



January 8, 2018

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

Re: Notice of Exempt Modification – Antenna Swap Property
Address: 89 Wewaka Brook Road, Bridgewater, CT 06752
Applicant: AT&T Mobility, LLC

Dear Ms. Bachman:

On behalf of AT&T, 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).

AT&T currently maintains a wireless telecommunications facility consisting of nine (9) wireless telecommunication antennas at an antenna centerline height of 166-feet on an existing 167-foot monopole, owned by SBA Communications Corporation at 8051 Congress Ave, Boca Raton, FL 33481. AT&T now intends to replace (3) existing 8' Andrew Panel Antennas, with (3) new 7.7' CCI Panel Antenna, each swap will be occurring in position [3] all sectors for a total of three (3) antennas being swapped. AT&T also wishes to add (1) RRUS-11, and (1) RRUS-B14 4478 on position [3] all sectors, for a total of (3) RRU-32 B2's and (3) RRUS-B14 4478 at the 166-foot centerline.

Per the attached Certificate of Approval of Special Exception, issued by the Connecticut Siting Council, the construction of the above mentioned tower was approved by the Connecticut Siting Council on November 10th, 2010.

In addition, attached is a summary of the planned modifications including power density calculations reflecting the change in AT&T's operations at the site. Also included is documentation of the structural sufficiency of the tower to accommodate the revised antenna configuration.

Please accept this letter pursuant to Regulation of Connecticut State Agencies §16-50j-73, for construction that constitutes an exempt modification pursuant to R.C.S.A. § 16-50j-72(b) (2). In accordance with R.C.S.A., a copy of this letter is being sent to Dainius Virbickas, Zoning Enforcement Officer – Town of Bridgewater, Zoning Office, P.O. Box 216 Bridgewater, CT 06752 and Curtis Read – First Selectman, CT, Selectman's Office, P.O. Box 216 Bridgewater, CT 06752. A copy of this letter is also being sent to the property owner Edward R. Bennett & Cynthia S. Bennett, 89 Wewaka Brook Road Bridgewater, CT 06752, and to the tower company, SBA Communications Corporation, 8051 Congress Avenue Boca Raton, FL 33487.

The following is a list of subsequent decisions by the Connecticut Siting Council:

- **THERE ARE NO PREVIOUS FILINGS FOR THIS SITE**

The planned modifications to AT&T's facility fall squarely within those activities explicitly provided for in R.C.S.A. §16-50j-72(b) (2).

1. The proposed modifications will not result in an increase in the height of the existing tower. AT&T's replacement antennas will be installed at the 166-foot level of the 167-foot monopole.
2. The proposed modifications will not involve any changes to ground-mounted equipment and, therefore, will not require and 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 RF Emissions Compliance Report, included in Tab 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 Tab 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,

A handwritten signature in blue ink, appearing to read 'Haleluya Haile'.

Haleluya Haile

Enclosures

CC w/enclosures:

First Selectman – Curtis Read
Property Owner – Edward R. Bennett & Cynthia S. Bennett
Structure Owner – SBA Communications Corporation
Zoning Officer - Dainius Virbickas

DOCKET NO. 412 – SBA Towers III and New Cingular } Connecticut
Wireless PCS, LLC application for a Certificate of Environmental }
Compatibility and Public Need for the construction, maintenance } Siting
and management of a telecommunications facility located at }
Wewaka Brook Road, Bridgewater, Connecticut. } Council

January 5, 2012

Decision and Order

Pursuant to the foregoing Findings of Fact and Opinion, the Connecticut Siting Council (Council) finds that the effects associated with the construction, maintenance, and management of a telecommunications facility, including effects on the natural environment; ecological integrity and balance; public health and safety; scenic, historic, and recreational values; forests and parks; air and water purity; and fish and wildlife are not disproportionate, either alone or cumulatively with other effects, when compared to need, are not in conflict with the policies of the State concerning such effects, and are not sufficient reason to deny the application, and therefore directs that a Certificate of Environmental Compatibility and Public Need, as provided by General Statutes § 16-50k, be issued to SBA Towers III (SBA), hereinafter referred to as the Certificate Holder, for a telecommunications facility at the proposed site, located at Wewaka Brook Road, Bridgewater, Connecticut.

Unless otherwise approved by the Council, the facility shall be constructed, operated, and maintained substantially as specified in the Council's record in this matter, and subject to the following conditions:

1. The tower shall be constructed as a monopole, no taller than necessary to provide the proposed telecommunications services, sufficient to accommodate the antennas of New Cingular Wireless PCS, LLC (AT&T) and other entities, both public and private, but such tower shall not exceed a height of 170 feet above ground level. The height at the top of AT&T's antennas shall not exceed 170 feet above ground level.
2. The Certificate Holder shall prepare a Development and Management (D&M) Plan for this site in compliance with Sections 16-50j-75 through 16-50j-77 of the Regulations of Connecticut State Agencies. The D&M Plan shall be served on the Town of Bridgewater for comment, and all parties and intervenors as listed in the service list, and submitted to and approved by the Council prior to the commencement of facility construction and shall include:
 - a) a final site plan(s) of site development to include specifications for the tower, tower foundation, antennas, equipment compound, radio equipment, access road, utility line, and landscaping; and
 - b) construction plans for site clearing, grading, landscaping, water drainage, and erosion and sedimentation controls consistent with the 2002 Connecticut Guidelines for Soil Erosion and Sediment Control, as amended.
3. The Certificate Holder shall follow the protective measures for inland wetland resources specified on page 11 of the November 11, 2010 report by VHB, Inc. to the extent feasible:
 - a) An extensive erosion and sedimentation control plan should be developed in accordance with the 2002 Connecticut Guidelines for Soil Erosion and Sediment Control to properly protect these vernal pools and the wildlife with them, particularly amphibians. Silt fencing will act as an exclusion to amphibians from active construction areas and avoid amphibian mortality associated with construction equipment traffic.

- b) A thorough cover search of the construction area should be performed by a properly qualified professional for amphibians prior to and following the installation of silt fencing to remove amphibians from the work zone prior to the initiation of construction activities.
 - c) A properly qualified professional independent of the site contractor should monitor the installation and maintenance of erosion and sedimentation controls throughout the construction project and perform periodic sweeps for amphibians to ensure that nearby wetlands are protected and amphibians are not trapped within the construction zone of the project.
 - d) Construction of the wireless telecommunications facility should be seasonally restricted from occurring between March 1 and May 15 to avoid construction activities and potential disturbance during the peak amphibian migration and breeding period. Access drive construction activities located more than 750 feet from the vernal pools need not be seasonally restricted from this period, excepting in-stream work associated with the bridge replacement previously described.
 - e) Any ruts or artificial depressions that could hold water created unintentionally by site clearing/construction activities should be properly filled in and permanently stabilized with vegetation to avoid the creation of decoy pools that could intercept amphibians moving towards the vernal pools.
 - f) The use of herbicides and pesticides at the proposed wireless telecommunications facility and along the proposed access drive should be restricted.
4. Prior to the commencement of operation, the Certificate Holder shall provide the Council worst-case modeling of the electromagnetic radio frequency power density of all proposed entities' antennas at the closest point of uncontrolled access to the tower base, consistent with Federal Communications Commission, Office of Engineering and Technology, Bulletin No. 65, August 1997. The Certificate Holder shall ensure a recalculated report of the electromagnetic radio frequency power density be submitted to the Council if and when circumstances in operation cause a change in power density above the levels calculated and provided pursuant to this Decision and Order.
 5. Upon the establishment of any new State or federal radio frequency standards applicable to frequencies of this facility, the facility granted herein shall be brought into compliance with such standards.
 6. The Certificate Holder shall permit public or private entities to share space on the proposed tower for fair consideration, or shall provide any requesting entity with specific legal, technical, environmental, or economic reasons precluding such tower sharing.
 7. The Certificate Holder shall provide reasonable space on the tower for no compensation for any Town of Bridgewater public safety services (police, fire and medical services), provided such use can be accommodated and is compatible with the structural integrity of the tower.

8. Unless otherwise approved by the Council, if the facility authorized herein is not fully constructed with at least one fully operational wireless telecommunications carrier providing wireless service within eighteen months from the date of the mailing of the Council's Findings of Fact, Opinion, and Decision and Order (collectively called "Final Decision"), this Decision and Order shall be void, and the Certificate Holder shall dismantle the tower and remove all associated equipment or reapply for any continued or new use to the Council before any such use is made. The time between the filing and resolution of any appeals of the Council's Final Decision shall not be counted in calculating this deadline. Authority to monitor and modify this schedule, as necessary, is delegated to the Executive Director. The Certificate Holder shall provide written notice to the Executive Director of any schedule changes as soon as is practicable.
9. Any request for extension of the time period referred to in Condition 8 shall be filed with the Council not later than 60 days prior to the expiration date of this Certificate and shall be served on all parties and intervenors, as listed in the service list, and the Town of Bridgewater. Any proposed modifications to this Decision and Order shall likewise be so served.
10. If the facility ceases to provide wireless services for a period of one year, this Decision and Order shall be void, and the Certificate Holder shall dismantle the tower and remove all associated equipment or reapply for any continued or new use to the Council before any such use is made.
11. Any nonfunctioning antenna and associated antenna mounting equipment on this facility shall be removed within 60 days of the date the antenna ceased to function.
12. In accordance with Section 16-50j-77 of the Regulations of Connecticut State Agencies, the Certificate Holder shall provide the Council with written notice two weeks prior to the commencement of site construction activities. In addition, the Certificate Holder shall provide the Council with written notice of the completion of site construction, and the commencement of site operation.
13. The Certificate Holder shall remit timely payments associated with annual assessments and invoices submitted by the Council for expenses attributable to the facility under Conn. Gen. Stat. §16-50v.
14. This Certificate may be transferred in accordance with Conn. Gen. Stat. §16-50k(b), provided both the Certificate Holder/transferor and the transferee are current with payments to the Council for their respective annual assessments and invoices under Conn. Gen. Stat. §16-50v. In addition, both the Certificate Holder/transferor and the transferee shall provide the Council a written agreement as to the entity responsible for any quarterly assessment charges under Conn. Gen. Stat. §16-50v(b)(2) that may be associated with this facility.
15. The Certificate Holder shall maintain the facility and associated equipment, including but not limited to, the tower, tower foundation, antennas, equipment compound, radio equipment, access road, utility line and landscaping in a reasonable physical and operational condition that is consistent with this Decision and Order and a Development and Management Plan to be approved by the Council.
16. If the Certificate Holder is a wholly-owned subsidiary of a corporation or other entity and is sold/transferred to another corporation or other entity, the Council shall be notified of such sale and/or transfer and of any change in contact information for the individual or representative responsible for management and operations of the Certificate Holder within 30 days of the sale and/or transfer.

Pursuant to General Statutes § 16-50p, the Council hereby directs that a copy of the Findings of Fact, Opinion, and Decision and Order be served on each person listed below, and notice of issuance shall be published in the Housatonic Times, The Spectrum, and Danbury News Times.

By this Decision and Order, the Council disposes of the legal rights, duties, and privileges of each party named or admitted to the proceeding in accordance with Section 16-50j-17 of the Regulations of Connecticut State Agencies.

The parties and intervenors to this proceeding are:

Applicant

SBA Towers III and
New Cingular Wireless PCS, LLC

Its Representative

Daniel M. Laub, Esq.
Christopher B. Fisher, Esq.
Cuddy & Feder LLP
445 Hamilton Avenue, 14th floor
White Plains, NY 10601

Michele Briggs
AT&T
500 Enterprise Drive
Rocky Hill, CT 06067

Hollis Redding
SBA
One Research Drive, Suite 200C
Westborough, MA 01581

Intervenor

Town of Bridgewater

Its Representative

Keith R. Ainsworth, Esq.
Evans Feldman & Ainsworth, L.L.C.
#101240
261 Bradley Street
P.O. Box 1694
New Haven, CT 06507-1694

The Honorable William Stuart
First Selectman
Bridgewater Town Hall
44 Main Street South
P.O. Box 216
Bridgewater, CT 06752



BRIDGEWATER CT



- Search
- Street Listing
- Sales Search
- Feedback
- Back
- Home

89 WEWAKA BROOK RD

- [Sales](#)
- [Print](#)
- [Map It](#)

Location 89 WEWAKA BROOK RD

Mblu 15/ 2/ / /

Acct# 00006100

Owner BENNETT EDWARD R & CYNTHIA S

Assessment \$241,100

Appraisal \$344,400

PID 250

Building Count 1

Current Value

Appraisal			
Valuation Year	Improvements	Land	Total
2016	\$114,400	\$230,000	\$344,400

Assessment			
Valuation Year	Improvements	Land	Total
2016	\$80,100	\$161,000	\$241,100

Owner of Record

Owner BENNETT EDWARD R & CYNTHIA S
Co-Owner

Sale Price \$0
Certificate C
Book & Page 25/ 438

Sale Date

Ownership History

Ownership History				
Owner	Sale Price	Certificate	Book & Page	Sale Date
BENNETT EDWARD R & CYNTHIA S	\$0	C	25/ 438	

Building Information

Building 1 : Section 1

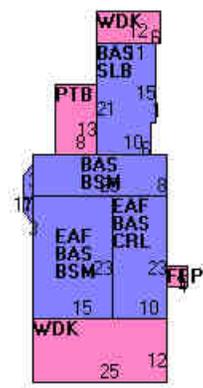
Year Built: 1700
Living Area: 1,248
Replacement Cost: \$120,555
Building Percent Good: 60
Replacement Cost Less Depreciation: \$72,300

Building Attributes	
Field	Description
Style	Cape Cod
Model	Residential
Grade:	C
Stories:	1 1/4 Stories
Occupancy	1
Exterior Wall 1	Wood Shingle
Exterior Wall 2	
Roof Structure:	Gable
Roof Cover	Asphalt Shingl
Interior Wall 1	Plastered
Interior Wall 2	
Interior Flr 1	Pine/Soft Wood
Interior Flr 2	
Heat Fuel	Oil
Heat Type:	Forced Air
AC Type:	None
Total Bedrooms:	2 Bedrooms
Total Full Bathrms	1 Full Bath
Total Half Baths:	0
Total Xtra Fixtrs:	0
Total Rooms:	5 Rooms
Bath Style:	Below Average
Kitchen Style:	Below Average
Fireplaces	1
Whirlpool Tubs	
Fin Basement	
Fin Bsmt Qual	
Bsmt. Garages	0

Building Photo



Building Layout



Building Sub-Areas (sq ft)			
Code	Description	Gross Area	Living Area
BAS	First Floor	1,018	1,018
EAF	Expansion Attic Finished	575	230
BSM	Basement Area	545	0
CRL	Crawl Space	230	0
FEP	Framed Enclosed Porch	16	0
PTB	Patio - Brick	104	0
SLB	Slab	225	0
WDK	Wood Deck	372	0
		3,085	1,248

Extra Features

Extra Features				
Code	Description	Size	Value	Bldg #
SOLP	Solar Panels	40 Units	\$0	1

Land

Land Use

Use Code	101
Description	Single Family ⓘ
Zone	RR4
Alt Land Appr Category	No

Land Line Valuation

Size (Acres)	4
Frontage	0
Depth	0
Assessed Value	\$161,000
Appraised Value	\$230,000

Outbuildings

Outbuildings						
Code	Description	Sub Code	Sub Description	Size	Value	Bldg #
GAR1	Garage	FR	Frame	432 S.F.	\$2,000	1
FIS	Farm Imp/Equip Shed	FR	Frame	240 S.F.	\$1,100	1
SHD1	Shed	FR	Frame	120 S.F.	\$500	1
SHD1	Shed	FR	Frame	48 S.F.	\$200	1
BRN8	Pole Barn	FR	Frame	5040 S.F.	\$37,400	1
SHD1	Shed	FR	Frame	96 S.F.	\$600	1
IMP	Implement Shed			96 S.F.	\$300	1

Valuation History

Appraisal			
Valuation Year	Improvements	Land	Total
2017	\$114,400	\$230,000	\$344,400
2015	\$180,400	\$229,400	\$409,800
2014	\$180,400	\$229,400	\$409,800

Assessment			
Valuation Year	Improvements	Land	Total
2017	\$80,100	\$161,000	\$241,100
2015	\$126,300	\$160,600	\$286,900
2014	\$126,300	\$160,600	\$286,900

All locations identified on Google, Yahoo, and Bing maps are approximate and may not be exact

[Go To Google Maps](#)

Quick Tools

USPS Tracking®

Tracking

FAQs

Track Another Package +

Tracking Number: 9505510019678016126455

Remove

On Time

Expected Delivery on

THURSDAY

18 JANUARY 2018

by 8:00pm

Status

Delivered

January 18, 2018 at 9:56 am
DELIVERED, PO BOX
BRIDGEWATER, CT 06752

Get Updates

Delivered

Text & Email Updates

Tracking History

From: TrackingUpdates@fedex.com
To: [Haleluya Haile](#)
Subject: FedEx Shipment 771210364328 Delivered
Date: Tuesday, January 16, 2018 11:43:58 AM

FedEx®

Your package has been delivered

Tracking # 771210364328

Ship date: Fri, 1/12/2018	Delivery date: Tue, 1/16/2018 11:40 am	
Haleluya Haile Smartlink LLC NORTH BILLERICA, MA 01862 US	 Delivered	Carla Shorter SBA Communications Corp. 8051 Congress Avenue BOCA RATON, FL 33487 US

Shipment Facts

Our records indicate that the following package has been delivered.

Tracking number:	771210364328
Status:	Delivered: 01/16/2018 11:40 AM Signed for By: F.FLEMENE
Reference:	MAL05057/10072394
Signed for by:	F.FLEMENE
Delivery location:	BOCA RATON, FL
Delivered to:	Receptionist/Front Desk
Service type:	FedEx 2Day
Packaging type:	FedEx Envelope
Number of pieces:	1
Weight:	1.00 lb.
Special handling/Services:	Deliver Weekday
Standard transit:	1/16/2018 by 4:30 pm

Please do not respond to this message. This email was sent from an unattended mailbox. This report was generated at approximately 10:43 AM CST on 01/16/2018.

All weights are estimated.

To track the latest status of your shipment, click on the tracking number above.

Standard transit is the date and time the package is scheduled to be delivered by, based on the selected service, destination and ship date. Limitations and exceptions may apply. Please see the FedEx Service Guide for terms and conditions of service, including the FedEx Money-Back Guarantee, or contact your FedEx Customer Support representative.

© 2018 Federal Express Corporation. The content of this message is protected by copyright and trademark laws under U.S. and international law. Review our [privacy policy](#). All rights reserved.

Thank you for your business.

From: TrackingUpdates@fedex.com
To: [Haleluya Haile](#)
Subject: FedEx Shipment 771210322674 Delivered
Date: Tuesday, January 16, 2018 1:12:20 PM

FedEx®

Your package has been delivered

Tracking # 771210322674

Ship date: Fri, 1/12/2018	Delivery date: Tue, 1/16/2018 1:07 pm	
Haleluya Haile Smartlink LLC North Billerica, MA 01862 US	 Delivered	Edward & Cynthia Bennett 89 Wewaka Brook Road BRIDGEWATER, CT 06752 US

Shipment Facts

Our records indicate that the following package has been delivered.

Tracking number:	771210322674
Status:	Delivered: 01/16/2018 1:07 PM Signed for By: Signature not required
Reference:	CTL02400
Signed for by:	Signature not required
Delivery location:	BRIDGEWATER, CT
Delivered to:	Residence
Service type:	FedEx 2Day
Packaging type:	FedEx Envelope
Number of pieces:	1
Weight:	1.00 lb.
Special handling/Services:	Deliver Weekday Residential Delivery
Standard transit:	1/16/2018 by 8:00 pm

Please do not respond to this message. This email was sent from an unattended mailbox. This report was generated at approximately 12:11 PM CST on 01/16/2018.

All weights are estimated.

To track the latest status of your shipment, click on the tracking number above.

Standard transit is the date and time the package is scheduled to be delivered by, based on the selected service, destination and ship date. Limitations and exceptions may apply. Please see the FedEx Service Guide for terms and conditions of service, including the FedEx Money-Back Guarantee, or contact your FedEx Customer Support representative.

© 2018 Federal Express Corporation. The content of this message is protected by copyright and trademark laws under U.S. and international law. Review our [privacy policy](#). All rights reserved.

Thank you for your business.

Quick Tools

USPS Tracking®

Tracking

FAQs

Track Another Package +

Tracking Number: 9505510019678016126448

Remove

On Time

Expected Delivery on

THURSDAY

18 JANUARY 2018

by 8:00pm

Status

Delivered

January 18, 2018 at 9:56 am
DELIVERED, PO BOX
BRIDGEWATER, CT 06752

Get Updates

Delivered

Text & Email Updates

Tracking History



200 North Glebe Road, Suite 1000, Arlington, VA 22203-3728
703.276.1100 • 703.276.1169 fax
info@sitesafe.com • www.sitesafe.com



**SmartLink, LLC on behalf of
AT&T Mobility, LLC
Site FA – 10128140
Site ID – CT2400 (MRCTB024493-
MRCTB024412)
USID – 100897
Site Name – Bridgewater CT
Wewaka rook Rd
Site Compliance Report**

**89 Wewaka Brook Rd
Bridgewater, CT 06752**

Latitude: N41-30-31.70
Longitude: W73-21-15.20
Structure Type: Monopole

Report generated date: December 27, 2017
Report by: Sam Cosgrove
Customer Contact: Haleluya Haile

**AT&T Mobility, LLC will be compliant when the
remediation recommended in Section 5.2 or
other appropriate remediation is implemented.**

Sitesafe logo is a registered trademark of Site Safe, Inc. All rights reserved.

Table of Contents

1	GENERAL SITE SUMMARY.....	2
1.1	REPORT SUMMARY.....	2
2	SCALE MAPS OF SITE.....	3
3	ANTENNA INVENTORY	5
4	EMISSION PREDICTIONS	6
5	SITE COMPLIANCE	9
5.1	SITE COMPLIANCE STATEMENT	9
5.2	ACTIONS FOR SITE COMPLIANCE	9
6	REVIEWER CERTIFICATION	10
	APPENDIX A – STATEMENT OF LIMITING CONDITIONS	11
	APPENDIX B – REGULATORY BACKGROUND INFORMATION	12
	FCC RULES AND REGULATIONS	12
	OSHA STATEMENT.....	13
	APPENDIX C – SAFETY PLAN AND PROCEDURES.....	14
	APPENDIX D – RF EMISSIONS.....	15
	APPENDIX E – ASSUMPTIONS AND DEFINITIONS	16
	GENERAL MODEL ASSUMPTIONS	16
	USE OF GENERIC ANTENNAS.....	16
	DEFINITIONS	17
	APPENDIX F – REFERENCES	19

1 General Site Summary

1.1 Report Summary

AT&T Mobility, LLC	Summary
Access to Antennas Locked?	Yes
RF Sign(s) @ access point(s)	None
RF Sign(s) @ antennas	None
Barrier(s) @ sectors	None
Max cumulative simulated RFE level on the Ground Level	<1% General Public Limit
FCC & AT&T Compliant?	Will Be Compliant

The following documents were provided by the client and were utilized to create this report:

RFDS: NEW-ENGLAND_CONNECTICUT_CTL02400_2018-LTE-Next-Carrier_LTE_mm093q_2051A0...

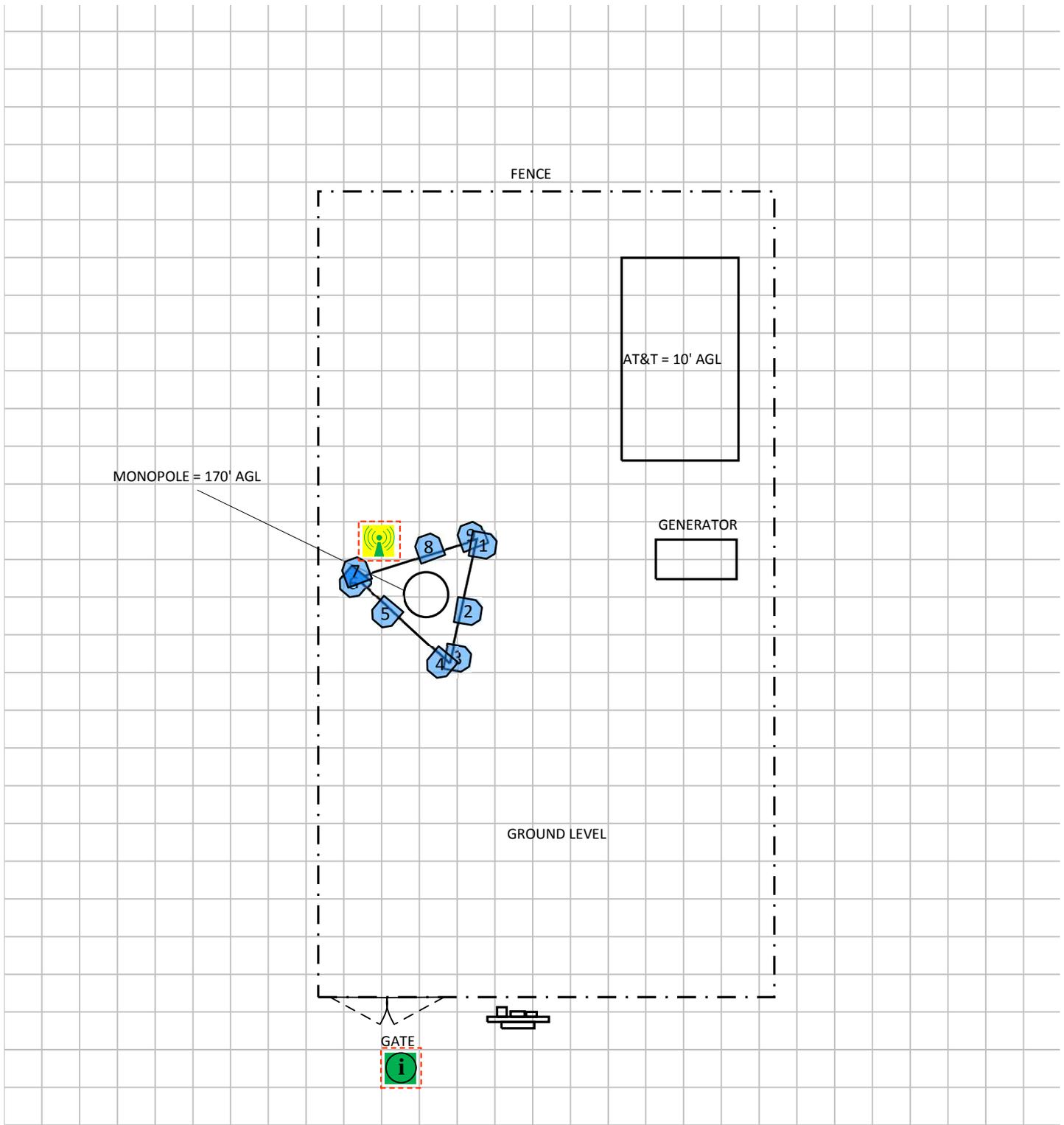
CD's: 10128140_AE201_171031_CTL02400_REV0.JMRL

2 Scale Maps of Site

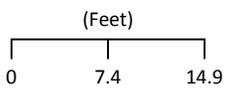
The following diagrams are included:

- Site Scale Map
- RF Exposure Diagram
- Elevation View

Site Scale Map For: Bridgewater CT Wewaka rook Rd



% of FCC Public Exposure Limit
Spatial average 0' - 6'



www.sitesafe.com
Site Name: Bridgewater CT Wewaka rook Rd
12/27/2017 3:02:01 PM

Carrier Identification						
AT&T MOBILITY LLC	VERIZON WIRELESS	T-MOBILE	SPRINT	UNKNOWN CARRIER		
Sign Legend						
Caution 2	Notice 2	Warning	Info 1	Info 2	Caution 1	Notice 1
Barrier			Proposed Barriers/ Signs			

3 Antenna Inventory

The following antenna inventory on this and the following page, were obtained by the customer and were utilized to create the site model diagrams:

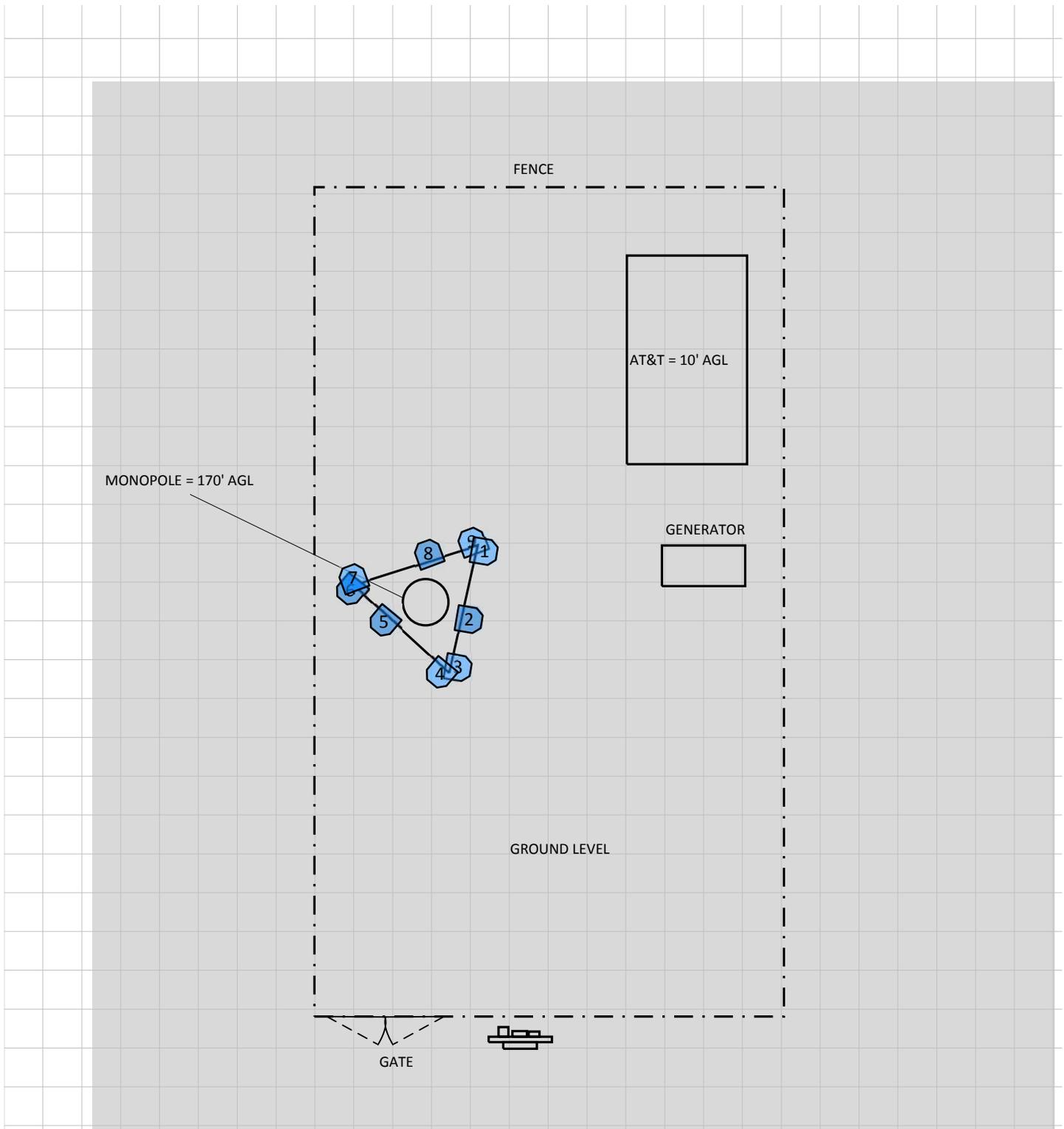
Ant ID	Operator	Antenna Make & Model	Type	TX Freq (MHz)	Az (Deg)	Hor BW (Deg)	Ant Len (ft)	Ant Gain (dBd)	2G GSM Radio(s)	3G UMTS Radio(s)	4G Radio(s)	Total ERP (Watts)	X	Y	Z (AGL)
1	AT&T MOBILITY LLC	Andrew SBNH-1D6565C	Panel	850	60	67	8	13.868	0	2	0	1949.4	39.6'	67.9'	162'
2	AT&T MOBILITY LLC (Proposed)	CCI Antennas HPA-65R-BUU-H8	Panel	737	60	64.9	7.7	13.26	0	0	1	2951.4	38.1'	61.3'	162.2'
2	AT&T MOBILITY LLC (Proposed)	CCI Antennas HPA-65R-BUU-H8	Panel	1900	60	63.1	7.7	14.76	0	0	1	4842.1	38.1'	61.3'	162.2'
3	AT&T MOBILITY LLC	Andrew SBNH-1D6565C	Panel	737	60	71	8	13.733	0	0	1	1475.7	37.1'	56.7'	162'
4	AT&T MOBILITY LLC	Andrew SBNH-1D6565C	Panel	850	180	67	8	13.868	0	2	0	1949.4	35.3'	56.1'	162'
5	AT&T MOBILITY LLC (Proposed)	CCI Antennas HPA-65R-BUU-H8	Panel	737	180	64.9	7.7	13.26	0	0	1	2951.4	29.9'	61.1'	162.2'
5	AT&T MOBILITY LLC (Proposed)	CCI Antennas HPA-65R-BUU-H8	Panel	1900	180	63.1	7.7	14.76	0	0	1	4842.1	29.9'	61.1'	162.2'
6	AT&T MOBILITY LLC	Andrew SBNH-1D6565C	Panel	737	180	71	8	13.733	0	0	1	1475.7	26.7'	64.2'	162'
7	AT&T MOBILITY LLC	Andrew SBNH-1D6565C	Panel	850	300	67	8	13.868	0	2	0	1949.4	26.9'	65.4'	162'
8	AT&T MOBILITY LLC (Proposed)	CCI Antennas HPA-65R-BUU-H8	Panel	737	300	64.9	7.7	13.26	0	0	1	2951.4	34.2'	67.7'	162.2'
8	AT&T MOBILITY LLC (Proposed)	CCI Antennas HPA-65R-BUU-H8	Panel	1900	300	63.1	7.7	14.76	0	0	1	4842.1	34.2'	67.7'	162.2'
9	AT&T MOBILITY LLC	Andrew SBNH-1D6565C	Panel	737	300	71	8	13.733	0	0	1	1475.7	38.4'	68.9'	162'

NOTE: X, Y and Z indicate relative position of the bottom of the antenna to the origin location on the site, displayed in the model results diagram. Specifically, the Z reference indicates the bottom of the antenna height above the main site level unless otherwise indicated. The distance to the bottom of the antenna is calculated by subtracting half of the length of the antenna from the antenna centerline. Effective Radiated Power (ERP) is provided by the operator or based on Sitesafe experience. The values used in the modeling may be greater than are currently deployed. For other operators at this site the use of "Generic" as an antenna model or "Unknown" for a wireless operator means the information with regard to operator, their FCC license and/or antenna information was not available nor could it be secured while on site. Other operator's equipment, antenna models and powers used for modeling are based on obtained information or Sitesafe experience.

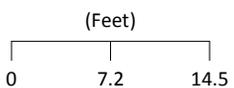
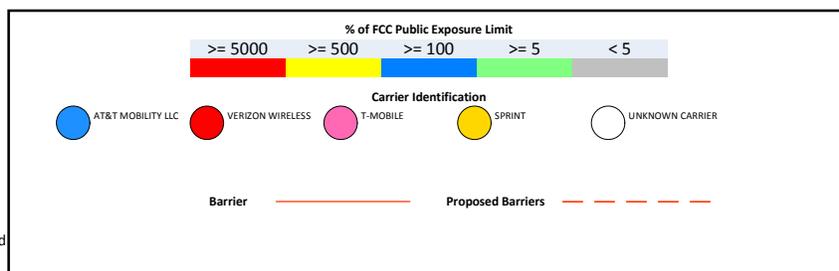
4 Emission Predictions

In the RF Exposure Simulations below all heights are reflected with respect to main site level. In most rooftop cases this is the height of the main rooftop and in other cases this can be ground level. Each different height area, rooftop, or platform level is labeled with its height relative to the main site level. Emissions are calculated appropriately based on the relative height and location of that area to all antennas.

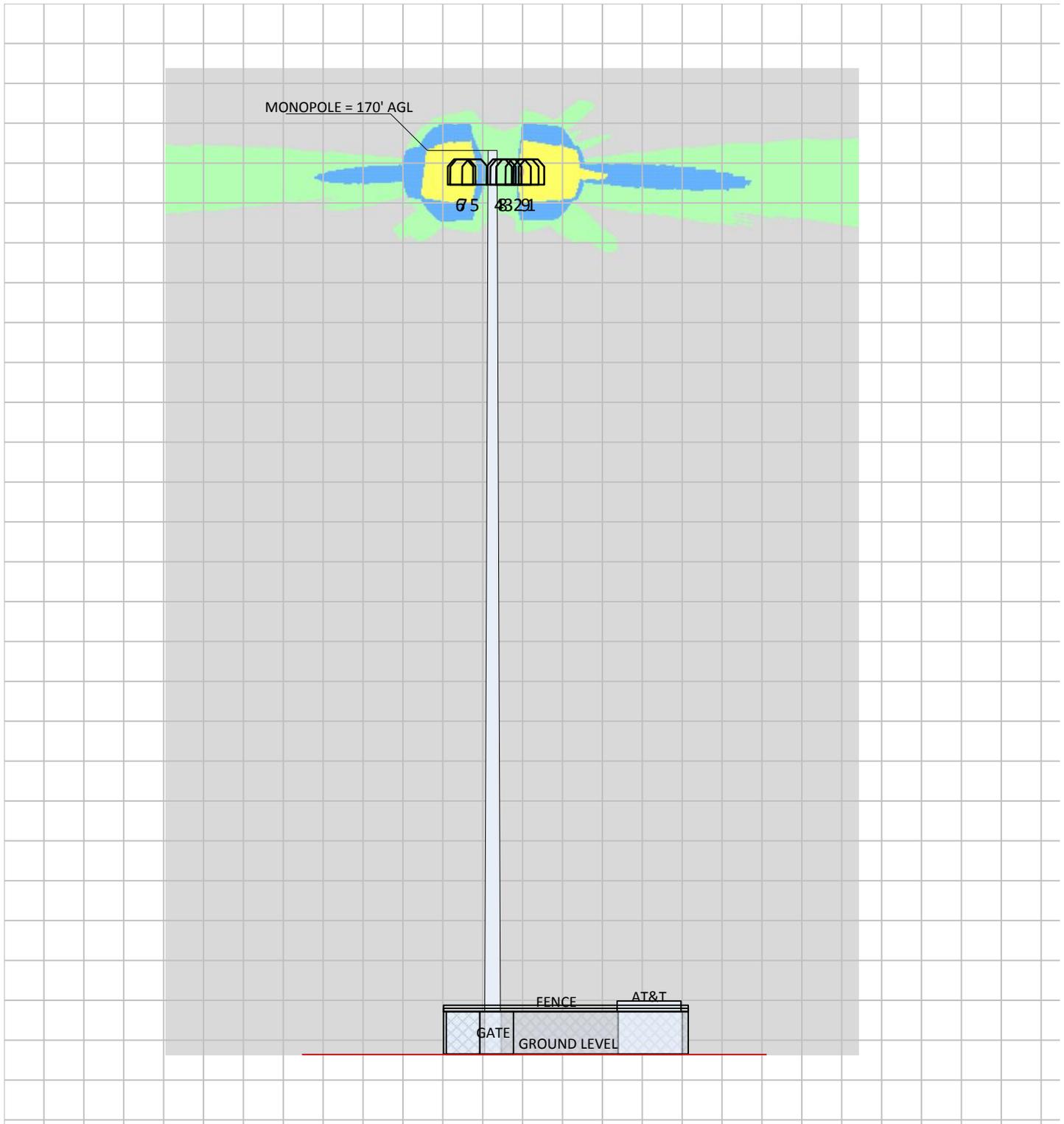
The Antenna Inventory heights are referenced to the same level.



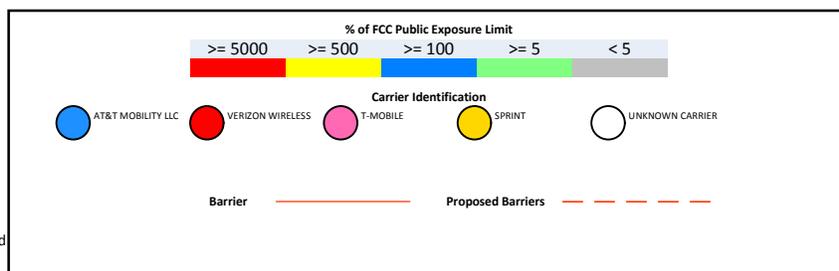
% of FCC Public Exposure Limit
Spatial average 0' - 6'



RF Exposure Simulation For: Bridgewater CT Wewaka rook Rd Elevation View



% of FCC Public Exposure Limit
Spatial average 0' - 6'



(Feet)
0 14.1 28.1
www.sitesafe.com
Site Name: Bridgewater CT Wewaka rook Rd
12/27/2017 3:00:36 PM

SitesafeTC Version: 1.0.0.0 - 0.0.0.266
Sitesafe OET-65 Model
Near Field Boundary: 1.5 * Aperture
Reflection Factor: 1
Single Level (0)

5 Site Compliance

5.1 Site Compliance Statement

Upon evaluation of the cumulative RF emission levels from all operators at this site, RF hazard signage and antenna locations, Sitesafe has determined that:

AT&T Mobility, LLC will be compliant when the remediation recommended in Section 5.2 or other appropriate remediation is implemented.

The compliance determination is based on General Public RFE levels derived from theoretical modeling, RF signage placement, proposed antenna inventory and the level of restricted access to the antennas at the site. Any deviation from the AT&T Mobility, LLC's proposed deployment plan could result in the site being rendered non-compliant.

Modeling is used for determining compliance and the percentage of MPE contribution.

5.2 Actions for Site Compliance

Based on FCC regulations, common industry practice, and our understanding of AT&T Mobility, LLC RF Safety Policy requirements, this section provides a statement of recommendations for site compliance. Recommendations have been proposed based on our understanding of existing access restrictions, signage, and an analysis of predicted RFE levels.

AT&T Mobility, LLC will be made compliant if the following changes are implemented:

Site Access Locations

Information 1 sign required at the gate.

Yellow caution 2 sign required at the base of the monopole.

6 Reviewer Certification

The reviewer whose signature appears below hereby certifies and affirms:

That I am an employee of Sitesafe, Inc., in Arlington, Virginia, at which place the staff and I provide RF compliance services to clients in the wireless communications industry; and

That I am thoroughly familiar with the Rules and Regulations of the Federal Communications Commission (FCC) as well as the regulations of the Occupational Safety and Health Administration (OSHA), both in general and specifically as they apply to the FCC Guidelines for Human Exposure to Radio-frequency Radiation; and

That I have thoroughly reviewed this Site Compliance Report and believe it to be true and accurate to the best of my knowledge as assembled by and attested to by Sam Cosgrove.

December 27, 2017

Appendix A – Statement of Limiting Conditions

Sitesafe has provided computer generated model(s) in this Site Compliance Report to show approximate dimensions of the site, and the model is included to assist the reader of the compliance report to visualize the site area, and to provide supporting documentation for Sitesafe's recommendations.

Sitesafe may note in the Site Compliance Report any adverse physical conditions, such as needed repairs, that Sitesafe became aware of during the normal research involved in creating this report. Sitesafe will not be responsible for any such conditions that do exist or for any engineering or testing that might be required to discover whether such conditions exist. Because Sitesafe is not an expert in the field of mechanical engineering or building maintenance, the Site Compliance Report must not be considered a structural or physical engineering report.

Sitesafe obtained information used in this Site Compliance Report from sources that Sitesafe considers reliable and believes them to be true and correct. Sitesafe does not assume any responsibility for the accuracy of such items that were furnished by other parties. When conflicts in information occur between data collected by Sitesafe provided by a second party and data collected by Sitesafe, the data will be used.

Appendix B – Regulatory Background Information

FCC Rules and Regulations

In 1996, the Federal Communications Commission (FCC) adopted regulations for the evaluating of the effects of RF emissions in 47 CFR § 1.1307 and 1.1310. The guideline from the FCC Office of Engineering and Technology is Bulletin 65 (“OET Bulletin 65”), *Evaluating Compliance with FCC Guidelines for Human Exposure to Radio Frequency Electromagnetic Fields*, Edition 97-01, published August 1997. Since 1996 the FCC periodically reviews these rules and regulations as per their congressional mandate.

FCC regulations define two separate tiers of exposure limits: Occupational or “Controlled environment” and General Public or “Uncontrolled environment”. The General Public limits are generally five times more conservative or restrictive than the Occupational limit. These limits apply to *accessible* areas where workers or the general public may be exposed to Radio Frequency (RF) electromagnetic fields.

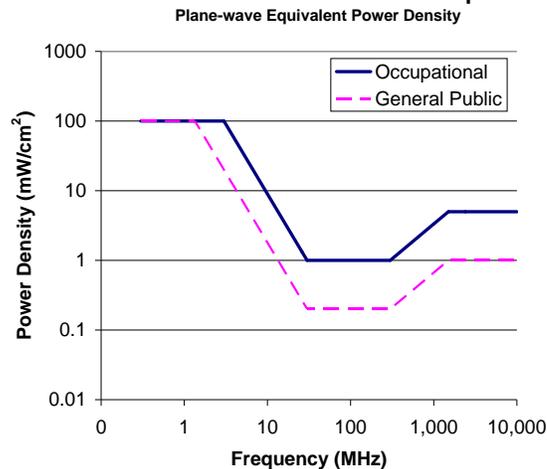
Occupational or Controlled limits apply in situations in which persons are exposed as a consequence of their employment and where those persons exposed have been made fully aware of the potential for exposure and can exercise control over their exposure.

An area is considered a Controlled environment when access is limited to these aware personnel. Typical criteria are restricted access (i.e. locked or alarmed doors, barriers, etc.) to the areas where antennas are located coupled with proper RF warning signage. A site with Controlled environments is evaluated with Occupational limits.

All other areas are considered Uncontrolled environments. If a site has no access controls or no RF warning signage it is evaluated with General Public limits.

The theoretical modeling of the RF electromagnetic fields has been performed in accordance with OET Bulletin 65. The Maximum Permissible Exposure (MPE) limits utilized in this analysis are outlined in the following diagram:

FCC Limits for Maximum Permissible Exposure (MPE)



Limits for Occupational/Controlled Exposure (MPE)

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm ²)	Averaging Time E ² , H ² or S (minutes)
0.3-3.0	614	1.63	(100)*	6
3.0-30	1842/f	4.89/f	(900/f ²)*	6
30-300	61.4	0.163	1.0	6
300-1500	--	--	f/300	6
1500-100,000	--	--	5	6

Limits for General Population/Uncontrolled Exposure (MPE)

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm ²)	Averaging Time E ² , H ² or S (minutes)
0.3-1.34	614	1.63	(100)*	30
1.34-30	824/f	2.19/f	(180/f ²)*	30
30-300	27.5	0.073	0.2	30
300-1500	--	--	f/1500	30
1500-100,000	--	--	1.0	30

f = frequency in MHz

*Plane-wave equivalent power density

OSHA Statement

The General Duty clause of the OSHA Act (Section 5) outlines the occupational safety and health responsibilities of the employer and employee. The General Duty clause in Section 5 states:

(a) Each employer –

- (1) shall furnish to each of his employees employment and a place of employment which are free from recognized hazards that are causing or are likely to cause death or serious physical harm to his employees;
- (2) shall comply with occupational safety and health standards promulgated under this Act.

(b) Each employee shall comply with occupational safety and health standards and all rules, regulations, and orders issued pursuant to this Act which are applicable to his own actions and conduct.

OSHA has defined Radiofrequency and Microwave Radiation safety standards for workers who may enter hazardous RF areas. Regulation Standards 29 CFR § 1910.147 identify a generic Lock Out Tag Out procedure aimed to control the unexpected energization or start up of machines when maintenance or service is being performed.

Appendix C – Safety Plan and Procedures

The following items are general safety recommendations that should be administered on a site by site basis as needed by the carrier.

General Maintenance Work: Any maintenance personnel required to work immediately in front of antennas and / or in areas indicated as above 100% of the Occupational MPE limits should coordinate with the wireless operators to disable transmitters during their work activities.

Training and Qualification Verification: All personnel accessing areas indicated as exceeding the General Population MPE limits should have a basic understanding of EME awareness and RF Safety procedures when working around transmitting antennas. Awareness training increases a workers understanding to potential RF exposure scenarios. Awareness can be achieved in a number of ways (e.g. videos, formal classroom lecture or internet based courses).

Physical Access Control: Access restrictions to transmitting antennas locations is the primary element in a site safety plan. Examples of access restrictions are as follows:

- Locked door or gate
- Alarmed door
- Locked ladder access
- Restrictive Barrier at antenna (e.g. Chain link with posted RF Sign)

RF Signage: Everyone should obey all posted signs at all times. RF signs play an important role in properly warning a worker prior to entering into a potential RF Exposure area.

Assume all antennas are active: Due to the nature of telecommunications transmissions, an antenna transmits intermittently. Always assume an antenna is transmitting. Never stop in front of an antenna. If you have to pass by an antenna, move through as quickly and safely as possible thereby reducing any exposure to a minimum.

Maintain a 3 foot clearance from all antennas: There is a direct correlation between the strength of an EME field and the distance from the transmitting antenna. The further away from an antenna, the lower the corresponding EME field is.

Site RF Emissions Diagram: Section 4 of this report contains an RF Diagram that outlines various theoretical Maximum Permissible Exposure (MPE) areas at the site. The modeling is a worst case scenario assuming a duty cycle of 100% for each transmitting antenna at full power. This analysis is based on one of two access control criteria: General Public criteria means the access to the site is uncontrolled and anyone can gain access. Occupational criteria means the access is restricted and only properly trained individuals can gain access to the antenna locations.

Appendix D – RF Emissions

The RF Emissions Simulation(s) in this report display theoretical spatially averaged percentage of the Maximum Permissible Exposure for all systems at the site unless otherwise noted. These diagrams use modeling as prescribed in OET Bulletin 65 and assumptions detailed in Appendix E.

The key at the bottom of each RF Emissions Simulation indicates percentages displayed referenced to FCC General Public Maximum Permissible Exposure (MPE) limits. Color coding on the diagram is as follows:

- Areas indicated as Gray are predicted to be below 5% of the MPE limits. **Gray represents areas more than 20 times below the most conservative exposure limit.**
- Green represents areas are predicted to be between 5% and 100% of the MPE limits. **Green areas are accessible to anyone.**
- Blue represents areas predicted to exceed the General Public MPE limits but are less than Occupational limits. **Blue areas should be accessible only to RF trained workers.**
- Yellow represents areas predicted to exceed Occupational MPE limits. **Yellow areas should be accessible only to RF trained workers able to assess current exposure levels.**
- Red represents areas predicted to have exposure more than 10 times the Occupational MPE limits. **Red indicates that the RF levels must be reduced prior to access.** An RF Safety Plan is required which outlines how to reduce the RF energy in these areas prior to access.

Appendix E – Assumptions and Definitions

General Model Assumptions

In this site compliance report, it is assumed that all antennas are operating at **full power at all times**. Software modeling was performed for all transmitting antennas located on the site. Sitesafe has further assumed a 100% duty cycle and maximum radiated power.

The modeling is based on recommendations from the FCC's OET-65 bulletin with the following variances per AT&T guidance. Reflection has not been considered in the modeling, i.e. the reflection factor is 1.0. The near / far field boundary has been set to 1.5 times the aperture height of the antenna and modeling beyond that point is the lesser of the near field cylindrical model and the far field model taking into account the gain of the antenna.

The site has been modeled with these assumptions to show the maximum RF energy density. Areas modeled with exposure greater than 100% of the General Public MPE level may not actually occur, but are shown as a prediction that could be realized. Sitesafe believes these areas to be safe for entry by occupationally trained personnel utilizing appropriate personal protective equipment (in most cases, a personal monitor).

Use of Generic Antennas

For the purposes of this report, the use of "Generic" as an antenna model, or "Unknown" for an operator means the information about a carrier, their FCC license and/or antenna information was not provided and could not be obtained while on site. In the event of unknown information, Sitesafe will use our industry specific knowledge of equipment, antenna models, and transmit power to model the site. If more specific information can be obtained for the unknown measurement criteria, Sitesafe recommends remodeling of the site utilizing the more complete and accurate data. Information about similar facilities is used when the service is identified and associated with a particular antenna. If no information is available regarding the transmitting service associated with an unidentified antenna, using the antenna manufacturer's published data regarding the antenna's physical characteristics makes more conservative assumptions.

Where the frequency is unknown, Sitesafe uses the closest frequency in the antenna's range that corresponds to the highest Maximum Permissible Exposure (MPE), resulting in a conservative analysis.

Definitions

5% Rule – The rules adopted by the FCC specify that, in general, at multiple transmitter sites actions necessary to bring the area into compliance with the guidelines are the shared responsibility of all licensees whose transmitters produce field strengths or power density levels at the area in question in excess of 5% of the exposure limits. In other words, any wireless operator that contributes 5% or greater of the MPE limit in an area that is identified to be greater than 100% of the MPE limit is responsible taking corrective actions to bring the site into compliance.

Compliance – The determination of whether a site is safe or not with regards to Human Exposure to Radio Frequency Radiation from transmitting antennas.

Decibel (dB) – A unit for measuring power or strength of a signal.

Duty Cycle – The percent of pulse duration to the pulse period of a periodic pulse train. Also, may be a measure of the temporal transmission characteristic of an intermittently transmitting RF source such as a paging antenna by dividing average transmission duration by the average period for transmission. A duty cycle of 100% corresponds to continuous operation.

Effective (or Equivalent) Isotropic Radiated Power (EIRP) – The product of the power supplied to the antenna and the antenna gain in a given direction relative to an isotropic antenna.

Effective Radiated Power (ERP) – In a given direction, the relative gain of a transmitting antenna with respect to the maximum directivity of a half wave dipole multiplied by the net power accepted by the antenna from the connecting transmitter.

Gain (of an antenna) – The ratio of the maximum intensity in a given direction to the maximum radiation in the same direction from an isotropic radiator. Gain is a measure of the relative efficiency of a directional antennas as compared to an omni directional antenna.

General Population/Uncontrolled Environment – Defined by the FCC, as an area where exposure to RF energy may occur to persons who are **unaware** of the potential for exposure and who have no control of their exposure. General Population is also referenced as General Public.

Generic Antenna – For the purposes of this report, the use of "Generic" as an antenna model means the antenna information was not provided and could not be obtained while on site. In the event of unknown information, Sitesafe will use our industry specific knowledge of antenna models to select a worst case scenario antenna to model the site.

Isotropic Antenna – An antenna that is completely non-directional. In other words, an antenna that radiates energy equally in all directions.

Maximum Measurement – This measurement represents the single largest measurement recorded when performing a spatial average measurement.

Maximum Permissible Exposure (MPE) – The maximum levels of RF exposure a person may be exposed to without harmful effect and with acceptable safety factor.

Occupational/Controlled Environment – Defined by the FCC, as an area where Radio Frequency Radiation (RFR) exposure may occur to persons who are **aware** of the

potential for exposure as a condition of employment or specific activity and can exercise control over their exposure.

OET Bulletin 65 – Technical guideline developed by the FCC's Office of Engineering and Technology to determine the impact of Radio Frequency radiation on Humans. The guideline was published in August 1997.

OSHA (Occupational Safety and Health Administration) – Under the Occupational Safety and Health Act of 1970, employers are responsible for providing a safe and healthy workplace for their employees. OSHA's role is to promote the safety and health of America's working men and women by setting and enforcing standards; providing training, outreach and education; establishing partnerships; and encouraging continual process improvement in workplace safety and health. For more information, visit www.osha.gov.

Radio Frequency (RF) – The frequencies of electromagnetic waves which are used for radio communications. Approximately 3 kHz to 300 GHz.

Radio Frequency Exposure (RFE) – The amount of RF power density that a person is or might be exposed to.

Spatial Average Measurement – A technique used to average a minimum of ten (10) measurements taken in a ten (10) second interval from zero (0) to six (6) feet. This measurement is intended to model the average power density an average sized human will be exposed to at a location.

Transmitter Power Output (TPO) – The radio frequency output power of a transmitter's final radio frequency stage as measured at the output terminal while connected to a load.

Appendix F – References

The following references can be followed for further information about RF Health and Safety.

Sitesafe, Inc.

<http://www.sitesafe.com>

FCC Radio Frequency Safety

<http://www.fcc.gov/encyclopedia/radio-frequency-safety>

National Council on Radiation Protection and Measurements (NCRP)

<http://www.ncrponline.org>

Institute of Electrical and Electronics Engineers, Inc., (IEEE)

<http://www.ieee.org>

American National Standards Institute (ANSI)

<http://www.ansi.org>

Environmental Protection Agency (EPA)

<http://www.epa.gov/radtown/wireless-tech.html>

National Institutes of Health (NIH)

<http://www.niehs.nih.gov/health/topics/agents/emf/>

Occupational Safety and Health Agency (OSHA)

<http://www.osha.gov/SLTC/radiofrequencyradiation/>

International Commission on Non-Ionizing Radiation Protection (ICNIRP)

<http://www.icnirp.org>

World Health Organization (WHO)

<http://www.who.int/peh-emf/en/>

National Cancer Institute

<http://www.cancer.gov/cancertopics/factsheet/Risk/cellphones>

American Cancer Society (ACS)

http://www.cancer.org/docroot/PED/content/PED_1_3X_Cellular_Phone_Towers.asp?sitearea=PED

European Commission Scientific Committee on Emerging and Newly Identified Health Risks

http://ec.europa.eu/health/ph_risk/committees/04_scenihp/docs/scenihp_o_022.pdf

Fairfax County, Virginia Public School Survey

<http://www.fcps.edu/fts/safety-security/RFEESurvey/>

UK Health Protection Agency Advisory Group on Non-ionising Radiation

http://www.hpa.org.uk/webw/HPAweb&HPAwebStandard/HPAweb_C/1317133826368

Norwegian Institute of Public Health

<http://www.fhi.no/dokumenter/545eea7147.pdf>



Tower Engineering Solutions

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

Structural Analysis Report

Existing 169 ft Monopole

Customer Name: SBA Communications Corp

Customer Site Number: CT11934-S

Customer Site Name: Bridgewater 4, CT

Carrier Name: AT&T

Carrier Site ID / Name: CT2400/ Brookfield

Site Location: 42 Wewaka Brook Road

Bridgewater, Connecticut

Litchfield County

Latitude: 41.508750

Longitude: -73.354444

Analysis Result:

Max Structural Usage: 54.4% [Pass]

Max Foundation Usage: 47.0% [Pass]

Report Prepared By: Khaibar Noorzad





Tower Engineering Solutions

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

Structural Analysis Report

Existing 169 ft Monopole

Customer Name: SBA Communications Corp

Customer Site Number: CT11934-S

Customer Site Name: Bridgewater 4, CT

Carrier Name: AT&T

Carrier Site ID / Name: CT2400/ Brookfield

Site Location: 42 Wewaka Brook Road

Bridgewater, Connecticut

Litchfield County

Latitude: 41.508750

Longitude: -73.354444

Analysis Result:

Max Structural Usage: 54.4% [Pass]

Max Foundation Usage: 47.0% [Pass]

Report Prepared By: Khaibar Noorzad

Introduction

The purpose of this report is to summarize the analysis results on the 169 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	Sabre Communications Corp; Job No. 00-55137; Dated 3/8/2012
Foundation Drawing	Sabre Communications Corp; Job No. 00-55137; Dated 3/8/2012
Geotechnical Report	Tower Engineering Professionals, Inc.; Project No. 120651.10; Dated 3/2/2012
Modification Drawings	N/A

Analysis Criteria

The rigorous analysis was performed in accordance with the requirements and stipulations of the ANSI/TIA/EIA 222-G. 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.

Wind Speed Used in the Analysis:	Ultimate Design Wind Speed $V_{ult} = 120$ mph (3-Sec. Gust)/ Nominal Design Wind Speed $V_{asd} = 93.0$ mph (3-Sec. Gust)
Wind Speed with Ice:	40 mph (3-Sec. Gust) with 1" radial ice concurrent
Operational Wind Speed:	60 mph + 0" Radial ice
Standard/Codes:	ANSI/TIA/EIA 222-G / 2012 IBC / 2016 Connecticut State Building Code
Exposure Category:	C
Structure Class:	II
Topographic Category:	1
Crest Height:	0 ft
Seismic Parameters:	$S_S = 0.184$, $S_1 = 0.065$

This structural analysis is based upon the tower being classified as a Structure Class II; however, if a different classification is required subsequent to the date hereof, the tower classification will be changed to meet such requirement and a new structural analysis will be run.

Existing Antennas, Mounts and Transmission Lines

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

Items	Elevation (ft)	Qty.	Antenna Descriptions	Mount Type & Qty.	Transmission Lines	Owner
1	170.0	3	Raycap - DC6-48-60-18-8F	Low Profile Platform	(12) 1/2" Cable (1) 1/2" Fiber (2) 3/8" DC Power (3) 3/8" RET Line	AT&T
2	164.25	12	Andrew - SBNH-1D6565C - Panel			

Proposed Carrier’s Final Configuration of Antennas, Mounts and Transmission Lines

Information pertaining to the proposed carrier’s final configuration of antennas and transmission lines was provided by SBA Communications Corp. The proposed antennas and lines are listed below.

Items	Elevation (ft)	Qty.	Antenna Descriptions	Mount Type & Qty.	Transmission Lines	Owner
1	170.0	3	Raycap - DC6-48-60-18-8F	Low Profile Platform	(12) 1/2" Cable (3) 1/2" Fiber (6) 3/8" DC Power (3) 3/8" RET Line	AT&T
2	167.0	3	CCI - HPA-65R-BUU-H8 - Panel			
3		15	Ericsson - RRUS 11 - RRU			
4		3	Ericsson - RRUS B14 4478 - RRU			
5		9	Andrew - SBNH-1D6565C - Panel			

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

Analysis Results

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

	Pole shafts	Anchor Bolts	Base Plate
Max. Usage:	52.9%	45.7%	54.4%
Pass/Fail	Pass	Pass	Pass

Foundations

	Moment (Kip-Ft)	Shear (Kips)
Original Design Reactions	5023.3	38.5
Analysis Reactions	2741.5	23.3
Factored Reactions*	6781.5	51.9
% of Design Reactions	40.4%	45.0%

* Per section 15.5.1 of the TIA-222-G standard, factored reactions were obtained by multiplying a 1.35 factor to the original design reactions.

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-G for the installed antennas. The maximum twist/sway at the elevation of the proposed equipment is 1.4803 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-G Standard under the design basic wind speed as specified in the Analysis Criteria.

Standard Conditions

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

Usage Diagram - Max Ratio 52.89% at 0.0ft

Structure: CT11934-S-SBA
Site Name: Bridgewater 4, CT
Height: 169.00 (ft)
Base Elev: 1.000 (ft)

Code: EIA/TIA-222-G
Exposure: C
Gh: 1.1

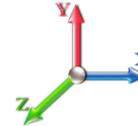
12/21/2017



Page: 1

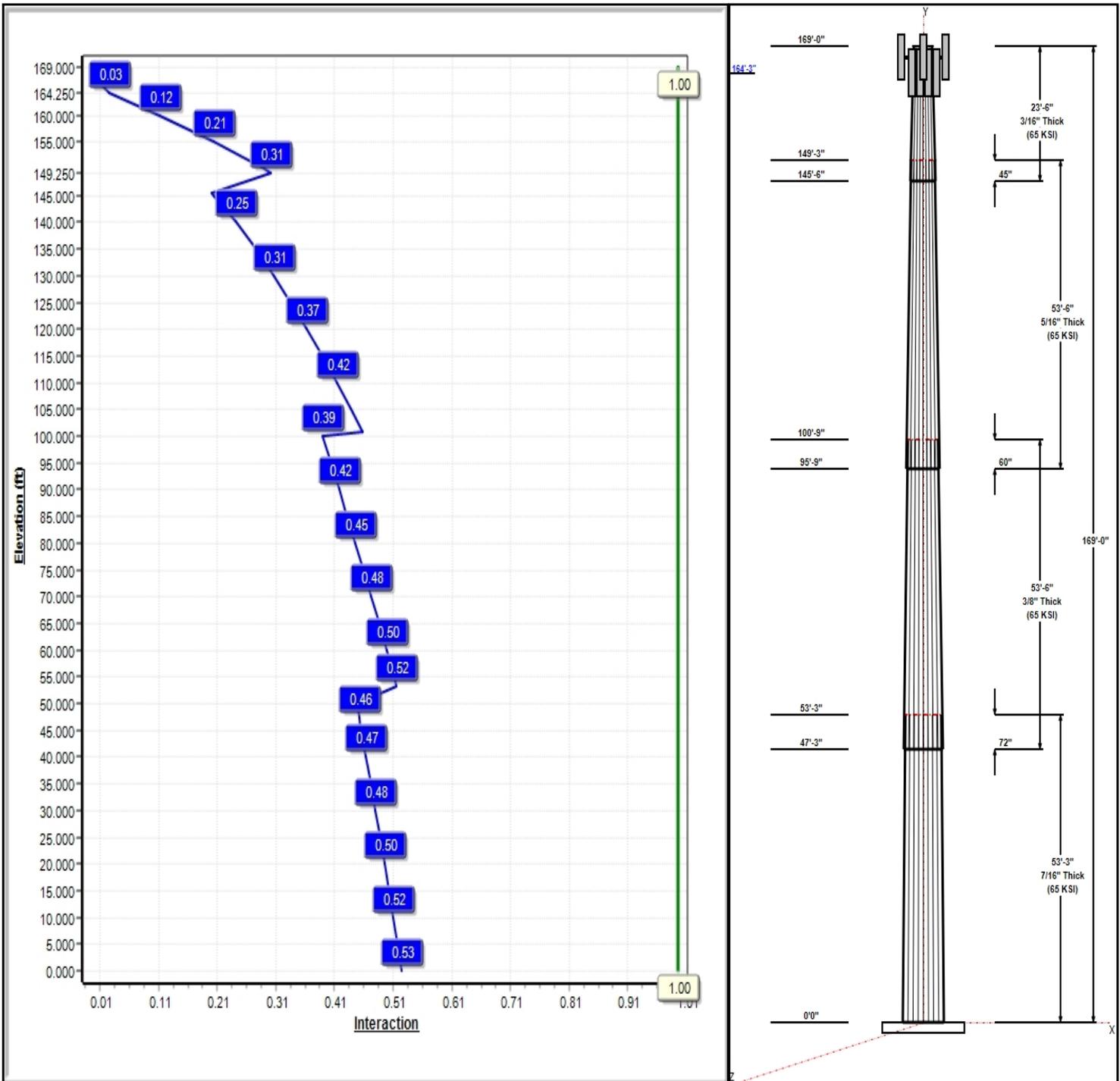
Dead Load Factor: 1.20
Wind Load Factor: 1.60

Load Case : 1.2D + 1.6W 93 mph Wind



Iterations: 27

Copyright © 2017 by Tower Engineering Solutions, LLC. All rights reserved.



Structure: CT11934-S-SBA

Type: Tapered
Site Name: Bridgewater 4, CT
Height: 169.00 (ft)
Base Elev: 1.00 (ft)

Base Shape: 18 Sided
Taper: 0.18300

12/21/2017

Page: 2



Shaft Properties

Seq	Length (ft)	Top (in)	Bottom (in)	Thick (in)	Joint Type	Taper	Grade (ksi)
1	53.25	41.68	51.43	0.438		0.18300	65
2	53.50	33.74	43.53	0.375	Slip	0.18300	65
3	53.50	25.49	35.28	0.313	Slip	0.18300	65
4	23.50	22.25	26.55	0.188	Slip	0.18300	65

Discrete Appurtenances

Attach Elev (ft)	Force Elev (ft)	Qty	Description	Carrier
169.00	169.00	3	Raycap -	AT&T
167.00	167.00	1	Low Profile Platform	AT&T
167.00	167.00	3	CCI - HPA-65R-BUU-H8	AT&T
167.00	167.00	15	Ericsson - RRUS 11	AT&T
167.00	167.00	3	Ericsson - RRUS B14	AT&T
164.25	164.25	12	Andrew - SBNH-1D6565C	AT&T

Linear Appurtenances

Elev From (ft)	Elev To (ft)	Placement	Description	Carrier
0.00	164.25	Inside	1/2" Cable	AT&T
0.00	164.25	Inside	1/2" Fiber	AT&T
0.00	164.25	Inside	3/8" DC Power	AT&T
0.00	164.25	Inside	3/8" RET Line	AT&T

Anchor Bolts

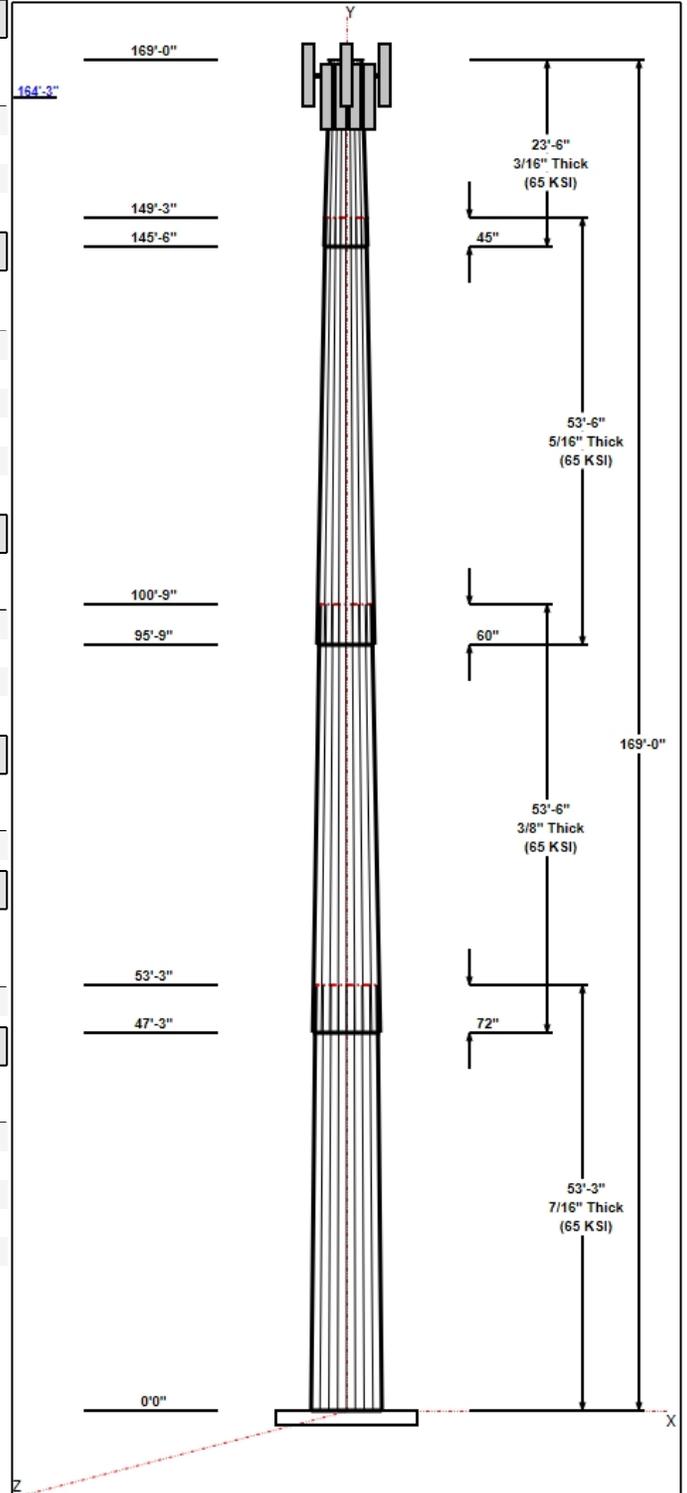
Qty	Specifications	Grade (ksi)	Arrangement
20	2.25" 18J	75.0	Cluster

Base Plate

Thickness (in)	Specifications (in)	Grade (ksi)	Geometry
2.7500	60.3	50.0	Clipped

Reactions

Load Case	Moment (FT-Kips)	Shear (Kips)	Axial (Kips)
1.2D + 1.6W 93 mph Wind	2741.5	23.3	36.2
0.9D + 1.6W 93 mph Wind	2715.7	23.3	27.2
1.2D + 1.0Di + 1.0Wi 40 mph Wind	587.3	5.0	60.5
1.2D + 1.0E	190.6	1.5	36.3
0.9D + 1.0E	188.7	1.5	27.2
1.0D + 1.0W 60 mph Wind	709.5	6.1	30.2



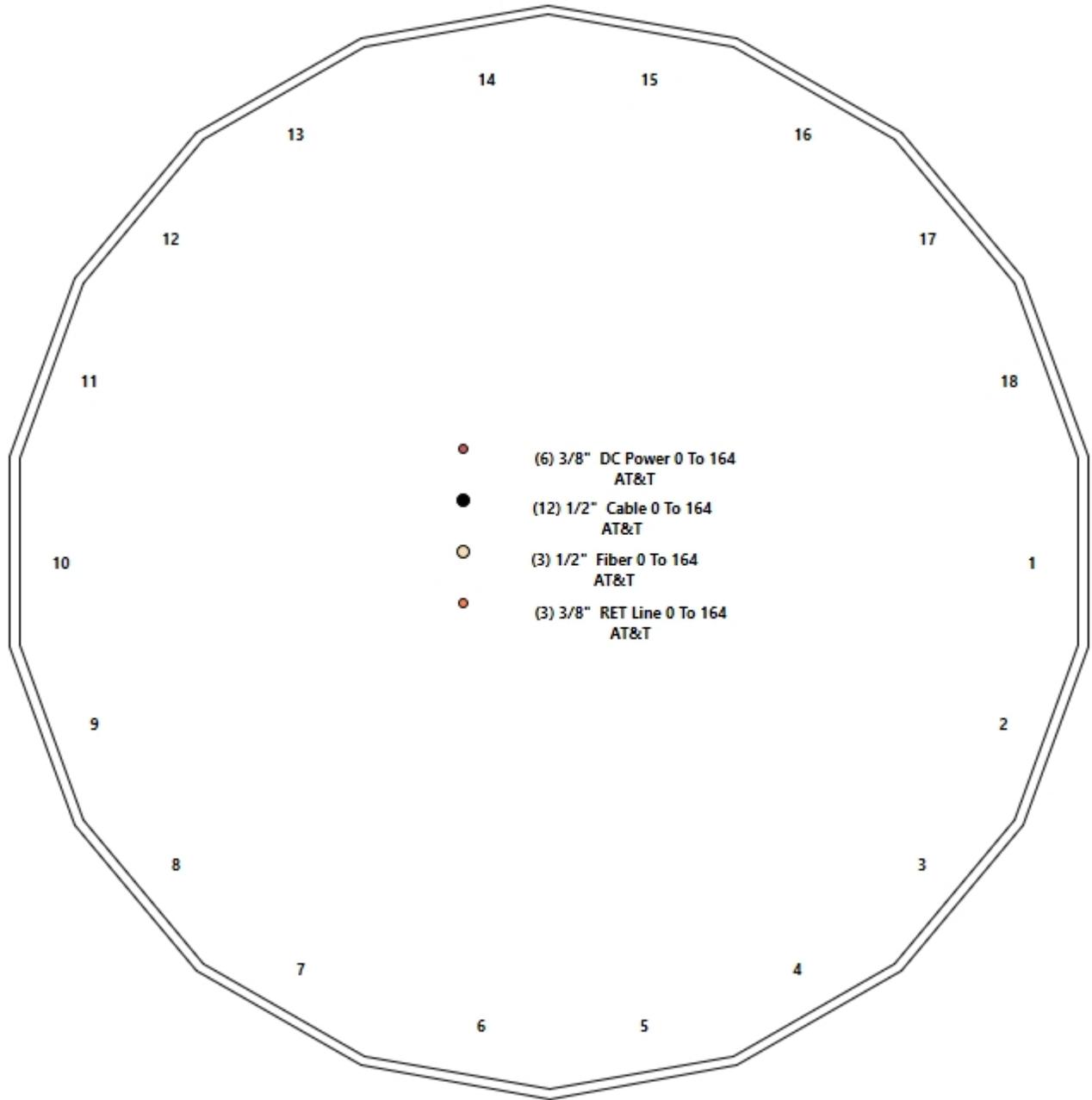
Structure: CT11934-S-SBA - Coax Line Placement

Type: Monopole
Site Name: Bridgewater 4, CT
Height: 169.00 (ft)

12/21/2017



Page: 3



Shaft Properties

Structure: CT11934-S-SBA	Code: EIA/TIA-222-G	12/21/2017
Site Name: Bridgewater 4, CT	Exposure: C	
Height: 169.00 (ft)	Crest Height: 0.00	
Base Elev: 1.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



Page: 4

Sec. No.	Shape	Length (ft)	Thick (in)	Fy (ksi)	Joint Type	Overlap (in)	Weight (lb)
1	18	53.250	0.4375	65		0.00	11,603
2	18	53.500	0.3750	65	Slip	72.00	8,290
3	18	53.500	0.3125	65	Slip	60.00	5,430
4	18	23.500	0.1875	65	Slip	45.00	1,152
Total Shaft Weight:							26,476

Bottom

Top

Sec. No.	Dia (in)	Elev (ft)	Area (sqin)	Ix (in^4)	W/t Ratio	D/t Ratio	Dia (in)	Elev (ft)	Area (sqin)	Ix (in^4)	W/t Ratio	D/t Ratio	Taper
1	51.43	0.00	70.80	23257.59	19.32	117.55	41.68	53.25	57.27	12309.1	15.39	95.27	0.183000
2	43.53	47.25	51.36	12085.83	19.06	116.08	33.74	100.75	39.71	5585.21	14.45	89.97	0.183000
3	35.28	95.75	34.68	5357.71	18.50	112.90	25.49	149.25	24.97	1999.83	12.97	81.57	0.183000
4	26.55	145.5	15.69	1377.62	23.56	141.60	22.25	169.00	13.13	807.44	19.51	118.6	0.183000

Load Summary

Structure: CT11934-S-SBA	Code: EIA/TIA-222-G	12/21/2017
Site Name: Bridgewater 4, CT	Exposure: C	
Height: 169.00 (ft)	Crest Height: 0.00	
Base Elev: 1.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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	169.00	Raycap - DC6-48-60-18-8F	3	31.80	0.92	0.50	115.27	1.511	0.60	0.00	0.00
2	167.00	Low Profile Platform	1	1200.00	25.00	1.00	2612.08	53.242	1.00	0.00	0.00
3	167.00	CCI - HPA-65R-BUU-H8	3	68.00	12.98	0.79	483.27	15.204	0.81	0.00	0.00
4	167.00	Ericsson - RRUS 11	15	51.00	2.52	0.67	148.46	3.374	0.75	0.00	0.00
5	167.00	Ericsson - RRUS B14 4478	3	59.40	1.65	0.67	115.32	2.349	0.75	0.00	0.00
6	164.25	Andrew - SBNH-1D6565C	12	66.10	11.47	0.84	375.60	15.847	0.85	0.00	0.00
Totals:			37	3,235.80			11,487.77				

Linear Appurtenances

Bottom Elev. (ft)	Top Elev. (ft)	Description	Exposed Width	Exposed
0.00	164.25	(12) 1/2" Cable	0.00	Inside
0.00	164.25	(3) 1/2" Fiber	0.00	Inside
0.00	164.25	(6) 3/8" DC Power	0.00	Inside
0.00	164.25	(3) 3/8" RET Line	0.00	Inside

Shaft Section Properties

Structure: CT11934-S-SBA	Code: EIA/TIA-222-G	12/21/2017
Site Name: Bridgewater 4, CT	Exposure: C	
Height: 169.00 (ft)	Crest Height: 0.00	
Base Elev: 1.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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	Fpy (ksi)	S (in ³)	Weight (lb)
0.00		0.4375	51.427	70.803	23257.6	19.32	117.55	78.7	890.7	0.0
5.00		0.4375	50.512	69.532	22027.9	18.95	115.46	79.1	858.9	1193.8
10.00		0.4375	49.597	68.262	20842.3	18.58	113.36	79.5	827.7	1172.2
15.00		0.4375	48.682	66.991	19700.0	18.21	111.27	80.0	797.0	1150.6
20.00		0.4375	47.767	65.721	18600.2	17.84	109.18	80.4	767.0	1129.0
25.00		0.4375	46.852	64.450	17542.2	17.47	107.09	80.9	737.5	1107.4
30.00		0.4375	45.937	63.179	16525.0	17.10	105.00	81.3	708.5	1085.7
35.00		0.4375	45.022	61.909	15548.0	16.73	102.91	81.7	680.2	1064.1
40.00		0.4375	44.107	60.638	14610.2	16.37	100.82	82.2	652.4	1042.5
45.00		0.4375	43.192	59.368	13711.0	16.00	98.72	82.5	625.2	1020.9
47.25	Bot - Section 2	0.4375	42.780	58.796	13318.6	15.83	97.78	82.5	613.2	452.3
50.00		0.4375	42.277	58.097	12849.4	15.63	96.63	82.5	598.6	1024.8
53.25	Top - Section 1	0.3750	42.432	50.057	11186.6	18.54	113.15	0.0	0.0	1195.4
55.00		0.3750	42.112	49.676	10933.0	18.39	112.30	79.8	511.3	296.9
60.00		0.3750	41.197	48.587	10229.6	17.96	109.86	80.3	489.1	835.9
65.00		0.3750	40.282	47.498	9557.0	17.53	107.42	80.8	467.3	817.4
70.00		0.3750	39.367	46.409	8914.6	17.10	104.98	81.3	446.0	798.9
75.00		0.3750	38.452	45.320	8301.6	16.67	102.54	81.8	425.2	780.3
80.00		0.3750	37.537	44.230	7717.4	16.24	100.10	82.3	404.9	761.8
85.00		0.3750	36.622	43.141	7161.3	15.81	97.66	82.5	385.2	743.3
90.00		0.3750	35.707	42.052	6632.5	15.38	95.22	82.5	365.9	724.7
95.00		0.3750	34.792	40.963	6130.5	14.95	92.78	82.5	347.1	706.2
95.75	Bot - Section 3	0.3750	34.655	40.800	6057.4	14.88	92.41	82.5	344.3	104.3
100.00		0.3750	33.877	39.874	5654.4	14.52	90.34	82.5	328.7	1079.3
100.75	Top - Section 2	0.3125	34.365	33.774	4948.0	17.98	109.97	0.0	0.0	187.9
105.00		0.3125	33.587	33.003	4616.7	17.54	107.48	80.8	270.7	482.9
110.00		0.3125	32.672	32.095	4246.2	17.02	104.55	81.4	256.0	553.8
115.00		0.3125	31.757	31.188	3896.1	16.51	101.62	82.0	241.6	538.3
120.00		0.3125	30.842	30.280	3565.8	15.99	98.69	82.5	227.7	522.9
125.00		0.3125	29.927	29.373	3254.7	15.48	95.77	82.5	214.2	507.5
130.00		0.3125	29.012	28.465	2962.2	14.96	92.84	82.5	201.1	492.0
135.00		0.3125	28.097	27.558	2687.8	14.44	89.91	82.5	188.4	476.6
140.00		0.3125	27.182	26.650	2430.9	13.93	86.98	82.5	176.1	461.1
145.00		0.3125	26.267	25.743	2190.9	13.41	84.05	82.5	164.3	445.7
145.50	Bot - Section 4	0.3125	26.175	25.652	2167.9	13.36	83.76	82.5	163.1	43.7
149.25	Top - Section 3	0.1875	25.864	15.280	1272.8	22.91	137.94	0.0	0.0	520.6
150.00		0.1875	25.727	15.199	1252.5	22.78	137.21	74.6	95.9	38.9
155.00		0.1875	24.812	14.654	1122.7	21.92	132.33	75.6	89.1	254.0
160.00		0.1875	23.897	14.110	1002.1	21.06	127.45	76.6	82.6	244.7
164.25		0.1875	23.119	13.647	906.7	20.33	123.30	77.5	77.2	200.7
165.00		0.1875	22.982	13.565	890.5	20.20	122.57	77.6	76.3	34.7
167.00		0.1875	22.616	13.347	848.3	19.86	120.62	78.0	73.9	91.6
169.00		0.1875	22.250	13.129	807.4	19.51	118.67	78.4	71.5	90.1

26475.5

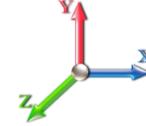
Wind Loading - Shaft

Structure: CT11934-S-SBA	Code: EIA/TIA-222-G	12/21/2017
Site Name: Bridgewater 4, CT	Exposure: C	
Height: 169.00 (ft)	Crest Height: 0.00	
Base Elev: 1.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



Load Case: 1.2D + 1.6W 93 mph Wind

Dead Load Factor 1.20
Wind Load Factor 1.60



Iterations 27

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		1.00	0.85	17.879	19.67	373.12	0.650	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.85	17.879	19.67	366.48	0.650	0.000	5.00	21.565	14.02	441.1	0.0	1432.6
10.00		1.00	0.85	17.879	19.67	359.84	0.650	0.000	5.00	21.178	13.77	433.2	0.0	1406.6
15.00		1.00	0.86	18.100	19.91	355.38	0.650	0.000	5.00	20.791	13.51	430.5	0.0	1380.7
20.00		1.00	0.91	19.166	21.08	358.83	0.650	0.000	5.00	20.404	13.26	447.4	0.0	1354.8
25.00		1.00	0.95	20.048	22.05	359.95	0.650	0.000	5.00	20.016	13.01	459.1	0.0	1328.8
30.00		1.00	0.99	20.804	22.88	359.52	0.650	0.000	5.00	19.629	12.76	467.2	0.0	1302.9
35.00		1.00	1.02	21.470	23.62	357.95	0.650	0.000	5.00	19.242	12.51	472.6	0.0	1276.9
40.00		1.00	1.05	22.065	24.27	355.51	0.650	0.000	5.00	18.855	12.26	476.0	0.0	1251.0
45.00		1.00	1.07	22.607	24.87	352.38	0.650	0.000	5.00	18.468	12.00	477.6	0.0	1225.1
47.25	Bot - Section 2	1.00	1.09	22.835	25.12	350.78	0.650	0.000	2.25	8.184	5.32	213.8	0.0	542.8
50.00		1.00	1.10	23.103	25.41	348.68	0.650	0.000	2.75	10.071	6.55	266.2	0.0	1229.7
53.25	Top - Section 1	1.00	1.11	23.405	25.75	346.01	0.650	0.000	3.25	11.751	7.64	314.6	0.0	1434.5
55.00		1.00	1.12	23.562	25.92	350.75	0.650	0.000	1.75	6.260	4.07	168.7	0.0	356.3
60.00		1.00	1.14	23.990	26.39	346.23	0.650	0.000	5.00	17.624	11.46	483.7	0.0	1003.1
65.00		1.00	1.16	24.392	26.83	341.36	0.650	0.000	5.00	17.237	11.20	481.0	0.0	980.9
70.00		1.00	1.18	24.770	27.25	336.18	0.650	0.000	5.00	16.850	10.95	477.5	0.0	958.6
75.00		1.00	1.19	25.127	27.64	330.73	0.650	0.000	5.00	16.462	10.70	473.2	0.0	936.4
80.00		1.00	1.21	25.466	28.01	325.03	0.650	0.000	5.00	16.075	10.45	468.3	0.0	914.2
85.00		1.00	1.23	25.789	28.37	319.12	0.650	0.000	5.00	15.688	10.20	462.8	0.0	891.9
90.00		1.00	1.24	26.098	28.71	313.00	0.650	0.000	5.00	15.301	9.95	456.8	0.0	869.7
95.00		1.00	1.25	26.394	29.03	306.70	0.650	0.000	5.00	14.914	9.69	450.3	0.0	847.5
95.75	Bot - Section 3	1.00	1.26	26.437	29.08	305.74	0.650	0.000	0.75	2.204	1.43	66.6	0.0	125.2
100.00		1.00	1.27	26.677	29.35	300.24	0.650	0.000	4.25	12.548	8.16	382.9	0.0	1295.2
100.75	Top - Section 2	1.00	1.27	26.719	29.39	299.25	0.650	0.000	0.75	2.185	1.42	66.8	0.0	225.5
105.00		1.00	1.28	26.950	29.65	299.18	0.650	0.000	4.25	12.219	7.94	376.7	0.0	579.4
110.00		1.00	1.29	27.213	29.93	292.45	0.650	0.000	5.00	14.017	9.11	436.4	0.0	664.5
115.00		1.00	1.31	27.466	30.21	285.58	0.650	0.000	5.00	13.630	8.86	428.3	0.0	646.0
120.00		1.00	1.32	27.712	30.48	278.59	0.650	0.000	5.00	13.243	8.61	419.8	0.0	627.5
125.00		1.00	1.33	27.949	30.74	271.48	0.650	0.000	5.00	12.856	8.36	411.0	0.0	609.0
130.00		1.00	1.34	28.179	31.00	264.26	0.650	0.000	5.00	12.468	8.10	401.9	0.0	590.4
135.00		1.00	1.35	28.402	31.24	256.93	0.650	0.000	5.00	12.081	7.85	392.5	0.0	571.9
140.00		1.00	1.36	28.619	31.48	249.51	0.650	0.000	5.00	11.694	7.60	382.9	0.0	553.4
145.00		1.00	1.37	28.829	31.71	242.00	0.650	0.000	5.00	11.307	7.35	372.9	0.0	534.8
145.50	Bot - Section 4	1.00	1.37	28.850	31.73	241.24	0.650	0.000	0.50	1.109	0.72	36.6	0.0	52.5
149.25	Top - Section 3	1.00	1.38	29.004	31.90	235.54	0.650	0.000	3.75	8.316	5.41	275.9	0.0	624.7
150.00		1.00	1.38	29.034	31.94	237.86	0.650	0.000	0.75	1.637	1.06	54.4	0.0	46.7
155.00		1.00	1.39	29.234	32.16	230.19	0.650	0.000	5.00	10.691	6.95	357.6	0.0	304.7
160.00		1.00	1.40	29.429	32.37	222.44	0.650	0.000	5.00	10.304	6.70	346.9	0.0	293.6
164.25	Appurtenance(s)	1.00	1.41	29.591	32.55	215.79	0.650	0.000	4.25	8.454	5.50	286.2	0.0	240.8
165.00		1.00	1.41	29.619	32.58	214.61	0.650	0.000	0.75	1.463	0.95	49.6	0.0	41.7
167.00	Appurtenance(s)	1.00	1.41	29.694	32.66	211.46	0.650	0.000	2.00	3.858	2.51	131.1	0.0	109.9
169.00	Appurtenance(s)	1.00	1.42	29.768	32.74	208.30	0.650	0.000	2.00	3.797	2.47	129.3	0.0	108.1
Totals:									169.00			14,627.9		31,770.6

Discrete Appurtenance Forces

Structure: CT11934-S-SBA	Code: EIA/TIA-222-G	12/21/2017
Site Name: Bridgewater 4, CT	Exposure: C	
Height: 169.00 (ft)	Crest Height: 0.00	
Base Elev: 1.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II

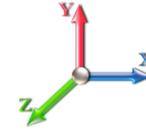


Page: 8

Load Case: 1.2D + 1.6W 93 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60



Iterations 27

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	CaAa x Ka	Ka	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)
1	169.00	Raycap -	3	29.768	32.745	0.40	0.80	1.10	114.48	0.000	0.000	57.84	0.00	0.00
2	167.00	Low Profile Platform	1	29.694	32.663	1.00	1.00	25.00	1440.00	0.000	0.000	1306.53	0.00	0.00
3	167.00	CCI - HPA-65R-BUU-H8	3	29.694	32.663	0.63	0.80	24.61	244.80	0.000	0.000	1286.15	0.00	0.00
4	167.00	Ericsson - RRUS 11	15	29.694	32.663	0.54	0.80	20.26	918.00	0.000	0.000	1058.85	0.00	0.00
5	167.00	Ericsson - RRUS B14	3	29.694	32.663	0.54	0.80	2.65	213.84	0.000	0.000	138.66	0.00	0.00
6	164.25	Andrew - SBNH-1D6565C	12	29.591	32.550	0.67	0.80	92.49	951.84	0.000	0.000	4817.08	0.00	0.00
Totals:									3,882.96			8,665.10		

Total Applied Force Summary

Structure: CT11934-S-SBA	Code: EIA/TIA-222-G	12/21/2017
Site Name: Bridgewater 4, CT	Exposure: C	
Height: 169.00 (ft)	Crest Height: 0.00	
Base Elev: 1.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II

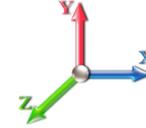


Page: 9

Load Case: 1.2D + 1.6W 93 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60



Iterations 27

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		441.08	1451.31	0.00	0.00
10.00		433.17	1425.37	0.00	0.00
15.00		430.50	1399.43	0.00	0.00
20.00		447.38	1373.48	0.00	0.00
25.00		459.07	1347.54	0.00	0.00
30.00		467.18	1321.60	0.00	0.00
35.00		472.61	1295.66	0.00	0.00
40.00		475.95	1269.72	0.00	0.00
45.00		477.61	1243.78	0.00	0.00
47.25		213.80	551.24	0.00	0.00
50.00		266.18	1240.01	0.00	0.00
53.25		314.65	1446.68	0.00	0.00
55.00		168.73	362.89	0.00	0.00
60.00		483.69	1021.81	0.00	0.00
65.00		480.97	999.58	0.00	0.00
70.00		477.45	977.35	0.00	0.00
75.00		473.22	955.11	0.00	0.00
80.00		468.33	932.88	0.00	0.00
85.00		462.85	910.64	0.00	0.00
90.00		456.83	888.41	0.00	0.00
95.00		450.31	866.17	0.00	0.00
95.75		66.65	128.01	0.00	0.00
100.00		382.94	1311.11	0.00	0.00
100.75		66.80	228.32	0.00	0.00
105.00		376.71	595.34	0.00	0.00
110.00		436.37	683.27	0.00	0.00
115.00		428.27	664.74	0.00	0.00
120.00		419.82	646.21	0.00	0.00
125.00		411.03	627.68	0.00	0.00
130.00		401.94	609.15	0.00	0.00
135.00		392.54	590.62	0.00	0.00
140.00		382.86	572.09	0.00	0.00
145.00		372.91	553.56	0.00	0.00
145.50		36.62	54.34	0.00	0.00
149.25		275.93	638.73	0.00	0.00
150.00		54.38	49.48	0.00	0.00
155.00		357.56	323.47	0.00	0.00
160.00		346.91	312.35	0.00	0.00
164.25	(12) attachments	5103.27	1208.60	0.00	0.00
165.00		49.57	41.67	0.00	0.00
167.00	(22) attachments	3921.26	2926.53	0.00	0.00
169.00	(3) attachments	187.13	222.59	0.00	0.00
Totals:		23,293.02	36,268.52	0.00	0.00

Calculated Forces

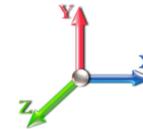
Structure: CT11934-S-SBA	Code: EIA/TIA-222-G	12/21/2017
Site Name: Bridgewater 4, CT	Exposure: C	
Height: 169.00 (ft)	Crest Height: 0.00	
Base Elev: 1.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



Page: 10

Load Case: 1.2D + 1.6W 93 mph Wind

Dead Load Factor 1.20
Wind Load Factor 1.60



Iterations 27

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-36.23	-23.35	0.00	-2741.4	0.00	2741.49	5013.77	2506.88	10497.1	5256.39	0.00	0.000	0.000	0.529
5.00	-34.72	-23.00	0.00	-2624.7	0.00	2624.77	4950.94	2475.47	10178.0	5096.59	0.09	-0.164	0.000	0.522
10.00	-33.23	-22.66	0.00	-2509.7	0.00	2509.76	4887.12	2443.56	9861.68	4938.17	0.35	-0.330	0.000	0.515
15.00	-31.77	-22.31	0.00	-2396.4	0.00	2396.46	4822.31	2411.15	9548.17	4781.18	0.78	-0.497	0.000	0.508
20.00	-30.33	-21.94	0.00	-2284.9	0.00	2284.90	4756.50	2378.25	9237.66	4625.69	1.40	-0.666	0.000	0.500
25.00	-28.93	-21.55	0.00	-2175.1	0.00	2175.19	4689.71	2344.85	8930.24	4471.76	2.18	-0.837	0.000	0.493
30.00	-27.55	-21.15	0.00	-2067.4	0.00	2067.44	4621.92	2310.96	8626.03	4319.43	3.15	-1.009	0.000	0.485
35.00	-26.20	-20.73	0.00	-1961.7	0.00	1961.71	4553.14	2276.57	8325.15	4168.76	4.30	-1.182	0.000	0.476
40.00	-24.88	-20.30	0.00	-1858.0	0.00	1858.07	4483.36	2241.68	8027.70	4019.82	5.63	-1.357	0.000	0.468
45.00	-23.60	-19.84	0.00	-1756.5	0.00	1756.57	4410.73	2205.37	7730.53	3871.01	7.15	-1.533	0.000	0.459
47.25	-23.03	-19.65	0.00	-1711.9	0.00	1711.92	4368.25	2184.13	7581.60	3796.44	7.89	-1.614	0.000	0.456
50.00	-21.76	-19.39	0.00	-1657.8	0.00	1657.88	4316.34	2158.17	7401.55	3706.27	8.85	-1.713	0.000	0.452
53.25	-20.29	-19.06	0.00	-1594.8	0.00	1594.87	3585.75	1792.87	6190.18	3099.69	10.06	-1.830	0.000	0.520
55.00	-19.89	-18.93	0.00	-1561.5	0.00	1561.50	3566.36	1783.18	6109.42	3059.25	10.74	-1.894	0.000	0.516
60.00	-18.83	-18.47	0.00	-1466.8	0.00	1466.86	3510.30	1755.15	5880.38	2944.56	12.83	-2.091	0.000	0.504
65.00	-17.78	-18.02	0.00	-1374.4	0.00	1374.49	3453.25	1726.63	5653.97	2831.19	15.12	-2.288	0.000	0.491
70.00	-16.77	-17.56	0.00	-1284.4	0.00	1284.41	3395.21	1697.61	5430.30	2719.18	17.63	-2.486	0.000	0.477
75.00	-15.77	-17.10	0.00	-1196.6	0.00	1196.62	3336.18	1668.09	5209.47	2608.61	20.33	-2.684	0.000	0.464
80.00	-14.81	-16.63	0.00	-1111.1	0.00	1111.14	3276.15	1638.08	4991.61	2499.52	23.25	-2.882	0.000	0.449
85.00	-13.87	-16.17	0.00	-1027.9	0.00	1027.97	3205.19	1602.60	4762.06	2384.57	26.37	-3.079	0.000	0.436
90.00	-12.95	-15.71	0.00	-947.11	0.00	947.11	3124.28	1562.14	4523.47	2265.10	29.70	-3.275	0.000	0.422
95.00	-12.08	-15.23	0.00	-868.56	0.00	868.56	3043.37	1521.69	4291.01	2148.70	33.23	-3.470	0.000	0.408
95.75	-11.93	-15.18	0.00	-857.13	0.00	857.13	3031.24	1515.62	4256.68	2131.50	33.78	-3.500	0.000	0.406
100.00	-10.62	-14.73	0.00	-792.62	0.00	792.62	2962.46	1481.23	4064.69	2035.37	36.97	-3.665	0.000	0.393
100.75	-10.38	-14.67	0.00	-781.57	0.00	781.57	2439.46	1219.73	3408.86	1706.97	37.55	-3.694	0.000	0.462
105.00	-9.76	-14.29	0.00	-719.22	0.00	719.22	2399.07	1199.53	3275.16	1640.02	40.91	-3.857	0.000	0.443
110.00	-9.06	-13.84	0.00	-647.78	0.00	647.78	2350.64	1175.32	3119.98	1562.31	45.06	-4.067	0.000	0.419
115.00	-8.38	-13.39	0.00	-578.59	0.00	578.59	2301.22	1150.61	2967.19	1485.80	49.43	-4.273	0.000	0.393
120.00	-7.72	-12.95	0.00	-511.64	0.00	511.64	2249.68	1124.84	2815.50	1409.84	54.00	-4.472	0.000	0.366
125.00	-7.09	-12.51	0.00	-446.89	0.00	446.89	2182.25	1091.13	2648.43	1326.19	58.79	-4.663	0.000	0.340
130.00	-6.48	-12.08	0.00	-384.32	0.00	384.32	2114.83	1057.41	2486.48	1245.09	63.76	-4.845	0.000	0.312
135.00	-5.89	-11.66	0.00	-323.91	0.00	323.91	2047.40	1023.70	2329.63	1166.55	68.92	-5.015	0.000	0.281
140.00	-5.33	-11.24	0.00	-265.62	0.00	265.62	1979.98	989.99	2177.89	1090.56	74.25	-5.171	0.000	0.246
145.00	-4.80	-10.82	0.00	-209.42	0.00	209.42	1912.55	956.28	2031.27	1017.14	79.74	-5.310	0.000	0.209
145.50	-4.73	-10.79	0.00	-204.01	0.00	204.01	1905.81	952.91	2016.88	1009.94	80.29	-5.323	0.000	0.205
149.25	-4.11	-10.46	0.00	-163.56	0.00	163.56	1023.88	511.94	1080.86	541.23	84.51	-5.414	0.000	0.307
150.00	-4.05	-10.40	0.00	-155.72	0.00	155.72	1020.48	510.24	1071.47	536.53	85.36	-5.431	0.000	0.295
155.00	-3.75	-10.02	0.00	-103.71	0.00	103.71	997.27	498.64	1009.31	505.41	91.12	-5.578	0.000	0.209
160.00	-3.46	-9.65	0.00	-53.58	0.00	53.58	973.07	486.53	947.94	474.68	97.01	-5.678	0.000	0.117
164.25	-2.76	-4.46	0.00	-12.56	0.00	12.56	951.71	475.86	896.49	448.91	102.08	-5.718	0.000	0.031
165.00	-2.72	-4.40	0.00	-9.22	0.00	9.22	947.87	473.93	887.48	444.40	102.98	-5.720	0.000	0.024
167.00	-0.20	-0.21	0.00	-0.42	0.00	0.42	937.51	468.76	863.57	432.43	105.37	-5.723	0.000	0.001
169.00	0.00	-0.19	0.00	0.00	0.00	0.00	927.00	463.50	839.84	420.54	107.77	-5.723	0.000	0.000

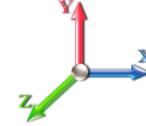
Wind Loading - Shaft

Structure: CT11934-S-SBA	Code: EIA/TIA-222-G	12/21/2017
Site Name: Bridgewater 4, CT	Exposure: C	
Height: 169.00 (ft)	Crest Height: 0.00	
Base Elev: 1.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



Load Case: 0.9D + 1.6W 93 mph Wind

Dead Load Factor 0.90
Wind Load Factor 1.60



Iterations 27

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		1.00	0.85	17.879	19.67	373.12	0.650	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.85	17.879	19.67	366.48	0.650	0.000	5.00	21.565	14.02	441.1	0.0	1074.4
10.00		1.00	0.85	17.879	19.67	359.84	0.650	0.000	5.00	21.178	13.77	433.2	0.0	1055.0
15.00		1.00	0.86	18.100	19.91	355.38	0.650	0.000	5.00	20.791	13.51	430.5	0.0	1035.5
20.00		1.00	0.91	19.166	21.08	358.83	0.650	0.000	5.00	20.404	13.26	447.4	0.0	1016.1
25.00		1.00	0.95	20.048	22.05	359.95	0.650	0.000	5.00	20.016	13.01	459.1	0.0	996.6
30.00		1.00	0.99	20.804	22.88	359.52	0.650	0.000	5.00	19.629	12.76	467.2	0.0	977.2
35.00		1.00	1.02	21.470	23.62	357.95	0.650	0.000	5.00	19.242	12.51	472.6	0.0	957.7
40.00		1.00	1.05	22.065	24.27	355.51	0.650	0.000	5.00	18.855	12.26	476.0	0.0	938.3
45.00		1.00	1.07	22.607	24.87	352.38	0.650	0.000	5.00	18.468	12.00	477.6	0.0	918.8
47.25	Bot - Section 2	1.00	1.09	22.835	25.12	350.78	0.650	0.000	2.25	8.184	5.32	213.8	0.0	407.1
50.00		1.00	1.10	23.103	25.41	348.68	0.650	0.000	2.75	10.071	6.55	266.2	0.0	922.3
53.25	Top - Section 1	1.00	1.11	23.405	25.75	346.01	0.650	0.000	3.25	11.751	7.64	314.6	0.0	1075.9
55.00		1.00	1.12	23.562	25.92	350.75	0.650	0.000	1.75	6.260	4.07	168.7	0.0	267.3
60.00		1.00	1.14	23.990	26.39	346.23	0.650	0.000	5.00	17.624	11.46	483.7	0.0	752.3
65.00		1.00	1.16	24.392	26.83	341.36	0.650	0.000	5.00	17.237	11.20	481.0	0.0	735.6
70.00		1.00	1.18	24.770	27.25	336.18	0.650	0.000	5.00	16.850	10.95	477.5	0.0	719.0
75.00		1.00	1.19	25.127	27.64	330.73	0.650	0.000	5.00	16.462	10.70	473.2	0.0	702.3
80.00		1.00	1.21	25.466	28.01	325.03	0.650	0.000	5.00	16.075	10.45	468.3	0.0	685.6
85.00		1.00	1.23	25.789	28.37	319.12	0.650	0.000	5.00	15.688	10.20	462.8	0.0	668.9
90.00		1.00	1.24	26.098	28.71	313.00	0.650	0.000	5.00	15.301	9.95	456.8	0.0	652.3
95.00		1.00	1.25	26.394	29.03	306.70	0.650	0.000	5.00	14.914	9.69	450.3	0.0	635.6
95.75	Bot - Section 3	1.00	1.26	26.437	29.08	305.74	0.650	0.000	0.75	2.204	1.43	66.6	0.0	93.9
100.00		1.00	1.27	26.677	29.35	300.24	0.650	0.000	4.25	12.548	8.16	382.9	0.0	971.4
100.75	Top - Section 2	1.00	1.27	26.719	29.39	299.25	0.650	0.000	0.75	2.185	1.42	66.8	0.0	169.1
105.00		1.00	1.28	26.950	29.65	299.18	0.650	0.000	4.25	12.219	7.94	376.7	0.0	434.6
110.00		1.00	1.29	27.213	29.93	292.45	0.650	0.000	5.00	14.017	9.11	436.4	0.0	498.4
115.00		1.00	1.31	27.466	30.21	285.58	0.650	0.000	5.00	13.630	8.86	428.3	0.0	484.5
120.00		1.00	1.32	27.712	30.48	278.59	0.650	0.000	5.00	13.243	8.61	419.8	0.0	470.6
125.00		1.00	1.33	27.949	30.74	271.48	0.650	0.000	5.00	12.856	8.36	411.0	0.0	456.7
130.00		1.00	1.34	28.179	31.00	264.26	0.650	0.000	5.00	12.468	8.10	401.9	0.0	442.8
135.00		1.00	1.35	28.402	31.24	256.93	0.650	0.000	5.00	12.081	7.85	392.5	0.0	428.9
140.00		1.00	1.36	28.619	31.48	249.51	0.650	0.000	5.00	11.694	7.60	382.9	0.0	415.0
145.00		1.00	1.37	28.829	31.71	242.00	0.650	0.000	5.00	11.307	7.35	372.9	0.0	401.1
145.50	Bot - Section 4	1.00	1.37	28.850	31.73	241.24	0.650	0.000	0.50	1.109	0.72	36.6	0.0	39.3
149.25	Top - Section 3	1.00	1.38	29.004	31.90	235.54	0.650	0.000	3.75	8.316	5.41	275.9	0.0	468.5
150.00		1.00	1.38	29.034	31.94	237.86	0.650	0.000	0.75	1.637	1.06	54.4	0.0	35.0
155.00		1.00	1.39	29.234	32.16	230.19	0.650	0.000	5.00	10.691	6.95	357.6	0.0	228.6
160.00		1.00	1.40	29.429	32.37	222.44	0.650	0.000	5.00	10.304	6.70	346.9	0.0	220.2
164.25	Appurtenance(s)	1.00	1.41	29.591	32.55	215.79	0.650	0.000	4.25	8.454	5.50	286.2	0.0	180.6
165.00		1.00	1.41	29.619	32.58	214.61	0.650	0.000	0.75	1.463	0.95	49.6	0.0	31.3
167.00	Appurtenance(s)	1.00	1.41	29.694	32.66	211.46	0.650	0.000	2.00	3.858	2.51	131.1	0.0	82.4
169.00	Appurtenance(s)	1.00	1.42	29.768	32.74	208.30	0.650	0.000	2.00	3.797	2.47	129.3	0.0	81.1
Totals:								169.00				14,627.9		23,828.0

Discrete Appurtenance Forces

Structure: CT11934-S-SBA	Code: EIA/TIA-222-G	12/21/2017
Site Name: Bridgewater 4, CT	Exposure: C	
Height: 169.00 (ft)	Crest Height: 0.00	
Base Elev: 1.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II

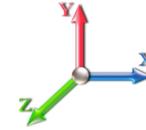


Page: 12

Load Case: 0.9D + 1.6W 93 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



Iterations 27

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	CaAa x Ka	Ka	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)
1	169.00	Raycap -	3	29.768	32.745	0.40	0.80	1.10	85.86	0.000	0.000	57.84	0.00	0.00
2	167.00	Low Profile Platform	1	29.694	32.663	1.00	1.00	25.00	1080.00	0.000	0.000	1306.53	0.00	0.00
3	167.00	CCI - HPA-65R-BUU-H8	3	29.694	32.663	0.63	0.80	24.61	183.60	0.000	0.000	1286.15	0.00	0.00
4	167.00	Ericsson - RRUS 11	15	29.694	32.663	0.54	0.80	20.26	688.50	0.000	0.000	1058.85	0.00	0.00
5	167.00	Ericsson - RRUS B14	3	29.694	32.663	0.54	0.80	2.65	160.38	0.000	0.000	138.66	0.00	0.00
6	164.25	Andrew - SBNH-1D6565C	12	29.591	32.550	0.67	0.80	92.49	713.88	0.000	0.000	4817.08	0.00	0.00
Totals:									2,912.22			8,665.10		

Total Applied Force Summary

Structure: CT11934-S-SBA	Code: EIA/TIA-222-G	12/21/2017
Site Name: Bridgewater 4, CT	Exposure: C	
Height: 169.00 (ft)	Crest Height: 0.00	
Base Elev: 1.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II

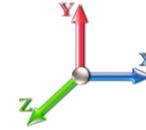


Page: 13

Load Case: 0.9D + 1.6W 93 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



Iterations 27

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		441.08	1088.48	0.00	0.00
10.00		433.17	1069.02	0.00	0.00
15.00		430.50	1049.57	0.00	0.00
20.00		447.38	1030.11	0.00	0.00
25.00		459.07	1010.66	0.00	0.00
30.00		467.18	991.20	0.00	0.00
35.00		472.61	971.75	0.00	0.00
40.00		475.95	952.29	0.00	0.00
45.00		477.61	932.84	0.00	0.00
47.25		213.80	413.43	0.00	0.00
50.00		266.18	930.01	0.00	0.00
53.25		314.65	1085.01	0.00	0.00
55.00		168.73	272.17	0.00	0.00
60.00		483.69	766.36	0.00	0.00
65.00		480.97	749.68	0.00	0.00
70.00		477.45	733.01	0.00	0.00
75.00		473.22	716.33	0.00	0.00
80.00		468.33	699.66	0.00	0.00
85.00		462.85	682.98	0.00	0.00
90.00		456.83	666.31	0.00	0.00
95.00		450.31	649.63	0.00	0.00
95.75		66.65	96.01	0.00	0.00
100.00		382.94	983.33	0.00	0.00
100.75		66.80	171.24	0.00	0.00
105.00		376.71	446.51	0.00	0.00
110.00		436.37	512.45	0.00	0.00
115.00		428.27	498.55	0.00	0.00
120.00		419.82	484.66	0.00	0.00
125.00		411.03	470.76	0.00	0.00
130.00		401.94	456.86	0.00	0.00
135.00		392.54	442.97	0.00	0.00
140.00		382.86	429.07	0.00	0.00
145.00		372.91	415.17	0.00	0.00
145.50		36.62	40.75	0.00	0.00
149.25		275.93	479.05	0.00	0.00
150.00		54.38	37.11	0.00	0.00
155.00		357.56	242.60	0.00	0.00
160.00		346.91	234.26	0.00	0.00
164.25	(12) attachments	5103.27	906.45	0.00	0.00
165.00		49.57	31.25	0.00	0.00
167.00	(22) attachments	3921.26	2194.90	0.00	0.00
169.00	(3) attachments	187.13	166.95	0.00	0.00
Totals:		23,293.02	27,201.39	0.00	0.00

Calculated Forces

Structure: CT11934-S-SBA	Code: EIA/TIA-222-G	12/21/2017
Site Name: Bridgewater 4, CT	Exposure: C	
Height: 169.00 (ft)	Crest Height: 0.00	
Base Elev: 1.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



Page: 14

Load Case: 0.9D + 1.6W 93 mph Wind

Iterations 27

Dead Load Factor 0.90

Wind Load Factor 1.60



Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-27.17	-23.33	0.00	-2715.6	0.00	2715.69	5013.77	2506.88	10497.1	5256.39	0.00	0.000	0.000	0.522
5.00	-26.01	-22.96	0.00	-2599.0	0.00	2599.03	4950.94	2475.47	10178.0	5096.59	0.09	-0.163	0.000	0.515
10.00	-24.88	-22.60	0.00	-2484.2	0.00	2484.21	4887.12	2443.56	9861.68	4938.17	0.35	-0.327	0.000	0.508
15.00	-23.77	-22.23	0.00	-2371.2	0.00	2371.22	4822.31	2411.15	9548.17	4781.18	0.78	-0.492	0.000	0.501
20.00	-22.68	-21.84	0.00	-2260.0	0.00	2260.08	4756.50	2378.25	9237.66	4625.69	1.38	-0.660	0.000	0.493
25.00	-21.61	-21.43	0.00	-2150.9	0.00	2150.90	4689.71	2344.85	8930.24	4471.76	2.16	-0.828	0.000	0.486
30.00	-20.57	-21.01	0.00	-2043.7	0.00	2043.75	4621.92	2310.96	8626.03	4319.43	3.12	-0.998	0.000	0.478
35.00	-19.54	-20.58	0.00	-1938.7	0.00	1938.71	4553.14	2276.57	8325.15	4168.76	4.26	-1.170	0.000	0.469
40.00	-18.54	-20.14	0.00	-1835.8	0.00	1835.84	4483.36	2241.68	8027.70	4019.82	5.58	-1.342	0.000	0.461
45.00	-17.58	-19.67	0.00	-1735.1	0.00	1735.16	4410.73	2205.37	7730.53	3871.01	7.07	-1.516	0.000	0.452
47.25	-17.14	-19.47	0.00	-1690.9	0.00	1690.90	4368.25	2184.13	7581.60	3796.44	7.81	-1.596	0.000	0.449
50.00	-16.18	-19.21	0.00	-1637.3	0.00	1637.34	4316.34	2158.17	7401.55	3706.27	8.76	-1.694	0.000	0.446
53.25	-15.08	-18.89	0.00	-1574.9	0.00	1574.90	3585.75	1792.87	6190.18	3099.69	9.95	-1.810	0.000	0.512
55.00	-14.77	-18.74	0.00	-1541.8	0.00	1541.85	3566.36	1783.18	6109.42	3059.25	10.63	-1.873	0.000	0.508
60.00	-13.96	-18.28	0.00	-1448.1	0.00	1448.13	3510.30	1755.15	5880.38	2944.56	12.69	-2.067	0.000	0.496
65.00	-13.17	-17.82	0.00	-1356.7	0.00	1356.72	3453.25	1726.63	5653.97	2831.19	14.96	-2.262	0.000	0.483
70.00	-12.39	-17.35	0.00	-1267.6	0.00	1267.63	3395.21	1697.61	5430.30	2719.18	17.43	-2.457	0.000	0.470
75.00	-11.64	-16.89	0.00	-1180.8	0.00	1180.87	3336.18	1668.09	5209.47	2608.61	20.11	-2.653	0.000	0.456
80.00	-10.91	-16.42	0.00	-1096.4	0.00	1096.43	3276.15	1638.08	4991.61	2499.52	22.99	-2.848	0.000	0.442
85.00	-10.20	-15.96	0.00	-1014.3	0.00	1014.31	3205.19	1602.60	4762.06	2384.57	26.08	-3.042	0.000	0.429
90.00	-9.50	-15.50	0.00	-934.51	0.00	934.51	3124.28	1562.14	4523.47	2265.10	29.37	-3.236	0.000	0.416
95.00	-8.85	-15.03	0.00	-857.01	0.00	857.01	3043.37	1521.69	4291.01	2148.70	32.86	-3.428	0.000	0.402
95.75	-8.74	-14.97	0.00	-845.73	0.00	845.73	3031.24	1515.62	4256.68	2131.50	33.40	-3.458	0.000	0.400
100.00	-7.75	-14.54	0.00	-782.10	0.00	782.10	2962.46	1481.23	4064.69	2035.37	36.55	-3.620	0.000	0.387
100.75	-7.56	-14.48	0.00	-771.19	0.00	771.19	2439.46	1219.73	3408.86	1706.97	37.12	-3.650	0.000	0.455
105.00	-7.10	-14.10	0.00	-709.66	0.00	709.66	2399.07	1199.53	3275.16	1640.02	40.44	-3.810	0.000	0.436
110.00	-6.57	-13.65	0.00	-639.19	0.00	639.19	2350.64	1175.32	3119.98	1562.31	44.54	-4.018	0.000	0.412
115.00	-6.05	-13.21	0.00	-570.94	0.00	570.94	2301.22	1150.61	2967.19	1485.80	48.85	-4.220	0.000	0.387
120.00	-5.56	-12.77	0.00	-504.90	0.00	504.90	2249.68	1124.84	2815.50	1409.84	53.37	-4.417	0.000	0.361
125.00	-5.08	-12.34	0.00	-441.05	0.00	441.05	2182.25	1091.13	2648.43	1326.19	58.09	-4.605	0.000	0.335
130.00	-4.63	-11.92	0.00	-379.35	0.00	379.35	2114.83	1057.41	2486.48	1245.09	63.01	-4.785	0.000	0.307
135.00	-4.18	-11.50	0.00	-319.77	0.00	319.77	2047.40	1023.70	2329.63	1166.55	68.11	-4.953	0.000	0.276
140.00	-3.76	-11.09	0.00	-262.27	0.00	262.27	1979.98	989.99	2177.89	1090.56	73.37	-5.107	0.000	0.243
145.00	-3.37	-10.69	0.00	-206.82	0.00	206.82	1912.55	956.28	2031.27	1017.14	78.79	-5.244	0.000	0.205
145.50	-3.32	-10.65	0.00	-201.47	0.00	201.47	1905.81	952.91	2016.88	1009.94	79.34	-5.257	0.000	0.201
149.25	-2.86	-10.33	0.00	-161.54	0.00	161.54	1023.88	511.94	1080.86	541.23	83.50	-5.346	0.000	0.302
150.00	-2.81	-10.28	0.00	-153.79	0.00	153.79	1020.48	510.24	1071.47	536.53	84.34	-5.363	0.000	0.290
155.00	-2.59	-9.91	0.00	-102.40	0.00	102.40	997.27	498.64	1009.31	505.41	90.03	-5.509	0.000	0.206
160.00	-2.37	-9.54	0.00	-52.87	0.00	52.87	973.07	486.53	947.94	474.68	95.85	-5.607	0.000	0.114
164.25	-1.97	-4.37	0.00	-12.33	0.00	12.33	951.71	475.86	896.49	448.91	100.86	-5.646	0.000	0.030
165.00	-1.95	-4.32	0.00	-9.05	0.00	9.05	947.87	473.93	887.48	444.40	101.74	-5.649	0.000	0.022
167.00	-0.15	-0.20	0.00	-0.41	0.00	0.41	937.51	468.76	863.57	432.43	104.10	-5.652	0.000	0.001
169.00	0.00	-0.19	0.00	0.00	0.00	0.00	927.00	463.50	839.84	420.54	106.47	-5.652	0.000	0.000

Wind Loading - Shaft

Structure: CT11934-S-SBA	Code: EIA/TIA-222-G	12/21/2017
Site Name: Bridgewater 4, CT	Exposure: C	
Height: 169.00 (ft)	Crest Height: 0.00	
Base Elev: 1.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



Load Case: 1.2D + 1.0Di + 1.0Wi 40 mph Wind

Dead Load Factor 1.20
Wind Load Factor 1.00



Iterations 26

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		1.00	0.85	3.308	3.64	0.00	1.200	1.410	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.85	3.308	3.64	0.00	1.200	1.687	5.00	22.970	27.56	100.3	551.4	1984.0
10.00		1.00	0.85	3.308	3.64	0.00	1.200	1.792	5.00	22.671	27.21	99.0	576.8	1983.4
15.00		1.00	0.86	3.348	3.68	0.00	1.200	1.860	5.00	22.341	26.81	98.7	588.9	1969.6
20.00		1.00	0.91	3.546	3.90	0.00	1.200	1.912	5.00	21.997	26.40	102.9	594.8	1949.5
25.00		1.00	0.95	3.709	4.08	0.00	1.200	1.953	5.00	21.644	25.97	106.0	596.9	1925.7
30.00		1.00	0.99	3.849	4.23	0.00	1.200	1.988	5.00	21.286	25.54	108.1	596.5	1899.4
35.00		1.00	1.02	3.972	4.37	0.00	1.200	2.017	5.00	20.923	25.11	109.7	594.3	1871.3
40.00		1.00	1.05	4.082	4.49	0.00	1.200	2.044	5.00	20.558	24.67	110.8	590.7	1841.7
45.00		1.00	1.07	4.182	4.60	0.00	1.200	2.068	5.00	20.191	24.23	111.5	586.0	1811.1
47.25	Bot - Section 2	1.00	1.09	4.224	4.65	0.00	1.200	2.077	2.25	8.963	10.76	50.0	262.6	805.4
50.00		1.00	1.10	4.274	4.70	0.00	1.200	2.089	2.75	11.028	13.23	62.2	324.6	1554.3
53.25	Top - Section 1	1.00	1.11	4.330	4.76	0.00	1.200	2.102	3.25	12.890	15.47	73.7	381.0	1815.5
55.00		1.00	1.12	4.359	4.79	0.00	1.200	2.109	1.75	6.875	8.25	39.6	204.4	560.7
60.00		1.00	1.14	4.438	4.88	0.00	1.200	2.127	5.00	19.396	23.28	113.6	577.0	1580.1
65.00		1.00	1.16	4.512	4.96	0.00	1.200	2.144	5.00	19.023	22.83	113.3	569.5	1550.3
70.00		1.00	1.18	4.582	5.04	0.00	1.200	2.159	5.00	18.649	22.38	112.8	561.5	1520.1
75.00		1.00	1.19	4.648	5.11	0.00	1.200	2.174	5.00	18.274	21.93	112.1	553.0	1489.4
80.00		1.00	1.21	4.711	5.18	0.00	1.200	2.188	5.00	17.899	21.48	111.3	544.2	1458.4
85.00		1.00	1.23	4.771	5.25	0.00	1.200	2.201	5.00	17.522	21.03	110.3	535.0	1427.0
90.00		1.00	1.24	4.828	5.31	0.00	1.200	2.214	5.00	17.146	20.57	109.3	525.5	1395.2
95.00		1.00	1.25	4.883	5.37	0.00	1.200	2.225	5.00	16.768	20.12	108.1	515.8	1363.2
95.75	Bot - Section 3	1.00	1.26	4.891	5.38	0.00	1.200	2.227	0.75	2.482	2.98	16.0	77.1	202.3
100.00		1.00	1.27	4.935	5.43	0.00	1.200	2.237	4.25	14.132	16.96	92.1	437.3	1732.5
100.75	Top - Section 2	1.00	1.27	4.943	5.44	0.00	1.200	2.238	0.75	2.465	2.96	16.1	76.9	302.5
105.00		1.00	1.28	4.986	5.48	0.00	1.200	2.248	4.25	13.811	16.57	90.9	428.6	1008.0
110.00		1.00	1.29	5.034	5.54	0.00	1.200	2.258	5.00	15.899	19.08	105.6	493.8	1158.3
115.00		1.00	1.31	5.081	5.59	0.00	1.200	2.268	5.00	15.520	18.62	104.1	483.1	1129.1
120.00		1.00	1.32	5.126	5.64	0.00	1.200	2.277	5.00	15.141	18.17	102.5	472.2	1099.7
125.00		1.00	1.33	5.170	5.69	0.00	1.200	2.287	5.00	14.761	17.71	100.7	461.1	1070.1
130.00		1.00	1.34	5.213	5.73	0.00	1.200	2.296	5.00	14.381	17.26	99.0	449.9	1040.3
135.00		1.00	1.35	5.254	5.78	0.00	1.200	2.304	5.00	14.001	16.80	97.1	438.5	1010.4
140.00		1.00	1.36	5.294	5.82	0.00	1.200	2.313	5.00	13.621	16.35	95.2	426.9	980.3
145.00		1.00	1.37	5.333	5.87	0.00	1.200	2.321	5.00	13.241	15.89	93.2	415.2	950.1
145.50	Bot - Section 4	1.00	1.37	5.337	5.87	0.00	1.200	2.321	0.50	1.303	1.56	9.2	41.4	93.9
149.25	Top - Section 3	1.00	1.38	5.366	5.90	0.00	1.200	2.327	3.75	9.771	11.72	69.2	308.0	932.7
150.00		1.00	1.38	5.371	5.91	0.00	1.200	2.329	0.75	1.928	2.31	13.7	61.3	108.0
155.00		1.00	1.39	5.408	5.95	0.00	1.200	2.336	5.00	12.638	15.17	90.2	396.9	701.7
160.00		1.00	1.40	5.444	5.99	0.00	1.200	2.343	5.00	12.257	14.71	88.1	384.8	678.5
164.25	Appurtenance(s)	1.00	1.41	5.474	6.02	0.00	1.200	2.350	4.25	10.119	12.14	73.1	318.3	559.2
165.00		1.00	1.41	5.479	6.03	0.00	1.200	2.351	0.75	1.757	2.11	12.7	55.9	97.6
167.00	Appurtenance(s)	1.00	1.41	5.493	6.04	0.00	1.200	2.353	2.00	4.643	5.57	33.7	147.1	257.0
169.00	Appurtenance(s)	1.00	1.42	5.507	6.06	0.00	1.200	2.356	2.00	4.582	5.50	33.3	145.1	253.2
Totals:								169.00				3,498.8		49,120.6

Discrete Appurtenance Forces

Structure: CT11934-S-SBA	Code: EIA/TIA-222-G	12/21/2017
Site Name: Bridgewater 4, CT	Exposure: C	
Height: 169.00 (ft)	Crest Height: 0.00	
Base Elev: 1.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II

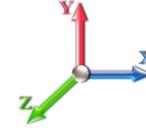


Page: 16

Load Case: 1.2D + 1.0Di + 1.0Wi 40 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 26

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	CaAa x Ka	Ka	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)
1	169.00	Raycap -	3	5.507	6.058	0.48	0.80	2.18	311.79	0.000	0.000	13.18	0.00	0.00
2	167.00	Low Profile Platform	1	5.493	6.042	1.00	1.00	53.24	2552.08	0.000	0.000	321.71	0.00	0.00
3	167.00	CCI - HPA-65R-BUU-H8	3	5.493	6.042	0.65	0.80	29.56	1490.61	0.000	0.000	178.59	0.00	0.00
4	167.00	Ericsson - RRUS 11	15	5.493	6.042	0.60	0.80	30.37	2139.93	0.000	0.000	183.49	0.00	0.00
5	167.00	Ericsson - RRUS B14	3	5.493	6.042	0.60	0.80	4.23	353.40	0.000	0.000	25.55	0.00	0.00
6	164.25	Andrew - SBNH-1D6565C	12	5.474	6.021	0.68	0.80	129.31	3875.02	0.000	0.000	778.63	0.00	0.00
Totals:									10,722.83			1,501.15		

Total Applied Force Summary

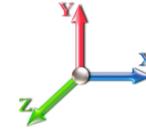
Structure: CT11934-S-SBA	Code: EIA/TIA-222-G	12/21/2017
Site Name: Bridgewater 4, CT	Exposure: C	
Height: 169.00 (ft)	Crest Height: 0.00	
Base Elev: 1.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



Page: 17

Load Case: 1.2D + 1.0Di + 1.0Wi 40 mph Wind

Dead Load Factor 1.20
Wind Load Factor 1.00



Iterations 26

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		100.29	2002.72	0.00	0.00
10.00		98.98	2002.12	0.00	0.00
15.00		98.74	1988.32	0.00	0.00
20.00		102.95	1968.26	0.00	0.00
25.00		105.96	1944.46	0.00	0.00
30.00		108.13	1918.14	0.00	0.00
35.00		109.69	1889.99	0.00	0.00
40.00		110.77	1860.44	0.00	0.00
45.00		111.46	1829.78	0.00	0.00
47.25		49.98	813.85	0.00	0.00
50.00		62.22	1564.62	0.00	0.00
53.25		73.67	1827.70	0.00	0.00
55.00		39.56	567.26	0.00	0.00
60.00		113.63	1598.78	0.00	0.00
65.00		113.30	1569.04	0.00	0.00
70.00		112.80	1538.81	0.00	0.00
75.00		112.13	1508.14	0.00	0.00
80.00		111.30	1477.08	0.00	0.00
85.00		110.35	1445.67	0.00	0.00
90.00		109.27	1413.95	0.00	0.00
95.00		108.07	1381.94	0.00	0.00
95.75		16.02	205.15	0.00	0.00
100.00		92.06	1748.42	0.00	0.00
100.75		16.08	305.26	0.00	0.00
105.00		90.89	1023.94	0.00	0.00
110.00		105.65	1177.03	0.00	0.00
115.00		104.09	1147.81	0.00	0.00
120.00		102.45	1118.40	0.00	0.00
125.00		100.74	1088.81	0.00	0.00
130.00		98.96	1059.04	0.00	0.00
135.00		97.11	1029.11	0.00	0.00
140.00		95.19	999.03	0.00	0.00
145.00		93.21	968.80	0.00	0.00
145.50		9.18	95.74	0.00	0.00
149.25		69.20	946.72	0.00	0.00
150.00		13.67	110.81	0.00	0.00
155.00		90.22	720.38	0.00	0.00
160.00		88.08	697.19	0.00	0.00
164.25	(12) attachments	851.74	4450.08	0.00	0.00
165.00		12.71	97.56	0.00	0.00
167.00	(22) attachments	743.00	6793.01	0.00	0.00
169.00	(3) attachments	46.49	565.03	0.00	0.00
Totals:		5,000.00	60,458.37	0.00	0.00

Calculated Forces

Structure: CT11934-S-SBA	Code: EIA/TIA-222-G	12/21/2017
Site Name: Bridgewater 4, CT	Exposure: C	
Height: 169.00 (ft)	Crest Height: 0.00	
Base Elev: 1.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



Page: 18

Load Case: 1.2D + 1.0Di + 1.0Wi 40 mph Wind

Iterations 26

Dead Load Factor 1.20
Wind Load Factor 1.00



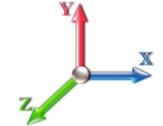
Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-60.46	-5.02	0.00	-587.26	0.00	587.26	5013.77	2506.88	10497.1	5256.39	0.00	0.000	0.000	0.124
5.00	-58.45	-4.95	0.00	-562.17	0.00	562.17	4950.94	2475.47	10178.0	5096.59	0.02	-0.035	0.000	0.122
10.00	-56.45	-4.89	0.00	-537.41	0.00	537.41	4887.12	2443.56	9861.68	4938.17	0.07	-0.071	0.000	0.120
15.00	-54.45	-4.82	0.00	-512.97	0.00	512.97	4822.31	2411.15	9548.17	4781.18	0.17	-0.107	0.000	0.119
20.00	-52.48	-4.75	0.00	-488.87	0.00	488.87	4756.50	2378.25	9237.66	4625.69	0.30	-0.143	0.000	0.117
25.00	-50.54	-4.67	0.00	-465.13	0.00	465.13	4689.71	2344.85	8930.24	4471.76	0.47	-0.179	0.000	0.115
30.00	-48.62	-4.58	0.00	-441.80	0.00	441.80	4621.92	2310.96	8626.03	4319.43	0.68	-0.216	0.000	0.113
35.00	-46.72	-4.50	0.00	-418.88	0.00	418.88	4553.14	2276.57	8325.15	4168.76	0.92	-0.253	0.000	0.111
40.00	-44.86	-4.41	0.00	-396.40	0.00	396.40	4483.36	2241.68	8027.70	4019.82	1.21	-0.290	0.000	0.109
45.00	-43.03	-4.31	0.00	-374.37	0.00	374.37	4410.73	2205.37	7730.53	3871.01	1.53	-0.328	0.000	0.106
47.25	-42.21	-4.26	0.00	-364.68	0.00	364.68	4368.25	2184.13	7581.60	3796.44	1.69	-0.345	0.000	0.106
50.00	-40.65	-4.21	0.00	-352.95	0.00	352.95	4316.34	2158.17	7401.55	3706.27	1.89	-0.366	0.000	0.105
53.25	-38.82	-4.14	0.00	-339.27	0.00	339.27	3585.75	1792.87	6190.18	3099.69	2.15	-0.391	0.000	0.120
55.00	-38.25	-4.11	0.00	-332.03	0.00	332.03	3566.36	1783.18	6109.42	3059.25	2.30	-0.405	0.000	0.119
60.00	-36.65	-4.01	0.00	-311.48	0.00	311.48	3510.30	1755.15	5880.38	2944.56	2.74	-0.446	0.000	0.116
65.00	-35.08	-3.91	0.00	-291.41	0.00	291.41	3453.25	1726.63	5653.97	2831.19	3.23	-0.488	0.000	0.113
70.00	-33.54	-3.81	0.00	-271.85	0.00	271.85	3395.21	1697.61	5430.30	2719.18	3.77	-0.530	0.000	0.110
75.00	-32.03	-3.71	0.00	-252.80	0.00	252.80	3336.18	1668.09	5209.47	2608.61	4.35	-0.572	0.000	0.107
80.00	-30.55	-3.60	0.00	-234.26	0.00	234.26	3276.15	1638.08	4991.61	2499.52	4.97	-0.614	0.000	0.103
85.00	-29.10	-3.50	0.00	-216.25	0.00	216.25	3205.19	1602.60	4762.06	2384.57	5.63	-0.655	0.000	0.100
90.00	-27.69	-3.39	0.00	-198.76	0.00	198.76	3124.28	1562.14	4523.47	2265.10	6.34	-0.697	0.000	0.097
95.00	-26.31	-3.28	0.00	-181.80	0.00	181.80	3043.37	1521.69	4291.01	2148.70	7.09	-0.737	0.000	0.093
95.75	-26.10	-3.27	0.00	-179.34	0.00	179.34	3031.24	1515.62	4256.68	2131.50	7.21	-0.744	0.000	0.093
100.00	-24.35	-3.16	0.00	-165.46	0.00	165.46	2962.46	1481.23	4064.69	2035.37	7.89	-0.778	0.000	0.090
100.75	-24.05	-3.15	0.00	-163.09	0.00	163.09	2439.46	1219.73	3408.86	1706.97	8.01	-0.784	0.000	0.105
105.00	-23.02	-3.06	0.00	-149.70	0.00	149.70	2399.07	1199.53	3275.16	1640.02	8.72	-0.818	0.000	0.101
110.00	-21.84	-2.95	0.00	-134.41	0.00	134.41	2350.64	1175.32	3119.98	1562.31	9.60	-0.862	0.000	0.095
115.00	-20.70	-2.85	0.00	-119.64	0.00	119.64	2301.22	1150.61	2967.19	1485.80	10.53	-0.905	0.000	0.090
120.00	-19.58	-2.74	0.00	-105.41	0.00	105.41	2249.68	1124.84	2815.50	1409.84	11.50	-0.946	0.000	0.083
125.00	-18.49	-2.63	0.00	-91.71	0.00	91.71	2182.25	1091.13	2648.43	1326.19	12.51	-0.985	0.000	0.078
130.00	-17.43	-2.53	0.00	-78.55	0.00	78.55	2114.83	1057.41	2486.48	1245.09	13.56	-1.022	0.000	0.071
135.00	-16.40	-2.42	0.00	-65.92	0.00	65.92	2047.40	1023.70	2329.63	1166.55	14.65	-1.057	0.000	0.065
140.00	-15.40	-2.31	0.00	-53.82	0.00	53.82	1979.98	989.99	2177.89	1090.56	15.78	-1.089	0.000	0.057
145.00	-14.44	-2.21	0.00	-42.25	0.00	42.25	1912.55	956.28	2031.27	1017.14	16.93	-1.117	0.000	0.049
145.50	-14.34	-2.20	0.00	-41.14	0.00	41.14	1905.81	952.91	2016.88	1009.94	17.05	-1.119	0.000	0.048
149.25	-13.39	-2.11	0.00	-32.90	0.00	32.90	1023.88	511.94	1080.86	541.23	17.93	-1.138	0.000	0.074
150.00	-13.28	-2.10	0.00	-31.32	0.00	31.32	1020.48	510.24	1071.47	536.53	18.11	-1.141	0.000	0.071
155.00	-12.56	-2.00	0.00	-20.81	0.00	20.81	997.27	498.64	1009.31	505.41	19.33	-1.171	0.000	0.054
160.00	-11.87	-1.90	0.00	-10.80	0.00	10.80	973.07	486.53	947.94	474.68	20.56	-1.191	0.000	0.035
164.25	-7.44	-0.96	0.00	-2.72	0.00	2.72	951.71	475.86	896.49	448.91	21.63	-1.199	0.000	0.014
165.00	-7.34	-0.94	0.00	-2.00	0.00	2.00	947.87	473.93	887.48	444.40	21.82	-1.199	0.000	0.012
167.00	-0.56	-0.06	0.00	-0.12	0.00	0.12	937.51	468.76	863.57	432.43	22.32	-1.200	0.000	0.001
169.00	0.00	-0.05	0.00	0.00	0.00	0.00	927.00	463.50	839.84	420.54	22.82	-1.200	0.000	0.000

Seismic Segment Forces (Factored)

Structure: CT11934-S-SBA	Code: EIA/TIA-222-G	12/21/2017
Site Name: Bridgewater 4, CT	Exposure: C	
Height: 169.00 (ft)	Crest Height: 0.00	
Base Elev: 1.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



Page: 19

Load Case: 1.2D + 1.0E						Iterations 24
Gust Response Factor	1.10			Sds	0.20	Ss 0.18
Dead Load Factor	1.20	Seismic Load Factor	1.00	Sd1	0.10	S1 0.07
Wind Load Factor	0.00	Structure Frequency	0.36	SA	0.04	Seismic Importance Factor 1.00

Top Elev (ft)	Description	Wz (lb)	a	b	c	Lateral Fs (lb)	R: 1.50
0.00		0.00	0.00	0.01	0.00	0.00	
5.00		1193.8	0.00	0.03	0.02	22.73	
10.00		1172.2	0.01	0.05	0.03	30.96	
15.00		1150.5	0.02	0.06	0.04	34.95	
20.00		1128.9	0.03	0.07	0.04	36.77	
25.00		1107.3	0.04	0.07	0.04	37.51	
30.00		1085.7	0.06	0.07	0.04	37.76	
35.00		1064.1	0.08	0.07	0.04	37.85	
40.00		1042.5	0.11	0.07	0.04	37.87	
45.00		1020.8	0.14	0.07	0.03	37.81	
47.25	Bot - Section 2	452.35	0.15	0.07	0.03	16.88	
50.00		1024.7	0.17	0.07	0.03	38.47	
53.25	Top - Section 1	1195.4	0.19	0.06	0.02	44.99	
55.00		296.95	0.21	0.06	0.02	11.16	
60.00		835.91	0.24	0.06	0.02	30.70	
65.00		817.38	0.28	0.05	0.01	28.24	
70.00		798.85	0.33	0.04	0.01	24.38	
75.00		780.33	0.38	0.02	0.01	18.88	
80.00		761.80	0.43	0.01	0.01	11.75	
85.00		743.27	0.48	-0.01	0.01	3.41	
90.00		724.74	0.54	-0.03	0.01	-5.27	
95.00		706.21	0.60	-0.05	0.01	-13.15	
95.75	Bot - Section 3	104.33	0.61	-0.06	0.02	-2.11	
100.00		1079.3	0.67	-0.08	0.02	-30.14	
100.75	Top - Section 2	187.92	0.68	-0.08	0.03	-5.46	
105.00		482.86	0.73	-0.10	0.04	-16.42	
110.00		553.79	0.81	-0.11	0.06	-20.07	
115.00		538.35	0.88	-0.12	0.08	-18.51	
120.00		522.91	0.96	-0.12	0.11	-14.86	
125.00		507.47	1.04	-0.10	0.15	-9.32	
130.00		492.03	1.12	-0.06	0.20	-2.11	
135.00		476.58	1.21	0.01	0.26	6.59	
140.00		461.14	1.30	0.12	0.34	16.59	
145.00		445.70	1.39	0.27	0.43	27.72	
145.50	Bot - Section 4	43.72	1.40	0.29	0.44	2.84	
149.25	Top - Section 3	520.58	1.48	0.44	0.52	45.68	
150.00		38.89	1.49	0.48	0.53	3.60	
155.00		253.96	1.59	0.75	0.66	32.29	
160.00		244.69	1.70	1.10	0.81	40.63	
164.25	Appurtenance(s)	993.90	1.79	1.47	0.95	201.30	
165.00		34.72	1.80	1.55	0.98	7.27	
167.00	Appurtenance(s)	2438.7	1.85	1.75	1.06	555.69	
169.00	Appurtenance(s)	185.49	1.89	1.98	1.14	45.84	
Totals:		29,711.3				1,391.7	Total Wind: 23,293.0

Seismic Base Shear is Less Than 50% of Wind Force - An Analysis is NOT Required

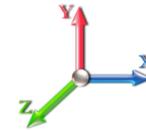
Calculated Forces

Structure: CT11934-S-SBA	Code: EIA/TIA-222-G	12/21/2017
Site Name: Bridgewater 4, CT	Exposure: C	
Height: 169.00 (ft)	Crest Height: 0.00	
Base Elev: 1.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



Page: 20

Load Case: 1.2D + 1.0E						Iterations 24
Gust Response Factor	1.10			Sds	0.20	Ss 0.18
Dead Load Factor	1.20	Seismic Load Factor	1.00	Sd1	0.10	S1 0.07
Wind Load Factor	0.00	Structure Frequency	0.36	SA	0.04	Seismic Importance Factor 1.00



Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-36.27	-1.53	0.00	-190.62	0.00	190.62	5013.77	2506.88	10497.1	5256.39	0.00	0.00	0.00	0.043
5.00	-34.82	-1.52	0.00	-182.96	0.00	182.96	4950.94	2475.47	10178.0	5096.59	0.01	-0.01	0.043	
10.00	-33.39	-1.49	0.00	-175.38	0.00	175.38	4887.12	2443.56	9861.68	4938.17	0.02	-0.02	0.042	
15.00	-31.99	-1.46	0.00	-167.93	0.00	167.93	4822.31	2411.15	9548.17	4781.18	0.05	-0.03	0.042	
20.00	-30.62	-1.43	0.00	-160.62	0.00	160.62	4756.50	2378.25	9237.66	4625.69	0.10	-0.05	0.041	
25.00	-29.27	-1.40	0.00	-153.46	0.00	153.46	4689.71	2344.85	8930.24	4471.76	0.15	-0.06	0.041	
30.00	-27.95	-1.36	0.00	-146.47	0.00	146.47	4621.92	2310.96	8626.03	4319.43	0.22	-0.07	0.040	
35.00	-26.65	-1.33	0.00	-139.65	0.00	139.65	4553.14	2276.57	8325.15	4168.76	0.30	-0.08	0.039	
40.00	-25.38	-1.30	0.00	-132.99	0.00	132.99	4483.36	2241.68	8027.70	4019.82	0.39	-0.10	0.039	
45.00	-24.14	-1.26	0.00	-126.51	0.00	126.51	4410.73	2205.37	7730.53	3871.01	0.50	-0.11	0.038	
47.25	-23.59	-1.25	0.00	-123.67	0.00	123.67	4368.25	2184.13	7581.60	3796.44	0.55	-0.11	0.038	
50.00	-22.35	-1.21	0.00	-120.25	0.00	120.25	4316.34	2158.17	7401.55	3706.27	0.62	-0.12	0.038	
53.25	-20.90	-1.16	0.00	-116.32	0.00	116.32	3585.75	1792.87	6190.18	3099.69	0.71	-0.13	0.043	
55.00	-20.54	-1.15	0.00	-114.29	0.00	114.29	3566.36	1783.18	6109.42	3059.25	0.76	-0.13	0.043	
60.00	-19.51	-1.12	0.00	-108.52	0.00	108.52	3510.30	1755.15	5880.38	2944.56	0.90	-0.15	0.042	
65.00	-18.52	-1.10	0.00	-102.90	0.00	102.90	3453.25	1726.63	5653.97	2831.19	1.07	-0.16	0.042	
70.00	-17.54	-1.08	0.00	-97.40	0.00	97.40	3395.21	1697.61	5430.30	2719.18	1.25	-0.18	0.041	
75.00	-16.58	-1.06	0.00	-92.02	0.00	92.02	3336.18	1668.09	5209.47	2608.61	1.44	-0.19	0.040	
80.00	-15.65	-1.05	0.00	-86.73	0.00	86.73	3276.15	1638.08	4991.61	2499.52	1.65	-0.21	0.039	
85.00	-14.74	-1.04	0.00	-81.49	0.00	81.49	3205.19	1602.60	4762.06	2384.57	1.88	-0.22	0.039	
90.00	-13.85	-1.05	0.00	-76.27	0.00	76.27	3124.28	1562.14	4523.47	2265.10	2.12	-0.24	0.038	
95.00	-12.98	-1.04	0.00	-71.04	0.00	71.04	3043.37	1521.69	4291.01	2148.70	2.38	-0.26	0.037	
95.75	-12.86	-1.04	0.00	-70.26	0.00	70.26	3031.24	1515.62	4256.68	2131.50	2.42	-0.26	0.037	
100.00	-11.54	-1.04	0.00	-65.82	0.00	65.82	2962.46	1481.23	4064.69	2035.37	2.66	-0.27	0.036	
100.75	-11.32	-1.04	0.00	-65.04	0.00	65.04	2439.46	1219.73	3408.86	1706.97	2.70	-0.27	0.043	
105.00	-10.72	-1.04	0.00	-60.62	0.00	60.62	2399.07	1199.53	3275.16	1640.02	2.95	-0.29	0.041	
110.00	-10.04	-1.04	0.00	-55.41	0.00	55.41	2350.64	1175.32	3119.98	1562.31	3.26	-0.31	0.040	
115.00	-9.37	-1.04	0.00	-50.21	0.00	50.21	2301.22	1150.61	2967.19	1485.80	3.59	-0.32	0.038	
120.00	-8.72	-1.04	0.00	-45.01	0.00	45.01	2249.68	1124.84	2815.50	1409.84	3.94	-0.34	0.036	
125.00	-8.10	-1.04	0.00	-39.82	0.00	39.82	2182.25	1091.13	2648.43	1326.19	4.31	-0.36	0.034	
130.00	-7.49	-1.04	0.00	-34.63	0.00	34.63	2114.83	1057.41	2486.48	1245.09	4.69	-0.37	0.031	
135.00	-6.90	-1.03	0.00	-29.46	0.00	29.46	2047.40	1023.70	2329.63	1166.55	5.09	-0.39	0.029	
140.00	-6.32	-1.01	0.00	-24.33	0.00	24.33	1979.98	989.99	2177.89	1090.56	5.51	-0.40	0.026	
145.00	-5.77	-0.98	0.00	-19.29	0.00	19.29	1912.55	956.28	2031.27	1017.14	5.94	-0.42	0.022	
145.50	-5.72	-0.97	0.00	-18.80	0.00	18.80	1905.81	952.91	2016.88	1009.94	5.98	-0.42	0.022	
149.25	-5.08	-0.92	0.00	-15.15	0.00	15.15	1023.88	511.94	1080.86	541.23	6.31	-0.43	0.033	
150.00	-5.03	-0.92	0.00	-14.45	0.00	14.45	1020.48	510.24	1071.47	536.53	6.38	-0.43	0.032	
155.00	-4.70	-0.89	0.00	-9.85	0.00	9.85	997.27	498.64	1009.31	505.41	6.84	-0.44	0.024	
160.00	-4.39	-0.84	0.00	-5.41	0.00	5.41	973.07	486.53	947.94	474.68	7.30	-0.45	0.016	
164.25	-3.19	-0.63	0.00	-1.82	0.00	1.82	951.71	475.86	896.49	448.91	7.71	-0.46	0.007	
165.00	-3.14	-0.63	0.00	-1.35	0.00	1.35	947.87	473.93	887.48	444.40	7.78	-0.46	0.006	
167.00	-0.22	-0.05	0.00	-0.10	0.00	0.10	937.51	468.76	863.57	432.43	7.97	-0.46	0.000	
169.00	0.00	-0.05	0.00	0.00	0.00	0.00	927.00	463.50	839.84	420.54	8.16	-0.46	0.000	

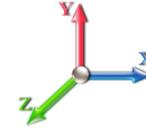
Seismic Segment Forces (Factored)

Structure: CT11934-S-SBA	Code: EIA/TIA-222-G	12/21/2017
Site Name: Bridgewater 4, CT	Exposure: C	
Height: 169.00 (ft)	Crest Height: 0.00	
Base Elev: 1.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



Page: 21

Load Case: 0.9D + 1.0E				Iterations 24
Gust Response Factor	1.10	Sds	0.20	Ss 0.18
Dead Load Factor	0.90	Seismic Load Factor	1.00	S1 0.07
Wind Load Factor	0.00	Structure Frequency	0.36	SA 0.04
				Seismic Importance Factor 1.00



Top Elev (ft)	Description	Wz (lb)	a	b	c	Lateral Fs (lb)	R: 1.50
0.00		0.00	0.00	0.01	0.00	0.00	
5.00		1193.8	0.00	0.03	0.02	22.73	
10.00		1172.2	0.01	0.05	0.03	30.96	
15.00		1150.5	0.02	0.06	0.04	34.95	
20.00		1128.9	0.03	0.07	0.04	36.77	
25.00		1107.3	0.04	0.07	0.04	37.51	
30.00		1085.7	0.06	0.07	0.04	37.76	
35.00		1064.1	0.08	0.07	0.04	37.85	
40.00		1042.5	0.11	0.07	0.04	37.87	
45.00		1020.8	0.14	0.07	0.03	37.81	
47.25	Bot - Section 2	452.35	0.15	0.07	0.03	16.88	
50.00		1024.7	0.17	0.07	0.03	38.47	
53.25	Top - Section 1	1195.4	0.19	0.06	0.02	44.99	
55.00		296.95	0.21	0.06	0.02	11.16	
60.00		835.91	0.24	0.06	0.02	30.70	
65.00		817.38	0.28	0.05	0.01	28.24	
70.00		798.85	0.33	0.04	0.01	24.38	
75.00		780.33	0.38	0.02	0.01	18.88	
80.00		761.80	0.43	0.01	0.01	11.75	
85.00		743.27	0.48	-0.01	0.01	3.41	
90.00		724.74	0.54	-0.03	0.01	-5.27	
95.00		706.21	0.60	-0.05	0.01	-13.15	
95.75	Bot - Section 3	104.33	0.61	-0.06	0.02	-2.11	
100.00		1079.3	0.67	-0.08	0.02	-30.14	
100.75	Top - Section 2	187.92	0.68	-0.08	0.03	-5.46	
105.00		482.86	0.73	-0.10	0.04	-16.42	
110.00		553.79	0.81	-0.11	0.06	-20.07	
115.00		538.35	0.88	-0.12	0.08	-18.51	
120.00		522.91	0.96	-0.12	0.11	-14.86	
125.00		507.47	1.04	-0.10	0.15	-9.32	
130.00		492.03	1.12	-0.06	0.20	-2.11	
135.00		476.58	1.21	0.01	0.26	6.59	
140.00		461.14	1.30	0.12	0.34	16.59	
145.00		445.70	1.39	0.27	0.43	27.72	
145.50	Bot - Section 4	43.72	1.40	0.29	0.44	2.84	
149.25	Top - Section 3	520.58	1.48	0.44	0.52	45.68	
150.00		38.89	1.49	0.48	0.53	3.60	
155.00		253.96	1.59	0.75	0.66	32.29	
160.00		244.69	1.70	1.10	0.81	40.63	
164.25	Appurtenance(s)	993.90	1.79	1.47	0.95	201.30	
165.00		34.72	1.80	1.55	0.98	7.27	
167.00	Appurtenance(s)	2438.7	1.85	1.75	1.06	555.69	
169.00	Appurtenance(s)	185.49	1.89	1.98	1.14	45.84	
Totals:		29,711.3				1,391.7	Total Wind: 23,293.0

Seismic Base Shear is Less Than 50% of Wind Force - An Analysis is NOT Required

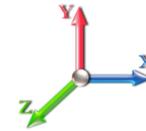
Calculated Forces

Structure: CT11934-S-SBA	Code: EIA/TIA-222-G	12/21/2017
Site Name: Bridgewater 4, CT	Exposure: C	
Height: 169.00 (ft)	Crest Height: 0.00	
Base Elev: 1.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



Page: 22

Load Case: 0.9D + 1.0E						Iterations 24
Gust Response Factor	1.10		Sds	0.20		Ss 0.18
Dead Load Factor	0.90	Seismic Load Factor	1.00	Sd1	0.10	S1 0.07
Wind Load Factor	0.00	Structure Frequency	0.36	SA	0.04	Seismic Importance Factor 1.00



Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-27.20	-1.53	0.00	-188.71	0.00	188.71	5013.77	2506.88	10497.1	5256.39	0.00	0.00	0.00	0.041
5.00	-26.11	-1.51	0.00	-181.06	0.00	181.06	4950.94	2475.47	10178.0	5096.59	0.01	-0.01	0.041	
10.00	-25.04	-1.49	0.00	-173.49	0.00	173.49	4887.12	2443.56	9861.68	4938.17	0.02	-0.02	0.040	
15.00	-23.99	-1.46	0.00	-166.06	0.00	166.06	4822.31	2411.15	9548.17	4781.18	0.05	-0.03	0.040	
20.00	-22.96	-1.42	0.00	-158.78	0.00	158.78	4756.50	2378.25	9237.66	4625.69	0.10	-0.05	0.039	
25.00	-21.95	-1.39	0.00	-151.66	0.00	151.66	4689.71	2344.85	8930.24	4471.76	0.15	-0.06	0.039	
30.00	-20.96	-1.36	0.00	-144.71	0.00	144.71	4621.92	2310.96	8626.03	4319.43	0.22	-0.07	0.038	
35.00	-19.99	-1.32	0.00	-137.94	0.00	137.94	4553.14	2276.57	8325.15	4168.76	0.30	-0.08	0.037	
40.00	-19.04	-1.29	0.00	-131.33	0.00	131.33	4483.36	2241.68	8027.70	4019.82	0.39	-0.09	0.037	
45.00	-18.10	-1.25	0.00	-124.91	0.00	124.91	4410.73	2205.37	7730.53	3871.01	0.50	-0.11	0.036	
47.25	-17.69	-1.23	0.00	-122.10	0.00	122.10	4368.25	2184.13	7581.60	3796.44	0.55	-0.11	0.036	
50.00	-16.76	-1.19	0.00	-118.71	0.00	118.71	4316.34	2158.17	7401.55	3706.27	0.61	-0.12	0.036	
53.25	-15.67	-1.15	0.00	-114.82	0.00	114.82	3585.75	1792.87	6190.18	3099.69	0.70	-0.13	0.041	
55.00	-15.40	-1.14	0.00	-112.81	0.00	112.81	3566.36	1783.18	6109.42	3059.25	0.75	-0.13	0.041	
60.00	-14.64	-1.11	0.00	-107.11	0.00	107.11	3510.30	1755.15	5880.38	2944.56	0.89	-0.15	0.041	
65.00	-13.89	-1.08	0.00	-101.56	0.00	101.56	3453.25	1726.63	5653.97	2831.19	1.06	-0.16	0.040	
70.00	-13.15	-1.06	0.00	-96.13	0.00	96.13	3395.21	1697.61	5430.30	2719.18	1.23	-0.18	0.039	
75.00	-12.44	-1.04	0.00	-90.83	0.00	90.83	3336.18	1668.09	5209.47	2608.61	1.43	-0.19	0.039	
80.00	-11.74	-1.03	0.00	-85.61	0.00	85.61	3276.15	1638.08	4991.61	2499.52	1.63	-0.21	0.038	
85.00	-11.05	-1.03	0.00	-80.45	0.00	80.45	3205.19	1602.60	4762.06	2384.57	1.86	-0.22	0.037	
90.00	-10.39	-1.03	0.00	-75.30	0.00	75.30	3124.28	1562.14	4523.47	2265.10	2.10	-0.24	0.037	
95.00	-9.74	-1.03	0.00	-70.15	0.00	70.15	3043.37	1521.69	4291.01	2148.70	2.35	-0.25	0.036	
95.75	-9.64	-1.03	0.00	-69.38	0.00	69.38	3031.24	1515.62	4256.68	2131.50	2.39	-0.26	0.036	
100.00	-8.66	-1.03	0.00	-65.01	0.00	65.01	2962.46	1481.23	4064.69	2035.37	2.63	-0.27	0.035	
100.75	-8.49	-1.03	0.00	-64.24	0.00	64.24	2439.46	1219.73	3408.86	1706.97	2.67	-0.27	0.041	
105.00	-8.04	-1.03	0.00	-59.88	0.00	59.88	2399.07	1199.53	3275.16	1640.02	2.92	-0.28	0.040	
110.00	-7.53	-1.03	0.00	-54.74	0.00	54.74	2350.64	1175.32	3119.98	1562.31	3.22	-0.30	0.038	
115.00	-7.03	-1.03	0.00	-49.61	0.00	49.61	2301.22	1150.61	2967.19	1485.80	3.55	-0.32	0.036	
120.00	-6.54	-1.02	0.00	-44.49	0.00	44.49	2249.68	1124.84	2815.50	1409.84	3.89	-0.34	0.034	
125.00	-6.07	-1.02	0.00	-39.36	0.00	39.36	2182.25	1091.13	2648.43	1326.19	4.26	-0.35	0.032	
130.00	-5.61	-1.02	0.00	-34.24	0.00	34.24	2114.83	1057.41	2486.48	1245.09	4.64	-0.37	0.030	
135.00	-5.17	-1.01	0.00	-29.13	0.00	29.13	2047.40	1023.70	2329.63	1166.55	5.03	-0.38	0.027	
140.00	-4.74	-1.00	0.00	-24.06	0.00	24.06	1979.98	989.99	2177.89	1090.56	5.44	-0.40	0.024	
145.00	-4.33	-0.97	0.00	-19.08	0.00	19.08	1912.55	956.28	2031.27	1017.14	5.87	-0.41	0.021	
145.50	-4.29	-0.96	0.00	-18.60	0.00	18.60	1905.81	952.91	2016.88	1009.94	5.91	-0.41	0.021	
149.25	-3.81	-0.91	0.00	-14.98	0.00	14.98	1023.88	511.94	1080.86	541.23	6.24	-0.42	0.031	
150.00	-3.77	-0.91	0.00	-14.30	0.00	14.30	1020.48	510.24	1071.47	536.53	6.30	-0.42	0.030	
155.00	-3.53	-0.88	0.00	-9.74	0.00	9.74	997.27	498.64	1009.31	505.41	6.75	-0.44	0.023	
160.00	-3.29	-0.84	0.00	-5.36	0.00	5.36	973.07	486.53	947.94	474.68	7.22	-0.45	0.015	
164.25	-2.39	-0.63	0.00	-1.80	0.00	1.80	951.71	475.86	896.49	448.91	7.61	-0.45	0.007	
165.00	-2.36	-0.62	0.00	-1.33	0.00	1.33	947.87	473.93	887.48	444.40	7.69	-0.45	0.005	
167.00	-0.17	-0.05	0.00	-0.09	0.00	0.09	937.51	468.76	863.57	432.43	7.87	-0.45	0.000	
169.00	0.00	-0.05	0.00	0.00	0.00	0.00	927.00	463.50	839.84	420.54	8.06	-0.45	0.000	

Wind Loading - Shaft

Structure: CT11934-S-SBA	Code: EIA/TIA-222-G	12/21/2017
Site Name: Bridgewater 4, CT	Exposure: C	
Height: 169.00 (ft)	Crest Height: 0.00	
Base Elev: 1.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



Page: 23

Load Case: 1.0D + 1.0W 60 mph Wind

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		1.00	0.85	7.442	8.19	240.72	0.650	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.85	7.442	8.19	236.44	0.650	0.000	5.00	21.565	14.02	114.7	0.0	1193.8
10.00		1.00	0.85	7.442	8.19	232.16	0.650	0.000	5.00	21.178	13.77	112.7	0.0	1172.2
15.00		1.00	0.86	7.534	8.29	229.28	0.650	0.000	5.00	20.791	13.51	112.0	0.0	1150.6
20.00		1.00	0.91	7.978	8.78	231.50	0.650	0.000	5.00	20.404	13.26	116.4	0.0	1129.0
25.00		1.00	0.95	8.345	9.18	232.23	0.650	0.000	5.00	20.016	13.01	119.4	0.0	1107.4
30.00		1.00	0.99	8.659	9.53	231.95	0.650	0.000	5.00	19.629	12.76	121.5	0.0	1085.7
35.00		1.00	1.02	8.936	9.83	230.94	0.650	0.000	5.00	19.242	12.51	122.9	0.0	1064.1
40.00		1.00	1.05	9.184	10.10	229.36	0.650	0.000	5.00	18.855	12.26	123.8	0.0	1042.5
45.00		1.00	1.07	9.410	10.35	227.34	0.650	0.000	5.00	18.468	12.00	124.2	0.0	1020.9
47.25	Bot - Section 2	1.00	1.09	9.505	10.46	226.31	0.650	0.000	2.25	8.184	5.32	55.6	0.0	452.3
50.00		1.00	1.10	9.616	10.58	224.95	0.650	0.000	2.75	10.071	6.55	69.2	0.0	1024.8
53.25	Top - Section 1	1.00	1.11	9.742	10.72	223.24	0.650	0.000	3.25	11.751	7.64	81.9	0.0	1195.4
55.00		1.00	1.12	9.807	10.79	226.29	0.650	0.000	1.75	6.260	4.07	43.9	0.0	296.9
60.00		1.00	1.14	9.986	10.98	223.38	0.650	0.000	5.00	17.624	11.46	125.8	0.0	835.9
65.00		1.00	1.16	10.153	11.17	220.23	0.650	0.000	5.00	17.237	11.20	125.1	0.0	817.4
70.00		1.00	1.18	10.310	11.34	216.89	0.650	0.000	5.00	16.850	10.95	124.2	0.0	798.9
75.00		1.00	1.19	10.459	11.50	213.37	0.650	0.000	5.00	16.462	10.70	123.1	0.0	780.3
80.00		1.00	1.21	10.600	11.66	209.70	0.650	0.000	5.00	16.075	10.45	121.8	0.0	761.8
85.00		1.00	1.23	10.734	11.81	205.88	0.650	0.000	5.00	15.688	10.20	120.4	0.0	743.3
90.00		1.00	1.24	10.863	11.95	201.94	0.650	0.000	5.00	15.301	9.95	118.8	0.0	724.7
95.00		1.00	1.25	10.986	12.08	197.87	0.650	0.000	5.00	14.914	9.69	117.1	0.0	706.2
95.75	Bot - Section 3	1.00	1.26	11.004	12.10	197.25	0.650	0.000	0.75	2.204	1.43	17.3	0.0	104.3
100.00		1.00	1.27	11.104	12.21	193.70	0.650	0.000	4.25	12.548	8.16	99.6	0.0	1079.3
100.75	Top - Section 2	1.00	1.27	11.121	12.23	193.07	0.650	0.000	0.75	2.185	1.42	17.4	0.0	187.9
105.00		1.00	1.28	11.218	12.34	193.02	0.650	0.000	4.25	12.219	7.94	98.0	0.0	482.9
110.00		1.00	1.29	11.327	12.46	188.68	0.650	0.000	5.00	14.017	9.11	113.5	0.0	553.8
115.00		1.00	1.31	11.432	12.58	184.24	0.650	0.000	5.00	13.630	8.86	111.4	0.0	538.3
120.00		1.00	1.32	11.534	12.69	179.73	0.650	0.000	5.00	13.243	8.61	109.2	0.0	522.9
125.00		1.00	1.33	11.633	12.80	175.15	0.650	0.000	5.00	12.856	8.36	106.9	0.0	507.5
130.00		1.00	1.34	11.729	12.90	170.49	0.650	0.000	5.00	12.468	8.10	104.6	0.0	492.0
135.00		1.00	1.35	11.822	13.00	165.76	0.650	0.000	5.00	12.081	7.85	102.1	0.0	476.6
140.00		1.00	1.36	11.912	13.10	160.98	0.650	0.000	5.00	11.694	7.60	99.6	0.0	461.1
145.00		1.00	1.37	12.000	13.20	156.13	0.650	0.000	5.00	11.307	7.35	97.0	0.0	445.7
145.50	Bot - Section 4	1.00	1.37	12.008	13.21	155.64	0.650	0.000	0.50	1.109	0.72	9.5	0.0	43.7
149.25	Top - Section 3	1.00	1.38	12.072	13.28	151.96	0.650	0.000	3.75	8.316	5.41	71.8	0.0	520.6
150.00		1.00	1.38	12.085	13.29	153.46	0.650	0.000	0.75	1.637	1.06	14.1	0.0	38.9
155.00		1.00	1.39	12.168	13.39	148.51	0.650	0.000	5.00	10.691	6.95	93.0	0.0	254.0
160.00		1.00	1.40	12.249	13.47	143.51	0.650	0.000	5.00	10.304	6.70	90.2	0.0	244.7
164.25	Appurtenance(s)	1.00	1.41	12.317	13.55	139.22	0.650	0.000	4.25	8.454	5.50	74.5	0.0	200.7
165.00		1.00	1.41	12.328	13.56	138.46	0.650	0.000	0.75	1.463	0.95	12.9	0.0	34.7
167.00	Appurtenance(s)	1.00	1.41	12.360	13.60	136.43	0.650	0.000	2.00	3.858	2.51	34.1	0.0	91.6
169.00	Appurtenance(s)	1.00	1.42	12.390	13.63	134.39	0.650	0.000	2.00	3.797	2.47	33.6	0.0	90.1
Totals:								169.00			3,805.4	26,475.5		

Discrete Appurtenance Forces

Structure: CT11934-S-SBA	Code: EIA/TIA-222-G	12/21/2017
Site Name: Bridgewater 4, CT	Exposure: C	
Height: 169.00 (ft)	Crest Height: 0.00	
Base Elev: 1.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II

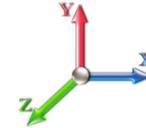


Page: 24

Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations 25

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	CaAa x Ka	Ka	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)
1	169.00	Raycap -	3	12.390	13.629	0.40	0.80	1.10	95.40	0.000	0.000	15.05	0.00	0.00
2	167.00	Low Profile Platform	1	12.360	13.596	1.00	1.00	25.00	1200.00	0.000	0.000	339.89	0.00	0.00
3	167.00	CCI - HPA-65R-BUU-H8	3	12.360	13.596	0.63	0.80	24.61	204.00	0.000	0.000	334.59	0.00	0.00
4	167.00	Ericsson - RRUS 11	15	12.360	13.596	0.54	0.80	20.26	765.00	0.000	0.000	275.46	0.00	0.00
5	167.00	Ericsson - RRUS B14	3	12.360	13.596	0.54	0.80	2.65	178.20	0.000	0.000	36.07	0.00	0.00
6	164.25	Andrew - SBNH-1D6565C	12	12.317	13.548	0.67	0.80	92.49	793.20	0.000	0.000	1253.14	0.00	0.00
Totals:									3,235.80			2,254.19		

Total Applied Force Summary

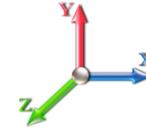
Structure: CT11934-S-SBA	Code: EIA/TIA-222-G	12/21/2017
Site Name: Bridgewater 4, CT	Exposure: C	
Height: 169.00 (ft)	Crest Height: 0.00	
Base Elev: 1.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



Page: 25

Load Case: 1.0D + 1.0W 60 mph Wind

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		114.75	1209.42	0.00	0.00
10.00		112.69	1187.80	0.00	0.00
15.00		111.99	1166.19	0.00	0.00
20.00		116.38	1144.57	0.00	0.00
25.00		119.43	1122.95	0.00	0.00
30.00		121.53	1101.34	0.00	0.00
35.00		122.95	1079.72	0.00	0.00
40.00		123.82	1058.10	0.00	0.00
45.00		124.25	1036.49	0.00	0.00
47.25		55.62	459.37	0.00	0.00
50.00		69.24	1033.34	0.00	0.00
53.25		81.85	1205.57	0.00	0.00
55.00		43.90	302.41	0.00	0.00
60.00		125.83	851.51	0.00	0.00
65.00		125.12	832.98	0.00	0.00
70.00		124.21	814.45	0.00	0.00
75.00		123.11	795.93	0.00	0.00
80.00		121.83	777.40	0.00	0.00
85.00		120.41	758.87	0.00	0.00
90.00		118.84	740.34	0.00	0.00
95.00		117.15	721.81	0.00	0.00
95.75		17.34	106.67	0.00	0.00
100.00		99.62	1092.59	0.00	0.00
100.75		17.38	190.26	0.00	0.00
105.00		98.00	496.12	0.00	0.00
110.00		113.52	569.39	0.00	0.00
115.00		111.41	553.95	0.00	0.00
120.00		109.21	538.51	0.00	0.00
125.00		106.93	523.07	0.00	0.00
130.00		104.56	507.63	0.00	0.00
135.00		102.12	492.18	0.00	0.00
140.00		99.60	476.74	0.00	0.00
145.00		97.01	461.30	0.00	0.00
145.50		9.53	45.28	0.00	0.00
149.25		71.78	532.28	0.00	0.00
150.00		14.15	41.23	0.00	0.00
155.00		93.02	269.56	0.00	0.00
160.00		90.25	260.29	0.00	0.00
164.25	(12) attachments	1327.59	1007.16	0.00	0.00
165.00		12.90	34.72	0.00	0.00
167.00	(22) attachments	1020.10	2438.78	0.00	0.00
169.00	(3) attachments	48.68	185.49	0.00	0.00
Totals:		6,059.58	30,223.77	0.00	0.00

Calculated Forces

Structure: CT11934-S-SBA
Site Name: Bridgewater 4, CT
Height: 169.00 (ft)
Base Elev: 1.000 (ft)
Gh: 1.1

Topography: 1

Code: EIA/TIA-222-G 12/21/2017
Exposure: C
Crest Height: 0.00
Site Class: D - Stiff Soil
Struct Class: II

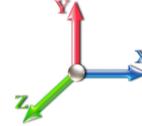


Page: 26

Load Case: 1.0D + 1.0W 60 mph Wind

Iterations 25

Dead Load Factor 1.00
Wind Load Factor 1.00



Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-30.22	-6.07	0.00	-709.49	0.00	709.49	5013.77	2506.88	10497.1	5256.39	0.00	0.000	0.000	0.141
5.00	-29.01	-5.98	0.00	-679.14	0.00	679.14	4950.94	2475.47	10178.0	5096.59	0.02	-0.042	0.000	0.139
10.00	-27.82	-5.88	0.00	-649.26	0.00	649.26	4887.12	2443.56	9861.68	4938.17	0.09	-0.085	0.000	0.137
15.00	-26.65	-5.79	0.00	-619.84	0.00	619.84	4822.31	2411.15	9548.17	4781.18	0.20	-0.129	0.000	0.135
20.00	-25.50	-5.69	0.00	-590.90	0.00	590.90	4756.50	2378.25	9237.66	4625.69	0.36	-0.172	0.000	0.133
25.00	-24.37	-5.58	0.00	-562.45	0.00	562.45	4689.71	2344.85	8930.24	4471.76	0.57	-0.216	0.000	0.131
30.00	-23.26	-5.48	0.00	-534.53	0.00	534.53	4621.92	2310.96	8626.03	4319.43	0.82	-0.261	0.000	0.129
35.00	-22.18	-5.37	0.00	-507.14	0.00	507.14	4553.14	2276.57	8325.15	4168.76	1.11	-0.306	0.000	0.127
40.00	-21.12	-5.25	0.00	-480.31	0.00	480.31	4483.36	2241.68	8027.70	4019.82	1.46	-0.351	0.000	0.124
45.00	-20.08	-5.13	0.00	-454.05	0.00	454.05	4410.73	2205.37	7730.53	3871.01	1.85	-0.396	0.000	0.122
47.25	-19.62	-5.08	0.00	-442.50	0.00	442.50	4368.25	2184.13	7581.60	3796.44	2.04	-0.417	0.000	0.121
50.00	-18.58	-5.01	0.00	-428.52	0.00	428.52	4316.34	2158.17	7401.55	3706.27	2.29	-0.443	0.000	0.120
53.25	-17.38	-4.93	0.00	-412.23	0.00	412.23	3585.75	1792.87	6190.18	3099.69	2.60	-0.473	0.000	0.138
55.00	-17.07	-4.89	0.00	-403.60	0.00	403.60	3566.36	1783.18	6109.42	3059.25	2.78	-0.490	0.000	0.137
60.00	-16.22	-4.77	0.00	-379.13	0.00	379.13	3510.30	1755.15	5880.38	2944.56	3.32	-0.541	0.000	0.133
65.00	-15.38	-4.66	0.00	-355.25	0.00	355.25	3453.25	1726.63	5653.97	2831.19	3.91	-0.592	0.000	0.130
70.00	-14.57	-4.54	0.00	-331.98	0.00	331.98	3395.21	1697.61	5430.30	2719.18	4.56	-0.643	0.000	0.126
75.00	-13.77	-4.42	0.00	-309.30	0.00	309.30	3336.18	1668.09	5209.47	2608.61	5.26	-0.694	0.000	0.123
80.00	-12.99	-4.30	0.00	-287.23	0.00	287.23	3276.15	1638.08	4991.61	2499.52	6.01	-0.745	0.000	0.119
85.00	-12.23	-4.18	0.00	-265.75	0.00	265.75	3205.19	1602.60	4762.06	2384.57	6.82	-0.796	0.000	0.115
90.00	-11.48	-4.06	0.00	-244.88	0.00	244.88	3124.28	1562.14	4523.47	2265.10	7.68	-0.847	0.000	0.112
95.00	-10.76	-3.93	0.00	-224.59	0.00	224.59	3043.37	1521.69	4291.01	2148.70	8.60	-0.897	0.000	0.108
95.75	-10.65	-3.92	0.00	-221.64	0.00	221.64	3031.24	1515.62	4256.68	2131.50	8.74	-0.905	0.000	0.108
100.00	-9.56	-3.81	0.00	-204.99	0.00	204.99	2962.46	1481.23	4064.69	2035.37	9.56	-0.947	0.000	0.104
100.75	-9.37	-3.79	0.00	-202.13	0.00	202.13	2439.46	1219.73	3408.86	1706.97	9.71	-0.955	0.000	0.122
105.00	-8.87	-3.69	0.00	-186.03	0.00	186.03	2399.07	1199.53	3275.16	1640.02	10.58	-0.997	0.000	0.117
110.00	-8.30	-3.57	0.00	-167.57	0.00	167.57	2350.64	1175.32	3119.98	1562.31	11.66	-1.052	0.000	0.111
115.00	-7.75	-3.46	0.00	-149.70	0.00	149.70	2301.22	1150.61	2967.19	1485.80	12.79	-1.105	0.000	0.104
120.00	-7.21	-3.35	0.00	-132.40	0.00	132.40	2249.68	1124.84	2815.50	1409.84	13.97	-1.156	0.000	0.097
125.00	-6.68	-3.23	0.00	-115.67	0.00	115.67	2182.25	1091.13	2648.43	1326.19	15.21	-1.206	0.000	0.090
130.00	-6.18	-3.12	0.00	-99.49	0.00	99.49	2114.83	1057.41	2486.48	1245.09	16.50	-1.253	0.000	0.083
135.00	-5.68	-3.02	0.00	-83.87	0.00	83.87	2047.40	1023.70	2329.63	1166.55	17.83	-1.297	0.000	0.075
140.00	-5.21	-2.91	0.00	-68.79	0.00	68.79	1979.98	989.99	2177.89	1090.56	19.21	-1.337	0.000	0.066
145.00	-4.75	-2.80	0.00	-54.25	0.00	54.25	1912.55	956.28	2031.27	1017.14	20.63	-1.373	0.000	0.056
145.50	-4.70	-2.79	0.00	-52.85	0.00	52.85	1905.81	952.91	2016.88	1009.94	20.78	-1.377	0.000	0.055
149.25	-4.17	-2.71	0.00	-42.38	0.00	42.38	1023.88	511.94	1080.86	541.23	21.87	-1.400	0.000	0.082
150.00	-4.13	-2.70	0.00	-40.35	0.00	40.35	1020.48	510.24	1071.47	536.53	22.09	-1.405	0.000	0.079
155.00	-3.86	-2.60	0.00	-26.87	0.00	26.87	997.27	498.64	1009.31	505.41	23.58	-1.443	0.000	0.057
160.00	-3.60	-2.50	0.00	-13.88	0.00	13.88	973.07	486.53	947.94	474.68	25.11	-1.469	0.000	0.033
164.25	-2.63	-1.15	0.00	-3.24	0.00	3.24	951.71	475.86	896.49	448.91	26.42	-1.479	0.000	0.010
165.00	-2.60	-1.14	0.00	-2.38	0.00	2.38	947.87	473.93	887.48	444.40	26.65	-1.480	0.000	0.008
167.00	-0.18	-0.05	0.00	-0.11	0.00	0.11	937.51	468.76	863.57	432.43	27.27	-1.480	0.000	0.000
169.00	0.00	-0.05	0.00	0.00	0.00	0.00	927.00	463.50	839.84	420.54	27.89	-1.480	0.000	0.000

Final Analysis Summary

Structure: CT11934-S-SBA	Code: EIA/TIA-222-G	12/21/2017
Site Name: Bridgewater 4, CT	Exposure: C	
Height: 169.00 (ft)	Crest Height: 0.00	
Base Elev: 1.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II
		Page: 27



Reactions

Load Case	Shear FX (kips)	Shear FZ (kips)	Axial FY (kips)	Moment MX (ft-kips)	Moment MY (ft-kips)	Moment MZ (ft-kips)
1.2D + 1.6W 93 mph Wind	23.3	0.00	36.23	0.00	0.00	2741.49
0.9D + 1.6W 93 mph Wind	23.3	0.00	27.17	0.00	0.00	2715.69
1.2D + 1.0Di + 1.0Wi 40 mph Wind	5.0	0.00	60.46	0.00	0.00	587.26
1.2D + 1.0E	1.5	0.00	36.27	0.00	0.00	190.62
0.9D + 1.0E	1.5	0.00	27.20	0.00	0.00	188.71
1.0D + 1.0W 60 mph Wind	6.1	0.00	30.22	0.00	0.00	709.49

Max Stresses

Load Case	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Elev (ft)	Stress Ratio
1.2D + 1.6W 93 mph Wind	-36.23	-23.35	0.00	-2741.4	0.00	-2741.4	5013.77	2506.8	10497.1	5256.39	0.00	0.529
0.9D + 1.6W 93 mph Wind	-27.17	-23.33	0.00	-2715.6	0.00	-2715.6	5013.77	2506.8	10497.1	5256.39	0.00	0.522
1.2D + 1.0Di + 1.0Wi 40 mph Wind	-60.46	-5.02	0.00	-587.26	0.00	-587.26	5013.77	2506.8	10497.1	5256.39	0.00	0.124
1.2D + 1.0E	-36.27	-1.53	0.00	-190.62	0.00	-190.62	5013.77	2506.8	10497.1	5256.39	0.00	0.043
0.9D + 1.0E	-15.67	-1.15	0.00	-114.82	0.00	-114.82	3585.75	1792.8	6190.18	3099.69	53.25	0.041
1.0D + 1.0W 60 mph Wind	-30.22	-6.07	0.00	-709.49	0.00	-709.49	5013.77	2506.8	10497.1	5256.39	0.00	0.141

Base Plate Summary

Structure: CT11934-S-SB	Code: EIA/TIA-222-G	12/21/2017
Site Name: Bridgewater 4, CT	Exposure: C	
Height: 169.00 (ft)	Crest Height: 0.00	
Base Elev: 1.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



Page: 28

Reactions	Base Plate	Anchor Bolts
Original Design	Yield (ksi): 50.00	Bolt Circle: 58.00
Moment (kip-ft): 5023.33	Width (in): 60.25	Number Bolts: 20.00
Axial (kip): 61.62	Style: Clipped	Bolt Type: 2.25" 18J
Shear (kip): 38.45	Polygon Sides: 4.00	Bolt Diameter (in): 2.25
Analysis	Clip Length (in): 14.00	Yield (ksi): 75.00
Moment (kip-ft): 2741.49	Effective Len (in): 8.28	Ultimate (ksi): 100.00
Axial (kip): 60.46	Moment (kip-in): 382.76	Arrangement: Clustered
Shear (kip): 23.35	Allow Stress (ksi): 67.50	Cluster Dist (in): 6.00
	Applied Stress (ksi): 0.00	Start Angle (deg): 45.00
Moment Design %: 54.58	Stress Ratio: 0.54	Compression
		Force (kip): 116.46
		Allowable (kip): 260.00
		Ratio: 0.46
		Tension
		Force (kip): 110.42
		Allowable (kip): 260.00
		Ratio: 0.43

	Monopole Mat Foundation Design			Date
				12/21/2017
	Customer Name:	AT&T	EIA/TIA Standard:	EIA-222-G
	Site Name:		Structure Height (Ft.):	169
	Site Number:	CT11934-S-SBA	Engineer Name:	K. Wyant
Engr. Number:	44315	Engineer Login ID:		

Foundation Info Obtained from:

Drawings/Calculations
Monopole
Analysis

Structure Type:

Analysis or Design?

Base Reactions (Factored):

Axial Load (Kips):	60.5	Shear Force (Kips):	23.3
Uplift Force (Kips):	0.0	Moment (Kips-ft):	2741.5

Allowable overstress %: 5.0%

Foundation Geometries:

		Mods required -Yes/No ?:	No
Diameter of Pier (ft.):	7.0	Depth of Base BG (ft.):	6.0
Pier Height A. G. (ft.):	0.50	Thickness of Pad (ft):	2.00
Length of Pad (ft.):	26.5	Width of Pad (ft.):	26.5
Final Length of pad (ft)	26.5	Final width of pad (ft):	26.5
Control Value for Cell D18:	0	Control Value for Cell F18:	0

Material Properties and Rebar Info:

Concrete Strength (psi):	4000	Steel Elastic Modulus:	29000	ksi
Vertical bar yield (ksi)	60	Tie steel yield (ksi):	60	
Vertical Rebar Size #:	9	Tie / Stirrup Size #:	5	
Qty. of Vertical Rebars:	36	Tie Spacing (in):	12.0	
Pad Rebar Yield (Ksi):	60	Pad Steel Rebar Size (#):	8	
Concrete Cover (in.):	3	Unit Weight of Concrete:	150.0	pcf
Rebar at the bottom of the concrete pad:				
Qty. of Rebar in Pad (L):	40	Qty. of Rebar in Pad (W):	40	
Rebar at the top of the concrete pad:				
Qty. of Rebar in Pad (L):	40	Qty. of Rebar in Pad (W):	40	

Apply 1.35 factor for e/w Per G: 1.35

Soil Design Parameters:

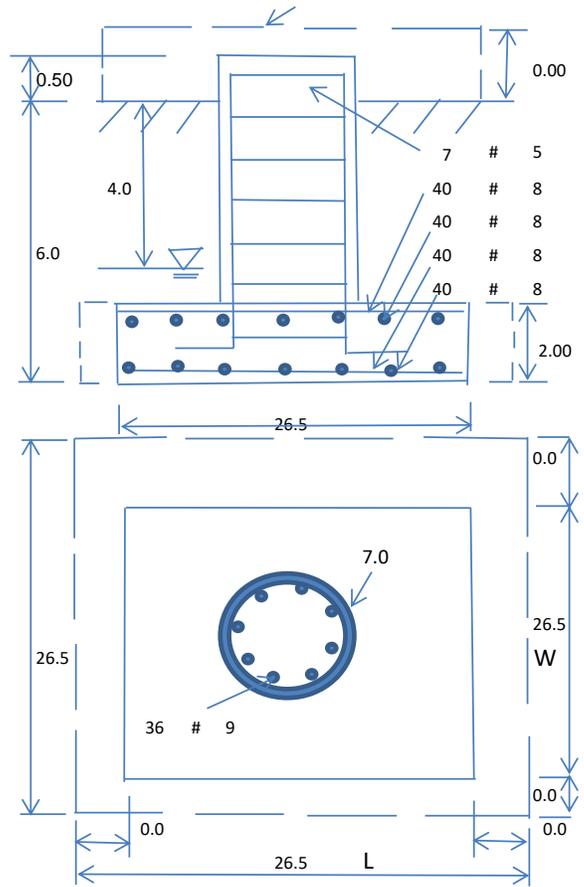
Soil Unit Weight (pcf):	117.0	Soil Buoyant Weight:	50.0	Pcf	
Water Table B.G.S. (ft):	4.0	Unit Weight of Water:	62.4	pcf	Angle from Top of Pad: 30
Ultimate Bearing Pressure (psf):	29800	Ultimate Skin Friction:	0	Psf	Angle from Bottm of Pad: 25
Consider Friction for O.T.M. (Y/N):	No	Consider Friction for bearing (Y/N):	No		Angle from Bottm of Pad: 25
Consider soil hor. resist. for OTM.:	No	Reduction factor on the maximum soil bearing pressure:	1.00		

Foundation Analysis and Design:

Uplift Strength Reduction Factor:	0.75	Compression Strength Reduction Factor:	0.75
Total Dry Soil Volume (cu. Ft.):	2655.06	Total Dry Soil Weight (Kips):	310.64
Total Buoyant Soil Volume (cu. Ft.):	0.00	Total Buoyant Soil Weight (Kips):	0.00
Total Effective Soil Weight (Kips):	310.64	Weight from the Concrete Block at Top (K):	0.00
Total Dry Concrete Volume (cu. Ft.):	173.18	Total Dry Concrete Weight (Kips):	25.98
Total Buoyant Concrete Volume (cu. Ft.):	1404.50	Total Buoyant Concrete Weight (Kips):	123.03
Total Effective Concrete Weight (Kips):	149.01	Total Vertical Load on Base (Kips):	520.15

Check Soil Capacities:

Calculated Maxium Net Soil Pressure under the base (psf):	1841	<	Allowable Factored Soil Bearing (psf):	22350	0.08	OK!
Allowable Foundation Overturning Resistance (kips-ft.):	6283.0	>	Design Factored Momont (kips-ft):	2893	0.46	OK!
Factor of Safety Against Overturning (O. R. Moment/Design Moment):	2.17					OK!



Check the capacities of Reinforcing Concrete:

Strength reduction factor (Flexure and axial tension):	0.90	Strength reduction factor (Shear):	0.75
Strength reduction factor (Axial compression):	0.65	Wind Load Factor on Concrete Design:	1.00

Load/
Capacity
Ratio

(1) Concrete Pier:

Vertical Steel Rebar Area (sq. in./each):	1.00	Tie / Stirrup Area (sq. in./each):	0.31		
Calculated Moment Capacity (Mn,Kips-Ft):	6026.1	>	Design Factored Moment (Mu, Kips-Ft)	2846.4	0.47 OK!
Calculated Shear Capacity (Kips):	734.1	>	Design Factored Shear (Kips):	23.3	0.03 OK!
Calculated Tension Capacity (Tn, Kips):	1944.0	>	Design Factored Tension (Tu Kips):	0.0	0.00 OK!
Calculated Compression Capacity (Pn, Kips):	9734.2	>	Design Factored Axial Load (Pu Kips):	60.5	0.01 OK!
Moment & Axial Strength Combination:	0.47	OK!	Check Tie Spacing (Design/Required):	1	OK!
Pier Reinforcement Ratio:	0.006		Reinforcement Ratio is satisfied per ACI		

(2).Concrete Pad:

One-Way Design Shear Capacity (L-Direction, Kips):	618.4	>	One-Way Factored Shear (L-D. Kips):	237.5	0.38 OK!
One-Way Design Shear Capacity (W-Direction, Kips):	618.4	>	One-Way Factored Shear (W-D., Kips)	237.5	0.38 OK!
One-Way Design Shear Capacity (Corner-Corner. Kips):	631.5	>	One-Way Factored Shear (C-C, Kips):	224.7	0.36 OK!
Lower Steel Pad Reinforcement Ratio (L-Direct.):	0.0048	OK!	Lower Steel Pad Reinf. Ratio (W-Direc	0.0048	
Lower Steel Pad Moment Capacity (L-Direction. Kips-ft):	2790.4	>	Moment at Bottom (L-Dir. K-Ft):	1301.6	0.47 OK!
Lower Steel Pad Moment Capacity (W-Direction. Kips-ft):	2790.4	>	Moment at Bottom (W-Dir. K-Ft):	1301.6	0.47 OK!
Lower Steel Pad Moment Capacity (Corner-Corner,K-ft):	3905.7	>	Moment at Bottom (C-C Dir. K-Ft):	1840.8	0.47 OK!
Upper Steel Pad Reinforcement Ratio (L-Direct.):	0.0048	OK!	Upper Steel Reinf. Ratio (W-Dir.):	0.0048	
Upper Steel Pad Moment Capacity (L-Direc. Kips-ft):	2790.4	>	Moment at the top (L-Dir K-Ft):	395.3	0.14 OK!
Upper Steel Pad Moment Capacity (W-Direc. Kips-ft):	2790.4	>	Moment at the top (W-Dir K-Ft):	395.3	0.14 OK!
Upper Steel Pad Moment Capacity (Corner-Corner. K-ft):	3905.7	>	Moment at the top (C-C Dir. K-Ft):	370.2	0.09 OK!

(3).Check Punching Shear Capacity due to Moment in the Pier:

Moment transferred by punching shear:	1096.6	k-ft.	Max. factored shear stress v_{u_cd} :	0.0	Psi
Max. factored shear stress v_{u_AB} :	15.0	Psi	Factored shear Strength ϕv_n :	189.7	Psi
Max. factored shear stress v_u :	15.0	Psi	Check Usage of Punching Shear Capacity:	0.08	OK!



GENERAL CONSTRUCTION

- FOR THE PURPOSE OF CONSTRUCTION DRAWINGS, THE FOLLOWING DEFINITIONS SHALL APPLY:
CONTRACTOR/CM – SMARTLINK
OWNER – AT&T WIRELESS
- ALL SITE WORK SHALL BE COMPLETED AS INDICATED ON THE DRAWINGS AND AT&T PROJECT SPECIFICATIONS.
- GENERAL CONTRACTOR SHALL VISIT THE SITE AND SHALL FAMILIARIZE HIMSELF WITH ALL CONDITIONS AFFECTING THE PROPOSED WORK AND SHALL MAKE PROVISIONS. GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR FAMILIARIZING HIMSELF WITH ALL CONTRACT DOCUMENTS, FIELD CONDITIONS, DIMENSIONS, AND CONFIRMING THAT THE WORK MAY BE ACCOMPLISHED AS SHOWN PRIOR TO PROCEEDING WITH CONSTRUCTION. ANY DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER PRIOR TO THE COMMENCEMENT OF WORK.
- ALL MATERIALS FURNISHED AND INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS, AND ORDINANCES. GENERAL CONTRACTOR SHALL ISSUE ALL APPROPRIATE NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS, AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY REGARDING THE PERFORMANCE OF WORK.
- ALL WORK CARRIED OUT SHALL COMPLY WITH ALL APPLICABLE MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS AND LOCAL JURISDICTIONAL CODES, ORDINANCES, AND APPLICABLE REGULATIONS.
- UNLESS NOTED OTHERWISE, THE WORK SHALL INCLUDE FURNISHING MATERIALS, EQUIPMENT, APPURTENANCES, AND LABOR NECESSARY TO COMPLETE ALL INSTALLATIONS AS INDICATED ON THE DRAWINGS.
- PLANS ARE NOT TO BE SCALED. THESE PLANS ARE INTENDED TO BE A DIAGRAMMATIC OUTLINE ONLY UNLESS OTHERWISE NOTED. DIMENSIONS SHOWN ARE TO FINISH SURFACES UNLESS OTHERWISE NOTED. SPACING BETWEEN EQUIPMENT IS THE MINIMUM REQUIRED CLEARANCE. THEREFORE, IT IS CRITICAL TO FIELD VERIFY DIMENSIONS, SHOULD THERE BE ANY QUESTIONS REGARDING THE CONTRACT DOCUMENTS, THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING A CLARIFICATION FROM THE ENGINEER PRIOR TO PROCEEDING WITH THE WORK. DETAILS ARE INTENDED TO SHOW DESIGN INTENT. MODIFICATIONS MAY BE REQUIRED TO SUIT JOB DIMENSIONS OR CONDITIONS AND SUCH MODIFICATIONS SHALL BE INCLUDED AS PART OF WORK AND PREPARED BY THE ENGINEER PRIOR TO PROCEEDING WITH WORK.
- THE CONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.
- IF THE SPECIFIED EQUIPMENT CANNOT BE INSTALLED AS SHOWN ON THESE DRAWINGS, THE CONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION SPACE FOR APPROVAL BY THE ENGINEER PRIOR TO PROCEEDING.
- GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR THE SAFETY OF WORK AREA, ADJACENT AREAS AND BUILDING OCCUPANTS THAT ARE LIKELY TO BE AFFECTED BY THE WORK UNDER THIS CONTRACT. WORK SHALL CONFIRM TO ALL OSHA REQUIREMENTS AND THE LOCAL JURISDICTION.
- GENERAL CONTRACTOR SHALL COORDINATE WORK AND SCHEDULE WORK ACTIVITIES WITH OTHER DISCIPLINES.
- ERECTION SHALL BE DONE IN A WORKMANLIKE MANNER BY COMPETENT EXPERIENCED WORKMAN IN ACCORDANCE WITH APPLICABLE CODES AND THE BEST ACCEPTED PRACTICE. ALL MEMBERS SHALL BE LAID PLUMB AND TRUE AS INDICATED ON THE DRAWINGS.
- SEAL PENETRATIONS THROUGH FIRE RATED AREAS WITH UL LISTED MATERIALS APPROVED BY LOCAL JURISDICTION. CONTRACTOR SHALL KEEP AREA CLEAN, HAZARD FREE, AND DISPOSE OF ALL DEBRIS.
- WORK PREVIOUSLY COMPLETED IS REPRESENTED BY LIGHT SHADED LINES AND NOTES. THE SCOPE OF WORK FOR THIS PROJECT IS REPRESENTED BY DARK SHADED LINES AND NOTES. CONTRACTOR SHALL NOTIFY THE GENERAL CONTRACTOR OF ANY EXISTING CONDITIONS THAT DEVIATE FROM THE DRAWINGS PRIOR TO BEGINNING CONSTRUCTION.
- CONTRACTOR SHALL PROVIDE WRITTEN NOTICE TO THE CONSTRUCTION MANAGER 48 HOURS PRIOR TO COMMENCEMENT OF WORK.
- THE CONTRACTOR SHALL PROTECT EXISTING IMPROVEMENTS, PAVEMENTS, CURBS, LANDSCAPING AND STRUCTURES. ANY DAMAGED PART SHALL BE REPAIRED AT CONTRACTOR'S EXPENSE TO THE SATISFACTION OF THE OWNER.
- THE CONTRACTOR SHALL CONTACT UTILITY LOCATING SERVICES PRIOR TO THE START OF CONSTRUCTION.
- GENERAL CONTRACTOR SHALL COORDINATE AND MAINTAIN ACCESS FOR ALL TRADES AND CONTRACTORS TO THE SITE AND/OR BUILDING.
- THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR SECURITY OF THE SITE FOR THE DURATION OF CONSTRUCTION UNTIL JOB COMPLETION.

- THE GENERAL CONTRACTOR SHALL MAINTAIN IN GOOD CONDITION ONE COMPLETE SET OF PLANS WITH ALL REVISIONS, ADDENDA, AND CHANGE ORDERS ON THE PREMISES AT ALL TIMES.
- THE GENERAL CONTRACTOR SHALL PROVIDE PORTABLE FIRE EXTINGUISHERS WITH A RATING OF NOT LESS THAN 2-A OR 2-A-10-B-C AND SHALL BE WITHIN 25 FEET OF TRAVEL DISTANCE TO ALL PORTIONS OF WHERE THE WORK IS BEING COMPLETED DURING CONSTRUCTION.
- ALL EXISTING ACTIVE SEWER, WATER, GAS, ELECTRIC, AND OTHER UTILITIES SHALL BE PROTECTED AT ALL TIMES, AND WHERE REQUIRED FOR THE PROPER EXECUTION OF THE WORK, SHALL BE RELOCATED AS DIRECTED BY THE ENGINEER. EXTREME CAUTION SHOULD BE USED BY THE CONTRACTOR WHEN EXCAVATING OR DRILLING PIERS AROUND OR NEAR UTILITIES. CONTRACTOR SHALL PROVIDE SAFETY TRAINING FOR THE WORKING CREW. THIS SHALL INCLUDE BUT NOT BE LIMITED TO A) FALL PROTECTION, B) CONFINED SPACE, C) ELECTRICAL SAFETY, AND D) TRENCHING & EXCAVATION.
- ALL EXISTING INACTIVE SEWER, WATER, GAS, ELECTRIC, AND OTHER UTILITIES, WHICH INTERFERE WITH THE EXECUTION OF THE WORK, SHALL BE REMOVED, CAPPED, PLUGGED OR OTHERWISE DISCONNECTED AT POINTS WHICH WILL NOT INTERFERE WITH THE EXECUTION OF THE WORK, AS DIRECTED BY THE RESPONSIBLE ENGINEER, AND SUBJECT TO THE APPROVAL OF THE OWNER AND/OR LOCAL UTILITIES.
- THE AREAS OF THE OWNER'S PROPERTY DISTURBED BY THE WORK AND NOT COVERED BY THE TOWER, EQUIPMENT OR DRIVEWAY, SHALL BE GRADED TO A UNIFORM SLOPE, AND STABILIZED TO PREVENT EROSION.
- CONTRACTOR SHALL MINIMIZE DISTURBANCE TO THE EXISTING SITE DURING CONSTRUCTION. EROSION CONTROL MEASURES, IF REQUIRED DURING CONSTRUCTION, SHALL BE IN CONFORMANCE WITH THE FEDERAL AND LOCAL JURISDICTION FOR EROSION AND SEDIMENT CONTROL.
- NO FILL OR EMBANKMENT MATERIAL SHALL BE PLACED ON FROZEN GROUNDING. FROZEN MATERIALS, SNOW OR ICE SHALL NOT BE PLACED IN ANY FILL OR EMBANKMENT.
- THE SUBGRADE SHALL BE BROUGHT TO A SMOOTH UNIFORM GRADE AND COMPACTED TO 95 PERCENT STANDARD PROCTOR DENSITY UNDER PAVEMENT AND STRUCTURES AND 80 PERCENT STANDARD PROCTOR DENSITY IN OPEN SPACE. ALL TRENCHES IN PUBLIC RIGHT OF WAY SHALL BE BACKFILLED WITH FLOWABLE FILL OR OTHER MATERIAL PRE-APPROVED BY THE LOCAL JURISDICTION.
- ALL NECESSARY RUBBISH, STUMPS, DEBRIS, STICKS, STONES, AND OTHER REFUSE SHALL BE REMOVED FROM THE SITE AND DISPOSED OF IN A LAWFUL MANNER.
- ALL BROCHURES, OPERATING AND MAINTENANCE MANUALS, CATALOGS, SHOP DRAWINGS, AND OTHER DOCUMENTS SHALL BE TURNED OVER TO THE GENERAL CONTRACTOR AT COMPLETION OF CONSTRUCTION AND PRIOR TO PAYMENT.
- CONTRACTOR SHALL SUBMIT A COMPLETE SET OF AS-BUILT REDLINES TO THE GENERAL CONTRACTOR UPON COMPLETION OF PROJECT AND PRIOR TO FINAL PAYMENT.
- CONTRACTOR SHALL LEAVE PREMISES IN A CLEAN CONDITION.
- THE PROPOSED FACILITY WILL BE UNMANNED AND DOES NOT REQUIRE POTABLE WATER OR SEWER SERVICE, AND IS NOT FOR HUMAN HABITAT (NO HANDICAP ACCESS REQUIRED).
- OCCUPANCY IS LIMITED TO PERIODIC MAINTENANCE AND INSPECTION, APPROXIMATELY 2 TIMES PER MONTH, BY AT&T TECHNICIANS.
- NO OUTDOOR STORAGE OR SOLID WASTE CONTAINERS ARE PROPOSED.
- ALL MATERIAL SHALL BE FURNISHED AND WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE LATEST REVISION AT&T MOBILITY GROUNDING STANDARD "TECHNICAL SPECIFICATION FOR CONSTRUCTION OF GSM/GPRS WIRELESS SITES" AND "TECHNICAL SPECIFICATION FOR FACILITY GROUNDING". IN CASE OF A CONFLICT BETWEEN THE CONSTRUCTION SPECIFICATION AND THE DRAWINGS, THE DRAWINGS SHALL GOVERN.
- CONTRACTORS SHALL BE RESPONSIBLE FOR OBTAINING ALL PERMITS AND INSPECTIONS REQUIRED FOR CONSTRUCTION. IF CONTRACTOR CANNOT OBTAIN A PERMIT, THEY MUST NOTIFY THE GENERAL CONTRACTOR IMMEDIATELY.
- CONTRACTOR SHALL REMOVE ALL TRASH AND DEBRIS FROM THE SITE ON A DAILY BASIS.
- INFORMATION SHOWN ON THESE DRAWINGS WAS OBTAINED FROM SITE VISITS AND/OR DRAWINGS PROVIDED BY THE SITE OWNER. CONTRACTORS SHALL NOTIFY THE ENGINEER OF ANY DISCREPANCIES PRIOR TO ORDERING MATERIAL OR PROCEEDING WITH CONSTRUCTION.
- NO WHITE STROBE LIGHTS ARE PERMITTED. LIGHTING IF REQUIRED, WILL MEET FAA STANDARDS AND REQUIREMENTS.

ANTENNA MOUNTING

- DESIGN AND CONSTRUCTION OF ANTENNA SUPPORTS SHALL

- CONFORM TO CURRENT ANSI/TIA-222 OR APPLICABLE LOCAL CODES.
- ALL STEEL MATERIALS SHALL BE GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH ASTM A123 "ZINC (HOT-DIP GALVANIZED) COATINGS ON IRON AND STEEL PRODUCTS", UNLESS NOTED OTHERWISE.
 - ALL BOLTS, ANCHORS AND MISCELLANEOUS HARDWARE SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A153 "ZINC-COATING (HOT-DIP) ON IRON AND STEEL HARDWARE", UNLESS NOTED OTHERWISE.
 - DAMAGED GALVANIZED SURFACES SHALL BE REPAIRED BY COLD GALVANIZING IN ACCORDANCE WITH ASTM A780.
 - ALL ANTENNA MOUNTS SHALL BE INSTALLED WITH LOCK NUTS, DOUBLE NUTS AND SHALL BE TORQUED TO MANUFACTURER'S RECOMMENDATIONS.
 - CONTRACTOR SHALL INSTALL ANTENNA PER MANUFACTURER'S RECOMMENDATION FOR INSTALLATION AND GROUNDING.
 - ALL UNUSED PORTS ON ANY ANTENNAS SHALL BE TERMINATED WITH A 50-OHM LOAD TO ENSURE ANTENNAS PERFORM AS DESIGNED.
 - PRIOR TO SETTING ANTENNA AZIMUTHS AND DOWNTILTS, ANTENNA CONTRACTOR SHALL CHECK THE ANTENNA MOUNT FOR TIGHTNESS AND ENSURE THAT THEY ARE PLUMB. ANTENNA AZIMUTHS SHALL BE SET FROM TRUE NORTH AND BE ORIENTED WITHIN +/- 5% AS DEFINED BY THE RFDS. ANTENNA DOWNTILTS SHALL BE WITHIN +/- 0.5% AS DEFINED BY THE RFDS. REFER TO ND-00246.
 - JUMPERS FROM THE TMA'S MUST TERMINATE TO OPPOSITE POLARIZATION'S IN EACH SECTOR.
 - CONTRACTOR SHALL RECORD THE SERIAL #, SECTOR, AND POSITION OF EACH ACTUATOR INSTALLED AT THE ANTENNAS AND PROVIDE THE INFORMATION TO AT&T.
 - TMA'S SHALL BE MOUNTED ON PIPE DIRECTLY BEHIND ANTENNAS AS CLOSE TO ANTENNA AS FEASIBLE IN A VERTICAL POSITION.

TORQUE REQUIREMENTS

- ALL RF CONNECTIONS SHALL BE TIGHTENED BY A TORQUE WRENCH.
- ALL RF CONNECTIONS, GROUNDING HARDWARE AND ANTENNA HARDWARE SHALL HAVE A TORQUE MARK INSTALLED IN A CONTINUOUS STRAIGHT LINE FROM BOTH SIDES OF THE CONNECTION.
A. RF CONNECTION BOTH SIDES OF THE CONNECTOR.
B. GROUNDING AND ANTENNA HARDWARE ON THE NUT SIDE STARTING FROM THE THREADS TO THE SOLID SURFACE. EXAMPLE OF SOLID SURFACE: GROUND BAR, ANTENNA BRACKET METAL.

FIBER & POWER CABLE MOUNTING

- THE FIBER OPTIC TRUNK CABLES SHALL BE INSTALLED INTO CONDUITS, CHANNEL CABLE TRAYS, OR CABLE TRAY. WHEN INSTALLING FIBER OPTIC TRUNK CABLES INTO A CABLE TRAY SYSTEM, THEY SHALL BE INSTALLED INTO AN INTER DUCT AND A PARTITION BARRIER SHALL BE INSTALLED BETWEEN THE 600 VOLT CABLES AND THE INTER DUCT IN ORDER TO SEGREGATE CABLE TYPES. OPTIC FIBER TRUNK CABLES SHALL HAVE APPROVED CABLE RESTRAINTS EVERY (60) SIXTY FEET AND SECURELY FASTENED TO THE CABLE TRAY SYSTEM. NFPA 70 (NEC) ARTICLE 770 RULES SHALL APPLY.
- THE TYPE TC-ER CABLES SHALL BE INSTALLED INTO CONDUITS, CHANNEL CABLE TRAYS, OR CABLE TRAY AND SHALL BE SECURED AT INTERVALS NOT EXCEEDING (6) SIX FEET. AN EXCEPTION; WHERE TYPE TC-ER CABLES ARE NOT SUBJECT TO PHYSICAL DAMAGE, CABLES SHALL BE PERMITTED TO MAKE A TRANSITION BETWEEN CONDUITS, CHANNEL CABLE TRAYS, OR CABLE TRAY WHICH ARE SERVING UTILIZATION EQUIPMENT OR DEVICES, A DISTANCE (6) SIX FEET SHALL NOT BE EXCEEDED WITHOUT CONTINUOUS SUPPORTING. NFPA 70 (NEC) ARTICLES 336 AND 392 RULES SHALL APPLY.
- WHEN INSTALLING OPTIC FIBER TRUNK CABLES OR TYPE TC-ER CABLES INTO CONDUITS, NFPA 70 (NEC) ARTICLE 300 RULES SHALL APPLY.

COAXIAL CABLE NOTES

- TYPES AND SIZES OF THE ANTENNA CABLE ARE BASED ON ESTIMATED LENGTHS. PRIOR TO ORDERING CABLE, CONTRACTOR SHALL VERIFY ACTUAL LENGTH BASED ON CONSTRUCTION LAYOUT AND NOTIFY THE PROJECT MANAGER IF ACTUAL LENGTHS EXCEED ESTIMATED LENGTHS.
- CONTRACTOR SHALL VERIFY THE DOWN-TILT OF EACH ANTENNA WITH A DIGITAL LEVEL.
- CONTRACTOR SHALL CONFIRM COAX COLOR CODING PRIOR TO CONSTRUCTION.
- ALL JUMPERS TO THE ANTENNAS FROM THE MAIN

- TRANSMISSION LINE SHALL BE 1/2" DIA. LDF AND SHALL NOT EXCEED 6'-0".
- ALL COAXIAL CABLE SHALL BE SECURED TO THE DESIGNED SUPPORT STRUCTURE, IN AN APPROVED MANNER, AT DISTANCES NOT TO EXCEED 4'-0" OC.
 - CONTRACTOR SHALL FOLLOW ALL MANUFACTURER'S RECOMMENDATIONS REGARDING BOTH THE INSTALLATION AND GROUNDING OF ALL COAXIAL CABLES, CONNECTORS, ANTENNAS, AND ALL OTHER EQUIPMENT.
 - CONTRACTOR SHALL GROUND ALL EQUIPMENT, INCLUDING ANTENNAS, RET MOTORS, TMA'S, COAX CABLES, AND RET CONTROL CABLES AS A COMPLETE SYSTEM. GROUNDING SHALL BE EXECUTED BY QUALIFIED WIREMEN IN COMPLIANCE WITH MANUFACTURER'S SPECIFICATION AND RECOMMENDATION.
 - CONTRACTOR SHALL PROVIDE STRAIN-RELIEF AND CABLE SUPPORTS FOR ALL CABLE ASSEMBLIES, COAX CABLES, AND RET CONTROL CABLES. CABLE STRAIN-RELIEFS AND CABLE SUPPORTS SHALL BE APPROVED FOR THE PURPOSE. INSTALLATION SHALL BE IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS AND RECOMMENDATIONS.
 - CONTRACTOR TO VERIFY THAT EXISTING COAX HANGERS ARE STACKABLE SNAP IN HANGERS. IF EXISTING HANGERS ARE NOT STACKABLE SNAP IN HANGERS THE CONTRACTOR SHALL REPLACE EXISTING HANGERS WITH NEW SNAP IN HANGERS IF APPLICABLE.

GENERAL CABLE AND EQUIPMENT NOTES

- CONTRACTOR SHALL BE RESPONSIBLE TO VERIFY ANTENNA, TMAS, DIPLEXERS, AND COAX CONFIGURATION, MAKE AND MODELS PRIOR TO INSTALLATION.
- ALL CONNECTIONS FOR HANGERS, SUPPORTS, BRACING, ETC. SHALL BE INSTALLED PER TOWER MANUFACTURER'S RECOMMENDATIONS.
- CONTRACTOR SHALL REFERENCE THE TOWER STRUCTURAL ANALYSIS/DESIGN DRAWINGS FOR DIRECTIONS ON CABLE DISTRIBUTION/ROUTING.
- ALL OUTDOOR RF CONNECTORS/CONNECTIONS SHALL BE WEATHERPROOFED, EXCEPT THE RET CONNECTORS, USING BUTYL TAPE AFTER INSTALLATION AND FINAL CONNECTIONS ARE MADE. BUTYL TAPE SHALL HAVE A MINIMUM OF ONE-HALF TAPE WIDTH OVERLAP ON EACH TURN AND EACH LAYER SHALL BE WRAPPED THREE TIMES. WEATHERPROOFING SHALL BE SMOOTH WITHOUT BUCKLING. BUTYL BLEEDING IS NOT ALLOWED.
- IF REQUIRED TO PAINT ANTENNAS AND/OR COAX:
A. TEMPERATURE SHALL BE ABOVE 50° F.
B. PAINT COLOR MUST BE APPROVED BY BUILDING OWNER/LANDLORD.
C. FOR REGULATED TOWERS, FAA/FCC APPROVED PAINT IS REQUIRED.
D. DO NOT PAINT OVER COLOR CODING OR ON EQUIPMENT MODEL NUMBERS
- ALL CABLES SHALL BE GROUNDING WITH COAXIAL CABLE GROUND KITS. FOLLOW THE MANUFACTURER'S RECOMMENDATIONS.
A. GROUNDING AT THE ANTENNA LEVEL.
B. GROUNDING AT MID LEVEL, TOWERS WHICH ARE OVER 200'-0", ADDITIONAL CABLE GROUNDING REQUIRED.
C. GROUNDING AT BASE OF TOWER PRIOR TO TURNING HORIZONTAL.
D. GROUNDING OUTSIDE THE EQUIPMENT SHELTER AT ENTRY PORT.
E. GROUNDING INSIDE THE EQUIPMENT SHELTER AT THE ENTRY PORT.
- ALL PROPOSED GROUND BAR DOWNLEADS ARE TO BE TERMINATED TO THE EXISTING ADJACENT GROUND BAR DOWNLEADS A MINIMUM DISTANCE OF 4'-0" BELOW GROUND BAR. TERMINATIONS MAY BE EXOTHERMIC OR COMPRESSION.



550 COCHITUATE ROAD
SUITE 550 13 AND 14
FRAMINGHAM, MA 01701



1362 MELLON ROAD
SUITE 140
HANOVER, MD 21076



1100 E. WOODFIELD ROAD, SUITE 500
SCHAUMBURG, ILLINOIS 60173
TEL: 847-908-8400
COA# PEC.0001444
www.FullertonEngineering.com

REV	DATE	DESCRIPTION	BY
0	10/31/17	90% REVIEW	KC
1	12/13/17	FINAL	KC

I HEREBY CERTIFY THAT THESE DRAWINGS WERE PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND CONTROL, AND TO THE BEST OF MY KNOWLEDGE AND BELIEF COMPLY WITH THE REQUIREMENTS OF ALL APPLICABLE CODES.



SITE NAME
**BRIDGEWATER CT
WEWAKA BROOK RD**

SITE NUMBER:
CTL02400

SITE ADDRESS
**89 WEWAKA BROOK ROAD
BRIDGEWATER, CT 06752**

SHEET NAME
**NOTES AND
SPECIFICATIONS**

SHEET NUMBER
SP1

THESE DRAWINGS ARE THE PROPERTY OF FULLERTON ENGINEERING CONSULTANTS, INC. IT IS FOR THE EXCLUSIVE USE OF THIS PROJECT. ANY RE-USE OF THIS DRAWING WITHOUT THE EXPRESSED WRITTEN CONSENT OF FULLERTON ENGINEERING CONSULTANTS, INC. IS PROHIBITED.

NOTICE



Beyond This Point you are entering a controlled area where RF emissions *may exceed* the FCC General Population Exposure Limits.

Follow all posted signs and site guidelines for working in a RF environment.



Ref: 47CFR 1.1307(b)

CAUTION



Beyond This Point you are entering a controlled area where RF emissions *may exceed* the FCC Occupational Exposure Limits.

Obey all posted signs and site guidelines for working in a RF environment.



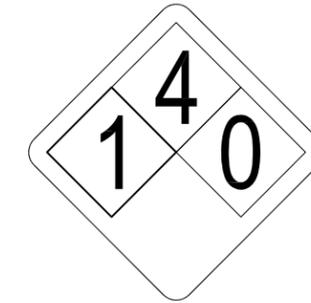
Ref: 47CFR 1.1307(b)



ALERTING SIGN
(FOR CELL SITE BATTERIES)



ALERTING SIGN
(FOR DIESEL FUEL)



ALERTING SIGN
(FOR PROPANE)



at&t

550 COCHITUATE ROAD
SUITE 550 13 AND 14
FRAMINGHAM, MA 01701



1362 MELLON ROAD
SUITE 140
HANOVER, MD 21076

FULLERTON
ENGINEERING • DESIGN

1100 E. WOODFIELD ROAD, SUITE 500
SCHAUMBURG, ILLINOIS 60173
TEL: 847-908-8400
COA# PEC.0001444
www.FullertonEngineering.com

REV	DATE	DESCRIPTION	BY
0	10/31/17	90% REVIEW	KC
1	12/13/17	FINAL	KC

I HEREBY CERTIFY THAT THESE DRAWINGS WERE PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND CONTROL, AND TO THE BEST OF MY KNOWLEDGE AND BELIEF COMPLY WITH THE REQUIREMENTS OF ALL APPLICABLE CODES.



SITE NAME
**BRIDGEWATER CT
WEWAKA BROOK RD**

SITE NUMBER:
CTL02400

SITE ADDRESS
**89 WEWAKA BROOK ROAD
BRIDGEWATER, CT 06752**

SHEET NAME
**NOTES AND
SPECIFICATIONS**

SHEET NUMBER
SP2

ALERTING SIGNS

WARNING!

DANGER DO NOT TOUCH TOWER!
SERIOUS "RF" BURN HAZARD!
MAINTAIN AN ADEQUATE
CLEARANCE BETWEEN TOWER
SUPPORTS AND GUY WIRES

FAILURE TO OBEY ALL POSTED SIGNS AND SITE
GUIDELINES FOR WORKING IN A RADIO
FREQUENCY ENVIRONMENT COULD RESULT IN
SERIOUS INJURY. CONTACT CURRENT MAY
EXCEED LIMITS PRESCRIBED IN ANSI/IEEE
C95.1-1992 FOR CONTROLLED ENVIRONMENTS.



PROPERTY OF AT&T 

AUTHORIZED PERSONNEL ONLY

IN CASE OF EMERGENCY, OR PRIOR TO
PERFORMING MAINTENANCE ON THIS SITE,
CALL 800-638-2822 AND REFERENCE CELL
SITE NUMBER _____

ALERTING SIGN

INFO SIGN #4

INFORMATION

AT&T operates telecommunications antennas at this location. Remain at least 3 feet away from any antenna and obey all posted signs.

Contact the owner(s) of the antenna(s) before working closer than 3 feet from the antenna.

Contact AT&T at _____ prior to performing any maintenance or repairs near AT&T antennas. This is Site # _____

Contact the management office if this door/hatch/gate is found unlocked.

INFORMACION

En esta propiedad se ubican antenas de telecomunicaciones operadas por AT&T. Favor mantener una distancia de no menos de 3 pies y obedecer todos los avisos.

Comuníquese con el propietario o los propietarios de las antenas antes de trabajar o caminar a una distancia de menos de 3 pies de la antena.

Comuníquese con AT&T _____ antes de realizar cualquier mantenimiento o reparaciones cerca de la antena de AT&T.

Esta es la estación base número _____

Favor comunicarse con la oficina de la administración del edificio si esta puerta o compuerta se encuentra sin candado.



INFORMATION

ACTIVE ANTENNAS ARE MOUNTED

ON THE OUTSIDE OF THIS BUILDING

BEHIND THIS PANEL

ON THIS STRUCTURE

**STAY BACK A MINIMUM
OF 3 FEET
FROM THESE ANTENNAS**

Contact AT&T at _____ and follow their instructions prior to performing any maintenance or repairs closer than 3 feet from the antennas.

This is AT&T site # _____



**S
T
A
Y

B
A
C
K

3

F
E
E
T

F
R
O
M

A
N
T
E
N
N
A**



GENERAL SIGNAGE GUIDELINES

STRUCTURE TYPE	INFO SIGN #1	INFO SIGN #2	INFO SIGN #3	INFO SIGN #4	STRIPING	NOTICE SIGN	CAUTION SIGN
TOWERS							
MONOPOLE/MONOPINE/MONOPALM	ENTRANCE GATES, SHELTER DOORS OR ON THE OUTDOOR CABINETS	CLIMBING SIDE OF THE TOWER	ON BACKSIDE OF ANTENNAS	ENTRANCE GATES, SHELTER DOORS OR ON THE OUTDOOR CABINETS			AT THE HEIGHT OF THE FIRST CLIMBING STEP, MIN 9 FT ABOVE GROUND
SEC TOWERS/TOWERS WITH HIGH VOLTAGE	ENTRANCE GATES, SHELTER DOORS OR ON THE OUTDOOR CABINETS	CLIMBING SIDE OF THE TOWER	ON BACKSIDE OF ANTENNAS	ENTRANCE GATES, SHELTER DOORS OR ON THE OUTDOOR CABINETS			
LIGHT POLES/FLAG POLES	ENTRANCE GATES, SHELTER DOORS OR ON THE OUTDOOR CABINETS	ON THE POLE, NO LESS THAN 3FT BELOW THE ANTENNA AND LESS THAN 9FT ABOVE GROUND	ON BACKSIDE OF ANTENNAS	ENTRANCE GATES, SHELTER DOORS OR ON THE OUTDOOR CABINETS			
UTILITY WOOD POLES (JPA)	ENTRANCE GATES, SHELTER DOORS OR ON THE OUTDOOR CABINETS	ON THE POLE, NO LESS THAN 3FT BELOW THE ANTENNA AND LESS THAN 9FT ABOVE GROUND	ON BACKSIDE OF ANTENNAS	ENTRANCE GATES, SHELTER DOORS OR ON THE OUTDOOR CABINETS		IF GP MAX VALUE OF MPE AT ANTENNA LEVEL IS: 0-99%; NOTICE SIGN; OVER 99%: CAUTION SIGN AT NO LESS THAN 3FT BELOW ANTENNA AND 9FT ABOVE GROUND	
MICROCELLS MOUNTED ON NON-JPA POLES	ENTRANCE GATES, SHELTER DOORS OR ON THE OUTDOOR CABINETS	ON THE POLE, NO LESS THAN 3FT BELOW THE ANTENNA AND LESS THAN 9FT ABOVE GROUND	ON BACKSIDE OF ANTENNAS	ENTRANCE GATES, SHELTER DOORS OR ON THE OUTDOOR CABINETS		NOTICE OR CAUTION SIGN AT NO LESS THAN 9FT ABOVE GROUND; ONLY IF THE EXPOSURE EXCEEDS 90% OF THE GENERAL PUBLIC EXPOSURE AT EXPOSURE AT 6FT ABOVE GROUND OR AT OUTSIDE OF SURFACE OF ADJACENT BUILDING	
TOWERS							
AT ALL ACCESS POINTS TO THE ROOF	X			X			
ON ANTENNAS	X		X	X			
CONCEALED ANTENNAS	X	X		X			
ANTENNAS MOUNTED FACING OUTSIDE THE BUILDING	X	X		X			
ANTENNAS ON SUPPORT STRUCTURE	X	X		X			
ROOFVIEW GRAPH							
RADIATION AREA IS WITHIN 3FT FROM ANTENNA	X	ADJACENT TO EACH ANTENNA		X			
RADIATION AREA IS BEYOND 3FT FROM ANTENNA	X	ADJACENT TO EACH ANTENNA		X	DIAGONAL, YELLOW STRIPING AS TO ROOFVIEW GRAPH		EITHER NOTICE OR CAUTION SIGN (BASED ON ROOFVIEW RESULTS) AT ANTENNA /BARRIER
CHURCH STEEPLES	ACCESS TO STEEPLE	ADJACENT TO ANTENNAS IF ANTENNAS ARE CONCEALED	ON BACKSIDE OF ANTENNAS	ACCESS TO STEEPLE			CAUTION SIGN AT THE ANTENNAS
WATER STATIONS	ACCESS TO LADDER	ADJACENT TO ANTENNAS IF ANTENNAS ARE CONCEALED	ON BACKSIDE OF ANTENNAS	ACCESS TO LADDER			CAUTION SIGN BESIDE INFO SIGN #1, MIN. 9FT ABOVE GROUND

NOTES FOR ROOFTOP SITES:

- EITHER NOTICE OR CAUTION SIGNS NEED TO BE POSTED AT EACH SECTOR AS CLOSE AS POSSIBLE TO: THE OUTER EDGE OF THE STRIPED OFF AREA OR THE OUTER ANTENNAS OF THE SECTOR
- IF ROOFVIEWS SHOWS: ONLY BLUE = NOTICE SIGN, BLUE AND YELLOW = CAUTION SIGN, ONLY YELLOW = CAUTION SIGN TO BE INSTALLED
- SHOULD THE REQUIRED STRIPING AREAS INTERFERE WITH ANY STRUCTURE OR EQUIPMENT (A/C, VENTS, ROOF HATCH, DOORS, OTHER ANTENNAS, DISHES, ETC.). PLEASE NOTIFY AT&T TO MODIFY THE STRIPING AREA, PRIOR TO STARTING THE WORK.

INFO SIGN #1

INFO SIGN #2

INFO SIGN #3

SIGNAGE GUIDELINES CHART

THESE DRAWINGS ARE THE PROPERTY OF FULLERTON ENGINEERING CONSULTANTS, INC. IT IS FOR THE EXCLUSIVE USE OF THIS PROJECT. ANY RE-USE OF THIS DRAWING WITHOUT THE EXPRESSED WRITTEN CONSENT OF FULLERTON ENGINEERING CONSULTANTS, INC. IS PROHIBITED.



550 COCHITUATE ROAD
SUITE 550 13 AND 14
FRAMINGHAM, MA 01701



1362 MELLON ROAD
SUITE 140
HANOVER, MD 21076



1100 E. WOODFIELD ROAD, SUITE 500
SCHAUMBURG, ILLINOIS 60173
TEL: 847-908-8400
COA# PEC.0001444
www.FullertonEngineering.com

REV	DATE	DESCRIPTION	BY
0	10/31/17	90% REVIEW	KC
1	12/13/17	FINAL	KC

I HEREBY CERTIFY THAT THESE DRAWINGS WERE PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND CONTROL, AND TO THE BEST OF MY KNOWLEDGE AND BELIEF COMPLY WITH THE REQUIREMENTS OF ALL APPLICABLE CODES.



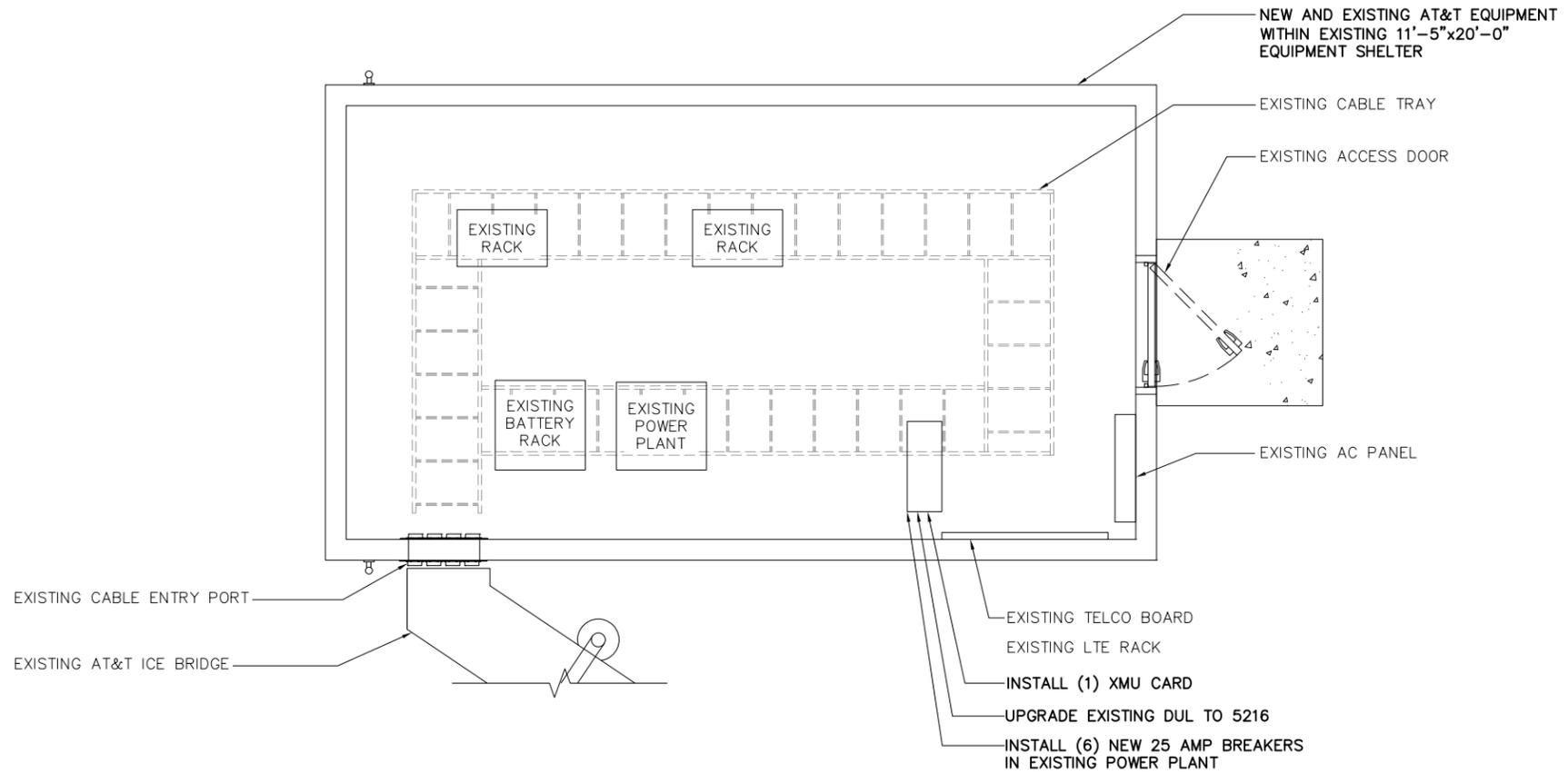
SITE NAME
**BRIDGEWATER CT
WEWAKA BROOK RD**

SITE NUMBER:
CTL02400

SITE ADDRESS
**89 WEWAKA BROOK ROAD
BRIDGEWATER, CT 06752**

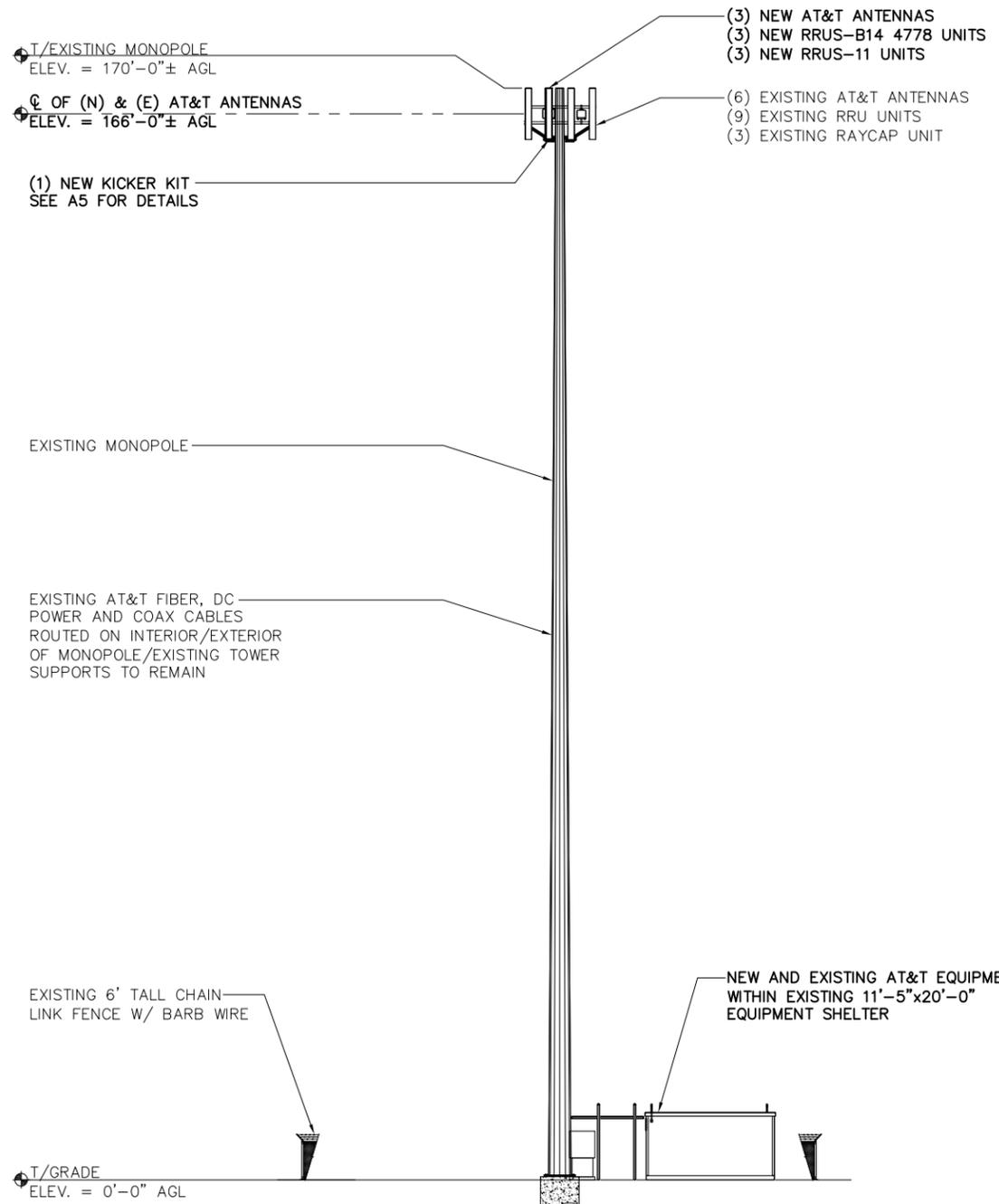
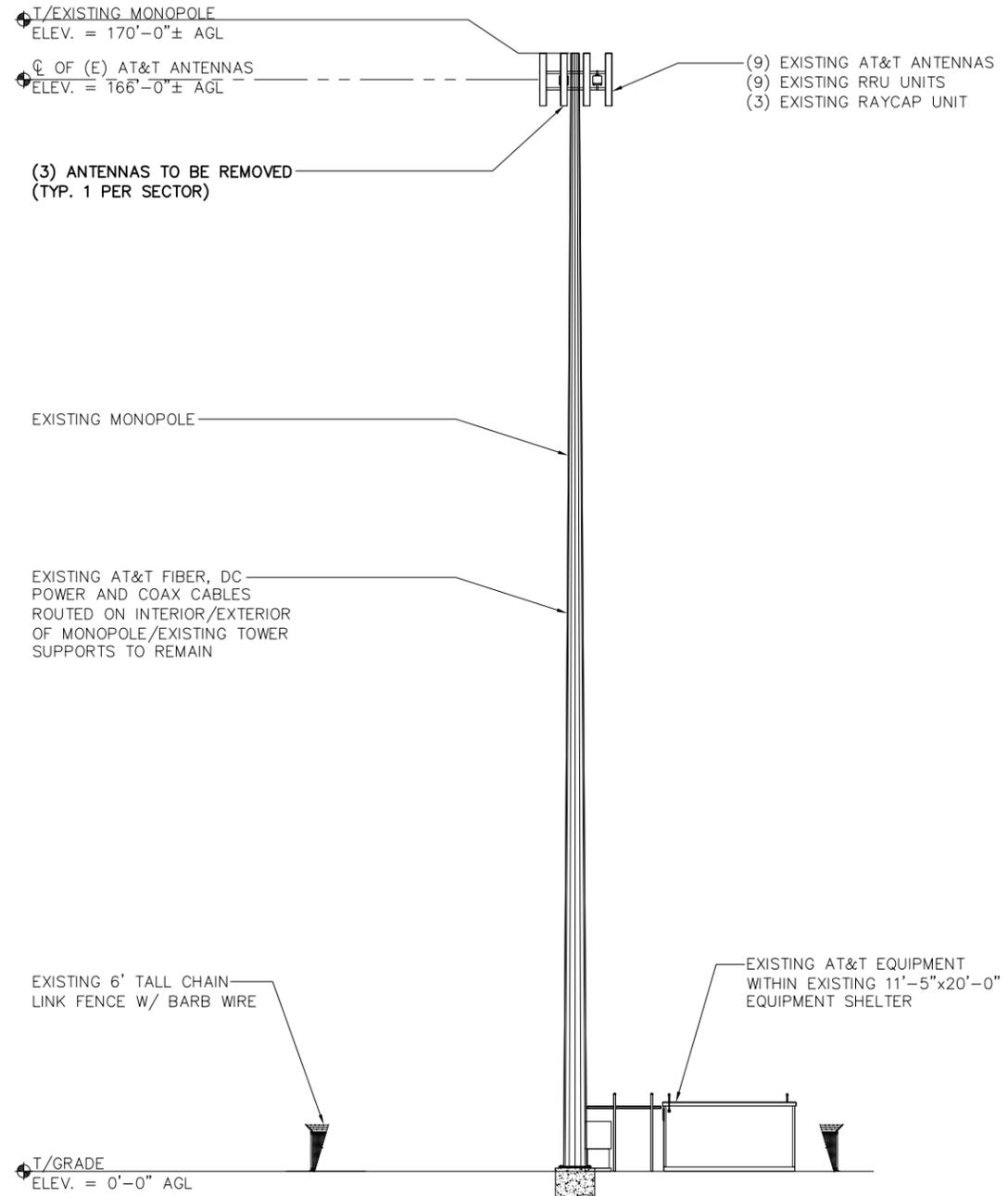
SHEET NAME
**EQUIPMENT
PLAN**

SHEET NUMBER
A2



NOTES:

1. CALCULATIONS FOR THE STRUCTURE WERE PREPARED BY OTHERS AND THOSE CALCULATIONS CERTIFY THE CAPACITY OF THE STRUCTURE TO SUPPORT THE NEW EQUIPMENT
2. CALCULATIONS FOR THE ANTENNA MOUNTS WERE PREPARED BY FULLERTON AND THOSE CALCULATIONS CERTIFY THE CAPACITY OF THE STRUCTURE TO SUPPORT THE NEW EQUIPMENT
3. CABLES NOT SHOWN FOR CLARITY



550 COCHITUATE ROAD
SUITE 550 13 AND 14
FRAMINGHAM, MA 01701



1362 MELLON ROAD
SUITE 140
HANOVER, MD 21076



1100 E. WOODFIELD ROAD, SUITE 500
SCHAUMBURG, ILLINOIS 60173
TEL: 847-908-8400
COA# PEC.0001444
www.FullertonEngineering.com

REV	DATE	DESCRIPTION	BY
0	10/31/17	90% REVIEW	KC
1	12/13/17	FINAL	KC

I HEREBY CERTIFY THAT THESE DRAWINGS WERE PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND CONTROL, AND TO THE BEST OF MY KNOWLEDGE AND BELIEF COMPLY WITH THE REQUIREMENTS OF ALL APPLICABLE CODES.



SITE NAME
**BRIDGEWATER CT
WEWAKA BROOK RD**

SITE NUMBER:
CTL02400

SITE ADDRESS
**89 WEWAKA BROOK ROAD
BRIDGEWATER, CT 06752**

SHEET NAME
ELEVATIONS

SHEET NUMBER
A3

EXISTING ELEVATION

SCALE: N.T.S. 1

NEW ELEVATION

SCALE: N.T.S. 2

THESE DRAWINGS ARE THE PROPERTY OF FULLERTON ENGINEERING CONSULTANTS, INC. IT IS FOR THE EXCLUSIVE USE OF THIS PROJECT. ANY RE-USE OF THIS DRAWING WITHOUT THE EXPRESSED WRITTEN CONSENT OF FULLERTON ENGINEERING CONSULTANTS, INC. IS PROHIBITED.



550 COCHITUATE ROAD
SUITE 550 13 AND 14
FRAMINGHAM, MA 01701



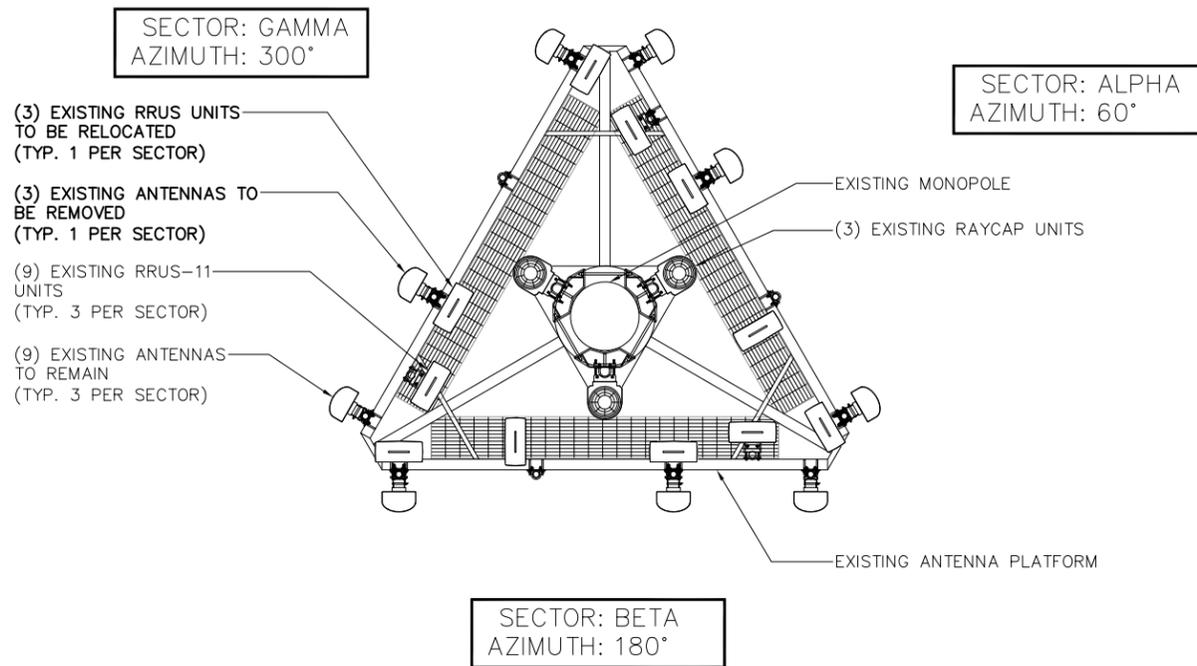
1362 MELLON ROAD
SUITE 140
HANOVER, MD 21076



1100 E. WOODFIELD ROAD, SUITE 500
SCHAUMBURG, ILLINOIS 60173
TEL: 847-908-8400
COA# PEC.0001444
www.FullertonEngineering.com

REV	DATE	DESCRIPTION	BY
0	10/31/17	90% REVIEW	KC
1	12/13/17	FINAL	KC

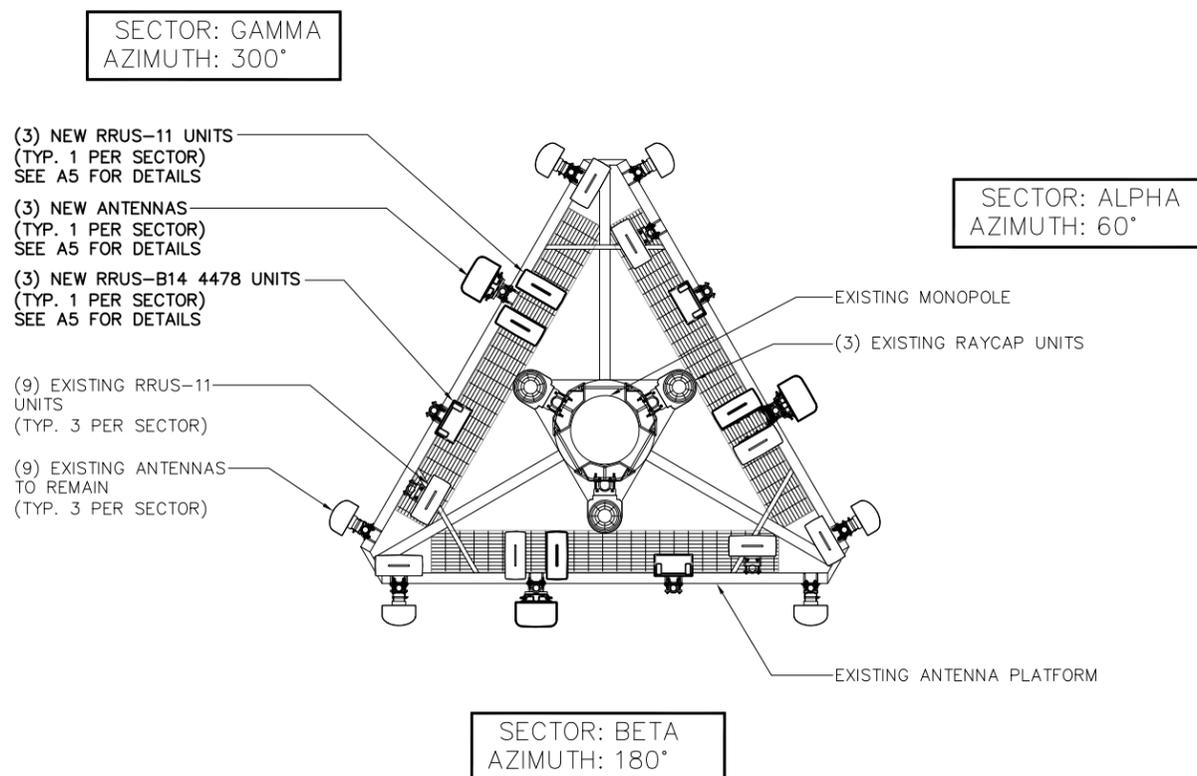
I HEREBY CERTIFY THAT THESE DRAWINGS WERE PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND CONTROL, AND TO THE BEST OF MY KNOWLEDGE AND BELIEF COMPLY WITH THE REQUIREMENTS OF ALL APPLICABLE CODES.



EXISTING ANTENNA PLAN

SCALE: 3/16" = 1'-0" 1

- NOTES:**
- EXISTING ANTENNA MOUNTING PIPE TO BE REUSED, RELOCATED OR REPLACED AS REQUIRED
 - IF REQUIRED INSTALL NEW GALV. MOUNTING PIPE(S) 2.5 STD. (2-7/8" O.D.)



FINAL ANTENNA PLAN

SCALE: 3/16" = 1'-0" 2



SITE NAME
**BRIDGEWATER CT
WEWAKA BROOK RD**

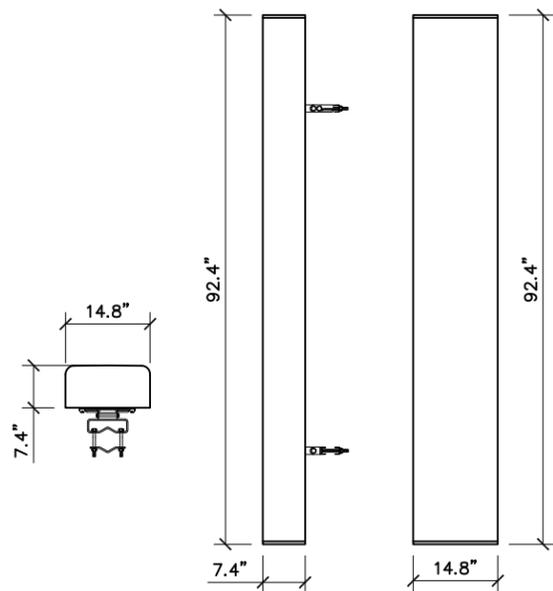
SITE NUMBER:
CTL02400

SITE ADDRESS
**89 WEWAKA BROOK ROAD
BRIDGEWATER, CT 06752**

SHEET NAME
**ANTENNA
PLANS**

SHEET NUMBER
A4

THESE DRAWINGS ARE THE PROPERTY OF FULLERTON ENGINEERING CONSULTANTS, INC. IT IS FOR THE EXCLUSIVE USE OF THIS PROJECT. ANY RE-USE OF THIS DRAWING WITHOUT THE EXPRESSED WRITTEN CONSENT OF FULLERTON ENGINEERING CONSULTANTS, INC. IS PROHIBITED.

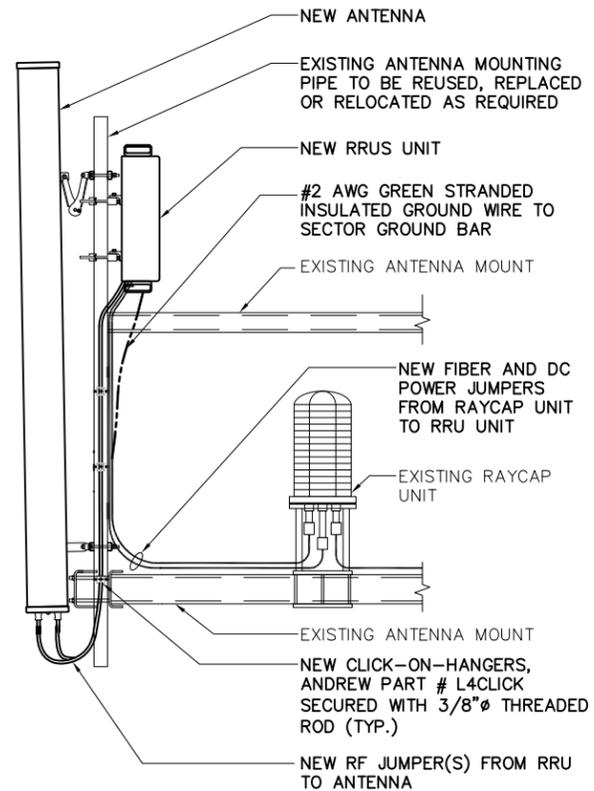


PLAN VIEW SIDE VIEW FRONT VIEW

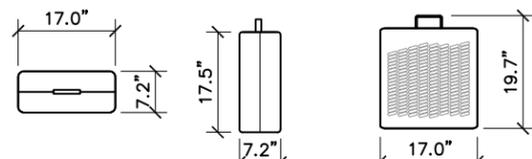
CCI – HPA-65R-BUU-H8

HEXPORT MULTI-BAND ANTENNA
 FREQUENCY RANGE 698-806 MHz
 824-894 MHz
 1850-1990 MHz
 1710-1755/2110-2170 MHz
 2305-2360 MHz
 ANTENNA WITH BRACKET 68 Lbs
 78 Lbs

ANTENNA SPEC SCALE: N.T.S. 1



ANTENNA SCHEMATIC SCALE: N.T.S. 3



PLAN VIEW SIDE VIEW FRONT VIEW

ERICSSON – RRU 11
WITH SOLAR SHIELD

UNIT WEIGHT 50 Lbs

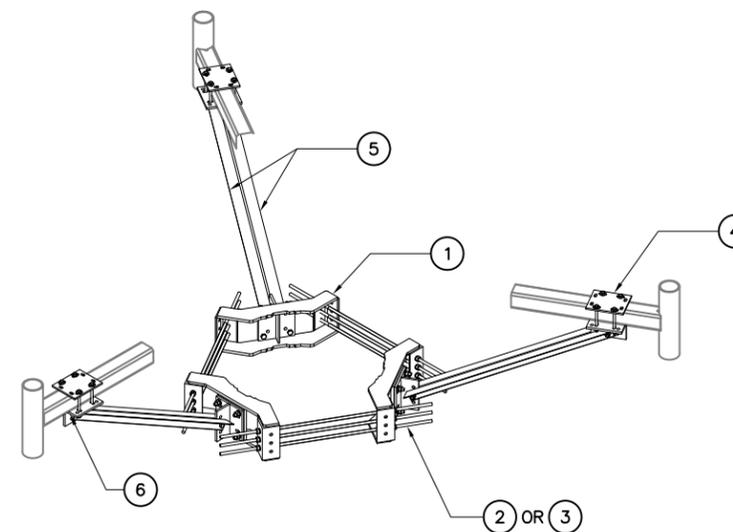


ERICSSON – RRU 4478 B14

FREQUENCY RANGE TX 758-768 MHz
 RX 788-798 MHz
 TOTAL WEIGHT 59.9 Lbs

RRU SPEC SCALE: N.T.S. 5

RRU SPEC SCALE: N.T.S. 6



ITEM	QTY.	PART DESCRIPTION
1	3	RING MOUNT WELDMENT
2	9	5/8" x 24" THREADED ROD (HDG.)
3	9	5/8" x 48" THREADED ROD (HDG.)
4	3	CROSSOVER PLATE
5	6	PLATFORM REINFORCEMENT KIT ANGLE
6	6	T-BRACKET FOR REINFORCEMENT KIT

PLATFORM REINFORCEMENT ON A 12" TO 45" POLE
 4'-6" ANGLE (SITEPRO - PRK-1245)
 TOTAL WEIGHT: 465 lbs

RRU SPEC SCALE: N.T.S. 5

RRU SPEC SCALE: N.T.S. 6

KICKER KIT DETAILS SCALE: N.T.S. 7



550 COCHITUATE ROAD
 SUITE 550 13 AND 14
 FRAMINGHAM, MA 01701



1362 MELLON ROAD
 SUITE 140
 HANOVER, MD 21076



1100 E. WOODFIELD ROAD, SUITE 500
 SCHAUMBURG, ILLINOIS 60173
 TEL: 847-908-8400
 COA# PEC.0001444
 www.FullertonEngineering.com

REV	DATE	DESCRIPTION	BY
0	10/31/17	90% REVIEW	KC
1	12/13/17	FINAL	KC

I HEREBY CERTIFY THAT THESE DRAWINGS WERE PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND CONTROL, AND TO THE BEST OF MY KNOWLEDGE AND BELIEF COMPLY WITH THE REQUIREMENTS OF ALL APPLICABLE CODES.



SITE NAME
**BRIDGEWATER CT
 WEWAKA BROOK RD**

SITE NUMBER:
CTL02400

SITE ADDRESS
**89 WEWAKA BROOK ROAD
 BRIDGEWATER, CT 06752**

SHEET NAME
**EQUIPMENT
 DETAILS**

SHEET NUMBER
A5

THESE DRAWINGS ARE THE PROPERTY OF FULLERTON ENGINEERING CONSULTANTS, INC. IT IS FOR THE EXCLUSIVE USE OF THIS PROJECT. ANY RE-USE OF THIS PROJECT, ANY RE-USE OF THIS DRAWING WITHOUT THE EXPRESSED WRITTEN CONSENT OF FULLERTON ENGINEERING CONSULTANTS, INC. IS PROHIBITED.



550 COCHITUATE ROAD
SUITE 550 13 AND 14
FRAMINGHAM, MA 01701



1362 MELLON ROAD
SUITE 140
HANOVER, MD 21076



1100 E. WOODFIELD ROAD, SUITE 500
SCHAUMBURG, ILLINOIS 60173
TEL: 847-908-8400
COA# PEC.0001444
www.FullertonEngineering.com

REV	DATE	DESCRIPTION	BY
0	10/31/17	90% REVIEW	KC
1	12/13/17	FINAL	KC

I HEREBY CERTIFY THAT THESE DRAWINGS WERE PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND CONTROL, AND TO THE BEST OF MY KNOWLEDGE AND BELIEF COMPLY WITH THE REQUIREMENTS OF ALL APPLICABLE CODES.



SITE NAME
**BRIDGEWATER CT
WEWAKA BROOK RD**

SITE NUMBER:
CTL02400

SITE ADDRESS
**89 WEWAKA BROOK ROAD
BRIDGEWATER, CT 06752**

SHEET NAME
**ANTENNA &
CABLE
CONFIGURATION**

SHEET NUMBER
A6

**FINAL ANTENNA CONFIGURATION AND CABLE SCHEDULE
SUPPLIED BY AT&T WIRELESS, FROM RF CONFIG. DATED (10/03/17)**

SECTOR	ANTENNA NUMBER	ANTENNA STATUS & TYPE	ANTENNA MODEL NUMBER	ANTENNA VENDOR	TMA/RRU UNIT	AZIMUTH	ANTENNA CL FROM GROUND	CABLE FEEDER		RAYCAP UNIT
								TYPE	LENGTH	
ALPHA	A-1	(E) UMTS ANTENNA	SBNH-1D6565C	COMMSCOPE	(1) EXISTING RRUS-11 UNIT(S)	60°	166'-0"	SEE ANTENNA A-4 FOR CABLE TYPE AND LENGTH		(3) (E) DC6-48-60-18-8F UNIT
	A-2	-	-	-	-	-	-	-		
	A-3	(N) LTE2C/3C ANTENNA	HPA-65R-BUU-H8	CCI	(1) EXISTING RRUS-11 UNIT (1) NEW RRUS-B14 4478 UNIT (1) NEW RRUS-11 UNIT	60°	166'-0"	SEE ANTENNA A-4 FOR CABLE TYPE AND LENGTH		
	A-4	(E) LTE1C ANTENNA	SBNH-1D6565C	COMMSCOPE	(1) EXISTING RRUS-11 UNIT(S)	60°	166'-0"	(1) EXISTING FIBER CABLE	210'-0"	
							(2) EXISTING DC POWER CABLES	210'-0"		
BETA	B-1	(E) UMTS ANTENNA	SBNH-1D6565C	COMMSCOPE	(1) EXISTING RRUS-11 UNIT(S)	180°	166'-0"	SEE ANTENNA B-4 FOR CABLE TYPE AND LENGTH		
	B-2	-	-	-	-	-	-	-		
	B-3	(N) LTE2C/3C ANTENNA	HPA-65R-BUU-H8	CCI	(1) EXISTING RRUS-11 UNIT (1) NEW RRUS-B14 4478 UNIT (1) NEW RRUS-11 UNIT	180°	166'-0"	SEE ANTENNA B-4 FOR CABLE TYPE AND LENGTH		
	B-4	(E) LTE1C ANTENNA	SBNH-1D6565C	COMMSCOPE	(1) EXISTING RRUS-11 UNIT(S)	180°	166'-0"	(1) EXISTING FIBER CABLE	210'-0"	
							(2) EXISTING DC POWER CABLES	210'-0"		
GAMMA	C-1	(E) UMTS ANTENNA	SBNH-1D6565C	COMMSCOPE	(1) EXISTING RRUS-11 UNIT(S)	300°	166'-0"	SEE ANTENNA C-4 FOR CABLE TYPE AND LENGTH		
	C-2	-	-	-	-	-	-	-		
	C-3	(N) LTE2C/3C ANTENNA	HPA-65R-BUU-H8	CCI	(1) EXISTING RRUS-11 UNIT (1) NEW RRUS-B14 4478 UNIT (1) NEW RRUS-11 UNIT	300°	166'-0"	SEE ANTENNA C-4 FOR CABLE TYPE AND LENGTH		
	C-4	(E) LTE1C ANTENNA	SBNH-1D6565C	COMMSCOPE	(1) EXISTING RRUS-11 UNIT(S)	300°	166'-0"	(1) EXISTING FIBER CABLE	210'-0"	
							(2) EXISTING DC POWER CABLES	210'-0"		

1. CONTRACTOR IS TO REFER TO AT&T'S MOST CURRENT RADIO FREQUENCY DATA SHEET (RFDS) PRIOR TO CONSTRUCTION.
2. THE SIZE, HEIGHT, AND DIRECTION OF THE ANTENNAS SHALL BE ADJUSTED TO ACHIEVE THE AZIMUTHS SPECIFIED AND LIMIT SHADOWING AND TO MEET THE SYSTEM REQUIREMENTS.
3. CONTRACTOR SHALL VERIFY THE HEIGHT OF THE ANTENNA WITH THE AT&T WIRELESS PROJECT MANAGER.
4. VERIFY TYPE AND SIZE OF TOWER LEG PRIOR TO ORDERING ANY ANTENNA MOUNT.
5. UNLESS NOTED OTHERWISE THE CONTRACTOR MUST PROVIDE ALL MATERIAL NECESSARY.
6. ANTENNA AZIMUTHS ARE DEGREES OFF OF TRUE NORTH, BEARING CLOCKWISE, IN WHICH ANTENNA FACE IS DIRECTED. ALL ANTENNAS (AND SUPPORTING STRUCTURES AS PRACTICAL) SHALL BE ACCURATELY ORIENTED IN THE SPECIFIED DIRECTION.
7. CONTRACTOR SHALL VERIFY ALL RF INFORMATION PRIOR TO CONSTRUCTION.
8. SWEEP TEST SHALL BE PERFORMED BY GENERAL CONTRACTOR AND SUBMITTED TO AT&T WIRELESS CONSTRUCTION SPECIALIST. TEST SHALL BE PERFORMED PER AT&T WIRELESS STANDARDS.
9. CABLE LENGTHS WERE DETERMINED BASED ON THE DESIGN DRAWING. CONTRACTOR TO VERIFY ACTUAL LENGTH DURING PRE-CONSTRUCTION WALK.
10. CONTRACTOR TO USE ROSENBERGER FIBER LINE HANGER COMPONENTS (OR ENGINEER APPROVED EQUAL).

ANTENNA AND CABLING NOTES

SCALE: N.T.S. 1

RF, DC, & COAX CABLE MARKING LOCATIONS TABLE	
NO	LOCATIONS
1	EACH TOP-JUMPER SHALL BE COLOR CODED WITH (1) SET OF 3" WIDE BANDS.
2	EACH MAIN COAX SHALL BE COLOR CODED WITH (1) SET OF 3" WIDE BANDS NEAR THE TOP-JUMPER CONNECTION AND WITH (1) SET OF 3/4" WIDE COLOR BANDS JUST PRIOR TO ENTERING THE BTS OR TRANSMITTER BUILDING.
3	CABLE ENTRY PORT ON THE INTERIOR OF THE SHELTER.
4	ALL BOTTOM JUMPERS SHALL BE COLOR CODED WITH (1) SET OF 3/4" WIDE BANDS ON EACH END OF THE BOTTOM JUMPER.
5	ALL BOTTOM JUMPERS SHALL BE COLOR CODED WITH (1) SET OF 3/4" WIDE BANDS ON EACH END OF THE BOTTOM JUMPER.

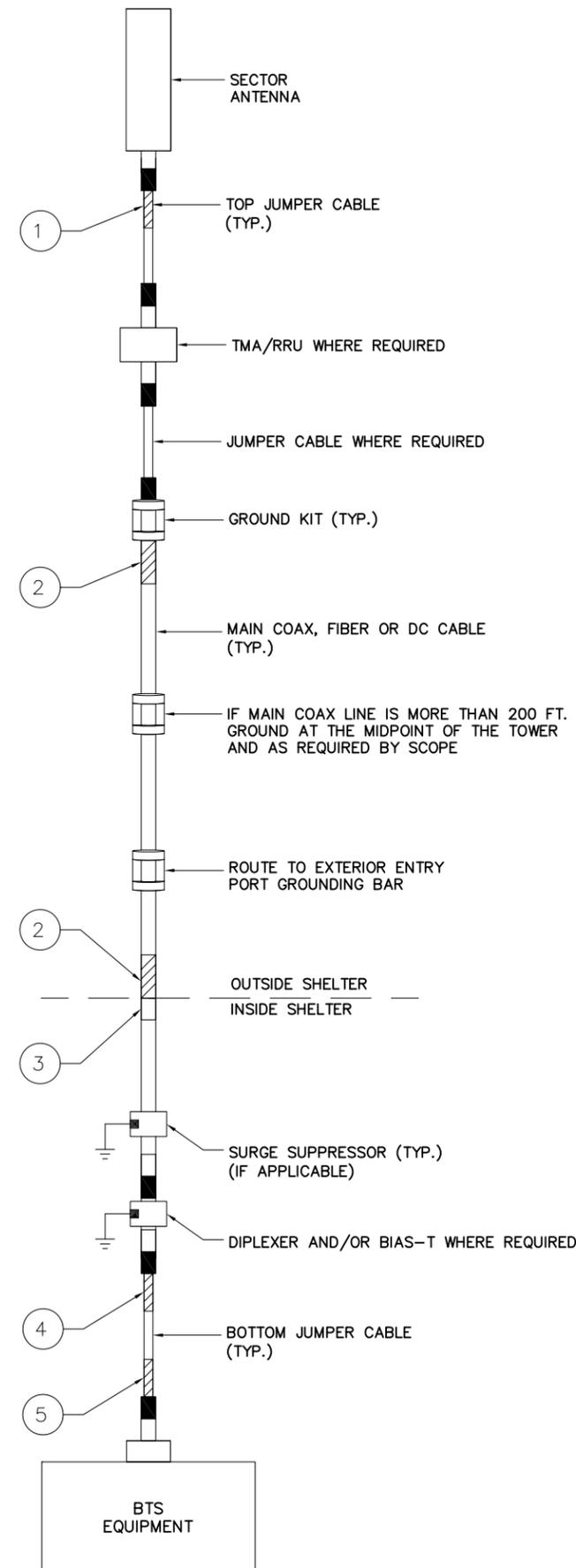
CABLE MARKING DIAGRAM

SCALE: N.T.S. 2

1. THE ANTENNA SYSTEM COAX SHALL BE LABELED WITH VINYL TAPE.
2. THE STANDARD IS BASED ON EIGHT COLORED TAPES-RED, BLUE, GREEN, YELLOW, ORANGE, BROWN, WHITE, AND VIOLET. THESE TAPES MUST BE 3/4" WIDE & UV RESISTANT SUCH AS SCOTCH 35 VINYL ELECTRICAL COLOR CODING TAPE AND SHOULD BE READILY AVAILABLE TO THE ELECTRICIAN OR CONTRACTOR ON SITE.
3. USING COLOR BANDS ON THE CABLES, MARK ALL RF CABLE BY SECTOR AND CABLE NUMBER AS SHOWN ON "CABLE COLOR CHART".
4. WHEN AN EXISTING COAXIAL LINE THAT IS INTENDED TO BE A SHARED LINE BETWEEN TECHNOLOGIES IS ENCOUNTERED, THE CONTRACTOR SHALL REMOVE THE EXISTING COLOR CODING SCHEME AND REPLACE IT WITH THE COLOR CODING STANDARD. IN THE ABSENCE OF AN EXISTING COLOR CODING AND TAGGING SCHEME, OR WHEN INSTALLING PROPOSED COAXIAL CABLES, THIS GUIDELINE SHALL BE IMPLEMENTED AT THAT SITE REGARDLESS OF TECHNOLOGY.
5. ALL COLOR CODE TAPE SHALL BE 3M-35 AND SHALL BE INSTALLED USING A MINIMUM OF (3) THREE WRAPS OF TAPE AND SHALL BE NEATLY TRIMMED AND SMOOTHED OUT SO AS TO AVOID UNRAVELING.
6. ALL COLOR BANDS INSTALLED AT THE TOP OF THE TOWER SHALL BE A MINIMUM OF 3" WIDE, AND SHALL HAVE A MINIMUM OF 3/4" OF SPACE BETWEEN EACH COLOR.
7. ALL COLOR CODES SHALL BE INSTALLED SO AS TO ALIGN NEATLY WITH ONE ANOTHER FROM SIDE-TO-SIDE.
8. IF EXISTING CABLES AT THE SITE ALREADY HAVE A COLOR CODING SCHEME AND THEY ARE NOT INTENDED TO BE REUSED OR SHARED WITH THE NEW TECHNOLOGY, THE EXISTING COLOR CODING SCHEME SHALL REMAIN UNTOUCHED.

CABLE MARKING NOTES

SCALE: N.T.S. 3



CABLE COLOR CODING DIAGRAM

SCALE: N.T.S. 4



550 COCHITUATE ROAD
SUITE 550 13 AND 14
FRAMINGHAM, MA 01701



1362 MELLON ROAD
SUITE 140
HANOVER, MD 21076



1100 E. WOODFIELD ROAD, SUITE 500
SCHAUMBURG, ILLINOIS 60173
TEL: 847-908-8400
COA# PEC.0001444
www.FullertonEngineering.com

REV	DATE	DESCRIPTION	BY
0	10/31/17	90% REVIEW	KC
1	12/13/17	FINAL	KC

I HEREBY CERTIFY THAT THESE DRAWINGS WERE PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND CONTROL, AND TO THE BEST OF MY KNOWLEDGE AND BELIEF COMPLY WITH THE REQUIREMENTS OF ALL APPLICABLE CODES.



SITE NAME
**BRIDGEWATER CT
WEWAKA BROOK RD**

SITE NUMBER:
CTL02400

SITE ADDRESS
**89 WEWAKA BROOK ROAD
BRIDGEWATER, CT 06752**

SHEET NAME
**CABLE NOTES
AND COLOR
CODING**

SHEET NUMBER
A7



550 COCHITUATE ROAD
SUITE 550 13 AND 14
FRAMINGHAM, MA 01701



1362 MELLON ROAD
SUITE 140
HANOVER, MD 21076



1100 E. WOODFIELD ROAD, SUITE 500
SCHAUMBURG, ILLINOIS 60173
TEL: 847-908-8400
COA# PEC.0001444
www.FullertonEngineering.com

REV	DATE	DESCRIPTION	BY
0	10/31/17	90% REVIEW	KC
1	12/13/17	FINAL	KC

I HEREBY CERTIFY THAT THESE DRAWINGS WERE PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND CONTROL, AND TO THE BEST OF MY KNOWLEDGE AND BELIEF COMPLY WITH THE REQUIREMENTS OF ALL APPLICABLE CODES.



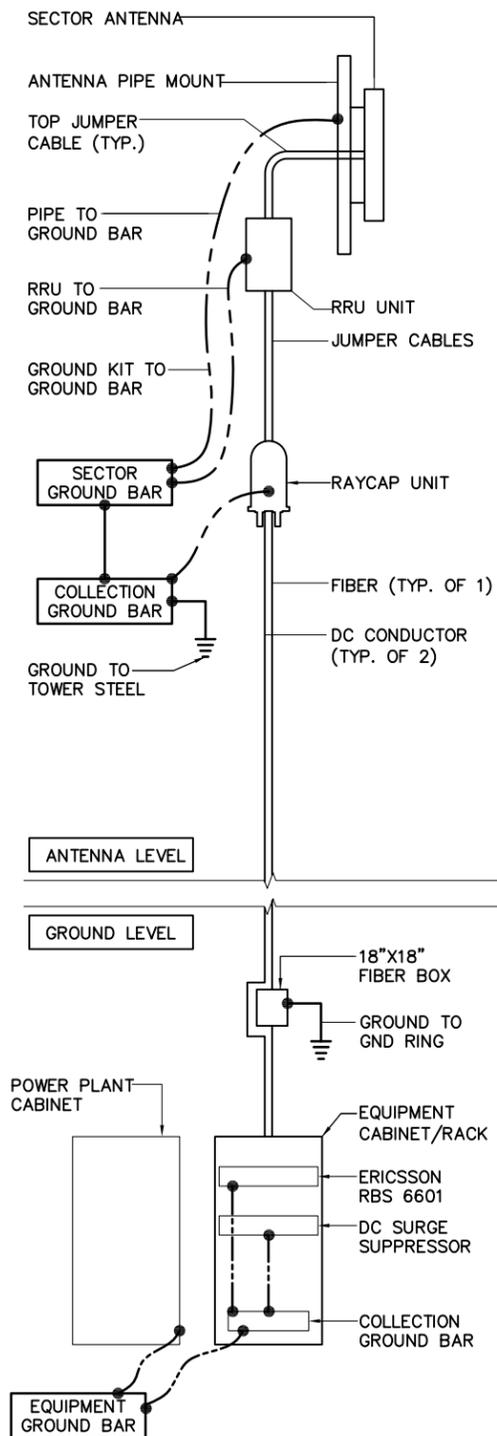
SITE NAME
**BRIDGEWATER CT
WEWAKA BROOK RD**

SITE NUMBER:
CTL02400

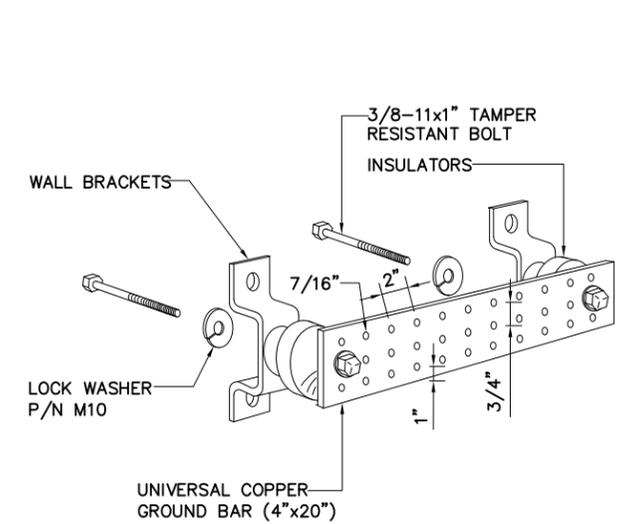
SITE ADDRESS
**89 WEWAKA BROOK ROAD
BRIDGEWATER, CT 06752**

SHEET NAME
**GROUNDING
DETAILS**

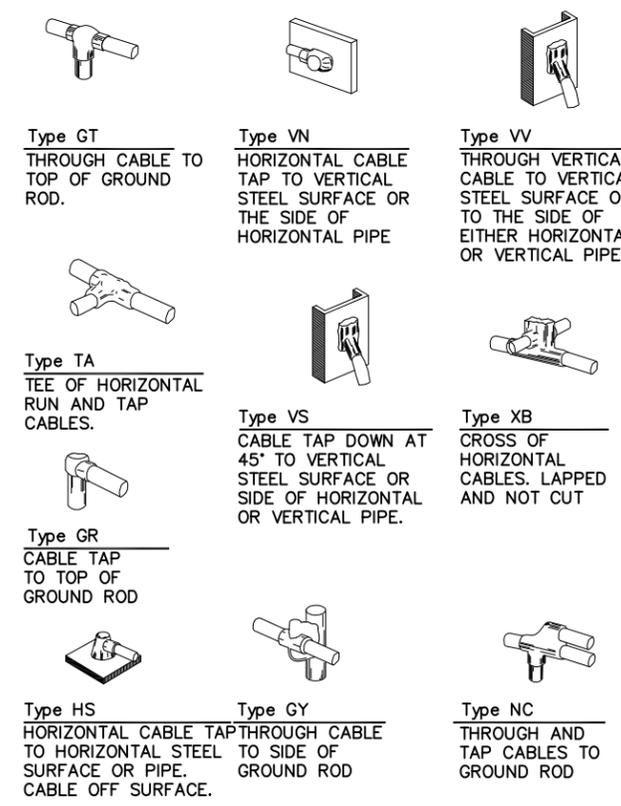
SHEET NUMBER
A8



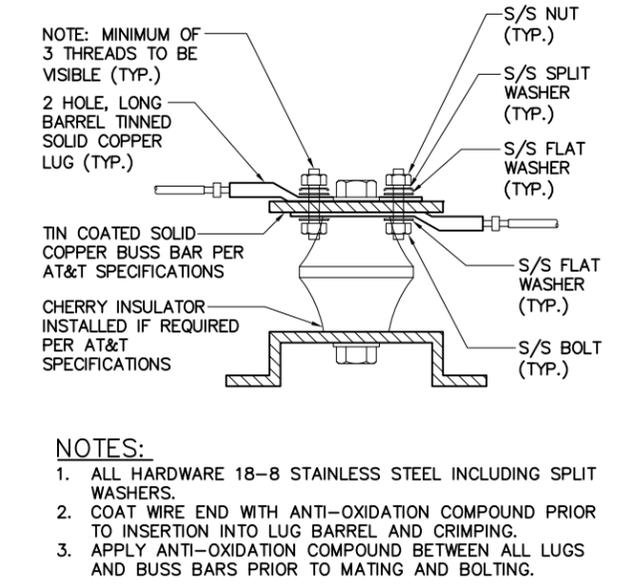
GROUNDING SCHEMATIC SCALE: N.T.S. 1



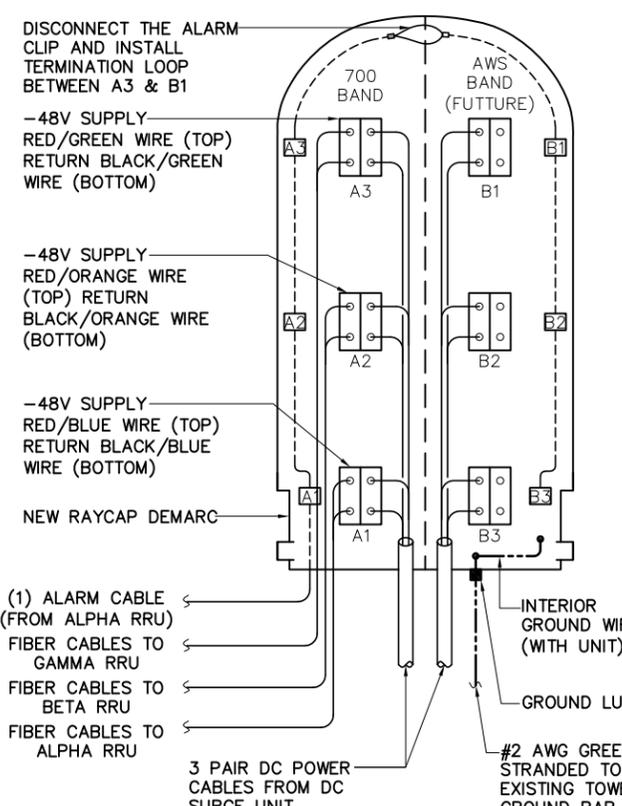
GROUND BAR DETAIL SCALE: N.T.S. 2



EXOTHERMIC WELD DETAILS SCALE: N.T.S. 4



LUG DETAIL SCALE: N.T.S. 3



RAYCAP DC POWER AND ALARM DET. SCALE: N.T.S. 5

NOT USED SCALE: N.T.S. 6

THESE DRAWINGS ARE THE PROPERTY OF FULLERTON ENGINEERING CONSULTANTS, INC. IT IS FOR THE EXCLUSIVE USE OF THIS PROJECT. ANY RE-USE OF THIS DRAWING WITHOUT THE EXPRESSED WRITTEN CONSENT OF FULLERTON ENGINEERING CONSULTANTS, INC. IS PROHIBITED.