



May 22, 2018

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

Regarding: Notice of Exempt Modification – Addition of (3) new antennas, (6) remote radio units, and (1) squid

Property Address: 60 Adams Street, Manchester, CT (the “Property”, AT&T Site # CT1080)

Applicant: AT&T Mobility (“AT&T”)

Dear Ms. Bachman:

AT&T currently maintains a wireless telecommunications facility on an existing 140 foot Monopole (“tower”) at the above-referenced address, latitude 41.7940481, longitude -72.55536. AT&T’s facility consists of nine (9) wireless telecommunications antennas at 125 feet. The tower is controlled and owned by Pom-Pom Gali, LLC and managed by SBA Communications. Assessor’s information is attached hereto.

AT&T desires to modify its existing telecommunications facility by adding three (3) new antennas, six (6) remote radios heads, and one (1) squid. The centerline height of said antennas is and will remain at 125 feet.

Please accept this application as notification pursuant to R.C.S.A. § 16-50j-73, for construction that constitutes an exempt modification pursuant to R.C.S.A. § 16-50j-72 (b)(2). In accordance with R.C.S.A. § 16-50j-73, a copy of this letter is being sent to the General Manager of the Town of Manchester, the Chief Building Inspector of the Town of Manchester, and the Zoning Enforcement Officer of the Town of Manchester. Notice is also being sent to Pom-Pom Gali, LLC as owner of the property and SBA Communications as the site manager of the property.

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 planned modifications will not result in an increase in the height of the existing structure. AT&T’s antennas and associated lines will be installed at 125 foot level of the 140 foot tower.
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 modification will not increase the noise level at the facility by six decibel 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. An RF emissions calculation is attached.
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. (Please see attached Structural Analysis completed by Tower Engineering Solutions dated May 17, 2018).

For the foregoing reasons AT&T respectfully requests that the proposed addition of antennas, remote radio heads, and squid be allowed within the exempt modifications under R.C.S.A. § 16-50j-72(b)(2).

Sincerely,

Nicole Caplan
Site Acquisition Specialist
Empire Telecom

CC: Scott Shanley, General Manager, Town of Manchester
Greg Smith, Chief Building Inspector, Town of Manchester
James Davis, Zoning Enforcement Officer, Town of Manchester
Pom-Pom Gali, LLC, Property Owner
SBA Communications, c/o Carla Shorter

16 Esquire Road, Billerica, MA 01862 Phone 978-284-3906 Email: ncaplan@empiretelecomm.com

+ (F) ▼ 60 Adams Street X Q

Show search results for 60 Ada...

105(P)

1024.98(P)

60A

60B

40ft

1,053,681.708 850,326.041 Feet

60 ADAMS STREET

Location 60 ADAMS STREET

Mblu 28/ 20/ 60/ /

Acct# 002000060

Owner POM-POM GALI LLC

Assessment \$1,144,100

Appraisal \$1,634,300

PID 26

Building Count 3

Current Value

Appraisal			
Valuation Year	Improvements	Land	Total
2016	\$520,100	\$1,114,200	\$1,634,300

Assessment			
Valuation Year	Improvements	Land	Total
2016	\$364,200	\$779,900	\$1,144,100

Owner of Record

Owner POM-POM GALI LLC

Sale Price \$1,551,222

Address PO BOX 133

Certificate C

WILLIMANTIC, CT 06226

Book & Page 3204/ 184

Sale Date 12/23/2005

Instrument 36

Ownership History

Ownership History					
Owner	Sale Price	Certificate	Book & Page	Instrument	Sale Date
POM-POM GALI LLC	\$1,551,222	C	3204/ 184	36	12/23/2005
THORNTON WILLIAM B EST	\$0		3130/ 054	35	08/25/2005
THORNTON WILLIAM B	\$0		492/ 089		

Building Information

Building 1 : Section 1

Year Built: 1965

Living Area: 1,863

Replacement Cost: \$223,203

Replacement Cost

Less Depreciation: \$84,800

Building Attributes

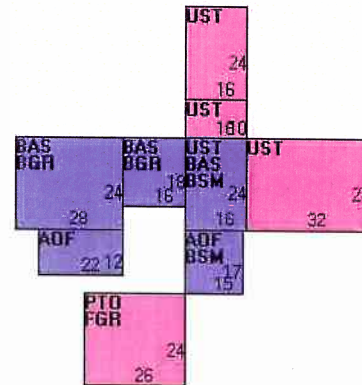
Field	Description
STYLE	Light Indust
MODEL	Ind/Comm
Grade	Average
Stories:	1
Occupancy	1
Exterior Wall 1	Pre-finish Metl
Exterior Wall 2	Concr/Cinder
Roof Structure	Flat
Roof Cover	Tar + Gravel
Interior Wall 1	Minim/Masonry
Interior Wall 2	Drywall/Sheetr
Interior Floor 1	Concr-Finished
Interior Floor 2	
Heating Fuel	Electric
Heating Type	Electr Basebrd
AC Type	None
Bldg Use	Industrial 96
Total Rooms	
Total Bedrms	00
Total Baths	0
1st Floor Use:	300
Heat/AC	None
Frame Type	Masonry
Baths/Plumbing	Average
Ceiling/Wall	Ceiling & Wall
Rooms/Prtns	Average
Wall Height	9
% Comn Wall	0

Building Photo



(<http://images.vgsi.com/photos2/ManchesterCTPhotos//\00\02\6>)

Building Layout



Building Sub-Areas (sq ft)		Legend	
Code	Description	Gross Area	Living Area
BAS	First Floor	1,344	1,344
AOF	Office, (Average)	519	519
BGR	Basement Garage	960	0
BSM	Basement	639	0
FGR	Garage	624	0
PTO	Patio	624	0
UST	Utility, Storage, Unfinished	1,696	0
		6,406	1,863

Building 2 : Section 1

Year Built: 1965
Living Area: 8,658
Replacement Cost: \$367,995
Replacement Cost
Less Depreciation: \$139,800

Building Attributes : Bldg 2 of 3

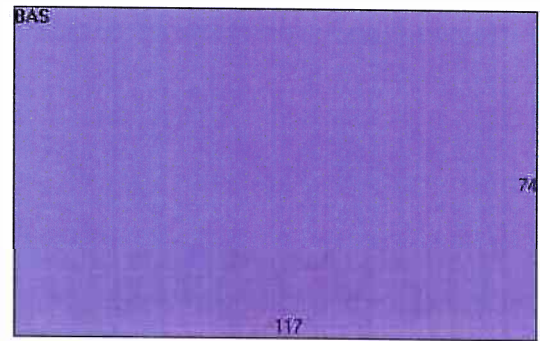
Field	Description
STYLE	Service Shop
MODEL	Serv Station
Grade	Minimum
Stories:	1
Occupancy	1
Exterior Wall 1	Concr/Cinder
Exterior Wall 2	
Roof Structure	Flat
Roof Cover	Metal/Tin
Interior Wall 1	Minim/Masonry
Interior Wall 2	
Interior Floor 1	Concr-Finished
Interior Floor 2	
Heating Fuel	Oil
Heating Type	Forced Air-Duc
AC Type	None
Bldg Use	Industrial 96
Total Rooms	
Total Bedrms	00
Total Baths	0
1st Floor Use:	300
Heat/AC	None
Frame Type	Masonry
Baths/Plumbing	Average
Ceiling/Wall	Ceiling & Wall
Rooms/Prtns	Average
Wall Height	18
% Comn Wall	0

Building Photo



(<http://images.vgsi.com/photos2/ManchesterCTPhotos//\00\02\6>)

Building Layout



Building Sub-Areas (sq ft)			Legend
Code	Description	Gross Area	Living Area
BAS	First Floor	8,658	8,658
		8,658	8,658

Building 3 : Section 1

Year Built: 1965
Living Area: 6,398
Replacement Cost: \$454,584
Replacement Cost Less Depreciation: \$172,700

Building Attributes : Bldg 3 of 3	
Field	Description
STYLE	Office Bldg
MODEL	Comm/Ind
Grade	Below Average
Stories:	1

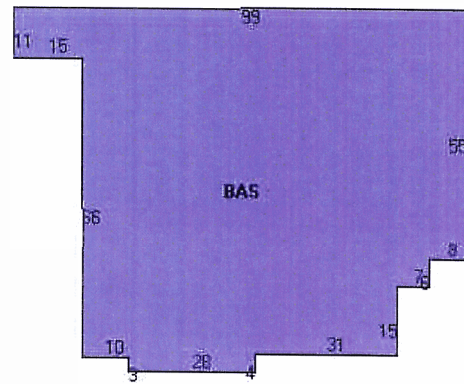
Occupancy	1
Exterior Wall 1	Concr/Cinder
Exterior Wall 2	
Roof Structure	Flat
Roof Cover	Metal/Tin
Interior Wall 1	Drywall/Sheetr
Interior Wall 2	
Interior Floor 1	Tile/Vinyl Cmp
Interior Floor 2	Carpet
Heating Fuel	Electric
Heating Type	Electr Basebrd
AC Type	Central
Bldg Use	Industrial 94
Total Rooms	
Total Bedrms	00
Total Baths	0
1st Floor Use:	300C
Heat/AC	Heat AC Split
Frame Type	Masonry
Baths/Plumbing	Average
Ceiling/Wall	Susp Ceil & WI
Rooms/Prtns	Average
Wall Height	10
% Comn Wall	0

Building Photo



(<http://images.vgsi.com/photos2/ManchesterCTPhotos/\00\02\6>)

Building Layout



Building Sub-Areas (sq ft)			Legend
Code	Description	Gross Area	Living Area
BAS	First Floor	6,398	6,398
		6,398	6,398

Extra Features

Extra Features	Legend
No Data for Extra Features	

Land

Land Use

Use Code	300
Description	Industrial 96
Zone	IND
Neighborhood	4000

Land Line Valuation

Size (Acres)	26.45
Frontage	0
Depth	0
Assessed Value	\$779,900

Outbuildings

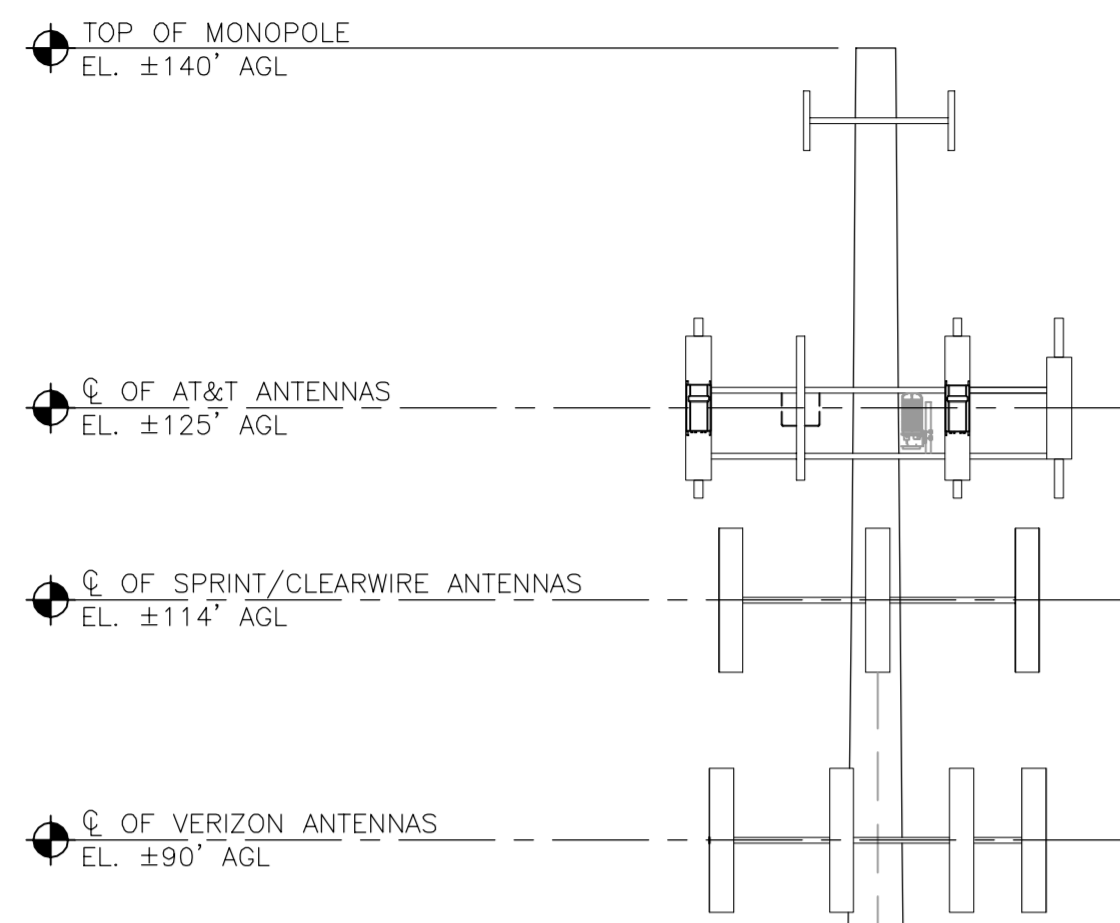
Outbuildings						Legend
Code	Description	Sub Code	Sub Description	Size	Value	Bldg #
FGR1	Garage Average			1440 S.F.	\$13,000	2
PAV2	Paving Concrete			40000 S.F.	\$54,000	1
PAV2	Paving Concrete			11498 S.F.	\$25,900	3
SHD1	Shed			1680 S.F.	\$15,100	1
PAV1	Paving Asphalt			8000 S.F.	\$10,000	3
TNK5	Tank Elevated			240 GALS	\$400	1
FN4	Fence 8' Chain			290 L.F.	\$4,400	1

Valuation History

Appraisal			
Valuation Year	Improvements	Land	Total
2015	\$440,800	\$1,114,200	\$1,555,000
2010	\$527,000	\$1,156,400	\$1,683,400
2005	\$458,400	\$795,200	\$1,253,600

Assessment			
Valuation Year	Improvements	Land	Total
2015	\$308,600	\$779,900	\$1,088,500
2010	\$369,000	\$809,400	\$1,178,400
2005	\$320,900	\$556,600	\$877,500

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TOWER STRUCTURAL NOTES:

1. TOWER STRUCTURAL ANALYSIS SIGNED AND SEALED BY A STRUCTURAL ENGINEER LICENSED IN THE STATE OF CONNECTICUT TO BE PROVIDED PRIOR TO INSTALLATION OF THE ADDITIONAL TOWER LOADING DEPICTED HEREIN.
2. ALL ANTENNAS AND COAX TO BE INSTALLED IN ACCORDANCE WITH STRUCTURAL ANALYSIS PROVIDED BY SBA COMMUNICATIONS, CORP. AND FINAL AT&T RF DATA SHEET.

NOTES:

1. OTHER CARRIER EQUIPMENT NOT SHOWN FOR CLARITY.
2. AGL = ABOVE GRADE LEVEL

EXISTING AT&T ICE BRIDGE WITH (12) LINES OF 1-1/4" DIA. COAX, (2) 2" FLEXIBLE CONDUIT WITH (1) FIBER TRUNK & (2) DC CONDUCTORS ROUTED TO TOWER.

EXISTING AT&T GPS ANTENNA TYP. OF (2)

EXISTING CHAINLINK FENCE (TYP.)

EXISTING ±140' TALL SBA MONOPOLE

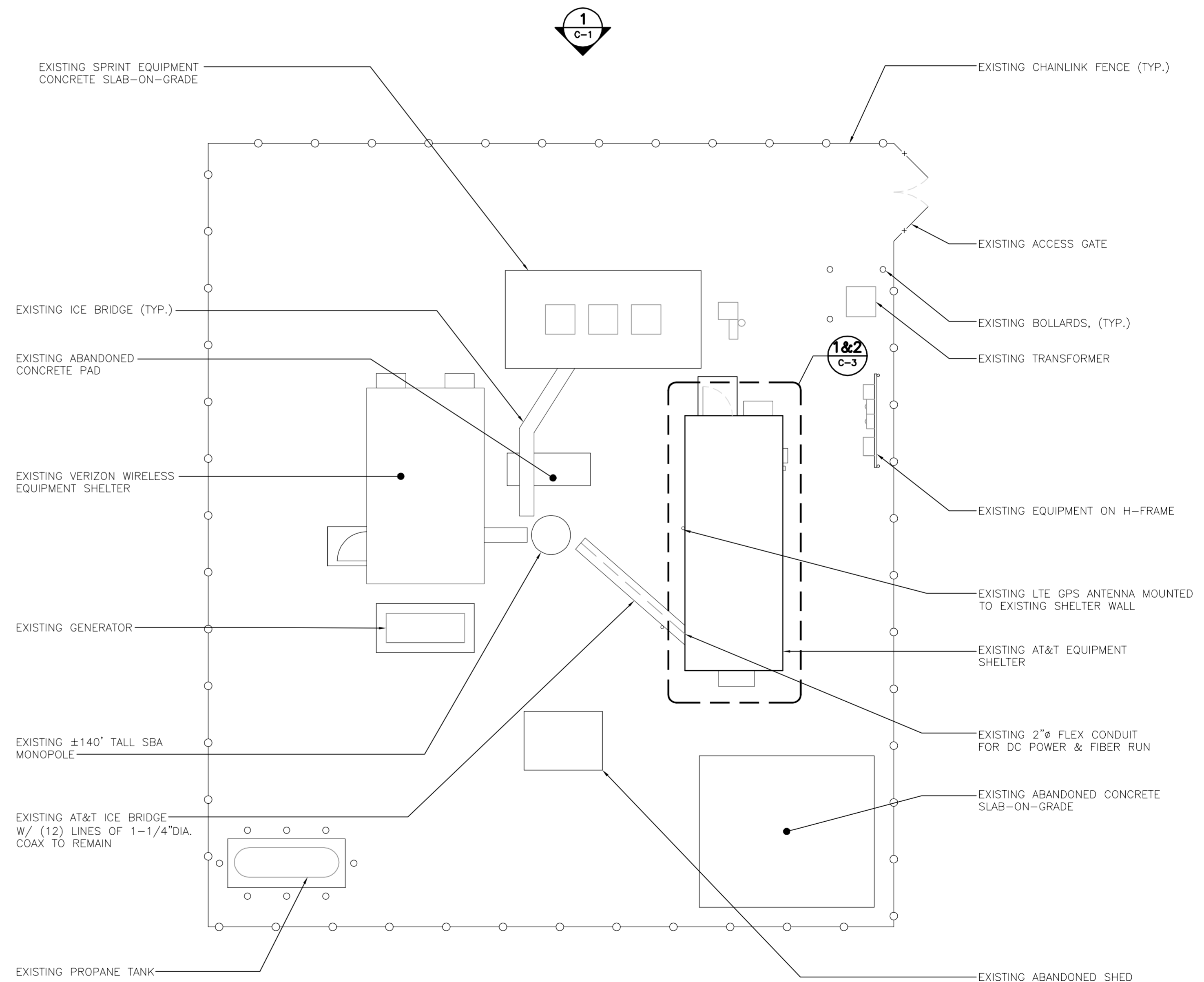
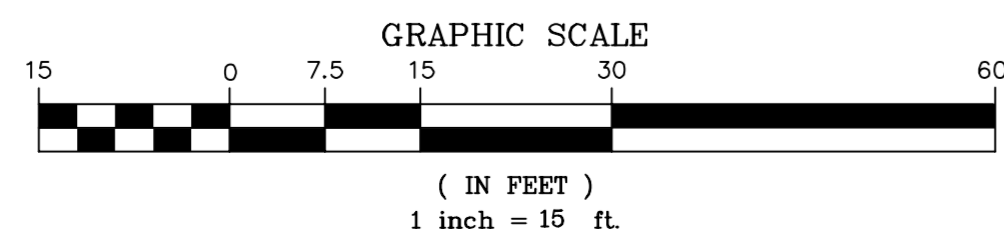
EXISTING SPRINT EQUIPMENT ON CONCRETE PAD

EXISTING VERIZON EQUIPMENT SHELTER

EXISTING PROPANE TANK

TOP OF FINISHED GRADE EL. ±0'

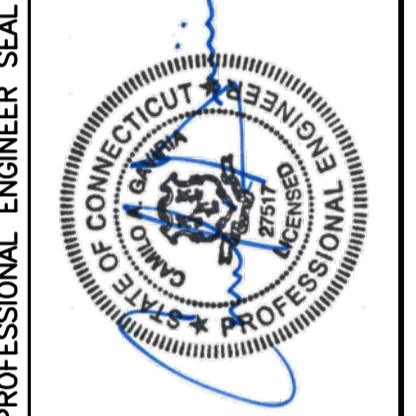
1 NORTH ELEVATION
C-1 SCALE: 1" = 15'-0"



2 COMPOUND PLAN
C-1 SCALE: 1/8" = 1'-0"



0	REV.	02/21/18	DATE	DMD	CAG	CONSTRUCTION DRAWINGS - ISSUED FOR CONSTRUCTION
						DRAWN BY/CHKD BY/DESCRIPTION



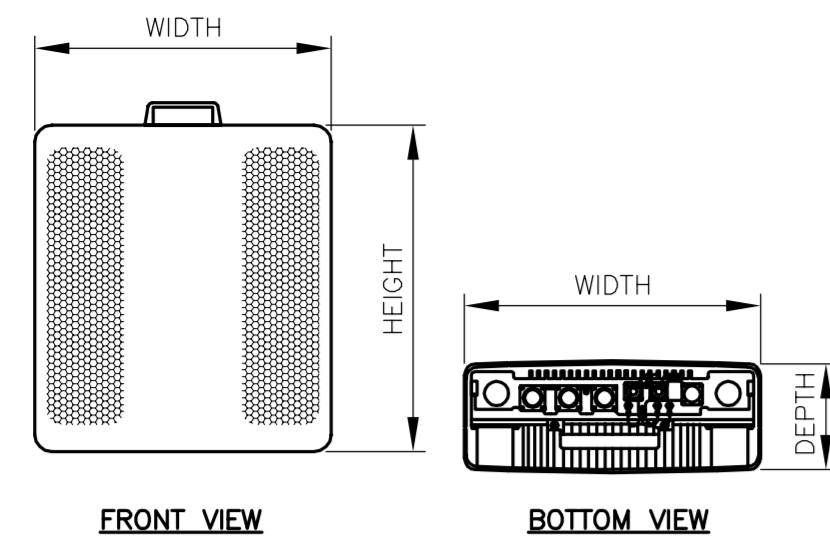
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60 ADAMS STREET
MANCHESTER, CT 06042

DATE: 08/29/17
SCALE: AS NOTED
JOB NO. 17004.48

PLAN AND ELEVATION

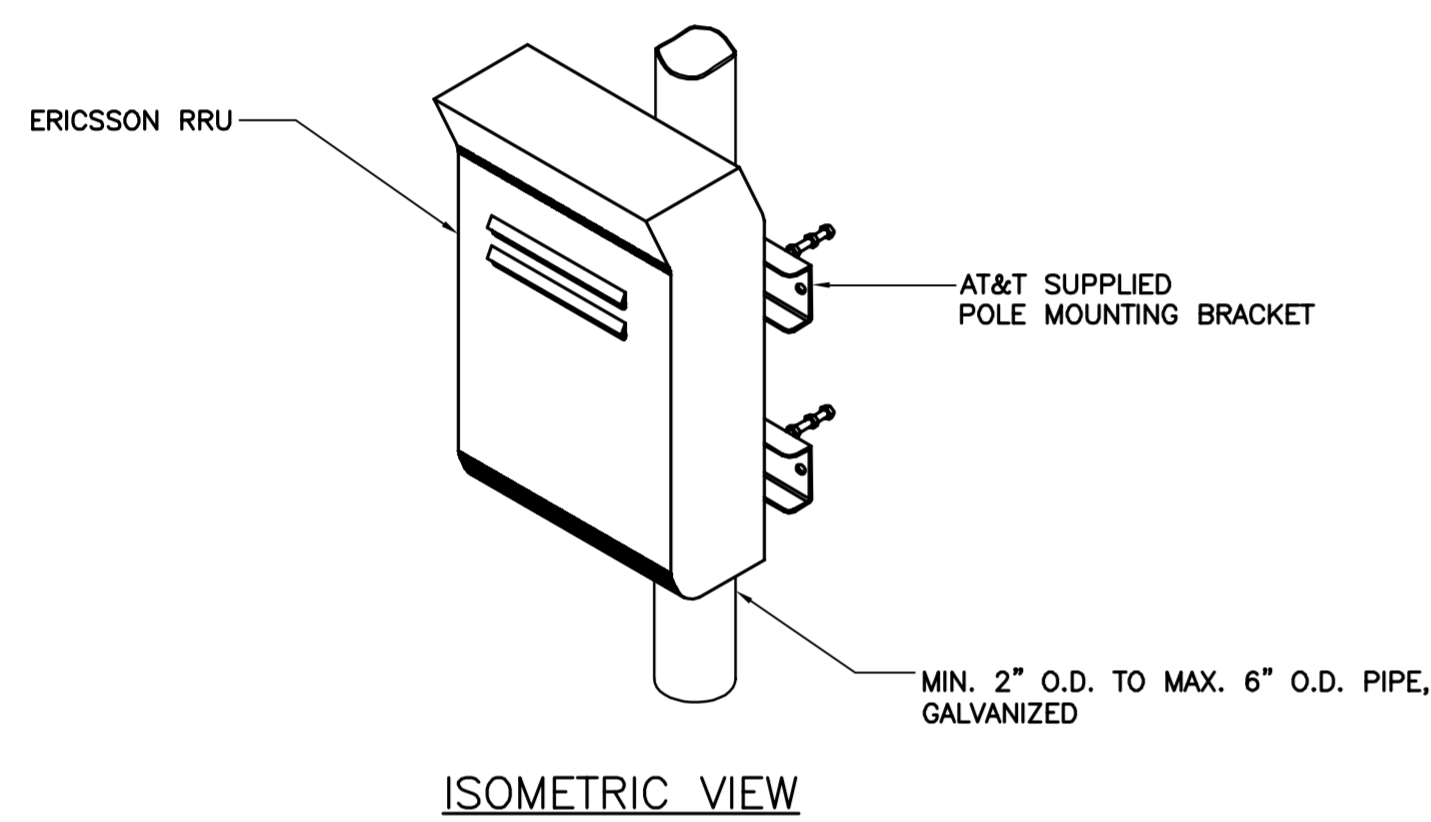
C-1
Sheet No. 3 of 9



RRU (REMOTE RADIO UNIT)			
EQUIPMENT	DIMENSIONS	WEIGHT	CLEARANCES
MAKE: ERICSSON MODEL: RRUS-E2	20.4"L x 18.5"W x 7.5"D	59.52 LBS.	ABOVE: 16" MIN. BELOW: 12" MIN. FRONT: 36" MIN.
MAKE: ERICSSON MODEL: RRUS 12	20.4"L x 18.5"W x 7.5"D	50 LBS.	ABOVE: 16" MIN. BELOW: 12" MIN. FRONT: 36" MIN.

NOTES:
1. CONTRACTOR TO COORDINATE FINAL EQUIPMENT MODEL SELECTION WITH AT&T CONSTRUCTION MANAGER PRIOR TO ORDERING.

1 ERICSSON REMOTE RADIO UNITS
C-4 SCALE: 1" = 1'-0"



- NOTES:
- AT&T SHALL SUPPLY RRU, AND RRU POLE-MOUNTING BRACKET. CONTRACTOR SHALL SUPPLY POLE/PIPE AND INSTALL ALL MOUNTING HARDWARE INCLUDING ERICSSON RRU POLE-MOUNTING BRACKET. CONTRACTOR SHALL INSTALLS RRU AND MAKES CABLE TERMINATIONS.
 - NO PAINTING OF THE RRU OR SOLAR SHIELD IS ALLOWED.

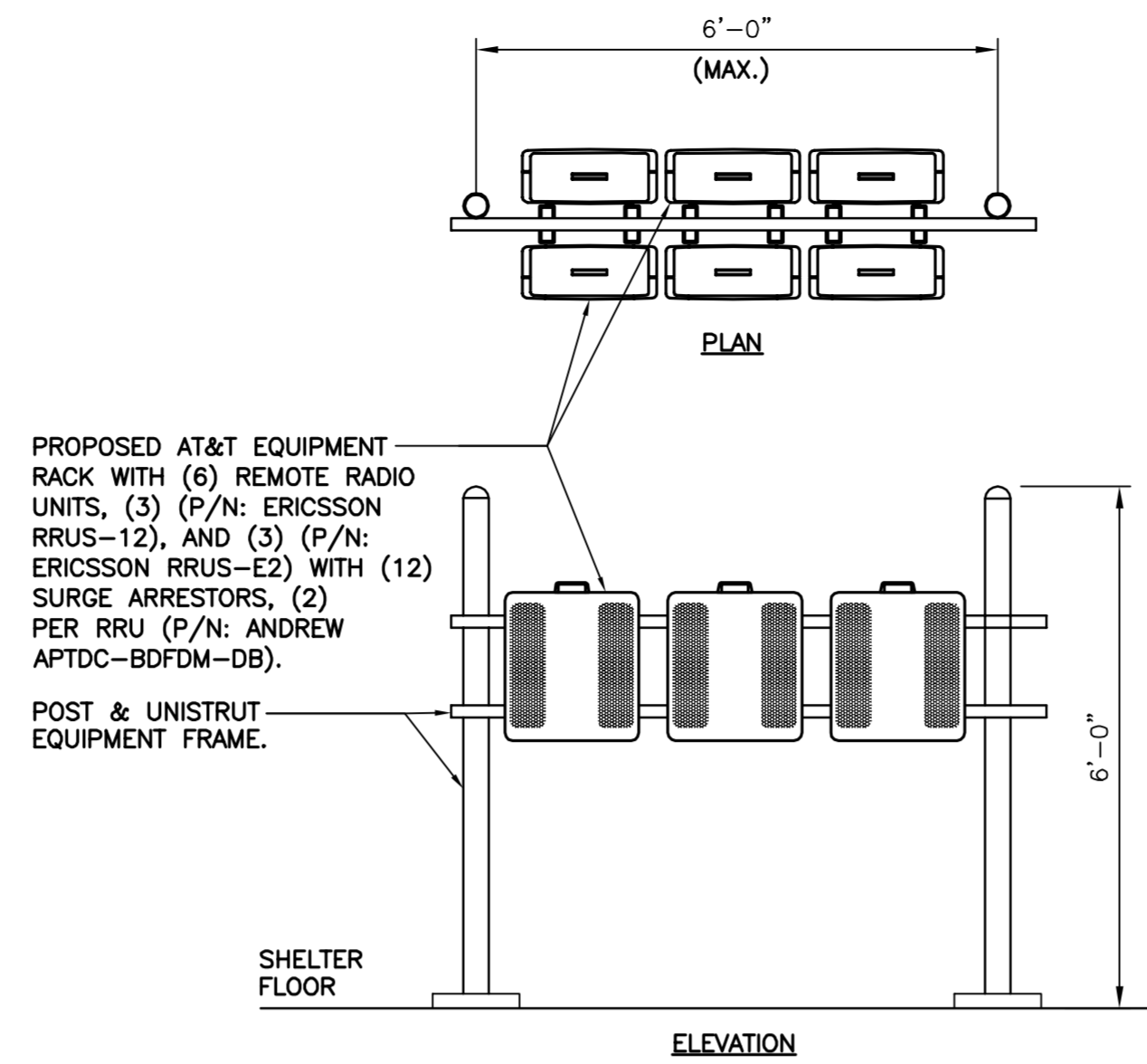
2 TYPICAL RRU MOUNTING DETAIL
C-4 SCALE: NTS



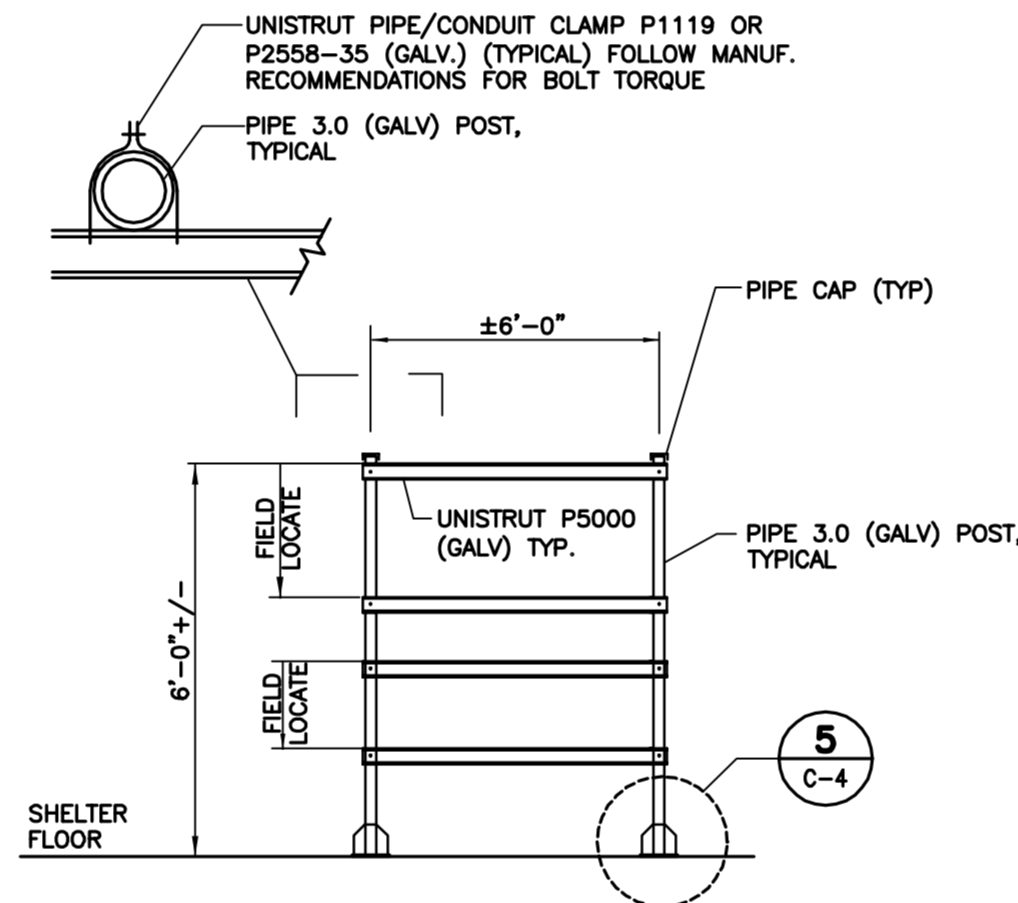
SURGE ARRESTOR		
EQUIPMENT	DIMENSIONS	WEIGHT
MAKE: ANDREW MODEL: APTDC-BDFDM-DB	3.46"H x 3.46"W x 1.65"D	1.32 LBS.

NOTES:
1. CONTRACTOR TO COORDINATE FINAL EQUIPMENT MODEL SELECTION WITH AT&T CONSTRUCTION MANAGER PRIOR TO ORDERING.

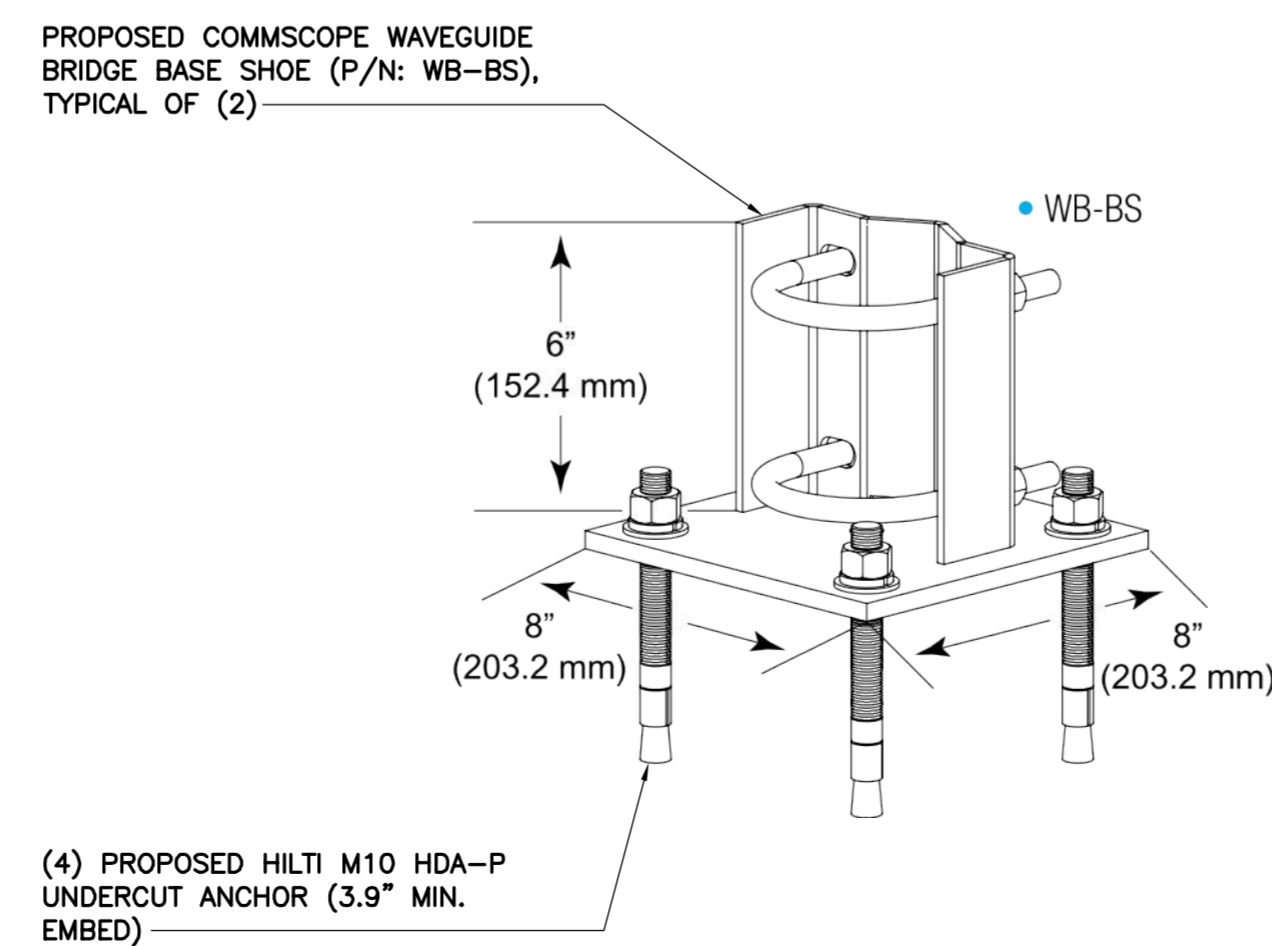
3 ANDREW APTDC-BDFDM-DB DETAIL
C-4 SCALE: NOT TO SCALE



4 PROPOSED EQUIPMENT RACK
C-4 SCALE: 1/2" = 1'-0"



5 PROPOSED EQUIPMENT MOUNTING FRAME DETAIL
C-4 SCALE: NOT TO SCALE



6 EQUIPMENT FRAME POST ATTACHMENT DETAIL
C-4 SCALE: NOT TO SCALE

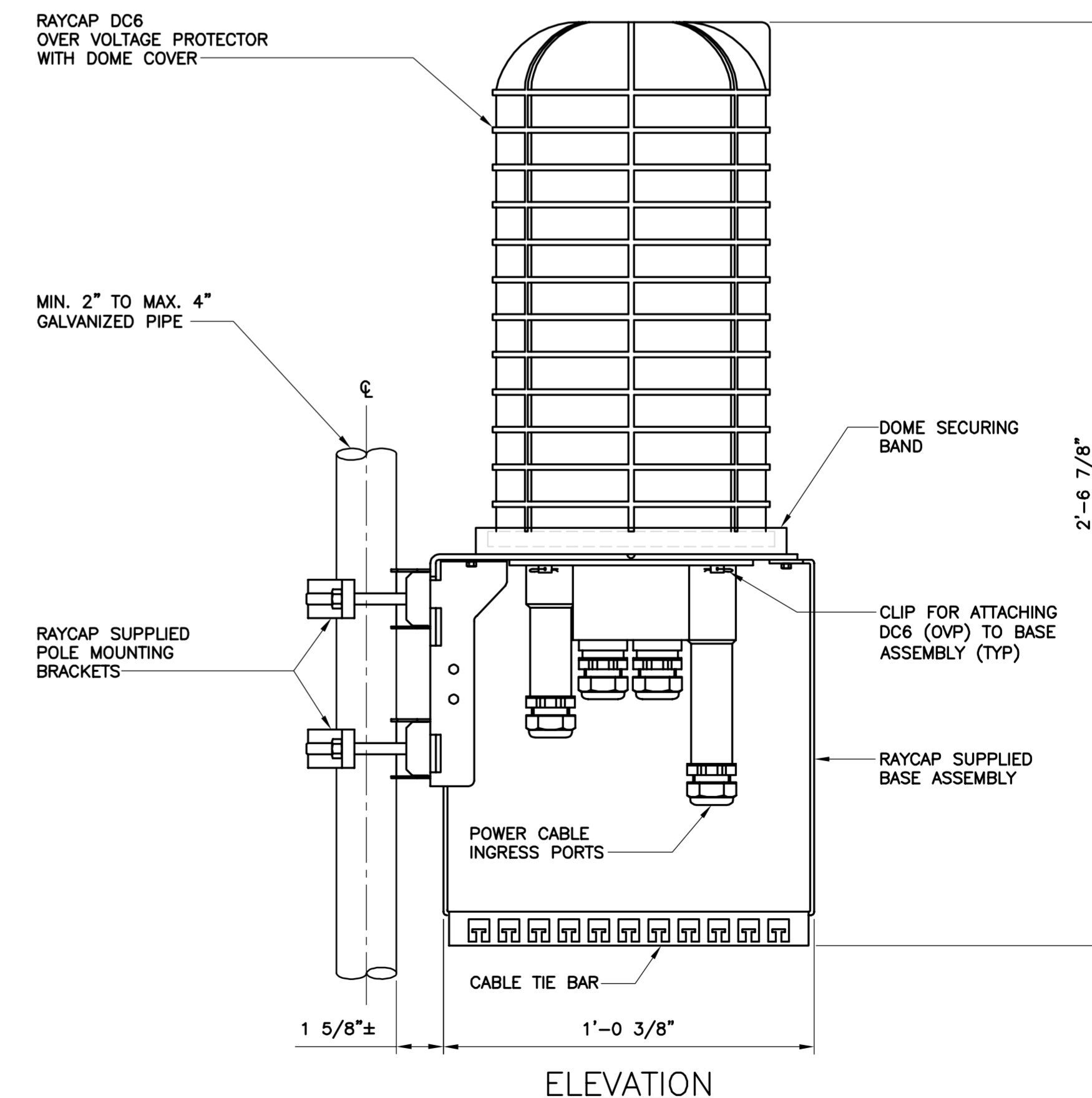


LOW BAND COMBINER

DIPLEXER 700/850		
EQUIPMENT	DIMENSIONS	WEIGHT
MAKE: KAELUS MODEL: DBC0061F1V51-2	8"H x 6.45"W x 6.2"D	18.3 LBS.

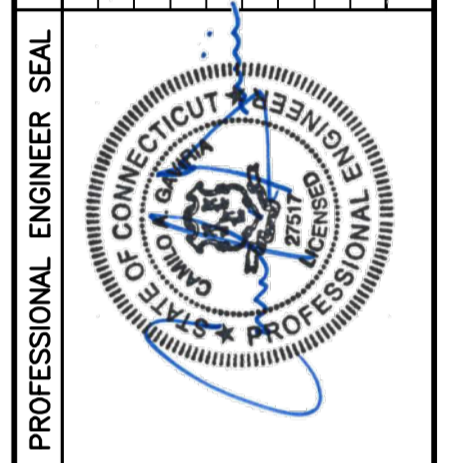
NOTES:
1. CONTRACTOR TO COORDINATE FINAL EQUIPMENT MODEL SELECTION WITH AT&T CONSTRUCTION MANAGER PRIOR TO ORDERING.

7 KAELUS DBC0061FV51-2 DETAIL
C-4 SCALE: NOT TO SCALE



8 RAYCAP DC6 MOUNTING DETAIL
C-4 SCALE: 3" = 1'-0"

REV.	DATE	BY	CHKD	DESCRIPTION
0	02/21/18	DMD	CAG	CONSTRUCTION DRAWINGS - ISSUED FOR CONSTRUCTION

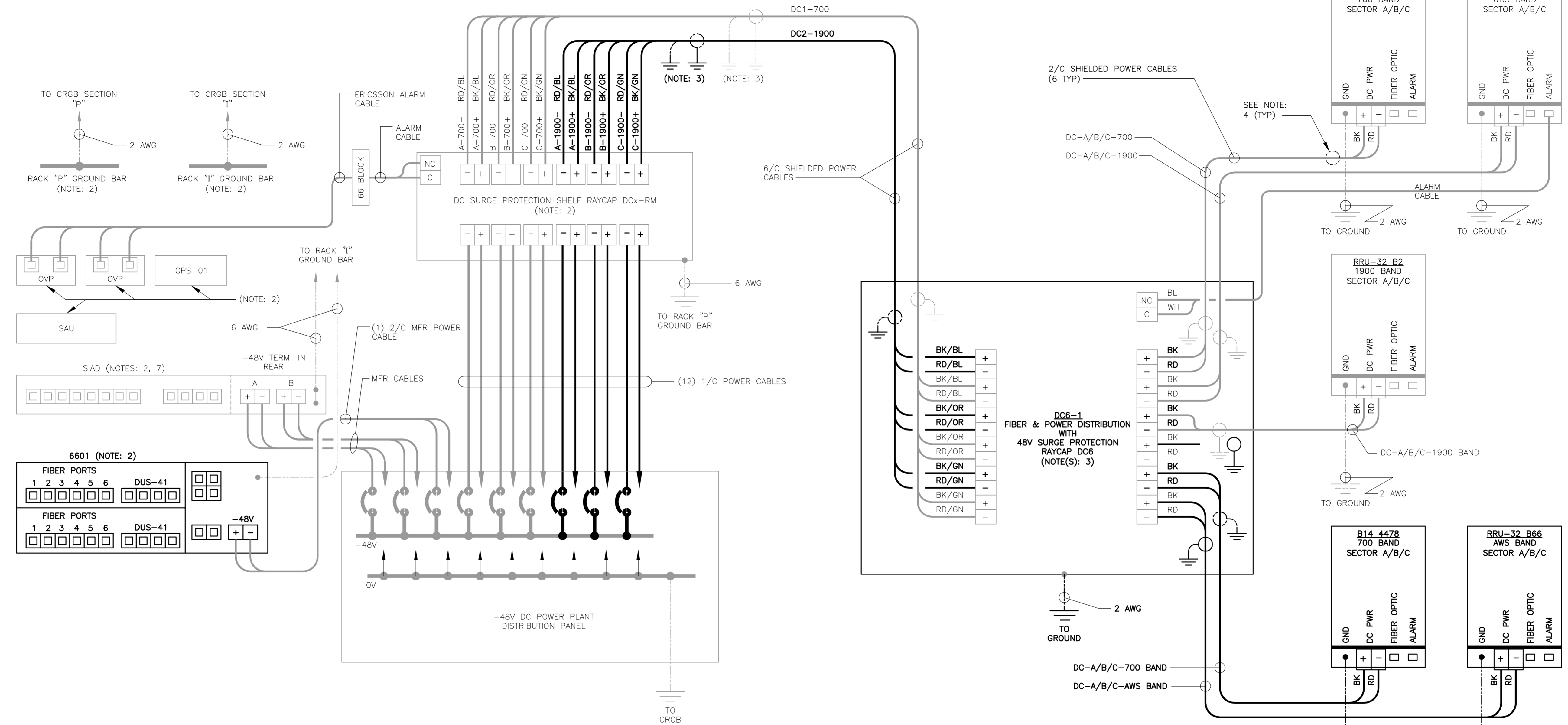


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DETAILS

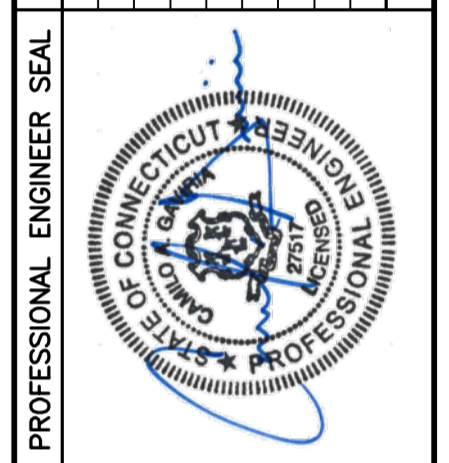


1 LTE WIRING DIAGRAM
E-2 NOT TO SCALE

LTE WIRING DIAGRAM NOTES:

1. LABEL THE DC POWER CABLES AT BOTH ENDS OF EVERY WIRE AND IN ANY PULL BOX IF USED. LABEL SHALL BE DURABLE, SELF ADHESIVE, WRAPPED LONGITUDINALLY ALONG THE CABLE AND STATE THE SECTOR, FREQUENCY BAND AND POLARITY; I.E. "A-1900+". CABLE AND WIRE LABELS SHOWN ARE REPRESENTATIVE AND MAY BE MODIFIED AS DIRECTED BY AT&T.
2. INSTALL ON BASEBAND EQUIPMENT RACK.
3. THE BARE GROUND WIRE OF EACH MULTI-CONDUCTOR CABLE SHALL BE CONNECTED TO THE "P" GROUND BAR ON THE RACK. WHEN A SHIELDED CABLE IS USED, THE DRAIN WIRE ALSO SHALL BE CONNECTED TO THE "P" GROUND BAR.
4. CABLE GROUND WIRE AND SHIELD DRAIN WIRE TO BE LEFT UN-TERMINATED AT RRU AND DC POWER PLANT.
5. SEE LTE SCHEMATIC DIAGRAM DETAIL 1/E-1 FOR BREAKER RATING.

REV	0	DATE	02/21/18	DRAWN BY	CHKD BY	CAG	CONSTRUCTION DRAWINGS - ISSUED FOR CONSTRUCTION
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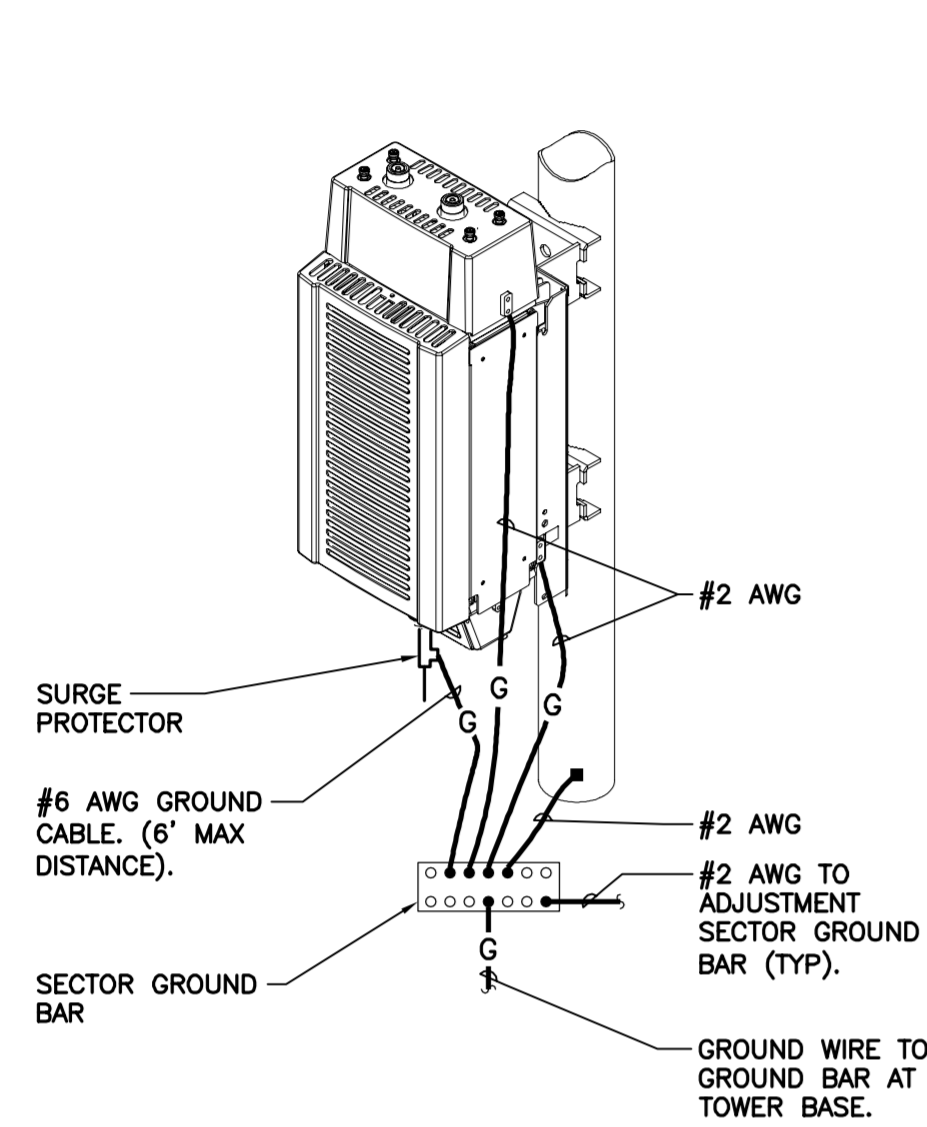
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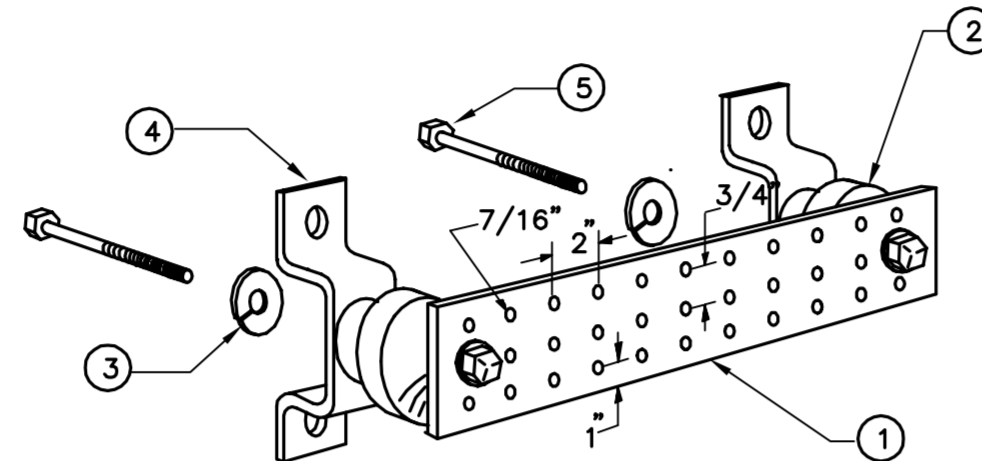
DATE: 08/29/17
SCALE: AS NOTED
JOB NO. 17004.48

LTE WIRING DIAGRAM

EACH RRU CABINET SHALL BE GROUNDED IN THE FOLLOWING MANNER:
 1. AT TOP OF THE CABINET
 2. AT RIGHT SIDE OF THE CABINET.

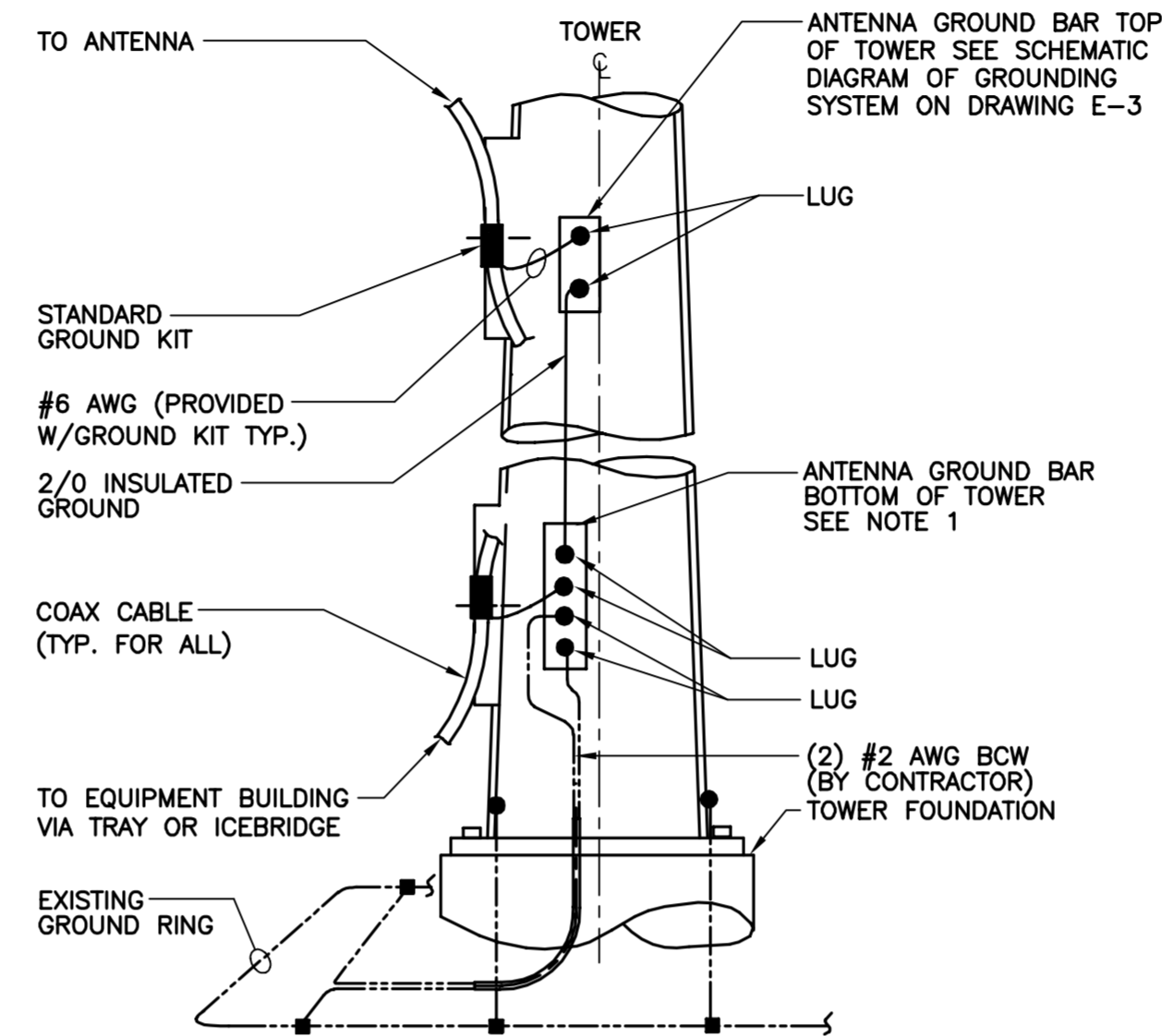


4 RRU POLE MOUNT GROUNING
 E-3 NOT TO SCALE



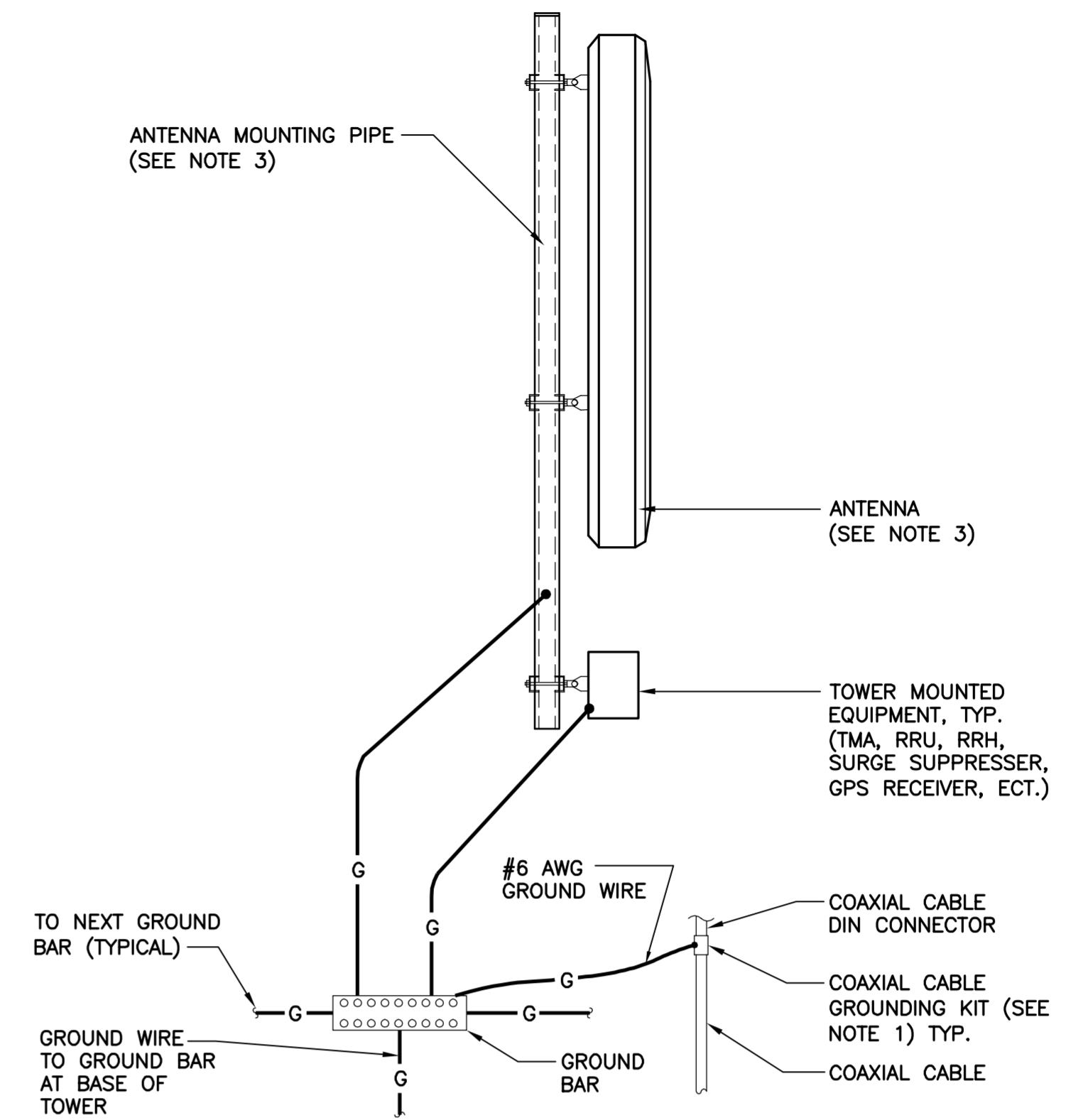
- LEGEND**
1. TINNED COPPER GROUND BAR, 1/4"x 4"x 20", NEWTON INSTRUMENT CO. HOLE CENTERS TO MATCH NEMA DOUBLE LUG .
 2. INSULATORS, NEWTON INSTRUMENT CAT. NO. 2. 3061-4.
 3. 5/8" LOCK WASHERS, NEWTON INSTRUMENT CO. CAT. NO. 3015-8.
 4. WALL MOUNTING BRACKET, NEWTON INSTRUMENT CO. CAT. NO. A-6056.
 5. STAINLESS STEEL SECURITY SCREWS.

3 GROUND BAR DETAIL
 E-3 NOT TO SCALE



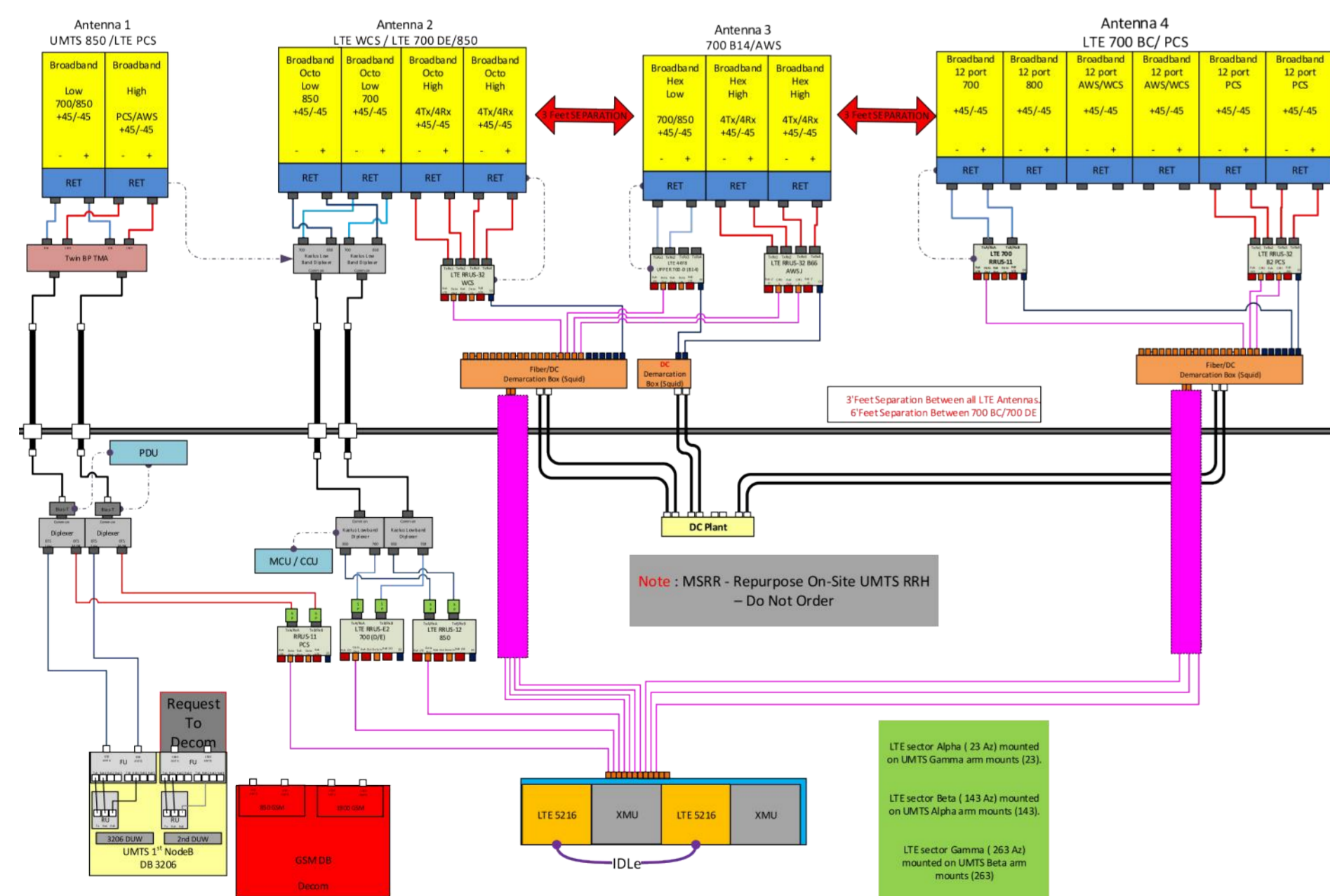
- NOTES:**
1. NUMBER OF GROUND BARS MAY VARY DEPENDING ON THE TYPE OF TOWER, LOCATION AND CONNECTION ORIENTATION. PROVIDE AS REQUIRED.
 2. A SEPARATE GROUND BAR TO BE USED FOR GPS ANTENNA IF REQUIRED.

2 ANTENNA CABLE GROUNING - TOWER
 E-3 NOT TO SCALE

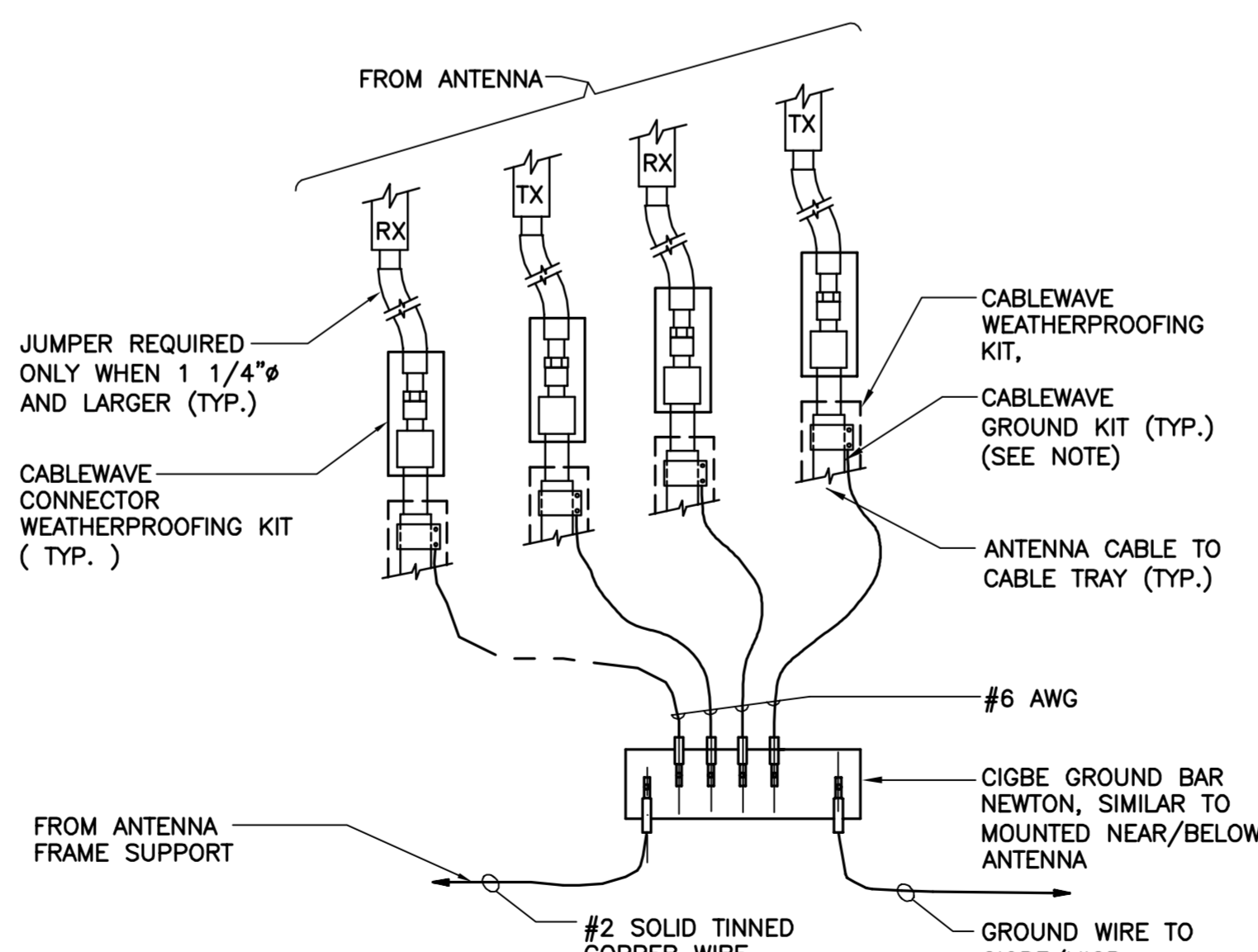


- NOTES:**
1. BOND COAXIAL CABLE GROUND KITS TO EACH OWNER'S GROUND BAR ALONG ENTIRE COAX RUN FROM ANTENNA TO SHELTER.
 2. BOND ALL EQUIPMENT TO GROUND PER NEC AND MANUFACTURERS SPECIFICATIONS.
 3. DETAIL IS TYPICAL FOR ALL ANTENNA SECTORS, INCLUDING GPS ANTENNA.

1 TYPICAL ANTENNA GROUNING DETAIL
 E-3 NOT TO SCALE

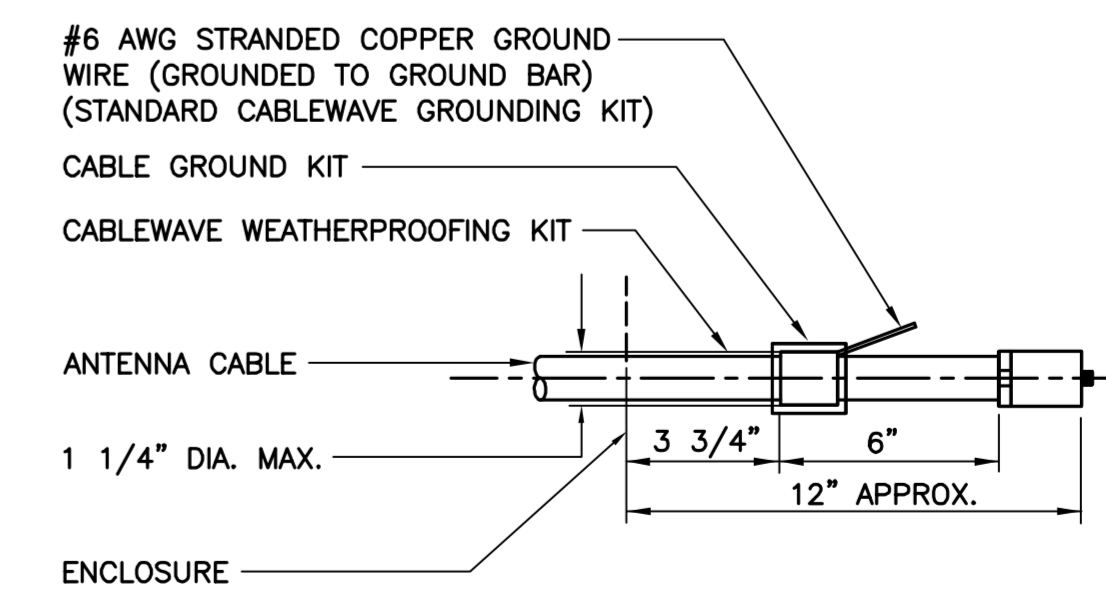


5 RF PLUMBING DIAGRAM
 E-3 NOT TO SCALE



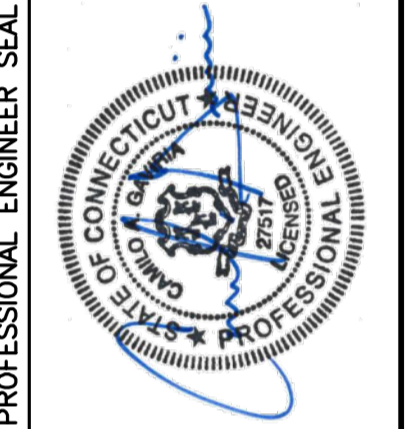
- NOTE:**
1. DO NOT INSTALL CABLE GROUND KIT AT A BEND AND ALWAYS DIRECT GROUND WIRE DOWN TO CIGBE

6 CONNECTION OF GROUND WIRES TO GROUND BAR
 E-3 NOT TO SCALE



- NOTE:**
1. DO NOT INSTALL CABLE GROUND KIT AT A BEND AND ALWAYS DIRECT GROUND WIRE DOWN TO GROUND BAR.

5 ANTENNA CABLE GROUNING DETAIL
 E-3 NOT TO SCALE



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MANCHESTER SAND AND GRAVEL
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 60 ADAMS STREET
 MANCHESTER, CT 06042

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TYPICAL ELECTRICAL DETAILS



Tower Engineering Solutions

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

Structural Analysis Report

Existing 141 ft EEI Monopole

Customer Name: SBA Communications Corp

Customer Site Number: CT16504-A

Customer Site Name: Manchester 12, CT

Carrier Name: AT&T

Carrier Site ID / Name: CT1080 / Manchester Sand and Gravel

Site Location: 60 Adams Street

Manchester, Connecticut

Hartford County

Latitude: 41.794100

Longitude: -72.555300

Analysis Result:

Max Structural Usage: 98.6% [Pass]

Max Foundation Usage: 94% [Pass]

Additional Usage Caused by New Mount/Mount Modification: N/A

Report Prepared By : Ram Kodali





Tower Engineering Solutions

Phone (972) 483-0607, Fax (972) 975-9615
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Structural Analysis Report

Existing 141 ft EEI Monopole

Customer Name: SBA Communications Corp

Customer Site Number: CT16504-A

Customer Site Name: Manchester 12, CT

Carrier Name: AT&T

Carrier Site ID / Name: CT1080 / Manchester Sand and Gravel

Site Location: 60 Adams Street

Manchester, Connecticut

Hartford County

Latitude: 41.794100

Longitude: -72.555300

Analysis Result:

Max Structural Usage: 98.6% [Pass]

Max Foundation Usage: 94% [Pass]

Additional Usage Caused by New Mount/Mount Modification: N/A

Report Prepared By : Ram Kodali

Introduction

The purpose of this report is to summarize the analysis results on the 141 ft EEI 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	FDH, Mapping Report #15BRLA1500, dated June 15, 2015
Foundation Drawing	FDH, Mapping Report # 15BRLC1500, dated June 16, 2015
Geotechnical Report	FDH, Project # 15BRNG1600, dated June 17, 2015
Modification Drawings	TES, Job # 36710, dated December 14, 2017

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 $V_{ult} = 125$ mph (3-Sec. Gust)/ Nominal Design Wind Speed $V_{asd} = 97$ mph (3-Sec. Gust)
Wind Speed with Ice:	50 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:	$S_5 = 0.178, S_1 = 0.064$

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

Existing Antennas, Mounts and Transmission Lines

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

Items	Elevation (ft)	Qty.	Antenna Descriptions	Mount Type & Qty.	Transmission Lines	Owner
1	135.0	3	Ericsson AIR32 KRD901146-1_B66A_B2A - Panel	(3) Sector Frame (MCG23HDX-10M-9-96)	(2) 1 1/4" Fiber (2) 1 5/8"	T-Mobile
2		3	Commscope F-65C-R2 - Panel			
3		3	RFS APX16DWV-16DWVS-E-A20 - Panel			
4		3	Ericsson S11B12 - RRU			
5		3	Ericsson RRUS 32 B66A - RRU			
6		3	15" X 14" X 7.5" - RRU			
-	125.0	3	Quintel QS66512-2 - Panel	Platform w/ Hand Rails	(12) 1 1/4" (4) 0.625" DC (2) 0.40" Fiber (1) 2" Conduit	AT&T
-		3	Kathrein 800-10121 - Panel			
-		3	CCI OPA-65R-LCUU-H6 - Panel			
-		3	AM-X-CD-16-65-00T-RET (54") - Panel			
-		6	CCI DTMAPB7819VG12A			
-		6	Kathrein 782 10250			
-		6	Ericsson RRUS-32			
-		3	Ericsson RRUS-11			
-		2	Raycap DC6-48-60-18-8F			
19	118.5	1	Andrew VHLP1-23-DW1 - Dish	Low Profile Platform*	(3) 1-1/4" (2) 2 1/8" F.C. (1) 3/4" Fiber (2) 5/8"	Sprint-Clearwire
20	1	Andrew VHLP2-23-DW1 - Dish				
21	117.0	3	RFS APXVTM14 - Panel			
22		3	RFS APXVSP18 - Panel			
23		3	Alcatel Lucent RRH8x20-25-FEU			
24	3	Alcatel Lucent RRH1900-4X45				
25	114.5	3	Argus LLPX310R-V1 - Panel			
26	114.0	1	20" x 18" x 9" Junction Box			
27	113.0	3	Samsung SPI-22132825WB			
28	112.5	3	Alcatel Lucent RRH2X50-800			
29	90.0	3	Swedcom SLCP 2x6014 - Panel	Platform w/ Hand Rails	(12) 1 5/8" (2) 1 5/8" Fiber	Verizon
30		6	Commscope SBNHH-1D65B - Panel			
31		3	Antel BXA-70063-6CF-EDIN-x - Panel			
32		3	Alcatel Lucent RRH2X60-AWS			
33		3	Alcatel Lucent RRH2X60-700			
34		3	Alcatel Lucent RRH2X60-PCS			
35		1	RFS DB-T1-6Z-8AB-OZ			

*Mount is at 114'.

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
7	125.0	3	Quintel QS66512-2 - Panel	Platform w/ Hand Rails	(12) 1 1/4" (4) 0.625" DC (2) 0.40" Fiber (2) 2" Conduit	AT&T
8		3	Kathrein 800-10121 - Panel			
9		3	CCI OPA-65R-LCUU-H6 - Panel			
10		3	CCI HPA-65R-BUU-H6 - Panel			
11		6	CCI DTMABP7819VG12A			
12		6	Kathrein 782 10250			
13		6	Ericsson RRUS-32			
14		3	Ericsson RRUS-11			
15		3	Ericsson B14 4478			
16		3	Ericsson RRUS 32 B66			
17		6	Kaelus DBC0061F1V51-2			
18		3	Raycap DC6-48-60-18-8F			

All proposed 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:	98.6%	83.3%	64%
Pass/Fail	Pass	Pass	Pass

Foundations

	Moment (Kip-Ft)	Shear (Kips)	Axial (Kips)
Analysis Reactions	3583.4	33.8	41

The foundation has been investigated using the supplied documents and soils report and was found to be 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 1.9426 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 98.64% at 70.0ft

Structure: CT16504-A-SBA
Site Name: Manchester 12, CT
Height: 140.50 (ft)
Base Elev: 0.000 (ft)

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

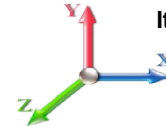
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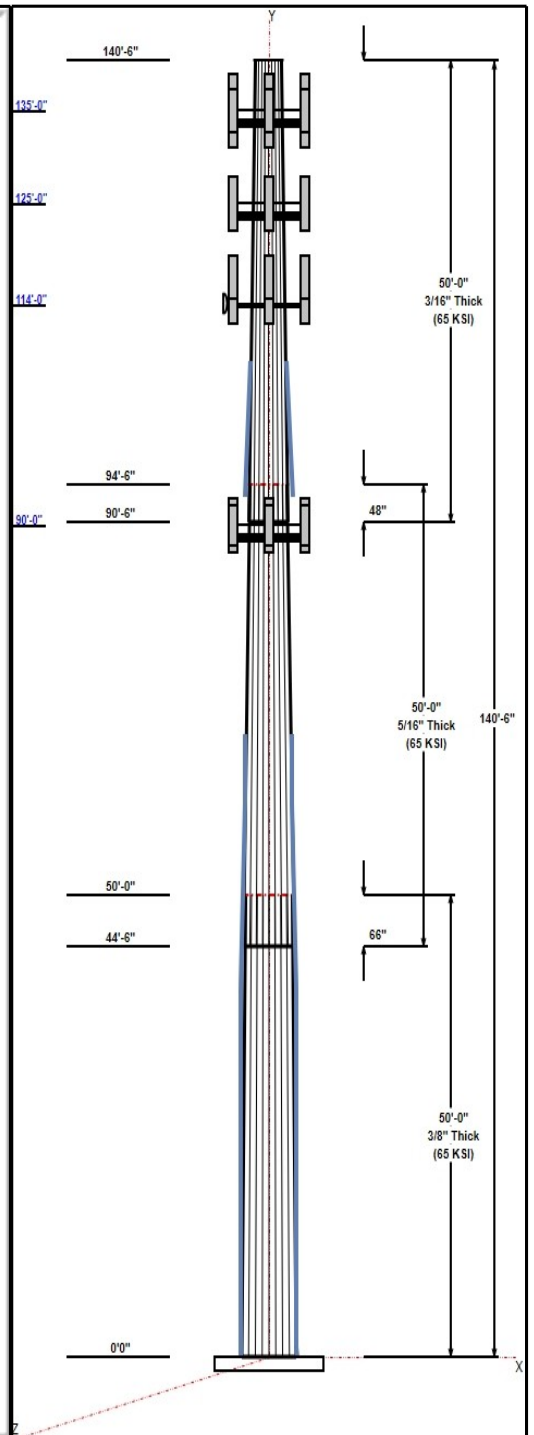
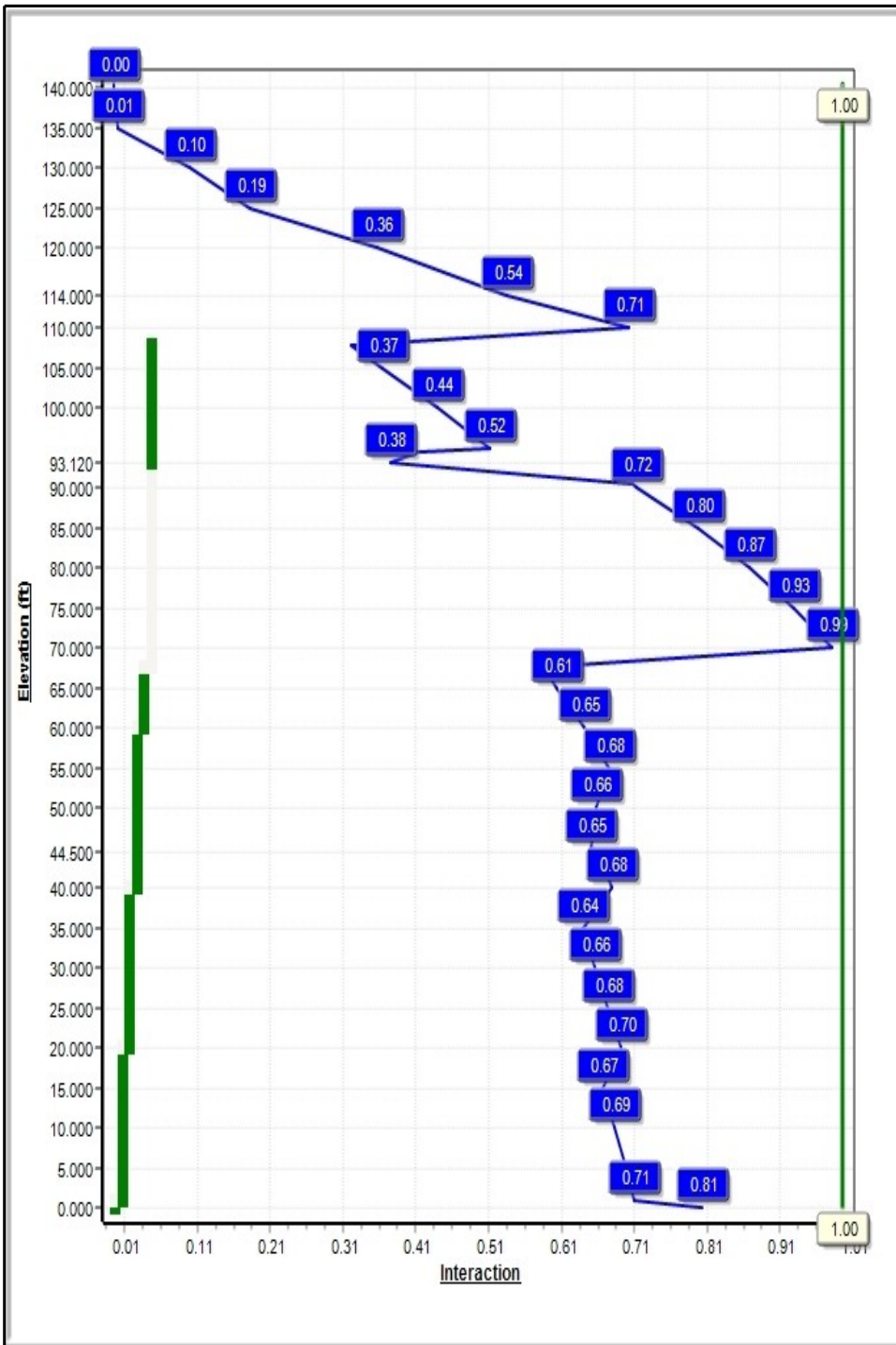
Dead Load Factor: 1.20
Wind Load Factor: 1.60

Load Case : 1.2D + 1.6W 97 mph Wind



Iterations: 25

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Structure: CT16504-A-SBA

Type: Tapered
Site Name: Manchester 12, CT
Height: 140.50 (ft)
Base Elev: 0.00 (ft)

Base Shape: 18 Sided
Taper: 0.18206

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Shaft Properties

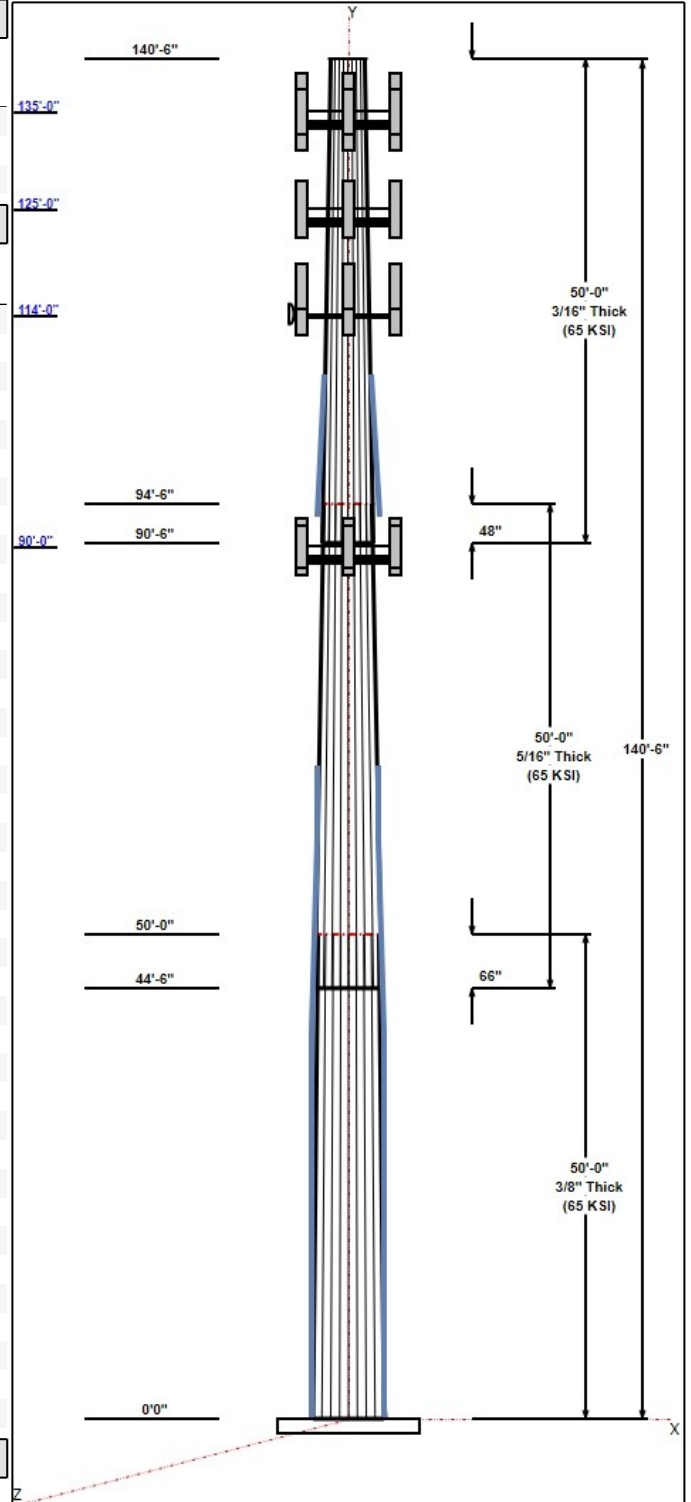
Seq	Length (ft)	Top (in)	Bottom (in)	Thick (in)	Joint Type	Taper	Grade (ksi)
1	50.00	33.44	42.54	0.375		0.18206	65
2	50.00	25.96	35.06	0.313	Slip	0.18206	65
3	50.00	17.96	27.06	0.188	Slip	0.18206	65

Discrete Appurtenances

Attach Elev (ft)	Force Elev (ft)	Qty	Description	Carrier
135.00	135.00	3	Ericsson AIR32	T-Mobile
135.00	135.00	3	Commscope F-65C-R2	T-Mobile
135.00	135.00	3	RFS	T-Mobile
135.00	135.00	3	Ericsson S11B12	T-Mobile
135.00	135.00	3	Ericsson RRUS 32 B66A	T-Mobile
135.00	135.00	3	Expansion rights	T-Mobile
135.00	135.00	3	Sector Frame	T-Mobile
125.00	125.00	1	Platform w/ Hand Rails	AT&T
125.00	125.00	3	QS66512-2	AT&T
125.00	125.00	3	CCI OPA-65R-LCUU-H6	AT&T
125.00	125.00	6	Kathrein 782 10250	AT&T
125.00	125.00	3	Raycap DC6-48-60-18-8F	AT&T
125.00	125.00	6	CCI DTMABP7819VG12A	AT&T
125.00	125.00	3	Ericsson RRUS-11	AT&T
125.00	125.00	6	Ericsson RRUS-32	AT&T
125.00	125.00	3	Kathrein 800-10121	AT&T
125.00	125.00	3	HPA-65R-BUU-H6	AT&T
125.00	125.00	3	B14 4478	AT&T
125.00	125.00	3	RRUS 32 B66	AT&T
125.00	125.00	6	DBC0061F1V51-2	AT&T
114.00	118.50	1	Andrew VHLP1-23-DW1	Sprint-Clearwire
114.00	118.50	1	Andrew VHLP2-23-DW1	Sprint-Clearwire
114.00	114.50	3	Argus LLPX310R-V1	Sprint-Clearwire
114.00	113.00	3	Samsung	Sprint-Clearwire
114.00	114.00	1	20" x 18" x 9" Junction Box	Sprint-Clearwire
114.00	117.00	3	RFS APXVTM14	Sprint-Clearwire
114.00	115.00	3	RFS APXVSP18	Sprint-Clearwire
114.00	117.00	3	Alcatel Lucent	Sprint-Clearwire
114.00	112.50	3	Alcatel Lucent	Sprint-Clearwire
114.00	117.00	3	Alcatel Lucent	Sprint-Clearwire
114.00	114.00	1	Low Profile Platform	Sprint-Clearwire
90.00	90.00	3	Swedcom SLCP 2x6014	Verizon
90.00	90.00	6	Commscope	Verizon
90.00	90.00	3	Antel	Verizon
90.00	90.00	3	Alcatel Lucent	Verizon
90.00	90.00	3	Alcatel Lucent	Verizon
90.00	90.00	3	Alcatel Lucent	Verizon
90.00	90.00	3	Alcatel Lucent	Verizon
90.00	90.00	1	RFS DB-T1-6Z-8AB-0Z	Verizon
90.00	90.00	1	Platform w/ Hand Rails	Verizon

Linear Appurtenances

Elev From (ft)	Elev To (ft)	Placement	Description	Carrier
0.00	135.00	Outside	1 1/4" Fiber	T-Mobile
0.00	135.00	Outside	1 5/8" Coax	T-Mobile
0.00	125.00	Inside	0.40" Fiber	AT&T
0.00	125.00	Inside	0.625" DC	AT&T



Structure: CT16504-A-SBA

Type: Tapered
Site Name: Manchester 12, CT
Height: 140.50 (ft)
Base Elev: 0.00 (ft)

Base Shape: 18 Sided
Taper: 0.18206

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0.00	125.00	Inside	1 1/4" Coax	AT&T
0.00	125.00	Inside	2" Conduit	AT&T
0.00	114.00	Inside	1-1/4"	Sprint-Clearwire
0.00	114.00	Inside	2 1/8" F.C.	Sprint-Clearwire
0.00	114.00	Inside	3/4"	Sprint-Clearwire
0.00	114.00	Inside	5/8"	Sprint-Clearwire
90.50	110.50	Outside	1" Reinforcing plate	
90.50	110.50	Outside	1" Reinforcing plate	
0.00	90.00	Inside	1 5/8" Coax	Verizon
0.00	90.00	Inside	1 5/8" Fiber	Verizon
40.00	70.00	Outside	1" Reinforcing plate	
40.00	70.00	Outside	1" Reinforcing plate	
0.00	40.00	Outside	1.25" Reinforcing plate	
0.00	40.00	Outside	1.25" Reinforcing plate	

Anchor Bolts

Qty	Specifications	Grade (ksi)	Arrangement
12	2.25" 18J	75.0	Radial

Base Plate

Thickness (in)	Specifications (in)	Grade (ksi)	Geometry
1.7500	57.0	60.0	Round

Reactions

Load Case	Moment (FT-Kips)	Shear (Kips)	Axial (Kips)
1.2D + 1.6W 97 mph Wind	3583.4	33.8	41.0
0.9D + 1.6W 97 mph Wind	3533.3	33.8	30.8
1.2D + 1.0Di + 1.0Wi 50 mph Wind	1029.7	9.3	84.7
1.2D + 1.0E	182.7	1.6	41.0
0.9D + 1.0E	179.9	1.6	30.8
1.0D + 1.0W 60 mph Wind	851.1	8.1	34.2

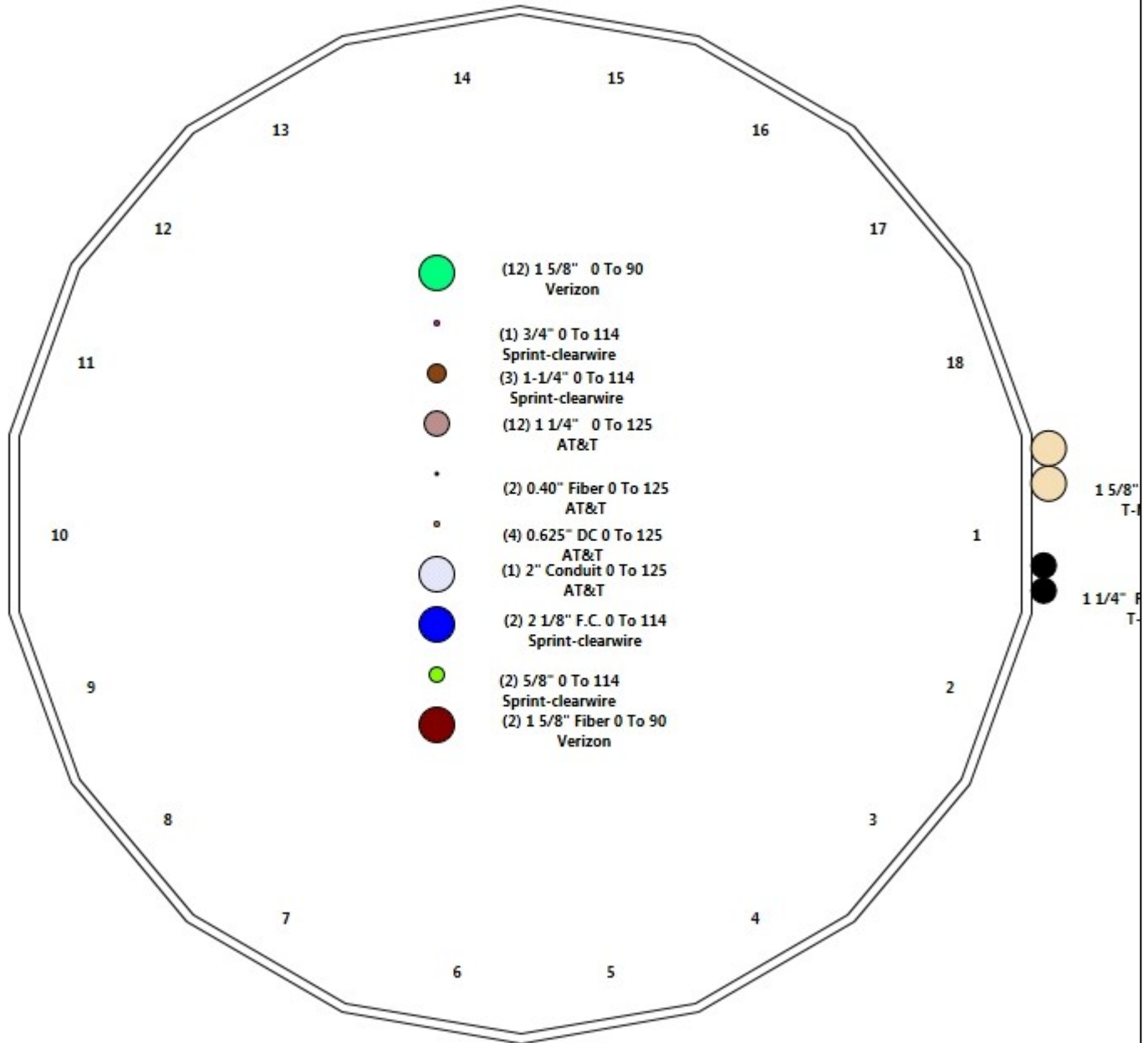
Structure: CT16504-A-SBA - Coax Line Placement

Type: Monopole
Site Name: Manchester 12, CT
Height: 140.50 (ft)

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Shaft Properties

Structure: CT16504-A-SBA	Code: EIA/TIA-222-G	5/17/2018
Site Name: Manchester 12, CT	Exposure: C	
Height: 140.50 (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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Sec. No.	Shape	Length (ft)	Thick (in)	Fy (ksi)	Joint Type	Overlap (in)	Weight (lb)
1	18	50.000	0.3750	65		0.00	7,617
2	18	50.000	0.3125	65	Slip	66.00	5,096
3	18	50.000	0.1875	65	Slip	48.00	2,260
Total Shaft Weight:							14,973

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	42.54	0.00	50.19	11272.80	18.59	113.44	33.44	50.00	39.35	5434.44	14.31	89.16	0.182064
2	35.06	44.50	34.47	5258.76	18.37	112.20	25.96	94.50	25.44	2114.11	13.24	83.07	0.182064
3	27.06	90.50	15.99	1459.57	24.04	144.34	17.96	140.50	10.58	422.08	15.48	95.79	0.182064

Additional Steel

Elev From (ft)	Elev To (ft)	Qty	Description	Fy (ksi)	Fu (ksi)	Offset (in)	Intermediate Connectors			Termination Connectors		
							Description	Spacing (in)	Lower Qty	Description	Spacing (in)	Upper Qty
0.00	1.00	4	SOL 2 1/4" William R71	105	125	4.75	5/8" Hollo Bolt	18.00		5/8" Hollo Bolt	3.00	
1.00	20.00	4	LNP LP7X125-B-20A	65	80	0.00	5/8" Hollo Bolt	24.00		5/8" Hollo Bolt	3.00	
20.00	40.00	4	LNP LP6X125-G-20AB	65	80	0.00	5/8" Hollo Bolt	24.00		5/8" Hollo Bolt	3.00	
40.00	60.00	4	LNP LP6X100-G-20BC	65	80	0.00	5/8" Hollo Bolt	24.00		5/8" Hollo Bolt	3.00	
60.00	67.50	4	LNP LP6X100-G-10CT	65	80	0.00	5/8" Hollo Bolt	24.00		5/8" Hollo Bolt	3.00	
93.12	107.8	3	LNP LP6X100-G-20TT	65	80	0.00	5/8" Hollo Bolt	24.00		5/8" Hollo Bolt	3.00	8

Load Summary

Structure: CT16504-A-SBA	Code: EIA/TIA-222-G	5/17/2018
Site Name: Manchester 12, CT	Exposure: C	
Height: 140.50 (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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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	135.00	Ericsson AIR32	3	132.20	6.51	0.87	389.88	8.081	0.87	0.00	0.00
2	135.00	Commscope F-65C-R2	3	61.70	14.17	0.84	521.15	16.432	0.84	0.00	0.00
3	135.00	RFS APX16DWV-16DWVS-E-A20	3	40.70	6.46	0.62	234.77	7.960	0.62	0.00	0.00
4	135.00	Ericsson S11B12	3	51.00	2.83	0.70	142.83	3.716	0.70	0.00	0.00
5	135.00	Ericsson RRUS 32 B66A	3	52.90	3.87	0.87	177.13	3.688	0.87	0.00	0.00
6	135.00	Expansion rights (15"X14"X7.5")	3	70.00	3.16	0.88	187.34	4.150	0.88	0.00	0.00
7	135.00	Sector Frame	3	817.00	15.00	0.75	1659.78	24.947	0.75	0.00	0.00
8	125.00	Platform w/ Hand Rails	1	2000.00	40.00	1.00	4741.90	67.419	1.00	0.00	0.00
9	125.00	QS66512-2	3	111.00	8.13	0.92	424.82	9.866	0.92	0.00	0.00
10	125.00	CCI OPA-65R-LCUU-H6	3	73.00	9.66	0.79	392.78	11.481	0.79	0.00	0.00
11	125.00	Kathrein 782 10250	6	6.40	0.52	0.67	23.14	1.265	0.67	0.00	0.00
12	125.00	Raycap DC6-48-60-18-8F	3	32.80	1.47	0.67	113.74	2.386	0.67	0.00	0.00
13	125.00	CCI DTMAPB7819VG12A	6	19.00	1.14	0.67	52.06	2.147	0.67	0.00	0.00
14	125.00	Ericsson RRUS-11	3	54.00	2.52	0.67	179.10	3.396	0.67	0.00	0.00
15	125.00	Ericsson RRUS-32	6	77.00	2.52	0.67	239.34	4.538	0.67	0.00	0.00
16	125.00	Kathrein 800-10121	3	44.10	5.15	0.79	234.79	6.546	0.79	0.00	0.00
17	125.00	HPA-65R-BUU-H6	3	51.00	9.66	0.85	392.43	11.481	0.85	0.00	0.00
18	125.00	B14 4478	3	59.40	1.65	0.67	146.33	2.378	0.67	0.00	0.00
19	125.00	RRUS 32 B66	3	53.00	2.74	0.67	176.91	3.717	0.67	0.00	0.00
20	125.00	DBC0061F1V51-2	6	25.40	0.43	0.67	44.44	0.803	0.67	0.00	0.00
21	114.00	Andrew VHLP1-23-DW1	1	14.00	1.61	1.00	59.93	2.594	1.00	0.00	4.50
22	114.00	Andrew VHLP2-23-DW1	1	31.00	4.69	1.00	157.95	6.346	1.00	0.00	4.50
23	114.00	Argus LLPX310R-V1	3	50.70	4.31	0.69	202.50	5.564	0.69	0.00	0.50
24	114.00	Samsung SPI-22132825WB	3	33.10	1.82	0.76	90.08	3.086	0.76	0.00	-1.00
25	114.00	20" x 18" x 9" Junction Box	1	20.00	3.15	1.00	145.93	4.779	1.00	0.00	0.00
26	114.00	RFS APXVTM14	3	116.70	6.34	0.79	337.46	7.812	0.79	0.00	3.00
27	114.00	RFS APXVSP18	3	125.30	8.02	0.83	399.38	9.733	0.83	0.00	1.00
28	114.00	Alcatel Lucent RRH8x20-25-FEU	3	70.00	4.05	0.69	222.34	5.129	0.69	0.00	3.00
29	114.00	Alcatel Lucent RRH2X50-800	3	64.00	2.40	0.97	164.15	3.852	0.97	0.00	-1.50
30	114.00	Alcatel Lucent RRH1900-4X45	3	60.00	2.71	0.98	164.76	4.349	0.98	0.00	3.00
31	114.00	Low Profile Platform	1	1800.00	25.00	1.00	3837.57	52.167	1.00	0.00	0.00
32	90.00	Swedcom SCLP 2x6014	3	45.60	6.49	0.89	309.79	7.890	0.89	0.00	0.00
33	90.00	Commscope SBNHH-1D65B	6	76.40	8.08	0.83	344.43	9.718	0.83	0.00	0.00
34	90.00	Antel BXA-70063-6CF-EDIN-x	3	42.60	7.57	0.73	276.01	9.198	0.73	0.00	0.00
35	90.00	Alcatel Lucent RRH2X60-AWS	3	90.00	3.50	0.76	255.88	4.500	0.76	0.00	0.00
36	90.00	Alcatel Lucent RRH2X60-700	3	90.00	3.50	0.76	255.88	4.500	0.76	0.00	0.00
37	90.00	Alcatel Lucent RRH2X60-PCS	3	55.00	1.51	0.90	168.94	3.026	0.90	0.00	0.00
38	90.00	RFS DB-T1-6Z-8AB-OZ	1	44.00	4.80	1.00	234.89	5.927	1.00	0.00	0.00
39	90.00	Platform w/ Hand Rails	1	2200.00	42.00	1.00	5118.61	69.859	1.00	0.00	0.00
Totals:			118	14,974.60			43,180.13				

Linear Appurtenances

Bottom Elev. (ft)	Top Elev. (ft)	Description	Exposed Width	Exposed
0.00	135.00	(2) 1 1/4" Fiber	0.00	Outside
0.00	135.00	(2) 1 5/8" Coax	1.98	Outside

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		
0.00	125.00	(2) 0.40" Fiber		0.00		Inside					
0.00	125.00	(4) 0.625" DC		0.00		Inside					
0.00	125.00	(12) 1 1/4" Coax		0.00		Inside					
0.00	125.00	(2) 2" Conduit		0.00		Inside					
0.00	114.00	(3) 1-1/4"		0.00		Inside					
0.00	114.00	(2) 2 1/8" F.C.		0.00		Inside					
0.00	114.00	(1) 3/4"		0.00		Inside					
0.00	114.00	(2) 5/8"		0.00		Inside					
90.50	110.50	(2) 1" Reinforcing plate		1.00		Outside					
90.50	110.50	(1) 1" Reinforcing plate		1.00		Outside					
0.00	90.00	(12) 1 5/8" Coax		0.00		Inside					
0.00	90.00	(2) 1 5/8" Fiber		0.00		Inside					
40.00	70.00	(2) 1" Reinforcing plate		1.00		Outside					
40.00	70.00	(2) 1" Reinforcing plate		1.00		Outside					
0.00	40.00	(2) 1.25" Reinforcing plate		1.25		Outside					
0.00	40.00	(2) 1.25" Reinforcing plate		1.25		Outside					

Shaft Section Properties

Structure: CT16504-A-SBA	Code: EIA/TIA-222-G	5/17/2018
Site Name: Manchester 12, CT	Exposure: C	
Height: 140.50 (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)	Additional Reinforcing											
			Flat Dia (in)	Area (in^2)	Ix (in^4)	W/t Ratio	D/t Ratio	Fy (ksi)	Fb (ksi)	Weight (lb)	Area (in^2)	Ixp (in^4)	Iyp (in^4)	Weight (lb)
0.00	RB1	0.3750	42.540	50.185	11272.8	18.59	113.44	65	80	0.0	16.32	7061.8	4973.6	
1.00	RT1 RB2	0.3750	42.358	49.968	11127.4	18.51	112.95	65	80	170.4	35.00	9835.2	6951.8	119.1
5.00		0.3750	41.630	49.102	10558.3	18.16	111.01	65	80	674.2	35.00	9511.8	6724.0	476.4
10.00		0.3750	40.719	48.018	9874.7	17.74	108.58	65	81	826.2	35.00	9115.2	6444.8	595.5
15.00		0.3750	39.809	46.935	9221.2	17.31	106.16	65	81	807.8	35.00	8727.1	6171.5	595.5
20.00	RT2 RB3	0.3750	38.899	45.851	8597.3	16.88	103.73	65	82	789.3	30.00	7139.4	5043.9	510.4
25.00		0.3750	37.988	44.768	8002.1	16.45	101.30	65	82	770.9	30.00	6821.4	4819.9	510.4
30.00		0.3750	37.078	43.684	7435.0	16.02	98.87	65	83	752.5	30.00	6510.6	4601.1	510.4
35.00		0.3750	36.168	42.601	6895.4	15.60	96.45	65	83	734.0	30.00	6207.1	4387.4	510.4
40.00	RT3 RB4	0.3750	35.257	41.517	6382.6	15.17	94.02	65	83	715.6	24.00	4664.1	3297.5	408.3
44.50	Bot - Section 2	0.3750	34.438	40.542	5943.3	14.78	91.84	65	83	628.3	24.00	4457.3	3151.9	367.5
45.00		0.3750	34.347	40.434	5895.8	14.74	91.59	65	83	127.5	24.00	4591.6	3246.4	40.8
50.00	Top - Section 1	0.3125	34.062	33.474	4817.1	17.81	109.00	65	80	1255.9	24.00	4363.9	3086.1	408.3
55.00		0.3125	33.151	32.571	4437.8	17.29	106.08	65	81	561.8	24.00	4142.0	2929.9	408.3
60.00	RT4 RB5	0.3125	32.241	31.668	4078.8	16.78	103.17	65	82	546.5	24.00	3926.0	2777.8	408.3
65.00		0.3125	31.331	30.765	3739.8	16.27	100.26	65	82	531.1	24.00	3715.9	2629.8	408.3
67.50	RT5	0.3125	30.876	30.314	3577.6	16.01	98.80	65	83	259.8	24.00	3613.0	2557.4	204.2
70.00		0.3125	30.421	29.862	3420.1	15.75	97.35	65	83	256.0				
75.00		0.3125	29.510	28.959	3119.2	15.24	94.43	65	83	500.4				
80.00		0.3125	28.600	28.057	2836.4	14.73	91.52	65	83	485.0				
85.00		0.3125	27.690	27.154	2571.3	14.21	88.61	65	83	469.7				
90.00		0.3125	26.779	26.251	2323.2	13.70	85.69	65	83	454.3				
90.50	Bot - Section 3	0.3125	26.688	26.160	2299.4	13.65	85.40	65	83	44.6				
93.12	RB6	0.3125	26.211	25.687	2176.8	13.38	83.88	65	83	372.4	18.00	1740.0	1740.0	160.5
94.50	Top - Section 2	0.1875	26.335	15.560	1344.1	23.36	140.45	65	74	193.5	18.00	1708.9	1708.9	84.5
95.00		0.1875	26.244	15.506	1330.1	23.27	139.97	65	74	26.4	18.00	1697.8	1697.8	30.6
100.00		0.1875	25.334	14.965	1195.5	22.41	135.11	65	75	259.2	18.00	1588.0	1588.0	306.2
105.00		0.1875	24.423	14.423	1070.3	21.56	130.26	65	76	250.0	18.00	1482.0	1482.0	306.2
107.87	RT6	0.1875	23.901	14.112	1002.6	21.07	127.47	65	77	139.3	18.00	1422.9	1422.9	175.8
110.00		0.1875	23.513	13.881	954.2	20.70	125.40	65	77	101.4				
114.00		0.1875	22.785	13.448	867.6	20.02	121.52	65	78	186.0				
115.00		0.1875	22.603	13.339	846.8	19.85	120.55	65	78	45.6				
120.00		0.1875	21.692	12.798	747.7	18.99	115.69	65	79	222.3				
125.00		0.1875	20.782	12.256	656.7	18.13	110.84	65	80	213.1				
130.00		0.1875	19.872	11.714	573.5	17.28	105.98	65	81	203.9				
135.00		0.1875	18.961	11.172	497.5	16.42	101.13	65	82	194.7				
140.00		0.1875	18.051	10.631	428.6	15.56	96.27	65	83	185.5				
140.50		0.1875	17.960	10.576	422.1	15.48	95.79	65	83	18.0				
Total Weight										14973.2	7546.2			

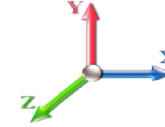
Wind Loading - Shaft

Structure: CT16504-A-SBA	Code: EIA/TIA-222-G	5/17/2018
Site Name: Manchester 12, CT	Exposure: C	
Height: 140.50 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



Load Case: 1.2D + 1.6W 97 mph Wind

Dead Load Factor 1.20
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	RB1	1.00	0.85	19.450	21.40	321.92	0.650	0.000	0.00	0.000	0.00	0.0	0.0	0.0
1.00	RT1 RB2	1.00	0.85	19.450	21.40	320.54	0.658 *	0.000	1.00	3.592	2.36	80.9	0.0	204.5
5.00		1.00	0.85	19.450	21.40	315.03	0.660 *	0.000	4.00	14.214	9.38	321.1	0.0	809.1
10.00		1.00	0.85	19.450	21.40	308.14	0.664 *	0.000	5.00	17.421	11.57	395.9	0.0	991.4
15.00		1.00	0.85	19.450	21.40	301.25	0.669 *	0.000	5.00	17.036	11.39	389.9	0.0	969.3
20.00	RT2 RB3	1.00	0.90	20.638	22.70	303.21	0.674 *	0.000	5.00	16.650	11.22	407.4	0.0	947.2
25.00		1.00	0.95	21.630	23.79	303.16	0.679 *	0.000	5.00	16.265	11.04	420.3	0.0	925.1
30.00		1.00	0.98	22.477	24.72	301.63	0.684 *	0.000	5.00	15.880	10.87	429.8	0.0	902.9
35.00		1.00	1.01	23.218	25.54	299.03	0.690 *	0.000	5.00	15.495	10.69	436.8	0.0	880.8
40.00	RT3 RB4	1.00	1.04	23.880	26.27	295.63	0.696 *	0.000	5.00	15.110	10.51	441.9	0.0	858.7
44.50	Bot - Section 2	1.00	1.07	24.422	26.86	292.02	0.674 *	0.000	4.50	13.270	8.95	384.6	0.0	753.9
45.00		1.00	1.07	24.479	26.93	291.59	0.677 *	0.000	0.50	1.482	1.00	43.2	0.0	152.9
50.00	Top - Section 1	1.00	1.09	25.029	27.53	287.03	0.681 *	0.000	5.00	14.604	9.94	437.8	0.0	1507.1
55.00		1.00	1.12	25.536	28.09	287.45	0.682 *	0.000	5.00	14.219	9.70	436.1	0.0	674.2
60.00	RT4 RB5	1.00	1.14	26.008	28.61	282.13	0.689 *	0.000	5.00	13.834	9.53	436.1	0.0	655.8
65.00		1.00	1.16	26.450	29.09	276.48	0.695 *	0.000	5.00	13.448	9.35	435.4	0.0	637.3
67.50	RT5	1.00	1.17	26.661	29.33	273.55	0.701 *	0.000	2.50	6.580	4.61	216.3	0.0	311.8
70.00		1.00	1.17	26.866	29.55	270.55	0.704 *	0.000	2.50	6.484	4.57	215.9	0.0	307.1
75.00		1.00	1.19	27.259	29.98	264.37	0.650	0.000	5.00	12.678	8.24	395.4	0.0	600.5
80.00		1.00	1.21	27.632	30.39	257.96	0.650	0.000	5.00	12.293	7.99	388.6	0.0	582.0
85.00		1.00	1.22	27.987	30.79	251.35	0.650	0.000	5.00	11.908	7.74	381.3	0.0	563.6
90.00	Appurtenance(s)	1.00	1.24	28.325	31.16	244.55	0.650	0.000	5.00	11.523	7.49	373.4	0.0	545.2
90.50	Bot - Section 3	1.00	1.24	28.359	31.19	243.86	0.650	0.000	0.50	1.131	0.74	36.7	0.0	53.5
93.12	RB6	1.00	1.25	28.529	31.38	240.23	0.744 *	0.000	2.62	5.947	4.42	222.2	0.0	446.9
94.50	Top - Section 2	1.00	1.25	28.618	31.48	238.29	0.748 *	0.000	1.38	3.090	2.31	116.4	0.0	232.2
95.00		1.00	1.25	28.650	31.51	241.03	0.746 *	0.000	0.50	1.112	0.83	41.8	0.0	31.7
100.00		1.00	1.27	28.961	31.86	233.93	0.751 *	0.000	5.00	10.911	8.20	417.9	0.0	311.1
105.00		1.00	1.28	29.260	32.19	226.69	0.762 *	0.000	5.00	10.526	8.02	413.2	0.0	300.0
107.87	RT6	1.00	1.29	29.426	32.37	222.47	0.771 *	0.000	2.87	5.868	4.53	234.4	0.0	167.2
110.00		1.00	1.29	29.548	32.50	219.31	0.777 *	0.000	2.13	4.273	3.32	172.7	0.0	121.7
114.00	Appurtenance(s)	1.00	1.30	29.771	32.75	213.32	0.650	0.000	4.00	7.835	5.09	266.9	0.0	223.2
115.00		1.00	1.30	29.826	32.81	211.81	0.650	0.000	1.00	1.920	1.25	65.5	0.0	54.7
120.00		1.00	1.32	30.094	33.10	204.19	0.650	0.000	5.00	9.370	6.09	322.6	0.0	266.8
125.00	Appurtenance(s)	1.00	1.33	30.354	33.39	196.46	0.650	0.000	5.00	8.985	5.84	312.0	0.0	255.8
130.00		1.00	1.34	30.605	33.67	188.63	0.650	0.000	5.00	8.600	5.59	301.1	0.0	244.7
135.00	Appurtenance(s)	1.00	1.35	30.850	33.93	180.71	0.651 *	0.000	5.00	8.215	5.35	290.3	0.0	233.6
140.00		1.00	1.36	31.087	34.20	172.69	0.650	0.000	5.00	7.830	5.09	278.5	0.0	222.6
140.50		1.00	1.36	31.110	34.22	171.89	0.650	0.000	0.50	0.762	0.50	27.1	0.0	21.6
Totals:									140.50			10,987.5		17,967.8

* Cf Adjusted by Linear Load Ra Effect

Discrete Appurtenance Forces

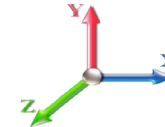
Structure: CT16504-A-SBA	Code: EIA/TIA-222-G	5/17/2018
Site Name: Manchester 12, CT	Exposure: C	
Height: 140.50 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 1.2D + 1.6W 97 mph Wind

Dead Load Factor 1.20
Wind Load Factor 1.60



Iterations 25

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	CaAa x Ka	Ka	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)
1	135.00	Expansion rights	3	30.850	33.934	0.70	0.80	6.67	252.00	0.000	0.000	362.36	0.00	0.00
2	135.00	Ericsson RRUS 32 B66A	3	30.850	33.934	0.70	0.80	8.08	190.44	0.000	0.000	438.74	0.00	0.00
3	135.00	Ericsson S11B12	3	30.850	33.934	0.56	0.80	4.75	183.60	0.000	0.000	258.14	0.00	0.00
4	135.00	RFS	3	30.850	33.934	0.50	0.80	9.61	146.52	0.000	0.000	521.91	0.00	0.00
5	135.00	Commscope F-65C-R2	3	30.850	33.934	0.67	0.80	28.57	222.12	0.000	0.000	1551.04	0.00	0.00
6	135.00	Ericsson AIR32	3	30.850	33.934	0.70	0.80	13.59	475.92	0.000	0.000	738.03	0.00	0.00
7	135.00	Sector Frame	3	30.850	33.934	0.56	0.75	25.31	2941.20	0.000	0.000	1374.35	0.00	0.00
8	125.00	DBC0061F1V51-2	6	30.354	33.389	0.50	0.75	1.30	182.88	0.000	0.000	69.26	0.00	0.00
9	125.00	CCI DTMAPB7819VG12A	6	30.354	33.389	0.50	0.75	3.44	136.80	0.000	0.000	183.62	0.00	0.00
10	125.00	Raycap DC6-48-60-18-8F	3	30.354	33.389	0.50	0.75	2.22	118.08	0.000	0.000	118.39	0.00	0.00
11	125.00	Ericsson RRUS-11	3	30.354	33.389	0.50	0.75	3.80	194.40	0.000	0.000	202.95	0.00	0.00
12	125.00	RRUS 32 B66	3	30.354	33.389	0.50	0.75	4.13	190.80	0.000	0.000	220.66	0.00	0.00
13	125.00	B14 4478	3	30.354	33.389	0.50	0.75	2.49	213.84	0.000	0.000	132.88	0.00	0.00
14	125.00	QS66512-2	3	30.354	33.389	0.69	0.75	16.83	399.60	0.000	0.000	899.05	0.00	0.00
15	125.00	Ericsson RRUS-32	6	30.354	33.389	0.50	0.75	7.60	554.40	0.000	0.000	405.89	0.00	0.00
16	125.00	Kathrein 800-10121	3	30.354	33.389	0.59	0.75	9.15	158.76	0.000	0.000	489.04	0.00	0.00
17	125.00	HPA-65R-BUU-H6	3	30.354	33.389	0.64	0.75	18.47	183.60	0.000	0.000	986.97	0.00	0.00
18	125.00	CCI OPA-65R-LCUU-H6	3	30.354	33.389	0.59	0.75	17.17	262.80	0.000	0.000	917.30	0.00	0.00
19	125.00	Kathrein 782 10250	6	30.354	33.389	0.50	0.75	1.57	46.08	0.000	0.000	83.76	0.00	0.00
20	125.00	Platform w/ Hand Rails	1	30.354	33.389	1.00	1.00	40.00	2400.00	0.000	0.000	2136.90	0.00	0.00
21	114.00	20" x 18" x 9" Junction Box	1	29.771	32.748	1.00	1.00	3.15	24.00	0.000	0.000	165.05	0.00	0.00
22	114.00	Andrew VHLP1-23-DW1	1	30.014	33.016	1.00	1.00	1.61	16.80	0.000	4.500	85.05	0.00	382.72
23	114.00	Andrew VHLP2-23-DW1	1	30.014	33.016	1.00	1.00	4.69	37.20	0.000	4.500	247.75	0.00	1114.88
24	114.00	Argus LLPX310R-V1	3	29.798	32.778	0.55	0.80	7.14	182.52	0.000	0.500	374.32	0.00	187.16
25	114.00	Samsung	3	29.716	32.687	0.61	0.80	3.32	119.16	0.000	-1.000	173.62	0.00	-173.62
26	114.00	Low Profile Platform	1	29.771	32.748	1.00	1.00	25.00	2160.00	0.000	0.000	1309.91	0.00	0.00
27	114.00	RFS APXVSP18	3	29.826	32.808	0.66	0.80	15.98	451.08	0.000	1.000	838.62	0.00	838.62
28	114.00	Alcatel Lucent	3	29.934	32.927	0.55	0.80	6.71	252.00	0.000	3.000	353.34	0.00	1060.02
29	114.00	Alcatel Lucent	3	29.688	32.657	0.78	0.80	5.59	230.40	0.000	-1.500	291.93	0.00	-437.90
30	114.00	Alcatel Lucent	3	29.934	32.927	0.78	0.80	6.37	216.00	0.000	3.000	335.80	0.00	1007.41
31	114.00	RFS APXVTM14	3	29.934	32.927	0.63	0.80	12.02	420.12	0.000	3.000	633.29	0.00	1899.88
32	90.00	Alcatel Lucent	3	28.325	31.158	0.57	0.75	5.99	324.00	0.000	0.000	298.37	0.00	0.00
33	90.00	Swedcom SLCP 2x6014	3	28.325	31.158	0.67	0.75	13.00	164.16	0.000	0.000	647.90	0.00	0.00
34	90.00	Commscope	6	28.325	31.158	0.62	0.75	30.18	550.08	0.000	0.000	1504.50	0.00	0.00
35	90.00	Antel	3	28.325	31.158	0.55	0.75	12.43	153.36	0.000	0.000	619.86	0.00	0.00
36	90.00	RFS DB-T1-6Z-8AB-OZ	1	28.325	31.158	1.00	1.00	4.80	52.80	0.000	0.000	239.29	0.00	0.00
37	90.00	Alcatel Lucent	3	28.325	31.158	0.57	0.75	5.99	324.00	0.000	0.000	298.37	0.00	0.00
38	90.00	Alcatel Lucent	3	28.325	31.158	0.68	0.75	3.06	198.00	0.000	0.000	152.44	0.00	0.00
39	90.00	Platform w/ Hand Rails	1	28.325	31.158	1.00	1.00	42.00	2640.00	0.000	0.000	2093.82	0.00	0.00

Totals: 17,969.52

22,754.45

Total Applied Force Summary

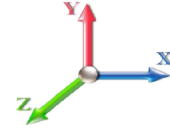
Structure: CT16504-A-SBA	Code: EIA/TIA-222-G	5/17/2018
Site Name: Manchester 12, CT	Exposure: C	
Height: 140.50 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 1.2D + 1.6W 97 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
1.00		80.87	250.63	0.00	0.00
5.00		321.08	993.69	0.00	0.00
10.00		395.95	1222.20	0.00	0.00
15.00		389.95	1200.08	0.00	0.00
20.00		407.39	1177.96	0.00	0.00
25.00		420.31	1155.84	0.00	0.00
30.00		429.82	1133.72	0.00	0.00
35.00		436.84	1111.60	0.00	0.00
40.00		441.93	1089.48	0.00	0.00
44.50		384.61	961.62	0.00	0.00
45.00		43.23	176.02	0.00	0.00
50.00		437.78	1737.88	0.00	0.00
55.00		436.10	904.98	0.00	0.00
60.00		436.14	886.55	0.00	0.00
65.00		435.39	868.11	0.00	0.00
67.50		216.35	427.14	0.00	0.00
70.00		215.94	422.53	0.00	0.00
75.00		395.36	831.24	0.00	0.00
80.00		388.59	812.81	0.00	0.00
85.00		381.25	794.38	0.00	0.00
90.00	(23) attachments	6227.92	5182.34	0.00	0.00
90.50		36.69	67.77	0.00	0.00
93.12		222.16	521.70	0.00	0.00
94.50		116.41	271.53	0.00	0.00
95.00		41.82	45.98	0.00	0.00
100.00		417.87	453.75	0.00	0.00
105.00		413.16	442.69	0.00	0.00
107.87		234.41	249.11	0.00	0.00
110.00		172.74	182.52	0.00	0.00
114.00	(25) attachments	5075.54	4446.62	0.00	5879.17
115.00		65.52	74.20	0.00	0.00
120.00		322.60	364.37	0.00	0.00
125.00	(49) attachments	7158.68	5395.35	0.00	0.00
130.00		301.11	265.09	0.00	0.00
135.00	(21) attachments	5534.85	4665.83	0.00	0.00
140.00		278.45	222.57	0.00	0.00
140.50		27.11	21.65	0.00	0.00
Totals:		33,741.94	41,031.56	0.00	5,879.17

Linear Appurtenance Segment Forces (Factored)

Structure: CT16504-A-SBA	Code: EIA/TIA-222-G	5/17/2018
Site Name: Manchester 12, CT	Exposure: C	
Height: 140.50 (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 97 mph Wind

Dead Load Factor 1.20
Wind Load Factor 1.60



Iterations 25

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
1.00	1 1/4" Fiber	Yes	1.00	0.000	0.00	0.00	0.00	0.104	1.012	19.450	0.00	1.58
1.00	1 5/8" Coax	Yes	1.00	0.000	1.98	0.17	0.00	0.104	1.012	19.450	0.00	2.50
1.00	1.25" Reinforcing	Yes	1.00	0.000	1.25	0.10	0.00	0.104	1.012	19.450	0.00	0.00
1.00	1.25" Reinforcing	Yes	1.00	0.000	1.25	0.10	0.00	0.104	1.012	19.450	0.00	0.00
5.00	1 1/4" Fiber	Yes	4.00	0.000	0.00	0.00	0.00	0.105	1.015	19.450	0.00	6.34
5.00	1 5/8" Coax	Yes	4.00	0.000	1.98	0.66	0.00	0.105	1.015	19.450	0.00	9.98
5.00	1.25" Reinforcing	Yes	4.00	0.000	1.25	0.42	0.00	0.105	1.015	19.450	0.00	0.00
5.00	1.25" Reinforcing	Yes	4.00	0.000	1.25	0.42	0.00	0.105	1.015	19.450	0.00	0.00
10.00	1 1/4" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.107	1.021	19.450	0.00	7.92
10.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.107	1.021	19.450	0.00	12.48
10.00	1.25" Reinforcing	Yes	5.00	0.000	1.25	0.52	0.00	0.107	1.021	19.450	0.00	0.00
10.00	1.25" Reinforcing	Yes	5.00	0.000	1.25	0.52	0.00	0.107	1.021	19.450	0.00	0.00
15.00	1 1/4" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.110	1.029	19.450	0.00	7.92
15.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.110	1.029	19.450	0.00	12.48
15.00	1.25" Reinforcing	Yes	5.00	0.000	1.25	0.52	0.00	0.110	1.029	19.450	0.00	0.00
15.00	1.25" Reinforcing	Yes	5.00	0.000	1.25	0.52	0.00	0.110	1.029	19.450	0.00	0.00
20.00	1 1/4" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.112	1.036	20.638	0.00	7.92
20.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.112	1.036	20.638	0.00	12.48
20.00	1.25" Reinforcing	Yes	5.00	0.000	1.25	0.52	0.00	0.112	1.036	20.638	0.00	0.00
20.00	1.25" Reinforcing	Yes	5.00	0.000	1.25	0.52	0.00	0.112	1.036	20.638	0.00	0.00
25.00	1 1/4" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.115	1.044	21.630	0.00	7.92
25.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.115	1.044	21.630	0.00	12.48
25.00	1.25" Reinforcing	Yes	5.00	0.000	1.25	0.52	0.00	0.115	1.044	21.630	0.00	0.00
25.00	1.25" Reinforcing	Yes	5.00	0.000	1.25	0.52	0.00	0.115	1.044	21.630	0.00	0.00
30.00	1 1/4" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.118	1.053	22.477	0.00	7.92
30.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.118	1.053	22.477	0.00	12.48
30.00	1.25" Reinforcing	Yes	5.00	0.000	1.25	0.52	0.00	0.118	1.053	22.477	0.00	0.00
30.00	1.25" Reinforcing	Yes	5.00	0.000	1.25	0.52	0.00	0.118	1.053	22.477	0.00	0.00
35.00	1 1/4" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.120	1.061	23.218	0.00	7.92
35.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.120	1.061	23.218	0.00	12.48
35.00	1.25" Reinforcing	Yes	5.00	0.000	1.25	0.52	0.00	0.120	1.061	23.218	0.00	0.00
35.00	1.25" Reinforcing	Yes	5.00	0.000	1.25	0.52	0.00	0.120	1.061	23.218	0.00	0.00
40.00	1 1/4" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.124	1.071	23.880	0.00	7.92
40.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.124	1.071	23.880	0.00	12.48
40.00	1.25" Reinforcing	Yes	5.00	0.000	1.25	0.52	0.00	0.124	1.071	23.880	0.00	0.00
40.00	1.25" Reinforcing	Yes	5.00	0.000	1.25	0.52	0.00	0.124	1.071	23.880	0.00	0.00
44.50	1 1/4" Fiber	Yes	4.50	0.000	0.00	0.00	0.00	0.112	1.037	24.422	0.00	7.13
44.50	1 5/8" Coax	Yes	4.50	0.000	1.98	0.74	0.00	0.112	1.037	24.422	0.00	11.23
44.50	1" Reinforcing plate	Yes	4.50	0.000	1.00	0.38	0.00	0.112	1.037	24.422	0.00	0.00
44.50	1" Reinforcing plate	Yes	4.50	0.000	1.00	0.38	0.00	0.112	1.037	24.422	0.00	0.00
45.00	1 1/4" Fiber	Yes	0.50	0.000	0.00	0.00	0.00	0.114	1.042	24.479	0.00	0.79
45.00	1 5/8" Coax	Yes	0.50	0.000	1.98	0.08	0.00	0.114	1.042	24.479	0.00	1.25
45.00	1" Reinforcing plate	Yes	0.50	0.000	1.00	0.04	0.00	0.114	1.042	24.479	0.00	0.00
45.00	1" Reinforcing plate	Yes	0.50	0.000	1.00	0.04	0.00	0.114	1.042	24.479	0.00	0.00
50.00	1 1/4" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.116	1.047	25.029	0.00	7.92
50.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.116	1.047	25.029	0.00	12.48
50.00	1" Reinforcing plate	Yes	5.00	0.000	1.00	0.42	0.00	0.116	1.047	25.029	0.00	0.00

Linear Appurtenance Segment Forces (Factored)

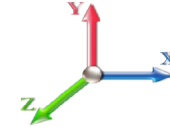
Structure: CT16504-A-SBA	Code: EIA/TIA-222-G	5/17/2018
Site Name: Manchester 12, CT	Exposure: C	
Height: 140.50 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 1.2D + 1.6W 97 mph Wind

Dead Load Factor 1.20
Wind Load Factor 1.60



Iterations 25

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
50.00	1" Reinforcing plate	Yes	5.00	0.000	1.00	0.42	0.00	0.116	1.047	25.029	0.00	0.00
55.00	1 1/4" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.117	1.050	25.536	0.00	7.92
55.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.117	1.050	25.536	0.00	12.48
55.00	1" Reinforcing plate	Yes	5.00	0.000	1.00	0.42	0.00	0.117	1.050	25.536	0.00	0.00
55.00	1" Reinforcing plate	Yes	5.00	0.000	1.00	0.42	0.00	0.117	1.050	25.536	0.00	0.00
60.00	1 1/4" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.120	1.060	26.008	0.00	7.92
60.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.120	1.060	26.008	0.00	12.48
60.00	1" Reinforcing plate	Yes	5.00	0.000	1.00	0.42	0.00	0.120	1.060	26.008	0.00	0.00
60.00	1" Reinforcing plate	Yes	5.00	0.000	1.00	0.42	0.00	0.120	1.060	26.008	0.00	0.00
65.00	1 1/4" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.123	1.070	26.450	0.00	7.92
65.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.123	1.070	26.450	0.00	12.48
65.00	1" Reinforcing plate	Yes	5.00	0.000	1.00	0.42	0.00	0.123	1.070	26.450	0.00	0.00
65.00	1" Reinforcing plate	Yes	5.00	0.000	1.00	0.42	0.00	0.123	1.070	26.450	0.00	0.00
67.50	1 1/4" Fiber	Yes	2.50	0.000	0.00	0.00	0.00	0.126	1.078	26.661	0.00	3.96
67.50	1 5/8" Coax	Yes	2.50	0.000	1.98	0.41	0.00	0.126	1.078	26.661	0.00	6.24
67.50	1" Reinforcing plate	Yes	2.50	0.000	1.00	0.21	0.00	0.126	1.078	26.661	0.00	0.00
67.50	1" Reinforcing plate	Yes	2.50	0.000	1.00	0.21	0.00	0.126	1.078	26.661	0.00	0.00
70.00	1 1/4" Fiber	Yes	2.50	0.000	0.00	0.00	0.00	0.128	1.084	26.866	0.00	3.96
70.00	1 5/8" Coax	Yes	2.50	0.000	1.98	0.41	0.00	0.128	1.084	26.866	0.00	6.24
70.00	1" Reinforcing plate	Yes	2.50	0.000	1.00	0.21	0.00	0.128	1.084	26.866	0.00	0.00
70.00	1" Reinforcing plate	Yes	2.50	0.000	1.00	0.21	0.00	0.128	1.084	26.866	0.00	0.00
75.00	1 1/4" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.065	0.000	27.259	0.00	7.92
75.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.065	0.000	27.259	0.00	12.48
80.00	1 1/4" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.067	0.000	27.632	0.00	7.92
80.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.067	0.000	27.632	0.00	12.48
85.00	1 1/4" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.069	0.000	27.987	0.00	7.92
85.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.069	0.000	27.987	0.00	12.48
90.00	1 1/4" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.072	0.000	28.325	0.00	7.92
90.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.072	0.000	28.325	0.00	12.48
90.50	1 1/4" Fiber	Yes	0.50	0.000	0.00	0.00	0.00	0.073	0.000	28.359	0.00	0.79
90.50	1 5/8" Coax	Yes	0.50	0.000	1.98	0.08	0.00	0.073	0.000	28.359	0.00	1.25
93.12	1 1/4" Fiber	Yes	2.62	0.000	0.00	0.00	0.00	0.148	1.145	28.529	0.00	4.15
93.12	1 5/8" Coax	Yes	2.62	0.000	1.98	0.43	0.00	0.148	1.145	28.529	0.00	6.54
93.12	1" Reinforcing plate	Yes	2.62	0.000	1.00	0.22	0.00	0.148	1.145	28.529	0.00	0.00
93.12	1" Reinforcing plate	Yes	2.62	0.000	1.00	0.22	0.00	0.148	1.145	28.529	0.00	0.00
94.50	1 1/4" Fiber	Yes	1.38	0.000	0.00	0.00	0.00	0.150	1.151	28.618	0.00	2.19
94.50	1 5/8" Coax	Yes	1.38	0.000	1.98	0.23	0.00	0.150	1.151	28.618	0.00	3.44
94.50	1" Reinforcing plate	Yes	1.38	0.000	1.00	0.11	0.00	0.150	1.151	28.618	0.00	0.00
94.50	1" Reinforcing plate	Yes	1.38	0.000	1.00	0.11	0.00	0.150	1.151	28.618	0.00	0.00
95.00	1 1/4" Fiber	Yes	0.50	0.000	0.00	0.00	0.00	0.149	1.147	28.650	0.00	0.79
95.00	1 5/8" Coax	Yes	0.50	0.000	1.98	0.08	0.00	0.149	1.147	28.650	0.00	1.25
95.00	1" Reinforcing plate	Yes	0.50	0.000	1.00	0.04	0.00	0.149	1.147	28.650	0.00	0.00
95.00	1" Reinforcing plate	Yes	0.50	0.000	1.00	0.04	0.00	0.149	1.147	28.650	0.00	0.00
100.00	1 1/4" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.152	1.156	28.961	0.00	7.92
100.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.152	1.156	28.961	0.00	12.48
100.00	1" Reinforcing plate	Yes	5.00	0.000	1.00	0.42	0.00	0.152	1.156	28.961	0.00	0.00
100.00	1" Reinforcing plate	Yes	5.00	0.000	1.00	0.42	0.00	0.152	1.156	28.961	0.00	0.00

Linear Appurtenance Segment Forces (Factored)

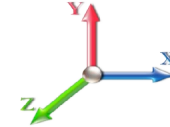
Structure: CT16504-A-SBA	Code: EIA/TIA-222-G	5/17/2018
Site Name: Manchester 12, CT	Exposure: C	
Height: 140.50 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 1.2D + 1.6W 97 mph Wind

Dead Load Factor 1.20
Wind Load Factor 1.60



Iterations 25

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
105.00	1 1/4" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.158	1.173	29.260	0.00	7.92
105.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.158	1.173	29.260	0.00	12.48
105.00	1" Reinforcing plate	Yes	5.00	0.000	1.00	0.42	0.00	0.158	1.173	29.260	0.00	0.00
105.00	1" Reinforcing plate	Yes	5.00	0.000	1.00	0.42	0.00	0.158	1.173	29.260	0.00	0.00
107.87	1 1/4" Fiber	Yes	2.87	0.000	0.00	0.00	0.00	0.162	1.187	29.426	0.00	4.55
107.87	1 5/8" Coax	Yes	2.87	0.000	1.98	0.47	0.00	0.162	1.187	29.426	0.00	7.16
107.87	1" Reinforcing plate	Yes	2.87	0.000	1.00	0.24	0.00	0.162	1.187	29.426	0.00	0.00
107.87	1" Reinforcing plate	Yes	2.87	0.000	1.00	0.24	0.00	0.162	1.187	29.426	0.00	0.00
110.00	1 1/4" Fiber	Yes	2.13	0.000	0.00	0.00	0.00	0.165	1.196	29.548	0.00	3.37
110.00	1 5/8" Coax	Yes	2.13	0.000	1.98	0.35	0.00	0.165	1.196	29.548	0.00	5.32
110.00	1" Reinforcing plate	Yes	2.13	0.000	1.00	0.18	0.00	0.165	1.196	29.548	0.00	0.00
110.00	1" Reinforcing plate	Yes	2.13	0.000	1.00	0.18	0.00	0.165	1.196	29.548	0.00	0.00
114.00	1 1/4" Fiber	Yes	4.00	0.000	0.00	0.00	0.00	0.095	0.000	29.771	0.00	6.34
114.00	1 5/8" Coax	Yes	4.00	0.000	1.98	0.66	0.00	0.095	0.000	29.771	0.00	9.98
114.00	1" Reinforcing plate	Yes	0.50	0.000	1.00	0.04	0.00	0.095	0.000	29.771	0.00	0.00
114.00	1" Reinforcing plate	Yes	0.50	0.000	1.00	0.04	0.00	0.095	0.000	29.771	0.00	0.00
115.00	1 1/4" Fiber	Yes	1.00	0.000	0.00	0.00	0.00	0.086	0.000	29.826	0.00	1.58
115.00	1 5/8" Coax	Yes	1.00	0.000	1.98	0.17	0.00	0.086	0.000	29.826	0.00	2.50
120.00	1 1/4" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.088	0.000	30.094	0.00	7.92
120.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.088	0.000	30.094	0.00	12.48
125.00	1 1/4" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.092	0.000	30.354	0.00	7.92
125.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.092	0.000	30.354	0.00	12.48
130.00	1 1/4" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.096	0.000	30.605	0.00	7.92
130.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.096	0.000	30.605	0.00	12.48
135.00	1 1/4" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.100	1.001	30.850	0.00	7.92
135.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.100	1.001	30.850	0.00	12.48
Totals:											0.0	550.8

Calculated Forces

Structure: CT16504-A-SBA	Code: EIA/TIA-222-G	5/17/2018
Site Name: Manchester 12, CT	Exposure: C	
Height: 140.50 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II

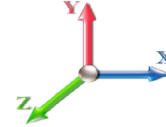


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Load Case: 1.2D + 1.6W 97 mph Wind

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	-41.01	-33.77	0.00	-3583.3	0.00	3583.37	3592.24	1796.12	6217.42	3113.33	0.00	0.000	0.000	0.808
1.00	-40.68	-33.78	0.00	-3549.6	0.00	3549.60	3581.26	1790.63	6171.41	3090.29	0.01	-0.062	0.000	0.714
5.00	-39.54	-33.63	0.00	-3414.4	0.00	3414.47	3536.93	1768.47	5988.37	2998.63	0.15	-0.282	0.000	0.703
10.00	-38.16	-33.41	0.00	-3246.3	0.00	3246.31	3480.64	1740.32	5761.86	2885.21	0.59	-0.556	0.000	0.688
15.00	-36.81	-33.18	0.00	-3079.2	0.00	3079.27	3423.37	1711.69	5538.01	2773.12	1.32	-0.831	0.000	0.672
20.00	-35.47	-32.93	0.00	-2913.3	0.00	2913.35	3365.12	1682.56	5316.92	2662.41	2.34	-1.108	0.000	0.696
25.00	-34.16	-32.66	0.00	-2748.6	0.00	2748.69	3305.89	1652.94	5098.71	2553.15	3.66	-1.404	0.000	0.678
30.00	-32.87	-32.37	0.00	-2585.3	0.00	2585.37	3245.52	1622.76	4883.27	2445.26	5.29	-1.699	0.000	0.660
35.00	-31.61	-32.07	0.00	-2423.5	0.00	2423.50	3165.03	1582.51	4642.85	2324.87	7.23	-1.995	0.000	0.643
40.00	-30.37	-31.74	0.00	-2263.1	0.00	2263.17	3084.53	1542.26	4408.49	2207.52	9.47	-2.291	0.000	0.683
44.50	-29.34	-31.40	0.00	-2120.3	0.00	2120.35	3012.08	1506.04	4202.76	2104.51	11.77	-2.581	0.000	0.665
45.00	-29.07	-31.43	0.00	-2104.6	0.00	2104.65	3004.03	1502.02	4180.21	2093.21	12.04	-2.614	0.000	0.655
50.00	-27.19	-31.06	0.00	-1947.4	0.00	1947.48	2423.81	1211.90	3356.59	1680.79	14.95	-2.929	0.000	0.662
55.00	-26.13	-30.73	0.00	-1792.1	0.00	1792.17	2376.14	1188.07	3201.01	1602.88	18.18	-3.241	0.000	0.680
60.00	-25.10	-30.38	0.00	-1638.5	0.00	1638.55	2327.49	1163.75	3047.73	1526.13	21.75	-3.572	0.000	0.646
65.00	-24.14	-29.99	0.00	-1486.6	0.00	1486.65	2277.86	1138.93	2896.88	1450.59	25.67	-3.897	0.000	0.608
67.50	-23.64	-29.81	0.00	-1411.6	0.00	1411.67	2252.16	1126.08	2821.75	1412.97	27.75	-4.058	0.000	0.589
67.50	-23.64	-29.81	0.00	-1411.6	0.00	1411.67	2252.16	1126.08	2821.75	1412.97	27.75	-4.058	0.000	0.589
70.00	-23.06	-29.71	0.00	-1337.1	0.00	1337.14	2218.62	1109.31	2737.91	1370.99	29.91	-4.218	0.000	0.986
75.00	-21.99	-29.45	0.00	-1188.6	0.00	1188.60	2151.54	1075.77	2574.02	1288.93	34.61	-4.743	0.000	0.933
80.00	-20.97	-29.17	0.00	-1041.3	0.00	1041.36	2084.46	1042.23	2415.20	1209.39	39.85	-5.252	0.000	0.872
85.00	-19.97	-28.88	0.00	-895.50	0.00	895.50	2017.38	1008.69	2261.43	1132.40	45.60	-5.737	0.000	0.802
90.00	-15.37	-22.22	0.00	-751.09	0.00	751.09	1950.30	975.15	2112.72	1057.93	51.85	-6.193	0.000	0.718
90.50	-15.26	-22.21	0.00	-739.98	0.00	739.98	1943.59	971.80	2098.13	1050.62	52.50	-6.238	0.000	0.713
93.12	-14.71	-21.97	0.00	-681.80	0.00	681.80	1908.44	954.22	2022.49	1012.75	55.98	-6.469	0.000	0.379
94.50	-14.43	-21.83	0.00	-651.48	0.00	651.48	1035.36	517.68	1113.15	557.40	57.86	-6.536	0.000	0.418
95.00	-14.33	-21.82	0.00	-640.57	0.00	640.57	1033.16	516.58	1106.89	554.27	58.54	-6.560	0.000	0.516
100.00	-13.84	-21.42	0.00	-531.45	0.00	531.45	1010.63	505.31	1044.65	523.10	65.55	-6.835	0.000	0.444
105.00	-13.38	-21.00	0.00	-424.35	0.00	424.35	987.11	493.55	983.14	492.30	72.82	-7.079	0.000	0.369
107.87	-13.12	-20.76	0.00	-364.09	0.00	364.09	973.17	486.58	948.19	474.80	77.11	-7.205	0.000	0.325
107.87	-13.12	-20.76	0.00	-364.09	0.00	364.09	973.17	486.58	948.19	474.80	77.11	-7.205	0.000	0.325
110.00	-12.88	-20.61	0.00	-319.87	0.00	319.87	962.61	481.31	922.45	461.91	80.33	-7.291	0.000	0.708
114.00	-9.09	-15.03	0.00	-231.54	0.00	231.54	942.31	471.15	874.57	437.94	86.57	-7.623	0.000	0.539
115.00	-8.97	-14.99	0.00	-216.50	0.00	216.50	937.13	468.57	862.70	431.99	88.17	-7.697	0.000	0.512
120.00	-8.59	-14.66	0.00	-141.55	0.00	141.55	910.67	455.33	804.02	402.61	96.38	-7.997	0.000	0.362
125.00	-4.24	-6.82	0.00	-68.26	0.00	68.26	883.23	441.61	746.49	373.80	104.85	-8.197	0.000	0.188
130.00	-4.01	-6.49	0.00	-34.16	0.00	34.16	854.80	427.40	690.24	345.64	113.47	-8.308	0.000	0.104
135.00	-0.20	-0.34	0.00	-1.70	0.00	1.70	825.39	412.70	635.38	318.16	122.17	-8.352	0.000	0.006
140.00	-0.02	-0.03	0.00	-0.01	0.00	0.01	789.80	394.90	578.22	289.54	130.89	-8.355	0.000	0.000
140.50	0.00	-0.03	0.00	0.00	0.00	0.00	785.78	392.89	572.31	286.58	131.76	-8.355	0.000	0.000

Wind Loading - Shaft

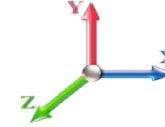
Structure: CT16504-A-SBA	Code: EIA/TIA-222-G	5/17/2018
Site Name: Manchester 12, CT	Exposure: C	
Height: 140.50 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 0.9D + 1.6W 97 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	RB1	1.00	0.85	19.450	21.40	321.92	0.650	0.000	0.00	0.000	0.00	0.0	0.0	0.0
1.00	RT1 RB2	1.00	0.85	19.450	21.40	320.54	0.658 *	0.000	1.00	3.592	2.36	80.9	0.0	153.4
5.00		1.00	0.85	19.450	21.40	315.03	0.660 *	0.000	4.00	14.214	9.38	321.1	0.0	606.8
10.00		1.00	0.85	19.450	21.40	308.14	0.664 *	0.000	5.00	17.421	11.57	395.9	0.0	743.6
15.00		1.00	0.85	19.450	21.40	301.25	0.669 *	0.000	5.00	17.036	11.39	389.9	0.0	727.0
20.00	RT2 RB3	1.00	0.90	20.638	22.70	303.21	0.674 *	0.000	5.00	16.650	11.22	407.4	0.0	710.4
25.00		1.00	0.95	21.630	23.79	303.16	0.679 *	0.000	5.00	16.265	11.04	420.3	0.0	693.8
30.00		1.00	0.98	22.477	24.72	301.63	0.684 *	0.000	5.00	15.880	10.87	429.8	0.0	677.2
35.00		1.00	1.01	23.218	25.54	299.03	0.690 *	0.000	5.00	15.495	10.69	436.8	0.0	660.6
40.00	RT3 RB4	1.00	1.04	23.880	26.27	295.63	0.696 *	0.000	5.00	15.110	10.51	441.9	0.0	644.0
44.50	Bot - Section 2	1.00	1.07	24.422	26.86	292.02	0.674 *	0.000	4.50	13.270	8.95	384.6	0.0	565.4
45.00		1.00	1.07	24.479	26.93	291.59	0.677 *	0.000	0.50	1.482	1.00	43.2	0.0	114.7
50.00	Top - Section 1	1.00	1.09	25.029	27.53	287.03	0.681 *	0.000	5.00	14.604	9.94	437.8	0.0	1130.3
55.00		1.00	1.12	25.536	28.09	287.45	0.682 *	0.000	5.00	14.219	9.70	436.1	0.0	505.7
60.00	RT4 RB5	1.00	1.14	26.008	28.61	282.13	0.689 *	0.000	5.00	13.834	9.53	436.1	0.0	491.8
65.00		1.00	1.16	26.450	29.09	276.48	0.695 *	0.000	5.00	13.448	9.35	435.4	0.0	478.0
67.50	RT5	1.00	1.17	26.661	29.33	273.55	0.701 *	0.000	2.50	6.580	4.61	216.3	0.0	233.8
70.00		1.00	1.17	26.866	29.55	270.55	0.704 *	0.000	2.50	6.484	4.57	215.9	0.0	230.4
75.00		1.00	1.19	27.259	29.98	264.37	0.650	0.000	5.00	12.678	8.24	395.4	0.0	450.4
80.00		1.00	1.21	27.632	30.39	257.96	0.650	0.000	5.00	12.293	7.99	388.6	0.0	436.5
85.00		1.00	1.22	27.987	30.79	251.35	0.650	0.000	5.00	11.908	7.74	381.3	0.0	422.7
90.00	Appurtenance(s)	1.00	1.24	28.325	31.16	244.55	0.650	0.000	5.00	11.523	7.49	373.4	0.0	408.9
90.50	Bot - Section 3	1.00	1.24	28.359	31.19	243.86	0.650	0.000	0.50	1.131	0.74	36.7	0.0	40.1
93.12	RB6	1.00	1.25	28.529	31.38	240.23	0.744 *	0.000	2.62	5.947	4.42	222.2	0.0	335.2
94.50	Top - Section 2	1.00	1.25	28.618	31.48	238.29	0.748 *	0.000	1.38	3.090	2.31	116.4	0.0	174.1
95.00		1.00	1.25	28.650	31.51	241.03	0.746 *	0.000	0.50	1.112	0.83	41.8	0.0	23.8
100.00		1.00	1.27	28.961	31.86	233.93	0.751 *	0.000	5.00	10.911	8.20	417.9	0.0	233.3
105.00		1.00	1.28	29.260	32.19	226.69	0.762 *	0.000	5.00	10.526	8.02	413.2	0.0	225.0
107.87	RT6	1.00	1.29	29.426	32.37	222.47	0.771 *	0.000	2.87	5.868	4.53	234.4	0.0	125.4
110.00		1.00	1.29	29.548	32.50	219.31	0.777 *	0.000	2.13	4.273	3.32	172.7	0.0	91.3
114.00	Appurtenance(s)	1.00	1.30	29.771	32.75	213.32	0.650	0.000	4.00	7.835	5.09	266.9	0.0	167.4
115.00		1.00	1.30	29.826	32.81	211.81	0.650	0.000	1.00	1.920	1.25	65.5	0.0	41.0
120.00		1.00	1.32	30.094	33.10	204.19	0.650	0.000	5.00	9.370	6.09	322.6	0.0	200.1
125.00	Appurtenance(s)	1.00	1.33	30.354	33.39	196.46	0.650	0.000	5.00	8.985	5.84	312.0	0.0	191.8
130.00		1.00	1.34	30.605	33.67	188.63	0.650	0.000	5.00	8.600	5.59	301.1	0.0	183.5
135.00	Appurtenance(s)	1.00	1.35	30.850	33.93	180.71	0.651 *	0.000	5.00	8.215	5.35	290.3	0.0	175.2
140.00		1.00	1.36	31.087	34.20	172.69	0.650	0.000	5.00	7.830	5.09	278.5	0.0	166.9
140.50		1.00	1.36	31.110	34.22	171.89	0.650	0.000	0.50	0.762	0.50	27.1	0.0	16.2
Totals:									140.50			10,987.5		13,475.8

* Cf Adjusted by Linear Load Ra Effect

Discrete Appurtenance Forces

Structure: CT16504-A-SBA	Code: EIA/TIA-222-G	5/17/2018
Site Name: Manchester 12, CT	Exposure: C	
Height: 140.50 (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 97 mph Wind

Dead Load Factor 0.90
Wind Load Factor 1.60



Iterations 25

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	CaAa x Ka	Ka	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)
1	135.00	Expansion rights	3	30.850	33.934	0.70	0.80	6.67	189.00	0.000	0.000	362.36	0.00	0.00
2	135.00	Ericsson RRUS 32 B66A	3	30.850	33.934	0.70	0.80	8.08	142.83	0.000	0.000	438.74	0.00	0.00
3	135.00	Ericsson S11B12	3	30.850	33.934	0.56	0.80	4.75	137.70	0.000	0.000	258.14	0.00	0.00
4	135.00	RFS	3	30.850	33.934	0.50	0.80	9.61	109.89	0.000	0.000	521.91	0.00	0.00
5	135.00	Commscope F-65C-R2	3	30.850	33.934	0.67	0.80	28.57	166.59	0.000	0.000	1551.04	0.00	0.00
6	135.00	Ericsson AIR32	3	30.850	33.934	0.70	0.80	13.59	356.94	0.000	0.000	738.03	0.00	0.00
7	135.00	Sector Frame	3	30.850	33.934	0.56	0.75	25.31	2205.90	0.000	0.000	1374.35	0.00	0.00
8	125.00	DBC0061F1V51-2	6	30.354	33.389	0.50	0.75	1.30	137.16	0.000	0.000	69.26	0.00	0.00
9	125.00	CCI DTMAPB7819VG12A	6	30.354	33.389	0.50	0.75	3.44	102.60	0.000	0.000	183.62	0.00	0.00
10	125.00	Raycap DC6-48-60-18-8F	3	30.354	33.389	0.50	0.75	2.22	88.56	0.000	0.000	118.39	0.00	0.00
11	125.00	Ericsson RRUS-11	3	30.354	33.389	0.50	0.75	3.80	145.80	0.000	0.000	202.95	0.00	0.00
12	125.00	RRUS 32 B66	3	30.354	33.389	0.50	0.75	4.13	143.10	0.000	0.000	220.66	0.00	0.00
13	125.00	B14 4478	3	30.354	33.389	0.50	0.75	2.49	160.38	0.000	0.000	132.88	0.00	0.00
14	125.00	QS66512-2	3	30.354	33.389	0.69	0.75	16.83	299.70	0.000	0.000	899.05	0.00	0.00
15	125.00	Ericsson RRUS-32	6	30.354	33.389	0.50	0.75	7.60	415.80	0.000	0.000	405.89	0.00	0.00
16	125.00	Kathrein 800-10121	3	30.354	33.389	0.59	0.75	9.15	119.07	0.000	0.000	489.04	0.00	0.00
17	125.00	HPA-65R-BUJ-H6	3	30.354	33.389	0.64	0.75	18.47	137.70	0.000	0.000	986.97	0.00	0.00
18	125.00	CCI OPA-65R-LCUU-H6	3	30.354	33.389	0.59	0.75	17.17	197.10	0.000	0.000	917.30	0.00	0.00
19	125.00	Kathrein 782 10250	6	30.354	33.389	0.50	0.75	1.57	34.56	0.000	0.000	83.76	0.00	0.00
20	125.00	Platform w/ Hand Rails	1	30.354	33.389	1.00	1.00	40.00	1800.00	0.000	0.000	2136.90	0.00	0.00
21	114.00	20" x 18" x 9" Junction Box	1	29.771	32.748	1.00	1.00	3.15	18.00	0.000	0.000	165.05	0.00	0.00
22	114.00	Andrew VHLP1-23-DW1	1	30.014	33.016	1.00	1.00	1.61	12.60	0.000	4.500	85.05	0.00	382.72
23	114.00	Andrew VHLP2-23-DW1	1	30.014	33.016	1.00	1.00	4.69	27.90	0.000	4.500	247.75	0.00	1114.88
24	114.00	Argus LLPX310R-V1	3	29.798	32.778	0.55	0.80	7.14	136.89	0.000	0.500	374.32	0.00	187.16
25	114.00	Samsung	3	29.716	32.687	0.61	0.80	3.32	89.37	0.000	-1.000	173.62	0.00	-173.62
26	114.00	Low Profile Platform	1	29.771	32.748	1.00	1.00	25.00	1620.00	0.000	0.000	1309.91	0.00	0.00
27	114.00	RFS APXVSP18	3	29.826	32.808	0.66	0.80	15.98	338.31	0.000	1.000	838.62	0.00	838.62
28	114.00	Alcatel Lucent	3	29.934	32.927	0.55	0.80	6.71	189.00	0.000	3.000	353.34	0.00	1060.02
29	114.00	Alcatel Lucent	3	29.688	32.657	0.78	0.80	5.59	172.80	0.000	-1.500	291.93	0.00	-437.90
30	114.00	Alcatel Lucent	3	29.934	32.927	0.78	0.80	6.37	162.00	0.000	3.000	335.80	0.00	1007.41
31	114.00	RFS APXVTM14	3	29.934	32.927	0.63	0.80	12.02	315.09	0.000	3.000	633.29	0.00	1899.88
32	90.00	Alcatel Lucent	3	28.325	31.158	0.57	0.75	5.99	243.00	0.000	0.000	298.37	0.00	0.00
33	90.00	Swedcom SCLP 2x6014	3	28.325	31.158	0.67	0.75	13.00	123.12	0.000	0.000	647.90	0.00	0.00
34	90.00	Commscope	6	28.325	31.158	0.62	0.75	30.18	412.56	0.000	0.000	1504.50	0.00	0.00
35	90.00	Antel	3	28.325	31.158	0.55	0.75	12.43	115.02	0.000	0.000	619.86	0.00	0.00
36	90.00	RFS DB-T1-6Z-8AB-OZ	1	28.325	31.158	1.00	1.00	4.80	39.60	0.000	0.000	239.29	0.00	0.00
37	90.00	Alcatel Lucent	3	28.325	31.158	0.57	0.75	5.99	243.00	0.000	0.000	298.37	0.00	0.00
38	90.00	Alcatel Lucent	3	28.325	31.158	0.68	0.75	3.06	148.50	0.000	0.000	152.44	0.00	0.00
39	90.00	Platform w/ Hand Rails	1	28.325	31.158	1.00	1.00	42.00	1980.00	0.000	0.000	2093.82	0.00	0.00

Totals: 13,477.14

22,754.45

Total Applied Force Summary

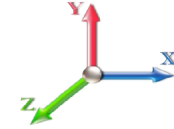
Structure: CT16504-A-SBA	Code: EIA/TIA-222-G	5/17/2018
Site Name: Manchester 12, CT	Exposure: C	
Height: 140.50 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 0.9D + 1.6W 97 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
1.00		80.87	187.98	0.00	0.00
5.00		321.08	745.27	0.00	0.00
10.00		395.95	916.65	0.00	0.00
15.00		389.95	900.06	0.00	0.00
20.00		407.39	883.47	0.00	0.00
25.00		420.31	866.88	0.00	0.00
30.00		429.82	850.29	0.00	0.00
35.00		436.84	833.70	0.00	0.00
40.00		441.93	817.11	0.00	0.00
44.50		384.61	721.21	0.00	0.00
45.00		43.23	132.01	0.00	0.00
50.00		437.78	1303.41	0.00	0.00
55.00		436.10	678.73	0.00	0.00
60.00		436.14	664.91	0.00	0.00
65.00		435.39	651.08	0.00	0.00
67.50		216.35	320.36	0.00	0.00
70.00		215.94	316.90	0.00	0.00
75.00		395.36	623.43	0.00	0.00
80.00		388.59	609.61	0.00	0.00
85.00		381.25	595.78	0.00	0.00
90.00	(23) attachments	6227.92	3886.76	0.00	0.00
90.50		36.69	50.83	0.00	0.00
93.12		222.16	391.28	0.00	0.00
94.50		116.41	203.65	0.00	0.00
95.00		41.82	34.49	0.00	0.00
100.00		417.87	340.31	0.00	0.00
105.00		413.16	332.02	0.00	0.00
107.87		234.41	186.83	0.00	0.00
110.00		172.74	136.89	0.00	0.00
114.00	(25) attachments	5075.54	3334.96	0.00	5879.17
115.00		65.52	55.65	0.00	0.00
120.00		322.60	273.28	0.00	0.00
125.00	(49) attachments	7158.68	4046.52	0.00	0.00
130.00		301.11	198.82	0.00	0.00
135.00	(21) attachments	5534.85	3499.37	0.00	0.00
140.00		278.45	166.93	0.00	0.00
140.50		27.11	16.24	0.00	0.00
	Totals:	33,741.94	30,773.67	0.00	5,879.17

Linear Appurtenance Segment Forces (Factored)

Structure: CT16504-A-SBA	Code: EIA/TIA-222-G	5/17/2018
Site Name: Manchester 12, CT	Exposure: C	
Height: 140.50 (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 97 mph Wind

Dead Load Factor 0.90
Wind Load Factor 1.60



Iterations 25

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
1.00	1 1/4" Fiber	Yes	1.00	0.000	0.00	0.00	0.00	0.104	1.012	19.450	0.00	1.19
1.00	1 5/8" Coax	Yes	1.00	0.000	1.98	0.17	0.00	0.104	1.012	19.450	0.00	1.87
1.00	1.25" Reinforcing	Yes	1.00	0.000	1.25	0.10	0.00	0.104	1.012	19.450	0.00	0.00
1.00	1.25" Reinforcing	Yes	1.00	0.000	1.25	0.10	0.00	0.104	1.012	19.450	0.00	0.00
5.00	1 1/4" Fiber	Yes	4.00	0.000	0.00	0.00	0.00	0.105	1.015	19.450	0.00	4.75
5.00	1 5/8" Coax	Yes	4.00	0.000	1.98	0.66	0.00	0.105	1.015	19.450	0.00	7.49
5.00	1.25" Reinforcing	Yes	4.00	0.000	1.25	0.42	0.00	0.105	1.015	19.450	0.00	0.00
5.00	1.25" Reinforcing	Yes	4.00	0.000	1.25	0.42	0.00	0.105	1.015	19.450	0.00	0.00
10.00	1 1/4" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.107	1.021	19.450	0.00	5.94
10.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.107	1.021	19.450	0.00	9.36
10.00	1.25" Reinforcing	Yes	5.00	0.000	1.25	0.52	0.00	0.107	1.021	19.450	0.00	0.00
10.00	1.25" Reinforcing	Yes	5.00	0.000	1.25	0.52	0.00	0.107	1.021	19.450	0.00	0.00
15.00	1 1/4" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.110	1.029	19.450	0.00	5.94
15.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.110	1.029	19.450	0.00	9.36
15.00	1.25" Reinforcing	Yes	5.00	0.000	1.25	0.52	0.00	0.110	1.029	19.450	0.00	0.00
15.00	1.25" Reinforcing	Yes	5.00	0.000	1.25	0.52	0.00	0.110	1.029	19.450	0.00	0.00
20.00	1 1/4" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.112	1.036	20.638	0.00	5.94
20.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.112	1.036	20.638	0.00	9.36
20.00	1.25" Reinforcing	Yes	5.00	0.000	1.25	0.52	0.00	0.112	1.036	20.638	0.00	0.00
20.00	1.25" Reinforcing	Yes	5.00	0.000	1.25	0.52	0.00	0.112	1.036	20.638	0.00	0.00
25.00	1 1/4" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.115	1.044	21.630	0.00	5.94
25.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.115	1.044	21.630	0.00	9.36
25.00	1.25" Reinforcing	Yes	5.00	0.000	1.25	0.52	0.00	0.115	1.044	21.630	0.00	0.00
25.00	1.25" Reinforcing	Yes	5.00	0.000	1.25	0.52	0.00	0.115	1.044	21.630	0.00	0.00
30.00	1 1/4" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.118	1.053	22.477	0.00	5.94
30.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.118	1.053	22.477	0.00	9.36
30.00	1.25" Reinforcing	Yes	5.00	0.000	1.25	0.52	0.00	0.118	1.053	22.477	0.00	0.00
30.00	1.25" Reinforcing	Yes	5.00	0.000	1.25	0.52	0.00	0.118	1.053	22.477	0.00	0.00
35.00	1 1/4" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.120	1.061	23.218	0.00	5.94
35.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.120	1.061	23.218	0.00	9.36
35.00	1.25" Reinforcing	Yes	5.00	0.000	1.25	0.52	0.00	0.120	1.061	23.218	0.00	0.00
35.00	1.25" Reinforcing	Yes	5.00	0.000	1.25	0.52	0.00	0.120	1.061	23.218	0.00	0.00
40.00	1 1/4" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.124	1.071	23.880	0.00	5.94
40.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.124	1.071	23.880	0.00	9.36
40.00	1.25" Reinforcing	Yes	5.00	0.000	1.25	0.52	0.00	0.124	1.071	23.880	0.00	0.00
40.00	1.25" Reinforcing	Yes	5.00	0.000	1.25	0.52	0.00	0.124	1.071	23.880	0.00	0.00
44.50	1 1/4" Fiber	Yes	4.50	0.000	0.00	0.00	0.00	0.112	1.037	24.422	0.00	5.35
44.50	1 5/8" Coax	Yes	4.50	0.000	1.98	0.74	0.00	0.112	1.037	24.422	0.00	8.42
44.50	1" Reinforcing plate	Yes	4.50	0.000	1.00	0.38	0.00	0.112	1.037	24.422	0.00	0.00
44.50	1" Reinforcing plate	Yes	4.50	0.000	1.00	0.38	0.00	0.112	1.037	24.422	0.00	0.00
45.00	1 1/4" Fiber	Yes	0.50	0.000	0.00	0.00	0.00	0.114	1.042	24.479	0.00	0.59
45.00	1 5/8" Coax	Yes	0.50	0.000	1.98	0.08	0.00	0.114	1.042	24.479	0.00	0.94
45.00	1" Reinforcing plate	Yes	0.50	0.000	1.00	0.04	0.00	0.114	1.042	24.479	0.00	0.00
45.00	1" Reinforcing plate	Yes	0.50	0.000	1.00	0.04	0.00	0.114	1.042	24.479	0.00	0.00
50.00	1 1/4" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.116	1.047	25.029	0.00	5.94
50.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.116	1.047	25.029	0.00	9.36
50.00	1" Reinforcing plate	Yes	5.00	0.000	1.00	0.42	0.00	0.116	1.047	25.029	0.00	0.00

Linear Appurtenance Segment Forces (Factored)

Structure: CT16504-A-SBA	Code: EIA/TIA-222-G	5/17/2018
Site Name: Manchester 12, CT	Exposure: C	
Height: 140.50 (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 97 mph Wind

Dead Load Factor 0.90
Wind Load Factor 1.60



Iterations 25

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
50.00	1" Reinforcing plate	Yes	5.00	0.000	1.00	0.42	0.00	0.116	1.047	25.029	0.00	0.00
55.00	1 1/4" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.117	1.050	25.536	0.00	5.94
55.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.117	1.050	25.536	0.00	9.36
55.00	1" Reinforcing plate	Yes	5.00	0.000	1.00	0.42	0.00	0.117	1.050	25.536	0.00	0.00
55.00	1" Reinforcing plate	Yes	5.00	0.000	1.00	0.42	0.00	0.117	1.050	25.536	0.00	0.00
60.00	1 1/4" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.120	1.060	26.008	0.00	5.94
60.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.120	1.060	26.008	0.00	9.36
60.00	1" Reinforcing plate	Yes	5.00	0.000	1.00	0.42	0.00	0.120	1.060	26.008	0.00	0.00
60.00	1" Reinforcing plate	Yes	5.00	0.000	1.00	0.42	0.00	0.120	1.060	26.008	0.00	0.00
65.00	1 1/4" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.123	1.070	26.450	0.00	5.94
65.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.123	1.070	26.450	0.00	9.36
65.00	1" Reinforcing plate	Yes	5.00	0.000	1.00	0.42	0.00	0.123	1.070	26.450	0.00	0.00
65.00	1" Reinforcing plate	Yes	5.00	0.000	1.00	0.42	0.00	0.123	1.070	26.450	0.00	0.00
67.50	1 1/4" Fiber	Yes	2.50	0.000	0.00	0.00	0.00	0.126	1.078	26.661	0.00	2.97
67.50	1 5/8" Coax	Yes	2.50	0.000	1.98	0.41	0.00	0.126	1.078	26.661	0.00	4.68
67.50	1" Reinforcing plate	Yes	2.50	0.000	1.00	0.21	0.00	0.126	1.078	26.661	0.00	0.00
67.50	1" Reinforcing plate	Yes	2.50	0.000	1.00	0.21	0.00	0.126	1.078	26.661	0.00	0.00
70.00	1 1/4" Fiber	Yes	2.50	0.000	0.00	0.00	0.00	0.128	1.084	26.866	0.00	2.97
70.00	1 5/8" Coax	Yes	2.50	0.000	1.98	0.41	0.00	0.128	1.084	26.866	0.00	4.68
70.00	1" Reinforcing plate	Yes	2.50	0.000	1.00	0.21	0.00	0.128	1.084	26.866	0.00	0.00
70.00	1" Reinforcing plate	Yes	2.50	0.000	1.00	0.21	0.00	0.128	1.084	26.866	0.00	0.00
75.00	1 1/4" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.065	0.000	27.259	0.00	5.94
75.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.065	0.000	27.259	0.00	9.36
80.00	1 1/4" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.067	0.000	27.632	0.00	5.94
80.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.067	0.000	27.632	0.00	9.36
85.00	1 1/4" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.069	0.000	27.987	0.00	5.94
85.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.069	0.000	27.987	0.00	9.36
90.00	1 1/4" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.072	0.000	28.325	0.00	5.94
90.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.072	0.000	28.325	0.00	9.36
90.50	1 1/4" Fiber	Yes	0.50	0.000	0.00	0.00	0.00	0.073	0.000	28.359	0.00	0.59
90.50	1 5/8" Coax	Yes	0.50	0.000	1.98	0.08	0.00	0.073	0.000	28.359	0.00	0.94
93.12	1 1/4" Fiber	Yes	2.62	0.000	0.00	0.00	0.00	0.148	1.145	28.529	0.00	3.11
93.12	1 5/8" Coax	Yes	2.62	0.000	1.98	0.43	0.00	0.148	1.145	28.529	0.00	4.90
93.12	1" Reinforcing plate	Yes	2.62	0.000	1.00	0.22	0.00	0.148	1.145	28.529	0.00	0.00
93.12	1" Reinforcing plate	Yes	2.62	0.000	1.00	0.22	0.00	0.148	1.145	28.529	0.00	0.00
94.50	1 1/4" Fiber	Yes	1.38	0.000	0.00	0.00	0.00	0.150	1.151	28.618	0.00	1.64
94.50	1 5/8" Coax	Yes	1.38	0.000	1.98	0.23	0.00	0.150	1.151	28.618	0.00	2.58
94.50	1" Reinforcing plate	Yes	1.38	0.000	1.00	0.11	0.00	0.150	1.151	28.618	0.00	0.00
94.50	1" Reinforcing plate	Yes	1.38	0.000	1.00	0.11	0.00	0.150	1.151	28.618	0.00	0.00
95.00	1 1/4" Fiber	Yes	0.50	0.000	0.00	0.00	0.00	0.149	1.147	28.650	0.00	0.59
95.00	1 5/8" Coax	Yes	0.50	0.000	1.98	0.08	0.00	0.149	1.147	28.650	0.00	0.94
95.00	1" Reinforcing plate	Yes	0.50	0.000	1.00	0.04	0.00	0.149	1.147	28.650	0.00	0.00
95.00	1" Reinforcing plate	Yes	0.50	0.000	1.00	0.04	0.00	0.149	1.147	28.650	0.00	0.00
100.00	1 1/4" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.152	1.156	28.961	0.00	5.94
100.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.152	1.156	28.961	0.00	9.36
100.00	1" Reinforcing plate	Yes	5.00	0.000	1.00	0.42	0.00	0.152	1.156	28.961	0.00	0.00
100.00	1" Reinforcing plate	Yes	5.00	0.000	1.00	0.42	0.00	0.152	1.156	28.961	0.00	0.00

Linear Appurtenance Segment Forces (Factored)

Structure: CT16504-A-SBA	Code: EIA/TIA-222-G	5/17/2018
Site Name: Manchester 12, CT	Exposure: C	
Height: 140.50 (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 97 mph Wind

Dead Load Factor 0.90
Wind Load Factor 1.60



Iterations 25

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
105.00	1 1/4" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.158	1.173	29.260	0.00	5.94
105.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.158	1.173	29.260	0.00	9.36
105.00	1" Reinforcing plate	Yes	5.00	0.000	1.00	0.42	0.00	0.158	1.173	29.260	0.00	0.00
105.00	1" Reinforcing plate	Yes	5.00	0.000	1.00	0.42	0.00	0.158	1.173	29.260	0.00	0.00
107.87	1 1/4" Fiber	Yes	2.87	0.000	0.00	0.00	0.00	0.162	1.187	29.426	0.00	3.41
107.87	1 5/8" Coax	Yes	2.87	0.000	1.98	0.47	0.00	0.162	1.187	29.426	0.00	5.37
107.87	1" Reinforcing plate	Yes	2.87	0.000	1.00	0.24	0.00	0.162	1.187	29.426	0.00	0.00
107.87	1" Reinforcing plate	Yes	2.87	0.000	1.00	0.24	0.00	0.162	1.187	29.426	0.00	0.00
110.00	1 1/4" Fiber	Yes	2.13	0.000	0.00	0.00	0.00	0.165	1.196	29.548	0.00	2.53
110.00	1 5/8" Coax	Yes	2.13	0.000	1.98	0.35	0.00	0.165	1.196	29.548	0.00	3.99
110.00	1" Reinforcing plate	Yes	2.13	0.000	1.00	0.18	0.00	0.165	1.196	29.548	0.00	0.00
110.00	1" Reinforcing plate	Yes	2.13	0.000	1.00	0.18	0.00	0.165	1.196	29.548	0.00	0.00
114.00	1 1/4" Fiber	Yes	4.00	0.000	0.00	0.00	0.00	0.095	0.000	29.771	0.00	4.75
114.00	1 5/8" Coax	Yes	4.00	0.000	1.98	0.66	0.00	0.095	0.000	29.771	0.00	7.49
114.00	1" Reinforcing plate	Yes	0.50	0.000	1.00	0.04	0.00	0.095	0.000	29.771	0.00	0.00
114.00	1" Reinforcing plate	Yes	0.50	0.000	1.00	0.04	0.00	0.095	0.000	29.771	0.00	0.00
115.00	1 1/4" Fiber	Yes	1.00	0.000	0.00	0.00	0.00	0.086	0.000	29.826	0.00	1.19
115.00	1 5/8" Coax	Yes	1.00	0.000	1.98	0.17	0.00	0.086	0.000	29.826	0.00	1.87
120.00	1 1/4" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.088	0.000	30.094	0.00	5.94
120.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.088	0.000	30.094	0.00	9.36
125.00	1 1/4" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.092	0.000	30.354	0.00	5.94
125.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.092	0.000	30.354	0.00	9.36
130.00	1 1/4" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.096	0.000	30.605	0.00	5.94
130.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.096	0.000	30.605	0.00	9.36
135.00	1 1/4" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.100	1.001	30.850	0.00	5.94
135.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.100	1.001	30.850	0.00	9.36
Totals:											0.0	413.1

Calculated Forces

Structure: CT16504-A-SBA	Code: EIA/TIA-222-G	5/17/2018
Site Name: Manchester 12, CT	Exposure: C	
Height: 140.50 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II

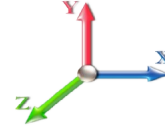


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Load Case: 0.9D + 1.6W 97 mph Wind

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	-30.75	-33.76	0.00	-3533.2	0.00	3533.29	3592.24	1796.12	6217.42	3113.33	0.00	0.000	0.000	0.794
1.00	-30.48	-33.75	0.00	-3499.5	0.00	3499.53	3581.26	1790.63	6171.41	3090.29	0.01	-0.062	0.000	0.702
5.00	-29.60	-33.56	0.00	-3364.5	0.00	3364.52	3536.93	1768.47	5988.37	2998.63	0.15	-0.278	0.000	0.691
10.00	-28.53	-33.29	0.00	-3196.7	0.00	3196.75	3480.64	1740.32	5761.86	2885.21	0.59	-0.548	0.000	0.676
15.00	-27.48	-33.02	0.00	-3030.3	0.00	3030.31	3423.37	1711.69	5538.01	2773.12	1.30	-0.819	0.000	0.660
20.00	-26.44	-32.73	0.00	-2865.2	0.00	2865.22	3365.12	1682.56	5316.92	2662.41	2.31	-1.091	0.000	0.683
25.00	-25.42	-32.42	0.00	-2701.6	0.00	2701.60	3305.89	1652.94	5098.71	2553.15	3.61	-1.382	0.000	0.665
30.00	-24.42	-32.09	0.00	-2539.5	0.00	2539.52	3245.52	1622.76	4883.27	2445.26	5.21	-1.672	0.000	0.646
35.00	-23.44	-31.74	0.00	-2379.0	0.00	2379.08	3165.03	1582.51	4642.85	2324.87	7.11	-1.963	0.000	0.630
40.00	-22.48	-31.39	0.00	-2220.3	0.00	2220.36	3084.53	1542.26	4408.49	2207.52	9.33	-2.253	0.000	0.668
44.50	-21.69	-31.03	0.00	-2079.1	0.00	2079.12	3012.08	1506.04	4202.76	2104.51	11.59	-2.537	0.000	0.651
45.00	-21.47	-31.05	0.00	-2063.6	0.00	2063.61	3004.03	1502.02	4180.21	2093.21	11.85	-2.570	0.000	0.641
50.00	-20.02	-30.66	0.00	-1908.3	0.00	1908.38	2423.81	1211.90	3356.59	1680.79	14.71	-2.879	0.000	0.647
55.00	-19.20	-30.29	0.00	-1755.1	0.00	1755.10	2376.14	1188.07	3201.01	1602.88	17.89	-3.185	0.000	0.665
60.00	-18.39	-29.92	0.00	-1603.6	0.00	1603.66	2327.49	1163.75	3047.73	1526.13	21.39	-3.509	0.000	0.630
65.00	-17.65	-29.52	0.00	-1454.0	0.00	1454.06	2277.86	1138.93	2896.88	1450.59	25.24	-3.826	0.000	0.594
67.50	-17.27	-29.33	0.00	-1380.2	0.00	1380.27	2252.16	1126.08	2821.75	1412.97	27.28	-3.984	0.000	0.575
67.50	-17.27	-29.33	0.00	-1380.2	0.00	1380.27	2252.16	1126.08	2821.75	1412.97	27.28	-3.984	0.000	0.575
70.00	-16.79	-29.19	0.00	-1306.9	0.00	1306.96	2218.62	1109.31	2737.91	1370.99	29.41	-4.140	0.000	0.962
75.00	-15.95	-28.89	0.00	-1161.0	0.00	1161.02	2151.54	1075.77	2574.02	1288.93	34.02	-4.653	0.000	0.909
80.00	-15.13	-28.58	0.00	-1016.5	0.00	1016.59	2084.46	1042.23	2415.20	1209.39	39.15	-5.150	0.000	0.849
85.00	-14.35	-28.26	0.00	-873.70	0.00	873.70	2017.38	1008.69	2261.43	1132.40	44.80	-5.624	0.000	0.779
90.00	-11.03	-21.71	0.00	-732.42	0.00	732.42	1950.30	975.15	2112.72	1057.93	50.92	-6.068	0.000	0.698
90.50	-10.93	-21.70	0.00	-721.56	0.00	721.56	1943.59	971.80	2098.13	1050.62	51.56	-6.113	0.000	0.693
93.12	-10.51	-21.46	0.00	-664.72	0.00	664.72	1908.44	954.22	2022.49	1012.75	54.97	-6.337	0.000	0.369
94.50	-10.30	-21.33	0.00	-635.10	0.00	635.10	1035.36	517.68	1113.15	557.40	56.80	-6.402	0.000	0.406
95.00	-10.22	-21.31	0.00	-624.44	0.00	624.44	1033.16	516.58	1106.89	554.27	57.48	-6.426	0.000	0.501
100.00	-9.84	-20.90	0.00	-517.89	0.00	517.89	1010.63	505.31	1044.65	523.10	64.34	-6.694	0.000	0.431
105.00	-9.49	-20.48	0.00	-413.39	0.00	413.39	987.11	493.55	983.14	492.30	71.46	-6.932	0.000	0.358
107.87	-9.30	-20.24	0.00	-354.62	0.00	354.62	973.17	486.58	948.19	474.80	75.66	-7.055	0.000	0.315
107.87	-9.30	-20.24	0.00	-354.62	0.00	354.62	973.17	486.58	948.19	474.80	75.66	-7.055	0.000	0.315
110.00	-9.11	-20.09	0.00	-311.50	0.00	311.50	962.61	481.31	922.45	461.91	78.82	-7.138	0.000	0.686
114.00	-6.40	-14.65	0.00	-225.28	0.00	225.28	942.31	471.15	874.57	437.94	84.93	-7.462	0.000	0.522
115.00	-6.30	-14.60	0.00	-210.63	0.00	210.63	937.13	468.57	862.70	431.99	86.49	-7.533	0.000	0.495
120.00	-6.02	-14.27	0.00	-137.64	0.00	137.64	910.67	455.33	804.02	402.61	94.53	-7.826	0.000	0.349
125.00	-2.98	-6.63	0.00	-66.31	0.00	66.31	883.23	441.61	746.49	373.80	102.81	-8.020	0.000	0.181
130.00	-2.82	-6.30	0.00	-33.18	0.00	33.18	854.80	427.40	690.24	345.64	111.25	-8.128	0.000	0.099
135.00	-0.14	-0.33	0.00	-1.66	0.00	1.66	825.39	412.70	635.38	318.16	119.76	-8.171	0.000	0.005
140.00	-0.01	-0.03	0.00	-0.01	0.00	0.01	789.80	394.90	578.22	289.54	128.29	-8.173	0.000	0.000
140.50	0.00	-0.03	0.00	0.00	0.00	0.00	785.78	392.89	572.31	286.58	129.15	-8.173	0.000	0.000

Wind Loading - Shaft

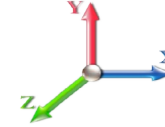
Structure: CT16504-A-SBA	Code: EIA/TIA-222-G	5/17/2018
Site Name: Manchester 12, CT	Exposure: C	
Height: 140.50 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 1.2D + 1.0Di + 1.0Wi 50 mph Wind

Dead Load Factor 1.20
Wind Load Factor 1.00



Iterations 25

Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00	RB1	1.00	0.85	5.168	5.68	0.00	1.200	0.000	0.00	0.000	0.00	0.0	0.0	0.0
1.00	RT1 RB2	1.00	0.85	5.168	5.68	0.00	1.214 *	1.410	1.00	3.827	4.65	26.4	77.3	281.8
5.00		1.00	0.85	5.168	5.68	0.00	1.218 *	1.656	4.00	15.318	18.66	106.1	359.2	1168.2
10.00		1.00	0.85	5.168	5.68	0.00	1.226 *	1.775	5.00	18.900	23.17	131.7	472.4	1463.8
15.00		1.00	0.85	5.168	5.68	0.00	1.234 *	1.848	5.00	18.576	22.93	130.4	482.2	1451.5
20.00	RT2 RB3	1.00	0.90	5.483	6.03	0.00	1.244 *	1.902	5.00	18.236	22.68	136.8	486.0	1433.2
25.00		1.00	0.95	5.747	6.32	0.00	1.253 *	1.945	5.00	17.886	22.41	141.7	486.4	1411.5
30.00		1.00	0.98	5.972	6.57	0.00	1.263 *	1.981	5.00	17.531	22.14	145.5	484.5	1387.5
35.00		1.00	1.01	6.169	6.79	0.00	1.274 *	2.012	5.00	17.171	21.87	148.4	481.0	1361.8
40.00	RT3 RB4	1.00	1.04	6.345	6.98	0.00	1.285 *	2.039	5.00	16.809	21.60	150.7	476.1	1334.8
44.50	Bot - Section 2	1.00	1.07	6.489	7.14	0.00	1.245 *	2.061	4.50	14.815	18.44	131.6	423.8	1177.8
45.00		1.00	1.07	6.504	7.15	0.00	1.250 *	2.063	0.50	1.653	2.07	14.8	47.8	200.8
50.00	Top - Section 1	1.00	1.09	6.650	7.32	0.00	1.256 *	2.085	5.00	16.341	20.53	150.2	471.8	1979.0
55.00		1.00	1.12	6.785	7.46	0.00	1.260 *	2.105	5.00	15.973	20.12	150.2	464.6	1138.8
60.00	RT4 RB5	1.00	1.14	6.910	7.60	0.00	1.272 *	2.123	5.00	15.603	19.84	150.8	456.8	1112.6
65.00		1.00	1.16	7.028	7.73	0.00	1.284 *	2.140	5.00	15.232	19.56	151.2	448.5	1085.8
67.50	RT5	1.00	1.17	7.084	7.79	0.00	1.294 *	2.148	2.50	7.475	9.67	75.4	222.1	533.8
70.00		1.00	1.17	7.138	7.85	0.00	1.300 *	2.156	2.50	7.382	9.60	75.4	219.9	527.0
75.00		1.00	1.19	7.243	7.97	0.00	1.200	2.171	5.00	14.487	17.38	138.5	430.6	1031.1
80.00		1.00	1.21	7.342	8.08	0.00	1.200	2.185	5.00	14.114	16.94	136.8	421.1	1003.1
85.00		1.00	1.22	7.436	8.18	0.00	1.200	2.198	5.00	13.740	16.49	134.9	411.3	974.9
90.00	Appurtenance(s)	1.00	1.24	7.526	8.28	0.00	1.200	2.211	5.00	13.365	16.04	132.8	401.2	946.4
90.50	Bot - Section 3	1.00	1.24	7.535	8.29	0.00	1.200	2.212	0.50	1.315	1.58	13.1	40.0	93.5
93.12	RB6	1.00	1.25	7.580	8.34	0.00	1.373 *	2.219	2.62	6.916	9.50	79.2	209.6	656.5
94.50	Top - Section 2	1.00	1.25	7.604	8.36	0.00	1.381 *	2.222	1.38	3.601	4.97	41.6	109.6	341.8
95.00		1.00	1.25	7.612	8.37	0.00	1.377 *	2.223	0.50	1.298	1.79	15.0	39.6	71.3
100.00		1.00	1.27	7.695	8.46	0.00	1.387 *	2.234	5.00	12.773	17.72	150.0	385.6	696.6
105.00		1.00	1.28	7.774	8.55	0.00	1.407 *	2.245	5.00	12.397	17.44	149.2	374.8	674.8
107.87	RT6	1.00	1.29	7.819	8.60	0.00	1.424 *	2.251	2.87	6.945	9.89	85.1	211.5	378.7
110.00		1.00	1.29	7.851	8.64	0.00	1.435 *	2.256	2.13	5.074	7.28	62.9	155.0	276.7
114.00	Appurtenance(s)	1.00	1.30	7.910	8.70	0.00	1.200	2.264	4.00	9.345	11.21	97.6	283.9	507.1
115.00		1.00	1.30	7.925	8.72	0.00	1.200	2.266	1.00	2.298	2.76	24.0	70.5	125.2
120.00		1.00	1.32	7.996	8.80	0.00	1.200	2.276	5.00	11.267	13.52	118.9	341.3	608.1
125.00	Appurtenance(s)	1.00	1.33	8.065	8.87	0.00	1.200	2.285	5.00	10.889	13.07	115.9	329.8	585.5
130.00		1.00	1.34	8.132	8.95	0.00	1.200	2.294	5.00	10.512	12.61	112.8	318.1	562.8
135.00	Appurtenance(s)	1.00	1.35	8.197	9.02	0.00	1.202 *	2.303	5.00	10.134	12.18	109.8	306.3	540.0
140.00		1.00	1.36	8.260	9.09	0.00	1.200	2.311	5.00	9.756	11.71	106.4	294.4	516.9
140.50		1.00	1.36	8.266	9.09	0.00	1.200	2.312	0.50	0.954	1.15	10.4	29.3	51.0
Totals:									140.50			3,851.9	29,691.9	

* Cf Adjusted by Linear Load Ra Effect

Discrete Appurtenance Forces

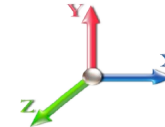
Structure: CT16504-A-SBA	Code: EIA/TIA-222-G	5/17/2018
Site Name: Manchester 12, CT	Exposure: C	
Height: 140.50 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 1.2D + 1.0Di + 1.0Wi 50 mph Wind

Dead Load Factor 1.20
Wind Load Factor 1.00



Iterations 25

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	CaAa x Ka	Ka	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)
1	135.00	Expansion rights	3	8.197	9.016	0.70	0.80	8.76	538.02	0.000	0.000	79.02	0.00	0.00
2	135.00	Ericsson RRUS 32 B66A	3	8.197	9.016	0.70	0.80	7.70	563.12	0.000	0.000	69.44	0.00	0.00
3	135.00	Ericsson S11B12	3	8.197	9.016	0.56	0.80	6.24	410.79	0.000	0.000	56.29	0.00	0.00
4	135.00	RFS	3	8.197	9.016	0.50	0.80	11.85	728.74	0.000	0.000	106.80	0.00	0.00
5	135.00	Commscope F-65C-R2	3	8.197	9.016	0.67	0.80	33.13	1600.47	0.000	0.000	298.69	0.00	0.00
6	135.00	Ericsson AIR32	3	8.197	9.016	0.70	0.80	16.87	1248.96	0.000	0.000	152.13	0.00	0.00
7	135.00	Sector Frame	3	8.197	9.016	0.56	0.75	42.10	6270.53	0.000	0.000	379.58	0.00	0.00
8	125.00	DBC0061F1V51-2	6	8.065	8.872	0.50	0.75	2.42	276.10	0.000	0.000	21.49	0.00	0.00
9	125.00	CCI DTMAPB7819VG12A	6	8.065	8.872	0.50	0.75	6.47	301.88	0.000	0.000	57.44	0.00	0.00
10	125.00	Raycap DC6-48-60-18-8F	3	8.065	8.872	0.50	0.75	3.60	307.80	0.000	0.000	31.91	0.00	0.00
11	125.00	Ericsson RRUS-11	3	8.065	8.872	0.50	0.75	5.12	569.70	0.000	0.000	45.42	0.00	0.00
12	125.00	RRUS 32 B66	3	8.065	8.872	0.50	0.75	5.60	562.53	0.000	0.000	49.71	0.00	0.00
13	125.00	B14 4478	3	8.065	8.872	0.50	0.75	3.58	474.62	0.000	0.000	31.80	0.00	0.00
14	125.00	QS66512-2	3	8.065	8.872	0.69	0.75	20.42	1341.06	0.000	0.000	181.17	0.00	0.00
15	125.00	Ericsson RRUS-32	6	8.065	8.872	0.50	0.75	13.68	1528.43	0.000	0.000	121.38	0.00	0.00
16	125.00	Kathrein 800-10121	3	8.065	8.872	0.59	0.75	11.64	730.84	0.000	0.000	103.23	0.00	0.00
17	125.00	HPA-65R-BUJ-H6	3	8.065	8.872	0.64	0.75	21.96	1207.90	0.000	0.000	194.80	0.00	0.00
18	125.00	CCI OPA-65R-LCUU-H6	3	8.065	8.872	0.59	0.75	20.41	1222.14	0.000	0.000	181.05	0.00	0.00
19	125.00	Kathrein 782 10250	6	8.065	8.872	0.50	0.75	3.81	124.93	0.000	0.000	33.84	0.00	0.00
20	125.00	Platform w/ Hand Rails	1	8.065	8.872	1.00	1.00	67.42	4541.90	0.000	0.000	598.11	0.00	0.00
21	114.00	20" x 18" x 9" Junction Box	1	7.910	8.701	1.00	1.00	4.78	131.93	0.000	0.000	41.58	0.00	0.00
22	114.00	Andrew VHLP1-23-DW1	1	7.975	8.772	1.00	1.00	2.59	52.63	0.000	4.500	22.76	0.00	102.41
23	114.00	Andrew VHLP2-23-DW1	1	7.975	8.772	1.00	1.00	6.35	136.15	0.000	4.500	55.67	0.00	250.53
24	114.00	Argus LLPX310R-V1	3	7.917	8.709	0.55	0.80	9.21	637.92	0.000	0.500	80.24	0.00	40.12
25	114.00	Samsung	3	7.896	8.685	0.61	0.80	5.63	252.61	0.000	-1.000	48.88	0.00	-48.88
26	114.00	Low Profile Platform	1	7.910	8.701	1.00	1.00	52.17	3797.57	0.000	0.000	453.92	0.00	0.00
27	114.00	RFS APXVSP18	3	7.925	8.717	0.66	0.80	19.39	1273.33	0.000	1.000	169.00	0.00	169.00
28	114.00	Alcatel Lucent	3	7.954	8.749	0.55	0.80	8.49	709.03	0.000	3.000	74.31	0.00	222.93
29	114.00	Alcatel Lucent	3	7.888	8.677	0.78	0.80	8.97	464.55	0.000	-1.500	77.81	0.00	-116.71
30	114.00	Alcatel Lucent	3	7.954	8.749	0.78	0.80	10.23	460.97	0.000	3.000	89.50	0.00	268.50
31	114.00	RFS APXVTM14	3	7.954	8.749	0.63	0.80	14.81	1082.40	0.000	3.000	129.58	0.00	388.75
32	90.00	Alcatel Lucent	3	7.526	8.279	0.57	0.75	7.69	729.85	0.000	0.000	63.70	0.00	0.00
33	90.00	Swedcom SLCP 2x6014	3	7.526	8.279	0.67	0.75	15.80	956.73	0.000	0.000	130.80	0.00	0.00
34	90.00	Commscope	6	7.526	8.279	0.62	0.75	36.30	2158.27	0.000	0.000	300.50	0.00	0.00
35	90.00	Antel	3	7.526	8.279	0.55	0.75	15.11	853.58	0.000	0.000	125.07	0.00	0.00
36	90.00	RFS DB-T1-6Z-8AB-OZ	1	7.526	8.279	1.00	1.00	5.93	243.69	0.000	0.000	49.07	0.00	0.00
37	90.00	Alcatel Lucent	3	7.526	8.279	0.57	0.75	7.69	729.85	0.000	0.000	63.70	0.00	0.00
38	90.00	Alcatel Lucent	3	7.526	8.279	0.68	0.75	6.13	539.83	0.000	0.000	50.73	0.00	0.00
39	90.00	Platform w/ Hand Rails	1	7.526	8.279	1.00	1.00	69.86	5358.61	0.000	0.000	578.35	0.00	0.00

Totals: 45,119.95

5,398.50

Total Applied Force Summary

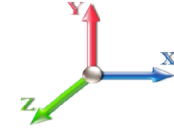
Structure: CT16504-A-SBA	Code: EIA/TIA-222-G	5/17/2018
Site Name: Manchester 12, CT	Exposure: C	
Height: 140.50 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 1.2D + 1.0Di + 1.0Wi 50 mph Wind

Dead Load Factor 1.20
Wind Load Factor 1.00



Iterations 25

Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00		0.00	0.00	0.00	0.00
1.00		26.41	352.45	0.00	0.00
5.00		106.08	1474.91	0.00	0.00
10.00		131.70	1862.66	0.00	0.00
15.00		130.36	1860.33	0.00	0.00
20.00		136.79	1849.54	0.00	0.00
25.00		141.70	1833.85	0.00	0.00
30.00		145.47	1814.93	0.00	0.00
35.00		148.42	1793.69	0.00	0.00
40.00		150.72	1770.69	0.00	0.00
44.50		131.65	1564.86	0.00	0.00
45.00		14.79	243.82	0.00	0.00
50.00		150.18	2412.55	0.00	0.00
55.00		150.19	1575.32	0.00	0.00
60.00		150.81	1551.77	0.00	0.00
65.00		151.18	1527.53	0.00	0.00
67.50		75.35	755.29	0.00	0.00
70.00		75.38	749.05	0.00	0.00
75.00		138.51	1384.32	0.00	0.00
80.00		136.78	1357.53	0.00	0.00
85.00		134.87	1330.37	0.00	0.00
90.00	(23) attachments	1494.70	12873.29	0.00	0.00
90.50		13.08	120.37	0.00	0.00
93.12		79.20	847.00	0.00	0.00
94.50		41.59	442.22	0.00	0.00
95.00		14.96	107.74	0.00	0.00
100.00		149.98	1062.47	0.00	0.00
105.00		149.19	1042.29	0.00	0.00
107.87		85.05	590.21	0.00	0.00
110.00		62.89	433.96	0.00	0.00
114.00	(25) attachments	1340.83	9734.13	0.00	1276.64
115.00		24.04	170.77	0.00	0.00
120.00		118.92	836.69	0.00	0.00
125.00	(49) attachments	1767.30	14004.72	0.00	0.00
130.00		112.83	715.77	0.00	0.00
135.00	(21) attachments	1251.74	12054.25	0.00	0.00
140.00		106.37	516.95	0.00	0.00
140.50		10.41	50.97	0.00	0.00
	Totals:	9,250.42	84,669.25	0.00	1,276.64

Linear Appurtenance Segment Forces (Factored)

Structure: CT16504-A-SBA	Code: EIA/TIA-222-G	5/17/2018
Site Name: Manchester 12, CT	Exposure: C	
Height: 140.50 (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 + 1.0Di + 1.0Wi 50 mph Wind

Dead Load Factor 1.20
Wind Load Factor 1.00



Iterations 25

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
1.00	1 1/4" Fiber	Yes	1.00	0.000	0.00	0.00	0.00	0.104	1.012	5.168	0.00	7.81
1.00	1 5/8" Coax	Yes	1.00	0.000	1.98	0.40	0.00	0.104	1.012	5.168	0.00	9.92
1.00	1.25" Reinforcing	Yes	1.00	0.000	1.25	0.34	0.00	0.104	1.012	5.168	0.00	5.43
1.00	1.25" Reinforcing	Yes	1.00	0.000	1.25	0.34	0.00	0.104	1.012	5.168	0.00	5.43
5.00	1 1/4" Fiber	Yes	4.00	0.000	0.00	0.00	0.00	0.105	1.015	5.168	0.00	37.31
5.00	1 5/8" Coax	Yes	4.00	0.000	1.98	1.76	0.00	0.105	1.015	5.168	0.00	46.41
5.00	1.25" Reinforcing	Yes	4.00	0.000	1.25	1.52	0.00	0.105	1.015	5.168	0.00	27.33
5.00	1.25" Reinforcing	Yes	4.00	0.000	1.25	1.52	0.00	0.105	1.015	5.168	0.00	27.33
10.00	1 1/4" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.107	1.021	5.168	0.00	50.57
10.00	1 5/8" Coax	Yes	5.00	0.000	1.98	2.30	0.00	0.107	1.021	5.168	0.00	62.33
10.00	1.25" Reinforcing	Yes	5.00	0.000	1.25	2.00	0.00	0.107	1.021	5.168	0.00	37.80
10.00	1.25" Reinforcing	Yes	5.00	0.000	1.25	2.00	0.00	0.107	1.021	5.168	0.00	37.80
15.00	1 1/4" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.110	1.029	5.168	0.00	53.08
15.00	1 5/8" Coax	Yes	5.00	0.000	1.98	2.37	0.00	0.110	1.029	5.168	0.00	65.09
15.00	1.25" Reinforcing	Yes	5.00	0.000	1.25	2.06	0.00	0.110	1.029	5.168	0.00	40.14
15.00	1.25" Reinforcing	Yes	5.00	0.000	1.25	2.06	0.00	0.110	1.029	5.168	0.00	40.14
20.00	1 1/4" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.112	1.036	5.483	0.00	54.96
20.00	1 5/8" Coax	Yes	5.00	0.000	1.98	2.41	0.00	0.112	1.036	5.483	0.00	67.15
20.00	1.25" Reinforcing	Yes	5.00	0.000	1.25	2.11	0.00	0.112	1.036	5.483	0.00	41.90
20.00	1.25" Reinforcing	Yes	5.00	0.000	1.25	2.11	0.00	0.112	1.036	5.483	0.00	41.90
25.00	1 1/4" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.115	1.044	5.747	0.00	56.49
25.00	1 5/8" Coax	Yes	5.00	0.000	1.98	2.45	0.00	0.115	1.044	5.747	0.00	68.82
25.00	1.25" Reinforcing	Yes	5.00	0.000	1.25	2.14	0.00	0.115	1.044	5.747	0.00	43.33
25.00	1.25" Reinforcing	Yes	5.00	0.000	1.25	2.14	0.00	0.115	1.044	5.747	0.00	43.33
30.00	1 1/4" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.118	1.053	5.972	0.00	57.78
30.00	1 5/8" Coax	Yes	5.00	0.000	1.98	2.48	0.00	0.118	1.053	5.972	0.00	70.23
30.00	1.25" Reinforcing	Yes	5.00	0.000	1.25	2.17	0.00	0.118	1.053	5.972	0.00	44.54
30.00	1.25" Reinforcing	Yes	5.00	0.000	1.25	2.17	0.00	0.118	1.053	5.972	0.00	44.54
35.00	1 1/4" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.120	1.061	6.169	0.00	58.90
35.00	1 5/8" Coax	Yes	5.00	0.000	1.98	2.50	0.00	0.120	1.061	6.169	0.00	71.46
35.00	1.25" Reinforcing	Yes	5.00	0.000	1.25	2.20	0.00	0.120	1.061	6.169	0.00	45.59
35.00	1.25" Reinforcing	Yes	5.00	0.000	1.25	2.20	0.00	0.120	1.061	6.169	0.00	45.59
40.00	1 1/4" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.124	1.071	6.345	0.00	59.90
40.00	1 5/8" Coax	Yes	5.00	0.000	1.98	2.52	0.00	0.124	1.071	6.345	0.00	72.54
40.00	1.25" Reinforcing	Yes	5.00	0.000	1.25	2.22	0.00	0.124	1.071	6.345	0.00	46.52
40.00	1.25" Reinforcing	Yes	5.00	0.000	1.25	2.22	0.00	0.124	1.071	6.345	0.00	46.52
44.50	1 1/4" Fiber	Yes	4.50	0.000	0.00	0.00	0.00	0.112	1.037	6.489	0.00	54.64
44.50	1 5/8" Coax	Yes	4.50	0.000	1.98	2.29	0.00	0.112	1.037	6.489	0.00	66.08
44.50	1" Reinforcing plate	Yes	4.50	0.000	1.00	1.92	0.00	0.112	1.037	6.489	0.00	38.52
44.50	1" Reinforcing plate	Yes	4.50	0.000	1.00	1.92	0.00	0.112	1.037	6.489	0.00	38.52
45.00	1 1/4" Fiber	Yes	0.50	0.000	0.00	0.00	0.00	0.114	1.042	6.504	0.00	6.08
45.00	1 5/8" Coax	Yes	0.50	0.000	1.98	0.25	0.00	0.114	1.042	6.504	0.00	7.35
45.00	1" Reinforcing plate	Yes	0.50	0.000	1.00	0.21	0.00	0.114	1.042	6.504	0.00	4.29
45.00	1" Reinforcing plate	Yes	0.50	0.000	1.00	0.21	0.00	0.114	1.042	6.504	0.00	4.29
50.00	1 1/4" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.116	1.047	6.650	0.00	61.61
50.00	1 5/8" Coax	Yes	5.00	0.000	1.98	2.56	0.00	0.116	1.047	6.650	0.00	74.41
50.00	1" Reinforcing plate	Yes	5.00	0.000	1.00	2.15	0.00	0.116	1.047	6.650	0.00	43.60

Linear Appurtenance Segment Forces (Factored)

Structure: CT16504-A-SBA	Code: EIA/TIA-222-G	5/17/2018
Site Name: Manchester 12, CT	Exposure: C	
Height: 140.50 (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 + 1.0Di + 1.0Wi 50 mph Wind

Dead Load Factor 1.20
Wind Load Factor 1.00



Iterations 25

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
50.00	1" Reinforcing plate	Yes	5.00	0.000	1.00	2.15	0.00	0.116	1.047	6.650	0.00	43.60
55.00	1 1/4" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.117	1.050	6.785	0.00	62.36
55.00	1 5/8" Coax	Yes	5.00	0.000	1.98	2.58	0.00	0.117	1.050	6.785	0.00	75.23
55.00	1" Reinforcing plate	Yes	5.00	0.000	1.00	2.17	0.00	0.117	1.050	6.785	0.00	44.27
55.00	1" Reinforcing plate	Yes	5.00	0.000	1.00	2.17	0.00	0.117	1.050	6.785	0.00	44.27
60.00	1 1/4" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.120	1.060	6.910	0.00	63.06
60.00	1 5/8" Coax	Yes	5.00	0.000	1.98	2.59	0.00	0.120	1.060	6.910	0.00	75.99
60.00	1" Reinforcing plate	Yes	5.00	0.000	1.00	2.19	0.00	0.120	1.060	6.910	0.00	44.89
60.00	1" Reinforcing plate	Yes	5.00	0.000	1.00	2.19	0.00	0.120	1.060	6.910	0.00	44.89
65.00	1 1/4" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.123	1.070	7.028	0.00	63.71
65.00	1 5/8" Coax	Yes	5.00	0.000	1.98	2.61	0.00	0.123	1.070	7.028	0.00	76.69
65.00	1" Reinforcing plate	Yes	5.00	0.000	1.00	2.20	0.00	0.123	1.070	7.028	0.00	45.46
65.00	1" Reinforcing plate	Yes	5.00	0.000	1.00	2.20	0.00	0.123	1.070	7.028	0.00	45.46
67.50	1 1/4" Fiber	Yes	2.50	0.000	0.00	0.00	0.00	0.126	1.078	7.084	0.00	32.01
67.50	1 5/8" Coax	Yes	2.50	0.000	1.98	1.31	0.00	0.126	1.078	7.084	0.00	38.52
67.50	1" Reinforcing plate	Yes	2.50	0.000	1.00	1.10	0.00	0.126	1.078	7.084	0.00	22.87
67.50	1" Reinforcing plate	Yes	2.50	0.000	1.00	1.10	0.00	0.126	1.078	7.084	0.00	22.87
70.00	1 1/4" Fiber	Yes	2.50	0.000	0.00	0.00	0.00	0.128	1.084	7.138	0.00	32.16
70.00	1 5/8" Coax	Yes	2.50	0.000	1.98	1.31	0.00	0.128	1.084	7.138	0.00	38.68
70.00	1" Reinforcing plate	Yes	2.50	0.000	1.00	1.11	0.00	0.128	1.084	7.138	0.00	23.00
70.00	1" Reinforcing plate	Yes	2.50	0.000	1.00	1.11	0.00	0.128	1.084	7.138	0.00	23.00
75.00	1 1/4" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.065	0.000	7.243	0.00	64.89
75.00	1 5/8" Coax	Yes	5.00	0.000	1.98	2.63	0.00	0.065	0.000	7.243	0.00	77.98
80.00	1 1/4" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.067	0.000	7.342	0.00	65.44
80.00	1 5/8" Coax	Yes	5.00	0.000	1.98	2.65	0.00	0.067	0.000	7.342	0.00	78.57
85.00	1 1/4" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.069	0.000	7.436	0.00	65.95
85.00	1 5/8" Coax	Yes	5.00	0.000	1.98	2.66	0.00	0.069	0.000	7.436	0.00	79.13
90.00	1 1/4" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.072	0.000	7.526	0.00	66.44
90.00	1 5/8" Coax	Yes	5.00	0.000	1.98	2.67	0.00	0.072	0.000	7.526	0.00	79.67
90.50	1 1/4" Fiber	Yes	0.50	0.000	0.00	0.00	0.00	0.073	0.000	7.535	0.00	6.65
90.50	1 5/8" Coax	Yes	0.50	0.000	1.98	0.27	0.00	0.073	0.000	7.535	0.00	7.97
93.12	1 1/4" Fiber	Yes	2.62	0.000	0.00	0.00	0.00	0.148	1.145	7.580	0.00	34.97
93.12	1 5/8" Coax	Yes	2.62	0.000	1.98	1.40	0.00	0.148	1.145	7.580	0.00	41.91
93.12	1" Reinforcing plate	Yes	2.62	0.000	1.00	1.19	0.00	0.148	1.145	7.580	0.00	27.74
93.12	1" Reinforcing plate	Yes	2.62	0.000	1.00	1.19	0.00	0.148	1.145	7.580	0.00	21.75
94.50	1 1/4" Fiber	Yes	1.38	0.000	0.00	0.00	0.00	0.150	1.151	7.604	0.00	18.46
94.50	1 5/8" Coax	Yes	1.38	0.000	1.98	0.74	0.00	0.150	1.151	7.604	0.00	22.11
94.50	1" Reinforcing plate	Yes	1.38	0.000	1.00	0.63	0.00	0.150	1.151	7.604	0.00	14.65
94.50	1" Reinforcing plate	Yes	1.38	0.000	1.00	0.63	0.00	0.150	1.151	7.604	0.00	11.48
95.00	1 1/4" Fiber	Yes	0.50	0.000	0.00	0.00	0.00	0.149	1.147	7.612	0.00	6.69
95.00	1 5/8" Coax	Yes	0.50	0.000	1.98	0.27	0.00	0.149	1.147	7.612	0.00	8.02
95.00	1" Reinforcing plate	Yes	0.50	0.000	1.00	0.23	0.00	0.149	1.147	7.612	0.00	5.31
95.00	1" Reinforcing plate	Yes	0.50	0.000	1.00	0.23	0.00	0.149	1.147	7.612	0.00	4.16
100.00	1 1/4" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.152	1.156	7.695	0.00	67.36
100.00	1 5/8" Coax	Yes	5.00	0.000	1.98	2.69	0.00	0.152	1.156	7.695	0.00	80.66
100.00	1" Reinforcing plate	Yes	5.00	0.000	1.00	2.28	0.00	0.152	1.156	7.695	0.00	53.53
100.00	1" Reinforcing plate	Yes	5.00	0.000	1.00	2.28	0.00	0.152	1.156	7.695	0.00	42.01

Linear Appurtenance Segment Forces (Factored)

Structure: CT16504-A-SBA	Code: EIA/TIA-222-G	5/17/2018
Site Name: Manchester 12, CT	Exposure: C	
Height: 140.50 (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 + 1.0Di + 1.0Wi 50 mph Wind

Dead Load Factor 1.20
Wind Load Factor 1.00



Iterations 25

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
105.00	1 1/4" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.158	1.173	7.774	0.00	67.79
105.00	1 5/8" Coax	Yes	5.00	0.000	1.98	2.70	0.00	0.158	1.173	7.774	0.00	81.13
105.00	1" Reinforcing plate	Yes	5.00	0.000	1.00	2.29	0.00	0.158	1.173	7.774	0.00	53.93
105.00	1" Reinforcing plate	Yes	5.00	0.000	1.00	2.29	0.00	0.158	1.173	7.774	0.00	42.37
107.87	1 1/4" Fiber	Yes	2.87	0.000	0.00	0.00	0.00	0.162	1.187	7.819	0.00	39.05
107.87	1 5/8" Coax	Yes	2.87	0.000	1.98	1.55	0.00	0.162	1.187	7.819	0.00	46.72
107.87	1" Reinforcing plate	Yes	2.87	0.000	1.00	1.32	0.00	0.162	1.187	7.819	0.00	31.09
107.87	1" Reinforcing plate	Yes	2.87	0.000	1.00	1.32	0.00	0.162	1.187	7.819	0.00	24.43
110.00	1 1/4" Fiber	Yes	2.13	0.000	0.00	0.00	0.00	0.165	1.196	7.851	0.00	29.06
110.00	1 5/8" Coax	Yes	2.13	0.000	1.98	1.15	0.00	0.165	1.196	7.851	0.00	34.75
110.00	1" Reinforcing plate	Yes	2.13	0.000	1.00	0.98	0.00	0.165	1.196	7.851	0.00	23.14
110.00	1" Reinforcing plate	Yes	2.13	0.000	1.00	0.98	0.00	0.165	1.196	7.851	0.00	18.19
114.00	1 1/4" Fiber	Yes	4.00	0.000	0.00	0.00	0.00	0.095	0.000	7.910	0.00	54.82
114.00	1 5/8" Coax	Yes	4.00	0.000	1.98	2.17	0.00	0.095	0.000	7.910	0.00	65.54
114.00	1" Reinforcing plate	Yes	0.50	0.000	1.00	0.23	0.00	0.095	0.000	7.910	0.00	5.46
114.00	1" Reinforcing plate	Yes	0.50	0.000	1.00	0.23	0.00	0.095	0.000	7.910	0.00	4.30
115.00	1 1/4" Fiber	Yes	1.00	0.000	0.00	0.00	0.00	0.086	0.000	7.925	0.00	13.72
115.00	1 5/8" Coax	Yes	1.00	0.000	1.98	0.54	0.00	0.086	0.000	7.925	0.00	16.40
120.00	1 1/4" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.088	0.000	7.996	0.00	68.99
120.00	1 5/8" Coax	Yes	5.00	0.000	1.98	2.72	0.00	0.088	0.000	7.996	0.00	82.43
125.00	1 1/4" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.092	0.000	8.065	0.00	69.36
125.00	1 5/8" Coax	Yes	5.00	0.000	1.98	2.73	0.00	0.092	0.000	8.065	0.00	82.83
130.00	1 1/4" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.096	0.000	8.132	0.00	69.72
130.00	1 5/8" Coax	Yes	5.00	0.000	1.98	2.74	0.00	0.096	0.000	8.132	0.00	83.22
135.00	1 1/4" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.100	1.001	8.197	0.00	70.07
135.00	1 5/8" Coax	Yes	5.00	0.000	1.98	2.74	0.00	0.100	1.001	8.197	0.00	83.60
Totals:											0.0	5,314.0

Calculated Forces

Structure: CT16504-A-SBA	Code: EIA/TIA-222-G	5/17/2018
Site Name: Manchester 12, CT	Exposure: C	
Height: 140.50 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II

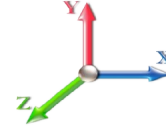


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Load Case: 1.2D + 1.0Di + 1.0Wi 50 mph Wind

Iterations 25

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	-84.67	-9.26	0.00	-1029.7	0.00	1029.73	3592.24	1796.12	6217.42	3113.33	0.00	0.000	0.000	0.247
1.00	-84.31	-9.30	0.00	-1020.4	0.00	1020.47	3581.26	1790.63	6171.41	3090.29	0.00	-0.018	0.000	0.217
5.00	-82.82	-9.29	0.00	-983.28	0.00	983.28	3536.93	1768.47	5988.37	2998.63	0.04	-0.081	0.000	0.214
10.00	-80.95	-9.27	0.00	-936.82	0.00	936.82	3480.64	1740.32	5761.86	2885.21	0.17	-0.160	0.000	0.210
15.00	-79.07	-9.24	0.00	-890.47	0.00	890.47	3423.37	1711.69	5538.01	2773.12	0.38	-0.240	0.000	0.206
20.00	-77.21	-9.21	0.00	-844.26	0.00	844.26	3365.12	1682.56	5316.92	2662.41	0.67	-0.320	0.000	0.214
25.00	-75.37	-9.17	0.00	-798.21	0.00	798.21	3305.89	1652.94	5098.71	2553.15	1.06	-0.405	0.000	0.209
30.00	-73.54	-9.12	0.00	-752.37	0.00	752.37	3245.52	1622.76	4883.27	2445.26	1.53	-0.491	0.000	0.204
35.00	-71.73	-9.06	0.00	-706.78	0.00	706.78	3165.03	1582.51	4642.85	2324.87	2.09	-0.578	0.000	0.199
40.00	-69.95	-9.00	0.00	-661.47	0.00	661.47	3084.53	1542.26	4408.49	2207.52	2.74	-0.664	0.000	0.212
44.50	-68.38	-8.90	0.00	-620.98	0.00	620.98	3012.08	1506.04	4202.76	2104.51	3.40	-0.749	0.000	0.207
45.00	-68.13	-8.95	0.00	-616.53	0.00	616.53	3004.03	1502.02	4180.21	2093.21	3.48	-0.758	0.000	0.204
50.00	-65.70	-8.87	0.00	-571.81	0.00	571.81	2423.81	1211.90	3356.59	1680.79	4.33	-0.851	0.000	0.207
55.00	-64.12	-8.80	0.00	-527.48	0.00	527.48	2376.14	1188.07	3201.01	1602.88	5.27	-0.943	0.000	0.214
60.00	-62.55	-8.73	0.00	-483.49	0.00	483.49	2327.49	1163.75	3047.73	1526.13	6.31	-1.040	0.000	0.204
65.00	-61.02	-8.62	0.00	-439.86	0.00	439.86	2277.86	1138.93	2896.88	1450.59	7.45	-1.136	0.000	0.193
67.50	-60.26	-8.58	0.00	-418.31	0.00	418.31	2252.16	1126.08	2821.75	1412.97	8.06	-1.184	0.000	0.188
67.50	-60.26	-8.58	0.00	-418.31	0.00	418.31	2252.16	1126.08	2821.75	1412.97	8.06	-1.184	0.000	0.188
70.00	-59.49	-8.60	0.00	-396.86	0.00	396.86	2218.62	1109.31	2737.91	1370.99	8.69	-1.231	0.000	0.316
75.00	-58.09	-8.58	0.00	-353.87	0.00	353.87	2151.54	1075.77	2574.02	1288.93	10.06	-1.387	0.000	0.302
80.00	-56.72	-8.56	0.00	-310.96	0.00	310.96	2084.46	1042.23	2415.20	1209.39	11.60	-1.539	0.000	0.284
85.00	-55.37	-8.52	0.00	-268.16	0.00	268.16	2017.38	1008.69	2261.43	1132.40	13.29	-1.684	0.000	0.264
90.00	-42.54	-6.69	0.00	-225.55	0.00	225.55	1950.30	975.15	2112.72	1057.93	15.13	-1.821	0.000	0.235
90.50	-42.41	-6.70	0.00	-222.21	0.00	222.21	1943.59	971.80	2098.13	1050.62	15.32	-1.834	0.000	0.233
93.12	-41.56	-6.63	0.00	-204.65	0.00	204.65	1908.44	954.22	2022.49	1012.75	16.34	-1.904	0.000	0.125
94.50	-41.12	-6.58	0.00	-195.50	0.00	195.50	1035.36	517.68	1113.15	557.40	16.90	-1.924	0.000	0.138
95.00	-41.01	-6.60	0.00	-192.21	0.00	192.21	1033.16	516.58	1106.89	554.27	17.10	-1.931	0.000	0.171
100.00	-39.94	-6.46	0.00	-159.23	0.00	159.23	1010.63	505.31	1044.65	523.10	19.16	-2.013	0.000	0.149
105.00	-38.90	-6.31	0.00	-126.91	0.00	126.91	987.11	493.55	983.14	492.30	21.31	-2.087	0.000	0.126
107.87	-38.31	-6.23	0.00	-108.79	0.00	108.79	973.17	486.58	948.19	474.80	22.58	-2.124	0.000	0.112
107.87	-38.31	-6.23	0.00	-108.79	0.00	108.79	973.17	486.58	948.19	474.80	22.58	-2.124	0.000	0.112
110.00	-37.87	-6.19	0.00	-95.52	0.00	95.52	962.61	481.31	922.45	461.91	23.53	-2.150	0.000	0.246
114.00	-28.19	-4.51	0.00	-69.48	0.00	69.48	942.31	471.15	874.57	437.94	25.38	-2.249	0.000	0.189
115.00	-28.02	-4.51	0.00	-64.97	0.00	64.97	937.13	468.57	862.70	431.99	25.85	-2.271	0.000	0.180
120.00	-27.18	-4.39	0.00	-42.44	0.00	42.44	910.67	455.33	804.02	402.61	28.28	-2.361	0.000	0.135
125.00	-13.26	-2.05	0.00	-20.50	0.00	20.50	883.23	441.61	746.49	373.80	30.79	-2.421	0.000	0.070
130.00	-12.55	-1.91	0.00	-10.26	0.00	10.26	854.80	427.40	690.24	345.64	33.34	-2.454	0.000	0.044
135.00	-0.56	-0.14	0.00	-0.71	0.00	0.71	825.39	412.70	635.38	318.16	35.92	-2.468	0.000	0.003
140.00	-0.05	-0.01	0.00	-0.01	0.00	0.01	789.80	394.90	578.22	289.54	38.51	-2.469	0.000	0.000
140.50	0.00	-0.01	0.00	0.00	0.00	0.00	785.78	392.89	572.31	286.58	38.77	-2.469	0.000	0.000

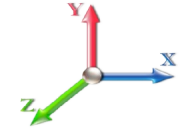
Seismic Segment Forces (Factored)

Structure: CT16504-A-SBA	Code: EIA/TIA-222-G	5/17/2018
Site Name: Manchester 12, CT	Exposure: C	
Height: 140.50 (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 + 1.0E				Iterations 22
Gust Response Factor	1.10	Sds	0.19	Ss 0.18
Dead Load Factor	1.20	Seismic Load Factor	1.00	S1 0.06
Wind Load Factor	0.00	Structure Frequency	0.26	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	RB1	0.00	0.00	0.00	0.00	0.00	
1.00	RT1 RB2	170.40	0.00	0.01	0.00	1.16	
5.00		674.23	0.00	0.03	0.02	15.00	
10.00		826.19	0.01	0.05	0.03	25.34	
15.00		807.76	0.02	0.06	0.04	27.84	
20.00	RT2 RB3	789.32	0.04	0.07	0.04	28.66	
25.00		770.89	0.06	0.07	0.04	28.85	
30.00		752.46	0.09	0.07	0.04	28.90	
35.00		734.02	0.12	0.07	0.03	28.95	
40.00	RT3 RB4	715.59	0.15	0.07	0.03	28.94	
44.50	Bot - Section 2	628.27	0.19	0.06	0.02	25.74	
45.00		127.45	0.19	0.06	0.02	5.22	
50.00	Top - Section 1	1255.9	0.24	0.06	0.02	50.67	
55.00		561.84	0.29	0.05	0.01	21.03	
60.00	RT4 RB5	546.48	0.34	0.03	0.01	16.85	
65.00		531.12	0.40	0.02	0.01	10.27	
67.50	RT5	259.80	0.44	0.01	0.01	3.04	
70.00		255.96	0.47	-0.01	0.01	0.80	
75.00		500.39	0.54	-0.03	0.01	-7.55	
80.00		485.03	0.61	-0.06	0.02	-15.01	
85.00		469.67	0.69	-0.08	0.03	-19.42	
90.00	Appurtenance(s)	4126.3	0.78	-0.11	0.05	-186.97	
90.50	Bot - Section 3	44.59	0.78	-0.11	0.05	-2.02	
93.12	RB6	372.44	0.83	-0.12	0.06	-16.61	
94.50	Top - Section 2	193.46	0.86	-0.12	0.07	-8.42	
95.00		26.43	0.86	-0.12	0.07	-1.14	
100.00		259.21	0.96	-0.12	0.11	-9.06	
105.00		250.00	1.06	-0.09	0.16	-5.33	
107.87	RT6	139.33	1.11	-0.06	0.20	-1.54	
110.00		101.45	1.16	-0.03	0.23	-0.23	
114.00	Appurtenance(s)	3610.3	1.24	0.05	0.29	61.19	
115.00		45.58	1.27	0.08	0.31	1.02	
120.00		222.35	1.38	0.24	0.41	11.65	
125.00	Appurtenance(s)	4414.8	1.50	0.49	0.54	389.21	
130.00		203.91	1.62	0.84	0.69	26.47	
135.00	Appurtenance(s)	3871.1	1.74	1.30	0.89	686.95	
140.00		185.48	1.88	1.91	1.11	42.90	
140.50		18.04	1.89	1.98	1.14	4.28	
Totals:		29,947.8				1,297.6	Total Wind: 33,741.9

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

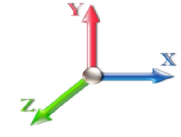
Calculated Forces

Structure: CT16504-A-SBA	Code: EIA/TIA-222-G	5/17/2018
Site Name: Manchester 12, CT	Exposure: C	
Height: 140.50 (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 + 1.0E						Iterations 22
Gust Response Factor	1.10			Sds	0.19	Ss 0.18
Dead Load Factor	1.20	Seismic Load Factor	1.00	Sd1	0.10	S1 0.06
Wind Load Factor	0.00	Structure Frequency	0.26	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	-41.03	-1.57	0.00	-182.73	0.00	182.73	3592.24	1796.12	6217.42	3113.33	0.00	0.00	0.00	0.049
1.00	-40.78	-1.58	0.00	-181.16	0.00	181.16	3581.26	1790.63	6171.41	3090.29	0.00	0.00	0.00	0.043
5.00	-39.79	-1.57	0.00	-174.86	0.00	174.86	3536.93	1768.47	5988.37	2998.63	0.01	-0.01	0.00	0.042
10.00	-38.56	-1.55	0.00	-167.02	0.00	167.02	3480.64	1740.32	5761.86	2885.21	0.03	-0.03	0.00	0.041
15.00	-37.36	-1.53	0.00	-159.25	0.00	159.25	3423.37	1711.69	5538.01	2773.12	0.07	-0.04	0.00	0.041
20.00	-36.19	-1.51	0.00	-151.59	0.00	151.59	3365.12	1682.56	5316.92	2662.41	0.12	-0.06	0.00	0.042
25.00	-35.03	-1.49	0.00	-144.02	0.00	144.02	3305.89	1652.94	5098.71	2553.15	0.19	-0.07	0.00	0.042
30.00	-33.89	-1.47	0.00	-136.56	0.00	136.56	3245.52	1622.76	4883.27	2445.26	0.27	-0.09	0.00	0.041
35.00	-32.78	-1.45	0.00	-129.21	0.00	129.21	3165.03	1582.51	4642.85	2324.87	0.37	-0.10	0.00	0.040
40.00	-31.69	-1.43	0.00	-121.96	0.00	121.96	3084.53	1542.26	4408.49	2207.52	0.49	-0.12	0.00	0.043
44.50	-30.73	-1.40	0.00	-115.54	0.00	115.54	3012.08	1506.04	4202.76	2104.51	0.61	-0.14	0.00	0.042
45.00	-30.56	-1.40	0.00	-114.84	0.00	114.84	3004.03	1502.02	4180.21	2093.21	0.62	-0.14	0.00	0.042
50.00	-28.82	-1.36	0.00	-107.82	0.00	107.82	2423.81	1211.90	3356.59	1680.79	0.78	-0.15	0.00	0.043
55.00	-27.91	-1.34	0.00	-101.04	0.00	101.04	2376.14	1188.07	3201.01	1602.88	0.95	-0.17	0.00	0.045
60.00	-27.02	-1.33	0.00	-94.33	0.00	94.33	2327.49	1163.75	3047.73	1526.13	1.14	-0.19	0.00	0.043
65.00	-26.16	-1.32	0.00	-87.67	0.00	87.67	2277.86	1138.93	2896.88	1450.59	1.35	-0.21	0.00	0.042
67.50	-25.73	-1.32	0.00	-84.36	0.00	84.36	2252.16	1126.08	2821.75	1412.97	1.46	-0.22	0.00	0.041
67.50	-25.73	-1.32	0.00	-84.36	0.00	84.36	2252.16	1126.08	2821.75	1412.97	1.46	-0.22	0.00	0.041
70.00	-25.31	-1.33	0.00	-81.05	0.00	81.05	2218.62	1109.31	2737.91	1370.99	1.58	-0.23	0.00	0.071
75.00	-24.47	-1.34	0.00	-74.39	0.00	74.39	2151.54	1075.77	2574.02	1288.93	1.83	-0.26	0.00	0.069
80.00	-23.66	-1.35	0.00	-67.68	0.00	67.68	2084.46	1042.23	2415.20	1209.39	2.13	-0.29	0.00	0.067
85.00	-22.87	-1.36	0.00	-60.93	0.00	60.93	2017.38	1008.69	2261.43	1132.40	2.45	-0.33	0.00	0.065
90.00	-17.68	-1.33	0.00	-54.13	0.00	54.13	1950.30	975.15	2112.72	1057.93	2.81	-0.36	0.00	0.060
90.50	-17.61	-1.34	0.00	-53.46	0.00	53.46	1943.59	971.80	2098.13	1050.62	2.85	-0.36	0.00	0.060
93.12	-17.09	-1.34	0.00	-49.96	0.00	49.96	1908.44	954.22	2022.49	1012.75	3.05	-0.38	0.00	0.033
94.50	-16.82	-1.34	0.00	-48.12	0.00	48.12	1035.36	517.68	1113.15	557.40	3.16	-0.38	0.00	0.036
95.00	-16.77	-1.34	0.00	-47.45	0.00	47.45	1033.16	516.58	1106.89	554.27	3.20	-0.38	0.00	0.045
100.00	-16.32	-1.34	0.00	-40.76	0.00	40.76	1010.63	505.31	1044.65	523.10	3.61	-0.41	0.00	0.041
105.00	-15.88	-1.34	0.00	-34.05	0.00	34.05	987.11	493.55	983.14	492.30	4.05	-0.42	0.00	0.036
107.87	-15.63	-1.34	0.00	-30.20	0.00	30.20	973.17	486.58	948.19	474.80	4.31	-0.43	0.00	0.033
107.87	-15.63	-1.34	0.00	-30.20	0.00	30.20	973.17	486.58	948.19	474.80	4.31	-0.43	0.00	0.033
110.00	-15.45	-1.35	0.00	-27.34	0.00	27.34	962.61	481.31	922.45	461.91	4.50	-0.44	0.00	0.075
114.00	-11.00	-1.25	0.00	-21.95	0.00	21.95	942.31	471.15	874.57	437.94	4.88	-0.47	0.00	0.062
115.00	-10.92	-1.26	0.00	-20.70	0.00	20.70	937.13	468.57	862.70	431.99	4.98	-0.48	0.00	0.060
120.00	-10.56	-1.25	0.00	-14.42	0.00	14.42	910.67	455.33	804.02	402.61	5.50	-0.51	0.00	0.047
125.00	-5.17	-0.81	0.00	-8.20	0.00	8.20	883.23	441.61	746.49	373.80	6.04	-0.53	0.00	0.028
130.00	-4.90	-0.78	0.00	-4.15	0.00	4.15	854.80	427.40	690.24	345.64	6.61	-0.54	0.00	0.018
135.00	-0.24	-0.05	0.00	-0.25	0.00	0.25	825.39	412.70	635.38	318.16	7.18	-0.55	0.00	0.001
140.00	-0.02	0.00	0.00	0.00	0.00	0.00	789.80	394.90	578.22	289.54	7.75	-0.55	0.00	0.000
140.50	0.00	0.00	0.00	0.00	0.00	0.00	785.78	392.89	572.31	286.58	7.81	-0.55	0.00	0.000

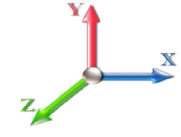
Seismic Segment Forces (Factored)

Structure: CT16504-A-SBA	Code: EIA/TIA-222-G	5/17/2018
Site Name: Manchester 12, CT	Exposure: C	
Height: 140.50 (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 + 1.0E				Iterations 22
Gust Response Factor	1.10	Sds	0.19	Ss 0.18
Dead Load Factor	0.90	Seismic Load Factor	1.00	S1 0.06
Wind Load Factor	0.00	Structure Frequency	0.26	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	RB1	0.00	0.00	0.00	0.00	0.00	
1.00	RT1 RB2	170.40	0.00	0.01	0.00	1.16	
5.00		674.23	0.00	0.03	0.02	15.00	
10.00		826.19	0.01	0.05	0.03	25.34	
15.00		807.76	0.02	0.06	0.04	27.84	
20.00	RT2 RB3	789.32	0.04	0.07	0.04	28.66	
25.00		770.89	0.06	0.07	0.04	28.85	
30.00		752.46	0.09	0.07	0.04	28.90	
35.00		734.02	0.12	0.07	0.03	28.95	
40.00	RT3 RB4	715.59	0.15	0.07	0.03	28.94	
44.50	Bot - Section 2	628.27	0.19	0.06	0.02	25.74	
45.00		127.45	0.19	0.06	0.02	5.22	
50.00	Top - Section 1	1255.9	0.24	0.06	0.02	50.67	
55.00		561.84	0.29	0.05	0.01	21.03	
60.00	RT4 RB5	546.48	0.34	0.03	0.01	16.85	
65.00		531.12	0.40	0.02	0.01	10.27	
67.50	RT5	259.80	0.44	0.01	0.01	3.04	
70.00		255.96	0.47	-0.01	0.01	0.80	
75.00		500.39	0.54	-0.03	0.01	-7.55	
80.00		485.03	0.61	-0.06	0.02	-15.01	
85.00		469.67	0.69	-0.08	0.03	-19.42	
90.00	Appurtenance(s)	4126.3	0.78	-0.11	0.05	-186.97	
90.50	Bot - Section 3	44.59	0.78	-0.11	0.05	-2.02	
93.12	RB6	372.44	0.83	-0.12	0.06	-16.61	
94.50	Top - Section 2	193.46	0.86	-0.12	0.07	-8.42	
95.00		26.43	0.86	-0.12	0.07	-1.14	
100.00		259.21	0.96	-0.12	0.11	-9.06	
105.00		250.00	1.06	-0.09	0.16	-5.33	
107.87	RT6	139.33	1.11	-0.06	0.20	-1.54	
110.00		101.45	1.16	-0.03	0.23	-0.23	
114.00	Appurtenance(s)	3610.3	1.24	0.05	0.29	61.19	
115.00		45.58	1.27	0.08	0.31	1.02	
120.00		222.35	1.38	0.24	0.41	11.65	
125.00	Appurtenance(s)	4414.8	1.50	0.49	0.54	389.21	
130.00		203.91	1.62	0.84	0.69	26.47	
135.00	Appurtenance(s)	3871.1	1.74	1.30	0.89	686.95	
140.00		185.48	1.88	1.91	1.11	42.90	
140.50		18.04	1.89	1.98	1.14	4.28	
Totals:		29,947.8				1,297.6	Total Wind: 33,741.9

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

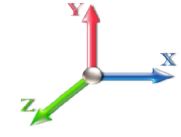
Calculated Forces

Structure: CT16504-A-SBA	Code: EIA/TIA-222-G	5/17/2018
Site Name: Manchester 12, CT	Exposure: C	
Height: 140.50 (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 + 1.0E						Iterations 22
Gust Response Factor	1.10			Sds	0.19	Ss 0.18
Dead Load Factor	0.90	Seismic Load Factor	1.00	Sd1	0.10	S1 0.06
Wind Load Factor	0.00	Structure Frequency	0.26	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	-30.77	-1.57	0.00	-179.88	0.00	179.88	3592.24	1796.12	6217.42	3113.33	0.00	0.00	0.00	0.047
1.00	-30.59	-1.57	0.00	-178.31	0.00	178.31	3581.26	1790.63	6171.41	3090.29	0.00	0.00	0.00	0.041
5.00	-29.84	-1.56	0.00	-172.01	0.00	172.01	3536.93	1768.47	5988.37	2998.63	0.01	-0.01	-0.01	0.040
10.00	-28.92	-1.55	0.00	-164.19	0.00	164.19	3480.64	1740.32	5761.86	2885.21	0.03	-0.03	-0.03	0.039
15.00	-28.02	-1.52	0.00	-156.46	0.00	156.46	3423.37	1711.69	5538.01	2773.12	0.07	-0.04	-0.04	0.038
20.00	-27.14	-1.50	0.00	-148.83	0.00	148.83	3365.12	1682.56	5316.92	2662.41	0.12	-0.06	-0.06	0.040
25.00	-26.27	-1.48	0.00	-141.32	0.00	141.32	3305.89	1652.94	5098.71	2553.15	0.18	-0.07	-0.07	0.039
30.00	-25.42	-1.46	0.00	-133.92	0.00	133.92	3245.52	1622.76	4883.27	2445.26	0.27	-0.09	-0.09	0.038
35.00	-24.59	-1.43	0.00	-126.64	0.00	126.64	3165.03	1582.51	4642.85	2324.87	0.37	-0.10	-0.10	0.038
40.00	-23.77	-1.41	0.00	-119.48	0.00	119.48	3084.53	1542.26	4408.49	2207.52	0.48	-0.12	-0.12	0.041
44.50	-23.05	-1.38	0.00	-113.14	0.00	113.14	3012.08	1506.04	4202.76	2104.51	0.60	-0.13	-0.13	0.040
45.00	-22.92	-1.38	0.00	-112.45	0.00	112.45	3004.03	1502.02	4180.21	2093.21	0.61	-0.13	-0.13	0.039
50.00	-21.61	-1.34	0.00	-105.54	0.00	105.54	2423.81	1211.90	3356.59	1680.79	0.76	-0.15	-0.15	0.040
55.00	-20.93	-1.32	0.00	-98.86	0.00	98.86	2376.14	1188.07	3201.01	1602.88	0.93	-0.17	-0.17	0.042
60.00	-20.27	-1.31	0.00	-92.27	0.00	92.27	2327.49	1163.75	3047.73	1526.13	1.12	-0.19	-0.19	0.041
65.00	-19.62	-1.30	0.00	-85.73	0.00	85.73	2277.86	1138.93	2896.88	1450.59	1.32	-0.21	-0.21	0.040
67.50	-19.30	-1.30	0.00	-82.49	0.00	82.49	2252.16	1126.08	2821.75	1412.97	1.43	-0.21	-0.21	0.039
67.50	-19.30	-1.30	0.00	-82.49	0.00	82.49	2252.16	1126.08	2821.75	1412.97	1.43	-0.21	-0.21	0.039
70.00	-18.98	-1.30	0.00	-79.24	0.00	79.24	2218.62	1109.31	2737.91	1370.99	1.55	-0.22	-0.22	0.066
75.00	-18.35	-1.31	0.00	-72.73	0.00	72.73	2151.54	1075.77	2574.02	1288.93	1.80	-0.26	-0.26	0.065
80.00	-17.74	-1.32	0.00	-66.18	0.00	66.18	2084.46	1042.23	2415.20	1209.39	2.09	-0.29	-0.29	0.063
85.00	-17.15	-1.32	0.00	-59.59	0.00	59.59	2017.38	1008.69	2261.43	1132.40	2.40	-0.32	-0.32	0.061
90.00	-13.26	-1.30	0.00	-52.98	0.00	52.98	1950.30	975.15	2112.72	1057.93	2.75	-0.35	-0.35	0.057
90.50	-13.21	-1.31	0.00	-52.33	0.00	52.33	1943.59	971.80	2098.13	1050.62	2.79	-0.35	-0.35	0.057
93.12	-12.82	-1.31	0.00	-48.90	0.00	48.90	1908.44	954.22	2022.49	1012.75	2.99	-0.37	-0.37	0.031
94.50	-12.61	-1.31	0.00	-47.10	0.00	47.10	1035.36	517.68	1113.15	557.40	3.10	-0.37	-0.37	0.034
95.00	-12.58	-1.31	0.00	-46.45	0.00	46.45	1033.16	516.58	1106.89	554.27	3.14	-0.38	-0.38	0.042
100.00	-12.24	-1.31	0.00	-39.91	0.00	39.91	1010.63	505.31	1044.65	523.10	3.54	-0.40	-0.40	0.038
105.00	-11.91	-1.31	0.00	-33.36	0.00	33.36	987.11	493.55	983.14	492.30	3.97	-0.42	-0.42	0.034
107.87	-11.72	-1.31	0.00	-29.60	0.00	29.60	973.17	486.58	948.19	474.80	4.22	-0.43	-0.43	0.031
107.87	-11.72	-1.31	0.00	-29.60	0.00	29.60	973.17	486.58	948.19	474.80	4.22	-0.43	-0.43	0.031
110.00	-11.58	-1.31	0.00	-26.80	0.00	26.80	962.61	481.31	922.45	461.91	4.41	-0.43	-0.43	0.070
114.00	-8.25	-1.23	0.00	-21.55	0.00	21.55	942.31	471.15	874.57	437.94	4.79	-0.46	-0.46	0.058
115.00	-8.19	-1.23	0.00	-20.32	0.00	20.32	937.13	468.57	862.70	431.99	4.88	-0.47	-0.47	0.056
120.00	-7.92	-1.22	0.00	-14.17	0.00	14.17	910.67	455.33	804.02	402.61	5.39	-0.50	-0.50	0.044
125.00	-3.87	-0.80	0.00	-8.07	0.00	8.07	883.23	441.61	746.49	373.80	5.92	-0.52	-0.52	0.026
130.00	-3.68	-0.77	0.00	-4.09	0.00	4.09	854.80	427.40	690.24	345.64	6.47	-0.53	-0.53	0.016
135.00	-0.18	-0.05	0.00	-0.25	0.00	0.25	825.39	412.70	635.38	318.16	7.04	-0.54	-0.54	0.001
140.00	-0.02	0.00	0.00	0.00	0.00	0.00	789.80	394.90	578.22	289.54	7.60	-0.54	-0.54	0.000
140.50	0.00	0.00	0.00	0.00	0.00	0.00	785.78	392.89	572.31	286.58	7.65	-0.54	-0.54	0.000

Wind Loading - Shaft

Structure: CT16504-A-SBA	Code: EIA/TIA-222-G	5/17/2018
Site Name: Manchester 12, CT	Exposure: C	
Height: 140.50 (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 23

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	RB1	1.00	0.85	7.442	8.19	199.12	0.650	0.000	0.00	0.000	0.00	0.0	0.0	0.0
1.00	RT1 RB2	1.00	0.85	7.442	8.19	198.27	0.658 *	0.000	1.00	3.592	2.36	19.3	0.0	170.4
5.00		1.00	0.85	7.442	8.19	194.86	0.660 *	0.000	4.00	14.214	9.38	76.8	0.0	674.2
10.00		1.00	0.85	7.442	8.19	190.60	0.664 *	0.000	5.00	17.421	11.57	94.7	0.0	826.2
15.00		1.00	0.85	7.442	8.19	186.34	0.669 *	0.000	5.00	17.036	11.39	93.2	0.0	807.8
20.00	RT2 RB3	1.00	0.90	7.896	8.69	187.56	0.674 *	0.000	5.00	16.650	11.22	97.4	0.0	789.3
25.00		1.00	0.95	8.276	9.10	187.52	0.679 *	0.000	5.00	16.265	11.04	100.5	0.0	770.9
30.00		1.00	0.98	8.600	9.46	186.57	0.684 *	0.000	5.00	15.880	10.87	102.8	0.0	752.5
35.00		1.00	1.01	8.883	9.77	184.97	0.690 *	0.000	5.00	15.495	10.69	104.5	0.0	734.0
40.00	RT3 RB4	1.00	1.04	9.137	10.05	182.87	0.696 *	0.000	5.00	15.110	10.51	105.7	0.0	715.6
44.50	Bot - Section 2	1.00	1.07	9.344	10.28	180.63	0.674 *	0.000	4.50	13.270	8.95	92.0	0.0	628.3
45.00		1.00	1.07	9.366	10.30	180.37	0.677 *	0.000	0.50	1.482	1.00	10.3	0.0	127.5
50.00	Top - Section 1	1.00	1.09	9.576	10.53	177.54	0.681 *	0.000	5.00	14.604	9.94	104.7	0.0	1255.9
55.00		1.00	1.12	9.770	10.75	177.80	0.682 *	0.000	5.00	14.219	9.70	104.3	0.0	561.8
60.00	RT4 RB5	1.00	1.14	9.951	10.95	174.51	0.689 *	0.000	5.00	13.834	9.53	104.3	0.0	546.5
65.00		1.00	1.16	10.120	11.13	171.02	0.695 *	0.000	5.00	13.448	9.35	104.1	0.0	531.1
67.50	RT5	1.00	1.17	10.201	11.22	169.21	0.701 *	0.000	2.50	6.580	4.61	51.7	0.0	259.8
70.00		1.00	1.17	10.279	11.31	167.35	0.704 *	0.000	2.50	6.484	4.57	51.6	0.0	256.0
75.00		1.00	1.19	10.430	11.47	163.53	0.650	0.000	5.00	12.678	8.24	94.5	0.0	500.4
80.00		1.00	1.21	10.572	11.63	159.56	0.650	0.000	5.00	12.293	7.99	92.9	0.0	485.0
85.00		1.00	1.22	10.708	11.78	155.47	0.650	0.000	5.00	11.908	7.74	91.2	0.0	469.7
90.00	Appurtenance(s)	1.00	1.24	10.838	11.92	151.27	0.650	0.000	5.00	11.523	7.49	89.3	0.0	454.3
90.50	Bot - Section 3	1.00	1.24	10.850	11.94	150.84	0.650	0.000	0.50	1.131	0.74	8.8	0.0	44.6
93.12	RB6	1.00	1.25	10.916	12.01	148.59	0.744 *	0.000	2.62	5.947	4.42	53.1	0.0	372.4
94.50	Top - Section 2	1.00	1.25	10.950	12.04	147.40	0.748 *	0.000	1.38	3.090	2.31	27.8	0.0	193.5
95.00		1.00	1.25	10.962	12.06	149.09	0.746 *	0.000	0.50	1.112	0.83	10.0	0.0	26.4
100.00		1.00	1.27	11.081	12.19	144.70	0.751 *	0.000	5.00	10.911	8.20	99.9	0.0	259.2
105.00		1.00	1.28	11.195	12.31	140.22	0.762 *	0.000	5.00	10.526	8.02	98.8	0.0	250.0
107.87	RT6	1.00	1.29	11.259	12.38	137.61	0.771 *	0.000	2.87	5.868	4.53	56.1	0.0	139.3
110.00		1.00	1.29	11.305	12.44	135.65	0.777 *	0.000	2.13	4.273	3.32	41.3	0.0	101.4
114.00	Appurtenance(s)	1.00	1.30	11.391	12.53	131.95	0.650	0.000	4.00	7.835	5.09	63.8	0.0	186.0
115.00		1.00	1.30	11.412	12.55	131.01	0.650	0.000	1.00	1.920	1.25	15.7	0.0	45.6
120.00		1.00	1.32	11.514	12.67	126.30	0.650	0.000	5.00	9.370	6.09	77.1	0.0	222.3
125.00	Appurtenance(s)	1.00	1.33	11.614	12.78	121.52	0.650	0.000	5.00	8.985	5.84	74.6	0.0	213.1
130.00		1.00	1.34	11.710	12.88	116.68	0.650	0.000	5.00	8.600	5.59	72.0	0.0	203.9
135.00	Appurtenance(s)	1.00	1.35	11.803	12.98	111.78	0.651 *	0.000	5.00	8.215	5.35	69.4	0.0	194.7
140.00		1.00	1.36	11.894	13.08	106.82	0.650	0.000	5.00	7.830	5.09	66.6	0.0	185.5
140.50		1.00	1.36	11.903	13.09	106.32	0.650	0.000	0.50	0.762	0.50	6.5	0.0	18.0
Totals:									140.50			2,627.5		14,973.2

* Cf Adjusted by Linear Load Ra Effect

Discrete Appurtenance Forces

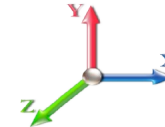
Structure: CT16504-A-SBA	Code: EIA/TIA-222-G	5/17/2018
Site Name: Manchester 12, CT	Exposure: C	
Height: 140.50 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00
Wind Load Factor 1.00



Iterations 23

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	135.00	Expansion rights	3	11.803	12.984	0.70	0.80	6.67	210.00	0.000	0.000	86.65	0.00	0.00
2	135.00	Ericsson RRUS 32 B66A	3	11.803	12.984	0.70	0.80	8.08	158.70	0.000	0.000	104.92	0.00	0.00
3	135.00	Ericsson S11B12	3	11.803	12.984	0.56	0.80	4.75	153.00	0.000	0.000	61.73	0.00	0.00
4	135.00	RFS	3	11.803	12.984	0.50	0.80	9.61	122.10	0.000	0.000	124.81	0.00	0.00
5	135.00	Commscope F-65C-R2	3	11.803	12.984	0.67	0.80	28.57	185.10	0.000	0.000	370.90	0.00	0.00
6	135.00	Ericsson AIR32	3	11.803	12.984	0.70	0.80	13.59	396.60	0.000	0.000	176.49	0.00	0.00
7	135.00	Sector Frame	3	11.803	12.984	0.56	0.75	25.31	2451.00	0.000	0.000	328.65	0.00	0.00
8	125.00	DBC0061F1V51-2	6	11.614	12.775	0.50	0.75	1.30	152.40	0.000	0.000	16.56	0.00	0.00
9	125.00	CCI DTMAPB7819VG12A	6	11.614	12.775	0.50	0.75	3.44	114.00	0.000	0.000	43.91	0.00	0.00
10	125.00	Raycap DC6-48-60-18-8F	3	11.614	12.775	0.50	0.75	2.22	98.40	0.000	0.000	28.31	0.00	0.00
11	125.00	Ericsson RRUS-11	3	11.614	12.775	0.50	0.75	3.80	162.00	0.000	0.000	48.53	0.00	0.00
12	125.00	RRUS 32 B66	3	11.614	12.775	0.50	0.75	4.13	159.00	0.000	0.000	52.77	0.00	0.00
13	125.00	B14 4478	3	11.614	12.775	0.50	0.75	2.49	178.20	0.000	0.000	31.78	0.00	0.00
14	125.00	QS66512-2	3	11.614	12.775	0.69	0.75	16.83	333.00	0.000	0.000	214.99	0.00	0.00
15	125.00	Ericsson RRUS-32	6	11.614	12.775	0.50	0.75	7.60	462.00	0.000	0.000	97.06	0.00	0.00
16	125.00	Kathrein 800-10121	3	11.614	12.775	0.59	0.75	9.15	132.30	0.000	0.000	116.94	0.00	0.00
17	125.00	HPA-65R-BUU-H6	3	11.614	12.775	0.64	0.75	18.47	153.00	0.000	0.000	236.02	0.00	0.00
18	125.00	CCI OPA-65R-LCUU-H6	3	11.614	12.775	0.59	0.75	17.17	219.00	0.000	0.000	219.36	0.00	0.00
19	125.00	Kathrein 782 10250	6	11.614	12.775	0.50	0.75	1.57	38.40	0.000	0.000	20.03	0.00	0.00
20	125.00	Platform w/ Hand Rails	1	11.614	12.775	1.00	1.00	40.00	2000.00	0.000	0.000	511.00	0.00	0.00
21	114.00	20" x 18" x 9" Junction Box	1	11.391	12.530	1.00	1.00	3.15	20.00	0.000	0.000	39.47	0.00	0.00
22	114.00	Andrew VHLP1-23-DW1	1	11.484	12.632	1.00	1.00	1.61	14.00	0.000	4.500	20.34	0.00	91.52
23	114.00	Andrew VHLP2-23-DW1	1	11.484	12.632	1.00	1.00	4.69	31.00	0.000	4.500	59.25	0.00	266.60
24	114.00	Argus LLPX310R-V1	3	11.401	12.541	0.55	0.80	7.14	152.10	0.000	0.500	89.51	0.00	44.76
25	114.00	Samsung	3	11.370	12.507	0.61	0.80	3.32	99.30	0.000	-1.000	41.52	0.00	-41.52
26	114.00	Low Profile Platform	1	11.391	12.530	1.00	1.00	25.00	1800.00	0.000	0.000	313.24	0.00	0.00
27	114.00	RFS APXVSP18	3	11.412	12.553	0.66	0.80	15.98	375.90	0.000	1.000	200.54	0.00	200.54
28	114.00	Alcatel Lucent	3	11.453	12.598	0.55	0.80	6.71	210.00	0.000	3.000	84.50	0.00	253.49
29	114.00	Alcatel Lucent	3	11.359	12.495	0.78	0.80	5.59	192.00	0.000	-1.500	69.81	0.00	-104.72
30	114.00	Alcatel Lucent	3	11.453	12.598	0.78	0.80	6.37	180.00	0.000	3.000	80.30	0.00	240.90
31	114.00	RFS APXVTM14	3	11.453	12.598	0.63	0.80	12.02	350.10	0.000	3.000	151.44	0.00	454.32
32	90.00	Alcatel Lucent	3	10.838	11.921	0.57	0.75	5.99	270.00	0.000	0.000	71.35	0.00	0.00
33	90.00	Swedcom SLCP 2x6014	3	10.838	11.921	0.67	0.75	13.00	136.80	0.000	0.000	154.93	0.00	0.00
34	90.00	Commscope	6	10.838	11.921	0.62	0.75	30.18	458.40	0.000	0.000	359.77	0.00	0.00
35	90.00	Antel	3	10.838	11.921	0.55	0.75	12.43	127.80	0.000	0.000	148.23	0.00	0.00
36	90.00	RFS DB-T1-6Z-8AB-OZ	1	10.838	11.921	1.00	1.00	4.80	44.00	0.000	0.000	57.22	0.00	0.00
37	90.00	Alcatel Lucent	3	10.838	11.921	0.57	0.75	5.99	270.00	0.000	0.000	71.35	0.00	0.00
38	90.00	Alcatel Lucent	3	10.838	11.921	0.68	0.75	3.06	165.00	0.000	0.000	36.45	0.00	0.00
39	90.00	Platform w/ Hand Rails	1	10.838	11.921	1.00	1.00	42.00	2200.00	0.000	0.000	500.70	0.00	0.00

Totals: 14,974.60

5,441.33

Total Applied Force Summary

Structure: CT16504-A-SBA	Code: EIA/TIA-222-G	5/17/2018
Site Name: Manchester 12, CT	Exposure: C	
Height: 140.50 (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 23

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
1.00		19.34	208.86	0.00	0.00
5.00		76.78	828.07	0.00	0.00
10.00		94.68	1018.50	0.00	0.00
15.00		93.25	1000.07	0.00	0.00
20.00		97.42	981.63	0.00	0.00
25.00		100.51	963.20	0.00	0.00
30.00		102.78	944.77	0.00	0.00
35.00		104.46	926.33	0.00	0.00
40.00		105.68	907.90	0.00	0.00
44.50		91.97	801.35	0.00	0.00
45.00		10.34	146.68	0.00	0.00
50.00		104.69	1448.23	0.00	0.00
55.00		104.28	754.15	0.00	0.00
60.00		104.29	738.79	0.00	0.00
65.00		104.12	723.43	0.00	0.00
67.50		51.74	355.95	0.00	0.00
70.00		51.64	352.11	0.00	0.00
75.00		94.54	692.70	0.00	0.00
80.00		92.92	677.34	0.00	0.00
85.00		91.17	661.98	0.00	0.00
90.00	(23) attachments	1489.30	4318.62	0.00	0.00
90.50		8.77	56.48	0.00	0.00
93.12		53.13	434.75	0.00	0.00
94.50		27.84	226.28	0.00	0.00
95.00		10.00	38.32	0.00	0.00
100.00		99.93	378.12	0.00	0.00
105.00		98.80	368.91	0.00	0.00
107.87		56.05	207.59	0.00	0.00
110.00		41.31	152.10	0.00	0.00
114.00	(25) attachments	1213.73	3705.52	0.00	1405.90
115.00		15.67	61.84	0.00	0.00
120.00		77.14	303.65	0.00	0.00
125.00	(49) attachments	1711.88	4496.13	0.00	0.00
130.00		72.01	220.91	0.00	0.00
135.00	(21) attachments	1323.56	3888.19	0.00	0.00
140.00		66.59	185.48	0.00	0.00
140.50		6.48	18.04	0.00	0.00
	Totals:	8,068.80	34,192.96	0.00	1,405.90

Linear Appurtenance Segment Forces (Factored)

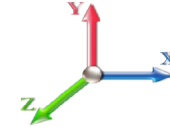
Structure: CT16504-A-SBA	Code: EIA/TIA-222-G	5/17/2018
Site Name: Manchester 12, CT	Exposure: C	
Height: 140.50 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00
Wind Load Factor 1.00



Iterations 23

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
1.00	1 1/4" Fiber	Yes	1.00	0.000	0.00	0.00	0.00	0.104	1.012	7.442	0.00	1.32
1.00	1 5/8" Coax	Yes	1.00	0.000	1.98	0.17	0.00	0.104	1.012	7.442	0.00	2.08
1.00	1.25" Reinforcing	Yes	1.00	0.000	1.25	0.10	0.00	0.104	1.012	7.442	0.00	0.00
1.00	1.25" Reinforcing	Yes	1.00	0.000	1.25	0.10	0.00	0.104	1.012	7.442	0.00	0.00
5.00	1 1/4" Fiber	Yes	4.00	0.000	0.00	0.00	0.00	0.105	1.015	7.442	0.00	5.28
5.00	1 5/8" Coax	Yes	4.00	0.000	1.98	0.66	0.00	0.105	1.015	7.442	0.00	8.32
5.00	1.25" Reinforcing	Yes	4.00	0.000	1.25	0.42	0.00	0.105	1.015	7.442	0.00	0.00
5.00	1.25" Reinforcing	Yes	4.00	0.000	1.25	0.42	0.00	0.105	1.015	7.442	0.00	0.00
10.00	1 1/4" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.107	1.021	7.442	0.00	6.60
10.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.107	1.021	7.442	0.00	10.40
10.00	1.25" Reinforcing	Yes	5.00	0.000	1.25	0.52	0.00	0.107	1.021	7.442	0.00	0.00
10.00	1.25" Reinforcing	Yes	5.00	0.000	1.25	0.52	0.00	0.107	1.021	7.442	0.00	0.00
15.00	1 1/4" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.110	1.029	7.442	0.00	6.60
15.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.110	1.029	7.442	0.00	10.40
15.00	1.25" Reinforcing	Yes	5.00	0.000	1.25	0.52	0.00	0.110	1.029	7.442	0.00	0.00
15.00	1.25" Reinforcing	Yes	5.00	0.000	1.25	0.52	0.00	0.110	1.029	7.442	0.00	0.00
20.00	1 1/4" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.112	1.036	7.896	0.00	6.60
20.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.112	1.036	7.896	0.00	10.40
20.00	1.25" Reinforcing	Yes	5.00	0.000	1.25	0.52	0.00	0.112	1.036	7.896	0.00	0.00
20.00	1.25" Reinforcing	Yes	5.00	0.000	1.25	0.52	0.00	0.112	1.036	7.896	0.00	0.00
25.00	1 1/4" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.115	1.044	8.276	0.00	6.60
25.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.115	1.044	8.276	0.00	10.40
25.00	1.25" Reinforcing	Yes	5.00	0.000	1.25	0.52	0.00	0.115	1.044	8.276	0.00	0.00
25.00	1.25" Reinforcing	Yes	5.00	0.000	1.25	0.52	0.00	0.115	1.044	8.276	0.00	0.00
30.00	1 1/4" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.118	1.053	8.600	0.00	6.60
30.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.118	1.053	8.600	0.00	10.40
30.00	1.25" Reinforcing	Yes	5.00	0.000	1.25	0.52	0.00	0.118	1.053	8.600	0.00	0.00
30.00	1.25" Reinforcing	Yes	5.00	0.000	1.25	0.52	0.00	0.118	1.053	8.600	0.00	0.00
35.00	1 1/4" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.120	1.061	8.883	0.00	6.60
35.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.120	1.061	8.883	0.00	10.40
35.00	1.25" Reinforcing	Yes	5.00	0.000	1.25	0.52	0.00	0.120	1.061	8.883	0.00	0.00
35.00	1.25" Reinforcing	Yes	5.00	0.000	1.25	0.52	0.00	0.120	1.061	8.883	0.00	0.00
40.00	1 1/4" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.124	1.071	9.137	0.00	6.60
40.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.124	1.071	9.137	0.00	10.40
40.00	1.25" Reinforcing	Yes	5.00	0.000	1.25	0.52	0.00	0.124	1.071	9.137	0.00	0.00
40.00	1.25" Reinforcing	Yes	5.00	0.000	1.25	0.52	0.00	0.124	1.071	9.137	0.00	0.00
44.50	1 1/4" Fiber	Yes	4.50	0.000	0.00	0.00	0.00	0.112	1.037	9.344	0.00	5.94
44.50	1 5/8" Coax	Yes	4.50	0.000	1.98	0.74	0.00	0.112	1.037	9.344	0.00	9.36
44.50	1" Reinforcing plate	Yes	4.50	0.000	1.00	0.38	0.00	0.112	1.037	9.344	0.00	0.00
44.50	1" Reinforcing plate	Yes	4.50	0.000	1.00	0.38	0.00	0.112	1.037	9.344	0.00	0.00
45.00	1 1/4" Fiber	Yes	0.50	0.000	0.00	0.00	0.00	0.114	1.042	9.366	0.00	0.66
45.00	1 5/8" Coax	Yes	0.50	0.000	1.98	0.08	0.00	0.114	1.042	9.366	0.00	1.04
45.00	1" Reinforcing plate	Yes	0.50	0.000	1.00	0.04	0.00	0.114	1.042	9.366	0.00	0.00
45.00	1" Reinforcing plate	Yes	0.50	0.000	1.00	0.04	0.00	0.114	1.042	9.366	0.00	0.00
50.00	1 1/4" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.116	1.047	9.576	0.00	6.60
50.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.116	1.047	9.576	0.00	10.40
50.00	1" Reinforcing plate	Yes	5.00	0.000	1.00	0.42	0.00	0.116	1.047	9.576	0.00	0.00

Linear Appurtenance Segment Forces (Factored)

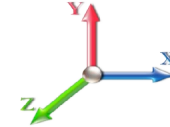
Structure: CT16504-A-SBA	Code: EIA/TIA-222-G	5/17/2018
Site Name: Manchester 12, CT	Exposure: C	
Height: 140.50 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00
Wind Load Factor 1.00



Iterations 23

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
50.00	1" Reinforcing plate	Yes	5.00	0.000	1.00	0.42	0.00	0.116	1.047	9.576	0.00	0.00
55.00	1 1/4" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.117	1.050	9.770	0.00	6.60
55.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.117	1.050	9.770	0.00	10.40
55.00	1" Reinforcing plate	Yes	5.00	0.000	1.00	0.42	0.00	0.117	1.050	9.770	0.00	0.00
55.00	1" Reinforcing plate	Yes	5.00	0.000	1.00	0.42	0.00	0.117	1.050	9.770	0.00	0.00
60.00	1 1/4" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.120	1.060	9.951	0.00	6.60
60.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.120	1.060	9.951	0.00	10.40
60.00	1" Reinforcing plate	Yes	5.00	0.000	1.00	0.42	0.00	0.120	1.060	9.951	0.00	0.00
60.00	1" Reinforcing plate	Yes	5.00	0.000	1.00	0.42	0.00	0.120	1.060	9.951	0.00	0.00
65.00	1 1/4" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.123	1.070	10.120	0.00	6.60
65.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.123	1.070	10.120	0.00	10.40
65.00	1" Reinforcing plate	Yes	5.00	0.000	1.00	0.42	0.00	0.123	1.070	10.120	0.00	0.00
65.00	1" Reinforcing plate	Yes	5.00	0.000	1.00	0.42	0.00	0.123	1.070	10.120	0.00	0.00
67.50	1 1/4" Fiber	Yes	2.50	0.000	0.00	0.00	0.00	0.126	1.078	10.201	0.00	3.30
67.50	1 5/8" Coax	Yes	2.50	0.000	1.98	0.41	0.00	0.126	1.078	10.201	0.00	5.20
67.50	1" Reinforcing plate	Yes	2.50	0.000	1.00	0.21	0.00	0.126	1.078	10.201	0.00	0.00
67.50	1" Reinforcing plate	Yes	2.50	0.000	1.00	0.21	0.00	0.126	1.078	10.201	0.00	0.00
70.00	1 1/4" Fiber	Yes	2.50	0.000	0.00	0.00	0.00	0.128	1.084	10.279	0.00	3.30
70.00	1 5/8" Coax	Yes	2.50	0.000	1.98	0.41	0.00	0.128	1.084	10.279	0.00	5.20
70.00	1" Reinforcing plate	Yes	2.50	0.000	1.00	0.21	0.00	0.128	1.084	10.279	0.00	0.00
70.00	1" Reinforcing plate	Yes	2.50	0.000	1.00	0.21	0.00	0.128	1.084	10.279	0.00	0.00
75.00	1 1/4" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.065	0.000	10.430	0.00	6.60
75.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.065	0.000	10.430	0.00	10.40
80.00	1 1/4" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.067	0.000	10.572	0.00	6.60
80.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.067	0.000	10.572	0.00	10.40
85.00	1 1/4" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.069	0.000	10.708	0.00	6.60
85.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.069	0.000	10.708	0.00	10.40
90.00	1 1/4" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.072	0.000	10.838	0.00	6.60
90.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.072	0.000	10.838	0.00	10.40
90.50	1 1/4" Fiber	Yes	0.50	0.000	0.00	0.00	0.00	0.073	0.000	10.850	0.00	0.66
90.50	1 5/8" Coax	Yes	0.50	0.000	1.98	0.08	0.00	0.073	0.000	10.850	0.00	1.04
93.12	1 1/4" Fiber	Yes	2.62	0.000	0.00	0.00	0.00	0.148	1.145	10.916	0.00	3.46
93.12	1 5/8" Coax	Yes	2.62	0.000	1.98	0.43	0.00	0.148	1.145	10.916	0.00	5.45
93.12	1" Reinforcing plate	Yes	2.62	0.000	1.00	0.22	0.00	0.148	1.145	10.916	0.00	0.00
93.12	1" Reinforcing plate	Yes	2.62	0.000	1.00	0.22	0.00	0.148	1.145	10.916	0.00	0.00
94.50	1 1/4" Fiber	Yes	1.38	0.000	0.00	0.00	0.00	0.150	1.151	10.950	0.00	1.82
94.50	1 5/8" Coax	Yes	1.38	0.000	1.98	0.23	0.00	0.150	1.151	10.950	0.00	2.87
94.50	1" Reinforcing plate	Yes	1.38	0.000	1.00	0.11	0.00	0.150	1.151	10.950	0.00	0.00
94.50	1" Reinforcing plate	Yes	1.38	0.000	1.00	0.11	0.00	0.150	1.151	10.950	0.00	0.00
95.00	1 1/4" Fiber	Yes	0.50	0.000	0.00	0.00	0.00	0.149	1.147	10.962	0.00	0.66
95.00	1 5/8" Coax	Yes	0.50	0.000	1.98	0.08	0.00	0.149	1.147	10.962	0.00	1.04
95.00	1" Reinforcing plate	Yes	0.50	0.000	1.00	0.04	0.00	0.149	1.147	10.962	0.00	0.00
95.00	1" Reinforcing plate	Yes	0.50	0.000	1.00	0.04	0.00	0.149	1.147	10.962	0.00	0.00
100.00	1 1/4" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.152	1.156	11.081	0.00	6.60
100.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.152	1.156	11.081	0.00	10.40
100.00	1" Reinforcing plate	Yes	5.00	0.000	1.00	0.42	0.00	0.152	1.156	11.081	0.00	0.00
100.00	1" Reinforcing plate	Yes	5.00	0.000	1.00	0.42	0.00	0.152	1.156	11.081	0.00	0.00

Linear Appurtenance Segment Forces (Factored)

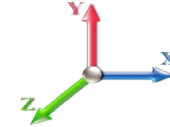
Structure: CT16504-A-SBA	Code: EIA/TIA-222-G	5/17/2018
Site Name: Manchester 12, CT	Exposure: C	
Height: 140.50 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00
Wind Load Factor 1.00



Iterations 23

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
105.00	1 1/4" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.158	1.173	11.195	0.00	6.60
105.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.158	1.173	11.195	0.00	10.40
105.00	1" Reinforcing plate	Yes	5.00	0.000	1.00	0.42	0.00	0.158	1.173	11.195	0.00	0.00
105.00	1" Reinforcing plate	Yes	5.00	0.000	1.00	0.42	0.00	0.158	1.173	11.195	0.00	0.00
107.87	1 1/4" Fiber	Yes	2.87	0.000	0.00	0.00	0.00	0.162	1.187	11.259	0.00	3.79
107.87	1 5/8" Coax	Yes	2.87	0.000	1.98	0.47	0.00	0.162	1.187	11.259	0.00	5.97
107.87	1" Reinforcing plate	Yes	2.87	0.000	1.00	0.24	0.00	0.162	1.187	11.259	0.00	0.00
107.87	1" Reinforcing plate	Yes	2.87	0.000	1.00	0.24	0.00	0.162	1.187	11.259	0.00	0.00
110.00	1 1/4" Fiber	Yes	2.13	0.000	0.00	0.00	0.00	0.165	1.196	11.305	0.00	2.81
110.00	1 5/8" Coax	Yes	2.13	0.000	1.98	0.35	0.00	0.165	1.196	11.305	0.00	4.43
110.00	1" Reinforcing plate	Yes	2.13	0.000	1.00	0.18	0.00	0.165	1.196	11.305	0.00	0.00
110.00	1" Reinforcing plate	Yes	2.13	0.000	1.00	0.18	0.00	0.165	1.196	11.305	0.00	0.00
114.00	1 1/4" Fiber	Yes	4.00	0.000	0.00	0.00	0.00	0.095	0.000	11.391	0.00	5.28
114.00	1 5/8" Coax	Yes	4.00	0.000	1.98	0.66	0.00	0.095	0.000	11.391	0.00	8.32
114.00	1" Reinforcing plate	Yes	0.50	0.000	1.00	0.04	0.00	0.095	0.000	11.391	0.00	0.00
114.00	1" Reinforcing plate	Yes	0.50	0.000	1.00	0.04	0.00	0.095	0.000	11.391	0.00	0.00
115.00	1 1/4" Fiber	Yes	1.00	0.000	0.00	0.00	0.00	0.086	0.000	11.412	0.00	1.32
115.00	1 5/8" Coax	Yes	1.00	0.000	1.98	0.17	0.00	0.086	0.000	11.412	0.00	2.08
120.00	1 1/4" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.088	0.000	11.514	0.00	6.60
120.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.088	0.000	11.514	0.00	10.40
125.00	1 1/4" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.092	0.000	11.614	0.00	6.60
125.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.092	0.000	11.614	0.00	10.40
130.00	1 1/4" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.096	0.000	11.710	0.00	6.60
130.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.096	0.000	11.710	0.00	10.40
135.00	1 1/4" Fiber	Yes	5.00	0.000	0.00	0.00	0.00	0.100	1.001	11.803	0.00	6.60
135.00	1 5/8" Coax	Yes	5.00	0.000	1.98	0.82	0.00	0.100	1.001	11.803	0.00	10.40
Totals:											0.0	459.0

Calculated Forces

Structure: CT16504-A-SBA	Code: EIA/TIA-222-G	5/17/2018
Site Name: Manchester 12, CT	Exposure: C	
Height: 140.50 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II

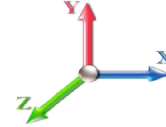


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Load Case: 1.0D + 1.0W 60 mph Wind

Iterations 23

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	-34.19	-8.07	0.00	-851.07	0.00	851.07	3592.24	1796.12	6217.42	3113.33	0.00	0.000	0.000	0.197
1.00	-33.98	-8.07	0.00	-843.00	0.00	843.00	3581.26	1790.63	6171.41	3090.29	0.00	-0.015	0.000	0.173
5.00	-33.14	-8.03	0.00	-810.70	0.00	810.70	3536.93	1768.47	5988.37	2998.63	0.04	-0.067	0.000	0.171
10.00	-32.11	-7.97	0.00	-770.56	0.00	770.56	3480.64	1740.32	5761.86	2885.21	0.14	-0.132	0.000	0.167
15.00	-31.11	-7.91	0.00	-730.71	0.00	730.71	3423.37	1711.69	5538.01	2773.12	0.31	-0.197	0.000	0.163
20.00	-30.12	-7.84	0.00	-691.17	0.00	691.17	3365.12	1682.56	5316.92	2662.41	0.56	-0.263	0.000	0.169
25.00	-29.14	-7.77	0.00	-651.95	0.00	651.95	3305.89	1652.94	5098.71	2553.15	0.87	-0.333	0.000	0.165
30.00	-28.19	-7.70	0.00	-613.08	0.00	613.08	3245.52	1622.76	4883.27	2445.26	1.26	-0.403	0.000	0.160
35.00	-27.25	-7.62	0.00	-574.59	0.00	574.59	3165.03	1582.51	4642.85	2324.87	1.72	-0.473	0.000	0.156
40.00	-26.34	-7.54	0.00	-536.48	0.00	536.48	3084.53	1542.26	4408.49	2207.52	2.25	-0.544	0.000	0.166
44.50	-25.53	-7.46	0.00	-502.56	0.00	502.56	3012.08	1506.04	4202.76	2104.51	2.79	-0.612	0.000	0.161
45.00	-25.38	-7.46	0.00	-498.83	0.00	498.83	3004.03	1502.02	4180.21	2093.21	2.86	-0.620	0.000	0.159
50.00	-23.93	-7.37	0.00	-461.52	0.00	461.52	2423.81	1211.90	3356.59	1680.79	3.55	-0.695	0.000	0.160
55.00	-23.16	-7.29	0.00	-424.65	0.00	424.65	2376.14	1188.07	3201.01	1602.88	4.32	-0.769	0.000	0.165
60.00	-22.42	-7.21	0.00	-388.21	0.00	388.21	2327.49	1163.75	3047.73	1526.13	5.16	-0.847	0.000	0.157
65.00	-21.69	-7.11	0.00	-352.18	0.00	352.18	2277.86	1138.93	2896.88	1450.59	6.09	-0.924	0.000	0.148
67.50	-21.33	-7.07	0.00	-334.40	0.00	334.40	2252.16	1126.08	2821.75	1412.97	6.59	-0.962	0.000	0.143
67.50	-21.33	-7.07	0.00	-334.40	0.00	334.40	2252.16	1126.08	2821.75	1412.97	6.59	-0.962	0.000	0.143
70.00	-20.97	-7.04	0.00	-316.74	0.00	316.74	2218.62	1109.31	2737.91	1370.99	7.10	-1.000	0.000	0.241
75.00	-20.26	-6.98	0.00	-281.53	0.00	281.53	2151.54	1075.77	2574.02	1288.93	8.21	-1.125	0.000	0.228
80.00	-19.57	-6.91	0.00	-246.65	0.00	246.65	2084.46	1042.23	2415.20	1209.39	9.46	-1.245	0.000	0.213
85.00	-18.90	-6.84	0.00	-212.10	0.00	212.10	2017.38	1008.69	2261.43	1132.40	10.82	-1.360	0.000	0.197
90.00	-14.61	-5.26	0.00	-177.90	0.00	177.90	1950.30	975.15	2112.72	1057.93	12.31	-1.468	0.000	0.176
90.50	-14.55	-5.26	0.00	-175.27	0.00	175.27	1943.59	971.80	2098.13	1050.62	12.46	-1.479	0.000	0.174
93.12	-14.12	-5.20	0.00	-161.50	0.00	161.50	1908.44	954.22	2022.49	1012.75	13.29	-1.533	0.000	0.093
94.50	-13.89	-5.17	0.00	-154.32	0.00	154.32	1035.36	517.68	1113.15	557.40	13.73	-1.549	0.000	0.102
95.00	-13.85	-5.17	0.00	-151.73	0.00	151.73	1033.16	516.58	1106.89	554.27	13.90	-1.555	0.000	0.127
100.00	-13.47	-5.07	0.00	-125.89	0.00	125.89	1010.63	505.31	1044.65	523.10	15.56	-1.620	0.000	0.110
105.00	-13.10	-4.97	0.00	-100.53	0.00	100.53	987.11	493.55	983.14	492.30	17.29	-1.678	0.000	0.092
107.87	-12.89	-4.92	0.00	-86.26	0.00	86.26	973.17	486.58	948.19	474.80	18.31	-1.708	0.000	0.081
107.87	-12.89	-4.92	0.00	-86.26	0.00	86.26	973.17	486.58	948.19	474.80	18.31	-1.708	0.000	0.081
110.00	-12.73	-4.88	0.00	-75.78	0.00	75.78	962.61	481.31	922.45	461.91	19.07	-1.728	0.000	0.177
114.00	-9.07	-3.56	0.00	-54.85	0.00	54.85	942.31	471.15	874.57	437.94	20.56	-1.807	0.000	0.135
115.00	-9.00	-3.55	0.00	-51.29	0.00	51.29	937.13	468.57	862.70	431.99	20.94	-1.824	0.000	0.128
120.00	-8.70	-3.47	0.00	-33.53	0.00	33.53	910.67	455.33	804.02	402.61	22.89	-1.895	0.000	0.093
125.00	-4.26	-1.61	0.00	-16.16	0.00	16.16	883.23	441.61	746.49	373.80	24.90	-1.943	0.000	0.048
130.00	-4.04	-1.54	0.00	-8.09	0.00	8.09	854.80	427.40	690.24	345.64	26.95	-1.969	0.000	0.028
135.00	-0.20	-0.08	0.00	-0.40	0.00	0.40	825.39	412.70	635.38	318.16	29.02	-1.979	0.000	0.002
140.00	-0.02	-0.01	0.00	0.00	0.00	0.00	789.80	394.90	578.22	289.54	31.09	-1.980	0.000	0.000
140.50	0.00	-0.01	0.00	0.00	0.00	0.00	785.78	392.89	572.31	286.58	31.30	-1.980	0.000	0.000

Final Analysis Summary

Structure: CT16504-A-SBA	Code: EIA/TIA-222-G	5/17/2018
Site Name: Manchester 12, CT	Exposure: C	
Height: 140.50 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II
		Page: 41



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 97 mph Wind	33.8	0.00	41.01	0.00	0.00	3583.37
0.9D + 1.6W 97 mph Wind	33.8	0.00	30.75	0.00	0.00	3533.29
1.2D + 1.0Di + 1.0Wi 50 mph Wind	9.3	0.00	84.67	0.00	0.00	1029.73
1.2D + 1.0E	1.6	0.00	41.03	0.00	0.00	182.73
0.9D + 1.0E	1.6	0.00	30.77	0.00	0.00	179.88
1.0D + 1.0W 60 mph Wind	8.1	0.00	34.19	0.00	0.00	851.07

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 97 mph Wind	-23.06	-29.71	0.00	-1337.1	0.00	-1337.1	2218.62	1109.3	2737.91	1370.99	70.00	0.986
0.9D + 1.6W 97 mph Wind	-16.79	-29.19	0.00	-1306.9	0.00	-1306.9	2218.62	1109.3	2737.91	1370.99	70.00	0.962
1.2D + 1.0Di + 1.0Wi 50 mph Wind	-59.49	-8.60	0.00	-396.86	0.00	-396.86	2218.62	1109.3	2737.91	1370.99	70.00	0.316
1.2D + 1.0E	-15.45	-1.35	0.00	-27.34	0.00	-27.34	962.61	481.31	922.45	461.91	110.00	0.075
0.9D + 1.0E	-11.58	-1.31	0.00	-26.80	0.00	-26.80	962.61	481.31	922.45	461.91	110.00	0.070
1.0D + 1.0W 60 mph Wind	-20.97	-7.04	0.00	-316.74	0.00	-316.74	2218.62	1109.3	2737.91	1370.99	70.00	0.241

Additional Steel Summary

Elev From (ft)	Elev To (ft)	Member	Intermediate Connectors			Lower Termination				Upper Termination				Max Member			
			VQ/I (lb/in)	Vu (kips)	phi Vn (kips)	MQ/I (kips)	phi Vn (kips)	Num Req'd	Num Actual	MQ/I (kips)	phi Vn (kips)	Num Req'd	Num Actual	Pu (kips)	phi Pn (kips)	phi Tn (kips)	Ratio
0.0	1.0	(4) SOL-2 1/4" William R71	-328.7	-5.92	25.3	274.0	25.3	11	0	414.4	25.3			274.03	370.7	385.56	0.739
1.0	20.0	(4) LNP-LP7X125-B-20A	-366.4	-8.79	25.3	414.4	25.3			388.9	25.3			414.44	460.8	440.63	0.941
20.0	40.0	(4) LNP-LP6X125-G-20AB	-378.6	-9.09	25.3	356.7	25.3			323.9	25.3			356.68	395.0	365.63	0.976
40.0	60.0	(4) LNP-LP6X100-G-20BC	-406.0	-9.74	25.3	283.7	25.3			262.8	25.3			283.69	297.8	292.50	0.970
60.0	67.5	(4) LNP-LP6X100-G-10CT	-426.1	-10.23	25.3	262.8	25.3			242.1	25.3	10	0	262.77	297.8	292.50	0.898
93.1	107.9	(3) LNP-LP6X100-G-20TT	639.4	15.34	25.3	172.9	25.3	7	8	134.6	25.3	6	8	207.49	297.8	292.50	0.709



Pier Foundation Design For Monopole			Date
			5/17/2018
Customer Name:	AT&T	EIA/TIA Standard:	EIA-222-G
Site Name:		Structure Height (Ft.):	140.5
Site Number:	CT16504-A-SBA	Engineer Name:	Rama K.
Engr. Number:	52078	Engineer Login ID:	

Foundation Info Obtained from:

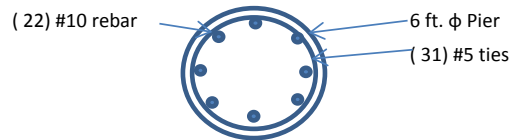
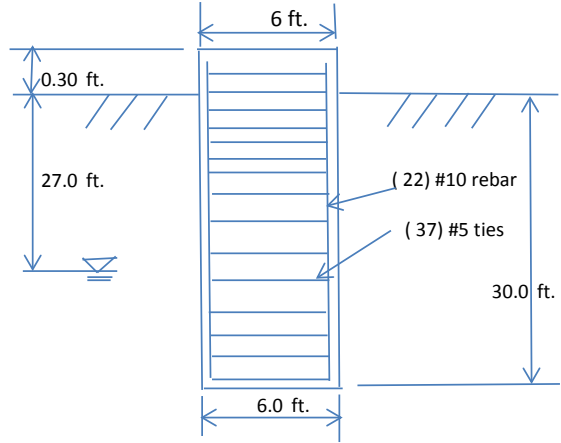
Mapping Operation	Acceptable overstress ()	0.0%
Structure Type:	Monopole	
Analysis or Design?	Analysis	

Base Reactions (Factored):

Axial Load (Kips):	41.0	Shear Force (Kips):	33.8
Uplift Force (Kips):	0.0	Moment (Kips-ft):	3583.4

Foundation Geometries:

Mods required -Yes/No ?:	No		ft.
Diameter of Pier (ft.):	6.0	Depth of Base B. G. S. :	30.0 ft.
Pier Height A. G. (ft.):	0.30		



Monopole Pier Foundation

Material Properties and Reabr Info:

Concrete Strength (psi):	3000	Steel Elastic Modulus:	29000	ksi
Vertical bar yield (ksi)	60	Tie steel yield strength:	40	ksi
Vertical Rebar Size #:	10	Tie / Stirrup Size #:	5	
Qty. of Vertical Rebars:	22	Tie Spacing:	12.0	in.
Concrete Cover (in.):	4	Concrete unit weight:	150.0	pcf

Soil Design Parameters:

Water Table B.G.S. (ft):	27.0	Unit weight of water:	62.4	psf
Ratio of Uplift/Axial Skin Friction:	1.0	Pullout failure Angle:	30	(°)
Skin Frictions are to be obtained from:		Calculations	Please Enter Ultimate End Bearing Pressure (psf):	
Kc = 1.15 For Sand		Kt = 0.7 For Sand and Silt	Friction δ	11600
Kc = 1.0 Silt/Clay		Kt = 0.85 For Clay	Between Pier & Soil =	0.95

Depth of Layers (ft)		γ_{soil}	ϕ	Cohesion			Soil Types	Ultimate Uplift Skin Friction (psf)	Ultimate Axial Skin Friction (psf)	Kc	Kt	α
Top	Bottom	(pcf)	(°)	(psf)								
0.0	1.0	100	0	0		0	Sand			1.15	0.70	
1.0	5.0	135	40	0		0	Sand	175.0	287.5	1.15	0.70	
5.0	7.0	120	33	0		0	Sand	187.6	308.3	1.15	0.70	
7.0	10.0	130	38	0		0	Sand	324.1	532.5	1.15	0.70	
10.0	15.0	128	37	0		0	Sand	470.7	773.3	1.15	0.70	
15.0	30.0	132	39	0		11600	Sand	988.8	1624.5	1.15	0.70	
30.0	35.0	127	36	0		11600	Sand	982.1	1613.4	1.15	0.70	

Soil weight Increase Factor for bouyant soils (1.0 to 1.15): 1.1

Foundation Analysis and Design:

Uplift Strength Reduction Factor:	0.75	Soil Bearing Strength Reduction Factor:	0.75
Total Dry Soil Volume from Conical Failure (cu. Ft.):	14255	Dry Soil Weight from Conical Failure:	1845 Kips
Total Buoyant Soil Volume from Conical Failure (cu. Ft.):	58	Buoyant Soil Weight from Conical Failure (Kips):	5 Kips
Total Dry Concrete Volume (cu. Ft.):	772	Total Dry Concrete Weight:	115.8 Kips
Total Buoyant Concrete Volume (cu. Ft.):	84.8	Total Buoyant Concrete Weight:	7.43 Kips
Total Effective Concrete Weight (Kips):	123.2	Total Effective Soil Weight:	1849.7 Kips
Total Effective Vertical Load on Base (Kips):	58.1		

Check Soil Capacities:

Allowable Foundation Overturning Resistance (kips-ft.):	16168.5	>	Design Factored Moment (kips-ft):	4285	Usage	0.27	OK!
Factor of Safety of Passive Soil Resistance against Moment:	3.77	OK!					

Check the capacities of Reinforcing Concrete:

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

Reinforcing Concrete Pier:

Vertical Steel Rebar Area (sq. in./each):	1.27	Tie / Stirrup Area (sq. in./each):	0.31	Usage	
Calculated Moment Capacity (Mn,Kips-Ft):	3931.4	>	Design Factored Moment (Mu, K-Ft):	3679.6	0.94 OK!
Calculated Shear Capacity (Kips):	707.8	>	Design Factored Shear (Kips):	307.5	0.43 OK!
Calculated Tension Capacity (Tn, Kips):	1508.8	>	Design Factored Tension (Tu Kips):	0.0	0.00 OK!
Calculated Compression Capacity (Pn, Kips):	5362	>	Design Factored Axial Load (Pu Kips):	41.0	0.01 OK!
Moment & Axial Strength Combination:	0.94	OK!	Max. Allowable Tie/Stirrup Spacing:	12.00	in.
Pier Reinforcement Ratio:	0.007	Reinforcement Ratio is satisfied per ACI			





Radio Frequency Emissions Analysis Report

AT&T Existing Facility

Site ID: CT1080

FA#: 10035244

Manchester Sand & Gravel

60 Adams Street

Manchester, CT 06042

March 6, 2018

Centerline Communications Project Number: 950006-099

Site Compliance Summary	
Compliance Status:	COMPLIANT
Site total MPE% of FCC general population allowable limit:	20.49 %



March 6, 2018

AT&T Mobility – New England
Attn: John Benedetto, RF Manager
550 Cochituate Road
Suite 550 – 13&14
Framingham, MA 06040

Emissions Analysis for Site: **CT1080 – Manchester Sand & Gravel**

Centerline Communications, LLC (“Centerline”) was directed to analyze the proposed AT&T facility located at **60 Adams Street, Manchester, CT**, for the purpose of determining whether the emissions from the Proposed AT&T Antenna Installation located on this property are within specified federal limits.

All information used in this report was analyzed as a percentage of current Maximum Permissible Exposure (% MPE) as listed in the FCC OET Bulletin 65 Edition 97-01 and ANSI/IEEE Std C95.1. The FCC regulates Maximum Permissible Exposure in units of microwatts per square centimeter ($\mu\text{W}/\text{cm}^2$). The number of $\mu\text{W}/\text{cm}^2$ calculated at each sample point is called the power density. The exposure limit for power density varies depending upon the frequencies being utilized. Wireless Carriers and Paging Services use different frequency bands each with different exposure limits, therefore it is necessary to report results and limits in terms of percent MPE rather than power density.

All results were compared to the FCC (Federal Communications Commission) radio frequency exposure rules, 47 CFR 1.1307(b)(1) – (b)(3), to determine compliance with the Maximum Permissible Exposure (MPE) limits for General Population/Uncontrolled environments as defined below.

General population/uncontrolled exposure limits apply to situations in which the general population may be exposed or in which persons who are exposed as a consequence of their employment may not be made fully aware of the potential for exposure or cannot exercise control over their exposure. Therefore, members of the general population would always be considered under this category when exposure is not employment related, for example, in the case of a telecommunications tower that exposes persons in a nearby residential area.

Population exposure to radio frequencies is regulated and enforced in units of microwatts per square centimeter ($\mu\text{W}/\text{cm}^2$). The general population exposure limits for the 700 and 850 MHz Bands are approximately $467 \mu\text{W}/\text{cm}^2$ and $567 \mu\text{W}/\text{cm}^2$ respectively. The general population exposure limit for the 1900 MHz (PCS), 2100 MHz (AWS) and 2300 MHz (WCS) bands is $1000 \mu\text{W}/\text{cm}^2$. Because each carrier will be using different frequency bands, and each frequency band has different exposure limits, it is necessary to report percent of MPE rather than power density.



Occupational/controlled exposure limits apply to situations in which persons are exposed as a consequence of their employment and in which those persons who are exposed have been made fully aware of the potential for exposure and can exercise control over their exposure. Occupational/controlled exposure limits also apply where exposure is of a transient nature as a result of incidental passage through a location where exposure levels may be above general population/uncontrolled limits (see below), as long as the exposed person has been made fully aware of the potential for exposure and can exercise control over his or her exposure by leaving the area or by some other appropriate means.

Additional details can be found in FCC OET 65.



CALCULATIONS

Calculations were performed for the proposed AT&T Wireless antenna facility located at **60 Adams Street, Manchester, CT**, using the equipment information listed below. All calculations were performed per the specifications under FCC OET 65. Since AT&T is proposing highly focused directional panel antennas, which project most of the emitted energy out toward the horizon, all calculations were performed assuming a lobe representing the maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB, was focused at the base of the tower. For this report the sample point is the top of a 6-foot person standing at the base of the tower.

Per FCC OET Bulletin No. 65 - Edition 97-01 recommendations to achieve the maximum anticipated value at each sample point, all power levels emitting from the proposed antenna installation are increased by a factor of 2.56 to account for possible in-phase reflections from the surrounding environment. All power values expressed and analyzed are maximum power levels expected to be used on all radios.

All emissions values for additional carriers were taken from the Connecticut Siting Council (CSC) active MPE database. Values in this database are provided by the individual carriers themselves

For each sector the following channel counts, frequency bands and power levels were utilized as shown in *Table 1*:

Technology	Frequency Band	Channel Count	Transmit Power per Channel (W)
UMTS	850 MHz	2	30
LTE	1900 MHz (PCS)	2	40
LTE	850 MHz	2	40
LTE	700 MHz	2	40
LTE	2300 MHz (WCS)	4	30
LTE	700 MHz (Band 14)	2	40
LTE	2100 MHz (AWS)	4	30
LTE	700 MHz	2	40
LTE	1900 MHz	4	40

Table 1: Channel Data Table



The following antennas listed in *Table 2* were used in the modeling for transmission in the 700 MHz, 850 MHz, 1900 MHz (PCS), 2100 MHz (AWS) and 2300 MHz (WCS) frequency bands. This is based on feedback from the carrier with regards to anticipated antenna selection. Maximum gain values for all antennas are listed in the Inventory and Power Data table below. The maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB, was used for all calculations. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.

Sector	Antenna Number	Antenna Make / Model	Antenna Centerline (ft)
A	1	Kathrein 800-10121	125
A	2	CCI OPA-65R-LCUU-H6	125
A	3	CCI HPA-65R-BUU-H6	125
A	4	Quintel QS66512-2	125
B	1	Kathrein 800-10121	125
B	2	CCI OPA-65R-LCUU-H6	125
B	3	CCI HPA-65R-BUU-H6	125
B	4	Quintel QS66512-2	125
C	1	Kathrein 800-10121	125
C	2	CCI OPA-65R-LCUU-H6	125
C	3	CCI HPA-65R-BUU-H6	125
C	4	Quintel QS66512-2	125

Table 2: Antenna Data

All calculations were done with respect to uncontrolled / general population threshold limits.



RESULTS

Per the calculations completed for the proposed AT&T configurations *Table 3* shows resulting emissions power levels and percentages of the FCC’s allowable general population limit.

Antenna ID	Antenna Make / Model	Frequency Bands	Antenna Gain (dBd)	Channel Count	Total TX Power (W)	ERP (W)	MPE %
Antenna A1	Kathrein 800-10121	850 MHz / 1900 MHz (PCS)	11.45 / 14.35	4	140	3,015.98	0.93
Antenna A2	CCI OPA-65R-LCUU-H6	850 MHz / 700 MHz / 2300 MHz (WCS)	2.45 / 11.65 / 15.45	8	280	6,785.10	2.33
Antenna A3	CCI HPA-65R-BUU-H6	700 MHz / 2100 MHz (AWS)	11.95 / 15.05	6	200	5,092.07	1.66
Antenna A4	Quintel QS66512-2	700 MHz / 1900 MHz (PCS)	10.85 / 13.85	6	240	4,855.52	1.51
Sector A Composite MPE%							6.43
Antenna B1	Kathrein 800-10121	850 MHz / 1900 MHz (PCS)	11.45 / 14.35	4	140	3,015.98	0.93
Antenna B2	CCI OPA-65R-LCUU-H6	850 MHz / 700 MHz / 2300 MHz (WCS)	2.45 / 11.65 / 15.45	8	280	6,785.10	2.33
Antenna B3	CCI HPA-65R-BUU-H6	700 MHz / 2100 MHz (AWS)	11.95 / 15.05	6	200	5,092.07	1.66
Antenna B4	Quintel QS66512-2	700 MHz / 1900 MHz (PCS)	10.85 / 13.85	6	240	4,855.52	1.51
Sector B Composite MPE%							6.43
Antenna C1	Kathrein 800-10121	850 MHz / 1900 MHz (PCS)	11.45 / 14.35	4	140	3,015.98	0.93
Antenna C2	CCI OPA-65R-LCUU-H6	850 MHz / 700 MHz / 2300 MHz (WCS)	2.45 / 11.65 / 15.45	8	280	6,785.10	2.33
Antenna C3	CCI HPA-65R-BUU-H6	700 MHz / 2100 MHz (AWS)	11.95 / 15.05	6	200	5,092.07	1.66
Antenna C4	Quintel QS66512-2	700 MHz / 1900 MHz (PCS)	10.85 / 13.85	6	240	4,855.52	1.51
Sector C Composite MPE%							6.43

Table 3: AT&T Emissions Levels



The Following table (*table 4*) shows all additional carriers on site and their MPE% as recorded in the CSC active MPE database for this facility along with the newly calculated maximum AT&T MPE contributions per this report. FCC OET 65 specifies that for carriers utilizing directional antennas that the highest recorded sector value be used for composite site MPE values due to their greatly reduced emissions contributions in the directions of the adjacent sectors. For this site, all three sectors have the same configuration yielding the same results on all three sectors. *Table 5* below shows a summary for each AT&T Sector as well as the composite MPE value for the site.

Site Composite MPE%	
Carrier	MPE%
AT&T – Max Sector Value	6.43 %
T-Mobile	2.87 %
Nextel	0.65 %
PageNet	0.40 %
Verizon Wireless	9.91 %
Clearwire	0.16 %
Sprint	0.07 %
Site Total MPE %:	20.49 %

Table 4: All Carrier MPE Contributions

AT&T Sector A Total:	6.43 %
AT&T Sector B Total:	6.43 %
AT&T Sector C Total:	6.43 %
Site Total:	20.49 %

Table 5: Site MPE Summary



FCC OET 65 specifies that for carriers utilizing directional antennas that the highest recorded sector value be used for composite site MPE values due to their greatly reduced emissions contributions in the directions of the adjacent sectors. *Table 6* below details a breakdown by frequency band and technology for the MPE power values for the maximum calculated AT&T sector(s). For this site, all three sectors have the same configuration yielding the same results on all three sectors.

AT&T _ Frequency Band / Technology Max Power Values (All Sectors)	# Channels	Watts ERP (Per Channel)	Height (feet)	Total Power Density ($\mu\text{W}/\text{cm}^2$)	Frequency (MHz)	Allowable MPE ($\mu\text{W}/\text{cm}^2$)	Calculated % MPE
AT&T 850 MHz UMTS (Antenna 1)	2	418.91	125	2.13	850 MHz	567	0.38%
AT&T 1900 MHz (PCS) LTE (Antenna 1)	2	1,089.08	125	5.53	1900 MHz (PCS)	1000	0.55%
AT&T 850 MHz LTE (Antenna 2)	2	703.17	125	3.57	850 MHz	567	0.63%
AT&T 700 MHz LTE (Antenna 2)	2	584.87	125	2.97	700 MHz	467	0.64%
AT&T 2300 MHz (WCS) LTE (Antenna 2)	4	1,052.26	125	10.69	2300 MHz (WCS)	1000	1.07%
AT&T 700 MHz LTE – Band 14 (Antenna 3)	2	626.70	125	3.18	700 MHz	467	0.68%
AT&T 2100 MHz (AWS) LTE (Antenna 3)	4	959.67	125	9.75	2100 MHz (AWS)	1000	0.97%
AT&T 700 MHz LTE (Antenna 4)	2	486.47	125	2.47	700 MHz	467	0.53%
AT&T 1900 MHz (PCS) LTE (Antenna 4)	4	970.64	125	9.86	1900 MHz (PCS)	1000	0.99%
						Total:	6.43%

Table 6: AT&T Maximum Sector MPE Power Values



Summary

All calculations performed for this analysis yielded results that were **within** the allowable limits for general population exposure to RF Emissions.

The anticipated maximum composite contributions from the AT&T facility as well as the site composite emissions value with regards to compliance with FCC's allowable limits for general population exposure to RF Emissions are shown here:

AT&T Sector	Power Density Value (%)
Sector A:	6.43 %
Sector B:	6.43 %
Sector C:	6.43 %
AT&T Maximum Total (per sector):	6.43 %
Site Total:	20.49 %
Site Compliance Status:	COMPLIANT

The anticipated composite MPE value for this site assuming all carriers present is **20.49 %** of the allowable FCC established general population limit sampled at the ground level. This is based upon values listed in the Connecticut Siting Council database for existing carrier emissions.

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

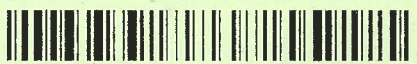
A handwritten signature in black ink, appearing to read 'Scott Heffernan', is positioned above the contact information.

Scott Heffernan
RF Engineering Director
Centerline Communications, LLC
95 Ryan Drive, Suite 1
Raynham, MA 02767

SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:
 SBA Communications Corp.
 Attn: Carla Shaker
 8051 Congress Ave
 Boca Raton, FL 33487-1307



9590 9402 3535 7305 4993 24

2. Article Number (Transfer from service label)
 7016 3010 0000 7829 1582

PS Form 3811, July 2015 PSN 7530-02-000-9053

COMPLETE THIS SECTION ON DELIVERY

A. Signature Agent Addressee

B. Received by (Printed Name) C. Date of Delivery
 6-9-18

D. Is delivery address different from item 1? Yes
 If YES, enter delivery address below: No

3. Service Type
- | | |
|--|---|
| <input type="checkbox"/> Adult Signature | <input type="checkbox"/> Priority Mail Express® |
| <input type="checkbox"/> Adult Signature Restricted Delivery | <input type="checkbox"/> Registered Mail™ |
| <input type="checkbox"/> Certified Mail® | <input type="checkbox"/> Registered Mail Restricted Delivery |
| <input type="checkbox"/> Certified Mail Restricted Delivery | <input type="checkbox"/> Return Receipt for Merchandise |
| <input type="checkbox"/> Collect on Delivery | <input type="checkbox"/> Signature Confirmation™ |
| <input type="checkbox"/> Collect on Delivery Restricted Delivery | <input type="checkbox"/> Signature Confirmation Restricted Delivery |
| <input type="checkbox"/> Insured Mail | |
| <input type="checkbox"/> Insured Mail Restricted Delivery (over \$500) | |

Domestic Return Receipt

SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:
 Greg Smith, Chief Building Inspector
 Town of Manchester
 P.O. Box 191
 Manchester, CT 06045



9590 9402 3535 7305 4992 94

2. Article Number (Transfer from service label)
 7016 3010 0000 7829 1551

PS Form 3811, July 2015 PSN 7530-02-000-9053

COMPLETE THIS SECTION ON DELIVERY

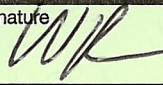

A. Signature Agent Addressee

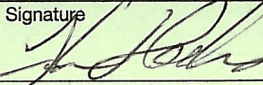
B. Received by (Printed Name) C. Date of Delivery
 7/2/18 6/8/18

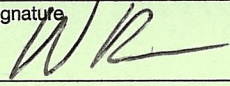

D. Is delivery address different from item 1? Yes
 If YES, enter delivery address below: No

3. Service Type
- | | |
|--|---|
| <input type="checkbox"/> Adult Signature | <input type="checkbox"/> Priority Mail Express® |
| <input type="checkbox"/> Adult Signature Restricted Delivery | <input type="checkbox"/> Registered Mail™ |
| <input type="checkbox"/> Certified Mail® | <input type="checkbox"/> Registered Mail Restricted Delivery |
| <input type="checkbox"/> Certified Mail Restricted Delivery | <input type="checkbox"/> Return Receipt for Merchandise |
| <input type="checkbox"/> Collect on Delivery | <input type="checkbox"/> Signature Confirmation™ |
| <input type="checkbox"/> Collect on Delivery Restricted Delivery | <input type="checkbox"/> Signature Confirmation Restricted Delivery |
| <input type="checkbox"/> Insured Mail | |
| <input type="checkbox"/> Insured Mail Restricted Delivery (over \$500) | |

Domestic Ret

SENDER: COMPLETE THIS SECTION	COMPLETE THIS SECTION ON DELIVERY	
<ul style="list-style-type: none"> Complete items 1, 2, and 3. Print your name and address on the reverse so that we can return the card to you. Attach this card to the back of the mailpiece, or on the front if space permits. 	A. Signature <input checked="" type="checkbox"/> Adult Signature  <input type="checkbox"/> Agent <input type="checkbox"/> Addressee	
1. Article Addressed to: Town of Manchester Attn: Scott Shanley, General Manager 41 Center Street Manchester, CT 06040	B. Received by (Printed Name) KIBOOT	C. Date of Delivery 6/6/18
2. Article Number (Transfer from service label) 7016 3010 0000 7829 1599	D. Is delivery address different from item 1? <input type="checkbox"/> Yes If YES, enter delivery address below: <input type="checkbox"/> No 191	
 9590 9402 3535 7305 4992 87	3. Service Type <input type="checkbox"/> Adult Signature <input type="checkbox"/> Priority Mail Express® <input type="checkbox"/> Adult Signature Restricted Delivery <input type="checkbox"/> Registered Mail™ <input type="checkbox"/> Certified Mail® <input type="checkbox"/> Registered Mail Restricted Delivery <input type="checkbox"/> Certified Mail Restricted Delivery <input type="checkbox"/> Return Receipt for Merchandise <input type="checkbox"/> Collect on Delivery <input type="checkbox"/> Signature Confirmation™ <input type="checkbox"/> Collect on Delivery Restricted Delivery <input type="checkbox"/> Signature Confirmation Restricted Delivery <input type="checkbox"/> Insured Mail <input type="checkbox"/> Signature Confirmation Restricted Delivery (over \$500) <input type="checkbox"/> Insured Mail Restricted Delivery (over \$500)	
PS Form 3811, July 2015 PSN 7530-02-000-9053		Domestic Return Receipt

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1. Article Addressed to: Pom-Pom Gals, LLC 79 Boston Post Road Willimantic, CT 06226	B. Received by (Printed Name) Jake Holland	C. Date of Delivery 6/7/18
2. Article Number (Transfer from service label) 7016 3010 0000 7829 1575	D. Is delivery address different from item 1? <input checked="" type="checkbox"/> Yes If YES, enter delivery address below: <input type="checkbox"/> No P.O. Box 133 Willimantic, CT 06226	
 9590 9402 3535 7305 4993 17	3. Service Type <input type="checkbox"/> Adult Signature <input type="checkbox"/> Priority Mail Express® <input type="checkbox"/> Adult Signature Restricted Delivery <input type="checkbox"/> Registered Mail™ <input type="checkbox"/> Certified Mail® <input type="checkbox"/> Registered Mail Restricted Delivery <input type="checkbox"/> Certified Mail Restricted Delivery <input type="checkbox"/> Return Receipt for Merchandise <input type="checkbox"/> Collect on Delivery <input type="checkbox"/> Signature Confirmation™ <input type="checkbox"/> Collect on Delivery Restricted Delivery <input type="checkbox"/> Signature Confirmation Restricted Delivery <input type="checkbox"/> Insured Mail <input type="checkbox"/> Signature Confirmation Restricted Delivery (over \$500) <input type="checkbox"/> Insured Mail Restricted Delivery (over \$500)	
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1. Article Addressed to: James Davis, Zoning Enforcement Officer Town of Manchester P.O. Box 191 Manchester, CT 06045	B. Received by (Printed Name) KIBOOT	C. Date of Delivery 6/8/18
2. Article Number (Transfer from service label) 7016 3010 0000 7829 1568	D. Is delivery address different from item 1? <input type="checkbox"/> Yes If YES, enter delivery address below: <input type="checkbox"/> No 191	
 9590 9402 3535 7305 4993 00	3. Service Type <input type="checkbox"/> Adult Signature <input type="checkbox"/> Priority Mail Express® <input type="checkbox"/> Adult Signature Restricted Delivery <input type="checkbox"/> Registered Mail™ <input type="checkbox"/> Certified Mail® <input type="checkbox"/> Registered Mail Restricted Delivery <input type="checkbox"/> Certified Mail Restricted Delivery <input type="checkbox"/> Return Receipt for Merchandise <input type="checkbox"/> Collect on Delivery <input type="checkbox"/> Signature Confirmation™ <input type="checkbox"/> Collect on Delivery Restricted Delivery <input type="checkbox"/> Signature Confirmation Restricted Delivery <input type="checkbox"/> Insured Mail <input type="checkbox"/> Signature Confirmation Restricted Delivery (over \$500) <input type="checkbox"/> Insured Mail Restricted Delivery (over \$500)	
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