

CONNECTICUT SITING COUNCIL

SUB-PETITION OF NEW CINGULAR WIRELESS)
PCS, LLC ("AT&T") TO THE CONNECTICUT)
SITING COUNCIL FOR MODIFICATION OF AN)
EXISTING WIRELESS TELECOMMUNICATIONS) SUB-PETITION NO. _____
FACILITY AT 130 WELLES ROAD)
GROTON, CONNECTICUT) JANUARY 25, 2019
)

SUB-PETITION FOR DECLARATORY RULING TO
APPROVE ELIGIBLE FACILITIES REQUEST FOR MODIFICATION OF AN EXISTING
WIRELESS TELECOMMUNICATIONS FACILITY
WITHOUT SUBSTANTIAL PHYSICAL CHANGE TO EXISTING BASE STATION
130 WELLES ROAD, GROTON, CONNECTICUT

I. Introduction

New Cingular Wireless PCS, LLC ("AT&T"), is applying for administrative approval of a needed modification of an existing facility pursuant to Section 6409(a) of the Spectrum Act¹ and published FCC guidance in the form of the October 14, 2014 Report and Order referenced as FCC-14-153.² AT&T hereby petitions the Connecticut Siting Council ("Council") to modify the existing wireless telecommunication facility at 130 Welles Road, Groton, Connecticut (the "Site"). More specifically, AT&T is proposing to flush mount three (3) antennas at a centerline height of approximately 98' above grade level ("AGL") on the existing 118' tall monopole and install an equipment shelter and emergency back-up generator within the existing fenced compound at the base of the monopole. None of this work represents a substantial change to the existing base station. This modification of the existing facility is needed by AT&T to fill a gap in wireless service that will result from AT&T's removal of its existing wireless facility currently located on the Aquarion Water Tank located at 34 Nantucket Drive in Groton. Aquarion advised AT&T that it is dismantling the water tank and that it will not lease space on the new water tank to AT&T. The proposed modification will provide some wireless service to the area that is currently being served by AT&T's water tank site. AT&T will continue to investigate options to fulfill the entire gap that will result when its existing water tank site is removed.

II. Existing Facility and Site Background

The Site consists of an approximately 118' tall monopole owned by SBA and associated equipment for the existing wireless carrier, Sprint. The existing facility is enclosed by a chain link

¹ 28 U.S.C. § 1455

² 47 C.F.R. § 1.40001

fence. The Site is the location of the town bulky waste disposal facility. State of Connecticut Department of Transportation Highway Maintenance Facility and town owned land are located to the east, town owned vacant land and commercial uses are located to the west, town owned land used as part of the town's bulky waste facility is located to the north, and a residence and a fire district community center are located to the south.

By Decision & Order dated December 19, 2002, the Council issued a Certificate of Environmental Compatibility and Public Need ("Certificate") for the existing facility in Docket No. 230. The Certificate was issued to Sprint and then transferred to SBA, who is the current facility owner.

On October 10, 2017, the Council issued an acknowledgment of an exempt modification to Sprint for modifications of its existing facility, which now consists of six (6) antennas and remote radio head ("RRH") units at the top of the monopole and equipment within the existing fenced compound (No. EM-SPRINT-059T-170915). On the same day, October 10, 2017, the Council issued an acknowledgement of an exempt modification to T-Mobile for modifications to its existing facility, which now consists of six (6) panel antennas and RRH units located at a centerline height of approximately 110' and equipment within the equipment compound (No. EM-SPRINT-059T-170915).

III. Proposed Modification

AT&T's modification consists of flush-mounting three (3) new HPA-65R-BUU-H8 model antennas at a centerline height of approximately 98' AGL. The height of the existing monopole will not change. AT&T will install a walk-in cabinet shelter approximately 6' x 6' in size on a 102" x 102" concrete pad within the existing fenced compound. A 15kW emergency generator will also be located within the fenced compound on a 72" x 48" concrete pad. The existing compound will not change. Site drawings for the proposed modification are included in Attachment 1. A Structural Modification Report confirming that the tower can accommodate AT&T's proposed modification is included in Attachment 2.

As noted above, AT&T's modification is necessary to fulfill a gap in service that will result when it removes its existing facility located on the Aquarion water tank located at 34 Nantucket Drive.³ Aquarion advised AT&T that it will dismantle the water tank this year and replace it with a new water tank. Aquarion also advised that it was not willing to lease space on the new water tank for AT&T's wireless facility. AT&T requested space at the Aquarion property to place a temporary facility (cell on wheels, or, "COW") until it could secure a permanent solution to replace the wireless service provided by the existing facility on the water tank. However, Aquarion was not interested in leasing space for a COW.

The height of the proposed modification on the existing monopole will not provide all of the service that is currently being provided by AT&T's water tank facility. Therefore, AT&T will continue to investigate options to fully replace the wireless service that is currently provided by the water tank facility.

³ AT&T's existing facility on the Aquarion water tank was approved by the Town of Groton in 2003.

IV. The Modification Does Not Represent a Substantial Change to the Physical Dimensions of the Existing Base Station and is an Eligible Facilities Request

Section 6409 requires that within 60 days of submission, a state or local agency must approve an “eligible facilities request for a modification of an existing wireless tower or base station that does not substantially change the physical dimensions of such tower or base station”. Section 6409 and the FCC Order provide that a modification does not “substantially change” the physical dimensions of a tower or base station if it meets the following criteria:

- A. Modification does not increase the height. The proposed modification does not include any extension of the existing monopole.
- B. Modification does not protrude from the edge of the tower more than twenty feet, or more than the width of the tower structure at the level of the appurtenance, whichever is greater; for those towers in the rights-of-way and for all base stations, it must not protrude from the edge of the structure more than six feet. The modification includes flush-mounted antennas, which will not protrude more than twenty feet within the Section 6409 Criteria.
- C. Proposal does not involve installation of more than the standard number of new equipment cabinets for the technology involved, but not to exceed four cabinets. The modification includes one new equipment cabinet.
- D. Proposal does not require excavation or deployment outside the current site of the tower or base station. All modifications will be located within the existing facility compound in compliance with this criterion.
- E. The collocation does not defeat the existing concealment elements of the tower or base station. The existing tower does not incorporate concealment elements.
- F. The proposal complies with conditions associated with the prior approval of the tower or base station and any non-compliance is due to an increase in height, increase in width, addition of cabinets, or new excavation that does not exceed the corresponding “substantial change” thresholds. The modification will comply with all conditions of the Certificate.

In light of the foregoing, AT&T’s proposal constitutes an “eligible facilities request” under Section 6409 as it is a “collocation of new transmission equipment” at an existing facility/base station and does not constitute a substantial change to the physical dimensions of the existing facility.

V. Compliance with FCC MPE Limits

The facility will be within 6.70% of the Federal and State emission standards for the general public. A copy of the RF Power Density assessment completed by C² Systems and dated December 3, 2018 is included in Attachment 3. As such, the total radio frequency power density will be well within standards adopted by the Connecticut Department of Environmental Protection as set forth in Section 22a-162 of the Connecticut General Statutes and the Maximum Permissible Exposure (“MPE”) limits established by the Federal Communications Commission for the public.

VI. Notice

Pursuant to Petition 1133, a notice letter and a copy of this Sub-Petition was provided to the Town of Groton and the abutting property owners. Copies of this correspondence may be found in Attachments 4 and 5.

VII. Conclusion

It is respectfully submitted that AT&T's proposal satisfies the criteria of Section 6409, while also providing critical wireless communication services to the community and enabling users to access a state-of-the-art, digital system for voice communications, messaging, and data transmission and reception.

Respectfully Submitted,

A handwritten signature in blue ink that reads "Lucia Chiochio".

Lucia Chiochio

On behalf of AT&T

cc: Town of Groton
Abutting Property Owners
AT&T
SAI Communications, Inc.
Christopher B. Fisher, Esq.

ISSUED FOR ZONING

PROJECT INFORMATION

SCOPE OF WORK: TELECOMMUNICATIONS FACILITY (NSB):

SITE ADDRESS: 130 WELLES ROAD
GROTON, CT 06340

LATITUDE: 41.392820 N, 41° 23' 34.15" N

LONGITUDE: 71.969927 W, 71° 58' 11.74" W

TYPE OF SITE: MONOPOLE / EQUIPMENT SHELTER

STRUCTURE HEIGHT: 117'-6"±

RAD CENTER: 98'±

CURRENT USE: TELECOMMUNICATIONS FACILITY

PROPOSED USE: TELECOMMUNICATIONS FACILITY



SITE NUMBER: CT1357

SITE NAME: MYSTIC TEMP

FA CODE: 13613193

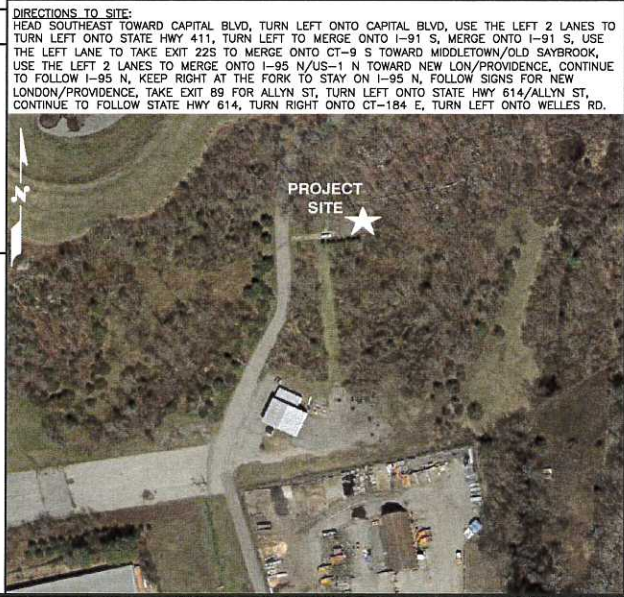
PACE ID: -

PROJECT: 2019 NSB

DRAWING INDEX

SHEET NO.	DESCRIPTION	REV.
T-1	TITLE SHEET	A
C-1	SITE PLAN	A
C-2	SETBACK PLAN	A
A-1	COMPOUND & EQUIPMENT PLANS	A
A-2	ELEVATIONS & ANTENNA PLAN	A
A-3	DETAILS	A

VICINITY MAP



GENERAL NOTES

1. THIS DOCUMENT IS THE CREATION, DESIGN, PROPERTY AND COPYRIGHTED WORK OF AT&T. ANY DUPLICATION OR USE WITHOUT EXPRESS WRITTEN CONSENT IS STRICTLY PROHIBITED. DUPLICATION AND USE BY GOVERNMENT AGENCIES FOR THE PURPOSES OF CONDUCTING THEIR LAWFULLY AUTHORIZED REGULATORY AND ADMINISTRATIVE FUNCTIONS IS SPECIFICALLY ALLOWED.
2. THE FACILITY IS AN UNMANNED PRIVATE AND SECURED EQUIPMENT INSTALLATION. IT IS ONLY ACCESSED BY TRAINED TECHNICIANS FOR PERIODIC ROUTINE MAINTENANCE AND THEREFORE DOES NOT REQUIRE ANY WATER OR SANITARY SEWER SERVICE. THE FACILITY IS NOT GOVERNED BY REGULATIONS REQUIRING PUBLIC ACCESS PER ADA REQUIREMENTS.
3. CONTRACTOR SHALL VERIFY ALL PLANS AND EXISTING DIMENSIONS AND CONDITIONS ON THE JOB SITE AND SHALL IMMEDIATELY NOTIFY THE AT&T MOBILITY REPRESENTATIVE IN WRITING OF DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR BE RESPONSIBLE FOR SAME.
4. CONSTRUCTION DRAWINGS ARE VALID FOR SIX MONTHS AFTER ENGINEER OF RECORD'S STAMPED AND SIGNED SUBMITTAL DATE LISTED HEREIN.

HGD HUDSON
Design Group LLC

45 BEECHWOOD DRIVE
NORTH ANDOVER, MA 01845

TEL: (978) 537-5553
FAX: (978) 338-5556

SAI

12 INDUSTRIAL WAY
SALEM, NH 03079

SITE NUMBER: CT1357
SITE NAME: MYSTIC TEMP

130 WELLES ROAD
GROTON, CT 06340
NEW LONDON COUNTY

at&t

500 ENTERPRISE DRIVE, SUITE 3A
ROCKY HILL, CT 06067

NO.	DATE	ISSUED FOR REVIEW	BY	CHK	APP'D
A	01/07/19	ISSUED FOR REVIEW	SF	JC	DJC
		REVISIONS	BY	CHK	APP'D
SCALE: AS SHOWN		DESIGNED BY: JC	DRAWN BY: SF		

AT&T		
TITLE SHEET (2019 NSB)		
SITE NUMBER	DRAWING NUMBER	REV
CT1357	T-1	A



KEY
SCALE: N.T.S.

1
C-1



APPROXIMATE
SUBJECT
PROPERTY LINE

EXISTING SBA MONOPOLE
EXISTING SBA COMPOUND
PROPOSED 12'-6"x20'-0"
AT&T LEASE AREA
PROPOSED UNDERGROUND
POWER/TELCO FROM
EXISTING METER BANK
AND TELCO HANDHOLE
TO PROPOSED EQUIPMENT

OWNER:
TOWN OF GROTON
45 FORT HILL ROAD
GROTON, CT 06340
PARCEL NUMBER:
271014348692
BOOK: 137 PAGE: 622



SITE PLAN

22x34 SCALE: 1"=40'
11x17 SCALE: 1"=80'

2
C-1



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GROTON, CT 06340
NEW LONDON COUNTY



500 ENTERPRISE DRIVE, SUITE 3A
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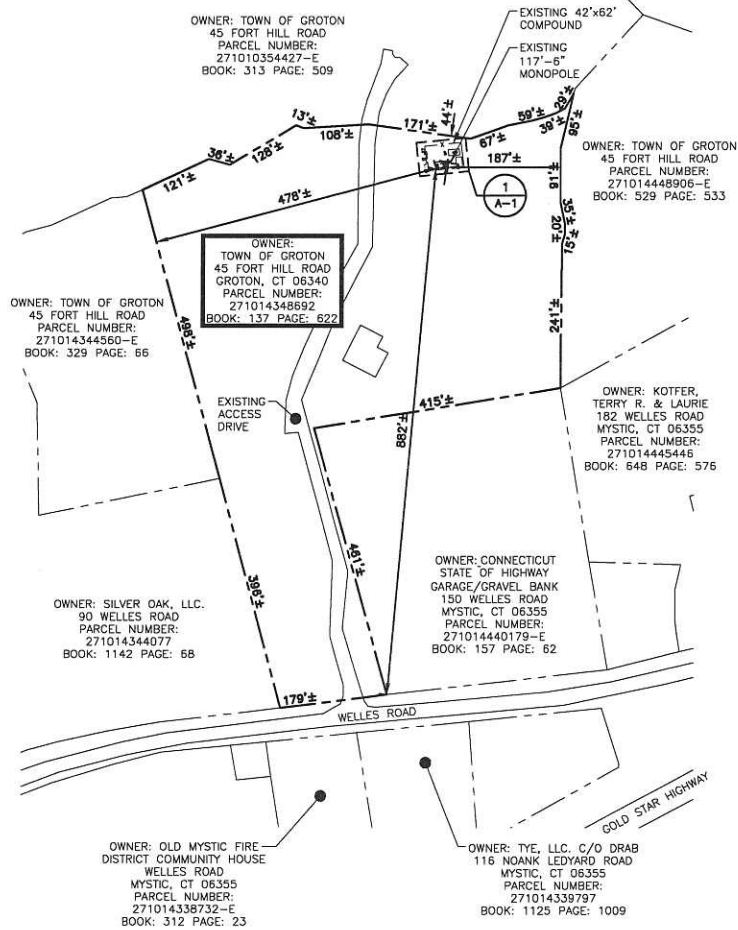
NO.	DATE	ISSUED FOR REVIEW	REVISIONS	BY	CHK	APP'D
A	01/07/19	ISSUED FOR REVIEW		SF	JC	DIC

SCALE: AS SHOWN DESIGNED BY: JC DRAWN BY: SF

AT&T

SITE PLAN
(2019 NSB)

SITE NUMBER	DRAWING NUMBER	REV
CT1357	C-1	A



SITE PLAN
22x34 SCALE: 1"=100'
11x17 SCALE: 1"=200'

1
C-2



BASE MAPING FROM:
1. TOWN OF GROTON, CT GIS MAP.

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S&I
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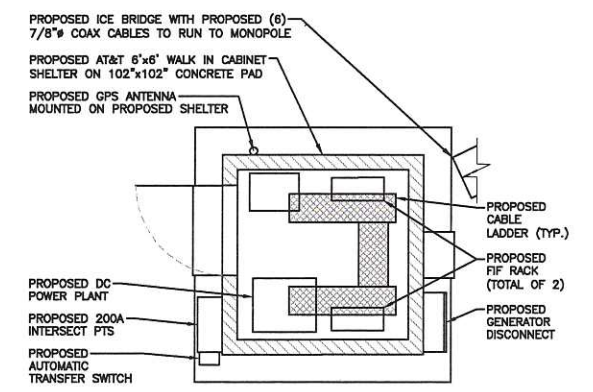
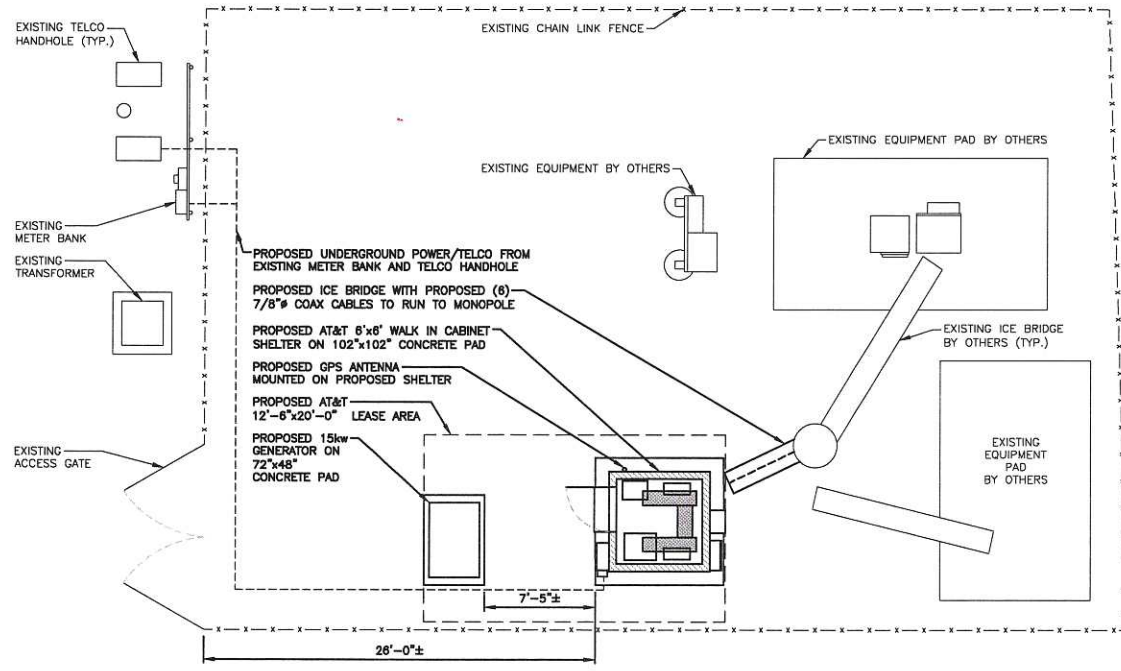
at&t
500 ENTERPRISE DRIVE, SUITE 3A
ROCKY HILL, CT 06067

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A	01/07/19					
		DESIGNED BY:	JC	DRAWN BY:		SF

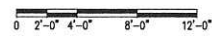
AT&T		
SETBACK PLAN (2019 NSB)		
SITE NUMBER	DRAWING NUMBER	REV
CT1357	C-2	A

NOTE:
REFER TO THE FINAL RF DATA SHEET FOR FINAL ANTENNA SETTINGS.

NOTE:
PROPOSED POWER, TELCO, & GROUNDING TO COME FROM EXISTING SOURCES (ROUTING TO BE DETERMINED)



COMPOUND PLAN
22x34 SCALE: 1/4"=1'-0"
11x17 SCALE: 1/8"=1'-0"
1
A-1



EQUIPMENT PLAN
22x34 SCALE: 1/2"=1'-0"
11x17 SCALE: 1/4"=1'-0"
2
A-1



HG HUDSON
Design Group LLC
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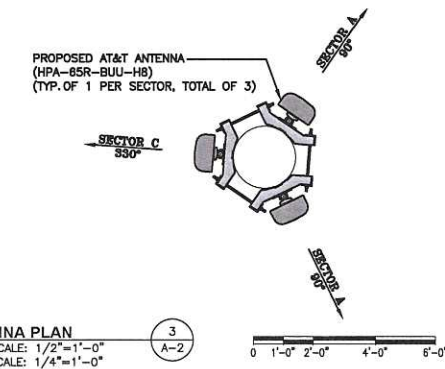
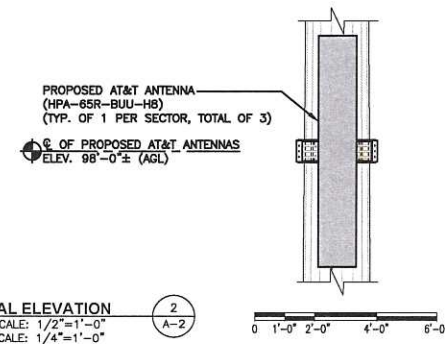
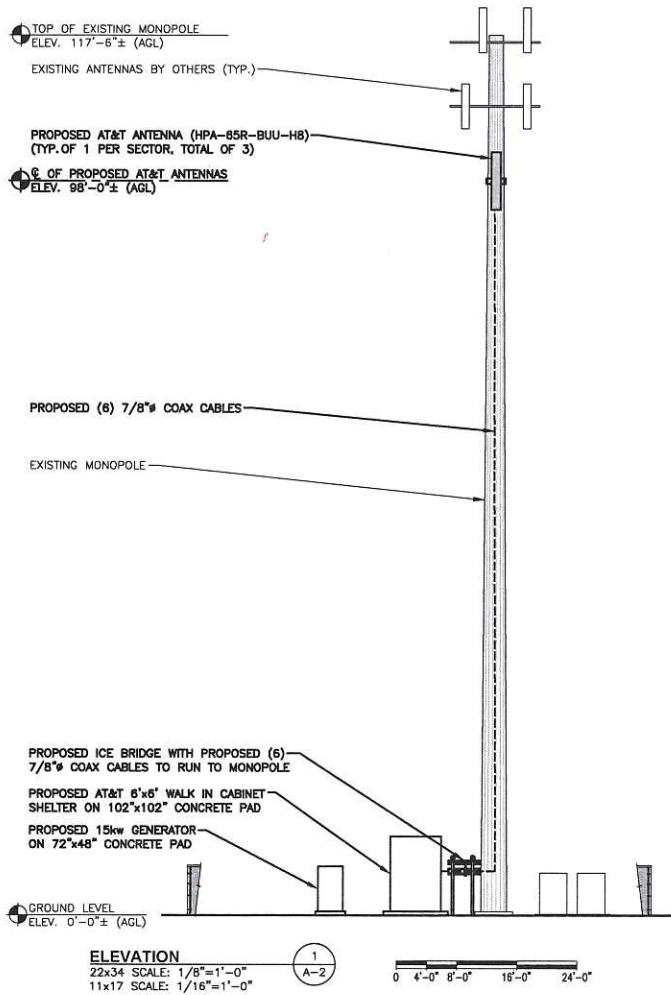
SAI
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A	01/07/19	ISSUED FOR REVIEW		SF	JC	DJC
SCALE: AS SHOWN			DESIGNED BY: JC	DRAWN BY: SF		

AT&T		
COMPOUND & EQUIPMENT PLANS (2019 NSB)		
SITE NUMBER	DRAWING NUMBER	REV
CT1357	A-1	A



NOTE:
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NOTE:
 AN ANALYSIS FOR THE CAPACITY OF THE EXISTING ANTENNA MOUNT TO SUPPORT THE PROPOSED LOADING HAS BEEN COMPLETED BY: HUDSON DESIGN GROUP, LLC. DATED: DECEMBER 21, 2018.

NOTE:
 PROPOSED POWER, TELCO, & GROUNDING TO COME FROM EXISTING SOURCES (ROUTING TO BE DETERMINED)

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A	01/07/19	ISSUED FOR REVIEW				
				BY	CHK	APP'D
				DESIGNED BY: JC	DRAWN BY: SF	

AT&T		
ELEVATIONS & ANTENNA PLAN (2019 NSB)		
SITE NUMBER	DRAWING NUMBER	REV
CT1357	A-2	A

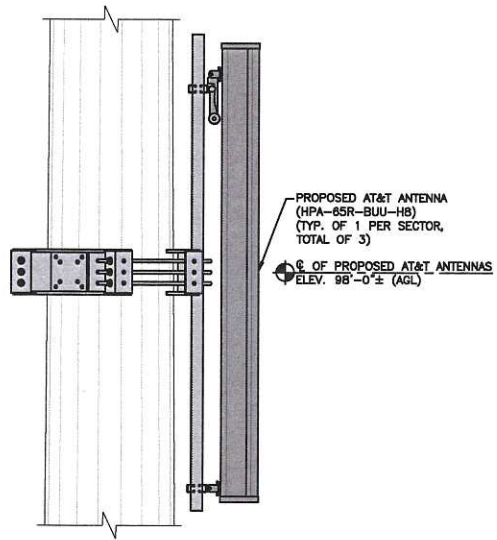
ANTENNA SCHEDULE									
SECTOR	BAND	ANTENNA	SIZE (INCHES) (LxWxD)	ANTENN E HEIGHT	AZIMUTH	TMA/DIPLXER	RRU	SIZE (INCHES) (LxWxD)	
A1	T.B.D.	HPA-65R-BUU-H8	92.4x14.8x7.4	98'±	30°	(P) (2) TPX-70821	-	-	-
B1	T.B.D.	HPA-65R-BUU-H8	92.4x14.8x7.4	98'±	150°	(P) (2) TPX-70821	-	-	-
C1	T.B.D.	HPA-65R-BUU-H8	92.4x14.8x7.4	98'±	270°	(P) (2) TPX-70821	-	-	-

FINAL ANTENNA SCHEDULE 1
SCALE: N.T.S. A-3

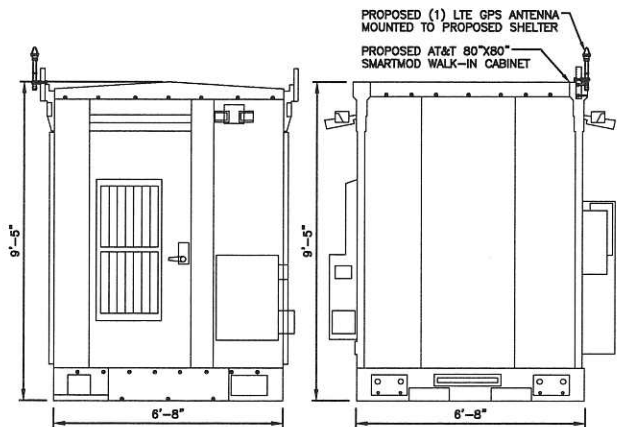
NOTE:
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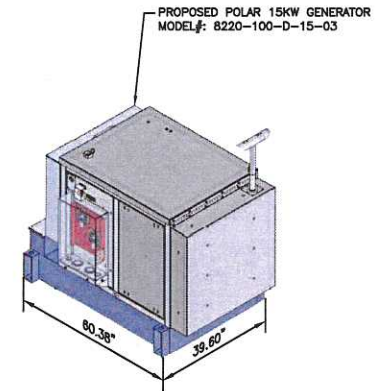
NOTE:
PROPOSED POWER, TELCO, & GROUNDING TO COME FROM EXISTING SOURCES (ROUTING TO BE DETERMINED)



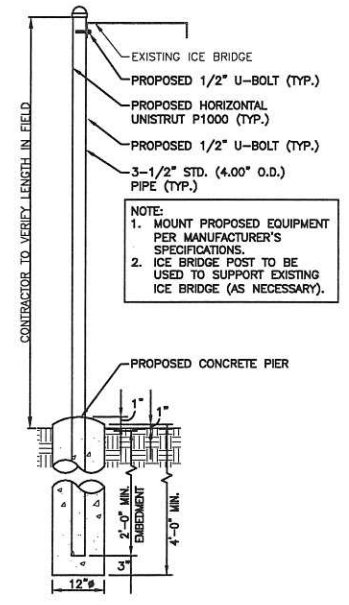
PROPOSED ANTENNA MOUNTING DETAIL 2
SCALE: N.T.S. A-3



TYPICAL SHELTER DETAIL 3
SCALE: N.T.S. A-3



GENERATOR DETAIL 4
SCALE: N.T.S. A-3



PROPOSED ICE BRIDGE DETAIL 5
SCALE: N.T.S. A-3

NOTE:
1. MOUNT PROPOSED EQUIPMENT PER MANUFACTURER'S SPECIFICATIONS.
2. ICE BRIDGE POST TO BE USED TO SUPPORT EXISTING ICE BRIDGE (AS NECESSARY).

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AT&T		
DETAILS		
(2019 NSB)		
SITE NUMBER	DRAWING NUMBER	REV
CT1357	A-3	A



Tower Engineering Solutions

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

Structural Analysis Report

Existing 118 ft PennSummit Monopole

Customer Name: SBA Communications Corp

Customer Site Number: CT46142-A

Customer Site Name: South Ledyard- Town Dump

Carrier Name: AT&T (App#: 88427, V5)

Carrier Site ID / Name: CT2117 / Mystic CT Replacement

Site Location: 130 Welles Road

Groton, Connecticut

New London County

Latitude: 41.392666

Longitude: -71.969805

Analysis Result:

Max Structural Usage: 92.6% [Pass]

Max Foundation Usage: 67.0% [Pass]

Additional Usage Caused by New Mount/Mount Modification : +2.2%

Report Prepared By : Dipika Dhungana



1/14/19

Introduction

The purpose of this report is to summarize the analysis results on the 118 ft PennSummit Monopole to support the proposed antennas and transmission lines in addition to those currently installed. Any modification listed under Sources of Information was assumed completed and was included in this analysis.

Sources of Information

Tower Drawings	Paul J. Ford and Company, Job #29203-0083 dated April 24, 2003
Foundation Drawing	Paul J. Ford and Company, Job #29203-0083 dated September 12, 2003
Geotechnical Report	Criscuolo Shepard Associates, PC, File #2001.916 dated April 10, 2001
Modification Drawings	N/A

Analysis Criteria

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

Wind Speed Used in the Analysis:	Ultimate Design Wind Speed $V_{ult} = 135$ mph (3-Sec. Gust)/ Nominal Design Wind Speed $V_{as_d} = 105.0$ mph (3-Sec. Gust)
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:	$S_S = 0.161$, $S_1 = 0.058$

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		
1	117.5	3	ALU RRH8x20-25	Low Profile Platform-flat	(4) 1-1/4" Hybrid	Sprint Nextel		
2		3	RFS - APXVTM14-C-120 - Panel					
3		3	RFS APXVSPP18-C-A20 - Panel					
4		4	RFS ACU-A20-N					
5	114.0	3	ALU 1900MHz RRH	Flash Mounted				
6		3	ALU 800 MHz RRH					
7		3	ALU 800 Filter					
8	108.0	3	Ericsson AIR 21 B4A B2P - Panel	(3) T-Arm			(13) 1 5/8"	T-Mobile
9		3	Ericsson AIR 21 B2A B4P - Panel					

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

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

Items	Elevation (ft)	Qty.	Antenna Descriptions	Mount Type & Qty.	Transmission Lines	Owner
10	98.0	3	KMW AM-X-CD-14-65-00T - Panel	(1)4-1/2" Pipe Mount Assembly (Sabre C10899050)	(6) 1 5/8"	AT&T
11		3	CCI DTMAPB7819VG12A			

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
Max. Usage:	82.9%	92.6%	74.0%
Pass/Fail	Pass	Pass	Pass

Foundations

	Moment (Kip-Ft)	Shear (Kips)	Axial (Kips)
Analysis Reactions	1737.4	19.6	34.2

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 1.2297 degrees under the operational wind speed as specified in the Analysis Criteria.

Conclusions

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

Standard Conditions

1. This analysis was performed based on the information supplied to **(TES) Tower Engineering Solutions, LLC**. Verification of the information provided was not included in the Scope of Work for **TES**. The accuracy of the analysis is dependent on the accuracy of the information provided.
2. The 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 82.95% at 0.0ft

Structure: CT46142-A-SBA
 Site Name: South Ledyard- Town Dump
 Height: 118.00 (ft)
 Base Elev: 0.000 (ft)

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

1/14/2019



IES

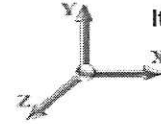
Tower Engineering Solutions

Page: 1

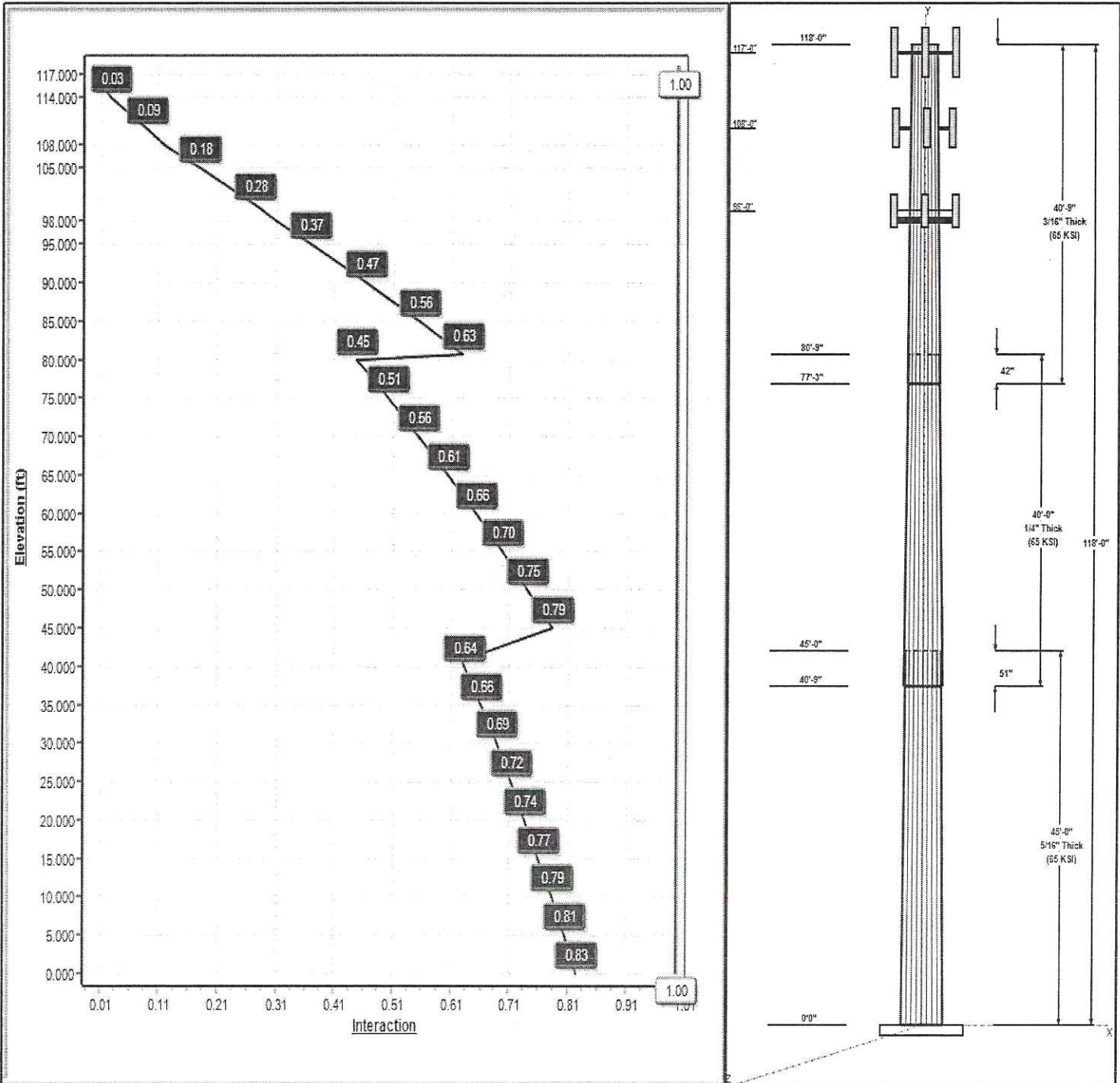
Dead Load Factor: 1.20
 Wind Load Factor: 1.60

Iterations: 25

Load Case : 1.2D + 1.6W 105 mph Wind



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Structure: CT46142-A-SBA

Type: Tapered
 Site Name: South Ledyard- Town Dump
 Height: 118.00 (ft)
 Base Elev: 0.00 (ft)

Base Shape: 18 Sided
 Taper: 0.15100

1/14/2019
 Page: 2



Shaft Properties

Seq	Length (ft)	Top (in)	Bottom (in)	Thick (in)	Joint Type	Taper	Grade (ksi)
1	45.00	32.15	38.94	0.313		0.15100	65
2	40.00	27.25	33.29	0.250	Slip	0.15100	65
3	40.75	22.00	28.15	0.188	Slip	0.15100	65

Discrete Appurtenances

Attach Elev (ft)	Force Elev (ft)	Qty	Description	Carrier
117.00	117.00	3	APXVSP18-C-A20	Sprint Nextel
117.00	117.00	4	ACU-A20-N	Sprint Nextel
117.00	117.00	3	56.3"x12.6"x6.3" Panel	Sprint Nextel
117.00	117.00	1	Low Profile Platform-flat	Sprint Nextel
114.00	114.00	3	1900MHz RRH	Sprint Nextel
114.00	114.00	3	800 MHz RRH	Sprint Nextel
114.00	114.00	3	800 Filter	Sprint Nextel
114.00	114.00	3	Flush Mount	Sprint Nextel
114.00	114.00	3	26.1"x18.6"x6.7" RRU	Sprint Nextel
108.00	108.00	3	T-Arm (Round)	T-Mobile
108.00	108.00	3	AIR 21 B4A B2P	T-Mobile
108.00	108.00	3	AIR 21 B2A B4P	T-Mobile
98.00	98.00	3	KMWAM-X-CD-14-65-00T	AT&T
98.00	98.00	3	CCI DTMABP7819VG12A	AT&T
98.00	98.00	1	Sabre C10899050	AT&T

Linear Appurtenances

Elev From (ft)	Elev To (ft)	Placement	Description	Carrier
0.00	117.00	Inside	1-1/4" Hybrid	Sprint Nextel
0.00	117.00	Outside	Safety Cable	
0.00	108.00	Inside	1 5/8" Coax	T-Mobile
0.00	108.00	Inside	1 5/8" Fiber	T-Mobile
0.00	98.00	Inside	1 5/8" Coax	AT&T

Anchor Bolts

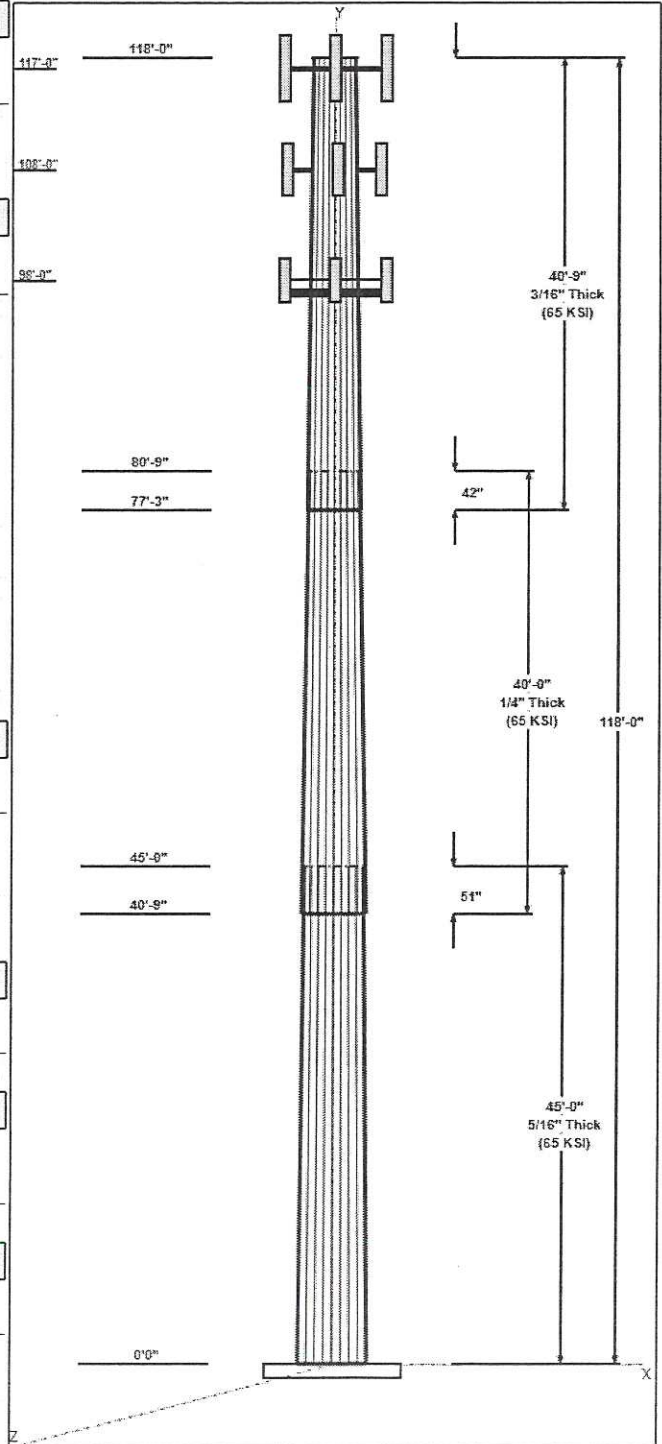
Qty	Specifications	Grade (ksi)	Arrangement
8	2.25" 18J	75.0	Cluster

Base Plate

Thickness (in)	Specifications (in)	Grade (ksi)	Geometry
2.5000	44.0	55.0	Clipped

Reactions

Load Case	Moment (FT-Kips)	Shear (Kips)	Axial (Kips)
1.2D + 1.6W 105 mph Wind	1737.4	19.6	21.8
0.9D + 1.6W 105 mph Wind	1718.1	19.6	16.3
1.2D + 1.0Di + 1.0Wi 50 mph Wind	430.1	4.9	34.2
1.2D + 1.0E	113.3	1.1	21.9
0.9D + 1.0E	111.9	1.1	16.4
1.0D + 1.0W 60 mph Wind	352.6	4.0	18.2

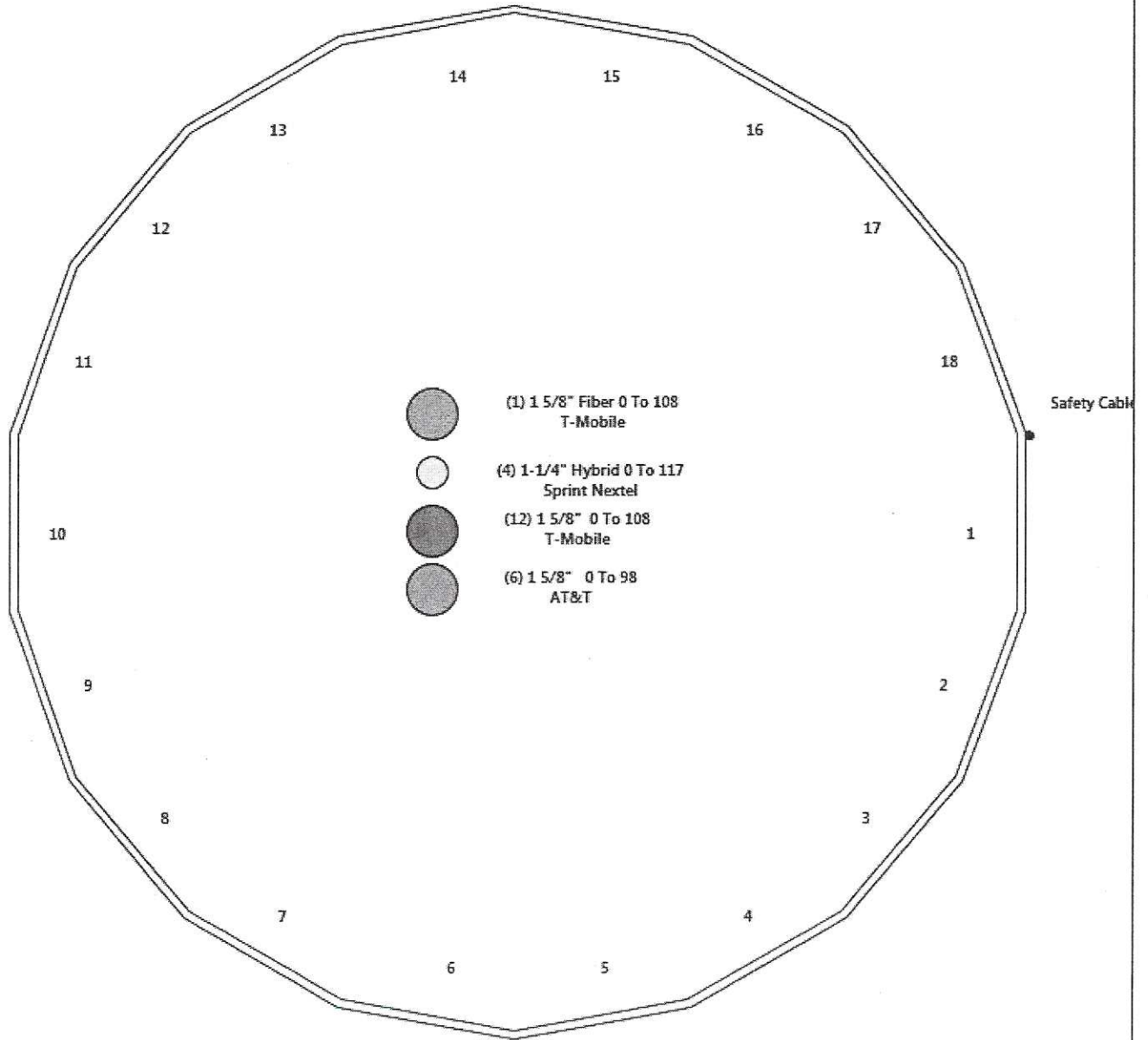


Structure: CT46142-A-SBA - Coax Line Placement

Type: Monopole
Site Name: South Ledyard- Town Dump
Height: 118.00 (ft)

1/14/2019

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Shaft Properties

Structure: CT46142-A-SBA	Code: EIA/TIA-222-G	1/14/2019
Site Name: South Ledyard- Town Dump	Exposure: C	
Height: 118.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Sec. No.	Shape	Length (ft)	Thick (in)	Fy (ksi)	Joint Type	Overlap (in)	Weight (lb)
1	18	45.000	0.3125	65		0.00	5,351
2	18	40.000	0.2500	65	Slip	51.00	3,242
3	18	40.750	0.1875	65	Slip	42.00	2,054
Total Shaft Weight:							10,647

Sec. No.	Bottom						Top						Taper
	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	
1	38.94	0.00	38.32	7224.13	20.56	124.62	32.15	45.00	31.58	4043.24	16.73	102.8	0.151000
2	33.29	40.75	26.22	3615.72	22.07	133.16	27.25	80.75	21.42	1973.17	17.81	109.0	0.151000
3	28.15	77.25	16.64	1644.47	25.06	150.15	22.00	118.00	12.98	780.30	19.28	117.3	0.151000

Load Summary

Structure: CT46142-A-SBA	Code: EIA/TIA-222-G	1/14/2019
Site Name: South Ledyard- Town Dump	Exposure: C	
Height: 118.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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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	117.00	APXVSP18-C-A20	3	57.00	8.02	0.83	225.61	10.745	0.83	0.00	0.00
2	117.00	ACU-A20-N	4	1.00	0.14	0.79	5.19	0.429	0.79	0.00	0.00
3	117.00	56.3"x12.6"x6.3" Panel	3	55.10	6.34	0.78	210.80	7.424	0.80	0.00	0.00
4	117.00	Low Profile Platform-flat	1	1200.00	25.00	1.00	2221.43	45.429	1.00	0.00	0.00
5	114.00	1900MHz RRH	3	60.00	2.77	0.75	141.18	4.004	0.75	0.00	0.00
6	114.00	800 MHz RRH	3	53.00	2.49	0.75	124.96	3.603	0.75	0.00	0.00
7	114.00	800 Filter	3	8.80	0.67	0.67	22.91	1.094	0.67	0.00	0.00
8	114.00	Flush Mount	3	350.00	5.00	1.00	635.26	8.396	1.00	0.00	0.00
9	114.00	26.1"x18.6"x6.7" RRU	3	70.00	4.05	0.68	176.87	4.840	0.70	0.00	0.00
10	108.00	T-Arm (Round)	3	350.00	8.00	0.67	586.43	14.755	0.67	0.00	0.00
11	108.00	AIR 21 B4A B2P	3	90.40	6.09	0.86	252.81	7.149	0.86	0.00	0.00
12	108.00	AIR 21 B2A B4P	3	90.40	6.09	0.86	252.81	7.149	0.86	0.00	0.00
13	98.00	KMW AM-X-CD-14-65-00T	3	36.40	5.00	0.75	161.08	5.931	0.75	0.00	0.00
14	98.00	CCI DTMABP7819VG12A TMA	3	19.20	1.14	0.50	51.42	1.379	0.50	0.00	0.00
15	98.00	Sabre C10899050	1	81.00	10.00	1.00	146.03	16.690	1.00	0.00	0.00
Totals:			42	5,005.90			10,914.57				

Linear Appurtenances

Bottom Elev. (ft)	Top Elev. (ft)	Description	Exposed Width	Exposed
0.00	117.00	(4) 1-1/4" Hybrid	0.00	Inside
0.00	117.00	(1) Safety Cable	0.38	Outside
0.00	108.00	(12) 1 5/8" Coax	0.00	Inside
0.00	108.00	(1) 1 5/8" Fiber	0.00	Inside
0.00	98.00	(6) 1 5/8" Coax	0.00	Inside

Shaft Section Properties

Structure: CT46142-A-SBA	Code: EIA/TIA-222-G	1/14/2019
Site Name: South Ledyard- Town Dump	Exposure: C	
Height: 118.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Increment Length: 5 (ft)

Elev (ft)	Description	Thick (in)	Dia (in)	Area (in ²)	Ix (in ⁴)	W/t Ratio	D/t Ratio	Fpy (ksi)	S (in ³)	Weight (lb)
0.00		0.3125	38.943	38.315	7224.1	20.56	124.62	77.2	365.4	0.0
5.00		0.3125	38.188	37.566	6808.8	20.14	122.20	77.7	351.2	645.5
10.00		0.3125	37.433	36.818	6409.7	19.71	119.79	78.2	337.3	632.8
15.00		0.3125	36.678	36.069	6026.5	19.28	117.37	78.7	323.6	620.0
20.00		0.3125	35.923	35.320	5658.9	18.86	114.95	79.2	310.3	607.3
25.00		0.3125	35.168	34.571	5306.5	18.43	112.54	79.7	297.2	594.6
30.00		0.3125	34.413	33.822	4969.1	18.01	110.12	80.2	284.4	581.8
35.00		0.3125	33.658	33.073	4646.3	17.58	107.71	80.7	271.9	569.1
40.00		0.3125	32.903	32.325	4337.8	17.15	105.29	81.2	259.7	556.3
40.75	Bot - Section 2	0.3125	32.790	32.212	4292.7	17.09	104.93	81.3	257.9	82.4
45.00	Top - Section 1	0.2500	32.648	25.707	3409.1	21.62	130.59	0.0	0.0	836.7
50.00		0.2500	31.893	25.108	3176.3	21.08	127.57	76.6	196.2	432.3
55.00		0.2500	31.138	24.509	2954.3	20.55	124.55	77.2	186.9	422.1
60.00		0.2500	30.383	23.910	2742.9	20.02	121.53	77.9	177.8	411.9
65.00		0.2500	29.628	23.311	2541.9	19.49	118.51	78.5	169.0	401.7
70.00		0.2500	28.873	22.712	2350.9	18.95	115.49	79.1	160.4	391.5
75.00		0.2500	28.118	22.112	2169.7	18.42	112.47	79.7	152.0	381.3
77.25	Bot - Section 3	0.2500	27.778	21.843	2091.3	18.18	111.11	80.0	148.3	168.3
80.00		0.2500	27.363	21.513	1998.1	17.89	109.45	80.4	143.8	357.4
80.75	Top - Section 2	0.1875	27.625	16.328	1553.0	24.57	147.33	0.0	0.0	96.5
85.00		0.1875	26.983	15.946	1446.5	23.96	143.91	73.2	105.6	233.4
90.00		0.1875	26.228	15.497	1327.7	23.25	139.88	74.0	99.7	267.5
95.00		0.1875	25.473	15.047	1215.5	22.54	135.86	74.9	94.0	259.8
98.00		0.1875	25.020	14.778	1151.3	22.12	133.44	75.4	90.6	152.2
100.00		0.1875	24.718	14.598	1109.9	21.83	131.83	75.7	88.4	100.0
105.00		0.1875	23.963	14.149	1010.5	21.12	127.80	76.6	83.1	244.5
108.00		0.1875	23.510	13.879	953.8	20.70	125.39	77.1	79.9	143.1
110.00		0.1875	23.208	13.700	917.3	20.41	123.78	77.4	77.8	93.8
114.00		0.1875	22.604	13.340	846.9	19.85	120.55	78.1	73.8	184.0
115.00		0.1875	22.453	13.250	829.9	19.70	119.75	78.2	72.8	45.2
117.00		0.1875	22.151	13.071	796.6	19.42	118.14	78.6	70.8	89.6
118.00		0.1875	22.000	12.981	780.3	19.28	117.33	78.7	69.9	44.3
										10647.0

Wind Loading - Shaft

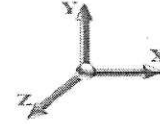
Structure: CT46142-A-SBA	Code: EIA/TIA-222-G	1/14/2019
Site Name: South Ledyard- Town Dump	Exposure: C	
Height: 118.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 1.2D + 1.6W 105 mph Wind

Dead Load Factor 1.20
Wind Load Factor 1.60



Iterations 25

Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.85	22.791	25.07	319.00	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	312.82	0.650	0.000	5.00	16.317	10.61	425.4	0.0	774.6
10.00		1.00	0.85	22.791	25.07	306.63	0.650	0.000	5.00	15.997	10.40	417.1	0.0	759.3
15.00		1.00	0.85	22.791	25.07	300.45	0.650	0.000	5.00	15.678	10.19	408.8	0.0	744.0
20.00		1.00	0.90	24.182	26.60	303.11	0.650	0.000	5.00	15.359	9.98	424.9	0.0	728.8
25.00		1.00	0.95	25.345	27.88	303.80	0.650	0.000	5.00	15.039	9.78	436.1	0.0	713.5
30.00		1.00	0.98	26.337	28.97	303.03	0.650	0.000	5.00	14.720	9.57	443.5	0.0	698.2
35.00		1.00	1.01	27.206	29.93	301.23	0.650	0.000	5.00	14.400	9.36	448.2	0.0	682.9
40.00		1.00	1.04	27.981	30.78	298.64	0.650	0.000	5.00	14.081	9.15	450.7	0.0	667.6
40.75	Bot - Section 2	1.00	1.05	28.091	30.90	298.20	0.650	0.000	0.75	2.085	1.35	67.0	0.0	98.8
45.00	Top - Section 1	1.00	1.07	28.684	31.55	295.43	0.650	0.000	4.25	11.857	7.71	389.1	0.0	1004.0
50.00		1.00	1.09	29.327	32.26	296.36	0.650	0.000	5.00	13.653	8.87	458.1	0.0	518.7
55.00		1.00	1.12	29.922	32.91	292.26	0.650	0.000	5.00	13.334	8.67	456.4	0.0	506.5
60.00		1.00	1.14	30.475	33.52	287.80	0.650	0.000	5.00	13.015	8.46	453.7	0.0	494.3
65.00		1.00	1.16	30.993	34.09	283.02	0.650	0.000	5.00	12.695	8.25	450.1	0.0	482.0
70.00		1.00	1.17	31.480	34.63	277.97	0.650	0.000	5.00	12.376	8.04	445.7	0.0	469.8
75.00		1.00	1.19	31.941	35.13	272.67	0.650	0.000	5.00	12.056	7.84	440.5	0.0	457.6
77.25	Bot - Section 3	1.00	1.20	32.140	35.35	270.22	0.650	0.000	2.25	5.321	3.46	195.6	0.0	201.9
80.00		1.00	1.21	32.377	35.62	267.16	0.650	0.000	2.75	6.503	4.23	240.9	0.0	428.9
80.75	Top - Section 2	1.00	1.21	32.441	35.69	266.32	0.650	0.000	0.75	1.757	1.14	65.2	0.0	115.9
85.00		1.00	1.22	32.793	36.07	265.14	0.650	0.000	4.25	9.819	6.38	368.4	0.0	280.0
90.00		1.00	1.24	33.190	36.51	259.27	0.650	0.000	5.00	11.257	7.32	427.4	0.0	321.0
95.00		1.00	1.25	33.570	36.93	253.25	0.650	0.000	5.00	10.937	7.11	420.0	0.0	311.8
98.00	Appurtenance(s)	1.00	1.26	33.791	37.17	249.56	0.650	0.000	3.00	6.409	4.17	247.8	0.0	182.7
100.00		1.00	1.27	33.935	37.33	247.07	0.650	0.000	2.00	4.209	2.74	163.4	0.0	120.0
105.00		1.00	1.28	34.285	37.71	240.76	0.650	0.000	5.00	10.298	6.69	403.9	0.0	293.5
108.00	Appurtenance(s)	1.00	1.29	34.489	37.94	236.91	0.650	0.000	3.00	6.026	3.92	237.7	0.0	171.7
110.00		1.00	1.29	34.623	38.08	234.32	0.650	0.000	2.00	3.953	2.57	156.6	0.0	112.6
114.00	Appurtenance(s)	1.00	1.30	34.884	38.37	229.08	0.650	0.000	4.00	7.753	5.04	309.4	0.0	220.8
115.00		1.00	1.30	34.948	38.44	227.76	0.650	0.000	1.00	1.906	1.24	76.2	0.0	54.3
117.00	Appurtenance(s)	1.00	1.31	35.075	38.58	225.10	0.650	0.000	2.00	3.774	2.45	151.4	0.0	107.5
118.00		1.00	1.31	35.138	38.65	223.77	0.650	0.000	1.00	1.868	1.21	75.1	0.0	53.2
Totals:								118.00				10,154.4		12,776.4

Discrete Appurtenance Forces

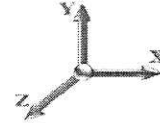
Structure: CT46142-A-SBA	Code: EIA/TIA-222-G	1/14/2019
Site Name: South Ledyard- Town Dump	Exposure: C	
Height: 118.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 1.2D + 1.6W 105 mph Wind

Dead Load Factor 1.20
Wind Load Factor 1.60



Iterations 25

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	CaAa x Ka	Ka	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)
1	117.00	Low Profile Platform-flat	1	35.075	38.583	1.00	1.00	25.00	1440.00	0.000	0.000	1543.31	0.00	0.00
2	117.00	56.3"x12.6"x6.3" Panel	3	35.075	38.583	0.78	1.00	14.84	198.36	0.000	0.000	915.84	0.00	0.00
3	117.00	ACU-A20-N	4	35.075	38.583	0.79	1.00	0.44	4.80	0.000	0.000	27.31	0.00	0.00
4	117.00	APXVSP18-C-A20	3	35.075	38.583	0.83	1.00	19.97	205.20	0.000	0.000	1232.78	0.00	0.00
5	114.00	26.1"x18.6"x6.7" RRU	3	34.884	38.372	0.68	1.00	8.26	252.00	0.000	0.000	507.25	0.00	0.00
6	114.00	Flush Mount	3	34.884	38.372	1.00	1.00	15.00	1260.00	0.000	0.000	920.93	0.00	0.00
7	114.00	800 Filter	3	34.884	38.372	0.67	1.00	1.35	31.68	0.000	0.000	82.68	0.00	0.00
8	114.00	800 MHz RRH	3	34.884	38.372	0.75	1.00	5.60	190.80	0.000	0.000	343.97	0.00	0.00
9	114.00	1900MHz RRH	3	34.884	38.372	0.75	1.00	6.23	216.00	0.000	0.000	382.65	0.00	0.00
10	108.00	AIR 21 B2A B4P	3	34.489	37.938	0.69	0.80	12.57	325.44	0.000	0.000	762.99	0.00	0.00
11	108.00	AIR 21 B4A B2P	3	34.489	37.938	0.69	0.80	12.57	325.44	0.000	0.000	762.99	0.00	0.00
12	108.00	T-Arm (Round)	3	34.489	37.938	0.50	0.75	12.06	1260.00	0.000	0.000	732.05	0.00	0.00
13	98.00	Sabre C10899050	1	33.791	37.170	1.00	1.00	10.00	97.20	0.000	0.000	594.72	0.00	0.00
14	98.00	CCI DTMABP7819VG12A	3	33.791	37.170	0.40	0.80	1.37	69.12	0.000	0.000	81.36	0.00	0.00
15	98.00	KMW AM-X-CD-14-65-00T	3	33.791	37.170	0.60	0.80	9.00	131.04	0.000	0.000	535.25	0.00	0.00
Totals:								6,007.08				9,426.08		

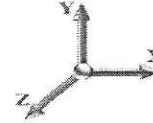
Total Applied Force Summary

Structure: CT46142-A-SBA	Code: EIA/TIA-222-G	1/14/2019
Site Name: South Ledyard- Town Dump	Exposure: C	
Height: 118.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II
		Page: 9



Load Case: 1.2D + 1.6W 105 mph Wind

Dead Load Factor 1.20
Wind Load Factor 1.60



Iterations 25

Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00		0.00	0.00	0.00	0.00
5.00		425.43	918.08	0.00	0.00
10.00		417.10	902.79	0.00	0.00
15.00		408.77	887.50	0.00	0.00
20.00		424.88	872.21	0.00	0.00
25.00		436.06	856.92	0.00	0.00
30.00		443.50	841.64	0.00	0.00
35.00		448.18	826.35	0.00	0.00
40.00		450.74	811.06	0.00	0.00
40.75		66.99	120.34	0.00	0.00
45.00		389.07	1125.97	0.00	0.00
50.00		458.08	662.19	0.00	0.00
55.00		456.43	649.96	0.00	0.00
60.00		453.73	637.73	0.00	0.00
65.00		450.11	625.49	0.00	0.00
70.00		445.69	613.26	0.00	0.00
75.00		440.54	601.03	0.00	0.00
77.25		195.65	266.47	0.00	0.00
80.00		240.87	507.82	0.00	0.00
80.75		65.20	137.37	0.00	0.00
85.00		368.38	401.98	0.00	0.00
90.00		427.41	464.43	0.00	0.00
95.00		420.04	455.26	0.00	0.00
98.00	(7) attachments	1459.07	566.11	0.00	0.00
100.00		163.39	162.36	0.00	0.00
105.00		403.92	399.47	0.00	0.00
108.00	(9) attachments	2495.79	2146.16	0.00	0.00
110.00		156.58	122.43	0.00	0.00
114.00	(15) attachments	2546.89	2190.93	0.00	0.00
115.00		76.22	59.20	0.00	0.00
117.00	(11) attachments	3870.69	1965.65	0.00	0.00
118.00		75.09	53.19	0.00	0.00
	Totals:	19,580.45	21,851.36	0.00	0.00

Linear Appurtenance Segment Forces (Factored)

Structure: CT46142-A-SBA	Code: EIA/TIA-222-G	1/14/2019
Site Name: South Ledyard- Town Dump	Exposure: C	
Height: 118.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II
		Page: 10



Load Case: 1.2D + 1.6W 105 mph Wind

Dead Load Factor 1.20
Wind Load Factor 1.60



Iterations 25

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
5.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.010	0.000	22.791	0.00	1.64
10.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.010	0.000	22.791	0.00	1.64
15.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.010	0.000	22.791	0.00	1.64
20.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.010	0.000	24.182	0.00	1.64
25.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.011	0.000	25.345	0.00	1.64
30.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.011	0.000	26.337	0.00	1.64
35.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.011	0.000	27.206	0.00	1.64
40.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.011	0.000	27.981	0.00	1.64
40.75	Safety Cable	Yes	0.75	0.000	0.38	0.02	0.00	0.011	0.000	28.091	0.00	0.25
45.00	Safety Cable	Yes	4.25	0.000	0.38	0.13	0.00	0.012	0.000	28.684	0.00	1.39
50.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.012	0.000	29.327	0.00	1.64
55.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.012	0.000	29.922	0.00	1.64
60.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.012	0.000	30.475	0.00	1.64
65.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.012	0.000	30.993	0.00	1.64
70.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.013	0.000	31.480	0.00	1.64
75.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.013	0.000	31.941	0.00	1.64
77.25	Safety Cable	Yes	2.25	0.000	0.38	0.07	0.00	0.013	0.000	32.140	0.00	0.74
80.00	Safety Cable	Yes	2.75	0.000	0.38	0.09	0.00	0.014	0.000	32.377	0.00	0.90
80.75	Safety Cable	Yes	0.75	0.000	0.38	0.02	0.00	0.014	0.000	32.441	0.00	0.25
85.00	Safety Cable	Yes	4.25	0.000	0.38	0.13	0.00	0.014	0.000	32.793	0.00	1.39
90.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.014	0.000	33.190	0.00	1.64
95.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.014	0.000	33.570	0.00	1.64
98.00	Safety Cable	Yes	3.00	0.000	0.38	0.10	0.00	0.015	0.000	33.791	0.00	0.98
100.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.015	0.000	33.935	0.00	0.66
105.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.015	0.000	34.285	0.00	1.64
108.00	Safety Cable	Yes	3.00	0.000	0.38	0.10	0.00	0.016	0.000	34.489	0.00	0.98
110.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.016	0.000	34.623	0.00	0.66
114.00	Safety Cable	Yes	4.00	0.000	0.38	0.13	0.00	0.016	0.000	34.884	0.00	1.31
115.00	Safety Cable	Yes	1.00	0.000	0.38	0.03	0.00	0.017	0.000	34.948	0.00	0.33
117.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.017	0.000	35.075	0.00	0.66
Totals:											0.0	38.3

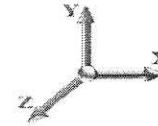
Calculated Forces

Structure: CT46142-A-SBA **Code:** EIA/TIA-222-G 1/14/2019
Site Name: South Ledyard- Town Dump **Exposure:** C
Height: 118.00 (ft) **Crest Height:** 0.00
Base Elev: 0.000 (ft) **Site Class:** D - Stiff Soil
Gh: 1.1 **Topography:** 1 **Struct Class:** II **Page:** 11



Load Case: 1.2D + 1.6W 105 mph Wind

Dead Load Factor 1.20
Wind Load Factor 1.60



Iterations 25

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	-21.79	-19.64	0.00	-1737.3	0.00	1737.37	2662.66	1331.33	4225.57	2115.93	0.00	0.000	0.000	0.829
5.00	-20.76	-19.34	0.00	-1639.1	0.00	1639.15	2627.56	1313.78	4087.72	2046.90	0.18	-0.332	0.000	0.809
10.00	-19.76	-19.03	0.00	-1542.4	0.00	1542.47	2591.79	1295.89	3951.04	1978.45	0.70	-0.665	0.000	0.787
15.00	-18.77	-18.71	0.00	-1447.3	0.00	1447.33	2555.34	1277.67	3815.58	1910.62	1.58	-0.997	0.000	0.765
20.00	-17.80	-18.37	0.00	-1353.7	0.00	1353.77	2518.21	1259.11	3681.41	1843.44	2.80	-1.327	0.000	0.742
25.00	-16.85	-18.01	0.00	-1261.9	0.00	1261.90	2480.41	1240.21	3548.60	1776.94	4.36	-1.656	0.000	0.717
30.00	-15.92	-17.63	0.00	-1171.8	0.00	1171.84	2441.94	1220.97	3417.21	1711.15	6.27	-1.982	0.000	0.692
35.00	-15.02	-17.24	0.00	-1083.6	0.00	1083.68	2402.79	1201.39	3287.30	1646.09	8.52	-2.305	0.000	0.665
40.00	-14.17	-16.80	0.00	-997.49	0.00	997.49	2362.96	1181.48	3158.94	1581.82	11.11	-2.624	0.000	0.637
40.75	-14.01	-16.76	0.00	-984.89	0.00	984.89	2356.93	1178.46	3139.82	1572.24	11.52	-2.672	0.000	0.633
45.00	-12.82	-16.39	0.00	-913.64	0.00	913.64	1757.80	878.90	2340.38	1171.93	14.02	-2.940	0.000	0.787
50.00	-12.09	-15.96	0.00	-831.72	0.00	831.72	1730.99	865.49	2250.57	1126.96	17.26	-3.247	0.000	0.745
55.00	-11.38	-15.54	0.00	-751.90	0.00	751.90	1703.50	851.75	2161.57	1082.39	20.85	-3.601	0.000	0.702
60.00	-10.68	-15.11	0.00	-674.22	0.00	674.22	1675.34	837.67	2073.46	1038.27	24.81	-3.945	0.000	0.656
65.00	-10.01	-14.67	0.00	-598.69	0.00	598.69	1646.50	823.25	1986.29	994.62	29.11	-4.275	0.000	0.608
70.00	-9.36	-14.23	0.00	-525.34	0.00	525.34	1616.99	808.49	1900.13	951.48	33.76	-4.589	0.000	0.558
75.00	-8.74	-13.77	0.00	-454.21	0.00	454.21	1586.80	793.40	1815.05	908.87	38.72	-4.886	0.000	0.506
77.25	-8.46	-13.57	0.00	-423.23	0.00	423.23	1573.00	786.50	1777.13	889.88	41.05	-5.015	0.000	0.481
80.00	-7.95	-13.30	0.00	-385.90	0.00	385.90	1555.94	777.97	1731.10	866.84	43.98	-5.166	0.000	0.451
80.75	-7.79	-13.24	0.00	-375.92	0.00	375.92	1065.47	532.73	1202.43	602.11	44.79	-5.207	0.000	0.632
85.00	-7.37	-12.87	0.00	-319.65	0.00	319.65	1050.73	525.37	1157.88	579.80	49.52	-5.420	0.000	0.559
90.00	-6.89	-12.43	0.00	-255.29	0.00	255.29	1032.77	516.39	1105.80	553.72	55.34	-5.703	0.000	0.468
95.00	-6.45	-11.99	0.00	-193.14	0.00	193.14	1014.14	507.07	1054.14	527.85	61.44	-5.943	0.000	0.373
98.00	-6.02	-10.49	0.00	-157.17	0.00	157.17	1002.64	501.32	1023.37	512.45	65.21	-6.066	0.000	0.313
100.00	-5.85	-10.32	0.00	-136.20	0.00	136.20	994.83	497.42	1002.97	502.23	67.76	-6.139	0.000	0.278
105.00	-5.48	-9.88	0.00	-84.60	0.00	84.60	974.85	487.42	952.34	476.88	74.26	-6.280	0.000	0.183
108.00	-3.62	-7.17	0.00	-54.95	0.00	54.95	962.53	481.27	922.25	461.81	78.22	-6.339	0.000	0.123
110.00	-3.51	-7.00	0.00	-40.61	0.00	40.61	954.18	477.09	902.32	451.83	80.88	-6.368	0.000	0.094
114.00	-1.62	-4.23	0.00	-12.60	0.00	12.60	937.17	468.59	862.79	432.04	86.22	-6.401	0.000	0.031
115.00	-1.57	-4.15	0.00	-8.37	0.00	8.37	932.85	466.42	852.98	427.13	87.56	-6.404	0.000	0.021
117.00	-0.04	-0.08	0.00	-0.08	0.00	0.08	924.13	462.06	833.45	417.34	90.24	-6.407	0.000	0.000
118.00	0.00	-0.08	0.00	0.00	0.00	0.00	919.72	459.86	823.73	412.48	91.57	-6.407	0.000	0.000

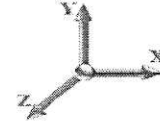
Wind Loading - Shaft

Structure: CT46142-A-SBA **Code:** EIA/TIA-222-G 1/14/2019
Site Name: South Ledyard- Town Dump **Exposure:** C
Height: 118.00 (ft) **Crest Height:** 0.00
Base Elev: 0.000 (ft) **Site Class:** D - Stiff Soil
Gh: 1.1 **Topography:** 1 **Struct Class:** II **Page:** 12



Load Case: 0.9D + 1.6W 105 mph Wind

Dead Load Factor 0.90
Wind Load Factor 1.60



Iterations 25

Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.85	22.791	25.07	319.00	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	312.82	0.650	0.000	5.00	16.317	10.61	425.4	0.0	581.0
10.00		1.00	0.85	22.791	25.07	306.63	0.650	0.000	5.00	15.997	10.40	417.1	0.0	569.5
15.00		1.00	0.85	22.791	25.07	300.45	0.650	0.000	5.00	15.678	10.19	408.8	0.0	558.0
20.00		1.00	0.90	24.182	26.60	303.11	0.650	0.000	5.00	15.359	9.98	424.9	0.0	546.6
25.00		1.00	0.95	25.345	27.88	303.80	0.650	0.000	5.00	15.039	9.78	436.1	0.0	535.1
30.00		1.00	0.98	26.337	28.97	303.03	0.650	0.000	5.00	14.720	9.57	443.5	0.0	523.6
35.00		1.00	1.01	27.206	29.93	301.23	0.650	0.000	5.00	14.400	9.36	448.2	0.0	512.2
40.00		1.00	1.04	27.981	30.78	298.64	0.650	0.000	5.00	14.081	9.15	450.7	0.0	500.7
40.75	Bot - Section 2	1.00	1.05	28.091	30.90	298.20	0.650	0.000	0.75	2.085	1.35	67.0	0.0	74.1
45.00	Top - Section 1	1.00	1.07	28.684	31.55	295.43	0.650	0.000	4.25	11.857	7.71	389.1	0.0	753.0
50.00		1.00	1.09	29.327	32.26	296.36	0.650	0.000	5.00	13.653	8.87	458.1	0.0	389.1
55.00		1.00	1.12	29.922	32.91	292.26	0.650	0.000	5.00	13.334	8.67	456.4	0.0	379.9
60.00		1.00	1.14	30.475	33.52	287.80	0.650	0.000	5.00	13.015	8.46	453.7	0.0	370.7
65.00		1.00	1.16	30.993	34.09	283.02	0.650	0.000	5.00	12.695	8.25	450.1	0.0	361.5
70.00		1.00	1.17	31.480	34.63	277.97	0.650	0.000	5.00	12.376	8.04	445.7	0.0	352.4
75.00		1.00	1.19	31.941	35.13	272.67	0.650	0.000	5.00	12.056	7.84	440.5	0.0	343.2
77.25	Bot - Section 3	1.00	1.20	32.140	35.35	270.22	0.650	0.000	2.25	5.321	3.46	195.6	0.0	151.4
80.00		1.00	1.21	32.377	35.62	267.16	0.650	0.000	2.75	6.503	4.23	240.9	0.0	321.7
80.75	Top - Section 2	1.00	1.21	32.441	35.69	266.32	0.650	0.000	0.75	1.757	1.14	65.2	0.0	86.9
85.00		1.00	1.22	32.793	36.07	265.14	0.650	0.000	4.25	9.819	6.38	368.4	0.0	210.0
90.00		1.00	1.24	33.190	36.51	259.27	0.650	0.000	5.00	11.257	7.32	427.4	0.0	240.7
95.00		1.00	1.25	33.570	36.93	253.25	0.650	0.000	5.00	10.937	7.11	420.0	0.0	233.9
98.00	Appurtenance(s)	1.00	1.26	33.791	37.17	249.56	0.650	0.000	3.00	6.409	4.17	247.8	0.0	137.0
100.00		1.00	1.27	33.935	37.33	247.07	0.650	0.000	2.00	4.209	2.74	163.4	0.0	90.0
105.00		1.00	1.28	34.285	37.71	240.76	0.650	0.000	5.00	10.298	6.69	403.9	0.0	220.1
108.00	Appurtenance(s)	1.00	1.29	34.489	37.94	236.91	0.650	0.000	3.00	6.026	3.92	237.7	0.0	128.8
110.00		1.00	1.29	34.623	38.08	234.32	0.650	0.000	2.00	3.953	2.57	156.6	0.0	84.5
114.00	Appurtenance(s)	1.00	1.30	34.884	38.37	229.08	0.650	0.000	4.00	7.753	5.04	309.4	0.0	165.6
115.00		1.00	1.30	34.948	38.44	227.76	0.650	0.000	1.00	1.906	1.24	76.2	0.0	40.7
117.00	Appurtenance(s)	1.00	1.31	35.075	38.58	225.10	0.650	0.000	2.00	3.774	2.45	151.4	0.0	80.6
118.00		1.00	1.31	35.138	38.65	223.77	0.650	0.000	1.00	1.868	1.21	75.1	0.0	39.9
Totals:									118.00			10,154.4		9,582.3

Discrete Appurtenance Forces

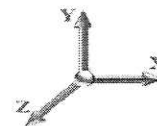
Structure: CT46142-A-SBA	Code: EIA/TIA-222-G	1/14/2019
Site Name: South Ledyard- Town Dump	Exposure: C	
Height: 118.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 0.9D + 1.6W 105 mph Wind

Dead Load Factor 0.90
Wind Load Factor 1.60



Iterations 25

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	CaAa x Ka	Ka	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)
1	117.00	Low Profile Platform-flat	1	35.075	38.583	1.00	1.00	25.00	1080.00	0.000	0.000	1543.31	0.00	0.00
2	117.00	56.3"x12.6"x6.3" Panel	3	35.075	38.583	0.78	1.00	14.84	148.77	0.000	0.000	915.84	0.00	0.00
3	117.00	ACU-A20-N	4	35.075	38.583	0.79	1.00	0.44	3.60	0.000	0.000	27.31	0.00	0.00
4	117.00	APXVSPP18-C-A20	3	35.075	38.583	0.83	1.00	19.97	153.90	0.000	0.000	1232.78	0.00	0.00
5	114.00	26.1"x18.6"x6.7" RRU	3	34.884	38.372	0.68	1.00	8.26	189.00	0.000	0.000	507.25	0.00	0.00
6	114.00	Flush Mount	3	34.884	38.372	1.00	1.00	15.00	945.00	0.000	0.000	920.93	0.00	0.00
7	114.00	800 Filter	3	34.884	38.372	0.67	1.00	1.35	23.76	0.000	0.000	82.68	0.00	0.00
8	114.00	800 MHz RRH	3	34.884	38.372	0.75	1.00	5.60	143.10	0.000	0.000	343.97	0.00	0.00
9	114.00	1900MHz RRH	3	34.884	38.372	0.75	1.00	6.23	162.00	0.000	0.000	382.65	0.00	0.00
10	108.00	AIR 21 B2A B4P	3	34.489	37.938	0.69	0.80	12.57	244.08	0.000	0.000	762.99	0.00	0.00
11	108.00	AIR 21 B4A B2P	3	34.489	37.938	0.69	0.80	12.57	244.08	0.000	0.000	762.99	0.00	0.00
12	108.00	T-Arm (Round)	3	34.489	37.938	0.50	0.75	12.06	945.00	0.000	0.000	732.05	0.00	0.00
13	98.00	Sabre C10899050	1	33.791	37.170	1.00	1.00	10.00	72.90	0.000	0.000	594.72	0.00	0.00
14	98.00	CCI DTMABP7819VG12A	3	33.791	37.170	0.40	0.80	1.37	51.84	0.000	0.000	81.36	0.00	0.00
15	98.00	KMW AM-X-CD-14-65-00T	3	33.791	37.170	0.60	0.80	9.00	98.28	0.000	0.000	535.25	0.00	0.00
Totals:								4,505.31				9,426.08		

Total Applied Force Summary

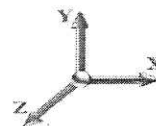
Structure: CT46142-A-SBA	Code: EIA/TIA-222-G	1/14/2019
Site Name: South Ledyard- Town Dump	Exposure: C	
Height: 118.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 0.9D + 1.6W 105 mph Wind

Dead Load Factor 0.90
 Wind Load Factor 1.60



Iterations 25

Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00		0.00	0.00	0.00	0.00
5.00		425.43	688.56	0.00	0.00
10.00		417.10	677.09	0.00	0.00
15.00		408.77	665.63	0.00	0.00
20.00		424.88	654.16	0.00	0.00
25.00		436.06	642.69	0.00	0.00
30.00		443.50	631.23	0.00	0.00
35.00		448.18	619.76	0.00	0.00
40.00		450.74	608.29	0.00	0.00
40.75		66.99	90.25	0.00	0.00
45.00		389.07	844.48	0.00	0.00
50.00		458.08	496.64	0.00	0.00
55.00		456.43	487.47	0.00	0.00
60.00		453.73	478.29	0.00	0.00
65.00		450.11	469.12	0.00	0.00
70.00		445.69	459.95	0.00	0.00
75.00		440.54	450.77	0.00	0.00
77.25		195.65	199.86	0.00	0.00
80.00		240.87	380.87	0.00	0.00
80.75		65.20	103.03	0.00	0.00
85.00		368.38	301.49	0.00	0.00
90.00		427.41	348.33	0.00	0.00
95.00		420.04	341.45	0.00	0.00
98.00	(7) attachments	1459.07	424.58	0.00	0.00
100.00		163.39	121.77	0.00	0.00
105.00		403.92	299.61	0.00	0.00
108.00	(9) attachments	2495.79	1609.62	0.00	0.00
110.00		156.58	91.82	0.00	0.00
114.00	(15) attachments	2546.89	1643.20	0.00	0.00
115.00		76.22	44.40	0.00	0.00
117.00	(11) attachments	3870.69	1474.24	0.00	0.00
118.00		75.09	39.89	0.00	0.00
	Totals:	19,580.45	16,388.52	0.00	0.00

Linear Appurtenance Segment Forces (Factored)

Structure: CT46142-A-SBA	Code: EIA/TIA-222-G	1/14/2019
Site Name: South Ledyard- Town Dump	Exposure: C	
Height: 118.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 0.9D + 1.6W 105 mph Wind

Dead Load Factor 0.90
Wind Load Factor 1.60



Iterations 25

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
5.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.010	0.000	22.791	0.00	1.23
10.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.010	0.000	22.791	0.00	1.23
15.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.010	0.000	22.791	0.00	1.23
20.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.010	0.000	24.182	0.00	1.23
25.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.011	0.000	25.345	0.00	1.23
30.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.011	0.000	26.337	0.00	1.23
35.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.011	0.000	27.206	0.00	1.23
40.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.011	0.000	27.981	0.00	1.23
40.75	Safety Cable	Yes	0.75	0.000	0.38	0.02	0.00	0.011	0.000	28.091	0.00	0.18
45.00	Safety Cable	Yes	4.25	0.000	0.38	0.13	0.00	0.012	0.000	28.684	0.00	1.04
50.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.012	0.000	29.327	0.00	1.23
55.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.012	0.000	29.922	0.00	1.23
60.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.012	0.000	30.475	0.00	1.23
65.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.012	0.000	30.993	0.00	1.23
70.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.013	0.000	31.480	0.00	1.23
75.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.013	0.000	31.941	0.00	1.23
77.25	Safety Cable	Yes	2.25	0.000	0.38	0.07	0.00	0.013	0.000	32.140	0.00	0.55
80.00	Safety Cable	Yes	2.75	0.000	0.38	0.09	0.00	0.014	0.000	32.377	0.00	0.68
80.75	Safety Cable	Yes	0.75	0.000	0.38	0.02	0.00	0.014	0.000	32.441	0.00	0.18
85.00	Safety Cable	Yes	4.25	0.000	0.38	0.13	0.00	0.014	0.000	32.793	0.00	1.04
90.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.014	0.000	33.190	0.00	1.23
95.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.014	0.000	33.570	0.00	1.23
98.00	Safety Cable	Yes	3.00	0.000	0.38	0.10	0.00	0.015	0.000	33.791	0.00	0.74
100.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.015	0.000	33.935	0.00	0.49
105.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.015	0.000	34.285	0.00	1.23
108.00	Safety Cable	Yes	3.00	0.000	0.38	0.10	0.00	0.016	0.000	34.489	0.00	0.74
110.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.016	0.000	34.623	0.00	0.49
114.00	Safety Cable	Yes	4.00	0.000	0.38	0.13	0.00	0.016	0.000	34.884	0.00	0.98
115.00	Safety Cable	Yes	1.00	0.000	0.38	0.03	0.00	0.017	0.000	34.948	0.00	0.25
117.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.017	0.000	35.075	0.00	0.49
Totals:											0.0	28.7

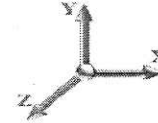
Calculated Forces

Structure: CT46142-A-SBA	Code: EIA/TIA-222-G	1/14/2019
Site Name: South Ledyard- Town Dump	Exposure: C	
Height: 118.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II
		Page: 16



Load Case: 0.9D + 1.6W 105 mph Wind

Dead Load Factor 0.90
Wind Load Factor 1.60



Iterations 25

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	-16.33	-19.63	0.00	-1718.0	0.00	1718.06	2662.66	1331.33	4225.57	2115.93	0.00	0.000	0.000	0.818
5.00	-15.53	-19.29	0.00	-1619.9	0.00	1619.93	2627.56	1313.78	4087.72	2046.90	0.18	-0.329	0.000	0.798
10.00	-14.75	-18.95	0.00	-1523.4	0.00	1523.48	2591.79	1295.89	3951.04	1978.45	0.70	-0.657	0.000	0.776
15.00	-13.99	-18.61	0.00	-1428.7	0.00	1428.73	2555.34	1277.67	3815.58	1910.62	1.56	-0.985	0.000	0.753
20.00	-13.24	-18.25	0.00	-1335.6	0.00	1335.66	2518.21	1259.11	3681.41	1843.44	2.77	-1.311	0.000	0.730
25.00	-12.51	-17.87	0.00	-1244.4	0.00	1244.41	2480.41	1240.21	3548.60	1776.94	4.31	-1.635	0.000	0.706
30.00	-11.79	-17.47	0.00	-1155.0	0.00	1155.07	2441.94	1220.97	3417.21	1711.15	6.20	-1.957	0.000	0.680
35.00	-11.09	-17.06	0.00	-1067.7	0.00	1067.71	2402.79	1201.39	3287.30	1646.09	8.42	-2.275	0.000	0.653
40.00	-10.45	-16.62	0.00	-982.40	0.00	982.40	2362.96	1181.48	3158.94	1581.82	10.97	-2.589	0.000	0.626
40.75	-10.32	-16.58	0.00	-969.93	0.00	969.93	2356.93	1178.46	3139.82	1572.24	11.38	-2.637	0.000	0.621
45.00	-9.42	-16.19	0.00	-899.48	0.00	899.48	1757.80	878.90	2340.38	1171.93	13.84	-2.900	0.000	0.773
50.00	-8.86	-15.76	0.00	-818.52	0.00	818.52	1730.99	865.49	2250.57	1126.96	17.04	-3.202	0.000	0.732
55.00	-8.30	-15.33	0.00	-739.71	0.00	739.71	1703.50	851.75	2161.57	1082.39	20.58	-3.551	0.000	0.689
60.00	-7.77	-14.89	0.00	-663.08	0.00	663.08	1675.34	837.67	2073.46	1038.27	24.48	-3.889	0.000	0.644
65.00	-7.25	-14.45	0.00	-588.65	0.00	588.65	1646.50	823.25	1986.29	994.62	28.72	-4.214	0.000	0.597
70.00	-6.76	-14.00	0.00	-516.42	0.00	516.42	1616.99	808.49	1900.13	951.48	33.30	-4.523	0.000	0.547
75.00	-6.29	-13.55	0.00	-446.41	0.00	446.41	1586.80	793.40	1815.05	908.87	38.19	-4.814	0.000	0.495
77.25	-6.08	-13.35	0.00	-415.92	0.00	415.92	1573.00	786.50	1777.13	889.88	40.49	-4.941	0.000	0.472
80.00	-5.70	-13.09	0.00	-379.21	0.00	379.21	1555.94	777.97	1731.10	866.84	43.37	-5.090	0.000	0.441
80.75	-5.57	-13.03	0.00	-369.39	0.00	369.39	1065.47	532.73	1202.43	602.11	44.18	-5.130	0.000	0.619
85.00	-5.25	-12.65	0.00	-314.03	0.00	314.03	1050.73	525.37	1157.88	579.80	48.83	-5.339	0.000	0.547
90.00	-4.89	-12.22	0.00	-250.76	0.00	250.76	1032.77	516.39	1105.80	553.72	54.57	-5.617	0.000	0.458
95.00	-4.56	-11.78	0.00	-189.67	0.00	189.67	1014.14	507.07	1054.14	527.85	60.58	-5.853	0.000	0.364
98.00	-4.27	-10.29	0.00	-154.33	0.00	154.33	1002.64	501.32	1023.37	512.45	64.29	-5.974	0.000	0.306
100.00	-4.15	-10.12	0.00	-133.75	0.00	133.75	994.83	497.42	1002.97	502.23	66.80	-6.045	0.000	0.271
105.00	-3.88	-9.70	0.00	-83.12	0.00	83.12	974.85	487.42	952.34	476.88	73.20	-6.184	0.000	0.179
108.00	-2.54	-7.04	0.00	-54.03	0.00	54.03	962.53	481.27	922.25	461.81	77.10	-6.242	0.000	0.120
110.00	-2.46	-6.88	0.00	-39.94	0.00	39.94	954.18	477.09	902.32	451.83	79.72	-6.270	0.000	0.091
114.00	-1.11	-4.17	0.00	-12.42	0.00	12.42	937.17	468.59	862.79	432.04	84.98	-6.302	0.000	0.030
115.00	-1.07	-4.09	0.00	-8.26	0.00	8.26	932.85	466.42	852.98	427.13	86.29	-6.306	0.000	0.021
117.00	-0.03	-0.08	0.00	-0.08	0.00	0.08	924.13	462.06	833.45	417.34	88.93	-6.309	0.000	0.000
118.00	0.00	-0.08	0.00	0.00	0.00	0.00	919.72	459.86	823.73	412.48	90.25	-6.309	0.000	0.000

Wind Loading - Shaft

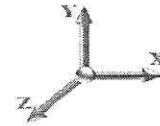
Structure: CT46142-A-SBA	Code: EIA/TIA-222-G	1/14/2019
Site Name: South Ledyard- Town Dump	Exposure: C	
Height: 118.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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

Dead Load Factor 1.20
Wind Load Factor 1.00



Iterations 24

Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.85	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	17.352	20.82	118.4	306.8	1081.4
10.00		1.00	0.85	5.168	5.68	0.00	1.200	1.331	5.00	17.107	20.53	116.7	323.2	1082.5
15.00		1.00	0.85	5.168	5.68	0.00	1.200	1.386	5.00	16.833	20.20	114.8	330.5	1074.5
20.00		1.00	0.90	5.483	6.03	0.00	1.200	1.427	5.00	16.547	19.86	119.8	333.7	1062.5
25.00		1.00	0.95	5.747	6.32	0.00	1.200	1.459	5.00	16.255	19.51	123.3	334.7	1048.1
30.00		1.00	0.98	5.972	6.57	0.00	1.200	1.486	5.00	15.958	19.15	125.8	334.0	1032.2
35.00		1.00	1.01	6.169	6.79	0.00	1.200	1.509	5.00	15.658	18.79	127.5	332.3	1015.2
40.00		1.00	1.04	6.345	6.98	0.00	1.200	1.529	5.00	15.355	18.43	128.6	329.7	997.3
40.75 Bot - Section 2		1.00	1.05	6.370	7.01	0.00	1.200	1.532	0.75	2.276	2.73	19.1	49.4	148.2
45.00 Top - Section 1		1.00	1.07	6.504	7.15	0.00	1.200	1.547	4.25	12.953	15.54	111.2	281.6	1285.7
50.00		1.00	1.09	6.650	7.32	0.00	1.200	1.564	5.00	14.957	17.95	131.3	327.6	846.3
55.00		1.00	1.12	6.785	7.46	0.00	1.200	1.579	5.00	14.650	17.58	131.2	323.4	829.9
60.00		1.00	1.14	6.910	7.60	0.00	1.200	1.592	5.00	14.342	17.21	130.8	318.8	813.1
65.00		1.00	1.16	7.028	7.73	0.00	1.200	1.605	5.00	14.033	16.84	130.2	313.9	796.0
70.00		1.00	1.17	7.138	7.85	0.00	1.200	1.617	5.00	13.723	16.47	129.3	308.7	778.6
75.00		1.00	1.19	7.243	7.97	0.00	1.200	1.628	5.00	13.413	16.10	128.2	303.3	760.9
77.25 Bot - Section 3		1.00	1.20	7.288	8.02	0.00	1.200	1.633	2.25	5.934	7.12	57.1	135.3	337.3
80.00		1.00	1.21	7.342	8.08	0.00	1.200	1.639	2.75	7.254	8.70	70.3	165.8	594.7
80.75 Top - Section 2		1.00	1.21	7.356	8.09	0.00	1.200	1.640	0.75	1.962	2.35	19.0	45.1	160.9
85.00		1.00	1.22	7.436	8.18	0.00	1.200	1.649	4.25	10.987	13.18	107.8	251.2	531.3
90.00		1.00	1.24	7.526	8.28	0.00	1.200	1.658	5.00	12.639	15.17	125.6	289.5	610.5
95.00		1.00	1.25	7.612	8.37	0.00	1.200	1.667	5.00	12.327	14.79	123.9	283.3	595.1
98.00 Appurtenance(s)		1.00	1.26	7.662	8.43	0.00	1.200	1.672	3.00	7.245	8.69	73.3	167.7	350.4
100.00		1.00	1.27	7.695	8.46	0.00	1.200	1.676	2.00	4.767	5.72	48.4	110.8	230.7
105.00		1.00	1.28	7.774	8.55	0.00	1.200	1.684	5.00	11.702	14.04	120.1	270.4	563.9
108.00 Appurtenance(s)		1.00	1.29	7.821	8.60	0.00	1.200	1.689	3.00	6.870	8.24	70.9	159.8	331.5
110.00		1.00	1.29	7.851	8.64	0.00	1.200	1.692	2.00	4.517	5.42	46.8	105.5	218.1
114.00 Appurtenance(s)		1.00	1.30	7.910	8.70	0.00	1.200	1.698	4.00	8.885	10.66	92.8	206.7	427.5
115.00		1.00	1.30	7.925	8.72	0.00	1.200	1.699	1.00	2.190	2.63	22.9	51.4	105.7
117.00 Appurtenance(s)		1.00	1.31	7.954	8.75	0.00	1.200	1.702	2.00	4.342	5.21	45.6	101.7	209.2
118.00		1.00	1.31	7.968	8.76	0.00	1.200	1.704	1.00	2.152	2.58	22.6	50.6	103.8
Totals:								118.00			2,933.4	20,023.0		

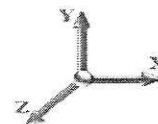
Discrete Appurtenance Forces

Structure: CT46142-A-SBA	Code: EIA/TIA-222-G	1/14/2019
Site Name: South Ledyard- Town Dump	Exposure: C	
Height: 118.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II
		Page: 18



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

Dead Load Factor 1.20
 Wind Load Factor 1.00



Iterations 24

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	CaAa x Ka	Ka	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)
1	117.00	Low Profile Platform-flat	1	7.954	8.749	1.00	1.00	45.43	2161.43	0.000	0.000	397.45	0.00	0.00
2	117.00	56.3"x12.6"x6.3" Panel	3	7.954	8.749	0.80	1.00	17.82	665.46	0.000	0.000	155.89	0.00	0.00
3	117.00	ACU-A20-N	4	7.954	8.749	0.79	1.00	1.36	16.36	0.000	0.000	11.87	0.00	0.00
4	117.00	APXVSP18-C-A20	3	7.954	8.749	0.83	1.00	26.76	562.53	0.000	0.000	234.08	0.00	0.00
5	114.00	26.1"x18.6"x6.7" RRU	3	7.910	8.701	0.70	1.00	10.16	572.60	0.000	0.000	88.43	0.00	0.00
6	114.00	Flush Mount	3	7.910	8.701	1.00	1.00	25.19	1815.78	0.000	0.000	219.16	0.00	0.00
7	114.00	800 Filter	3	7.910	8.701	0.67	1.00	2.20	30.20	0.000	0.000	19.13	0.00	0.00
8	114.00	800 MHz RRH	3	7.910	8.701	0.75	1.00	8.11	343.37	0.000	0.000	70.53	0.00	0.00
9	114.00	1900MHz RRH	3	7.910	8.701	0.75	1.00	9.01	387.83	0.000	0.000	78.39	0.00	0.00
10	108.00	AIR 21 B2A B4P	3	7.821	8.603	0.69	0.80	14.76	812.66	0.000	0.000	126.95	0.00	0.00
11	108.00	AIR 21 B4A B2P	3	7.821	8.603	0.69	0.80	14.76	812.66	0.000	0.000	126.95	0.00	0.00
12	108.00	T-Arm (Round)	3	7.821	8.603	0.50	0.75	22.24	1759.30	0.000	0.000	191.36	0.00	0.00
13	98.00	Sabre C10899050	1	7.662	8.429	1.00	1.00	16.69	59.23	0.000	0.000	140.67	0.00	0.00
14	98.00	CCI DTMABP7819VG12A	3	7.662	8.429	0.40	0.80	1.66	165.77	0.000	0.000	13.95	0.00	0.00
15	98.00	KMW AM-X-CD-14-65-00T	3	7.662	8.429	0.60	0.80	10.68	505.08	0.000	0.000	89.99	0.00	0.00
Totals:								10,670.25				1,964.80		

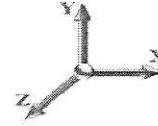
Total Applied Force Summary

Structure: CT46142-A-SBA	Code: EIA/TIA-222-G	1/14/2019
Site Name: South Ledyard- Town Dump	Exposure: C	
Height: 118.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II
		Page: 19



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

Dead Load Factor 1.20
Wind Load Factor 1.00



Iterations 24

Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00		0.00	0.00	0.00	0.00
5.00		118.37	1236.13	0.00	0.00
10.00		116.70	1238.82	0.00	0.00
15.00		114.83	1231.81	0.00	0.00
20.00		119.77	1220.53	0.00	0.00
25.00		123.31	1206.77	0.00	0.00
30.00		125.80	1191.38	0.00	0.00
35.00		127.50	1174.81	0.00	0.00
40.00		128.60	1157.36	0.00	0.00
40.75		19.14	172.23	0.00	0.00
45.00		111.21	1422.00	0.00	0.00
50.00		131.29	1007.06	0.00	0.00
55.00		131.20	990.96	0.00	0.00
60.00		130.82	974.44	0.00	0.00
65.00		130.18	957.57	0.00	0.00
70.00		129.31	940.40	0.00	0.00
75.00		128.24	922.95	0.00	0.00
77.25		57.08	410.24	0.00	0.00
80.00		70.30	683.99	0.00	0.00
80.75		19.05	185.29	0.00	0.00
85.00		107.85	669.44	0.00	0.00
90.00		125.56	773.24	0.00	0.00
95.00		123.86	758.04	0.00	0.00
98.00	(7) attachments	317.89	1178.28	0.00	0.00
100.00		48.42	280.99	0.00	0.00
105.00		120.09	689.71	0.00	0.00
108.00	(9) attachments	516.17	3791.71	0.00	0.00
110.00		46.81	235.93	0.00	0.00
114.00	(15) attachments	568.42	3612.99	0.00	0.00
115.00		22.90	114.62	0.00	0.00
117.00	(11) attachments	844.88	3632.85	0.00	0.00
118.00		22.63	103.75	0.00	0.00
	Totals:	4,898.20	34,166.30	0.00	0.00

Linear Appurtenance Segment Forces (Factored)

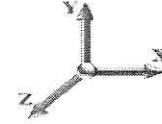
Structure: CT46142-A-SBA	Code: EIA/TIA-222-G	1/14/2019
Site Name: South Ledyard- Town Dump	Exposure: C	
Height: 118.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



Page: 20

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

Dead Load Factor 1.20
Wind Load Factor 1.00



Iterations 24

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
5.00	Safety Cable	Yes	5.00	0.000	0.38	1.19	0.00	0.010	0.000	5.168	0.00	12.93
10.00	Safety Cable	Yes	5.00	0.000	0.38	1.27	0.00	0.010	0.000	5.168	0.00	14.46
15.00	Safety Cable	Yes	5.00	0.000	0.38	1.31	0.00	0.010	0.000	5.168	0.00	15.46
20.00	Safety Cable	Yes	5.00	0.000	0.38	1.35	0.00	0.010	0.000	5.483	0.00	16.21
25.00	Safety Cable	Yes	5.00	0.000	0.38	1.37	0.00	0.011	0.000	5.747	0.00	16.83
30.00	Safety Cable	Yes	5.00	0.000	0.38	1.40	0.00	0.011	0.000	5.972	0.00	17.35
35.00	Safety Cable	Yes	5.00	0.000	0.38	1.42	0.00	0.011	0.000	6.169	0.00	17.80
40.00	Safety Cable	Yes	5.00	0.000	0.38	1.43	0.00	0.011	0.000	6.345	0.00	18.21
40.75	Safety Cable	Yes	0.75	0.000	0.38	0.22	0.00	0.011	0.000	6.370	0.00	2.74
45.00	Safety Cable	Yes	4.25	0.000	0.38	1.23	0.00	0.012	0.000	6.504	0.00	15.79
50.00	Safety Cable	Yes	5.00	0.000	0.38	1.46	0.00	0.012	0.000	6.650	0.00	18.91
55.00	Safety Cable	Yes	5.00	0.000	0.38	1.47	0.00	0.012	0.000	6.785	0.00	19.22
60.00	Safety Cable	Yes	5.00	0.000	0.38	1.49	0.00	0.012	0.000	6.910	0.00	19.51
65.00	Safety Cable	Yes	5.00	0.000	0.38	1.50	0.00	0.012	0.000	7.028	0.00	19.78
70.00	Safety Cable	Yes	5.00	0.000	0.38	1.51	0.00	0.013	0.000	7.138	0.00	20.03
75.00	Safety Cable	Yes	5.00	0.000	0.38	1.52	0.00	0.013	0.000	7.243	0.00	20.27
77.25	Safety Cable	Yes	2.25	0.000	0.38	0.68	0.00	0.013	0.000	7.288	0.00	9.17
80.00	Safety Cable	Yes	2.75	0.000	0.38	0.84	0.00	0.014	0.000	7.342	0.00	11.27
80.75	Safety Cable	Yes	0.75	0.000	0.38	0.23	0.00	0.014	0.000	7.356	0.00	3.08
85.00	Safety Cable	Yes	4.25	0.000	0.38	1.30	0.00	0.014	0.000	7.436	0.00	17.60
90.00	Safety Cable	Yes	5.00	0.000	0.38	1.54	0.00	0.014	0.000	7.526	0.00	20.91
95.00	Safety Cable	Yes	5.00	0.000	0.38	1.55	0.00	0.014	0.000	7.612	0.00	21.11
98.00	Safety Cable	Yes	3.00	0.000	0.38	0.93	0.00	0.015	0.000	7.662	0.00	12.73
100.00	Safety Cable	Yes	2.00	0.000	0.38	0.62	0.00	0.015	0.000	7.695	0.00	8.52
105.00	Safety Cable	Yes	5.00	0.000	0.38	1.56	0.00	0.015	0.000	7.774	0.00	21.48
108.00	Safety Cable	Yes	3.00	0.000	0.38	0.94	0.00	0.016	0.000	7.821	0.00	12.95
110.00	Safety Cable	Yes	2.00	0.000	0.38	0.63	0.00	0.016	0.000	7.851	0.00	8.66
114.00	Safety Cable	Yes	4.00	0.000	0.38	1.26	0.00	0.016	0.000	7.910	0.00	17.43
115.00	Safety Cable	Yes	1.00	0.000	0.38	0.31	0.00	0.017	0.000	7.925	0.00	4.36
117.00	Safety Cable	Yes	2.00	0.000	0.38	0.63	0.00	0.017	0.000	7.954	0.00	8.75
Totals:											0.0	443.5

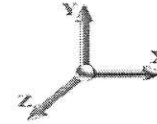
Calculated Forces

Structure: CT46142-A-SBA	Code: EIA/TIA-222-G	1/14/2019
Site Name: South Ledyard- Town Dump	Exposure: C	
Height: 118.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II
		Page: 21



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

Dead Load Factor 1.20
Wind Load Factor 1.00



Iterations 24

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-34.16	-4.92	0.00	-430.10	0.00	430.10	2662.66	1331.33	4225.57	2115.93	0.00	0.000	0.000	0.216
5.00	-32.92	-4.85	0.00	-405.49	0.00	405.49	2627.56	1313.78	4087.72	2046.90	0.04	-0.082	0.000	0.211
10.00	-31.67	-4.78	0.00	-381.24	0.00	381.24	2591.79	1295.89	3951.04	1978.45	0.17	-0.164	0.000	0.205
15.00	-30.44	-4.70	0.00	-357.36	0.00	357.36	2555.34	1277.67	3815.58	1910.62	0.39	-0.246	0.000	0.199
20.00	-29.21	-4.62	0.00	-333.86	0.00	333.86	2518.21	1259.11	3681.41	1843.44	0.69	-0.328	0.000	0.193
25.00	-28.00	-4.52	0.00	-310.78	0.00	310.78	2480.41	1240.21	3548.60	1776.94	1.08	-0.409	0.000	0.186
30.00	-26.80	-4.43	0.00	-288.16	0.00	288.16	2441.94	1220.97	3417.21	1711.15	1.55	-0.489	0.000	0.179
35.00	-25.62	-4.32	0.00	-266.03	0.00	266.03	2402.79	1201.39	3287.30	1646.09	2.11	-0.569	0.000	0.172
40.00	-24.46	-4.20	0.00	-244.41	0.00	244.41	2362.96	1181.48	3158.94	1581.82	2.74	-0.647	0.000	0.165
40.75	-24.29	-4.20	0.00	-241.26	0.00	241.26	2356.93	1178.46	3139.82	1572.24	2.85	-0.659	0.000	0.164
45.00	-22.86	-4.10	0.00	-223.43	0.00	223.43	1757.80	878.90	2340.38	1171.93	3.46	-0.724	0.000	0.204
50.00	-21.85	-3.98	0.00	-202.94	0.00	202.94	1730.99	865.49	2250.57	1126.96	4.26	-0.799	0.000	0.193
55.00	-20.86	-3.87	0.00	-183.03	0.00	183.03	1703.50	851.75	2161.57	1082.39	5.14	-0.886	0.000	0.181
60.00	-19.88	-3.75	0.00	-163.69	0.00	163.69	1675.34	837.67	2073.46	1038.27	6.12	-0.969	0.000	0.170
65.00	-18.92	-3.63	0.00	-144.94	0.00	144.94	1646.50	823.25	1986.29	994.62	7.17	-1.049	0.000	0.157
70.00	-17.98	-3.50	0.00	-126.80	0.00	126.80	1616.99	808.49	1900.13	951.48	8.31	-1.125	0.000	0.144
75.00	-17.05	-3.37	0.00	-109.28	0.00	109.28	1586.80	793.40	1815.05	908.87	9.53	-1.197	0.000	0.131
77.25	-16.64	-3.32	0.00	-101.69	0.00	101.69	1573.00	786.50	1777.13	889.88	10.10	-1.228	0.000	0.125
80.00	-15.96	-3.24	0.00	-92.57	0.00	92.57	1555.94	777.97	1731.10	866.84	10.82	-1.264	0.000	0.117
80.75	-15.77	-3.22	0.00	-90.14	0.00	90.14	1065.47	532.73	1202.43	602.11	11.02	-1.274	0.000	0.165
85.00	-15.10	-3.12	0.00	-76.44	0.00	76.44	1050.73	525.37	1157.88	579.80	12.18	-1.325	0.000	0.146
90.00	-14.33	-2.99	0.00	-60.86	0.00	60.86	1032.77	516.39	1105.80	553.72	13.60	-1.392	0.000	0.124
95.00	-13.57	-2.86	0.00	-45.92	0.00	45.92	1014.14	507.07	1054.14	527.85	15.09	-1.450	0.000	0.100
98.00	-12.40	-2.51	0.00	-37.35	0.00	37.35	1002.64	501.32	1023.37	512.45	16.01	-1.479	0.000	0.085
100.00	-12.12	-2.46	0.00	-32.32	0.00	32.32	994.83	497.42	1002.97	502.23	16.64	-1.496	0.000	0.077
105.00	-11.43	-2.33	0.00	-20.01	0.00	20.01	974.85	487.42	952.34	476.88	18.22	-1.529	0.000	0.054
108.00	-7.66	-1.71	0.00	-13.02	0.00	13.02	962.53	481.27	922.25	461.81	19.19	-1.543	0.000	0.036
110.00	-7.42	-1.66	0.00	-9.60	0.00	9.60	954.18	477.09	902.32	451.83	19.84	-1.550	0.000	0.029
114.00	-3.83	-0.99	0.00	-2.96	0.00	2.96	937.17	468.59	862.79	432.04	21.14	-1.558	0.000	0.011
115.00	-3.71	-0.97	0.00	-1.96	0.00	1.96	932.85	466.42	852.98	427.13	21.47	-1.559	0.000	0.009
117.00	-0.10	-0.03	0.00	-0.03	0.00	0.03	924.13	462.06	833.45	417.34	22.12	-1.559	0.000	0.000
118.00	0.00	-0.02	0.00	0.00	0.00	0.00	919.72	459.86	823.73	412.48	22.45	-1.560	0.000	0.000

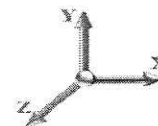
Seismic Segment Forces (Factored)

Structure: CT46142-A-SBA	Code: EIA/TIA-222-G	1/14/2019
Site Name: South Ledyard- Town Dump	Exposure: C	
Height: 118.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 1.2D + 1.0E



Iterations 23

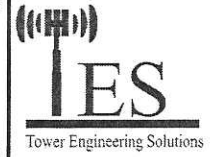
Gust Response Factor	1.10	Sds	0.17	Ss	0.16
Dead Load Factor	1.20	Seismic Load Factor	1.00	Sd1	0.09
Wind Load Factor	0.00	Structure Frequency	0.40	SA	0.04
				Seismic Importance Factor	1.00

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		645.52	0.00	0.04	0.02	11.09	
10.00		632.78	0.01	0.06	0.03	15.23	
15.00		620.04	0.03	0.07	0.04	16.78	
20.00		607.30	0.05	0.07	0.04	17.32	
25.00		594.56	0.08	0.07	0.04	17.57	
30.00		581.82	0.12	0.07	0.03	17.73	
35.00		569.08	0.17	0.07	0.03	17.75	
40.00		556.34	0.22	0.06	0.02	17.32	
40.75	Bot - Section 2	82.35	0.23	0.06	0.02	2.55	
45.00	Top - Section 1	836.69	0.27	0.05	0.01	24.61	
50.00		432.28	0.34	0.04	0.01	10.78	
55.00		422.09	0.41	0.01	0.01	7.11	
60.00		411.89	0.49	-0.01	0.01	2.17	
65.00		401.70	0.57	-0.04	0.01	-3.18	
70.00		391.51	0.67	-0.08	0.02	-7.62	
75.00		381.32	0.76	-0.10	0.04	-10.00	
77.25	Bot - Section 3	168.27	0.81	-0.11	0.06	-4.57	
80.00		357.43	0.87	-0.12	0.08	-9.42	
80.75	Top - Section 2	96.55	0.89	-0.12	0.08	-2.49	
85.00		233.37	0.98	-0.11	0.12	-4.48	
90.00		267.48	1.10	-0.07	0.19	-1.22	
95.00		259.84	1.23	0.03	0.27	4.54	
98.00	Appurtenance(s)	400.03	1.30	0.13	0.34	13.71	
100.00		99.96	1.36	0.21	0.39	4.70	
105.00		244.55	1.50	0.49	0.54	20.57	
108.00	Appurtenance(s)	1735.4	1.58	0.73	0.65	191.03	
110.00		93.84	1.64	0.92	0.73	12.10	
114.00	Appurtenance(s)	1809.4	1.76	1.38	0.92	308.60	
115.00		45.24	1.80	1.52	0.97	8.22	
117.00	Appurtenance(s)	1629.8	1.86	1.82	1.08	334.35	
118.00		44.32	1.89	1.98	1.14	9.63	
Totals:		15,652.9				1,042.5	Total Wind: 19,580.4

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

Calculated Forces

Structure: CT46142-A-SBA	Code: EIA/TIA-222-G	1/14/2019
Site Name: South Ledyard- Town Dump	Exposure: C	
Height: 118.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



Load Case: 1.2D + 1.0E



Iterations 23

Gust Response Factor 1.10	Sds 0.17	Ss 0.16
Dead Load Factor 1.20	Seismic Load Factor 1.00	Sd1 0.09
Wind Load Factor 0.00	Structure Frequency 0.40	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	-21.85	-1.09	0.00	-113.31	0.00	113.31	2662.66	1331.33	4225.57	2115.93		0.00	0.00	0.062
5.00	-20.93	-1.09	0.00	-107.86	0.00	107.86	2627.56	1313.78	4087.72	2046.90		0.01	-0.02	0.061
10.00	-20.03	-1.08	0.00	-102.43	0.00	102.43	2591.79	1295.89	3951.04	1978.45		0.05	-0.04	0.060
15.00	-19.14	-1.07	0.00	-97.05	0.00	97.05	2555.34	1277.67	3815.58	1910.62		0.10	-0.07	0.058
20.00	-18.27	-1.06	0.00	-91.71	0.00	91.71	2518.21	1259.11	3681.41	1843.44		0.18	-0.09	0.057
25.00	-17.41	-1.04	0.00	-86.43	0.00	86.43	2480.41	1240.21	3548.60	1776.94		0.29	-0.11	0.056
30.00	-16.57	-1.03	0.00	-81.21	0.00	81.21	2441.94	1220.97	3417.21	1711.15		0.42	-0.13	0.054
35.00	-15.74	-1.02	0.00	-76.06	0.00	76.06	2402.79	1201.39	3287.30	1646.09		0.57	-0.16	0.053
40.00	-14.93	-1.00	0.00	-70.97	0.00	70.97	2362.96	1181.48	3158.94	1581.82		0.74	-0.18	0.051
40.75	-14.81	-1.00	0.00	-70.22	0.00	70.22	2356.93	1178.46	3139.82	1572.24		0.77	-0.18	0.051
45.00	-13.68	-0.98	0.00	-65.97	0.00	65.97	1757.80	878.90	2340.38	1171.93		0.94	-0.20	0.064
50.00	-13.02	-0.97	0.00	-61.08	0.00	61.08	1730.99	865.49	2250.57	1126.96		1.16	-0.22	0.062
55.00	-12.37	-0.97	0.00	-56.23	0.00	56.23	1703.50	851.75	2161.57	1082.39		1.41	-0.25	0.059
60.00	-11.73	-0.97	0.00	-51.40	0.00	51.40	1675.34	837.67	2073.46	1038.27		1.69	-0.28	0.057
65.00	-11.11	-0.97	0.00	-46.57	0.00	46.57	1646.50	823.25	1986.29	994.62		1.99	-0.30	0.054
70.00	-10.49	-0.97	0.00	-41.73	0.00	41.73	1616.99	808.49	1900.13	951.48		2.32	-0.33	0.050
75.00	-9.89	-0.97	0.00	-36.89	0.00	36.89	1586.80	793.40	1815.05	908.87		2.67	-0.35	0.047
77.25	-9.63	-0.97	0.00	-34.71	0.00	34.71	1573.00	786.50	1777.13	889.88		2.84	-0.36	0.045
80.00	-9.12	-0.97	0.00	-32.05	0.00	32.05	1555.94	777.97	1731.10	866.84		3.05	-0.37	0.043
80.75	-8.98	-0.97	0.00	-31.33	0.00	31.33	1065.47	532.73	1202.43	602.11		3.11	-0.38	0.060
85.00	-8.58	-0.97	0.00	-27.21	0.00	27.21	1050.73	525.37	1157.88	579.80		3.45	-0.39	0.055
90.00	-8.11	-0.97	0.00	-22.38	0.00	22.38	1032.77	516.39	1105.80	553.72		3.87	-0.42	0.048
95.00	-7.66	-0.96	0.00	-17.54	0.00	17.54	1014.14	507.07	1054.14	527.85		4.32	-0.44	0.041
98.00	-7.09	-0.95	0.00	-14.65	0.00	14.65	1002.64	501.32	1023.37	512.45		4.60	-0.45	0.036
100.00	-6.93	-0.94	0.00	-12.76	0.00	12.76	994.83	497.42	1002.97	502.23		4.79	-0.46	0.032
105.00	-6.53	-0.92	0.00	-8.06	0.00	8.06	974.85	487.42	952.34	476.88		5.28	-0.47	0.024
108.00	-4.39	-0.71	0.00	-5.31	0.00	5.31	962.53	481.27	922.25	461.81		5.58	-0.48	0.016
110.00	-4.26	-0.70	0.00	-3.89	0.00	3.89	954.18	477.09	902.32	451.83		5.78	-0.48	0.013
114.00	-2.07	-0.37	0.00	-1.10	0.00	1.10	937.17	468.59	862.79	432.04		6.18	-0.48	0.005
115.00	-2.02	-0.36	0.00	-0.73	0.00	0.73	932.85	466.42	852.98	427.13		6.28	-0.48	0.004
117.00	-0.05	-0.01	0.00	-0.01	0.00	0.01	924.13	462.06	833.45	417.34		6.49	-0.48	0.000
118.00	0.00	-0.01	0.00	0.00	0.00	0.00	919.72	459.86	823.73	412.48		6.59	-0.48	0.000

Seismic Segment Forces (Factored)

Structure: CT46142-A-SBA	Code: EIA/TIA-222-G	1/14/2019
Site Name: South Ledyard- Town Dump	Exposure: C	
Height: 118.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 0.9D + 1.0E						Iterations	23
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	0.40	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		645.52	0.00	0.04	0.02	11.09	
10.00		632.78	0.01	0.06	0.03	15.23	
15.00		620.04	0.03	0.07	0.04	16.78	
20.00		607.30	0.05	0.07	0.04	17.32	
25.00		594.56	0.08	0.07	0.04	17.57	
30.00		581.82	0.12	0.07	0.03	17.73	
35.00		569.08	0.17	0.07	0.03	17.75	
40.00		556.34	0.22	0.06	0.02	17.32	
40.75	Bot - Section 2	82.35	0.23	0.06	0.02	2.55	
45.00	Top - Section 1	836.69	0.27	0.05	0.01	24.61	
50.00		432.28	0.34	0.04	0.01	10.78	
55.00		422.09	0.41	0.01	0.01	7.11	
60.00		411.89	0.49	-0.01	0.01	2.17	
65.00		401.70	0.57	-0.04	0.01	-3.18	
70.00		391.51	0.67	-0.08	0.02	-7.62	
75.00		381.32	0.76	-0.10	0.04	-10.00	
77.25	Bot - Section 3	168.27	0.81	-0.11	0.06	-4.57	
80.00		357.43	0.87	-0.12	0.08	-9.42	
80.75	Top - Section 2	96.55	0.89	-0.12	0.08	-2.49	
85.00		233.37	0.98	-0.11	0.12	-4.48	
90.00		267.48	1.10	-0.07	0.19	-1.22	
95.00		259.84	1.23	0.03	0.27	4.54	
98.00	Appurtenance(s)	400.03	1.30	0.13	0.34	13.71	
100.00		99.96	1.36	0.21	0.39	4.70	
105.00		244.55	1.50	0.49	0.54	20.57	
108.00	Appurtenance(s)	1735.4	1.58	0.73	0.65	191.03	
110.00		93.84	1.64	0.92	0.73	12.10	
114.00	Appurtenance(s)	1809.4	1.76	1.38	0.92	308.60	
115.00		45.24	1.80	1.52	0.97	8.22	
117.00	Appurtenance(s)	1629.8	1.86	1.82	1.08	334.35	
118.00		44.32	1.89	1.98	1.14	9.63	
Totals:		15,652.9				1,042.5	Total Wind: 19,580.4

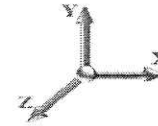
Seismic Base Shear is Less Than 50% of Wind Force - An Analysis is NOT Required

Calculated Forces

Structure: CT46142-A-SBA	Code: EIA/TIA-222-G	1/14/2019
Site Name: South Ledyard- Town Dump	Exposure: C	
Height: 118.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



Load Case: 0.9D + 1.0E



Iterations 23

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 0.40	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	-16.39	-1.09	0.00	-111.94	0.00	111.94	2662.66	1331.33	4225.57	2115.93	0.00	0.00	0.00	0.059
5.00	-15.70	-1.08	0.00	-106.50	0.00	106.50	2627.56	1313.78	4087.72	2046.90	0.01	-0.02	-0.02	0.058
10.00	-15.02	-1.07	0.00	-101.09	0.00	101.09	2591.79	1295.89	3951.04	1978.45	0.05	-0.04	-0.04	0.057
15.00	-14.36	-1.06	0.00	-95.72	0.00	95.72	2555.34	1277.67	3815.58	1910.62	0.10	-0.07	-0.07	0.056
20.00	-13.70	-1.05	0.00	-90.42	0.00	90.42	2518.21	1259.11	3681.41	1843.44	0.18	-0.09	-0.09	0.054
25.00	-13.06	-1.03	0.00	-85.18	0.00	85.18	2480.41	1240.21	3548.60	1776.94	0.29	-0.11	-0.11	0.053
30.00	-12.43	-1.02	0.00	-80.01	0.00	80.01	2441.94	1220.97	3417.21	1711.15	0.41	-0.13	-0.13	0.052
35.00	-11.81	-1.01	0.00	-74.91	0.00	74.91	2402.79	1201.39	3287.30	1646.09	0.56	-0.15	-0.15	0.050
40.00	-11.20	-0.99	0.00	-69.88	0.00	69.88	2362.96	1181.48	3158.94	1581.82	0.73	-0.18	-0.18	0.049
40.75	-11.11	-0.99	0.00	-69.14	0.00	69.14	2356.93	1178.46	3139.82	1572.24	0.76	-0.18	-0.18	0.049
45.00	-10.26	-0.96	0.00	-64.94	0.00	64.94	1757.80	878.90	2340.38	1171.93	0.93	-0.20	-0.20	0.061
50.00	-9.77	-0.96	0.00	-60.12	0.00	60.12	1730.99	865.49	2250.57	1126.96	1.15	-0.22	-0.22	0.059
55.00	-9.28	-0.95	0.00	-55.34	0.00	55.34	1703.50	851.75	2161.57	1082.39	1.39	-0.25	-0.25	0.057
60.00	-8.80	-0.95	0.00	-50.59	0.00	50.59	1675.34	837.67	2073.46	1038.27	1.66	-0.27	-0.27	0.054
65.00	-8.33	-0.95	0.00	-45.83	0.00	45.83	1646.50	823.25	1986.29	994.62	1.96	-0.30	-0.30	0.051
70.00	-7.87	-0.95	0.00	-41.08	0.00	41.08	1616.99	808.49	1900.13	951.48	2.28	-0.32	-0.32	0.048
75.00	-7.42	-0.95	0.00	-36.31	0.00	36.31	1586.80	793.40	1815.05	908.87	2.63	-0.34	-0.34	0.045
77.25	-7.22	-0.95	0.00	-34.17	0.00	34.17	1573.00	786.50	1777.13	889.88	2.80	-0.35	-0.35	0.043
80.00	-6.84	-0.95	0.00	-31.55	0.00	31.55	1555.94	777.97	1731.10	866.84	3.00	-0.37	-0.37	0.041
80.75	-6.73	-0.95	0.00	-30.84	0.00	30.84	1065.47	532.73	1202.43	602.11	3.06	-0.37	-0.37	0.058
85.00	-6.43	-0.95	0.00	-26.79	0.00	26.79	1050.73	525.37	1157.88	579.80	3.40	-0.39	-0.39	0.052
90.00	-6.08	-0.95	0.00	-22.03	0.00	22.03	1032.77	516.39	1105.80	553.72	3.82	-0.41	-0.41	0.046
95.00	-5.74	-0.95	0.00	-17.27	0.00	17.27	1014.14	507.07	1054.14	527.85	4.26	-0.43	-0.43	0.038
98.00	-5.32	-0.93	0.00	-14.44	0.00	14.44	1002.64	501.32	1023.37	512.45	4.54	-0.44	-0.44	0.033
100.00	-5.20	-0.93	0.00	-12.57	0.00	12.57	994.83	497.42	1002.97	502.23	4.72	-0.45	-0.45	0.030
105.00	-4.90	-0.90	0.00	-7.95	0.00	7.95	974.85	487.42	952.34	476.88	5.20	-0.46	-0.46	0.022
108.00	-3.29	-0.70	0.00	-5.24	0.00	5.24	962.53	481.27	922.25	461.81	5.50	-0.47	-0.47	0.015
110.00	-3.20	-0.69	0.00	-3.84	0.00	3.84	954.18	477.09	902.32	451.83	5.69	-0.47	-0.47	0.012
114.00	-1.56	-0.36	0.00	-1.09	0.00	1.09	937.17	468.59	862.79	432.04	6.09	-0.47	-0.47	0.004
115.00	-1.51	-0.36	0.00	-0.72	0.00	0.72	932.85	466.42	852.98	427.13	6.19	-0.48	-0.48	0.003
117.00	-0.04	-0.01	0.00	-0.01	0.00	0.01	924.13	462.06	833.45	417.34	6.39	-0.48	-0.48	0.000
118.00	0.00	-0.01	0.00	0.00	0.00	0.00	919.72	459.86	823.73	412.48	6.49	-0.48	-0.48	0.000

Wind Loading - Shaft

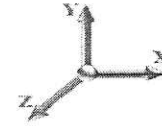
Structure: CT46142-A-SBA	Code: EIA/TIA-222-G	1/14/2019
Site Name: South Ledyard- Town Dump	Exposure: C	
Height: 118.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00
Wind Load Factor 1.00



Iterations 24

Elev (ft)	Description	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	182.29	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	178.75	0.650	0.000	5.00	16.317	10.61	86.8	0.0	645.5
10.00		1.00	0.85	7.442	8.19	175.22	0.650	0.000	5.00	15.997	10.40	85.1	0.0	632.8
15.00		1.00	0.85	7.442	8.19	171.69	0.650	0.000	5.00	15.678	10.19	83.4	0.0	620.0
20.00		1.00	0.90	7.896	8.69	173.21	0.650	0.000	5.00	15.359	9.98	86.7	0.0	607.3
25.00		1.00	0.95	8.276	9.10	173.60	0.650	0.000	5.00	15.039	9.78	89.0	0.0	594.6
30.00		1.00	0.98	8.600	9.46	173.16	0.650	0.000	5.00	14.720	9.57	90.5	0.0	581.8
35.00		1.00	1.01	8.883	9.77	172.13	0.650	0.000	5.00	14.400	9.36	91.5	0.0	569.1
40.00		1.00	1.04	9.137	10.05	170.65	0.650	0.000	5.00	14.081	9.15	92.0	0.0	556.3
40.75	Bot - Section 2	1.00	1.05	9.173	10.09	170.40	0.650	0.000	0.75	2.085	1.35	13.7	0.0	82.4
45.00	Top - Section 1	1.00	1.07	9.366	10.30	168.82	0.650	0.000	4.25	11.857	7.71	79.4	0.0	836.7
50.00		1.00	1.09	9.576	10.53	169.35	0.650	0.000	5.00	13.653	8.87	93.5	0.0	432.3
55.00		1.00	1.12	9.770	10.75	167.01	0.650	0.000	5.00	13.334	8.67	93.1	0.0	422.1
60.00		1.00	1.14	9.951	10.95	164.46	0.650	0.000	5.00	13.015	8.46	92.6	0.0	411.9
65.00		1.00	1.16	10.120	11.13	161.73	0.650	0.000	5.00	12.695	8.25	91.9	0.0	401.7
70.00		1.00	1.17	10.279	11.31	158.84	0.650	0.000	5.00	12.376	8.04	91.0	0.0	391.5
75.00		1.00	1.19	10.430	11.47	155.81	0.650	0.000	5.00	12.056	7.84	89.9	0.0	381.3
77.25	Bot - Section 3	1.00	1.20	10.495	11.54	154.41	0.650	0.000	2.25	5.321	3.46	39.9	0.0	168.3
80.00		1.00	1.21	10.572	11.63	152.66	0.650	0.000	2.75	6.503	4.23	49.2	0.0	357.4
80.75	Top - Section 2	1.00	1.21	10.593	11.65	152.18	0.650	0.000	0.75	1.757	1.14	13.3	0.0	96.5
85.00		1.00	1.22	10.708	11.78	151.51	0.650	0.000	4.25	9.819	6.38	75.2	0.0	233.4
90.00		1.00	1.24	10.838	11.92	148.16	0.650	0.000	5.00	11.257	7.32	87.2	0.0	267.5
95.00		1.00	1.25	10.962	12.06	144.71	0.650	0.000	5.00	10.937	7.11	85.7	0.0	259.8
98.00	Appurtenance(s)	1.00	1.26	11.034	12.14	142.60	0.650	0.000	3.00	6.409	4.17	50.6	0.0	152.2
100.00		1.00	1.27	11.081	12.19	141.18	0.650	0.000	2.00	4.209	2.74	33.3	0.0	100.0
105.00		1.00	1.28	11.195	12.31	137.58	0.650	0.000	5.00	10.298	6.69	82.4	0.0	244.5
108.00	Appurtenance(s)	1.00	1.29	11.262	12.39	135.38	0.650	0.000	3.00	6.026	3.92	48.5	0.0	143.1
110.00		1.00	1.29	11.305	12.44	133.90	0.650	0.000	2.00	3.953	2.57	32.0	0.0	93.8
114.00	Appurtenance(s)	1.00	1.30	11.391	12.53	130.90	0.650	0.000	4.00	7.753	5.04	63.1	0.0	184.0
115.00		1.00	1.30	11.412	12.55	130.15	0.650	0.000	1.00	1.906	1.24	15.6	0.0	45.2
117.00	Appurtenance(s)	1.00	1.31	11.453	12.60	128.63	0.650	0.000	2.00	3.774	2.45	30.9	0.0	89.6
118.00		1.00	1.31	11.474	12.62	127.87	0.650	0.000	1.00	1.868	1.21	15.3	0.0	44.3
Totals:									118.00			2,072.3		10,647.0

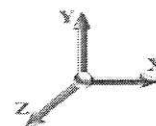
Discrete Appurtenance Forces

Structure: CT46142-A-SBA	Code: EIA/TIA-222-G	1/14/2019
Site Name: South Ledyard- Town Dump	Exposure: C	
Height: 118.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II
		Page: 27



Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00
Wind Load Factor 1.00



Iterations 24

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	CaAa x Ka	Ka	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)
1	117.00	Low Profile Platform-flat	1	11.453	12.598	1.00	1.00	25.00	1200.00	0.000	0.000	314.96	0.00	0.00
2	117.00	56.3"x12.6"x6.3" Panel	3	11.453	12.598	0.78	1.00	14.84	165.30	0.000	0.000	186.91	0.00	0.00
3	117.00	ACU-A20-N	4	11.453	12.598	0.79	1.00	0.44	4.00	0.000	0.000	5.57	0.00	0.00
4	117.00	APXVSP18-C-A20	3	11.453	12.598	0.83	1.00	19.97	171.00	0.000	0.000	251.59	0.00	0.00
5	114.00	26.1"x18.6"x6.7" RRU	3	11.391	12.530	0.68	1.00	8.26	210.00	0.000	0.000	103.52	0.00	0.00
6	114.00	Flush Mount	3	11.391	12.530	1.00	1.00	15.00	1050.00	0.000	0.000	187.95	0.00	0.00
7	114.00	800 Filter	3	11.391	12.530	0.67	1.00	1.35	26.40	0.000	0.000	16.87	0.00	0.00
8	114.00	800 MHz RRH	3	11.391	12.530	0.75	1.00	5.60	159.00	0.000	0.000	70.20	0.00	0.00
9	114.00	1900MHz RRH	3	11.391	12.530	0.75	1.00	6.23	180.00	0.000	0.000	78.09	0.00	0.00
10	108.00	AIR 21 B2A B4P	3	11.262	12.388	0.69	0.80	12.57	271.20	0.000	0.000	155.71	0.00	0.00
11	108.00	AIR 21 B4A B2P	3	11.262	12.388	0.69	0.80	12.57	271.20	0.000	0.000	155.71	0.00	0.00
12	108.00	T-Arm (Round)	3	11.262	12.388	0.50	0.75	12.06	1050.00	0.000	0.000	149.40	0.00	0.00
13	98.00	Sabre C10899050	1	11.034	12.137	1.00	1.00	10.00	81.00	0.000	0.000	121.37	0.00	0.00
14	98.00	CCI DTMABP7819VG12A	3	11.034	12.137	0.40	0.80	1.37	57.60	0.000	0.000	16.60	0.00	0.00
15	98.00	KMW AM-X-CD-14-65-00T	3	11.034	12.137	0.60	0.80	9.00	109.20	0.000	0.000	109.23	0.00	0.00
Totals:								5,005.90				1,923.69		

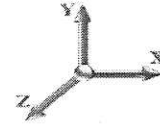
Total Applied Force Summary

Structure: CT46142-A-SBA	Code: EIA/TIA-222-G	1/14/2019
Site Name: South Ledyard- Town Dump	Exposure: C	
Height: 118.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II
		Page: 28



Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00
Wind Load Factor 1.00



Iterations 24

Elev (ft)	Description	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		86.82	765.07	0.00	0.00
10.00		85.12	752.33	0.00	0.00
15.00		83.42	739.58	0.00	0.00
20.00		86.71	726.84	0.00	0.00
25.00		88.99	714.10	0.00	0.00
30.00		90.51	701.36	0.00	0.00
35.00		91.47	688.62	0.00	0.00
40.00		91.99	675.88	0.00	0.00
40.75		13.67	100.28	0.00	0.00
45.00		79.40	938.31	0.00	0.00
50.00		93.49	551.82	0.00	0.00
55.00		93.15	541.63	0.00	0.00
60.00		92.60	531.44	0.00	0.00
65.00		91.86	521.25	0.00	0.00
70.00		90.96	511.05	0.00	0.00
75.00		89.91	500.86	0.00	0.00
77.25		39.93	222.06	0.00	0.00
80.00		49.16	423.18	0.00	0.00
80.75		13.31	114.48	0.00	0.00
85.00		75.18	334.98	0.00	0.00
90.00		87.23	387.03	0.00	0.00
95.00		85.72	379.38	0.00	0.00
98.00	(7) attachments	297.77	471.76	0.00	0.00
100.00		33.34	135.30	0.00	0.00
105.00		82.43	332.89	0.00	0.00
108.00	(9) attachments	509.34	1788.47	0.00	0.00
110.00		31.96	102.02	0.00	0.00
114.00	(15) attachments	519.77	1825.78	0.00	0.00
115.00		15.55	49.33	0.00	0.00
117.00	(11) attachments	789.94	1638.04	0.00	0.00
118.00		15.32	44.32	0.00	0.00
	Totals:	3,996.01	18,209.46	0.00	0.00

Linear Appurtenance Segment Forces (Factored)

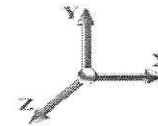
Structure: CT46142-A-SBA	Code: EIA/TIA-222-G	1/14/2019
Site Name: South Ledyard- Town Dump	Exposure: C	
Height: 118.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00
Wind Load Factor 1.00



Iterations 24

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
5.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.010	0.000	7.442	0.00	1.37
10.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.010	0.000	7.442	0.00	1.37
15.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.010	0.000	7.442	0.00	1.37
20.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.010	0.000	7.896	0.00	1.37
25.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.011	0.000	8.276	0.00	1.37
30.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.011	0.000	8.600	0.00	1.37
35.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.011	0.000	8.883	0.00	1.37
40.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.011	0.000	9.137	0.00	1.37
40.75	Safety Cable	Yes	0.75	0.000	0.38	0.02	0.00	0.011	0.000	9.173	0.00	0.20
45.00	Safety Cable	Yes	4.25	0.000	0.38	0.13	0.00	0.012	0.000	9.366	0.00	1.16
50.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.012	0.000	9.576	0.00	1.37
55.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.012	0.000	9.770	0.00	1.37
60.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.012	0.000	9.951	0.00	1.37
65.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.012	0.000	10.120	0.00	1.37
70.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.013	0.000	10.279	0.00	1.37
75.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.013	0.000	10.430	0.00	1.37
77.25	Safety Cable	Yes	2.25	0.000	0.38	0.07	0.00	0.013	0.000	10.495	0.00	0.61
80.00	Safety Cable	Yes	2.75	0.000	0.38	0.09	0.00	0.014	0.000	10.572	0.00	0.75
80.75	Safety Cable	Yes	0.75	0.000	0.38	0.02	0.00	0.014	0.000	10.593	0.00	0.20
85.00	Safety Cable	Yes	4.25	0.000	0.38	0.13	0.00	0.014	0.000	10.708	0.00	1.16
90.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.014	0.000	10.838	0.00	1.37
95.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.014	0.000	10.962	0.00	1.37
98.00	Safety Cable	Yes	3.00	0.000	0.38	0.10	0.00	0.015	0.000	11.034	0.00	0.82
100.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.015	0.000	11.081	0.00	0.55
105.00	Safety Cable	Yes	5.00	0.000	0.38	0.16	0.00	0.015	0.000	11.195	0.00	1.37
108.00	Safety Cable	Yes	3.00	0.000	0.38	0.10	0.00	0.016	0.000	11.262	0.00	0.82
110.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.016	0.000	11.305	0.00	0.55
114.00	Safety Cable	Yes	4.00	0.000	0.38	0.13	0.00	0.016	0.000	11.391	0.00	1.09
115.00	Safety Cable	Yes	1.00	0.000	0.38	0.03	0.00	0.017	0.000	11.412	0.00	0.27
117.00	Safety Cable	Yes	2.00	0.000	0.38	0.06	0.00	0.017	0.000	11.453	0.00	0.55
Totals:											0.0	31.9

Calculated Forces

Structure: CT46142-A-SBA	Code: EIA/TIA-222-G	1/14/2019
Site Name: South Ledyard- Town Dump	Exposure: C	
Height: 118.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II

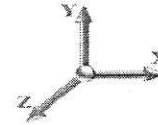


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Load Case: 1.0D + 1.0W 60 mph Wind

Iterations 24

Dead Load Factor 1.00
Wind Load Factor 1.00



Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-18.21	-4.01	0.00	-352.61	0.00	352.61	2662.66	1331.33	4225.57	2115.93	0.00	0.000	0.000	0.173
5.00	-17.44	-3.94	0.00	-332.58	0.00	332.58	2627.56	1313.78	4087.72	2046.90	0.04	-0.067	0.000	0.169
10.00	-16.68	-3.87	0.00	-312.88	0.00	312.88	2591.79	1295.89	3951.04	1978.45	0.14	-0.135	0.000	0.165
15.00	-15.94	-3.81	0.00	-293.52	0.00	293.52	2555.34	1277.67	3815.58	1910.62	0.32	-0.202	0.000	0.160
20.00	-15.21	-3.73	0.00	-274.49	0.00	274.49	2518.21	1259.11	3681.41	1843.44	0.57	-0.269	0.000	0.155
25.00	-14.49	-3.66	0.00	-255.82	0.00	255.82	2480.41	1240.21	3548.60	1776.94	0.89	-0.336	0.000	0.150
30.00	-13.78	-3.58	0.00	-237.53	0.00	237.53	2441.94	1220.97	3417.21	1711.15	1.27	-0.402	0.000	0.144
35.00	-13.09	-3.50	0.00	-219.64	0.00	219.64	2402.79	1201.39	3287.30	1646.09	1.73	-0.467	0.000	0.139
40.00	-12.41	-3.41	0.00	-202.16	0.00	202.16	2362.96	1181.48	3158.94	1581.82	2.25	-0.532	0.000	0.133
40.75	-12.31	-3.40	0.00	-199.60	0.00	199.60	2356.93	1178.46	3139.82	1572.24	2.34	-0.542	0.000	0.132
45.00	-11.37	-3.32	0.00	-185.15	0.00	185.15	1757.80	878.90	2340.38	1171.93	2.84	-0.596	0.000	0.164
50.00	-10.82	-3.24	0.00	-168.54	0.00	168.54	1730.99	865.49	2250.57	1126.96	3.50	-0.658	0.000	0.156
55.00	-10.27	-3.15	0.00	-152.37	0.00	152.37	1703.50	851.75	2161.57	1082.39	4.23	-0.730	0.000	0.147
60.00	-9.74	-3.06	0.00	-136.63	0.00	136.63	1675.34	837.67	2073.46	1038.27	5.03	-0.800	0.000	0.137
65.00	-9.22	-2.97	0.00	-121.32	0.00	121.32	1646.50	823.25	1986.29	994.62	5.91	-0.867	0.000	0.128
70.00	-8.70	-2.88	0.00	-106.47	0.00	106.47	1616.99	808.49	1900.13	951.48	6.85	-0.930	0.000	0.117
75.00	-8.20	-2.79	0.00	-92.06	0.00	92.06	1586.80	793.40	1815.05	908.87	7.86	-0.990	0.000	0.106
77.25	-7.98	-2.75	0.00	-85.78	0.00	85.78	1573.00	786.50	1777.13	889.88	8.33	-1.017	0.000	0.101
80.00	-7.56	-2.70	0.00	-78.22	0.00	78.22	1555.94	777.97	1731.10	866.84	8.92	-1.047	0.000	0.095
80.75	-7.44	-2.68	0.00	-76.20	0.00	76.20	1065.47	532.73	1202.43	602.11	9.09	-1.056	0.000	0.134
85.00	-7.10	-2.61	0.00	-64.80	0.00	64.80	1050.73	525.37	1157.88	579.80	10.05	-1.099	0.000	0.119
90.00	-6.72	-2.52	0.00	-51.75	0.00	51.75	1032.77	516.39	1105.80	553.72	11.23	-1.156	0.000	0.100
95.00	-6.34	-2.43	0.00	-39.15	0.00	39.15	1014.14	507.07	1054.14	527.85	12.47	-1.205	0.000	0.080
98.00	-5.87	-2.12	0.00	-31.86	0.00	31.86	1002.64	501.32	1023.37	512.45	13.23	-1.230	0.000	0.068
100.00	-5.74	-2.09	0.00	-27.61	0.00	27.61	994.83	497.42	1002.97	502.23	13.75	-1.244	0.000	0.061
105.00	-5.40	-2.00	0.00	-17.16	0.00	17.16	974.85	487.42	952.34	476.88	15.07	-1.273	0.000	0.042
108.00	-3.63	-1.45	0.00	-11.15	0.00	11.15	962.53	481.27	922.25	461.81	15.88	-1.285	0.000	0.028
110.00	-3.53	-1.42	0.00	-8.24	0.00	8.24	954.18	477.09	902.32	451.83	16.42	-1.291	0.000	0.022
114.00	-1.71	-0.86	0.00	-2.56	0.00	2.56	937.17	468.59	862.79	432.04	17.50	-1.298	0.000	0.008
115.00	-1.66	-0.84	0.00	-1.70	0.00	1.70	932.85	466.42	852.98	427.13	17.77	-1.298	0.000	0.006
117.00	-0.04	-0.02	0.00	-0.02	0.00	0.02	924.13	462.06	833.45	417.34	18.32	-1.299	0.000	0.000
118.00	0.00	-0.02	0.00	0.00	0.00	0.00	919.72	459.86	823.73	412.48	18.59	-1.299	0.000	0.000

Final Analysis Summary

Structure: CT46142-A-SBA	Code: EIA/TIA-222-G	1/14/2019
Site Name: South Ledyard- Town Dump	Exposure: C	
Height: 118.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



Page: 31

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	19.6	0.00	21.79	0.00	0.00	1737.37
0.9D + 1.6W 105 mph Wind	19.6	0.00	16.33	0.00	0.00	1718.06
1.2D + 1.0Di + 1.0Wi 50 mph Wind	4.9	0.00	34.16	0.00	0.00	430.10
1.2D + 1.0E	1.1	0.00	21.85	0.00	0.00	113.31
0.9D + 1.0E	1.1	0.00	16.39	0.00	0.00	111.94
1.0D + 1.0W 60 mph Wind	4.0	0.00	18.21	0.00	0.00	352.61

Max Stresses

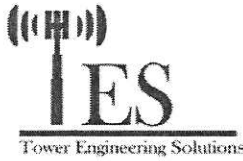
Load Case	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Elev (ft)	Stress Ratio
1.2D + 1.6W 105 mph Wind	-21.79	-19.64	0.00	-1737.3	0.00	-1737.3	2662.66	1331.3	4225.57	2115.93	0.00	0.829
0.9D + 1.6W 105 mph Wind	-16.33	-19.63	0.00	-1718.0	0.00	-1718.0	2662.66	1331.3	4225.57	2115.93	0.00	0.818
1.2D + 1.0Di + 1.0Wi 50 mph Wind	-34.16	-4.92	0.00	-430.10	0.00	-430.10	2662.66	1331.3	4225.57	2115.93	0.00	0.216
1.2D + 1.0E	-13.68	-0.98	0.00	-65.97	0.00	-65.97	1757.80	878.90	2340.38	1171.93	45.00	0.064
0.9D + 1.0E	-10.26	-0.96	0.00	-64.94	0.00	-64.94	1757.80	878.90	2340.38	1171.93	45.00	0.061
1.0D + 1.0W 60 mph Wind	-18.21	-4.01	0.00	-352.61	0.00	-352.61	2662.66	1331.3	4225.57	2115.93	0.00	0.173

Base Plate Summary

Structure: CT46142-A-SB	Code: EIA/TIA-222-G	1/14/2019
Site Name: South Ledyard- Town Dump	Exposure: C	
Height: 118.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II
		Page: 32



Reactions	Base Plate	Anchor Bolts
Original Design	Yield (ksi): 55.00	Bolt Circle: 45.00
Moment (kip-ft): 1461.00	Width (in): 44.00	Number Bolts: 8.00
Axial (kip): 19.00	Style: Clipped	Bolt Type: 2.25" 18J
Shear (kip): 17.00	Polygon Sides: 0.00	Bolt Diameter (in): 2.25
Analysis	Clip Length (in): 8.00	Yield (ksi): 75.00
Moment (kip-ft): 1737.37	Effective Len (in): 12.49	Ultimate (ksi): 100.00
Axial (kip): 34.16	Moment (kip-in): 714.48	Arrangement: Clustered
Shear (kip): 19.64	Allow Stress (ksi): 74.25	Cluster Dist (in): 6.00
	Applied Stress (ksi): 0.00	Start Angle (deg): 45.00
Moment Design %: 118.92	Stress Ratio: 0.74	Compression
		Force (kip): 235.92
		Allowable (kip): 260.00
		Ratio: 0.93
		Tension
		Force (kip): 227.38
		Allowable (kip): 260.00
		Ratio: 0.89



Monopole Mat Foundation Design

Date

1/11/2019

Customer Name:	AT&T	EIA/TIA Standard:	EIA-222-G
Site Name:		Structure Height (Ft.):	118
Site Number:	CT46142-A-SBA	Engineer Name:	J. Chen
Engr. Number:	67358	Engineer Login ID:	

Foundation Info Obtained from:

Drawings/Calculations

Structure Type:

Monopole

Analysis or Design?

Analysis

Base Reactions (Factored):

Axial Load (Kips):	34.2	Shear Force (Kips):	19.6
Uplift Force (Kips):	0.0	Moment (Kips-ft):	1737.4

Foundation Geometries:

		Mods required -Yes/No ?:	No
Diameter of Pier (ft.):	6.0	Depth of Base BG (ft.):	5.5
Pier Height A. G. (ft.):	0.75	Thickness of Pad (ft):	2.50
Length of Pad (ft.):	19.5	Width of Pad (ft.):	19.5

Final Length of pad (ft)	19.5	Final width of pad (ft):	19.5
Control Value for Cell D18:	0	Control Value for Cell F18:	0

Material Properties and Rebar Info:

Concrete Strength (psi):	3000	Steel Elastic Modulus:	29000	ksi
Vertical bar yield (ksi)	60	Tie steel yield (ksi):	40	
Vertical Rebar Size #:	11	Tie / Stirrup Size #:	4	
Qty. of Vertical Rebars:	20	Tie Spacing (in):	6.0	
Pad Rebar Yield (Ksi):	60	Pad Steel Rebar Size (#):	8	
Concrete Cover (in.):	3	Unit Weight of Concrete:	150.0	pcf
Rebar at the bottom of the concrete pad:				
Qty. of Rebar in Pad (L):	12	Qty. of Rebar in Pad (W):	12	
Rebar at the top of the concrete pad:				
Qty. of Rebar in Pad (L):	12	Qty. of Rebar in Pad (W):	12	

Soil Design Parameters:

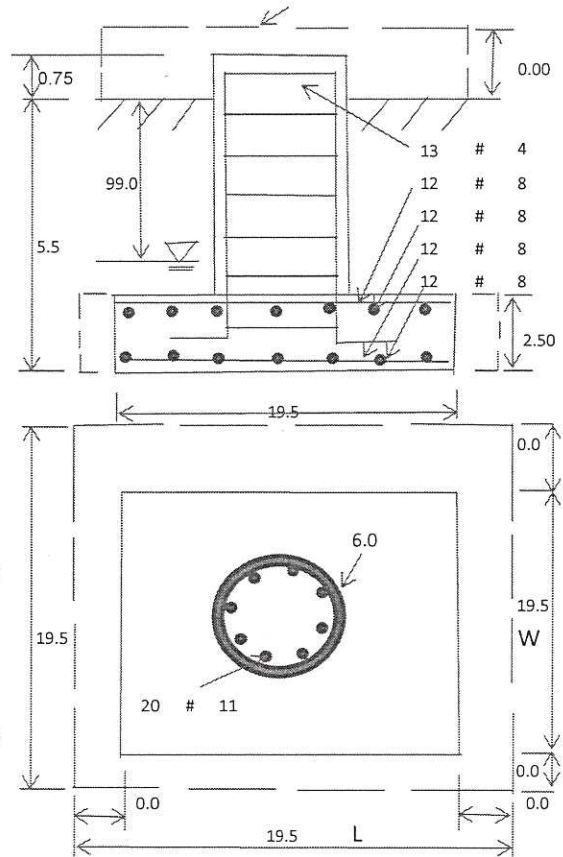
Soil Unit Weight (pcf):	100.0	Soil Buoyant Weight:	37.6	Pcf
Water Table B.G.S. (ft):	99.0	Unit Weight of Water:	62.4	pcf
Ultimate Bearing Pressure (psf):	12000	Ultimate Skin Friction:	0	Psf
Consider Friction for O.T.M. (Y/N):	No	Consider Friction for bearing (Y/N):	No	
Consider soil hor. resist. for OTM.:	Yes	Reduction factor on the maximum soil bearing pressure:	1.00	
		Angle from Top of Pad:	30	
		Angle from Bottm of Pad:	25	
		Angle from Bottm of Pad:	25	

Foundation Analysis and Design:

Uplift Strength Reduction Factor:	0.75	Compression Strength Reduction Factor:	0.75
Total Dry Soil Volume (cu. Ft.):	1055.93	Total Dry Soil Weight (Kips):	105.59
Total Buoyant Soil Volume (cu. Ft.):	0.00	Total Buoyant Soil Weight (Kips):	0.00
Total Effective Soil Weight (Kips):	105.59	Weight from the Concrete Block at Top (K):	0.00
Total Dry Concrete Volume (cu. Ft.):	1056.65	Total Dry Concrete Weight (Kips):	158.50
Total Buoyant Concrete Volume (cu. Ft.):	0.00	Total Buoyant Concrete Weight (Kips):	0.00
Total Effective Concrete Weight (Kips):	158.50	Total Vertical Load on Base (Kips):	298.29

Check Soil Capacities:

Calculated Maxium Net Soil Pressure under the base (psf):	2797	<	Allowable Factored Soil Bearing (psf):	9000	0.31	OK!
Allowable Foundation Overturning Resistance (kips-ft.):	2650.8	>	Design Factored Momont (kips-ft):	1788	0.67	OK!
Factor of Safety Against Overturning (O. R. Moment/Design Moment):	1.48					OK!



Check the capacities of Reinforcing Concrete:

Strength reduction factor (Flexure and axial tension):	0.90	Strength reduction factor (Shear):	0.75		
Strength reduction factor (Axial compression):	0.65	Wind Load Factor on Concrete Design:	1.00		
				Load/ Capacity Ratio	
(1) Concrete Pier:					
Vertical Steel Rebar Area (sq. in./each):	1.56	Tie / Stirrup Area (sq. in./each):	0.20		
Calculated Moment Capacity (Mn, Kips-Ft):	4355.8	> Design Factored Moment (Mu, Kips-Ft)	1810.9	0.42	OK!
Calculated Shear Capacity (Kips):	488.1	> Design Factored Shear (Kips):	19.6	0.04	OK!
Calculated Tension Capacity (Tn, Kips):	1684.8	> Design Factored Tension (Tu Kips):	0.0	0.00	OK!
Calculated Compression Capacity (Pn, Kips):	5357.4	> Design Factored Axial Load (Pu Kips):	34.2	0.01	OK!
Moment & Axial Strength Combination:	0.42	OK! Check Tie Spacing (Design/Required):		0.5	OK!
Pier Reinforcement Ratio:	0.008	Reinforcement Ratio is satisfied per ACI			
(2). Concrete Pad:					
One-Way Design Shear Capacity (L-Direction, Kips):	509.5	> One-Way Factored Shear (L-D, Kips):	135.3	0.27	OK!
One-Way Design Shear Capacity (W-Direction, Kips):	509.5	> One-Way Factored Shear (W-D., Kips)	135.3	0.27	OK!
One-Way Design Shear Capacity (Corner-Corner, Kips):	448.3	> One-Way Factored Shear (C-C, Kips):	133.6	0.30	OK!
Lower Steel Pad Reinforcement Ratio (L-Direct.):	0.0015	OK! Lower Steel Pad Reinf. Ratio (W-Direc	0.0015		
Lower Steel Pad Moment Capacity (L-Direction, Kips-ft):	1110.2	> Moment at Bottom (L-Dir. K-Ft):	573.1	0.52	OK!
Lower Steel Pad Moment Capacity (W-Direction, Kips-ft):	1110.2	> Moment at Bottom (W-Dir. K-Ft):	573.1	0.52	OK!
Lower Steel Pad Moment Capacity (Corner-Corner, K-ft):	1562.0	> Moment at Bottom (C-C Dir. K-Ft):	810.5	0.52	OK!
Upper Steel Pad Reinforcement Ratio (L-Direct.):	0.0015	OK! Upper Steel Reinf. Ratio (W-Dir.):	0.0015		
Upper Steel Pad Moment Capacity (L-Direc. Kips-ft):	1110.2	> Moment at the top (L-Dir K-Ft):	242.7	0.22	OK!
Upper Steel Pad Moment Capacity (W-Direc. Kips-ft):	1110.2	> Moment at the top (W-Dir K-Ft):	242.7	0.22	OK!
Upper Steel Pad Moment Capacity (Corner-Corner, K-ft):	1562.0	> Moment at the top (C-C Dir. K-Ft):	228.7	0.15	OK!
(3). Check Punching Shear Capacity due to Moment in the Pier:					
Moment transferred by punching shear:	695.0	k-ft. Max. factored shear stress $v_{u,cd}$:	2.3	Psi	
Max. factored shear stress $v_{u,AB}$:	8.8	Psi Factored shear Strength ϕv_n :	164.3	Psi	
Max. factored shear stress v_u :	8.8	Psi Check Usage of Punching Shear Capacity:	0.05	OK!	

Chiocchio, Lucia

From: Fisher, Christopher
Sent: Friday, January 18, 2019 2:43 PM
To: Chiocchio, Lucia
Subject: Fwd: CT1357 Mystic CT Replacement - Fieldcrest WT

Here is email from water co.
Sent from my iPhone

Begin forwarded message:

From: Shawna Salato <SSalato@aquarionwater.com>
Date: January 18, 2019 at 9:32:33 AM EST
To: 'Dan Bilezikian' <dbilezikian@saigrp.com>
Cc: "'BRADY, SARA (SB368E@att.com)'" <SB368E@att.com>, "'kw1362@att.com'" <kw1362@att.com>, Kevin Mason <kmason@saigrp.com>, Stephanie Wenderoth <SWenderoth@saigrp.com>, "Fisher, Christopher (CFisher@cuddyfeder.com)" <CFisher@cuddyfeder.com>
Subject: RE: CT1357 Mystic CT Replacement - Fieldcrest WT

Dan:

I think we would like to schedule a call to discuss this matter further. As we are only about two months shy of when you have to be fully dismantled from the site, it does not seem like AT&T will be ready by March 31. From other emails I have received, it sounds as if AT&T has not engaged anyone to do this work as of yet; and, AT&T is still vetting a new, temporary site. We are quite concerned at this point. Any input you can provide to allay our concerns would be appreciated.

Thank you.
Shawna

From: Dan Bilezikian [<mailto:dbilezikian@saigrp.com>]
Sent: Friday, January 18, 2019 8:49 AM
To: Shawna Salato
Cc: 'BRADY, SARA (SB368E@att.com)'; 'kw1362@att.com'; Kevin Mason; Stephanie Wenderoth; Fisher, Christopher (CFisher@cuddyfeder.com)
Subject: RE: CT1357 Mystic CT Replacement - Fieldcrest WT

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Shawna,

The more promising candidate at this point is space on the existing SBA tower which we are diligently pursuing. I will update you once the lease is finalized.

Dan

From: Shawna Salato <SSalato@aquarionwater.com>
Sent: Thursday, January 17, 2019 8:43 AM
To: Dan Bilezikian <dbilezikian@saigrp.com>
Cc: 'BRADY, SARA (SB368E@att.com)' <SB368E@att.com>; 'kw1362@att.com' <kw1362@att.com>; Kevin Mason <kmason@saigrp.com>; Stephanie Wenderoth <SWenderoth@saigrp.com>; Fisher, Christopher (CFisher@cuddyfeder.com) <CFisher@cuddyfeder.com>
Subject: RE: CT1357 Mystic CT Replacement - Fieldcrest WT

Dan:

Any luck on finalizing an agreement with the Town. A status would be appreciated.

Thank you.
Shawna

From: Dan Bilezikian [mailto:dbilezikian@saigrp.com]
Sent: Friday, January 04, 2019 3:59 PM
To: Shawna Salato
Cc: 'BRADY, SARA (SB368E@att.com)'; 'kw1362@att.com'; Kevin Mason; Stephanie Wenderoth; Fisher, Christopher (CFisher@cuddyfeder.com)
Subject: RE: CT1357 Mystic CT Replacement - Fieldcrest WT

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Happy New Year to you, too. We've made significant progress and I hope to have a more definitive answer for you soon, possibly next week.

Dan

From: Shawna Salato <SSalato@aquarionwater.com>
Sent: Thursday, January 03, 2019 8:32 AM
To: Dan Bilezikian <dbilezikian@saigrp.com>
Cc: 'BRADY, SARA (SB368E@att.com)' <SB368E@att.com>; 'kw1362@att.com' <kw1362@att.com>; Kevin Mason <kmason@saigrp.com>; Stephanie Wenderoth <SWenderoth@saigrp.com>; Fisher, Christopher (CFisher@cuddyfeder.com) <CFisher@cuddyfeder.com>
Subject: RE: CT1357 Mystic CT Replacement - Fieldcrest WT

Dan:

Good morning and happy new year. Just following up to see how you are coming along with your temporary license with the Town of Groton. We are getting close to the end of ATT's lease term with Aquarion, so we just want to be certain that there will not be any issues. We are going out to bid on our demo project soon, so we are moving along according to plan. Any updates you can provide would be most appreciated.

Thank you.
Shawna

From: Dan Bilezikian [mailto:dbilezikian@saigrp.com]
Sent: Thursday, November 29, 2018 12:27 PM
To: Shawna Salato

Cc: 'BRADY, SARA (SB368E@att.com)'; 'kw1362@att.com'; Kevin Mason; Stephanie Wenderoth; Fisher, Christopher (CFisher@cuddyfeder.com)

Subject: RE: CT1357 Mystic CT Replacement - Fieldcrest WT

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Shawna,

Yes, the Town is working with us on a temp site at the DPW facility as one of the options we're pursuing. Thank you for following up.

Dan

From: Shawna Salato <SSalato@aquarionwater.com>

Sent: Thursday, November 29, 2018 12:10 PM

To: Dan Bilezikian <dbilezikian@saigrp.com>

Cc: 'BRADY, SARA (SB368E@att.com)' <SB368E@att.com>; 'kw1362@att.com' <kw1362@att.com>; Kevin Mason <kmason@saigrp.com>; Stephanie Wenderoth <SWenderoth@saigrp.com>; 'Laub, Daniel M. (DLaub@cuddyfeder.com)' <DLaub@cuddyfeder.com>

Subject: RE: CT1357 Mystic CT Replacement - Fieldcrest WT

Dan:

Good afternoon. Another month has passed, and we are wondering how things are coming along with the Town. Were they ever able to find you a suitable, temporary location. Any update you can provide would be appreciated.

Thank you.

Shawna

From: Shawna Salato

Sent: Thursday, October 25, 2018 4:47 PM

To: 'Dan Bilezikian'

Cc: 'BRADY, SARA (SB368E@att.com)'; 'kw1362@att.com'; Kevin Mason; Stephanie Wenderoth; Laub, Daniel M. (DLaub@cuddyfeder.com)

Subject: RE: CT1357 Mystic CT Replacement - Fieldcrest WT

Great, Dan. Thank you for the update. We are happy to assist in any way we can.

Shawna

From: Dan Bilezikian [mailto:Dan.Bilezikian@SAI-Comm.com]

Sent: Thursday, October 25, 2018 4:44 PM

To: Shawna Salato

Cc: 'BRADY, SARA (SB368E@att.com)'; 'kw1362@att.com'; Kevin Mason; Stephanie Wenderoth; Laub, Daniel M. (DLaub@cuddyfeder.com)

Subject: RE: CT1357 Mystic CT Replacement - Fieldcrest WT

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Shawna,

We met with the Town Manager and his staff today to discuss several options, one of which is a temp facility on DPW property on Welles Rd. That appears to be much more palatable to everyone than the Ann Ave. WT site with the school being so close. I'll follow up with you if/when things start to solidify.

Thank you for all your help with this. We really do appreciate the effort you expended on our behalf.

Dan

From: Shawna Salato [mailto:SSalato@aquarionwater.com]
Sent: Thursday, October 25, 2018 9:40 AM
To: Dan Bilezikian
Cc: 'BRADY, SARA (SB368E@att.com)'; 'kw1362@att.com'; Kevin Mason; Stephanie Wenderoth; Laub, Daniel M. (DLaub@cuddyfeder.com)
Subject: RE: CT1357 Mystic CT Replacement - Fieldcrest WT

Dan:

Good morning. Just a follow up to see if you have had any luck with the Town of Groton on a temporary COW at our new tank site. Any updates you might be able to share would be appreciated. We are about 5 months out from lease termination, so I am hoping things are progressing. Please let me know.

Thank you.
Shawna

From: Dan Bilezikian [mailto:Dan.Bilezikian@SAI-Comm.com]
Sent: Sunday, October 07, 2018 1:55 PM
To: Shawna Salato
Cc: 'BRADY, SARA (SB368E@att.com)'; 'kw1362@att.com'; Kevin Mason; Stephanie Wenderoth; Laub, Daniel M. (DLaub@cuddyfeder.com)
Subject: RE: CT1357 Mystic CT Replacement - Fieldcrest WT

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Thanks Shawna.

+ Dan L.

From: Shawna Salato [mailto:SSalato@aquarionwater.com]
Sent: Wednesday, October 03, 2018 11:55 AM
To: Dan Bilezikian
Cc: 'BRADY, SARA (SB368E@att.com)'; 'kw1362@att.com'; Kevin Mason; Stephanie Wenderoth
Subject: RE: CT1357 Mystic CT Replacement - Fieldcrest WT

Dan:

Liz spoke with the Town this morning and is being told that AT&T will have to reach out to the Planning Department to discuss its request to place a COW within our easement area. From what she understands, this request has been discussed with several Town officials so the Planning Department

should have some (albeit loose) understanding of AT&T's needs. Below is the link to the Planning Departments information:

<http://www.groton-ct.gov/depts/plandev/>

If you have any questions or should you need any further assistance from Aquarion, please feel free to contact me. Also, please keep us in the loop with regard to whether or not the Town will grant AT&T's request or not.

Thank you.
Shawna

From: Shawna Salato
Sent: Friday, September 28, 2018 8:33 AM
To: 'Dan Bilezikian'
Cc: BRADY, SARA (SB368E@att.com); kw1362@att.com; Kevin Mason; Stephanie Wenderoth
Subject: RE: CT1357 Mystic CT Replacement - Fieldcrest WT

Dan:

The Town replied back to us yesterday, and they are interpreting the easement to mean that no antenna can be installed (in any fashion) within the easement area at all. We are going to reach back out to them because we do not, necessarily, agree with that position. The easement says that nothing can be done without the written permission of the Town. We do not see that language to mean there is an outright 'no' to antenna. We will keep you posted.

Thank you.
Shawna

From: Dan Bilezikian [mailto:Dan.Bilezikian@SAI-Comm.com]
Sent: Thursday, September 27, 2018 4:34 PM
To: Shawna Salato
Cc: BRADY, SARA (SB368E@att.com); kw1362@att.com; Kevin Mason; Stephanie Wenderoth
Subject: RE: CT1357 Mystic CT Replacement - Fieldcrest WT

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Shawna,

We haven't heard anything from the town. If you have no objection, I will reach out to one or the other directly as we are pressed for time.

Dan

From: Shawna Salato [mailto:SSalato@aquarionwater.com]
Sent: Wednesday, September 19, 2018 4:25 PM
To: Dan Bilezikian
Cc: BRADY, SARA (SB368E@att.com)
Subject: RE: CT1357 Mystic CT Replacement - Fieldcrest WT

Dan:

We made contact with the Town of Groton. Either the assistant to the Town Manager, Eileen Cardillo, or the Town Manager, John Burt, may be calling to discuss AT&T's request. They asked for your information, which our Director passed along. While we do not have an issue, in theory, with a temporary COW being placed within our easement area, we will want to be involved in any planning for any placement of the structure, as we need to be sure it does not interfere with our tank and our operations. You should keep us in the loop about any discussions you have.

Thank you.
Shawna

From: Shawna Salato
Sent: Friday, September 14, 2018 12:41 PM
To: 'Dan Bilezikian'
Subject: RE: CT1357 Mystic CT Replacement - Fieldcrest WT

Dan:

Our Director of Real Estate had an internal discussion at an executive level about this yesterday. She will be reaching out to the Town this afternoon. We will let you know what they say. I would assume they will want to be in contact directly with AT&T; however, we will assist in facilitating since it is our tank easement and since we have a relationship with the Town already.

Thank you.
Shawna

From: Dan Bilezikian [<mailto:Dan.Bilezikian@SAI-Comm.com>]
Sent: Friday, September 14, 2018 12:06 PM
To: Shawna Salato
Subject: RE: CT1357 Mystic CT Replacement - Fieldcrest WT

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Hi Shawna,

Any further updates on this?

Dan

From: Shawna Salato [<mailto:SSalato@aquarionwater.com>]
Sent: Thursday, September 06, 2018 9:41 AM
To: Dan Bilezikian
Subject: RE: CT1357 Mystic CT Replacement - Fieldcrest WT

Dan:

This is now out of my hands. It is with our Director of Real Estate to discuss with the Town. We are in the middle of our budget season, and she is not in the office this week. I will remind her upon her return that AT&T is waiting for a response.

Thank you.

Shawna

From: Dan Bilezikian [<mailto:Dan.Bilezikian@SAI-Comm.com>]
Sent: Thursday, September 06, 2018 9:36 AM
To: Shawna Salato
Subject: RE: CT1357 Mystic CT Replacement - Fieldcrest WT

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Shawna,

Have you had a chance to discuss this with anyone?

Dan

From: Dan Bilezikian
Sent: Thursday, August 23, 2018 3:02 PM
To: 'Shawna Salato'
Subject: RE: CT1357 Mystic CT Replacement - Fieldcrest WT

Here's the temp site on Chappy. Not the greatest shot in the world, but you get the idea. This one has all the antennas concealed within but they can also be mounted externally which is more efficient and allows for more capacity. The pole is mounted to a steel ballast frame (not visible behind the fence) which is weighed down by concrete blocks to keep it from overturning. All the equipment would also be sitting on the same steel frame and so everything is contained within the 18' x 18' footprint.

From: Shawna Salato [<mailto:SSalato@aquarionwater.com>]
Sent: Thursday, August 23, 2018 2:19 PM
To: Dan Bilezikian
Subject: RE: CT1357 Mystic CT Replacement - Fieldcrest WT

Dan:

First, do you have any photos of the unipole on Martha's Vineyard? It is not like we are right around the corner to take a look. It might help us to have a visual. Do you know how long AT&T anticipates temporarily using the parcel?

With regard to your inquiry about a permanent monopole, our Director of Real Estate will have to have a discussion with our upper management team and with the Town. There is definitely some value to the Town to keep cellular coverage for the citizens of that area of Groton; however, please understand that the discussion of cellular antennas during the tank building process raised quite a few eyebrows with both school and Town officials. The decision to allow a monopole (or even to make an exception to allow antenna on the tank) will be entirely up to the Town. We will inquire.

Please let me know if you have any photos of the pole in MA, and then we can reach out to the Town to discuss AT&T's use of its property.

Thank you.
Shawna

From: Dan Bilezikian [<mailto:Dan.Bilezikian@SAI-Comm.com>]
Sent: Thursday, August 23, 2018 12:29 PM
To: Shawna Salato
Subject: RE: CT1357 Mystic CT Replacement - Fieldcrest WT

Shawna,

We have two options for COWs here. One is a 120' tall trailer mounted unit which, with outriggers extended, would have a 44' x 22' footprint, not counting guys extending 60'-70'. The other option is a ballast mounted 105' tall unipole identical to a unit we currently have set up on Chappaquiddick Island on Martha's Vineyard. The ballast mounted unit has a 18' x 18' footprint, and all the equipment cabinets can fit within that space. That option would certainly be viable here. I'm not so sure about the 120' unit.

On a separate topic, regarding a permanent facility, the town specifically prohibited any antenna attachment to the new tank, but does that prohibition extend to a stand-alone monopole on the property? It doesn't appear that they addressed that issue. If it were permissible, would Aquarion entertain the idea?

Dan

From: Shawna Salato [<mailto:SSalato@aquarionwater.com>]
Sent: Monday, August 06, 2018 3:48 PM
To: Dan Bilezikian
Subject: RE: CT1357 Mystic CT Replacement - Fieldcrest WT

Was able to get my hands on a photo. It does look like there could be some room at the front of the tank verses in the back or on the sides. However, some dimensions about the C.O.W. would be helpful.

Shawna

From: Shawna Salato
Sent: Monday, August 06, 2018 12:18 PM
To: 'Dan Bilezikian'
Subject: RE: CT1357 Mystic CT Replacement - Fieldcrest WT

Dan:

Before we go to the Town, we would like to know if you have seen this site or not? The easement area is only 13,000 square feet, a portion of which is taken up by our water tank. The backside of the easement area/site is very wooded and there is about 1,700 square feet of parking area. We really do not want to talk to the Town if there is no room for a C.O.W. Do you have any dimensions you can provide? Please let us know.

Thank you.
Shawna

From: Dan Bilezikian [<mailto:Dan.Bilezikian@SAI-Comm.com>]
Sent: Monday, August 06, 2018 10:27 AM
To: Shawna Salato
Subject: RE: CT1357 Mystic CT Replacement - Fieldcrest WT

Thank you

From: Shawna Salato [mailto:SSalato@aquarionwater.com]
Sent: Monday, August 06, 2018 10:25 AM
To: Dan Bilezikian
Subject: RE: CT1357 Mystic CT Replacement - Fieldcrest WT

Dan:

We are going to have to review our easement agreement in a bit more detail and then reach out to the Town Manager. This process could take us a few weeks, but we are working on it and will get back to you to let you know what the Town has to say or if they need anything further.

Thanks.
Shawna

From: Dan Bilezikian [mailto:Dan.Bilezikian@SAI-Comm.com]
Sent: Thursday, August 02, 2018 10:11 AM
To: Shawna Salato
Subject: RE: CT1357 Mystic CT Replacement - Fieldcrest WT

Ok, thanks.

From: Shawna Salato [mailto:SSalato@aquarionwater.com]
Sent: Thursday, August 02, 2018 10:10 AM
To: Dan Bilezikian
Subject: RE: CT1357 Mystic CT Replacement - Fieldcrest WT

Dan:

I doubt it, but will check on this for you. We need to demolish the tank on Nantucket so we need to have full control and use of that property once ATT vacates. Not sure how the Town will feel about a temporary COW at Ann Avenue but that would be the only option from our perspective. I will be back to you next week.

Shawna

----- Original Message -----

From: Dan Bilezikian <Dan.Bilezikian@SAI-Comm.com>
Date: Thu, 2 Aug 2018, 10:03 am
To: Shawna Salato <SSalato@aquarionwater.com>
Subject: RE: CT1357 Mystic CT Replacement - Fieldcrest WT

Would Aquarion be willing to consider a short term license agreement for space to park a temporary facility, a.k.a. cell-on-wheels (COW), at either the Nantucket Dr., or the Ann Ave. property? Obviously, this would require CSC approval, but, assuming the approvals could be obtained, would it be a possibility? I think the preference would be Nantucket Dr. since the power and telco demark is already there.

Dan

From: Shawna Salato [mailto:SSalato@aquarionwater.com]
Sent: Monday, July 30, 2018 3:30 PM

To: Dan Bilezikian
Subject: FW: CT1357 Mystic CT Replacement - Fieldcrest WT

Dan:

Liz and I have discussed your email, and she asked me to get back to you. As part of our easement for the new tank granted by the Town of Groton, Aquarion agreed that it would not allow any cellular carriers on the tank. The Town did not want them, and we are complying with the Town's request. Aquarion will not allow any cellular antennas on its new tank on Ann Avenue.

If you have any questions or should you require anything further, please feel free to contact me.

Thank you.
Shawna

Shawna Salato
Real Estate Paralegal
Aquarion Water Company
835 Main Street
Bridgeport, CT 06604
203-336-7680 (phone)
203-395-4629 (cell)
888-585-9008 – Room 222-004-797 (OpenVoice)
ssalato@aquarionwater.com

Stewards of the Environment

From: Liz Camerino Schultz
Sent: Monday, July 30, 2018 3:11 PM
To: Shawna Salato
Subject: FW: CT1357 Mystic CT Replacement - Fieldcrest WT

This is for Fieldcrest.

Let's discuss.

Liz

From: Dan Bilezikian [<mailto:Dan.Bilezikian@SAI-Comm.com>]
Sent: Monday, July 30, 2018 3:04 PM
To: Liz Camerino Schultz
Cc: BRADY, SARA (SB368E@att.com)
Subject: CT1357 Mystic CT Replacement - Fieldcrest WT

Dear Ms. Schultz,

According to the attached hearing minutes, the "Planning Commission would prefer not to have additional cell antenna on the new tank." Is it Aquarion's policy going forward not to allow any wireless colocation on the Fieldcrest WT, or is the prohibition just based on the Commission's preference? What I'm looking for is something definitive in writing we can present to the CSC.

Thank you,

Dan Bilezikian
Site Acquisition Specialist



SAI Communications, Inc.
PO Box 246
125 Tremont St.
Rehoboth, MA 02769
401-368-0006

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This email has been scanned by the Symantec Email Security.cloud service.

Martin J. Lavin
 C Squared Systems, LLC
 65 Dartmouth Drive
 Auburn, NH 03032
 603-644-2800
 Martin.Lavin@csquaredsystems.com



December 3, 2018

Connecticut Siting Council

Subject: New Cingular Wireless PCS, LLC (“AT&T”) – (CT1357) – Existing SBA Tower at 130 Welles Road, Mystic, CT

Dear Connecticut Siting Council:

C Squared Systems has been retained by New Cingular Wireless PCS, LLC (“AT&T”) to investigate RF Power Density levels for the AT&T antenna arrays, to be installed on the existing SBA tower located at 130 Welles Road Mystic, CT.

Calculations were done in accordance with FCC OET Bulletin 65. These worst-case calculations assume that all transmitters are simultaneously operating at full power and that there is 0 dB of cable loss. The calculation point is 6 feet above ground level to model the RF power density at the head of a person standing at ground level and do not take into account building penetration losses.

Due to the directional nature of the proposed AT&T antennas, the majority of the RF power is focused out towards the horizon. As a result, there will be less RF power directed below the antennas relative to the horizon, and consequently lower power density levels around the base of the tower. Please refer to the Attachment for the vertical patterns of the proposed AT&T antennas. The calculated results below include a nominal 10 dB off-beam pattern loss to account for the lower relative gain directly below the antennas.

Location	Carrier	Vertical Distance to Antenna (Ft.)	Operating Frequency (MHz)	Number of Trans.	Effective Radiated Power (ERP) Per Transmitter (Watts)	Power Density (mw/cm ²)	Limit	%MPE
1	Sprint	117.5	850	1	438	0.0013	0.56667	0.22%
2	Sprint	117.5	850	2	438	0.0025	0.56667	0.45%
3	Sprint	117.5	1900	5	623	0.0090	1	0.90%
4	Sprint	117.5	1900	2	1556	0.0090	1	0.90%
5	Sprint	117.5	2500	8	778	0.0180	1	1.80%
6	T-Mobile	108	1950	2	12	0.0001	1	0.01%
7	T-Mobile	108	2100	2	16	0.0001	1	0.01%
8	T-Mobile	108	2100	2	24	0.0002	1	0.02%
9	AT&T UMTS	98	880	1	367	0.0016	0.5867	0.27%
10	AT&T LTE	98	734	1	918	0.0039	0.4893	0.80%
11	AT&T LTE	98	1900	2	1560	0.0133	1.0000	1.33%
Total								6.70%

Summary: Under worst-case assumptions, the Cumulative RF Power Density levels for the proposed AT&T antenna arrays and the existing antenna arrays on the tower¹ will not exceed 6.70%² of the FCC MPE limit for General Public/Uncontrolled Environments.

¹ Data for existing antenna arrays is taken from the CSC’s Power Density Table database.

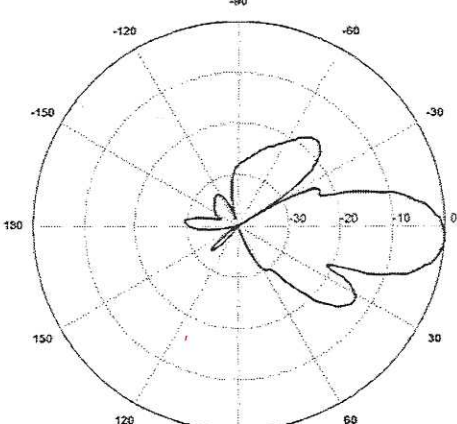
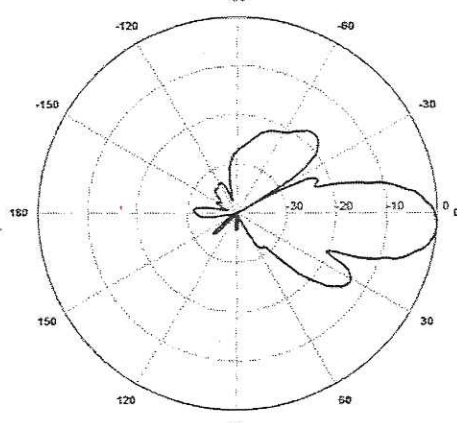
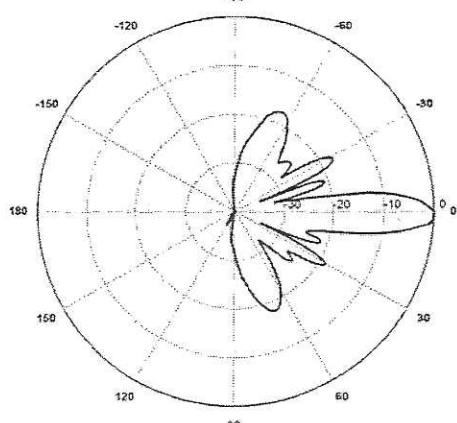
² The total %MPE is a summation of each unrounded contribution. Therefore, summing each rounded value may not reflect the total value listed in the table.

Sincerely,

A handwritten signature in cursive script, reading "Martin J. Lavin". The signature is written in dark ink and is positioned below the word "Sincerely,".

Martin J. Lavin
C Squared Systems, LLC

Attachment: AT&T's Antenna Data Sheets and Electrical Patterns

<p>734 MHz</p> <p>Manufacturer: KMW Model #: AM-X-CD-14-65-00T-RET Frequency Band: 698-806 MHz Gain: 14.0 dBi Vertical Beamwidth: 17.5° Horizontal Beamwidth: 67° Polarization: ±45° Size L x W x D: 48.0" x 11.8" x 5.9"</p>	 <p>A polar plot showing the radiation pattern of the 734 MHz antenna. The plot is circular with concentric dashed lines representing gain levels at -10, -20, and -30 dB. Radial lines indicate angles from 0 to 180 degrees in 30-degree increments. The main lobe is centered at 0 degrees, extending to approximately -10 dB. There are two side lobes, one on each side of the main lobe, extending to approximately -20 dB. The pattern is roughly symmetric about the 0-degree axis.</p>
<p>880 MHz</p> <p>Manufacturer: KMW Model #: AM-X-CD-14-65-00T-RET Frequency Band: 824-894 MHz Gain: 14.8 dBi Vertical Beamwidth: 16.5° Horizontal Beamwidth: 65° Polarization: ±45° Size L x W x D: 48.0" x 11.8" x 5.9"</p>	 <p>A polar plot showing the radiation pattern of the 880 MHz antenna. The plot is circular with concentric dashed lines representing gain levels at -10, -20, and -30 dB. Radial lines indicate angles from 0 to 180 degrees in 30-degree increments. The main lobe is centered at 0 degrees, extending to approximately -10 dB. There are two side lobes, one on each side of the main lobe, extending to approximately -20 dB. The pattern is roughly symmetric about the 0-degree axis.</p>
<p>1900 MHz</p> <p>Manufacturer: KMW Model #: AM-X-CD-14-65-00T-RET Frequency Band: 1850-1990 MHz Gain: 16.3 dBi Vertical Beamwidth: 8.5° Horizontal Beamwidth: 61° Polarization: ±45° Size L x W x D: 48.0" x 11.8" x 5.9"</p>	 <p>A polar plot showing the radiation pattern of the 1900 MHz antenna. The plot is circular with concentric dashed lines representing gain levels at -10, -20, and -30 dB. Radial lines indicate angles from 0 to 180 degrees in 30-degree increments. The main lobe is centered at 0 degrees, extending to approximately -10 dB. There are two side lobes, one on each side of the main lobe, extending to approximately -20 dB. The pattern is roughly symmetric about the 0-degree axis.</p>

4

CERTIFICATION OF SERVICE

I hereby certify that on the 25th of January, 2019, a copy of the foregoing letter with copy of the noted sub-petition was mailed to each of the abutting properties owners on the accompanying list and to the Town of Groton.

1/25/19
Date



Lucia Chiochio
Cuddy & Feder LLP
445 Hamilton Avenue, 14th Floor
White Plains, New York 10601

Attorneys for:
New Cingular Wireless PCS, LLC (“AT&T”)

TOWN OF GROTON:

John Burt, Town Manager
Town of Groton
45 Fort Hill Road, Groton, CT 06340

ADJACENT PROPERTY OWNERS:

Town of Groton
45 Fort Hill Road
Groton, CT 06340

Silver Oak, LLC.
90 Welles Road
Mystic, CT 06355

Old Mystic Fire District
Community House
Welles Road
Mystic, CT 06355

Kotfer, Terry R. & Laurie
182 Welles Road
Mystic, CT 06355

Connecticut State of Highway
Garage/Gravel Bank
150 Welles Road
Mystic CT, 06355

TYE, LLC. C/O DRAB
116 Nowank Ledyard Road
Mystic, CT 06355



445 Hamilton Avenue, 14th Floor
White Plains, New York 10601
T 914 761 1300
F 914 761 5372
cuddyfeder.com

Lucia Chiochio
lchiocchio@cuddyfeder.com

January 25, 2019

CERTIFICATE OF MAILING
[ADDRESSEE]

Re: Connecticut Siting Council Sub-Petition
Collocation on an Existing Telecommunications Facility
130 Welles Road, Groton, Connecticut

Dear Sir or Madam:

We are writing to you on behalf of our client New Cingular Wireless PCS, LLC ("AT&T") with respect to the above referenced matter and the filing today of a sub-petition for declaratory ruling ("Sub-Petition") with the Connecticut Siting Council ("Council") to allow a modification of the existing wireless facility at the above-referenced location. AT&T plans to collocate a wireless facility on the existing monopole wireless facility owned by SBA located at 130 Welles Road, the site of the town bulk waste facility. AT&T will flush-mount three (3) new antennas at a centerline height of approximately 98' above grade level on the existing 118' tall monopole. AT&T will also install associated unmanned equipment cabinets and an emergency back-up generator within the existing fenced equipment compound at the base of the monopole.

AT&T is submitting this Sub-Petition as an eligible facility request pursuant to Section 6409(a) of the Federal Middle-Class Tax Relief and Job Creation Act of 2012 (codified at 47 USC Sec. 1455(a)) and as further clarified by the Federal Communications Commission in its October 21, 2014 Order (FCC-14-153).

This notice and the enclosed copy of the Sub-Petition¹ are provided to you as an abutting property owner in keeping with the Council's ruling in Petition 113. Any comments regarding this proposal should be provided to the Council within thirty (30) days of the date of this submission.

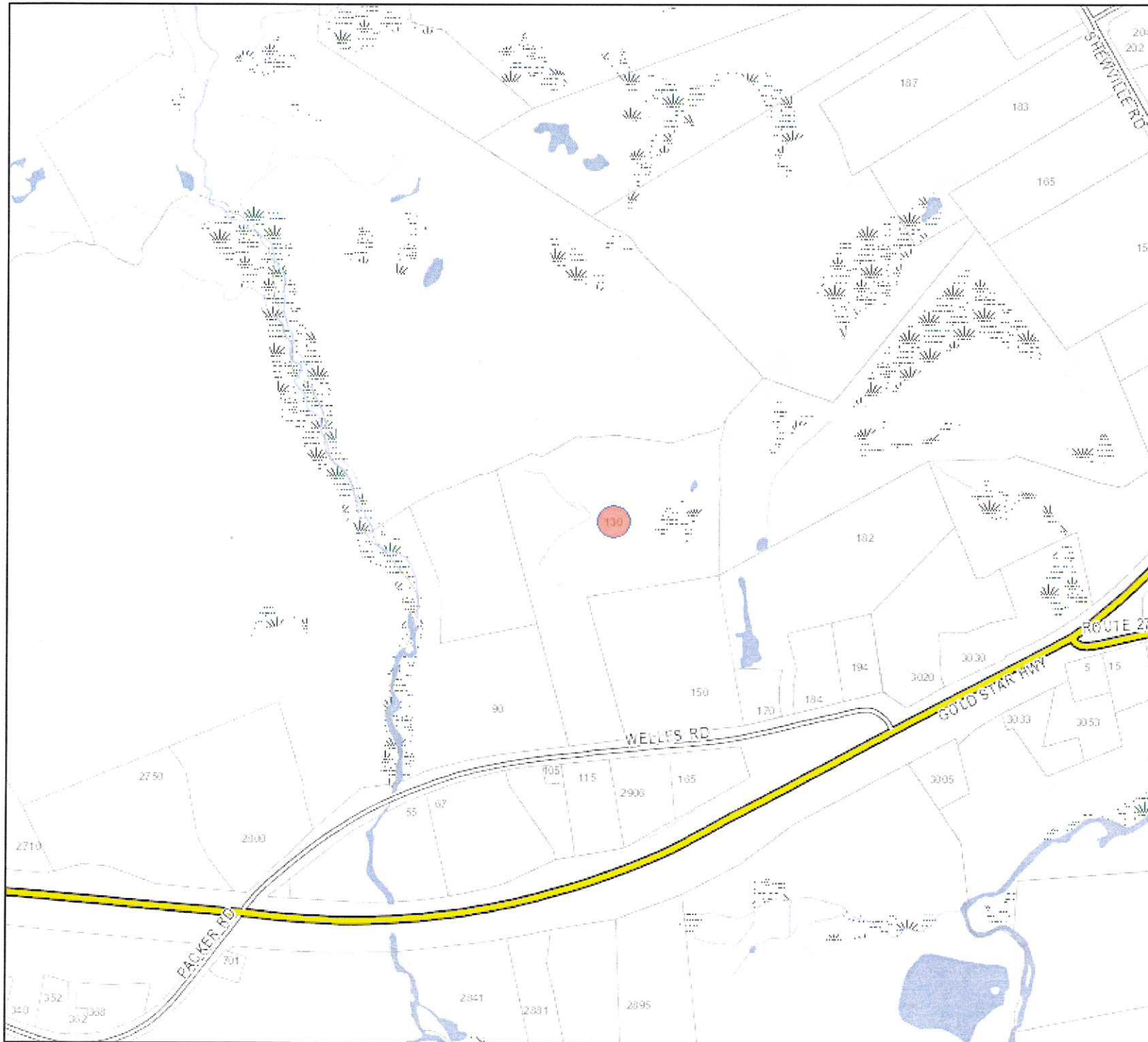
Should you have any questions please feel free to contact me at the address above or the Council at 860.827.2935.

Very truly yours,

Lucia Chiochio
Enclosure

¹ Attachment 2 provides the summary sheet of the Structural Modification Report. A full copy of this report is on file with the Council and available for review upon request.

Property Owner	Property Owner 2	Address	City	State	Zip Code
Property Owner Town of Groton		45 Fort Hill Road	Groton	CT	06340
Silver Oak, LLC.		90 Welles Road	Mystic	CT	06355
Old Mystic Fire District		Community House	Welles Road	CT	06355
Kotter, Terry R. & Laurie		182 Welles Road	Mystic	CT	06355
Connecticut State of Highway	Garage/Gravel Bank	150 Welles Road	Mystic	CT	06355
TYE, LLC. C/O DRAB		116 Nowank Ledyard Road	Mystic	CT	06355



Town of Groton



GIS Map

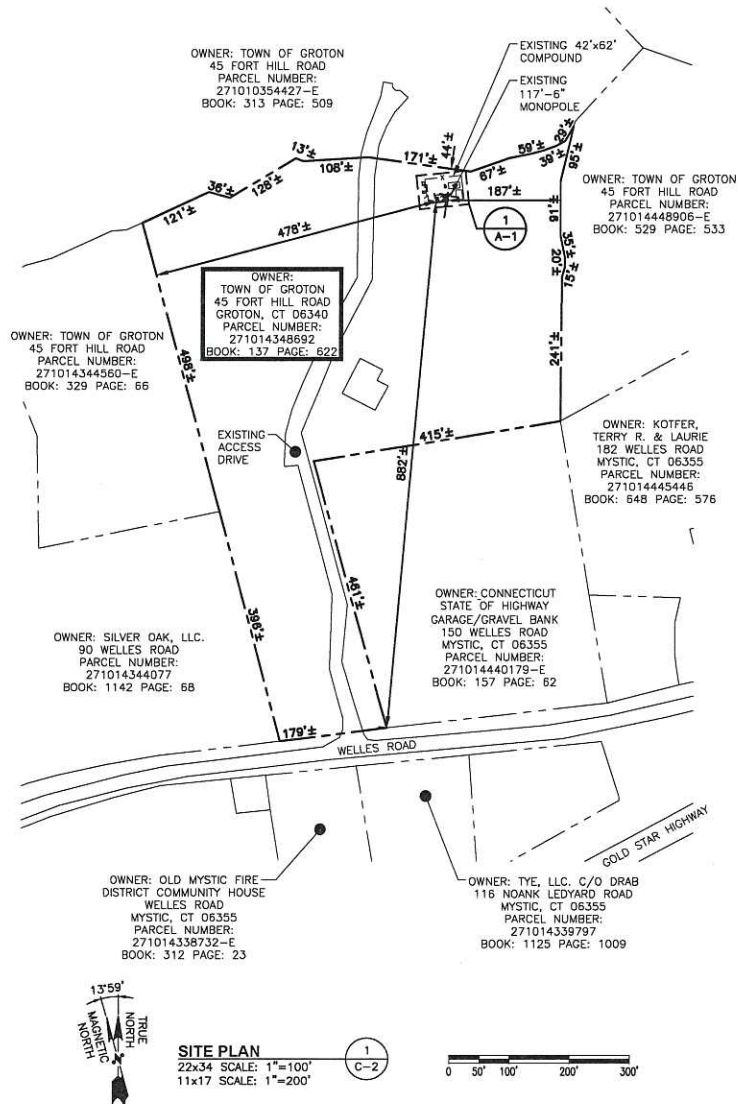


1 inch = 417 feet

Date: January 25, 2019

Disclaimer:
 The planning and topographic information depicted on this map was compiled by the Seaborn Map Company based on an aerial flight performed in April 2009. The parcel and property line information on this map has been compiled from recorded deeds, maps, assessor's records, and other sources of information in the Town of Groton. The intent of this map is to provide a visual representation of real property information related to the planning fees for the Town of Groton and is subject to change as a more accurate survey may disclose. The Town of Groton and the mapping company assume no legal responsibility for the information contained in this data.
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Horizontal Datum:
 Geocentric Earth Plane Coordinates, North American Datum of 1983 (NAD83 Feet)
Vertical Datum:
 North American Vertical Datum of 1988 (NAVD88)



BASE MAPPING FROM:
1. TOWN OF GROTON, CT GIS MAP.

HG HUDSON
Design Group LLC
45 BEECHWOOD DRIVE
NORTH ANDOVER, MA 01845
TEL: (978) 557-5553
FAX: (978) 334-5586

SAI
12 INDUSTRIAL WAY
SALEM, NH 03079

SITE NUMBER: CT1357
SITE NAME: MYSTIC TEMP
130 WELLES ROAD
GROTON, CT 06340
NEW LONDON COUNTY

at&t
500 ENTERPRISE DRIVE, SUITE 3A
ROCKY HILL, CT 06067

NO.	DATE	REVISIONS	BY	CHK	APP'D
A	01/07/19	ISSUED FOR REVIEW	SF	JC	DJC
SCALE: AS SHOWN					
DESIGNED BY: JC			DRAWN BY: SF		

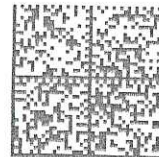
AT&T		
SETBACK PLAN (2019 NSB)		
SITE NUMBER	DRAWING NUMBER	REV
CT1357	C-2	A

Name and Address of Sender

CUDDY & FEDER LLP
45 HAMILTON AVENUE, 14TH FLOOR
WHITE PLAINS, NY 10601

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 - Signature Confirmation
 - Signature Confirmation Restricted Delivery

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0000356099 JAN 25 2019

USPS Tracking/Article Number	Addressee (Name, Street, City, State, & ZIP Code™)	Postage	(Extra Service) Fee	Handling Charge	Actual Value if Registered	Insured Value	Due Sender If COD	ASR Fee	ASRD Fee	RD Fee	RR Fee	SC Fee	SCRD Fee	SH Fee
1.	Town of Groton 45 Fort Hill Road Groton, CT 06340													
2.														
3.	Silver Oak, LLC. 90 Welles Road Mystic, CT 06355													
4.														
5.	Old Mystic Fire District Community House Welles Road Mystic, CT 06355													
6.														
7.														
8.														

Handling Charge - Registered and over \$50,000 in value

Adult Signature Required

Adult Signature Restricted Delivery

Restricted Delivery

Return Receipt

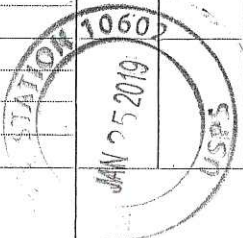
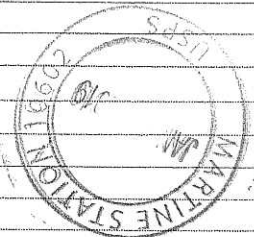
Signature Confirmation

Signature Confirmation Restricted Delivery

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Total Number of Pieces Received at Post Office: 5

Postmaster, Per (Name of receiving employee): [Signature]



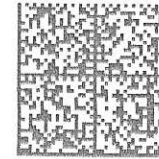
1844-2880

Name and Address of Sender

CUDDY & FEDER LLP
45 HAMILTON AVENUE, 14TH FLOOR
WHITE PLAINS, NY 10601

- Check type of mail or service
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 - Adult Signature Restricted Delivery
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 - Certified Mail Restricted Delivery
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 - Priority Mail Express
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 - Signature Confirmation
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USPS Tracking/Article Number	Addressee (Name, Street, City, State, & ZIP Code™)	Postage	(Extra Service) Fee	Handling Charge	Actual Value If Registered	Insured Value	Due Sender If COD	ASR Fee	ASRD Fee	RD Fee	RR Fee	SC Fee	SCRD Fee	SH Fee
1.	Kotfer, Terry R. & Laurie 182 Welles Road Mystic, CT 06355													
2.														
3.	Connecticut State of Highway Garage/Gravel Bank 150 Welles Road Mystic, CT 06355													
4.														
5.	Tye, LLC. C/O Drab 116 Nowank Ledyard Road Mystic, CT 06355													
6.														
7.														
8.														
Total Number of Pieces Listed by Sender: 3 Total Number of Pieces Received at Post Office: 3		Postmaster, Per (Name of receiving employee): K												



Handling Charge - Registered and over \$50.00 in value

Adult Signature Required

Adult Signature Restricted Delivery

Restricted Delivery

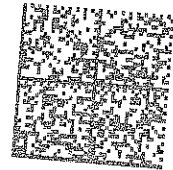
Return Receipt

Signature Confirmation

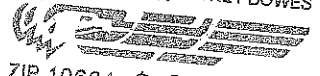
Signature Confirmation Restricted Delivery

Special Handling

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ZIP 10601 \$ 001.40⁰
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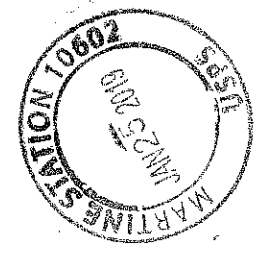
To pay fee, affix stamps or meter postage here.

From:

CUDDY & FEDER LLP

445 HAMILTON AVENUE, 14TH FLOOR

WHITE PLAINS, NY 10601



To:

_____ John Burt, Town Manager

Town of Groton

45 Fort Hill Road

Groton, CT 06340

Postmark Here



445 Hamilton Avenue, 14th Floor
White Plains, New York 10601
T 914 761 1300
F 914 761 5372
cuddyfeder.com

Lucia Chiochio
lchiochio@cuddyfeder.com

January 25, 2019

CERTIFICATE OF MAILING

Town of Groton
45 Fort Hill Road
Groton, CT 06340

Re: Connecticut Siting Council Sub-Petition
Collocation on an Existing Telecommunications Facility
130 Welles Road, Groton, Connecticut

Dear Sir or Madam:

We are writing to you on behalf of our client New Cingular Wireless PCS, LLC (“AT&T”) with respect to the above referenced matter and the filing today of a sub-petition for declaratory ruling (“Sub-Petition”) with the Connecticut Siting Council (“Council”) to allow a modification of the existing wireless facility at the above-referenced location. AT&T plans to collocate a wireless facility on the existing monopole wireless facility owned by SBA located at 130 Welles Road, the site of the town bulk waste facility. AT&T will flush-mount three (3) new antennas at a centerline height of approximately 98’ above grade level on the existing 118’ tall monopole. AT&T will also install associated unmanned equipment cabinets and an emergency back-up generator within the existing fenced equipment compound at the base of the monopole.

AT&T is submitting this Sub-Petition as an eligible facility request pursuant to Section 6409(a) of the Federal Middle-Class Tax Relief and Job Creation Act of 2012 (codified at 47 USC Sec. 1455(a)) and as further clarified by the Federal Communications Commission in its October 21, 2014 Order (FCC-14-153).

This notice and the enclosed copy of the Sub-Petition¹ are provided to you as an abutting property owner in keeping with the Council’s ruling in Petition 113. Any comments regarding this proposal should be provided to the Council within thirty (30) days of the date of this submission.

Should you have any questions please feel free to contact me at the address above or the Council at 860.827.2935.

Very truly yours,

A handwritten signature in cursive script that reads 'Lucia Chiochio'.

Lucia Chiochio
Enclosure

¹ Attachment 2 provides the summary sheet of the Structural Modification Report. A full copy of this report is on file with the Council and available for review upon request.



445 Hamilton Avenue, 14th Floor
White Plains, New York 10601
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Lucia Chiocchio
lchiocchio@cuddyfeder.com

January 25, 2019

CERTIFICATE OF MAILING

Old Mystic Fire District
Community House/Welles Road
Mystic, CT 06355

Re: Connecticut Siting Council Sub-Petition
Collocation on an Existing Telecommunications Facility
130 Welles Road, Groton, Connecticut

Dear Sir or Madam:

We are writing to you on behalf of our client New Cingular Wireless PCS, LLC ("AT&T") with respect to the above referenced matter and the filing today of a sub-petition for declaratory ruling ("Sub-Petition") with the Connecticut Siting Council ("Council") to allow a modification of the existing wireless facility at the above-referenced location. AT&T plans to collocate a wireless facility on the existing monopole wireless facility owned by SBA located at 130 Welles Road, the site of the town bulk waste facility. AT&T will flush-mount three (3) new antennas at a centerline height of approximately 98' above grade level on the existing 118' tall monopole. AT&T will also install associated unmanned equipment cabinets and an emergency back-up generator within the existing fenced equipment compound at the base of the monopole.

AT&T is submitting this Sub-Petition as an eligible facility request pursuant to Section 6409(a) of the Federal Middle-Class Tax Relief and Job Creation Act of 2012 (codified at 47 USC Sec. 1455(a)) and as further clarified by the Federal Communications Commission in its October 21, 2014 Order (FCC-14-153).

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Lucia Chiocchio
lchiocchio@cuddyfeder.com

January 25, 2019

CERTIFICATE OF MAILING

Silver Oak, LLC.
90 Welles Road
Mystic, CT 06355

Re: Connecticut Siting Council Sub-Petition
Collocation on an Existing Telecommunications Facility
130 Welles Road, Groton, Connecticut

Dear Sir or Madam:

We are writing to you on behalf of our client New Cingular Wireless PCS, LLC ("AT&T") with respect to the above referenced matter and the filing today of a sub-petition for declaratory ruling ("Sub-Petition") with the Connecticut Siting Council ("Council") to allow a modification of the existing wireless facility at the above-referenced location. AT&T plans to collocate a wireless facility on the existing monopole wireless facility owned by SBA located at 130 Welles Road, the site of the town bulk waste facility. AT&T will flush-mount three (3) new antennas at a centerline height of approximately 98' above grade level on the existing 118' tall monopole. AT&T will also install associated unmanned equipment cabinets and an emergency back-up generator within the existing fenced equipment compound at the base of the monopole.

AT&T is submitting this Sub-Petition as an eligible facility request pursuant to Section 6409(a) of the Federal Middle-Class Tax Relief and Job Creation Act of 2012 (codified at 47 USC Sec. 1455(a)) and as further clarified by the Federal Communications Commission in its October 21, 2014 Order (FCC-14-153).

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Lucia Chiocchio
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January 25, 2019

CERTIFICATE OF MAILING

Kotfer, Terry R. & Laurie
182 Welles Road
Mystic, CT 06355

Re: Connecticut Siting Council Sub-Petition
Collocation on an Existing Telecommunications Facility
130 Welles Road, Groton, Connecticut

Dear Sir or Madam:

We are writing to you on behalf of our client New Cingular Wireless PCS, LLC ("AT&T") with respect to the above referenced matter and the filing today of a sub-petition for declaratory ruling ("Sub-Petition") with the Connecticut Siting Council ("Council") to allow a modification of the existing wireless facility at the above-referenced location. AT&T plans to collocate a wireless facility on the existing monopole wireless facility owned by SBA located at 130 Welles Road, the site of the town bulk waste facility. AT&T will flush-mount three (3) new antennas at a centerline height of approximately 98' above grade level on the existing 118' tall monopole. AT&T will also install associated unmanned equipment cabinets and an emergency back-up generator within the existing fenced equipment compound at the base of the monopole.

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Lucia Chiochio
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January 25, 2019

CERTIFICATE OF MAILING

Tye, LLC. C/O Drab
116 Nowank Ledyard Road
Mystic, CT 06355

Re: Connecticut Siting Council Sub-Petition
Collocation on an Existing Telecommunications Facility
130 Welles Road, Groton, Connecticut

Dear Sir or Madam:

We are writing to you on behalf of our client New Cingular Wireless PCS, LLC ("AT&T") with respect to the above referenced matter and the filing today of a sub-petition for declaratory ruling ("Sub-Petition") with the Connecticut Siting Council ("Council") to allow a modification of the existing wireless facility at the above-referenced location. AT&T plans to collocate a wireless facility on the existing monopole wireless facility owned by SBA located at 130 Welles Road, the site of the town bulk waste facility. AT&T will flush-mount three (3) new antennas at a centerline height of approximately 98' above grade level on the existing 118' tall monopole. AT&T will also install associated unmanned equipment cabinets and an emergency back-up generator within the existing fenced equipment compound at the base of the monopole.

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Lucia Chiocchio
lchiocchio@cuddyfeder.com

January 25, 2019

CERTIFICATE OF MAILING

Connecticut State of Highway
Garage/Gravel Bank
150 Welles Road
Mystic, CT 06355

Re: Connecticut Siting Council Sub-Petition
Collocation on an Existing Telecommunications Facility
130 Welles Road, Groton, Connecticut

Dear Sir or Madam:

We are writing to you on behalf of our client New Cingular Wireless PCS, LLC ("AT&T") with respect to the above referenced matter and the filing today of a sub-petition for declaratory ruling ("Sub-Petition") with the Connecticut Siting Council ("Council") to allow a modification of the existing wireless facility at the above-referenced location. AT&T plans to collocate a wireless facility on the existing monopole wireless facility owned by SBA located at 130 Welles Road, the site of the town bulk waste facility. AT&T will flush-mount three (3) new antennas at a centerline height of approximately 98' above grade level on the existing 118' tall monopole. AT&T will also install associated unmanned equipment cabinets and an emergency back-up generator within the existing fenced equipment compound at the base of the monopole.

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January 25, 2019

CERTIFICATE OF MAILING

John Burt, Town Manager
Town of Groton
45 Fort Hill Road
Groton, CT 06340

Re: Connecticut Siting Council Sub-Petition
Collocation on an Existing Telecommunications Facility
130 Welles Road, Groton, Connecticut

Dear Sir or Madam:

We are writing to you on behalf of our client New Cingular Wireless PCS, LLC ("AT&T") with respect to the above referenced matter and the filing today of a sub-petition for declaratory ruling ("Sub-Petition") with the Connecticut Siting Council ("Council") to allow a modification of the existing wireless facility at the above-referenced location. AT&T plans to collocate a wireless facility on the existing monopole wireless facility owned by SBA located at 130 Welles Road, the site of the town bulk waste facility. AT&T will flush-mount three (3) new antennas at a centerline height of approximately 98' above grade level on the existing 118' tall monopole. AT&T will also install associated unmanned equipment cabinets and an emergency back-up generator within the existing fenced equipment compound at the base of the monopole.

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