



January 1, 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: 170 Mount Tobe Rd. Plymouth, CT 06782
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 108-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 add (3) 6' KMW Panel Antennas, each add will be occurring in position [3] all sectors for a total of three (3) antennas being added, the (3) current Panel antennas in position [3] will be moved to the currently vacant position [2] . AT&T also wishes to add (1) RRUS-32 B2, 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&T also intends to add (1) Raycap Surge Suppressor and (2) DC Power cables and (1) Fiber cable on position [3] in all sectors, for a total of (1) Surge Suppressor, (1) Fiber cable, and (2) DC Power cables to be mounted on the existing antenna mount.

Per the attached, Minutes on Decision for Cell Tower at 170 Mount Tobe Road, September 27, 2001, this facility was unanimously approved on September 27, 2001. Also – a letter has been attached from Zoning Enforcement Official, Margus Laan, stating this was the only document available.

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 Scott Eisenlohr, Zoning Enforcement Officer – Town of Plymouth, Zoning Office, 80 Main Street Terryville, CT 06786 and David V. Merchant – Mayor of Plymouth, CT, Mayor's Office, 80 Main Street Terryville, CT 06786. A copy of this letter is also being sent to the property owner Susan A. Macdonald & Walter T. Macdonald 42 South Street Plymouth, CT 06782, 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:

- **EM-CING-111-090422** – New Cingular Wireless PCS, LLC notice of intent to modify an existing telecommunications facility located at 170 Mount Tobe Road, Plymouth, Connecticut.
- **EM-CING-111-121116** -- New Cingular Wireless PCS, LLC notice of intent to modify an existing telecommunications facility located at 170 Mount Tobe Road, Plymouth, Connecticut.



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 108-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 an extension of the site boundary.
3. The proposed modifications will not increase the noise levels at the facility by six decibels or more, or to levels that exceed state and local criteria.
4. The operation of the modified facility will not increase radio frequency (RF) emissions at the facility to a level at or above the Federal Communications Commission (FCC) safety standard. A cumulative worst-case RF emissions calculation for AT&T's modified facility is provided in the 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,

Haleluya Haile

Enclosures

CC w/enclosures:

Mayor – David V. Merchant
Property Owner – Susan A. Macdonald & Walter T. Macdonald
Structure Owner – SBA Communications Corporation
Zoning Officer - Scott Eisenlohr

Plymouth, CT : Residential Property Record Card

[[Back to Search Results](#)] [[Start a New Search](#)] [[Help with Printing](#)]

Search For Properties			
Account	Name	Street Name	

Map-Block-Lot	Card	Account	Location	Zoning	State Class	Acres
093-138-002	1	00483500	170 MT TOBE RD	RA1	103 - Mobile Home	117.120
Living Units						
1						

Owner Information
Macdonald Susan A & Walter T
42 South St
Plymouth CT 06782

Deed Information
Book / Page: 230/661
Deed Date: 1992/06/16

Dwelling Information
Style:
Story Height: 0
Attic:
Basement:
Year Built: 0
Ground Flr Area: 0
Tot Living Area: 0
Rooms: 0
Bedrooms: 0
Full Baths: 0
Half Baths: 0

Valuation
Land: \$429,400
Building: \$142,500
Total: \$251,200
Net Assessment: \$175,840



Sales History				
Book / Page	Date	Price	Type	Validity
n/a	1992/06/01	\$260,000	Land Only	6

Out Building Information						
Type	Qty	Year	Size1	Size2	Grade	Cond
Garage-Wd/Cb	1	1986	20	23	C	A
Mobile Home-Sing Wide	1	1986	14	75	C	F
Cell Tower	1	2000	1	180	C	A
Shed-Frame	1	2000	20	28	B	A

Building Sketch

	<u>Descriptor/Area</u>
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Notice

The information delivered through this on-line database is provided in the spirit of open access to government information and is intended as an enhanced service and convenience for citizens of Plymouth, CT.

The providers of this database: CLT, Big Room Studios, and Plymouth, CT assume no liability for any error or omission in the information provided here.

Currently All Values Have Not Been Finalized and Are Subject To Change.

Comments regarding this service should be directed to: rwalcott@plymouthct.us



Opening Public Hearing for
Cell Tower at 170 Mount Tobe Road
May 24, 2001

extension of the public hearing for Towill Farms Subdivision – Harwinton Avenue – Towill. Jamie Purney seconded.

VOTE: G. Zukauskas – Aye, J. Purney – Aye and Chairman Herzing so voted.

MOTION: Gaye Zukauskas made a motion to continue the public hearing for Harwinton Avenue – Towill Farms Subdivision – Towill. Jamie Purney seconded.

VOTE: G. Zukauskas – Aye, J. Purney – Aye and Chairman Herzing so voted.

4. 41 Fall Mountain Lake Road – Special Permit – Hultslander – Mark Hultslander of 41 Fall Mountain Lake Road represented himself. The addition is one floor and will be put on piers. He had the size of the deck corrected at town hall. It was 16 x 20. He wants to change the existing deck into living space. Not going any higher. Vincent Lago of Lago Builders showed the Commission the plans. The existing closed in porch will be changed to a bedroom and the existing deck will be changed to living space. There is nothing else on the property. FOR – No one. AGAINST – No one. FOR NOR AGAINST – No one. Discussion was had. **MOTION:** Gaye Zukauskas made a motion to close the public hearing. Jamie Purney seconded. VOTE: G. Zukauskas – Aye, J. Purney – Aye and Chairman Herzing so voted. **MOTION:** Gaye Zukauskas made a motion to accept the application for a special permit – 41 Fall Mountain Lake Road – Hultslander approval based on plans dated March 27, 2001 by Lago Builders designed by Vincent Lago. The whole square footage of the total framing of the house not to exceed 20' x 40'. Silt fence to be put up during building process. Jamie Purney seconded. VOTE: G. Zukauskas – Aye, J. Purney – Aye and Chairman Herzing so voted.

5. 170 Mt. Tobe Road – Special Permit – SBA – Mr. Thomas Flynn represented SBA Inc. from Glastonbury, CT. Mr. Flynn felt the Commission has been educated on telecommunication towers so would explain why and where they are building it. He showed the Commission a topo map and showed them the locations of towers and how their tower relates to these other towers. They are trying to cover the blind spots up along Route 8. Thomaston recently denied 2 towers. They are proposing a tower on property across from the airport. It is a large parcel of land – over 150 acres – with nothing on it except 1 house. It has an existing road and existing utilities. They will have a lease with the landowner to cross and re-cross. They will be approximately 600' away from the house. It is way back in the property. It is approximately 2000' from Plymouth properties. It is next to the state forest. It is a simple site plan consisting of a compound 100' x 100' with a 70' x 70' compound within it. It will service up to 5 carriers – possibly 6. It will be self contained and fence secured. There will be no lighting except for maintenance and no water or sewer. It will be serviced a couple of times a month. There will be nothing outside the fenced area. The yellow areas on the map are partially visible to the Town of Plymouth. In the green areas, views are screened by vegetation. In the purple areas, views are blocked by topography. The tower will be galvanized, gray mat finish. It will have an ID # and emergency call number on it. It complies with all the regulations in terms of height and tower fall zone. It meets FCC regulations. Utilities are

PLANNING & ZONING PUBLIC HEARING
MAY 24, 2001

PAGE 3

already underground but would like to propose above ground from there on. Chairman Herzing had concerns as to the need of the tower and height of the tower. Mr. Flynn stated that the issue in this part of Connecticut is the depth of the river valley. They need the height so they will be able to get it down into the valley. Signals don't roll with the terrain. It varies from carrier to carrier as to where they are on the facility and how high a carrier may need to be. NEXTEL has signed on for this tower. Sprint could probably use this site as well. Chairman Herzing asked how high they need to go to get into the valley. (Since NEXTEL has signed on, what are their requirements?) There are three towers in town that aren't used to their capacity. Mr. Flynn said the lower they put a tower, the smaller the number of co-habitators that can be put on it. They need 10 feet from the mid line separation. Patrick Herzing asked if in the event all antennas are used by your provider, what do you need for height to get into the hole? FOR – Susan Macdonald asked if this tower would cover the dead spot on Route 6 up to Watertown. Mr. Flynn said yes. She also spoke in favor of the tower but she would rather see underground utilities rather than above. There was no one else who wanted to speak for the application. AGAINST – No one. FOR NOR AGAINST – No one. Discussion was had. The Commission would like more information from Mr. Flynn regarding NEXTEL, etc. **MOTION:** Gaye Zukauskas made a motion to continue the public hearing for 170 Mt. Tobe Road-Special Permit-SBA to 6/14. Jamie Purney seconded. VOTE: G. Zukauskas – Aye, J. Purney – Aye and Chairman Herzing so voted.

6. 403 Greystone Road – Modification of Special Permit – Edwards – Connie Massimo of 214 Christian Street, Oxford spoke for the applicant. They would like to extend their hours of operation. The hours at the present time are 8:00 a.m. to 3:00 p.m. which only gives them 6 ½ hours. Chairman Herzing stated that they knew that going into the project. Ms. Massimo stated that it is hard to hire trucks for only 6 ½ hours. They really need more hours. Chairman Herzing stated that he didn't think they were moving that much material from there. The majority was to be used on site to finish the driveway. 35,000 yds. of which 20,000 were to be used on site. This would leave 15,000 yds. to be hauled off. It is 22,000 yds. to be taken out. They had a rough winter and they have a hard time with the blasting because they don't have the time for the blasters to get in and blast. It takes 2 days because by the time they drill their holes, it is 3:00. She really needs to extend the hours. They have been working on this project since January and have had a lot of bad weather and she had a stopping point because of blasting. Chairman Herzing asked her how much material has been removed so far. What percentage of the job is completed. She stated maybe a quarter. Chairman Herzing asked if all that had been removed or has some of it been moved up into the property filling. Some for the road base. Mike Massimo of 214 Christian Street, Oxford stated they took some material out for the swale and some 50' to 75' from the road and then they hit ledge. They have removed about 1000 yds. They have to remove the rock that has been blasted. FOR – No one. AGAINST – Joan Cavalari of 410 Greystone Road lives across the road. Their hours are supposed to be 8-3 and already they have extended them on

Minutes on Decision for
Cell Tower at 170 Mount Tobe Road
September 27, 2001
Noted as Item #6

PLANNING & ZONING REGULAR MEETING
SEPTEMBER 27, 2001

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9. Greystone Road – Special Permit Review – Edwards – Attorney Kenneth Slater, Mr. Edwards and Mr. Massimo were in attendance. Attorney Slater stated that there is no value of an as-built at this time. The project hasn't proceeded at the rate it was supposed to because of the mica schist. Mr. Hrica was engaged to write a report as to what was done and was presented at the last meeting. They had one promising location but it was not permitted. There are some projects coming up where the contractor might be able to get rid of the mica schists. Chairman Herzing stated that it was more than the as-built. They requested a time frame that work was being done because there is a big impact on the neighbors with the traffic, noise and safety. They should have looked into the marketability of the material they had to remove to complete this project and the time restraints. There is a big hole in the side of a mountain causing safety issues with kids playing. It shouldn't be put on hold and let the hole sit there waiting for someone to get hurt. Mica is not a marketable material and research should have been done in advance. Attorney Slater told the Commission that they did not want to come back to them but they learned about the mica when they blasted. Chairman Herzing said they could have created something better than what was there and should clean up the mess and maybe sit on it. Attorney Slater said the engineering report indicated no immediate hazard. This project wouldn't take long to complete if there was a place to bring this material. Chairman Herzing feels they should get in and clean up the gaping hole in the side of the hill. They were supposed to be in 500 feet by the last meeting. Attorney Slater said the General Statutes give 5 years. Properties are left unsafe a lot longer than this. The applicant expected to be ½ done by this time. There is no value in an as-built. Chairman Herzing said that on 7/26/01 the Commission gave them 6 weeks. At that time they needed an as-built so they could see what they had or had not done. Good faith would have had them bring us an as-built. The fear that this was not a driveway – just an excavation operation. Attorney Slater said that they thought they would find a legal location before September but this didn't happen and they have no way to move the material. The Commission said nothing about it being shored up and is reasonably safe right now. When they find a location, the project will continue. The Commission and Attorney Slater went back and forth regarding a time line, a location for the mica schist and the as-built. The permit is over tomorrow (9/28/01) so they have to come in for a renewal. Attorney Slater stated that the permit is effective to 1/11/02. Gaye Zukauskas stated that our special permits run 1 year from the date of approval. Chairman Herzing asked if the Commission could give them a two week extension? Discussion was had. **MOTION:** Gaye Zukauskas made a motion to give a two week extension to Mr. Edwards-Greystone Road-driveway permit to allow them time to prepare a site plan and exhaust all other avenues for solid waste removal. Peter Tonn seconded. **VOTE:** S. Panasuk – Aye, J. Purney – Aye, P. Tonn – Aye, G. Zukauskas – Aye and Chairman Herzing so voted. It was made clear that the permit stays in effect for the two weeks.

6. 170 Mt. Tobe Road – Special Permit – SBA – Mr. Kuehn informed the Commission that the energy goes horizontal from the antenna and the antenna is vertical to the horizon. It goes parallel to the horizon – not down. Steve Panasuk asked if it met all

PLANNING & ZONING REGULAR MEETING
SEPTEMBER 27, 2001

PAGE 3

FCC regulations and the answer was yes. He also recommended a bond for removing the tower if it is not used for one year. The building is ok in size. The Siting Council has to go over the permit. Discussion was had. **MOTION:** Steve Panasuk made a motion to grant a special permit for SBA for 170 Mt. Tobe Road covering sheet T-1-cover sheet, S-1-site plan, C-1-vicinity plan, C-2-overall site and grading and C-3-site details. Bond to be set by the town engineer for removal of the tower if it is not used for 12 consecutive months. Gaye Zukauskas modified the motion to include: report entitled "Visual Simulations" dated July 9, 2001; View Shed Map, undated, for 160' monopole; and, maps and overlays as submitted to Commission at its meeting of July 26, 2001. Plan sheets for South Plymouth Communications Facility dated 3/16/00, revised 7/16/01 prepared by Erdman Anthony Consulting Engineers. Jamie Purney seconded. **VOTE:** S. Panasuk – Aye, J. Purney – Aye, G. Zukauskas – Aye and Chairman Herzing so voted. Peter Tonn was not here for the public hearing so didn't vote.

10. 591 Main Street – Site Plan Modification – KCK Properties

11. 10 Todd Hollow Road – Site Plan – KCK Properties – Kim Pelletier of 1 Cynthia Court, Bristol and Brian Ireland represented KCK Properties. They plan to modify 591 Main Street by removing the mountain of rock between 10 Todd Hollow Road and 591 Main Street. This would improve the sight line to Route 6 and provide additional parking area and extend the approved area to the south. This would bring the property up to grade. It would be the same building. Most of the material will be used on site. The rock will be crushed and what is not used will go to Scalia Brothers. Mr. Kuehn told the Commission that he hasn't received all reviews. Ten Todd Hollow Road was changed to Commercial. Gaye Zukauskas asked if they plan to build for themselves or to sell. The back building will be for a shop and executive businesses. Mr. Pelletier installs dump bodies on trucks. The Police Chief would like them to come out on Todd Hollow Road and not Route 6 because of the traffic. Mr. Pelletier said they would like an entrance on both. Mr. Kuehn said they need the elevations for the building on the corner and what it is going to look like – architectural sketches. Also what signage is necessary. Chairman Herzing asked why they were removing the hill. They need more parking area and a place to put dump bodies. Mr. Pelletier asked if it would be possible to make the building 60' by 120' instead of 50' x 100'. They were told to do everything at one time. Item 11 is about the same. They need a landscape design. They are in front of Wetlands on October 3. Discussion was had. **MOTION:** Gaye Zukauskas made a motion to table 591 Main Street-Site Plan Modification-KCK Properties and 10 Todd Hollow Road-Site Plan-KCK Properties until October 11 pending Wetlands approval. **VOTE:** S. Panasuk – Aye, J. Purney – Aye, P. Tonn – Aye, G. Zukauskas – Aye and Chairman Herzing so voted.

12. 6 Hove Street – Front Yard Setback – Denski – Mr. Kuehn stated that this is an existing house which encroaches on the front yard. The Commission can allow this if it is consistent with neighboring properties (notes to table 3.12). It will be an additional overhang. Discussion was had. **MOTION:** Gaye Zukauskas made a motion to approve



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 – 10042336
Site ID – CT1126
(MRCTB025408-MRCTB025397)
USID – 71301
Site Name – Plymouth-170 Mt.
Tobe Rd
Site Compliance Report**

**170 Plymouth Tobe Rd
Plymouth, CT 06782**

Latitude: N41-37-48.09
Longitude: W73-3-23.44
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.**



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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_CTL01126_2018-LTE-Multi-Carrier_LTE_sp656b_2051A...

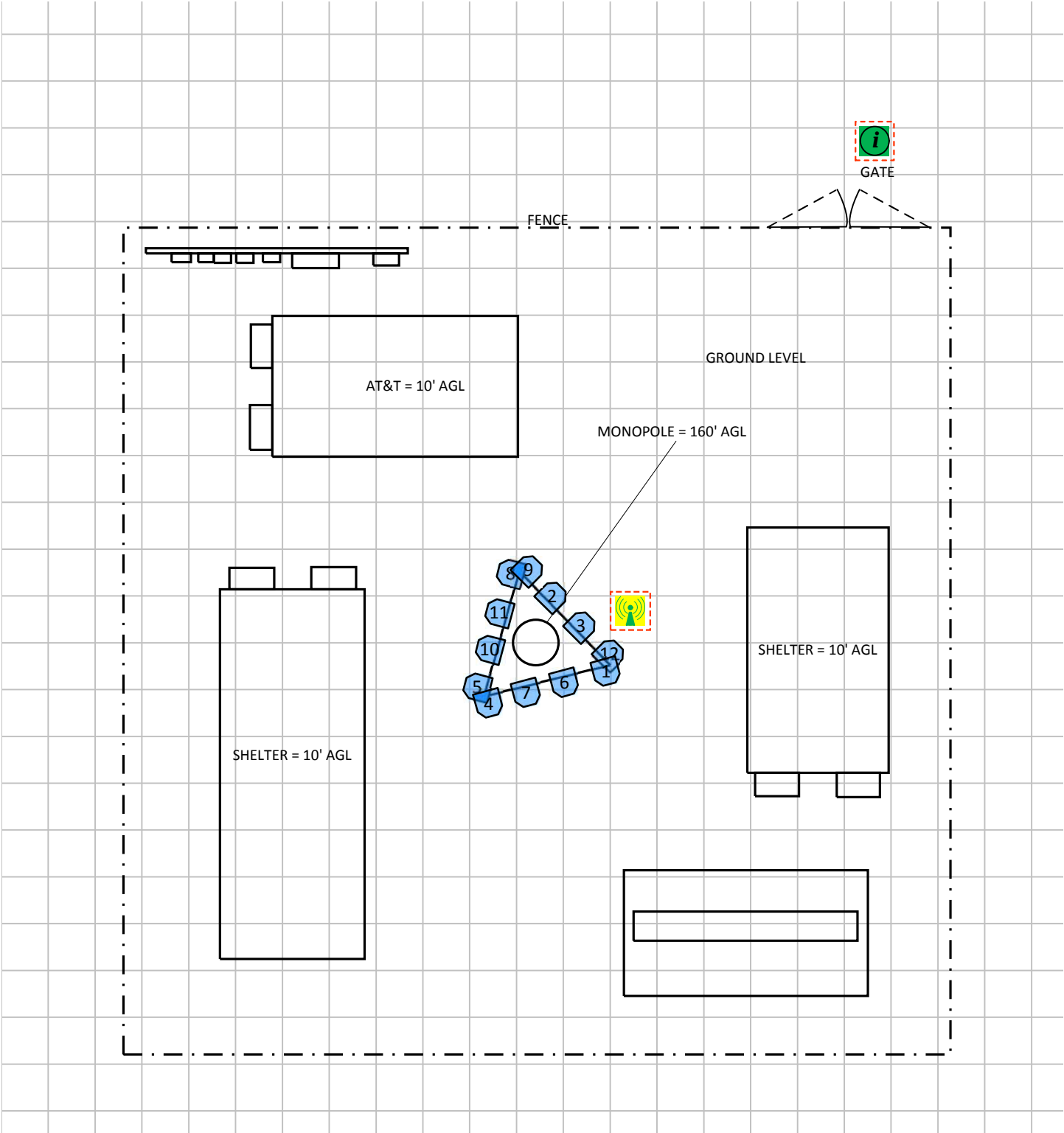
CD's: 10042336_AE201_171110_CTL01126_REV1 (1)

2 Scale Maps of Site

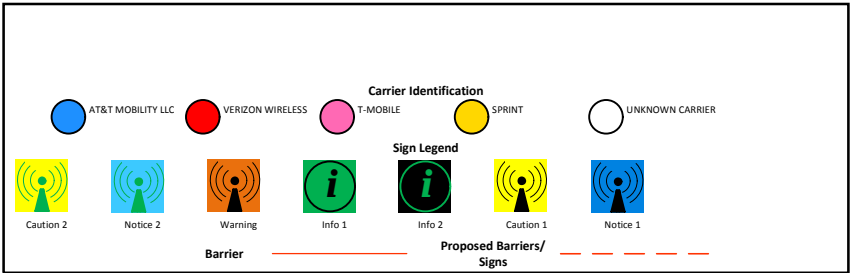
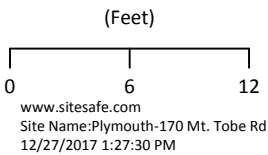
The following diagrams are included:

- Site Scale Map
- RF Exposure Diagram
- Elevation View

Site Scale Map For: Plymouth-170 Mt. Tobe Rd



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



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	Powerwave 7770	Panel	850	143	82	4.6	11.51	0	1	0	401.5	43.9'	48.9'	105.7'
2	AT&T MOBILITY LLC	KMW AM-X-CD-16-65-00T	Panel	737	23	65	6	13.36	0	0	1	1475.7	39.6'	54.9'	105'
3	AT&T MOBILITY LLC (Proposed)	KMW EPBQ-654L8H6	Panel	737	23	68	6.4	12.36	0	0	1	1475.7	41.9'	52.6'	104.8'
3	AT&T MOBILITY LLC (Proposed)	KMW EPBQ-654L8H6	Panel	1900	23	60	6.4	15.06	0	0	1	3664.4	41.9'	52.6'	104.8'
4	AT&T MOBILITY LLC (Decommissioned)	Powerwave 7770	Panel	850	143	82	4.6	11.51	0	0	0	0	34.5'	46.3'	105.7'
5	AT&T MOBILITY LLC	Powerwave 7770	Panel	850	263	82	4.6	11.51	0	1	0	401.5	33.6'	47.7'	105.7'
6	AT&T MOBILITY LLC	KMW AM-X-CD-16-65-00T	Panel	737	143	65	6	13.36	0	0	1	1475.7	40.6'	48'	105'
7	AT&T MOBILITY LLC (Proposed)	KMW EPBQ-654L8H6	Panel	737	143	68	6.4	12.36	0	0	1	1475.7	37.5'	47.2'	104.8'
7	AT&T MOBILITY LLC (Proposed)	KMW EPBQ-654L8H6	Panel	1900	143	60	6.4	15.06	0	0	1	3664.4	37.5'	47.2'	104.8'
8	AT&T MOBILITY LLC (Decommissioned)	Powerwave 7770	Panel	850	263	82	4.6	11.51	0	0	0	0	36.3'	56.8'	105.7'
9	AT&T MOBILITY LLC	Powerwave 7770	Panel	850	23	82	4.6	11.51	0	1	0	401.5	37.7'	57.1'	105.7'
10	AT&T MOBILITY LLC	KMW AM-X-CD-16-65-00T	Panel	737	263	65	6	13.36	0	0	1	1475.7	34.6'	50.7'	105'
11	AT&T MOBILITY LLC (Proposed)	KMW EPBQ-654L8H6	Panel	737	263	68	6.4	12.36	0	0	1	1475.7	35.3'	53.6'	104.8'
11	AT&T MOBILITY LLC (Proposed)	KMW EPBQ-654L8H6	Panel	1900	263	60	6.4	15.06	0	0	1	3664.4	35.3'	53.6'	104.8'
12	AT&T MOBILITY LLC (Decommissioned)	Powerwave 7770	Panel	850	23	82	4.6	11.51	0	0	0	0	44.2'	50.3'	105.7'

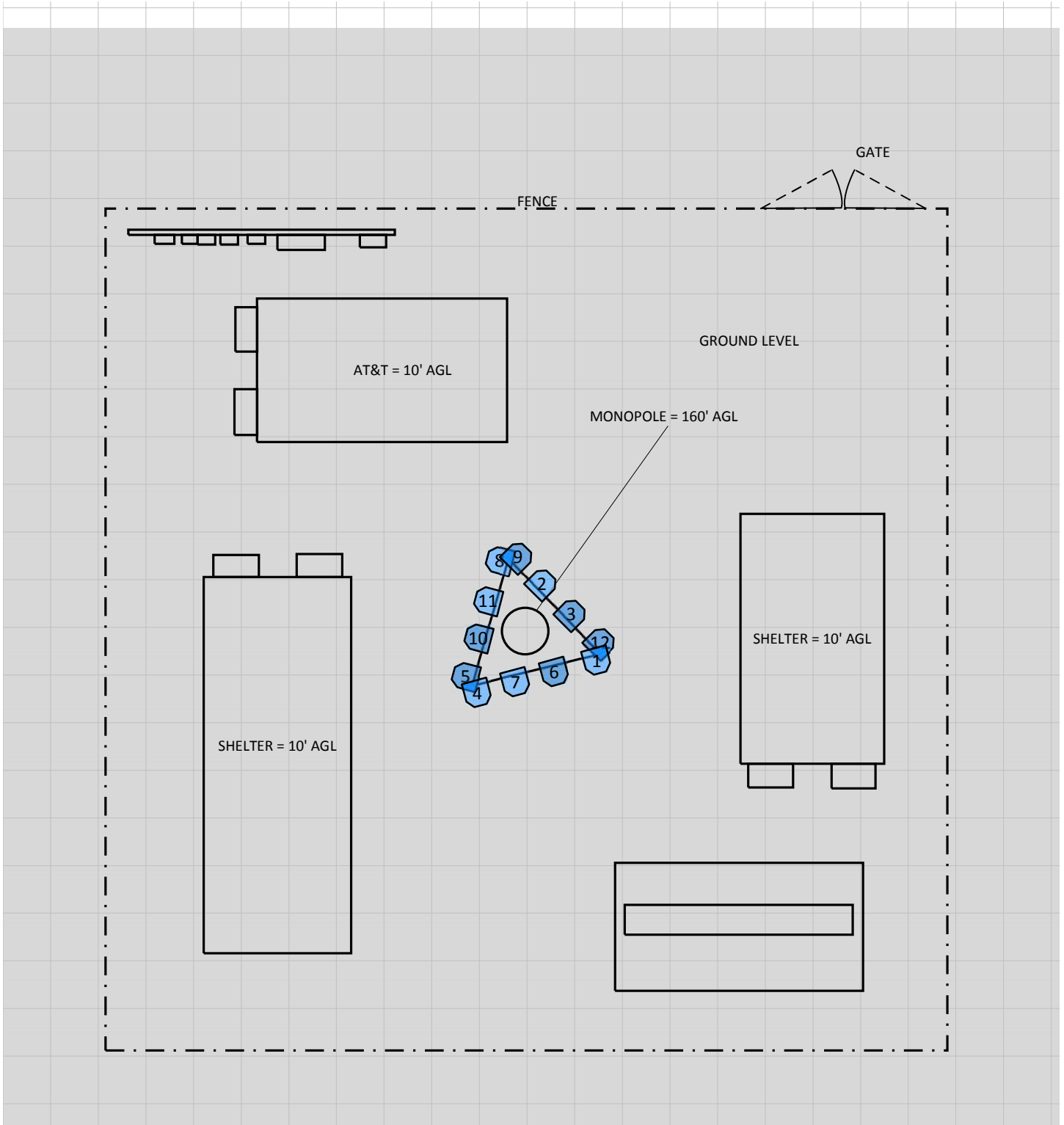
NOTE: X, Y and Z indicate relative position of the bottom of the antenna to the origin location on the site, displayed in the model results diagram. Specifically, the Z reference indicates the bottom of the antenna height above the main site level unless otherwise indicated. The distance to the bottom 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.

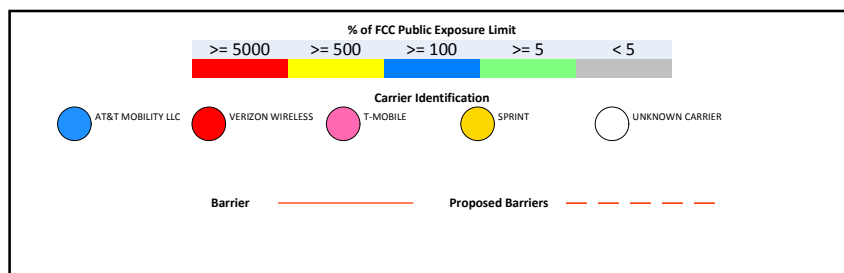
The Antenna Inventory heights are referenced to the same level.

RF Exposure Simulation For: Plymouth-170 Mt. Tobe Rd



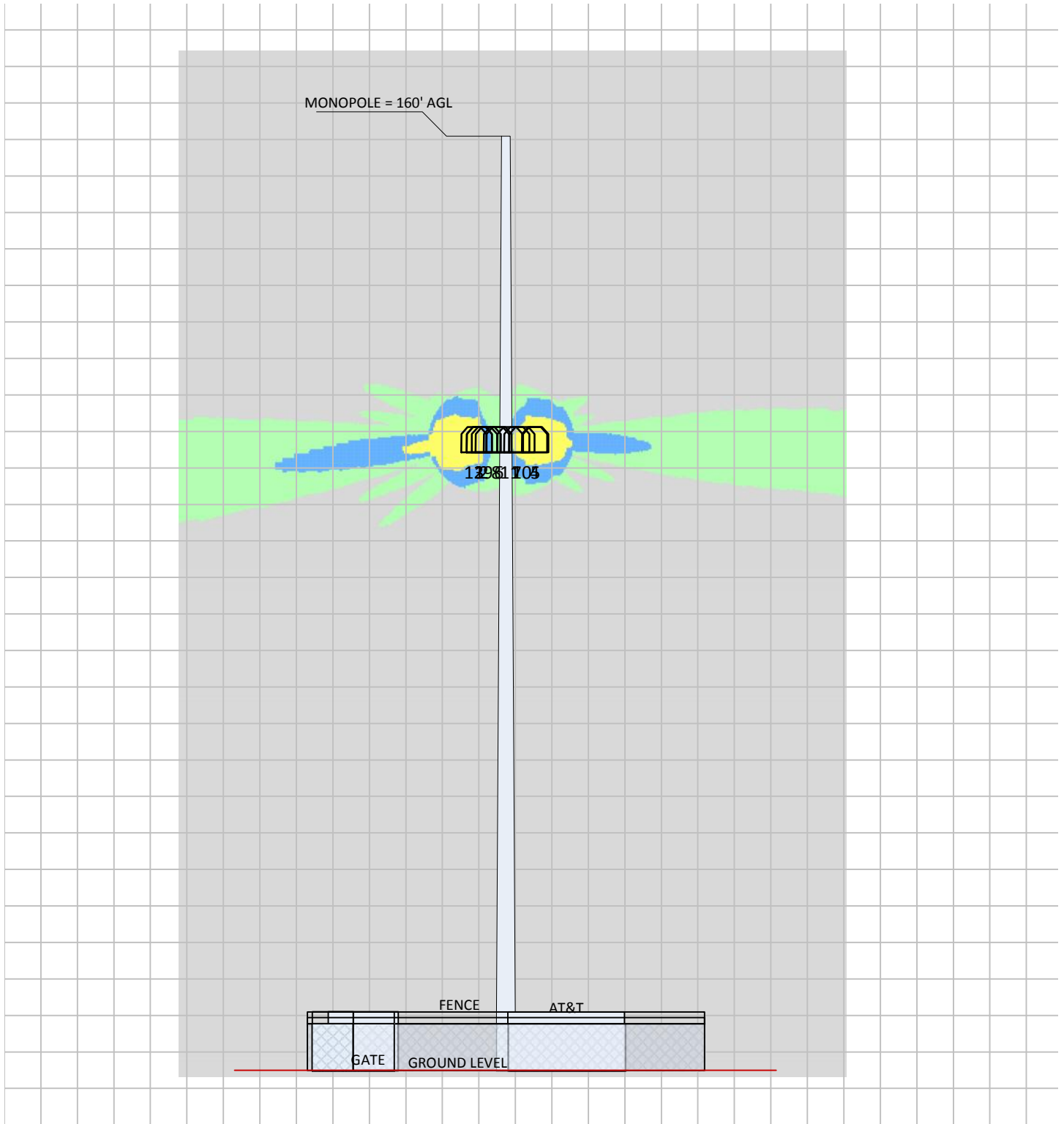
% of FCC Public Exposure Limit
Spatial average 0' - 6'

(Feet)
0 5.9 11.8
www.sitesafe.com
Site Name: Plymouth-170 Mt. Tobe Rd
12/27/2017 1:08:45 PM



SitesafeTC Version: 1.0.0.0 - 0.0.0.266
Sitesafe OET-65 Model
Near Field Boundary: 1.5 * Aperture
Reflection Factor: 1
Spatially Averaged

RF Exposure Simulation For: Plymouth-170 Mt. Tobe Rd Elevation View

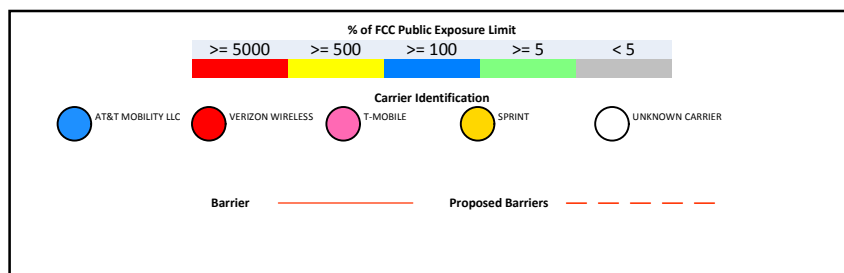


% of FCC Public Exposure Limit
Spatial average 0' - 6'

(Feet)

0 12.8 25.6

www.sitesafe.com
Site Name: Plymouth-170 Mt. Tobe Rd
12/27/2017 1:25:41 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 monopole base.

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.

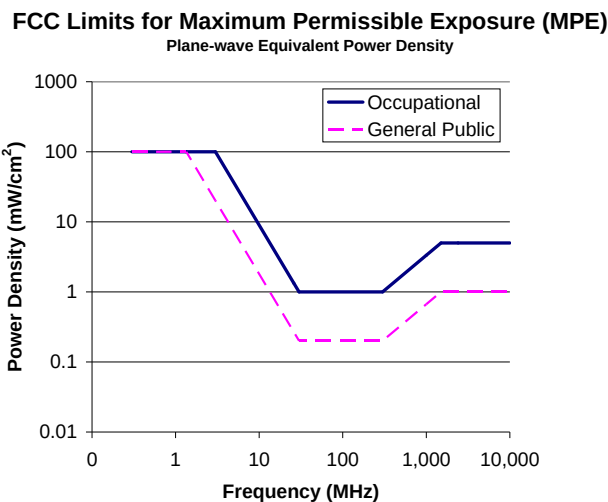
FCC regulations define two separate tiers of exposure limits: Occupational or "Controlled environment" and General Public or "Uncontrolled environment". The General Public limits are generally five times more conservative or restrictive than the Occupational limit. These limits apply to *accessible* 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:



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

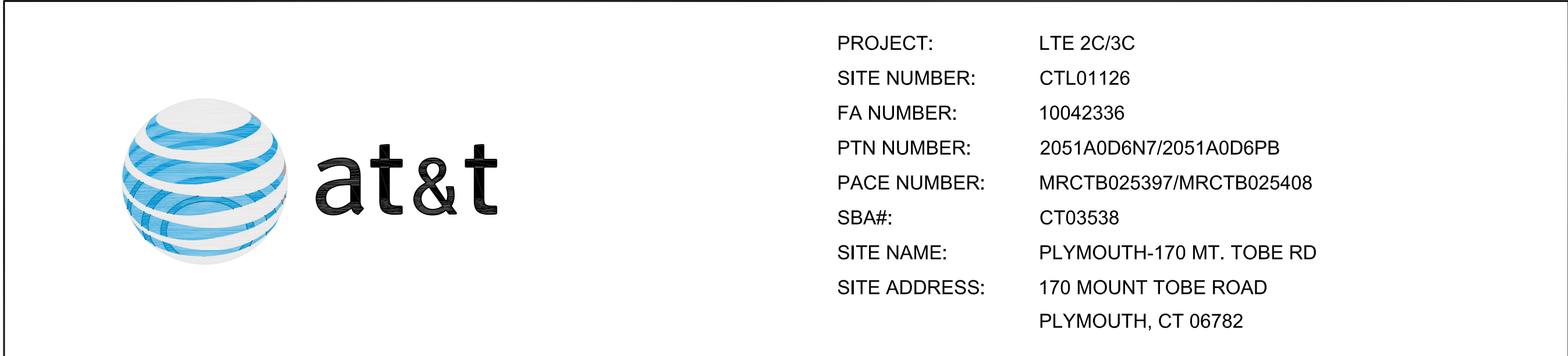
<http://www.fcps.edu/fts/safety-security/RFEESurvey/>

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>



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REV	DATE	DESCRIPTION	BY
0	09/26/17	90% REVIEW	NM
1	12/14/17	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.

[illegible]

THESE DRAWINGS ARE THE PROPERTY OF FULLERTON ENGINEERING CONSULTANTS, INC. 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.

GENERAL CONSTRUCTION

1. FOR THE PURPOSE OF CONSTRUCTION DRAWINGS, THE FOLLOWING DEFINITIONS SHALL APPLY:
CONTRACTOR/CM – SMARTLINK
OWNER – AT&T WIRELESS
2. ALL SITE WORK SHALL BE COMPLETED AS INDICATED ON THE DRAWINGS AND AT&T PROJECT SPECIFICATIONS.
3. 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.
4. 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.
5. ALL WORK CARRIED OUT SHALL COMPLY WITH ALL APPLICABLE MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS AND LOCAL JURISDICTIONAL CODES, ORDINANCES, AND APPLICABLE REGULATIONS.
6. UNLESS NOTED OTHERWISE, THE WORK SHALL INCLUDE FURNISHING MATERIALS, EQUIPMENT, APPURTENANCES, AND LABOR NECESSARY TO COMPLETE ALL INSTALLATIONS AS INDICATED ON THE DRAWINGS.
7. 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.
8. THE CONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.
9. 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.
10. 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.
11. GENERAL CONTRACTOR SHALL COORDINATE WORK AND SCHEDULE WORK ACTIVITIES WITH OTHER DISCIPLINES.
12. 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.
13. 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.
14. 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.
15. CONTRACTOR SHALL PROVIDE WRITTEN NOTICE TO THE CONSTRUCTION MANAGER 48 HOURS PRIOR TO COMMENCEMENT OF WORK.
16. 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.
17. THE CONTRACTOR SHALL CONTACT UTILITY LOCATING SERVICES PRIOR TO THE START OF CONSTRUCTION.
18. GENERAL CONTRACTOR SHALL COORDINATE AND MAINTAIN ACCESS FOR ALL TRADES AND CONTRACTORS TO THE SITE AND/OR BUILDING.
19. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR SECURITY OF THE SITE FOR THE DURATION OF CONSTRUCTION UNTIL JOB COMPLETION.

20. 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.
21. THE GENERAL CONTRACTOR SHALL PROVIDE PORTABLE FIRE EXTINGUISHERS WITH A RATING OF NOT LESS THAN 2-A OT 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.
22. 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.
23. 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.
24. 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.
25. 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.
26. 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.
27. 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.
28. ALL NECESSARY RUBBISH, STUMPS, DEBRIS, STICKS, STONES, AND OTHER REFUSE SHALL BE REMOVED FROM THE SITE AND DISPOSED OF IN A LAWFUL MANNER.
29. 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.
30. CONTRACTOR SHALL SUBMIT A COMPLETE SET OF AS-BUILT REDLINES TO THE GENERAL CONTRACTOR UPON COMPLETION OF PROJECT AND PRIOR TO FINAL PAYMENT.
31. CONTRACTOR SHALL LEAVE PREMISES IN A CLEAN CONDITION.
32. 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).
33. OCCUPANCY IS LIMITED TO PERIODIC MAINTENANCE AND INSPECTION, APPROXIMATELY 2 TIMES PER MONTH, BY AT&T TECHNICIANS.
34. NO OUTDOOR STORAGE OR SOLID WASTE CONTAINERS ARE PROPOSED.
35. 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.
36. 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.
37. CONTRACTOR SHALL REMOVE ALL TRASH AND DEBRIS FROM THE SITE ON A DAILY BASIS.
38. 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.
39. NO WHITE STROBE LIGHTS ARE PERMITTED. LIGHTING IF REQUIRED, WILL MEET FAA STANDARDS AND REQUIREMENTS.

ANTENNA MOUNTING

40. DESIGN AND CONSTRUCTION OF ANTENNA SUPPORTS SHALL

- CONFORM TO CURRENT ANSI/TIA-222 OR APPLICABLE LOCAL CODES.
41. 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.
42. 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.
43. DAMAGED GALVANIZED SURFACES SHALL BE REPAIRED BY COLD GALVANIZING IN ACCORDANCE WITH ASTM A780.
44. ALL ANTENNA MOUNTS SHALL BE INSTALLED WITH LOCK NUTS, DOUBLE NUTS AND SHALL BE TORQUED TO MANUFACTURER'S RECOMMENDATIONS.
45. CONTRACTOR SHALL INSTALL ANTENNA PER MANUFACTURER'S RECOMMENDATION FOR INSTALLATION AND GROUNDING.
46. ALL UNUSED PORTS ON ANY ANTENNAS SHALL BE TERMINATED WITH A 50-OHM LOAD TO ENSURE ANTENNAS PERFORM AS DESIGNED.
47. 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 NO-00246.

48. JUMPERS FROM THE TMA'S MUST TERMINATE TO OPPOSITE POLARIZATION'S IN EACH SECTOR.
49. CONTRACTOR SHALL RECORD THE SERIAL #, SECTOR, AND POSITION OF EACH ACTUATOR INSTALLED AT THE ANTENNAS AND PROVIDE THE INFORMATION TO AT&T.

50. TMA'S SHALL BE MOUNTED ON PIPE DIRECTLY BEHIND ANTENNAS AS CLOSE TO ANTENNA AS FEASIBLE IN A VERTICAL POSITION.

TORQUE REQUIREMENTS

51. ALL RF CONNECTIONS SHALL BE TIGHTENED BY A TORQUE WRENCH.
52. 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

53. 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.
54. 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.
55. WHEN INSTALLING OPTIC FIBER TRUNK CABLES OR TYPE TC-ER CABLES INTO CONDUITS, NFPA 70 (NEC) ARTICLE 300 RULES SHALL APPLY.

COAXIAL CABLE NOTES

62. 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.
63. CONTRACTOR SHALL VERIFY THE DOWN-TILT OF EACH ANTENNA WITH A DIGITAL LEVEL.
64. CONTRACTOR SHALL CONFIRM COAX COLOR CODING PRIOR TO CONSTRUCTION.
65. ALL JUMPERS TO THE ANTENNAS FROM THE MAIN

TRANSMISSION LINE SHALL BE 1/2" DIA. LDF AND SHALL NOT EXCEED 6'-0".

66. ALL COAXIAL CABLE SHALL BE SECURED TO THE DESIGNED SUPPORT STRUCTURE, IN AN APPROVED MANNER, AT DISTANCES NOT TO EXCEED 4'-0" OC.
67. CONTRACTOR SHALL FOLLOW ALL MANUFACTURER'S RECOMMENDATIONS REGARDING BOTH THE INSTALLATION AND GROUNDING OF ALL COAXIAL CABLES, CONNECTORS, ANTENNAS, AND ALL OTHER EQUIPMENT.
68. 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.
69. 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.
70. 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

71. CONTRACTOR SHALL BE RESPONSIBLE TO VERIFY ANTENNA, TMAS, DIPLEXERS, AND COAX CONFIGURATION, MAKE AND MODELS PRIOR TO INSTALLATION.
72. ALL CONNECTIONS FOR HANGERS, SUPPORTS, BRACING, ETC. SHALL BE INSTALLED PER TOWER MANUFACTURER'S RECOMMENDATIONS.
73. CONTRACTOR SHALL REFERENCE THE TOWER STRUCTURAL ANALYSIS/DESIGN DRAWINGS FOR DIRECTIONS ON CABLE DISTRIBUTION/ROUTING.
74. 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.
75. 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
76. ALL CABLES SHALL BE GROUNDED 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.
77. 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



1100 E. WOODFIELD ROAD, SUITE 500
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COA# PEC.0001444
www.FullertonEngineering.com

REV	DATE	DESCRIPTION	BY
0	09/26/17	90% REVIEW	NM
1	12/14/17	FINAL	KC

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SITE NAME

PLYMOUTH-170
MT. TOBE RD

SITE NUMBER:

CTL01126

SITE ADDRESS

170 MOUNT TOBE ROAD
PLYMOUTH, CT 06782

SHEET NAME

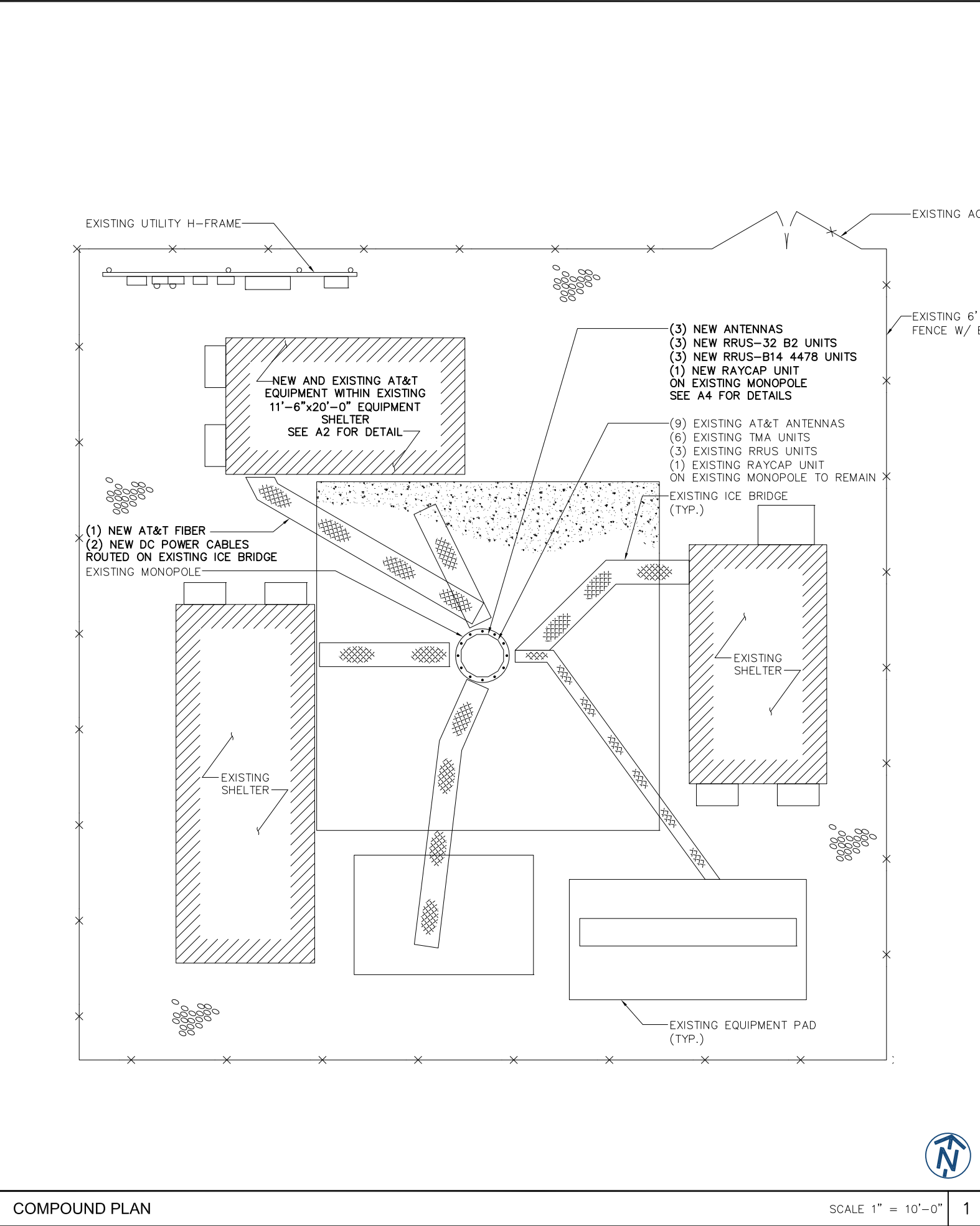
NOTES AND
SPECIFICATIONS

SHEET NUMBER

SP1

ABBREVIATIONS	
AFF	ABOVE FINISHED FLOOR
AGL	ABOVE GRADE LEVEL
AMSL	ABOVE MEAN SEA LEVEL
APPROX	APPROXIMATE
ATS	AUTOMATIC TRANSFER SWITCH
AWG	AMERICAN WIRE GAUGE
BLDG	BUILDING
BTS	BASE TRANSMISSION STATION
C	CENTERLINE
CLR	CLEAR
COL	COLUMN
CONC	CONCRETE
CND	CONDUIT
DWG	DRAWING
FT	FOOT(FEET)
EGB	EQUIPMENT GROUND BAR
ELEC	ELECTRICAL
EMT	ELECTRICAL METALLIC TUBING
ELEV	ELEVATION
EQUIP	EQUIPMENT
(E)	EXISTING
EXT	EXTERIOR
FND	FOUNDATION
F	FIBER
FIF	FACILITY INTERFACE FRAME
GA	GAUGE
GALV	GALVANIZED
GPS	GLOBAL POSITIONING SYSTEM
GND	GROUND
GSM	GLOBAL SYSTEM FOR MOBILE COMMUNICATION
LTE	LONG TERM EVOLUTION
MAX	MAXIMUM
MCPA	MULTI-CARRIER POWER AMPLIFIER
MFR	MANUFACTURER
MGB	MASTER GROUND BAR
MIN	MINIMUM
MTS	MANUAL TRANSFER SWITCH
N.T.S.	NOT TO SCALE
O.C.	ON CENTER
OE/OT	OVERHEAD ELECTRIC/TELCO
PPC	POWER PROTECTION CABINET
PL	PROPERTY LINE
RBS	RADIO BASED STATION
RET	REMOTE ELECTRIC TILT
RRU	REMOTE RADIO UNIT
RGS	RIGID GALVANIZED STEEL
IN	INCH(ES)
INT	INTERIOR
LB(S), #	POUND(S)
SF	SQUARE FOOT
STL	STEEL
TMA	TOWER MOUNTED AMPLIFIER
TYP	TYPICAL
UE/UT	UNDERGROUND ELECTRIC/TELCO
UNO	UNLESS NOTED OTHERWISE
UMTS	UNIVERSAL MOBILE TELE-COMMUNICATION SYSTEM
VIF	VERIFY IN FIELD
W/	WITH
XFMR	TRANSFORMER

SYMBOLS	
	REVISION
	WORK POINT
	UTILITY POLE
	COMPRESSED STONE
	BRICK
	CONCRETE
	EARTH
	GRAVEL
	MASONRY
	STEEL
	CENTERLINE
	PROPERTY LINE
	LEASE LINE
	EASEMENT LINE
	CHAIN LINK FENCE
	WOOD FENCE
	BELOW GRADE ELECTRIC
	BELOW GRADE TELEPHONE
	OVERHEAD ELECTRIC/TELEPHONE
	SECTION REFERENCE



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SITE NAME

**PLYMOUTH-170
MT. TOBE RD**

SITE PHOTO 1

SCALE: N.T.S.

2

SITE PHOTO 2

SCALE: N.T.S.

3

SITE NUMBER:

CTL01126

SITE ADDRESS

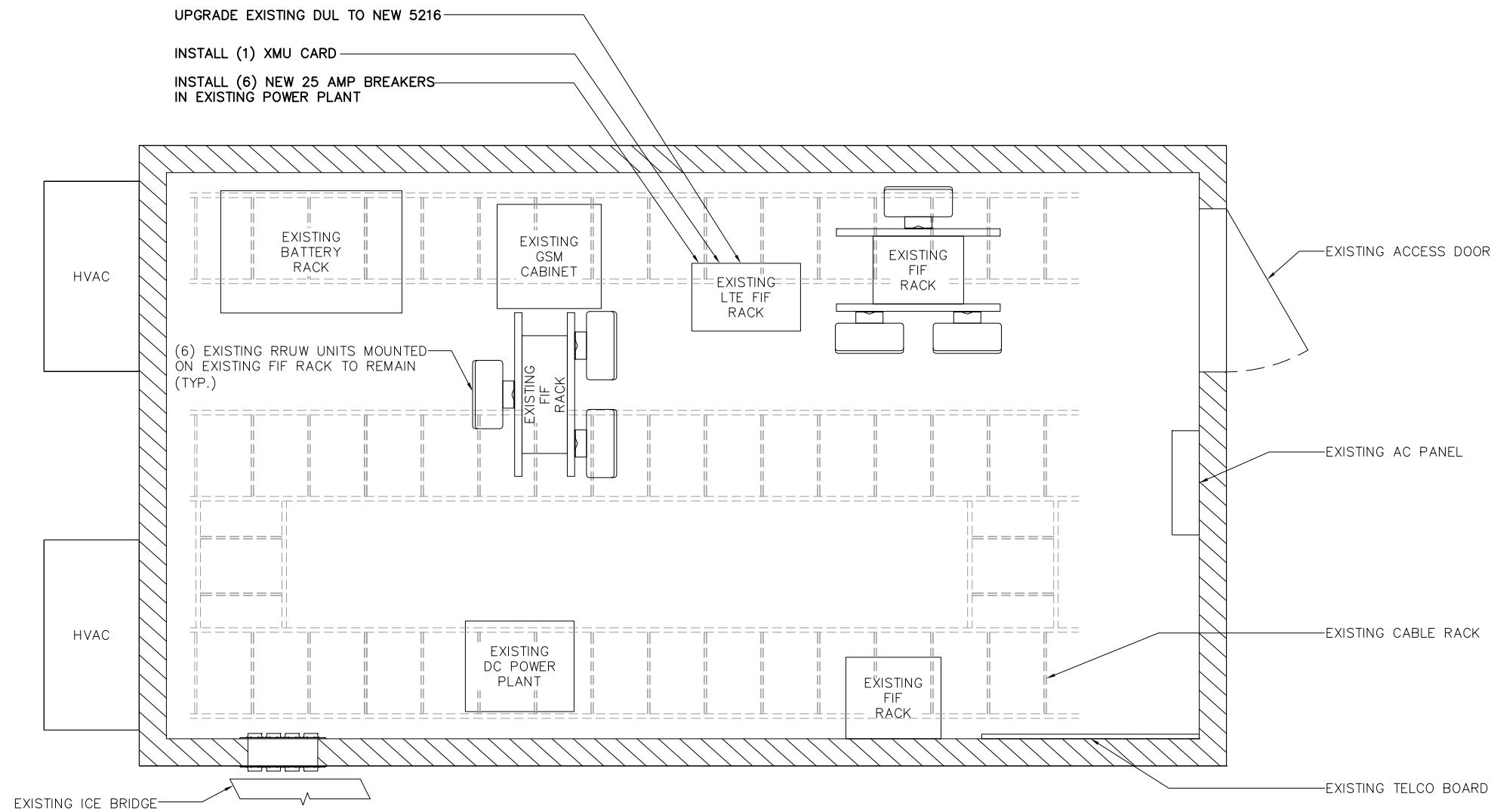
**170 MOUNT TOBE ROAD
PLYMOUTH, CT 06782**

SHEET NAME

**COMPOUND
PLAN**

SHEET NUMBER

A1



550 COCHITUATE ROAD
SUITE 550 13 AND 14
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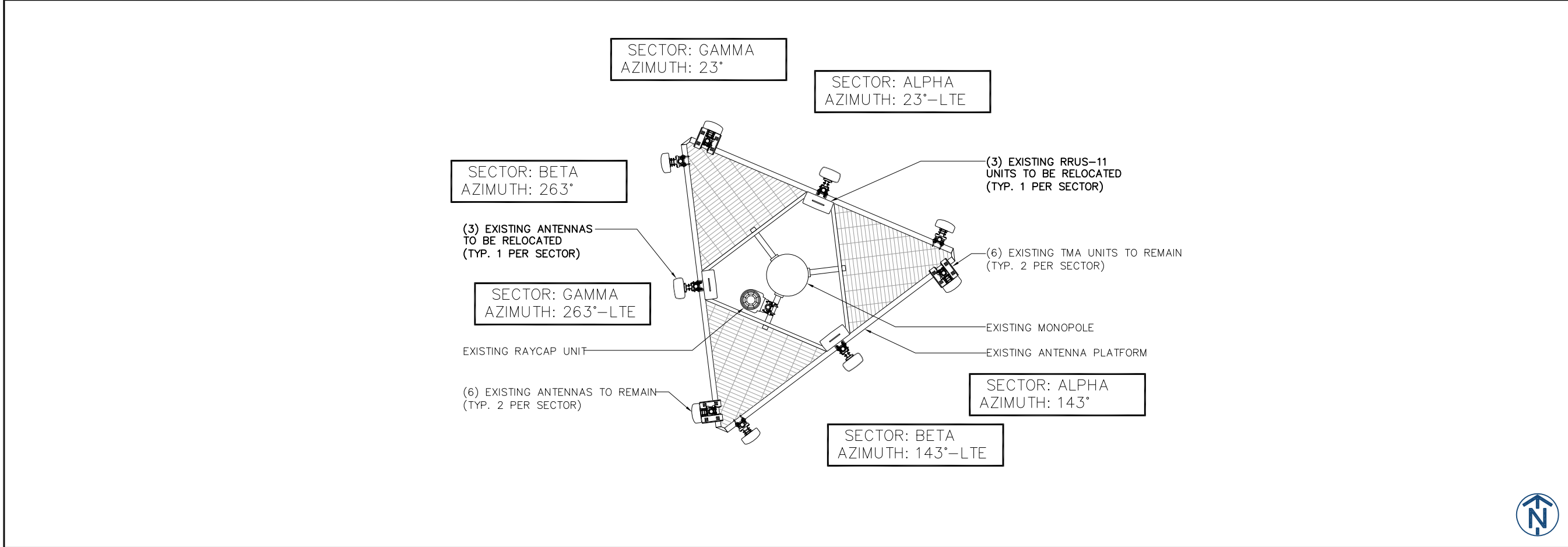
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SITE ADDRESS
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PLYMOUTH, CT 06782**

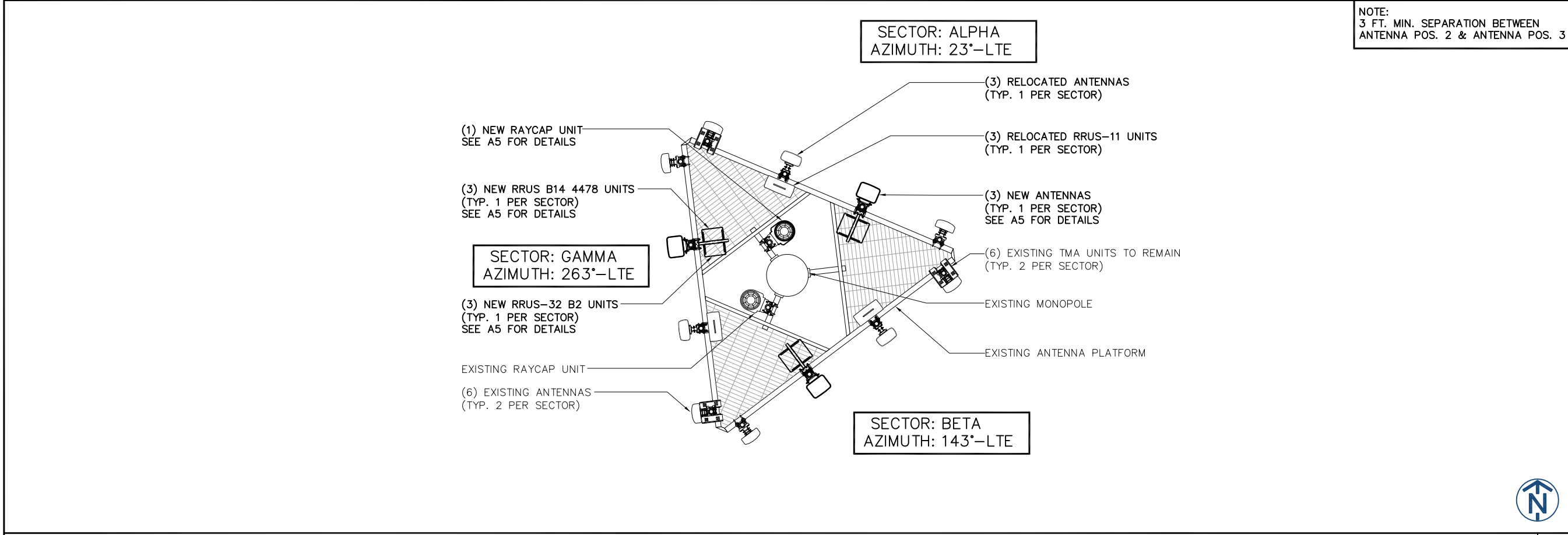
SHEET NAME
**EQUIPMENT
PLAN**

SHEET NUMBER
A2



EXISTING ANTENNA PLAN

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



FINAL ANTENNA PLAN

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



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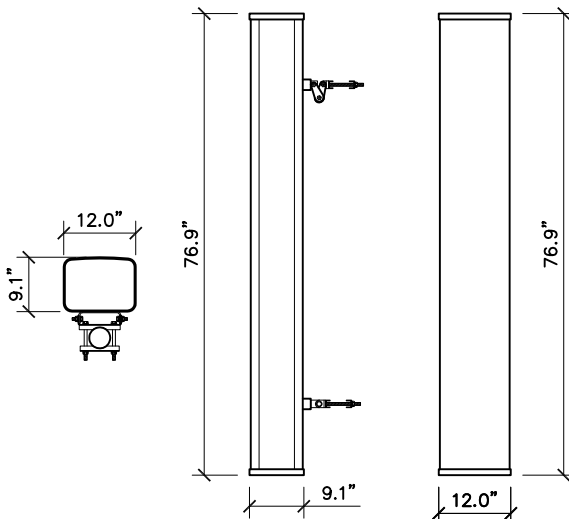
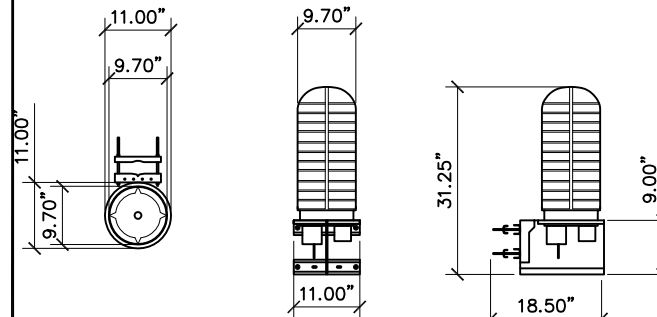
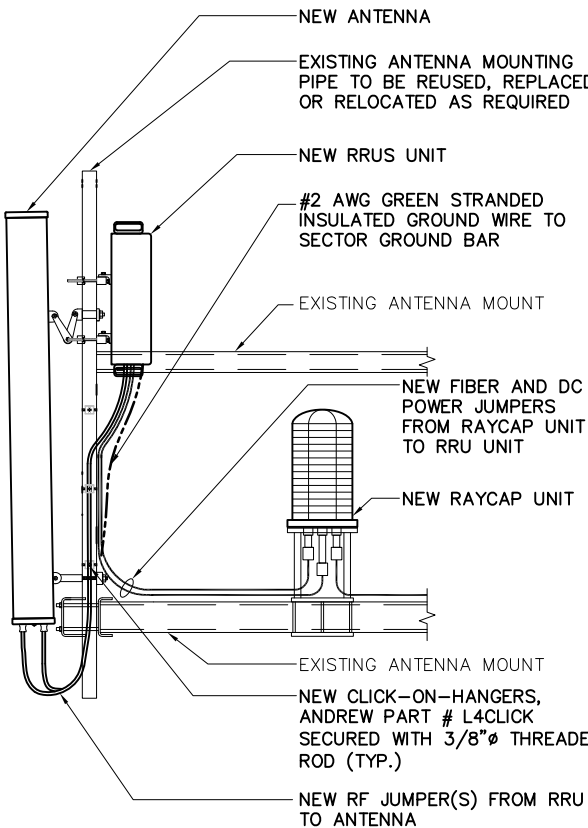
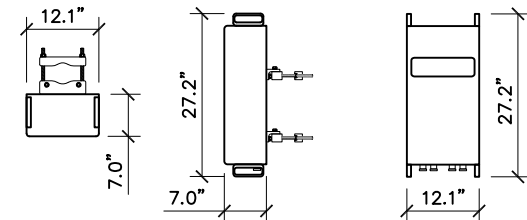
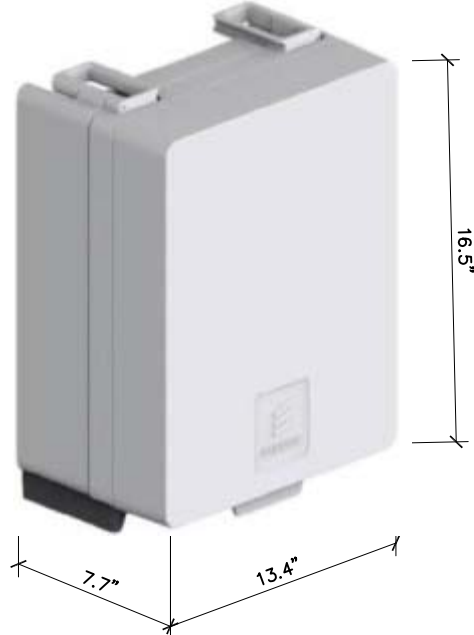
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SITE ADDRESS
**170 MOUNT TOBE ROAD
PLYMOUTH, CT 06782**

SHEET NAME
**ANTENNA
PLANS**

SHEET NUMBER
A4

 PLAN VIEW SIDE VIEW FRONT VIEW KMW – EPBQ-654L8H6 12-PORT MULTI-BAND ANTENNA /6’/65’ FREQUENCY RANGE 698–798 MHz 824–894 MHz 1850–1990 MHz 1710–2180, 2300–2360 MHz ANTENNA 88.0 Lbs BRACKET 10.0 Lbs TOTAL WEIGHT 98.0 Lbs		NOMINAL OPERATING VOLTAGE: 48 VDC NOMINAL DISCHARGE CURRENT: 20 kA 8/20ms MAXIMUM DISCHARGE CURRENT: 60 kA 8/20ms MAXIMUM CONTINUOUS OPERATING VOLTAGE: 75 VDC VOLTAGE PROTECTION RATING: 400 V WIND LOADING: 150 MPH SUSTAINED (105.7 lbs) 195 MPH GUST (213.6 lbs)  PLAN VIEW FRONT VIEW SIDE VIEW RAYCAP – DC6-48-60-0-8F TOWER DC OVER VOLTAGE PROTECTION POWER CONNECTION SOLUTION UNIT WEIGHT 32.8 Lbs CONTRACTOR TO USE "THREAD LUBRICANT" ON MOUNTING BOLTS DURING INSTALLATION ON EXISTING STRUCTURAL MEMBER						 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 <table><tr><th>REV</th><th>DATE</th><th>DESCRIPTION</th><th>BY</th></tr><tr><td>0</td><td>09/26/17</td><td>90% REVIEW</td><td>NM</td></tr><tr><td>1</td><td>12/14/17</td><td>FINAL</td><td>KC</td></tr><tr><td> </td><td> </td><td> </td><td> </td></tr><tr><td> </td><td> </td><td> </td><td> </td></tr><tr><td> </td><td> </td><td> </td><td> </td></tr></table> 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 PLYMOUTH-170 MT. TOBE RD SITE NUMBER: CTL01126 SITE ADDRESS 170 MOUNT TOBE ROAD PLYMOUTH, CT 06782 SHEET NAME EQUIPMENT DETAILS SHEET NUMBER A5	REV	DATE	DESCRIPTION	BY	0	09/26/17	90% REVIEW	NM	1	12/14/17	FINAL	KC												
REV	DATE	DESCRIPTION	BY																													
0	09/26/17	90% REVIEW	NM																													
1	12/14/17	FINAL	KC																													
ANTENNA SPEC		SCALE: N.T.S.	1	RAYCAP SPEC		SCALE: N.T.S.	2	ANTENNA SCHEMATIC		SCALE: N.T.S.	3	NOT USED		SCALE: N.T.S.	4																	
 PLAN VIEW SIDE VIEW FRONT VIEW ERICSSON – RRUS 32 B30 UNIT WEIGHT 60 Lbs				 ERICSSON – RRUS 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	NOT USED		SCALE: N.T.S.	7	NOT USED		SCALE: N.T.S.	8																	

FINAL ANTENNA CONFIGURATION AND CABLE SCHEDULE
SUPPLIED BY AT&T WIRELESS, FROM RF CONFIG. DATED (09/14/17)

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	7770	POWERWAVE	(2) EXISTING TMA UNIT	143°	108'-0"	RFS 1-5/8"ø	150'-0"	(1) (E) DC6-48-60-18-8F UNIT (1) (N) DC6-48-60-18-8F UNIT
	A-2	(E) LTE1C ANTENNA	AM-X-CD-16-65-00T-RET	KMW	(1) EXISTING RRUS-11 UNIT	23°	108'-0"	(1) EXISTING FIBER CABLE	150'-0"	
								(2) EXISTING DC POWER CABLES	150'-0"	
	A-3	(N) LTE2C/3C ANTENNA	EPBQ-654L8H6-L2	KMW	(1) NEW RRUS-32 B2 UNIT AND (1) NEW RRUS-B14 4478 UNIT	23°	108'-0"	(1) NEW FIBER CABLE	150'-0"	
								(2) NEW DC POWER CABLES	150'-0"	
A-4	(E) GSM ANTENNA	7770	POWERWAVE	-	143°	108'-0"	RFS 1-5/8"ø	150'-0"		
BETA	B-1	(E) UMTS ANTENNA	7770	POWERWAVE	(2) EXISTING TMA UNIT	263°	108'-0"	RFS 1-5/8"ø	150'-0"	
	B-2	(E) LTE1C ANTENNA	AM-X-CD-16-65-00T-RET	KMW	(1) EXISTING RRUS-11 UNIT	143°	108'-0"	SEE ANTENNA A-2 FOR CABLE TYPE AND LENGTH		
	B-3	(N) LTE2C/3C ANTENNA	EPBQ-654L8H6-L2	KMW	(1) NEW RRUS-32 B2 UNIT AND (1) NEW RRUS-B14 4478 UNIT	143°	108'-0"	SEE ANTENNA A-3 FOR CABLE TYPE AND LENGTH		
	B-4	(E) GSM ANTENNA	7770	POWERWAVE	-	263°	108'-0"	RFS 1-5/8"ø	150'-0"	
GAMMA	C-1	(E) UMTS ANTENNA	7770	POWERWAVE	(2) EXISTING TMA UNIT	23°	108'-0"	RFS 1-5/8"ø	150'-0"	
	C-2	(E) LTE1C ANTENNA	AM-X-CD-16-65-00T-RET	KMW	(1) EXISTING RRUS-11 UNIT	263°	108'-0"	SEE ANTENNA A-2 FOR CABLE TYPE AND LENGTH		
	C-3	(N) LTE2C/3C ANTENNA	EPBQ-654L8H6-L2	KMW	(1) NEW RRUS-32 B2 UNIT AND (1) NEW RRUS-B14 4478 UNIT	263°	108'-0"	SEE ANTENNA A-3 FOR CABLE TYPE AND LENGTH		
	C-4	(E) GSM ANTENNA	7770	POWERWAVE	-	23°	108'-0"	RFS 1-5/8"ø	150'-0"	



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SITE NAME
**PLYMOUTH-170
MT. TOBE RD**

SITE NUMBER:
CTL01126

SITE ADDRESS
**170 MOUNT TOBE ROAD
PLYMOUTH, CT 06782**

SHEET NAME
**ANTENNA &
CABLE
CONFIGURATION**

SHEET NUMBER
A6

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).		
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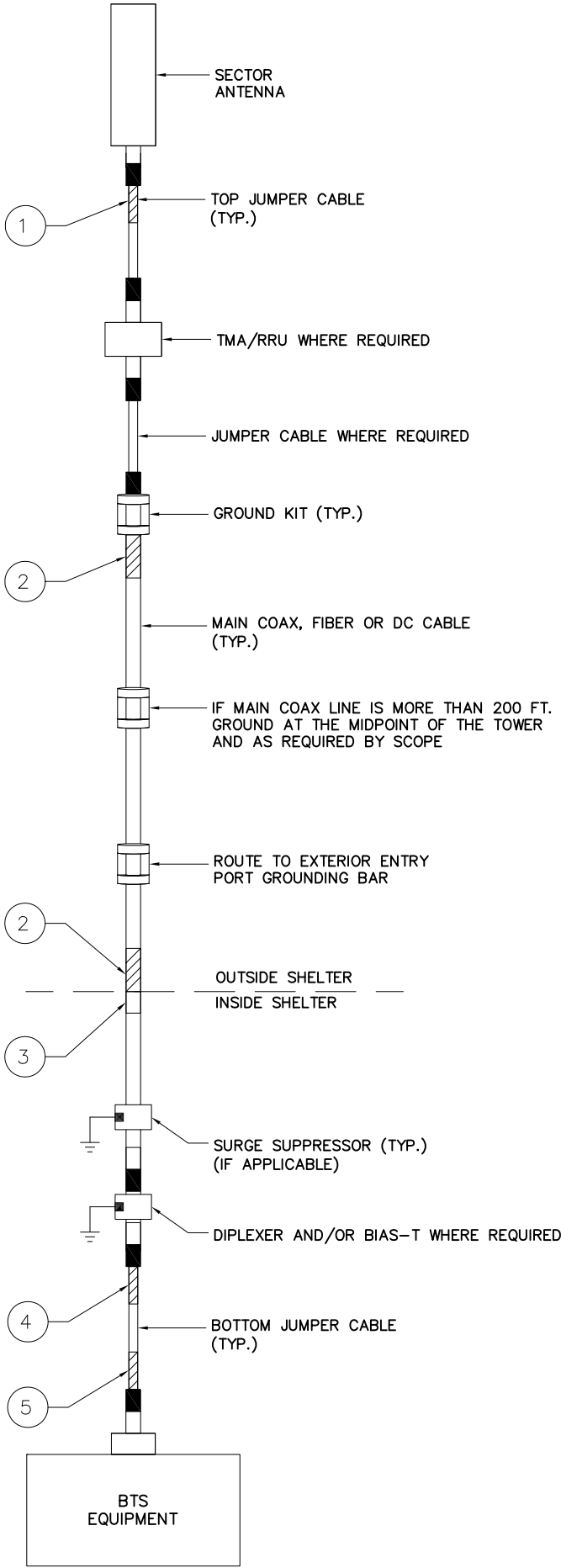
ANTENNA AND CABLING NOTES	SCALE: N.T.S.	1
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RF, DC, & COAX CABLE MARKING LOCATIONS TABLE	
NO	LOCATIONS
1	EACH TOP-JUMPER SHALL BE COLOR CODED WITH (1) SET OF 3" WIDE BANDS.
2	EACH MAIN COAX SHALL BE COLOR CODED WITH (1) SET OF 3" WIDE BANDS NEAR THE 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
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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
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CABLE COLOR CODING DIAGRAM	SCALE: N.T.S.	4
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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	09/26/17	90% REVIEW	NM
1	12/14/17	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
**PLYMOUTH-170
MT. TOBE RD**

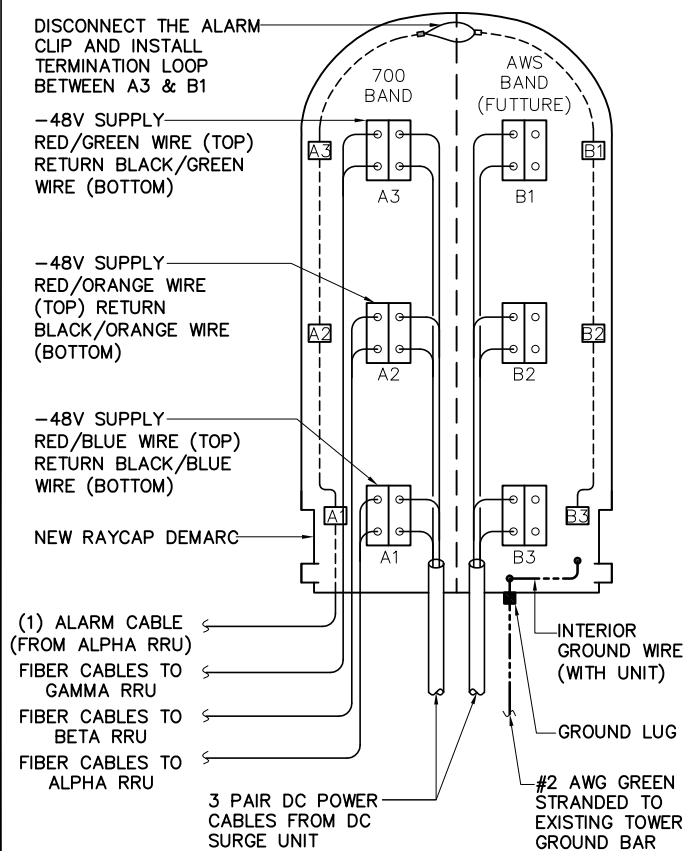
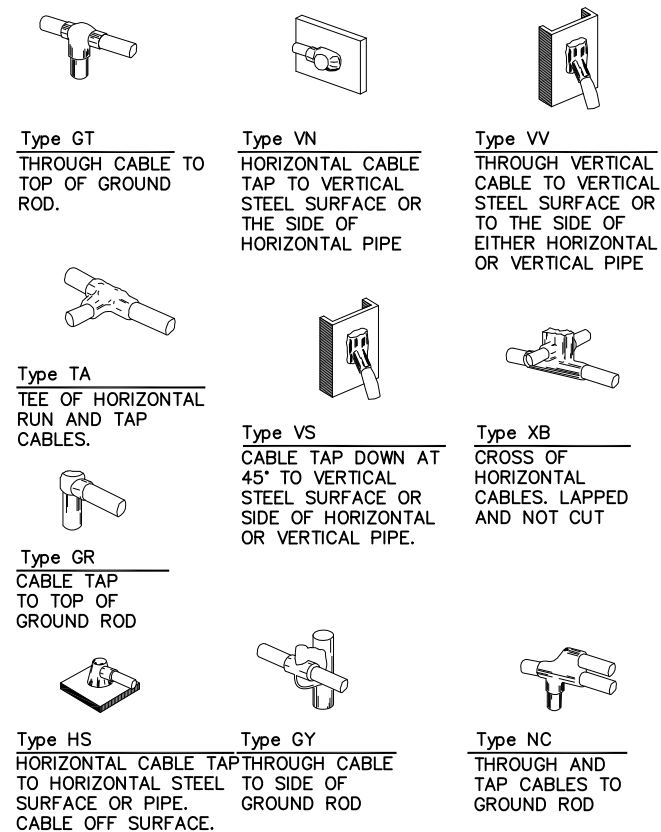
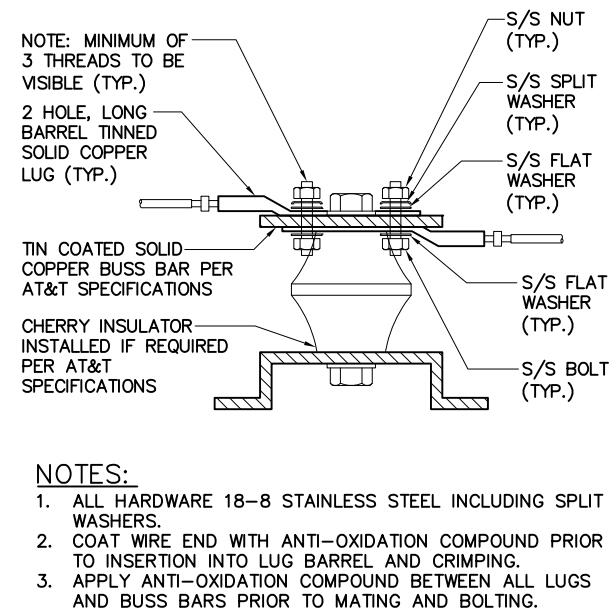
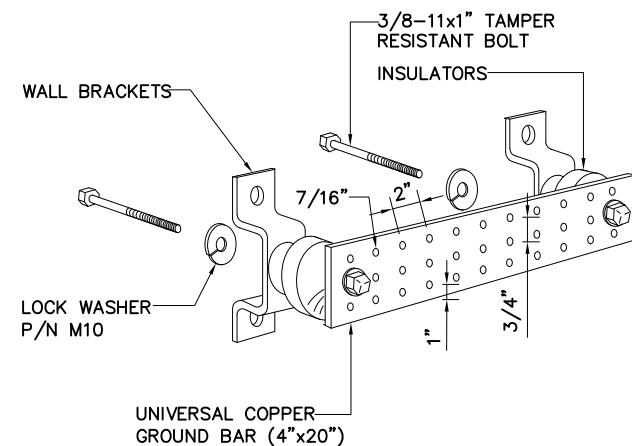
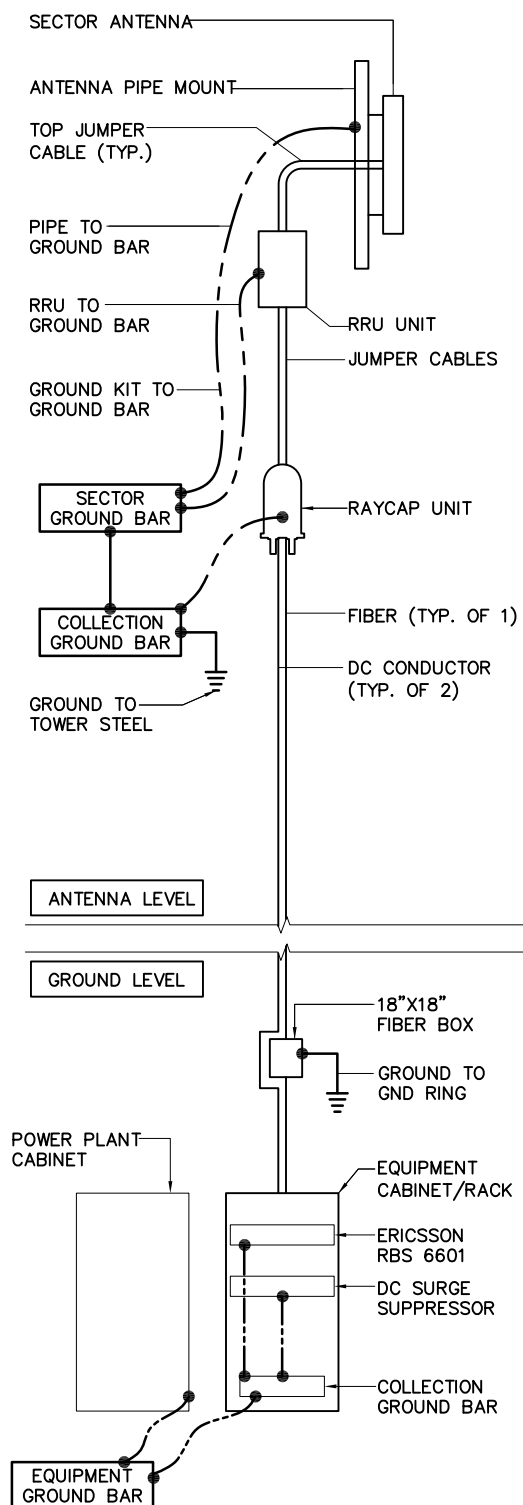
SITE NUMBER:
CTL01126

SITE ADDRESS
**170 MOUNT TOBE ROAD
PLYMOUTH, CT 06782**

SHEET NAME
**CABLE NOTES
AND COLOR
CODING**

SHEET NUMBER
A7

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REV	DATE	DESCRIPTION	BY
0	09/26/17	90% REVIEW	NM
1	12/14/17	FINAL	KC

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SITE NAME

PLYMOUTH-170
MT. TOBE RD

SITE NUMBER:

CTL01126

SITE ADDRESS

170 MOUNT TOBE ROAD
PLYMOUTH, CT 06782

SHEET NAME

GROUNDING DETAILS

SHEET NUMBER

A8



Tower Engineering Solutions

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

Structural Analysis Report

Existing 160 ft SUMMIT Monopole

Customer Name: SBA Communications Corp

Customer Site Number: CT03538-S

Customer Site Name: South Plymouth

Carrier Name: AT&T

Carrier Site ID / Name: CT1126 / Plymouth 2

Site Location: 170 Mount Tobe Road

Plymouth, Connecticut

Litchfield County

Latitude: 41.630030

Longitude: -73.056553

Analysis Result:

Max Structural Usage: 77.0% [Pass]

Max Foundation Usage: 67.0% [Pass]

Report Prepared By : Tawfeeq Alajaj





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Litchfield County

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Longitude: -73.056553

Analysis Result:

Max Structural Usage: 77.0% [Pass]

Max Foundation Usage: 67.0% [Pass]

Report Prepared By : Tawfeeq Alajaj

Introduction

The purpose of this report is to summarize the analysis results on the 160 ft SUMMIT 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	Tower Design by Paul J. Ford and Company for Summit Manufacturing, LLC, PJF Job No. 29201-1019, Summit # 15616, dated August 21, 2001
Foundation Drawing	Foundation Design by Paul J. Ford and Company for Summit Manufacturing, LLC, PJF Job No. 29201-1019, Summit # 15616, dated August 21, 2001
Geotechnical Report	Jaworski Geotech, Inc., Project No. 00244G, dated July 31, 2001
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 $V_{ult} = 120.0$ 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:	$S_S = 0.187$, $S_1 = 0.064$

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	160.0	3	Ericsson AIR 21 B2A/B4P - Panel	Low Profile Platform	(12) 1 5/8" (1) 1 5/8" Hybrid (1) 1 5/8" Fiber	T-Mobile
2		3	Ericsson AIR 32 - Panel			
3		3	Commscope LNX-6515DS-A1M - Panel			
4		3	Ericsson KRY112 144 - TMA			
5		3	Ericsson RRUS 11 - RRU			
4	156.5	1	Lone Star Electronics LS-230C - Omni	(1) 4 ft. Sidearm	(1) 7/8"	Thomaston P.D.
5	153.0	1	Andrew VHLP-2.6-11 - Dish	(2) Pipe Mounts	(2) EW90	
6		1	Hutton HPD 3.4-4.7 - Dish			
7		3	Motorola ODU-A-RF			
8	150.0	3	RFS APXVTM14-C-120 - Panel	Low Profile Platform	(4) 1 1/4"	Sprint
9	148.0	3	RFS APXVSPP18-C-A20 - Panel			
10		3	ALU 1900MHz - RRU			
11		3	ALU 800 MHz - RRU			
12		3	ALU TD-RRH8x20-25 - RRU			
13		3	ALU 800 MHz Filter			
14		4	RFS ACU-A20-N - RET			
15	137.0	3	Antel BXA-70063-6CF-2 - Panel	Low Profile Platform	(12) 1 5/8" (1) 1 5/8" Hybriflex	Verizon
16		6	Commscope HBXX-6517DS-A2M - Panel			
17		3	Antel BXA-70080-6CF-2 - Panel			
18		1	RFS DB-T1-6Z-8AB-0Z - Distribution Box			
19		3	ALU 2X60-1900 - RRU			
20		3	ALU RRH2X60-AWS - RRU			
21		6	RFS FD9R6004/2C-3 - Diplexer			
22	134.5	1	Bird Technologies CSA 10-67 DIM - Dipole	(1) Pipe Mount	(1) 7/8"	Thomaston P.D.
23	117.0	3	RFS APXV18-206517S-C - Panel	(3) Pipe Mounts	(6) 1 5/8"	Metro PCS
24	108.0	3	CSS DUO1417- 8686-40 - Panel	Low Profile Platform	(12) 1 5/8" (2) 3/4" DC (1) 7/16" Fiber	AT&T
25		6	Powerwave 7770 - Panel			
26		3	KMW AM-X-CD-16-65-00T-RET - Panel			
27		6	Powerwave LGP21401 - TMA			
28		6	Powerwave 21903 - Diplexer			
29		6	Ericsson RRUS 11 - RRU			
30		3	Andrew ABT-DF-DMADBH - Bias T			
31		1	Raycap DC6-48-60-18-8F - Surge Protector			

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
26	108.0	3	CSS - DUO1417- 8686-40 - Panel	Low Profile Platform	(12) 1 5/8" (4) 3/4" DC (2) 7/16" Fiber	AT&T
27		6	Powerwave - 7770 - Panel			
28		3	KMW - AM-X-CD-17-65-00T-RET - Panel			
29		3	KMW - EPBQ-652L8H6-L2 - Panel			
30		6	Powerwave LGP21401 TMA			
31		6	Powerwave 21903 Diplexer			
32		12	Powerwave 7020 RET			
33		6	Ericsson RRU 11			
34		3	Ericsson RRUS 32 B2 RRU			
35		3	Ericsson B14 4478 RRU			
36		2	Raycap DC6-48-60-18-8F			
37		3	Andrew ABT-DFDM-ADBH BIAS-T			

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:	77.0%	68.6%	72.3%
Pass/Fail	Pass	Pass	Pass

Foundations

	Moment (Kip-Ft)	Shear (Kips)
Original Design Reactions	4450.0	38.0
Analysis Reactions	4527.6	38.2
Factored Reactions*	6007.5	51.3
% of Design Reactions	75.4%	74.5%

* 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 1.3123 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 76.99% at 45.0ft

Structure: CT03538-S-SBA
Site Name: South Plymouth
Height: 160.00 (ft)
Base Elev: 0.000 (ft)

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

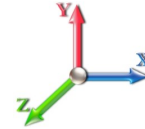
10/25/2017

Page: 1



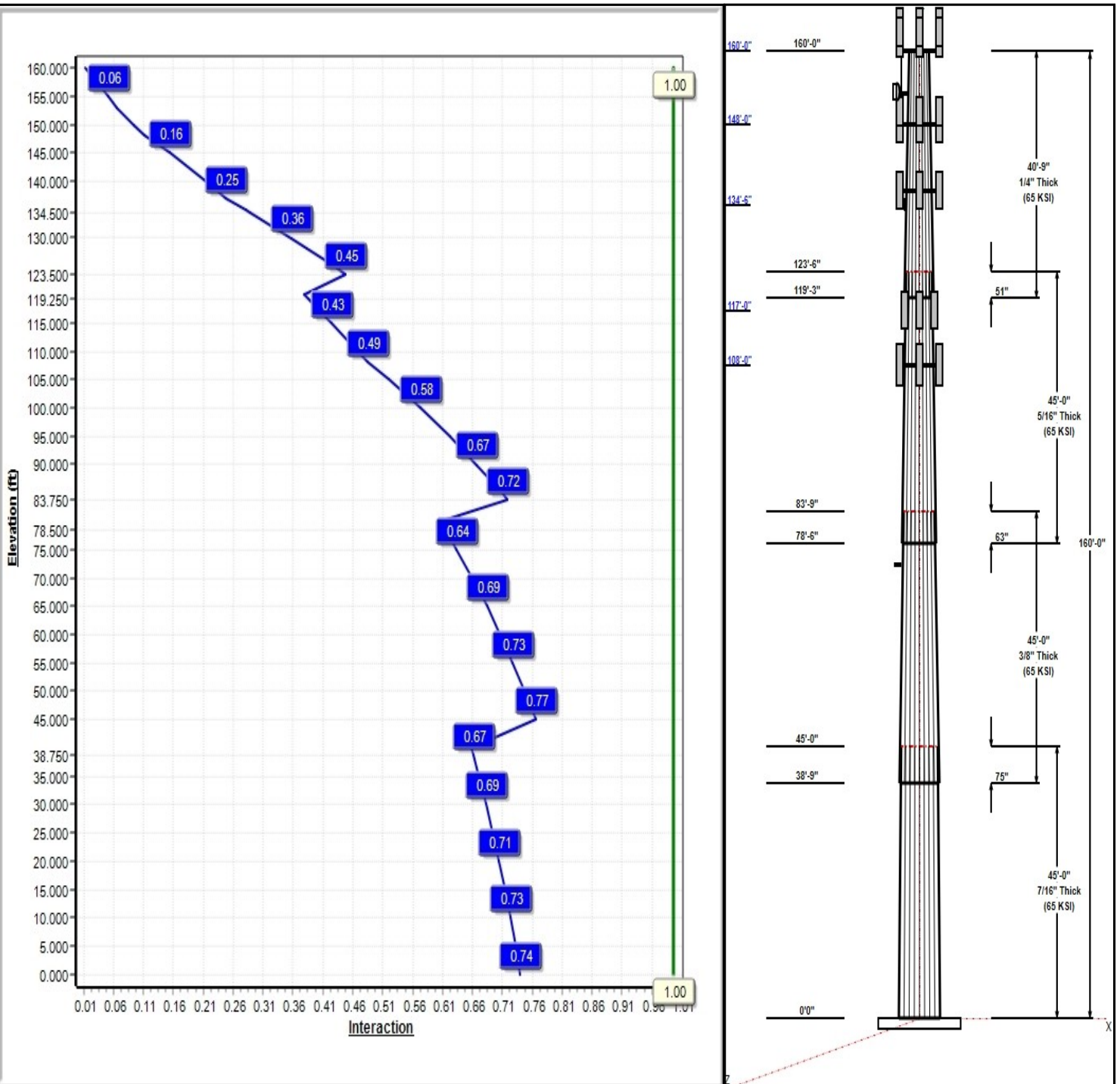
Dead Load Factor: 1.20
Wind Load Factor: 1.60

Load Case : 1.2D + 1.6W 93 mph Wind



Iterations: 25

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Structure: CT03538-S-SBA

Type: Tapered
Site Name: South Plymouth
Height: 160.00 (ft)
Base Elev: 0.00 (ft)

Base Shape: 18 Sided
Taper: 0.21503

10/25/2017

Page: 2

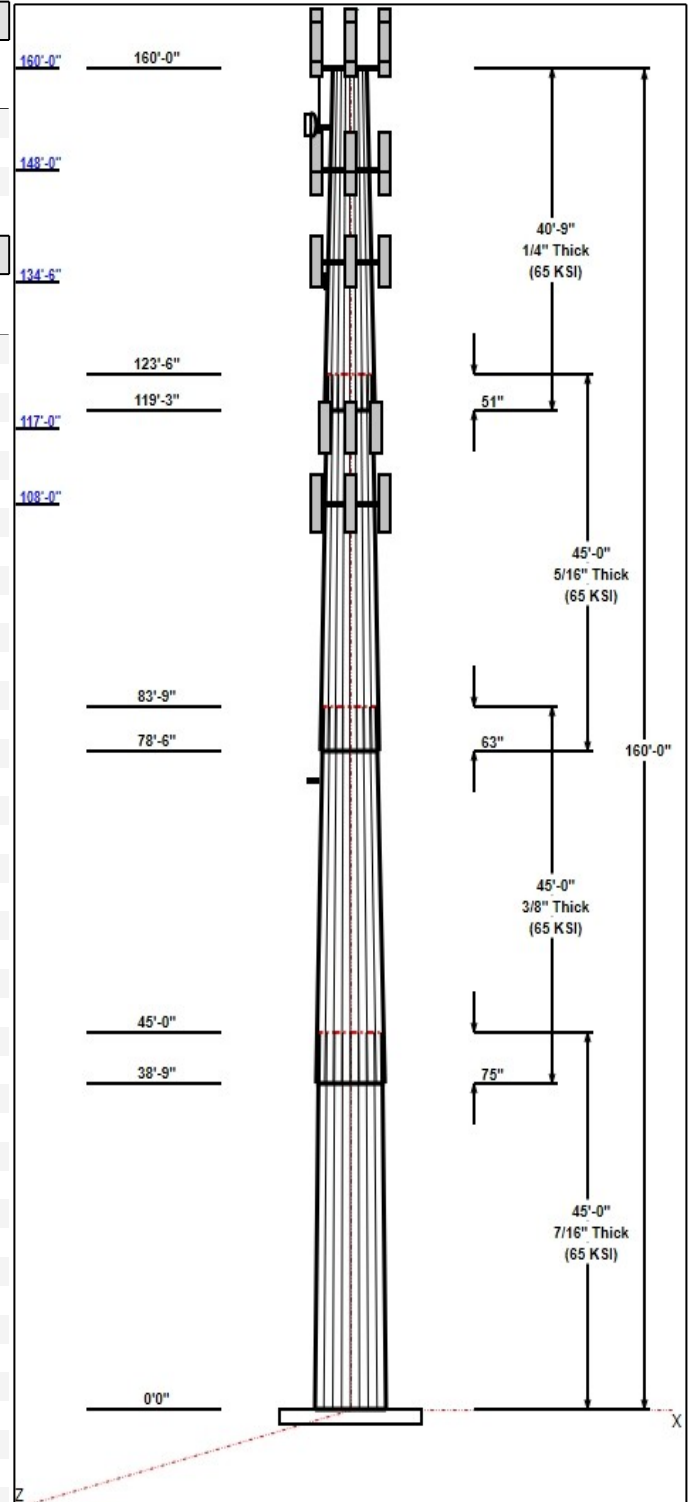


Shaft Properties

Seq	Length (ft)	Top (in)	Bottom (in)	Thick (in)	Joint Type	Taper	Grade (ksi)
1	45.00	46.85	56.53	0.438		0.21503	65
2	45.00	39.27	48.95	0.375	Slip	0.21503	65
3	45.00	31.35	41.03	0.313	Slip	0.21503	65
4	40.75	24.00	32.76	0.250	Slip	0.21503	65

Discrete Appurtenances

Attach Elev (ft)	Force Elev (ft)	Qty	Description	Carrier
160.00	163.00	3	AIR 21, 1.3M, B2A B4P	T-Mobile
160.00	163.00	3	Ericsson AIR 32	T-Mobile
160.00	163.00	3	Commscope	T-Mobile
160.00	163.00	3	KRY112 144	T-Mobile
160.00	163.00	3	RRUS 11	T-Mobile
160.00	160.00	1	Low Profile Platform	T-Mobile
153.00	156.50	1	Lone Star Electronics	Thomaston P.D.
153.00	153.00	1	VHLP-2.6-11	Thomaston P.D.
153.00	153.00	1	Hutton HPD 3.4-4.7	Thomaston P.D.
153.00	153.00	3	Motorola ODU-A-RF	Thomaston P.D.
153.00	153.00	2	Pipe Mounts	Thomaston P.D.
153.00	153.00	1	4 ft Sidearm	Thomaston P.D.
148.00	150.00	3	RFS APXVTM14-C-120	Sprint
148.00	148.00	3	RFS APXVSP18-C-A20	Sprint
148.00	148.00	3	ALU 1900MHz RRH	Sprint
148.00	148.00	3	ALU 800 MHz RRH	Sprint
148.00	148.00	3	ALU TD-RRH8x20-25	Sprint
148.00	148.00	3	ALU 800 MHz Filter	Sprint
148.00	148.00	4	RFS ACU-A20-N	Sprint
148.00	148.00	1	Low Profile Platform	Sprint
137.00	137.00	3	Antel BXA-70063-6CF-2	Verizon
137.00	137.00	6	Commscope	Verizon
137.00	137.00	3	Antel BXA-70080-6CF-2	Verizon
137.00	137.00	1	RFS DB-T1-6Z-8AB-0Z	Verizon
137.00	137.00	3	ALU 2X60-1900	Verizon
137.00	137.00	3	ALU RRH2X60-AWS	Verizon
137.00	137.00	6	RFS FD9R6004/2C-3	Verizon
137.00	137.00	1	Low Profile Platform	Verizon
134.50	134.50	1	Bird Technologies CSA	Thomaston P.D.
134.50	134.50	1	Pipe Mount	Thomaston P.D.
117.00	117.00	3	RFS APXV18-206517S-C	Metro PCS
117.00	117.00	3	Pipe Mounts	Metro PCS
108.00	108.00	3	DUO1417- 8686-40	AT&T
108.00	108.00	6	7770	AT&T
108.00	108.00	3	AM-X-CD-17-65-00T-RET	AT&T
108.00	108.00	6	Powerwave LGP21401	AT&T
108.00	108.00	6	Powerwave 21903	AT&T
108.00	108.00	6	Ericsson RRU 11	AT&T
108.00	108.00	3	Andrew ABT-DFDM-ADBH	AT&T
108.00	108.00	2	Raycap DC6-48-60-18-8F	AT&T
108.00	108.00	1	Low Profile Platform	AT&T
108.00	108.00	3	EPBQ-652L8H6-L2	AT&T
108.00	108.00	12	Powerwave 7020 RET	AT&T
108.00	108.00	3	Ericsson RRUS 32 B2	AT&T
108.00	108.00	3	Ericsson B14 4478 RRU	AT&T



Structure: CT03538-S-SBA

Type: Tapered
Site Name: South Plymouth
Height: 160.00 (ft)
Base Elev: 0.00 (ft)

Base Shape: 18 Sided
Taper: 0.21503

10/25/2017

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75.00	75.00	1	GPS	T-Mobile
75.00	75.00	1	Standoff	T-Mobile

Linear Appurtenances

Elev From (ft)	Elev To (ft)	Placement	Description	Carrier
0.00	160.00	Inside	1 5/8" Coax	T-Mobile
0.00	160.00	Inside	1 5/8" Fiber	T-Mobile
0.00	160.00	Inside	1 5/8" Hybrid	T-Mobile
0.00	153.00	Inside	7/8" Coax	Thomaston P.D.
0.00	153.00	Inside	EW90	Thomaston P.D.
0.00	148.00	Inside	1 1/4" Coax	Sprint
0.00	137.00	Inside	1 5/8" Coax	Verizon
0.00	137.00	Inside	1 5/8" Hybriflex	Verizon
0.00	134.50	Inside	7/8" Coax	Thomaston P.D.
0.00	117.00	Inside	1 5/8" Coax	Metro PCS
0.00	108.00	Inside	1 5/8" Coax	AT&T
0.00	108.00	Inside	3/4" DC	AT&T
0.00	108.00	Inside	7/16" Fiber	AT&T
0.00	75.00	Inside	1/2" Coax	T-Mobile

Anchor Bolts

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

Base Plate

Thickness (in)	Specifications (in)	Grade (ksi)	Geometry
3.0000	64.0	50.0	Clipped

Reactions

Load Case	Moment (FT-Kips)	Shear (Kips)	Axial (Kips)
1.2D + 1.6W 93 mph Wind	4527.6	38.2	54.8
0.9D + 1.6W 93 mph Wind	4476.0	38.2	41.1
1.2D + 1.0Di + 1.0Wi 40 mph Wind	1009.2	8.2	94.5
1.2D + 1.0E	271.5	2.1	54.9
0.9D + 1.0E	268.1	2.1	41.2
1.0D + 1.0W 60 mph Wind	1170.9	9.9	45.8

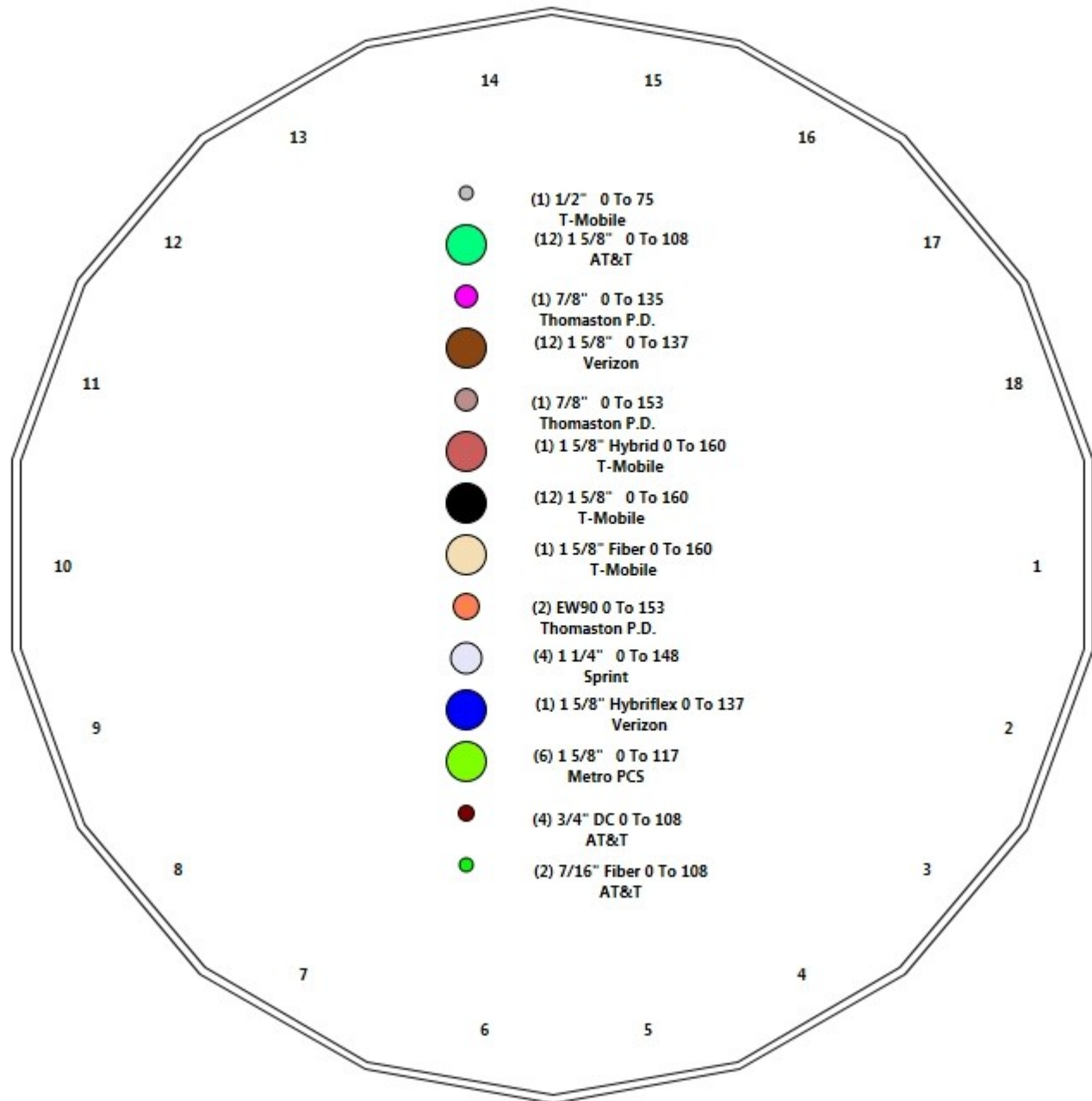
Structure: CT03538-S-SBA - Coax Line Placement

Type: Monopole
Site Name: South Plymouth
Height: 160.00 (ft)

10/25/2017



Page: 4



Shaft Properties

Structure: CT03538-S-SBA	Code: EIA/TIA-222-G	10/25/2017
Site Name: South Plymouth	Exposure: C	
Height: 160.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



Page: 5

Sec. No.	Shape	Length (ft)	Thick (in)	Fy (ksi)	Joint Type	Overlap (in)	Weight (lb)
1	18	45.000	0.4375	65		0.00	10,898
2	18	45.000	0.3750	65	Slip	75.00	7,971
3	18	45.000	0.3125	65	Slip	63.00	5,448
4	18	40.750	0.2500	65	Slip	51.00	3,095
Total Shaft Weight:							27,412

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	56.53	0.00	77.89	30962.56	21.37	129.21	46.85	45.00	64.45	17543.9	17.47	107.0	0.215031
2	48.95	38.75	57.81	17232.49	21.60	130.53	39.27	83.75	46.29	8849.01	17.05	104.7	0.215031
3	41.03	78.50	40.38	8456.28	21.74	131.28	31.35	123.50	30.78	3746.26	16.28	100.3	0.215031
4	32.76	119.2	25.80	3445.37	21.70	131.05	24.00	160.00	18.84	1343.00	15.52	96.00	0.215031

Load Summary

Structure: CT03538-S-SBA	Code: EIA/TIA-222-G	10/25/2017	
Site Name: South Plymouth	Exposure: C		
Height: 160.00 (ft)	Crest Height: 0.00		
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil		
Gh: 1.1	Topography: 1	Struct Class: II	Page: 6



Discrete Appurtenances

No.	Elev (ft)	Description	Qty	No Ice			Ice			Hor. Ecc. (ft)	Vert Ecc (ft)
				Weight (lb)	CaAa (sf)	CaAa Factor	Weight (lb)	CaAa (sf)	CaAa Factor		
1	160.00	AIR 21, 1.3M, B2A B4P	3	117.00	6.09	0.94	358.95	7.551	0.97	0.00	3.00
2	160.00	Ericsson AIR 32	3	166.00	6.07	0.96	893.63	8.987	1.00	0.00	3.00
3	160.00	Commscope LNX-6515DS-A1M	3	91.00	11.47	0.93	653.90	15.854	0.96	0.00	3.00
4	160.00	KRY112 144	3	11.00	0.41	0.70	25.47	1.048	0.75	0.00	3.00
5	160.00	RRUS 11	3	51.00	2.52	0.71	147.99	3.370	0.76	0.00	3.00
6	160.00	Low Profile Platform	1	1600.00	22.00	1.00	3473.62	45.701	1.00	0.00	0.00
7	153.00	Lone Star Electronics LS-230C	1	20.00	2.10	1.00	77.36	4.603	1.00	0.00	3.50
8	153.00	VHLP-2.6-11	1	47.60	8.43	1.00	278.31	10.710	1.00	0.00	0.00
9	153.00	Hutton HPD 3.4-4.7	1	105.00	8.92	1.00	114.79	9.752	1.00	0.00	0.00
10	153.00	Motorola ODU-A-RF	3	10.40	1.44	1.00	52.47	2.586	1.00	0.00	0.00
11	153.00	Pipe Mounts	2	50.00	5.00	1.00	105.96	9.663	1.00	0.00	0.00
12	153.00	4 ft Sidearm	1	50.00	3.50	1.00	184.16	14.179	1.00	0.00	0.00
13	148.00	RFS APXVTM14-C-120	3	96.00	6.34	0.89	324.12	7.854	0.94	0.00	2.00
14	148.00	RFS APXVSP18-C-A20	3	97.00	8.02	0.93	488.68	11.740	0.98	0.00	0.00
15	148.00	ALU 1900MHz RRH	3	44.00	3.80	0.67	189.36	5.651	0.67	0.00	0.00
16	148.00	ALU 800 MHz RRH	3	53.00	2.49	0.67	151.48	4.013	0.00	0.00	0.00
17	148.00	ALU TD-RRH8x20-25	3	70.00	4.05	0.69	227.46	5.160	0.75	0.00	0.00
18	148.00	ALU 800 MHz Filter	3	10.00	0.42	0.99	45.52	0.879	0.00	0.00	0.00
19	148.00	RFS ACU-A20-N	4	1.00	0.14	0.79	6.72	0.535	0.00	0.00	0.00
20	148.00	Low Profile Platform	1	1200.00	25.00	1.00	2594.30	52.886	1.00	0.00	0.00
21	137.00	Antel BXA-70063-6CF-2	3	17.00	7.57	0.83	212.94	11.222	0.88	0.00	0.00
22	137.00	Commscope HBXX-6517DS-A2M	6	40.80	8.55	0.87	273.67	12.406	0.92	0.00	0.00
23	137.00	Antel BXA-70080-6CF-2	3	18.00	5.76	0.97	185.39	8.895	1.02	0.00	0.00
24	137.00	RFS DB-T1-6Z-8AB-OZ	1	18.90	4.80	0.71	219.89	5.979	0.75	0.00	0.00
25	137.00	ALU 2X60-1900	3	46.00	1.88	0.84	145.19	2.681	0.89	0.00	0.00
26	137.00	ALU RRH2X60-AWS	3	55.00	2.20	0.89	175.32	3.066	0.94	0.00	0.00
27	137.00	RFS FD9R6004/2C-3	6	3.10	0.36	0.50	13.71	0.946	0.50	0.00	0.00
28	137.00	Low Profile Platform	1	1500.00	22.00	1.00	3229.47	45.336	1.00	0.00	0.00
29	134.50	Bird Technologies CSA 10-67 DIM	1	4.60	3.81	1.00	166.47	38.800	1.00	0.00	0.00
30	134.50	Pipe Mount	1	50.00	5.00	1.00	105.24	9.603	1.00	0.00	0.00
31	117.00	RFS APXV18-206517S-C	3	26.40	5.17	0.74	147.16	8.259	0.75	0.00	0.00
32	117.00	Pipe Mounts	3	50.00	5.00	1.00	104.48	9.540	1.00	0.00	0.00
33	108.00	DUO1417- 8686-40	3	20.30	5.79	0.92	249.44	7.141	0.97	0.00	0.00
34	108.00	7770	6	35.00	5.50	0.83	221.09	6.901	0.88	0.00	0.00
35	108.00	AM-X-CD-17-65-00T-RET	3	48.50	8.02	0.75	257.88	11.625	0.75	0.00	0.00
36	108.00	Powerwave LGP21401 TMA	6	14.10	1.29	0.50	46.36	2.368	0.50	0.00	0.00
37	108.00	Powerwave 21903 Diplexer	6	5.50	0.27	0.84	16.37	0.783	0.89	0.00	0.00
38	108.00	Ericsson RRU 11	6	51.00	2.52	0.67	144.25	3.337	0.67	0.00	0.00
39	108.00	Andrew ABT-DFDM-ADBH BIAS-T	3	1.10	0.05	0.98	3.98	0.298	1.00	0.00	0.00
40	108.00	Raycap DC6-48-60-18-8F	2	31.80	0.92	1.00	111.57	1.485	1.00	0.00	0.00
41	108.00	Low Profile Platform	1	1500.00	22.00	1.00	3188.82	44.788	1.00	0.00	0.00
42	108.00	EPBQ-652L8H6-L2	3	99.00	15.71	0.71	533.29	17.905	0.71	0.00	0.00
43	108.00	Powerwave 7020 RET	12	2.20	0.40	1.00	15.40	1.025	1.00	0.00	0.00
44	108.00	Ericsson RRUS 32 B2 RRU	3	77.00	1.65	0.67	145.73	2.419	0.67	0.00	0.00
45	108.00	Ericsson B14 4478 RRU	3	58.00	3.15	0.67	189.12	4.095	0.67	0.00	0.00
46	75.00	GPS	1	1.70	0.14	1.00	10.13	0.514	1.00	0.00	0.00
47	75.00	Standoff	1	20.00	2.63	1.00	69.94	10.055	1.00	0.00	0.00
Totals:			141	11,206.90			36,378.67				

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		

Linear Appurtenances

Bottom Elev. (ft)	Top Elev. (ft)	Description	Exposed Width	Exposed
0.00	160.00	(12) 1 5/8" Coax	0.00	Inside
0.00	160.00	(1) 1 5/8" Fiber	0.00	Inside
0.00	160.00	(1) 1 5/8" Hybrid	0.00	Inside
0.00	153.00	(1) 7/8" Coax	0.00	Inside
0.00	153.00	(2) EW90	0.00	Inside
0.00	148.00	(4) 1 1/4" Coax	0.00	Inside
0.00	137.00	(12) 1 5/8" Coax	0.00	Inside
0.00	137.00	(1) 1 5/8" Hybriflex	0.00	Inside
0.00	134.50	(1) 7/8" Coax	0.00	Inside
0.00	117.00	(6) 1 5/8" Coax	0.00	Inside
0.00	108.00	(12) 1 5/8" Coax	0.00	Inside
0.00	108.00	(4) 3/4" DC	0.00	Inside
0.00	108.00	(2) 7/16" Fiber	0.00	Inside
0.00	75.00	(1) 1/2" Coax	0.00	Inside

Shaft Section Properties

Structure: CT03538-S-SBA	Code: EIA/TIA-222-G	10/25/2017
Site Name: South Plymouth	Exposure: C	
Height: 160.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Increment Length: 5 (ft)

Elev (ft)	Description	Thick (in)	Dia (in)	Area (in^2)	Ix (in^4)	W/t Ratio	D/t Ratio	Fpy (ksi)	S (in^3)	Weight (lb)
0.00		0.4375	56.530	77.889	30962.6	21.37	129.21	76.3	1078.	0.0
5.00		0.4375	55.455	76.396	29216.0	20.94	126.75	76.8	1037.	1312.5
10.00		0.4375	54.380	74.903	27536.5	20.51	124.30	77.3	997.4	1287.1
15.00		0.4375	53.305	73.410	25922.5	20.07	121.84	77.8	957.8	1261.7
20.00		0.4375	52.229	71.917	24372.9	19.64	119.38	78.3	919.1	1236.3
25.00		0.4375	51.154	70.424	22886.3	19.21	116.92	78.8	881.2	1210.9
30.00		0.4375	50.079	68.931	21461.4	18.77	114.47	79.3	844.1	1185.5
35.00		0.4375	49.004	67.438	20097.0	18.34	112.01	79.8	807.8	1160.1
38.75	Bot - Section 2	0.4375	48.198	66.318	19112.5	18.01	110.17	80.2	781.0	853.4
40.00		0.4375	47.929	65.945	18791.6	17.91	109.55	80.3	772.2	526.5
45.00	Top - Section 1	0.3750	47.604	56.212	15841.3	20.97	126.94	0.0	0.0	2076.6
50.00		0.3750	46.528	54.932	14783.9	20.47	124.08	77.3	625.8	945.5
55.00		0.3750	45.453	53.652	13774.6	19.96	121.21	77.9	596.9	923.7
60.00		0.3750	44.378	52.373	12812.3	19.46	118.34	78.5	568.6	902.0
65.00		0.3750	43.303	51.093	11895.9	18.95	115.47	79.1	541.1	880.2
70.00		0.3750	42.228	49.814	11024.3	18.45	112.61	79.7	514.2	858.4
75.00		0.3750	41.153	48.534	10196.3	17.94	109.74	80.3	488.0	836.6
78.50	Bot - Section 3	0.3750	40.400	47.638	9642.1	17.59	107.73	80.7	470.1	572.7
80.00		0.3750	40.077	47.254	9410.9	17.43	106.87	80.9	462.5	447.5
83.75	Top - Section 2	0.3125	39.896	39.261	7772.2	21.10	127.67	0.0	0.0	1102.9
85.00		0.3125	39.627	38.994	7614.9	20.95	126.81	76.8	378.5	166.4
90.00		0.3125	38.552	37.928	7007.1	20.34	123.37	77.5	358.0	654.4
95.00		0.3125	37.477	36.861	6432.5	19.74	119.93	78.2	338.1	636.2
100.00		0.3125	36.402	35.795	5890.2	19.13	116.49	78.9	318.7	618.1
105.00		0.3125	35.327	34.728	5379.3	18.52	113.05	79.6	299.9	599.9
108.00		0.3125	34.682	34.089	5087.4	18.16	110.98	80.0	288.9	351.3
110.00		0.3125	34.252	33.662	4898.8	17.92	109.61	80.3	281.7	230.5
115.00		0.3125	33.176	32.596	4447.9	17.31	106.16	81.0	264.1	563.7
117.00		0.3125	32.746	32.169	4275.5	17.07	104.79	81.3	257.2	220.4
119.25	Bot - Section 4	0.3125	32.263	31.689	4087.0	16.79	103.24	81.6	249.5	244.5
120.00		0.3125	32.101	31.529	4025.5	16.70	102.72	81.8	247.0	146.3
123.50	Top - Section 3	0.2500	31.849	25.073	3162.9	21.05	127.39	0.0	0.0	673.2
125.00		0.2500	31.526	24.817	3067.1	20.82	126.10	76.9	191.6	127.3
130.00		0.2500	30.451	23.964	2761.5	20.07	121.80	77.8	178.6	415.0
134.50		0.2500	29.483	23.196	2504.5	19.38	117.93	78.6	167.3	361.1
135.00		0.2500	29.376	23.110	2476.9	19.31	117.50	78.7	166.1	39.4
137.00		0.2500	28.946	22.769	2368.8	19.01	115.78	79.0	161.2	156.1
140.00		0.2500	28.301	22.257	2212.6	18.55	113.20	79.6	154.0	229.8
145.00		0.2500	27.225	21.404	1967.8	17.79	108.90	80.5	142.4	371.4
148.00		0.2500	26.580	20.892	1830.0	17.34	106.32	81.0	135.6	215.9
150.00		0.2500	26.150	20.551	1741.8	17.03	104.60	81.4	131.2	141.0
153.00		0.2500	25.505	20.039	1614.9	16.58	102.02	81.9	124.7	207.2
155.00		0.2500	25.075	19.698	1533.8	16.28	100.30	82.3	120.5	135.2
160.00		0.2500	24.000	18.845	1343.0	15.52	96.00	82.5	110.2	327.9
										27412.2

Wind Loading - Shaft

Structure: CT03538-S-SBA

Code: EIA/TIA-222-G

10/25/2017

Site Name: South Plymouth

Exposure: C

Height: 160.00 (ft)

Crest Height: 0.00

Base Elev: 0.000 (ft)

Site Class: D - Stiff Soil

Gh: 1.1

Topography: 1

Struct Class: II

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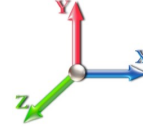


Load Case: 1.2D + 1.6W 93 mph Wind

Iterations 25

Dead Load Factor 1.20

Wind Load Factor 1.60



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	410.15	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	402.35	0.650	0.000	5.00	23.690	15.40	484.6	0.0	1575.0
10.00		1.00	0.85	17.879	19.67	394.54	0.650	0.000	5.00	23.235	15.10	475.2	0.0	1544.5
15.00		1.00	0.85	17.879	19.67	386.74	0.650	0.000	5.00	22.780	14.81	465.9	0.0	1514.0
20.00		1.00	0.90	18.971	20.87	390.34	0.650	0.000	5.00	22.325	14.51	484.5	0.0	1483.5
25.00		1.00	0.95	19.883	21.87	391.39	0.650	0.000	5.00	21.871	14.22	497.5	0.0	1453.1
30.00		1.00	0.98	20.661	22.73	390.59	0.650	0.000	5.00	21.416	13.92	506.2	0.0	1422.6
35.00		1.00	1.01	21.343	23.48	388.45	0.650	0.000	5.00	20.961	13.62	511.8	0.0	1392.1
38.75 Bot - Section 2		1.00	1.04	21.805	23.99	386.18	0.650	0.000	3.75	15.422	10.02	384.7	0.0	1024.1
40.00		1.00	1.04	21.951	24.15	385.31	0.650	0.000	1.25	5.163	3.36	129.7	0.0	631.8
45.00 Top - Section 1		1.00	1.07	22.502	24.75	381.36	0.650	0.000	5.00	20.368	13.24	524.3	0.0	2491.9
50.00		1.00	1.09	23.007	25.31	382.94	0.650	0.000	5.00	19.913	12.94	524.1	0.0	1134.6
55.00		1.00	1.12	23.473	25.82	377.87	0.650	0.000	5.00	19.458	12.65	522.5	0.0	1108.5
60.00		1.00	1.14	23.907	26.30	372.32	0.650	0.000	5.00	19.004	12.35	519.7	0.0	1082.3
65.00		1.00	1.16	24.313	26.74	366.38	0.650	0.000	5.00	18.549	12.06	515.9	0.0	1056.2
70.00		1.00	1.17	24.696	27.17	360.08	0.650	0.000	5.00	18.094	11.76	511.2	0.0	1030.1
75.00 Appurtenance(s)		1.00	1.19	25.057	27.56	353.47	0.650	0.000	5.00	17.639	11.47	505.6	0.0	1004.0
78.50 Bot - Section 3		1.00	1.20	25.299	27.83	348.67	0.650	0.000	3.50	12.077	7.85	349.5	0.0	687.2
80.00		1.00	1.21	25.400	27.94	346.58	0.650	0.000	1.50	5.187	3.37	150.7	0.0	537.0
83.75 Top - Section 2		1.00	1.22	25.646	28.21	341.25	0.650	0.000	3.75	12.788	8.31	375.2	0.0	1323.5
85.00		1.00	1.22	25.726	28.30	344.88	0.650	0.000	1.25	4.206	2.73	123.8	0.0	199.7
90.00		1.00	1.24	26.037	28.64	337.55	0.650	0.000	5.00	16.539	10.75	492.6	0.0	785.2
95.00		1.00	1.25	26.336	28.97	330.01	0.650	0.000	5.00	16.084	10.45	484.6	0.0	763.5
100.00		1.00	1.27	26.621	29.28	322.27	0.650	0.000	5.00	15.629	10.16	476.0	0.0	741.7
105.00		1.00	1.28	26.896	29.59	314.37	0.650	0.000	5.00	15.174	9.86	466.9	0.0	719.9
108.00 Appurtenance(s)		1.00	1.29	27.056	29.76	309.54	0.650	0.000	3.00	8.886	5.78	275.0	0.0	421.5
110.00		1.00	1.29	27.161	29.88	306.29	0.650	0.000	2.00	5.833	3.79	181.2	0.0	276.6
115.00		1.00	1.30	27.416	30.16	298.07	0.650	0.000	5.00	14.264	9.27	447.4	0.0	676.4
117.00 Appurtenance(s)		1.00	1.31	27.516	30.27	294.74	0.650	0.000	2.00	5.578	3.63	175.6	0.0	264.5
119.25 Bot - Section 4		1.00	1.31	27.627	30.39	290.97	0.650	0.000	2.25	6.189	4.02	195.6	0.0	293.3
120.00		1.00	1.32	27.663	30.43	289.71	0.650	0.000	0.75	2.074	1.35	65.6	0.0	175.6
123.50 Top - Section 3		1.00	1.32	27.831	30.61	283.77	0.650	0.000	3.50	9.544	6.20	303.9	0.0	807.9
125.00		1.00	1.33	27.902	30.69	285.74	0.650	0.000	1.50	4.022	2.61	128.4	0.0	152.8
130.00		1.00	1.34	28.133	30.95	277.14	0.650	0.000	5.00	13.111	8.52	422.0	0.0	498.0
134.50 Appurtenance(s)		1.00	1.35	28.336	31.17	269.29	0.650	0.000	4.50	11.411	7.42	369.9	0.0	433.3
135.00		1.00	1.35	28.358	31.19	268.42	0.650	0.000	0.50	1.245	0.81	40.4	0.0	47.3
137.00 Appurtenance(s)		1.00	1.35	28.446	31.29	264.90	0.650	0.000	2.00	4.935	3.21	160.6	0.0	187.3
140.00		1.00	1.36	28.576	31.43	259.59	0.650	0.000	3.00	7.266	4.72	237.5	0.0	275.8
145.00		1.00	1.37	28.788	31.67	250.65	0.650	0.000	5.00	11.746	7.64	386.8	0.0	445.7
148.00 Appurtenance(s)		1.00	1.37	28.912	31.80	245.24	0.650	0.000	3.00	6.829	4.44	225.9	0.0	259.1
150.00		1.00	1.38	28.994	31.89	241.61	0.650	0.000	2.00	4.462	2.90	148.0	0.0	169.2
153.00 Appurtenance(s)		1.00	1.38	29.115	32.03	236.14	0.650	0.000	3.00	6.557	4.26	218.4	0.0	248.6
155.00		1.00	1.39	29.195	32.11	232.48	0.650	0.000	2.00	4.280	2.78	142.9	0.0	162.3
160.00 Appurtenance(s)		1.00	1.40	29.390	32.33	223.25	0.650	0.000	5.00	10.382	6.75	349.1	0.0	393.5
Totals:									160.00			14,957.0		32,894.6

Discrete Appurtenance Forces

Structure: CT03538-S-SBA

Code: EIA/TIA-222-G

10/25/2017

Site Name: South Plymouth

Exposure: C

Height: 160.00 (ft)

Crest Height: 0.00

Base Elev: 0.000 (ft)

Site Class: D - Stiff Soil

Gh: 1.1

Topography: 1

Struct Class: II

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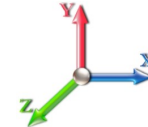


Load Case: 1.2D + 1.6W 93 mph Wind

Iterations 25

Dead Load Factor 1.20

Wind Load Factor 1.60



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	160.00	RRUS 11	3	29.506	32.456	0.71	1.00	5.37	183.60	0.000	3.000	278.74	0.00	836.21
2	160.00	KRY112 144	3	29.506	32.456	0.70	1.00	0.86	39.60	0.000	3.000	44.71	0.00	134.13
3	160.00	Commscope	3	29.506	32.456	0.93	1.00	31.86	327.60	0.000	3.000	1654.67	0.00	4964.01
4	160.00	Ericsson AIR 32	3	29.506	32.456	0.96	1.00	17.50	597.60	0.000	3.000	908.76	0.00	2726.28
5	160.00	AIR 21, 1.3M, B2A B4P	3	29.506	32.456	0.94	1.00	17.08	421.20	0.000	3.000	887.09	0.00	2661.26
6	160.00	Low Profile Platform	1	29.390	32.329	1.00	1.00	22.00	1920.00	0.000	0.000	1137.99	0.00	0.00
7	153.00	Hutton HPD 3.4-4.7	1	29.115	32.026	1.00	1.00	8.92	126.00	0.000	0.000	457.08	0.00	0.00
8	153.00	VHLP-2.6-11	1	29.115	32.026	1.00	1.00	8.43	57.12	0.000	0.000	431.97	0.00	0.00
9	153.00	Lone Star Electronics	1	29.254	32.179	1.00	1.00	2.10	24.00	0.000	3.500	108.12	0.00	378.43
10	153.00	Pipe Mounts	2	29.115	32.026	1.00	1.00	10.00	120.00	0.000	0.000	512.42	0.00	0.00
11	153.00	4 ft Sidearm	1	29.115	32.026	1.00	1.00	3.50	60.00	0.000	0.000	179.35	0.00	0.00
12	153.00	Motorola ODU-A-RF	3	29.115	32.026	1.00	1.00	4.32	37.44	0.000	0.000	221.37	0.00	0.00
13	148.00	ALU 800 MHz RRH	3	28.912	31.803	0.54	0.80	4.00	190.80	0.000	0.000	203.74	0.00	0.00
14	148.00	RFS APXVTM14-C-120	3	28.994	31.893	0.71	0.80	13.54	345.60	0.000	2.000	691.05	0.00	1382.09
15	148.00	RFS APXVSP18-C-A20	3	28.912	31.803	0.74	0.80	17.90	349.20	0.000	0.000	910.87	0.00	0.00
16	148.00	ALU 1900MHz RRH	3	28.912	31.803	0.54	0.80	6.11	158.40	0.000	0.000	310.93	0.00	0.00
17	148.00	ALU TD-RRH8x20-25	3	28.912	31.803	0.55	0.80	6.71	252.00	0.000	0.000	341.28	0.00	0.00
18	148.00	ALU 800 MHz Filter	3	28.912	31.803	0.79	0.80	1.00	36.00	0.000	0.000	50.78	0.00	0.00
19	148.00	RFS ACU-A20-N	4	28.912	31.803	0.63	0.80	0.35	4.80	0.000	0.000	18.01	0.00	0.00
20	148.00	Low Profile Platform	1	28.912	31.803	1.00	1.00	25.00	1440.00	0.000	0.000	1272.12	0.00	0.00
21	137.00	Low Profile Platform	1	28.446	31.290	1.00	1.00	22.00	1800.00	0.000	0.000	1101.42	0.00	0.00
22	137.00	RFS FD9R6004/2C-3	6	28.446	31.290	0.40	0.80	0.86	22.32	0.000	0.000	43.26	0.00	0.00
23	137.00	ALU RRH2X60-AWS	3	28.446	31.290	0.71	0.80	4.70	198.00	0.000	0.000	235.26	0.00	0.00
24	137.00	ALU 2X60-1900	3	28.446	31.290	0.67	0.80	3.79	165.60	0.000	0.000	189.75	0.00	0.00
25	137.00	RFS DB-T1-6Z-8AB-OZ	1	28.446	31.290	0.57	0.80	2.73	22.68	0.000	0.000	136.50	0.00	0.00
26	137.00	Antel BXA-70080-6CF-2	3	28.446	31.290	0.78	0.80	13.41	64.80	0.000	0.000	671.33	0.00	0.00
27	137.00	Commscope	6	28.446	31.290	0.70	0.80	35.70	293.76	0.000	0.000	1787.54	0.00	0.00
28	137.00	Antel BXA-70063-6CF-2	3	28.446	31.290	0.66	0.80	15.08	61.20	0.000	0.000	754.94	0.00	0.00
29	134.50	Pipe Mount	1	28.336	31.169	1.00	1.00	5.00	60.00	0.000	0.000	249.35	0.00	0.00
30	134.50	Bird Technologies CSA	1	28.336	31.169	1.00	1.00	3.81	5.52	0.000	0.000	190.01	0.00	0.00
31	117.00	Pipe Mounts	3	27.516	30.268	1.00	1.00	15.00	180.00	0.000	0.000	726.43	0.00	0.00
32	117.00	RFS APXV18-206517S-C	3	27.516	30.268	0.59	0.80	9.18	95.04	0.000	0.000	444.67	0.00	0.00
33	108.00	Powerwave 21903	6	27.056	29.762	0.67	0.80	1.09	39.60	0.000	0.000	51.84	0.00	0.00
34	108.00	Powerwave LGP21401	6	27.056	29.762	0.40	0.80	3.10	101.52	0.000	0.000	147.43	0.00	0.00
35	108.00	Ericsson RRU 11	6	27.056	29.762	0.54	0.80	8.10	367.20	0.000	0.000	385.92	0.00	0.00
36	108.00	AM-X-CD-17-65-00T-RET	3	27.056	29.762	0.60	0.80	14.44	174.60	0.000	0.000	687.43	0.00	0.00
37	108.00	7770	6	27.056	29.762	0.66	0.80	21.91	252.00	0.000	0.000	1043.43	0.00	0.00
38	108.00	DUO1417- 8686-40	3	27.056	29.762	0.74	0.80	12.78	73.08	0.000	0.000	608.78	0.00	0.00
39	108.00	EPBQ-652L8H6-L2	3	27.056	29.762	0.57	0.80	26.77	356.40	0.000	0.000	1274.76	0.00	0.00
40	108.00	Andrew	3	27.056	29.762	0.78	0.80	0.12	3.96	0.000	0.000	5.60	0.00	0.00
41	108.00	Raycap DC6-48-60-18-8F	2	27.056	29.762	0.80	0.80	1.47	76.32	0.000	0.000	70.10	0.00	0.00
42	108.00	Low Profile Platform	1	27.056	29.762	1.00	1.00	22.00	1800.00	0.000	0.000	1047.62	0.00	0.00
43	108.00	Powerwave 7020 RET	12	27.056	29.762	0.80	0.80	3.84	31.68	0.000	0.000	182.86	0.00	0.00
44	108.00	Ericsson RRUS 32 B2	3	27.056	29.762	0.54	0.80	2.65	277.20	0.000	0.000	126.34	0.00	0.00
45	108.00	Ericsson B14 4478 RRU	3	27.056	29.762	0.54	0.80	5.07	208.80	0.000	0.000	241.20	0.00	0.00
46	75.00	Standoff	1	25.057	27.563	1.00	1.00	2.63	24.00	0.000	0.000	115.98	0.00	0.00
47	75.00	GPS	1	25.057	27.563	1.00	1.00	0.14	2.04	0.000	0.000	6.17	0.00	0.00

Discrete Appurtenance Forces

Structure:	CT03538-S-SBA	Code:	EIA/TIA-222-G	10/25/2017
Site Name:	South Plymouth	Exposure:	C	
Height:	160.00 (ft)	Crest Height:	0.00	
Base Elev:	0.000 (ft)	Site Class:	D - Stiff Soil	
Gh:	1.1	Topography:	1	
		Struct Class:	II	Page: 11



Totals:	13,448.28	23,146.94
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Total Applied Force Summary

Structure: CT03538-S-SBA	Code: EIA/TIA-222-G	10/25/2017	
Site Name: South Plymouth	Exposure: C		
Height: 160.00 (ft)	Crest Height: 0.00		
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil		
Gh: 1.1	Topography: 1	Struct Class: II	Page: 12

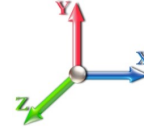


Load Case: 1.2D + 1.6W 93 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60

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		484.55	1895.27	0.00	0.00
10.00		475.25	1864.79	0.00	0.00
15.00		465.94	1834.30	0.00	0.00
20.00		484.51	1803.82	0.00	0.00
25.00		497.47	1773.34	0.00	0.00
30.00		506.18	1742.86	0.00	0.00
35.00		511.77	1712.38	0.00	0.00
38.75		384.70	1264.28	0.00	0.00
40.00		129.66	711.88	0.00	0.00
45.00		524.33	2812.14	0.00	0.00
50.00		524.12	1454.87	0.00	0.00
55.00		522.52	1428.75	0.00	0.00
60.00		519.74	1402.62	0.00	0.00
65.00		515.92	1376.50	0.00	0.00
70.00		511.18	1350.37	0.00	0.00
75.00	(2) attachments	627.78	1350.28	0.00	0.00
78.50		349.52	910.75	0.00	0.00
80.00		150.71	632.75	0.00	0.00
83.75		375.18	1563.02	0.00	0.00
85.00		123.78	279.54	0.00	0.00
90.00		492.64	1104.56	0.00	0.00
95.00		484.57	1082.79	0.00	0.00
100.00		475.98	1061.02	0.00	0.00
105.00		466.89	1039.25	0.00	0.00
108.00	(57) attachments	6148.35	4375.46	0.00	0.00
110.00		181.25	369.82	0.00	0.00
115.00		447.39	909.30	0.00	0.00
117.00	(6) attachments	1346.69	632.66	0.00	0.00
119.25		195.59	381.32	0.00	0.00
120.00		65.64	204.94	0.00	0.00
123.50		303.87	944.71	0.00	0.00
125.00		128.38	211.43	0.00	0.00
130.00		421.97	693.45	0.00	0.00
134.50	(2) attachments	809.26	674.73	0.00	0.00
135.00		40.39	66.51	0.00	0.00
137.00	(26) attachments	5080.58	2892.65	0.00	0.00
140.00		237.54	342.32	0.00	0.00
145.00		386.84	556.59	0.00	0.00
148.00	(23) attachments	4024.66	3102.40	0.00	1382.09
150.00		148.00	207.24	0.00	0.00
153.00	(9) attachments	2128.69	730.20	0.00	378.43
155.00		142.95	197.49	0.00	0.00
160.00	(16) attachments	5261.02	3971.14	0.00	11321.91
Totals:		38,103.97	54,916.48	0.00	13,082.43

Calculated Forces

Structure: CT03538-S-SBA

Code: EIA/TIA-222-G

10/25/2017

Site Name: South Plymouth

Exposure: C

Height: 160.00 (ft)

Crest Height: 0.00

Base Elev: 0.000 (ft)

Site Class: D - Stiff Soil

Gh: 1.1

Topography: 1

Struct Class: II

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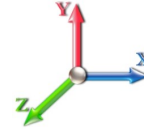


Load Case: 1.2D + 1.6W 93 mph Wind

Iterations 25

Dead Load Factor 1.20

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	-54.85	-38.20	0.00	-4527.6	0.00	4527.64	5345.98	2672.99	12322.4	6170.37	0.00	0.000	0.000	0.744
5.00	-52.82	-37.90	0.00	-4336.6	0.00	4336.63	5278.55	2639.27	11931.9	5974.86	0.11	-0.204	0.000	0.736
10.00	-50.82	-37.60	0.00	-4147.1	0.00	4147.11	5209.75	2604.88	11544.5	5780.84	0.43	-0.410	0.000	0.727
15.00	-48.85	-37.30	0.00	-3959.1	0.00	3959.10	5139.58	2569.79	11160.2	5588.39	0.98	-0.620	0.000	0.718
20.00	-46.92	-36.97	0.00	-3772.5	0.00	3772.59	5068.05	2534.02	10779.2	5397.62	1.74	-0.832	0.000	0.708
25.00	-45.01	-36.61	0.00	-3587.7	0.00	3587.75	4995.14	2497.57	10401.7	5208.61	2.72	-1.046	0.000	0.698
30.00	-43.14	-36.24	0.00	-3404.6	0.00	3404.69	4920.87	2460.43	10028.0	5021.46	3.94	-1.264	0.000	0.687
35.00	-41.32	-35.82	0.00	-3223.5	0.00	3223.51	4845.22	2422.61	9658.13	4836.24	5.38	-1.483	0.000	0.675
38.75	-40.00	-35.48	0.00	-3089.1	0.00	3089.18	4787.59	2393.79	9383.39	4698.67	6.61	-1.651	0.000	0.666
40.00	-39.21	-35.43	0.00	-3044.8	0.00	3044.82	4768.21	2384.10	9292.33	4653.07	7.05	-1.708	0.000	0.663
45.00	-36.28	-34.96	0.00	-2867.6	0.00	2867.68	3881.96	1940.98	7532.86	3772.03	8.96	-1.932	0.000	0.770
50.00	-34.70	-34.53	0.00	-2692.9	0.00	2692.90	3822.99	1911.49	7248.21	3629.49	11.11	-2.157	0.000	0.751
55.00	-33.14	-34.09	0.00	-2520.2	0.00	2520.27	3762.64	1881.32	6966.27	3488.31	13.50	-2.408	0.000	0.732
60.00	-31.62	-33.65	0.00	-2349.8	0.00	2349.81	3700.92	1850.46	6687.23	3348.59	16.16	-2.660	0.000	0.711
65.00	-30.12	-33.20	0.00	-2181.5	0.00	2181.56	3637.84	1818.92	6411.28	3210.40	19.08	-2.911	0.000	0.688
70.00	-28.66	-32.74	0.00	-2015.5	0.00	2015.55	3573.38	1786.69	6138.59	3073.86	22.26	-3.162	0.000	0.664
75.00	-27.23	-32.14	0.00	-1851.8	0.00	1851.83	3507.56	1753.78	5869.35	2939.04	25.70	-3.412	0.000	0.638
78.50	-26.27	-31.79	0.00	-1739.3	0.00	1739.34	3460.67	1730.33	5683.03	2845.74	28.27	-3.587	0.000	0.619
80.00	-25.57	-31.66	0.00	-1691.6	0.00	1691.65	3440.37	1720.18	5603.74	2806.03	29.41	-3.663	0.000	0.611
83.75	-23.97	-31.24	0.00	-1572.9	0.00	1572.92	2706.01	1353.00	4401.17	2203.86	32.36	-3.848	0.000	0.723
85.00	-23.61	-31.16	0.00	-1533.8	0.00	1533.88	2693.89	1346.95	4351.48	2178.97	33.37	-3.910	0.000	0.713
90.00	-22.40	-30.70	0.00	-1378.0	0.00	1378.06	2644.58	1322.29	4154.08	2080.13	37.61	-4.182	0.000	0.671
95.00	-21.22	-30.23	0.00	-1224.5	0.00	1224.56	2593.89	1296.95	3958.97	1982.43	42.13	-4.447	0.000	0.626
100.00	-20.07	-29.76	0.00	-1073.4	0.00	1073.40	2541.84	1270.92	3766.36	1885.98	46.92	-4.701	0.000	0.578
105.00	-18.98	-29.27	0.00	-924.60	0.00	924.60	2488.42	1244.21	3576.41	1790.86	51.97	-4.942	0.000	0.524
108.00	-15.11	-22.79	0.00	-836.79	0.00	836.79	2455.70	1227.85	3463.79	1734.47	55.12	-5.082	0.000	0.489
110.00	-14.70	-22.62	0.00	-791.21	0.00	791.21	2433.62	1216.81	3389.31	1697.17	57.27	-5.173	0.000	0.473
115.00	-13.78	-22.12	0.00	-678.12	0.00	678.12	2377.46	1188.73	3205.24	1605.00	62.79	-5.386	0.000	0.429
117.00	-13.24	-20.74	0.00	-633.87	0.00	633.87	2354.61	1177.31	3132.50	1568.58	65.06	-5.470	0.000	0.410
119.25	-12.86	-20.53	0.00	-587.19	0.00	587.19	2328.64	1164.32	3051.30	1527.92	67.66	-5.561	0.000	0.390
120.00	-12.63	-20.46	0.00	-571.80	0.00	571.80	2319.93	1159.96	3024.39	1514.44	68.54	-5.592	0.000	0.383
123.50	-11.69	-20.08	0.00	-500.19	0.00	500.19	1729.39	864.70	2245.31	1124.33	72.68	-5.724	0.000	0.452
125.00	-11.45	-19.96	0.00	-470.06	0.00	470.06	1717.71	858.86	2207.21	1105.25	74.48	-5.779	0.000	0.433
130.00	-10.74	-19.50	0.00	-370.26	0.00	370.26	1677.90	838.95	2081.35	1042.22	80.63	-5.974	0.000	0.362
134.50	-10.13	-18.64	0.00	-282.50	0.00	282.50	1640.90	820.45	1969.70	986.31	86.33	-6.126	0.000	0.293
135.00	-10.06	-18.60	0.00	-273.18	0.00	273.18	1636.72	818.36	1957.39	980.15	86.97	-6.141	0.000	0.285
137.00	-7.71	-13.25	0.00	-235.99	0.00	235.99	1619.86	809.93	1908.38	955.61	89.55	-6.200	0.000	0.252
140.00	-7.38	-12.99	0.00	-196.25	0.00	196.25	1594.17	797.08	1835.53	919.13	93.47	-6.278	0.000	0.218
145.00	-6.85	-12.55	0.00	-131.32	0.00	131.32	1550.24	775.12	1715.94	859.24	100.09	-6.383	0.000	0.158
148.00	-4.21	-8.21	0.00	-92.29	0.00	92.29	1523.23	761.62	1645.35	823.90	104.11	-6.432	0.000	0.115
150.00	-4.02	-8.04	0.00	-75.88	0.00	75.88	1504.95	752.48	1598.80	800.59	106.81	-6.458	0.000	0.098
153.00	-3.53	-5.84	0.00	-51.39	0.00	51.39	1477.12	738.56	1529.77	766.02	110.87	-6.489	0.000	0.070
155.00	-3.35	-5.68	0.00	-39.71	0.00	39.71	1458.29	729.15	1484.30	743.26	113.58	-6.505	0.000	0.056
160.00	0.00	-5.26	0.00	-11.32	0.00	11.32	1400.09	700.04	1362.73	682.38	120.40	-6.529	0.000	0.017

Wind Loading - Shaft

Structure: CT03538-S-SBA

Code: EIA/TIA-222-G

10/25/2017

Site Name: South Plymouth

Exposure: C

Height: 160.00 (ft)

Crest Height: 0.00

Base Elev: 0.000 (ft)

Site Class: D - Stiff Soil

Gh: 1.1

Topography: 1

Struct Class: II

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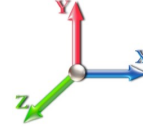


Load Case: 0.9D + 1.6W 93 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60

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	17.879	19.67	410.15	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	402.35	0.650	0.000	5.00	23.690	15.40	484.6	0.0	1181.2
10.00		1.00	0.85	17.879	19.67	394.54	0.650	0.000	5.00	23.235	15.10	475.2	0.0	1158.4
15.00		1.00	0.85	17.879	19.67	386.74	0.650	0.000	5.00	22.780	14.81	465.9	0.0	1135.5
20.00		1.00	0.90	18.971	20.87	390.34	0.650	0.000	5.00	22.325	14.51	484.5	0.0	1112.7
25.00		1.00	0.95	19.883	21.87	391.39	0.650	0.000	5.00	21.871	14.22	497.5	0.0	1089.8
30.00		1.00	0.98	20.661	22.73	390.59	0.650	0.000	5.00	21.416	13.92	506.2	0.0	1066.9
35.00		1.00	1.01	21.343	23.48	388.45	0.650	0.000	5.00	20.961	13.62	511.8	0.0	1044.1
38.75 Bot - Section 2		1.00	1.04	21.805	23.99	386.18	0.650	0.000	3.75	15.422	10.02	384.7	0.0	768.1
40.00		1.00	1.04	21.951	24.15	385.31	0.650	0.000	1.25	5.163	3.36	129.7	0.0	473.9
45.00 Top - Section 1		1.00	1.07	22.502	24.75	381.36	0.650	0.000	5.00	20.368	13.24	524.3	0.0	1868.9
50.00		1.00	1.09	23.007	25.31	382.94	0.650	0.000	5.00	19.913	12.94	524.1	0.0	850.9
55.00		1.00	1.12	23.473	25.82	377.87	0.650	0.000	5.00	19.458	12.65	522.5	0.0	831.4
60.00		1.00	1.14	23.907	26.30	372.32	0.650	0.000	5.00	19.004	12.35	519.7	0.0	811.8
65.00		1.00	1.16	24.313	26.74	366.38	0.650	0.000	5.00	18.549	12.06	515.9	0.0	792.2
70.00		1.00	1.17	24.696	27.17	360.08	0.650	0.000	5.00	18.094	11.76	511.2	0.0	772.6
75.00 Appurtenance(s)		1.00	1.19	25.057	27.56	353.47	0.650	0.000	5.00	17.639	11.47	505.6	0.0	753.0
78.50 Bot - Section 3		1.00	1.20	25.299	27.83	348.67	0.650	0.000	3.50	12.077	7.85	349.5	0.0	515.4
80.00		1.00	1.21	25.400	27.94	346.58	0.650	0.000	1.50	5.187	3.37	150.7	0.0	402.7
83.75 Top - Section 2		1.00	1.22	25.646	28.21	341.25	0.650	0.000	3.75	12.788	8.31	375.2	0.0	992.6
85.00		1.00	1.22	25.726	28.30	344.88	0.650	0.000	1.25	4.206	2.73	123.8	0.0	149.8
90.00		1.00	1.24	26.037	28.64	337.55	0.650	0.000	5.00	16.539	10.75	492.6	0.0	588.9
95.00		1.00	1.25	26.336	28.97	330.01	0.650	0.000	5.00	16.084	10.45	484.6	0.0	572.6
100.00		1.00	1.27	26.621	29.28	322.27	0.650	0.000	5.00	15.629	10.16	476.0	0.0	556.3
105.00		1.00	1.28	26.896	29.59	314.37	0.650	0.000	5.00	15.174	9.86	466.9	0.0	539.9
108.00 Appurtenance(s)		1.00	1.29	27.056	29.76	309.54	0.650	0.000	3.00	8.886	5.78	275.0	0.0	316.1
110.00		1.00	1.29	27.161	29.88	306.29	0.650	0.000	2.00	5.833	3.79	181.2	0.0	207.5
115.00		1.00	1.30	27.416	30.16	298.07	0.650	0.000	5.00	14.264	9.27	447.4	0.0	507.3
117.00 Appurtenance(s)		1.00	1.31	27.516	30.27	294.74	0.650	0.000	2.00	5.578	3.63	175.6	0.0	198.3
119.25 Bot - Section 4		1.00	1.31	27.627	30.39	290.97	0.650	0.000	2.25	6.189	4.02	195.6	0.0	220.0
120.00		1.00	1.32	27.663	30.43	289.71	0.650	0.000	0.75	2.074	1.35	65.6	0.0	131.7
123.50 Top - Section 3		1.00	1.32	27.831	30.61	283.77	0.650	0.000	3.50	9.544	6.20	303.9	0.0	605.9
125.00		1.00	1.33	27.902	30.69	285.74	0.650	0.000	1.50	4.022	2.61	128.4	0.0	114.6
130.00		1.00	1.34	28.133	30.95	277.14	0.650	0.000	5.00	13.111	8.52	422.0	0.0	373.5
134.50 Appurtenance(s)		1.00	1.35	28.336	31.17	269.29	0.650	0.000	4.50	11.411	7.42	369.9	0.0	325.0
135.00		1.00	1.35	28.358	31.19	268.42	0.650	0.000	0.50	1.245	0.81	40.4	0.0	35.5
137.00 Appurtenance(s)		1.00	1.35	28.446	31.29	264.90	0.650	0.000	2.00	4.935	3.21	160.6	0.0	140.5
140.00		1.00	1.36	28.576	31.43	259.59	0.650	0.000	3.00	7.266	4.72	237.5	0.0	206.8
145.00		1.00	1.37	28.788	31.67	250.65	0.650	0.000	5.00	11.746	7.64	386.8	0.0	334.3
148.00 Appurtenance(s)		1.00	1.37	28.912	31.80	245.24	0.650	0.000	3.00	6.829	4.44	225.9	0.0	194.3
150.00		1.00	1.38	28.994	31.89	241.61	0.650	0.000	2.00	4.462	2.90	148.0	0.0	126.9
153.00 Appurtenance(s)		1.00	1.38	29.115	32.03	236.14	0.650	0.000	3.00	6.557	4.26	218.4	0.0	186.5
155.00		1.00	1.39	29.195	32.11	232.48	0.650	0.000	2.00	4.280	2.78	142.9	0.0	121.7
160.00 Appurtenance(s)		1.00	1.40	29.390	32.33	223.25	0.650	0.000	5.00	10.382	6.75	349.1	0.0	295.1
Totals:									160.00			14,957.0		24,670.9

Discrete Appurtenance Forces

Structure: CT03538-S-SBA

Code: EIA/TIA-222-G

10/25/2017

Site Name: South Plymouth

Exposure: C

Height: 160.00 (ft)

Crest Height: 0.00

Base Elev: 0.000 (ft)

Site Class: D - Stiff Soil

Gh: 1.1

Topography: 1

Struct Class: II

Page: 15

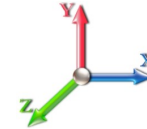


Load Case: 0.9D + 1.6W 93 mph Wind

Iterations 25

Dead Load Factor 0.90

Wind Load Factor 1.60



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	160.00	RRUS 11	3	29.506	32.456	0.71	1.00	5.37	137.70	0.000	3.000	278.74	0.00	836.21
2	160.00	KRY112 144	3	29.506	32.456	0.70	1.00	0.86	29.70	0.000	3.000	44.71	0.00	134.13
3	160.00	Commscope	3	29.506	32.456	0.93	1.00	31.86	245.70	0.000	3.000	1654.67	0.00	4964.01
4	160.00	Ericsson AIR 32	3	29.506	32.456	0.96	1.00	17.50	448.20	0.000	3.000	908.76	0.00	2726.28
5	160.00	AIR 21, 1.3M, B2A B4P	3	29.506	32.456	0.94	1.00	17.08	315.90	0.000	3.000	887.09	0.00	2661.26
6	160.00	Low Profile Platform	1	29.390	32.329	1.00	1.00	22.00	1440.00	0.000	0.000	1137.99	0.00	0.00
7	153.00	Hutton HPD 3.4-4.7	1	29.115	32.026	1.00	1.00	8.92	94.50	0.000	0.000	457.08	0.00	0.00
8	153.00	VHLP-2.6-11	1	29.115	32.026	1.00	1.00	8.43	42.84	0.000	0.000	431.97	0.00	0.00
9	153.00	Lone Star Electronics	1	29.254	32.179	1.00	1.00	2.10	18.00	0.000	3.500	108.12	0.00	378.43
10	153.00	Pipe Mounts	2	29.115	32.026	1.00	1.00	10.00	90.00	0.000	0.000	512.42	0.00	0.00
11	153.00	4 ft Sidearm	1	29.115	32.026	1.00	1.00	3.50	45.00	0.000	0.000	179.35	0.00	0.00
12	153.00	Motorola ODU-A-RF	3	29.115	32.026	1.00	1.00	4.32	28.08	0.000	0.000	221.37	0.00	0.00
13	148.00	ALU 800 MHz RRH	3	28.912	31.803	0.54	0.80	4.00	143.10	0.000	0.000	203.74	0.00	0.00
14	148.00	RFS APXVTM14-C-120	3	28.994	31.893	0.71	0.80	13.54	259.20	0.000	2.000	691.05	0.00	1382.09
15	148.00	RFS APXVSP18-C-A20	3	28.912	31.803	0.74	0.80	17.90	261.90	0.000	0.000	910.87	0.00	0.00
16	148.00	ALU 1900MHz RRH	3	28.912	31.803	0.54	0.80	6.11	118.80	0.000	0.000	310.93	0.00	0.00
17	148.00	ALU TD-RRH8x20-25	3	28.912	31.803	0.55	0.80	6.71	189.00	0.000	0.000	341.28	0.00	0.00
18	148.00	ALU 800 MHz Filter	3	28.912	31.803	0.79	0.80	1.00	27.00	0.000	0.000	50.78	0.00	0.00
19	148.00	RFS ACU-A20-N	4	28.912	31.803	0.63	0.80	0.35	3.60	0.000	0.000	18.01	0.00	0.00
20	148.00	Low Profile Platform	1	28.912	31.803	1.00	1.00	25.00	1080.00	0.000	0.000	1272.12	0.00	0.00
21	137.00	Low Profile Platform	1	28.446	31.290	1.00	1.00	22.00	1350.00	0.000	0.000	1101.42	0.00	0.00
22	137.00	RFS FD9R6004/2C-3	6	28.446	31.290	0.40	0.80	0.86	16.74	0.000	0.000	43.26	0.00	0.00
23	137.00	ALU RRH2X60-AWS	3	28.446	31.290	0.71	0.80	4.70	148.50	0.000	0.000	235.26	0.00	0.00
24	137.00	ALU 2X60-1900	3	28.446	31.290	0.67	0.80	3.79	124.20	0.000	0.000	189.75	0.00	0.00
25	137.00	RFS DB-T1-6Z-8AB-OZ	1	28.446	31.290	0.57	0.80	2.73	17.01	0.000	0.000	136.50	0.00	0.00
26	137.00	Antel BXA-70080-6CF-2	3	28.446	31.290	0.78	0.80	13.41	48.60	0.000	0.000	671.33	0.00	0.00
27	137.00	Commscope	6	28.446	31.290	0.70	0.80	35.70	220.32	0.000	0.000	1787.54	0.00	0.00
28	137.00	Antel BXA-70063-6CF-2	3	28.446	31.290	0.66	0.80	15.08	45.90	0.000	0.000	754.94	0.00	0.00
29	134.50	Pipe Mount	1	28.336	31.169	1.00	1.00	5.00	45.00	0.000	0.000	249.35	0.00	0.00
30	134.50	Bird Technologies CSA	1	28.336	31.169	1.00	1.00	3.81	4.14	0.000	0.000	190.01	0.00	0.00
31	117.00	Pipe Mounts	3	27.516	30.268	1.00	1.00	15.00	135.00	0.000	0.000	726.43	0.00	0.00
32	117.00	RFS APXV18-206517S-C	3	27.516	30.268	0.59	0.80	9.18	71.28	0.000	0.000	444.67	0.00	0.00
33	108.00	Powerwave 21903	6	27.056	29.762	0.67	0.80	1.09	29.70	0.000	0.000	51.84	0.00	0.00
34	108.00	Powerwave LGP21401	6	27.056	29.762	0.40	0.80	3.10	76.14	0.000	0.000	147.43	0.00	0.00
35	108.00	Ericsson RRU 11	6	27.056	29.762	0.54	0.80	8.10	275.40	0.000	0.000	385.92	0.00	0.00
36	108.00	AM-X-CD-17-65-00T-RET	3	27.056	29.762	0.60	0.80	14.44	130.95	0.000	0.000	687.43	0.00	0.00
37	108.00	7770	6	27.056	29.762	0.66	0.80	21.91	189.00	0.000	0.000	1043.43	0.00	0.00
38	108.00	DUO1417- 8686-40	3	27.056	29.762	0.74	0.80	12.78	54.81	0.000	0.000	608.78	0.00	0.00
39	108.00	EPBQ-652L8H6-L2	3	27.056	29.762	0.57	0.80	26.77	267.30	0.000	0.000	1274.76	0.00	0.00
40	108.00	Andrew	3	27.056	29.762	0.78	0.80	0.12	2.97	0.000	0.000	5.60	0.00	0.00
41	108.00	Raycap DC6-48-60-18-8F	2	27.056	29.762	0.80	0.80	1.47	57.24	0.000	0.000	70.10	0.00	0.00
42	108.00	Low Profile Platform	1	27.056	29.762	1.00	1.00	22.00	1350.00	0.000	0.000	1047.62	0.00	0.00
43	108.00	Powerwave 7020 RET	12	27.056	29.762	0.80	0.80	3.84	23.76	0.000	0.000	182.86	0.00	0.00
44	108.00	Ericsson RRUS 32 B2	3	27.056	29.762	0.54	0.80	2.65	207.90	0.000	0.000	126.34	0.00	0.00
45	108.00	Ericsson B14 4478 RRU	3	27.056	29.762	0.54	0.80	5.07	156.60	0.000	0.000	241.20	0.00	0.00
46	75.00	Standoff	1	25.057	27.563	1.00	1.00	2.63	18.00	0.000	0.000	115.98	0.00	0.00
47	75.00	GPS	1	25.057	27.563	1.00	1.00	0.14	1.53	0.000	0.000	6.17	0.00	0.00

Discrete Appurtenance Forces

Structure:	CT03538-S-SBA	Code:	EIA/TIA-222-G	10/25/2017
Site Name:	South Plymouth	Exposure:	C	
Height:	160.00 (ft)	Crest Height:	0.00	
Base Elev:	0.000 (ft)	Site Class:	D - Stiff Soil	
Gh:	1.1	Topography:	1	
		Struct Class:	II	Page: 16



Totals:	10,086.21	23,146.94
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Total Applied Force Summary

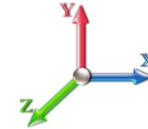
Structure: CT03538-S-SBA	Code: EIA/TIA-222-G	10/25/2017
Site Name: South Plymouth	Exposure: C	
Height: 160.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II
		Page: 17



Load Case: 0.9D + 1.6W 93 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



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		484.55	1421.45	0.00	0.00
10.00		475.25	1398.59	0.00	0.00
15.00		465.94	1375.73	0.00	0.00
20.00		484.51	1352.87	0.00	0.00
25.00		497.47	1330.01	0.00	0.00
30.00		506.18	1307.15	0.00	0.00
35.00		511.77	1284.29	0.00	0.00
38.75		384.70	948.21	0.00	0.00
40.00		129.66	533.91	0.00	0.00
45.00		524.33	2109.11	0.00	0.00
50.00		524.12	1091.16	0.00	0.00
55.00		522.52	1071.56	0.00	0.00
60.00		519.74	1051.97	0.00	0.00
65.00		515.92	1032.37	0.00	0.00
70.00		511.18	1012.78	0.00	0.00
75.00	(2) attachments	627.78	1012.71	0.00	0.00
78.50		349.52	683.06	0.00	0.00
80.00		150.71	474.56	0.00	0.00
83.75		375.18	1172.27	0.00	0.00
85.00		123.78	209.66	0.00	0.00
90.00		492.64	828.42	0.00	0.00
95.00		484.57	812.09	0.00	0.00
100.00		475.98	795.76	0.00	0.00
105.00		466.89	779.43	0.00	0.00
108.00	(57) attachments	6148.35	3281.59	0.00	0.00
110.00		181.25	277.36	0.00	0.00
115.00		447.39	681.98	0.00	0.00
117.00	(6) attachments	1346.69	474.50	0.00	0.00
119.25		195.59	285.99	0.00	0.00
120.00		65.64	153.70	0.00	0.00
123.50		303.87	708.53	0.00	0.00
125.00		128.38	158.57	0.00	0.00
130.00		421.97	520.08	0.00	0.00
134.50	(2) attachments	809.26	506.05	0.00	0.00
135.00		40.39	49.88	0.00	0.00
137.00	(26) attachments	5080.58	2169.48	0.00	0.00
140.00		237.54	256.74	0.00	0.00
145.00		386.84	417.44	0.00	0.00
148.00	(23) attachments	4024.66	2326.80	0.00	1382.09
150.00		148.00	155.43	0.00	0.00
153.00	(9) attachments	2128.69	547.65	0.00	378.43
155.00		142.95	148.12	0.00	0.00
160.00	(16) attachments	5261.02	2978.35	0.00	11321.91
Totals:		38,103.97	41,187.36	0.00	13,082.43

Calculated Forces

Structure: CT03538-S-SBA

Code: EIA/TIA-222-G

10/25/2017

Site Name: South Plymouth

Exposure: C

Height: 160.00 (ft)

Crest Height: 0.00

Base Elev: 0.000 (ft)

Site Class: D - Stiff Soil

Gh: 1.1

Topography: 1

Struct Class: II

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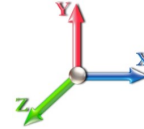


Load Case: 0.9D + 1.6W 93 mph Wind

Iterations 25

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	-41.12	-38.18	0.00	-4476.0	0.00	4476.00	5345.98	2672.99	12322.4	6170.37	0.00	0.000	0.000	0.733
5.00	-39.56	-37.83	0.00	-4285.1	0.00	4285.11	5278.55	2639.27	11931.9	5974.86	0.11	-0.201	0.000	0.725
10.00	-38.03	-37.48	0.00	-4095.9	0.00	4095.96	5209.75	2604.88	11544.5	5780.84	0.43	-0.405	0.000	0.716
15.00	-36.53	-37.14	0.00	-3908.5	0.00	3908.54	5139.58	2569.79	11160.2	5588.39	0.96	-0.612	0.000	0.707
20.00	-35.05	-36.77	0.00	-3722.8	0.00	3722.85	5068.05	2534.02	10779.2	5397.62	1.72	-0.821	0.000	0.697
25.00	-33.59	-36.37	0.00	-3539.0	0.00	3539.02	4995.14	2497.57	10401.7	5208.61	2.69	-1.033	0.000	0.686
30.00	-32.16	-35.96	0.00	-3357.1	0.00	3357.16	4920.87	2460.43	10028.0	5021.46	3.89	-1.248	0.000	0.675
35.00	-30.77	-35.52	0.00	-3177.3	0.00	3177.35	4845.22	2422.61	9658.13	4836.24	5.31	-1.464	0.000	0.664
38.75	-29.76	-35.17	0.00	-3044.1	0.00	3044.14	4787.59	2393.79	9383.39	4698.67	6.53	-1.629	0.000	0.654
40.00	-29.15	-35.10	0.00	-3000.1	0.00	3000.18	4768.21	2384.10	9292.33	4653.07	6.96	-1.686	0.000	0.651
45.00	-26.92	-34.61	0.00	-2824.7	0.00	2824.70	3881.96	1940.98	7532.86	3772.03	8.85	-1.906	0.000	0.756
50.00	-25.71	-34.15	0.00	-2651.6	0.00	2651.66	3822.99	1911.49	7248.21	3629.49	10.96	-2.128	0.000	0.738
55.00	-24.52	-33.70	0.00	-2480.8	0.00	2480.89	3762.64	1881.32	6966.27	3488.31	13.32	-2.375	0.000	0.718
60.00	-23.34	-33.23	0.00	-2312.4	0.00	2312.42	3700.92	1850.46	6687.23	3348.59	15.94	-2.623	0.000	0.697
65.00	-22.20	-32.76	0.00	-2146.2	0.00	2146.27	3637.84	1818.92	6411.28	3210.40	18.82	-2.870	0.000	0.675
70.00	-21.07	-32.29	0.00	-1982.4	0.00	1982.46	3573.38	1786.69	6138.59	3073.86	21.96	-3.117	0.000	0.651
75.00	-19.98	-31.68	0.00	-1821.0	0.00	1821.01	3507.56	1753.78	5869.35	2939.04	25.36	-3.362	0.000	0.626
78.50	-19.25	-31.33	0.00	-1710.1	0.00	1710.14	3460.67	1730.33	5683.03	2845.74	27.88	-3.535	0.000	0.607
80.00	-18.72	-31.19	0.00	-1663.1	0.00	1663.15	3440.37	1720.18	5603.74	2806.03	29.01	-3.609	0.000	0.598
83.75	-17.51	-30.78	0.00	-1546.1	0.00	1546.18	2706.01	1353.00	4401.17	2203.86	31.91	-3.791	0.000	0.709
85.00	-17.22	-30.69	0.00	-1507.7	0.00	1507.70	2693.89	1346.95	4351.48	2178.97	32.91	-3.853	0.000	0.699
90.00	-16.29	-30.22	0.00	-1354.2	0.00	1354.25	2644.58	1322.29	4154.08	2080.13	37.09	-4.120	0.000	0.658
95.00	-15.38	-29.74	0.00	-1203.1	0.00	1203.16	2593.89	1296.95	3958.97	1982.43	41.54	-4.380	0.000	0.613
100.00	-14.50	-29.27	0.00	-1054.4	0.00	1054.45	2541.84	1270.92	3766.36	1885.98	46.26	-4.629	0.000	0.565
105.00	-13.67	-28.78	0.00	-908.11	0.00	908.11	2488.42	1244.21	3576.41	1790.86	51.23	-4.866	0.000	0.513
108.00	-10.89	-22.40	0.00	-821.76	0.00	821.76	2455.70	1227.85	3463.79	1734.47	54.33	-5.003	0.000	0.479
110.00	-10.57	-22.22	0.00	-776.97	0.00	776.97	2433.62	1216.81	3389.31	1697.17	56.45	-5.093	0.000	0.462
115.00	-9.87	-21.74	0.00	-665.88	0.00	665.88	2377.46	1188.73	3205.24	1605.00	61.89	-5.302	0.000	0.419
117.00	-9.50	-20.37	0.00	-622.41	0.00	622.41	2354.61	1177.31	3132.50	1568.58	64.12	-5.385	0.000	0.401
119.25	-9.21	-20.15	0.00	-576.58	0.00	576.58	2328.64	1164.32	3051.30	1527.92	66.68	-5.474	0.000	0.382
120.00	-9.04	-20.09	0.00	-561.47	0.00	561.47	2319.93	1159.96	3024.39	1514.44	67.54	-5.504	0.000	0.375
123.50	-8.33	-19.73	0.00	-491.17	0.00	491.17	1729.39	864.70	2245.31	1124.33	71.62	-5.634	0.000	0.442
125.00	-8.14	-19.60	0.00	-461.58	0.00	461.58	1717.71	858.86	2207.21	1105.25	73.40	-5.689	0.000	0.423
130.00	-7.61	-19.15	0.00	-363.56	0.00	363.56	1677.90	838.95	2081.35	1042.22	79.45	-5.880	0.000	0.354
134.50	-7.16	-18.31	0.00	-277.37	0.00	277.37	1640.90	820.45	1969.70	986.31	85.06	-6.029	0.000	0.286
135.00	-7.11	-18.26	0.00	-268.22	0.00	268.22	1636.72	818.36	1957.39	980.15	85.69	-6.044	0.000	0.278
137.00	-5.47	-12.99	0.00	-231.69	0.00	231.69	1619.86	809.93	1908.38	955.61	88.23	-6.101	0.000	0.246
140.00	-5.22	-12.73	0.00	-192.72	0.00	192.72	1594.17	797.08	1835.53	919.13	92.08	-6.178	0.000	0.213
145.00	-4.83	-12.31	0.00	-129.05	0.00	129.05	1550.24	775.12	1715.94	859.24	98.60	-6.281	0.000	0.154
148.00	-2.96	-8.06	0.00	-90.74	0.00	90.74	1523.23	761.62	1645.35	823.90	102.56	-6.329	0.000	0.112
150.00	-2.82	-7.89	0.00	-74.62	0.00	74.62	1504.95	752.48	1598.80	800.59	105.21	-6.355	0.000	0.095
153.00	-2.51	-5.72	0.00	-50.56	0.00	50.56	1477.12	738.56	1529.77	766.02	109.20	-6.386	0.000	0.068
155.00	-2.37	-5.56	0.00	-39.13	0.00	39.13	1458.29	729.15	1484.30	743.26	111.88	-6.402	0.000	0.054
160.00	0.00	-5.26	0.00	-11.32	0.00	11.32	1400.09	700.04	1362.73	682.38	118.58	-6.425	0.000	0.017

Wind Loading - Shaft

Structure: CT03538-S-SBA

Code: EIA/TIA-222-G

10/25/2017

Site Name: South Plymouth

Exposure: C

Height: 160.00 (ft)

Crest Height: 0.00

Base Elev: 0.000 (ft)

Site Class: D - Stiff Soil

Gh: 1.1

Topography: 1

Struct Class: II

Page: 19

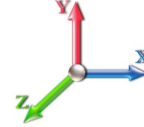


Load Case: 1.2D + 1.0Di + 1.0Wi 40 mph Wind

Iterations 24

Dead Load Factor 1.20

Wind Load Factor 1.00



Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.85	3.308	3.64	0.00	1.200	0.000	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	1.656	5.00	25.070	30.08	109.5	592.4	2167.4
10.00		1.00	0.85	3.308	3.64	0.00	1.200	1.775	5.00	24.714	29.66	107.9	624.3	2168.8
15.00		1.00	0.85	3.308	3.64	0.00	1.200	1.848	5.00	24.321	29.18	106.2	638.5	2152.5
20.00		1.00	0.90	3.509	3.86	0.00	1.200	1.902	5.00	23.911	28.69	110.8	645.0	2128.5
25.00		1.00	0.95	3.678	4.05	0.00	1.200	1.945	5.00	23.492	28.19	114.1	646.9	2100.0
30.00		1.00	0.98	3.822	4.20	0.00	1.200	1.981	5.00	23.066	27.68	116.4	645.9	2068.5
35.00		1.00	1.01	3.948	4.34	0.00	1.200	2.012	5.00	22.637	27.16	118.0	642.8	2034.9
38.75 Bot - Section 2		1.00	1.04	4.034	4.44	0.00	1.200	2.032	3.75	16.692	20.03	88.9	479.5	1503.6
40.00		1.00	1.04	4.061	4.47	0.00	1.200	2.039	1.25	5.588	6.71	30.0	161.9	793.7
45.00 Top - Section 1		1.00	1.07	4.163	4.58	0.00	1.200	2.063	5.00	22.087	26.50	121.4	641.7	3133.6
50.00		1.00	1.09	4.256	4.68	0.00	1.200	2.085	5.00	21.651	25.98	121.6	634.7	1769.3
55.00		1.00	1.12	4.342	4.78	0.00	1.200	2.105	5.00	21.212	25.45	121.6	626.9	1735.3
60.00		1.00	1.14	4.423	4.86	0.00	1.200	2.123	5.00	20.773	24.93	121.3	618.3	1700.6
65.00		1.00	1.16	4.498	4.95	0.00	1.200	2.140	5.00	20.332	24.40	120.7	609.1	1665.3
70.00		1.00	1.17	4.569	5.03	0.00	1.200	2.156	5.00	19.891	23.87	119.9	599.3	1629.4
75.00 Appurtenance(s)		1.00	1.19	4.635	5.10	0.00	1.200	2.171	5.00	19.448	23.34	119.0	589.0	1593.0
78.50 Bot - Section 3		1.00	1.20	4.680	5.15	0.00	1.200	2.181	3.50	13.349	16.02	82.5	407.1	1094.3
80.00		1.00	1.21	4.699	5.17	0.00	1.200	2.185	1.50	5.733	6.88	35.6	176.1	713.0
83.75 Top - Section 2		1.00	1.22	4.744	5.22	0.00	1.200	2.195	3.75	14.160	16.99	88.7	433.9	1757.5
85.00		1.00	1.22	4.759	5.24	0.00	1.200	2.198	1.25	4.664	5.60	29.3	143.9	343.7
90.00		1.00	1.24	4.817	5.30	0.00	1.200	2.211	5.00	18.381	22.06	116.9	564.4	1349.6
95.00		1.00	1.25	4.872	5.36	0.00	1.200	2.223	5.00	17.936	21.52	115.3	552.6	1316.1
100.00		1.00	1.27	4.925	5.42	0.00	1.200	2.234	5.00	17.491	20.99	113.7	540.5	1282.2
105.00		1.00	1.28	4.976	5.47	0.00	1.200	2.245	5.00	17.045	20.45	111.9	528.2	1248.1
108.00 Appurtenance(s)		1.00	1.29	5.005	5.51	0.00	1.200	2.252	3.00	10.012	12.01	66.1	312.4	733.9
110.00		1.00	1.29	5.025	5.53	0.00	1.200	2.256	2.00	6.585	7.90	43.7	206.2	482.9
115.00		1.00	1.30	5.072	5.58	0.00	1.200	2.266	5.00	16.152	19.38	108.1	502.8	1179.2
117.00 Appurtenance(s)		1.00	1.31	5.090	5.60	0.00	1.200	2.270	2.00	6.335	7.60	42.6	199.0	463.5
119.25 Bot - Section 4		1.00	1.31	5.111	5.62	0.00	1.200	2.274	2.25	7.041	8.45	47.5	221.3	514.6
120.00		1.00	1.32	5.117	5.63	0.00	1.200	2.276	0.75	2.359	2.83	15.9	74.5	250.1
123.50 Top - Section 3		1.00	1.32	5.149	5.66	0.00	1.200	2.282	3.50	10.875	13.05	73.9	341.3	1149.2
125.00		1.00	1.33	5.162	5.68	0.00	1.200	2.285	1.50	4.593	5.51	31.3	145.1	297.9
130.00		1.00	1.34	5.204	5.72	0.00	1.200	2.294	5.00	15.023	18.03	103.2	470.2	968.2
134.50 Appurtenance(s)		1.00	1.35	5.242	5.77	0.00	1.200	2.302	4.50	13.137	15.76	90.9	412.2	845.4
135.00		1.00	1.35	5.246	5.77	0.00	1.200	2.303	0.50	1.437	1.72	10.0	45.7	92.9
137.00 Appurtenance(s)		1.00	1.35	5.262	5.79	0.00	1.200	2.306	2.00	5.704	6.84	39.6	180.4	367.8
140.00		1.00	1.36	5.286	5.81	0.00	1.200	2.311	3.00	8.422	10.11	58.8	265.7	541.5
145.00		1.00	1.37	5.325	5.86	0.00	1.200	2.319	5.00	13.679	16.41	96.2	428.9	874.6
148.00 Appurtenance(s)		1.00	1.37	5.348	5.88	0.00	1.200	2.324	3.00	7.991	9.59	56.4	252.2	511.3
150.00		1.00	1.38	5.364	5.90	0.00	1.200	2.327	2.00	5.238	6.29	37.1	165.9	335.1
153.00 Appurtenance(s)		1.00	1.38	5.386	5.92	0.00	1.200	2.332	3.00	7.722	9.27	54.9	243.7	492.3
155.00		1.00	1.39	5.401	5.94	0.00	1.200	2.335	2.00	5.058	6.07	36.1	160.2	322.5
160.00 Appurtenance(s)		1.00	1.40	5.437	5.98	0.00	1.200	2.342	5.00	12.333	14.80	88.5	386.1	779.5
Totals:									160.00			3,541.7		50,651.3

Discrete Appurtenance Forces

Structure: CT03538-S-SBA

Code: EIA/TIA-222-G

10/25/2017

Site Name: South Plymouth

Exposure: C

Height: 160.00 (ft)

Crest Height: 0.00

Base Elev: 0.000 (ft)

Site Class: D - Stiff Soil

Gh: 1.1

Topography: 1

Struct Class: II

Page: 20

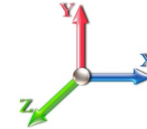


Load Case: 1.2D + 1.0Di + 1.0Wi 40 mph Wind

Iterations 24

Dead Load Factor 1.20

Wind Load Factor 1.00



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	160.00	RRUS 11	3	5.458	6.004	0.76	1.00	7.68	426.56	0.000	3.000	46.13	0.00	138.39
2	160.00	KRY112 144	3	5.458	6.004	0.75	1.00	2.36	73.70	0.000	3.000	14.15	0.00	42.46
3	160.00	Commscope	3	5.458	6.004	0.96	1.00	45.75	1776.31	0.000	3.000	274.72	0.00	824.15
4	160.00	Ericsson AIR 32	3	5.458	6.004	1.00	1.00	26.91	2621.50	0.000	3.000	161.56	0.00	484.67
5	160.00	AIR 21, 1.3M, B2A B4P	3	5.458	6.004	0.97	1.00	22.06	1147.06	0.000	3.000	132.47	0.00	397.41
6	160.00	Low Profile Platform	1	5.437	5.981	1.00	1.00	45.70	3393.62	0.000	0.000	273.33	0.00	0.00
7	153.00	Hutton HPD 3.4-4.7	1	5.386	5.925	1.00	1.00	9.75	240.79	0.000	0.000	57.78	0.00	0.00
8	153.00	VHLP-2.6-11	1	5.386	5.925	1.00	1.00	10.71	238.43	0.000	0.000	63.45	0.00	0.00
9	153.00	Lone Star Electronics	1	5.412	5.953	1.00	1.00	4.60	69.36	0.000	3.500	27.40	0.00	95.90
10	153.00	Pipe Mounts	2	5.386	5.925	1.00	1.00	19.33	131.92	0.000	0.000	114.50	0.00	0.00
11	153.00	4 ft Sidearm	1	5.386	5.925	1.00	1.00	14.18	160.16	0.000	0.000	84.00	0.00	0.00
12	153.00	Motorola ODU-A-RF	3	5.386	5.925	1.00	1.00	7.76	166.64	0.000	0.000	45.96	0.00	0.00
13	148.00	ALU 800 MHz RRH	3	5.348	5.883	0.00	0.80	12.04	422.94	0.000	0.000	70.83	0.00	0.00
14	148.00	RFS APXVTM14-C-120	3	5.364	5.900	0.75	0.80	17.72	1029.96	0.000	2.000	104.54	0.00	209.08
15	148.00	RFS APXVSP18-C-A20	3	5.348	5.883	0.78	0.80	27.61	1495.73	0.000	0.000	162.45	0.00	0.00
16	148.00	ALU 1900MHz RRH	3	5.348	5.883	0.54	0.80	9.09	500.87	0.000	0.000	53.46	0.00	0.00
17	148.00	ALU TD-RRH8x20-25	3	5.348	5.883	0.60	0.80	9.29	724.39	0.000	0.000	54.65	0.00	0.00
18	148.00	ALU 800 MHz Filter	3	5.348	5.883	0.00	0.80	2.64	142.56	0.000	0.000	15.52	0.00	0.00
19	148.00	RFS ACU-A20-N	4	5.348	5.883	0.00	0.80	2.14	22.48	0.000	0.000	12.59	0.00	0.00
20	148.00	Low Profile Platform	1	5.348	5.883	1.00	1.00	52.89	2534.30	0.000	0.000	311.15	0.00	0.00
21	137.00	Low Profile Platform	1	5.262	5.788	1.00	1.00	45.34	3229.47	0.000	0.000	262.43	0.00	0.00
22	137.00	RFS FD9R6004/2C-3	6	5.262	5.788	0.40	0.80	2.27	72.15	0.000	0.000	13.14	0.00	0.00
23	137.00	ALU RRH2X60-AWS	3	5.262	5.788	0.75	0.80	6.92	558.96	0.000	0.000	40.03	0.00	0.00
24	137.00	ALU 2X60-1900	3	5.262	5.788	0.71	0.80	5.73	463.18	0.000	0.000	33.15	0.00	0.00
25	137.00	RFS DB-T1-6Z-8AB-OZ	1	5.262	5.788	0.60	0.80	3.59	223.67	0.000	0.000	20.77	0.00	0.00
26	137.00	Antel BXA-70080-6CF-2	3	5.262	5.788	0.82	0.80	21.77	458.07	0.000	0.000	126.04	0.00	0.00
27	137.00	Commscope	6	5.262	5.788	0.74	0.80	54.79	1388.60	0.000	0.000	317.13	0.00	0.00
28	137.00	Antel BXA-70063-6CF-2	3	5.262	5.788	0.70	0.80	23.70	521.53	0.000	0.000	137.19	0.00	0.00
29	134.50	Pipe Mount	1	5.242	5.766	1.00	1.00	9.60	65.24	0.000	0.000	55.37	0.00	0.00
30	134.50	Bird Technologies CSA	1	5.242	5.766	1.00	1.00	38.80	132.19	0.000	0.000	223.73	0.00	0.00
31	117.00	Pipe Mounts	3	5.090	5.599	1.00	1.00	28.62	193.43	0.000	0.000	160.25	0.00	0.00
32	117.00	RFS APXV18-206517S-C	3	5.090	5.599	0.60	0.80	14.87	377.52	0.000	0.000	83.24	0.00	0.00
33	108.00	Powerwave 21903	6	5.005	5.506	0.71	0.80	3.35	90.44	0.000	0.000	18.42	0.00	0.00
34	108.00	Powerwave LGP21401	6	5.005	5.506	0.40	0.80	5.68	252.47	0.000	0.000	31.29	0.00	0.00
35	108.00	Ericsson RRU 11	6	5.005	5.506	0.54	0.80	10.73	830.70	0.000	0.000	59.09	0.00	0.00
36	108.00	AM-X-CD-17-65-00T-RET	3	5.005	5.506	0.60	0.80	20.92	663.23	0.000	0.000	115.20	0.00	0.00
37	108.00	7770	6	5.005	5.506	0.70	0.80	29.15	1368.52	0.000	0.000	160.48	0.00	0.00
38	108.00	DUO1417- 8686-40	3	5.005	5.506	0.78	0.80	16.63	760.50	0.000	0.000	91.54	0.00	0.00
39	108.00	EPBQ-652L8H6-L2	3	5.005	5.506	0.57	0.80	30.51	1659.26	0.000	0.000	167.98	0.00	0.00
40	108.00	Andrew	3	5.005	5.506	0.80	0.80	0.72	10.49	0.000	0.000	3.94	0.00	0.00
41	108.00	Raycap DC6-48-60-18-8F	2	5.005	5.506	0.80	0.80	2.38	200.46	0.000	0.000	13.08	0.00	0.00
42	108.00	Low Profile Platform	1	5.005	5.506	1.00	1.00	44.79	3188.82	0.000	0.000	246.59	0.00	0.00
43	108.00	Powerwave 7020 RET	12	5.005	5.506	0.80	0.80	9.84	155.24	0.000	0.000	54.16	0.00	0.00
44	108.00	Ericsson RRUS 32 B2	3	5.005	5.506	0.54	0.80	3.89	483.39	0.000	0.000	21.41	0.00	0.00
45	108.00	Ericsson B14 4478 RRU	3	5.005	5.506	0.54	0.80	6.59	602.15	0.000	0.000	36.26	0.00	0.00
46	75.00	Standoff	1	4.635	5.099	1.00	1.00	10.06	43.94	0.000	0.000	51.27	0.00	0.00
47	75.00	GPS	1	4.635	5.099	1.00	1.00	0.51	8.67	0.000	0.000	2.62	0.00	0.00

Discrete Appurtenance Forces

Structure:	CT03538-S-SBA	Code:	EIA/TIA-222-G	10/25/2017
Site Name:	South Plymouth	Exposure:	C	
Height:	160.00 (ft)	Crest Height:	0.00	
Base Elev:	0.000 (ft)	Site Class:	D - Stiff Soil	
Gh:	1.1	Topography:	1	
		Struct Class:	II	Page: 21



Totals:	35,321.55	4,626.42
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Total Applied Force Summary

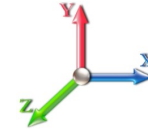
Structure: CT03538-S-SBA	Code: EIA/TIA-222-G	10/25/2017	
Site Name: South Plymouth	Exposure: C		
Height: 160.00 (ft)	Crest Height: 0.00		
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil		
Gh: 1.1	Topography: 1	Struct Class: II	Page: 22



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

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 24

Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00		0.00	0.00	0.00	0.00
5.00		109.45	2487.70	0.00	0.00
10.00		107.90	2489.08	0.00	0.00
15.00		106.18	2472.82	0.00	0.00
20.00		110.76	2448.79	0.00	0.00
25.00		114.06	2420.27	0.00	0.00
30.00		116.38	2388.78	0.00	0.00
35.00		117.98	2355.16	0.00	0.00
38.75		88.88	1743.79	0.00	0.00
40.00		29.95	873.78	0.00	0.00
45.00		121.37	3453.83	0.00	0.00
50.00		121.63	2089.60	0.00	0.00
55.00		121.59	2055.63	0.00	0.00
60.00		121.27	2020.91	0.00	0.00
65.00		120.71	1985.56	0.00	0.00
70.00		119.95	1949.65	0.00	0.00
75.00	(2) attachments	172.89	1965.85	0.00	0.00
78.50		82.47	1317.83	0.00	0.00
80.00		35.56	808.81	0.00	0.00
83.75		88.68	1996.96	0.00	0.00
85.00		29.30	423.49	0.00	0.00
90.00		116.87	1668.91	0.00	0.00
95.00		115.35	1635.39	0.00	0.00
100.00		113.70	1601.56	0.00	0.00
105.00		111.95	1567.45	0.00	0.00
108.00	(57) attachments	1085.60	11191.19	0.00	0.00
110.00		43.67	576.06	0.00	0.00
115.00		108.14	1412.09	0.00	0.00
117.00	(6) attachments	286.05	1127.61	0.00	0.00
119.25		47.50	602.58	0.00	0.00
120.00		15.93	279.46	0.00	0.00
123.50		73.91	1286.04	0.00	0.00
125.00		31.30	356.52	0.00	0.00
130.00		103.20	1163.65	0.00	0.00
134.50	(2) attachments	370.00	1218.81	0.00	0.00
135.00		9.95	112.17	0.00	0.00
137.00	(26) attachments	989.49	7360.35	0.00	0.00
140.00		58.77	608.00	0.00	0.00
145.00		96.16	985.45	0.00	0.00
148.00	(23) attachments	841.60	7451.07	0.00	209.08
150.00		37.08	373.14	0.00	0.00
153.00	(9) attachments	447.99	1556.66	0.00	95.90
155.00		36.06	357.69	0.00	0.00
160.00	(16) attachments	990.87	10306.38	0.00	1887.08
Totals:		8,168.09	94,546.51	0.00	2,192.06

Calculated Forces

Structure: CT03538-S-SBA

Code: EIA/TIA-222-G

10/25/2017

Site Name: South Plymouth

Exposure: C

Height: 160.00 (ft)

Crest Height: 0.00

Base Elev: 0.000 (ft)

Site Class: D - Stiff Soil

Gh: 1.1

Topography: 1

Struct Class: II

Page: 23



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

Iterations 24

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	-94.54	-8.21	0.00	-1009.1	0.00	1009.18	5345.98	2672.99	12322.4	6170.37	0.00	0.000	0.000	0.181
5.00	-92.05	-8.17	0.00	-968.16	0.00	968.16	5278.55	2639.27	11931.9	5974.86	0.02	-0.045	0.000	0.179
10.00	-89.55	-8.13	0.00	-927.31	0.00	927.31	5209.75	2604.88	11544.5	5780.84	0.10	-0.092	0.000	0.178
15.00	-87.07	-8.09	0.00	-886.66	0.00	886.66	5139.58	2569.79	11160.2	5588.39	0.22	-0.138	0.000	0.176
20.00	-84.62	-8.04	0.00	-846.21	0.00	846.21	5068.05	2534.02	10779.2	5397.62	0.39	-0.186	0.000	0.173
25.00	-82.19	-7.99	0.00	-805.99	0.00	805.99	4995.14	2497.57	10401.7	5208.61	0.61	-0.234	0.000	0.171
30.00	-79.80	-7.93	0.00	-766.03	0.00	766.03	4920.87	2460.43	10028.0	5021.46	0.88	-0.283	0.000	0.169
35.00	-77.44	-7.86	0.00	-726.37	0.00	726.37	4845.22	2422.61	9658.13	4836.24	1.20	-0.332	0.000	0.166
38.75	-75.69	-7.79	0.00	-696.90	0.00	696.90	4787.59	2393.79	9383.39	4698.67	1.48	-0.370	0.000	0.164
40.00	-74.81	-7.80	0.00	-687.16	0.00	687.16	4768.21	2384.10	9292.33	4653.07	1.58	-0.383	0.000	0.163
45.00	-71.35	-7.72	0.00	-648.16	0.00	648.16	3881.96	1940.98	7532.86	3772.03	2.01	-0.434	0.000	0.190
50.00	-69.26	-7.64	0.00	-609.57	0.00	609.57	3822.99	1911.49	7248.21	3629.49	2.49	-0.485	0.000	0.186
55.00	-67.20	-7.57	0.00	-571.35	0.00	571.35	3762.64	1881.32	6966.27	3488.31	3.03	-0.541	0.000	0.182
60.00	-65.17	-7.49	0.00	-533.50	0.00	533.50	3700.92	1850.46	6687.23	3348.59	3.62	-0.599	0.000	0.177
65.00	-63.18	-7.42	0.00	-496.02	0.00	496.02	3637.84	1818.92	6411.28	3210.40	4.28	-0.656	0.000	0.172
70.00	-61.22	-7.33	0.00	-458.95	0.00	458.95	3573.38	1786.69	6138.59	3073.86	5.00	-0.713	0.000	0.166
75.00	-59.25	-7.18	0.00	-422.29	0.00	422.29	3507.56	1753.78	5869.35	2939.04	5.78	-0.770	0.000	0.161
78.50	-57.93	-7.11	0.00	-397.14	0.00	397.14	3460.67	1730.33	5683.03	2845.74	6.36	-0.810	0.000	0.156
80.00	-57.12	-7.10	0.00	-386.47	0.00	386.47	3440.37	1720.18	5603.74	2806.03	6.61	-0.827	0.000	0.154
83.75	-55.12	-7.00	0.00	-359.87	0.00	359.87	2706.01	1353.00	4401.17	2203.86	7.28	-0.869	0.000	0.184
85.00	-54.69	-7.01	0.00	-351.11	0.00	351.11	2693.89	1346.95	4351.48	2178.97	7.51	-0.884	0.000	0.181
90.00	-53.02	-6.92	0.00	-316.08	0.00	316.08	2644.58	1322.29	4154.08	2080.13	8.47	-0.946	0.000	0.172
95.00	-51.38	-6.83	0.00	-281.49	0.00	281.49	2593.89	1296.95	3958.97	1982.43	9.49	-1.007	0.000	0.162
100.00	-49.77	-6.74	0.00	-247.34	0.00	247.34	2541.84	1270.92	3766.36	1885.98	10.58	-1.065	0.000	0.151
105.00	-48.20	-6.63	0.00	-213.66	0.00	213.66	2488.42	1244.21	3576.41	1790.86	11.72	-1.121	0.000	0.139
108.00	-37.03	-5.34	0.00	-193.77	0.00	193.77	2455.70	1227.85	3463.79	1734.47	12.44	-1.153	0.000	0.127
110.00	-36.45	-5.31	0.00	-183.09	0.00	183.09	2433.62	1216.81	3389.31	1697.17	12.93	-1.174	0.000	0.123
115.00	-35.04	-5.19	0.00	-156.55	0.00	156.55	2377.46	1188.73	3205.24	1605.00	14.18	-1.223	0.000	0.112
117.00	-33.92	-4.89	0.00	-146.17	0.00	146.17	2354.61	1177.31	3132.50	1568.58	14.70	-1.243	0.000	0.108
119.25	-33.32	-4.84	0.00	-135.16	0.00	135.16	2328.64	1164.32	3051.30	1527.92	15.29	-1.264	0.000	0.103
120.00	-33.04	-4.83	0.00	-131.53	0.00	131.53	2319.93	1159.96	3024.39	1514.44	15.49	-1.271	0.000	0.101
123.50	-31.75	-4.74	0.00	-114.63	0.00	114.63	1729.39	864.70	2245.31	1124.33	16.43	-1.301	0.000	0.120
125.00	-31.39	-4.71	0.00	-107.52	0.00	107.52	1717.71	858.86	2207.21	1105.25	16.84	-1.314	0.000	0.116
130.00	-30.23	-4.61	0.00	-83.95	0.00	83.95	1677.90	838.95	2081.35	1042.22	18.25	-1.358	0.000	0.099
134.50	-29.02	-4.22	0.00	-63.22	0.00	63.22	1640.90	820.45	1969.70	986.31	19.54	-1.392	0.000	0.082
135.00	-28.90	-4.21	0.00	-61.12	0.00	61.12	1636.72	818.36	1957.39	980.15	19.69	-1.396	0.000	0.080
137.00	-21.57	-3.04	0.00	-52.70	0.00	52.70	1619.86	809.93	1908.38	955.61	20.28	-1.409	0.000	0.068
140.00	-20.96	-2.98	0.00	-43.57	0.00	43.57	1594.17	797.08	1835.53	919.13	21.17	-1.426	0.000	0.061
145.00	-19.98	-2.86	0.00	-28.69	0.00	28.69	1550.24	775.12	1715.94	859.24	22.67	-1.450	0.000	0.046
148.00	-12.55	-1.83	0.00	-19.90	0.00	19.90	1523.23	761.62	1645.35	823.90	23.59	-1.460	0.000	0.032
150.00	-12.18	-1.79	0.00	-16.23	0.00	16.23	1504.95	752.48	1598.80	800.59	24.20	-1.466	0.000	0.028
153.00	-10.63	-1.30	0.00	-10.77	0.00	10.77	1477.12	738.56	1529.77	766.02	25.13	-1.472	0.000	0.021
155.00	-10.28	-1.26	0.00	-8.17	0.00	8.17	1458.29	729.15	1484.30	743.26	25.74	-1.476	0.000	0.018
160.00	0.00	-0.99	0.00	-1.89	0.00	1.89	1400.09	700.04	1362.73	682.38	27.29	-1.480	0.000	0.003

Seismic Segment Forces (Factored)

Structure: CT03538-S-SBA	Code: EIA/TIA-222-G	10/25/2017	
Site Name: South Plymouth	Exposure: C		
Height: 160.00 (ft)	Crest Height: 0.00		
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil		
Gh: 1.1	Topography: 1	Struct Class: II	Page: 24



Load Case: 1.2D + 1.0E

Iterations 22

Gust Response Factor 1.10

Sds 0.20

Ss 0.19

Dead Load Factor 1.20

Seismic Load Factor 1.00

Sd1 0.10

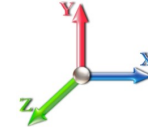
S1 0.06

Wind Load Factor 0.00

Structure Frequency 0.33

SA 0.03

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	0.00	0.00	0.00	
5.00		1312.4	0.00	0.03	0.02	25.28	
10.00		1287.0	0.01	0.05	0.03	36.07	
15.00		1261.6	0.02	0.06	0.04	40.94	
20.00		1236.2	0.03	0.07	0.04	43.00	
25.00		1210.8	0.05	0.07	0.04	43.74	
30.00		1185.4	0.07	0.07	0.04	43.94	
35.00		1160.0	0.09	0.07	0.04	43.99	
38.75	Bot - Section 2	853.39	0.11	0.07	0.04	32.91	
40.00		526.51	0.12	0.07	0.03	20.42	
45.00	Top - Section 1	2076.5	0.15	0.07	0.03	82.12	
50.00		945.50	0.18	0.06	0.03	37.80	
55.00		923.72	0.22	0.06	0.02	36.63	
60.00		901.95	0.27	0.05	0.02	34.25	
65.00		880.18	0.31	0.04	0.01	30.12	
70.00		858.41	0.36	0.03	0.01	23.76	
75.00	Appurtenance(s)	858.34	0.42	0.01	0.01	15.37	
78.50	Bot - Section 3	572.69	0.45	0.00	0.01	5.31	
80.00		447.46	0.47	-0.01	0.01	2.34	
83.75	Top - Section 2	1102.9	0.52	-0.02	0.01	-5.92	
85.00		166.43	0.53	-0.03	0.01	-1.49	
90.00		654.37	0.60	-0.05	0.01	-14.66	
95.00		636.22	0.67	-0.08	0.02	-21.00	
100.00		618.08	0.74	-0.10	0.04	-24.36	
105.00		599.94	0.81	-0.11	0.06	-24.62	
108.00	Appurtenance(s)	3486.5	0.86	-0.12	0.07	-138.42	
110.00		230.54	0.89	-0.12	0.08	-8.73	
115.00		563.65	0.98	-0.12	0.12	-16.88	
117.00	Appurtenance(s)	449.58	1.01	-0.11	0.14	-11.46	
119.25	Bot - Section 4	244.46	1.05	-0.09	0.16	-4.79	
120.00		146.34	1.06	-0.09	0.17	-2.55	
123.50	Top - Section 3	673.22	1.13	-0.05	0.20	-4.02	
125.00		127.32	1.15	-0.03	0.22	-0.05	
130.00		414.97	1.25	0.05	0.29	8.81	
134.50	Appurtenance(s)	415.66	1.34	0.17	0.37	18.53	
135.00		39.39	1.35	0.19	0.38	1.87	
137.00	Appurtenance(s)	2346.4	1.39	0.26	0.42	138.88	
140.00		229.82	1.45	0.38	0.48	17.99	
145.00		371.43	1.55	0.64	0.61	42.29	
148.00	Appurtenance(s)	2529.8	1.62	0.83	0.69	347.97	
150.00		141.02	1.66	0.98	0.76	21.76	
153.00	Appurtenance(s)	560.98	1.73	1.23	0.86	101.52	
155.00		135.22	1.77	1.42	0.93	27.01	
160.00	Appurtenance(s)	3235.8	1.89	1.98	1.14	809.75	
Totals:		38,619.1				1,855.4	
						Total Wind:	38,104.0

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

Calculated Forces

Structure: CT03538-S-SBA **Code:** EIA/TIA-222-G 10/25/2017
Site Name: South Plymouth **Exposure:** C
Height: 160.00 (ft) **Crest Height:** 0.00
Base Elev: 0.000 (ft) **Site Class:** D - Stiff Soil
Gh: 1.1 **Topography:** 1 **Struct Class:** II Page: 25



Load Case: 1.2D + 1.0E

Iterations 22

Gust Response Factor 1.10

Sds 0.20

Ss 0.19

Dead Load Factor 1.20

Seismic Load Factor 1.00

Sd1 0.10

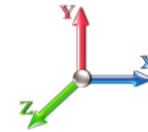
S1 0.06

Wind Load Factor 0.00

Structure Frequency 0.33

SA 0.03

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	-54.92	-2.14	0.00	-271.48	0.00	271.48	5345.98	2672.99	12322.4	6170.37		0.00	0.00	0.054
5.00	-53.02	-2.12	0.00	-260.78	0.00	260.78	5278.55	2639.27	11931.9	5974.86		0.01	-0.01	0.054
10.00	-51.16	-2.10	0.00	-250.16	0.00	250.16	5209.75	2604.88	11544.5	5780.84		0.03	-0.02	0.053
15.00	-49.32	-2.07	0.00	-239.66	0.00	239.66	5139.58	2569.79	11160.2	5588.39		0.06	-0.04	0.052
20.00	-47.52	-2.03	0.00	-229.32	0.00	229.32	5068.05	2534.02	10779.2	5397.62		0.10	-0.05	0.052
25.00	-45.74	-2.00	0.00	-219.15	0.00	219.15	4995.14	2497.57	10401.7	5208.61		0.16	-0.06	0.051
30.00	-44.00	-1.96	0.00	-209.15	0.00	209.15	4920.87	2460.43	10028.0	5021.46		0.24	-0.08	0.051
35.00	-42.29	-1.93	0.00	-199.33	0.00	199.33	4845.22	2422.61	9658.13	4836.24		0.33	-0.09	0.050
38.75	-41.02	-1.90	0.00	-192.11	0.00	192.11	4787.59	2393.79	9383.39	4698.67		0.40	-0.10	0.049
40.00	-40.31	-1.88	0.00	-189.74	0.00	189.74	4768.21	2384.10	9292.33	4653.07		0.43	-0.10	0.049
45.00	-37.50	-1.80	0.00	-180.33	0.00	180.33	3881.96	1940.98	7532.86	3772.03		0.54	-0.12	0.057
50.00	-36.04	-1.77	0.00	-171.32	0.00	171.32	3822.99	1911.49	7248.21	3629.49		0.67	-0.13	0.057
55.00	-34.61	-1.74	0.00	-162.46	0.00	162.46	3762.64	1881.32	6966.27	3488.31		0.82	-0.15	0.056
60.00	-33.21	-1.71	0.00	-153.76	0.00	153.76	3700.92	1850.46	6687.23	3348.59		0.99	-0.16	0.055
65.00	-31.83	-1.69	0.00	-145.20	0.00	145.20	3637.84	1818.92	6411.28	3210.40		1.17	-0.18	0.054
70.00	-30.48	-1.67	0.00	-136.76	0.00	136.76	3573.38	1786.69	6138.59	3073.86		1.37	-0.20	0.053
75.00	-29.13	-1.66	0.00	-128.42	0.00	128.42	3507.56	1753.78	5869.35	2939.04		1.58	-0.22	0.052
78.50	-28.22	-1.65	0.00	-122.63	0.00	122.63	3460.67	1730.33	5683.03	2845.74		1.75	-0.23	0.051
80.00	-27.59	-1.65	0.00	-120.15	0.00	120.15	3440.37	1720.18	5603.74	2806.03		1.82	-0.23	0.051
83.75	-26.02	-1.65	0.00	-113.96	0.00	113.96	2706.01	1353.00	4401.17	2203.86		2.01	-0.25	0.061
85.00	-25.74	-1.65	0.00	-111.90	0.00	111.90	2693.89	1346.95	4351.48	2178.97		2.07	-0.25	0.061
90.00	-24.64	-1.66	0.00	-103.64	0.00	103.64	2644.58	1322.29	4154.08	2080.13		2.34	-0.27	0.059
95.00	-23.56	-1.66	0.00	-95.36	0.00	95.36	2593.89	1296.95	3958.97	1982.43		2.64	-0.29	0.057
100.00	-22.49	-1.66	0.00	-87.07	0.00	87.07	2541.84	1270.92	3766.36	1885.98		2.95	-0.31	0.055
105.00	-21.45	-1.66	0.00	-78.76	0.00	78.76	2488.42	1244.21	3576.41	1790.86		3.29	-0.33	0.053
108.00	-17.08	-1.64	0.00	-73.78	0.00	73.78	2455.70	1227.85	3463.79	1734.47		3.50	-0.34	0.049
110.00	-16.71	-1.64	0.00	-70.50	0.00	70.50	2433.62	1216.81	3389.31	1697.17		3.65	-0.35	0.048
115.00	-15.80	-1.64	0.00	-62.29	0.00	62.29	2377.46	1188.73	3205.24	1605.00		4.03	-0.37	0.045
117.00	-15.17	-1.64	0.00	-59.02	0.00	59.02	2354.61	1177.31	3132.50	1568.58		4.18	-0.38	0.044
119.25	-14.79	-1.64	0.00	-55.33	0.00	55.33	2328.64	1164.32	3051.30	1527.92		4.37	-0.39	0.043
120.00	-14.58	-1.64	0.00	-54.11	0.00	54.11	2319.93	1159.96	3024.39	1514.44		4.43	-0.39	0.042
123.50	-13.63	-1.63	0.00	-48.38	0.00	48.38	1729.39	864.70	2245.31	1124.33		4.72	-0.40	0.051
125.00	-13.42	-1.63	0.00	-45.93	0.00	45.93	1717.71	858.86	2207.21	1105.25		4.84	-0.41	0.049
130.00	-12.73	-1.62	0.00	-37.76	0.00	37.76	1677.90	838.95	2081.35	1042.22		5.28	-0.43	0.044
134.50	-12.05	-1.60	0.00	-30.46	0.00	30.46	1640.90	820.45	1969.70	986.31		5.69	-0.44	0.038
135.00	-11.99	-1.60	0.00	-29.66	0.00	29.66	1636.72	818.36	1957.39	980.15		5.74	-0.44	0.038
137.00	-9.10	-1.44	0.00	-26.46	0.00	26.46	1619.86	809.93	1908.38	955.61		5.93	-0.45	0.033
140.00	-8.75	-1.42	0.00	-22.14	0.00	22.14	1594.17	797.08	1835.53	919.13		6.21	-0.46	0.030
145.00	-8.20	-1.38	0.00	-15.03	0.00	15.03	1550.24	775.12	1715.94	859.24		6.70	-0.47	0.023
148.00	-5.10	-1.00	0.00	-10.90	0.00	10.90	1523.23	761.62	1645.35	823.90		7.00	-0.48	0.017
150.00	-4.89	-0.98	0.00	-8.90	0.00	8.90	1504.95	752.48	1598.80	800.59		7.20	-0.48	0.014
153.00	-4.16	-0.87	0.00	-5.96	0.00	5.96	1477.12	738.56	1529.77	766.02		7.51	-0.48	0.011
155.00	-3.96	-0.84	0.00	-4.22	0.00	4.22	1458.29	729.15	1484.30	743.26		7.71	-0.49	0.008
160.00	0.00	-0.81	0.00	0.00	0.00	0.00	1400.09	700.04	1362.73	682.38		8.22	-0.49	0.000

Seismic Segment Forces (Factored)

Structure: CT03538-S-SBA **Code:** EIA/TIA-222-G 10/25/2017
Site Name: South Plymouth **Exposure:** C
Height: 160.00 (ft) **Crest Height:** 0.00
Base Elev: 0.000 (ft) **Site Class:** D - Stiff Soil
Gh: 1.1 **Topography:** 1 **Struct Class:** II Page: 26



Load Case: 0.9D + 1.0E

Iterations 22

Gust Response Factor 1.10

Sds 0.20

Ss 0.19

Dead Load Factor 0.90

Seismic Load Factor 1.00

Sd1 0.10

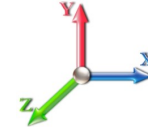
S1 0.06

Wind Load Factor 0.00

Structure Frequency 0.33

SA 0.03

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	0.00	0.00	0.00	
5.00		1312.4	0.00	0.03	0.02	25.28	
10.00		1287.0	0.01	0.05	0.03	36.07	
15.00		1261.6	0.02	0.06	0.04	40.94	
20.00		1236.2	0.03	0.07	0.04	43.00	
25.00		1210.8	0.05	0.07	0.04	43.74	
30.00		1185.4	0.07	0.07	0.04	43.94	
35.00		1160.0	0.09	0.07	0.04	43.99	
38.75	Bot - Section 2	853.39	0.11	0.07	0.04	32.91	
40.00		526.51	0.12	0.07	0.03	20.42	
45.00	Top - Section 1	2076.5	0.15	0.07	0.03	82.12	
50.00		945.50	0.18	0.06	0.03	37.80	
55.00		923.72	0.22	0.06	0.02	36.63	
60.00		901.95	0.27	0.05	0.02	34.25	
65.00		880.18	0.31	0.04	0.01	30.12	
70.00		858.41	0.36	0.03	0.01	23.76	
75.00	Appurtenance(s)	858.34	0.42	0.01	0.01	15.37	
78.50	Bot - Section 3	572.69	0.45	0.00	0.01	5.31	
80.00		447.46	0.47	-0.01	0.01	2.34	
83.75	Top - Section 2	1102.9	0.52	-0.02	0.01	-5.92	
85.00		166.43	0.53	-0.03	0.01	-1.49	
90.00		654.37	0.60	-0.05	0.01	-14.66	
95.00		636.22	0.67	-0.08	0.02	-21.00	
100.00		618.08	0.74	-0.10	0.04	-24.36	
105.00		599.94	0.81	-0.11	0.06	-24.62	
108.00	Appurtenance(s)	3486.5	0.86	-0.12	0.07	-138.42	
110.00		230.54	0.89	-0.12	0.08	-8.73	
115.00		563.65	0.98	-0.12	0.12	-16.88	
117.00	Appurtenance(s)	449.58	1.01	-0.11	0.14	-11.46	
119.25	Bot - Section 4	244.46	1.05	-0.09	0.16	-4.79	
120.00		146.34	1.06	-0.09	0.17	-2.55	
123.50	Top - Section 3	673.22	1.13	-0.05	0.20	-4.02	
125.00		127.32	1.15	-0.03	0.22	-0.05	
130.00		414.97	1.25	0.05	0.29	8.81	
134.50	Appurtenance(s)	415.66	1.34	0.17	0.37	18.53	
135.00		39.39	1.35	0.19	0.38	1.87	
137.00	Appurtenance(s)	2346.4	1.39	0.26	0.42	138.88	
140.00		229.82	1.45	0.38	0.48	17.99	
145.00		371.43	1.55	0.64	0.61	42.29	
148.00	Appurtenance(s)	2529.8	1.62	0.83	0.69	347.97	
150.00		141.02	1.66	0.98	0.76	21.76	
153.00	Appurtenance(s)	560.98	1.73	1.23	0.86	101.52	
155.00		135.22	1.77	1.42	0.93	27.01	
160.00	Appurtenance(s)	3235.8	1.89	1.98	1.14	809.75	
Totals:		38,619.1				1,855.4	
						Total Wind:	38,104.0

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

Calculated Forces

Structure: CT03538-S-SBA **Code:** EIA/TIA-222-G 10/25/2017
Site Name: South Plymouth **Exposure:** C
Height: 160.00 (ft) **Crest Height:** 0.00
Base Elev: 0.000 (ft) **Site Class:** D - Stiff Soil
Gh: 1.1 **Topography:** 1 **Struct Class:** II Page: 27



Load Case: 0.9D + 1.0E

Iterations 22

Gust Response Factor 1.10

Sds 0.20

Ss 0.19

Dead Load Factor 0.90

Seismic Load Factor 1.00

Sd1 0.10

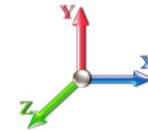
S1 0.06

Wind Load Factor 0.00

Structure Frequency 0.33

SA 0.03

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	-41.19	-2.14	0.00	-268.09	0.00	268.09	5345.98	2672.99	12322.4	6170.37	0.00	0.00	0.00	0.051
5.00	-39.77	-2.12	0.00	-257.40	0.00	257.40	5278.55	2639.27	11931.9	5974.86	0.01	-0.01	0.00	0.051
10.00	-38.37	-2.09	0.00	-246.80	0.00	246.80	5209.75	2604.88	11544.5	5780.84	0.03	-0.02	0.00	0.050
15.00	-36.99	-2.06	0.00	-236.34	0.00	236.34	5139.58	2569.79	11160.2	5588.39	0.06	-0.04	0.00	0.049
20.00	-35.64	-2.02	0.00	-226.05	0.00	226.05	5068.05	2534.02	10779.2	5397.62	0.10	-0.05	0.00	0.049
25.00	-34.31	-1.99	0.00	-215.93	0.00	215.93	4995.14	2497.57	10401.7	5208.61	0.16	-0.06	0.00	0.048
30.00	-33.00	-1.95	0.00	-206.01	0.00	206.01	4920.87	2460.43	10028.0	5021.46	0.23	-0.08	0.00	0.048
35.00	-31.71	-1.91	0.00	-196.27	0.00	196.27	4845.22	2422.61	9658.13	4836.24	0.32	-0.09	0.00	0.047
38.75	-30.77	-1.88	0.00	-189.12	0.00	189.12	4787.59	2393.79	9383.39	4698.67	0.39	-0.10	0.00	0.047
40.00	-30.23	-1.86	0.00	-186.77	0.00	186.77	4768.21	2384.10	9292.33	4653.07	0.42	-0.10	0.00	0.046
45.00	-28.12	-1.78	0.00	-177.47	0.00	177.47	3881.96	1940.98	7532.86	3772.03	0.54	-0.12	0.00	0.054
50.00	-27.03	-1.75	0.00	-168.56	0.00	168.56	3822.99	1911.49	7248.21	3629.49	0.67	-0.13	0.00	0.054
55.00	-25.96	-1.72	0.00	-159.82	0.00	159.82	3762.64	1881.32	6966.27	3488.31	0.81	-0.15	0.00	0.053
60.00	-24.91	-1.69	0.00	-151.24	0.00	151.24	3700.92	1850.46	6687.23	3348.59	0.97	-0.16	0.00	0.052
65.00	-23.87	-1.66	0.00	-142.81	0.00	142.81	3637.84	1818.92	6411.28	3210.40	1.15	-0.18	0.00	0.051
70.00	-22.86	-1.64	0.00	-134.51	0.00	134.51	3573.38	1786.69	6138.59	3073.86	1.35	-0.20	0.00	0.050
75.00	-21.85	-1.63	0.00	-126.31	0.00	126.31	3507.56	1753.78	5869.35	2939.04	1.56	-0.21	0.00	0.049
78.50	-21.16	-1.62	0.00	-120.62	0.00	120.62	3460.67	1730.33	5683.03	2845.74	1.72	-0.22	0.00	0.049
80.00	-20.69	-1.62	0.00	-118.19	0.00	118.19	3440.37	1720.18	5603.74	2806.03	1.79	-0.23	0.00	0.048
83.75	-19.52	-1.62	0.00	-112.11	0.00	112.11	2706.01	1353.00	4401.17	2203.86	1.98	-0.24	0.00	0.058
85.00	-19.31	-1.62	0.00	-110.09	0.00	110.09	2693.89	1346.95	4351.48	2178.97	2.04	-0.25	0.00	0.058
90.00	-18.48	-1.62	0.00	-101.98	0.00	101.98	2644.58	1322.29	4154.08	2080.13	2.31	-0.27	0.00	0.056
95.00	-17.67	-1.63	0.00	-93.86	0.00	93.86	2593.89	1296.95	3958.97	1982.43	2.60	-0.29	0.00	0.054
100.00	-16.87	-1.63	0.00	-85.73	0.00	85.73	2541.84	1270.92	3766.36	1885.98	2.91	-0.31	0.00	0.052
105.00	-16.09	-1.63	0.00	-77.58	0.00	77.58	2488.42	1244.21	3576.41	1790.86	3.24	-0.33	0.00	0.050
108.00	-12.81	-1.61	0.00	-72.70	0.00	72.70	2455.70	1227.85	3463.79	1734.47	3.45	-0.34	0.00	0.047
110.00	-12.53	-1.61	0.00	-69.48	0.00	69.48	2433.62	1216.81	3389.31	1697.17	3.59	-0.35	0.00	0.046
115.00	-11.85	-1.61	0.00	-61.41	0.00	61.41	2377.46	1188.73	3205.24	1605.00	3.97	-0.36	0.00	0.043
117.00	-11.37	-1.61	0.00	-58.19	0.00	58.19	2354.61	1177.31	3132.50	1568.58	4.12	-0.37	0.00	0.042
119.25	-11.09	-1.61	0.00	-54.56	0.00	54.56	2328.64	1164.32	3051.30	1527.92	4.30	-0.38	0.00	0.040
120.00	-10.93	-1.61	0.00	-53.36	0.00	53.36	2319.93	1159.96	3024.39	1514.44	4.36	-0.38	0.00	0.040
123.50	-10.22	-1.61	0.00	-47.72	0.00	47.72	1729.39	864.70	2245.31	1124.33	4.65	-0.40	0.00	0.048
125.00	-10.06	-1.61	0.00	-45.31	0.00	45.31	1717.71	858.86	2207.21	1105.25	4.77	-0.40	0.00	0.047
130.00	-9.54	-1.60	0.00	-37.27	0.00	37.27	1677.90	838.95	2081.35	1042.22	5.20	-0.42	0.00	0.041
134.50	-9.04	-1.58	0.00	-30.08	0.00	30.08	1640.90	820.45	1969.70	986.31	5.61	-0.44	0.00	0.036
135.00	-8.99	-1.58	0.00	-29.29	0.00	29.29	1636.72	818.36	1957.39	980.15	5.65	-0.44	0.00	0.035
137.00	-6.82	-1.42	0.00	-26.14	0.00	26.14	1619.86	809.93	1908.38	955.61	5.84	-0.44	0.00	0.032
140.00	-6.56	-1.40	0.00	-21.87	0.00	21.87	1594.17	797.08	1835.53	919.13	6.12	-0.45	0.00	0.028
145.00	-6.15	-1.36	0.00	-14.86	0.00	14.86	1550.24	775.12	1715.94	859.24	6.60	-0.46	0.00	0.021
148.00	-3.82	-0.99	0.00	-10.79	0.00	10.79	1523.23	761.62	1645.35	823.90	6.90	-0.47	0.00	0.016
150.00	-3.67	-0.97	0.00	-8.80	0.00	8.80	1504.95	752.48	1598.80	800.59	7.09	-0.47	0.00	0.013
153.00	-3.12	-0.86	0.00	-5.90	0.00	5.90	1477.12	738.56	1529.77	766.02	7.39	-0.48	0.00	0.010
155.00	-2.97	-0.83	0.00	-4.17	0.00	4.17	1458.29	729.15	1484.30	743.26	7.59	-0.48	0.00	0.008
160.00	0.00	-0.81	0.00	0.00	0.00	0.00	1400.09	700.04	1362.73	682.38	8.10	-0.48	0.00	0.000

Wind Loading - Shaft

Structure: CT03538-S-SBA

Code: EIA/TIA-222-G

10/25/2017

Site Name: South Plymouth

Exposure: C

Height: 160.00 (ft)

Crest Height: 0.00

Base Elev: 0.000 (ft)

Site Class: D - Stiff Soil

Gh: 1.1

Topography: 1

Struct Class: II

Page: 28

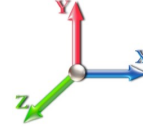


Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00

Iterations 24



Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.85	7.442	8.19	264.61	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	259.58	0.650	0.000	5.00	23.690	15.40	126.1	0.0	1312.5
10.00		1.00	0.85	7.442	8.19	254.55	0.650	0.000	5.00	23.235	15.10	123.6	0.0	1287.1
15.00		1.00	0.85	7.442	8.19	249.51	0.650	0.000	5.00	22.780	14.81	121.2	0.0	1261.7
20.00		1.00	0.90	7.896	8.69	251.83	0.650	0.000	5.00	22.325	14.51	126.0	0.0	1236.3
25.00		1.00	0.95	8.276	9.10	252.51	0.650	0.000	5.00	21.871	14.22	129.4	0.0	1210.9
30.00		1.00	0.98	8.600	9.46	251.99	0.650	0.000	5.00	21.416	13.92	131.7	0.0	1185.5
35.00		1.00	1.01	8.883	9.77	250.62	0.650	0.000	5.00	20.961	13.62	133.1	0.0	1160.1
38.75 Bot - Section 2		1.00	1.04	9.076	9.98	249.15	0.650	0.000	3.75	15.422	10.02	100.1	0.0	853.4
40.00		1.00	1.04	9.137	10.05	248.59	0.650	0.000	1.25	5.163	3.36	33.7	0.0	526.5
45.00 Top - Section 1		1.00	1.07	9.366	10.30	246.04	0.650	0.000	5.00	20.368	13.24	136.4	0.0	2076.6
50.00		1.00	1.09	9.576	10.53	247.06	0.650	0.000	5.00	19.913	12.94	136.3	0.0	945.5
55.00		1.00	1.12	9.770	10.75	243.78	0.650	0.000	5.00	19.458	12.65	135.9	0.0	923.7
60.00		1.00	1.14	9.951	10.95	240.21	0.650	0.000	5.00	19.004	12.35	135.2	0.0	902.0
65.00		1.00	1.16	10.120	11.13	236.37	0.650	0.000	5.00	18.549	12.06	134.2	0.0	880.2
70.00		1.00	1.17	10.279	11.31	232.31	0.650	0.000	5.00	18.094	11.76	133.0	0.0	858.4
75.00 Appurtenance(s)		1.00	1.19	10.430	11.47	228.04	0.650	0.000	5.00	17.639	11.47	131.5	0.0	836.6
78.50 Bot - Section 3		1.00	1.20	10.530	11.58	224.95	0.650	0.000	3.50	12.077	7.85	90.9	0.0	572.7
80.00		1.00	1.21	10.572	11.63	223.60	0.650	0.000	1.50	5.187	3.37	39.2	0.0	447.5
83.75 Top - Section 2		1.00	1.22	10.675	11.74	220.16	0.650	0.000	3.75	12.788	8.31	97.6	0.0	1102.9
85.00		1.00	1.22	10.708	11.78	222.50	0.650	0.000	1.25	4.206	2.73	32.2	0.0	166.4
90.00		1.00	1.24	10.838	11.92	217.77	0.650	0.000	5.00	16.539	10.75	128.2	0.0	654.4
95.00		1.00	1.25	10.962	12.06	212.91	0.650	0.000	5.00	16.084	10.45	126.1	0.0	636.2
100.00		1.00	1.27	11.081	12.19	207.92	0.650	0.000	5.00	15.629	10.16	123.8	0.0	618.1
105.00		1.00	1.28	11.195	12.31	202.82	0.650	0.000	5.00	15.174	9.86	121.5	0.0	599.9
108.00 Appurtenance(s)		1.00	1.29	11.262	12.39	199.70	0.650	0.000	3.00	8.886	5.78	71.6	0.0	351.3
110.00		1.00	1.29	11.305	12.44	197.61	0.650	0.000	2.00	5.833	3.79	47.2	0.0	230.5
115.00		1.00	1.30	11.412	12.55	192.30	0.650	0.000	5.00	14.264	9.27	116.4	0.0	563.7
117.00 Appurtenance(s)		1.00	1.31	11.453	12.60	190.16	0.650	0.000	2.00	5.578	3.63	45.7	0.0	220.4
119.25 Bot - Section 4		1.00	1.31	11.499	12.65	187.72	0.650	0.000	2.25	6.189	4.02	50.9	0.0	244.5
120.00		1.00	1.32	11.514	12.67	186.91	0.650	0.000	0.75	2.074	1.35	17.1	0.0	146.3
123.50 Top - Section 3		1.00	1.32	11.584	12.74	183.08	0.650	0.000	3.50	9.544	6.20	79.0	0.0	673.2
125.00		1.00	1.33	11.614	12.78	184.35	0.650	0.000	1.50	4.022	2.61	33.4	0.0	127.3
130.00		1.00	1.34	11.710	12.88	178.80	0.650	0.000	5.00	13.111	8.52	109.8	0.0	415.0
134.50 Appurtenance(s)		1.00	1.35	11.794	12.97	173.74	0.650	0.000	4.50	11.411	7.42	96.2	0.0	361.1
135.00		1.00	1.35	11.803	12.98	173.17	0.650	0.000	0.50	1.245	0.81	10.5	0.0	39.4
137.00 Appurtenance(s)		1.00	1.35	11.840	13.02	170.90	0.650	0.000	2.00	4.935	3.21	41.8	0.0	156.1
140.00		1.00	1.36	11.894	13.08	167.47	0.650	0.000	3.00	7.266	4.72	61.8	0.0	229.8
145.00		1.00	1.37	11.982	13.18	161.71	0.650	0.000	5.00	11.746	7.64	100.6	0.0	371.4
148.00 Appurtenance(s)		1.00	1.37	12.034	13.24	158.22	0.650	0.000	3.00	6.829	4.44	58.8	0.0	215.9
150.00		1.00	1.38	12.068	13.27	155.88	0.650	0.000	2.00	4.462	2.90	38.5	0.0	141.0
153.00 Appurtenance(s)		1.00	1.38	12.119	13.33	152.35	0.650	0.000	3.00	6.557	4.26	56.8	0.0	207.2
155.00		1.00	1.39	12.152	13.37	149.99	0.650	0.000	2.00	4.280	2.78	37.2	0.0	135.2
160.00 Appurtenance(s)		1.00	1.40	12.233	13.46	144.03	0.650	0.000	5.00	10.382	6.75	90.8	0.0	327.9
Totals:									160.00			3,891.0		27,412.2

Discrete Appurtenance Forces

Structure: CT03538-S-SBA

Site Name: South Plymouth

Height: 160.00 (ft)

Base Elev: 0.000 (ft)

Gh: 1.1

Topography: 1

Code: EIA/TIA-222-G

Exposure: C

Crest Height: 0.00

Site Class: D - Stiff Soil

Struct Class: II

10/25/2017

Page: 29

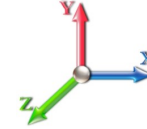


Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00

Iterations 24



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	160.00	RRUS 11	3	12.281	13.509	0.71	1.00	5.37	153.00	0.000	3.000	72.51	0.00	217.54
2	160.00	KRY112 144	3	12.281	13.509	0.70	1.00	0.86	33.00	0.000	3.000	11.63	0.00	34.89
3	160.00	Commscope	3	12.281	13.509	0.93	1.00	31.86	273.00	0.000	3.000	430.46	0.00	1291.37
4	160.00	Ericsson AIR 32	3	12.281	13.509	0.96	1.00	17.50	498.00	0.000	3.000	236.41	0.00	709.23
5	160.00	AIR 21, 1.3M, B2A B4P	3	12.281	13.509	0.94	1.00	17.08	351.00	0.000	3.000	230.77	0.00	692.32
6	160.00	Low Profile Platform	1	12.233	13.457	1.00	1.00	22.00	1600.00	0.000	0.000	296.04	0.00	0.00
7	153.00	Hutton HPD 3.4-4.7	1	12.119	13.330	1.00	1.00	8.92	105.00	0.000	0.000	118.91	0.00	0.00
8	153.00	VHLP-2.6-11	1	12.119	13.330	1.00	1.00	8.43	47.60	0.000	0.000	112.38	0.00	0.00
9	153.00	Lone Star Electronics	1	12.176	13.394	1.00	1.00	2.10	20.00	0.000	3.500	28.13	0.00	98.45
10	153.00	Pipe Mounts	2	12.119	13.330	1.00	1.00	10.00	100.00	0.000	0.000	133.30	0.00	0.00
11	153.00	4 ft Sidearm	1	12.119	13.330	1.00	1.00	3.50	50.00	0.000	0.000	46.66	0.00	0.00
12	153.00	Motorola ODU-A-RF	3	12.119	13.330	1.00	1.00	4.32	31.20	0.000	0.000	57.59	0.00	0.00
13	148.00	ALU 800 MHz RRH	3	12.034	13.238	0.54	0.80	4.00	159.00	0.000	0.000	53.00	0.00	0.00
14	148.00	RFS APXVTM14-C-120	3	12.068	13.275	0.71	0.80	13.54	288.00	0.000	2.000	179.77	0.00	359.55
15	148.00	RFS APXVSP18-C-A20	3	12.034	13.238	0.74	0.80	17.90	291.00	0.000	0.000	236.96	0.00	0.00
16	148.00	ALU 1900MHz RRH	3	12.034	13.238	0.54	0.80	6.11	132.00	0.000	0.000	80.89	0.00	0.00
17	148.00	ALU TD-RRH8x20-25	3	12.034	13.238	0.55	0.80	6.71	210.00	0.000	0.000	88.78	0.00	0.00
18	148.00	ALU 800 MHz Filter	3	12.034	13.238	0.79	0.80	1.00	30.00	0.000	0.000	13.21	0.00	0.00
19	148.00	RFS ACU-A20-N	4	12.034	13.238	0.63	0.80	0.35	4.00	0.000	0.000	4.69	0.00	0.00
20	148.00	Low Profile Platform	1	12.034	13.238	1.00	1.00	25.00	1200.00	0.000	0.000	330.94	0.00	0.00
21	137.00	Low Profile Platform	1	11.840	13.024	1.00	1.00	22.00	1500.00	0.000	0.000	286.53	0.00	0.00
22	137.00	RFS FD9R6004/2C-3	6	11.840	13.024	0.40	0.80	0.86	18.60	0.000	0.000	11.25	0.00	0.00
23	137.00	ALU RRH2X60-AWS	3	11.840	13.024	0.71	0.80	4.70	165.00	0.000	0.000	61.20	0.00	0.00
24	137.00	ALU 2X60-1900	3	11.840	13.024	0.67	0.80	3.79	138.00	0.000	0.000	49.36	0.00	0.00
25	137.00	RFS DB-T1-6Z-8AB-OZ	1	11.840	13.024	0.57	0.80	2.73	18.90	0.000	0.000	35.51	0.00	0.00
26	137.00	Antel BXA-70080-6CF-2	3	11.840	13.024	0.78	0.80	13.41	54.00	0.000	0.000	174.64	0.00	0.00
27	137.00	Commscope	6	11.840	13.024	0.70	0.80	35.70	244.80	0.000	0.000	465.02	0.00	0.00
28	137.00	Antel BXA-70063-6CF-2	3	11.840	13.024	0.66	0.80	15.08	51.00	0.000	0.000	196.39	0.00	0.00
29	134.50	Pipe Mount	1	11.794	12.974	1.00	1.00	5.00	50.00	0.000	0.000	64.87	0.00	0.00
30	134.50	Bird Technologies CSA	1	11.794	12.974	1.00	1.00	3.81	4.60	0.000	0.000	49.43	0.00	0.00
31	117.00	Pipe Mounts	3	11.453	12.598	1.00	1.00	15.00	150.00	0.000	0.000	188.98	0.00	0.00
32	117.00	RFS APXV18-206517S-C	3	11.453	12.598	0.59	0.80	9.18	79.20	0.000	0.000	115.68	0.00	0.00
33	108.00	Powerwave 21903	6	11.262	12.388	0.67	0.80	1.09	33.00	0.000	0.000	13.49	0.00	0.00
34	108.00	Powerwave LGP21401	6	11.262	12.388	0.40	0.80	3.10	84.60	0.000	0.000	38.35	0.00	0.00
35	108.00	Ericsson RRU 11	6	11.262	12.388	0.54	0.80	8.10	306.00	0.000	0.000	100.40	0.00	0.00
36	108.00	AM-X-CD-17-65-00T-RET	3	11.262	12.388	0.60	0.80	14.44	145.50	0.000	0.000	178.83	0.00	0.00
37	108.00	7770	6	11.262	12.388	0.66	0.80	21.91	210.00	0.000	0.000	271.44	0.00	0.00
38	108.00	DUO1417- 8686-40	3	11.262	12.388	0.74	0.80	12.78	60.90	0.000	0.000	158.37	0.00	0.00
39	108.00	EPBQ-652L8H6-L2	3	11.262	12.388	0.57	0.80	26.77	297.00	0.000	0.000	331.62	0.00	0.00
40	108.00	Andrew	3	11.262	12.388	0.78	0.80	0.12	3.30	0.000	0.000	1.46	0.00	0.00
41	108.00	Raycap DC6-48-60-18-8F	2	11.262	12.388	0.80	0.80	1.47	63.60	0.000	0.000	18.24	0.00	0.00
42	108.00	Low Profile Platform	1	11.262	12.388	1.00	1.00	22.00	1500.00	0.000	0.000	272.53	0.00	0.00
43	108.00	Powerwave 7020 RET	12	11.262	12.388	0.80	0.80	3.84	26.40	0.000	0.000	47.57	0.00	0.00
44	108.00	Ericsson RRUS 32 B2	3	11.262	12.388	0.54	0.80	2.65	231.00	0.000	0.000	32.87	0.00	0.00
45	108.00	Ericsson B14 4478 RRU	3	11.262	12.388	0.54	0.80	5.07	174.00	0.000	0.000	62.75	0.00	0.00
46	75.00	Standoff	1	10.430	11.473	1.00	1.00	2.63	20.00	0.000	0.000	30.17	0.00	0.00
47	75.00	GPS	1	10.430	11.473	1.00	1.00	0.14	1.70	0.000	0.000	1.61	0.00	0.00

Discrete Appurtenance Forces

Structure:	CT03538-S-SBA	Code:	EIA/TIA-222-G	10/25/2017
Site Name:	South Plymouth	Exposure:	C	
Height:	160.00 (ft)	Crest Height:	0.00	
Base Elev:	0.000 (ft)	Site Class:	D - Stiff Soil	
Gh:	1.1	Topography:	1	
		Struct Class:	II	Page: 30



Totals: 11,206.90

6,021.58

Total Applied Force Summary

Structure: CT03538-S-SBA	Code: EIA/TIA-222-G	10/25/2017
Site Name: South Plymouth	Exposure: C	
Height: 160.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



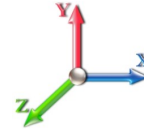
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Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00

Iterations 24



Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00		0.00	0.00	0.00	0.00
5.00		126.05	1579.39	0.00	0.00
10.00		123.63	1553.99	0.00	0.00
15.00		121.21	1528.59	0.00	0.00
20.00		126.04	1503.19	0.00	0.00
25.00		129.41	1477.79	0.00	0.00
30.00		131.68	1452.39	0.00	0.00
35.00		133.14	1426.98	0.00	0.00
38.75		100.08	1053.57	0.00	0.00
40.00		33.73	593.23	0.00	0.00
45.00		136.40	2343.45	0.00	0.00
50.00		136.35	1212.40	0.00	0.00
55.00		135.93	1190.62	0.00	0.00
60.00		135.21	1168.85	0.00	0.00
65.00		134.22	1147.08	0.00	0.00
70.00		132.98	1125.31	0.00	0.00
75.00	(2) attachments	163.31	1125.24	0.00	0.00
78.50		90.93	758.96	0.00	0.00
80.00		39.21	527.29	0.00	0.00
83.75		97.60	1302.52	0.00	0.00
85.00		32.20	232.95	0.00	0.00
90.00		128.16	920.47	0.00	0.00
95.00		126.06	902.32	0.00	0.00
100.00		123.82	884.18	0.00	0.00
105.00		121.46	866.04	0.00	0.00
108.00	(57) attachments	1599.47	3646.21	0.00	0.00
110.00		47.15	308.18	0.00	0.00
115.00		116.39	757.75	0.00	0.00
117.00	(6) attachments	350.34	527.22	0.00	0.00
119.25		50.88	317.76	0.00	0.00
120.00		17.08	170.78	0.00	0.00
123.50		79.05	787.25	0.00	0.00
125.00		33.40	176.19	0.00	0.00
130.00		109.77	577.87	0.00	0.00
134.50	(2) attachments	210.53	562.27	0.00	0.00
135.00		10.51	55.42	0.00	0.00
137.00	(26) attachments	1321.69	2410.54	0.00	0.00
140.00		61.79	285.26	0.00	0.00
145.00		100.64	463.83	0.00	0.00
148.00	(23) attachments	1047.00	2585.33	0.00	359.55
150.00		38.50	172.70	0.00	0.00
153.00	(9) attachments	553.77	608.50	0.00	98.45
155.00		37.19	164.58	0.00	0.00
160.00	(16) attachments	1368.63	3309.28	0.00	2945.34
Totals:		9,912.58	45,763.74	0.00	3,403.34

Calculated Forces

Structure: CT03538-S-SBA

Code: EIA/TIA-222-G

10/25/2017

Site Name: South Plymouth

Exposure: C

Height: 160.00 (ft)

Crest Height: 0.00

Base Elev: 0.000 (ft)

Site Class: D - Stiff Soil

Gh: 1.1

Topography: 1

Struct Class: II

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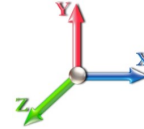


Load Case: 1.0D + 1.0W 60 mph Wind

Iterations 24

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	-45.76	-9.93	0.00	-1170.8	0.00	1170.86	5345.98	2672.99	12322.4	6170.37	0.00	0.000	0.000	0.198
5.00	-44.17	-9.85	0.00	-1121.2	0.00	1121.20	5278.55	2639.27	11931.9	5974.86	0.03	-0.053	0.000	0.196
10.00	-42.61	-9.76	0.00	-1071.9	0.00	1071.96	5209.75	2604.88	11544.5	5780.84	0.11	-0.106	0.000	0.194
15.00	-41.07	-9.68	0.00	-1023.1	0.00	1023.15	5139.58	2569.79	11160.2	5588.39	0.25	-0.160	0.000	0.191
20.00	-39.56	-9.58	0.00	-974.77	0.00	974.77	5068.05	2534.02	10779.2	5397.62	0.45	-0.215	0.000	0.188
25.00	-38.07	-9.48	0.00	-926.86	0.00	926.86	4995.14	2497.57	10401.7	5208.61	0.70	-0.270	0.000	0.186
30.00	-36.61	-9.38	0.00	-879.43	0.00	879.43	4920.87	2460.43	10028.0	5021.46	1.02	-0.327	0.000	0.183
35.00	-35.18	-9.27	0.00	-832.53	0.00	832.53	4845.22	2422.61	9658.13	4836.24	1.39	-0.383	0.000	0.179
38.75	-34.12	-9.18	0.00	-797.76	0.00	797.76	4787.59	2393.79	9383.39	4698.67	1.71	-0.427	0.000	0.177
40.00	-33.52	-9.16	0.00	-786.29	0.00	786.29	4768.21	2384.10	9292.33	4653.07	1.82	-0.441	0.000	0.176
45.00	-31.17	-9.04	0.00	-740.47	0.00	740.47	3881.96	1940.98	7532.86	3772.03	2.32	-0.499	0.000	0.204
50.00	-29.95	-8.92	0.00	-695.28	0.00	695.28	3822.99	1911.49	7248.21	3629.49	2.87	-0.557	0.000	0.199
55.00	-28.75	-8.81	0.00	-650.66	0.00	650.66	3762.64	1881.32	6966.27	3488.31	3.49	-0.622	0.000	0.194
60.00	-27.57	-8.69	0.00	-606.62	0.00	606.62	3700.92	1850.46	6687.23	3348.59	4.18	-0.687	0.000	0.189
65.00	-26.42	-8.57	0.00	-563.17	0.00	563.17	3637.84	1818.92	6411.28	3210.40	4.93	-0.752	0.000	0.183
70.00	-25.28	-8.45	0.00	-520.31	0.00	520.31	3573.38	1786.69	6138.59	3073.86	5.75	-0.817	0.000	0.176
75.00	-24.15	-8.30	0.00	-478.05	0.00	478.05	3507.56	1753.78	5869.35	2939.04	6.64	-0.881	0.000	0.170
78.50	-23.39	-8.21	0.00	-449.02	0.00	449.02	3460.67	1730.33	5683.03	2845.74	7.31	-0.926	0.000	0.165
80.00	-22.86	-8.17	0.00	-436.71	0.00	436.71	3440.37	1720.18	5603.74	2806.03	7.60	-0.946	0.000	0.162
83.75	-21.56	-8.06	0.00	-406.07	0.00	406.07	2706.01	1353.00	4401.17	2203.86	8.36	-0.994	0.000	0.192
85.00	-21.32	-8.04	0.00	-395.99	0.00	395.99	2693.89	1346.95	4351.48	2178.97	8.62	-1.010	0.000	0.190
90.00	-20.39	-7.92	0.00	-355.78	0.00	355.78	2644.58	1322.29	4154.08	2080.13	9.72	-1.080	0.000	0.179
95.00	-19.48	-7.80	0.00	-316.16	0.00	316.16	2593.89	1296.95	3958.97	1982.43	10.89	-1.148	0.000	0.167
100.00	-18.59	-7.68	0.00	-277.15	0.00	277.15	2541.84	1270.92	3766.36	1885.98	12.13	-1.214	0.000	0.154
105.00	-17.72	-7.56	0.00	-238.75	0.00	238.75	2488.42	1244.21	3576.41	1790.86	13.43	-1.276	0.000	0.140
108.00	-14.11	-5.88	0.00	-216.08	0.00	216.08	2455.70	1227.85	3463.79	1734.47	14.25	-1.312	0.000	0.130
110.00	-13.80	-5.84	0.00	-204.32	0.00	204.32	2433.62	1216.81	3389.31	1697.17	14.80	-1.336	0.000	0.126
115.00	-13.04	-5.71	0.00	-175.13	0.00	175.13	2377.46	1188.73	3205.24	1605.00	16.23	-1.391	0.000	0.115
117.00	-12.52	-5.35	0.00	-163.71	0.00	163.71	2354.61	1177.31	3132.50	1568.58	16.82	-1.413	0.000	0.110
119.25	-12.20	-5.30	0.00	-151.66	0.00	151.66	2328.64	1164.32	3051.30	1527.92	17.49	-1.436	0.000	0.105
120.00	-12.03	-5.28	0.00	-147.69	0.00	147.69	2319.93	1159.96	3024.39	1514.44	17.72	-1.444	0.000	0.103
123.50	-11.24	-5.19	0.00	-129.21	0.00	129.21	1729.39	864.70	2245.31	1124.33	18.79	-1.478	0.000	0.121
125.00	-11.06	-5.15	0.00	-121.43	0.00	121.43	1717.71	858.86	2207.21	1105.25	19.25	-1.493	0.000	0.116
130.00	-10.48	-5.04	0.00	-95.65	0.00	95.65	1677.90	838.95	2081.35	1042.22	20.85	-1.543	0.000	0.098
134.50	-9.93	-4.82	0.00	-72.98	0.00	72.98	1640.90	820.45	1969.70	986.31	22.32	-1.582	0.000	0.080
135.00	-9.87	-4.81	0.00	-70.58	0.00	70.58	1636.72	818.36	1957.39	980.15	22.49	-1.586	0.000	0.078
137.00	-7.50	-3.42	0.00	-60.96	0.00	60.96	1619.86	809.93	1908.38	955.61	23.15	-1.601	0.000	0.068
140.00	-7.21	-3.35	0.00	-50.71	0.00	50.71	1594.17	797.08	1835.53	919.13	24.17	-1.621	0.000	0.060
145.00	-6.75	-3.24	0.00	-33.94	0.00	33.94	1550.24	775.12	1715.94	859.24	25.88	-1.648	0.000	0.044
148.00	-4.20	-2.12	0.00	-23.86	0.00	23.86	1523.23	761.62	1645.35	823.90	26.92	-1.661	0.000	0.032
150.00	-4.02	-2.08	0.00	-19.62	0.00	19.62	1504.95	752.48	1598.80	800.59	27.62	-1.668	0.000	0.027
153.00	-3.43	-1.51	0.00	-13.29	0.00	13.29	1477.12	738.56	1529.77	766.02	28.67	-1.676	0.000	0.020
155.00	-3.27	-1.47	0.00	-10.27	0.00	10.27	1458.29	729.15	1484.30	743.26	29.37	-1.680	0.000	0.016
160.00	0.00	-1.37	0.00	-2.95	0.00	2.95	1400.09	700.04	1362.73	682.38	31.13	-1.686	0.000	0.004

Final Analysis Summary

Structure: CT03538-S-SBA	Code: EIA/TIA-222-G	10/25/2017	
Site Name: South Plymouth	Exposure: C		
Height: 160.00 (ft)	Crest Height: 0.00		
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil		
Gh: 1.1	Topography: 1	Struct Class: II	Page: 33



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	38.2	0.00	54.85	0.00	0.00	4527.64
0.9D + 1.6W 93 mph Wind	38.2	0.00	41.12	0.00	0.00	4476.00
1.2D + 1.0Di + 1.0Wi 40 mph Wind	8.2	0.00	94.54	0.00	0.00	1009.18
1.2D + 1.0E	2.1	0.00	54.92	0.00	0.00	271.48
0.9D + 1.0E	2.1	0.00	41.19	0.00	0.00	268.09
1.0D + 1.0W 60 mph Wind	9.9	0.00	45.76	0.00	0.00	1170.86

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	-36.28	-34.96	0.00	-2867.6	0.00	-2867.6	3881.96	1940.9	7532.86	3772.03	45.00	0.770
0.9D + 1.6W 93 mph Wind	-26.92	-34.61	0.00	-2824.7	0.00	-2824.7	3881.96	1940.9	7532.86	3772.03	45.00	0.756
1.2D + 1.0Di + 1.0Wi 40 mph Wind	-71.35	-7.72	0.00	-648.16	0.00	-648.16	3881.96	1940.9	7532.86	3772.03	45.00	0.190
1.2D + 1.0E	-26.02	-1.65	0.00	-113.96	0.00	-113.96	2706.01	1353.0	4401.17	2203.86	83.75	0.061
0.9D + 1.0E	-19.52	-1.62	0.00	-112.11	0.00	-112.11	2706.01	1353.0	4401.17	2203.86	83.75	0.058
1.0D + 1.0W 60 mph Wind	-31.17	-9.04	0.00	-740.47	0.00	-740.47	3881.96	1940.9	7532.86	3772.03	45.00	0.204



Monopole Mat Foundation Design

Date

10/25/2017

Customer Name:	SBA Communications Corp	EIA/TIA Standard:	EIA-222-G
Site Name:	South Plymouth	Structure Height (Ft.):	160
Site Number:	CT03538-S-SBA	Engineer Name:	T. Alajaj
Engr. Number:	41941	Engineer Login ID:	

Foundation Info Obtained from:

Structure Type:

Analysis or Design?

Base Reactions (Factored):

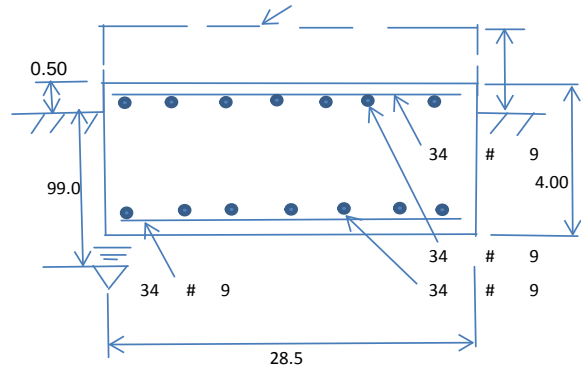
Axial Load (Kips):	54.9	Shear Force (Kips):	38.2
Uplift Force (Kips):	0.0	Moment (Kips-ft):	4527.6

Allowable overstress %: 5.0%

Foundation Geometries:

		Mods required -Yes/No ?:	No
Anchor Bolt Circle (ft.):	5.33	Depth of Base BG (ft.):	3.50
Thickness of Pad (ft):	4.00		
Length of Pad (ft.):	28.5	Width of Pad (ft.):	28.5

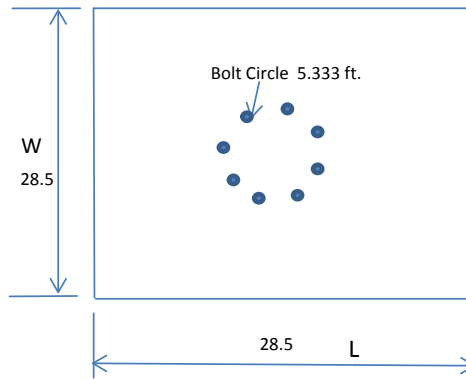
Final Length of pad (ft) 28.5 Final width of pad (ft): 28.5



Material Properties and Rebar Info:

Concrete Strength (psi):	3000	Steel Elastic Modulus:	29000	ksi
Pad Rebar Yield (Ksi):	60	Tie Spacing (in):	6.0	
Pad Steel Rebar Size (#):	9			
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):	34	Qty. of Rebar in Pad (W):	34	
Rebar at the top of the concrete pad:				
Qty. of Rebar in Pad (L):	34	Qty. of Rebar in Pad (W):	34	

Apply 1.35 factor for e/w Per G: 1.35



Soil Design Parameters:

Water Table B.G.S. (ft):	99.0	Unit Weight of Water:	62.4	pcf	Angle from Top of Pad:	30
Ultimate Bearing Pressure (psf):	20000	Ultimate Skin Friction:		Psf	Angle from Botm of Pad:	25
Consider Friction for O.T.M. (Y/N):	No	Consider Friction for bearing (Y/N):	No		Angle from Botm 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.):	0.00	Total Dry Soil Weight (Kips):	0.00
Total Buoyant Soil Volume (cu. Ft.):	0.00	Total Buoyant Soil Weight (Kips):	0.00
Total Effective Soil Weight (Kips):	0.00	Weight from the Concrete Block at Top (K):	0.00
Total Dry Concrete Volume (cu. Ft.):	3249.00	Total Dry Concrete Weight (Kips):	487.35
Total Buoyant Concrete Volume (cu. Ft.):	0.00	Total Buoyant Concrete Weight (Kips):	0.00
Total Effective Concrete Weight (Kips):	487.35	Total Vertical Load on Base (Kips):	542.20

Check Soil Capacities:

Calculated Maxium Net Soil Pressure under the base (psf):	2562	<	Allowable Factored Soil Bearing (psf):	15000	0.17	OK!
Allowable Foundation Overturning Resistance (kips-ft.):	7031.9	>	Design Factored Momont (kips-ft):	4682	0.67	OK!
Factor of Safety Against Overturning (O. R. Moment/Design Moment):	1.50					OK!

Load/
Capacity
Ratio

Check the capacities of Reinforcing Concrete:

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

Concrete Pad:

One-Way Design Shear Capacity (L-Direction, Kips):	1248.6	>	One-Way Factored Shear (L-D. Kips):	323.0	0.26	OK!
One-Way Design Shear Capacity (W-Direction, Kips):	1248.6	>	One-Way Factored Shear (W-D., Kips)	323.0	0.26	OK!
One-Way Design Shear Capacity (Corner-Corner. Kips):	1510.3	>	One-Way Factored Shear (C-C, Kips):	558.1	0.37	OK!
Lower Steel Pad Reinforcement Ratio (L-Direct.):	0.0022	OK!	Lower Steel Pad Reinf. Ratio (W-Direct	0.0022		
Lower Steel Pad Moment Capacity (L-Direction. Kips-ft):	6620.0	>	Moment at Bottom (L-Direct. K-Ft):	1232.3	0.19	OK!
Lower Steel Pad Moment Capacity (W-Direction. Kips-ft):	6620.0	>	Moment at Bottom (W-Direct. K-Ft):	1232.3	0.19	OK!
Lower Steel Pad Moment Capacity (Corner-Corner,K-ft):	9319.3	>	Moment at Bottom (C-C Dir. K-Ft):	1742.7	0.19	OK!
Upper Steel Pad Reinforcement Ratio (L-Direct.):	0.0022	OK!	Upper Steel Reinf. Ratio (W-Direct.):	0.0022		
Upper Steel Pad Moment Capacity (L-Direction. Kips-ft):	6620.0	>	Moment at the top (L-Dir Kips-Ft):	187.6	0.03	OK!
Upper Steel Pad Moment Capacity (W-Direction. Kips-ft):	6620.0	>	Moment at the top (W-Dir Kips-Ft):	187.6	0.03	OK!
Upper Steel Pad Moment Capacity (Corner-Corner. K-ft):	9319.3	>	Moment at the top (C-C Direc. K-Ft):	682.2	0.07	OK!

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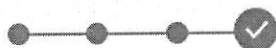


771231565626

Ship date:

Tue 1/16/2018

NORTH BILLERICA, MA US



Delivered

Signed for by: E. CAYIBA

Actual delivery:

Thu 1/18/2018 1:05 pm

TERRYVILLE, CT US

Travel History

▲ Date/Time	Activity	Location
1/18/2018 - Thursday		
1:05 pm	Delivered	TERRYVILLE, CT
10:24 am	On FedEx vehicle for delivery	WATERTOWN, CT
10:19 am	At local FedEx facility	WATERTOWN, CT
8:42 am	At destination sort facility	EAST GRANBY, CT
5:15 am	Departed FedEx location	MEMPHIS, TN
1/17/2018 - Wednesday		
12:29 pm	Arrived at FedEx location	MEMPHIS, TN
1/16/2018 - Tuesday		
8:20 pm	Left FedEx origin facility	WILMINGTON, MA
6:59 pm	Picked up	WILMINGTON, MA
4:13 pm	Shipment information sent to FedEx	

Shipment Facts

Tracking Number	771231565626	Service	FedEx 2Day
Reference	CTL01126	Weight	2 lbs / 0.91 kgs
Delivered To	Receptionist/Front Desk	Total pieces	1
Total shipment weight	2 lbs / 0.91 kgs	Terms	Shipper
Shipper reference	CTL01126	Packaging	FedEx Envelope
Special handling section	Deliver Weekday	Standard transit	1/18/2018 by 4:30 pm

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771231629377

Ship date:

Tue 1/16/2018

NORTH BILLERICA, MA US



Delivered

Signature not required

Actual delivery:

Thu 1/18/2018 11:57 am

PLYMOUTH, CT US

Travel History

▲ Date/Time	Activity	Location
■ 1/18/2018 - Thursday		
11:57 am	Delivered	PLYMOUTH, CT
	Left at back door. Package delivered to recipient address - release authorized	
10:23 am	On FedEx vehicle for delivery	WATERTOWN, CT
10:19 am	At local FedEx facility	WATERTOWN, CT
8:42 am	At destination sort facility	EAST GRANBY, CT
5:15 am	Departed FedEx location	MEMPHIS, TN
■ 1/17/2018 - Wednesday		
12:29 pm	Arrived at FedEx location	MEMPHIS, TN
■ 1/16/2018 - Tuesday		
8:20 pm	Left FedEx origin facility	WILMINGTON, MA
6:59 pm	Picked up	WILMINGTON, MA
4:13 pm	Shipment information sent to FedEx	

Shipment Facts

Tracking Number	771231629377	Service	FedEx 2Day
Reference	CTL01126	Weight	2 lbs / 0.91 kgs
Delivered To	Residence	Total pieces	1
Total shipment weight	2 lbs / 0.91 kgs	Terms	Shipper
Shipper reference	CTL01126	Packaging	FedEx Envelope
Special handling section	Deliver Weekday, Residential Delivery	Standard transit	1/18/2018 by 8:00 pm

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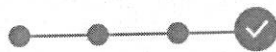


771231643922

Ship date:

Tue 1/16/2018

NORTH BILLERICA, MA US



Delivered

Signed for by: B.BERRY

Actual delivery:

Thu 1/18/2018 2:12 pm

BOCA RATON, FL US

Travel History

▲ Date/Time	Activity	Location
■ 1/18/2018 - Thursday		
2:12 pm	Delivered	BOCA RATON, FL
12:36 pm	Delivery exception	BOCA RATON, FL
	Package at station, arrived after courier dispatch	
12:09 pm	On FedEx vehicle for delivery	BOCA RATON, FL
11:50 am	At local FedEx facility	BOCA RATON, FL
9:00 am	At destination sort facility	FORT LAUDERDALE, FL
6:01 am	Departed FedEx location	MEMPHIS, TN
■ 1/17/2018 - Wednesday		
12:29 pm	Arrived at FedEx location	MEMPHIS, TN
■ 1/16/2018 - Tuesday		
8:20 pm	Left FedEx origin facility	WILMINGTON, MA
6:59 pm	Picked up	WILMINGTON, MA
4:14 pm	Shipment information sent to FedEx	

Shipment Facts

Tracking Number	771231643922	Service	FedEx 2Day
Reference	CTL01126	Weight	2 lbs / 0.91 kgs
Delivered To	Receptionist/Front Desk	Total pieces	1
Total shipment weight	2 lbs / 0.91 kgs	Terms	Shipper
Shipper reference	CTL01126	Packaging	FedEx Envelope
Special handling section	Deliver Weekday	Standard transit	1/18/2018 by 4:30 pm

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771231592012

Ship date:

Tue 1/16/2018

NORTH BILLERICA, MA US



Delivered

Signed for by: E.CAYIBA

Actual delivery:

Thu 1/18/2018 1:05 pm

TERRYVILLE, CT US

Travel History

▲ Date/Time	Activity	Location
- 1/18/2018 - Thursday		
1:05 pm	Delivered	TERRYVILLE, CT
10:24 am	On FedEx vehicle for delivery	WATERTOWN, CT
10:19 am	At local FedEx facility	WATERTOWN, CT
8:42 am	At destination sort facility	EAST GRANBY, CT
5:15 am	Departed FedEx location	MEMPHIS, TN
- 1/17/2018 - Wednesday		
12:29 pm	Arrived at FedEx location	MEMPHIS, TN
- 1/16/2018 - Tuesday		
8:20 pm	Left FedEx origin facility	WILMINGTON, MA
6:59 pm	Picked up	WILMINGTON, MA
4:13 pm	Shipment information sent to FedEx	

Shipment Facts

Tracking Number	771231592012	Service	FedEx 2Day
Reference	CTL01126	Weight	2 lbs / 0.91 kgs
Delivered To	Receptionist/Front Desk	Total pieces	1
Total shipment weight	2 lbs / 0.91 kgs	Terms	Shipper
Shipper reference	CTL01126	Packaging	FedEx Envelope
Special handling section	Deliver Weekday	Standard transit	1/18/2018 by 4:30 pm

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