



QC Development

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Storrs, CT 06268

860-670-9068

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May 26, 2017

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

Notice of Exempt Modification – New Cingular Wireless PCS, LLC (AT&T) – CT2336

39 Maennerchor Avenue, Norwich, CT 06380

N 41-33-30.50

W 72-03-04.6

Dear Ms. Bachman:

AT&T currently maintains nine (9) antennas at the 127-foot level of the existing 130-foot Monopole at 39 Maennerchor Avenue, Taftville (Norwich), CT. The tower and property are owned by SBA. AT&T now intends to replace three (3) Andrew antennas with three (3) CCI antennas and install three (3) Ericsson remote radio units (RRUS-32), also at the 127-foot level of the tower.

This facility was approved by the Siting Council on November 20, 2008 in Docket # 365. The approval included the condition that the tower be constructed as a Monopole not to exceed 120'. Subsequently, an 11-foot tower extension to accommodate AT&T was approved by the Council in Petition # 1036 on October 4th, 2012. Since no changes to the tower type or overall height are proposed, this Modification therefore complies with the aforementioned approvals.

Please accept this letter as notification pursuant to Regulations of Connecticut State Agencies § 16-50j-73, for construction that constitutes an exempt modification pursuant to R.C.S.A. § 16-50j-72(b)(2). In accordance with R.C.S.A. § 16-50j-73, a copy of this letter is being sent to Deb Hinckey, Mayor of the City of Norwich, the Norwich Planning Department as well as the property and tower owner.

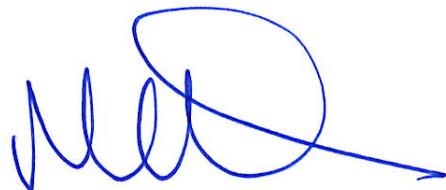
The planned modifications to the facility fall squarely within those activities explicitly provided for in R.C.S.A. § 16-50j-72(b)(2).

1. The proposed modifications will not result in an increase in the height of the existing structure.
2. The proposed modifications will not require the extension of the site boundary.
3. The proposed modifications will not increase noise levels at the facility by six decibels or more, or to levels that exceed state and local criteria.
4. The operation of the replacement antennas will not increase radio frequency emissions at the facility to a level at or above the Federal Communications Commission safety standard.
5. The proposed modifications will not cause a change or alteration in the physical or environmental characteristics of the site.
6. The existing structure and its foundation can support the proposed loading.

For the foregoing reasons, AT&T respectfully submits that the proposed modifications to the above-referenced telecommunications facility constitute an exempt modification under R.C.S.A. § 16-50j-72(b)(2).

Please feel free to call me at (860) 670-9068 with any questions regarding this matter. Thank you for your consideration.

Sincerely,

A handwritten signature in blue ink, appearing to read "Mark Roberts". It consists of a stylized "M" followed by "ark" and "Roberts" in a cursive script.

Mark Roberts
QC Development
Consultant for AT&T

Attachments

cc: The Honorable Deb Hinchey - as elected official (via e-mail)
Tianne Curtis – Zoning Enforcement Officer (via e-mail)
SBA - as tower and property owner (via e-mail)

Power Density

Existing Loading on Tower

Carrier	# of Channels	ERP/Ch (W)	Antenna Centerline Height (ft)	Power Density (mW/cm^2)	Freq. Band (MHz**)	Limit S (mW /cm^2)	%MPE
Other Carriers*							5.89%
AT&T UMTS	2	500	127	0.0246	850	0.5667	0.43%
AT&T UMTS	2	500	127	0.0246	1900	1.0000	0.25%
AT&T LTE	2	500	127	0.0246	734	0.4667	0.25%
AT&T LTE	2	500	127	0.0246	2100	1.0000	0.53%
Site Total							7.34%

*Per CSC Records (available upon request, includes calculation formulas)

** If a range of frequencies are used, such as 880-894, enter the lowest value, i.e. 880

Proposed Loading on Tower

Carrier	# of Channels	ERP/Ch (W)	Antenna Centerline Height (ft)	Power Density (mW/cm^2)	Freq. Band (MHz**)	Limit S (mW /cm^2)	%MPE
Other Carriers*							5.89%
AT&T UMTS	2	500	127	0.0246	850	0.5667	0.43%
AT&T UMTS	2	500	127	0.0246	1900	1.0000	0.25%
AT&T LTE	2	1476	127	0.0725	734	0.4667	1.55%
AT&T LTE	2	2421	127	0.1189	1900	1.0000	1.19%
AT&T LTE	2	500	127	0.0246	2100	1.0000	0.25%
Site Total							9.56%

*Per CSC Records (available upon request, includes calculation formulas)

** If a range of frequencies are used, such as 880-894, enter the lowest value, i.e. 880

PROJECT INFORMATION

SCOPE OF WORK: TELECOMMUNICATIONS FACILITY UPGRADE (LTE 2C 2017 UPGRADE):

SITE ADDRESS: 29 MAENNERCHOR AVENUE
TAFTVILLE, CT 06380

LATITUDE: 41.558470° N 41° 33' 30.49" N

LONGITUDE: 72.051280° W 72° 3' 4.60" W

TYPE OF SITE: MONOPOLE / INDOOR EQUIPMENT

TOWER HEIGHT: 130'±

RAD CENTER: 127'±

CURRENT USE: TELECOMMUNICATIONS FACILITY

PROPOSED USE: TELECOMMUNICATIONS FACILITY



SITE NUMBER: CT2336

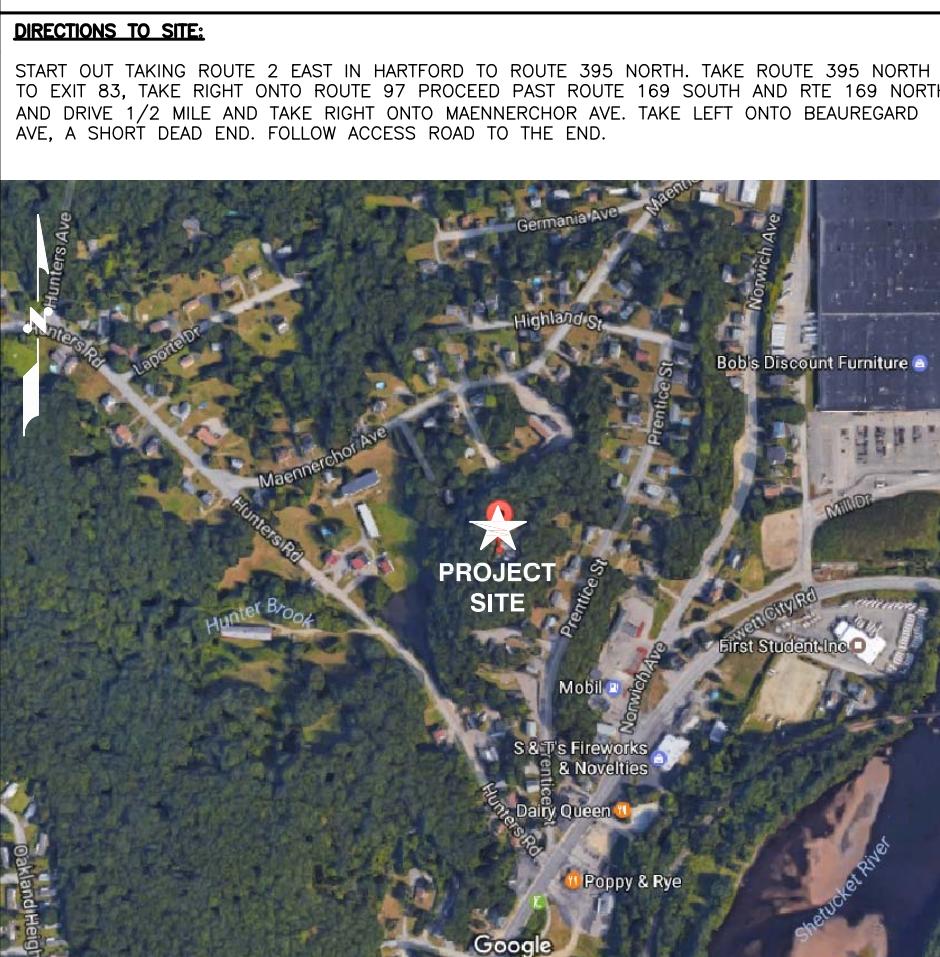
SITE NAME: NORWICH MAENNERCHOR AVE

PROJECT: LTE 2C 2017 UPGRADE

DRAWING INDEX

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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.

UNDERGROUND SERVICE ALERT



CALL
BEFORE YOU DIG
CALL TOLL FREE 1-888-DIG-SAFE
OR CALL 811



STATE OF CONNECTICUT
DERRICK J. CLARK
72 HOURS
PROFESSIONAL ENGINEER

GROUNDING NOTES

1. THE SUBCONTRACTOR SHALL REVIEW AND INSPECT THE EXISTING FACILITY GROUNDING SYSTEM AND LIGHTNING PROTECTION SYSTEM (AS DESIGNED AND INSTALLED) FOR STRICT COMPLIANCE WITH THE NEC (AS ADOPTED BY THE AHJ), THE SITE-SPECIFIC (UL, LPI, OR NFPA) LIGHTING PROTECTION CODE, AND GENERAL COMPLIANCE WITH TELCORDIA AND TIA GROUNDING STANDARDS. THE SUBCONTRACTOR SHALL REPORT ANY VIOLATIONS OR ADVERSE FINDINGS TO THE CONTRACTOR FOR RESOLUTION.
 2. ALL GROUND ELECTRODE SYSTEMS (INCLUDING TELECOMMUNICATION, RADIO, LIGHTNING PROTECTION, AND AC POWER GES'S) SHALL BE BONDED TOGETHER, AT OR BELOW GRADE, BY TWO OR MORE COPPER BONDING CONDUCTORS IN ACCORDANCE WITH THE NEC.
 3. THE SUBCONTRACTOR SHALL PERFORM IEEE FALL-OF-POTENTIAL RESISTANCE TO EARTH TESTING (PER IEEE 1100 AND 81) FOR NEW GROUND ELECTRODE SYSTEMS. THE SUBCONTRACTOR SHALL FURNISH AND INSTALL SUPPLEMENTAL GROUND ELECTRODES AS NEEDED TO ACHIEVE A TEST RESULT OF 5 OHMS OR LESS.
 4. METAL RACEWAY SHALL NOT BE USED AS THE NEC REQUIRED EQUIPMENT GROUND CONDUCTOR. STRANDED COPPER CONDUCTORS WITH GREEN INSULATION, SIZED IN ACCORDANCE WITH THE NEC, SHALL BE FURNISHED AND INSTALLED WITH THE POWER CIRCUITS TO BTS EQUIPMENT.
 5. EACH BTS CABINET FRAME SHALL BE DIRECTLY CONNECTED TO THE MASTER GROUND BAR WITH GREEN INSULATED SUPPLEMENTAL EQUIPMENT GROUND WIRES, 6 AWG STRANDED COPPER OR LARGER FOR INDOOR BTS 2 AWG STRANDED COPPER FOR OUTDOOR BTS.
 6. EXOTHERMIC WELDS SHALL BE USED FOR ALL GROUNDING CONNECTIONS BELOW GRADE.
 7. APPROVED ANTIODANT COATINGS (I.E., CONDUCTIVE GEL OR PASTE) SHALL BE USED ON ALL COMPRESSION AND BOLTED GROUND CONNECTIONS.
 8. ICE BRIDGE BONDING CONDUCTORS SHALL BE EXOTHERMICALY BONDED OR BOLTED TO GROUND BAR.
 9. ALUMINUM CONDUCTOR OR COPPER CLAD STEEL CONDUCTOR SHALL NOT BE USED FOR GROUNDING CONNECTIONS.
 10. MISCELLANEOUS ELECTRICAL AND NON-ELECTRICAL METAL BOXES, FRAMES AND SUPPORTS SHALL BE BONDED TO THE GROUND RING, IN ACCORDANCE WITH THE NEC.
 11. METAL CONDUIT SHALL BE MADE ELECTRICALLY CONTINUOUS WITH LISTED BONDING FITTINGS OR BY BONDING ACROSS THE DISCONTINUITY WITH 6 AWS COPPER WIRE UL APPROVED GROUNDING TYPE CONDUIT CLAMPS.
 12. ALL NEW STRUCTURES WITH A FOUNDATION AND/OR FOOTING HAVING 20 FT. OR MORE OF 1/2 IN. OR GREATER ELECTRICALLY CONDUCTIVE REINFORCING STEEL MUST HAVE IT BONDED TO THE GROUND RING USING AN EXOTHERMIC WELD CONNECTION USING #2 AWG SOLID BARE TINNED COPPER GROUND WIRE, PER NEC 250.50

GENERAL NOTES

1. FOR THE PURPOSE OF CONSTRUCTION DRAWING, THE FOLLOWING DEFINITIONS SHALL APPLY:
 - CONTRACTOR – SAI
 - SUBCONTRACTOR – GENERAL CONTRACTOR (CONSTRUCTION)
 - OWNER – AT&T MOBILITY
 2. PRIOR TO THE SUBMISSION OF BIDS, THE BIDDING SUBCONTRACTOR SHALL VISIT THE CELL SITE TO FAMILIARIZE WITH THE EXISTING CONDITIONS AND TO CONFIRM THAT THE WORK CAN BE ACCOMPLISHED AS SHOWN ON THE CONSTRUCTION DRAWINGS. ANY DISCREPANCY FOUND SHALL BE BROUGHT TO THE ATTENTION OF CONTRACTOR.
 3. ALL MATERIALS FURNISHED AND INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS, AND ORDINANCES. SUBCONTRACTOR SHALL ISSUE ALL APPROPRIATE NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS, AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY REGARDING THE PERFORMANCE OF THE WORK. ALL WORK CARRIED OUT SHALL COMPLY WITH ALL APPLICABLE MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS AND LOCAL JURISDICTIONAL CODES, ORDINANCES AND APPLICABLE REGULATIONS.
 4. DRAWINGS PROVIDED HERE ARE NOT TO BE SCALED AND ARE INTENDED TO SHOW OUTLINE ONLY.
 5. UNLESS NOTED OTHERWISE, THE WORK SHALL INCLUDE FURNISHING MATERIALS, EQUIPMENT, APPURTENANCES, AND LABOR NECESSARY TO COMPLETE ALL INSTALLATIONS AS INDICATED ON THE DRAWINGS.
 6. "KITTING LIST" SUPPLIED WITH THE BID PACKAGE IDENTIFIES ITEMS THAT WILL BE SUPPLIED BY CONTRACTOR. ITEMS NOT INCLUDED IN THE BILL OF MATERIALS AND KITTING LIST SHALL BE SUPPLIED BY THE SUBCONTRACTOR.
 7. THE SUBCONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.
 8. IF THE SPECIFIED EQUIPMENT CANNOT BE INSTALLED AS SHOWN ON THESE DRAWINGS, THE SUBCONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION SPACE FOR APPROVAL BY THE CONTRACTOR.
 9. SUBCONTRACTOR SHALL DETERMINE ACTUAL ROUTING OF CONDUIT, POWER AND T1 CABLES, GROUNDING CABLES AS SHOWN ON THE POWER, GROUNDING AND TELCO PLAN DRAWING. SUBCONTRACTOR SHALL UTILIZE EXISTING TRAYS AND/OR SHALL ADD NEW TRAYS AS NECESSARY. SUBCONTRACTOR SHALL CONFIRM THE ACTUAL ROUTING WITH THE CONTRACTOR.
 10. THE SUBCONTRACTOR SHALL PROTECT EXISTING IMPROVEMENTS, PAVEMENTS, CURBS, LANDSCAPING AND STRUCTURES. ANY DAMAGED PART SHALL BE REPAIRED AT SUBCONTRACTOR'S EXPENSE TO THE SATISFACTION OF OWNER.
 11. SUBCONTRACTOR SHALL LEGALLY AND PROPERLY DISPOSE OF ALL SCRAP MATERIALS SUCH AS COAXIAL CABLES AND OTHER ITEMS REMOVED FROM THE EXISTING FACILITY. ANTENNAS REMOVED SHALL BE RETURNED TO THE OWNER'S DESIGNATED LOCATION.
 12. SUBCONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION.
 13. ALL CONCRETE REPAIR WORK SHALL BE DONE IN ACCORDANCE WITH AMERICAN CONCRETE INSTITUTE (ACI) 301.

14. ANY NEW CONCRETE NEEDED FOR THE CONSTRUCTION SHALL BE AIR-ENTRAINED AND SHALL HAVE 4000 PSI STRENGTH AT 28 DAYS. ALL CONCRETE WORK SHALL BE DONE IN ACCORDANCE WITH ACI 318 CODE REQUIREMENTS.
 15. ALL STRUCTURAL STEEL WORK SHALL BE DETAILED, FABRICATED AND ERECTED IN ACCORDANCE WITH AISC SPECIFICATIONS. ALL STRUCTURAL STEEL SHALL BE ASTM A36 ($F_y = 36$ ksi) UNLESS OTHERWISE NOTED. PIPES SHALL BE ASTM A53 TYPE E ($F_y = 36$ ksi). ALL STEEL EXPOSED TO WEATHER SHALL BE HOT DIPPED GALVANIZED. TOUCHUP ALL SCRATCHES AND OTHER MARKS IN THE FIELD AFTER STEEL IS ERECTED USING A COMPATIBLE ZINC RICH PAINT.
 16. CONSTRUCTION SHALL COMPLY WITH LTE SPECIFICATIONS AND "GENERAL CONSTRUCTION SERVICES FOR CONSTRUCTION OF AT&T SITES."
 17. SUBCONTRACTOR SHALL VERIFY ALL EXISTING DIMENSIONS AND CONDITIONS PRIOR TO COMMENCING ANY WORK. ALL DIMENSIONS OF EXISTING CONSTRUCTION SHOWN ON THE DRAWINGS MUST BE VERIFIED. SUBCONTRACTOR SHALL NOTIFY THE CONTRACTOR OF ANY DISCREPANCIES PRIOR TO ORDERING MATERIAL OR PROCEEDING WITH CONSTRUCTION.
 18. THE EXISTING CELL SITE IS IN FULL COMMERCIAL OPERATION. ANY CONSTRUCTION WORK BY SUBCONTRACTOR SHALL NOT DISRUPT THE EXISTING NORMAL OPERATION. ANY WORK ON EXISTING EQUIPMENT MUST BE COORDINATED WITH CONTRACTOR. ALSO, WORK SHOULD BE SCHEDULED FOR AN APPROPRIATE MAINTENANCE WINDOW USUALLY IN LOW TRAFFIC PERIODS AFTER MIDNIGHT.
 19. SINCE THE CELL SITE IS ACTIVE, ALL SAFETY PRECAUTIONS MUST BE TAKEN WHEN WORKING AROUND HIGH LEVELS OF ELECTROMAGNETIC RADIATION. EQUIPMENT SHOULD BE SHUTDOWN PRIOR TO PERFORMING ANY WORK THAT COULD EXPOSE THE WORKERS TO DANGER. PERSONAL RF EXPOSURE MONITORS ARE ADVISED TO BE WORN TO ALERT OF ANY DANGEROUS EXPOSURE LEVELS.
 20. APPLICABLE BUILDING CODES:
SUBCONTRACTOR'S WORK SHALL COMPLY WITH ALL APPLICABLE NATIONAL, STATE, AND LOCAL CODES AS ADOPTED BY THE LOCAL AUTHORITY HAVING JURISDICTION (AHJ) FOR THE LOCATION. THE EDITION OF THE AHJ ADOPTED CODES AND STANDARDS IN EFFECT ON THE DATE OF CONTRACT AWARD SHALL GOVERN THE DESIGN.
BUILDING CODE: IBC 2012 WITH 2016 CT BUILDING CODE AMENDMENTS
ELECTRICAL CODE: REFER TO ELECTRICAL DRAWINGS
LIGHTENING CODE: REFER TO ELECTRICAL DRAWINGS

SUBCONTRACTOR'S WORK SHALL COMPLY WITH THE LATEST EDITION OF THE FOLLOWING STANDARDS:

AMERICAN CONCRETE INSTITUTE (ACI) 318; BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE;

AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC)

MANUAL OF STEEL CONSTRUCTION, ASD, FOURTEENTH EDITION;

TELECOMMUNICATIONS INDUSTRY ASSOCIATION (TIA) 222-G,
STRUCTURAL STANDARDS FOR STEEL

EQUIPMENT AND ANTENNA SUPPORTING STRUCTURES; REFER TO ELECTRICAL DRAWINGS FOR SPECIFIC ELECTRICAL STANDARDS.

FOR ANY CONFLICTS BETWEEN SECTIONS OF LISTED CODES AND STANDARDS REGARDING MATERIAL, METHODS OF CONSTRUCTION, OR OTHER REQUIREMENTS, THE MOST RESTRICTIVE REQUIREMENT SHALL GOVERN. WHERE THERE IS CONFLICT BETWEEN A GENERAL REQUIREMENT AND A SPECIFIC REQUIREMENT, THE SPECIFIC REQUIREMENT SHALL GOVERN.

ABBREVIATIONS

ACRONYM	DEFINITION	SYNTHETIC ACRONYM	DEFINITION	SYNTHETIC ACRONYM	DEFINITION
AGL	ABOVE GRADE LEVEL	EQ	EQUAL	REQ	REQUIRED
AWG	AMERICAN WIRE GAUGE	GC	GENERAL CONTRACTOR	RF	RADIO FREQUENCY
BBU	BATTERY BACKUP UNIT	GRC	GALVANIZED RIGID CONDUIT	TBD	TO BE DETERMINED
BTCW	BARE TINNED SOLID COPPER WIRE	MGB	MASTER GROUND BAR	TBR	TO BE REMOVED
BGR	BURIED GROUND RING	MIN	MINIMUM	TBRR	TO BE REMOVED AND REPLACED
BTS	BASE TRANSCEIVER STATION	P	PROPOSED	TYP	TYPICAL
E	EXISTING	NTS	NOT TO SCALE	UG	UNDER GROUND
EGB	EQUIPMENT GROUND BAR	RAD	RADIATION CENTER LINE (ANTENNA)	VIF	VERIFY IN FIELD
EGR	EQUIPMENT GROUND RING	REF	REFERENCE		



AT&T

GENERAL NOTES
(LTE 2C)

DRAWING NUMBER REV
GN-1 1



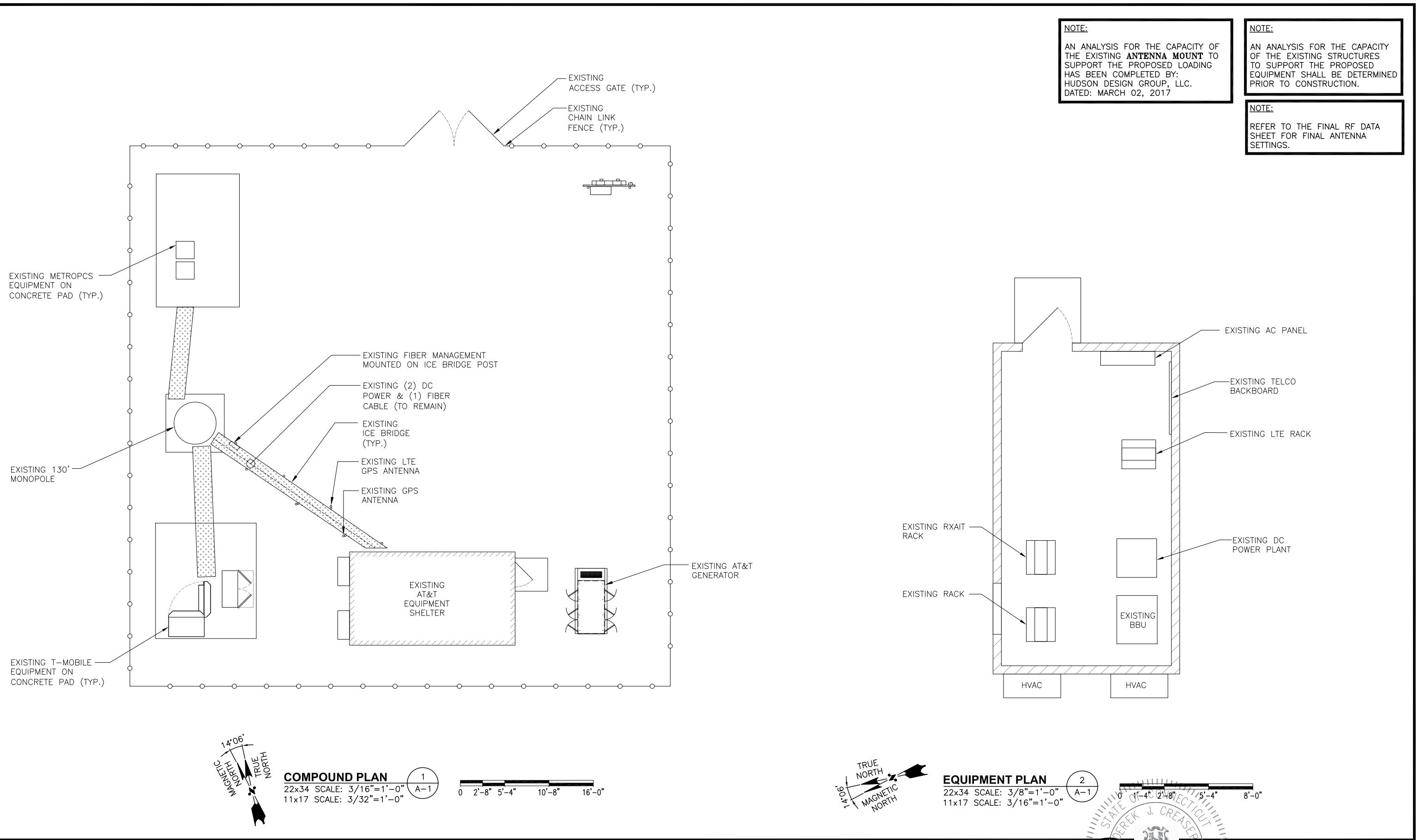
SITE NUMBER: CT2336
SITE NAME: NORWICH MAENNERCHOR AVE
29 MAENNERCHOR AVENUE
TAFTVILLE, CT 06380
NEW LONDON COUNTY

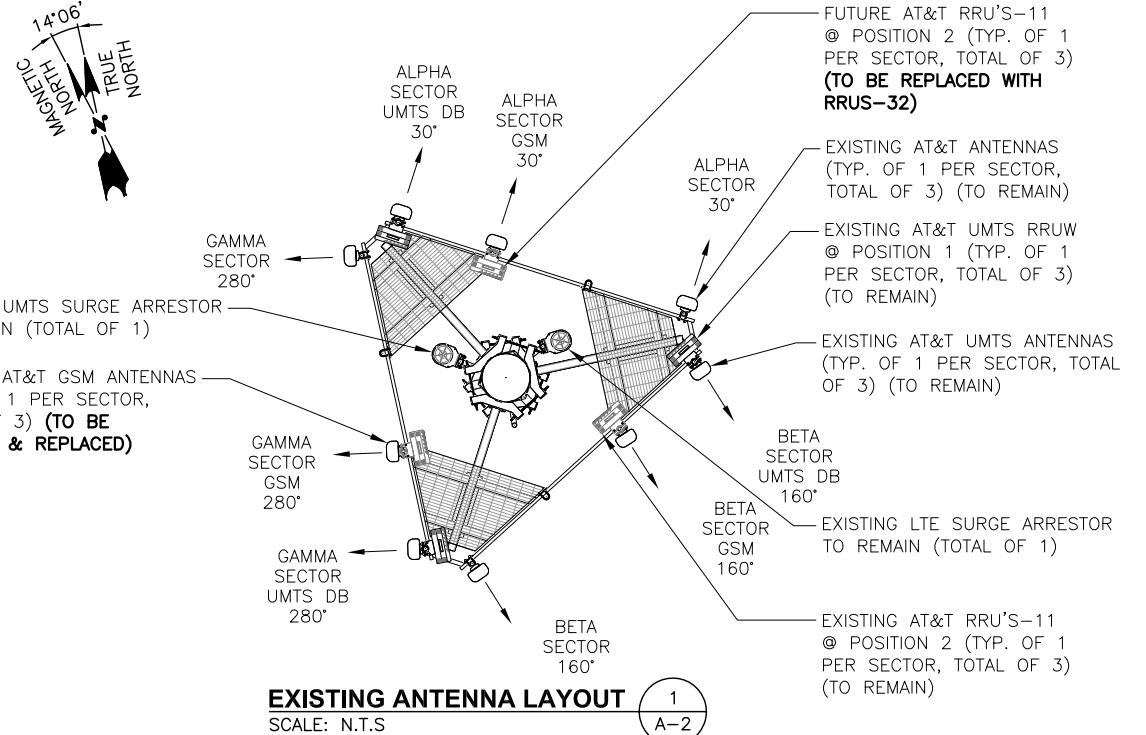


550 COCHITUATE ROAD
FRAMINGHAM, MA 01701

1	04/04/17	ISSUED FOR CONSTRUCTION	SG	AT	DJC
A	03/01/17	ISSUED FOR REVIEW	EB	AT	DJC
NO.	DATE	REVISIONS	BY	CHK	APP'D
SCALE: AS SHOWN			DESIGNED BY: AT		DRAWN BY: EB

16-20551
PROFESSIONAL ENGINEER
SITES C

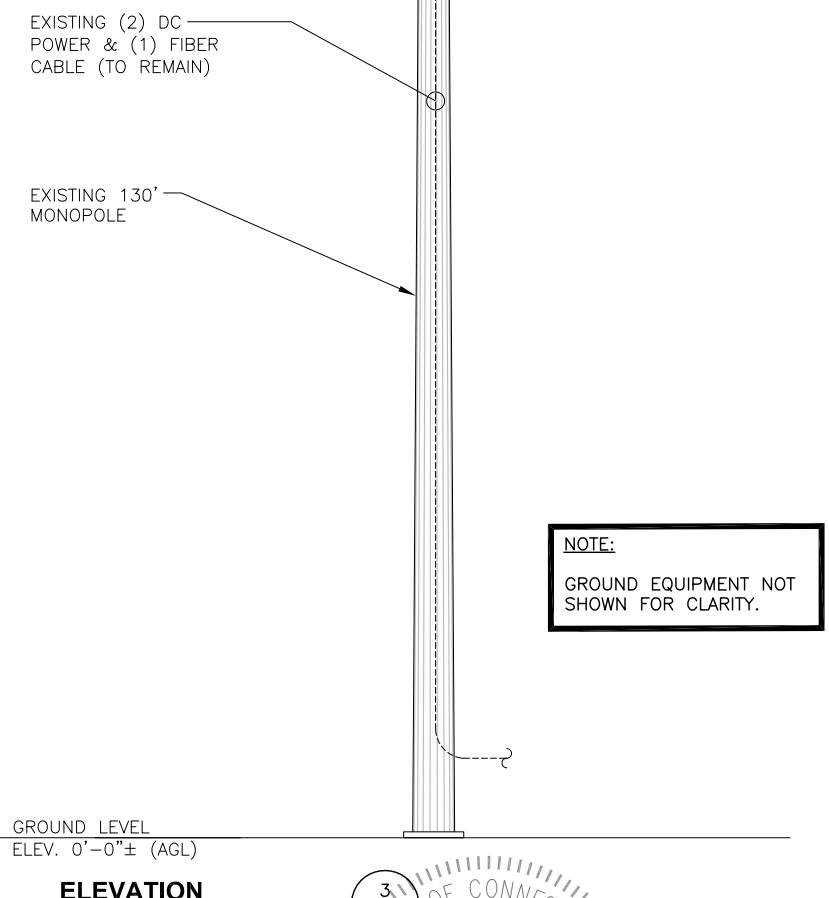
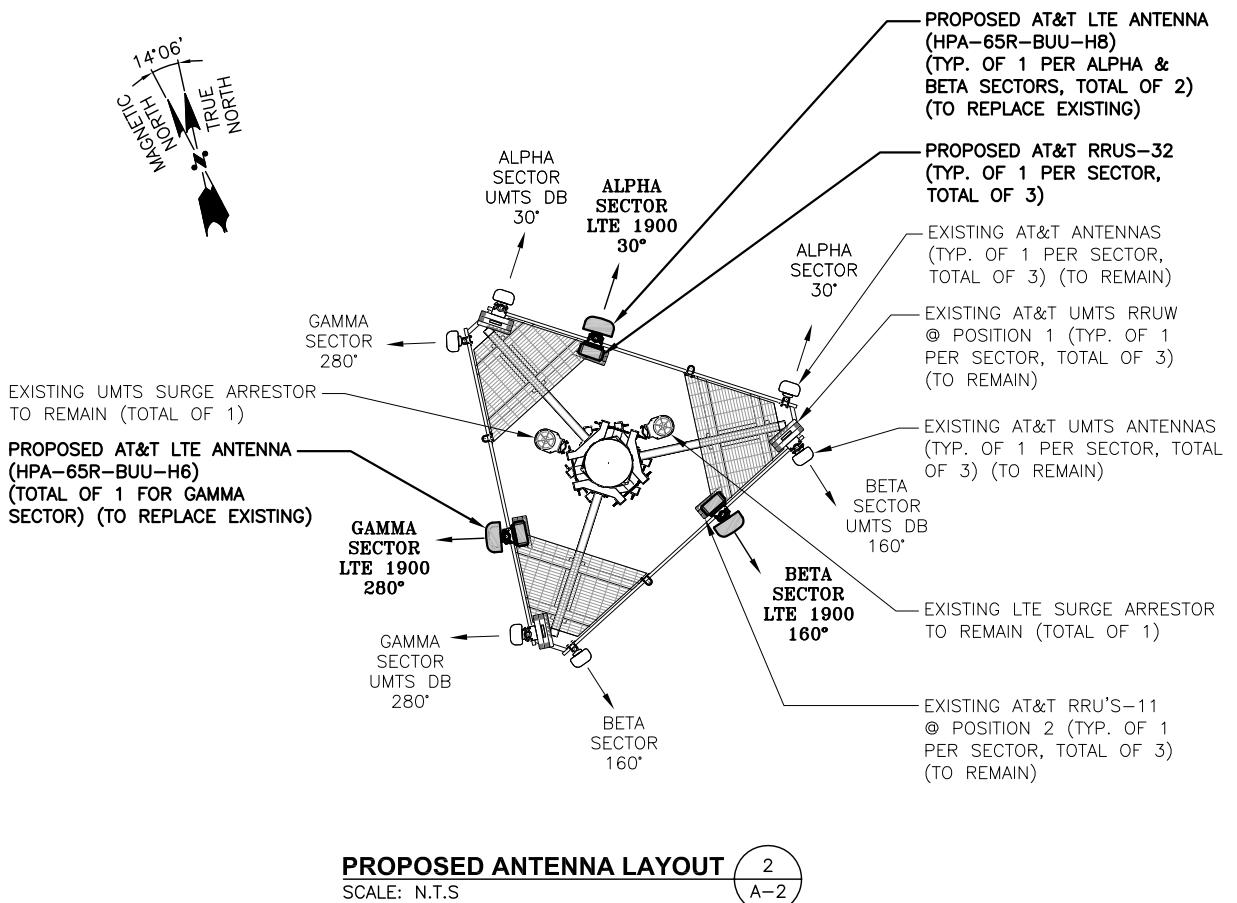
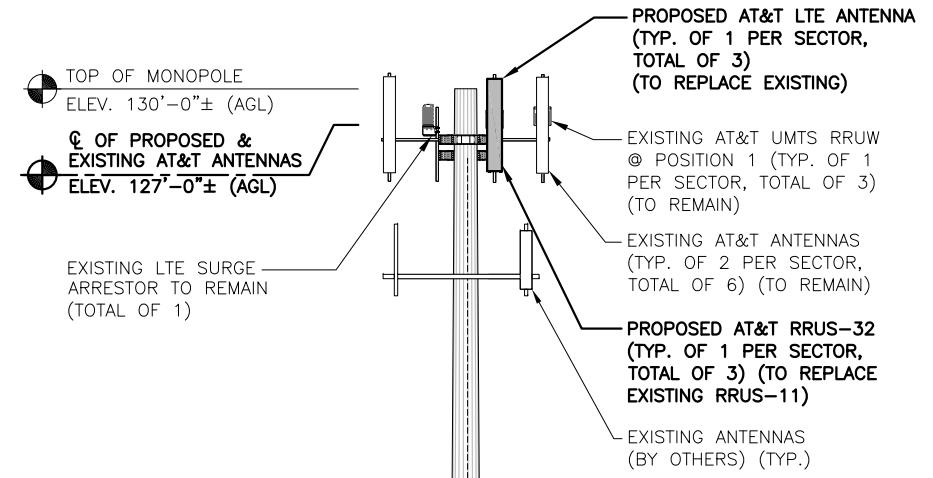




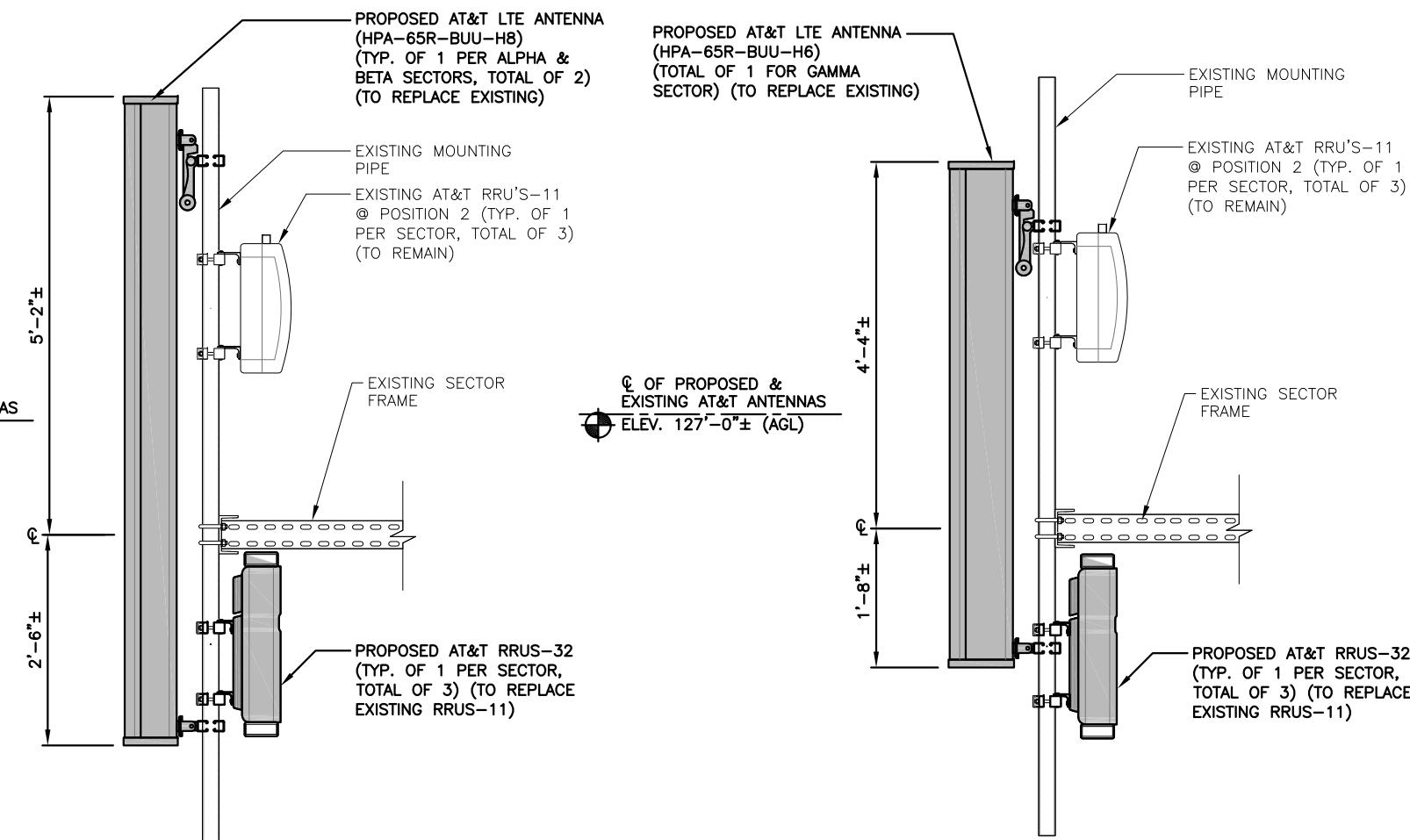
NOTE:
AN ANALYSIS FOR THE CAPACITY OF THE EXISTING STRUCTURES TO SUPPORT THE PROPOSED EQUIPMENT SHALL BE DETERMINED PRIOR TO CONSTRUCTION.

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

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: MARCH 02, 2017



EXISTING ANTENNA SCHEDULE				PROPOSED ANTENNA SCHEDULE			
SECTOR	MAKE	MODEL#	SIZE (INCHES)	SECTOR	MAKE	MODEL#	SIZE (INCHES)
ALPHA:	ANDREW	SBNH-1D6565C	96.4X11.9X7.1	ALPHA:	ANDREW	SBNH-1D6565C	96.4X11.9X7.1
	ANDREW	SBNH-1D6565C	96.4X11.9X7.1		CCI	HPA-65R-BUU-H8	92.4X14.8X7.4
	ANDREW	SBNH-1D6565C	96.4X11.9X7.1		ANDREW	SBNH-1D6565C	96.4X11.9X7.1
BETA:	ANDREW	SBNH-1D6565C	96.4X11.9X7.1	BETA:	ANDREW	SBNH-1D6565C	96.4X11.9X7.1
	ANDREW	SBNH-1D6565C	96.4X11.9X7.1		CCI	HPA-65R-BUU-H8	92.4X14.8X7.4
	ANDREW	SBNH-1D6565C	96.4X11.9X7.1		ANDREW	SBNH-1D6565C	96.4X11.9X7.1
GAMMA:	KMW	AM-X-CD-16-65-00T-RETT	72X11.8X5.9	GAMMA:	KMW	AM-X-CD-16-65-00T-RETT	72X11.8X5.9
	KMW	AM-X-CD-16-65-00T-RETT	72X11.8X5.9		CCI	HPA-65R-BUU-H6	72X14.8X9
	—	—	—		—	—	—
	KMW	AM-X-CD-16-65-00T-RETT	72X11.8X5.9		KMW	AM-X-CD-16-65-00T-RETT	72X11.8X5.9



PROPOSED LTE ANTENNA & RRH
(ALPHA & BETA SECTORS) MOUNTING DETAIL

22x34 SCALE: 1"=1'-0"
11x17 SCALE: 1/2"=1'-0"

0 0'-6" 1'-0" 2'-0" 3'-0"

1
A-3

PROPOSED LTE ANTENNA & RRH
(GAMMA SECTOR) MOUNTING DETAIL

22x34 SCALE: 1"=1'-0"
11x17 SCALE: 1/2"=1'-0"

0 0'-6" 1'-0" 2'-0" 3'-0"

RRU CHART				
QUANTITY	MODEL	L	W	D
3(E)	RRUS-11	19.7"	17.0"	7.2"
—	RRUS-12	20.4"	18.5"	7.5"
3(P)	RRUS-32	26.7"	12.1"	6.7"
—	RRUS-E2	20.4"	18.5"	7.5"
—	LTE-A2	16.4"	15.2"	3.4"

NOTE:
MOUNT PER MANUFACTURER'S SPECIFICATIONS

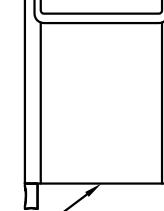
NOTE:
SEE RFDS FOR RRH FREQUENCY AND MODEL NUMBER

PROPOSED RRU REFER TO THE FINAL RFDS AND CHART FOR QUANTITY, MODEL AND DIMENSIONS

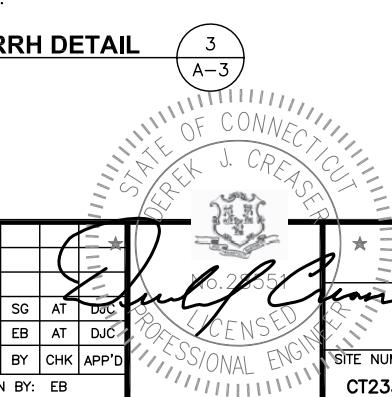
NOTE:
MOUNT PER MANUFACTURER'S SPECIFICATIONS.

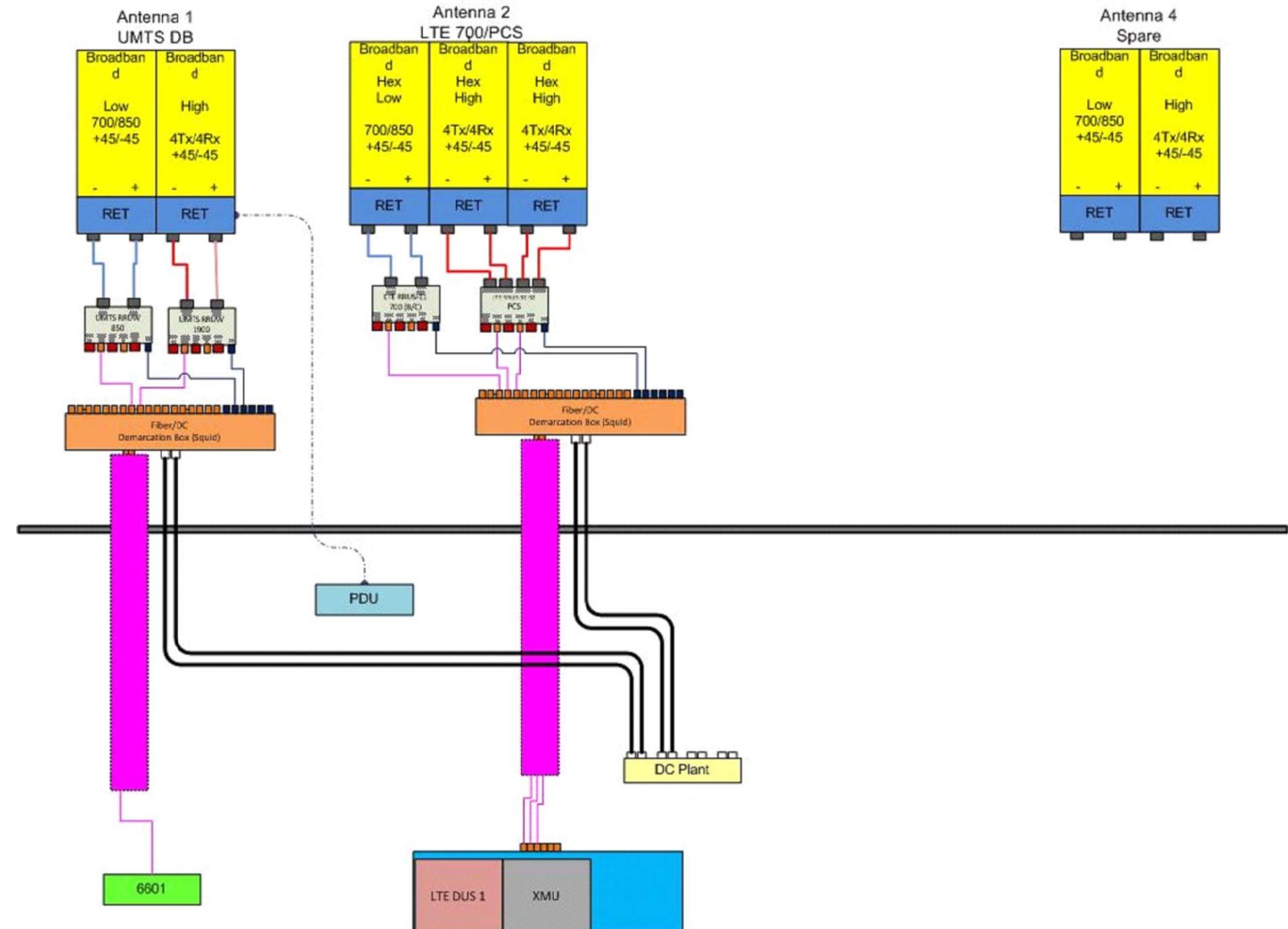
PROPOSED RRH DETAIL

SCALE: N.T.S



3
A-3





RF PLUMBING DIAGRAM

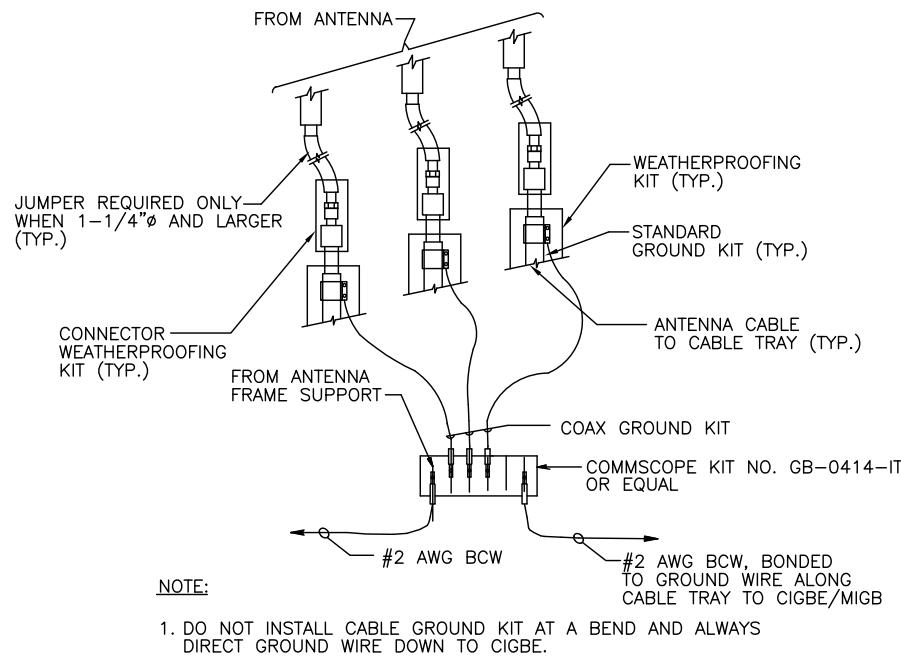
SCALE: N.T.S.

1

RF-1

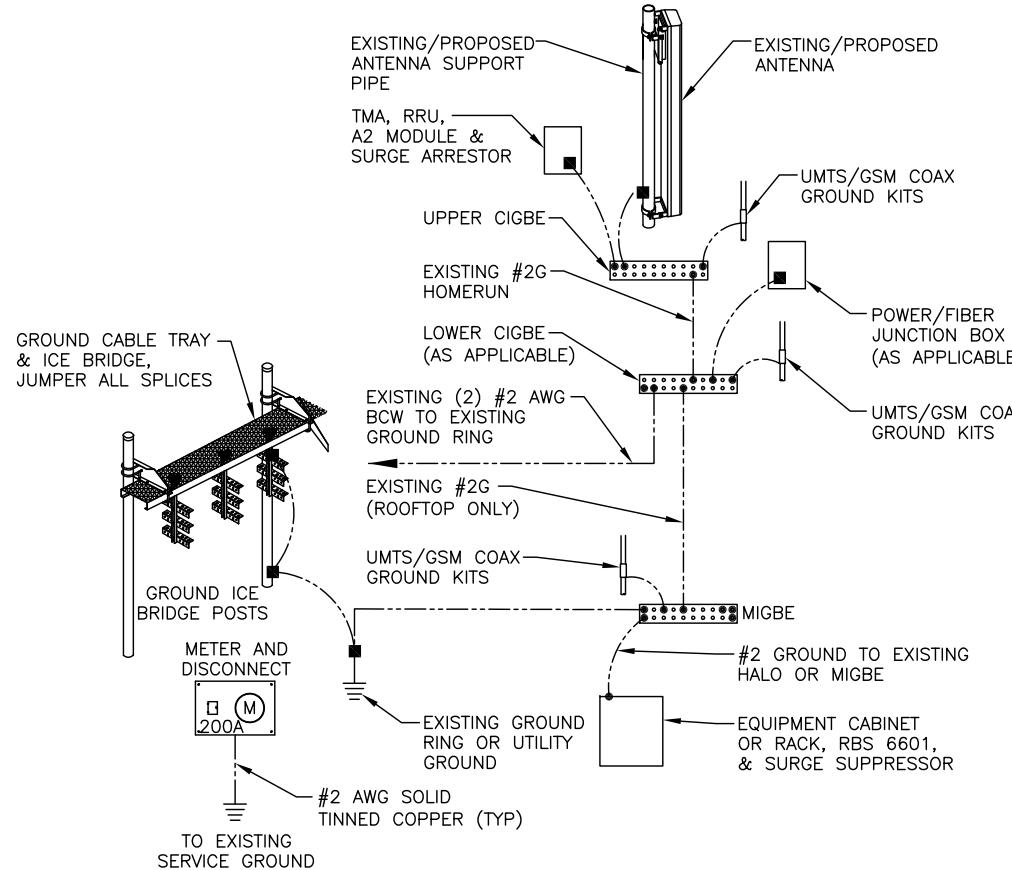
NOTE:
1. CONTRACTOR TO CONFIRM ALL PARTS.
2. INSTALL ALL EQUIPMENT TO MANUFACTURER'S RECOMMENDATIONS

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



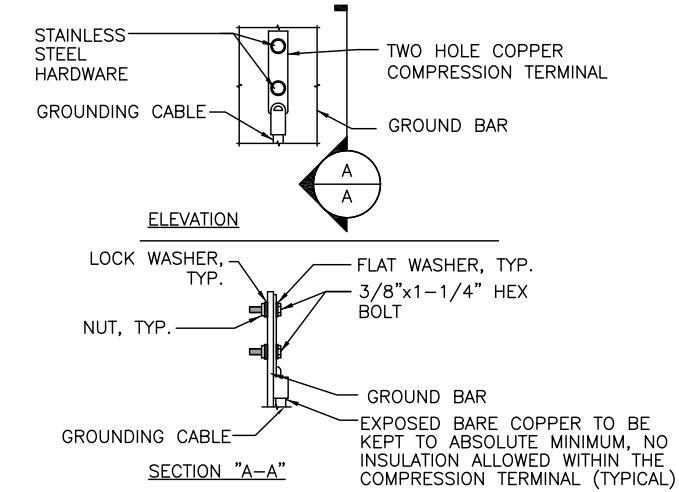
GROUND WIRE TO GROUND BAR CONNECTION DETAIL

SCALE: N.T.S



GROUNDING RISER DIAGRAM

SCALE: N.T.S



NOTE:
1. "DOUBLING UP" OR "STACKING" OF CONNECTION IS NOT PERMITTED.
2. OXIDE INHIBITING COMPOUND TO BE USED AT ALL LOCATION.
3. CADWELD DOWNLEADS FROM UPPER EGB, LOWER EGB, AND MGB

TYPICAL GROUND BAR CONNECTION DETAIL

SCALE: N.T.S

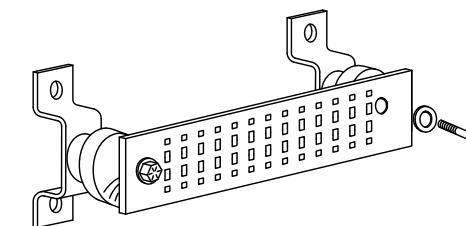
EACH GROUND CONDUCTOR TERMINATING ON ANY GROUND BAR SHALL HAVE AN IDENTIFICATION TAG ATTACHED AT EACH END THAT WILL IDENTIFY ITS ORIGIN AND DESTINATION.

SECTION "P" — SURGE PRODUCERS

CABLE ENTRY PORTS (HATCH PLATES) (#2)
GENERATOR FRAMEWORK (IF AVAILABLE) (#2)
TELCO GROUND BAR
COMMERCIAL POWER COMMON NEUTRAL/GROUND BOND (#2)
+24V POWER SUPPLY RETURN BAR (#2)
-48V POWER SUPPLY RETURN BAR (#2)
RECTIFIER FRAMES.

SECTION "A" — SURGE ABSORBERS

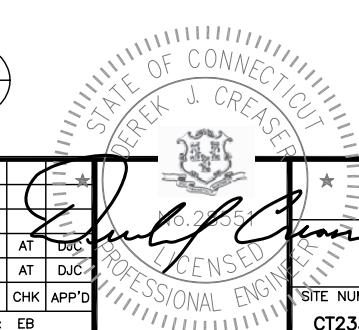
INTERIOR GROUND RING (#2)
EXTERNAL EARTH GROUND FIELD (BURIED GROUND RING) (#2)
METALLIC COLD WATER PIPE (IF AVAILABLE) (#2)
BUILDING STEEL (IF AVAILABLE) (#2)



GROUND BAR - DETAIL

SCALE: N.T.S

1	04/04/17	ISSUED FOR CONSTRUCTION	SG	AT	DUC
A	03/01/17	ISSUED FOR REVIEW	EB	AT	DJC
NO.	DATE	REVISIONS	BY	CHK	APP'D
	SCALE: AS SHOWN	DESIGNED BY: AT	DRAWN BY: EB		



AT&T

GROUNDING DETAILS
(LTE 2C)

SITE NUMBER: CT2336
DRAWING NUMBER: G-1
REV: 1



Tower Engineering Solutions

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

Structural Analysis Report

Existing 128 ft SABRE Monopole

Customer Name: SBA Communications Corp

Customer Site Number: CT13556-S

Customer Site Name: Norwich

Carrier Name: AT&T

Carrier Site ID / Name: CT2336 / LISBON-RIVER RD

Site Location: 39 Maennerchor Avenue

Taftville, Connecticut

New London County

Latitude: 41.558472

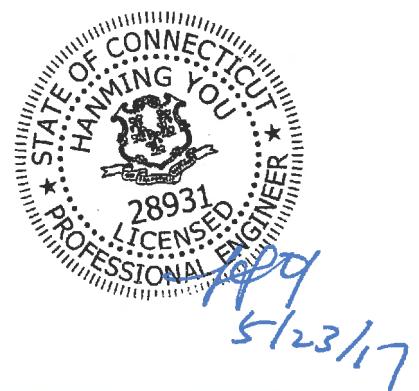
Longitude: -72.051278

Analysis Result:

Max Structural Usage: 48.0% [Pass]

Max Foundation Usage: 51.0% [Pass]

Report Prepared by: Matthew Baker





Tower Engineering Solutions

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New London County

Latitude: 41.558472

Longitude: -72.051278

Analysis Result:

Max Structural Usage: 48.0% [Pass]

Max Foundation Usage: 51.0% [Pass]

Report Prepared by: Matthew Baker

Introduction

The purpose of this report is to summarize the analysis results on the 128 ft SABRE Monopole to support the proposed antennas and transmission lines in addition to those currently installed. Any modification listed under Sources of Information was assumed completed and was included in this analysis.

Sources of Information

Tower Drawings	Sabre Job #09-01086, dated 01/05/09
Foundation Drawing	Sabre Job #09-01086, dated 01/05/09
Geotechnical Report	TEP Project #083184.01, dated 12/08/08
Modification Drawings	FDH Project #12-05460E S4, dated 02/25/13

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} = 135.0 mph (3-Sec. Gust)/ Nominal Design Wind Speed V_{asd} = 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 / 2012 IBC / 2016 Connecticut State Building Code
Exposure Category:	B
Structure Class:	II
Topographic Category:	1
Crest Height:	0 ft
Seismic Parameters:	$S_S = 0.168, S_1 = 0.06$

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
-	128.0	6	Andrew - SBNH-1D6565C - Panel	Low Profile Platform	(6) 5/8" DC (2) 3/8" Fiber (3) 3/8" RET	AT&T
-		3	KMW - AM-X-CD-16-65-00T-RET - Panel			
-		12	Ericsson - RRUS-11 - RRU			
-		3	Raycap - DC6-48-60-18-8F - SP			
8	117.0	3	72" x 13" Panel	Low Profile Platform	(18) 1 5/8"	T-Mobile
9		3	RFS - APXV18-206517S-C-A20			
10		3	Commscope - LNX-6515DS			
11		6	Allen Telecom - FE15501P77/75			
12		3	Kathrein - 782 11056			
13	110.5	6	Kathrein - 742 351	(3) T-Arm	(12) 7/8" (1) 3/8"	Metro PCS
14	100.0	6	Antel - BXA 70063 6CF 2	Low Profile Platform	(12) 1/2" (2) 1 5/8" Fiber	Verizon
15		6	Antel - BXA 171063 12CF 2			
16		3	ALU - RRH 2X40 AWS - RRH			
17		3	ALU - RRH 2x40 07-U - RRH			
18		1	RFS - DB-T1-6Z-8AB-0Z			

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

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

Items	Elevation (ft)	Qty.	Antenna Descriptions	Mount Type & Qty.	Transmission Lines	Owner
1	128.0	4	Andrew - SBNHH-1D65C - Panel	Low Profile Platform	(6) 5/8" DC (2) 3/8" Fiber (3) 3/8" RET	AT&T
2		2	KMW - AM-X-CD-16-65-00T-RET - Panel			
3		2	Cci Antennas - HPA-65R-BUU-H8 - Panel			
4		1	Cci Antennas - HPA-65R-BUU-H6 - Panel			
5		9	Ericsson - RRUS-11 - RRU			
6		3	Ericsson - RRUS 32 B30 - RRU			
7		3	Raycap - DC6-48-60-18-8F - SP			

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

Analysis Results

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

	Pole shafts	Anchor Bolts	Base Plate	Flange Bolts	Flange Plate
Max. Usage:	47.5%	45.9%	37.7%	24.4%	48.0%
Pass/Fail	Pass	Pass	Pass	Pass	Pass

Foundations

	Moment (Kip-Ft)	Shear (Kips)	Axial (Kips)
Analysis Reactions	2421.3	25.6	36.9

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 0.6642 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.

Antenna Mount Note:

The existing mount contributes no additional stress to the tower since it is existing on the tower.

Standard Conditions

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

Usage Diagram - Max Ratio 47.51% at 0.0ft

Structure: CT13556-S-SBA
Site Name: Norwich
Height: 128.00 (ft)
Base Elev: 0.000 (ft)

Code: EIA/TIA-222-G
Exposure: B
G_h: 1.1

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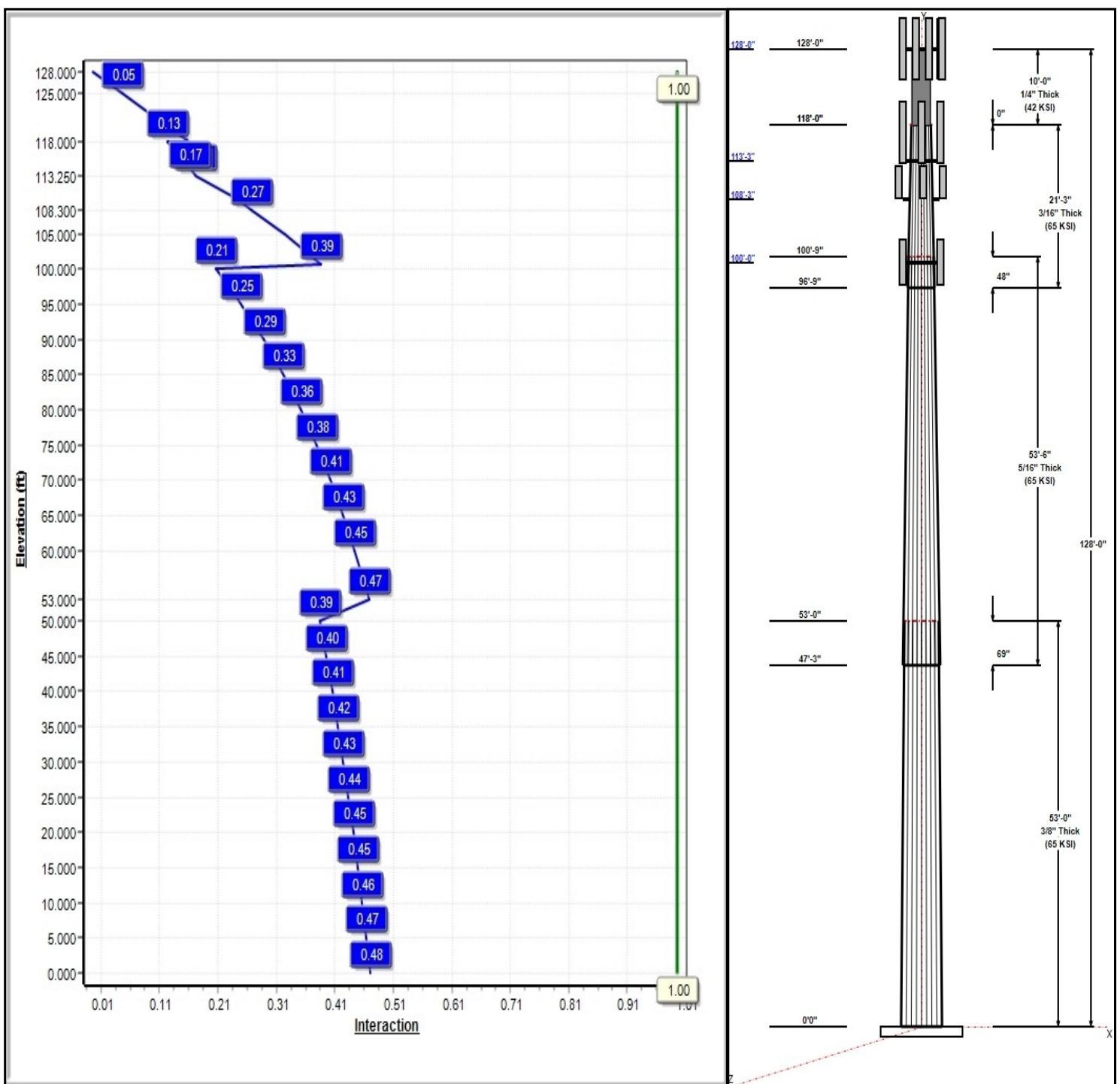
Dead Load Factor: 1.20
Wind Load Factor: 1.60

Load Case : 1.2D + 1.6W 105 mph Wind



Iterations: 21

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Structure: CT13556-S-SBA

Type: Custom
Site Name: Norwich
Height: 128.00 (ft)
Base Elev: 0.00 (ft)

Base Shape: 18 Sided
Taper: 0.00000

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Shaft Properties						
Seq	Length (ft)	Top (in)	Bottom (in)	Thick (in)	Joint Type	Grade (ksi)
1	53.00	42.65	57.91	0.375		0.28797 65
2	53.50	29.52	44.93	0.313	Slip	0.28797 65
3	21.25	24.93	31.05	0.188	Slip	0.28797 65
4	10.00	24.00	24.00	0.250	Butt	0.00000 42

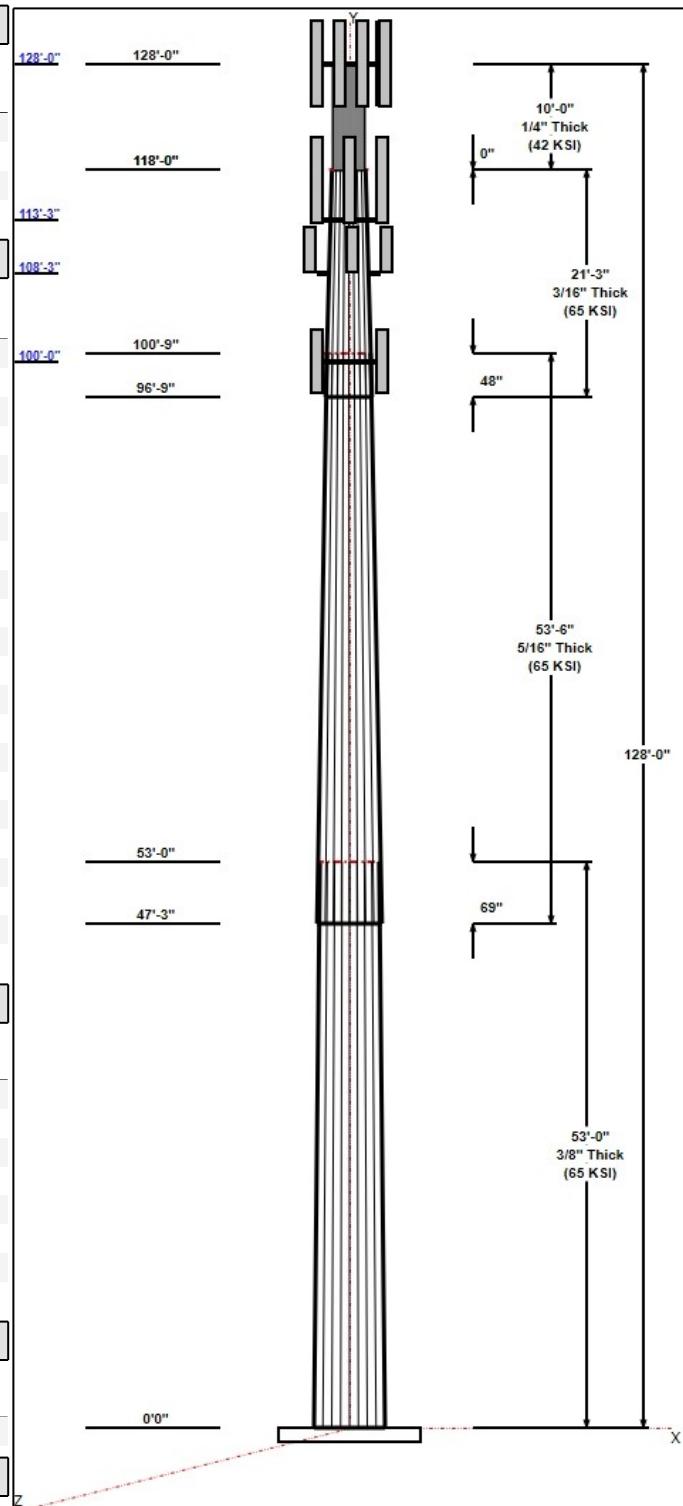
Discrete Appurtenances				
Attach Elev (ft)	Force Elev (ft)	Qty	Description	Carrier
128.00	128.00	1	Low Profile Platform-flat	AT&T
128.00	128.00	4	SBNHH-1D65C	AT&T
128.00	128.00	2	AM-X-CD-16-65-00T-RET	AT&T
128.00	128.00	2	HPA-65R-BUU-H8	AT&T
128.00	128.00	1	HPA-65R-BUU-H6	AT&T
128.00	128.00	9	RRUS-11	AT&T
128.00	128.00	3	RRUS 32 B30	AT&T
128.00	128.00	3	DC6-48-60-18-8F	AT&T
113.25	113.25	1	Low Profile	T-Mobile
113.25	117.00	3	72" x 13" Panel	T-Mobile
113.25	117.00	3	APXV18-206517S-C-A20	T-Mobile
113.25	117.00	3	LNX-6515DS	T-Mobile
113.25	117.00	6	FE15501P77/75	T-Mobile
113.25	117.00	3	782 11056	T-Mobile
108.30	108.30	3	T-Arm (Round)	Metro PCS
108.30	110.50	6	742 351	Metro PCS
100.00	100.00	1	Low Profile	Verizon
100.00	100.00	6	BXA 70063 6CF 2	Verizon
100.00	100.00	6	BXA 171063 12CF 2	Verizon
100.00	100.00	3	RRH 2X40 AWS	Verizon
100.00	100.00	3	RRH 2x40 07-U	Verizon
100.00	100.00	1	DB-T1-6Z-8AB-0Z	Verizon

Linear Appurtenances				
Elev From (ft)	Elev To (ft)	Placement	Description	Carrier
0.00	128.00	Inside	3/8" Fiber	AT&T
0.00	128.00	Inside	3/8" RET	AT&T
0.00	128.00	Inside	5/8" DC	AT&T
0.00	113.25	Inside	1 5/8"	T-Mobile
0.00	108.30	Inside	3/8"	Metro PCS
0.00	108.30	Inside	7/8"	Metro PCS
0.00	100.00	Inside	1 5/8" Fiber	Verizon
0.00	100.00	Inside	1/2"	Verizon

Anchor Bolts			
Qty	Specifications	Grade (ksi)	Arrangement
16	2.25" 18J	75.0	Cluster

Base Plate			
Thickness (in)	Specifications (in)	Grade (ksi)	Geometry
3.2500	62.5	50.0	Clipped

Reactions			
-----------	--	--	--



Structure: CT13556-S-SBA

Type: Custom
Site Name: Norwich
Height: 128.00 (ft)
Base Elev: 0.00 (ft)

Base Shape: 18 Sided
Taper: 0.00000

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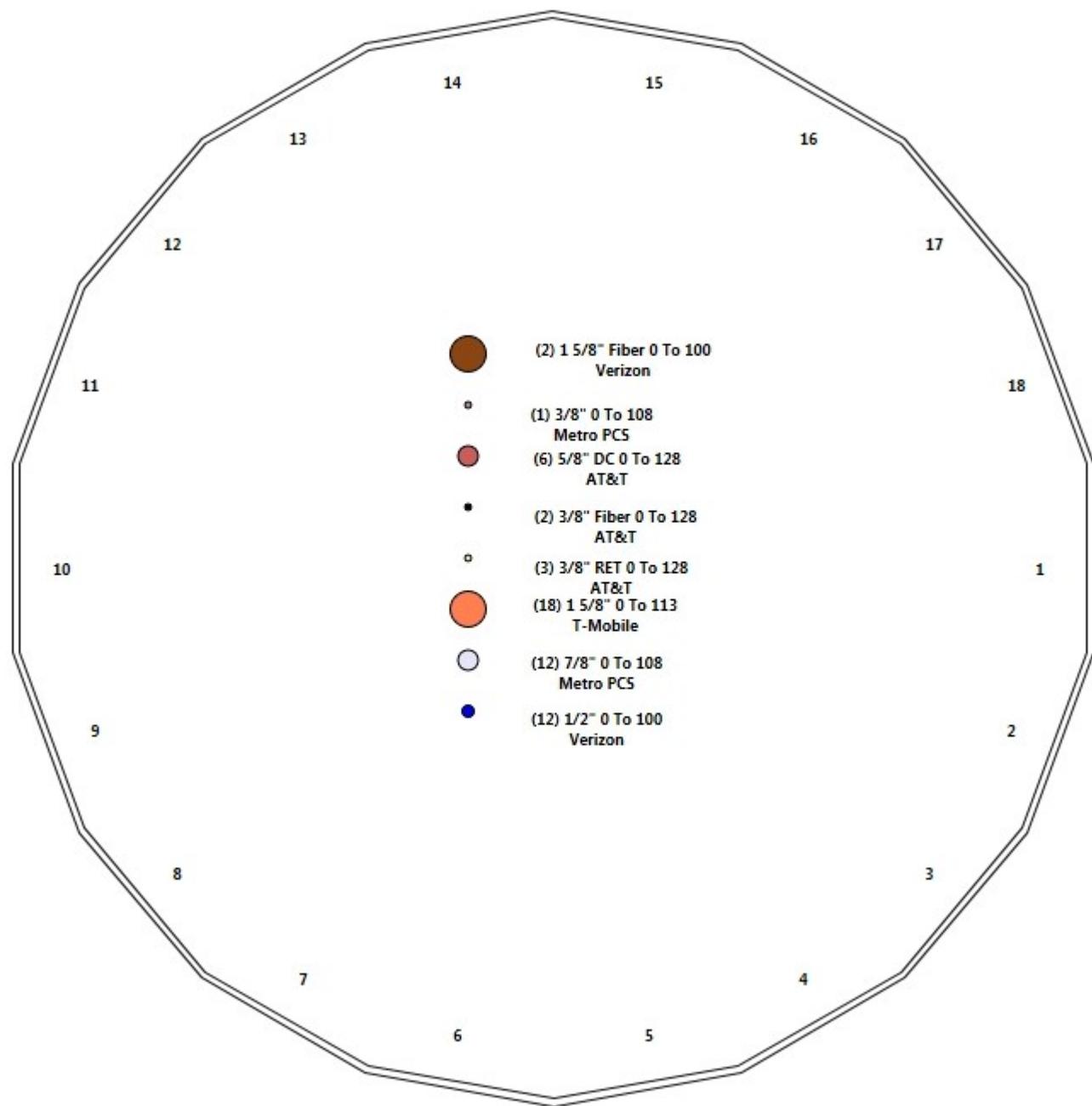
Load Case	Moment (FT-Kips)	Shear (Kips)	Axial (Kips)
1.2D + 1.6W 105 mph Wind	2421.3	25.6	36.9
0.9D + 1.6W 105 mph Wind	2407.5	25.6	27.7
1.2D + 1.0Di + 1.0Wi 50 mph Wind	564.5	6.2	55.8
1.2D + 1.0E	141.5	1.4	36.9
0.9D + 1.0E	140.7	1.4	27.7
1.0D + 1.0W 60 mph Wind	492.4	5.2	30.8

Structure: CT13556-S-SBA - Coax Line Placement

Type: Monopole
Site Name: Norwich
Height: 128.00 (ft)

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Shaft Properties

Structure: CT13556-S-SBA
Site Name: Norwich
Height: 128.00 (ft)
Base Elev: 0.000 (ft)
Gh: 1.1

Code: EIA/TIA-222-G
Exposure: B
Crest Height: 0.00
Site Class: D - Stiff Soil
Struct Class: II

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Sec. No.	Shape	Length (ft)	Thick (in)	Fy (ksi)	Joint Type	Overlap (in)	Weight (lb)
1	18	53.000	0.3750	65		0.00	10,712
2	18	53.500	0.3125	65	Slip	69.00	6,665
3	18	21.250	0.1875	65	Slip	48.00	1,196
4	R	10.000	0.2500	42	Flange	0.00	635
Total Shaft Weight:							19,208

Bottom

Sec. No.	Dia (in)	Elev (ft)	Area (sqin)	Ix (in^4)	W/t Ratio	D/t Ratio	Dia (in)	Elev (ft)	Area (sqin)	Ix (in^4)	W/t Ratio	D/t Ratio	Taper
1	57.91	0.00	68.48	28639.93	25.82	154.43	42.65	53.00	50.31	11359.4	18.64	113.7	0.287966
2	44.93	47.25	44.25	11129.34	23.94	143.77	29.52	100.75	28.97	3123.10	15.25	94.47	0.287966
3	31.05	96.75	18.37	2210.08	27.79	165.60	24.93	118.00	14.72	1138.88	22.03	132.9	0.287966
4	24.00	118.0	18.65	1316.20	0.00	96.00	24.00	128.00	18.65	1316.20	0.00	96.00	0.000000

Top

Load Summary

Structure: CT13556-S-SBA
Site Name: Norwich
Height: 128.00 (ft)
Base Elev: 0.000 (ft)
Gh: 1.1

Topography: 1

Code: EIA/TIA-222-G
Exposure: B
Crest Height: 0.00
Site Class: D - Stiff Soil
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	128.00	Low Profile Platform-flat	1	1200.00	25.00	1.00	2230.65	45.613	1.00	0.00	0.00
2	128.00	SBNHH-1D65C	4	49.60	11.39	0.84	310.86	13.018	0.85	0.00	0.00
3	128.00	AM-X-CD-16-65-00T-RET	2	33.00	6.05	0.84	175.51	8.116	0.86	0.00	0.00
4	128.00	HPA-65R-BUU-H8	2	68.00	12.98	0.79	362.91	14.576	0.81	0.00	0.00
5	128.00	HPA-65R-BUU-H6	1	51.00	9.66	0.83	279.69	11.007	0.85	0.00	0.00
6	128.00	RRUS-11	9	51.00	2.52	0.67	122.14	3.143	0.67	0.00	0.00
7	128.00	RRUS 32 B30	3	60.00	2.74	0.67	142.45	3.681	0.67	0.00	0.00
8	128.00	DC6-48-60-18-8F	3	31.80	0.92	1.00	92.65	1.351	1.00	0.00	0.00
9	113.25	Low Profile Platform-Round	1	1500.00	22.00	1.00	2772.64	39.172	1.00	0.00	0.00
10	113.25	72" x 13" Panel	3	45.00	8.68	0.77	205.47	11.579	0.80	0.00	3.75
11	113.25	APXV18-206517S-C-A20	3	26.40	5.17	0.79	116.67	7.479	0.82	0.00	3.75
12	113.25	LNX-6515DS	3	49.80	11.47	0.84	272.99	14.646	0.85	0.00	3.75
13	113.25	FE15501P77/75	6	70.00	1.75	0.50	165.02	2.344	0.50	0.00	3.75
14	113.25	782 11056	3	2.60	0.28	0.50	8.95	0.670	0.50	0.00	3.75
15	108.30	T-Arm (Round)	3	350.00	8.00	0.75	586.50	14.757	0.75	0.00	0.00
16	108.30	742 351	6	29.80	5.38	0.66	122.04	7.303	0.70	0.00	2.20
17	100.00	Low Profile Platform-Round	1	1500.00	22.00	1.00	2756.90	38.960	1.00	0.00	0.00
18	100.00	BXA 70063 6CF 2	6	17.00	7.57	0.75	153.08	10.224	0.78	0.00	0.00
19	100.00	BXA 171063 12CF 2	6	15.00	4.78	0.88	107.02	7.045	0.90	0.00	0.00
20	100.00	RRH 2X40 AWS	3	44.00	2.16	0.67	102.31	3.166	0.67	0.00	0.00
21	100.00	RRH 2x40 07-U	3	50.70	1.93	0.67	107.15	2.812	0.67	0.00	0.00
22	100.00	DB-T1-6Z-8AB-0Z	1	18.90	4.80	0.50	135.17	6.409	0.50	0.00	0.00

Totals: 73 **7,901.00** **19,782.99**

Linear Appurtenances

Bottom Elev. (ft)	Top Elev. (ft)	Description	Exposed Width	Exposed
0.00	128.00	(2) 3/8" Fiber	0.00	Inside
0.00	128.00	(3) 3/8" RET	0.00	Inside
0.00	128.00	(6) 5/8" DC	0.00	Inside
0.00	113.25	(18) 1 5/8"	0.00	Inside
0.00	108.30	(1) 3/8"	0.00	Inside
0.00	108.30	(12) 7/8"	0.00	Inside
0.00	100.00	(2) 1 5/8" Fiber	0.00	Inside
0.00	100.00	(12) 1/2"	0.00	Inside

Shaft Section Properties

Structure: CT13556-S-SBA
Site Name: Norwich
Height: 128.00 (ft)
Base Elev: 0.000 (ft)
Gh: 1.1

Code: EIA/TIA-222-G
Exposure: B
Crest Height: 0.00
Site Class: D - Stiff Soil
Topography: 1 **Struct Class:** II

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Increment Length: 5 (ft)

Elev (ft)	Description	Thick (in)	Dia (in)	Area (in^2)	Ix (in^4)	W/t Ratio	D/t Ratio	Fpy (ksi)	S (in^3)	Weight (lb)
0.00		0.3750	57.910	68.479	28639.9	25.82	154.43	71.0	974.1	0.0
5.00		0.3750	56.470	66.765	26543.1	25.14	150.59	71.8	925.8	1150.5
10.00		0.3750	55.030	65.051	24551.2	24.46	146.75	72.6	878.7	1121.4
15.00		0.3750	53.591	63.337	22661.6	23.79	142.91	73.4	832.9	1092.2
20.00		0.3750	52.151	61.624	20871.5	23.11	139.07	74.2	788.3	1063.0
25.00		0.3750	50.711	59.910	19178.2	22.43	135.23	75.0	744.9	1033.9
30.00		0.3750	49.271	58.196	17579.1	21.76	131.39	75.8	702.7	1004.7
35.00		0.3750	47.831	56.483	16071.4	21.08	127.55	76.6	661.8	975.6
40.00		0.3750	46.391	54.769	14652.5	20.40	123.71	77.4	622.1	946.4
45.00		0.3750	44.952	53.055	13319.7	19.73	119.87	78.2	583.6	917.3
47.25	Bot - Section 2	0.3750	44.304	52.284	12747.3	19.42	118.14	78.6	566.7	403.3
50.00		0.3750	43.512	51.342	12070.2	19.05	116.03	79.0	546.4	895.3
53.00	Top - Section 1	0.3125	43.273	42.610	9935.6	23.01	138.47	0.0	0.0	958.2
55.00		0.3125	42.697	42.038	9541.4	22.68	136.63	74.7	440.1	288.0
60.00		0.3125	41.257	40.610	8601.7	21.87	132.02	75.7	410.6	703.1
65.00		0.3125	39.817	39.182	7725.8	21.06	127.42	76.6	382.2	678.8
70.00		0.3125	38.377	37.754	6911.4	20.24	122.81	77.6	354.7	654.5
75.00		0.3125	36.938	36.326	6156.4	19.43	118.20	78.5	328.3	630.2
80.00		0.3125	35.498	34.898	5458.5	18.62	113.59	79.5	302.9	605.9
85.00		0.3125	34.058	33.470	4815.5	17.81	108.99	80.5	278.5	581.6
90.00		0.3125	32.618	32.042	4225.0	16.99	104.38	81.4	255.1	557.3
95.00		0.3125	31.178	30.614	3684.9	16.18	99.77	82.4	232.8	533.0
96.75	Bot - Section 3	0.3125	30.674	30.114	3507.3	15.90	98.16	82.6	225.2	180.8
100.00		0.3125	29.738	29.186	3192.9	15.37	95.16	82.6	211.5	527.9
100.75	Top - Section 2	0.1875	29.897	17.680	1971.7	26.71	159.45	0.0	0.0	119.5
105.00		0.1875	28.674	16.952	1738.0	25.55	152.93	71.3	119.4	250.4
108.30		0.1875	27.723	16.387	1569.8	24.66	147.86	72.4	111.5	187.2
110.00		0.1875	27.234	16.095	1487.5	24.20	145.25	72.9	107.6	93.9
113.25		0.1875	26.298	15.538	1338.4	23.32	140.26	74.0	100.2	174.9
115.00		0.1875	25.794	15.238	1262.4	22.85	137.57	74.5	96.4	91.6
118.00	Top - Section 3	0.1875	24.930	14.724	1138.9	22.03	132.96	75.5	90.0	152.9
118.00	Bot - Section 4	0.2500	24.000	18.653	1316.2	16.53	99.72	39.4	109.7	
120.00		0.2500	24.000	18.653	1316.2	0.00	96.00	39.4	109.7	126.9
125.00		0.2500	24.000	18.653	1316.2	0.00	96.00	39.4	109.7	317.4
128.00		0.2500	24.000	18.653	1316.2	0.00	96.00	39.4	109.7	190.4
										19208.1

Wind Loading - Shaft

Structure: CT13556-S-SBA
Site Name: Norwich
Height: 128.00 (ft)
Base Elev: 0.000 (ft)
Gh: 1.1

Code: EIA/TIA-222-G
Exposure: B
Crest Height: 0.00
Site Class: D - Stiff Soil
Topography: 1
Struct Class: II

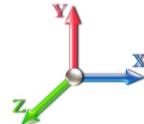
5/23/2017



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Load Case: 1.2D + 1.6W 105 mph Wind

Dead Load Factor 1.20
Wind Load Factor 1.60



Iterations 21

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 (lb)	Tot Dead Load (lb)
0.00		1.00	0.70	18.769	20.65	430.49	0.650	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.70	18.769	20.65	419.78	0.650	0.000	5.00	24.197	15.73	519.5	0.0	1380.6
10.00		1.00	0.70	18.769	20.65	409.08	0.650	0.000	5.00	23.588	15.33	506.5	0.0	1345.6
15.00		1.00	0.70	18.769	20.65	398.38	0.650	0.000	5.00	22.978	14.94	493.4	0.0	1310.6
20.00		1.00	0.70	18.769	20.65	387.67	0.650	0.000	5.00	22.369	14.54	480.3	0.0	1275.6
25.00		1.00	0.70	18.769	20.65	376.97	0.650	0.000	5.00	21.760	14.14	467.2	0.0	1240.7
30.00		1.00	0.70	18.785	20.66	366.42	0.650	0.000	5.00	21.151	13.75	454.5	0.0	1205.7
35.00		1.00	0.73	19.631	21.59	363.63	0.650	0.000	5.00	20.542	13.35	461.3	0.0	1170.7
40.00		1.00	0.76	20.394	22.43	359.48	0.650	0.000	5.00	19.933	12.96	465.0	0.0	1135.7
45.00		1.00	0.79	21.092	23.20	354.23	0.650	0.000	5.00	19.323	12.56	466.3	0.0	1100.7
47.25 Bot - Section 2		1.00	0.80	21.388	23.53	351.57	0.650	0.000	2.25	8.497	5.52	207.9	0.0	483.9
50.00		1.00	0.81	21.737	23.91	348.09	0.650	0.000	2.75	10.363	6.74	257.7	0.0	1074.3
53.00 Top - Section 1		1.00	0.82	22.102	24.31	344.03	0.650	0.000	3.00	11.095	7.21	280.5	0.0	1149.9
55.00		1.00	0.83	22.337	24.57	346.25	0.650	0.000	2.00	7.275	4.73	185.9	0.0	345.6
60.00		1.00	0.85	22.899	25.19	338.76	0.650	0.000	5.00	17.760	11.54	465.3	0.0	843.7
65.00		1.00	0.87	23.429	25.77	330.70	0.650	0.000	5.00	17.151	11.15	459.7	0.0	814.6
70.00		1.00	0.89	23.930	26.32	322.13	0.650	0.000	5.00	16.542	10.75	452.8	0.0	785.4
75.00		1.00	0.91	24.406	26.85	313.12	0.650	0.000	5.00	15.933	10.36	444.9	0.0	756.2
80.00		1.00	0.93	24.861	27.35	303.70	0.650	0.000	5.00	15.323	9.96	435.8	0.0	727.1
85.00		1.00	0.94	25.295	27.82	293.91	0.650	0.000	5.00	14.714	9.56	425.8	0.0	697.9
90.00		1.00	0.96	25.711	28.28	283.80	0.650	0.000	5.00	14.105	9.17	414.9	0.0	668.8
95.00		1.00	0.97	26.112	28.72	273.37	0.650	0.000	5.00	13.496	8.77	403.1	0.0	639.6
96.75 Bot - Section 3		1.00	0.98	26.248	28.87	269.66	0.650	0.000	1.75	4.580	2.98	137.5	0.0	217.0
100.00 Appurtenance(s)		1.00	0.99	26.497	29.15	262.67	0.650	0.000	3.25	8.410	5.47	254.9	0.0	633.5
100.75 Top - Section 2		1.00	0.99	26.554	29.21	261.04	0.650	0.000	0.75	1.904	1.24	57.8	0.0	143.4
105.00		1.00	1.00	26.869	29.56	255.03	0.650	0.000	4.25	10.532	6.85	323.7	0.0	300.5
108.30 Appurtenance(s)		1.00	1.01	27.108	29.82	247.67	0.650	0.000	3.30	7.874	5.12	244.2	0.0	224.6
110.00		1.00	1.02	27.229	29.95	243.84	0.650	0.000	1.70	3.953	2.57	123.1	0.0	112.7
113.25 Appurtenance(s)		1.00	1.02	27.456	30.20	236.44	0.650	0.000	3.25	7.361	4.78	231.2	0.0	209.9
115.00		1.00	1.03	27.577	30.33	232.42	0.650	0.000	1.75	3.857	2.51	121.7	0.0	110.0
118.00 Top - Section 3		1.00	1.04	27.780	30.56	225.46	0.650	0.000	3.00	6.438	4.18	204.6	0.0	183.5
120.00		1.00	1.04	27.914	30.71	214.27	0.600	0.000	2.00	4.000	2.40	117.9	0.0	152.3
125.00		1.00	1.05	28.242	31.07	215.52	0.600	0.000	5.00	10.000	6.00	298.2	0.0	380.8
128.00 Appurtenance(s)		1.00	1.06	28.434	31.28	216.25	0.600	0.000	3.00	6.000	3.60	180.2	0.0	228.5
Totals:									128.00		11,043.5		23,049.7	

Discrete Appurtenance Forces

Structure: CT13556-S-SBA
Site Name: Norwich
Height: 128.00 (ft)
Base Elev: 0.000 (ft)
Gh: 1.1

Code: EIA/TIA-222-G
Exposure: B
Crest Height: 0.00
Site Class: D - Stiff Soil
Struct Class: II

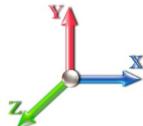
5/23/2017



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Load Case: 1.2D + 1.6W 105 mph Wind

Dead Load Factor 1.20
Wind Load Factor 1.60



Iterations

21

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	128.00	HPA-65R-BUU-H8	2	28.434	31.277	0.71	0.90	18.46	163.20	0.000	0.000	923.67	0.00	0.00
2	128.00	Low Profile Platform-flat	1	28.434	31.277	1.00	1.00	25.00	1440.00	0.000	0.000	1251.08	0.00	0.00
3	128.00	SBNHH-1D65C	4	28.434	31.277	0.76	0.90	34.44	238.08	0.000	0.000	1723.65	0.00	0.00
4	128.00	AM-X-CD-16-65-00T-RET	2	28.434	31.277	0.76	0.90	9.15	79.20	0.000	0.000	457.77	0.00	0.00
5	128.00	DC6-48-60-18-8F	3	28.434	31.277	0.90	0.90	2.48	114.48	0.000	0.000	124.31	0.00	0.00
6	128.00	HPA-65R-BUU-H6	1	28.434	31.277	0.75	0.90	7.22	61.20	0.000	0.000	361.11	0.00	0.00
7	128.00	RRUS-11	9	28.434	31.277	0.60	0.90	13.68	550.80	0.000	0.000	684.39	0.00	0.00
8	128.00	RRUS 32 B30	3	28.434	31.277	0.60	0.90	4.96	216.00	0.000	0.000	248.05	0.00	0.00
9	113.25	782 11056	3	27.713	30.484	0.40	0.80	0.34	9.36	0.000	3.750	16.39	0.00	61.46
10	113.25	FE15501P77/75	6	27.713	30.484	0.40	0.80	4.20	504.00	0.000	3.750	204.85	0.00	768.20
11	113.25	LNX-6515DS	3	27.713	30.484	0.67	0.80	23.12	179.28	0.000	3.750	1127.84	0.00	4229.41
12	113.25	APXV18-206517S-C-A20	3	27.713	30.484	0.63	0.80	9.80	95.04	0.000	3.750	478.11	0.00	1792.90
13	113.25	72" x 13" Panel	3	27.713	30.484	0.62	0.80	16.04	162.00	0.000	3.750	782.38	0.00	2933.92
14	113.25	Low Profile	1	27.456	30.202	1.00	1.00	22.00	1800.00	0.000	0.000	1063.10	0.00	0.00
15	108.30	742 351	6	27.264	29.990	0.53	0.80	17.04	214.56	0.000	2.200	817.84	0.00	1799.26
16	108.30	T-Arm (Round)	3	27.108	29.819	0.56	0.75	13.50	1260.00	0.000	0.000	644.08	0.00	0.00
17	100.00	DB-T1-6Z-8AB-0Z	1	26.497	29.147	0.40	0.80	1.92	22.68	0.000	0.000	89.54	0.00	0.00
18	100.00	RRH 2x40 07-U	3	26.497	29.147	0.54	0.80	3.10	182.52	0.000	0.000	144.73	0.00	0.00
19	100.00	RRH 2X40 AWS	3	26.497	29.147	0.54	0.80	3.47	158.40	0.000	0.000	161.98	0.00	0.00
20	100.00	BXA 171063 12CF 2	6	26.497	29.147	0.70	0.80	20.19	108.00	0.000	0.000	941.60	0.00	0.00
21	100.00	BXA 70063 6CF 2	6	26.497	29.147	0.60	0.80	27.25	122.40	0.000	0.000	1270.90	0.00	0.00
22	100.00	Low Profile	1	26.497	29.147	1.00	1.00	22.00	1800.00	0.000	0.000	1025.97	0.00	0.00

Totals: 9,481.20

14,543.36

Total Applied Force Summary

Structure: CT13556-S-SBA
Site Name: Norwich
Height: 128.00 (ft)
Base Elev: 0.000 (ft)
Gh: 1.1

Code: EIA/TIA-222-G
Exposure: B
Crest Height: 0.00
Site Class: D - Stiff Soil
Struct Class: II

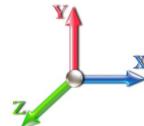
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Load Case: 1.2D + 1.6W 105 mph Wind

Dead Load Factor 1.20
Wind Load Factor 1.60



Iterations 21

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		519.55	1576.09	0.00	0.00
10.00		506.47	1541.10	0.00	0.00
15.00		493.39	1506.11	0.00	0.00
20.00		480.31	1471.13	0.00	0.00
25.00		467.23	1436.14	0.00	0.00
30.00		454.53	1401.15	0.00	0.00
35.00		461.31	1366.16	0.00	0.00
40.00		465.04	1331.17	0.00	0.00
45.00		466.26	1296.19	0.00	0.00
47.25		207.90	571.87	0.00	0.00
50.00		257.69	1181.83	0.00	0.00
53.00		280.52	1267.14	0.00	0.00
55.00		185.89	423.84	0.00	0.00
60.00		465.25	1039.19	0.00	0.00
65.00		459.69	1010.03	0.00	0.00
70.00		452.85	980.87	0.00	0.00
75.00		444.85	951.72	0.00	0.00
80.00		435.81	922.56	0.00	0.00
85.00		425.79	893.40	0.00	0.00
90.00		414.89	864.25	0.00	0.00
95.00		403.15	835.09	0.00	0.00
96.75		137.52	285.39	0.00	0.00
100.00	(20) attachments	3889.66	3154.58	0.00	0.00
100.75		57.85	169.01	0.00	0.00
105.00		323.73	445.66	0.00	0.00
108.30	(9) attachments	1706.11	1811.88	0.00	1799.26
110.00		123.13	157.91	0.00	0.00
113.25	(19) attachments	3903.88	3045.93	0.00	9785.89
115.00		121.68	117.14	0.00	0.00
118.00		204.61	195.83	0.00	0.00
120.00		117.91	160.54	0.00	0.00
125.00		298.23	401.36	0.00	0.00
128.00	(25) attachments	5954.20	3103.77	0.00	0.00
Totals:		25,586.86	36,916.04	0.00	11,585.14

Calculated Forces

Structure: CT13556-S-SBA
Site Name: Norwich
Height: 128.00 (ft)
Base Elev: 0.000 (ft)
Gh: 1.1

Code: EIA/TIA-222-G
Exposure: B
Crest Height: 0.00
Site Class: D - Stiff Soil
Struct Class: II

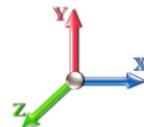
5/23/2017



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Load Case: 1.2D + 1.6W 105 mph Wind

Dead Load Factor 1.20
Wind Load Factor 1.60



Iterations 21

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-36.89	-25.63	0.00	-2421.2	0.00	2421.25	4377.82	2188.91	10363.5	5189.46	0.00	0.000	0.000	0.475
5.00	-35.26	-25.18	0.00	-2293.1	0.00	2293.13	4316.11	2158.05	9960.07	4987.44	0.06	-0.117	0.000	0.468
10.00	-33.67	-24.74	0.00	-2167.2	0.00	2167.24	4251.94	2125.97	9558.48	4786.34	0.25	-0.237	0.000	0.461
15.00	-32.11	-24.30	0.00	-2043.5	0.00	2043.56	4185.32	2092.66	9159.16	4586.39	0.56	-0.359	0.000	0.453
20.00	-30.59	-23.88	0.00	-1922.0	0.00	1922.04	4116.24	2058.12	8762.56	4387.79	1.01	-0.483	0.000	0.446
25.00	-29.11	-23.47	0.00	-1802.6	0.00	1802.64	4044.71	2022.35	8369.11	4190.78	1.58	-0.610	0.000	0.437
30.00	-27.66	-23.06	0.00	-1685.3	0.00	1685.31	3970.72	1985.36	7979.26	3995.56	2.29	-0.739	0.000	0.429
35.00	-26.25	-22.64	0.00	-1570.0	0.00	1570.03	3894.27	1947.14	7593.45	3802.37	3.14	-0.871	0.000	0.420
40.00	-24.87	-22.21	0.00	-1456.8	0.00	1456.84	3815.37	1907.68	7212.11	3611.41	4.12	-1.005	0.000	0.410
45.00	-23.55	-21.76	0.00	-1345.7	0.00	1345.79	3734.01	1867.00	6835.68	3422.92	5.25	-1.141	0.000	0.400
47.25	-22.96	-21.57	0.00	-1296.8	0.00	1296.84	3696.60	1848.30	6668.01	3338.96	5.80	-1.205	0.000	0.395
50.00	-21.75	-21.32	0.00	-1237.5	0.00	1237.52	3650.19	1825.10	6464.60	3237.11	6.52	-1.282	0.000	0.388
53.00	-20.46	-21.03	0.00	-1173.5	0.00	1173.58	2850.91	1425.45	5035.48	2521.48	7.35	-1.368	0.000	0.473
55.00	-20.00	-20.87	0.00	-1131.5	0.00	1131.51	2827.15	1413.58	4926.09	2466.71	7.94	-1.425	0.000	0.466
60.00	-18.92	-20.44	0.00	-1027.1	0.00	1027.14	2766.03	1383.02	4654.68	2330.80	9.52	-1.586	0.000	0.448
65.00	-17.87	-20.00	0.00	-924.97	0.00	924.97	2702.46	1351.23	4386.56	2196.54	11.27	-1.748	0.000	0.428
70.00	-16.85	-19.56	0.00	-824.98	0.00	824.98	2636.43	1318.22	4122.19	2064.16	13.18	-1.909	0.000	0.406
75.00	-15.86	-19.13	0.00	-727.18	0.00	727.18	2567.95	1283.97	3862.00	1933.87	15.27	-2.068	0.000	0.382
80.00	-14.90	-18.70	0.00	-631.55	0.00	631.55	2497.00	1248.50	3606.43	1805.90	17.52	-2.225	0.000	0.356
85.00	-13.98	-18.27	0.00	-538.07	0.00	538.07	2423.61	1211.80	3355.92	1680.45	19.94	-2.378	0.000	0.326
90.00	-13.09	-17.85	0.00	-446.71	0.00	446.71	2347.75	1173.88	3110.91	1557.76	22.51	-2.523	0.000	0.293
95.00	-12.25	-17.43	0.00	-357.45	0.00	357.45	2269.44	1134.72	2871.83	1438.05	25.22	-2.659	0.000	0.254
96.75	-11.95	-17.29	0.00	-326.95	0.00	326.95	2237.32	1118.66	2784.49	1394.32	26.21	-2.705	0.000	0.240
100.00	-8.97	-13.26	0.00	-270.74	0.00	270.74	2168.36	1084.18	2614.63	1309.26	28.08	-2.784	0.000	0.211
100.75	-8.79	-13.21	0.00	-260.80	0.00	260.80	1113.72	556.86	1361.71	681.87	28.52	-2.801	0.000	0.391
105.00	-8.34	-12.88	0.00	-204.67	0.00	204.67	1088.50	544.25	1275.70	638.80	31.05	-2.892	0.000	0.329
108.30	-6.61	-11.09	0.00	-160.38	0.00	160.38	1067.69	533.84	1209.29	605.55	33.09	-2.991	0.000	0.271
110.00	-6.44	-10.96	0.00	-141.53	0.00	141.53	1056.55	528.27	1175.26	588.50	34.16	-3.037	0.000	0.247
113.25	-3.61	-6.90	0.00	-96.12	0.00	96.12	1034.46	517.23	1110.60	556.13	36.26	-3.114	0.000	0.176
115.00	-3.49	-6.78	0.00	-84.04	0.00	84.04	1022.14	511.07	1076.04	538.82	37.40	-3.148	0.000	0.160
118.00	-3.30	-6.57	0.00	-63.70	0.00	63.70	1000.32	500.16	1017.28	509.40	39.40	-3.198	0.000	0.129
118.00	-3.30	-6.57	0.00	-63.70	0.00	63.70	662.26	331.13	648.15	396.94	39.40	-3.198	0.000	0.166
120.00	-3.15	-6.44	0.00	-50.57	0.00	50.57	662.26	331.13	648.15	396.94	40.74	-3.226	0.000	0.133
125.00	-2.76	-6.12	0.00	-18.36	0.00	18.36	662.26	331.13	648.15	396.94	44.14	-3.263	0.000	0.051
128.00	0.00	-5.95	0.00	0.00	0.00	0.00	662.26	331.13	648.15	396.94	46.20	-3.269	0.000	0.000

Wind Loading - Shaft

Structure: CT13556-S-SBA
Site Name: Norwich
Height: 128.00 (ft)
Base Elev: 0.000 (ft)
Gh: 1.1 **Topography:** 1

Code: EIA/TIA-222-G
Exposure: B
Crest Height: 0.00
Site Class: D - Stiff Soil
Struct Class: II

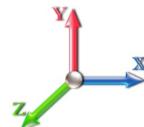
5/23/2017



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Load Case: 0.9D + 1.6W 105 mph Wind

Dead Load Factor 0.90
Wind Load Factor 1.60



Iterations 20

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 (lb)	Tot Dead Load (lb)
0.00		1.00	0.70	18.769	20.65	430.49	0.650	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.70	18.769	20.65	419.78	0.650	0.000	5.00	24.197	15.73	519.5	0.0	1035.5
10.00		1.00	0.70	18.769	20.65	409.08	0.650	0.000	5.00	23.588	15.33	506.5	0.0	1009.2
15.00		1.00	0.70	18.769	20.65	398.38	0.650	0.000	5.00	22.978	14.94	493.4	0.0	983.0
20.00		1.00	0.70	18.769	20.65	387.67	0.650	0.000	5.00	22.369	14.54	480.3	0.0	956.7
25.00		1.00	0.70	18.769	20.65	376.97	0.650	0.000	5.00	21.760	14.14	467.2	0.0	930.5
30.00		1.00	0.70	18.785	20.66	366.42	0.650	0.000	5.00	21.151	13.75	454.5	0.0	904.3
35.00		1.00	0.73	19.631	21.59	363.63	0.650	0.000	5.00	20.542	13.35	461.3	0.0	878.0
40.00		1.00	0.76	20.394	22.43	359.48	0.650	0.000	5.00	19.933	12.96	465.0	0.0	851.8
45.00		1.00	0.79	21.092	23.20	354.23	0.650	0.000	5.00	19.323	12.56	466.3	0.0	825.5
47.25 Bot - Section 2		1.00	0.80	21.388	23.53	351.57	0.650	0.000	2.25	8.497	5.52	207.9	0.0	362.9
50.00		1.00	0.81	21.737	23.91	348.09	0.650	0.000	2.75	10.363	6.74	257.7	0.0	805.7
53.00 Top - Section 1		1.00	0.82	22.102	24.31	344.03	0.650	0.000	3.00	11.095	7.21	280.5	0.0	862.4
55.00		1.00	0.83	22.337	24.57	346.25	0.650	0.000	2.00	7.275	4.73	185.9	0.0	259.2
60.00		1.00	0.85	22.899	25.19	338.76	0.650	0.000	5.00	17.760	11.54	465.3	0.0	632.8
65.00		1.00	0.87	23.429	25.77	330.70	0.650	0.000	5.00	17.151	11.15	459.7	0.0	610.9
70.00		1.00	0.89	23.930	26.32	322.13	0.650	0.000	5.00	16.542	10.75	452.8	0.0	589.0
75.00		1.00	0.91	24.406	26.85	313.12	0.650	0.000	5.00	15.933	10.36	444.9	0.0	567.2
80.00		1.00	0.93	24.861	27.35	303.70	0.650	0.000	5.00	15.323	9.96	435.8	0.0	545.3
85.00		1.00	0.94	25.295	27.82	293.91	0.650	0.000	5.00	14.714	9.56	425.8	0.0	523.4
90.00		1.00	0.96	25.711	28.28	283.80	0.650	0.000	5.00	14.105	9.17	414.9	0.0	501.6
95.00		1.00	0.97	26.112	28.72	273.37	0.650	0.000	5.00	13.496	8.77	403.1	0.0	479.7
96.75 Bot - Section 3		1.00	0.98	26.248	28.87	269.66	0.650	0.000	1.75	4.580	2.98	137.5	0.0	162.7
100.00 Appurtenance(s)		1.00	0.99	26.497	29.15	262.67	0.650	0.000	3.25	8.410	5.47	254.9	0.0	475.1
100.75 Top - Section 2		1.00	0.99	26.554	29.21	261.04	0.650	0.000	0.75	1.904	1.24	57.8	0.0	107.5
105.00		1.00	1.00	26.869	29.56	255.03	0.650	0.000	4.25	10.532	6.85	323.7	0.0	225.4
108.30 Appurtenance(s)		1.00	1.01	27.108	29.82	247.67	0.650	0.000	3.30	7.874	5.12	244.2	0.0	168.5
110.00		1.00	1.02	27.229	29.95	243.84	0.650	0.000	1.70	3.953	2.57	123.1	0.0	84.6
113.25 Appurtenance(s)		1.00	1.02	27.456	30.20	236.44	0.650	0.000	3.25	7.361	4.78	231.2	0.0	157.4
115.00		1.00	1.03	27.577	30.33	232.42	0.650	0.000	1.75	3.857	2.51	121.7	0.0	82.5
118.00 Top - Section 3		1.00	1.04	27.780	30.56	225.46	0.650	0.000	3.00	6.438	4.18	204.6	0.0	137.6
120.00		1.00	1.04	27.914	30.71	214.27	0.600	0.000	2.00	4.000	2.40	117.9	0.0	114.3
125.00		1.00	1.05	28.242	31.07	215.52	0.600	0.000	5.00	10.000	6.00	298.2	0.0	285.6
128.00 Appurtenance(s)		1.00	1.06	28.434	31.28	216.25	0.600	0.000	3.00	6.000	3.60	180.2	0.0	171.4
Totals:									128.00		11,043.5		17,287.3	

Discrete Appurtenance Forces

Structure: CT13556-S-SBA
Site Name: Norwich
Height: 128.00 (ft)
Base Elev: 0.000 (ft)
Gh: 1.1

Code: EIA/TIA-222-G
Exposure: B
Crest Height: 0.00
Site Class: D - Stiff Soil
Struct Class: II

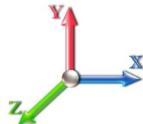
5/23/2017



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Load Case: 0.9D + 1.6W 105 mph Wind

Dead Load Factor 0.90
Wind Load Factor 1.60



Iterations

20

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	128.00	HPA-65R-BUU-H8	2	28.434	31.277	0.71	0.90	18.46	122.40	0.000	0.000	923.67	0.00	0.00
2	128.00	Low Profile Platform-flat	1	28.434	31.277	1.00	1.00	25.00	1080.00	0.000	0.000	1251.08	0.00	0.00
3	128.00	SBNHH-1D65C	4	28.434	31.277	0.76	0.90	34.44	178.56	0.000	0.000	1723.65	0.00	0.00
4	128.00	AM-X-CD-16-65-00T-RET	2	28.434	31.277	0.76	0.90	9.15	59.40	0.000	0.000	457.77	0.00	0.00
5	128.00	DC6-48-60-18-8F	3	28.434	31.277	0.90	0.90	2.48	85.86	0.000	0.000	124.31	0.00	0.00
6	128.00	HPA-65R-BUU-H6	1	28.434	31.277	0.75	0.90	7.22	45.90	0.000	0.000	361.11	0.00	0.00
7	128.00	RRUS-11	9	28.434	31.277	0.60	0.90	13.68	413.10	0.000	0.000	684.39	0.00	0.00
8	128.00	RRUS 32 B30	3	28.434	31.277	0.60	0.90	4.96	162.00	0.000	0.000	248.05	0.00	0.00
9	113.25	782 11056	3	27.713	30.484	0.40	0.80	0.34	7.02	0.000	3.750	16.39	0.00	61.46
10	113.25	FE15501P77/75	6	27.713	30.484	0.40	0.80	4.20	378.00	0.000	3.750	204.85	0.00	768.20
11	113.25	LNX-6515DS	3	27.713	30.484	0.67	0.80	23.12	134.46	0.000	3.750	1127.84	0.00	4229.41
12	113.25	APXV18-206517S-C-A20	3	27.713	30.484	0.63	0.80	9.80	71.28	0.000	3.750	478.11	0.00	1792.90
13	113.25	72" x 13" Panel	3	27.713	30.484	0.62	0.80	16.04	121.50	0.000	3.750	782.38	0.00	2933.92
14	113.25	Low Profile	1	27.456	30.202	1.00	1.00	22.00	1350.00	0.000	0.000	1063.10	0.00	0.00
15	108.30	742 351	6	27.264	29.990	0.53	0.80	17.04	160.92	0.000	2.200	817.84	0.00	1799.26
16	108.30	T-Arm (Round)	3	27.108	29.819	0.56	0.75	13.50	945.00	0.000	0.000	644.08	0.00	0.00
17	100.00	DB-T1-6Z-8AB-0Z	1	26.497	29.147	0.40	0.80	1.92	17.01	0.000	0.000	89.54	0.00	0.00
18	100.00	RRH 2x40 07-U	3	26.497	29.147	0.54	0.80	3.10	136.89	0.000	0.000	144.73	0.00	0.00
19	100.00	RRH 2X40 AWS	3	26.497	29.147	0.54	0.80	3.47	118.80	0.000	0.000	161.98	0.00	0.00
20	100.00	BXA 171063 12CF 2	6	26.497	29.147	0.70	0.80	20.19	81.00	0.000	0.000	941.60	0.00	0.00
21	100.00	BXA 70063 6CF 2	6	26.497	29.147	0.60	0.80	27.25	91.80	0.000	0.000	1270.90	0.00	0.00
22	100.00	Low Profile	1	26.497	29.147	1.00	1.00	22.00	1350.00	0.000	0.000	1025.97	0.00	0.00

Totals: 7,110.90

14,543.36

Total Applied Force Summary

Structure: CT13556-S-SBA
Site Name: Norwich
Height: 128.00 (ft)
Base Elev: 0.000 (ft)
Gh: 1.1

Topography: 1

Code: EIA/TIA-222-G
Exposure: B
Crest Height: 0.00
Site Class: D - Stiff Soil
Struct Class: II

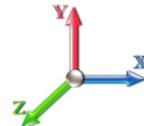
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Load Case: 0.9D + 1.6W 105 mph Wind

Dead Load Factor 0.90
Wind Load Factor 1.60



Iterations 20

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		519.55	1182.07	0.00	0.00
10.00		506.47	1155.83	0.00	0.00
15.00		493.39	1129.59	0.00	0.00
20.00		480.31	1103.34	0.00	0.00
25.00		467.23	1077.10	0.00	0.00
30.00		454.53	1050.86	0.00	0.00
35.00		461.31	1024.62	0.00	0.00
40.00		465.04	998.38	0.00	0.00
45.00		466.26	972.14	0.00	0.00
47.25		207.90	428.90	0.00	0.00
50.00		257.69	886.37	0.00	0.00
53.00		280.52	950.36	0.00	0.00
55.00		185.89	317.88	0.00	0.00
60.00		465.25	779.39	0.00	0.00
65.00		459.69	757.52	0.00	0.00
70.00		452.85	735.66	0.00	0.00
75.00		444.85	713.79	0.00	0.00
80.00		435.81	691.92	0.00	0.00
85.00		425.79	670.05	0.00	0.00
90.00		414.89	648.19	0.00	0.00
95.00		403.15	626.32	0.00	0.00
96.75		137.52	214.05	0.00	0.00
100.00	(20) attachments	3889.66	2365.93	0.00	0.00
100.75		57.85	126.76	0.00	0.00
105.00		323.73	334.24	0.00	0.00
108.30	(9) attachments	1706.11	1358.91	0.00	1799.26
110.00		123.13	118.43	0.00	0.00
113.25	(19) attachments	3903.88	2284.45	0.00	9785.89
115.00		121.68	87.86	0.00	0.00
118.00		204.61	146.88	0.00	0.00
120.00		117.91	120.41	0.00	0.00
125.00		298.23	301.02	0.00	0.00
128.00	(25) attachments	5954.20	2327.83	0.00	0.00
Totals:		25,586.86	27,687.03	0.00	11,585.14

Calculated Forces

Structure: CT13556-S-SBA
Site Name: Norwich
Height: 128.00 (ft)
Base Elev: 0.000 (ft)
Gh: 1.1

Code: EIA/TIA-222-G
Exposure: B
Crest Height: 0.00
Site Class: D - Stiff Soil
Struct Class: II

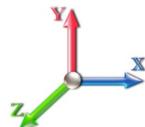
5/23/2017



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Load Case: 0.9D + 1.6W 105 mph Wind

Dead Load Factor 0.90
Wind Load Factor 1.60



Iterations 20

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-27.66	-25.61	0.00	-2407.5	0.00	2407.51	4377.82	2188.91	10363.5	5189.46	0.00	0.000	0.000	0.470
5.00	-26.43	-25.15	0.00	-2279.4	0.00	2279.44	4316.11	2158.05	9960.07	4987.44	0.06	-0.116	0.000	0.463
10.00	-25.22	-24.69	0.00	-2153.7	0.00	2153.70	4251.94	2125.97	9558.48	4786.34	0.25	-0.235	0.000	0.456
15.00	-24.04	-24.24	0.00	-2030.2	0.00	2030.24	4185.32	2092.66	9159.16	4586.39	0.56	-0.356	0.000	0.449
20.00	-22.89	-23.80	0.00	-1909.0	0.00	1909.03	4116.24	2058.12	8762.56	4387.79	1.00	-0.480	0.000	0.441
25.00	-21.77	-23.38	0.00	-1790.0	0.00	1790.01	4044.71	2022.35	8369.11	4190.78	1.57	-0.606	0.000	0.433
30.00	-20.67	-22.96	0.00	-1673.1	0.00	1673.13	3970.72	1985.36	7979.26	3995.56	2.28	-0.735	0.000	0.424
35.00	-19.60	-22.53	0.00	-1558.3	0.00	1558.35	3894.27	1947.14	7593.45	3802.37	3.12	-0.865	0.000	0.415
40.00	-18.56	-22.09	0.00	-1445.7	0.00	1445.73	3815.37	1907.68	7212.11	3611.41	4.09	-0.998	0.000	0.405
45.00	-17.56	-21.63	0.00	-1335.2	0.00	1335.29	3734.01	1867.00	6835.68	3422.92	5.21	-1.133	0.000	0.395
47.25	-17.11	-21.44	0.00	-1286.6	0.00	1286.62	3696.60	1848.30	6668.01	3338.96	5.76	-1.196	0.000	0.390
50.00	-16.20	-21.18	0.00	-1227.6	0.00	1227.66	3650.19	1825.10	6464.60	3237.11	6.48	-1.273	0.000	0.384
53.00	-15.23	-20.90	0.00	-1164.1	0.00	1164.11	2850.91	1425.45	5035.48	2521.48	7.30	-1.358	0.000	0.467
55.00	-14.87	-20.74	0.00	-1122.3	0.00	1122.31	2827.15	1413.58	4926.09	2466.71	7.88	-1.415	0.000	0.460
60.00	-14.05	-20.29	0.00	-1018.6	0.00	1018.64	2766.03	1383.02	4654.68	2330.80	9.45	-1.575	0.000	0.442
65.00	-13.25	-19.85	0.00	-917.19	0.00	917.19	2702.46	1351.23	4386.56	2196.54	11.19	-1.735	0.000	0.423
70.00	-12.47	-19.40	0.00	-817.97	0.00	817.97	2636.43	1318.22	4122.19	2064.16	13.09	-1.895	0.000	0.401
75.00	-11.72	-18.97	0.00	-720.95	0.00	720.95	2567.95	1283.97	3862.00	1933.87	15.16	-2.053	0.000	0.378
80.00	-11.00	-18.54	0.00	-626.12	0.00	626.12	2497.00	1248.50	3606.43	1805.90	17.40	-2.209	0.000	0.351
85.00	-10.30	-18.11	0.00	-533.44	0.00	533.44	2423.61	1211.80	3355.92	1680.45	19.79	-2.360	0.000	0.322
90.00	-9.63	-17.69	0.00	-442.89	0.00	442.89	2347.75	1173.88	3110.91	1557.76	22.34	-2.504	0.000	0.289
95.00	-8.99	-17.27	0.00	-354.44	0.00	354.44	2269.44	1134.72	2871.83	1438.05	25.04	-2.638	0.000	0.251
96.75	-8.77	-17.14	0.00	-324.21	0.00	324.21	2237.32	1118.66	2784.49	1394.32	26.02	-2.684	0.000	0.237
100.00	-6.58	-13.14	0.00	-268.51	0.00	268.51	2168.36	1084.18	2614.63	1309.26	27.87	-2.762	0.000	0.208
100.75	-6.44	-13.09	0.00	-258.66	0.00	258.66	1113.72	556.86	1361.71	681.87	28.31	-2.780	0.000	0.386
105.00	-6.10	-12.76	0.00	-203.04	0.00	203.04	1088.50	544.25	1275.70	638.80	30.82	-2.869	0.000	0.324
108.30	-4.82	-10.99	0.00	-159.14	0.00	159.14	1067.69	533.84	1209.29	605.55	32.84	-2.967	0.000	0.268
110.00	-4.70	-10.87	0.00	-140.46	0.00	140.46	1056.55	528.27	1175.26	588.50	33.91	-3.014	0.000	0.244
113.25	-2.62	-6.85	0.00	-95.36	0.00	95.36	1034.46	517.23	1110.60	556.13	35.99	-3.090	0.000	0.174
115.00	-2.53	-6.72	0.00	-83.38	0.00	83.38	1022.14	511.07	1076.04	538.82	37.13	-3.123	0.000	0.157
118.00	-2.39	-6.51	0.00	-63.21	0.00	63.21	1000.32	500.16	1017.28	509.40	39.11	-3.173	0.000	0.127
118.00	-2.39	-6.51	0.00	-63.21	0.00	63.21	662.26	331.13	648.15	396.94	39.11	-3.173	0.000	0.163
120.00	-2.27	-6.39	0.00	-50.18	0.00	50.18	662.26	331.13	648.15	396.94	40.44	-3.201	0.000	0.130
125.00	-1.99	-6.08	0.00	-18.23	0.00	18.23	662.26	331.13	648.15	396.94	43.81	-3.238	0.000	0.049
128.00	0.00	-5.95	0.00	0.00	0.00	0.00	662.26	331.13	648.15	396.94	45.85	-3.244	0.000	0.000

Wind Loading - Shaft

Structure: CT13556-S-SBA
Site Name: Norwich
Height: 128.00 (ft)
Base Elev: 0.000 (ft)
Gh: 1.1 **Topography:** 1

Code: EIA/TIA-222-G
Exposure: B
Crest Height: 0.00
Site Class: D - Stiff Soil
Struct Class: II

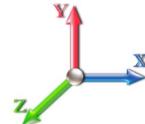
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Load Case: 1.2D + 1.0Di + 1.0Wi 50 mph Wind

Dead Load Factor 1.20
Wind Load Factor 1.00



Iterations 20

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	0.70	4.256	4.68	0.00	1.200	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.70	4.256	4.68	0.00	1.200	1.242	5.00	25.232	30.28	141.8	444.5	1825.1
10.00		1.00	0.70	4.256	4.68	0.00	1.200	1.331	5.00	24.697	29.64	138.7	465.2	1810.8
15.00		1.00	0.70	4.256	4.68	0.00	1.200	1.386	5.00	24.134	28.96	135.6	472.6	1783.2
20.00		1.00	0.70	4.256	4.68	0.00	1.200	1.427	5.00	23.558	28.27	132.3	474.0	1749.6
25.00		1.00	0.70	4.256	4.68	0.00	1.200	1.459	5.00	22.976	27.57	129.1	471.9	1712.6
30.00		1.00	0.70	4.260	4.69	0.00	1.200	1.486	5.00	22.389	26.87	125.9	467.6	1673.2
35.00		1.00	0.73	4.451	4.90	0.00	1.200	1.509	5.00	21.799	26.16	128.1	461.6	1632.3
40.00		1.00	0.76	4.625	5.09	0.00	1.200	1.529	5.00	21.207	25.45	129.5	454.3	1590.0
45.00		1.00	0.79	4.783	5.26	0.00	1.200	1.547	5.00	20.613	24.74	130.1	446.0	1546.7
47.25 Bot - Section 2		1.00	0.80	4.850	5.33	0.00	1.200	1.555	2.25	9.080	10.90	58.1	198.9	682.8
50.00		1.00	0.81	4.929	5.42	0.00	1.200	1.564	2.75	11.080	13.30	72.1	243.7	1318.0
53.00 Top - Section 1		1.00	0.82	5.012	5.51	0.00	1.200	1.573	3.00	11.881	14.26	78.6	262.4	1412.2
55.00		1.00	0.83	5.065	5.57	0.00	1.200	1.579	2.00	7.801	9.36	52.2	173.3	519.0
60.00		1.00	0.85	5.193	5.71	0.00	1.200	1.592	5.00	19.087	22.90	130.8	423.0	1266.7
65.00		1.00	0.87	5.313	5.84	0.00	1.200	1.605	5.00	18.489	22.19	129.7	412.2	1226.7
70.00		1.00	0.89	5.426	5.97	0.00	1.200	1.617	5.00	17.889	21.47	128.1	400.9	1186.3
75.00		1.00	0.91	5.534	6.09	0.00	1.200	1.628	5.00	17.290	20.75	126.3	389.3	1145.5
80.00		1.00	0.93	5.637	6.20	0.00	1.200	1.639	5.00	16.689	20.03	124.2	377.3	1104.4
85.00		1.00	0.94	5.736	6.31	0.00	1.200	1.649	5.00	16.088	19.31	121.8	364.9	1062.9
90.00		1.00	0.96	5.830	6.41	0.00	1.200	1.658	5.00	15.487	18.58	119.2	352.3	1021.1
95.00		1.00	0.97	5.921	6.51	0.00	1.200	1.667	5.00	14.885	17.86	116.3	339.4	979.0
96.75 Bot - Section 3		1.00	0.98	5.952	6.55	0.00	1.200	1.670	1.75	5.067	6.08	39.8	117.2	334.2
100.00 Appurtenance(s)		1.00	0.99	6.008	6.61	0.00	1.200	1.676	3.25	9.318	11.18	73.9	214.6	848.1
100.75 Top - Section 2		1.00	0.99	6.021	6.62	0.00	1.200	1.677	0.75	2.114	2.54	16.8	49.2	192.6
105.00		1.00	1.00	6.093	6.70	0.00	1.200	1.684	4.25	11.725	14.07	94.3	269.3	569.8
108.30 Appurtenance(s)		1.00	1.01	6.147	6.76	0.00	1.200	1.689	3.30	8.803	10.56	71.4	203.2	427.9
110.00		1.00	1.02	6.174	6.79	0.00	1.200	1.692	1.70	4.432	5.32	36.1	103.1	215.9
113.25 Appurtenance(s)		1.00	1.02	6.226	6.85	0.00	1.200	1.697	3.25	8.280	9.94	68.0	191.3	401.3
115.00		1.00	1.03	6.253	6.88	0.00	1.200	1.699	1.75	4.353	5.22	35.9	101.3	211.3
118.00 Top - Section 3		1.00	1.04	6.299	6.93	0.00	1.200	1.704	3.00	7.290	8.75	60.6	168.7	352.2
120.00		1.00	1.04	6.330	6.96	0.00	1.200	1.707	2.00	4.569	5.48	38.2	107.2	259.5
125.00		1.00	1.05	6.404	7.04	0.00	1.200	1.714	5.00	11.428	13.71	96.6	269.2	650.0
128.00 Appurtenance(s)		1.00	1.06	6.448	7.09	0.00	1.200	1.718	3.00	6.859	8.23	58.4	161.9	390.4
Totals:												128.00	3,138.6	33,101.5

Discrete Appurtenance Forces

Structure: CT13556-S-SBA
Site Name: Norwich
Height: 128.00 (ft)
Base Elev: 0.000 (ft)
Gh: 1.1

Code: EIA/TIA-222-G
Exposure: B
Crest Height: 0.00
Site Class: D - Stiff Soil
Struct Class: II

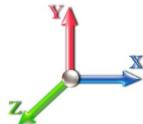
5/23/2017



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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

20

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	128.00	HPA-65R-BUU-H8	2	6.448	7.092	0.73	0.90	21.25	615.03	0.000	0.000	150.73	0.00	0.00
2	128.00	Low Profile Platform-flat	1	6.448	7.092	1.00	1.00	45.61	2170.65	0.000	0.000	323.50	0.00	0.00
3	128.00	SBNHH-1D65C	4	6.448	7.092	0.77	0.90	39.83	1036.72	0.000	0.000	282.52	0.00	0.00
4	128.00	AM-X-CD-16-65-00T-RET	2	6.448	7.092	0.77	0.90	12.56	281.22	0.000	0.000	89.10	0.00	0.00
5	128.00	DC6-48-60-18-8F	3	6.448	7.092	0.90	0.90	3.65	243.94	0.000	0.000	25.87	0.00	0.00
6	128.00	HPA-65R-BUU-H6	1	6.448	7.092	0.77	0.90	8.42	232.49	0.000	0.000	59.72	0.00	0.00
7	128.00	RRUS-11	9	6.448	7.092	0.60	0.90	17.06	1047.02	0.000	0.000	120.99	0.00	0.00
8	128.00	RRUS 32 B30	3	6.448	7.092	0.60	0.90	6.66	410.56	0.000	0.000	47.23	0.00	0.00
9	113.25	782 11056	3	6.284	6.913	0.40	0.80	0.80	22.71	0.000	3.750	5.56	0.00	20.85
10	113.25	FE15501P77/75	6	6.284	6.913	0.40	0.80	5.63	1009.34	0.000	3.750	38.89	0.00	145.82
11	113.25	LNX-6515DS	3	6.284	6.913	0.68	0.80	29.88	651.45	0.000	3.750	206.54	0.00	774.51
12	113.25	APXV18-206517S-C-A20	3	6.284	6.913	0.66	0.80	14.72	286.06	0.000	3.750	101.74	0.00	381.54
13	113.25	72" x 13" Panel	3	6.284	6.913	0.64	0.80	22.23	501.82	0.000	3.750	153.67	0.00	576.27
14	113.25	Low Profile	1	6.226	6.848	1.00	1.00	39.17	2772.64	0.000	0.000	268.27	0.00	0.00
15	108.30	742 351	6	6.182	6.801	0.56	0.80	24.54	604.23	0.000	2.200	166.87	0.00	367.12
16	108.30	T-Arm (Round)	3	6.147	6.762	0.56	0.75	24.90	1759.50	0.000	0.000	168.38	0.00	0.00
17	100.00	DB-T1-6Z-8AB-0Z	1	6.008	6.609	0.40	0.80	2.56	111.85	0.000	0.000	16.94	0.00	0.00
18	100.00	RRH 2x40 07-U	3	6.008	6.609	0.54	0.80	4.52	301.48	0.000	0.000	29.89	0.00	0.00
19	100.00	RRH 2X40 AWS	3	6.008	6.609	0.54	0.80	5.09	281.14	0.000	0.000	33.65	0.00	0.00
20	100.00	BXA 171063 12CF 2	6	6.008	6.609	0.72	0.80	30.44	495.69	0.000	0.000	201.16	0.00	0.00
21	100.00	BXA 70063 6CF 2	6	6.008	6.609	0.62	0.80	38.28	695.27	0.000	0.000	252.99	0.00	0.00
22	100.00	Low Profile	1	6.008	6.609	1.00	1.00	38.96	2756.90	0.000	0.000	257.50	0.00	0.00

Totals: 18,287.69

3,001.72

Total Applied Force Summary

Structure: CT13556-S-SBA
Site Name: Norwich
Height: 128.00 (ft)
Base Elev: 0.000 (ft)
Gh: 1.1

Code: EIA/TIA-222-G
Exposure: B
Crest Height: 0.00
Site Class: D - Stiff Soil
Struct Class: II

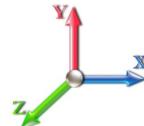
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Load Case: 1.2D + 1.0Di + 1.0Wi 50 mph Wind

Dead Load Factor 1.20
Wind Load Factor 1.00



Iterations 20

Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00		0.00	0.00	0.00	0.00
5.00		141.75	2020.57	0.00	0.00
10.00		138.75	2006.32	0.00	0.00
15.00		135.58	1978.67	0.00	0.00
20.00		132.35	1945.09	0.00	0.00
25.00		129.08	1908.05	0.00	0.00
30.00		125.89	1868.72	0.00	0.00
35.00		128.09	1827.73	0.00	0.00
40.00		129.45	1785.48	0.00	0.00
45.00		130.13	1742.23	0.00	0.00
47.25		58.13	770.79	0.00	0.00
50.00		72.09	1425.49	0.00	0.00
53.00		78.60	1529.50	0.00	0.00
55.00		52.16	597.16	0.00	0.00
60.00		130.83	1462.20	0.00	0.00
65.00		129.65	1422.23	0.00	0.00
70.00		128.14	1381.81	0.00	0.00
75.00		126.31	1341.00	0.00	0.00
80.00		124.19	1299.83	0.00	0.00
85.00		121.81	1258.34	0.00	0.00
90.00		119.19	1216.56	0.00	0.00
95.00		116.34	1174.52	0.00	0.00
96.75		39.81	402.59	0.00	0.00
100.00	(20) attachments	866.04	5617.52	0.00	0.00
100.75		16.80	218.24	0.00	0.00
105.00		94.30	714.98	0.00	0.00
108.30	(9) attachments	406.69	2904.28	0.00	367.12
110.00		36.12	261.03	0.00	0.00
113.25	(19) attachments	842.71	5731.63	0.00	1898.98
115.00		35.93	218.49	0.00	0.00
118.00		60.62	364.56	0.00	0.00
120.00		38.17	267.75	0.00	0.00
125.00		96.60	670.53	0.00	0.00
128.00	(25) attachments	1158.04	6440.34	0.00	0.00
Totals:		6,140.31	55,774.27	0.00	2,266.11

Calculated Forces

Structure: CT13556-S-SBA
Site Name: Norwich
Height: 128.00 (ft)
Base Elev: 0.000 (ft)
Gh: 1.1

Code: EIA/TIA-222-G
Exposure: B
Crest Height: 0.00
Site Class: D - Stiff Soil
Struct Class: II

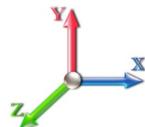
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Load Case: 1.2D + 1.0Di + 1.0Wi 50 mph Wind

Dead Load Factor 1.20
Wind Load Factor 1.00



Iterations 20

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	-55.77	-6.15	0.00	-564.48	0.00	564.48	4377.82	2188.91	10363.5	5189.46	0.00	0.000	0.000	0.122
5.00	-53.75	-6.04	0.00	-533.72	0.00	533.72	4316.11	2158.05	9960.07	4987.44	0.01	-0.027	0.000	0.119
10.00	-51.74	-5.92	0.00	-503.53	0.00	503.53	4251.94	2125.97	9558.48	4786.34	0.06	-0.055	0.000	0.117
15.00	-49.76	-5.81	0.00	-473.92	0.00	473.92	4185.32	2092.66	9159.16	4586.39	0.13	-0.083	0.000	0.115
20.00	-47.81	-5.70	0.00	-444.87	0.00	444.87	4116.24	2058.12	8762.56	4387.79	0.23	-0.112	0.000	0.113
25.00	-45.90	-5.59	0.00	-416.38	0.00	416.38	4044.71	2022.35	8369.11	4190.78	0.37	-0.142	0.000	0.111
30.00	-44.03	-5.48	0.00	-388.44	0.00	388.44	3970.72	1985.36	7979.26	3995.56	0.53	-0.171	0.000	0.108
35.00	-42.20	-5.37	0.00	-361.04	0.00	361.04	3894.27	1947.14	7593.45	3802.37	0.73	-0.202	0.000	0.106
40.00	-40.41	-5.25	0.00	-334.20	0.00	334.20	3815.37	1907.68	7212.11	3611.41	0.96	-0.233	0.000	0.103
45.00	-38.67	-5.13	0.00	-307.93	0.00	307.93	3734.01	1867.00	6835.68	3422.92	1.22	-0.264	0.000	0.100
47.25	-37.90	-5.08	0.00	-296.38	0.00	296.38	3696.60	1848.30	6668.01	3338.96	1.34	-0.278	0.000	0.099
50.00	-36.47	-5.01	0.00	-282.41	0.00	282.41	3650.19	1825.10	6464.60	3237.11	1.51	-0.296	0.000	0.097
53.00	-34.94	-4.94	0.00	-267.37	0.00	267.37	2850.91	1425.45	5035.48	2521.48	1.70	-0.315	0.000	0.118
55.00	-34.34	-4.90	0.00	-257.49	0.00	257.49	2827.15	1413.58	4926.09	2466.71	1.84	-0.329	0.000	0.117
60.00	-32.87	-4.78	0.00	-233.01	0.00	233.01	2766.03	1383.02	4654.68	2330.80	2.20	-0.365	0.000	0.112
65.00	-31.45	-4.66	0.00	-209.12	0.00	209.12	2702.46	1351.23	4386.56	2196.54	2.60	-0.402	0.000	0.107
70.00	-30.07	-4.54	0.00	-185.83	0.00	185.83	2636.43	1318.22	4122.19	2064.16	3.04	-0.438	0.000	0.101
75.00	-28.72	-4.42	0.00	-163.14	0.00	163.14	2567.95	1283.97	3862.00	1933.87	3.52	-0.474	0.000	0.096
80.00	-27.42	-4.30	0.00	-141.04	0.00	141.04	2497.00	1248.50	3606.43	1805.90	4.04	-0.509	0.000	0.089
85.00	-26.16	-4.18	0.00	-119.53	0.00	119.53	2423.61	1211.80	3355.92	1680.45	4.59	-0.543	0.000	0.082
90.00	-24.95	-4.07	0.00	-98.62	0.00	98.62	2347.75	1173.88	3110.91	1557.76	5.18	-0.575	0.000	0.074
95.00	-23.77	-3.95	0.00	-78.29	0.00	78.29	2269.44	1134.72	2871.83	1438.05	5.80	-0.605	0.000	0.065
96.75	-23.37	-3.91	0.00	-71.39	0.00	71.39	2237.32	1118.66	2784.49	1394.32	6.02	-0.615	0.000	0.062
100.00	-17.76	-2.98	0.00	-58.69	0.00	58.69	2168.36	1084.18	2614.63	1309.26	6.44	-0.632	0.000	0.053
100.75	-17.54	-2.97	0.00	-56.45	0.00	56.45	1113.72	556.86	1361.71	681.87	6.54	-0.636	0.000	0.099
105.00	-16.83	-2.87	0.00	-43.84	0.00	43.84	1088.50	544.25	1275.70	638.80	7.12	-0.656	0.000	0.084
108.30	-13.93	-2.43	0.00	-34.00	0.00	34.00	1067.69	533.84	1209.29	605.55	7.58	-0.677	0.000	0.069
110.00	-13.67	-2.40	0.00	-29.86	0.00	29.86	1056.55	528.27	1175.26	588.50	7.82	-0.687	0.000	0.064
113.25	-7.94	-1.49	0.00	-20.17	0.00	20.17	1034.46	517.23	1110.60	556.13	8.30	-0.703	0.000	0.044
115.00	-7.73	-1.45	0.00	-17.57	0.00	17.57	1022.14	511.07	1076.04	538.82	8.56	-0.710	0.000	0.040
118.00	-7.36	-1.39	0.00	-13.22	0.00	13.22	1000.32	500.16	1017.28	509.40	9.01	-0.720	0.000	0.033
118.00	-7.36	-1.39	0.00	-13.22	0.00	13.22	662.26	331.13	648.15	396.94	9.01	-0.720	0.000	0.044
120.00	-7.09	-1.35	0.00	-10.45	0.00	10.45	662.26	331.13	648.15	396.94	9.31	-0.726	0.000	0.037
125.00	-6.42	-1.24	0.00	-3.72	0.00	3.72	662.26	331.13	648.15	396.94	10.07	-0.734	0.000	0.019
128.00	0.00	-1.16	0.00	0.00	0.00	0.00	662.26	331.13	648.15	396.94	10.54	-0.735	0.000	0.000

Seismic Segment Forces (Factored)

Structure: CT13556-S-SBA
Site Name: Norwich
Height: 128.00 (ft)
Base Elev: 0.000 (ft)
Gh: 1.1

Code: EIA/TIA-222-G
Exposure: B
Crest Height: 0.00
Site Class: D - Stiff Soil
Struct Class: II

5/23/2017



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Load Case: 1.2D + 1.0E



Gust Response Factor	1.10	Sds	0.18	Iterations	18
Dead Load Factor	1.20	Seismic Load Factor	1.00	Sd1	0.10
Wind Load Factor	0.00	Structure Frequency	0.53	SA	0.05

Ss 0.17

S1 0.06

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		1150.5	0.00	0.04	0.02	15.98	
10.00		1121.3	0.01	0.06	0.03	22.97	
15.00		1092.2	0.03	0.07	0.04	25.91	
20.00		1063.0	0.05	0.07	0.04	27.05	
25.00		1033.8	0.07	0.07	0.04	27.50	
30.00		1004.7	0.10	0.07	0.04	27.74	
35.00		975.57	0.14	0.07	0.03	27.84	
40.00		946.41	0.18	0.06	0.03	27.61	
45.00		917.26	0.23	0.06	0.02	26.68	
47.25	Bot - Section 2	403.25	0.26	0.05	0.02	11.56	
50.00		895.27	0.29	0.05	0.01	24.81	
53.00	Top - Section 1	958.21	0.32	0.04	0.01	24.94	
55.00		288.04	0.35	0.03	0.01	7.05	
60.00		703.09	0.42	0.01	0.01	13.32	
65.00		678.79	0.49	-0.01	0.01	7.62	
70.00		654.49	0.57	-0.04	0.01	1.40	
75.00		630.20	0.65	-0.07	0.02	-4.22	
80.00		605.90	0.74	-0.10	0.04	-8.04	
85.00		581.60	0.83	-0.12	0.06	-9.12	
90.00		557.31	0.93	-0.12	0.10	-7.03	
95.00		533.01	1.04	-0.10	0.15	-1.74	
96.75	Bot - Section 3	180.81	1.08	-0.08	0.17	0.28	
100.00	Appurtenance(s)	2522.9	1.15	-0.03	0.22	32.04	
100.75	Top - Section 2	119.50	1.17	-0.02	0.23	1.87	
105.00		250.43	1.27	0.08	0.31	8.88	
108.30	Appurtenance(s)	1415.9	1.35	0.20	0.38	76.84	
110.00		93.95	1.40	0.28	0.43	6.12	
113.25	Appurtenance(s)	2466.3	1.48	0.45	0.52	217.42	
115.00		91.64	1.53	0.57	0.57	9.33	
118.00	Top - Section 3	152.94	1.61	0.80	0.68	19.45	
120.00		126.95	1.66	0.98	0.76	18.47	
125.00		317.36	1.80	1.55	0.98	62.36	
128.00	Appurtenance(s)	2576.2	1.89	1.98	1.14	594.05	
	Totals:	27,109.1			1,337.0		Total Wind: 25,586.9

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

Calculated Forces

Structure: CT13556-S-SBA
Site Name: Norwich
Height: 128.00 (ft)
Base Elev: 0.000 (ft)
Gh: 1.1

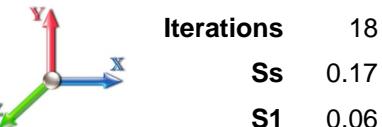
Code: EIA/TIA-222-G
Exposure: B
Crest Height: 0.00
Site Class: D - Stiff Soil
Struct Class: II

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Load Case: 1.2D + 1.0E



Gust Response Factor	1.10	Sds	0.18	Iterations	18
Dead Load Factor	1.20	Sd1	0.10	Ss	0.17
Wind Load Factor	0.00	Structure Frequency	0.53	S1	0.06

Seismic Load Factor 1.00 **SA** 0.05 **Seismic Importance Factor** 1.00

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-36.92	-1.37	0.00	-141.53	0.00	141.53	4377.82	2188.91	10363.5	5189.46	0.00	0.00	0.00	0.036
5.00	-35.34	-1.36	0.00	-134.69	0.00	134.69	4316.11	2158.05	9960.07	4987.44	0.00	-0.01	-0.01	0.035
10.00	-33.80	-1.34	0.00	-127.91	0.00	127.91	4251.94	2125.97	9558.48	4786.34	0.01	-0.01	-0.01	0.035
15.00	-32.29	-1.31	0.00	-121.22	0.00	121.22	4185.32	2092.66	9159.16	4586.39	0.03	-0.02	-0.02	0.034
20.00	-30.82	-1.29	0.00	-114.65	0.00	114.65	4116.24	2058.12	8762.56	4387.79	0.06	-0.03	-0.03	0.034
25.00	-29.38	-1.27	0.00	-108.19	0.00	108.19	4044.71	2022.35	8369.11	4190.78	0.09	-0.04	-0.04	0.033
30.00	-27.98	-1.24	0.00	-101.85	0.00	101.85	3970.72	1985.36	7979.26	3995.56	0.14	-0.04	-0.04	0.033
35.00	-26.62	-1.22	0.00	-95.64	0.00	95.64	3894.27	1947.14	7593.45	3802.37	0.19	-0.05	-0.05	0.032
40.00	-25.29	-1.19	0.00	-89.56	0.00	89.56	3815.37	1907.68	7212.11	3611.41	0.24	-0.06	-0.06	0.031
45.00	-23.99	-1.17	0.00	-83.60	0.00	83.60	3734.01	1867.00	6835.68	3422.92	0.31	-0.07	-0.07	0.031
47.25	-23.42	-1.16	0.00	-80.98	0.00	80.98	3696.60	1848.30	6668.01	3338.96	0.34	-0.07	-0.07	0.031
50.00	-22.24	-1.13	0.00	-77.80	0.00	77.80	3650.19	1825.10	6464.60	3237.11	0.39	-0.08	-0.08	0.030
53.00	-20.97	-1.11	0.00	-74.41	0.00	74.41	2850.91	1425.45	5035.48	2521.48	0.44	-0.08	-0.08	0.037
55.00	-20.54	-1.10	0.00	-72.19	0.00	72.19	2827.15	1413.58	4926.09	2466.71	0.47	-0.09	-0.09	0.037
60.00	-19.50	-1.09	0.00	-66.69	0.00	66.69	2766.03	1383.02	4654.68	2330.80	0.57	-0.10	-0.036	
65.00	-18.49	-1.08	0.00	-61.24	0.00	61.24	2702.46	1351.23	4386.56	2196.54	0.68	-0.11	-0.035	
70.00	-17.51	-1.08	0.00	-55.82	0.00	55.82	2636.43	1318.22	4122.19	2064.16	0.80	-0.12	-0.034	
75.00	-16.56	-1.08	0.00	-50.40	0.00	50.40	2567.95	1283.97	3862.00	1933.87	0.92	-0.13	-0.033	
80.00	-15.64	-1.09	0.00	-44.98	0.00	44.98	2497.00	1248.50	3606.43	1805.90	1.07	-0.14	-0.031	
85.00	-14.75	-1.09	0.00	-39.55	0.00	39.55	2423.61	1211.80	3355.92	1680.45	1.22	-0.15	-0.030	
90.00	-13.88	-1.09	0.00	-34.12	0.00	34.12	2347.75	1173.88	3110.91	1557.76	1.38	-0.16	-0.028	
95.00	-13.05	-1.09	0.00	-28.68	0.00	28.68	2269.44	1134.72	2871.83	1438.05	1.56	-0.17	-0.026	
96.75	-12.76	-1.09	0.00	-26.78	0.00	26.78	2237.32	1118.66	2784.49	1394.32	1.62	-0.18	-0.025	
100.00	-9.61	-1.04	0.00	-23.25	0.00	23.25	2168.36	1084.18	2614.63	1309.26	1.74	-0.18	-0.022	
100.75	-9.44	-1.04	0.00	-22.47	0.00	22.47	1113.72	556.86	1361.71	681.87	1.77	-0.18	0.041	
105.00	-8.99	-1.03	0.00	-18.04	0.00	18.04	1088.50	544.25	1275.70	638.80	1.94	-0.19	0.036	
108.30	-7.18	-0.95	0.00	-14.62	0.00	14.62	1067.69	533.84	1209.29	605.55	2.08	-0.20	0.031	
110.00	-7.02	-0.95	0.00	-13.00	0.00	13.00	1056.55	528.27	1175.26	588.50	2.15	-0.21	0.029	
113.25	-3.98	-0.72	0.00	-9.93	0.00	9.93	1034.46	517.23	1110.60	556.13	2.29	-0.21	0.022	
115.00	-3.86	-0.71	0.00	-8.67	0.00	8.67	1022.14	511.07	1076.04	538.82	2.37	-0.22	0.020	
118.00	-3.66	-0.69	0.00	-6.55	0.00	6.55	1000.32	500.16	1017.28	509.40	2.51	-0.22	0.017	
118.00	-3.66	-0.69	0.00	-6.55	0.00	6.55	662.26	331.13	648.15	396.94	2.51	-0.22	0.022	
120.00	-3.50	-0.67	0.00	-5.17	0.00	5.17	662.26	331.13	648.15	396.94	2.60	-0.22	0.018	
125.00	-3.10	-0.61	0.00	-1.82	0.00	1.82	662.26	331.13	648.15	396.94	2.84	-0.23	0.009	
128.00	0.00	-0.59	0.00	0.00	0.00	0.00	662.26	331.13	648.15	396.94	2.98	-0.23	0.000	

Seismic Segment Forces (Factored)

Structure: CT13556-S-SBA
Site Name: Norwich
Height: 128.00 (ft)
Base Elev: 0.000 (ft)
Gh: 1.1

Code: EIA/TIA-222-G
Exposure: B
Crest Height: 0.00
Site Class: D - Stiff Soil
Struct Class: II

5/23/2017



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Load Case: 0.9D + 1.0E



Gust Response Factor	1.10	Sds	0.18	Iterations	18
Dead Load Factor	0.90	Seismic Load Factor	1.00	Sd1	0.10
Wind Load Factor	0.00	Structure Frequency	0.53	SA	0.05

Ss 0.17

S1 0.06

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		1150.5	0.00	0.04	0.02	15.98	
10.00		1121.3	0.01	0.06	0.03	22.97	
15.00		1092.2	0.03	0.07	0.04	25.91	
20.00		1063.0	0.05	0.07	0.04	27.05	
25.00		1033.8	0.07	0.07	0.04	27.50	
30.00		1004.7	0.10	0.07	0.04	27.74	
35.00		975.57	0.14	0.07	0.03	27.84	
40.00		946.41	0.18	0.06	0.03	27.61	
45.00		917.26	0.23	0.06	0.02	26.68	
47.25	Bot - Section 2	403.25	0.26	0.05	0.02	11.56	
50.00		895.27	0.29	0.05	0.01	24.81	
53.00	Top - Section 1	958.21	0.32	0.04	0.01	24.94	
55.00		288.04	0.35	0.03	0.01	7.05	
60.00		703.09	0.42	0.01	0.01	13.32	
65.00		678.79	0.49	-0.01	0.01	7.62	
70.00		654.49	0.57	-0.04	0.01	1.40	
75.00		630.20	0.65	-0.07	0.02	-4.22	
80.00		605.90	0.74	-0.10	0.04	-8.04	
85.00		581.60	0.83	-0.12	0.06	-9.12	
90.00		557.31	0.93	-0.12	0.10	-7.03	
95.00		533.01	1.04	-0.10	0.15	-1.74	
96.75	Bot - Section 3	180.81	1.08	-0.08	0.17	0.28	
100.00	Appurtenance(s)	2522.9	1.15	-0.03	0.22	32.04	
100.75	Top - Section 2	119.50	1.17	-0.02	0.23	1.87	
105.00		250.43	1.27	0.08	0.31	8.88	
108.30	Appurtenance(s)	1415.9	1.35	0.20	0.38	76.84	
110.00		93.95	1.40	0.28	0.43	6.12	
113.25	Appurtenance(s)	2466.3	1.48	0.45	0.52	217.42	
115.00		91.64	1.53	0.57	0.57	9.33	
118.00	Top - Section 3	152.94	1.61	0.80	0.68	19.45	
120.00		126.95	1.66	0.98	0.76	18.47	
125.00		317.36	1.80	1.55	0.98	62.36	
128.00	Appurtenance(s)	2576.2	1.89	1.98	1.14	594.05	
	Totals:	27,109.1			1,337.0		Total Wind: 25,586.9

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

Calculated Forces

Structure: CT13556-S-SBA
Site Name: Norwich
Height: 128.00 (ft)
Base Elev: 0.000 (ft)
Gh: 1.1

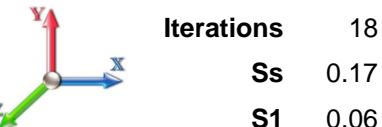
Code: EIA/TIA-222-G
Exposure: B
Crest Height: 0.00
Site Class: D - Stiff Soil
Struct Class: II

5/23/2017



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Load Case: 0.9D + 1.0E



Gust Response Factor	1.10	Sds	0.18	Iterations	18
Dead Load Factor	0.90	Sd1	0.10	Ss	0.17
Wind Load Factor	0.00	SA	0.05	S1	0.06

Structure Frequency 0.53 **Seismic Importance Factor** 1.00

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-27.69	-1.37	0.00	-140.68	0.00	140.68	4377.82	2188.91	10363.5	5189.46	0.00	0.00	0.00	0.033
5.00	-26.50	-1.35	0.00	-133.84	0.00	133.84	4316.11	2158.05	9960.07	4987.44	0.00	-0.01	-0.01	0.033
10.00	-25.35	-1.33	0.00	-127.07	0.00	127.07	4251.94	2125.97	9558.48	4786.34	0.01	-0.01	-0.01	0.033
15.00	-24.22	-1.31	0.00	-120.39	0.00	120.39	4185.32	2092.66	9159.16	4586.39	0.03	-0.02	-0.02	0.032
20.00	-23.12	-1.29	0.00	-113.84	0.00	113.84	4116.24	2058.12	8762.56	4387.79	0.06	-0.03	-0.03	0.032
25.00	-22.04	-1.26	0.00	-107.40	0.00	107.40	4044.71	2022.35	8369.11	4190.78	0.09	-0.04	-0.04	0.031
30.00	-20.99	-1.24	0.00	-101.09	0.00	101.09	3970.72	1985.36	7979.26	3995.56	0.13	-0.04	-0.04	0.031
35.00	-19.96	-1.21	0.00	-94.91	0.00	94.91	3894.27	1947.14	7593.45	3802.37	0.18	-0.05	-0.05	0.030
40.00	-18.96	-1.18	0.00	-88.86	0.00	88.86	3815.37	1907.68	7212.11	3611.41	0.24	-0.06	-0.06	0.030
45.00	-17.99	-1.16	0.00	-82.94	0.00	82.94	3734.01	1867.00	6835.68	3422.92	0.31	-0.07	-0.07	0.029
47.25	-17.56	-1.15	0.00	-80.33	0.00	80.33	3696.60	1848.30	6668.01	3338.96	0.34	-0.07	-0.07	0.029
50.00	-16.68	-1.12	0.00	-77.18	0.00	77.18	3650.19	1825.10	6464.60	3237.11	0.39	-0.08	-0.08	0.028
53.00	-15.73	-1.10	0.00	-73.81	0.00	73.81	2850.91	1425.45	5035.48	2521.48	0.44	-0.08	-0.08	0.035
55.00	-15.41	-1.09	0.00	-71.61	0.00	71.61	2827.15	1413.58	4926.09	2466.71	0.47	-0.09	-0.09	0.034
60.00	-14.63	-1.08	0.00	-66.15	0.00	66.15	2766.03	1383.02	4654.68	2330.80	0.57	-0.10	-0.10	0.034
65.00	-13.87	-1.07	0.00	-60.74	0.00	60.74	2702.46	1351.23	4386.56	2196.54	0.67	-0.11	-0.11	0.033
70.00	-13.13	-1.07	0.00	-55.37	0.00	55.37	2636.43	1318.22	4122.19	2064.16	0.79	-0.12	-0.12	0.032
75.00	-12.42	-1.08	0.00	-50.00	0.00	50.00	2567.95	1283.97	3862.00	1933.87	0.92	-0.13	-0.13	0.031
80.00	-11.73	-1.08	0.00	-44.62	0.00	44.62	2497.00	1248.50	3606.43	1805.90	1.06	-0.14	-0.14	0.029
85.00	-11.06	-1.08	0.00	-39.24	0.00	39.24	2423.61	1211.80	3355.92	1680.45	1.21	-0.15	-0.15	0.028
90.00	-10.41	-1.08	0.00	-33.86	0.00	33.86	2347.75	1173.88	3110.91	1557.76	1.37	-0.16	-0.16	0.026
95.00	-9.78	-1.08	0.00	-28.48	0.00	28.48	2269.44	1134.72	2871.83	1438.05	1.55	-0.17	-0.17	0.024
96.75	-9.57	-1.08	0.00	-26.60	0.00	26.60	2237.32	1118.66	2784.49	1394.32	1.61	-0.17	-0.17	0.023
100.00	-7.20	-1.04	0.00	-23.10	0.00	23.10	2168.36	1084.18	2614.63	1309.26	1.73	-0.18	-0.18	0.021
100.75	-7.08	-1.04	0.00	-22.33	0.00	22.33	1113.72	556.86	1361.71	681.87	1.76	-0.18	-0.18	0.039
105.00	-6.74	-1.03	0.00	-17.93	0.00	17.93	1088.50	544.25	1275.70	638.80	1.93	-0.19	-0.19	0.034
108.30	-5.38	-0.95	0.00	-14.54	0.00	14.54	1067.69	533.84	1209.29	605.55	2.06	-0.20	-0.20	0.029
110.00	-5.27	-0.94	0.00	-12.93	0.00	12.93	1056.55	528.27	1175.26	588.50	2.13	-0.20	-0.20	0.027
113.25	-2.98	-0.71	0.00	-9.88	0.00	9.88	1034.46	517.23	1110.60	556.13	2.28	-0.21	-0.21	0.021
115.00	-2.89	-0.70	0.00	-8.63	0.00	8.63	1022.14	511.07	1076.04	538.82	2.35	-0.21	-0.21	0.019
118.00	-2.75	-0.69	0.00	-6.51	0.00	6.51	1000.32	500.16	1017.28	509.40	2.49	-0.22	-0.22	0.016
118.00	-2.75	-0.69	0.00	-6.51	0.00	6.51	662.26	331.13	648.15	396.94	2.49	-0.22	-0.22	0.021
120.00	-2.63	-0.67	0.00	-5.14	0.00	5.14	662.26	331.13	648.15	396.94	2.58	-0.22	-0.22	0.017
125.00	-2.33	-0.60	0.00	-1.81	0.00	1.81	662.26	331.13	648.15	396.94	2.82	-0.23	-0.23	0.008
128.00	0.00	-0.59	0.00	0.00	0.00	0.00	662.26	331.13	648.15	396.94	2.96	-0.23	-0.23	0.000

Wind Loading - Shaft

Structure: CT13556-S-SBA
Site Name: Norwich
Height: 128.00 (ft)
Base Elev: 0.000 (ft)
Gh: 1.1 **Topography:** 1

Code: EIA/TIA-222-G
Exposure: B
Crest Height: 0.00
Site Class: D - Stiff Soil
Struct Class: II

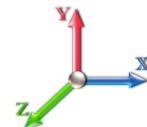
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Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00
Wind Load Factor 1.00



Iterations 19

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	0.70	6.129	6.74	245.99	0.650	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.70	6.129	6.74	239.88	0.650	0.000	5.00	24.197	15.73	106.0	0.0	1150.5
10.00		1.00	0.70	6.129	6.74	233.76	0.650	0.000	5.00	23.588	15.33	103.4	0.0	1121.4
15.00		1.00	0.70	6.129	6.74	227.64	0.650	0.000	5.00	22.978	14.94	100.7	0.0	1092.2
20.00		1.00	0.70	6.129	6.74	221.53	0.650	0.000	5.00	22.369	14.54	98.0	0.0	1063.0
25.00		1.00	0.70	6.129	6.74	215.41	0.650	0.000	5.00	21.760	14.14	95.4	0.0	1033.9
30.00		1.00	0.70	6.134	6.75	209.38	0.650	0.000	5.00	21.151	13.75	92.8	0.0	1004.7
35.00		1.00	0.73	6.410	7.05	207.79	0.650	0.000	5.00	20.542	13.35	94.1	0.0	975.6
40.00		1.00	0.76	6.659	7.33	205.42	0.650	0.000	5.00	19.933	12.96	94.9	0.0	946.4
45.00		1.00	0.79	6.887	7.58	202.42	0.650	0.000	5.00	19.323	12.56	95.2	0.0	917.3
47.25 Bot - Section 2		1.00	0.80	6.984	7.68	200.90	0.650	0.000	2.25	8.497	5.52	42.4	0.0	403.3
50.00		1.00	0.81	7.098	7.81	198.91	0.650	0.000	2.75	10.363	6.74	52.6	0.0	895.3
53.00 Top - Section 1		1.00	0.82	7.217	7.94	196.59	0.650	0.000	3.00	11.095	7.21	57.2	0.0	958.2
55.00		1.00	0.83	7.294	8.02	197.86	0.650	0.000	2.00	7.275	4.73	37.9	0.0	288.0
60.00		1.00	0.85	7.477	8.22	193.58	0.650	0.000	5.00	17.760	11.54	94.9	0.0	703.1
65.00		1.00	0.87	7.650	8.42	188.97	0.650	0.000	5.00	17.151	11.15	93.8	0.0	678.8
70.00		1.00	0.89	7.814	8.60	184.07	0.650	0.000	5.00	16.542	10.75	92.4	0.0	654.5
75.00		1.00	0.91	7.969	8.77	178.92	0.650	0.000	5.00	15.933	10.36	90.8	0.0	630.2
80.00		1.00	0.93	8.118	8.93	173.54	0.650	0.000	5.00	15.323	9.96	88.9	0.0	605.9
85.00		1.00	0.94	8.260	9.09	167.95	0.650	0.000	5.00	14.714	9.56	86.9	0.0	581.6
90.00		1.00	0.96	8.396	9.24	162.17	0.650	0.000	5.00	14.105	9.17	84.7	0.0	557.3
95.00		1.00	0.97	8.526	9.38	156.21	0.650	0.000	5.00	13.496	8.77	82.3	0.0	533.0
96.75 Bot - Section 3		1.00	0.98	8.571	9.43	154.09	0.650	0.000	1.75	4.580	2.98	28.1	0.0	180.8
100.00 Appurtenance(s)		1.00	0.99	8.652	9.52	150.09	0.650	0.000	3.25	8.410	5.47	52.0	0.0	527.9
100.75 Top - Section 2		1.00	0.99	8.671	9.54	149.16	0.650	0.000	0.75	1.904	1.24	11.8	0.0	119.5
105.00		1.00	1.00	8.774	9.65	145.73	0.650	0.000	4.25	10.532	6.85	66.1	0.0	250.4
108.30 Appurtenance(s)		1.00	1.01	8.852	9.74	141.53	0.650	0.000	3.30	7.874	5.12	49.8	0.0	187.2
110.00		1.00	1.02	8.891	9.78	139.34	0.650	0.000	1.70	3.953	2.57	25.1	0.0	93.9
113.25 Appurtenance(s)		1.00	1.02	8.965	9.86	135.11	0.650	0.000	3.25	7.361	4.78	47.2	0.0	174.9
115.00		1.00	1.03	9.005	9.91	132.81	0.650	0.000	1.75	3.857	2.51	24.8	0.0	91.6
118.00 Top - Section 3		1.00	1.04	9.071	9.98	128.84	0.650	0.000	3.00	6.438	4.18	41.8	0.0	152.9
120.00		1.00	1.04	9.115	10.03	122.44	0.600	0.000	2.00	4.000	2.40	24.1	0.0	126.9
125.00		1.00	1.05	9.222	10.14	123.16	0.600	0.000	5.00	10.000	6.00	60.9	0.0	317.4
128.00 Appurtenance(s)		1.00	1.06	9.284	10.21	123.57	0.600	0.000	3.00	6.000	3.60	36.8	0.0	190.4
Totals:									128.00		2,253.8		19,208.1	

Discrete Appurtenance Forces

Structure: CT13556-S-SBA
Site Name: Norwich
Height: 128.00 (ft)
Base Elev: 0.000 (ft)
Gh: 1.1

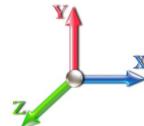
Code: EIA/TIA-222-G
Exposure: B
Crest Height: 0.00
Site Class: D - Stiff Soil
Struct Class: II

5/23/2017

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Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00
Wind Load Factor 1.00



Iterations 19

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	128.00	HPA-65R-BUU-H8	2	9.284	10.213	0.71	0.90	18.46	136.00	0.000	0.000	188.51	0.00	0.00
2	128.00	Low Profile Platform-flat	1	9.284	10.213	1.00	1.00	25.00	1200.00	0.000	0.000	255.32	0.00	0.00
3	128.00	SBNHH-1D65C	4	9.284	10.213	0.76	0.90	34.44	198.40	0.000	0.000	351.77	0.00	0.00
4	128.00	AM-X-CD-16-65-00T-RET	2	9.284	10.213	0.76	0.90	9.15	66.00	0.000	0.000	93.42	0.00	0.00
5	128.00	DC6-48-60-18-8F	3	9.284	10.213	0.90	0.90	2.48	95.40	0.000	0.000	25.37	0.00	0.00
6	128.00	HPA-65R-BUU-H6	1	9.284	10.213	0.75	0.90	7.22	51.00	0.000	0.000	73.70	0.00	0.00
7	128.00	RRUS-11	9	9.284	10.213	0.60	0.90	13.68	459.00	0.000	0.000	139.67	0.00	0.00
8	128.00	RRUS 32 B30	3	9.284	10.213	0.60	0.90	4.96	180.00	0.000	0.000	50.62	0.00	0.00
9	113.25	782 11056	3	9.049	9.954	0.40	0.80	0.34	7.80	0.000	3.750	3.34	0.00	12.54
10	113.25	FE15501P77/75	6	9.049	9.954	0.40	0.80	4.20	420.00	0.000	3.750	41.81	0.00	156.78
11	113.25	LNX-6515DS	3	9.049	9.954	0.67	0.80	23.12	149.40	0.000	3.750	230.17	0.00	863.15
12	113.25	APXV18-206517S-C-A20	3	9.049	9.954	0.63	0.80	9.80	79.20	0.000	3.750	97.57	0.00	365.90
13	113.25	72" x 13" Panel	3	9.049	9.954	0.62	0.80	16.04	135.00	0.000	3.750	159.67	0.00	598.76
14	113.25	Low Profile	1	8.965	9.862	1.00	1.00	22.00	1500.00	0.000	0.000	216.96	0.00	0.00
15	108.30	742 351	6	8.903	9.793	0.53	0.80	17.04	178.80	0.000	2.200	166.91	0.00	367.19
16	108.30	T-Arm (Round)	3	8.852	9.737	0.56	0.75	13.50	1050.00	0.000	0.000	131.45	0.00	0.00
17	100.00	DB-T1-6Z-8AB-0Z	1	8.652	9.517	0.40	0.80	1.92	18.90	0.000	0.000	18.27	0.00	0.00
18	100.00	RRH 2x40 07-U	3	8.652	9.517	0.54	0.80	3.10	152.10	0.000	0.000	29.54	0.00	0.00
19	100.00	RRH 2X40 AWS	3	8.652	9.517	0.54	0.80	3.47	132.00	0.000	0.000	33.06	0.00	0.00
20	100.00	BXA 171063 12CF 2	6	8.652	9.517	0.70	0.80	20.19	90.00	0.000	0.000	192.16	0.00	0.00
21	100.00	BXA 70063 6CF 2	6	8.652	9.517	0.60	0.80	27.25	102.00	0.000	0.000	259.37	0.00	0.00
22	100.00	Low Profile	1	8.652	9.517	1.00	1.00	22.00	1500.00	0.000	0.000	209.38	0.00	0.00

Totals: 7,901.00 2,968.03

Total Applied Force Summary

Structure: CT13556-S-SBA
Site Name: Norwich
Height: 128.00 (ft)
Base Elev: 0.000 (ft)
Gh: 1.1

Code: EIA/TIA-222-G
Exposure: B
Crest Height: 0.00
Site Class: D - Stiff Soil
Struct Class: II

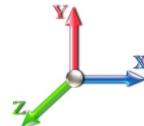
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Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00
Wind Load Factor 1.00



Iterations 19

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		106.03	1313.41	0.00	0.00
10.00		103.36	1284.25	0.00	0.00
15.00		100.69	1255.10	0.00	0.00
20.00		98.02	1225.94	0.00	0.00
25.00		95.35	1196.78	0.00	0.00
30.00		92.76	1167.63	0.00	0.00
35.00		94.15	1138.47	0.00	0.00
40.00		94.91	1109.31	0.00	0.00
45.00		95.15	1080.16	0.00	0.00
47.25		42.43	476.56	0.00	0.00
50.00		52.59	984.86	0.00	0.00
53.00		57.25	1055.95	0.00	0.00
55.00		37.94	353.20	0.00	0.00
60.00		94.95	865.99	0.00	0.00
65.00		93.81	841.69	0.00	0.00
70.00		92.42	817.39	0.00	0.00
75.00		90.79	793.10	0.00	0.00
80.00		88.94	768.80	0.00	0.00
85.00		86.90	744.50	0.00	0.00
90.00		84.67	720.21	0.00	0.00
95.00		82.28	695.91	0.00	0.00
96.75		28.06	237.83	0.00	0.00
100.00	(20) attachments	793.81	2628.81	0.00	0.00
100.75		11.81	140.84	0.00	0.00
105.00		66.07	371.38	0.00	0.00
108.30	(9) attachments	348.19	1509.90	0.00	367.19
110.00		25.13	131.59	0.00	0.00
113.25	(19) attachments	796.71	2538.27	0.00	1997.12
115.00		24.83	97.62	0.00	0.00
118.00		41.76	163.20	0.00	0.00
120.00		24.06	133.79	0.00	0.00
125.00		60.86	334.46	0.00	0.00
128.00	(25) attachments	1215.14	2586.48	0.00	0.00
Totals:		5,221.81	30,763.37	0.00	2,364.31

Calculated Forces

Structure: CT13556-S-SBA
Site Name: Norwich
Height: 128.00 (ft)
Base Elev: 0.000 (ft)
Gh: 1.1

Code: EIA/TIA-222-G
Exposure: B
Crest Height: 0.00
Site Class: D - Stiff Soil
Struct Class: II

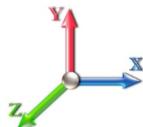
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Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00
Wind Load Factor 1.00



Iterations 19

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-30.76	-5.23	0.00	-492.38	0.00	492.38	4377.82	2188.91	10363.5	5189.46	0.00	0.000	0.000	0.102
5.00	-29.45	-5.13	0.00	-466.24	0.00	466.24	4316.11	2158.05	9960.07	4987.44	0.01	-0.024	0.000	0.100
10.00	-28.16	-5.04	0.00	-440.57	0.00	440.57	4251.94	2125.97	9558.48	4786.34	0.05	-0.048	0.000	0.099
15.00	-26.90	-4.95	0.00	-415.37	0.00	415.37	4185.32	2092.66	9159.16	4586.39	0.11	-0.073	0.000	0.097
20.00	-25.68	-4.86	0.00	-390.61	0.00	390.61	4116.24	2058.12	8762.56	4387.79	0.20	-0.098	0.000	0.095
25.00	-24.48	-4.78	0.00	-366.30	0.00	366.30	4044.71	2022.35	8369.11	4190.78	0.32	-0.124	0.000	0.093
30.00	-23.31	-4.69	0.00	-342.42	0.00	342.42	3970.72	1985.36	7979.26	3995.56	0.47	-0.150	0.000	0.092
35.00	-22.17	-4.60	0.00	-318.97	0.00	318.97	3894.27	1947.14	7593.45	3802.37	0.64	-0.177	0.000	0.090
40.00	-21.06	-4.52	0.00	-295.94	0.00	295.94	3815.37	1907.68	7212.11	3611.41	0.84	-0.204	0.000	0.087
45.00	-19.97	-4.42	0.00	-273.37	0.00	273.37	3734.01	1867.00	6835.68	3422.92	1.07	-0.232	0.000	0.085
47.25	-19.50	-4.38	0.00	-263.41	0.00	263.41	3696.60	1848.30	6668.01	3338.96	1.18	-0.245	0.000	0.084
50.00	-18.51	-4.33	0.00	-251.36	0.00	251.36	3650.19	1825.10	6464.60	3237.11	1.32	-0.261	0.000	0.083
53.00	-17.45	-4.27	0.00	-238.36	0.00	238.36	2850.91	1425.45	5035.48	2521.48	1.49	-0.278	0.000	0.101
55.00	-17.10	-4.24	0.00	-229.81	0.00	229.81	2827.15	1413.58	4926.09	2466.71	1.61	-0.290	0.000	0.099
60.00	-16.23	-4.15	0.00	-208.60	0.00	208.60	2766.03	1383.02	4654.68	2330.80	1.93	-0.322	0.000	0.095
65.00	-15.39	-4.06	0.00	-187.84	0.00	187.84	2702.46	1351.23	4386.56	2196.54	2.29	-0.355	0.000	0.091
70.00	-14.57	-3.97	0.00	-167.54	0.00	167.54	2636.43	1318.22	4122.19	2064.16	2.68	-0.388	0.000	0.087
75.00	-13.77	-3.88	0.00	-147.68	0.00	147.68	2567.95	1283.97	3862.00	1933.87	3.10	-0.420	0.000	0.082
80.00	-13.00	-3.80	0.00	-128.26	0.00	128.26	2497.00	1248.50	3606.43	1805.90	3.56	-0.452	0.000	0.076
85.00	-12.26	-3.71	0.00	-109.28	0.00	109.28	2423.61	1211.80	3355.92	1680.45	4.05	-0.483	0.000	0.070
90.00	-11.54	-3.62	0.00	-90.74	0.00	90.74	2347.75	1173.88	3110.91	1557.76	4.57	-0.513	0.000	0.063
95.00	-10.84	-3.54	0.00	-72.62	0.00	72.62	2269.44	1134.72	2871.83	1438.05	5.13	-0.540	0.000	0.055
96.75	-10.60	-3.51	0.00	-66.42	0.00	66.42	2237.32	1118.66	2784.49	1394.32	5.33	-0.550	0.000	0.052
100.00	-7.98	-2.69	0.00	-55.01	0.00	55.01	2168.36	1084.18	2614.63	1309.26	5.71	-0.566	0.000	0.046
100.75	-7.84	-2.68	0.00	-52.99	0.00	52.99	1113.72	556.86	1361.71	681.87	5.80	-0.569	0.000	0.085
105.00	-7.47	-2.61	0.00	-41.60	0.00	41.60	1088.50	544.25	1275.70	638.80	6.31	-0.587	0.000	0.072
108.30	-5.96	-2.25	0.00	-32.60	0.00	32.60	1067.69	533.84	1209.29	605.55	6.72	-0.608	0.000	0.059
110.00	-5.83	-2.23	0.00	-28.77	0.00	28.77	1056.55	528.27	1175.26	588.50	6.94	-0.617	0.000	0.054
113.25	-3.30	-1.40	0.00	-19.54	0.00	19.54	1034.46	517.23	1110.60	556.13	7.37	-0.633	0.000	0.038
115.00	-3.20	-1.38	0.00	-17.08	0.00	17.08	1022.14	511.07	1076.04	538.82	7.60	-0.639	0.000	0.035
118.00	-3.04	-1.33	0.00	-12.95	0.00	12.95	1000.32	500.16	1017.28	509.40	8.01	-0.650	0.000	0.028
118.00	-3.04	-1.33	0.00	-12.95	0.00	12.95	662.26	331.13	648.15	396.94	8.01	-0.650	0.000	0.037
120.00	-2.91	-1.31	0.00	-10.28	0.00	10.28	662.26	331.13	648.15	396.94	8.28	-0.655	0.000	0.030
125.00	-2.57	-1.24	0.00	-3.73	0.00	3.73	662.26	331.13	648.15	396.94	8.97	-0.663	0.000	0.013
128.00	0.00	-1.22	0.00	0.00	0.00	0.00	662.26	331.13	648.15	396.94	9.39	-0.664	0.000	0.000

Final Analysis Summary

Structure: CT13556-S-SBA
Site Name: Norwich
Height: 128.00 (ft)
Base Elev: 0.000 (ft)
Gh: 1.1

Code: EIA/TIA-222-G
Exposure: B
Crest Height: 0.00
Site Class: D - Stiff Soil
Struct Class: II

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Reactions

Load Case	Shear FX (kips)	Shear FZ (kips)	Axial FY (kips)	Moment MX (ft-kips)	Moment MY (ft-kips)	Moment MZ (ft-kips)
1.2D + 1.6W 105 mph Wind	25.6	0.00	36.89	0.00	0.00	2421.25
0.9D + 1.6W 105 mph Wind	25.6	0.00	27.66	0.00	0.00	2407.51
1.2D + 1.0Di + 1.0Wi 50 mph Wind	6.2	0.00	55.77	0.00	0.00	564.48
1.2D + 1.0E	1.4	0.00	36.92	0.00	0.00	141.53
0.9D + 1.0E	1.4	0.00	27.69	0.00	0.00	140.68
1.0D + 1.0W 60 mph Wind	5.2	0.00	30.76	0.00	0.00	492.38

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	-36.89	-25.63	0.00	-2421.2	0.00	-2421.2	4377.82	2188.9	10363.5	5189.46	0.00	0.475
0.9D + 1.6W 105 mph Wind	-27.66	-25.61	0.00	-2407.5	0.00	-2407.5	4377.82	2188.9	10363.5	5189.46	0.00	0.470
1.2D + 1.0Di + 1.0Wi 50 mph Wind	-55.77	-6.15	0.00	-564.48	0.00	-564.48	4377.82	2188.9	10363.5	5189.46	0.00	0.122
1.2D + 1.0E	-9.44	-1.04	0.00	-22.47	0.00	-22.47	1113.72	556.86	1361.71	681.87	100.75	0.041
0.9D + 1.0E	-7.08	-1.04	0.00	-22.33	0.00	-22.33	1113.72	556.86	1361.71	681.87	100.75	0.039
1.0D + 1.0W 60 mph Wind	-30.76	-5.23	0.00	-492.38	0.00	-492.38	4377.82	2188.9	10363.5	5189.46	0.00	0.102

Base Plate Summary

Structure: CT13556-S-SB
Site Name: Norwich
Height: 128.00 (ft)
Base Elev: 0.000 (ft)
Gh: 1.1

Topography: 1

Code: EIA/TIA-222-G
Exposure: B
Crest Height: 0.00
Site Class: D - Stiff Soil
Struct Class: II

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Reactions		Base Plate		Anchor Bolts	
Original Design		Yield (ksi):	50.00	Bolt Circle:	64.50
Moment (kip-ft):	4750.83	Width (in):	62.50	Number Bolts:	16.00
Axial (kip):	48.75	Style:	Clipped	Bolt Type:	2.25" 18J
Shear (kip):	48.83	Polygon Sides:	4.00	Bolt Diameter (in):	2.25
Analysis		Clip Length (in):	12.00	Yield (ksi):	75.00
Moment (kip-ft):	2421.25	Effective Len (in):	8.55	Ultimate (ksi):	100.00
Axial (kip):	55.77	Moment (kip-in):	382.56	Arrangement:	Clustered
Shear (kip):	25.63	Allow Stress (ksi):	67.50	Cluster Dist (in):	6.00
		Applied Stress (ksi):	0.00	Start Angle (deg):	45.00
Moment Design %:	50.96	Stress Ratio:	0.38	Compression	
				Force (kip):	116.10
				Allowable (kip):	260.00
				Ratio:	0.46
				Tension	
				Force (kip):	109.13
				Allowable (kip):	260.00
				Ratio:	0.43



Monopole Mat Foundation Design

Date	
5/23/2017	

Customer Name:	AT&T	EIA/TIA Standard:	EIA-222-G
Site Name:		Structure Height (Ft.):	128
Site Number:	CT13556-S-SBA	Engineer Name:	M. Baker
Engr. Number:	34412	Engineer Login ID:	

Foundation Info Obtained from:

Drawings/Calculations

Structure Type:

Monopole

Analysis or Design?

Analysis

Base Reactions (Factored):

Axial Load (Kips):

36.9

Shear Force (Kips):

25.6

Uplift Force (Kips):

0.0

Moment (Kips-ft):

2421.3

Allowable overstress %:

5.0%

Foundation Geometries:

Mods required -Yes/No ?:

No

Diameter of Pier (ft.):

7.0

Depth of Base BG (ft.):

5.5

Pier Height A. G. (ft.):

1.00

Thickness of Pad (ft.):

2.00

Length of Pad (ft.):

26.5

Width of Pad (ft.):

26.5

Final Length of pad (ft)

26.5

Final width of pad (ft):

26.5

Control Value for Cell D18:

0

Control Value for Cell F18:

0

Material Properties and Rebar Info:

Concrete Strength (psi):

3000

Steel Elastic Modulus:

29000

ksi

Vertical bar yield (ksi):

60

Tie steel yield (ksi):

60

Vertical Rebar Size #:

8

Tie / Stirrup Size #:

5

Qty. of Vertical Rebars:

38

Tie Spacing (in):

12.0

Pad Rebar Yield (Ksi):

60

Pad Steel Rebar Size (#):

8

Concrete Cover (in.):

3

Unit Weight of Concrete:

150.0

pcf

Rebar at the bottom of the concrete pad:

36

Qty. of Rebar in Pad (L):

36

Rebar at the top of the concrete pad:

36

Qty. of Rebar in Pad (W):

36

Apply 1.35 factor for e/w Per G:

1.35

Soil Design Parameters:

Soil Unit Weight (pcf):

135.0

Soil Buoyant Weight:

50.0

Pcf

Water Table B.G.S. (ft.):

4.5

Unit Weight of Water:

62.4

pcf

Ultimate Bearing Pressure (psf):

20000

Ultimate Skin Friction:

0

Psf

Consider Friction for O.T.M. (Y/N):

No

Consider Friction for bearing (Y/N):

No

Angle from Top of Pad:

30

Consider soil hor. resist. for OTM.:

No

Reduction factor on the maximum soil bearing pressure:

1.00

25

Angle from Bottom 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.):

2323.18

Total Dry Soil Weight (Kips):

313.63

313.63

Total Buoyant Soil Volume (cu. Ft.):

0.00

Total Buoyant Soil Weight (Kips):

313.63

0.00

Total Effective Soil Weight (Kips):

875.43

Weight from the Concrete Block at Top (K):

702.25

0.00

Total Dry Concrete Weight (Kips):

192.83

131.31

Total Buoyant Concrete Weight (Kips):

2.52

61.52

Total Vertical Load on Base (Kips):

543.35

Check Soil Capacities:

Calculated Maximum Net Soil Pressure under the base (psf):

1819

<

Allowable Factored Soil Bearing (psf):

15000

0.12

OK!

Allowable Foundation Overturning Resistance (kips-ft.):

6528.3

>

Design Factored Moment (kips-ft.):

2588

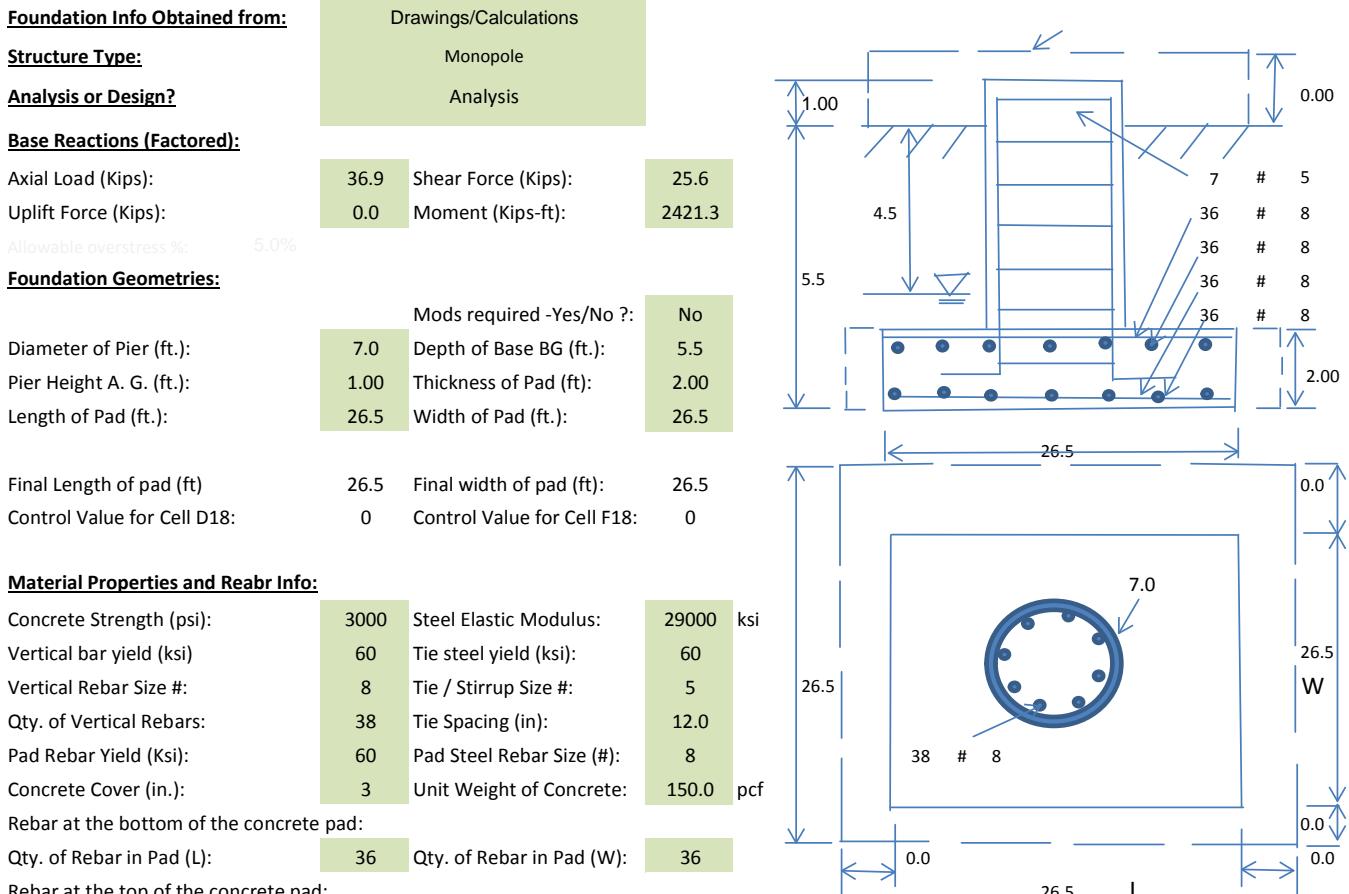
0.40

OK!

Factor of Safety Against Overturning (O. R. Moment/Design Moment):

2.52

OK!

 Load/
Capacity
Ratio


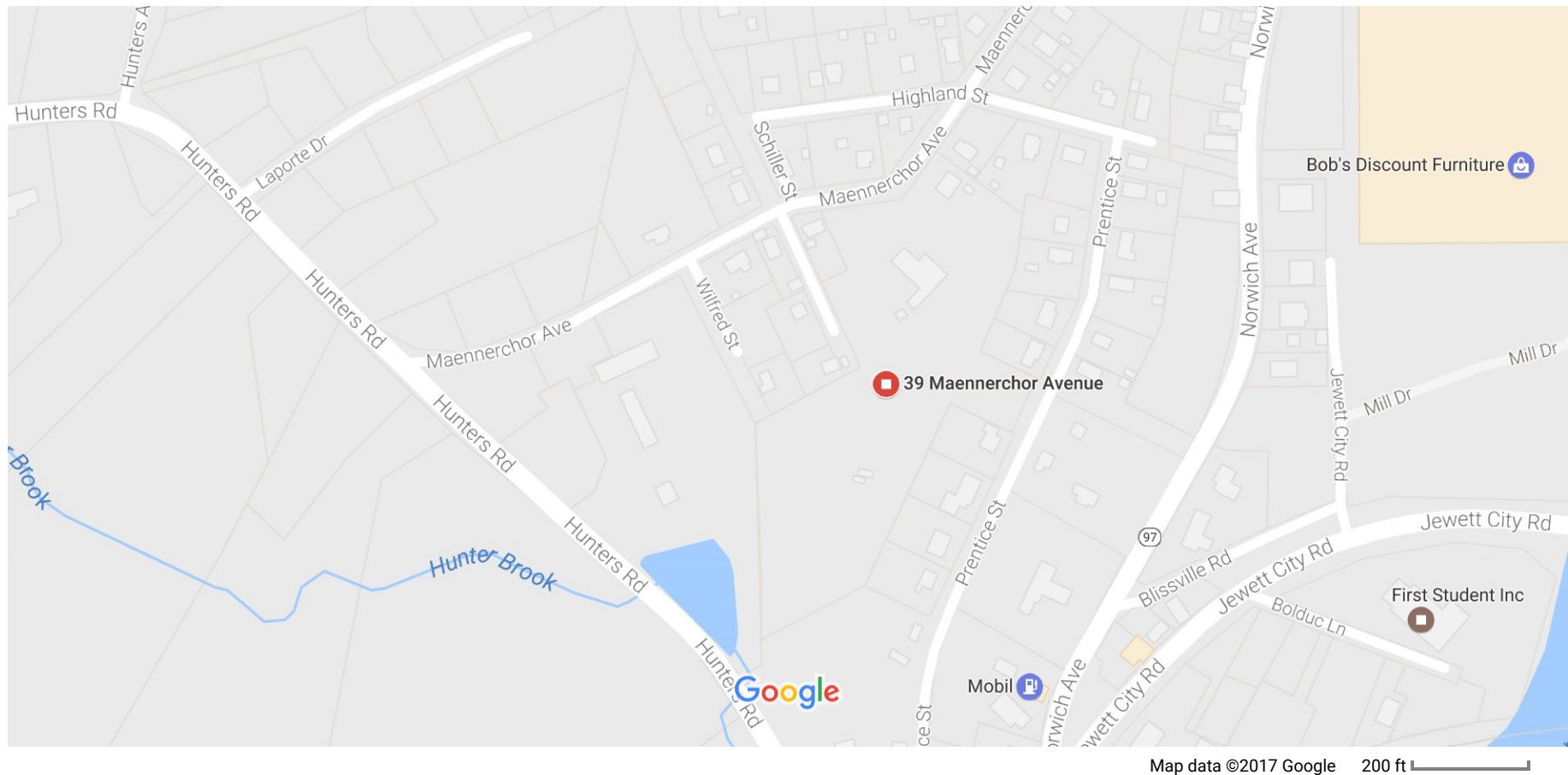
Check the capacities of Reinforcing Concrete:

Strength reduction factor (Flexure and axial tension):	0.90	Strength reduction factor (Shear):	0.75		
Strength reduction factor (Axial compression):	0.65	Wind Load Factor on Concrete Design:	1.00		
Load/ Capacity Ratio					
(1) Concrete Pier:					
Vertical Steel Rebar Area (sq. in./each):	0.79	Tie / Stirrup Area (sq. in./each):	0.31		
Calculated Moment Capacity (Mn, Kips-Ft):	4964.4	> Design Factored Moment (Mu, Kips-Ft):	2536.5	0.51	OK!
Calculated Shear Capacity (Kips):	663.6	> Design Factored Shear (Kips):	25.6	0.04	OK!
Calculated Tension Capacity (Tn, Kips):	1621.1	> Design Factored Tension (Tu Kips):	0.0	0.00	OK!
Calculated Compression Capacity (Pn, Kips):	7308.6	> Design Factored Axial Load (Pu Kips):	36.9	0.01	OK!
Moment & Axial Strength Combination:	0.51	OK! Check Tie Spacing (Design/Required):		1	OK!
Pier Reinforcement Ratio:	0.005	Reinforcement Ratio is satisfied per ACI			

(2).Concrete Pad:

One-Way Design Shear Capacity (L-Direction, Kips):	535.6	>	One-Way Factored Shear (L-D. Kips):	247.3	0.46	OK!
One-Way Design Shear Capacity (W-Direction, Kips):	535.6	>	One-Way Factored Shear (W-D., Kips)	247.3	0.46	OK!
One-Way Design Shear Capacity (Corner-Corner, Kips):	616.0	>	One-Way Factored Shear (C-C, Kips):	229.8	0.37	OK!
Lower Steel Pad Reinforcement Ratio (L-Direct.):	0.0044	OK!	Lower Steel Pad Reinf. Ratio (W-Direc	0.0044		
Lower Steel Pad Moment Capacity (L-Direction, Kips-ft):	2488.9	>	Moment at Bottom (L-Direct. K-Ft):	994.2	0.40	OK!
Lower Steel Pad Moment Capacity (W-Direction, Kips-ft):	2488.9	>	Moment at Bottom (W-Direct. K-Ft):	994.2	0.40	OK!
Lower Steel Pad Moment Capacity (Corner-Corner,K-ft):	3476.1	>	Moment at Bottom (C-C Dir. K-Ft):	1406.0	0.40	OK!
Upper Steel Pad Reinforcement Ratio (L-Direct.):	0.0044	OK!	Upper Steel Reinf. Ratio (W-Direct.):	0.0044		
Upper Steel Pad Moment Capacity (L-Direction, Kips-ft):	2488.9	>	Moment at the top (L-Dir Kips-Ft):	87.9	0.04	OK!
Upper Steel Pad Moment Capacity (W-Direction, Kips-ft):	2488.9	>	Moment at the top (W-Dir Kips-Ft):	87.9	0.04	OK!
Upper Steel Pad Moment Capacity (Corner-Corner. K-ft):	3476.1	>	Moment at the top (C-C Direc. K-Ft):	268.9	0.08	OK!

Google Maps 39 Maennerchor Ave, Taftville, CT 06380



39 MAENNERCHOR AVE REAR

Location 39 MAENNERCHOR AVE REAR

Mblu 55/ 2/ 43/ 0001/

Acct# 0552430001

Owner SBA TOWERS II LLC

Assessment \$185,800

Appraisal \$265,500

PID 110827

Building Count 1

Current Value

Appraisal			
Valuation Year	Improvements	Land	Total
2013	\$115,500	\$150,000	\$265,500
Assessment			
Valuation Year	Improvements	Land	Total
2013	\$80,800	\$105,000	\$185,800

Parcel Addresses

Additional Addresses

No Additional Addresses available for this parcel

Owner of Record

Owner SBA TOWERS II LLC
ATTN: TAX DEPARTMENT - CT01365
Address 8051 CONGRESS AVENUE
BOCA RATON, FL 33487-1307

Sale Price \$0
Certificate
Book & Page 0
Sale Date 10/01/2009

Ownership History

Ownership History				
Owner	Sale Price	Certificate	Book & Page	Sale Date
SBA TOWERS II LLC	\$0		0	10/01/2009

Building Information

Building 1 : Section 1

Year Built: 2009
Living Area: 400
Replacement Cost: \$20,404
Building Percent 95
Good:

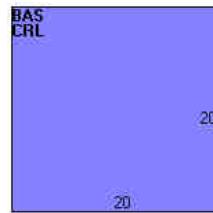
Building Photo

Replacement Cost**Less Depreciation:** \$19,400

Building Attributes	
Field	Description
STYLE	Commercial
MODEL	Commercial
Grade	C
Stories:	1
Occupancy	1
Exterior Wall 1	Concr/Cinder
Exterior Wall 2	
Roof Structure	Flat
Roof Cover	T&G/Rubber
Interior Wall 1	Minim/Masonry
Interior Wall 2	
Interior Floor 1	Concr-Finished
Interior Floor 2	
Heating Fuel	Gas
Heating Type	None
AC Type	None
Bldg Use	TEL REL TW
Total Rooms	
Total Bedrms	
Total Baths	
1st Floor Use:	
Heat/AC	NONE
Frame Type	MASONRY
Baths/Plumbing	NONE
Ceiling/Wall	NONE
Rooms/Prtns	LIGHT
Wall Height	9
% Comm Wall	



(<http://images.vgsi.com/photos/NorwichCTPhotos//00\01\64/66.jpg>)

Building Layout

Building Sub-Areas (sq ft)		Legend	
Code	Description	Gross Area	Living Area
BAS	First Floor	400	400
CRL	Crawl Space/Slab	400	0
		800	400

Extra Features

Extra Features	Legend
No Data for Extra Features	

Land**Land Use**

Use Code 4310
Description TEL REL TW
Zone R-20

Land Line Valuation

Size (Acres) 0.1
Frontage
Depth

Neighborhood
Alt Land Appr No
Category

Assessed Value \$105,000
Appraised Value \$150,000

Outbuildings

Outbuildings						<u>Legend</u>
Code	Description	Sub Code	Sub Description	Size	Value	Bldg #
SHD5	Shed Comm Mas			240 S.F.	\$7,200	1
SHD5	Shed Comm Mas			360 S.F.	\$10,800	1
FN4	Fence Chain 8'			260 L.F.	\$2,900	1
TWR	CELL TOWER			120 UNITS	\$75,200	1

Valuation History

Appraisal			
Valuation Year	Improvements	Land	Total
2016	\$115,500	\$150,000	\$265,500
2015	\$115,500	\$150,000	\$265,500
2012	\$20,000	\$137,000	\$157,000

Assessment			
Valuation Year	Improvements	Land	Total
2016	\$80,800	\$105,000	\$185,800
2015	\$80,800	\$105,000	\$185,800
2012	\$14,000	\$96,000	\$110,000

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