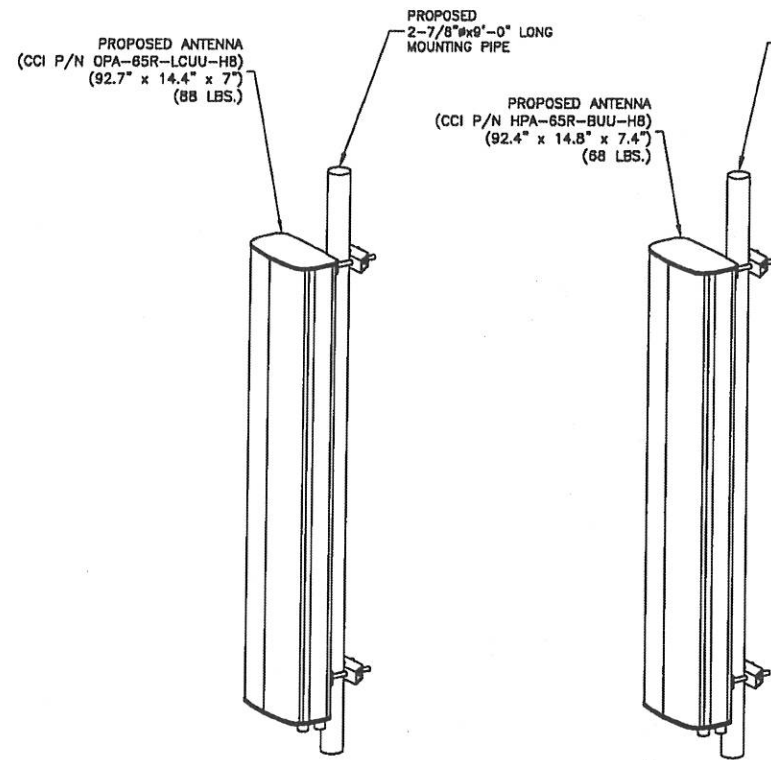
29 MAHONEY ROAD
COLCHESTER, CT 06415
NEW LONDON COUNTY

SHEET TITLE

ANTENNA LAYOUTS
& ELEVATIONS

SHEET NUMBER

C-2



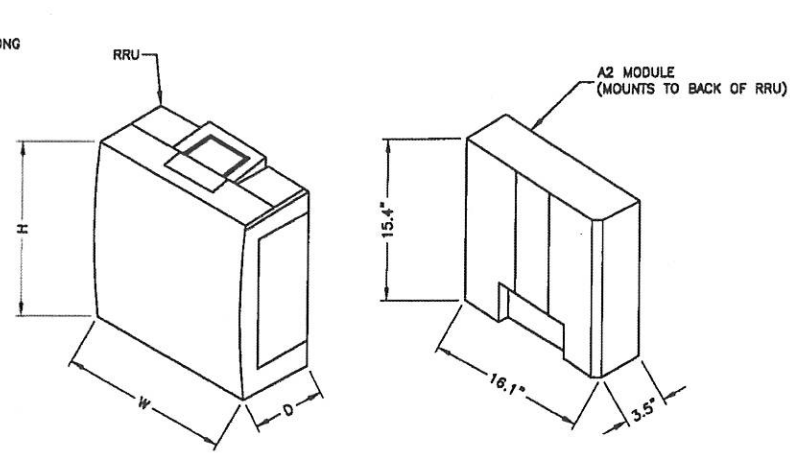
NOTE:

1. PLEASE SEE RFDS FOR SPECIFIC ANTENNA MODEL.

ISOMETRIC ANTENNA DETAIL

SCALE: N.T.S.

1



RRU MODEL & DIMENSIONS	
ERICSSON MODEL #	DIMENSIONS (HxWxD)
RRUS-11	19.7"x17.0"x7.2"
RRUS-12	20.4"x18.8"x7.5"
RRUS-E2	20.4"x18.8"x7.5"
RRUS-32	29.9"x13.3"x9.5"

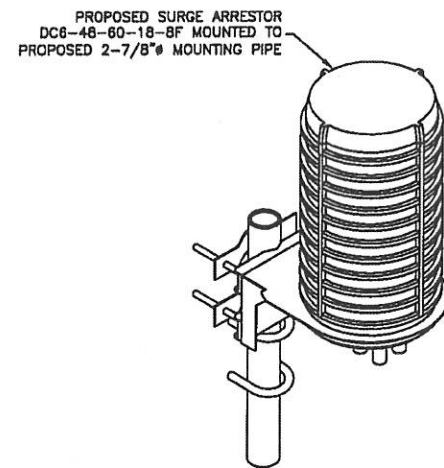
RRU NOTES:

1. GROUND EQUIPMENT AND MOUNTS PER MANUFACTURER'S RECOMMENDATIONS AND AT&T STANDARDS.
2. MOUNT EQUIPMENT PER MANUFACTURER'S RECOMMENDATIONS.
3. CONFIRM REQUIRED EQUIPMENT WITH LATEST RFDS.

RRU & A2 MODULE

SCALE: N.T.S.

2



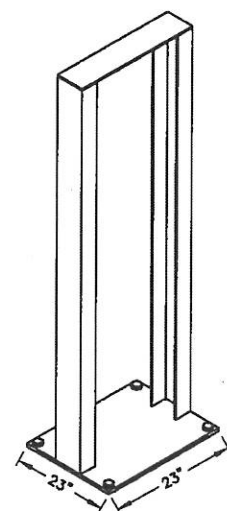
NOTE:

1. ALL ANTENNAS, COAX AND ANTENNA SUPPORT EQUIPMENT TO BE INSTALLED IN ACCORDANCE WITH STRUCTURAL ANALYSIS AND FINAL RF DATA SHEET.

SURGE ARRESTOR MOUNTING DETAIL

SCALE: N.T.S.

3



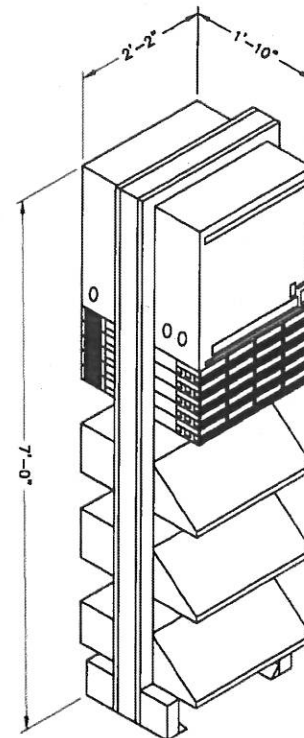
NOTE:

1. CONTRACTOR SHALL SECURE RACK AS PER MANUFACTURER RECOMMENDATIONS.

23" x 23" INDOOR RACK

SCALE: N.T.S.

4



NOTE:

1. CONTRACTOR SHALL SECURE RACK & POWER PLANT AS PER MANUFACTURER RECOMMENDATIONS.

GE INFINITY POWER PLANT DETAIL

SCALE: N.T.S.

5



500 ENTERPRISE DRIVE SUITE 3A
ROCKY HILL, CT 06067



1997 ANNAPOLIS EXCHANGE PARKWAY
SUITE 200
ANNAPOLIS, MD 21401

**CT2149
COLCHESTER 2**

CONSTRUCTION DRAWINGS

Q2	09/08/14	ISSUED AS REV Q2
Q1	09/04/14	ISSUED AS REV Q



Dewberry Engineers Inc.
600 PARSIPPANY ROAD
SUITE 301
PARSIPPANY, NJ 07054
PHONE: 973.739.9400
FAX: 973.739.9710



DRAWN BY: FG

REVIEWED BY: PD

CHECKED BY: GHN

PROJECT NUMBER: 50063024

JOB NUMBER: 50083037

SITE ADDRESS:

29 MAHONEY ROAD
COLCHESTER, CT 06415
NEW LONDON COUNTY

SHEET TITLE

CONSTRUCTION DETAILS I

SHEET NUMBER

C-3

EXISTING ANTENNA SCHEDULE

SECTOR	MAKE	MODEL#	SIZE (INCHES)
ALPHA:	POWERWAVE	7770.00.850.04	72x11.8x5.9
	KMW	AM-X-CD-17-65-00T-RET	96x12x8
	POWERWAVE	7770.00.850.04	72x11.8x5.9
BETA:	POWERWAVE	7770.00.850.04	72x11.8x5.9
	KMW	AM-X-CD-17-65-00T-RET	96x12x8
	POWERWAVE	7770.00.850.04	72x11.8x5.9
GAMMA:	POWERWAVE	7770.00.850.04	72x11.8x5.9
	ANDREW	SBNH-106565C	96.4x11.9x7.1
	POWERWAVE	7770.00.850.04	72x11.8x5.9

PROPOSED ANTENNA SCHEDULE

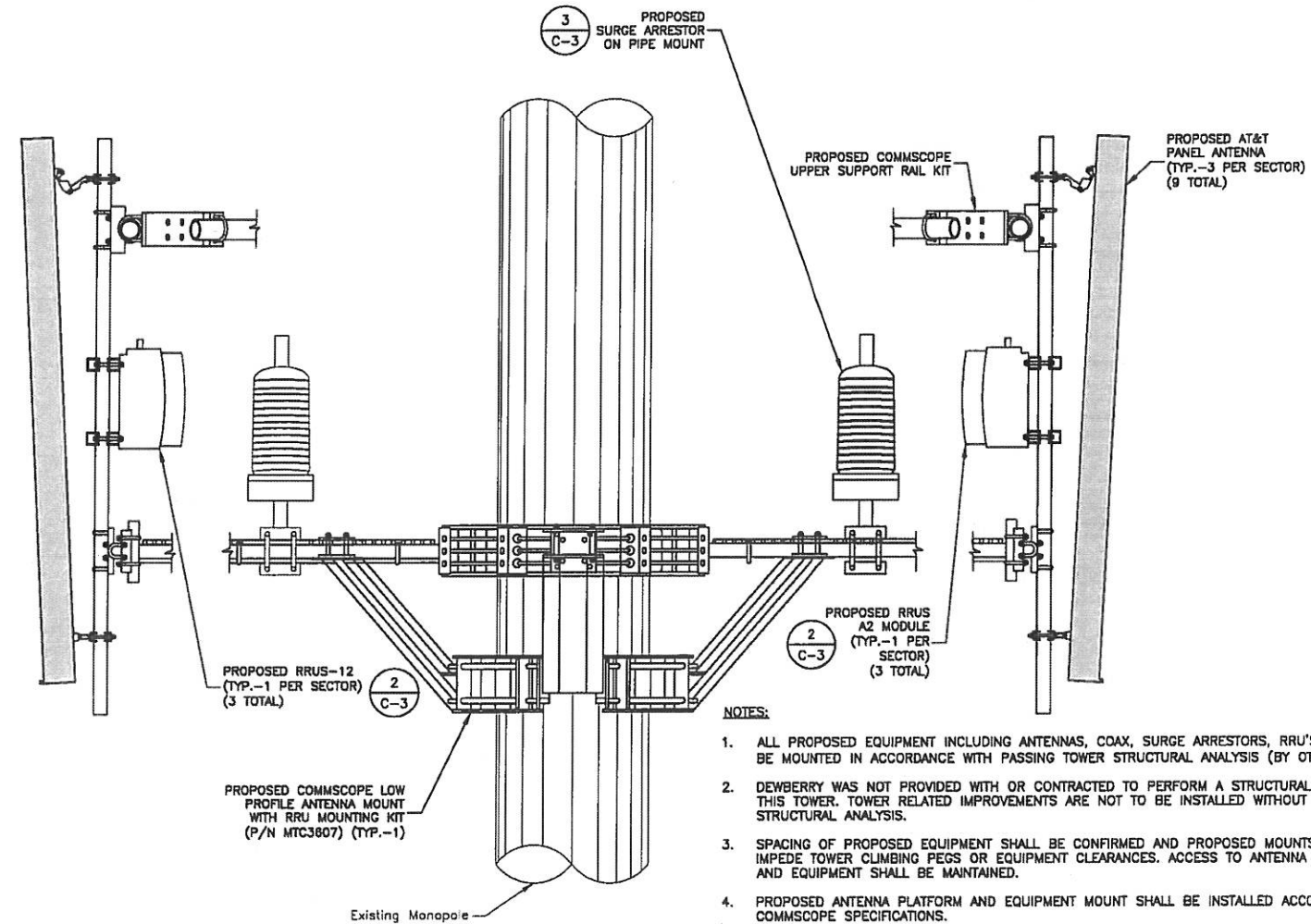
SECTOR	MAKE	MODEL#	SIZE (INCHES)
ALPHA:	POWERWAVE	770.00.850.04	55x11x5
	CCI	OPA-85R-LCUU-H8	92.7x14.4x7
	CCI	HPA-85R-BUU-H8	92.4x14.8x7.4
	CCI	HPA-85R-BUU-H8	92.4x14.8x7.4
BETA:	POWERWAVE	770.00.850.04	55x11x5
	CCI	OPA-85R-LCUU-H8	92.7x14.4x7
	CCI	HPA-85R-BUU-H8	92.4x14.8x7.4
	CCI	HPA-85R-BUU-H8	92.4x14.8x7.4
GAMMA:	POWERWAVE	770.00.850.04	55x11x5
	CCI	OPA-85R-LCUU-H8	92.7x14.4x7
	CCI	HPA-85R-BUU-H8	92.4x14.8x7.4
	CCI	HPA-85R-BUU-H8	92.4x14.8x7.4

EXISTING RRUS SCHEDULE

SECTOR	MAKE	MODEL#	SIZE (INCHES)
ALPHA:	ERICSSON	RRUS-11	19.7x17.0x7.2
BETA:	ERICSSON	RRUS-11	19.7x17.0x7.2
GAMMA:	ERICSSON	RRUS-11	19.7x17.0x7.2

PROPOSED RRUS SCHEDULE

SECTOR	MAKE	MODEL#	SIZE (INCHES)
ALPHA:	ERICSSON	RRUS-11	19.7x17.0x7.2
	ERICSSON	RRUS-12	20.4x18.5x7.5
	ERICSSON	RRUS-A2	15.4x16.1x3.5
BETA:	ERICSSON	RRUS-11	19.7x17.0x7.2
	ERICSSON	RRUS-12	20.4x18.5x7.5
	ERICSSON	RRUS-A2	15.4x16.1x3.5
GAMMA:	ERICSSON	RRUS-11	19.7x17.0x7.2
	ERICSSON	RRUS-12	20.4x18.5x7.5
	ERICSSON	RRUS-A2	15.4x16.1x3.5



PROPOSED ANTENNA MOUNTING DETAIL

SCALE: N.T.S.

NOTES:

1. ALL PROPOSED EQUIPMENT INCLUDING ANTENNAS, COAX, SURGE ARRESTORS, RRUS, ETC. SHALL BE MOUNTED IN ACCORDANCE WITH PASSING TOWER STRUCTURAL ANALYSIS (BY OTHERS).
2. DEWBERRY WAS NOT PROVIDED WITH OR CONTRACTED TO PERFORM A STRUCTURAL ANALYSIS ON THIS TOWER. TOWER RELATED IMPROVEMENTS ARE NOT TO BE INSTALLED WITHOUT A PASSING STRUCTURAL ANALYSIS.
3. SPACING OF PROPOSED EQUIPMENT SHALL BE CONFIRMED AND PROPOSED MOUNTS SHALL NOT IMPEDE TOWER CLIMBING FEES OR EQUIPMENT CLEARANCES. ACCESS TO ANTENNA PLATFORM AND EQUIPMENT SHALL BE MAINTAINED.
4. PROPOSED ANTENNA PLATFORM AND EQUIPMENT MOUNT SHALL BE INSTALLED ACCORDING TO COMMSCOPE SPECIFICATIONS.



500 ENTERPRISE DRIVE SUITE 3A
ROCKY HILL, CT 06067



1997 ANNAPOLIS EXCHANGE PARKWAY
SUITE 200
ANNAPOLIS, MD 21401

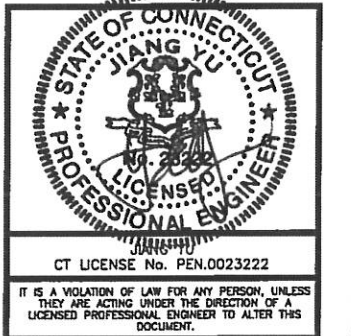
**CT2149
COLCHESTER 2**

CONSTRUCTION DRAWINGS

DATE	ISSUED AS REV
09/08/14	ISSUED AS REV Q2
09/04/14	ISSUED AS REV Q



Dewberry Engineers Inc.
600 PARSIPPANY ROAD
SUITE 901
PARSIPPANY, NJ 07054
PHONE: 973.739.9400
FAX: 973.739.9710



DRAWN BY: FG

REVIEWED BY: PD

CHECKED BY: GHN

PROJECT NUMBER: 50063024

JOB NUMBER: 50063037

SITE ADDRESS:

29 MAHONEY ROAD
COLCHESTER, CT 06415
NEW LONDON COUNTY

SHEET TITLE

ANTENNA SCHEDULE &
CONSTRUCTION DETAILS II

SHEET NUMBER

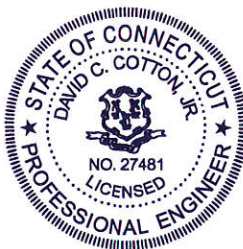
TAB 2

Todd Oliver
Smartlink, LLC
Market Manager, NE
33 Boston Post Road, Suite 210
Marlborough, MA 01752

Reference: Smartlink LLC Site, Colchester 2: 29 Mahoney Road. Colchester, CT 06415

Date: 05 May 2014

1. This letter will address the additional RF impact that adding AT&T LTE antennas to the referenced site. Attached are two documents which cover the modeled RF emissions from the site.
2. The first report, "RF Emissions Compliance Report," for the site compiled by Sitesafe, uses the antenna patterns for the antennas at the site to calculate the General Public Maximum Permissible Exposure (MPE) on the ground. The total MPE of all the carriers is 2.387% (based on the General Public MPE) based on this modeling, with AT&T antennas emitting a maximum of 0.575% of the General Public MPE on the ground.
3. The second attachment has the calculations, used by the Connecticut Siting Council, which assumes the maximum antenna gain transmits in a spherical pattern where the worst case results would be at the base of the tower. That calculation, based on the existing antennas, gives a result of 33.29% of the General Public MPE, with the AT&T antennas emitting 13.94% of the General Public MPE on the ground, using the modeling predictions used by Connecticut Siting Council.
4. In either case, the site is compliant with FCC guidelines. If you have any questions regarding this site, the compliance report, please contact me at 719-434-0700 or dcotton@sitesafe.com.



David C. Cotton, Jr.
Licensed Professional Engineer (Electrical)
State of Connecticut, PEN.0027481
Date: 2014-May-06

Director, RF Compliance

RF EMISSIONS COMPLIANCE REPORT

Smartlink on behalf of AT&T Mobility, LLC

**Site FA: 10042314
Site ID: CT2149
Site Name: Colchester 2
Address: 29 Mahoney Road
Colchester, CT 06415
5/5/2014**

Report Status:

AT&T Mobility LLC Is Compliant

Prepared By:

Sitesafe, Inc.

Engineering Statement in Re:
Electromagnetic Energy Analysis
AT&T Mobility LLC
Colchester, CT 06415

My signature on the cover of this document indicates:

That I am registered as a Professional Engineer in the jurisdiction indicated; and

That I have extensive professional experience in the wireless communications engineering industry; and

That I am an employee of Sitesafe, Inc. in Arlington, Virginia; and

That I am thoroughly familiar with the Rules and Regulations of the Federal Communications Commission ("the FCC" and "the FCC Rules") both in general and specifically as they apply to the FCC's Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields; and

That the technical information serving as the basis for this report was supplied by Smartlink (See attached Site Summary and Carrier documents), and that AT&T Mobility LLC's installations involve communications equipment, antennas and associated technical equipment at a location referred to as the "Colchester 2" ("the site"); and

That AT&T Mobility LLC proposes to operate at the site with transmit antennas listed in the carrier summary and with a maximum effective radiated power as specified by AT&T Mobility LLC and shown on the worksheet, and that worst-case 100% duty cycle have been assumed; and

That this analysis has been performed with the assumption that the ground immediately surrounding the tower is primarily flat or falling; and

That at this time, the FCC requires that certain licensees address specific levels of radio-frequency energy to which workers or members of the public might possibly be exposed (at §1.1307(b) of the FCC Rules); and

That such consideration of possible exposure of humans to radio-frequency radiation must utilize the standards set by the FCC, which is the Federal Agency having jurisdiction over communications facilities; and

That the FCC rules define two tiers of permissible exposure guidelines: 1) "uncontrolled environments," defined as situations in which persons may not be aware of (the "general public"), or may not be able to control their exposure to a transmission facility; and (2) "controlled environments," which defines situations in which persons are aware of their potential for exposure (industry personnel); and

That this statement specifically addresses the uncontrolled environment (which is more conservative than the controlled environment) and the limit set forth in the FCC rules for licensees of AT&T Mobility LLC's operating frequency as shown on the attached antenna worksheet; and

That when applying the uncontrolled environment standards, the predicted Maximum Power Density at two meters above ground level from the proposed AT&T Mobility LLC operation is no more than 0.575% of the maximum in any accessible area on the ground and

That it is understood per FCC Guidelines and OET65 Appendix A, that regardless of the existent radio-frequency environment, only those licenses whose contributions exceed five percent of the exposure limit pertinent to their operation(s) bear any responsibility for bringing any non-compliant area(s) into compliance; and

That when applying the uncontrolled environment standards, the cumulative predicted energy density from the proposed operation is no more than 2.387% of the maximum in any accessible area up to two meters above the ground per OET-65; and

That the calculations provided in this report are based on data provided by the client and antenna pattern data supplied by the antenna manufacturer, in accordance with FCC guidelines listed in OET-65. Horizontal and vertical antenna patterns are combined for modeling purposes to accurately reflect the energy two meters above ground level where on-axis energy refers to maximum energy two meters above the ground along the azimuth of the antenna and where area energy refers to the maximum energy anywhere two meters above the ground regardless of the antenna azimuth, accounting for cumulative energy from multiple antennas for the carrier and frequency range indicated; and

That the Occupational Safety and Health Administration has policies in place which address worker safety in and around communications sites, thus individual companies will be responsible for their employees' training regarding Radio Frequency Safety.

In summary, it is stated here that the proposed operation at the site would not result in exposure of the Public to excessive levels of radio-frequency energy as defined in the FCC Rules and Regulations, specifically 47 CFR 1.1307 and that AT&T Mobility LLC's proposed operation is completely compliant.

Finally, it is stated that access to the tower should be restricted to communication industry professionals, and approved contractor personnel trained in radio-frequency safety; and that the instant analysis addresses exposure levels at two meters above ground level and does not address exposure levels on the tower, or in the immediate proximity of the antennas.

Note: Sitesafe has used data obtained from the “Connecticut Siting Council” to create this report. The manufacturer antenna patterns for AT&T Mobility, LLC were used to determine the RF emissions from the AT&T Mobility, LLC antennas. Generic antennas were used for the other carriers on the tower, as this information was not available, or provided at the time the study was conducted. Sitesafe has conducted FCC research on this site, and was updated in this report with the appropriate FCC call signs and Maximum ERP values. Sitesafe has also referenced the AT&T Mobility, LLC construction diagram for this site.

The following documents below were the primary sources of data used to create this report. The primary document was the “Connecticut Siting Council” document. The AT&T Mobility, LLC construction diagram was referenced when appropriate.

Connecticut Siting Council: AlphaExMPowDens 4-16-14

AT&T Mobility, LLC Construction Diagram: 10042314.AE201.140414 (CT2149)
Dewberry Rev 0.pdf

**AT&T Mobility LLC
Colchester 2
Site Summary**

Carrier	Area Maximum Percentage MPE
AT&T Mobility LLC	0.089 %
AT&T Mobility LLC	0.249 %
AT&T Mobility LLC	0.076 %
AT&T Mobility LLC	0.161 %
T-Mobile (VoiceStream)	0.075 %
Verizon Wireless	0.154 %
Verizon Wireless	0.381 %
Verizon Wireless	0.883 %
Verizon Wireless	0.317 %
Composite Site MPE:	2.387 %

Attachment 2

Control Number	Site	Carrier	#Channels	ERP/Ch	Ant Ht	Power Den	MHz	S	%MPE	Site Total
EM-AT&T-028-020510	Colchester - 29 Mahoney Road	VoiceStream	4	250	182	0.0109	1945	1.0000	1.09%	
EM-CING-028-121015A	Colchester - 29 Mahoney Road	AT&T UMTS	2	565	157	0.0165	880	0.5867	2.81%	
EM-CING-028-121015A	Colchester - 29 Mahoney Road	AT&T UMTS	2	875	157	0.0255	1900	1.0000	2.55%	
EM-CING-028-121015A	Colchester - 29 Mahoney Road	AT&T GSM	1	283	157	0.0041	880	0.5867	0.70%	
EM-CING-028-121015A	Colchester - 29 Mahoney Road	AT&T GSM	4	525	157	0.0306	1900	1.0000	3.06%	
EM-CING-028-121015A	Colchester - 29 Mahoney Road	AT&T LTE	1	1615	157	0.0236	734	0.4893	4.81%	
EM-VER-028-131108	Colchester - 29 Mahoney Road	Verizon cellular	9	376	167	0.0436	869	0.5793	7.53%	
EM-VER-028-131108	Colchester - 29 Mahoney Road	Verizon PCS	11	392	167	0.0556	1970	1.0000	5.56%	
EM-VER-028-131108	Colchester - 29 Mahoney Road	Verizon AWS	1	1750	167	0.0226	2145	1.0000	2.26%	
EM-VER-028-131108	Colchester - 29 Mahoney Road	Verizon LTE	1	1050	167	0.0135	698	0.4653	2.91%	33.29%



Tower Engineering Solutions

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

Structural Analysis Report

Existing 180 ft. Monopole

Customer Name: SBA Communications Corp

Customer Site Number: CT02652-S-02

Customer Site Name: Colchester 3 CT

Carrier Name: AT&T Mobility

Carrier Site Number / Name: CT2149

Site Location: 29 Mahoney Road

Colchester, Connecticut

New London County

Latitude: 41.564533

Longitude: -72.251697

Analysis Result:

Max Structural Usage: 95.0% [Pass]

Report Prepared By : Delu Zhou



TAB 3



Tower Engineering Solutions

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

Structural Analysis Report

Existing 180 ft. Monopole

Customer Name: SBA Communications Corp

Customer Site Number: CT02652-S-02

Customer Site Name: Colchester 3 CT

Carrier Name: AT&T Mobility

Carrier Site Number / Name: CT2149

Site Location: 29 Mahoney Road

Colchester, Connecticut

New London County

Latitude: 41.564533

Longitude: -72.251697

Analysis Result:

Max Structural Usage: 95.0% [Pass]

Report Prepared By : Delu Zhou

Introduction

The purpose of this report is to summarize the analysis results on the 180 ft. Monopole to support the proposed antennas and transmission lines in addition to those currently installed. Any modification listed under Sources of Information was assumed completed and was included in this analysis.

Sources of Information

Tower Drawings	Valmont Microflect (Order # 11277-00) original design drawings, dated 011/03/1999
Foundation Drawing	Valmont Microflect (Order # 11277-00) drawing # 3097-F, dated 04/03/2000
Geotechnical Report	FDH Engineering, Inc. (Project # 1465721600) Geotechnical Report, dated 05/22/2014

Analysis Criteria

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

- Basic Wind Speed Used in the Analysis:** 85.0 mph (fastest mile)
- Basic Wind Speed with Ice:** 74 mph (fastest mile) with 1/2" radial ice concurrent
- Operational Wind Speed:** 50 mph + 0" Radial ice
- Standard/Codes:** ANSI/TIA/EIA 222-F / 2005 Connecticut State Building Code

Existing Antennas, Mounts and Transmission Lines

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

Items	Elevation (ft.)	Qty.	Antenna Descriptions	Mount Type & Qty.	Transmission Lines	Owner
1	177.0	12	EMS RR90-17-02DP	(1) Low Profile Platform	(12) 1 5/8"	T-Mobile
2		3	TMA's (24"x13"x7" RRU)			
3	167.0	6	BXA-171063-12CF	(1) Low Profile Platform	(12) 1 5/8"	Verizon Wireless
4		6	BXA-70063-6CF			
5		1	DB-T1-6Z-8AB-0Z			
6		3	RRH2x40-07-U			
7		3	RRH2x40-AWS			

Proposed Antennas, Mounts and Transmission Lines

Information pertaining to the proposed antennas and transmission lines was provided by SBA Communications Corp. The proposed antennas and lines are listed below.

Items	Elevation (ft.)	Qty.	Antenna Descriptions	Mount Type & Qty.	Transmission Lines	Owner	
8	160.0	6	CCI HPA-65R-BUU-H8	(1) Low Profile Platform	(12) 1-5/8" (12) 3/4" DC (2) 3/8" Fiber	AT&T Mobility	
9		3	CCI OPA-65R-LCUU-H8				
10		3	Ericsson RRUS-11				
11		3	Ericsson RRUS-12 w/ Shield				
12		3	Ericsson RRUS-E2				
13		3	Ericsson RRUS 32				
14		3	Ericsson RRUS A2 Module				
15		6	Powerwave LGP21401 TMAs				
16		3	Powerwave 7020.00 RET				
17		6	Powerwave LGP21901 Diplexers				
18		2	Raycap DC6-48-60-18-8F				
19		157	3				Powerwave 7770.00

All transmission lines are considered running inside of pole shaft.

Analysis Results

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

	Pole shafts	Anchor Bolts	Base Plate
Max. Usage:	95.0%	86.4%	71.9%
Pass/Fail	Pass	Pass	Pass

Foundations

	Moment (Kip-Ft)	Shear (Kips)
Original Design Reactions	5045.0	39.5
Analysis Reactions	4737.2	36.0
% of Design Reactions	93.9%	91.1%

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

Operational Condition (Rigidity):

Operational characteristics of the tower are found to be within the limits prescribed by ANSI/TIA/EIA 222-F for the installed antennas. Maximum twist/sway at the elevation of the proposed equipment is 2.3260 degrees under the operational wind speed as specified in the Analysis Criteria.

Conclusions

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

Standard Conditions

1. This analysis was performed based on the information supplied to **(TES) Tower Engineering Solutions, LLC**. Verification of the information provided was not included in the Scope of Work for **TES**. The accuracy of the analysis is dependent on the accuracy of the information provided.
2. The analysis is based on the presumption that the tower members and components along with any existing reinforcement items have been correctly and properly designed, manufactured, installed and maintained.
3. All the existing structural members were assumed to be in good condition with no physical damage or deterioration associated with corrosion.
4. An initial tension of 10% of the break strength on all the existing guy wires was assumed in all the structural analyses of guyed towers unless different values were provided by the client. **TES** cannot take responsibility for the deviations in the analysis results because of differences in the initial tension forces of the existing guy wires.
5. It isn't possible or practical to obtain all the information required to perform a detailed investigation of every secondary component or connection. **TES** cannot take responsibility for verification of the adequacy on the connections, bolts and welds present in the structure.
6. The analyses will be performed based on the codes as specified by the client or based on the best knowledge of the engineering staff of **TES**. In the absence of information to the contrary, all work will be performed in accordance with the latest relevant revision of ANSI/TIA-222. If wind speed or/and ice loads are different from the minimum values recommended by the EIA/TIA-222 standard or other codes, **TES** should be notified in writing and the applicable minimum values provided by the client.
7. The configuration of the existing mounts, antennas, coax and other appurtenances were supplied by the customer for the current structural analysis. **TES** has not visited the tower site to verify the adequacy of the information provided. If there is any discrepancy found in the report regarding the existing conditions, **TES** should be notified immediately to evaluate the effect of the discrepancy on the analysis results.
8. The client will assume responsibility for rework associated with the differences in initially provided information, including tower and foundation information, existing and/or proposed equipment and transmission lines.
9. If a feasibility analysis was performed, final acceptance of changed conditions shall be based upon a rigorous structural analysis.

Usage Diagram - Max Stress 95.0% at 53.0ft

Structure: CT02652-S-SBA
Site Name: Colchester 3 CT
Height: 180.00 (ft)
Base Elev: 0.000 (ft)

Code: EIATIA-222-F
Exposure: C
Gh: 1.69

12/8/2014

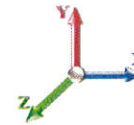


Page: 1

Dead Load Factor: 1.00
Wind Load Factor: 1.00

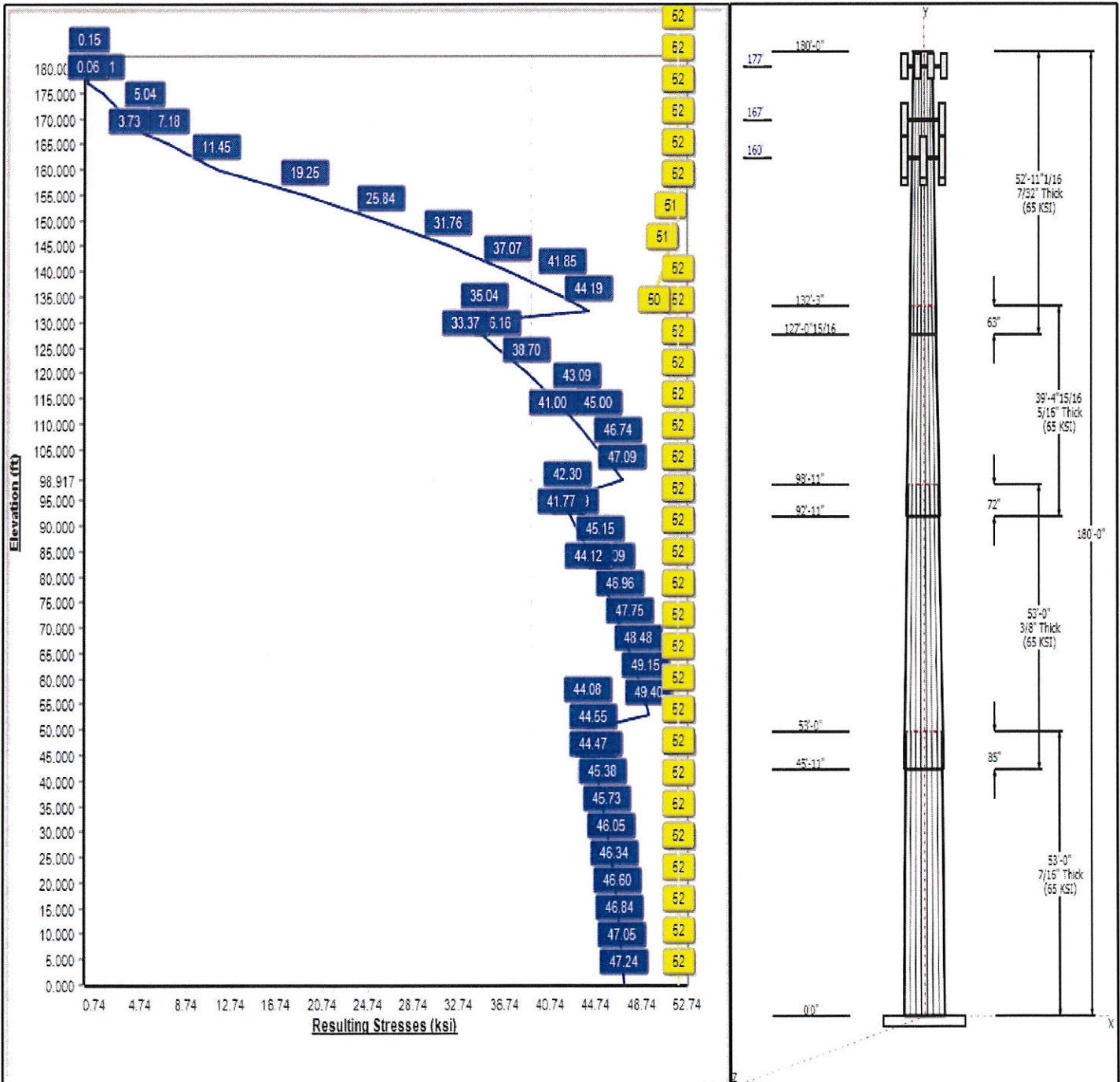
52 Allowable Stress
49 Resulting Stress

Load Case : 85 mph Wind with 0 in Ice



Iterations: 25

Copyright © 2014 by Tower Engineering Solutions, LLC. All rights reserved.



Structure: CT02652-S-SBA

Type: Tapered
Site Name: Colchester 3 CT
Height: 180.00 (ft)
Base Elev: 0.00 (ft)

Base Shape: 16 Sided
Taper: 0.20502

12/8/2014

Page: 2



Shaft Properties

Seq	Length (ft)	Top	Bottom	Thick	Joint Type	Taper	Grade (ksi)
1	53.00	49.13	60.00	0.44		0.20502	65
2	53.00	40.47	51.34	0.38	Slip	0.20502	65
3	39.41	34.25	42.33	0.31	Slip	0.20502	65
4	52.92	24.91	35.76	0.22	Slip	0.20502	65

Discrete Appurtenances

Attach Elev (ft)	Force Elev (ft)	Qty	Description	Carrier
180.00	183.50	1	Lightning Rod	AT&T Wireless
177.00	177.00	12	EMS RR90-17-02DP	T-Mobile
177.00	177.00	1	Low Profile Platform	T-Mobile
177.00	177.00	3	TMA's (24"x13"x7" RRU)	T-Mobile
167.00	167.00	6	BXA-171063-12CF	Verizon Wireless
167.00	167.00	6	BXA-70063-6CF	Verizon Wireless
167.00	167.00	1	DB-T1-6Z-8AB-0Z	Verizon Wireless
167.00	167.00	1	Low Profile Platform	Verizon Wireless
167.00	167.00	3	RRH2x40-07-U	Verizon Wireless
167.00	167.00	3	RRH2x40-AWS	Verizon Wireless
160.00	157.00	3	7770.00	AT&T Mobility
160.00	160.00	6	CCI HPA-65R-BUU-H8	AT&T Mobility
160.00	160.00	3	CCI OPA-65R-LCUU-H8	AT&T Mobility
160.00	160.00	2	DC6-48-60-18-8F	AT&T Mobility
160.00	160.00	3	Ericsson RRUS 32	AT&T Mobility
160.00	160.00	3	Ericsson RRUS A2 Module	AT&T Mobility
160.00	160.00	3	Ericsson RRUS-11	AT&T Mobility
160.00	160.00	3	Ericsson RRUS-12 w/	AT&T Mobility
160.00	160.00	3	Ericsson RRUS-E2	AT&T Mobility
160.00	160.00	6	LGP21401 TMA's	AT&T Mobility
160.00	160.00	6	LGP21901 Diplexers	AT&T Mobility
160.00	160.00	1	Low Profile Platform	AT&T Mobility
160.00	160.00	3	Powerwave 7020.00 RET	AT&T Mobility

Linear Appurtenances

Elev From (ft)	Elev To (ft)	Placement	Description	Carrier
0.00	180.00	Outside	Climbing Ladder	
0.00	177.00	Inside	1 5/8" Coax	T-Mobile
0.00	167.00	Inside	1 5/8" Coax	Verizon Wireless
0.00	160.00	Inside	1 5/8" Coax	AT&T Mobility
0.00	160.00	Inside	3/4" DC Power	AT&T Mobility
0.00	160.00	Inside	3/8" Fiber	AT&T Mobility

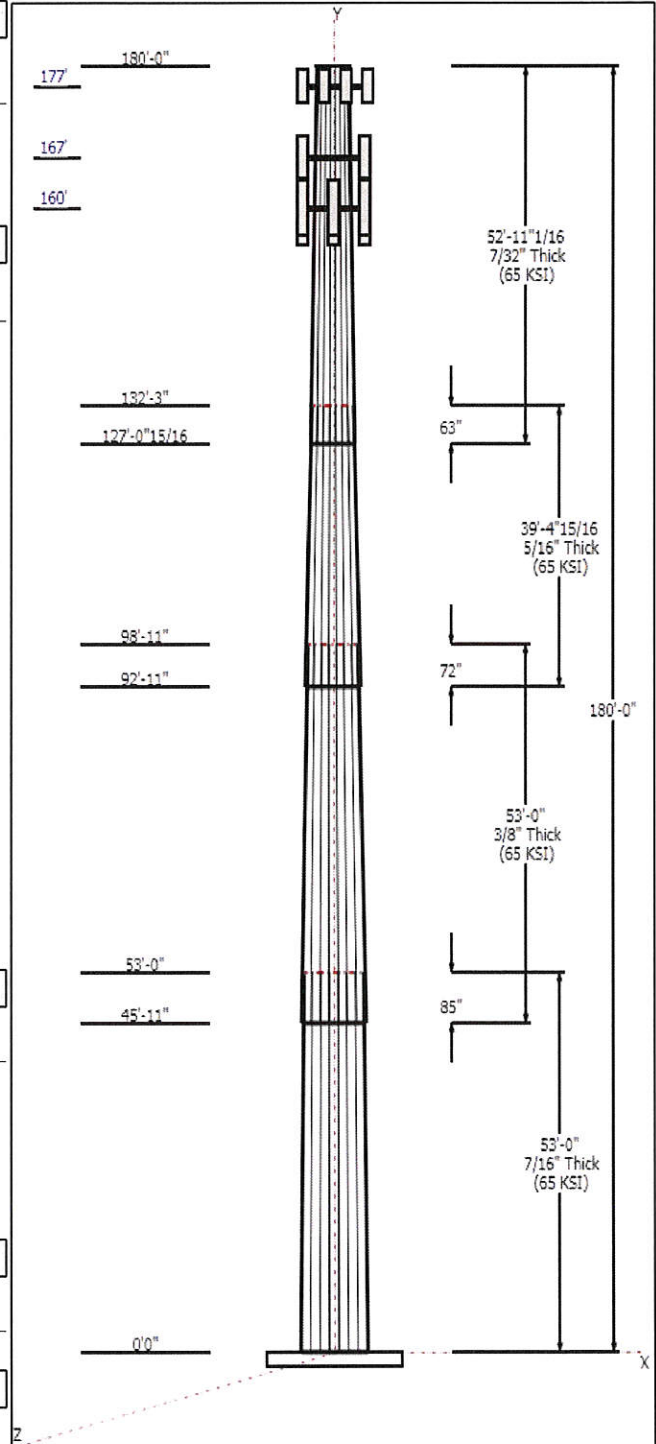
Anchor Bolts

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

Base Plate

Thickness (in)	Specifications (in)	Grade (ksi)	Geometry
2.7500	74.6	60.0	Clipped

Reactions



Structure: CT02652-S-SBA

Type: Tapered
Site Name: Colchester 3 CT
Height: 180.00 (ft)
Base Elev: 0.00 (ft)

Base Shape: 16 Sided
Taper: 0.20502

12/8/2014

Page: 3



Load Case	Moment	Shear	Axial
85 mph Wind with 0" Ice	4737.2	36.0	49.7
73.61 mph Wind with 0.5" Ice	3792.9	28.4	57.7
50 mph Wind with 0" Ice	1642.1	12.5	49.8

Shaft Properties

Structure: CT02652-S-SBA	Code: EIA/TIA-222-F	12/8/2014
Site Name: Colchester 3 CT	Exposure: C	
Height: 180.00 (ft)	Gh: 1.69	
Base Elev: 0.000 (ft)	Struct Class: II	Page: 4



Sec. No.	Shape	Length (ft)	Thick (in)	Fy (ksi)	Joint Type	Overlap (in)	Weight (lb)
1	16	53.000	0.4380	65		0.00	13,640
2	16	53.000	0.3750	65	Slip	85.00	9,822
3	16	39.410	0.3130	65	Slip	72.00	5,085
4	16	52.923	0.2190	65	Slip	63.00	3,789
Total Shaft Weight:							32,335

Sec. No.	Bottom						Top						
	Dia (in)	Elev (ft)	Area (sqin)	Ix (in ⁴)	W/t Ratio	D/t Ratio	Dia (in)	Elev (ft)	Area (sqin)	Ix (in ⁴)	W/t Ratio	D/t Ratio	Taper
1	60.00	0.00	83.22	37298.12	25.65	136.9	49.13	53.00	68.04	20382.3	20.72	112.1	0.205022
2	51.34	45.92	60.96	20001.00	25.63	136.8	40.47	98.92	47.96	9740.99	19.87	107.9	0.205022
3	42.33	92.92	41.95	9354.08	25.30	135.2	34.25	132.3	33.88	4928.56	20.17	109.4	0.205022
4	35.76	127.0	24.83	3962.37	30.88	163.2	24.91	180.0	17.25	1328.51	21.03	113.7	0.205022

Loading Summary

Structure: CT02652-S-SBA
Site Name: Colchester 3 CT
Height: 180.00 (ft)
Base Elev: 0.000 (ft)

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

12/8/2014

Page: 5



Discrete Appurtenances

No.	Elev (ft)	Description	Qty	No Ice			Ice			Hor. Ecc. (ft)	Vert Ecc (ft)
				Weight (lb)	CaAa (sf)	CaAa Factor	Weight (lb)	CaAa (sf)	CaAa Factor		
1	180.0	Lightning Rod	1	35.00	1.05	1.00	44.00	1.730	1.00	0.00	3.50
2	177.0	EMS RR90-17-02DP	12	13.50	4.36	0.75	25.00	4.990	0.75	0.00	0.00
3	177.0	Low Profile Platform	1	2000.00	30.00	1.00	2500.00	27.00	1.00	0.00	0.00
4	177.0	TMA's (24"x13"x7" RRU)	3	60.00	3.03	0.78	76.20	3.240	0.79	0.00	0.00
5	167.0	BXA-171063-12CF	6	15.00	4.79	0.84	42.50	5.460	0.85	0.00	0.00
6	167.0	BXA-70063-6CF	6	17.00	7.73	0.76	59.50	8.540	0.76	0.00	0.00
7	167.0	DB-T1-6Z-8AB-0Z	1	21.40	4.78	1.00	51.10	5.040	1.00	0.00	0.00
8	167.0	Low Profile Platform	1	2000.00	30.00	1.00	2500.00	27.00	1.00	0.00	0.00
9	167.0	RRH2x40-07-U	3	50.70	2.23	0.78	67.50	2.540	0.79	0.00	0.00
10	167.0	RRH2x40-AWS	3	44.00	2.52	0.82	61.40	2.870	0.83	0.00	0.00
11	160.0	7770.00	3	35.00	5.88	0.75	0.00	6.530	0.75	0.00	-3.00
12	160.0	CCI HPA-65R-BUU-H8	6	68.00	13.30	0.79	137.00	13.90	0.80	0.00	0.00
13	160.0	CCI OPA-65R-LCUU-H8	3	95.00	12.98	0.79	162.00	13.58	0.79	0.00	0.00
14	160.0	DC6-48-60-18-8F	2	31.80	1.47	0.84	49.50	1.670	0.85	0.00	0.00
15	160.0	Ericsson RRUS 32	3	77.00	1.93	0.70	86.20	2.100	0.72	0.00	0.00
16	160.0	Ericsson RRUS A2 Module	3	21.20	1.86	0.67	31.40	2.150	0.68	0.00	0.00
17	160.0	Ericsson RRUS-11	3	55.00	4.42	0.68	80.70	4.850	0.69	0.00	0.00
18	160.0	Ericsson RRUS-12 w/ Shield	3	60.00	3.15	0.75	81.20	3.510	0.76	0.00	0.00
19	160.0	Ericsson RRUS-E2	3	50.70	2.23	0.78	67.50	2.540	0.79	0.00	0.00
20	160.0	LGP21401 TMA's	6	14.10	1.29	0.67	21.20	1.530	0.68	0.00	0.00
21	160.0	LGP21901 Diplexers	6	5.50	0.33	0.75	7.70	0.440	0.77	0.00	0.00
22	160.0	Low Profile Platform	1	2000.00	30.00	1.00	2500.00	27.00	1.00	0.00	0.00
23	160.0	Powerwave 7020.00 RET	3	2.20	0.40	0.67	5.10	0.540	0.67	0.00	0.00
Totals:			82	8,652.00			11,759.10				

Linear Appurtenances

Bottom Elev. (ft)	Top Elev. (ft)	Description	No Ice		Ice		Exposed
			Weight (lb/ft)	CaAa (sf/ft)	Weight (lb/ft)	CaAa (sf/ft)	
0.00	180.0	(1) Climbing Ladder	6.90	0.00	7.50	0.06	Outside
0.00	177.0	(12) 1 5/8" Coax	12.48	0.00	0.00	0.00	Inside
0.00	167.0	(12) 1 5/8" Coax	12.48	0.00	0.00	0.00	Inside
0.00	160.0	(12) 1 5/8" Coax	12.48	0.00	0.00	0.00	Inside
0.00	160.0	(12) 3/4" DC Power	7.80	0.00	0.00	0.00	Inside
0.00	160.0	(2) 3/8" Fiber	0.12	0.00	0.00	0.00	Inside
Totals:			8,799.12		1,350.00		

Shaft Section Properties

Structure: CT02652-S-SBA
Site Name: Colchester 3 CT
Height: 180.00 (ft)
Base Elev: 0.000 (ft)

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

12/8/2014

Page: 6



Increment Length: 5 (ft)

Elev (ft)	Description	Thick (in)	Dia (in)	Area (in^2)	Ix (in^4)	W/t Ratio	D/t Ratio	Fy (ksi)	Fb (ksi)	Weight (lb)
0.00		0.4380	60.000	83.221	37298.1	25.66	136.99	65	52	0.0
5.00		0.4380	58.975	81.789	35405.3	25.19	134.65	65	52	1403.7
10.00		0.4380	57.950	80.357	33577.6	24.73	132.31	65	52	1379.4
15.00		0.4380	56.925	78.924	31813.9	24.26	129.96	65	52	1355.0
20.00		0.4380	55.900	77.492	30113.1	23.79	127.62	65	52	1330.6
25.00		0.4380	54.874	76.060	28474.0	23.33	125.28	65	52	1306.3
30.00		0.4380	53.849	74.627	26895.5	22.86	122.94	65	52	1281.9
35.00		0.4380	52.824	73.195	25376.4	22.40	120.60	65	52	1257.5
40.00		0.4380	51.799	71.763	23915.7	21.93	118.26	65	52	1233.1
45.00		0.4380	50.774	70.330	22512.1	21.47	115.92	65	52	1208.8
45.92	Bot - Section 2	0.4380	50.586	70.068	22260.8	21.38	115.49	65	52	219.0
50.00		0.3750	50.499	59.961	19031.4	25.19	134.66	65	52	1805.5
53.00	Top - Section 1	0.3750	49.884	59.225	18339.4	24.87	133.02	65	52	1307.3
55.00		0.3750	49.474	58.734	17887.4	24.65	131.93	65	52	401.4
60.00		0.3750	48.449	57.508	16790.3	24.11	129.20	65	52	988.9
65.00		0.3750	47.424	56.282	15738.9	23.56	126.46	65	52	968.0
70.00		0.3750	46.398	55.056	14732.4	23.02	123.73	65	52	947.1
75.00		0.3750	45.373	53.829	13769.7	22.48	121.00	65	52	926.3
80.00		0.3750	44.348	52.603	12849.9	21.93	118.26	65	52	905.4
85.00		0.3750	43.323	51.377	11972.0	21.39	115.53	65	52	884.5
90.00		0.3750	42.298	50.150	11135.1	20.84	112.79	65	52	863.7
92.92	Bot - Section 3	0.3750	41.700	49.435	10665.4	20.53	111.20	65	52	494.2
95.00		0.3130	41.899	41.522	9071.7	25.04	133.86	65	52	644.5
98.92	Top - Section 2	0.3130	41.096	40.720	8556.2	24.53	131.30	65	52	1193.7
100.00		0.3130	40.874	40.499	8417.2	24.38	130.59	65	52	149.7
105.00		0.3130	39.849	39.475	7795.0	23.73	127.31	65	52	680.3
110.00		0.3130	38.824	38.452	7204.2	23.08	124.04	65	52	662.9
115.00		0.3130	37.798	37.428	6644.1	22.43	120.76	65	52	645.5
120.00		0.3130	36.773	36.405	6113.8	21.78	117.49	65	52	628.1
125.00		0.3130	35.748	35.381	5612.5	21.13	114.21	65	52	610.7
127.08	Bot - Section 4	0.3130	35.322	34.956	5412.6	20.86	112.85	65	52	248.5
130.00		0.2190	35.161	24.411	3765.3	30.34	160.55	65	52	589.7
132.33	Top - Section 3	0.2190	34.684	24.078	3613.2	29.91	158.37	65	52	462.1
135.00		0.2190	34.136	23.695	3443.5	29.41	155.87	65	50	217.3
140.00		0.2190	33.111	22.979	3140.6	28.48	151.19	65	51	397.0
145.00		0.2190	32.086	22.262	2856.0	27.55	146.51	65	51	384.9
150.00		0.2190	31.061	21.546	2589.2	26.62	141.83	65	52	372.7
155.00		0.2190	30.036	20.830	2339.5	25.69	137.15	65	52	360.5
160.00		0.2190	29.010	20.114	2106.4	24.76	132.47	65	52	348.3
165.00		0.2190	27.985	19.398	1889.3	23.83	127.79	65	52	336.1
167.00		0.2190	27.575	19.111	1806.8	23.45	125.91	65	52	131.0
170.00		0.2190	26.960	18.682	1687.7	22.90	123.11	65	52	192.9
175.00		0.2190	25.935	17.966	1500.9	21.96	118.43	65	52	311.8
177.00		0.2190	25.525	17.679	1430.3	21.59	116.55	65	52	121.3
180.00		0.2190	24.910	17.249	1328.5	21.03	113.74	65	52	178.3
										32335.3

Wind Loading - Shaft

Structure: CT02652-S-SBA
Site Name: Colchester 3 CT
Height: 180.00 (ft)
Base Elev: 0.000 (ft)

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

12/8/2014



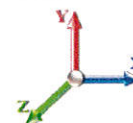
IES

Tower Engineering Solutions

Page: 7

Load Case: 85 mph Wind with 0" Ice

Dead Load Factor 1.00
Wind Load Factor 1.00



Iterations: 25

Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		0.00	1.00	18.496	31.26	425.00	0.720	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		0.00	1.00	18.496	31.26	417.74	0.720	0.000	5.00	24.786	17.85	557.8	0.0	1403.7
10.00		0.00	1.00	18.496	31.26	410.48	0.720	0.000	5.00	24.359	17.54	548.2	0.0	1379.4
15.00		0.00	1.00	18.496	31.26	403.22	0.720	0.000	5.00	23.932	17.23	538.6	0.0	1355.0
20.00		0.00	1.00	18.496	31.26	395.96	0.720	0.000	5.00	23.505	16.92	529.0	0.0	1330.6
25.00		0.00	1.00	18.496	31.26	388.69	0.720	0.000	5.00	23.078	16.62	519.4	0.0	1306.3
30.00		0.00	1.00	18.496	31.26	381.43	0.720	0.000	5.00	22.651	16.31	509.8	0.0	1281.9
35.00		0.00	1.02	18.810	31.79	377.33	0.720	0.000	5.00	22.224	16.00	508.6	0.0	1257.5
40.00		0.00	1.06	19.541	33.02	377.13	0.720	0.000	5.00	21.797	15.69	518.3	0.0	1233.1
45.00		0.00	1.09	20.210	34.15	375.94	0.720	0.000	5.00	21.369	15.39	525.5	0.0	1208.8
45.92	Bot - Section 2	0.00	1.10	20.327	34.35	375.63	0.720	0.000	0.92	3.871	2.79	95.8	0.0	219.0
50.00		0.00	1.13	20.827	35.20	373.94	0.720	0.000	4.08	17.326	12.47	439.1	0.0	1805.5
53.00	Top - Section 1	0.00	1.14	21.177	35.79	372.40	0.720	0.000	3.00	12.548	9.03	323.3	0.0	1307.3
55.00		0.00	1.16	21.402	36.17	376.97	0.720	0.000	2.00	8.280	5.96	215.6	0.0	401.4
60.00		0.00	1.19	21.941	37.08	373.78	0.720	0.000	5.00	20.401	14.69	544.7	0.0	988.9
65.00		0.00	1.21	22.449	37.94	370.07	0.720	0.000	5.00	19.973	14.38	545.6	0.0	968.0
70.00		0.00	1.24	22.929	38.75	365.93	0.720	0.000	5.00	19.546	14.07	545.3	0.0	947.1
75.00		0.00	1.26	23.386	39.52	361.39	0.720	0.000	5.00	19.119	13.77	544.0	0.0	926.3
80.00		0.00	1.29	23.821	40.26	356.49	0.720	0.000	5.00	18.692	13.46	541.8	0.0	905.4
85.00		0.00	1.31	24.237	40.96	351.28	0.720	0.000	5.00	18.265	13.15	538.7	0.0	884.5
90.00		0.00	1.33	24.636	41.63	345.78	0.720	0.000	5.00	17.838	12.84	534.7	0.0	863.7
92.92	Bot - Section 3	0.00	1.34	24.862	42.02	342.45	0.720	0.000	2.92	10.208	7.35	308.8	0.0	494.2
95.00		0.00	1.35	25.020	42.28	340.02	0.720	0.000	2.08	7.311	5.26	222.6	0.0	644.5
98.92	Top - Section 2	0.00	1.37	25.310	42.77	335.33	0.720	0.000	3.92	13.544	9.75	417.1	0.0	1193.7
100.00		0.00	1.37	25.389	42.91	339.21	0.720	0.000	1.08	3.700	2.66	114.3	0.0	149.7
105.00		0.00	1.39	25.745	43.51	333.01	0.720	0.000	5.00	16.817	12.11	526.8	0.0	680.3
110.00		0.00	1.41	26.090	44.09	326.61	0.720	0.000	5.00	16.390	11.80	520.3	0.0	662.9
115.00		0.00	1.43	26.423	44.66	320.01	0.720	0.000	5.00	15.963	11.49	513.2	0.0	645.5
120.00		0.00	1.45	26.747	45.20	313.23	0.720	0.000	5.00	15.536	11.19	505.6	0.0	628.1
125.00		0.00	1.46	27.060	45.73	306.28	0.720	0.000	5.00	15.109	10.88	497.5	0.0	610.7
127.08	Bot - Section 4	0.00	1.47	27.188	45.95	303.35	0.720	0.000	2.08	6.150	4.43	203.4	0.0	248.5
130.00		0.00	1.48	27.365	46.25	299.17	0.720	0.000	2.92	8.639	6.22	287.7	0.0	589.7
132.33	Top - Section 3	0.00	1.49	27.504	46.48	295.81	0.720	0.000	2.33	6.771	4.88	226.6	0.0	462.1
135.00		0.00	1.50	27.662	46.75	295.70	0.720	0.000	2.67	7.666	5.52	258.0	0.0	217.3
140.00		0.00	1.51	27.951	47.24	288.32	0.720	0.000	5.00	14.010	10.09	476.5	0.0	397.0
145.00		0.00	1.53	28.233	47.71	280.79	0.720	0.000	5.00	13.583	9.78	466.6	0.0	384.9
150.00		0.00	1.54	28.507	48.18	273.14	0.720	0.000	5.00	13.156	9.47	456.3	0.0	372.7
155.00		0.00	1.56	28.776	48.63	265.37	0.720	0.000	5.00	12.728	9.16	445.7	0.0	360.5
160.00	Appurtenance(s)	0.00	1.57	29.038	49.07	257.48	0.720	0.000	5.00	12.301	8.86	434.6	0.0	348.3
165.00		0.00	1.58	29.294	49.51	249.47	0.720	0.000	5.00	11.874	8.55	423.3	0.0	336.1
167.00	Appurtenance(s)	0.00	1.59	29.395	49.68	246.24	0.720	0.000	2.00	4.630	3.33	165.6	0.0	131.0
170.00		0.00	1.60	29.545	49.93	241.36	0.720	0.000	3.00	6.817	4.91	245.1	0.0	192.9
175.00		0.00	1.61	29.791	50.35	233.15	0.720	0.000	5.00	11.020	7.93	399.5	0.0	311.8
177.00	Appurtenance(s)	0.00	1.62	29.888	50.51	229.83	0.720	0.000	2.00	4.288	3.09	156.0	0.0	121.3
180.00	Appurtenance(s)	0.00	1.62	30.032	50.75	224.83	0.720	0.000	3.00	6.304	4.54	230.4	0.0	178.3
Totals:									180.00	6.304	4.54	18,125.4	0.0	32,335.3

Discrete Appurtenance Forces

Structure: CT02652-S-SB
Site Name: Colchester 3 CT
Height: 180.00 (ft)
Base Elev: 0.000 (ft)

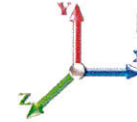
Code: EIA/TIA-222-F
Exposure: C
Gh: 1.69
Struct Class: II

12/8/2014
 Page: 8



Load Case: 85 mph Wind with 0" Ice

Dead Load Factor 1.00
Wind Load Factor 1.00



Iterations: 25

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	CaAa Factor	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)
1	160.00	7770.00	3	28.881	48.809	0.75	13.23	105.00	0.000	-3.000	645.75	0.00	-1937.24
2	160.00	CCI HPA-65R-BUU-H8	6	29.038	49.074	0.79	63.04	408.00	0.000	0.000	3093.73	0.00	0.00
3	160.00	CCI OPA-65R-LCUU-H8	3	29.038	49.074	0.79	30.76	285.00	0.000	0.000	1509.65	0.00	0.00
4	160.00	DC6-48-60-18-8F	2	29.038	49.074	0.84	2.47	63.60	0.000	0.000	121.19	0.00	0.00
5	160.00	Ericsson RRUS 32	3	29.038	49.074	0.70	4.05	231.00	0.000	0.000	198.90	0.00	0.00
6	160.00	Ericsson RRUS A2 Module	3	29.038	49.074	0.67	3.74	63.60	0.000	0.000	183.47	0.00	0.00
7	160.00	Ericsson RRUS-11	3	29.038	49.074	0.68	9.02	165.00	0.000	0.000	442.49	0.00	0.00
8	160.00	Ericsson RRUS-12 w/ Shield	3	29.038	49.074	0.75	7.09	180.00	0.000	0.000	347.81	0.00	0.00
9	160.00	Ericsson RRUS-E2	3	29.038	49.074	0.78	5.22	152.10	0.000	0.000	256.08	0.00	0.00
10	160.00	LGP21401 TMAs	6	29.038	49.074	0.67	5.19	84.60	0.000	0.000	254.49	0.00	0.00
11	160.00	LGP21901 Diplexers	6	29.038	49.074	0.75	1.48	33.00	0.000	0.000	72.87	0.00	0.00
12	160.00	Low Profile Platform	1	29.038	49.074	1.00	30.00	2000.00	0.000	0.000	1472.22	0.00	0.00
13	160.00	Powerwave 7020.00 RET	3	29.038	49.074	0.67	0.80	6.60	0.000	0.000	39.46	0.00	0.00
14	167.00	BXA-171063-12CF	6	29.395	49.678	0.84	24.14	90.00	0.000	0.000	1199.31	0.00	0.00
15	167.00	BXA-70063-6CF	6	29.395	49.678	0.76	35.25	102.00	0.000	0.000	1751.09	0.00	0.00
16	167.00	DB-T1-6Z-8AB-0Z	1	29.395	49.678	1.00	4.78	21.40	0.000	0.000	237.46	0.00	0.00
17	167.00	Low Profile Platform	1	29.395	49.678	1.00	30.00	2000.00	0.000	0.000	1490.34	0.00	0.00
18	167.00	RRH2x40-07-U	3	29.395	49.678	0.78	5.22	152.10	0.000	0.000	259.23	0.00	0.00
19	167.00	RRH2x40-AWS	3	29.395	49.678	0.82	6.20	132.00	0.000	0.000	307.96	0.00	0.00
20	177.00	EMS RR90-17-02DP	12	29.888	50.510	0.75	39.24	162.00	0.000	0.000	1982.03	0.00	0.00
21	177.00	Low Profile Platform	1	29.888	50.510	1.00	30.00	2000.00	0.000	0.000	1515.31	0.00	0.00
22	177.00	TMAs (24"x13"x7" RRU)	3	29.888	50.510	0.78	7.09	180.00	0.000	0.000	358.13	0.00	0.00
23	180.00	Lightning Rod	1	30.197	51.034	1.00	1.05	35.00	0.000	3.500	53.59	0.00	187.55
Totals:								8,652.00			17,792.57		

Total Applied Force Summary

Structure: CT02652-S-SB
Site Name: Colchester 3 CT
Height: 180.00 (ft)
Base Elev: 0.000 (ft)

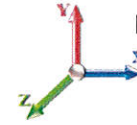
Code: EIA/TIA-222-F
Exposure: C
Gh: 1.69
Struct Class: II

12/8/2014
 Page: 9



Load Case: 85 mph Wind with 0" Ice

Dead Load Factor 1.00
Wind Load Factor 1.00



Iterations: 25

Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00		0.00	0.00	0.00	0.00
5.00		557.84	1665.03	0.00	0.00
10.00		548.23	1640.66	0.00	0.00
15.00		538.62	1616.29	0.00	0.00
20.00		529.00	1591.92	0.00	0.00
25.00		519.39	1567.56	0.00	0.00
30.00		509.78	1543.19	0.00	0.00
35.00		508.64	1518.82	0.00	0.00
40.00		518.27	1494.45	0.00	0.00
45.00		525.50	1470.08	0.00	0.00
45.92		95.75	266.87	0.00	0.00
50.00		439.09	2018.93	0.00	0.00
53.00		323.34	1464.07	0.00	0.00
55.00		215.63	505.91	0.00	0.00
60.00		544.65	1250.17	0.00	0.00
65.00		545.59	1229.30	0.00	0.00
70.00		545.34	1208.44	0.00	0.00
75.00		544.05	1187.58	0.00	0.00
80.00		541.79	1166.71	0.00	0.00
85.00		538.66	1145.85	0.00	0.00
90.00		534.73	1124.99	0.00	0.00
92.92		308.81	646.61	0.00	0.00
95.00		222.58	753.38	0.00	0.00
98.92		417.13	1398.37	0.00	0.00
100.00		114.31	206.32	0.00	0.00
105.00		526.83	941.63	0.00	0.00
110.00		520.32	924.22	0.00	0.00
115.00		513.24	906.80	0.00	0.00
120.00		505.62	889.39	0.00	0.00
125.00		497.48	871.98	0.00	0.00
127.08		203.44	357.04	0.00	0.00
130.00		287.65	742.43	0.00	0.00
132.33		226.61	583.66	0.00	0.00
135.00		258.02	357.00	0.00	0.00
140.00		476.48	658.35	0.00	0.00
145.00		466.61	646.16	0.00	0.00
150.00		456.34	633.98	0.00	0.00
155.00		445.67	621.79	0.00	0.00
160.00	(45) appurtenances	9072.75	4387.11	0.00	-1937.24
165.00		423.26	495.42	0.00	0.00
167.00	(20) appurtenances	5411.01	2692.26	0.00	0.00
170.00		245.07	251.04	0.00	0.00
175.00		399.47	408.66	0.00	0.00
177.00	(16) appurtenances	4011.43	2502.05	0.00	0.00
180.00	(1) appurtenances	283.96	233.98	0.00	187.55
	Totals:	35,917.98	49,786.46	0.00	-1,749.70

Resulting Forces and Deflections

Structure: CT02652-S-SB **Code:** EIA/TIA-222-F 12/8/2014
Site Name: Colchester 3 CT **Exposure:** C
Height: 180.00 (ft) **Gh:** 1.69
Base Elev: 0.000 (ft) **Struct Class:** II Page: 10

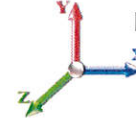


Load Case: 85 mph Wind with 0" Ice

Iterations: 25

Dead Load Factor 1.00

Wind Load Factor 1.00



Elev (ft)	Lateral FX (-) (kips)	Axial FY (-) (kips)	Lateral FZ (kips)	Moment MX (ft-kips)	Torsion MY (ft-kips)	Moment MZ (ft-kips)	Deflect X (in)	Deflect Z (in)	Deflect Resultant (in)	Rotation Sway (deg)	Rotation Twist (deg)
0.00	-35.996	-49.729	0.000	0.000	0.000	-4737.2	0.000	0.000	0.000	0.000	0.000
5.00	-35.585	-47.955	0.000	0.000	0.000	-4557.2	-0.095	0.000	0.095	-0.177	0.000
10.00	-35.175	-46.206	0.000	0.000	0.000	-4379.3	-0.377	0.000	0.377	-0.357	0.000
15.00	-34.766	-44.483	0.000	0.000	0.000	-4203.4	-0.848	0.000	0.848	-0.539	0.000
20.00	-34.357	-42.786	0.000	0.000	0.000	-4029.6	-1.511	0.000	1.511	-0.723	0.000
25.00	-33.950	-41.115	0.000	0.000	0.000	-3857.8	-2.368	0.000	2.368	-0.909	0.000
30.00	-33.544	-39.471	0.000	0.000	0.000	-3688.1	-3.421	0.000	3.421	-1.097	0.000
35.00	-33.131	-37.852	0.000	0.000	0.000	-3520.3	-4.673	0.000	4.673	-1.288	0.000
40.00	-32.700	-36.260	0.000	0.000	0.000	-3354.7	-6.125	0.000	6.125	-1.481	0.000
45.00	-32.204	-34.741	0.000	0.000	0.000	-3191.2	-7.780	0.000	7.780	-1.675	0.000
45.92	-32.160	-34.421	0.000	0.000	0.000	-3161.7	-8.106	0.000	8.106	-1.712	0.000
50.00	-31.737	-32.339	0.000	0.000	0.000	-3030.4	-9.641	0.000	9.641	-1.874	0.000
53.00	-31.419	-30.831	0.000	0.000	0.000	-2935.2	-10.857	0.000	10.857	-1.994	0.000
55.00	-31.266	-30.250	0.000	0.000	0.000	-2872.3	-11.710	0.000	11.710	-2.075	0.000
60.00	-30.787	-28.902	0.000	0.000	0.000	-2716.0	-14.002	0.000	14.002	-2.297	0.000
65.00	-30.298	-27.579	0.000	0.000	0.000	-2562.1	-16.527	0.000	16.527	-2.521	0.000
70.00	-29.801	-26.280	0.000	0.000	0.000	-2410.6	-19.288	0.000	19.288	-2.746	0.000
75.00	-29.297	-25.005	0.000	0.000	0.000	-2261.6	-22.283	0.000	22.283	-2.971	0.000
80.00	-28.788	-23.756	0.000	0.000	0.000	-2115.1	-25.515	0.000	25.515	-3.197	0.000
85.00	-28.273	-22.532	0.000	0.000	0.000	-1971.1	-28.983	0.000	28.983	-3.424	0.000
90.00	-27.736	-21.356	0.000	0.000	0.000	-1829.8	-32.688	0.000	32.688	-3.649	0.000
92.92	-27.428	-20.676	0.000	0.000	0.000	-1748.9	-34.958	0.000	34.958	-3.783	0.000
95.00	-27.203	-19.874	0.000	0.000	0.000	-1691.7	-36.629	0.000	36.629	-3.878	0.000
98.92	-26.726	-18.456	0.000	0.000	0.000	-1585.2	-39.883	0.000	39.883	-4.055	0.000
100.00	-26.646	-18.187	0.000	0.000	0.000	-1556.3	-40.808	0.000	40.808	-4.105	0.000
105.00	-26.126	-17.173	0.000	0.000	0.000	-1423.0	-45.239	0.000	45.239	-4.356	0.000
110.00	-25.605	-16.183	0.000	0.000	0.000	-1292.4	-49.931	0.000	49.931	-4.604	0.000
115.00	-25.082	-15.217	0.000	0.000	0.000	-1164.4	-54.878	0.000	54.878	-4.847	0.000
120.00	-24.560	-14.275	0.000	0.000	0.000	-1039.0	-60.076	0.000	60.076	-5.083	0.000
125.00	-24.022	-13.386	0.000	0.000	0.000	-916.22	-65.515	0.000	65.515	-5.310	0.000
127.08	-23.812	-13.003	0.000	0.000	0.000	-866.33	-67.843	0.000	67.843	-5.404	0.000
130.00	-23.479	-12.245	0.000	0.000	0.000	-796.72	-71.188	0.000	71.188	-5.532	0.000
132.33	-23.218	-11.644	0.000	0.000	0.000	-742.09	-73.905	0.000	73.905	-5.631	0.000
135.00	-22.963	-11.239	0.000	0.000	0.000	-680.03	-77.085	0.000	77.085	-5.740	0.000
140.00	-22.467	-10.537	0.000	0.000	0.000	-565.21	-83.228	0.000	83.228	-5.998	0.000
145.00	-21.971	-9.862	0.000	0.000	0.000	-452.88	-89.626	0.000	89.626	-6.228	0.000
150.00	-21.476	-9.215	0.000	0.000	0.000	-343.03	-96.247	0.000	96.247	-6.426	0.000
155.00	-20.983	-8.598	0.000	0.000	0.000	-235.65	-103.05	0.000	103.055	-6.585	0.000
160.00	-11.472	-5.274	0.000	0.000	0.000	-130.74	-110.00	0.000	110.003	-6.697	0.000
165.00	-10.997	-4.824	0.000	0.000	0.000	-73.383	-117.04	0.000	117.042	-6.766	0.000
167.00	-5.307	-2.787	0.000	0.000	0.000	-51.390	-119.87	0.000	119.874	-6.785	0.000
170.00	-5.035	-2.565	0.000	0.000	0.000	-35.470	-124.13	0.000	124.134	-6.805	0.000
175.00	-4.590	-2.206	0.000	0.000	0.000	-10.297	-131.25	0.000	131.257	-6.824	0.000
177.00	-0.310	-0.199	0.000	0.000	0.000	-1.117	-134.11	0.000	134.110	-6.827	0.000
180.00	-0.284	0.000	0.000	0.000	0.000	-0.188	0.000	0.000	138.389	-6.827	0.000

Resulting Stresses

Structure: CT02652-S-SBA

Code: EIA/TIA-222-F

12/8/2014



Site Name: Colchester 3 CT

Exposure: C

Height: 180.00 (ft)

Gh: 1.69

Base Elev: 0.000 (ft)

Struct Class: II

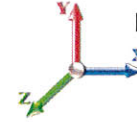
Page: 11

Tower Engineering Solutions

Load Case: 85 mph Wind with 0" Ice

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations: 25

Applied Stresses

Elev (ft)	fa Axial (Y) (ksi)	fvx Shear (X) (ksi)	fvz Shear (Z) (ksi)	fvt Torsion (ksi)	fbx Bending (X) (ksi)	fbz Bending (Z) (ksi)	fb Combined (ksi)	Allow Stress (ksi)	f/Fb Stress Ratio
0.00	0.60	0.87	0.00	0.00	0.00	46.62	47.24	52.0	0.909
5.00	0.59	0.88	0.00	0.00	0.00	46.44	47.05	52.0	0.905
10.00	0.58	0.89	0.00	0.00	0.00	46.24	46.84	52.0	0.901
15.00	0.56	0.89	0.00	0.00	0.00	46.01	46.60	52.0	0.896
20.00	0.55	0.90	0.00	0.00	0.00	45.76	46.34	52.0	0.891
25.00	0.54	0.90	0.00	0.00	0.00	45.48	46.05	52.0	0.886
30.00	0.53	0.91	0.00	0.00	0.00	45.17	45.73	52.0	0.879
35.00	0.52	0.92	0.00	0.00	0.00	44.83	45.38	52.0	0.873
40.00	0.51	0.92	0.00	0.00	0.00	44.45	44.98	52.0	0.865
45.00	0.49	0.93	0.00	0.00	0.00	44.03	44.55	52.0	0.857
45.92	0.49	0.93	0.00	0.00	0.00	43.95	44.47	52.0	0.855
50.00	0.47	0.93	0.00	0.00	0.00	43.58	44.08	52.0	0.848
53.00	0.52	1.07	0.00	0.00	0.00	48.84	49.40	52.0	0.950
55.00	0.52	1.08	0.00	0.00	0.00	48.60	49.15	52.0	0.945
60.00	0.50	1.08	0.00	0.00	0.00	47.94	48.48	52.0	0.932
65.00	0.49	1.09	0.00	0.00	0.00	47.23	47.75	52.0	0.918
70.00	0.48	1.09	0.00	0.00	0.00	46.44	46.96	52.0	0.903
75.00	0.46	1.10	0.00	0.00	0.00	45.59	46.09	52.0	0.886
80.00	0.45	1.11	0.00	0.00	0.00	44.66	45.15	52.0	0.868
85.00	0.44	1.11	0.00	0.00	0.00	43.64	44.12	52.0	0.848
90.00	0.43	1.12	0.00	0.00	0.00	42.52	42.99	52.0	0.827
92.92	0.42	1.12	0.00	0.00	0.00	41.83	42.30	52.0	0.813
95.00	0.41	1.12	0.00	0.00	0.00	41.32	41.77	52.0	0.803
98.92	0.45	1.33	0.00	0.00	0.00	46.58	47.09	52.0	0.906
100.00	0.45	1.33	0.00	0.00	0.00	46.23	46.74	52.0	0.899
105.00	0.44	1.34	0.00	0.00	0.00	44.50	45.00	52.0	0.865
110.00	0.42	1.35	0.00	0.00	0.00	42.61	43.09	52.0	0.829
115.00	0.41	1.36	0.00	0.00	0.00	40.53	41.00	52.0	0.788
120.00	0.39	1.36	0.00	0.00	0.00	38.23	38.70	52.0	0.744
125.00	0.38	1.37	0.00	0.00	0.00	35.70	36.16	52.0	0.695
127.08	0.37	1.38	0.00	0.00	0.00	34.59	35.04	52.0	0.674
130.00	0.36	1.38	0.00	0.00	0.00	32.93	33.37	52.0	0.642
132.33	0.48	1.95	0.00	0.00	0.00	43.58	44.19	52.0	0.850
135.00	0.47	1.96	0.00	0.00	0.00	41.24	41.85	49.8	0.840
140.00	0.46	1.98	0.00	0.00	0.00	36.45	37.07	50.6	0.733
145.00	0.44	2.00	0.00	0.00	0.00	31.13	31.76	51.4	0.618
150.00	0.43	2.02	0.00	0.00	0.00	25.17	25.84	52.0	0.497
155.00	0.41	2.04	0.00	0.00	0.00	18.51	19.25	52.0	0.370
160.00	0.26	1.15	0.00	0.00	0.00	11.02	11.45	52.0	0.220
165.00	0.25	1.15	0.00	0.00	0.00	6.65	7.18	52.0	0.138
167.00	0.15	0.56	0.00	0.00	0.00	4.80	5.04	52.0	0.097
170.00	0.14	0.55	0.00	0.00	0.00	3.47	3.73	52.0	0.072
175.00	0.12	0.52	0.00	0.00	0.00	1.09	1.51	52.0	0.029
177.00	0.01	0.04	0.00	0.00	0.00	0.12	0.15	52.0	0.003
180.00	0.00	0.03	0.00	0.00	0.00	0.02	0.06	52.0	0.001

Wind Loading - Shaft

Structure: CT02652-S-SBA
Site Name: Colchester 3 CT
Height: 180.00 (ft)
Base Elev: 0.000 (ft)

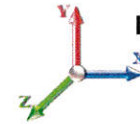
Code: EIA/TIA-222-F
Exposure: C
Gh: 1.69
Struct Class: II

12/8/2014
 Page: 12



Load Case: 73.61 mph Wind with 0.5" Ice

Dead Load Factor 1.00
Wind Load Factor 1.00



Iterations: 25

Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		0.00	1.00	13.871	23.44	368.05	0.720	0.500	0.00	0.000	0.00	0.0	0.0	0.0
5.00		0.00	1.00	13.871	23.44	361.76	0.720	0.500	5.00	25.203	18.15	425.4	184.5	1588.2
10.00		0.00	1.00	13.871	23.44	355.47	0.720	0.500	5.00	24.776	17.84	418.2	181.3	1560.6
15.00		0.00	1.00	13.871	23.44	349.19	0.720	0.500	5.00	24.349	17.53	411.0	178.1	1533.1
20.00		0.00	1.00	13.871	23.44	342.90	0.720	0.500	5.00	23.922	17.22	403.8	174.9	1505.5
25.00		0.00	1.00	13.871	23.44	336.61	0.720	0.500	5.00	23.495	16.92	396.6	171.7	1478.0
30.00		0.00	1.00	13.871	23.44	330.32	0.720	0.500	5.00	23.067	16.61	389.3	168.6	1450.4
35.00		0.00	1.02	14.106	23.84	326.77	0.720	0.500	5.00	22.640	16.30	388.6	165.4	1422.9
40.00		0.00	1.06	14.655	24.77	326.60	0.720	0.500	5.00	22.213	15.99	396.1	162.2	1395.3
45.00		0.00	1.09	15.156	25.61	325.57	0.720	0.500	5.00	21.786	15.69	401.8	159.0	1367.8
45.92	Bot - Section 2	0.00	1.10	15.244	25.76	325.30	0.720	0.500	0.92	3.948	2.84	73.2	29.0	248.0
50.00		0.00	1.13	15.620	26.40	323.83	0.720	0.500	4.08	17.666	12.72	335.8	129.2	1934.7
53.00	Top - Section 1	0.00	1.14	15.882	26.84	322.50	0.720	0.500	3.00	12.798	9.21	247.3	93.8	1401.0
55.00		0.00	1.16	16.051	27.13	326.45	0.720	0.500	2.00	8.446	6.08	165.0	62.0	463.4
60.00		0.00	1.19	16.455	27.81	323.69	0.720	0.500	5.00	20.817	14.99	416.8	151.8	1140.7
65.00		0.00	1.21	16.836	28.45	320.48	0.720	0.500	5.00	20.390	14.68	417.7	148.6	1116.6
70.00		0.00	1.24	17.196	29.06	316.89	0.720	0.500	5.00	19.963	14.37	417.7	145.5	1092.6
75.00		0.00	1.26	17.538	29.64	312.96	0.720	0.500	5.00	19.536	14.07	416.9	142.3	1068.5
80.00		0.00	1.29	17.865	30.19	308.72	0.720	0.500	5.00	19.109	13.76	415.4	139.1	1044.5
85.00		0.00	1.31	18.177	30.72	304.21	0.720	0.500	5.00	18.682	13.45	413.2	135.9	1020.5
90.00		0.00	1.33	18.476	31.22	299.45	0.720	0.500	5.00	18.254	13.14	410.4	132.7	996.4
92.92	Bot - Section 3	0.00	1.34	18.645	31.51	296.56	0.720	0.500	2.92	10.451	7.52	237.1	76.3	570.5
95.00		0.00	1.35	18.764	31.71	294.46	0.720	0.500	2.08	7.485	5.39	170.9	54.8	699.3
98.92	Top - Section 2	0.00	1.37	18.981	32.08	290.40	0.720	0.500	3.92	13.871	9.99	320.4	101.1	1294.7
100.00		0.00	1.37	19.041	32.18	293.75	0.720	0.500	1.08	3.790	2.73	87.8	27.8	177.5
105.00		0.00	1.39	19.308	32.63	288.39	0.720	0.500	5.00	17.234	12.41	404.9	125.1	805.5
110.00		0.00	1.41	19.566	33.07	282.84	0.720	0.500	5.00	16.807	12.10	400.1	122.0	784.9
115.00		0.00	1.43	19.816	33.49	277.13	0.720	0.500	5.00	16.380	11.79	395.0	118.8	764.3
120.00		0.00	1.45	20.059	33.90	271.26	0.720	0.500	5.00	15.952	11.49	389.4	115.6	743.7
125.00		0.00	1.46	20.294	34.30	265.24	0.720	0.500	5.00	15.525	11.18	383.4	112.4	723.1
127.08	Bot - Section 4	0.00	1.47	20.390	34.46	262.70	0.720	0.500	2.08	6.323	4.55	156.9	46.1	294.7
130.00		0.00	1.48	20.523	34.68	259.08	0.720	0.500	2.92	8.882	6.40	221.8	64.7	654.3
132.33	Top - Section 3	0.00	1.49	20.627	34.86	256.17	0.720	0.500	2.33	6.965	5.01	174.8	50.8	512.8
135.00		0.00	1.50	20.745	35.06	256.08	0.720	0.500	2.67	7.889	5.68	199.1	57.4	274.7
140.00		0.00	1.51	20.962	35.43	249.68	0.720	0.500	5.00	14.426	10.39	368.0	104.2	501.3
145.00		0.00	1.53	21.173	35.78	243.17	0.720	0.500	5.00	13.999	10.08	360.7	101.1	485.9
150.00		0.00	1.54	21.379	36.13	236.54	0.720	0.500	5.00	13.572	9.77	353.1	97.9	470.6
155.00		0.00	1.56	21.581	36.47	229.81	0.720	0.500	5.00	13.145	9.46	345.2	94.7	455.2
160.00	Appurtenance(s)	0.00	1.57	21.777	36.80	222.97	0.720	0.500	5.00	12.718	9.16	337.0	91.5	439.8
165.00		0.00	1.58	21.969	37.13	216.04	0.720	0.500	5.00	12.291	8.85	328.6	88.3	424.5
167.00	Appurtenance(s)	0.00	1.59	22.045	37.26	213.24	0.720	0.500	2.00	4.797	3.45	128.7	34.8	165.9
170.00		0.00	1.60	22.158	37.45	209.02	0.720	0.500	3.00	7.067	5.09	190.5	51.1	244.0
175.00		0.00	1.61	22.342	37.76	201.91	0.720	0.500	5.00	11.437	8.23	310.9	82.0	393.7
177.00	Appurtenance(s)	0.00	1.62	22.415	37.88	199.04	0.720	0.500	2.00	4.455	3.21	121.5	32.3	153.6
180.00	Appurtenance(s)	0.00	1.62	22.522	38.06	194.71	0.720	0.500	3.00	6.554	4.72	179.6	47.3	225.6
Totals:									180.00			13,925.3		37,089.0

Discrete Appurtenance Forces

Structure: CT02652-S-SB
Site Name: Colchester 3 CT
Height: 180.00 (ft)
Base Elev: 0.000 (ft)

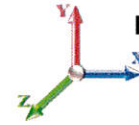
Code: EIA/TIA-222-F
Exposure: C
Gh: 1.69
Struct Class: II

12/8/2014
 Page: 13



Load Case: 73.61 mph Wind with 0.5" Ice

Dead Load Factor 1.00
Wind Load Factor 1.00



Iterations: 25

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	CaAa Factor	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)
1	160.00	7770.00	3	21.660	36.605	0.75	14.69	0.00	0.000	-3.000	537.82	0.00	-1613.45
2	160.00	CCI HPA-65R-BUU-H8	6	21.777	36.803	0.80	66.72	822.00	0.000	0.000	2455.52	0.00	0.00
3	160.00	CCI OPA-65R-LCUU-H8	3	21.777	36.803	0.79	32.18	486.00	0.000	0.000	1184.50	0.00	0.00
4	160.00	DC6-48-60-18-8F	2	21.777	36.803	0.85	2.84	99.00	0.000	0.000	104.48	0.00	0.00
5	160.00	Ericsson RRUS 32	3	21.777	36.803	0.72	4.54	258.60	0.000	0.000	166.94	0.00	0.00
6	160.00	Ericsson RRUS A2 Module	3	21.777	36.803	0.68	4.39	94.20	0.000	0.000	161.42	0.00	0.00
7	160.00	Ericsson RRUS-11	3	21.777	36.803	0.69	10.04	242.10	0.000	0.000	369.49	0.00	0.00
8	160.00	Ericsson RRUS-12 w/ Shield	3	21.777	36.803	0.76	8.00	243.60	0.000	0.000	294.53	0.00	0.00
9	160.00	Ericsson RRUS-E2	3	21.777	36.803	0.79	6.02	202.50	0.000	0.000	221.55	0.00	0.00
10	160.00	LGP21401 TMAs	6	21.777	36.803	0.68	6.24	127.20	0.000	0.000	229.74	0.00	0.00
11	160.00	LGP21901 Diplexers	6	21.777	36.803	0.77	2.03	46.20	0.000	0.000	74.81	0.00	0.00
12	160.00	Low Profile Platform	1	21.777	36.803	1.00	27.00	2500.00	0.000	0.000	993.69	0.00	0.00
13	160.00	Powerwave 7020.00 RET	3	21.777	36.803	0.67	1.09	15.30	0.000	0.000	39.95	0.00	0.00
14	167.00	BXA-171063-12CF	6	22.045	37.256	0.85	27.85	255.00	0.000	0.000	1037.44	0.00	0.00
15	167.00	BXA-70063-6CF	6	22.045	37.256	0.76	38.94	357.00	0.000	0.000	1450.85	0.00	0.00
16	167.00	DB-T1-6Z-8AB-0Z	1	22.045	37.256	1.00	5.04	51.10	0.000	0.000	187.77	0.00	0.00
17	167.00	Low Profile Platform	1	22.045	37.256	1.00	27.00	2500.00	0.000	0.000	1005.92	0.00	0.00
18	167.00	RRH2x40-07-U	3	22.045	37.256	0.79	6.02	202.50	0.000	0.000	224.28	0.00	0.00
19	167.00	RRH2x40-AWS	3	22.045	37.256	0.83	7.15	184.20	0.000	0.000	266.25	0.00	0.00
20	177.00	EMS RR90-17-02DP	12	22.415	37.881	0.75	44.91	300.00	0.000	0.000	1701.22	0.00	0.00
21	177.00	Low Profile Platform	1	22.415	37.881	1.00	27.00	2500.00	0.000	0.000	1022.78	0.00	0.00
22	177.00	TMAs (24"x13"x7" RRU)	3	22.415	37.881	0.79	7.68	228.60	0.000	0.000	290.88	0.00	0.00
23	180.00	Lightning Rod	1	22.647	38.273	1.00	1.73	44.00	0.000	3.500	66.21	0.00	231.74
Totals:								11,759.10			14,088.05		

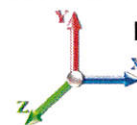
Total Applied Force Summary

Structure: CT02652-S-SB	Code: EIA/TIA-222-F	12/8/2014
Site Name: Colchester 3 CT	Exposure: C	
Height: 180.00 (ft)	Gh: 1.69	
Base Elev: 0.000 (ft)	Struct Class: II	Page: 14



Load Case: 73.61 mph Wind with 0.5" Ice

Dead Load Factor 1.00
Wind Load Factor 1.00



Iterations: 25

Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00		0.00	0.00	0.00	0.00
5.00		432.42	1852.49	0.00	0.00
10.00		425.21	1824.94	0.00	0.00
15.00		418.00	1797.39	0.00	0.00
20.00		410.79	1769.84	0.00	0.00
25.00		403.59	1742.29	0.00	0.00
30.00		396.38	1714.74	0.00	0.00
35.00		395.76	1687.20	0.00	0.00
40.00		403.54	1659.65	0.00	0.00
45.00		409.47	1632.10	0.00	0.00
45.92		74.64	296.47	0.00	0.00
50.00		342.23	2150.55	0.00	0.00
53.00		252.15	1559.63	0.00	0.00
55.00		168.22	569.10	0.00	0.00
60.00		425.15	1404.98	0.00	0.00
65.00		426.24	1380.93	0.00	0.00
70.00		426.42	1356.89	0.00	0.00
75.00		425.79	1332.85	0.00	0.00
80.00		424.43	1308.80	0.00	0.00
85.00		422.40	1284.76	0.00	0.00
90.00		419.75	1260.72	0.00	0.00
92.92		242.62	724.70	0.00	0.00
95.00		174.85	809.42	0.00	0.00
98.92		327.90	1501.77	0.00	0.00
100.00		89.91	234.77	0.00	0.00
105.00		414.68	1069.77	0.00	0.00
110.00		410.06	1049.18	0.00	0.00
115.00		405.00	1028.58	0.00	0.00
120.00		399.53	1007.99	0.00	0.00
125.00		393.67	987.40	0.00	0.00
127.08		161.16	404.43	0.00	0.00
130.00		227.89	808.85	0.00	0.00
132.33		179.68	635.84	0.00	0.00
135.00		204.75	416.03	0.00	0.00
140.00		378.60	765.59	0.00	0.00
145.00		371.41	750.22	0.00	0.00
150.00		363.91	734.86	0.00	0.00
155.00		356.12	719.50	0.00	0.00
160.00	(45) appurtenances	7182.49	5840.83	0.00	-1613.45
165.00		339.70	586.77	0.00	0.00
167.00	(20) appurtenances	4305.65	3780.59	0.00	0.00
170.00		197.28	303.94	0.00	0.00
175.00		322.24	493.64	0.00	0.00
177.00	(16) appurtenances	3140.93	3222.14	0.00	0.00
180.00	(1) appurtenances	252.69	292.06	0.00	231.74
	Totals:	28,345.33	57,755.20	0.00	-1,381.71

Resulting Forces and Deflections

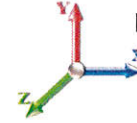
Structure: CT02652-S-SB **Code:** EIA/TIA-222-F 12/8/2014
Site Name: Colchester 3 CT **Exposure:** C
Height: 180.00 (ft) **Gh:** 1.69
Base Elev: 0.000 (ft) **Struct Class:** II



Page: 15

Load Case: 73.61 mph Wind with 0.5" Ice

Dead Load Factor 1.00
Wind Load Factor 1.00



Iterations: 25

Elev (ft)	Lateral FX (-) (kips)	Axial FY (-) (kips)	Lateral FZ (kips)	Moment MX (ft-kips)	Torsion MY (ft-kips)	Moment MZ (ft-kips)	Deflect X (in)	Deflect Z (in)	Deflect Resultant (in)	Rotation Sway (deg)	Rotation Twist (deg)
0.00	-28.417	-57.719	0.000	0.000	0.000	-3792.9	0.000	0.000	0.000	0.000	0.000
5.00	-28.122	-55.797	0.000	0.000	0.000	-3650.8	-0.076	0.000	0.076	-0.142	0.000
10.00	-27.826	-53.904	0.000	0.000	0.000	-3510.2	-0.302	0.000	0.302	-0.286	0.000
15.00	-27.530	-52.039	0.000	0.000	0.000	-3371.1	-0.680	0.000	0.680	-0.432	0.000
20.00	-27.234	-50.202	0.000	0.000	0.000	-3233.4	-1.211	0.000	1.211	-0.579	0.000
25.00	-26.938	-48.394	0.000	0.000	0.000	-3097.3	-1.898	0.000	1.898	-0.729	0.000
30.00	-26.641	-46.614	0.000	0.000	0.000	-2962.6	-2.742	0.000	2.742	-0.880	0.000
35.00	-26.338	-44.863	0.000	0.000	0.000	-2829.4	-3.746	0.000	3.746	-1.033	0.000
40.00	-26.020	-43.141	0.000	0.000	0.000	-2697.7	-4.911	0.000	4.911	-1.188	0.000
45.00	-25.642	-41.477	0.000	0.000	0.000	-2567.6	-6.240	0.000	6.240	-1.345	0.000
45.92	-25.618	-41.147	0.000	0.000	0.000	-2544.1	-6.501	0.000	6.501	-1.374	0.000
50.00	-25.298	-38.956	0.000	0.000	0.000	-2439.5	-7.733	0.000	7.733	-1.504	0.000
53.00	-25.057	-37.368	0.000	0.000	0.000	-2363.6	-8.710	0.000	8.710	-1.601	0.000
55.00	-24.951	-36.750	0.000	0.000	0.000	-2313.5	-9.395	0.000	9.395	-1.667	0.000
60.00	-24.594	-35.282	0.000	0.000	0.000	-2188.7	-11.236	0.000	11.236	-1.846	0.000
65.00	-24.228	-33.840	0.000	0.000	0.000	-2065.7	-13.266	0.000	13.266	-2.026	0.000
70.00	-23.855	-32.424	0.000	0.000	0.000	-1944.6	-15.484	0.000	15.484	-2.207	0.000
75.00	-23.475	-31.035	0.000	0.000	0.000	-1825.3	-17.893	0.000	17.893	-2.389	0.000
80.00	-23.089	-29.673	0.000	0.000	0.000	-1708.0	-20.492	0.000	20.492	-2.572	0.000
85.00	-22.698	-28.337	0.000	0.000	0.000	-1592.5	-23.283	0.000	23.283	-2.754	0.000
90.00	-22.284	-27.042	0.000	0.000	0.000	-1479.0	-26.264	0.000	26.264	-2.937	0.000
92.92	-22.046	-26.296	0.000	0.000	0.000	-1414.0	-28.092	0.000	28.092	-3.045	0.000
95.00	-21.877	-25.455	0.000	0.000	0.000	-1368.1	-29.437	0.000	29.437	-3.122	0.000
98.92	-21.504	-23.940	0.000	0.000	0.000	-1282.4	-32.057	0.000	32.057	-3.265	0.000
100.00	-21.452	-23.664	0.000	0.000	0.000	-1259.1	-32.803	0.000	32.803	-3.305	0.000
105.00	-21.054	-22.547	0.000	0.000	0.000	-1151.9	-36.372	0.000	36.372	-3.509	0.000
110.00	-20.654	-21.454	0.000	0.000	0.000	-1046.6	-40.153	0.000	40.153	-3.709	0.000
115.00	-20.250	-20.386	0.000	0.000	0.000	-943.38	-44.141	0.000	44.141	-3.906	0.000
120.00	-19.845	-19.343	0.000	0.000	0.000	-842.13	-48.332	0.000	48.332	-4.097	0.000
125.00	-19.421	-18.344	0.000	0.000	0.000	-742.91	-52.719	0.000	52.719	-4.281	0.000
127.08	-19.258	-17.922	0.000	0.000	0.000	-702.58	-54.597	0.000	54.597	-4.357	0.000
130.00	-18.996	-17.103	0.000	0.000	0.000	-646.28	-57.295	0.000	57.295	-4.461	0.000
132.33	-18.792	-16.456	0.000	0.000	0.000	-602.08	-59.488	0.000	59.488	-4.541	0.000
135.00	-18.597	-16.008	0.000	0.000	0.000	-551.85	-62.054	0.000	62.054	-4.630	0.000
140.00	-18.209	-15.213	0.000	0.000	0.000	-458.86	-67.013	0.000	67.013	-4.839	0.000
145.00	-17.819	-14.444	0.000	0.000	0.000	-367.82	-72.179	0.000	72.179	-5.026	0.000
150.00	-17.426	-13.700	0.000	0.000	0.000	-278.73	-77.527	0.000	77.527	-5.187	0.000
155.00	-17.030	-12.983	0.000	0.000	0.000	-191.60	-83.027	0.000	83.027	-5.317	0.000
160.00	-9.342	-7.829	0.000	0.000	0.000	-106.45	-88.642	0.000	88.642	-5.407	0.000
165.00	-8.953	-7.272	0.000	0.000	0.000	-59.743	-94.329	0.000	94.329	-5.463	0.000
167.00	-4.307	-3.918	0.000	0.000	0.000	-41.838	-96.619	0.000	96.619	-5.479	0.000
170.00	-4.083	-3.633	0.000	0.000	0.000	-28.916	-100.06	0.000	100.062	-5.495	0.000
175.00	-3.715	-3.172	0.000	0.000	0.000	-8.501	-105.81	0.000	105.818	-5.511	0.000
177.00	-0.280	-0.266	0.000	0.000	0.000	-1.070	-108.12	0.000	108.124	-5.513	0.000
180.00	-0.253	0.000	0.000	0.000	0.000	-0.232	0.000	0.000	111.583	-5.513	0.000

Resulting Stresses

Structure: CT02652-S-SBA

Code: EIA/TIA-222-F

12/8/2014



Site Name: Colchester 3 CT

Exposure: C

Height: 180.00 (ft)

Gh: 1.69

Page: 16

Base Elev: 0.000 (ft)

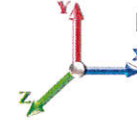
Struct Class: II

Load Case: 73.61 mph Wind with 0.5" Ice

Iterations: 25

Dead Load Factor 1.00

Wind Load Factor 1.00



Applied Stresses

Elev (ft)	fa Axial (Y) (ksi)	fvx Shear (X) (ksi)	fvz Shear (Z) (ksi)	fvt Torsion (ksi)	fbx Bending (X) (ksi)	fbz Bending (Z) (ksi)	fb Combined (ksi)	Allow Stress (ksi)	f/Fb Stress Ratio
0.00	0.69	0.69	0.00	0.00	0.00	37.33	38.04	52.0	0.732
5.00	0.68	0.70	0.00	0.00	0.00	37.20	37.90	52.0	0.729
10.00	0.67	0.70	0.00	0.00	0.00	37.06	37.75	52.0	0.726
15.00	0.66	0.71	0.00	0.00	0.00	36.90	37.58	52.0	0.723
20.00	0.65	0.71	0.00	0.00	0.00	36.72	37.39	52.0	0.719
25.00	0.64	0.72	0.00	0.00	0.00	36.52	37.17	52.0	0.715
30.00	0.62	0.72	0.00	0.00	0.00	36.29	36.93	52.0	0.710
35.00	0.61	0.73	0.00	0.00	0.00	36.03	36.67	52.0	0.705
40.00	0.60	0.73	0.00	0.00	0.00	35.74	36.37	52.0	0.699
45.00	0.59	0.74	0.00	0.00	0.00	35.43	36.04	52.0	0.693
45.92	0.59	0.74	0.00	0.00	0.00	35.37	35.98	52.0	0.692
50.00	0.57	0.74	0.00	0.00	0.00	35.08	35.67	52.0	0.686
53.00	0.63	0.86	0.00	0.00	0.00	39.33	39.99	52.0	0.769
55.00	0.63	0.86	0.00	0.00	0.00	39.14	39.80	52.0	0.765
60.00	0.61	0.86	0.00	0.00	0.00	38.64	39.28	52.0	0.755
65.00	0.60	0.87	0.00	0.00	0.00	38.08	38.71	52.0	0.744
70.00	0.59	0.88	0.00	0.00	0.00	37.47	38.09	52.0	0.732
75.00	0.58	0.88	0.00	0.00	0.00	36.80	37.40	52.0	0.719
80.00	0.56	0.89	0.00	0.00	0.00	36.06	36.66	52.0	0.705
85.00	0.55	0.89	0.00	0.00	0.00	35.26	35.84	52.0	0.689
90.00	0.54	0.90	0.00	0.00	0.00	34.37	34.95	52.0	0.672
92.92	0.53	0.90	0.00	0.00	0.00	33.82	34.39	52.0	0.661
95.00	0.52	0.90	0.00	0.00	0.00	33.41	33.97	52.0	0.653
98.92	0.59	1.07	0.00	0.00	0.00	37.68	38.32	52.0	0.737
100.00	0.58	1.07	0.00	0.00	0.00	37.41	38.04	52.0	0.731
105.00	0.57	1.08	0.00	0.00	0.00	36.02	36.64	52.0	0.705
110.00	0.56	1.09	0.00	0.00	0.00	34.51	35.11	52.0	0.675
115.00	0.54	1.09	0.00	0.00	0.00	32.83	33.43	52.0	0.643
120.00	0.53	1.10	0.00	0.00	0.00	30.99	31.58	52.0	0.607
125.00	0.52	1.11	0.00	0.00	0.00	28.95	29.53	52.0	0.568
127.08	0.51	1.11	0.00	0.00	0.00	28.05	28.63	52.0	0.551
130.00	0.50	1.12	0.00	0.00	0.00	26.71	27.28	52.0	0.525
132.33	0.68	1.58	0.00	0.00	0.00	35.36	36.14	52.0	0.695
135.00	0.68	1.59	0.00	0.00	0.00	33.47	34.25	49.8	0.687
140.00	0.66	1.60	0.00	0.00	0.00	29.60	30.38	50.6	0.600
145.00	0.65	1.62	0.00	0.00	0.00	25.28	26.08	51.4	0.508
150.00	0.64	1.64	0.00	0.00	0.00	20.46	21.28	52.0	0.409
155.00	0.62	1.65	0.00	0.00	0.00	15.05	15.93	52.0	0.306
160.00	0.39	0.94	0.00	0.00	0.00	8.97	9.50	52.0	0.183
165.00	0.37	0.93	0.00	0.00	0.00	5.41	6.01	52.0	0.116
167.00	0.20	0.46	0.00	0.00	0.00	3.91	4.19	52.0	0.081
170.00	0.19	0.44	0.00	0.00	0.00	2.83	3.12	52.0	0.060
175.00	0.18	0.42	0.00	0.00	0.00	0.90	1.30	52.0	0.025
177.00	0.02	0.03	0.00	0.00	0.00	0.12	0.14	52.0	0.003
180.00	0.00	0.03	0.00	0.00	0.00	0.03	0.06	52.0	0.001

Wind Loading - Shaft

Structure: CT02652-S-SBA
Site Name: Colchester 3 CT
Height: 180.00 (ft)
Base Elev: 0.000 (ft)

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

12/8/2014
 Page: 17



Load Case: 50 mph Wind with 0" Ice

Dead Load Factor 1.00
Wind Load Factor 1.00



Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		0.00	1.00	6.400	10.82	250.00	0.720	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		0.00	1.00	6.400	10.82	245.73	0.720	0.000	5.00	24.786	17.85	193.0	0.0	1403.7
10.00		0.00	1.00	6.400	10.82	241.46	0.720	0.000	5.00	24.359	17.54	189.7	0.0	1379.4
15.00		0.00	1.00	6.400	10.82	237.19	0.720	0.000	5.00	23.932	17.23	186.4	0.0	1355.0
20.00		0.00	1.00	6.400	10.82	232.91	0.720	0.000	5.00	23.505	16.92	183.0	0.0	1330.6
25.00		0.00	1.00	6.400	10.82	228.64	0.720	0.000	5.00	23.078	16.62	179.7	0.0	1306.3
30.00		0.00	1.00	6.400	10.82	224.37	0.720	0.000	5.00	22.651	16.31	176.4	0.0	1281.9
35.00		0.00	1.02	6.509	11.00	221.96	0.720	0.000	5.00	22.224	16.00	176.0	0.0	1257.5
40.00		0.00	1.06	6.762	11.43	221.84	0.720	0.000	5.00	21.797	15.69	179.3	0.0	1233.1
45.00		0.00	1.09	6.993	11.82	221.14	0.720	0.000	5.00	21.369	15.39	181.8	0.0	1208.8
45.92	Bot - Section 2	0.00	1.10	7.033	11.89	220.96	0.720	0.000	0.92	3.871	2.79	33.1	0.0	219.0
50.00		0.00	1.13	7.207	12.18	219.96	0.720	0.000	4.08	17.326	12.47	151.9	0.0	1805.5
53.00	Top - Section 1	0.00	1.14	7.328	12.38	219.06	0.720	0.000	3.00	12.548	9.03	111.9	0.0	1307.3
55.00		0.00	1.16	7.406	12.52	221.75	0.720	0.000	2.00	8.280	5.96	74.6	0.0	401.4
60.00		0.00	1.19	7.592	12.83	219.87	0.720	0.000	5.00	20.401	14.69	188.5	0.0	988.9
65.00		0.00	1.21	7.768	13.13	217.69	0.720	0.000	5.00	19.973	14.38	188.8	0.0	968.0
70.00		0.00	1.24	7.934	13.41	215.25	0.720	0.000	5.00	19.546	14.07	188.7	0.0	947.1
75.00		0.00	1.26	8.092	13.68	212.58	0.720	0.000	5.00	19.119	13.77	188.3	0.0	926.3
80.00		0.00	1.29	8.242	13.93	209.70	0.720	0.000	5.00	18.692	13.46	187.5	0.0	905.4
85.00		0.00	1.31	8.387	14.17	206.64	0.720	0.000	5.00	18.265	13.15	186.4	0.0	884.5
90.00		0.00	1.33	8.525	14.41	203.40	0.720	0.000	5.00	17.838	12.84	185.0	0.0	863.7
92.92	Bot - Section 3	0.00	1.34	8.603	14.54	201.44	0.720	0.000	2.92	10.208	7.35	106.9	0.0	494.2
95.00		0.00	1.35	8.657	14.63	200.01	0.720	0.000	2.08	7.311	5.26	77.0	0.0	644.5
98.92	Top - Section 2	0.00	1.37	8.758	14.80	197.26	0.720	0.000	3.92	13.544	9.75	144.3	0.0	1193.7
100.00		0.00	1.37	8.785	14.85	199.53	0.720	0.000	1.08	3.700	2.66	39.6	0.0	149.7
105.00		0.00	1.39	8.908	15.06	195.89	0.720	0.000	5.00	16.817	12.11	182.3	0.0	680.3
110.00		0.00	1.41	9.028	15.26	192.12	0.720	0.000	5.00	16.390	11.80	180.0	0.0	662.9
115.00		0.00	1.43	9.143	15.45	188.24	0.720	0.000	5.00	15.963	11.49	177.6	0.0	645.5
120.00		0.00	1.45	9.255	15.64	184.25	0.720	0.000	5.00	15.536	11.19	175.0	0.0	628.1
125.00		0.00	1.46	9.363	15.82	180.17	0.720	0.000	5.00	15.109	10.88	172.1	0.0	610.7
127.08	Bot - Section 4	0.00	1.47	9.408	15.90	178.44	0.720	0.000	2.08	6.150	4.43	70.4	0.0	248.5
130.00		0.00	1.48	9.469	16.00	175.98	0.720	0.000	2.92	8.639	6.22	99.5	0.0	589.7
132.33	Top - Section 3	0.00	1.49	9.517	16.08	174.00	0.720	0.000	2.33	6.771	4.88	78.4	0.0	462.1
135.00		0.00	1.50	9.572	16.18	173.94	0.720	0.000	2.67	7.666	5.52	89.3	0.0	217.3
140.00		0.00	1.51	9.672	16.35	169.60	0.720	0.000	5.00	14.010	10.09	164.9	0.0	397.0
145.00		0.00	1.53	9.769	16.51	165.17	0.720	0.000	5.00	13.583	9.78	161.5	0.0	384.9
150.00		0.00	1.54	9.864	16.67	160.67	0.720	0.000	5.00	13.156	9.47	157.9	0.0	372.7
155.00		0.00	1.56	9.957	16.83	156.10	0.720	0.000	5.00	12.728	9.16	154.2	0.0	360.5
160.00	Appurtenance(s)	0.00	1.57	10.048	16.98	151.46	0.720	0.000	5.00	12.301	8.86	150.4	0.0	348.3
165.00		0.00	1.58	10.136	17.13	146.75	0.720	0.000	5.00	11.874	8.55	146.5	0.0	336.1
167.00	Appurtenance(s)	0.00	1.59	10.171	17.19	144.85	0.720	0.000	2.00	4.630	3.33	57.3	0.0	131.0
170.00		0.00	1.60	10.223	17.28	141.98	0.720	0.000	3.00	6.817	4.91	84.8	0.0	192.9
175.00		0.00	1.61	10.308	17.42	137.15	0.720	0.000	5.00	11.020	7.93	138.2	0.0	311.8
177.00	Appurtenance(s)	0.00	1.62	10.342	17.48	135.20	0.720	0.000	2.00	4.288	3.09	54.0	0.0	121.3
180.00	Appurtenance(s)	0.00	1.62	10.392	17.56	132.26	0.720	0.000	3.00	6.304	4.54	79.7	0.0	178.3
Totals:									180.00			6,271.8		32,335.3

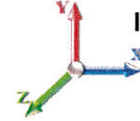
Discrete Appurtenance Forces

Structure: CT02652-S-SB **Code:** EIA/TIA-222-F 12/8/2014
Site Name: Colchester 3 CT **Exposure:** C
Height: 180.00 (ft) **Gh:** 1.69
Base Elev: 0.000 (ft) **Struct Class:** II Page: 18



Load Case: 50 mph Wind with 0" Ice

Dead Load Factor 1.00
Wind Load Factor 1.00



Iterations: 24

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	CaAa Factor	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)
1	160.00	7770.00	3	9.994	16.889	0.75	13.23	105.00	0.000	-3.000	223.44	0.00	-670.33
2	160.00	CCI HPA-65R-BUU-H8	6	10.048	16.981	0.79	63.04	408.00	0.000	0.000	1070.49	0.00	0.00
3	160.00	CCI OPA-65R-LCUU-H8	3	10.048	16.981	0.79	30.76	285.00	0.000	0.000	522.37	0.00	0.00
4	160.00	DC6-48-60-18-8F	2	10.048	16.981	0.84	2.47	63.60	0.000	0.000	41.94	0.00	0.00
5	160.00	Ericsson RRUS 32	3	10.048	16.981	0.70	4.05	231.00	0.000	0.000	68.82	0.00	0.00
6	160.00	Ericsson RRUS A2 Module	3	10.048	16.981	0.67	3.74	63.60	0.000	0.000	63.48	0.00	0.00
7	160.00	Ericsson RRUS-11	3	10.048	16.981	0.68	9.02	165.00	0.000	0.000	153.11	0.00	0.00
8	160.00	Ericsson RRUS-12 w/ Shield	3	10.048	16.981	0.75	7.09	180.00	0.000	0.000	120.35	0.00	0.00
9	160.00	Ericsson RRUS-E2	3	10.048	16.981	0.78	5.22	152.10	0.000	0.000	88.61	0.00	0.00
10	160.00	LGP21401 TMAs	6	10.048	16.981	0.67	5.19	84.60	0.000	0.000	88.06	0.00	0.00
11	160.00	LGP21901 Diplexers	6	10.048	16.981	0.75	1.48	33.00	0.000	0.000	25.22	0.00	0.00
12	160.00	Low Profile Platform	1	10.048	16.981	1.00	30.00	2000.00	0.000	0.000	509.42	0.00	0.00
13	160.00	Powerwave 7020.00 RET	3	10.048	16.981	0.67	0.80	6.60	0.000	0.000	13.65	0.00	0.00
14	167.00	BXA-171063-12CF	6	10.171	17.190	0.84	24.14	90.00	0.000	0.000	414.99	0.00	0.00
15	167.00	BXA-70063-6CF	6	10.171	17.190	0.76	35.25	102.00	0.000	0.000	605.92	0.00	0.00
16	167.00	DB-T1-6Z-8AB-0Z	1	10.171	17.190	1.00	4.78	21.40	0.000	0.000	82.17	0.00	0.00
17	167.00	Low Profile Platform	1	10.171	17.190	1.00	30.00	2000.00	0.000	0.000	515.69	0.00	0.00
18	167.00	RRH2x40-07-U	3	10.171	17.190	0.78	5.22	152.10	0.000	0.000	89.70	0.00	0.00
19	167.00	RRH2x40-AWS	3	10.171	17.190	0.82	6.20	132.00	0.000	0.000	106.56	0.00	0.00
20	177.00	EMS RR90-17-02DP	12	10.342	17.478	0.75	39.24	162.00	0.000	0.000	685.82	0.00	0.00
21	177.00	Low Profile Platform	1	10.342	17.478	1.00	30.00	2000.00	0.000	0.000	524.33	0.00	0.00
22	177.00	TMAs (24"x13"x7" RRU)	3	10.342	17.478	0.78	7.09	180.00	0.000	0.000	123.92	0.00	0.00
23	180.00	Lightning Rod	1	10.449	17.659	1.00	1.05	35.00	0.000	3.500	18.54	0.00	64.90
Totals:								8,652.00			6,156.60		

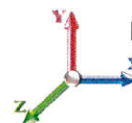
Total Applied Force Summary

Structure: CT02652-S-SB **Code:** EIA/TIA-222-F 12/8/2014
Site Name: Colchester 3 CT **Exposure:** C
Height: 180.00 (ft) **Gh:** 1.69
Base Elev: 0.000 (ft) **Struct Class:** II Page: 19



Load Case: 50 mph Wind with 0" Ice

Dead Load Factor 1.00
Wind Load Factor 1.00



Iterations: 24

Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00		0.00	0.00	0.00	0.00
5.00		193.02	1665.03	0.00	0.00
10.00		189.70	1640.66	0.00	0.00
15.00		186.37	1616.29	0.00	0.00
20.00		183.05	1591.92	0.00	0.00
25.00		179.72	1567.56	0.00	0.00
30.00		176.39	1543.19	0.00	0.00
35.00		176.00	1518.82	0.00	0.00
40.00		179.33	1494.45	0.00	0.00
45.00		181.83	1470.08	0.00	0.00
45.92		33.13	266.87	0.00	0.00
50.00		151.94	2018.93	0.00	0.00
53.00		111.88	1464.07	0.00	0.00
55.00		74.61	505.91	0.00	0.00
60.00		188.46	1250.17	0.00	0.00
65.00		188.78	1229.30	0.00	0.00
70.00		188.70	1208.44	0.00	0.00
75.00		188.25	1187.58	0.00	0.00
80.00		187.47	1166.71	0.00	0.00
85.00		186.39	1145.85	0.00	0.00
90.00		185.03	1124.99	0.00	0.00
92.92		106.86	646.61	0.00	0.00
95.00		77.02	753.38	0.00	0.00
98.92		144.33	1398.37	0.00	0.00
100.00		39.55	206.32	0.00	0.00
105.00		182.29	941.63	0.00	0.00
110.00		180.04	924.22	0.00	0.00
115.00		177.59	906.80	0.00	0.00
120.00		174.95	889.39	0.00	0.00
125.00		172.14	871.98	0.00	0.00
127.08		70.40	357.04	0.00	0.00
130.00		99.53	742.43	0.00	0.00
132.33		78.41	583.66	0.00	0.00
135.00		89.28	357.00	0.00	0.00
140.00		164.87	658.35	0.00	0.00
145.00		161.46	646.16	0.00	0.00
150.00		157.90	633.98	0.00	0.00
155.00		154.21	621.79	0.00	0.00
160.00	(45) appurtenances	3139.36	4387.11	0.00	-670.33
165.00		146.46	495.42	0.00	0.00
167.00	(20) appurtenances	1872.32	2692.26	0.00	0.00
170.00		84.80	251.04	0.00	0.00
175.00		138.22	408.66	0.00	0.00
177.00	(16) appurtenances	1388.04	2502.05	0.00	0.00
180.00	(1) appurtenances	98.26	233.98	0.00	64.90
	Totals:	12,428.37	49,786.46	0.00	-605.43

Resulting Forces and Deflections

Structure: CT02652-S-SB
Site Name: Colchester 3 CT
Height: 180.00 (ft)
Base Elev: 0.000 (ft)

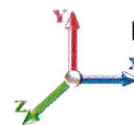
Code: EIA/TIA-222-F
Exposure: C
Gh: 1.69
Struct Class: II

12/8/2014
 Page: 20



Load Case: 50 mph Wind with 0" Ice

Dead Load Factor 1.00
Wind Load Factor 1.00



Iterations: 24

Elev (ft)	Lateral FX (-) (kips)	Axial FY (-) (kips)	Lateral FZ (kips)	Moment MX (ft-kips)	Torsion MY (ft-kips)	Moment MZ (ft-kips)	Deflect X (in)	Deflect Z (in)	Deflect Resultant (in)	Rotation Sway (deg)	Rotation Twist (deg)
0.00	-12.454	-49.780	0.000	0.000	0.000	-1642.1	0.000	0.000	0.000	0.000	0.000
5.00	-12.312	-48.101	0.000	0.000	0.000	-1579.8	-0.033	0.000	0.033	-0.061	0.000
10.00	-12.171	-46.448	0.000	0.000	0.000	-1518.2	-0.131	0.000	0.131	-0.124	0.000
15.00	-12.030	-44.819	0.000	0.000	0.000	-1457.4	-0.294	0.000	0.294	-0.187	0.000
20.00	-11.889	-43.214	0.000	0.000	0.000	-1397.2	-0.524	0.000	0.524	-0.251	0.000
25.00	-11.749	-41.634	0.000	0.000	0.000	-1337.8	-0.821	0.000	0.821	-0.315	0.000
30.00	-11.609	-40.079	0.000	0.000	0.000	-1279.1	-1.186	0.000	1.186	-0.381	0.000
35.00	-11.467	-38.548	0.000	0.000	0.000	-1221.0	-1.620	0.000	1.620	-0.447	0.000
40.00	-11.318	-37.042	0.000	0.000	0.000	-1163.7	-2.124	0.000	2.124	-0.513	0.000
45.00	-11.147	-35.566	0.000	0.000	0.000	-1107.1	-2.698	0.000	2.698	-0.581	0.000
45.92	-11.133	-35.293	0.000	0.000	0.000	-1096.9	-2.811	0.000	2.811	-0.594	0.000
50.00	-10.987	-33.266	0.000	0.000	0.000	-1051.4	-3.343	0.000	3.343	-0.650	0.000
53.00	-10.877	-31.797	0.000	0.000	0.000	-1018.5	-3.765	0.000	3.765	-0.692	0.000
55.00	-10.825	-31.282	0.000	0.000	0.000	-996.75	-4.061	0.000	4.061	-0.720	0.000
60.00	-10.661	-30.020	0.000	0.000	0.000	-942.62	-4.856	0.000	4.856	-0.797	0.000
65.00	-10.493	-28.779	0.000	0.000	0.000	-889.32	-5.732	0.000	5.732	-0.874	0.000
70.00	-10.323	-27.560	0.000	0.000	0.000	-836.85	-6.690	0.000	6.690	-0.952	0.000
75.00	-10.150	-26.362	0.000	0.000	0.000	-785.24	-7.729	0.000	7.729	-1.031	0.000
80.00	-9.976	-25.185	0.000	0.000	0.000	-734.49	-8.851	0.000	8.851	-1.109	0.000
85.00	-9.799	-24.030	0.000	0.000	0.000	-684.61	-10.055	0.000	10.055	-1.188	0.000
90.00	-9.615	-22.899	0.000	0.000	0.000	-635.61	-11.341	0.000	11.341	-1.266	0.000
92.92	-9.509	-22.248	0.000	0.000	0.000	-607.57	-12.129	0.000	12.129	-1.313	0.000
95.00	-9.433	-21.489	0.000	0.000	0.000	-587.76	-12.709	0.000	12.709	-1.346	0.000
98.92	-9.268	-20.088	0.000	0.000	0.000	-550.82	-13.839	0.000	13.839	-1.407	0.000
100.00	-9.242	-19.874	0.000	0.000	0.000	-540.78	-14.161	0.000	14.161	-1.424	0.000
105.00	-9.064	-18.924	0.000	0.000	0.000	-494.57	-15.699	0.000	15.699	-1.512	0.000
110.00	-8.886	-17.992	0.000	0.000	0.000	-449.25	-17.329	0.000	17.329	-1.598	0.000
115.00	-8.708	-17.078	0.000	0.000	0.000	-404.82	-19.048	0.000	19.048	-1.682	0.000
120.00	-8.529	-16.182	0.000	0.000	0.000	-361.28	-20.854	0.000	20.854	-1.764	0.000
125.00	-8.344	-15.308	0.000	0.000	0.000	-318.64	-22.745	0.000	22.745	-1.843	0.000
127.08	-8.272	-14.948	0.000	0.000	0.000	-301.31	-23.554	0.000	23.554	-1.876	0.000
130.00	-8.158	-14.204	0.000	0.000	0.000	-277.13	-24.717	0.000	24.717	-1.921	0.000
132.33	-8.069	-13.618	0.000	0.000	0.000	-258.15	-25.661	0.000	25.661	-1.955	0.000
135.00	-7.982	-13.255	0.000	0.000	0.000	-236.58	-26.767	0.000	26.767	-1.993	0.000
140.00	-7.813	-12.591	0.000	0.000	0.000	-196.67	-28.904	0.000	28.904	-2.083	0.000
145.00	-7.643	-11.942	0.000	0.000	0.000	-157.60	-31.129	0.000	31.129	-2.163	0.000
150.00	-7.473	-11.306	0.000	0.000	0.000	-119.39	-33.432	0.000	33.432	-2.232	0.000
155.00	-7.303	-10.685	0.000	0.000	0.000	-82.029	-35.801	0.000	35.801	-2.287	0.000
160.00	-3.993	-6.426	0.000	0.000	0.000	-45.513	-38.219	0.000	38.219	-2.326	0.000
165.00	-3.828	-5.936	0.000	0.000	0.000	-25.547	-40.669	0.000	40.669	-2.350	0.000
167.00	-1.847	-3.322	0.000	0.000	0.000	-17.890	-41.655	0.000	41.655	-2.356	0.000
170.00	-1.753	-3.075	0.000	0.000	0.000	-12.348	-43.138	0.000	43.138	-2.364	0.000
175.00	-1.598	-2.672	0.000	0.000	0.000	-3.584	-45.617	0.000	45.617	-2.370	0.000
177.00	-0.108	-0.230	0.000	0.000	0.000	-0.388	-46.610	0.000	46.610	-2.371	0.000
180.00	-0.098	0.000	0.000	0.000	0.000	-0.065	0.000	0.000	48.099	-2.371	0.000

Resulting Stresses

Structure: CT02652-S-SBA
Site Name: Colchester 3 CT
Height: 180.00 (ft)
Base Elev: 0.000 (ft)

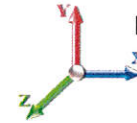
Code: EIA/TIA-222-F
Exposure: C
Gh: 1.69
Struct Class: II

12/8/2014
 Page: 21



Load Case: 50 mph Wind with 0" Ice

Dead Load Factor 1.00
Wind Load Factor 1.00



Iterations: 24

Applied Stresses

Elev (ft)	fa Axial (Y) (ksi)	fvx Shear (X) (ksi)	fvz Shear (Z) (ksi)	fvt Torsion (ksi)	fbx Bending (X) (ksi)	fbz Bending (Z) (ksi)	fb Combined (ksi)	Allow Stress (ksi)	f/Fb Stress Ratio
0.00	0.60	0.30	0.00	0.00	0.00	16.16	16.77	52.0	0.322
5.00	0.59	0.30	0.00	0.00	0.00	16.10	16.70	52.0	0.321
10.00	0.58	0.31	0.00	0.00	0.00	16.03	16.62	52.0	0.320
15.00	0.57	0.31	0.00	0.00	0.00	15.95	16.53	52.0	0.318
20.00	0.56	0.31	0.00	0.00	0.00	15.87	16.43	52.0	0.316
25.00	0.55	0.31	0.00	0.00	0.00	15.77	16.33	52.0	0.314
30.00	0.54	0.31	0.00	0.00	0.00	15.67	16.21	52.0	0.312
35.00	0.53	0.32	0.00	0.00	0.00	15.55	16.09	52.0	0.309
40.00	0.52	0.32	0.00	0.00	0.00	15.42	15.95	52.0	0.307
45.00	0.51	0.32	0.00	0.00	0.00	15.28	15.79	52.0	0.304
45.92	0.50	0.32	0.00	0.00	0.00	15.25	15.76	52.0	0.303
50.00	0.48	0.32	0.00	0.00	0.00	15.12	15.61	52.0	0.300
53.00	0.54	0.37	0.00	0.00	0.00	16.95	17.50	52.0	0.336
55.00	0.53	0.37	0.00	0.00	0.00	16.87	17.41	52.0	0.335
60.00	0.52	0.37	0.00	0.00	0.00	16.64	17.17	52.0	0.330
65.00	0.51	0.38	0.00	0.00	0.00	16.39	16.92	52.0	0.325
70.00	0.50	0.38	0.00	0.00	0.00	16.12	16.64	52.0	0.320
75.00	0.49	0.38	0.00	0.00	0.00	15.83	16.33	52.0	0.314
80.00	0.48	0.38	0.00	0.00	0.00	15.51	16.00	52.0	0.308
85.00	0.47	0.39	0.00	0.00	0.00	15.16	15.64	52.0	0.301
90.00	0.46	0.39	0.00	0.00	0.00	14.77	15.24	52.0	0.293
92.92	0.45	0.39	0.00	0.00	0.00	14.53	15.00	52.0	0.288
95.00	0.44	0.39	0.00	0.00	0.00	14.36	14.81	52.0	0.285
98.92	0.49	0.46	0.00	0.00	0.00	16.18	16.70	52.0	0.321
100.00	0.49	0.46	0.00	0.00	0.00	16.06	16.57	52.0	0.319
105.00	0.48	0.46	0.00	0.00	0.00	15.47	15.97	52.0	0.307
110.00	0.47	0.47	0.00	0.00	0.00	14.81	15.30	52.0	0.294
115.00	0.46	0.47	0.00	0.00	0.00	14.09	14.57	52.0	0.280
120.00	0.44	0.47	0.00	0.00	0.00	13.29	13.76	52.0	0.265
125.00	0.43	0.48	0.00	0.00	0.00	12.42	12.88	52.0	0.248
127.08	0.43	0.48	0.00	0.00	0.00	12.03	12.48	52.0	0.240
130.00	0.41	0.48	0.00	0.00	0.00	11.45	11.90	52.0	0.229
132.33	0.57	0.68	0.00	0.00	0.00	15.16	15.77	52.0	0.303
135.00	0.56	0.68	0.00	0.00	0.00	14.35	14.95	49.8	0.300
140.00	0.55	0.69	0.00	0.00	0.00	12.68	13.29	50.6	0.263
145.00	0.54	0.69	0.00	0.00	0.00	10.83	11.43	51.4	0.223
150.00	0.52	0.70	0.00	0.00	0.00	8.76	9.37	52.0	0.180
155.00	0.51	0.71	0.00	0.00	0.00	6.44	7.06	52.0	0.136
160.00	0.32	0.40	0.00	0.00	0.00	3.83	4.21	52.0	0.081
165.00	0.31	0.40	0.00	0.00	0.00	2.31	2.71	52.0	0.052
167.00	0.17	0.20	0.00	0.00	0.00	1.67	1.87	52.0	0.036
170.00	0.16	0.19	0.00	0.00	0.00	1.21	1.41	52.0	0.027
175.00	0.15	0.18	0.00	0.00	0.00	0.38	0.61	52.0	0.012
177.00	0.01	0.01	0.00	0.00	0.00	0.04	0.06	52.0	0.001
180.00	0.00	0.01	0.00	0.00	0.00	0.01	0.02	52.0	0.000

Final Analysis Summary

Structure: CT02652-S-SBA
Site Name: Colchester 3 CT
Height: 180.00 (ft)
Base Elev: 0.000 (ft)

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

12/8/2014
 Page: 22



Reactions

Load Case	Shear FX (kips)	Shear FZ (kips)	Axial FY (kips)	Moment MX (ft-kips)	Moment MY (ft-kips)	t MZ (ft-kips)
85 mph Wind with 0" Ice	36.0	0.00	49.73	0.00	0.00	4737.24
73.61 mph Wind with 0.5" Ice	28.4	0.00	57.72	0.00	0.00	3792.94
50 mph Wind with 0" Ice	12.5	0.00	49.78	0.00	0.00	1642.12

Max Stresses

Load Case	fa Axial (Y) (ksi)	fvx Shear (X) (ksi)	fvz Shear (Z) (ksi)	fvT Torsion (ksi)	fbx Bending (X) (ksi)	fbz Bending (Z) (ksi)	Combined Stress (ksi)	Allowable Stress (ksi)	Elev (ft)	Stress Ratio
85 mph Wind with 0" Ice	0.52	1.07	0.00	0.00	0.00	48.84	49.40	52.0	53.00	0.950
73.61 mph Wind with 0.5" Ice	0.63	0.86	0.00	0.00	0.00	39.33	39.99	52.0	53.00	0.769
50 mph Wind with 0" Ice	0.54	0.37	0.00	0.00	0.00	16.95	17.50	52.0	53.00	0.336

Base Plate Summary

Structure: CT02652-S-SB
Site Name: Colchester 3 CT
Height: 180.00 (ft)
Base Elev: 0.000 (ft)

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

12/8/2014

 Page: 23



Reactions		Base Plate		Anchor Bolts	
Original Design		Yield (ksi):	60.00	Bolt Circle:	68.62
Moment (kip-ft):	5045.00	Width (in):	74.62	Number Bolts:	20.00
Axial (kip):	56.10	Style:	Polygon	Bolt Type:	2.25" 18J
Shear (kip):	39.50	Polygon Sides:	16.00	Bolt Diameter (in):	2.25
Analysis		Clip Length (in):	14.84	Yield (ksi):	75.00
Moment (kip-ft):	4737.24	Effective Len (in):	13.35	Ultimate (ksi):	100.00
Axial (kip):	57.72	Moment (kip-in):	726.54	Arrangement:	Radial
Shear (kip):	36.00	Allow Stress (ksi):	60.00	Cluster Dist (in):	0.00
		Applied Stress (ksi):	43.17	Start Angle (deg):	0.00
Moment Design %:	93.90	Stress Ratio:	0.72	Compression	
				Force (kip):	168.57
				Allowable (kip):	195.00
				Ratio:	0.86
				Tension	
				Force (kip):	162.80
				Allowable (kip):	195.00
				Ratio:	0.83