



August 15, 2019

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

Regarding: Notice of Exempt Modification – adding (3) new antennas, swapping (3) antennas, swapping (3) tower-mounted amplifiers (“TMA”), and adding (9) TMAs.
Property Address: 72 Jerry Browne Road, Stonington CT, 06378 (the “Property”)
Applicant: AT&T Mobility (“AT&T”, Site # CT5226)

Dear Ms. Bachman:

AT&T currently maintains a wireless telecommunications facility on an existing 159-foot monopole at the above-referenced address, latitude 41.37546667°, longitude -71.953361°. Said monopole is owned by SBA Communications LLC and the underlying property owner is JRBV LLC.

AT&T desires to modify its existing telecommunications facility by adding (3) new antennas, swapping (3) antennas, swapping (3) tower-mounted amplifiers (“TMA”), and adding (9) TMAs. The centerline height of the existing antennas and ancillary tower-mounted equipment is and will remain at 127’ and 145’ 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 Honorable Robert Simmons, First selectman of the City of Stonington; Bill Lyman, as Chief of Zoning Administration with the City of Stonington; JRBV LLC, as property owner; and the tower owner, SBA Communications LLC.

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). Specifically:

1. The planned modification will not result in an increase in the height of the existing structure. The added and swapped antennas will be installed at the existing height of 127’ and 145’ feet on the 159’-foot monopole.
2. The proposed modifications will not involve any changes to AT&T’s ground-space footprint, and therefore 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 decibels or more, or to levels that exceed state and local criteria.

April 18, 2019

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4. The proposed modifications will not cause a change or alteration in the physical or environmental characteristics of the site.
5. The existing structure and its foundation can support AT&T's proposed modifications. Please see enclosed structural analysis completed by Tower Engineering Solutions., dated March 7, 2019, and stamped by Hamming You.

For the foregoing reasons, AT&T respectfully requests that the proposed installation be allowed within the exempt modifications under R.C.S.A. §16-50j-72 (b)(2).

Sincerely,

Scott Pike

Scott Pike
Site Acquisition Specialist
Empire Telecom USA, LLC
spike@empiretelecomm.com

Enclosures: Exhibit 1 – Field Card and GIS Map
Exhibit 2 – Construction Drawings
Exhibit 3 – Structural Analysis
Exhibit 4 – RF Emissions Analysis Report Evaluation

cc:

The Honorable Robert Simmons
First Selectman's Office
152 Elm Street
Stonington, CT 06378

Bill Lyman
Stonington Zoning Administrator
152 Elm Street
Stonington, CT 06378

SBA Communications LLC
Carla Shorter
8051 Congress Avenue
Boca Raton, FL 33487

JRBV, LLC
PO Box 10
Mystic, CT 06355



Town of Stonington, CT
Property Listing Report

Map Block Lot 164-2-3

Account 00846700

Property Information

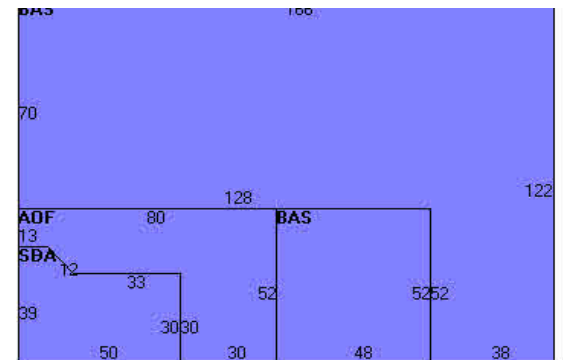
Property Location	72 JERRY BROWNE RD
Owner	JBRV LLC
Co-Owner	
Mailing Address	P O BOX 10 MYSTIC CT 06355
Land Use	3300 AUTO V S&S
Land Class	C
Survey Map #	NA
School District	

Fire District	Old Mystic
Census Tract	7054
Neighborhood	8000
Zoning Code	GC-60
Acreage	14.5
Utilities	
Lot Setting/Desc	Suburban
Trash Day	TH
Polling Place (District)	Deans Mill School 3

Photo



Sketch



Primary Construction Details

Year Built	1983
Stories	2
Building Style	Auto dealer
Building Use	Ind/Comm
Building Condition	Average
Floors	Concr-Finished
Total Rooms	0

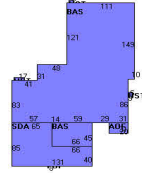
Bedrooms	0
Full Bathrooms	0
Half Bathrooms	0
Bath Style	NA
Kitchen Style	NA
Roof Style	Gable/Hip
Roof Cover	Metal/Tin

Exterior Walls	Pre-finish Metl
Interior Walls	Minim/Masonry
Heating Type	Forced Air-Duc
Heating Fuel	Gas
AC Type	None
Gross Bldg Area	20252
Total Living Area	20252

Photo



Sketch



Primary Construction Details

Year Built	1983	Kitchen Style	NA
Stories	1	Roof Style	Gable/Hip
Building Style	Auto dealer	Roof Cover	Metal/Tin
Building Use	Ind/Comm	Exterior Walls	Pre-finsh Metl
Building Condition	Average	Interior Walls	Minim/Masonry
Floors	Concr-Finished	Heating Type	Forced Air-Duc
Total Rooms	0	Heating Fuel	Gas
Bedrooms	0	AC Type	None
Bathrooms	0	Gross Bldg Area	46153
Bath Style	NA	Total Living Area	45967

Sub Areas

Subarea Type	Gross Area (sq ft)	Living Area (sq ft)
Total Area	46153	45967

Town of Stonington, Connecticut - Assessment Parcel Map

Parcel: 164-2-3 Address: 72 JERRY BROWNE RD



Approximate Scale:

1 inch = 200 feet

0 120 240 360 480 Feet

Revised To: October 2017

Map Produced: May 2018

Disclaimer: This map is for informational purposes only All information is subject to verification by any user. The Town of Stonington and its mapping contractors assume no legal responsibility for the information contained herein.



Tower Engineering Solutions

Phone (972) 483-0607, Fax (972) 975-9615
1320 Greenway Drive, Suite 600, Irving, Texas 75038

Post-Mod Structural Analysis Report

Existing 159 ft. Monopole

Customer Name: SBA Communications Corp

Customer Site Number: CT00799-S

Customer Site Name: Mystic

Carrier Name: AT&T (App#: 79158, V4)

Carrier Site ID / Name: CT5226 / Old Mystic

Site Location: 72 Jerry Brown Road

Mystic, Connecticut

New London County

Latitude: 41.375480

Longitude: -71.953369

Analysis Result:

Max Structural Usage: 85.8% [Pass]

Max Foundation Usage: 48% [Pass]

Report Prepared By : Stacey Hesselbein





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Latitude: 41.375480

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Analysis Result:

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Max Foundation Usage: 48% [Pass]

Report Prepared By : Stacey Hesselbein

Introduction

The purpose of this report is to summarize the analysis results on the 159 ft. Monopole to support the proposed antennas and transmission lines in addition to those currently installed. Any existing modification listed under Sources of Information was assumed completed and was included in this analysis.

The proposed modification by **TES** listed under Sources of Information was considered completed and was included in this analysis.

Sources of Information

Tower Drawings	Drawings by Summit Manufacturing, Job # 4252 Dated 12/10/1998 Concealment Drawings by Stealth, Job # FOUR-4C-100-40 Dated 03/17/2003
Foundation Drawing	Drawings by Summit Manufacturing, Job # 4252 Dated 12/10/1998
Geotechnical Report	Geotechnical Report by FHD, Project # 1424W51600 Dated 03/26/2014
Existing Modification	N/A
Proposed Modification	TES Job # 70368

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 $V_{ult} = 135$ mph (3-Sec. Gust)/ Nominal Design Wind Speed $V_{asd} = 105.0$ mph (3-Sec. Gust)
Basic Wind Speed with Ice:	50 mph (3-Sec. Gust) with 3/4" radial ice concurrent
Operational Wind Speed:	60 mph + 0" Radial ice
Standard/Codes:	ANSI/TIA/EIA 222-G / 2015 IBC / 2018 Connecticut State Building Code
Exposure Category:	C
Structure Class:	II
Topographic Category:	1
Crest Height:	0 ft.
Seismic Parameters:	$SS = 0.161$, $S1 = 0.058$

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
3	135.0	3	RFS APXV18-206516S - Panel	Concealed Inside 29" Canister*	(6) 1 5/8" (6) 7/8"	T-Mobile
4		6	Ericsson KRY 112 144/1			
-	126.0	3	KMW AM-X-CD-14-65-00T - Panel	Concealed Inside 30" Canister*	(12) 1 5/8"	AT&T
-		3	Powerwave LGP21401 - TMA			
-		3	Cci DTMAPB7819VG12A - TMA			

*All canisters were considered replaced with 37" canisters in this analysis

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

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

Items	Elevation (ft.)	Qty.	Antenna Descriptions	Mount Type & Qty.	Transmission Lines	Owner
1	147.0	6	Cci BPD7823VG12A TMA	Concealed Inside 37" Canister	(12) 7/8"	AT&T
2	145.0	3	Andrew SBNHH-1D65A Panel			
5	126.0	6	Cci BPD7823VG12A TMA		(12) 1 5/8"	
6		3	Andrew SBNHH-1D65A Panel			

See the attached coax layout for the line placement considered in the analysis.

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	Flange Connections
Max. Usage:	69.4%	72.2%	52.4%	85.8%
Pass/Fail	Pass	Pass	Pass	Pass

Foundations

	Moment (Kip-Ft)	Shear (Kips)
Original Design Reactions	1602.0	17.0
Analysis Reactions	1602.8	18.3
Factored Reactions*	2162.7	23.0
% of Design Reactions	74.1%	79.9%

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

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

Operational Condition (Rigidity):

Operational characteristics of the tower are found to be within the limits prescribed by ANSI/TIA/EIA 222-G for the installed antennas. The maximum twist/sway at the elevation of the proposed equipment is 1.6304 degrees under the operational wind speed as specified in the Analysis Criteria.

Conclusions

Based on the analysis results, the structure and its foundation will be adequate to safely support the existing and proposed equipment and meet the minimum requirements per the design ANSI/TIA/EIA 222-G standards under a basic wind speed of 105 mph no ice and 50 mph with 3/4" radial ice after the following proposed modification is successfully completed.

- Proposed modification design drawing by **TES** Job # 70368

Pre-Mod Installation Determination

We have also checked this tower to determine if the proposed AT&T equipment loading can be installed prior to the completion of the required modifications.

Since the proposed equipment will interfere the installation of the mods, the Carrier cannot install their proposed loading prior to the mods completion.

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 structural analysis was performance based upon the evidence available at the time of this report. All information provided by the client is considered to be accurate.
3. 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.
4. 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.
5. 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.
6. If a feasibility analysis was performed, final acceptance of changed conditions shall be based upon a rigorous structural analysis.

Usage Diagram - Max Ratio 69.38% at 120.0ft

Structure: CT00799-S-SBA

Code: EIA/TIA-222-G

5/30/2019

Site Name: Mystic

Exposure: C

Height: 159.25 (ft)

Gh: 1.1

Base Elev: 0.000 (ft)

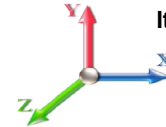
Page: 1



Dead Load Factor: 1.20

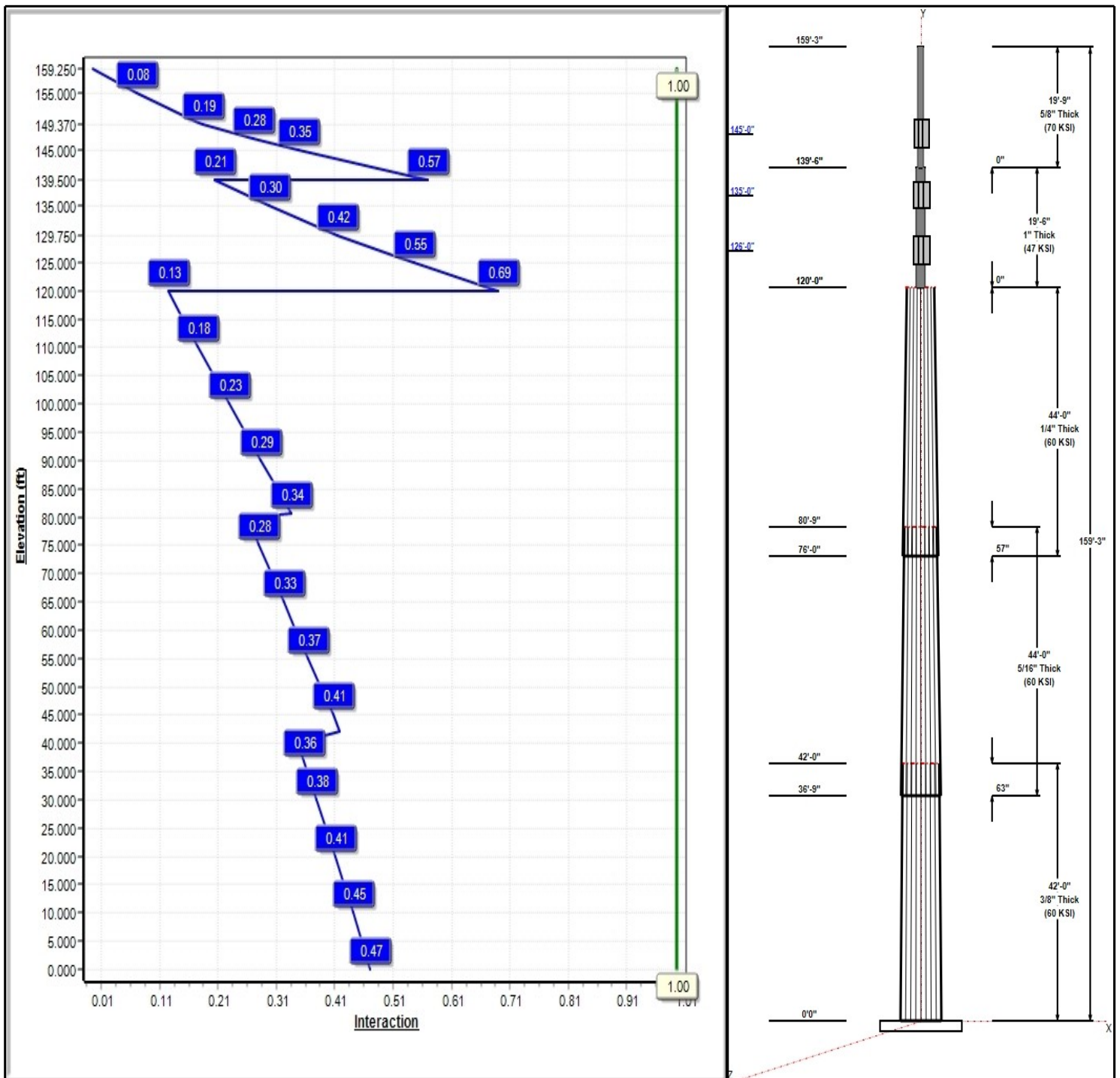
Wind Load Factor: 1.60

Load Case : 1.2D + 1.6W 105 mph Wind



Iterations: 28

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Structure: CT00799-S-SBA

Type: Custom
Site Name: Mystic
Height: 159.25 (ft)
Base Elev: 0.00 (ft)

Base Shape: 18 Sided
Taper: 0.00000

5/30/2019

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Shaft Properties

Seq	Length (ft)	Top (in)	Bottom (in)	Thick (in)	Joint Type	Taper	Grade (ksi)
1	42.00	40.58	46.88	0.375		0.15004	60
2	44.00	35.39	41.99	0.313	Slip	0.15004	60
3	44.00	30.00	36.60	0.250	Slip	0.15004	60
4	19.50	8.00	8.00	1.000	Butt	0.00000	47
5	19.75	5.00	5.00	0.625	Butt	0.00000	70

Discrete Appurtenances

Attach Elev (ft)	Force Elev (ft)	Qty	Description	Carrier
159.25	159.25	1	6' Lightning rod	AT&T
159.25	159.25	1	Flag	AT&T
159.25	159.25	1	37" Canister	AT&T
149.37	149.37	1	37" Canister	AT&T
147.00	147.00	6	BPD7823VG12A	AT&T
145.00	145.00	3	SBNHH-1D65A	AT&T
145.00	145.00	1	Flush Mount	AT&T
139.50	139.50	1	37" Canister	AT&T
135.00	135.00	3	APXV18-206516S	T-Mobile
135.00	135.00	6	KRY 112 144/1	T-Mobile
135.00	135.00	1	Flush Mount	T-Mobile
129.75	129.75	1	37" Canister	AT&T
126.00	126.00	3	SBNHH-1D65A	AT&T
126.00	126.00	6	BPD7823VG12A	AT&T
126.00	126.00	1	Flush Mount	AT&T
120.00	120.00	1	37" Canister	AT&T

Linear Appurtenances

Elev From (ft)	Elev To (ft)	Placement	Description	Carrier
0.00	145.00	Inside	7/8" Coax	AT&T
0.00	135.00	Inside	1 5/8" Coax	T-Mobile
0.00	135.00	Inside	7/8" Coax	T-Mobile
0.00	127.00	Inside	1 5/8" Coax	AT&T

Anchor Bolts

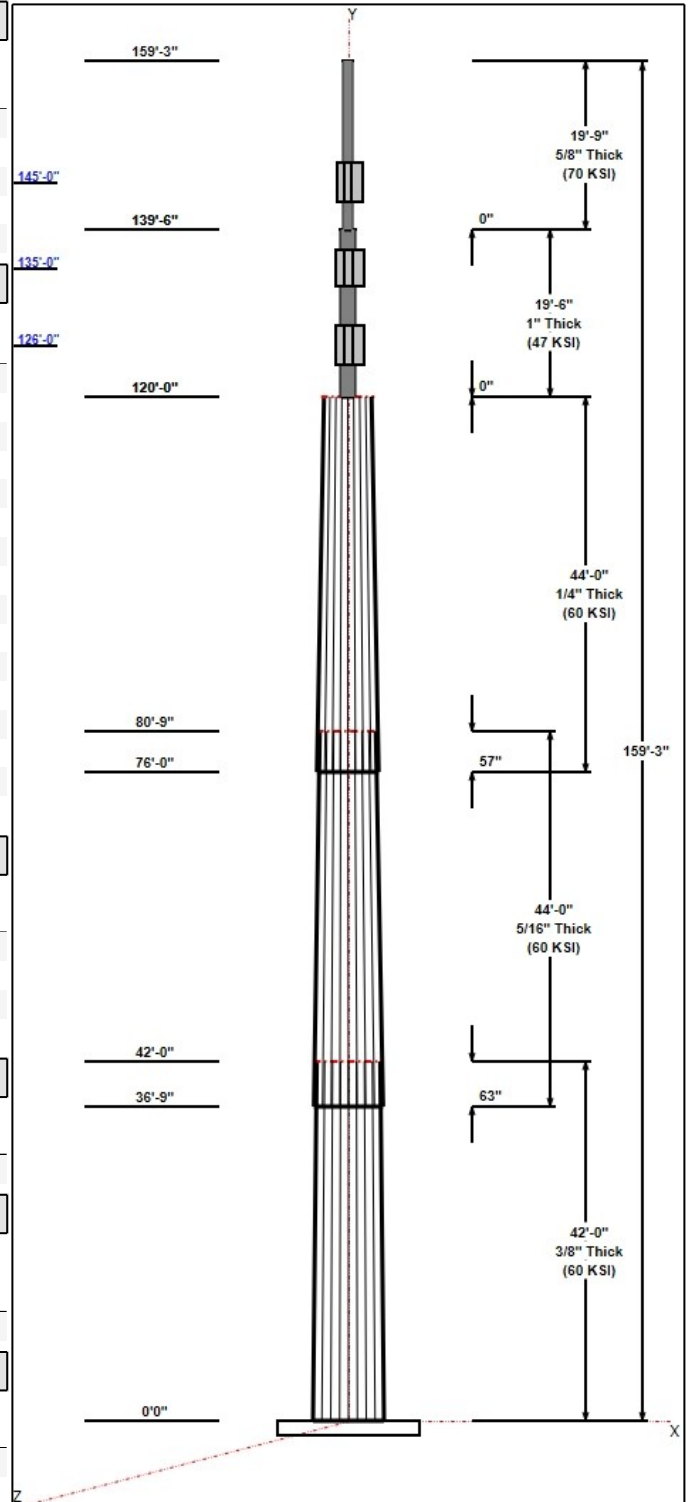
Qty	Specifications	Grade (ksi)	Arrangement
8	2.25" 18J	75.0	Cluster

Base Plate

Thickness (in)	Specifications (in)	Grade (ksi)	Geometry
2.7500	52.0	50.0	Clipped

Reactions

Load Case	Moment (FT-Kips)	Shear (Kips)	Axial (Kips)
1.2D + 1.6W 105 mph Wind	1602.9	18.3	29.4
0.9D + 1.6W 105 mph Wind	1590.8	18.3	22.1
1.2D + 1.0Di + 1.0Wi 50 mph Wind	448.7	5.1	41.0
1.2D + 1.0E	53.4	0.6	29.5
0.9D + 1.0E	53.0	0.6	22.1
1.0D + 1.0W 60 mph Wind	338.5	3.8	24.5

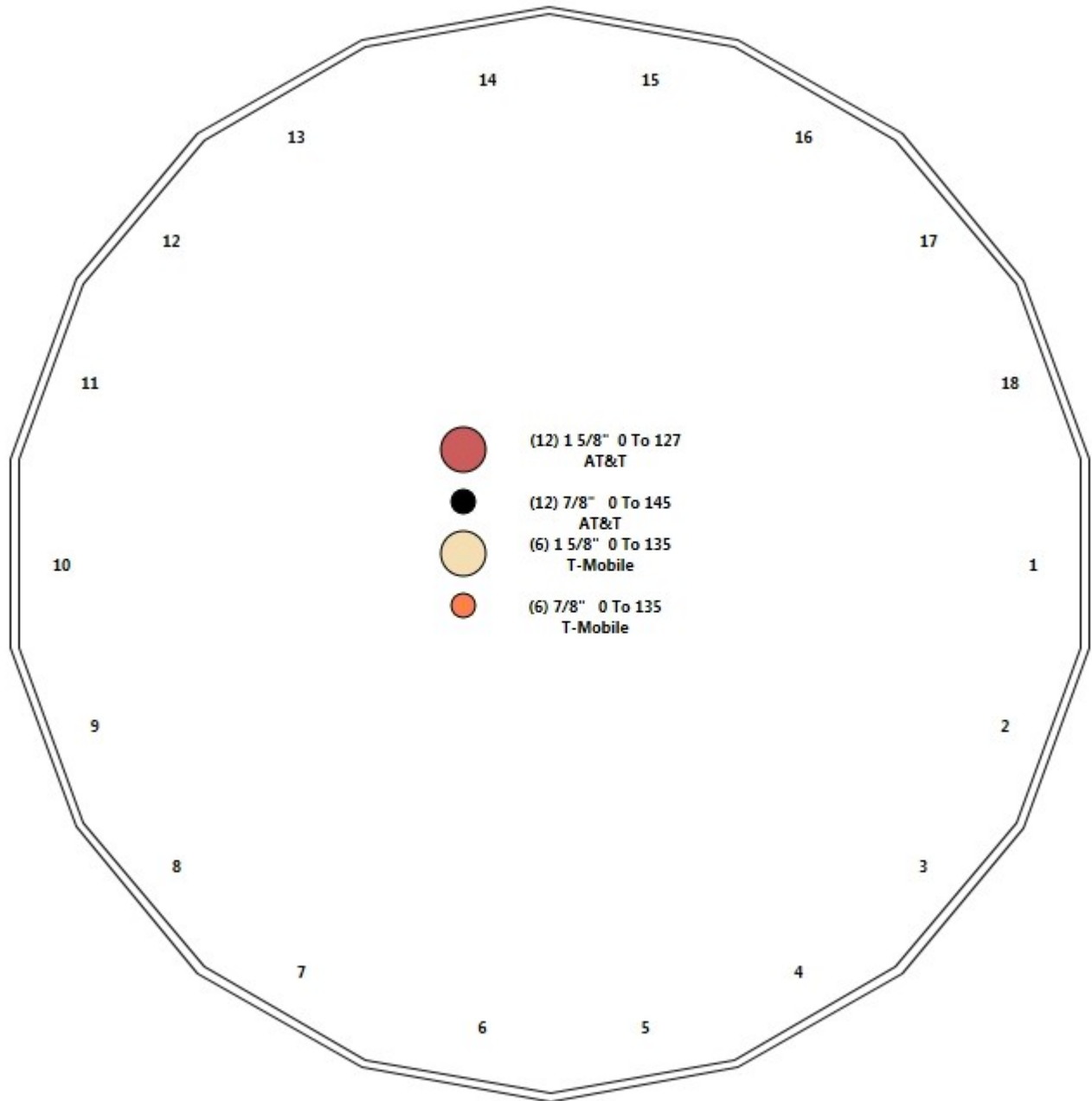


Structure: CT00799-S-SBA - Coax Line Placement

Type: Monopole
Site Name: Mystic
Height: 159.25 (ft)

5/30/2019

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Shaft Properties

Structure: CT00799-S-SBA	Code: EIA/TIA-222-G	5/30/2019
Site Name: Mystic	Exposure: C	
Height: 159.25 (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	42.000	0.3750	60		0.00	7,375
2	18	44.000	0.3125	60	Slip	63.00	5,699
3	18	44.000	0.2500	60	Slip	57.00	3,926
4	R	19.500	1.0000	47	Flange	0.00	1,459
5	R	19.750	0.6250	70	Flange	0.00	577
Total Shaft Weight:							19,037

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	46.88	0.00	55.35	15124.28	20.63	125.01	40.58	42.00	47.85	9771.45	17.67	108.2	0.150042
2	41.99	36.75	41.34	9072.56	22.28	134.37	35.39	80.75	34.79	5408.14	18.56	113.2	0.150042
3	36.60	76.00	28.84	4815.74	24.40	146.41	30.00	120.00	23.61	2639.64	19.75	120.0	0.150042
4	8.00	120.0	21.99	134.80	0.00	8.00	8.00	139.50	21.99	134.80	0.00	8.00	0.000000
5	5.00	139.5	8.59	20.57	0.00	8.00	5.00	159.25	8.59	20.57	0.00	8.00	0.000000

Load Summary

Structure: CT00799-S-SBA	Code: EIA/TIA-222-G	5/30/2019
Site Name: Mystic	Exposure: C	
Height: 159.25 (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	159.25	6' Lightning rod	1	6.50	0.38	1.00	43.02	1.474	1.00	0.00	0.00
2	159.25	Flag	1	0.00	7.27	1.00	0.00	7.781	1.00	0.00	0.00
3	159.25	37" Canister	1	150.00	7.60	1.00	160.53	8.134	1.00	0.00	0.00
4	149.37	37" Canister	1	150.00	15.19	1.00	160.47	16.250	1.00	0.00	0.00
5	147.00	BPD7823VG12A	6	19.20	0.00	0.00	44.67	0.000	0.00	0.00	0.00
6	145.00	SBNHH-1D65A	3	33.50	0.00	1.00	191.21	6.957	1.00	0.00	0.00
7	145.00	Flush Mount	1	150.00	0.00	1.00	275.23	0.000	1.00	0.00	0.00
8	139.50	37" Canister	1	150.00	14.69	1.00	160.40	15.708	1.00	0.00	0.00
9	135.00	APXV18-206516S	3	18.70	0.00	1.00	88.04	0.000	1.00	0.00	0.00
10	135.00	KRY 112 144/1	6	11.00	0.00	1.00	21.67	0.000	1.00	0.00	0.00
11	135.00	Flush Mount	1	150.00	0.00	1.00	274.34	0.000	1.00	0.00	0.00
12	129.75	37" Canister	1	150.00	14.14	1.00	160.32	15.113	1.00	0.00	0.00
13	126.00	SBNHH-1D65A	3	33.50	0.00	1.00	188.58	6.941	1.00	0.00	0.00
14	126.00	BPD7823VG12A	6	19.20	0.00	0.00	44.28	0.000	0.00	0.00	0.00
15	126.00	Flush Mount	1	150.00	0.00	1.00	273.48	0.000	1.00	0.00	0.00
16	120.00	37" Canister	1	150.00	7.05	1.00	160.24	7.531	1.00	0.00	0.00
Totals:			37	1,760.00			3,735.22				

Linear Appurtenances

Bottom Elev. (ft)	Top Elev. (ft)	Description	Exposed Width	Exposed
0.00	145.00	(12) 7/8" Coax	0.00	Inside
0.00	135.00	(6) 1 5/8" Coax	0.00	Inside
0.00	135.00	(6) 7/8" Coax	0.00	Inside
0.00	127.00	(12) 1 5/8" Coax	0.00	Inside

Shaft Section Properties

Structure: CT00799-S-SBA	Code: EIA/TIA-222-G	5/30/2019
Site Name: Mystic	Exposure: C	
Height: 159.25 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Increment Length: 5 (ft)

Elev (ft)	Description	Thick (in)	Dia (in)	Area (in^2)	Ix (in^4)	W/t Ratio	D/t Ratio	Fpy (ksi)	S (in^3)	Weight (lb)
0.00		0.3750	46.880	55.351	15124.3	20.63	125.01	72.1	635.4	0.0
5.00		0.3750	46.130	54.458	14404.1	20.28	123.01	72.4	615.0	934.1
10.00		0.3750	45.380	53.565	13707.1	19.93	121.01	72.8	594.9	918.9
15.00		0.3750	44.629	52.672	13033.0	19.57	119.01	73.2	575.2	903.7
20.00		0.3750	43.879	51.779	12381.4	19.22	117.01	73.6	555.8	888.6
25.00		0.3750	43.129	50.886	11751.8	18.87	115.01	73.9	536.7	873.4
30.00		0.3750	42.379	49.993	11144.0	18.52	113.01	74.3	517.9	858.2
35.00		0.3750	41.629	49.100	10557.5	18.16	111.01	74.7	499.5	843.0
36.75	Bot - Section 2	0.3750	41.366	48.788	10357.1	18.04	110.31	74.8	493.1	291.5
40.00		0.3750	40.878	48.207	9991.9	17.81	109.01	75.0	481.4	990.8
42.00	Top - Section 1	0.3125	41.203	40.557	8567.8	21.84	131.85	0.0	0.0	603.9
45.00		0.3125	40.753	40.111	8288.0	21.58	130.41	71.1	400.6	411.7
50.00		0.3125	40.003	39.367	7835.2	21.16	128.01	71.5	385.8	676.1
55.00		0.3125	39.253	38.622	7399.3	20.74	125.61	72.0	371.3	663.4
60.00		0.3125	38.502	37.878	6979.8	20.31	123.21	72.4	357.1	650.8
65.00		0.3125	37.752	37.134	6576.5	19.89	120.81	72.9	343.1	638.1
70.00		0.3125	37.002	36.390	6189.0	19.47	118.41	73.3	329.4	625.5
75.00		0.3125	36.252	35.646	5817.1	19.04	116.01	73.7	316.1	612.8
76.00	Bot - Section 3	0.3125	36.102	35.497	5744.5	18.96	115.53	73.8	313.4	121.0
80.00		0.3125	35.502	34.902	5460.4	18.62	113.61	74.2	302.9	868.5
80.75	Top - Section 2	0.2500	35.889	28.279	4538.0	23.90	143.56	0.0	0.0	161.2
85.00		0.2500	35.251	27.773	4298.8	23.45	141.01	69.1	240.2	405.3
90.00		0.2500	34.501	27.177	4028.2	22.92	138.00	69.7	230.0	467.5
95.00		0.2500	33.751	26.582	3769.3	22.39	135.00	70.2	220.0	457.3
100.00		0.2500	33.001	25.987	3521.7	21.87	132.00	70.8	210.2	447.2
105.00		0.2500	32.251	25.392	3285.2	21.34	129.00	71.3	200.6	437.1
110.00		0.2500	31.500	24.796	3059.5	20.81	126.00	71.9	191.3	426.9
115.00		0.2500	30.750	24.201	2844.4	20.28	123.00	72.4	182.2	416.8
120.00	Top - Section 3	0.2500	30.000	23.606	2639.6	19.75	120.00	73.0	173.3	406.7
120.00	Bot - Section 4	1.0000	8.000	21.991	134.8	4.94	30.00	47.0	33.7	
125.00		1.0000	8.000	21.991	134.8	0.00	8.00	47.0	33.7	374.2
126.00		1.0000	8.000	21.991	134.8	0.00	8.00	47.0	33.7	74.8
129.75		1.0000	8.000	21.991	134.8	0.00	8.00	47.0	33.7	280.6
130.00		1.0000	8.000	21.991	134.8	0.00	8.00	47.0	33.7	18.7
135.00		1.0000	8.000	21.991	134.8	0.00	8.00	47.0	33.7	374.2
139.50	Top - Section 4	1.0000	8.000	21.991	134.8	0.00	8.00	47.0	33.7	336.7
139.50	Bot - Section 5	0.6250	5.000	8.590	20.6	0.00	12.80	70.0	8.2	
140.00		0.6250	5.000	8.590	20.6	0.00	8.00	70.0	8.2	14.6
145.00		0.6250	5.000	8.590	20.6	0.00	8.00	70.0	8.2	146.2
147.00		0.6250	5.000	8.590	20.6	0.00	8.00	70.0	8.2	58.5
149.37		0.6250	5.000	8.590	20.6	0.00	8.00	70.0	8.2	69.3
150.00		0.6250	5.000	8.590	20.6	0.00	8.00	70.0	8.2	18.4
155.00		0.6250	5.000	8.590	20.6	0.00	8.00	70.0	8.2	146.2
159.25		0.6250	5.000	8.590	20.6	0.00	8.00	70.0	8.2	124.2

19036.6

Wind Loading - Shaft

Structure: CT00799-S-SBA

Code: EIA/TIA-222-G

5/30/2019

Site Name: Mystic

Exposure: C

Height: 159.25 (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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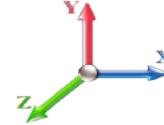


Load Case: 1.2D + 1.6W 105 mph Wind

Iterations 28

Dead Load Factor 1.20

Wind Load Factor 1.60



Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.85	22.791	25.07	384.02	0.650	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.85	22.791	25.07	377.87	0.650	0.000	5.00	19.676	12.79	513.0	0.0	1121.0
10.00		1.00	0.85	22.791	25.07	371.73	0.650	0.000	5.00	19.359	12.58	504.7	0.0	1102.7
15.00		1.00	0.85	22.791	25.07	365.58	0.650	0.000	5.00	19.041	12.38	496.5	0.0	1084.5
20.00		1.00	0.90	24.182	26.60	370.25	0.650	0.000	5.00	18.724	12.17	518.0	0.0	1066.3
25.00		1.00	0.95	25.345	27.88	372.57	0.650	0.000	5.00	18.406	11.96	533.7	0.0	1048.0
30.00		1.00	0.98	26.337	28.97	373.18	0.650	0.000	5.00	18.089	11.76	545.0	0.0	1029.8
35.00		1.00	1.01	27.206	29.93	372.57	0.650	0.000	5.00	17.772	11.55	553.1	0.0	1011.6
36.75	Bot - Section 2	1.00	1.03	27.487	30.24	372.13	0.650	0.000	1.75	6.145	3.99	193.2	0.0	349.7
40.00		1.00	1.04	27.981	30.78	371.03	0.650	0.000	3.25	11.481	7.46	367.5	0.0	1189.0
42.00	Top - Section 1	1.00	1.05	28.270	31.10	370.21	0.650	0.000	2.00	6.999	4.55	226.3	0.0	724.7
45.00		1.00	1.07	28.684	31.55	374.51	0.650	0.000	3.00	10.403	6.76	341.4	0.0	494.1
50.00		1.00	1.09	29.327	32.26	371.72	0.650	0.000	5.00	17.084	11.10	573.2	0.0	811.3
55.00		1.00	1.12	29.922	32.91	368.42	0.650	0.000	5.00	16.766	10.90	573.9	0.0	796.1
60.00		1.00	1.14	30.475	33.52	364.71	0.650	0.000	5.00	16.449	10.69	573.5	0.0	780.9
65.00		1.00	1.16	30.993	34.09	360.63	0.650	0.000	5.00	16.131	10.49	572.0	0.0	765.8
70.00		1.00	1.17	31.480	34.63	356.23	0.650	0.000	5.00	15.814	10.28	569.5	0.0	750.6
75.00		1.00	1.19	31.941	35.13	351.55	0.650	0.000	5.00	15.497	10.07	566.2	0.0	735.4
76.00	Bot - Section 3	1.00	1.19	32.030	35.23	350.58	0.650	0.000	1.00	3.061	1.99	112.2	0.0	145.3
80.00		1.00	1.21	32.377	35.62	346.62	0.650	0.000	4.00	12.287	7.99	455.1	0.0	1042.2
80.75	Top - Section 2	1.00	1.21	32.441	35.69	345.86	0.650	0.000	0.75	2.281	1.48	84.7	0.0	193.5
85.00		1.00	1.22	32.793	36.07	346.38	0.650	0.000	4.25	12.792	8.31	479.9	0.0	486.4
90.00		1.00	1.24	33.190	36.51	341.06	0.650	0.000	5.00	14.756	9.59	560.3	0.0	560.9
95.00		1.00	1.25	33.570	36.93	335.54	0.650	0.000	5.00	14.439	9.39	554.5	0.0	548.8
100.00		1.00	1.27	33.935	37.33	329.86	0.650	0.000	5.00	14.121	9.18	548.2	0.0	536.6
105.00		1.00	1.28	34.285	37.71	324.02	0.650	0.000	5.00	13.804	8.97	541.4	0.0	524.5
110.00		1.00	1.29	34.623	38.08	318.04	0.650	0.000	5.00	13.486	8.77	534.2	0.0	512.3
115.00		1.00	1.30	34.948	38.44	311.92	0.650	0.000	5.00	13.169	8.56	526.5	0.0	500.2
120.00	Top - Section 3	1.00	1.32	35.263	38.79	305.68	0.650	0.000	5.00	12.852	8.35	518.4	0.0	488.0
125.00		1.00	1.33	35.567	39.12	80.62	0.600	0.000	5.00	3.333	2.00	125.2	0.0	449.0
126.00	Appurtenance(s)	1.00	1.33	35.627	39.19	80.69	0.600	0.000	1.00	0.667	0.40	25.1	0.0	89.8
129.75	Appurtenance(s)	1.00	1.34	35.847	39.43	80.94	0.600	0.000	3.75	2.500	1.50	94.6	0.0	336.7
130.00		1.00	1.34	35.862	39.45	80.95	0.600	0.000	0.25	0.167	0.10	6.3	0.0	22.4
135.00	Appurtenance(s)	1.00	1.35	36.148	39.76	81.28	0.600	0.000	5.00	3.333	2.00	127.2	0.0	449.0
139.50	Top - Section 4	1.00	1.36	36.398	40.04	81.56	0.600	0.000	4.50	3.000	1.80	115.3	0.0	404.1
140.00		1.00	1.36	36.426	40.07	50.99	0.753	0.000	0.50	0.208	0.16	10.1	0.0	17.5
145.00	Appurtenance(s)	1.00	1.37	36.696	40.37	51.18	0.750	0.000	5.00	2.083	1.56	100.9	0.0	175.4
147.00	Appurtenance(s)	1.00	1.37	36.802	40.48	51.26	0.749	0.000	2.00	0.833	0.62	40.4	0.0	70.2
149.37	Appurtenance(s)	1.00	1.38	36.926	40.62	51.34	0.748	0.000	2.37	0.988	0.74	48.0	0.0	83.1
150.00		1.00	1.38	36.959	40.65	51.36	0.748	0.000	0.63	0.262	0.20	12.8	0.0	22.1
155.00		1.00	1.39	37.215	40.94	51.54	0.745	0.000	5.00	2.083	1.55	101.7	0.0	175.4
159.25	Appurtenance(s)	1.00	1.40	37.427	41.17	51.69	0.743	0.000	4.25	1.771	1.32	86.7	0.0	149.1
Totals:									159.25			14,030.3		22,843.9

Discrete Appurtenance Forces

Structure: CT00799-S-SBA

Code: EIA/TIA-222-G

5/30/2019

Site Name: Mystic

Exposure: C

Height: 159.25 (ft)

Crest Height: 0.00

Base Elev: 0.000 (ft)

Site Class: D - Stiff Soil

Gh: 1.1

Topography: 1

Struct Class: II

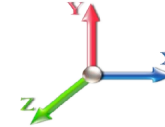
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Load Case: 1.2D + 1.6W 105 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60



Iterations 28

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	159.25	Flag	1	37.427	41.170	1.00	1.00	7.27	0.00	0.000	0.000	478.89	0.00	0.00
2	159.25	6' Lightning rod	1	37.427	41.170	1.00	1.00	0.38	7.80	0.000	0.000	25.03	0.00	0.00
3	159.25	37" Canister	1	37.427	41.170	1.00	1.00	7.60	180.00	0.000	0.000	500.63	0.00	0.00
4	149.37	37" Canister	1	36.926	40.619	1.00	1.00	15.19	180.00	0.000	0.000	987.19	0.00	0.00
5	147.00	BPD7823VG12A	6	36.802	40.482	0.00	1.00	0.00	138.24	0.000	0.000	0.00	0.00	0.00
6	145.00	Flush Mount	1	36.696	40.365	1.00	1.00	0.00	180.00	0.000	0.000	0.00	0.00	0.00
7	145.00	SBNHH-1D65A	3	36.696	40.365	1.00	1.00	0.00	120.60	0.000	0.000	0.00	0.00	0.00
8	139.50	37" Canister	1	36.398	40.038	1.00	1.00	14.69	180.00	0.000	0.000	941.06	0.00	0.00
9	135.00	Flush Mount	1	36.148	39.763	1.00	1.00	0.00	180.00	0.000	0.000	0.00	0.00	0.00
10	135.00	KRY 112 144/1	6	36.148	39.763	1.00	1.00	0.00	79.20	0.000	0.000	0.00	0.00	0.00
11	135.00	APXV18-206516S	3	36.148	39.763	1.00	1.00	0.00	67.32	0.000	0.000	0.00	0.00	0.00
12	129.75	37" Canister	1	35.847	39.432	1.00	1.00	14.14	180.00	0.000	0.000	892.11	0.00	0.00
13	126.00	Flush Mount	1	35.627	39.189	1.00	1.00	0.00	180.00	0.000	0.000	0.00	0.00	0.00
14	126.00	BPD7823VG12A	6	35.627	39.189	0.00	1.00	0.00	138.24	0.000	0.000	0.00	0.00	0.00
15	126.00	SBNHH-1D65A	3	35.627	39.189	1.00	1.00	0.00	120.60	0.000	0.000	0.00	0.00	0.00
16	120.00	37" Canister	1	35.263	38.789	1.00	1.00	7.05	180.00	0.000	0.000	437.54	0.00	0.00
Totals:									2,112.00			4,262.45		

Total Applied Force Summary

Structure: CT00799-S-SBA	Code: EIA/TIA-222-G	5/30/2019
Site Name: Mystic	Exposure: C	
Height: 159.25 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II

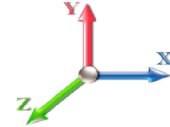


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Load Case: 1.2D + 1.6W 105 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60



Iterations 28

Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00		0.00	0.00	0.00	0.00
5.00		513.01	1289.44	0.00	0.00
10.00		504.73	1271.21	0.00	0.00
15.00		496.46	1252.98	0.00	0.00
20.00		517.98	1234.75	0.00	0.00
25.00		533.69	1216.52	0.00	0.00
30.00		545.01	1198.29	0.00	0.00
35.00		553.11	1180.06	0.00	0.00
36.75		193.23	408.71	0.00	0.00
40.00		367.51	1298.50	0.00	0.00
42.00		226.34	792.06	0.00	0.00
45.00		341.35	595.18	0.00	0.00
50.00		573.16	979.81	0.00	0.00
55.00		573.92	964.62	0.00	0.00
60.00		573.46	949.43	0.00	0.00
65.00		571.95	934.23	0.00	0.00
70.00		569.51	919.04	0.00	0.00
75.00		566.25	903.85	0.00	0.00
76.00		112.17	178.95	0.00	0.00
80.00		455.12	1176.94	0.00	0.00
80.75		84.66	218.73	0.00	0.00
85.00		479.91	629.57	0.00	0.00
90.00		560.28	729.43	0.00	0.00
95.00		554.51	717.27	0.00	0.00
100.00		548.20	705.12	0.00	0.00
105.00		541.41	692.97	0.00	0.00
110.00		534.17	680.81	0.00	0.00
115.00		526.50	668.66	0.00	0.00
120.00	(1) attachments	955.98	836.51	0.00	0.00
125.00		125.20	617.47	0.00	0.00
126.00	(10) attachments	25.08	562.33	0.00	0.00
129.75	(1) attachments	986.75	601.92	0.00	0.00
130.00		6.31	27.13	0.00	0.00
135.00	(10) attachments	127.24	869.11	0.00	0.00
139.50	(1) attachments	1056.37	617.78	0.00	0.00
140.00		10.06	21.28	0.00	0.00
145.00	(4) attachments	100.95	513.43	0.00	0.00
147.00	(6) attachments	40.44	208.39	0.00	0.00
149.37	(1) attachments	1035.19	263.13	0.00	0.00
150.00		12.77	22.10	0.00	0.00
155.00		101.66	175.39	0.00	0.00
159.25	(3) attachments	1091.21	336.88	0.00	0.00
Totals:		18,292.79	29,459.96	0.00	0.00

Calculated Forces

Structure: CT00799-S-SBA

Code: EIA/TIA-222-G

5/30/2019

Site Name: Mystic

Exposure: C

Height: 159.25 (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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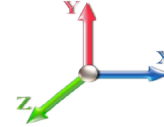


Load Case: 1.2D + 1.6W 105 mph Wind

Iterations 28

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	-29.44	-18.33	0.00	-1602.8	0.00	1602.86	3590.63	1795.31	6859.94	3435.07	0.00	0.000	0.000	0.475
5.00	-28.10	-17.89	0.00	-1511.2	0.00	1511.21	3550.74	1775.37	6673.42	3341.67	0.08	-0.146	0.000	0.460
10.00	-26.79	-17.45	0.00	-1421.7	0.00	1421.77	3510.26	1755.13	6488.29	3248.97	0.31	-0.291	0.000	0.445
15.00	-25.50	-17.00	0.00	-1334.5	0.00	1334.55	3469.19	1734.59	6304.60	3156.98	0.69	-0.434	0.000	0.430
20.00	-24.23	-16.53	0.00	-1249.5	0.00	1249.53	3427.52	1713.76	6122.40	3065.75	1.22	-0.575	0.000	0.415
25.00	-22.98	-16.04	0.00	-1166.8	0.00	1166.86	3385.27	1692.63	5941.76	2975.29	1.90	-0.714	0.000	0.399
30.00	-21.75	-15.53	0.00	-1086.6	0.00	1086.65	3342.42	1671.21	5762.72	2885.64	2.72	-0.851	0.000	0.383
35.00	-20.56	-14.99	0.00	-1008.9	0.00	1008.99	3298.98	1649.49	5585.34	2796.82	3.68	-0.984	0.000	0.367
36.75	-20.13	-14.82	0.00	-982.75	0.00	982.75	3283.64	1641.82	5523.66	2765.94	4.05	-1.031	0.000	0.362
40.00	-18.82	-14.45	0.00	-934.60	0.00	934.60	3254.95	1627.48	5409.68	2708.86	4.79	-1.117	0.000	0.351
42.00	-18.02	-14.22	0.00	-905.71	0.00	905.71	2585.06	1292.53	4344.38	2175.42	5.27	-1.169	0.000	0.423
45.00	-17.41	-13.90	0.00	-863.04	0.00	863.04	2566.17	1283.08	4264.80	2135.57	6.03	-1.246	0.000	0.411
50.00	-16.41	-13.35	0.00	-793.52	0.00	793.52	2534.21	1267.10	4132.95	2069.55	7.41	-1.389	0.000	0.390
55.00	-15.43	-12.79	0.00	-726.77	0.00	726.77	2501.66	1250.83	4002.14	2004.05	8.94	-1.527	0.000	0.369
60.00	-14.47	-12.22	0.00	-662.84	0.00	662.84	2468.51	1234.26	3872.43	1939.09	10.61	-1.660	0.000	0.348
65.00	-13.52	-11.65	0.00	-601.74	0.00	601.74	2434.78	1217.39	3743.87	1874.72	12.42	-1.789	0.000	0.327
70.00	-12.60	-11.08	0.00	-543.48	0.00	543.48	2400.45	1200.23	3616.52	1810.95	14.36	-1.913	0.000	0.305
75.00	-11.70	-10.50	0.00	-488.09	0.00	488.09	2365.53	1182.77	3490.42	1747.80	16.42	-2.031	0.000	0.284
76.00	-11.52	-10.39	0.00	-477.60	0.00	477.60	2358.48	1179.24	3465.36	1735.25	16.85	-2.055	0.000	0.280
80.00	-10.35	-9.90	0.00	-436.04	0.00	436.04	2330.02	1165.01	3365.64	1685.32	18.61	-2.146	0.000	0.263
80.75	-10.13	-9.82	0.00	-428.62	0.00	428.62	1747.65	873.83	2561.44	1282.63	18.95	-2.162	0.000	0.340
85.00	-9.50	-9.33	0.00	-386.89	0.00	386.89	1728.11	864.05	2487.16	1245.43	20.92	-2.254	0.000	0.316
90.00	-8.77	-8.76	0.00	-340.24	0.00	340.24	1704.57	852.28	2400.33	1201.95	23.34	-2.374	0.000	0.288
95.00	-8.07	-8.19	0.00	-296.44	0.00	296.44	1680.44	840.22	2314.14	1158.79	25.89	-2.486	0.000	0.261
100.00	-7.37	-7.62	0.00	-255.49	0.00	255.49	1655.72	827.86	2228.66	1115.99	28.55	-2.591	0.000	0.233
105.00	-6.69	-7.06	0.00	-217.37	0.00	217.37	1630.40	815.20	2143.93	1073.56	31.31	-2.686	0.000	0.207
110.00	-6.03	-6.50	0.00	-182.06	0.00	182.06	1604.50	802.25	2060.02	1031.54	34.17	-2.773	0.000	0.180
115.00	-5.38	-5.95	0.00	-149.53	0.00	149.53	1578.00	789.00	1976.98	989.96	37.12	-2.850	0.000	0.155
120.00	-4.59	-4.96	0.00	-119.77	0.00	119.77	1550.91	775.46	1894.86	948.84	40.14	-2.917	0.000	0.129
120.00	-4.59	-4.96	0.00	-119.77	0.00	119.77	930.23	465.11	237.26	173.90	40.14	-2.917	0.000	0.694
125.00	-3.97	-4.81	0.00	-94.96	0.00	94.96	930.23	465.11	237.26	173.90	43.22	-2.975	0.000	0.550
126.00	-3.37	-4.78	0.00	-90.15	0.00	90.15	930.23	465.11	237.26	173.90	43.87	-3.170	0.000	0.522
129.75	-2.81	-3.78	0.00	-72.21	0.00	72.21	930.23	465.11	237.26	173.90	46.62	-3.813	0.000	0.418
130.00	-2.76	-3.79	0.00	-71.27	0.00	71.27	930.23	465.11	237.26	173.90	46.82	-3.851	0.000	0.413
135.00	-1.87	-3.61	0.00	-52.33	0.00	52.33	930.23	465.11	237.26	173.90	51.21	-4.503	0.000	0.303
139.50	-1.33	-2.52	0.00	-36.07	0.00	36.07	930.23	465.11	237.26	173.90	55.65	-4.922	0.000	0.209
139.50	-1.33	-2.52	0.00	-36.07	0.00	36.07	541.19	270.59	86.27	63.23	55.65	-4.922	0.000	0.573
140.00	-1.26	-2.53	0.00	-34.81	0.00	34.81	541.19	270.59	86.27	63.23	56.17	-4.960	0.000	0.553
145.00	-0.71	-2.39	0.00	-22.17	0.00	22.17	541.19	270.59	86.27	63.23	62.46	-6.930	0.000	0.352
147.00	-0.49	-2.33	0.00	-17.39	0.00	17.39	541.19	270.59	86.27	63.23	65.48	-7.477	0.000	0.276
149.37	-0.36	-1.27	0.00	-11.87	0.00	11.87	541.19	270.59	86.27	63.23	69.30	-7.957	0.000	0.188
150.00	-0.33	-1.25	0.00	-11.07	0.00	11.07	541.19	270.59	86.27	63.23	70.36	-8.057	0.000	0.176
155.00	-0.17	-1.13	0.00	-4.80	0.00	4.80	541.19	270.59	86.27	63.23	79.09	-8.606	0.000	0.076
159.25	0.00	-1.09	0.00	0.00	0.00	0.00	541.19	270.59	86.27	63.23	86.80	-8.747	0.000	0.000

Wind Loading - Shaft

Structure: CT00799-S-SBA

Code: EIA/TIA-222-G

5/30/2019

Site Name: Mystic

Exposure: C

Height: 159.25 (ft)

Crest Height: 0.00

Base Elev: 0.000 (ft)

Site Class: D - Stiff Soil

Gh: 1.1

Topography: 1

Struct Class: II

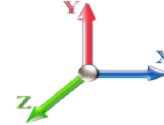
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Load Case: 0.9D + 1.6W 105 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



Iterations 28

Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.85	22.791	25.07	384.02	0.650	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.85	22.791	25.07	377.87	0.650	0.000	5.00	19.676	12.79	513.0	0.0	840.7
10.00		1.00	0.85	22.791	25.07	371.73	0.650	0.000	5.00	19.359	12.58	504.7	0.0	827.0
15.00		1.00	0.85	22.791	25.07	365.58	0.650	0.000	5.00	19.041	12.38	496.5	0.0	813.4
20.00		1.00	0.90	24.182	26.60	370.25	0.650	0.000	5.00	18.724	12.17	518.0	0.0	799.7
25.00		1.00	0.95	25.345	27.88	372.57	0.650	0.000	5.00	18.406	11.96	533.7	0.0	786.0
30.00		1.00	0.98	26.337	28.97	373.18	0.650	0.000	5.00	18.089	11.76	545.0	0.0	772.4
35.00		1.00	1.01	27.206	29.93	372.57	0.650	0.000	5.00	17.772	11.55	553.1	0.0	758.7
36.75	Bot - Section 2	1.00	1.03	27.487	30.24	372.13	0.650	0.000	1.75	6.145	3.99	193.2	0.0	262.3
40.00		1.00	1.04	27.981	30.78	371.03	0.650	0.000	3.25	11.481	7.46	367.5	0.0	891.7
42.00	Top - Section 1	1.00	1.05	28.270	31.10	370.21	0.650	0.000	2.00	6.999	4.55	226.3	0.0	543.5
45.00		1.00	1.07	28.684	31.55	374.51	0.650	0.000	3.00	10.403	6.76	341.4	0.0	370.6
50.00		1.00	1.09	29.327	32.26	371.72	0.650	0.000	5.00	17.084	11.10	573.2	0.0	608.5
55.00		1.00	1.12	29.922	32.91	368.42	0.650	0.000	5.00	16.766	10.90	573.9	0.0	597.1
60.00		1.00	1.14	30.475	33.52	364.71	0.650	0.000	5.00	16.449	10.69	573.5	0.0	585.7
65.00		1.00	1.16	30.993	34.09	360.63	0.650	0.000	5.00	16.131	10.49	572.0	0.0	574.3
70.00		1.00	1.17	31.480	34.63	356.23	0.650	0.000	5.00	15.814	10.28	569.5	0.0	562.9
75.00		1.00	1.19	31.941	35.13	351.55	0.650	0.000	5.00	15.497	10.07	566.2	0.0	551.5
76.00	Bot - Section 3	1.00	1.19	32.030	35.23	350.58	0.650	0.000	1.00	3.061	1.99	112.2	0.0	108.9
80.00		1.00	1.21	32.377	35.62	346.62	0.650	0.000	4.00	12.287	7.99	455.1	0.0	781.6
80.75	Top - Section 2	1.00	1.21	32.441	35.69	345.86	0.650	0.000	0.75	2.281	1.48	84.7	0.0	145.1
85.00		1.00	1.22	32.793	36.07	346.38	0.650	0.000	4.25	12.792	8.31	479.9	0.0	364.8
90.00		1.00	1.24	33.190	36.51	341.06	0.650	0.000	5.00	14.756	9.59	560.3	0.0	420.7
95.00		1.00	1.25	33.570	36.93	335.54	0.650	0.000	5.00	14.439	9.39	554.5	0.0	411.6
100.00		1.00	1.27	33.935	37.33	329.86	0.650	0.000	5.00	14.121	9.18	548.2	0.0	402.5
105.00		1.00	1.28	34.285	37.71	324.02	0.650	0.000	5.00	13.804	8.97	541.4	0.0	393.4
110.00		1.00	1.29	34.623	38.08	318.04	0.650	0.000	5.00	13.486	8.77	534.2	0.0	384.3
115.00		1.00	1.30	34.948	38.44	311.92	0.650	0.000	5.00	13.169	8.56	526.5	0.0	375.1
120.00	Top - Section 3	1.00	1.32	35.263	38.79	305.68	0.650	0.000	5.00	12.852	8.35	518.4	0.0	366.0
125.00		1.00	1.33	35.567	39.12	80.62	0.600	0.000	5.00	3.333	2.00	125.2	0.0	336.7
126.00	Appurtenance(s)	1.00	1.33	35.627	39.19	80.69	0.600	0.000	1.00	0.667	0.40	25.1	0.0	67.3
129.75	Appurtenance(s)	1.00	1.34	35.847	39.43	80.94	0.600	0.000	3.75	2.500	1.50	94.6	0.0	252.6
130.00		1.00	1.34	35.862	39.45	80.95	0.600	0.000	0.25	0.167	0.10	6.3	0.0	16.8
135.00	Appurtenance(s)	1.00	1.35	36.148	39.76	81.28	0.600	0.000	5.00	3.333	2.00	127.2	0.0	336.7
139.50	Top - Section 4	1.00	1.36	36.398	40.04	81.56	0.600	0.000	4.50	3.000	1.80	115.3	0.0	303.1
140.00		1.00	1.36	36.426	40.07	50.99	0.753	0.000	0.50	0.208	0.16	10.1	0.0	13.2
145.00	Appurtenance(s)	1.00	1.37	36.696	40.37	51.18	0.750	0.000	5.00	2.083	1.56	100.9	0.0	131.5
147.00	Appurtenance(s)	1.00	1.37	36.802	40.48	51.26	0.749	0.000	2.00	0.833	0.62	40.4	0.0	52.6
149.37	Appurtenance(s)	1.00	1.38	36.926	40.62	51.34	0.748	0.000	2.37	0.988	0.74	48.0	0.0	62.3
150.00		1.00	1.38	36.959	40.65	51.36	0.748	0.000	0.63	0.262	0.20	12.8	0.0	16.6
155.00		1.00	1.39	37.215	40.94	51.54	0.745	0.000	5.00	2.083	1.55	101.7	0.0	131.5
159.25	Appurtenance(s)	1.00	1.40	37.427	41.17	51.69	0.743	0.000	4.25	1.771	1.32	86.7	0.0	111.8
Totals:									159.25			14,030.3		17,132.9

Discrete Appurtenance Forces

Structure: CT00799-S-SBA

Code: EIA/TIA-222-G

5/30/2019

Site Name: Mystic

Exposure: C

Height: 159.25 (ft)

Crest Height: 0.00

Base Elev: 0.000 (ft)

Site Class: D - Stiff Soil

Gh: 1.1

Topography: 1

Struct Class: II

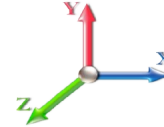
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Load Case: 0.9D + 1.6W 105 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



Iterations 28

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	159.25	Flag	1	37.427	41.170	1.00	1.00	7.27	0.00	0.000	0.000	478.89	0.00	0.00
2	159.25	6' Lightning rod	1	37.427	41.170	1.00	1.00	0.38	5.85	0.000	0.000	25.03	0.00	0.00
3	159.25	37" Canister	1	37.427	41.170	1.00	1.00	7.60	135.00	0.000	0.000	500.63	0.00	0.00
4	149.37	37" Canister	1	36.926	40.619	1.00	1.00	15.19	135.00	0.000	0.000	987.19	0.00	0.00
5	147.00	BPD7823VG12A	6	36.802	40.482	0.00	1.00	0.00	103.68	0.000	0.000	0.00	0.00	0.00
6	145.00	Flush Mount	1	36.696	40.365	1.00	1.00	0.00	135.00	0.000	0.000	0.00	0.00	0.00
7	145.00	SBNHH-1D65A	3	36.696	40.365	1.00	1.00	0.00	90.45	0.000	0.000	0.00	0.00	0.00
8	139.50	37" Canister	1	36.398	40.038	1.00	1.00	14.69	135.00	0.000	0.000	941.06	0.00	0.00
9	135.00	Flush Mount	1	36.148	39.763	1.00	1.00	0.00	135.00	0.000	0.000	0.00	0.00	0.00
10	135.00	KRY 112 144/1	6	36.148	39.763	1.00	1.00	0.00	59.40	0.000	0.000	0.00	0.00	0.00
11	135.00	APXV18-206516S	3	36.148	39.763	1.00	1.00	0.00	50.49	0.000	0.000	0.00	0.00	0.00
12	129.75	37" Canister	1	35.847	39.432	1.00	1.00	14.14	135.00	0.000	0.000	892.11	0.00	0.00
13	126.00	Flush Mount	1	35.627	39.189	1.00	1.00	0.00	135.00	0.000	0.000	0.00	0.00	0.00
14	126.00	BPD7823VG12A	6	35.627	39.189	0.00	1.00	0.00	103.68	0.000	0.000	0.00	0.00	0.00
15	126.00	SBNHH-1D65A	3	35.627	39.189	1.00	1.00	0.00	90.45	0.000	0.000	0.00	0.00	0.00
16	120.00	37" Canister	1	35.263	38.789	1.00	1.00	7.05	135.00	0.000	0.000	437.54	0.00	0.00
Totals:									1,584.00			4,262.45		

Total Applied Force Summary

Structure: CT00799-S-SBA	Code: EIA/TIA-222-G	5/30/2019
Site Name: Mystic	Exposure: C	
Height: 159.25 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II

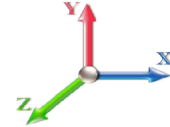


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Load Case: 0.9D + 1.6W 105 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



Iterations 28

Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00		0.00	0.00	0.00	0.00
5.00		513.01	967.08	0.00	0.00
10.00		504.73	953.41	0.00	0.00
15.00		496.46	939.73	0.00	0.00
20.00		517.98	926.06	0.00	0.00
25.00		533.69	912.39	0.00	0.00
30.00		545.01	898.72	0.00	0.00
35.00		553.11	885.04	0.00	0.00
36.75		193.23	306.54	0.00	0.00
40.00		367.51	973.87	0.00	0.00
42.00		226.34	594.04	0.00	0.00
45.00		341.35	446.38	0.00	0.00
50.00		573.16	734.86	0.00	0.00
55.00		573.92	723.46	0.00	0.00
60.00		573.46	712.07	0.00	0.00
65.00		571.95	700.68	0.00	0.00
70.00		569.51	689.28	0.00	0.00
75.00		566.25	677.89	0.00	0.00
76.00		112.17	134.21	0.00	0.00
80.00		455.12	882.71	0.00	0.00
80.75		84.66	164.05	0.00	0.00
85.00		479.91	472.18	0.00	0.00
90.00		560.28	547.07	0.00	0.00
95.00		554.51	537.96	0.00	0.00
100.00		548.20	528.84	0.00	0.00
105.00		541.41	519.73	0.00	0.00
110.00		534.17	510.61	0.00	0.00
115.00		526.50	501.50	0.00	0.00
120.00	(1) attachments	955.98	627.38	0.00	0.00
125.00		125.20	463.10	0.00	0.00
126.00	(10) attachments	25.08	421.75	0.00	0.00
129.75	(1) attachments	986.75	451.44	0.00	0.00
130.00		6.31	20.35	0.00	0.00
135.00	(10) attachments	127.24	651.83	0.00	0.00
139.50	(1) attachments	1056.37	463.34	0.00	0.00
140.00		10.06	15.96	0.00	0.00
145.00	(4) attachments	100.95	385.07	0.00	0.00
147.00	(6) attachments	40.44	156.30	0.00	0.00
149.37	(1) attachments	1035.19	197.35	0.00	0.00
150.00		12.77	16.57	0.00	0.00
155.00		101.66	131.54	0.00	0.00
159.25	(3) attachments	1091.21	252.66	0.00	0.00
Totals:		18,292.79	22,094.97	0.00	0.00

Calculated Forces

Structure: CT00799-S-SBA

Code: EIA/TIA-222-G

5/30/2019

Site Name: Mystic

Exposure: C

Height: 159.25 (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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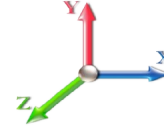


Load Case: 0.9D + 1.6W 105 mph Wind

Iterations 28

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	-22.07	-18.32	0.00	-1590.7	0.00	1590.78	3590.63	1795.31	6859.94	3435.07	0.00	0.000	0.000	0.469
5.00	-21.06	-17.86	0.00	-1499.1	0.00	1499.18	3550.74	1775.37	6673.42	3341.67	0.08	-0.145	0.000	0.455
10.00	-20.06	-17.40	0.00	-1409.8	0.00	1409.88	3510.26	1755.13	6488.29	3248.97	0.31	-0.289	0.000	0.440
15.00	-19.09	-16.95	0.00	-1322.8	0.00	1322.87	3469.19	1734.59	6304.60	3156.98	0.69	-0.431	0.000	0.425
20.00	-18.13	-16.46	0.00	-1238.1	0.00	1238.14	3427.52	1713.76	6122.40	3065.75	1.21	-0.571	0.000	0.409
25.00	-17.18	-15.96	0.00	-1155.8	0.00	1155.82	3385.27	1692.63	5941.76	2975.29	1.88	-0.708	0.000	0.394
30.00	-16.25	-15.44	0.00	-1076.0	0.00	1076.02	3342.42	1671.21	5762.72	2885.64	2.70	-0.843	0.000	0.378
35.00	-15.35	-14.90	0.00	-998.81	0.00	998.81	3298.98	1649.49	5585.34	2796.82	3.65	-0.976	0.000	0.362
36.75	-15.03	-14.72	0.00	-972.74	0.00	972.74	3283.64	1641.82	5523.66	2765.94	4.02	-1.022	0.000	0.356
40.00	-14.05	-14.35	0.00	-924.91	0.00	924.91	3254.95	1627.48	5409.68	2708.86	4.75	-1.107	0.000	0.346
42.00	-13.45	-14.13	0.00	-896.21	0.00	896.21	2585.06	1292.53	4344.38	2175.42	5.22	-1.159	0.000	0.417
45.00	-12.98	-13.80	0.00	-853.84	0.00	853.84	2566.17	1283.08	4264.80	2135.57	5.97	-1.235	0.000	0.405
50.00	-12.23	-13.24	0.00	-784.84	0.00	784.84	2534.21	1267.10	4132.95	2069.55	7.34	-1.376	0.000	0.384
55.00	-11.49	-12.67	0.00	-718.65	0.00	718.65	2501.66	1250.83	4002.14	2004.05	8.86	-1.512	0.000	0.363
60.00	-10.76	-12.11	0.00	-655.28	0.00	655.28	2468.51	1234.26	3872.43	1939.09	10.51	-1.644	0.000	0.342
65.00	-10.06	-11.54	0.00	-594.75	0.00	594.75	2434.78	1217.39	3743.87	1874.72	12.30	-1.772	0.000	0.321
70.00	-9.36	-10.96	0.00	-537.07	0.00	537.07	2400.45	1200.23	3616.52	1810.95	14.22	-1.894	0.000	0.301
75.00	-8.69	-10.38	0.00	-482.26	0.00	482.26	2365.53	1182.77	3490.42	1747.80	16.27	-2.011	0.000	0.280
76.00	-8.55	-10.28	0.00	-471.87	0.00	471.87	2358.48	1179.24	3465.36	1735.25	16.69	-2.034	0.000	0.276
80.00	-7.68	-9.80	0.00	-430.76	0.00	430.76	2330.02	1165.01	3365.64	1685.32	18.44	-2.124	0.000	0.259
80.75	-7.51	-9.71	0.00	-423.42	0.00	423.42	1747.65	873.83	2561.44	1282.63	18.77	-2.141	0.000	0.335
85.00	-7.04	-9.23	0.00	-382.14	0.00	382.14	1728.11	864.05	2487.16	1245.43	20.72	-2.231	0.000	0.311
90.00	-6.50	-8.66	0.00	-335.99	0.00	335.99	1704.57	852.28	2400.33	1201.95	23.12	-2.349	0.000	0.283
95.00	-5.97	-8.09	0.00	-292.69	0.00	292.69	1680.44	840.22	2314.14	1158.79	25.64	-2.460	0.000	0.256
100.00	-5.45	-7.53	0.00	-252.22	0.00	252.22	1655.72	827.86	2228.66	1115.99	28.27	-2.563	0.000	0.229
105.00	-4.94	-6.98	0.00	-214.56	0.00	214.56	1630.40	815.20	2143.93	1073.56	31.01	-2.658	0.000	0.203
110.00	-4.45	-6.42	0.00	-179.68	0.00	179.68	1604.50	802.25	2060.02	1031.54	33.84	-2.743	0.000	0.177
115.00	-3.97	-5.88	0.00	-147.55	0.00	147.55	1578.00	789.00	1976.98	989.96	36.75	-2.819	0.000	0.152
120.00	-3.38	-4.90	0.00	-118.16	0.00	118.16	1550.91	775.46	1894.86	948.84	39.74	-2.885	0.000	0.127
120.00	-3.38	-4.90	0.00	-118.16	0.00	118.16	930.23	465.11	237.26	173.90	39.74	-2.885	0.000	0.683
125.00	-2.92	-4.75	0.00	-93.67	0.00	93.67	930.23	465.11	237.26	173.90	42.79	-2.942	0.000	0.542
126.00	-2.46	-4.73	0.00	-88.92	0.00	88.92	930.23	465.11	237.26	173.90	43.43	-3.135	0.000	0.514
129.75	-2.05	-3.73	0.00	-71.19	0.00	71.19	930.23	465.11	237.26	173.90	46.14	-3.769	0.000	0.412
130.00	-2.01	-3.73	0.00	-70.26	0.00	70.26	930.23	465.11	237.26	173.90	46.34	-3.806	0.000	0.406
135.00	-1.33	-3.57	0.00	-51.61	0.00	51.61	930.23	465.11	237.26	173.90	50.68	-4.449	0.000	0.298
139.50	-0.95	-2.48	0.00	-35.55	0.00	35.55	930.23	465.11	237.26	173.90	55.08	-4.863	0.000	0.205
139.50	-0.95	-2.48	0.00	-35.55	0.00	35.55	541.19	270.59	86.27	63.23	55.08	-4.863	0.000	0.564
140.00	-0.89	-2.49	0.00	-34.31	0.00	34.31	541.19	270.59	86.27	63.23	55.59	-4.900	0.000	0.544
145.00	-0.47	-2.36	0.00	-21.88	0.00	21.88	541.19	270.59	86.27	63.23	61.80	-6.843	0.000	0.347
147.00	-0.30	-2.30	0.00	-17.16	0.00	17.16	541.19	270.59	86.27	63.23	64.78	-7.383	0.000	0.272
149.37	-0.23	-1.25	0.00	-11.71	0.00	11.71	541.19	270.59	86.27	63.23	68.56	-7.856	0.000	0.186
150.00	-0.21	-1.24	0.00	-10.92	0.00	10.92	541.19	270.59	86.27	63.23	69.60	-7.955	0.000	0.173
155.00	-0.09	-1.12	0.00	-4.75	0.00	4.75	541.19	270.59	86.27	63.23	78.22	-8.497	0.000	0.075
159.25	0.00	-1.09	0.00	0.00	0.00	0.00	541.19	270.59	86.27	63.23	85.83	-8.636	0.000	0.000

Wind Loading - Shaft

Structure: CT00799-S-SBA

Code: EIA/TIA-222-G

5/30/2019

Site Name: Mystic

Exposure: C

Height: 159.25 (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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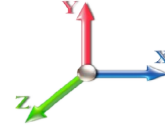


Load Case: 1.2D + 1.0Di + 1.0Wi 50 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.00

Iterations 27



Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.85	5.168	5.68	0.00	1.200	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.85	5.168	5.68	0.00	1.200	1.242	5.00	20.711	24.85	141.3	364.8	1485.8
10.00		1.00	0.85	5.168	5.68	0.00	1.200	1.331	5.00	20.468	24.56	139.6	385.5	1488.3
15.00		1.00	0.85	5.168	5.68	0.00	1.200	1.386	5.00	20.196	24.24	137.8	395.5	1480.0
20.00		1.00	0.90	5.483	6.03	0.00	1.200	1.427	5.00	19.913	23.90	144.1	400.8	1467.0
25.00		1.00	0.95	5.747	6.32	0.00	1.200	1.459	5.00	19.622	23.55	148.9	403.3	1451.3
30.00		1.00	0.98	5.972	6.57	0.00	1.200	1.486	5.00	19.327	23.19	152.4	404.1	1433.9
35.00		1.00	1.01	6.169	6.79	0.00	1.200	1.509	5.00	19.029	22.83	155.0	403.5	1415.1
36.75	Bot - Section 2	1.00	1.03	6.233	6.86	0.00	1.200	1.516	1.75	6.587	7.90	54.2	141.1	490.8
40.00		1.00	1.04	6.345	6.98	0.00	1.200	1.529	3.25	12.309	14.77	103.1	265.2	1454.2
42.00	Top - Section 1	1.00	1.05	6.410	7.05	0.00	1.200	1.537	2.00	7.511	9.01	63.6	162.9	887.5
45.00		1.00	1.07	6.504	7.15	0.00	1.200	1.547	3.00	11.176	13.41	96.0	243.4	737.5
50.00		1.00	1.09	6.650	7.32	0.00	1.200	1.564	5.00	18.387	22.06	161.4	402.9	1214.3
55.00		1.00	1.12	6.785	7.46	0.00	1.200	1.579	5.00	18.082	21.70	161.9	399.6	1195.7
60.00		1.00	1.14	6.910	7.60	0.00	1.200	1.592	5.00	17.776	21.33	162.1	395.8	1176.7
65.00		1.00	1.16	7.028	7.73	0.00	1.200	1.605	5.00	17.469	20.96	162.1	391.6	1157.4
70.00		1.00	1.17	7.138	7.85	0.00	1.200	1.617	5.00	17.162	20.59	161.7	387.1	1137.7
75.00		1.00	1.19	7.243	7.97	0.00	1.200	1.628	5.00	16.854	20.22	161.1	382.4	1117.7
76.00	Bot - Section 3	1.00	1.19	7.263	7.99	0.00	1.200	1.631	1.00	3.333	4.00	32.0	76.3	221.5
80.00		1.00	1.21	7.342	8.08	0.00	1.200	1.639	4.00	13.380	16.06	129.7	305.9	1348.1
80.75	Top - Section 2	1.00	1.21	7.356	8.09	0.00	1.200	1.640	0.75	2.486	2.98	24.1	57.2	250.7
85.00		1.00	1.22	7.436	8.18	0.00	1.200	1.649	4.25	13.960	16.75	137.0	320.6	806.9
90.00		1.00	1.24	7.526	8.28	0.00	1.200	1.658	5.00	16.138	19.37	160.3	371.7	932.6
95.00		1.00	1.25	7.612	8.37	0.00	1.200	1.667	5.00	15.828	18.99	159.0	366.0	914.8
100.00		1.00	1.27	7.695	8.46	0.00	1.200	1.676	5.00	15.518	18.62	157.6	360.2	896.8
105.00		1.00	1.28	7.774	8.55	0.00	1.200	1.684	5.00	15.207	18.25	156.1	354.2	878.7
110.00		1.00	1.29	7.851	8.64	0.00	1.200	1.692	5.00	14.896	17.88	154.4	348.1	860.4
115.00		1.00	1.30	7.925	8.72	0.00	1.200	1.699	5.00	14.585	17.50	152.6	341.8	842.0
120.00	Top - Section 3	1.00	1.32	7.996	8.80	0.00	1.200	1.707	5.00	14.274	17.13	150.7	335.4	823.4
125.00		1.00	1.33	8.065	8.87	0.00	1.200	1.714	5.00	4.761	5.71	50.7	101.7	550.7
126.00	Appurtenance(s)	1.00	1.33	8.079	8.89	0.00	1.200	1.715	1.00	0.953	1.14	10.2	20.4	110.2
129.75	Appurtenance(s)	1.00	1.34	8.129	8.94	0.00	1.200	1.720	3.75	3.575	4.29	38.4	76.6	413.3
130.00		1.00	1.34	8.132	8.95	0.00	1.200	1.720	0.25	0.238	0.29	2.6	5.1	27.6
135.00	Appurtenance(s)	1.00	1.35	8.197	9.02	0.00	1.200	1.727	5.00	4.772	5.73	51.6	102.6	551.6
139.50	Top - Section 4	1.00	1.36	8.254	9.08	0.00	1.200	1.733	4.50	4.299	5.16	46.8	92.7	496.8
140.00		1.00	1.36	8.260	9.09	24.28	1.200	1.733	0.50	0.353	0.42	3.8	7.1	24.7
145.00	Appurtenance(s)	1.00	1.37	8.321	9.15	24.37	1.200	1.739	5.00	3.533	4.24	38.8	71.6	247.0
147.00	Appurtenance(s)	1.00	1.37	8.345	9.18	24.41	1.200	1.742	2.00	1.414	1.70	15.6	28.7	98.8
149.37	Appurtenance(s)	1.00	1.38	8.373	9.21	24.45	1.200	1.744	2.37	1.677	2.01	18.5	34.1	117.2
150.00		1.00	1.38	8.381	9.22	24.46	1.200	1.745	0.63	0.446	0.53	4.9	9.1	31.2
155.00		1.00	1.39	8.439	9.28	24.54	1.200	1.751	5.00	3.542	4.25	39.5	72.2	247.6
159.25	Appurtenance(s)	1.00	1.40	8.487	9.34	24.61	1.200	1.756	4.25	3.014	3.62	33.8	61.6	210.7
Totals:									159.25			4,074.8		32,694.3

Discrete Appurtenance Forces

Structure: CT00799-S-SBA

Code: EIA/TIA-222-G

5/30/2019

Site Name: Mystic

Exposure: C

Height: 159.25 (ft)

Crest Height: 0.00

Base Elev: 0.000 (ft)

Site Class: D - Stiff Soil

Gh: 1.1

Topography: 1

Struct Class: II

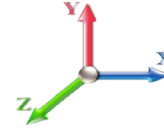
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Load Case: 1.2D + 1.0Di + 1.0Wi 50 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 27

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	CaAa x Ka	Ka	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)
1	159.25	Flag	1	8.487	9.336	1.00	1.00	7.78	0.00	0.000	0.000	72.64	0.00	0.00
2	159.25	6' Lightning rod	1	8.487	9.336	1.00	1.00	1.47	39.02	0.000	0.000	13.76	0.00	0.00
3	159.25	37" Canister	1	8.487	9.336	1.00	1.00	8.13	340.53	0.000	0.000	75.93	0.00	0.00
4	149.37	37" Canister	1	8.373	9.211	1.00	1.00	16.25	340.47	0.000	0.000	149.67	0.00	0.00
5	147.00	BPD7823VG12A	6	8.345	9.180	0.00	1.00	0.00	247.25	0.000	0.000	0.00	0.00	0.00
6	145.00	Flush Mount	1	8.321	9.153	1.00	1.00	0.00	5.23	0.000	0.000	0.00	0.00	0.00
7	145.00	SBNHH-1D65A	3	8.321	9.153	1.00	1.00	20.87	593.74	0.000	0.000	191.03	0.00	0.00
8	139.50	37" Canister	1	8.254	9.079	1.00	1.00	15.71	340.40	0.000	0.000	142.61	0.00	0.00
9	135.00	Flush Mount	1	8.197	9.016	1.00	1.00	0.00	4.34	0.000	0.000	0.00	0.00	0.00
10	135.00	KRY 112 144/1	6	8.197	9.016	1.00	1.00	0.00	124.61	0.000	0.000	0.00	0.00	0.00
11	135.00	APXV18-206516S	3	8.197	9.016	1.00	1.00	0.00	215.34	0.000	0.000	0.00	0.00	0.00
12	129.75	37" Canister	1	8.129	8.942	1.00	1.00	15.11	340.32	0.000	0.000	135.13	0.00	0.00
13	126.00	Flush Mount	1	8.079	8.886	1.00	1.00	0.00	3.48	0.000	0.000	0.00	0.00	0.00
14	126.00	BPD7823VG12A	6	8.079	8.886	0.00	1.00	0.00	244.91	0.000	0.000	0.00	0.00	0.00
15	126.00	SBNHH-1D65A	3	8.079	8.886	1.00	1.00	20.82	585.84	0.000	0.000	185.03	0.00	0.00
16	120.00	37" Canister	1	7.996	8.796	1.00	1.00	7.53	340.24	0.000	0.000	66.24	0.00	0.00
Totals:									3,765.72			1,032.05		

Total Applied Force Summary

Structure: CT00799-S-SBA	Code: EIA/TIA-222-G	5/30/2019
Site Name: Mystic	Exposure: C	
Height: 159.25 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II

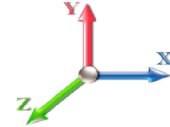


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Load Case: 1.2D + 1.0Di + 1.0Wi 50 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 27

Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00		0.00	0.00	0.00	0.00
5.00		141.29	1654.26	0.00	0.00
10.00		139.63	1656.74	0.00	0.00
15.00		137.77	1648.48	0.00	0.00
20.00		144.13	1635.51	0.00	0.00
25.00		148.86	1619.82	0.00	0.00
30.00		152.36	1602.34	0.00	0.00
35.00		154.96	1583.58	0.00	0.00
36.75		54.20	549.80	0.00	0.00
40.00		103.09	1563.66	0.00	0.00
42.00		63.55	954.92	0.00	0.00
45.00		95.95	838.63	0.00	0.00
50.00		161.40	1382.74	0.00	0.00
55.00		161.94	1364.20	0.00	0.00
60.00		162.15	1345.23	0.00	0.00
65.00		162.06	1325.87	0.00	0.00
70.00		161.71	1306.18	0.00	0.00
75.00		161.13	1286.21	0.00	0.00
76.00		31.95	255.22	0.00	0.00
80.00		129.67	1482.86	0.00	0.00
80.75		24.14	275.97	0.00	0.00
85.00		137.03	950.14	0.00	0.00
90.00		160.32	1101.12	0.00	0.00
95.00		159.04	1083.31	0.00	0.00
100.00		157.62	1065.33	0.00	0.00
105.00		156.06	1047.18	0.00	0.00
110.00		154.37	1028.89	0.00	0.00
115.00		152.57	1010.46	0.00	0.00
120.00	(1) attachments	216.90	1332.14	0.00	0.00
125.00		50.69	719.15	0.00	0.00
126.00	(10) attachments	195.19	978.08	0.00	0.00
129.75	(1) attachments	173.49	838.84	0.00	0.00
130.00		2.56	32.24	0.00	0.00
135.00	(10) attachments	51.64	989.49	0.00	0.00
139.50	(1) attachments	189.45	870.89	0.00	0.00
140.00		3.85	28.41	0.00	0.00
145.00	(4) attachments	229.83	883.40	0.00	0.00
147.00	(6) attachments	15.57	346.09	0.00	0.00
149.37	(1) attachments	168.20	457.67	0.00	0.00
150.00		4.93	31.16	0.00	0.00
155.00		39.46	247.59	0.00	0.00
159.25	(3) attachments	196.10	590.22	0.00	0.00
Totals:		5,106.82	40,964.00	0.00	0.00

Calculated Forces

Structure: CT00799-S-SBA

Code: EIA/TIA-222-G

5/30/2019

Site Name: Mystic

Exposure: C

Height: 159.25 (ft)

Crest Height: 0.00

Base Elev: 0.000 (ft)

Site Class: D - Stiff Soil

Gh: 1.1

Topography: 1

Struct Class: II

Page: 18

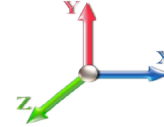


Load Case: 1.2D + 1.0Di + 1.0Wi 50 mph Wind

Iterations 27

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	-40.96	-5.12	0.00	-448.68	0.00	448.68	3590.63	1795.31	6859.94	3435.07	0.00	0.000	0.000	0.142
5.00	-39.30	-5.01	0.00	-423.07	0.00	423.07	3550.74	1775.37	6673.42	3341.67	0.02	-0.041	0.000	0.138
10.00	-37.64	-4.89	0.00	-398.03	0.00	398.03	3510.26	1755.13	6488.29	3248.97	0.09	-0.082	0.000	0.133
15.00	-35.99	-4.78	0.00	-373.57	0.00	373.57	3469.19	1734.59	6304.60	3156.98	0.19	-0.122	0.000	0.129
20.00	-34.35	-4.65	0.00	-349.69	0.00	349.69	3427.52	1713.76	6122.40	3065.75	0.34	-0.161	0.000	0.124
25.00	-32.73	-4.52	0.00	-326.43	0.00	326.43	3385.27	1692.63	5941.76	2975.29	0.53	-0.200	0.000	0.119
30.00	-31.13	-4.38	0.00	-303.83	0.00	303.83	3342.42	1671.21	5762.72	2885.64	0.76	-0.238	0.000	0.115
35.00	-29.54	-4.23	0.00	-281.92	0.00	281.92	3298.98	1649.49	5585.34	2796.82	1.03	-0.275	0.000	0.110
36.75	-28.99	-4.19	0.00	-274.51	0.00	274.51	3283.64	1641.82	5523.66	2765.94	1.13	-0.289	0.000	0.108
40.00	-27.43	-4.08	0.00	-260.91	0.00	260.91	3254.95	1627.48	5409.68	2708.86	1.34	-0.312	0.000	0.105
42.00	-26.47	-4.02	0.00	-252.74	0.00	252.74	2585.06	1292.53	4344.38	2175.42	1.47	-0.327	0.000	0.126
45.00	-25.63	-3.94	0.00	-240.67	0.00	240.67	2566.17	1283.08	4264.80	2135.57	1.69	-0.349	0.000	0.123
50.00	-24.25	-3.78	0.00	-221.00	0.00	221.00	2534.21	1267.10	4132.95	2069.55	2.07	-0.388	0.000	0.116
55.00	-22.88	-3.63	0.00	-202.09	0.00	202.09	2501.66	1250.83	4002.14	2004.05	2.50	-0.427	0.000	0.110
60.00	-21.54	-3.47	0.00	-183.96	0.00	183.96	2468.51	1234.26	3872.43	1939.09	2.97	-0.464	0.000	0.104
65.00	-20.21	-3.31	0.00	-166.63	0.00	166.63	2434.78	1217.39	3743.87	1874.72	3.47	-0.499	0.000	0.097
70.00	-18.90	-3.14	0.00	-150.10	0.00	150.10	2400.45	1200.23	3616.52	1810.95	4.01	-0.534	0.000	0.091
75.00	-17.62	-2.98	0.00	-134.39	0.00	134.39	2365.53	1182.77	3490.42	1747.80	4.59	-0.566	0.000	0.084
76.00	-17.36	-2.95	0.00	-131.41	0.00	131.41	2358.48	1179.24	3465.36	1735.25	4.71	-0.573	0.000	0.083
80.00	-15.88	-2.81	0.00	-119.63	0.00	119.63	2330.02	1165.01	3365.64	1685.32	5.20	-0.598	0.000	0.078
80.75	-15.60	-2.78	0.00	-117.52	0.00	117.52	1747.65	873.83	2561.44	1282.63	5.29	-0.602	0.000	0.101
85.00	-14.65	-2.64	0.00	-105.70	0.00	105.70	1728.11	864.05	2487.16	1245.43	5.84	-0.627	0.000	0.093
90.00	-13.55	-2.48	0.00	-92.49	0.00	92.49	1704.57	852.28	2400.33	1201.95	6.52	-0.660	0.000	0.085
95.00	-12.47	-2.31	0.00	-80.10	0.00	80.10	1680.44	840.22	2314.14	1158.79	7.23	-0.691	0.000	0.077
100.00	-11.41	-2.15	0.00	-68.54	0.00	68.54	1655.72	827.86	2228.66	1115.99	7.96	-0.719	0.000	0.068
105.00	-10.36	-1.98	0.00	-57.81	0.00	57.81	1630.40	815.20	2143.93	1073.56	8.73	-0.744	0.000	0.060
110.00	-9.33	-1.82	0.00	-47.91	0.00	47.91	1604.50	802.25	2060.02	1031.54	9.52	-0.767	0.000	0.052
115.00	-8.32	-1.65	0.00	-38.82	0.00	38.82	1578.00	789.00	1976.98	989.96	10.34	-0.787	0.000	0.044
120.00	-6.99	-1.42	0.00	-30.55	0.00	30.55	1550.91	775.46	1894.86	948.84	11.17	-0.805	0.000	0.037
120.00	-6.99	-1.42	0.00	-30.55	0.00	30.55	930.23	465.11	237.26	173.90	11.17	-0.805	0.000	0.183
125.00	-6.27	-1.36	0.00	-23.46	0.00	23.46	930.23	465.11	237.26	173.90	12.02	-0.819	0.000	0.142
126.00	-5.30	-1.16	0.00	-22.09	0.00	22.09	930.23	465.11	237.26	173.90	12.20	-0.867	0.000	0.133
129.75	-4.46	-0.98	0.00	-17.73	0.00	17.73	930.23	465.11	237.26	173.90	12.94	-1.025	0.000	0.107
130.00	-4.43	-0.99	0.00	-17.49	0.00	17.49	930.23	465.11	237.26	173.90	13.00	-1.034	0.000	0.105
135.00	-3.44	-0.92	0.00	-12.56	0.00	12.56	930.23	465.11	237.26	173.90	14.17	-1.193	0.000	0.076
139.50	-2.57	-0.72	0.00	-8.41	0.00	8.41	930.23	465.11	237.26	173.90	15.34	-1.292	0.000	0.051
139.50	-2.57	-0.72	0.00	-8.41	0.00	8.41	541.19	270.59	86.27	63.23	15.34	-1.292	0.000	0.138
140.00	-2.54	-0.72	0.00	-8.05	0.00	8.05	541.19	270.59	86.27	63.23	15.48	-1.301	0.000	0.132
145.00	-1.66	-0.48	0.00	-4.44	0.00	4.44	541.19	270.59	86.27	63.23	17.09	-1.733	0.000	0.073
147.00	-1.31	-0.45	0.00	-3.49	0.00	3.49	541.19	270.59	86.27	63.23	17.84	-1.843	0.000	0.058
149.37	-0.86	-0.27	0.00	-2.42	0.00	2.42	541.19	270.59	86.27	63.23	18.78	-1.940	0.000	0.040
150.00	-0.83	-0.26	0.00	-2.25	0.00	2.25	541.19	270.59	86.27	63.23	19.04	-1.960	0.000	0.037
155.00	-0.58	-0.22	0.00	-0.92	0.00	0.92	541.19	270.59	86.27	63.23	21.15	-2.070	0.000	0.016
159.25	0.00	-0.20	0.00	0.00	0.00	0.00	541.19	270.59	86.27	63.23	23.01	-2.097	0.000	0.000

Seismic Segment Forces (Factored)

Structure: CT00799-S-SBA

Code: EIA/TIA-222-G

5/30/2019

Site Name: Mystic

Exposure: C

Height: 159.25 (ft)

Crest Height: 0.00

Base Elev: 0.000 (ft)

Site Class: D - Stiff Soil

Gh: 1.1

Topography: 1

Struct Class: II

Page: 19



Load Case: 1.2D + 1.0E

Iterations 24

Gust Response Factor 1.10

Sds 0.17

Ss 0.16

Dead Load Factor 1.20 **Seismic Load Factor** 1.00

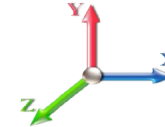
Sd1 0.09

S1 0.06

Wind Load Factor 0.00 **Structure Frequency (f1)** 0.38

SA 0.04

Seismic Importance Factor 1.00



Top Elev (ft)	Description	Wz (lb)	a	b	c	Lateral Fs (lb)	R: 1.50
0.00		0.00	0.00	0.00	0.00	0.00	
5.00		934.13	0.00	0.03	0.02	13.60	
10.00		918.94	0.01	0.05	0.03	19.96	
15.00		903.75	0.02	0.06	0.04	23.02	
20.00		888.56	0.03	0.07	0.04	24.43	
25.00		873.37	0.05	0.07	0.04	25.04	
30.00		858.17	0.07	0.07	0.04	25.32	
35.00		842.98	0.09	0.07	0.04	25.48	
36.75	Bot - Section 2	291.45	0.10	0.07	0.04	8.88	
40.00		990.82	0.12	0.07	0.03	30.63	
42.00	Top - Section 1	603.89	0.13	0.07	0.03	18.82	
45.00		411.74	0.15	0.07	0.03	12.97	
50.00		676.11	0.19	0.06	0.03	21.50	
55.00		663.45	0.23	0.06	0.02	20.89	
60.00		650.79	0.27	0.05	0.02	19.61	
65.00		638.13	0.31	0.04	0.01	17.41	
70.00		625.47	0.37	0.03	0.01	14.05	
75.00		612.81	0.42	0.01	0.01	9.48	
76.00	Bot - Section 3	121.04	0.43	0.01	0.01	1.67	
80.00		868.47	0.48	-0.01	0.01	5.65	
80.75	Top - Section 2	161.21	0.49	-0.01	0.01	0.81	
85.00		405.30	0.54	-0.03	0.01	-1.46	
90.00		467.46	0.60	-0.05	0.01	-6.32	
95.00		457.33	0.67	-0.08	0.02	-9.93	
100.00		447.20	0.75	-0.10	0.04	-12.08	
105.00		437.07	0.82	-0.12	0.06	-12.52	
110.00		426.95	0.90	-0.12	0.09	-11.22	
115.00		416.82	0.99	-0.11	0.12	-8.28	
120.00	Top - Section 3	556.69	1.07	-0.08	0.17	-5.21	
125.00		374.15	1.16	-0.03	0.23	1.95	
126.00	Appurtenance(s)	440.53	1.18	-0.01	0.24	3.79	
129.75	Appurtenance(s)	430.62	1.25	0.06	0.30	9.83	
130.00		18.71	1.26	0.07	0.30	0.45	
135.00	Appurtenance(s)	646.25	1.36	0.21	0.39	30.10	
139.50	Top - Section 4	486.74	1.45	0.39	0.49	34.35	
140.00		14.62	1.46	0.41	0.50	1.07	
145.00	Appurtenance(s)	396.65	1.57	0.68	0.63	41.47	
147.00	Appurtenance(s)	173.66	1.61	0.81	0.68	20.52	
149.37	Appurtenance(s)	219.28	1.66	0.99	0.76	29.65	
150.00		18.42	1.68	1.04	0.78	2.58	
155.00		146.15	1.79	1.50	0.96	26.26	
159.25	Appurtenance(s)	280.73	1.89	1.98	1.14	60.91	
Totals:		20,796.6				535.2	
						Total Wind:	18,292.8

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

Calculated Forces

Structure: CT00799-S-SBA

Code: EIA/TIA-222-G

5/30/2019

Site Name: Mystic

Exposure: C

Height: 159.25 (ft)

Crest Height: 0.00

Base Elev: 0.000 (ft)

Site Class: D - Stiff Soil

Gh: 1.1

Topography: 1

Struct Class: II

Page: 20



Load Case: 1.2D + 1.0E

Iterations 24

Gust Response Factor 1.10

Sds 0.17

Ss 0.16

Dead Load Factor 1.20

Seismic Load Factor 1.00

Sd1 0.09

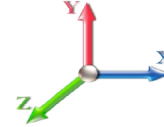
S1 0.06

Wind Load Factor 0.00

Structure Frequency (f1) 0.38

SA 0.04

Seismic Importance Factor 1.00



Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-29.46	-0.60	0.00	-53.44	0.00	53.44	3590.63	1795.31	6859.94	3435.07	0.00	0.00	0.00	0.024
5.00	-28.17	-0.59	0.00	-50.43	0.00	50.43	3550.74	1775.37	6673.42	3341.67	0.00	0.00	0.00	0.023
10.00	-26.90	-0.57	0.00	-47.47	0.00	47.47	3510.26	1755.13	6488.29	3248.97	0.01	-0.01	0.00	0.022
15.00	-25.65	-0.55	0.00	-44.61	0.00	44.61	3469.19	1734.59	6304.60	3156.98	0.02	-0.01	0.00	0.022
20.00	-24.41	-0.53	0.00	-41.85	0.00	41.85	3427.52	1713.76	6122.40	3065.75	0.04	-0.02	0.00	0.021
25.00	-23.19	-0.51	0.00	-39.20	0.00	39.20	3385.27	1692.63	5941.76	2975.29	0.06	-0.02	0.00	0.020
30.00	-22.00	-0.48	0.00	-36.67	0.00	36.67	3342.42	1671.21	5762.72	2885.64	0.09	-0.03	0.00	0.019
35.00	-20.82	-0.46	0.00	-34.26	0.00	34.26	3298.98	1649.49	5585.34	2796.82	0.12	-0.03	0.00	0.019
36.75	-20.41	-0.45	0.00	-33.46	0.00	33.46	3283.64	1641.82	5523.66	2765.94	0.14	-0.03	0.00	0.018
40.00	-19.11	-0.42	0.00	-32.01	0.00	32.01	3254.95	1627.48	5409.68	2708.86	0.16	-0.04	0.00	0.018
42.00	-18.32	-0.40	0.00	-31.17	0.00	31.17	2585.06	1292.53	4344.38	2175.42	0.18	-0.04	0.00	0.021
45.00	-17.72	-0.39	0.00	-29.98	0.00	29.98	2566.17	1283.08	4264.80	2135.57	0.20	-0.04	0.00	0.021
50.00	-16.74	-0.37	0.00	-28.04	0.00	28.04	2534.21	1267.10	4132.95	2069.55	0.25	-0.05	0.00	0.020
55.00	-15.78	-0.35	0.00	-26.21	0.00	26.21	2501.66	1250.83	4002.14	2004.05	0.30	-0.05	0.00	0.019
60.00	-14.83	-0.33	0.00	-24.49	0.00	24.49	2468.51	1234.26	3872.43	1939.09	0.36	-0.06	0.00	0.019
65.00	-13.89	-0.31	0.00	-22.85	0.00	22.85	2434.78	1217.39	3743.87	1874.72	0.42	-0.06	0.00	0.018
70.00	-12.97	-0.30	0.00	-21.31	0.00	21.31	2400.45	1200.23	3616.52	1810.95	0.49	-0.07	0.00	0.017
75.00	-12.07	-0.29	0.00	-19.83	0.00	19.83	2365.53	1182.77	3490.42	1747.80	0.56	-0.07	0.00	0.016
76.00	-11.89	-0.28	0.00	-19.55	0.00	19.55	2358.48	1179.24	3465.36	1735.25	0.57	-0.07	0.00	0.016
80.00	-10.72	-0.28	0.00	-18.41	0.00	18.41	2330.02	1165.01	3365.64	1685.32	0.64	-0.08	0.00	0.016
80.75	-10.50	-0.28	0.00	-18.21	0.00	18.21	1747.65	873.83	2561.44	1282.63	0.65	-0.08	0.00	0.020
85.00	-9.87	-0.28	0.00	-17.03	0.00	17.03	1728.11	864.05	2487.16	1245.43	0.72	-0.08	0.00	0.019
90.00	-9.14	-0.28	0.00	-15.65	0.00	15.65	1704.57	852.28	2400.33	1201.95	0.80	-0.09	0.00	0.018
95.00	-8.42	-0.28	0.00	-14.27	0.00	14.27	1680.44	840.22	2314.14	1158.79	0.90	-0.09	0.00	0.017
100.00	-7.71	-0.28	0.00	-12.89	0.00	12.89	1655.72	827.86	2228.66	1115.99	1.00	-0.10	0.00	0.016
105.00	-7.02	-0.27	0.00	-11.51	0.00	11.51	1630.40	815.20	2143.93	1073.56	1.10	-0.10	0.00	0.015
110.00	-6.34	-0.27	0.00	-10.14	0.00	10.14	1604.50	802.25	2060.02	1031.54	1.21	-0.11	0.00	0.014
115.00	-5.67	-0.27	0.00	-8.77	0.00	8.77	1578.00	789.00	1976.98	989.96	1.32	-0.11	0.00	0.012
120.00	-4.84	-0.27	0.00	-7.40	0.00	7.40	1550.91	775.46	1894.86	948.84	1.44	-0.11	0.00	0.011
120.00	-4.84	-0.27	0.00	-7.40	0.00	7.40	930.23	465.11	237.26	173.90	1.44	-0.11	0.00	0.048
125.00	-4.22	-0.27	0.00	-6.04	0.00	6.04	930.23	465.11	237.26	173.90	1.56	-0.12	0.00	0.039
126.00	-3.66	-0.27	0.00	-5.77	0.00	5.77	930.23	465.11	237.26	173.90	1.59	-0.13	0.00	0.037
129.75	-3.05	-0.26	0.00	-4.78	0.00	4.78	930.23	465.11	237.26	173.90	1.71	-0.17	0.00	0.031
130.00	-3.03	-0.26	0.00	-4.71	0.00	4.71	930.23	465.11	237.26	173.90	1.71	-0.17	0.00	0.030
135.00	-2.16	-0.23	0.00	-3.43	0.00	3.43	930.23	465.11	237.26	173.90	1.92	-0.22	0.00	0.022
139.50	-1.54	-0.19	0.00	-2.42	0.00	2.42	930.23	465.11	237.26	173.90	2.14	-0.25	0.00	0.016
139.50	-1.54	-0.19	0.00	-2.42	0.00	2.42	541.19	270.59	86.27	63.23	2.14	-0.25	0.00	0.041
140.00	-1.52	-0.19	0.00	-2.32	0.00	2.32	541.19	270.59	86.27	63.23	2.17	-0.25	0.00	0.040
145.00	-1.00	-0.15	0.00	-1.37	0.00	1.37	541.19	270.59	86.27	63.23	2.50	-0.38	0.00	0.024
147.00	-0.80	-0.13	0.00	-1.08	0.00	1.08	541.19	270.59	86.27	63.23	2.66	-0.41	0.00	0.019
149.37	-0.53	-0.09	0.00	-0.79	0.00	0.79	541.19	270.59	86.27	63.23	2.87	-0.44	0.00	0.013
150.00	-0.51	-0.09	0.00	-0.73	0.00	0.73	541.19	270.59	86.27	63.23	2.93	-0.45	0.00	0.012
155.00	-0.34	-0.06	0.00	-0.27	0.00	0.27	541.19	270.59	86.27	63.23	3.42	-0.48	0.00	0.005
159.25	0.00	-0.06	0.00	0.00	0.00	0.00	541.19	270.59	86.27	63.23	3.86	-0.49	0.00	0.000

Seismic Segment Forces (Factored)

Structure: CT00799-S-SBA

Code: EIA/TIA-222-G

5/30/2019

Site Name: Mystic

Exposure: C

Height: 159.25 (ft)

Crest Height: 0.00

Base Elev: 0.000 (ft)

Site Class: D - Stiff Soil

Gh: 1.1

Topography: 1

Struct Class: II

Page: 21



Load Case: 0.9D + 1.0E

Iterations 24

Gust Response Factor 1.10

Sds 0.17

Ss 0.16

Dead Load Factor 0.90 **Seismic Load Factor** 1.00

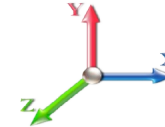
Sd1 0.09

S1 0.06

Wind Load Factor 0.00 **Structure Frequency (f1)** 0.38

SA 0.04

Seismic Importance Factor 1.00



Top Elev (ft)	Description	Wz (lb)	a	b	c	Lateral Fs (lb)	R: 1.50
0.00		0.00	0.00	0.00	0.00	0.00	
5.00		934.13	0.00	0.03	0.02	13.60	
10.00		918.94	0.01	0.05	0.03	19.96	
15.00		903.75	0.02	0.06	0.04	23.02	
20.00		888.56	0.03	0.07	0.04	24.43	
25.00		873.37	0.05	0.07	0.04	25.04	
30.00		858.17	0.07	0.07	0.04	25.32	
35.00		842.98	0.09	0.07	0.04	25.48	
36.75	Bot - Section 2	291.45	0.10	0.07	0.04	8.88	
40.00		990.82	0.12	0.07	0.03	30.63	
42.00	Top - Section 1	603.89	0.13	0.07	0.03	18.82	
45.00		411.74	0.15	0.07	0.03	12.97	
50.00		676.11	0.19	0.06	0.03	21.50	
55.00		663.45	0.23	0.06	0.02	20.89	
60.00		650.79	0.27	0.05	0.02	19.61	
65.00		638.13	0.31	0.04	0.01	17.41	
70.00		625.47	0.37	0.03	0.01	14.05	
75.00		612.81	0.42	0.01	0.01	9.48	
76.00	Bot - Section 3	121.04	0.43	0.01	0.01	1.67	
80.00		868.47	0.48	-0.01	0.01	5.65	
80.75	Top - Section 2	161.21	0.49	-0.01	0.01	0.81	
85.00		405.30	0.54	-0.03	0.01	-1.46	
90.00		467.46	0.60	-0.05	0.01	-6.32	
95.00		457.33	0.67	-0.08	0.02	-9.93	
100.00		447.20	0.75	-0.10	0.04	-12.08	
105.00		437.07	0.82	-0.12	0.06	-12.52	
110.00		426.95	0.90	-0.12	0.09	-11.22	
115.00		416.82	0.99	-0.11	0.12	-8.28	
120.00	Top - Section 3	556.69	1.07	-0.08	0.17	-5.21	
125.00		374.15	1.16	-0.03	0.23	1.95	
126.00	Appurtenance(s)	440.53	1.18	-0.01	0.24	3.79	
129.75	Appurtenance(s)	430.62	1.25	0.06	0.30	9.83	
130.00		18.71	1.26	0.07	0.30	0.45	
135.00	Appurtenance(s)	646.25	1.36	0.21	0.39	30.10	
139.50	Top - Section 4	486.74	1.45	0.39	0.49	34.35	
140.00		14.62	1.46	0.41	0.50	1.07	
145.00	Appurtenance(s)	396.65	1.57	0.68	0.63	41.47	
147.00	Appurtenance(s)	173.66	1.61	0.81	0.68	20.52	
149.37	Appurtenance(s)	219.28	1.66	0.99	0.76	29.65	
150.00		18.42	1.68	1.04	0.78	2.58	
155.00		146.15	1.79	1.50	0.96	26.26	
159.25	Appurtenance(s)	280.73	1.89	1.98	1.14	60.91	
Totals:		20,796.6				535.2	
						Total Wind:	18,292.8

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

Calculated Forces

Structure: CT00799-S-SBA

Code: EIA/TIA-222-G

5/30/2019

Site Name: Mystic

Exposure: C

Height: 159.25 (ft)

Crest Height: 0.00

Base Elev: 0.000 (ft)

Site Class: D - Stiff Soil

Gh: 1.1

Topography: 1

Struct Class: II

Page: 22



Load Case: 0.9D + 1.0E

Iterations 24

Gust Response Factor 1.10

Sds 0.17

Ss 0.16

Dead Load Factor 0.90

Seismic Load Factor 1.00

Sd1 0.09

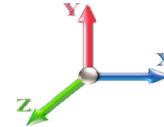
S1 0.06

Wind Load Factor 0.00

Structure Frequency (f1) 0.38

SA 0.04

Seismic Importance Factor 1.00



Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-22.09	-0.60	0.00	-53.00	0.00	53.00	3590.63	1795.31	6859.94	3435.07	0.00	0.00	0.00	0.022
5.00	-21.13	-0.59	0.00	-49.99	0.00	49.99	3550.74	1775.37	6673.42	3341.67	0.00	0.00	0.00	0.021
10.00	-20.17	-0.57	0.00	-47.04	0.00	47.04	3510.26	1755.13	6488.29	3248.97	0.01	-0.01	0.00	0.020
15.00	-19.23	-0.55	0.00	-44.18	0.00	44.18	3469.19	1734.59	6304.60	3156.98	0.02	-0.01	0.00	0.020
20.00	-18.31	-0.53	0.00	-41.43	0.00	41.43	3427.52	1713.76	6122.40	3065.75	0.04	-0.02	0.00	0.019
25.00	-17.40	-0.50	0.00	-38.79	0.00	38.79	3385.27	1692.63	5941.76	2975.29	0.06	-0.02	0.00	0.018
30.00	-16.50	-0.48	0.00	-36.28	0.00	36.28	3342.42	1671.21	5762.72	2885.64	0.09	-0.03	0.00	0.018
35.00	-15.61	-0.45	0.00	-33.89	0.00	33.89	3298.98	1649.49	5585.34	2796.82	0.12	-0.03	0.00	0.017
36.75	-15.31	-0.44	0.00	-33.09	0.00	33.09	3283.64	1641.82	5523.66	2765.94	0.13	-0.03	0.00	0.017
40.00	-14.33	-0.41	0.00	-31.65	0.00	31.65	3254.95	1627.48	5409.68	2708.86	0.16	-0.04	0.00	0.016
42.00	-13.74	-0.40	0.00	-30.82	0.00	30.82	2585.06	1292.53	4344.38	2175.42	0.17	-0.04	0.00	0.019
45.00	-13.29	-0.38	0.00	-29.63	0.00	29.63	2566.17	1283.08	4264.80	2135.57	0.20	-0.04	0.00	0.019
50.00	-12.56	-0.36	0.00	-27.72	0.00	27.72	2534.21	1267.10	4132.95	2069.55	0.25	-0.05	0.00	0.018
55.00	-11.83	-0.34	0.00	-25.91	0.00	25.91	2501.66	1250.83	4002.14	2004.05	0.30	-0.05	0.00	0.018
60.00	-11.12	-0.32	0.00	-24.20	0.00	24.20	2468.51	1234.26	3872.43	1939.09	0.35	-0.06	0.00	0.017
65.00	-10.42	-0.31	0.00	-22.59	0.00	22.59	2434.78	1217.39	3743.87	1874.72	0.42	-0.06	0.00	0.016
70.00	-9.73	-0.29	0.00	-21.06	0.00	21.06	2400.45	1200.23	3616.52	1810.95	0.48	-0.07	0.00	0.016
75.00	-9.05	-0.28	0.00	-19.60	0.00	19.60	2365.53	1182.77	3490.42	1747.80	0.55	-0.07	0.00	0.015
76.00	-8.92	-0.28	0.00	-19.32	0.00	19.32	2358.48	1179.24	3465.36	1735.25	0.57	-0.07	0.00	0.015
80.00	-8.04	-0.27	0.00	-18.20	0.00	18.20	2330.02	1165.01	3365.64	1685.32	0.63	-0.07	0.00	0.014
80.75	-7.87	-0.27	0.00	-18.00	0.00	18.00	1747.65	873.83	2561.44	1282.63	0.64	-0.08	0.00	0.019
85.00	-7.40	-0.27	0.00	-16.84	0.00	16.84	1728.11	864.05	2487.16	1245.43	0.71	-0.08	0.00	0.018
90.00	-6.85	-0.27	0.00	-15.48	0.00	15.48	1704.57	852.28	2400.33	1201.95	0.80	-0.08	0.00	0.017
95.00	-6.31	-0.27	0.00	-14.11	0.00	14.11	1680.44	840.22	2314.14	1158.79	0.89	-0.09	0.00	0.016
100.00	-5.79	-0.27	0.00	-12.75	0.00	12.75	1655.72	827.86	2228.66	1115.99	0.98	-0.10	0.00	0.015
105.00	-5.27	-0.27	0.00	-11.39	0.00	11.39	1630.40	815.20	2143.93	1073.56	1.09	-0.10	0.00	0.014
110.00	-4.76	-0.27	0.00	-10.03	0.00	10.03	1604.50	802.25	2060.02	1031.54	1.19	-0.10	0.00	0.013
115.00	-4.25	-0.27	0.00	-8.68	0.00	8.68	1578.00	789.00	1976.98	989.96	1.31	-0.11	0.00	0.011
120.00	-3.63	-0.27	0.00	-7.33	0.00	7.33	1550.91	775.46	1894.86	948.84	1.42	-0.11	0.00	0.010
120.00	-3.63	-0.27	0.00	-7.33	0.00	7.33	930.23	465.11	237.26	173.90	1.42	-0.11	0.00	0.046
125.00	-3.16	-0.27	0.00	-5.98	0.00	5.98	930.23	465.11	237.26	173.90	1.54	-0.12	0.00	0.038
126.00	-2.74	-0.26	0.00	-5.71	0.00	5.71	930.23	465.11	237.26	173.90	1.57	-0.13	0.00	0.036
129.75	-2.29	-0.25	0.00	-4.72	0.00	4.72	930.23	465.11	237.26	173.90	1.69	-0.17	0.00	0.030
130.00	-2.27	-0.25	0.00	-4.66	0.00	4.66	930.23	465.11	237.26	173.90	1.70	-0.17	0.00	0.029
135.00	-1.62	-0.22	0.00	-3.39	0.00	3.39	930.23	465.11	237.26	173.90	1.90	-0.22	0.00	0.021
139.50	-1.15	-0.19	0.00	-2.39	0.00	2.39	930.23	465.11	237.26	173.90	2.12	-0.24	0.00	0.015
139.50	-1.15	-0.19	0.00	-2.39	0.00	2.39	541.19	270.59	86.27	63.23	2.12	-0.24	0.00	0.040
140.00	-1.14	-0.19	0.00	-2.29	0.00	2.29	541.19	270.59	86.27	63.23	2.14	-0.25	0.00	0.038
145.00	-0.75	-0.14	0.00	-1.36	0.00	1.36	541.19	270.59	86.27	63.23	2.47	-0.37	0.00	0.023
147.00	-0.60	-0.12	0.00	-1.07	0.00	1.07	541.19	270.59	86.27	63.23	2.63	-0.41	0.00	0.018
149.37	-0.40	-0.09	0.00	-0.78	0.00	0.78	541.19	270.59	86.27	63.23	2.84	-0.44	0.00	0.013
150.00	-0.38	-0.09	0.00	-0.72	0.00	0.72	541.19	270.59	86.27	63.23	2.90	-0.44	0.00	0.012
155.00	-0.25	-0.06	0.00	-0.27	0.00	0.27	541.19	270.59	86.27	63.23	3.38	-0.48	0.00	0.005
159.25	0.00	-0.06	0.00	0.00	0.00	0.00	541.19	270.59	86.27	63.23	3.81	-0.48	0.00	0.000

Wind Loading - Shaft

Structure: CT00799-S-SBA

Code: EIA/TIA-222-G

5/30/2019

Site Name: Mystic

Exposure: C

Height: 159.25 (ft)

Crest Height: 0.00

Base Elev: 0.000 (ft)

Site Class: D - Stiff Soil

Gh: 1.1

Topography: 1

Struct Class: II

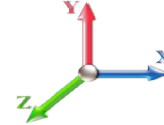
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Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations 26

Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.85	7.442	8.19	219.44	0.650	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.85	7.442	8.19	215.93	0.650	0.000	5.00	19.676	12.79	104.7	0.0	934.1
10.00		1.00	0.85	7.442	8.19	212.42	0.650	0.000	5.00	19.359	12.58	103.0	0.0	918.9
15.00		1.00	0.85	7.442	8.19	208.90	0.650	0.000	5.00	19.041	12.38	101.3	0.0	903.7
20.00		1.00	0.90	7.896	8.69	211.57	0.650	0.000	5.00	18.724	12.17	105.7	0.0	888.6
25.00		1.00	0.95	8.276	9.10	212.89	0.650	0.000	5.00	18.406	11.96	108.9	0.0	873.4
30.00		1.00	0.98	8.600	9.46	213.24	0.650	0.000	5.00	18.089	11.76	111.2	0.0	858.2
35.00		1.00	1.01	8.883	9.77	212.90	0.650	0.000	5.00	17.772	11.55	112.9	0.0	843.0
36.75	Bot - Section 2	1.00	1.03	8.975	9.87	212.64	0.650	0.000	1.75	6.145	3.99	39.4	0.0	291.5
40.00		1.00	1.04	9.137	10.05	212.02	0.650	0.000	3.25	11.481	7.46	75.0	0.0	990.8
42.00	Top - Section 1	1.00	1.05	9.231	10.15	211.55	0.650	0.000	2.00	6.999	4.55	46.2	0.0	603.9
45.00		1.00	1.07	9.366	10.30	214.01	0.650	0.000	3.00	10.403	6.76	69.7	0.0	411.7
50.00		1.00	1.09	9.576	10.53	212.41	0.650	0.000	5.00	17.084	11.10	117.0	0.0	676.1
55.00		1.00	1.12	9.770	10.75	210.53	0.650	0.000	5.00	16.766	10.90	117.1	0.0	663.4
60.00		1.00	1.14	9.951	10.95	208.40	0.650	0.000	5.00	16.449	10.69	117.0	0.0	650.8
65.00		1.00	1.16	10.120	11.13	206.07	0.650	0.000	5.00	16.131	10.49	116.7	0.0	638.1
70.00		1.00	1.17	10.279	11.31	203.56	0.650	0.000	5.00	15.814	10.28	116.2	0.0	625.5
75.00		1.00	1.19	10.430	11.47	200.89	0.650	0.000	5.00	15.497	10.07	115.6	0.0	612.8
76.00	Bot - Section 3	1.00	1.19	10.459	11.50	200.33	0.650	0.000	1.00	3.061	1.99	22.9	0.0	121.0
80.00		1.00	1.21	10.572	11.63	198.07	0.650	0.000	4.00	12.287	7.99	92.9	0.0	868.5
80.75	Top - Section 2	1.00	1.21	10.593	11.65	197.64	0.650	0.000	0.75	2.281	1.48	17.3	0.0	161.2
85.00		1.00	1.22	10.708	11.78	197.93	0.650	0.000	4.25	12.792	8.31	97.9	0.0	405.3
90.00		1.00	1.24	10.838	11.92	194.89	0.650	0.000	5.00	14.756	9.59	114.3	0.0	467.5
95.00		1.00	1.25	10.962	12.06	191.74	0.650	0.000	5.00	14.439	9.39	113.2	0.0	457.3
100.00		1.00	1.27	11.081	12.19	188.49	0.650	0.000	5.00	14.121	9.18	111.9	0.0	447.2
105.00		1.00	1.28	11.195	12.31	185.16	0.650	0.000	5.00	13.804	8.97	110.5	0.0	437.1
110.00		1.00	1.29	11.305	12.44	181.74	0.650	0.000	5.00	13.486	8.77	109.0	0.0	426.9
115.00		1.00	1.30	11.412	12.55	178.24	0.650	0.000	5.00	13.169	8.56	107.4	0.0	416.8
120.00	Top - Section 3	1.00	1.32	11.514	12.67	174.67	0.650	0.000	5.00	12.852	8.35	105.8	0.0	406.7
125.00		1.00	1.33	11.614	12.78	46.07	0.834	0.000	5.00	3.333	2.78	35.5	0.0	374.2
126.00	Appurtenance(s)	1.00	1.33	11.633	12.80	46.11	0.833	0.000	1.00	0.667	0.56	7.1	0.0	74.8
129.75	Appurtenance(s)	1.00	1.34	11.705	12.88	46.25	0.830	0.000	3.75	2.500	2.08	26.7	0.0	280.6
130.00		1.00	1.34	11.710	12.88	46.26	0.830	0.000	0.25	0.167	0.14	1.8	0.0	18.7
135.00	Appurtenance(s)	1.00	1.35	11.803	12.98	46.44	0.827	0.000	5.00	3.333	2.76	35.8	0.0	374.2
139.50	Top - Section 4	1.00	1.36	11.885	13.07	46.60	0.824	0.000	4.50	3.000	2.47	32.3	0.0	336.7
140.00		1.00	1.36	11.894	13.08	29.14	1.200	0.000	0.50	0.208	0.25	3.3	0.0	14.6
145.00	Appurtenance(s)	1.00	1.37	11.982	13.18	29.25	1.200	0.000	5.00	2.083	2.50	33.0	0.0	146.2
147.00	Appurtenance(s)	1.00	1.37	12.017	13.22	29.29	1.200	0.000	2.00	0.833	1.00	13.2	0.0	58.5
149.37	Appurtenance(s)	1.00	1.38	12.057	13.26	29.34	1.200	0.000	2.37	0.988	1.19	15.7	0.0	69.3
150.00		1.00	1.38	12.068	13.27	29.35	1.200	0.000	0.63	0.262	0.31	4.2	0.0	18.4
155.00		1.00	1.39	12.152	13.37	29.45	1.200	0.000	5.00	2.083	2.50	33.4	0.0	146.2
159.25	Appurtenance(s)	1.00	1.40	12.221	13.44	29.54	1.200	0.000	4.25	1.771	2.13	28.6	0.0	124.2
Totals:									159.25			2,951.4		19,036.6

Discrete Appurtenance Forces

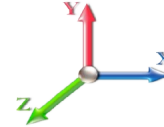
Structure: CT00799-S-SBA	Code: EIA/TIA-222-G	5/30/2019
Site Name: Mystic	Exposure: C	
Height: 159.25 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II
		Page: 24



Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations 26

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	CaAa x Ka	Ka	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)
1	159.25	Flag	1	12.221	13.443	1.00	1.00	7.27	0.00	0.000	0.000	97.73	0.00	0.00
2	159.25	6' Lightning rod	1	12.221	13.443	1.00	1.00	0.38	6.50	0.000	0.000	5.11	0.00	0.00
3	159.25	37" Canister	1	12.221	13.443	1.00	1.00	7.60	150.00	0.000	0.000	102.17	0.00	0.00
4	149.37	37" Canister	1	12.057	13.263	1.00	1.00	15.19	150.00	0.000	0.000	201.47	0.00	0.00
5	147.00	BPD7823VG12A	6	12.017	13.219	0.00	1.00	0.00	115.20	0.000	0.000	0.00	0.00	0.00
6	145.00	Flush Mount	1	11.982	13.181	1.00	1.00	0.00	150.00	0.000	0.000	0.00	0.00	0.00
7	145.00	SBNHH-1D65A	3	11.982	13.181	1.00	1.00	0.00	100.50	0.000	0.000	0.00	0.00	0.00
8	139.50	37" Canister	1	11.885	13.074	1.00	1.00	14.69	150.00	0.000	0.000	192.05	0.00	0.00
9	135.00	Flush Mount	1	11.803	12.984	1.00	1.00	0.00	150.00	0.000	0.000	0.00	0.00	0.00
10	135.00	KRY 112 144/1	6	11.803	12.984	1.00	1.00	0.00	66.00	0.000	0.000	0.00	0.00	0.00
11	135.00	APXV18-206516S	3	11.803	12.984	1.00	1.00	0.00	56.10	0.000	0.000	0.00	0.00	0.00
12	129.75	37" Canister	1	11.705	12.876	1.00	1.00	14.14	150.00	0.000	0.000	182.06	0.00	0.00
13	126.00	Flush Mount	1	11.633	12.797	1.00	1.00	0.00	150.00	0.000	0.000	0.00	0.00	0.00
14	126.00	BPD7823VG12A	6	11.633	12.797	0.00	1.00	0.00	115.20	0.000	0.000	0.00	0.00	0.00
15	126.00	SBNHH-1D65A	3	11.633	12.797	1.00	1.00	0.00	100.50	0.000	0.000	0.00	0.00	0.00
16	120.00	37" Canister	1	11.514	12.666	1.00	1.00	7.05	150.00	0.000	0.000	89.29	0.00	0.00
Totals:									1,760.00			869.89		

Total Applied Force Summary

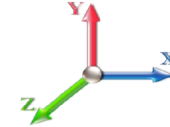
Structure: CT00799-S-SBA	Code: EIA/TIA-222-G	5/30/2019
Site Name: Mystic	Exposure: C	
Height: 159.25 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00
Wind Load Factor 1.00



Iterations 26

Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00		0.00	0.00	0.00	0.00
5.00		104.70	1074.53	0.00	0.00
10.00		103.01	1059.34	0.00	0.00
15.00		101.32	1044.15	0.00	0.00
20.00		105.71	1028.96	0.00	0.00
25.00		108.92	1013.77	0.00	0.00
30.00		111.23	998.57	0.00	0.00
35.00		112.88	983.38	0.00	0.00
36.75		39.43	340.59	0.00	0.00
40.00		75.00	1082.08	0.00	0.00
42.00		46.19	660.05	0.00	0.00
45.00		69.66	495.98	0.00	0.00
50.00		116.97	816.51	0.00	0.00
55.00		117.13	803.85	0.00	0.00
60.00		117.03	791.19	0.00	0.00
65.00		116.72	778.53	0.00	0.00
70.00		116.23	765.87	0.00	0.00
75.00		115.56	753.21	0.00	0.00
76.00		22.89	149.12	0.00	0.00
80.00		92.88	980.79	0.00	0.00
80.75		17.28	182.27	0.00	0.00
85.00		97.94	524.64	0.00	0.00
90.00		114.34	607.86	0.00	0.00
95.00		113.16	597.73	0.00	0.00
100.00		111.88	587.60	0.00	0.00
105.00		110.49	577.47	0.00	0.00
110.00		109.01	567.35	0.00	0.00
115.00		107.45	557.22	0.00	0.00
120.00	(1) attachments	195.10	697.09	0.00	0.00
125.00		35.49	514.55	0.00	0.00
126.00	(10) attachments	7.10	468.61	0.00	0.00
129.75	(1) attachments	208.79	501.60	0.00	0.00
130.00		1.78	22.61	0.00	0.00
135.00	(10) attachments	35.78	724.25	0.00	0.00
139.50	(1) attachments	224.37	514.82	0.00	0.00
140.00		3.27	17.74	0.00	0.00
145.00	(4) attachments	32.95	427.85	0.00	0.00
147.00	(6) attachments	13.22	173.66	0.00	0.00
149.37	(1) attachments	217.19	219.28	0.00	0.00
150.00		4.18	18.42	0.00	0.00
155.00		33.42	146.15	0.00	0.00
159.25	(3) attachments	233.58	280.73	0.00	0.00
Totals:		3,821.24	24,549.97	0.00	0.00

Calculated Forces

Structure: CT00799-S-SBA

Code: EIA/TIA-222-G

5/30/2019

Site Name: Mystic

Exposure: C

Height: 159.25 (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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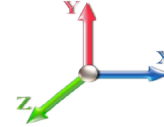


Load Case: 1.0D + 1.0W 60 mph Wind

Iterations 26

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	-24.55	-3.83	0.00	-338.54	0.00	338.54	3590.63	1795.31	6859.94	3435.07	0.00	0.000	0.000	0.105
5.00	-23.47	-3.73	0.00	-319.40	0.00	319.40	3550.74	1775.37	6673.42	3341.67	0.02	-0.031	0.000	0.102
10.00	-22.41	-3.64	0.00	-300.73	0.00	300.73	3510.26	1755.13	6488.29	3248.97	0.07	-0.062	0.000	0.099
15.00	-21.37	-3.55	0.00	-282.52	0.00	282.52	3469.19	1734.59	6304.60	3156.98	0.15	-0.092	0.000	0.096
20.00	-20.33	-3.45	0.00	-264.76	0.00	264.76	3427.52	1713.76	6122.40	3065.75	0.26	-0.122	0.000	0.092
25.00	-19.32	-3.35	0.00	-247.49	0.00	247.49	3385.27	1692.63	5941.76	2975.29	0.40	-0.151	0.000	0.089
30.00	-18.32	-3.25	0.00	-230.73	0.00	230.73	3342.42	1671.21	5762.72	2885.64	0.58	-0.180	0.000	0.085
35.00	-17.34	-3.14	0.00	-214.49	0.00	214.49	3298.98	1649.49	5585.34	2796.82	0.78	-0.208	0.000	0.082
36.75	-16.99	-3.10	0.00	-209.00	0.00	209.00	3283.64	1641.82	5523.66	2765.94	0.86	-0.218	0.000	0.081
40.00	-15.91	-3.03	0.00	-198.92	0.00	198.92	3254.95	1627.48	5409.68	2708.86	1.01	-0.237	0.000	0.078
42.00	-15.25	-2.98	0.00	-192.87	0.00	192.87	3258.06	1292.53	4344.38	2175.42	1.11	-0.248	0.000	0.095
45.00	-14.75	-2.91	0.00	-183.93	0.00	183.93	2566.17	1283.08	4264.80	2135.57	1.28	-0.264	0.000	0.092
50.00	-13.94	-2.80	0.00	-169.36	0.00	169.36	2534.21	1267.10	4132.95	2069.55	1.57	-0.295	0.000	0.087
55.00	-13.13	-2.69	0.00	-155.36	0.00	155.36	2501.66	1250.83	4002.14	2004.05	1.89	-0.324	0.000	0.083
60.00	-12.34	-2.57	0.00	-141.93	0.00	141.93	2468.51	1234.26	3872.43	1939.09	2.25	-0.353	0.000	0.078
65.00	-11.56	-2.45	0.00	-129.08	0.00	129.08	2434.78	1217.39	3743.87	1874.72	2.63	-0.380	0.000	0.074
70.00	-10.80	-2.34	0.00	-116.81	0.00	116.81	2400.45	1200.23	3616.52	1810.95	3.05	-0.407	0.000	0.069
75.00	-10.04	-2.22	0.00	-105.12	0.00	105.12	2365.53	1182.77	3490.42	1747.80	3.48	-0.432	0.000	0.064
76.00	-9.89	-2.20	0.00	-102.90	0.00	102.90	2358.48	1179.24	3465.36	1735.25	3.58	-0.437	0.000	0.063
80.00	-8.91	-2.10	0.00	-94.11	0.00	94.11	2330.02	1165.01	3365.64	1685.32	3.95	-0.457	0.000	0.060
80.75	-8.73	-2.08	0.00	-92.54	0.00	92.54	1747.65	873.83	2561.44	1282.63	4.02	-0.461	0.000	0.077
85.00	-8.21	-1.98	0.00	-83.69	0.00	83.69	1728.11	864.05	2487.16	1245.43	4.44	-0.480	0.000	0.072
90.00	-7.60	-1.87	0.00	-73.78	0.00	73.78	1704.57	852.28	2400.33	1201.95	4.96	-0.506	0.000	0.066
95.00	-7.00	-1.75	0.00	-64.45	0.00	64.45	1680.44	840.22	2314.14	1158.79	5.50	-0.531	0.000	0.060
100.00	-6.41	-1.64	0.00	-55.69	0.00	55.69	1655.72	827.86	2228.66	1115.99	6.07	-0.553	0.000	0.054
105.00	-5.84	-1.52	0.00	-47.52	0.00	47.52	1630.40	815.20	2143.93	1073.56	6.66	-0.574	0.000	0.048
110.00	-5.27	-1.41	0.00	-39.91	0.00	39.91	1604.50	802.25	2060.02	1031.54	7.27	-0.593	0.000	0.042
115.00	-4.71	-1.30	0.00	-32.87	0.00	32.87	1578.00	789.00	1976.98	989.96	7.90	-0.610	0.000	0.036
120.00	-4.02	-1.09	0.00	-26.38	0.00	26.38	1550.91	775.46	1894.86	948.84	8.55	-0.625	0.000	0.030
120.00	-4.02	-1.09	0.00	-26.38	0.00	26.38	930.23	465.11	237.26	173.90	8.55	-0.625	0.000	0.156
125.00	-3.50	-1.06	0.00	-20.91	0.00	20.91	930.23	465.11	237.26	173.90	9.21	-0.638	0.000	0.124
126.00	-3.03	-1.05	0.00	-19.85	0.00	19.85	930.23	465.11	237.26	173.90	9.35	-0.681	0.000	0.117
129.75	-2.53	-0.84	0.00	-15.92	0.00	15.92	930.23	465.11	237.26	173.90	9.94	-0.822	0.000	0.094
130.00	-2.51	-0.84	0.00	-15.72	0.00	15.72	930.23	465.11	237.26	173.90	9.99	-0.831	0.000	0.093
135.00	-1.78	-0.79	0.00	-11.53	0.00	11.53	930.23	465.11	237.26	173.90	10.94	-0.974	0.000	0.068
139.50	-1.27	-0.56	0.00	-7.96	0.00	7.96	930.23	465.11	237.26	173.90	11.90	-1.067	0.000	0.047
139.50	-1.27	-0.56	0.00	-7.96	0.00	7.96	541.19	270.59	86.27	63.23	11.90	-1.067	0.000	0.128
140.00	-1.25	-0.56	0.00	-7.68	0.00	7.68	541.19	270.59	86.27	63.23	12.01	-1.075	0.000	0.124
145.00	-0.82	-0.52	0.00	-4.86	0.00	4.86	541.19	270.59	86.27	63.23	13.38	-1.509	0.000	0.078
147.00	-0.65	-0.51	0.00	-3.81	0.00	3.81	541.19	270.59	86.27	63.23	14.04	-1.629	0.000	0.062
149.37	-0.44	-0.28	0.00	-2.61	0.00	2.61	541.19	270.59	86.27	63.23	14.88	-1.734	0.000	0.042
150.00	-0.42	-0.28	0.00	-2.43	0.00	2.43	541.19	270.59	86.27	63.23	15.11	-1.756	0.000	0.039
155.00	-0.27	-0.24	0.00	-1.03	0.00	1.03	541.19	270.59	86.27	63.23	17.02	-1.876	0.000	0.017
159.25	0.00	-0.23	0.00	0.00	0.00	0.00	541.19	270.59	86.27	63.23	18.71	-1.906	0.000	0.000

Final Analysis Summary

Structure: CT00799-S-SBA	Code: EIA/TIA-222-G	5/30/2019
Site Name: Mystic	Exposure: C	
Height: 159.25 (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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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 105 mph Wind	18.3	0.00	29.44	0.00	0.00	1602.86
0.9D + 1.6W 105 mph Wind	18.3	0.00	22.07	0.00	0.00	1590.78
1.2D + 1.0Di + 1.0Wi 50 mph Wind	5.1	0.00	40.96	0.00	0.00	448.68
1.2D + 1.0E	0.6	0.00	29.46	0.00	0.00	53.44
0.9D + 1.0E	0.6	0.00	22.09	0.00	0.00	53.00
1.0D + 1.0W 60 mph Wind	3.8	0.00	24.55	0.00	0.00	338.54

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 105 mph Wind	-4.59	-4.96	0.00	-119.77	0.00	-119.77	1550.91	775.46	1894.86	948.84	120.00	0.694
0.9D + 1.6W 105 mph Wind	-3.38	-4.90	0.00	-118.16	0.00	-118.16	1550.91	775.46	1894.86	948.84	120.00	0.683
1.2D + 1.0Di + 1.0Wi 50 mph Wind	-6.99	-1.42	0.00	-30.55	0.00	-30.55	1550.91	775.46	1894.86	948.84	120.00	0.183
1.2D + 1.0E	-4.84	-0.27	0.00	-7.40	0.00	-7.40	1550.91	775.46	1894.86	948.84	120.00	0.048
0.9D + 1.0E	-3.63	-0.27	0.00	-7.33	0.00	-7.33	1550.91	775.46	1894.86	948.84	120.00	0.046
1.0D + 1.0W 60 mph Wind	-4.02	-1.09	0.00	-26.38	0.00	-26.38	1550.91	775.46	1894.86	948.84	120.00	0.156

Base Plate Summary

Structure: CT00799-S-SB	Code: EIA/TIA-222-G	5/30/2019
Site Name: Mystic	Exposure: C	
Height: 159.25 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II
		Page: 28



Reactions		Base Plate		Anchor Bolts	
Original Design		Yield (ksi):	50.00	Bolt Circle:	54.00
Moment (kip-ft):	1602.00	Width (in):	52.00	Number Bolts:	8.00
Axial (kip):	19.80	Style:	Clipped	Bolt Type:	2.25" 18J
Shear (kip):	17.00	Polygon Sides:	0.00	Bolt Diameter (in):	2.25
Analysis		Clip Length (in):	10.00	Yield (ksi):	75.00
Moment (kip-ft):	1602.86	Effective Len (in):	14.62	Ultimate (ksi):	100.00
Axial (kip):	40.96	Moment (kip-in):	652.25	Arrangement:	Clustered
Shear (kip):	18.33	Allow Stress (ksi):	67.50	Cluster Dist (in):	6.00
		Applied Stress (ksi):	0.00	Start Angle (deg):	45.00
Moment Design %:	100.05	Stress Ratio:	0.52	Compression	
				Force (kip):	183.22
				Allowable (kip):	260.00
				Ratio:	0.72
				Tension	
				Force (kip):	172.98
				Allowable (kip):	260.00
				Ratio:	0.68



Pier Foundation Design For Monopole			Date
			5/30/2019
Customer Name:	AT&T	EIA/TIA Standard:	EIA-222-G
Site Name:	Mystic	Structure Height (Ft.):	159.25
Site Number:	CT00799-S-SBA	Engineer Name:	S. Hesselbein
Engr. Number:	76669	Engineer Login ID:	

Foundation Info Obtained from:

Structure Type:

Analysis or Design?

Base Reactions (Factored):

Axial Load (Kips):	29.4	Shear Force (Kips):	18.3
Uplift Force (Kips):	0.0	Moment (Kips-ft):	1602.9

Foundation Geometries:

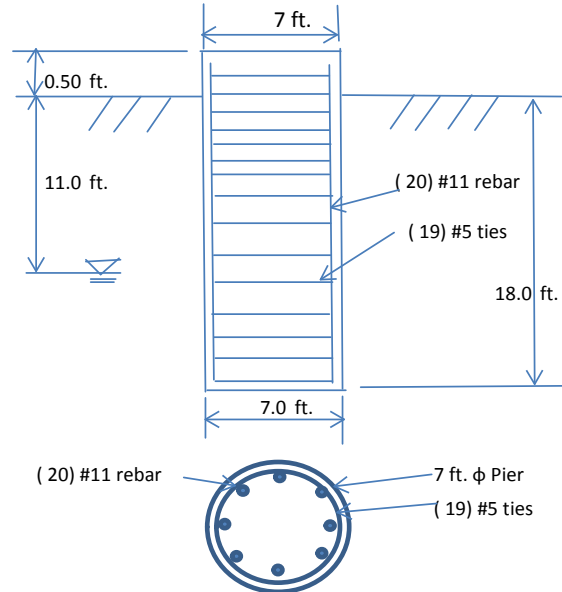
Mods required -Yes/No ?:	No		ft.
Diameter of Pier (ft.):	7.0	Depth of Base B. G. S. :	18.0 ft.
Pier Height A. G. (ft.):	0.50		

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 #:	11	Tie / Stirrup Size #:	5	
Qty. of Vertical Rebars:	20	Tie Spacing:	18.0	in.
Concrete Cover (in.):	4	Concrete unit weight:	150.0	pcf

Soil Design Parameters:

Water Table B.G.S. (ft):	11.0	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:	Soil Report			



Monopole Pier Foundation

Depth of Layers (ft)		γ_{soil}	ϕ	Cohesion	Ultimate Skin Friction (psf)	Ultimate Bearing (psf)	Soil Types					
Top	Bottom	(pcf)	(°)	(psf)								
0.0	4.0	120	33	0	0		Sand					
4.0	6.0	130	37	0	410		Sand					
6.0	10.0	130	40	0	590		Sand					
10.0	18.0	130	40	0	250		Sand					
18.0	25.0	130	40	0	920		Sand					
25.0	30.0											

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

1.1

Foundation Analysis and Design:

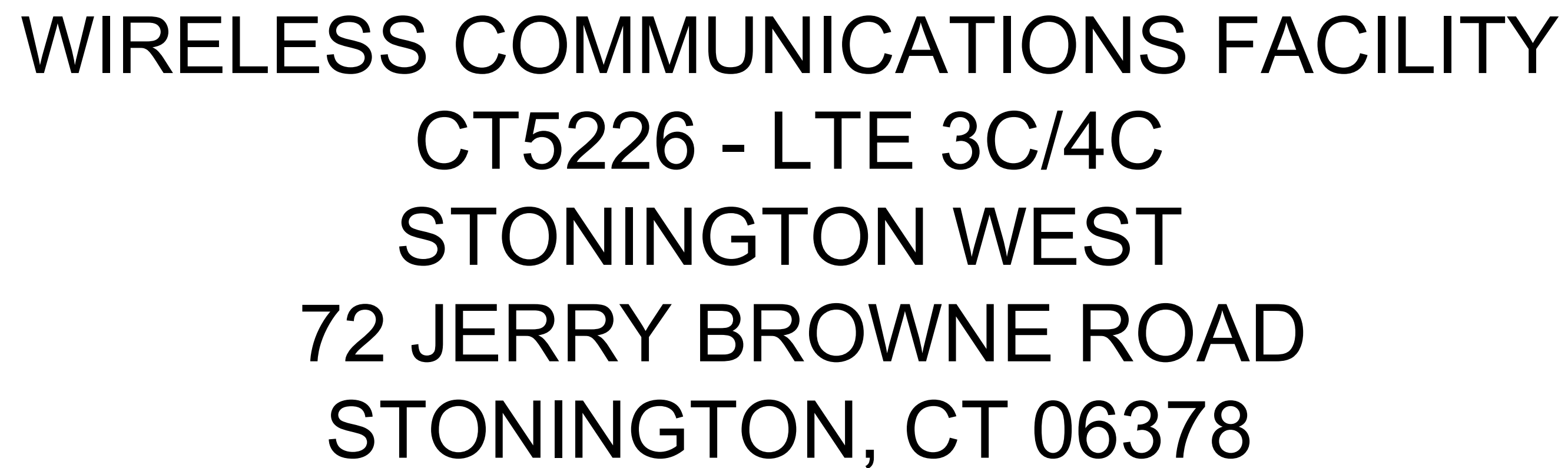
Uplift Strength Reduction Factor:	0.75	Soil Bearing Strength Reduction Factor:	0.75
Total Dry Soil Volume from Conical Failure (cu. Ft.):	3643	Dry Soil Weight from Conical Failure:	460 Kips
Total Buoyant Soil Volume from Conical Failure (cu. Ft.):	431	Buoyant Soil Weight from Conical Failure (Ki	21 Kips
Total Dry Concrete Volume (cu. Ft.):	443	Total Dry Concrete Weight:	66.4 Kips
Total Buoyant Concrete Volume (cu. Ft.):	269.4	Total Buoyant Concrete Weight:	23.60 Kips
Total Effective Concrete Weight (Kips):	90.0	Total Effective Soil Weight:	480.9 Kips
Total Effective Vertical Load on Base (Kips):	53.0		

Check Soil Capacities:

Allowable Foundation Overturning Resistance (kips-ft.):	3828.3	>	Design Factored Moment (kips-ft):	1831	Usage	0.48	OK!
Factor of Safety of Passive Soil Resistance against Moment:	2.09	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:					Usage		
Vertical Steel Rebar Area (sq. in./each):	1.56	Tie / Stirrup Area (sq. in./each):	0.31				
Calculated Moment Capacity (Mn, Kips-Ft):	5187.3	>	Design Factored Moment (Mu, K-Ft):	1650.3	0.32	OK!	
Calculated Shear Capacity (Kips):	970.0	>	Design Factored Shear (Kips):	232.5	0.24	OK!	
Calculated Tension Capacity (Tn, Kips):	1684.8	>	Design Factored Tension (Tu Kips):	0.0	0.00	OK!	
Calculated Compression Capacity (Pn, Kips):	7307	>	Design Factored Axial Load (Pu Kips):	29.4	0.00	OK!	
Moment & Axial Strength Combination:	0.32	OK!	Max. Allowable Tie/Stirrup Spacing:	12.00	in.		
Pier Reinforcement Ratio:	0.006	Reinforcement Ratio is satisfied per ACI					



3. ALL WORK SHALL BE IN ACCORDANCE WITH THE 2015 INTERNATIONAL BUILDING CODE AS MODIFIED BY THE 2018 CONNECTICUT STATE BUILDING CODE, INCLUDING THE TIA-222 REVISION "G" STRUCTURAL STANDARDS FOR STEEL ANTENNA TOWERS AND SUPPORTING STRUCTURES, 2017 CONNECTICUT FIRE SAFETY CODE AND, NATIONAL ELECTRICAL CODE AND LOCAL CODES.
2. THE COMPOUND, TOWER, PRIMARY GROUND RING, ELECTRICAL SERVICE TO THE METER BANK AND TELEPHONE SERVICE TO THE DEMARCATION POINT ARE PROVIDED BY SITE OWNER. AS BUILT FIELD CONDITIONS REGARDING THESE ITEMS SHALL BE CONFIRMED BY THE CONTRACTOR. SHOULD ANY FIELD CONDITIONS PRECLUDE COMPLIANCE WITH THE DRAWINGS, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER AND SHALL NOT PROCEED WITH ANY AFFECTED WORK.
3. CONTRACTOR SHALL REVIEW ALL DRAWINGS AND SPECIFICATIONS IN THE CONTRACT DOCUMENT SET. CONTRACTOR SHALL COORDINATE ALL WORK SHOWN IN THE SET OF DRAWINGS. THE CONTRACTOR SHALL PROVIDE A COMPLETE SET OF DRAWINGS TO ALL SUBCONTRACTORS AND ALL RELATED PARTIES. THE SUBCONTRACTORS SHALL EXAMINE ALL THE DRAWINGS AND SPECIFICATIONS FOR THE INFORMATION THAT AFFECTS THEIR WORK.
4. CONTRACTOR SHALL PROVIDE A COMPLETE BUILD-OUT WITH ALL FINISHES, STRUCTURAL, MECHANICAL, AND ELECTRICAL COMPONENTS AND PROVIDE ALL ITEMS AS SHOWN OR INDICATED ON THE DRAWINGS OR IN THE WRITTEN SPECIFICATIONS.
5. CONTRACTOR SHALL FURNISH ALL MATERIAL, LABOR AND EQUIPMENT TO COMPLETE THE WORK AND FURNISH A COMPLETED JOB ALL IN ACCORDANCE WITH LOCAL AND STATE GOVERNING AUTHORITIES AND OTHER AUTHORITIES HAVING LAWFUL JURISDICTION OVER THE WORK.
6. CONTRACTOR SHALL SECURE AND PAY FOR ALL PERMITS AND ALL INSPECTIONS REQUIRED AND SHALL ALSO PAY FEES REQUIRED FOR THE GENERAL CONSTRUCTION, PLUMBING, ELECTRICAL AND HVAC. PERMITS SHALL BE PAID FOR BY THE RESPECTIVE SUBCONTRACTORS.
7. CONTRACTOR SHALL MAINTAIN A CURRENT SET OF DRAWINGS AND SPECIFICATIONS ON SITE AT ALL TIMES AND INSURE DISTRIBUTION OF NEW DRAWINGS TO SUBCONTRACTORS AND OTHER RELEVANT PARTIES AS SOON AS THEY ARE MADE AVAILABLE. ALL OLD DRAWINGS SHALL BE MARKED VOID AND REMOVED FROM THE CONTRACT AREA. THE CONTRACTOR SHALL FURNISH AN "AS-BUILT" SET OF DRAWINGS TO OWNER UPON COMPLETION OF PROJECT.
8. LOCATION OF EQUIPMENT, AND WORK SUPPLIED BY OTHERS THAT IS DIAGRAMMATICALLY INDICATED ON THE DRAWINGS SHALL BE DETERMINED BY THE CONTRACTOR. THE CONTRACTOR SHALL DETERMINE LOCATIONS AND DIMENSIONS SUBJECT TO STRUCTURAL CONDITIONS AND WORK OF THE SUBCONTRACTORS.
9. THE CONTRACTOR IS SOLELY RESPONSIBLE TO DETERMINE CONSTRUCTION PROCEDURE AND SEQUENCE, AND TO ENSURE THE SAFETY OF THE EXISTING STRUCTURES AND ITS COMPONENT PARTS DURING CONSTRUCTION. THIS INCLUDES THE ADDITION OF WHATEVER SHORING, BRACING, UNDERPINNING, ETC. THAT MAY BE NECESSARY. MAINTAIN EXISTING BUILDING'S/PROPERTY'S OPERATIONS, COORDINATE WORK WITH BUILDING/PROPERTY OWNER.
10. DRAWINGS INDICATE THE MINIMUM STANDARDS, BUT IF ANY WORK SHOULD BE INDICATED TO BE SUBSTANDARD TO ANY ORDINANCES, LAWS, CODES, RULES, OR REGULATIONS BEARING ON THE WORK, THE CONTRACTOR SHALL INCLUDE IN HIS WORK AND SHALL EXECUTE THE WORK CORRECTLY IN ACCORDANCE WITH SUCH ORDINANCES, LAWS, CODES, RULES OR REGULATIONS WITH NO INCREASE IN COSTS.
11. ALL UTILITY WORK SHALL BE IN ACCORDANCE WITH LOCAL UTILITY COMPANY REQUIREMENTS AND SPECIFICATIONS.
12. ALL EQUIPMENT AND PRODUCTS PURCHASED ARE TO BE REVIEWED BY CONTRACTOR AND ALL APPLICABLE SUBCONTRACTORS FOR ANY CONDITION PER MFR.'S RECOMMENDATIONS. CONTRACTOR TO SUPPLY THESE ITEMS AT NO COST TO OWNER OR CONSTRUCTION MANAGER.
13. ANY AND ALL ERRORS, DISCREPANCIES, AND "MISSED" ITEMS ARE TO BE BROUGHT TO THE ATTENTION OF THE AT&T CONSTRUCTION MANAGER DURING THE BIDDING PROCESS BY THE CONTRACTOR. ALL THESE ITEMS ARE TO BE INCLUDED IN THE BID. NO 'EXTRA' WILL BE ALLOWED FOR MISSED ITEMS.
14. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL ON-SITE SAFETY FROM THE TIME THE JOB IS AWARDED UNTIL ALL WORK IS COMPLETE AND ACCEPTED BY THE OWNER.
15. CONTRACTOR TO REVIEW ALL SHOP DRAWINGS AND SUBMIT COPY TO ENGINEER FOR APPROVAL. DRAWINGS MUST BEAR THE CHECKER'S INITIALS BEFORE SUBMITTING TO THE CONSTRUCTION MANAGER FOR REVIEW.
16. THE CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS, ELEVATIONS, ANGLES, AND EXISTING CONDITIONS AT THE SITE, PRIOR TO FABRICATION AND/OR INSTALLATION OF ANY WORK IN THE CONTRACT AREA.
17. COORDINATION, LAYOUT, FURNISHING AND INSTALLATION OF CONDUIT AND ALL APPURTENANCES REQUIRED FOR PROPER INSTALLATION OF ELECTRICAL AND TELECOMMUNICATION SERVICE SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
18. ALL EQUIPMENT AND PRODUCTS PURCHASED ARE TO BE REVIEWED BY CONTRACTOR AND ALL APPLICABLE SUB-CONTRACTORS FOR ANY CONDITION PER THE MANUFACTURER'S RECOMMENDATIONS. CONTRACTOR TO SUPPLY THESE ITEMS AT NO COST TO OWNER OR CONSTRUCTION MANAGER.
19. ALL DAMAGE CAUSED TO ANY EXISTING STRUCTURE SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR WILL BE HELD LIABLE FOR ALL REPAIRS REQUIRED FOR EXISTING STRUCTURES IF DAMAGED DURING CONSTRUCTION ACTIVITIES.
20. THE CONTRACTOR SHALL CONTACT "CALL BEFORE YOU DIG" AT LEAST 48 HOURS PRIOR TO ANY EXCAVATIONS AT 1-800-922-4455. ALL UTILITIES SHALL BE IDENTIFIED AND CLEARLY MARKED PRIOR TO ANY EXCAVATION WORK. CONTRACTOR SHALL MAINTAIN AND PROTECT MARKED UTILITIES THROUGHOUT PROJECT COMPLETION.
21. CONTRACTOR SHALL COMPLY WITH OWNERS ENVIRONMENTAL ENGINEER ON ALL METHODS AND PROVISIONS FOR ALL EXCAVATION ACTIVITIES INCLUDING SOIL DISPOSAL. ALL BACKFILL MATERIALS TO BE PROVIDED BY

FROM:	500 ENTERPRISE DRIVE ROCKY HILL, CONNECTICUT	TO:	72 JERRY BROWNE ROAD STONINGTON, CONNECTICUT
1.	TURN LEFT ONTO CAPITAL BLVD.		0.36 M
2.	TURN LEFT ONTO WEST ST.		0.27 M
3.	TURN LEFT TO MERGE ONTO I-91 S TOWARD NEW HAVEN.		0.30 M
4.	MERGE ONTO CT-9 S VIA EXIT 225 ON THE LEFT TOWARD MIDDLETOWN/OLD SAYBROOK.		1.41 M
5.	MERGE ONTO I-95 N VIA THE EXIT ON THE LEFT TOWARD PROVIDENCE/NEW LONDON.		29.24 M
6.	TAKE THE CT-27 N EXIT, EXIT 90, TOWARD AQUARIUM.		23.27 M
7.	TURN LEFT ONTO WHITEHALL AVE/CT-27.		0.25 M
8.	TURN RIGHT ONTO JERRY BROWNE RD.		0.45 M
9.	72 JERRY BROWNE RD, MYSTIC, CT 06355-3050, 72 JERRY BROWNE RD IS ON THE RIGHT.		0.32 M

This topographic map shows the Mystic River area in Massachusetts. Key features include the Mystic River, Old Mystic, West Mystic, and various ponds such as Shioas Pond and Quilombas Cove. A callout box points to the 'PROJECT LOCATION' on the riverbank. The map also shows roads like Route 95 and Route 184, and a scale bar at the bottom indicates distances up to 2,000 feet.

1. THE PROPOSED SCOPE OF WORK CONSISTS OF A MODIFICATION TO THE EXISTING UNMANNED TELECOMMUNICATIONS FACILITY INCLUDING THE FOLLOWING:

A. AT EACH ANTENNA SECTOR:

- REMOVE KMW ANTENNA AT POS. 1. AND REPLACE WITH ANDREW ANTENNA AT POS. 1. (TOTAL OF 3)
- INSTALL ANDREW ANTENNA AT POS. 2 (TOTAL OF 3)
- INSTALL (4) TMA8P07823VG12A PER SECTOR (TOTAL OF 12)

B. AT THE EQUIPMENT SHELTER

- REMOVE EXISTING DIPLEXER AND TMA COMPONENTS
- HARVEST RXAIT CABINET
- SWAP DUS WITH 5216, ADD XMU
- INSTALL NEW EQUIPMENT RACK FOR PROPOSED APPURTENANCES
- INSTALL (24) QUADRUPLXERS ONTO NEWLY PROPOSED EQUIPMENT RACK WITHIN AT&T SHELTER
- INSTALL (1) RRUS-8843 PER SECTOR AT POS. 2. (TOTAL OF 3) ONTO NEWLY PROPOSED EQUIPMENT RACK WITHIN AT&T SHELTER
- INSTALL (1) RRUS-32 PER SECTOR AT POS. 1. (TOTAL OF 3) ONTO NEWLY PROPOSED EQUIPMENT RACK WITHIN AT&T SHELTER
- INSTALL (12) SURGE ARRESTORS PER SECTOR (TOTAL OF 36)

AT&T SITE NUMBER: CT5226

AT&T SITE NAME: STONINGTON WEST

SITE ADDRESS: 72 JERRY BROWNE ROAD
STONINGTON, CT 06378

LESSEE/APPLICANT: AT&T MOBILITY
500 ENTERPRISE DRIVE, SUITE 3A
ROCKY HILL, CT 06067

AT&T PACE ID NUMBER: PACE JOB 1 - MRCTB022550
PACE JOB 2 - MRCTB022399
PACE JOB 3 - MRCTB022756

AT&T FA LOCATION CODE: 10071265

ENGINEER: CENTEK ENGINEERING, INC.
63-2 NORTH BRANFORD RD.
BRANFORD, CT 06405

PROJECT COORDINATES: LATITUDE: 41°-22'-31.82" N
LONGITUDE: 71°-57'-12.10" W
GROUND ELEVATION: ±25' AMSL
SITE COORDINATES AND GROUND ELEVATION
REFERENCED FROM GOOGLE EARTH.

SHT. NO.	DESCRIPTION	REV.
T-1	TITLE SHEET	B
N-1	NOTES, SPECIFICATIONS AND ANTENNA SCHEDULE	B
C-1	PLANS AND ELEVATION	B
C-2	ANTENNA CONFIGURATION DETAILS	B
C-3	DETAILS	B
C-4	EQUIPMENT FRAME DETAILS	B
C-5	EQUIPMENT FRAME DETAILS	B
E-1	SCHEMATIC DIAGRAM AND NOTES	B
E-2	WIRING DIAGRAM	B
E-3	TYPICAL ELECTRICAL DETAILS	B



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WIRELESS COMMUNICATIONS FACILITY
STONINGTON WEST
CT5226 - LTE 3C/4C
72 JERRY BROWNE ROAD
STONINGTON, CT 06278

DATE:	03/20/19
SCALE:	AS NOTED
JOB NO.	17004.64

TITLE SHEET

T-1

Sheet No. 1 of 10

NOTES AND SPECIFICATIONS

DESIGN BASIS:

GOVERNING CODE: 2015 INTERNATIONAL BUILDING (IBC) AS MODIFIED BY THE 2018 CT STATE BUILDING CODE AND AMENDMENTS.

1. DESIGN CRITERIA:
- WIND LOAD: PER TIA 222 G (ANTENNA MOUNTS): 90–110 MPH (3 SECOND GUST)

• RISK CATEGORY: II (BASED ON IBC TABLE 1604.5)

• NOMINAL DESIGN SPEED (OTHER STRUCTURE): 108 MPH (V_{asd}) (EXPOSURE B/IMPORTANCE FACTOR 1.0 BASED ON ASCE 7–10) PER 2015 INTERNATIONAL BUILDING CODE (IBC) AS MODIFIED BY THE 2018 CONNECTICUT STATE BUILDING CODE.

• SEISMIC LOAD (DOES NOT CONTROL): PER ASCE 7–10 MINIMUM DESIGN LOADS FOR BUILDING AND OTHER STRUCTURES.

GENERAL NOTES:

1. ALL CONSTRUCTION SHALL BE IN COMPLIANCE WITH THE GOVERNING BUILDING CODE.
2. DRAWINGS INDICATE THE MINIMUM STANDARDS, BUT IF ANY WORK SHOULD BE INDICATED TO BE SUBSTANDARD TO ANY ORDINANCES, LAWS, CODES, RULES, OR REGULATIONS BEARING ON THE WORK, THE CONTRACTOR SHALL INCLUDE IN HIS WORK AND SHALL EXECUTE THE WORK CORRECTLY IN ACCORDANCE WITH SUCH ORDINANCES, LAWS, CODES, RULES OR REGULATIONS WITH NO INCREASE IN COSTS.
3. BEFORE BEGINNING THE WORK, THE CONTRACTOR IS RESPONSIBLE FOR MAKING SUCH INVESTIGATIONS CONCERNING PHYSICAL CONDITIONS (SURFACE AND SUBSURFACE) AT OR CONTIGUOUS TO THE SITE WHICH MAY AFFECT PERFORMANCE AND COST OF THE WORK.
4. DIMENSIONS AND DETAILS SHALL BE CHECKED AGAINST EXISTING FIELD CONDITIONS.
5. THE CONTRACTOR SHALL VERIFY AND COORDINATE THE SIZE AND LOCATION OF ALL OPENINGS, SLEEVES AND ANCHOR BOLTS AS REQUIRED BY ALL TRADES.
6. ALL DIMENSIONS, ELEVATIONS, AND OTHER REFERENCES TO EXISTING STRUCTURES, SURFACE, AND SUBSURFACE CONDITIONS ARE APPROXIMATE. NO GUARANTEE IS MADE FOR THE ACCURACY OR COMPLETENESS OF THE INFORMATION SHOWN. THE CONTRACTOR SHALL VERIFY AND COORDINATE ALL DIMENSIONS, ELEVATIONS, ANGLES WITH EXISTING CONDITIONS AND WITH ARCHITECTURAL AND SITE DRAWINGS BEFORE PROCEEDING WITH ANY WORK.
7. AS THE WORK PROGRESSES, THE CONTRACTOR SHALL NOTIFY THE OWNER OF ANY CONDITIONS WHICH ARE IN CONFLICT OR OTHERWISE NOT CONSISTENT WITH THE CONSTRUCTION DOCUMENTS AND SHALL NOT PROCEED WITH SUCH WORK UNTIL THE CONFLICT IS SATISFACTORILY RESOLVED.
8. THE CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE SAFETY CODES AND REGULATIONS DURING ALL PHASES OF CONSTRUCTION. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR PROVIDING AND MAINTAINING ADEQUATE SHORING, BRACING, AND BARRICADES AS MAY BE REQUIRED FOR THE PROTECTION OF EXISTING PROPERTY, CONSTRUCTION WORKERS, AND FOR PUBLIC SAFETY.
9. THE CONTRACTOR IS SOLELY RESPONSIBLE TO DETERMINE CONSTRUCTION PROCEDURE AND SEQUENCE, AND TO ENSURE THE SAFETY OF THE EXISTING STRUCTURES AND ITS COMPONENT PARTS DURING CONSTRUCTION. THIS INCLUDES THE ADDITION OF WHATEVER SHORING, BRACING, UNDERPINNING, ETC. THAT MAY BE NECESSARY. MAINTAIN EXISTING SITE OPERATIONS, COORDINATE WORK WITH NORTHEAST UTILITIES
10. THE STRUCTURE IS DESIGNED TO BE SELF-SUPPORTING AND STABLE AFTER FOUNDATION REMEDIATION WORK IS COMPLETE. IT IS THE CONTRACTOR'S SOLE RESPONSIBILITY TO DETERMINE ERECTION PROCEDURE AND SEQUENCE AND TO ENSURE THE SAFETY OF THE STRUCTURE AND ITS COMPONENT PARTS DURING ERECTION. THIS INCLUDES THE ADDITION OF WHATEVER SHORING, TEMPORARY BRACING, GUYS OR TIEDOWNS, WHICH MIGHT BE NECESSARY.
11. ALL DAMAGE CAUSED TO ANY EXISTING STRUCTURE SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR WILL BE HELD LIABLE FOR ALL REPAIRS REQUIRED FOR EXISTING STRUCTURES IF DAMAGED DURING CONSTRUCTION ACTIVITIES.
12. SHOP DRAWINGS, CONCRETE MIX DESIGNS, TEST REPORTS, AND OTHER SUBMITTALS PERTAINING TO STRUCTURAL WORK SHALL BE FORWARDED TO THE OWNER FOR REVIEW BEFORE FABRICATION AND/OR INSTALLATION IS MADE. SHOP DRAWINGS SHALL INCLUDE ERECTION DRAWINGS AND COMPLETE DETAILS OF CONNECTIONS AS WELL AS MANUFACTURER'S SPECIFICATION DATA WHERE APPROPRIATE. SHOP DRAWINGS SHALL BE CHECKED BY THE CONTRACTOR AND BEAR THE CHECKER'S INITIALS BEFORE BEING SUBMITTED FOR REVIEW.
13. NO DRILLING WELDING OR TAPING ON EVERSOURCE OWNED EQUIPMENT.
14. REFER TO DRAWING T1 FOR ADDITIONAL NOTES AND REQUIREMENTS.

STRUCTURAL STEEL

1. ALL STRUCTURAL STEEL IS DESIGNED BY ALLOWABLE STRESS DESIGN (ASD)
- A. STRUCTURAL STEEL (W SHAPES)---ASTM A992 (FY = 50 KSI)

B. STRUCTURAL STEEL (OTHER SHAPES)---ASTM A36 (FY = 36 KSI)

C. STRUCTURAL HSS (RECTANGULAR SHAPES)---ASTM A500 GRADE B, (FY = 46 KSI)

D. STRUCTURAL HSS (ROUND SHAPES)---ASTM A500 GRADE B, (FY = 42 KSI)

E. PIPE---ASTM A53 (FY = 35 KSI)

F. CONNECTION BOLTS---ASTM A325–N

G. U–BOLTS---ASTM A36

H. ANCHOR RODS---ASTM F 1554

I. WELDING ELECTRODE---ASTM E 70XX
2. CONTRACTOR TO REVIEW ALL SHOP DRAWINGS AND SUBMIT COPY TO ENGINEER FOR APPROVAL. DRAWINGS MUST BEAR THE CHECKER'S INITIALS BEFORE SUBMITTING TO THE ENGINEER FOR REVIEW. SHOP DRAWINGS SHALL INCLUDE THE FOLLOWING: SECTION PROFILES, SIZES, CONNECTION ATTACHMENTS, REINFORCING, ANCHORAGE, SIZE AND TYPE OF FASTENERS AND ACCESSORIES. INCLUDE ERECTION DRAWINGS, ELEVATIONS AND DETAILS.
3. STRUCTURAL STEEL SHALL BE DETAILED, FABRICATED AND ERECTED IN ACCORDANCE WITH THE LATEST PROVISIONS OF AISC MANUAL OF STEEL CONSTRUCTION.
4. PROVIDE ALL PLATES, CLIP ANGLES, CLOSURE PIECES, STRAP ANCHORS, MISCELLANEOUS PIECES AND HOLES REQUIRED TO COMPLETE THE STRUCTURE.
5. FIT AND SHOP ASSEMBLE FABRICATIONS IN THE LARGEST PRACTICAL SECTIONS FOR DELIVERY TO SITE.
6. INSTALL FABRICATIONS PLUMB AND LEVEL, ACCURATELY FITTED, AND FREE FROM DISTORTIONS OR DEFECTS.
7. AFTER ERECTION OF STRUCTURES, TOUCHUP ALL WELDS, ABRASIONS AND NON–GALVANIZED SURFACES WITH A 95% ORGANIC ZINC RICH PAINT IN ACCORDANCE WITH ASTM 780.
8. ALL STEEL MATERIAL (EXPOSED TO WEATHER) SHALL BE GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH ASTM A123 "ZINC (HOT DIPPED GALVANIZED) COATINGS" ON IRONS AND STEEL PRODUCTS.
9. ALL BOLTS, ANCHORS AND MISCELLANEOUS HARDWARE SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A153 "ZINC COATING (HOT–DIP) ON IRON AND STEEL HARDWARE".
10. THE ENGINEER SHALL BE NOTIFIED OF ANY INCORRECTLY FABRICATED, DAMAGED OR OTHERWISE MISFITTING OR NON CONFORMING MATERIALS OR CONDITIONS TO REMEDIAL OR CORRECTIVE ACTION. ANY SUCH ACTION SHALL REQUIRE ENGINEER REVIEW.
11. CONNECTION ANGLES SHALL HAVE A MINIMUM THICKNESS OF 1/4 INCHES.
12. STRUCTURAL CONNECTION BOLTS SHALL CONFORM TO ASTM A325. ALL BOLTS SHALL BE 3/4" DIAMETER MINIMUM AND SHALL HAVE A MINIMUM OF TWO BOLTS, UNLESS OTHERWISE ON THE DRAWINGS.
13. LOCK WASHER ARE NOT PERMITTED FOR A325 STEEL ASSEMBLIES.
14. SHOP CONNECTIONS SHALL BE WELDED OR HIGH STRENGTH BOLTED.
15. MILL BEARING ENDS OF COLUMNS, STIFFENERS, AND OTHER BEARING SURFACES TO TRANSFER LOAD OVER ENTIRE CROSS SECTION.
16. FABRICATE BEAMS WITH MILL CAMBER UP.
17. LEVEL AND PLUMB INDIVIDUAL MEMBERS OF THE STRUCTURE TO AN ACCURACY OF 1:500, BUT NOT TO EXCEED 1/4" IN THE FULL HEIGHT OF THE COLUMN.
18. COMMENCEMENT OF STRUCTURAL STEEL WORK WITHOUT NOTIFYING THE ENGINEER OF ANY DISCREPANCIES WILL BE CONSIDERED ACCEPTANCE OF PRECEDING WORK.
19. INSPECTION AND TESTING OF ALL WELDING AND HIGH STRENGTH BOLTING SHALL BE PERFORMED BY AN INDEPENDENT TESTING LABORATORY.
20. FOUR COPIES OF ALL INSPECTION TEST REPORTS SHALL BE SUBMITTED TO THE ENGINEER WITHIN TEN (10) WORKING DAYS OF THE DATE OF INSPECTION.

ANTENNA SCHEDULE

SECTOR	EXISTING/PROPOSED	BAND	ANTENNA	SIZE (INCHES) (L x W x D)	ANTENNA ⌀ HEIGHT	AZIMUTH	TMA/DIPLEXER/TRIPLEXER (QTY)	(E/P) RRU (QTY)	FEEDER/LENGTH (QTY)	(E/P) SURGE ARRESTOR (QTY)
A1	PROPOSED	UMTS 850/LTE WCS/AWS	ANDREW (SBNHH–1D65A)	55 x 11.9 x 7.1	127'	30°	(P) QUADRUPLXER – KAEIUS: QBC0007F1V51–1 (4), (P) TMA – CCI: TMABPD7823VG12A (2)	(P) RRUS–32 (1)	ANDREW: 7/8⌀ COAX (4) LENGTH: 165.04'	(P) APTDC–BDRDM–DB (4)
A2	PROPOSED	LTE 700BC/1900	ANDREW (SBNHH–1D65A)	55 x 11.9 x 7.1	145'	30°	(P) QUADRUPLXER – KAEIUS: QBC0007F1V51–1 (4), (P) TMA – CCI: TMABPD7823VG12A (2)	(E) RRUS–11 (1), (P) RRUS–8843 (1)	ANDREW: 7/8⌀ COAX (4) LENGTH: 165.04'	(E) APTDC–BDRDM–DB (2)
										(P) TSXDC–4310FM (8)
B1	PROPOSED	UMTS 850/LTE WCS/AWS	ANDREW (SBNHH–1D65A)	55 x 11.9 x 7.1	127'	150°	(P) QUADRUPLXER – KAEIUS: QBC0007F1V51–1 (4), (P) TMA – CCI: TMABPD7823VG12A (2)	(P) RRUS–32 (1)	ANDREW: 7/8⌀ COAX (4) LENGTH: 165.04'	(P) APTDC–BDRDM–DB (4)
B2	PROPOSED	LTE 700BC/1900	ANDREW (SBNHH–1D65A)	55 x 11.9 x 7.1	145'	150°	(P) QUADRUPLXER – KAEIUS: QBC0007F1V51–1 (4), (P) TMA – CCI: TMABPD7823VG12A (2)	(E) RRUS–11 (1), (P) RRUS–8843 (1)	ANDREW: 7/8⌀ COAX (4) LENGTH: 165.04'	(E) APTDC–BDRDM–DB (2)
										(P) TSXDC–4310FM (8)
C1	PROPOSED	UMTS 850/LTE WCS/AWS	ANDREW (SBNHH–1D65A)	55 x 11.9 x 7.1	127'	270°	(P) QUADRUPLXER – KAEIUS: QBC0007F1V51–1 (4), (P) TMA – CCI: TMABPD7823VG12A (2)	(P) RRUS–32 (1)	ANDREW: 7/8⌀ COAX (4) LENGTH: 165.04'	(P) APTDC–BDRDM–DB (4)
C2	PROPOSED	LTE 700BC/1900	ANDREW (SBNHH–1D65A)	55 x 11.9 x 7.1	145'	270°	(P) QUADRUPLXER – KAEIUS: QBC0007F1V51–1 (4), (P) TMA – CCI: TMABPD7823VG12A (2)	(E) RRUS–11 (1), (P) RRUS–8843 (1)	ANDREW: 7/8⌀ COAX (4) LENGTH: 165.04'	(E) APTDC–BDRDM–DB (2)
										(P) TSXDC–4310FM (8)

RRU	SIZE (INCHES) (L x W x D)
RRUS–11	19.7 x 17 x 7.2
RRUS–32	27.2 x 12.1 x 7
RRUS–8843	14.9 x 13.2 x 10.9

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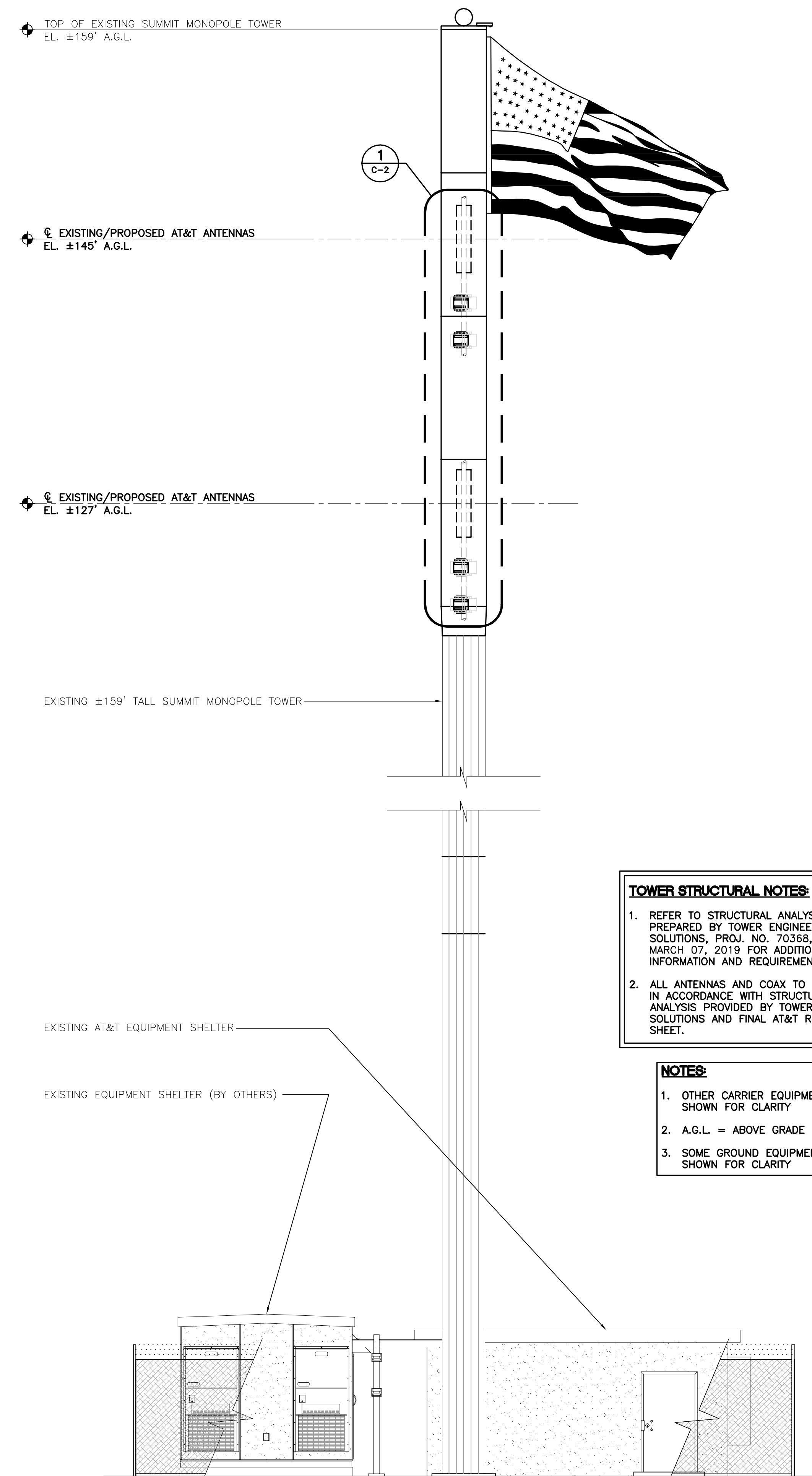
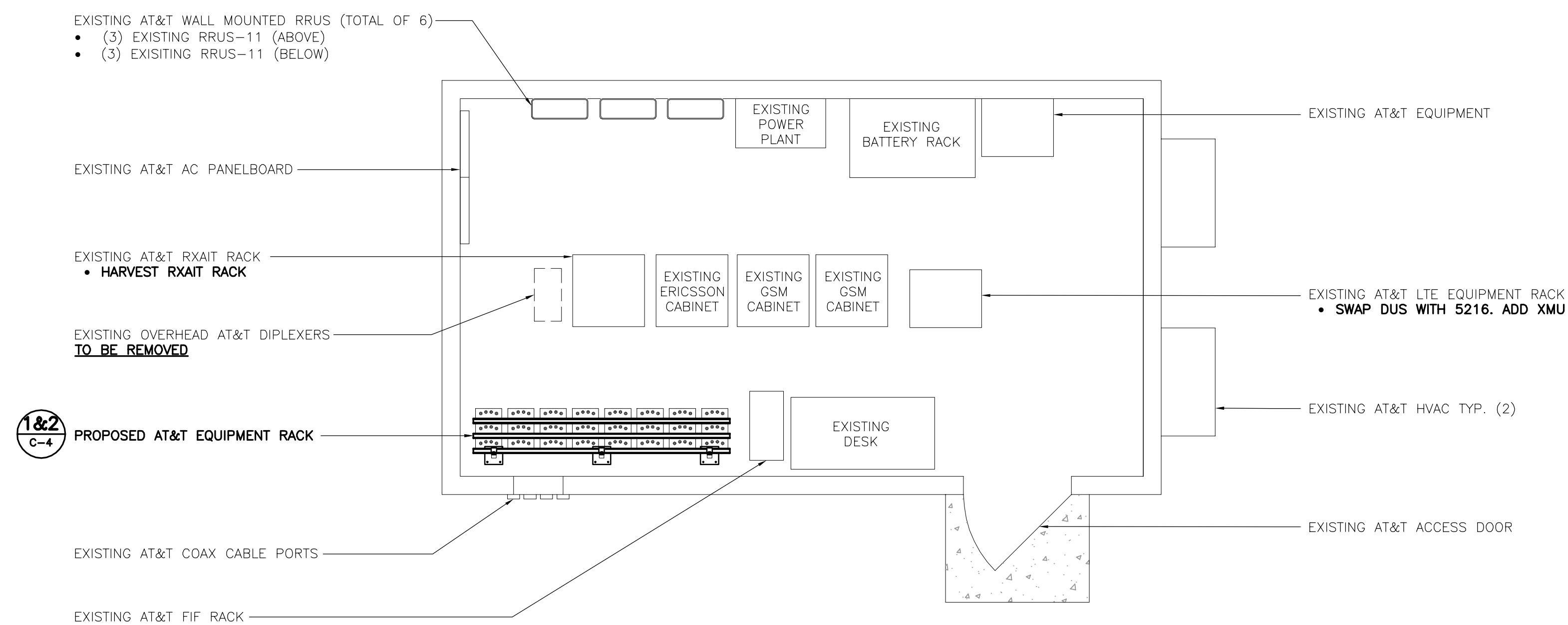
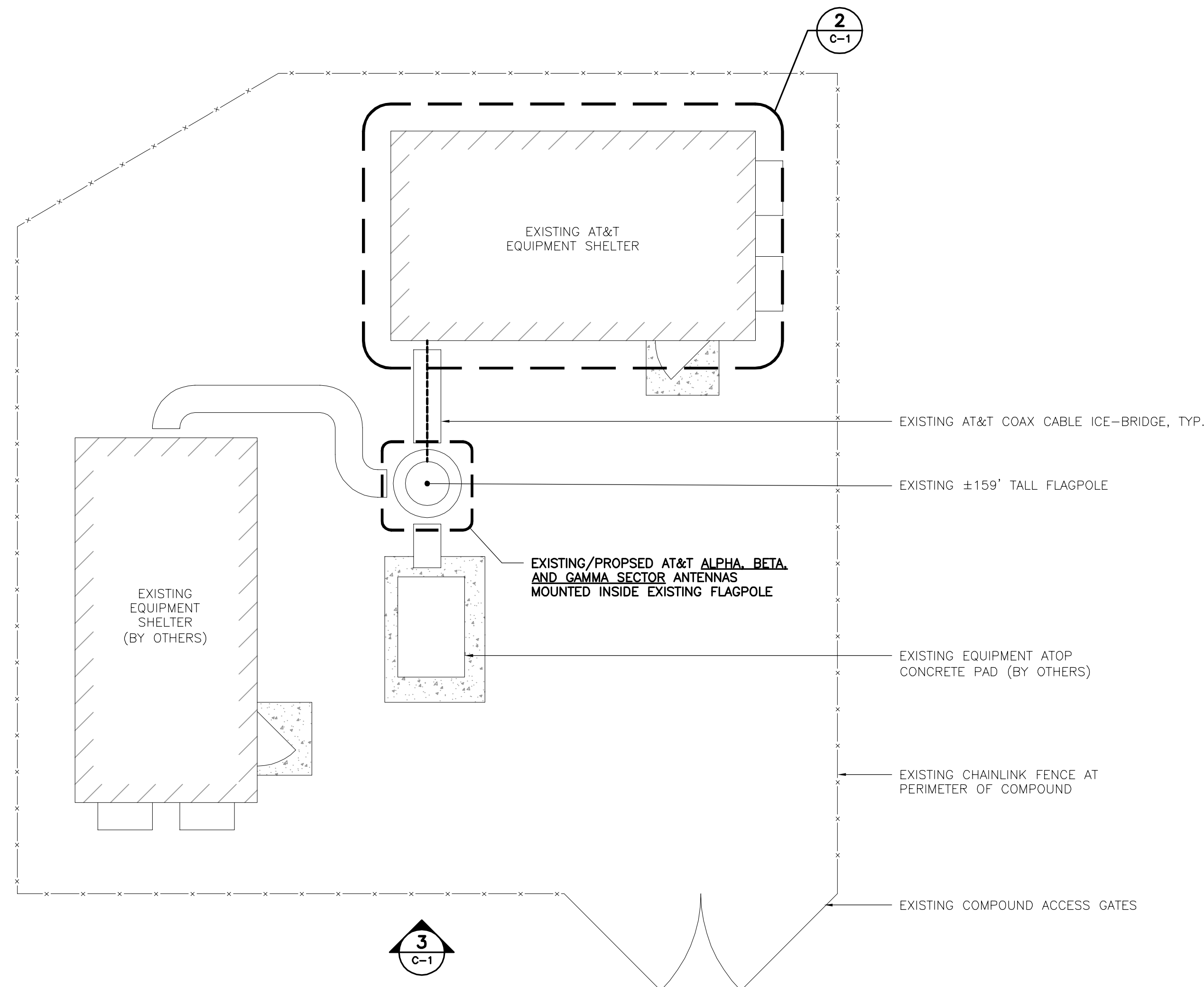
SCALE: AS NOTED

JOB NO. 17004.64

NOTES,
SPECIFICATIONS,
AND ANTENNA
SCHEDULE

N-1

Sheet No. 2 of 10

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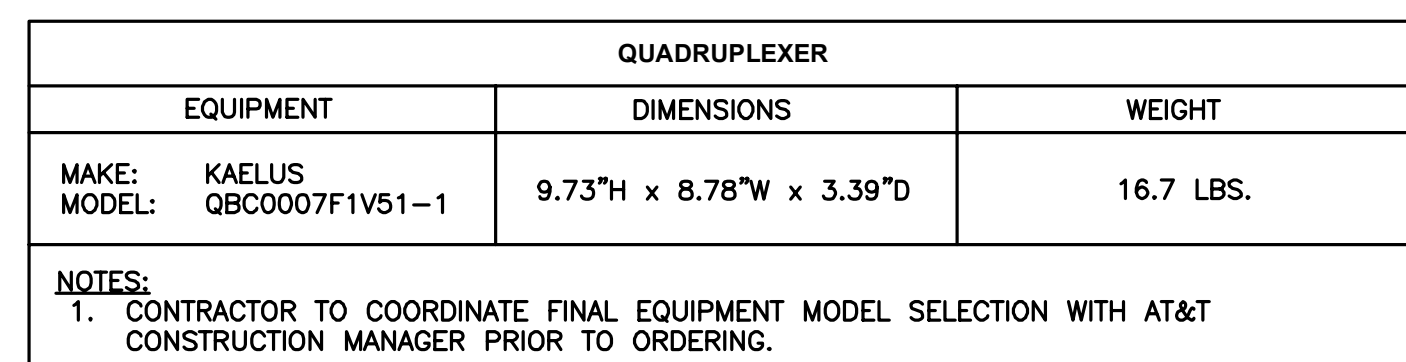
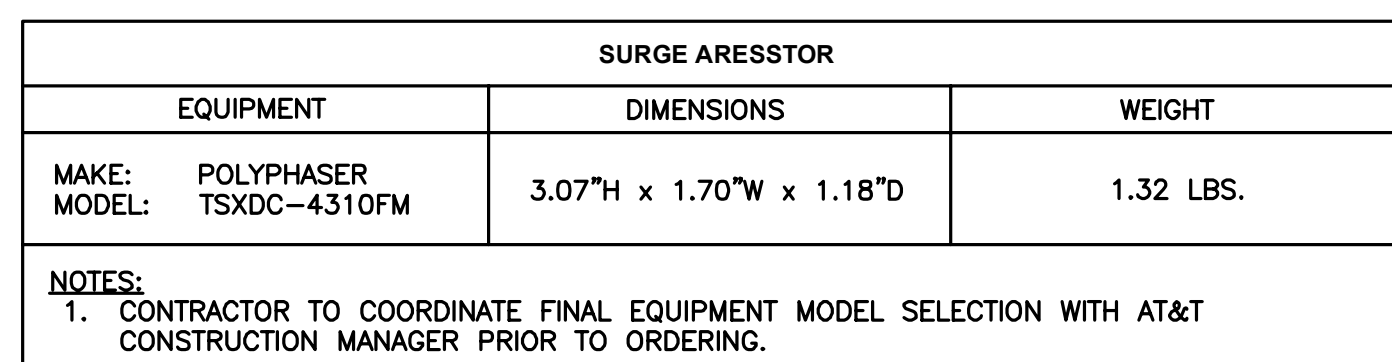
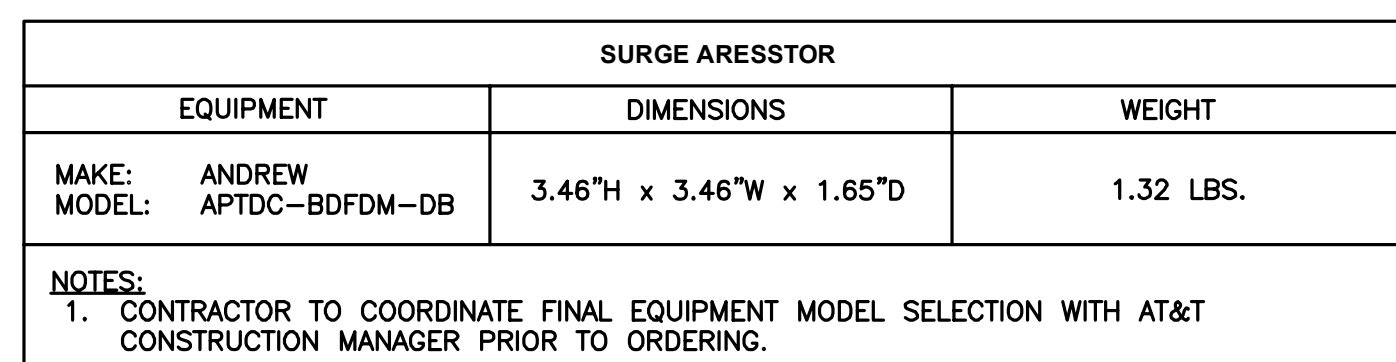
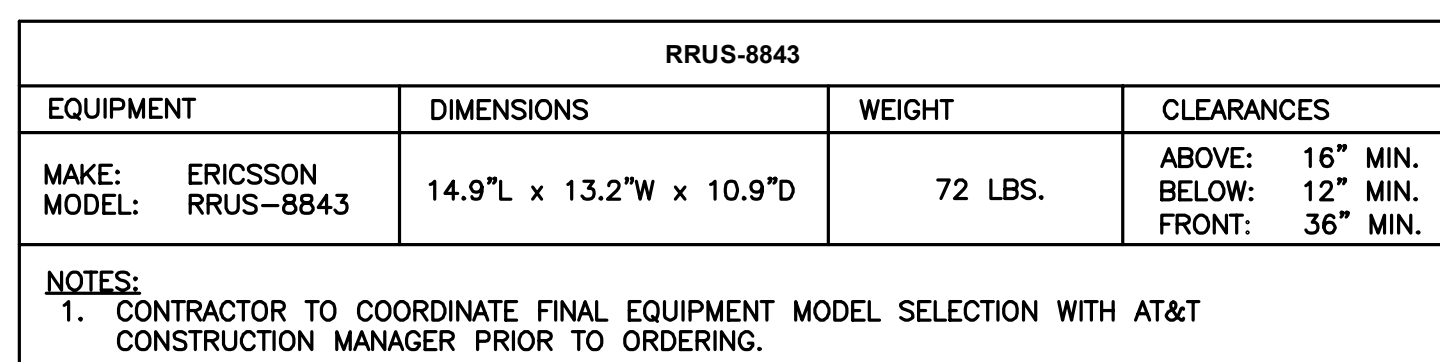
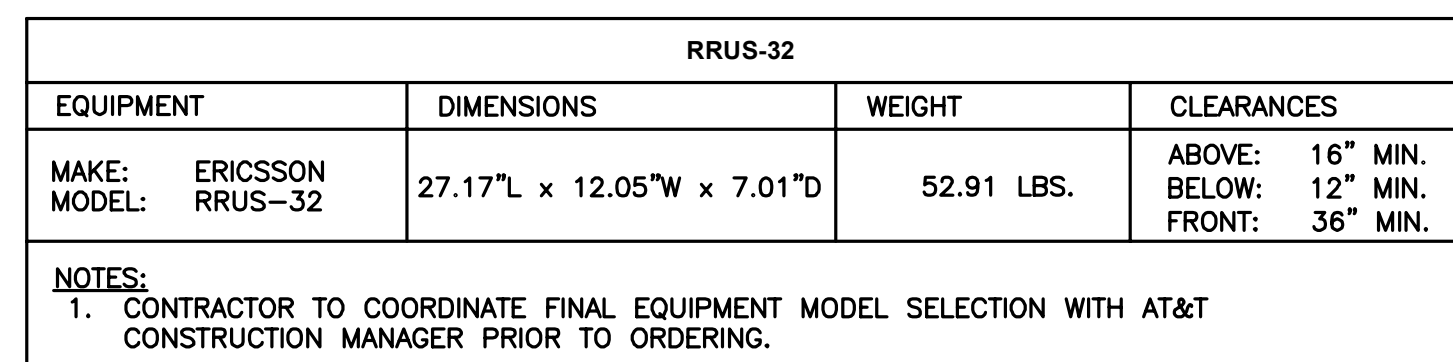
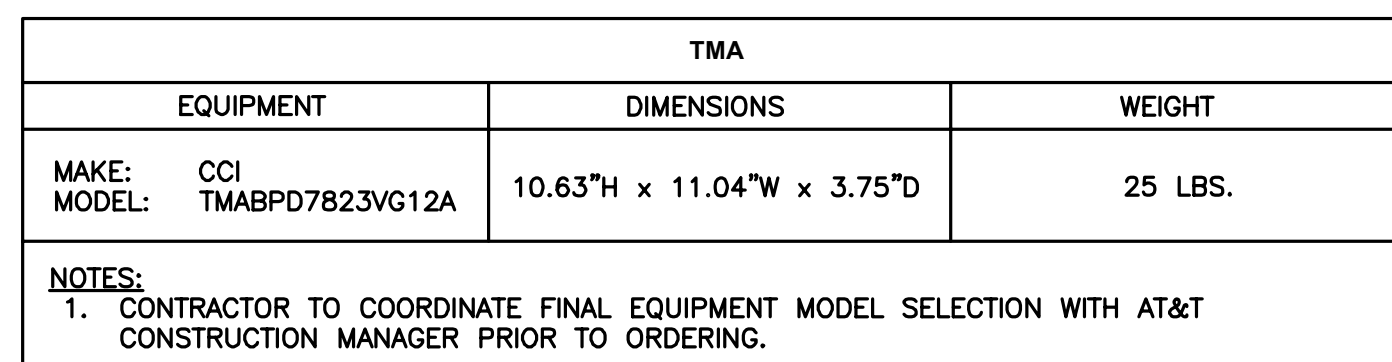
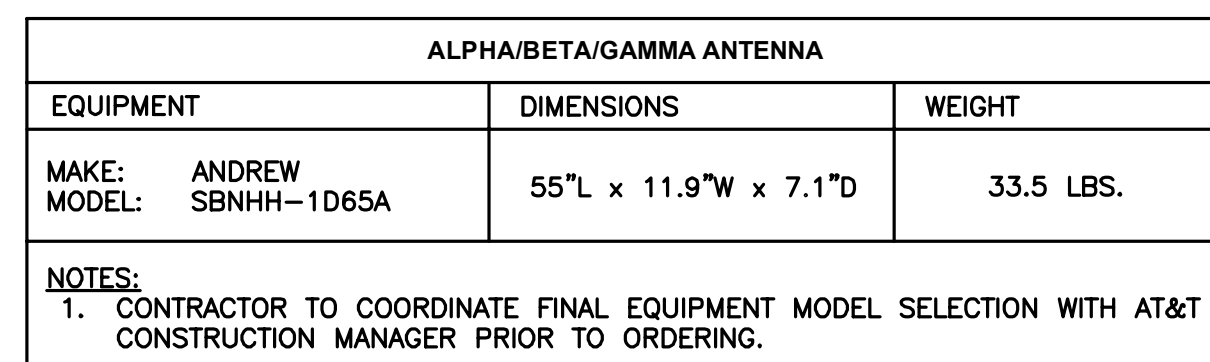
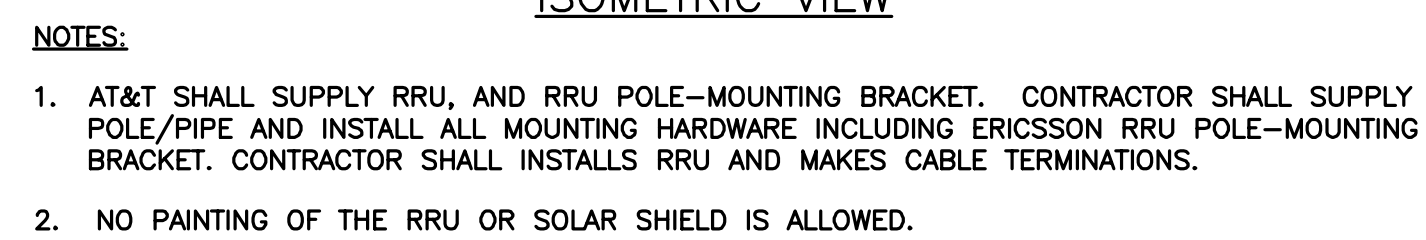
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PLANS AND
ELEVATION

C-1

Sheet No. 3 of 10



1. DESIGN SPECIFICATIONS MANUFACTURED FROM
B-LINE CATALOG OR APPROVED EQUAL.



1 RRU RACK DETAILS
C-4 SCALE: NOT TO SCALE

[illegible]

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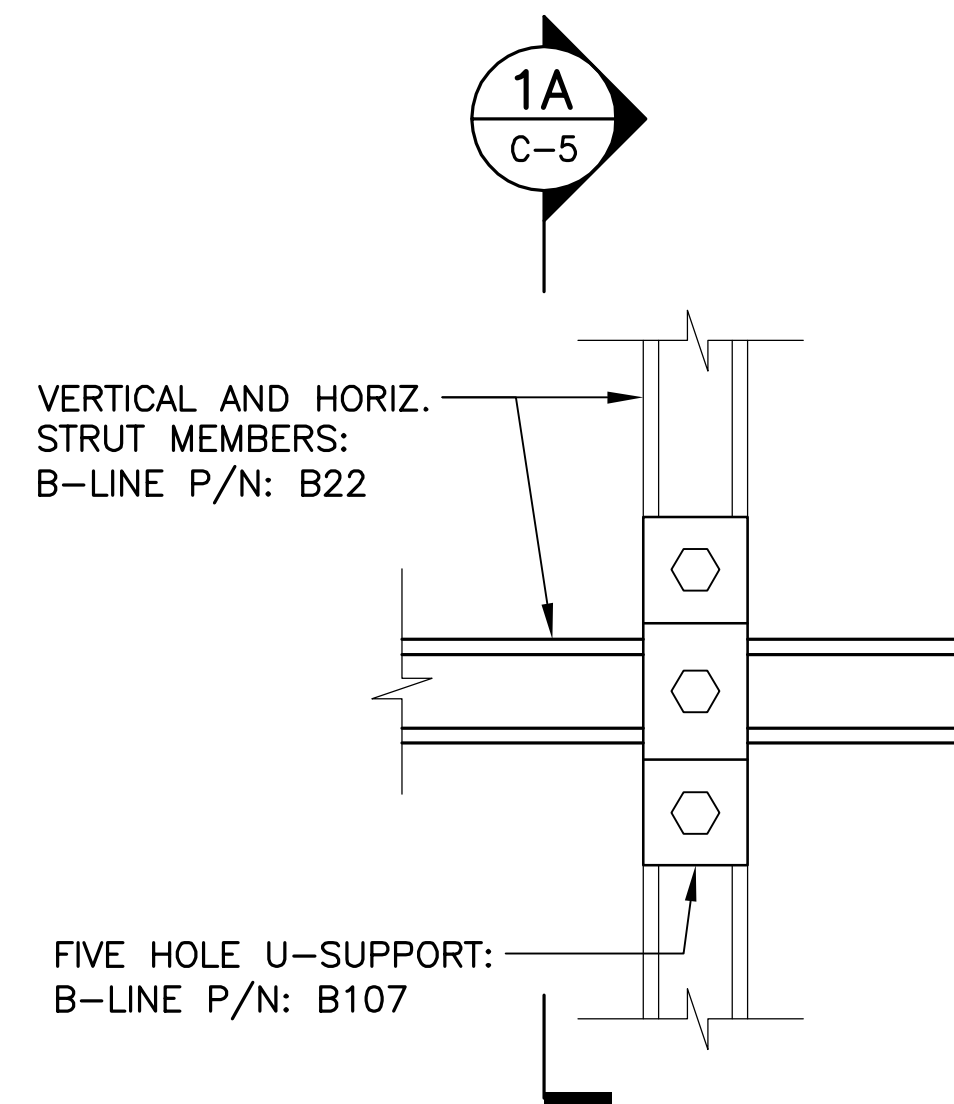
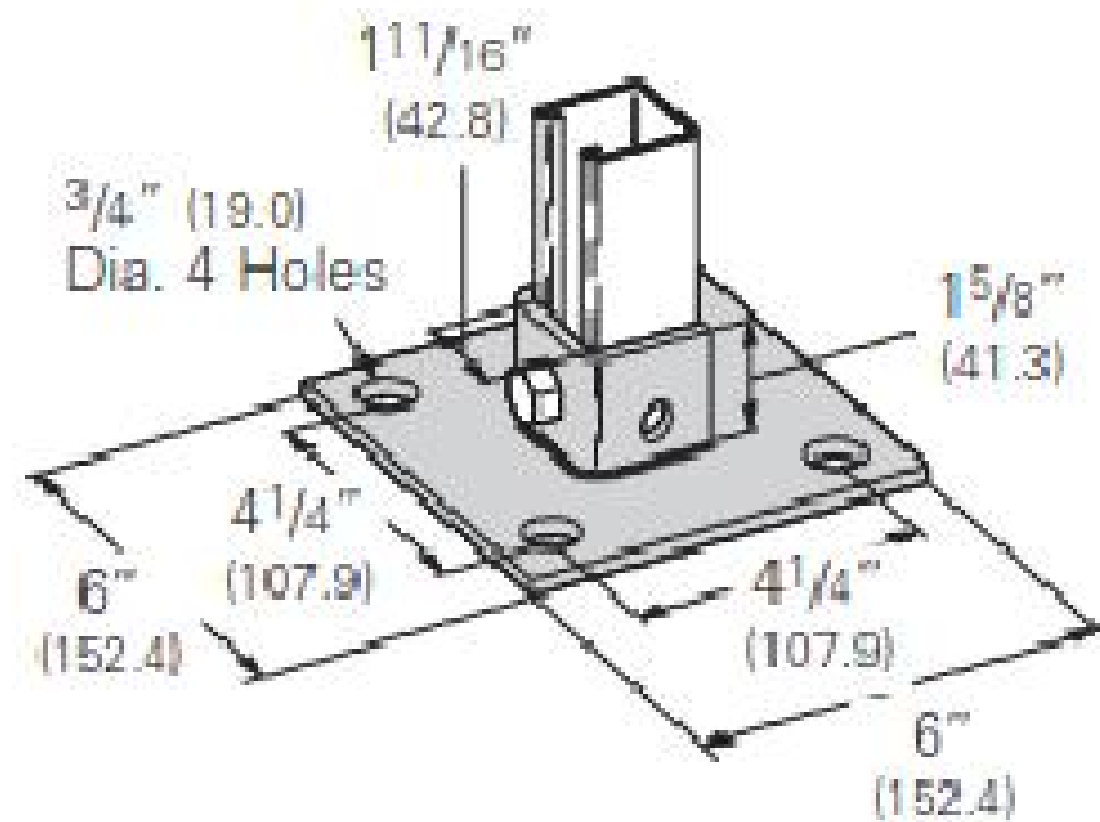
EQUIPMENT FRAME DETAILS

C-4

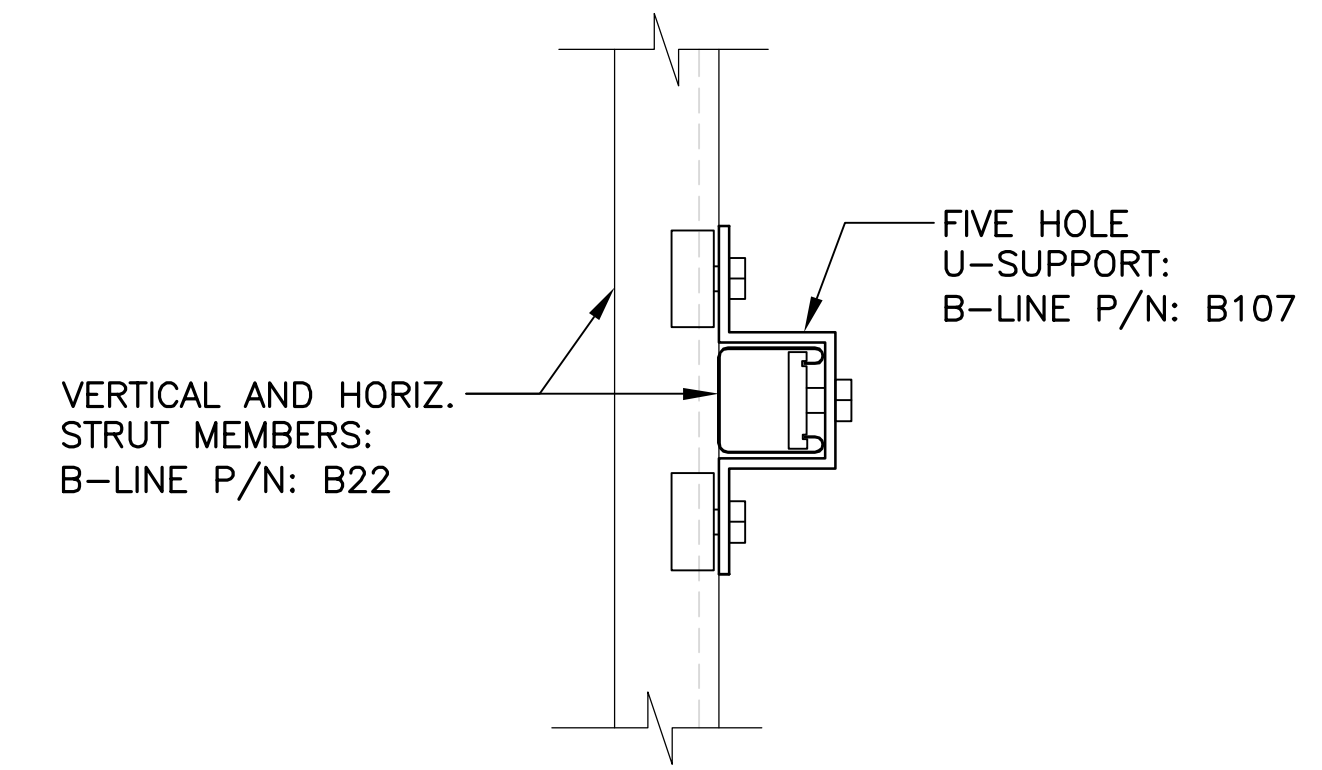
Sheet No. 6 of 10

1. DESIGN SPECIFICATIONS MANUFACTURED FROM
B-LINE CATALOG OR APPROVED EQUAL.

- Standard finishes: ZN, GRN
- Wt./C 314 Lbs. (142.4 kg)

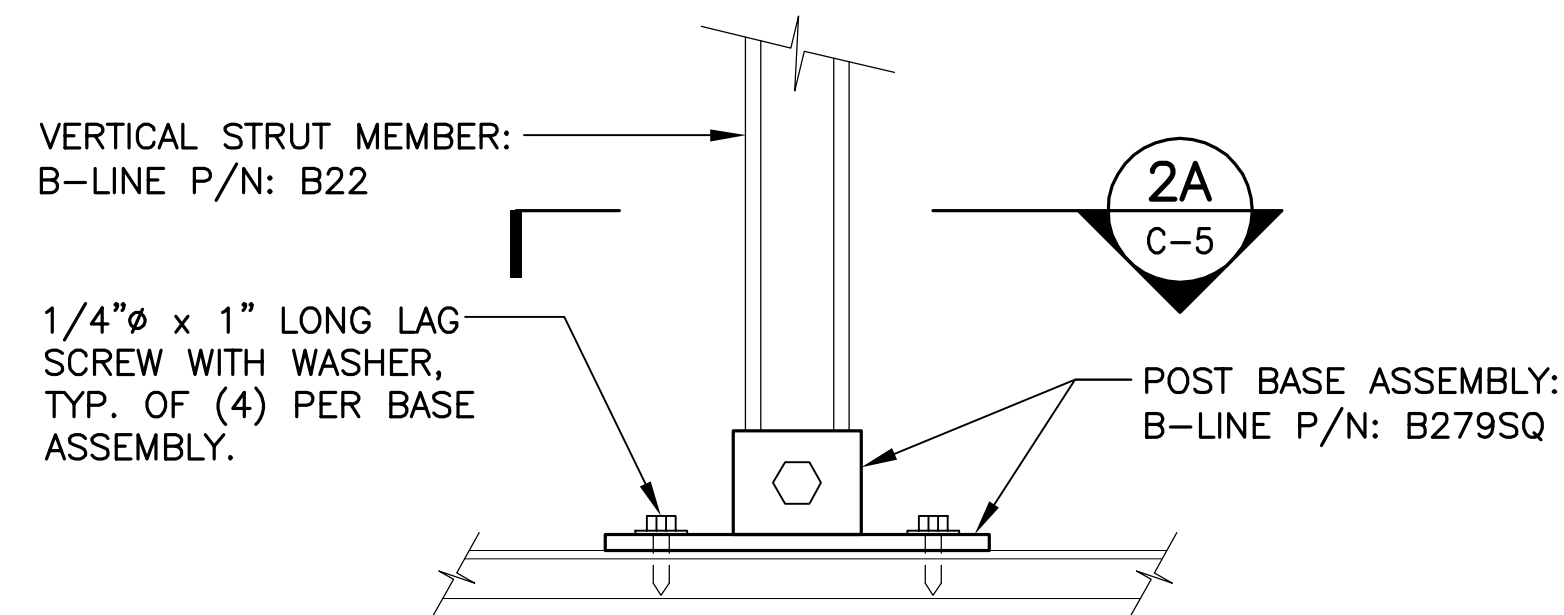
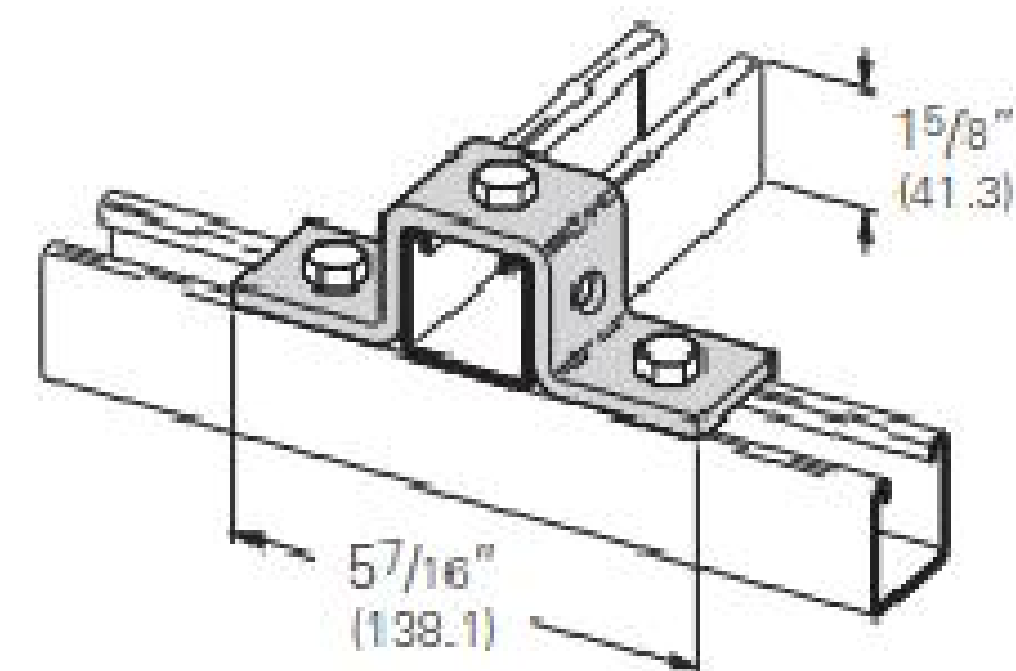
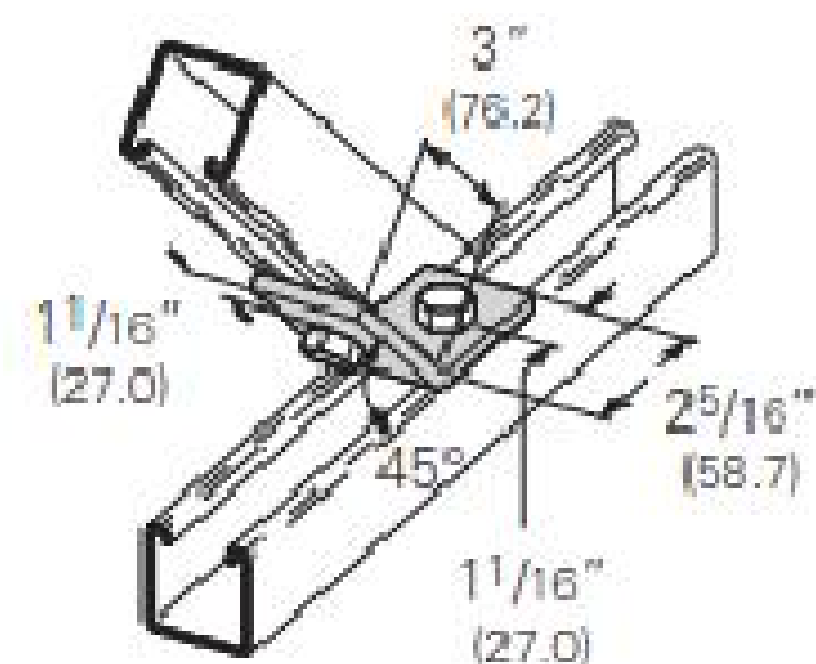
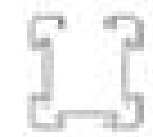


1 RRU SUPPORT FRAME DETAIL
C-5 SCALE: 1-1/2" = 1'-0"

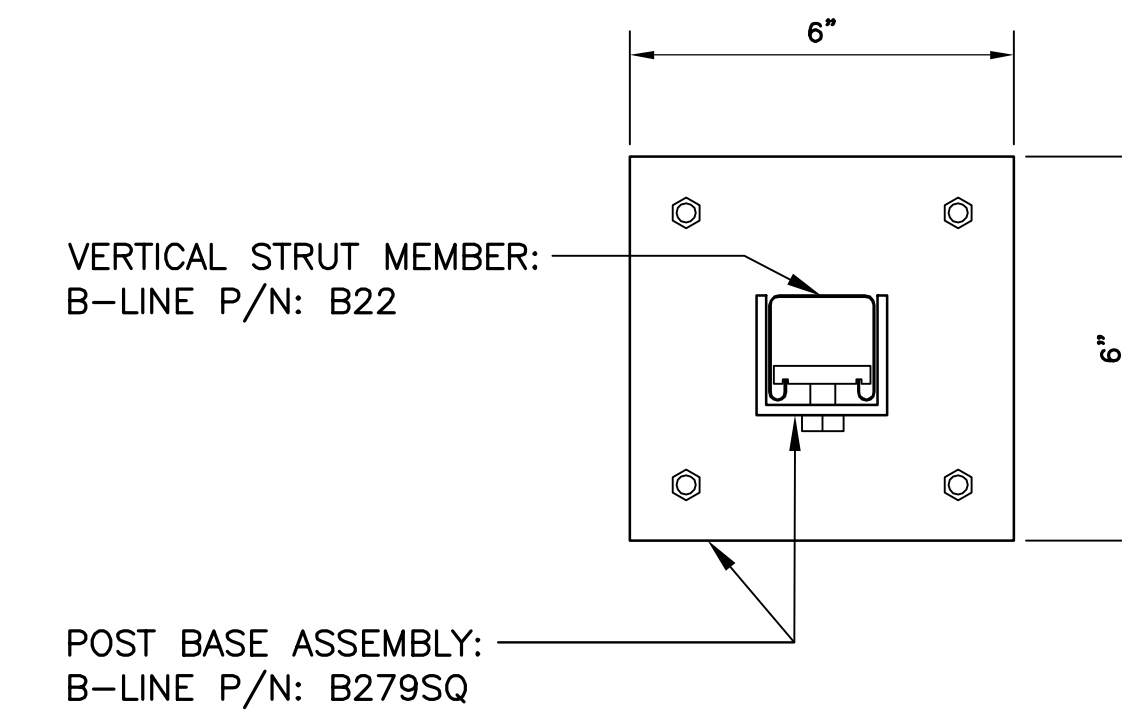


1A RRU SUPPORT FRAME SECTION
C-5 SCALE: 1-1/2" = 1'-0"

- Standard finishes: ZN, GRN, SS4
- Wt./C 58 Lbs. (26.3 kg)



2 RRU SUPPORT FRAME BASE DETAIL
C-5 SCALE: 1-1/2" = 1'-0"

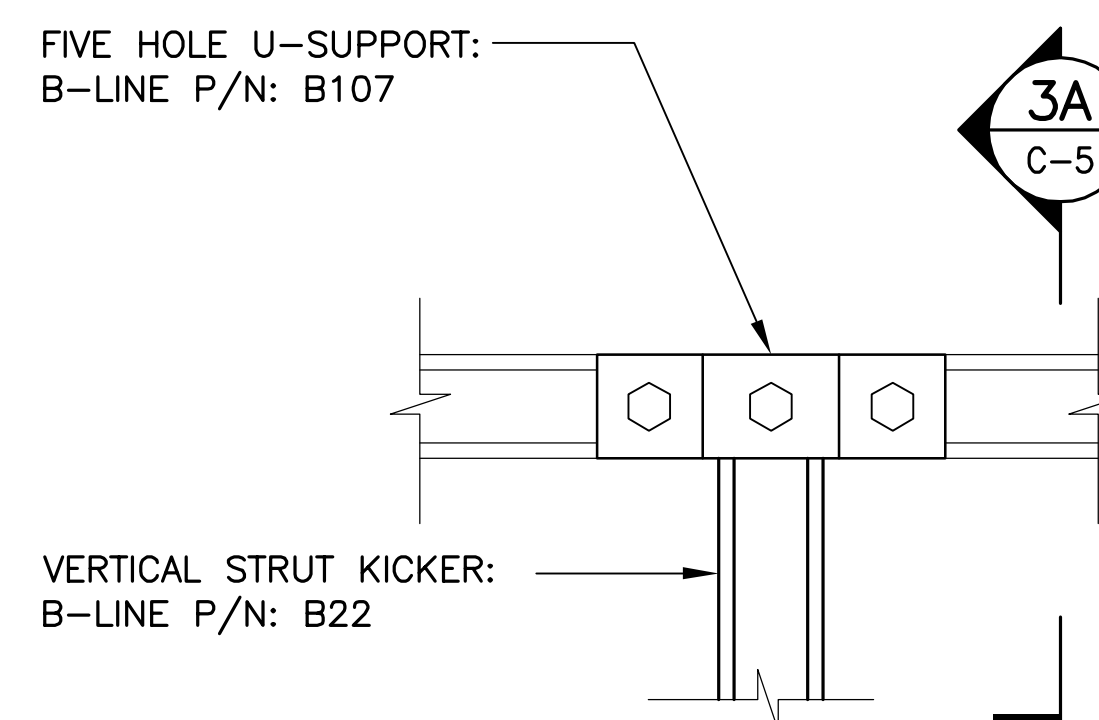
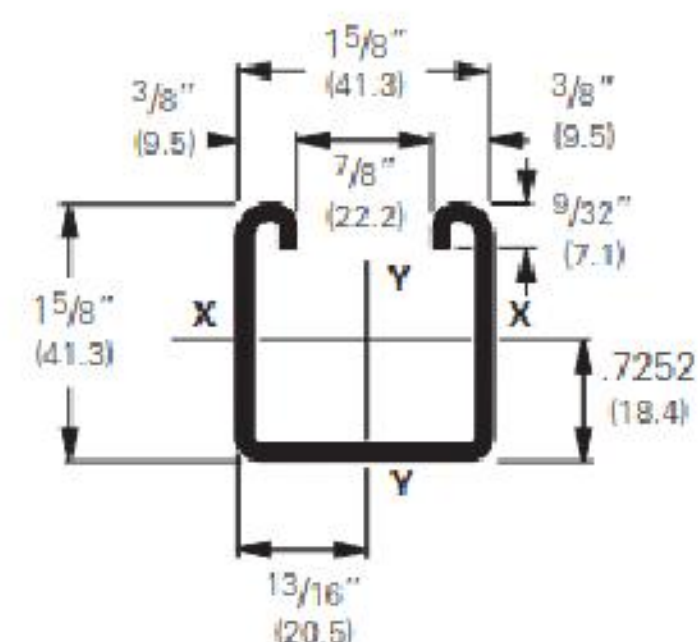
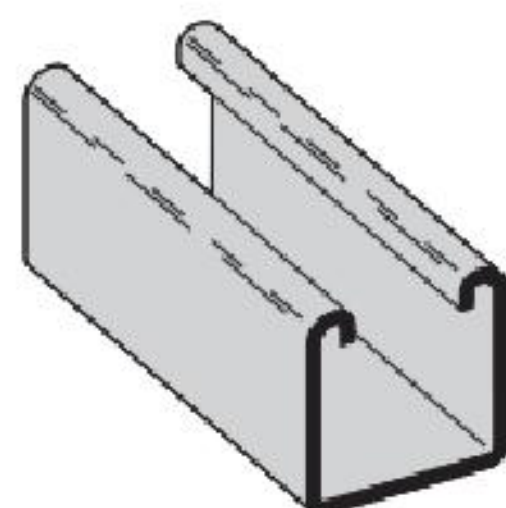


2A RRU SUPPORT FRAME SECTION
C-5 SCALE: 1-1/2" = 1'-0"

B22

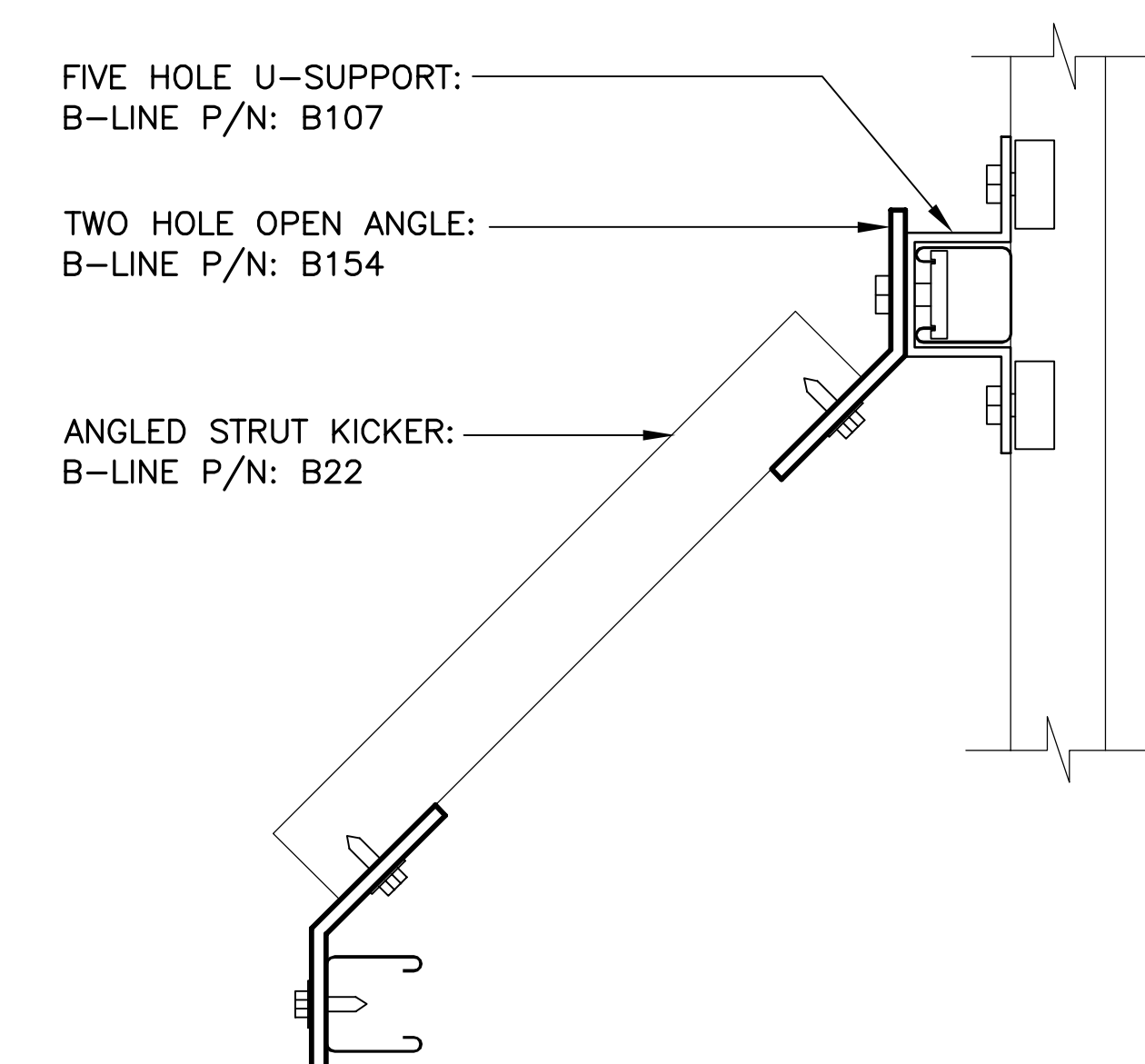
- Thickness: 12 Gauge (2.6 mm)
- Standard lengths: 10' (3.05 m) & 20' (6.09 m)
- Standard finishes: Plain, DURA GREEN™, Pre-Galvanized, Hot-Dipped Galvanized, Stainless Steel Type 304 or 316, Aluminum
- Weight: 1.90 Lbs./Ft. (2.83 kg/m)

Note:
Aluminum loading, for B22 & B22A, can be determined by multiplying load data times a factor of 0.38



3 ANGLED SUPPORT KICKER DETAIL

C-5 SCALE: 1'-1/2" = 1'-0"



3A ANGLED SUPPORT KICKER SECTION
C-5 SCALE: 1'-1/2" = 1'-0"

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SCALE: AS NOTED

JOB NO. 17004.64

EQUIPMENT FRAME DETAILS

C-5

Sheet No. 7 of 10

Sheet No. 8 of 10



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

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



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

3 ANTENNA CABLE GROUNDING DETAIL



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. 3/5" B" LOCK WASHERS, NEWTON INSTRUMENT CO.
CAT. NO. 3015-8.
4. WALL MOUNTING BRACKET, NEWTON INSTRUMENT CO.
4. CAT NO. A-6056.
5. STAINLESS STEEL SECURITY SCREWS.

5
E-3

GROUND BAR DETAIL

NOT TO SCALE



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.

6 TYPICAL ANTENNA GROUNDING DETAIL
E-3 NOT TO SCALE

PER THE INTERNATIONAL BUILDING CODE THIS STRUCTURE IS CLASSIFIED AS:

1. CONSTRUCTION TYPE V-B (TABLE 601)
2. GROUP U OCCUPANCY (SECTION 312.1 UNOCCUPIED TOWER SITE)

MODIFICATION AND DESIGN
DRAWINGS FOR AN EXISTING
159' SUMMIT MONOPOLE TOWER

PROPOSED CARRIER: AT&T

SITE: CT00799-S-SBA / MYSTIC

COORDINATES (LATITUDE: 41.375480°, LONGITUDE: -71.953369°)

CONSTRUCTION CLASS

TES HAS DETERMINED THIS AS A
CLASS III CONSTRUCTION PROJECT
PER ANSI/ASSP A10.48

NOTE:

1. THE MODIFICATION DRAWINGS ARE BASED ON THE
TES PROJECT NO. 69479, DATED 02/20/2019.

SHEET	SHEET TITLE	REV
T-1	TITLE SHEET	0
BOM	BILL OF MATERIALS	0
GN-1	GENERAL NOTES	0
A-1	TOWER PROFILE	0



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BOCA RATON, FL 33487
(800)-487-SITE

TES JOB NO:
70368

CUSTOMER SITE NO:
CT00799-S-SBA
CUSTOMER SITE NAME:
MYSTIC
72 JERRY BROWN ROAD
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TES JOB NO.
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CUSTOMER SITE NO:
CT00799-S-SBA
CUSTOMER SITE NAME:

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GENERAL NOTES

- ALL WORK SHALL COMPLY WITH THE ANSI/TIA-222-G, ANSI/ASSP A10.48, 2018 CONNECTICUT STATE BUILDING CODE AND ANY OTHER GOVERNING BUILDING CODES AND OSHA SAFETY REGULATIONS.
- ALL WORK INDICATED ON THE DRAWINGS SHALL BE PERFORMED BY QUALIFIED CONTRACTORS EXPERIENCED IN TELECOMMUNICATIONS TOWER, POLE AND FOUNDATION CONSTRUCTION.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DESIGN AND FABRICATION OF ALL MISCELLANEOUS PARTS (SUCH AS SHIMS), TEMPORARY SUPPORTS, AND GUYINGS, ETC., PER ANSI/ASSP A10.48, TO COMPLETE THE ASSEMBLY AS SHOWN IN THE DRAWINGS.
- CONTRACTOR SHALL PROCEED WITH THE INSTALLATION WORK CAREFULLY SO THE WORK WILL NOT DAMAGE ANY EXISTING CABLE, EQUIPMENT OR THE STRUCTURE.
- THE USE OF GAS TORCH OR WELDER, ARE NOT ALLOWED ON ANY TOWER STRUCTURE WITHOUT THE CONSENT OF THE TOWER OWNER.
- GENERALLY THE CONTRACTOR IS RESPONSIBLE TO CONDUCT AN ONSITE VISIT SURVEY OF THE JOB SITE AFTER AWARD, AND REPORT ANY ISSUES WITH THE SITE TO **TES** BEFORE PROCEEDING CONSTRUCTION.

FABRICATION

- ALL STEEL SHALL MEET OR EXCEED THE MINIMUM STRENGTH AS SPECIFIED IN THE DRAWINGS. IF YIELD STRENGTH WAS NOT NOTED IN THE DRAWINGS, CONTRACTORS SHALL CONTACT TES FOR DIRECTION.
- ALL FIELD CUT EDGES SHALL BE GROUND SMOOTH. ALL FIELD CUT AND DRILLED SURFACES SHALL BE REPAIRED WITH A MINIMUM OF TWO COATS OF ZRC GALVILITE COLD GALVANIZING COMPOUND PER ASTM A780 AND MANUFACTURER’S RECOMMENDATIONS.

WELDING

- ALL WELDING SHALL BE PERFORMED BY AWS CERTIFIED WELDERS AND IN ACCORDANCE WITH THE LATEST EDITION OF THE AWS WELDING CODE D1.1. ALL ELECTRODES TO BE LOW HYDROGEN, MATCHING FILLER METAL, PER AWS D1.1, UNO. (E70XX UNLESS NOTED OTHERWISE).
- PRIOR TO FIELD WELDING GALVANIZED MATERIAL, CONTRACTOR SHALL GRIND OFF GALVANIZING APPROX. 0.5” BEYOND THE PROPOSED FIELD WELD SURFACES.
- ALL WELDS SHALL BE INSPECTED VISUALLY. A MINIMUM OF 25% OF WELDS SHALL BE INSPECTED WITH DYE PENETRANT OR MAGNETIC PARTICLE TO MEET THE ACCEPTANCE CRITERIA OF AWS D1.1. 100% OF WELDS SHALL BE INSPECTED IF DEFECTS ARE FOUND.
- WELD INSPECTIONS SHALL BE PERFORMED BY AN AWS CERTIFIED WELD INSPECTOR.
- AFTER INSPECTION, ALL FIELD WELDED SURFACES SHALL BE REPAIRED WITH A MINIMUM OF TWO COATS OF ZRC GALVILITE COLD GALVANIZING COMPOUND PER ASTM A780 AND MANUFACTURER’S RECOMMENDATIONS.

BOLTED ASSEMBLIES AND TIGHTENING OF CONNECTIONS

- ALL HIGH STRENGTH BOLTS SHALL CONFORM TO THE PROVISIONS OF THE SPECIFICATIONS FOR STRUCTURAL JOINTS USING A325 OR A490 BOLTS AS APPROVED BY THE RCSC.
- FLANGE BOLTS SHALL BE TIGHTENED BY THE AISC "TURN-OF-THE-NUT" METHOD. THE FOLLOWING TABLE SHOULD BE USED FOR THE "TURN-OF-THE-NUT" TIGHTENING.
- SPLICE BOLTS AND ALL OTHER BOLTS IN BEARING TYPE CONNECTIONS SHALL BE TIGHTENED TO A SNUG-TIGHT CONDITION.
- THE SNUG-TIGHT CONDITION IS DEFINED AS THE TIGHTNESS ATTAINED BY EITHER A FEW IMPACTS OF AN IMPACT WRENCH OR THE FULL EFFORT OF AN IRONWORKER WITH AN ORDINARY SPUD WRENCH TO BRING THE CONNECTED PLIES INTO FIRM CONTACT.
- HB HOLLO-BOLT SHALL BE INSTALLED PER ICC ESR-3330 INSTRUCTIONS.

VERIFICATION AND INSPECTION

- IF APPLICABLE, VERIFICATION INSPECTION TO BE PERFORMED SHALL BE IN ACCORDANCE TO IBC-2015 SECTION 1705 – FOR STEEL CONSTRUCTION & TABLE 1705.3 FOR CONCRETE CONSTRUCTION.

POST INSTALLED EPOXY INJECTED ANCHOR BOLTS:

- CONCRETE MUST BE A MINIMUM OF 28 DAYS OLD.
- FOLLOW MANUFACTURER’S REQUIREMENTS FOR CURE TIME VS. AMBIENT TEMPERATURE.
- DRILL HOLE TO REQUIRED DIAMETER AND DEPTH. ALL WATER, DIRT, OIL, DEBRIS, GREASE OR DUST MUST BE REMOVED FROM EACH CORE HOLE. FOLLOW MANUFACTURER’S RECOMMENDATION FOR CORRECT TYPE OF CORE BIT. AVOID DAMAGING EXISTING REINFORCING STEEL OR OTHER EMBEDDED ITEMS. NOTIFY TES ENGINEERING IF VOIDS IN THE CONCRETE, REINFORCING STEEL OR OTHER EMBEDDED ITEMS ARE ENCOUNTERED. STOP CORING IMMEDIATELY IF THIS OCCURS.
- A HOLE ROUGHENING DEVICE FROM EITHER HILTI OR ALLFASTENERS SHALL BE USED WITH ALL HOLES. FOLLOW ALL MANUFACTURER’S RECOMMENDED CORING AND INSTALLATION INSTRUCTIONS.
- AFTER CORING AND ROUGHENING, FLUSH EACH HOLE WITH RUNNING WATER TO REMOVE ANY SLURRY OR DEBRIS. REMOVE ALL WATER FROM THE HOLE BY MECHANICAL PUMPING.
- BRUSH EACH HOLE WITH AN APPROPRIATE SIZED NYLON BRUSH AND FLUSH WITH RUNNING WATER A SECOND TIME. REMOVE ALL WATER FROM THE HOLE.
- AFTER THE SECOND WATER FLUSH BRUSH THE HOLE AGAIN WITH THE APPROPRIATE SIZED NYLON BRUSH.
- BLOW EACH HOLE WITH COMPRESSED AIR TWO TIMES MINIMUM.
- CONFIRM THAT EACH HOLE IS PROPERLY ROUGHED AND DRY.
- NO EPOXY INJECTION SHALL TAKE PLACE IN RAINY CONDITIONS.
- EPOXY SHOULD BE VISIBLE AT THE TOP OF THE CORE HOLE AFTER INSTALLATION.
- CONTRACTOR TO SUPPLY ONE PHOTO OF EACH ROUGHED AND CLEANED HOLE IN CLOSEOUT PHOTO PACKAGE.

TABLE 8.2 NUT ROTATION FROM SNUG-TIGHT
CONDITION FOR TURN-OF-NUT PRETENSIONING^{a,b}

BOLT LENGTH ^f	DISPOSITION OF OUTER FACE OF BOLTED PARTS		
	BOTH FACES NORMAL TO BOLT AXIS	ONE FACE NORMAL TO BOLT AXIS, OTHER SLOPED NOT MORE THAN 1:20 ^d	BOTH FACES SLOPED NOT MORE THAN 1:20 FROM NORMAL TO BOLT AXIS ^d
NOT MORE THAN 4d _b	1/3 TURN	1/2 TURN	2/3 TURN
MORE THAN 4d _b BUT NOT MORE THAN 8d _b	1/2 TURN	2/3 TURN	5/6 TURN
MORE THAN 8d _b BUT NOT MORE THAN 12d _b	2/3 TURN	5/6 TURN	1 TURN
^a NUT ROTATION IS RELATIVE TO BOLT REGARDLESS OF THE ELEMENT (NUT OR BOLT) BEING TURNED. FOR REQUIRED NUT ROTATIONS OF 1/2 TURN AND LESS, THE TOLERANCE IS PLUS OR MINUS 30 DEGREES; FOR REQUIRED NUT ROTATIONS OF 2/3 TURN AND MORE, THE TOLERANCE IS PLUS OR MINUS 45 DEGREES. ^b APPLICABLE ONLY TO JOINTS IN WHICH ALL MATERIAL WITHIN THE GRIP IS STEEL. ^c WHEN THE BOLT LENGTH EXCEEDS 12d_b, THE REQUIRED NUT ROTATION SHALL BE DETERMINED BY ACTUAL TESTING IN A SUITABLE TENSION CALIBRATOR THAT SIMULATES THE CONDITIONS OF SOLIDLY FITTING STEEL. ^d BEVELED WASHER NOT USED.			

SPECIFICATION FOR STRUCTURAL JOINTS USING ASTM A325 OR A490 BOLTS, JUNE 30, 2004
RESEARCH COUNCIL ON STRUCTURAL CONNECTIONS

INSTALLATION TORQUE REQUIRED FOR HOLLO BOLTS AND AJAX BOLTS:

- HB12 HOLLO BOLT: 59 FT-LBS
- HB16 HOLLO BOLT: 140 FT-LBS
- HB20 HOLLO BOLT: 221 FT-LBS
- M20 AJAX BOLT: 280 FT-LBS.

FIELD HOT WORK PLAN NOTES:

FOLLOWING GUIDELINES SHALL BE COMPLIED WITH:

- CONTRACTOR’S RESPONSIBILITY TO COMPLETE A HOT WORK PLAN IF AWARDED PER CUSTOMER SPECIFICATIONS GUIDELINES FOR WELDING, CUTTING & SPARK PRODUCING WORK.
- HAVE A FIRE PLAN APPROVED BY THE CUSTOMER AND THEIR SAFETY MANAGEMENT DEPT.
- CONTRACTOR MUST OBTAIN THE CONTACT INFO OF THE LOCAL FIRE DEPARTMENT AND THE 911 ADDRESS OF THE TOWER SITE BEFORE CONSTRUCTION.
- CONTRACTOR SHALL MAKE SURE THAT CELL PHONE COVERAGE IS AVAILABLE IN THE TOWER SITE. IF CELL COVERAGE IS NOT AVAILABLE, AN IMMEDIATE AVAILABLE MEANS OF DIRECT COMMUNICATION WITH THE FIRE DEPARTMENT SHALL BE DETERMINED PRIOR TO CONSTRUCTION START.
- ALL CONSTRUCTION SHALL BE PERFORMED UNDER WIND SPEED LESS THAN 10 MPH ON THE GROUND LEVEL. IF WIND SPEED INCREASE, CONTRACTOR MUST DETERMINE IF CONSTRUCTION SHALL BE DISCONTINUED.
- FIRE SUPPRESSION EQUIPMENT MUST BE MADE AVAILABLE ON SITE AND READY TO USE.
- CONTRACTOR SHALL ASSIGN A FIRE WATCHER TO PERFORM FIRE-FIGHTING DUTIES.
- ALL WELDERS SHALL BE AWS OR STATE CERTIFIED. THEY MUST ALSO BE EXPERIENCED IN WELDING ON GALVANIZED MATERIALS.
- IF IT IS POSSIBLE, ALL EXISTING COAX NEAR WELDING AREA SHALL BE TEMPORARILY MOVED AWAY FROM THE WELDING AREA BEFORE WELDING THE PLATES.
- PLEASE REPORT ANY FIELD ISSUE TO TES @ 972-483-0607.



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CUSTOMER SITE NO:
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CUSTOMER SITE NAME:
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NOTES:

1. TEMPORARILY RELOCATE ANY EXISTING COAX ATTACHED TO THE MONOPOLE AND ANY OTHER MEMBERS WHERE OBSTRUCTION WITH THE PROPOSED MODIFICATION MAY OCCUR.
2. TEMPORARY RELOCATION OF EXISTING EQUIPMENT AROUND THE FOUNDATION MAY BE REQUIRED DURING CONSTRUCTION.

SCOPE OF WORK

- 1

A. REPLACE EXISTING 30" O.D. X 10'-0" CANISTER WITH (1) NEW 37" O.D. X 10'-0" CANISTER.
B. EXISTING 29" O.D. X 9'-3" CANISTER WITH (1) NEW 37" O.D. X 9'-9" CANISTER
C. EXISTING 28" O.D. X 9'-6" CANISTER WITH (1) NEW 37" O.D. X 9'-9" CANISTER
D. EXISTING 27" O.D. X 9'-6" CANISTER WITH (1) NEW 37" O.D. X 9'-9" CANISTER.

CANISTERS SHOULD HAVE SMOOTH SHROUD, MULTI-PART WITH EXPANSION KITS AND TOP CAP FROM 120" TO 159.25" ELEV. NEW SHROUDS COLOR SHOULD MATCH EXISTING TOWER COLOR.
- 2

INSTALL NEW TRANSITION CONE, PROVIDED BY OTHERS.
- 3

REPLACE EXISTING FLAG TRUCK & BALL WITH NEW FLAG TRUCK & BALL FOR 37" O.D. CANISTER SHROUDS.
- 4

THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE CLEAN-UP, REMOVAL AND DISPOSAL OF EXCESS MATERIALS USED AND REMOVED FROM THE STRUCTURE AT THE COMPLETION OF THE PROJECT.



PHOTO 1
EXISTING FOUNDATION

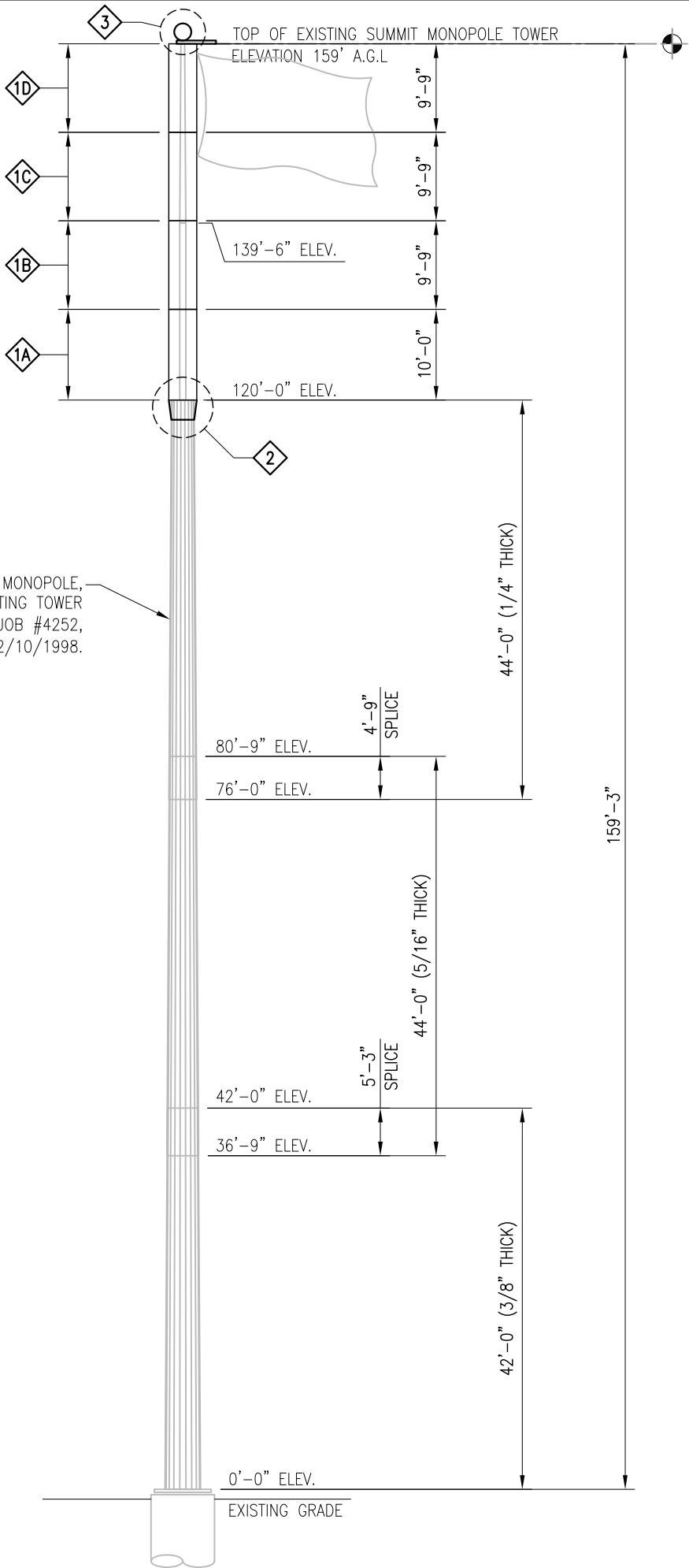


PHOTO 2
EXISTING CANISTERS

FOUNDATION COATING NOTES:

1. THE COATING MATERIALS SHALL BE LANCO WHITE ACRYLIC ELASTOMERIC COATING AND SEALER, OR HYDRO ARMOR COATING.
2. THE COATING CAN BE PLACED AT LEAST (2) DAYS AFTER THE PLACEMENT OF THE CONCRETE FOR FOUNDATION REINFORCEMENT, AND MINIMUM (4) DAYS FOR NEW FOUNDATION CONSTRUCTION.
3. THE CONCRETE SURFACE SHALL BE CLEAN AND DRY PRIOR TO THE APPLICATION OF THE COATING.
4. THE COATING SHALL BE APPLIED TO ALL THE SURFACES OF THE CONCRETE ABOVE THE GROUND AND 6" BELOW THE GRADE SURFACE IF APPLICABLE.
5. MINIMUM 30 MILS COATING IS REQUIRED.
6. APPLY COLD GALVANIZE AT LEAST 2'-3' ABOVE FOUNDATION.

EXISTING SUMMIT MONOPOLE,
REFERENCE EXISTING TOWER
DWGS, JOB #4252,
DATED 12/10/1998.



Tower Engineering Solutions

1320 GREENWAY DRIVE, SUITE 600
IRVING, TX 75038
PHONE: (972) 483-0607



5900 BROKEN SOUND PARKWAY, NW
BOCA RATON, FL 33487
(800)-487-SITE

TES JOB NO:

70368

CUSTOMER SITE NO:

CT00799-S-SBA

CUSTOMER SITE NAME:

MYSTIC

72 JERRY BROWN ROAD
MYSTIC, CT 06355

DRAWN BY: GO CHECKED BY: SH/JRL

REV.	DESCRIPTION	BY	DATE
1	FIRST ISSUE	GO	03/07/19
2			
3			
4			
5			

SHEET TITLE:

TOWER PROFILE

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SHEET NUMBER:

A-1

REV #:

0



Radio Frequency Emissions Analysis Report

AT&T Existing Facility

Site ID: CT5226

FA#: 10071265

Stonington West
72 Jerry Brown Rd
Stonington, CT 06378

December 17, 2018

Centerline Communications Project Number: 950006-156

Site Compliance Summary	
Compliance Status:	COMPLIANT
Site total MPE% of FCC general population allowable limit:	3.71 %



December 17, 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: **CT5226 – Stonington West**

Centerline Communications, LLC (“Centerline”) was directed to analyze the proposed AT&T facility located at **72 Jerry Brown Rd, Stonington, 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 **72 Jerry Brown Rd, Stonington, 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)
LTE	2100 MHz (AWS)	4	30
LTE	2300 MHz (WCS)	4	30
UMTS	850 MHz	2	30
LTE	1900 MHz (PCS)	4	40
LTE	700 MHz	2	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	Quintel QS46512-2	145
A	2	Commscope SBNHH-1D65A	127
B	1	Quintel QS46512-2	145
B	2	Commscope SBNHH-1D65A	127
C	1	Quintel QS46512-2	145
C	2	Commscope SBNHH-1D65A	127

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	Quintel QS46512-2	2100 MHz (AWS) / 2300 MHz (WCS)	13.85 / 14.05	8	240	5,961.10	1.11
Antenna A2	Commscope SBNHH-1D65A	850 MHz / 1900 MHz (PCS) / 700 MHz	10.65 / 14.55 / 10.85	8	320	6,463.74	2.03
Sector A Composite MPE%							3.14
Antenna B1	Quintel QS46512-2	2100 MHz (AWS) / 2300 MHz (WCS)	13.85 / 14.05	8	240	5,961.10	1.11
Antenna B2	Commscope SBNHH-1D65A	850 MHz / 1900 MHz (PCS) / 700 MHz	10.65 / 14.55 / 10.85	8	320	6,463.74	2.03
Sector B Composite MPE%							3.14
Antenna C1	Quintel QS46512-2	2100 MHz (AWS) / 2300 MHz (WCS)	13.85 / 14.05	8	240	5,961.10	1.11
Antenna C2	Commscope SBNHH-1D65A	850 MHz / 1900 MHz (PCS) / 700 MHz	10.65 / 14.55 / 10.85	8	320	6,463.74	2.03
Sector C Composite MPE%							3.14

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 Per Sector Value	3.14 %
T-Mobile	0.02 %
Nextel	0.55 %
Site Total MPE %:	3.71 %

Table 4: All Carrier MPE Contributions

AT&T Sector A Total:	3.14 %
AT&T Sector B Total:	3.14 %
AT&T Sector C Total:	3.14 %
Site Total:	3.71 %

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 (Per Sector)	# Channels	Watts ERP (Per Channel)	Height (feet)	Total Power Density ($\mu\text{W}/\text{cm}^2$)	Frequency (MHz)	Allowable MPE ($\mu\text{W}/\text{cm}^2$)	Calculated % MPE
AT&T 2100 MHz (AWS) LTE – Antenna 1	4	727.98	145	5.42	2100 MHz (AWS)	1000	0.54%
AT&T 2300 MHz (WCS) LTE – Antenna 1	4	762.29	145	5.67	2300 MHz (WCS)	1000	0.57%
AT&T 850 MHz UMTS – Antenna 2	2	464.58	127	2.28	850 MHz	567	0.40%
AT&T 1900 MHz (PCS) LTE – Antenna 2	4	1,140.41	127	11.20	1900 MHz (PCS)	1000	1.12%
AT&T 700 MHz LTE – Antenna 2	2	486.47	127	2.39	700 MHz	467	0.51%
						Total:	3.14%

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:

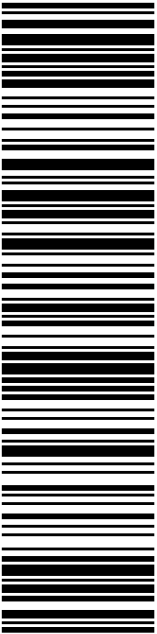
AT&T Sector	Power Density Value (%)
Sector A:	3.14 %
Sector B:	3.14 %
Sector C:	3.14 %
AT&T Maximum Total (per sector):	3.14 %
Site Total:	3.71 %
Site Compliance Status:	COMPLIANT

The anticipated composite MPE value for this site assuming all carriers present is **3.71 %** 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 blue ink, appearing to read 'Scott Heffernan', is positioned above the printed name.

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

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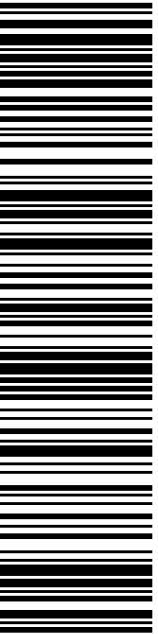
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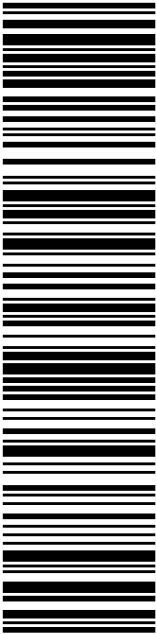
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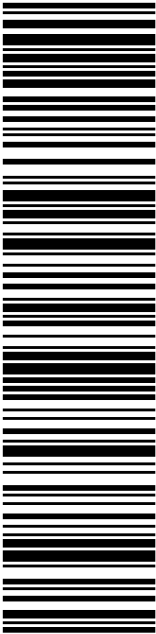
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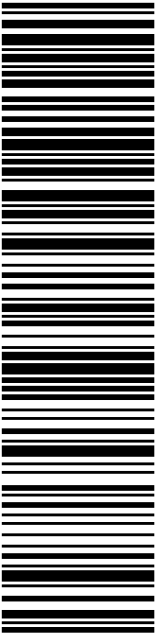
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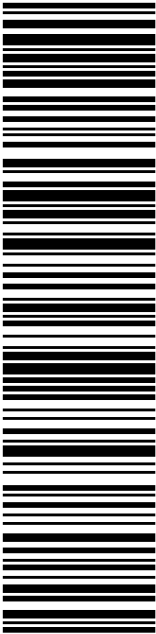
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Expected			
Delivery Date:	04/22/2019		

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EMPIRE TELECOM USA, LLC
16 ESQUIRE RD
N BILLERICA MA 01862-2527

To: JBRV LLC (ACTIVE) DOMESTIC LIMITED LIABILITY CO.
PO BOX 10
MYSTIC CT 06355-0010

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EMPIRE TELECOM USA, LLC
16 ESQUIRE RD
N BILLERICA MA 01862-2527

Type of Mail	Volume
Priority Mail®	6
Priority Mail Express™*	0
International Mail*	0
Other	0
Total Volume	6

*Start time for products with service guarantees will begin when mail arrives at the local Post Office™ and items receive individual processing and acceptance scans.

B. USPS Action

- USPS EMPLOYEE: Please scan upon pickup or receipt of mail. Leave form with customer or in customer's mail receptacle.
- Employee verifies the package volume count on the Package Pickup Carrier Manifest.
 - If the volume on the manifest matches the volume being collected from the customer, the employee should make the **1:YES** selection by pressing the number 1 on the keypad of the handheld scanner, or on the keyboard of the POS ONE terminal.
 - If the volume on the manifest does not match the volume being collected from the customer, the employee should make the **2:NO** selection. The mail should still be collected and dispatched as normal.

USPS SCAN



9475 7036 9930 0311 7471 39