



QC Development

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February 23, 2018

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) – CT1110
154 Sayles Avenue, Putnam, CT 06260
N 41-55-46
W 71-53-11

Dear Ms. Bachman:

AT&T currently maintains nine (9) antennas at the 134-foot level of the existing 175-foot Monopole at 154 Sayles Ave, Putnam, CT. The tower and the property are owned by SBA. AT&T now intends to replace three (3) Powerwave antennas with (3) CCI antennas. AT&T also intends to replace (3) Ericsson Remote Radio Units (RRU) with three (3) Ericsson RRUS-32 B2 units and add (3) Ericsson RRUS-32. These RRUs would also be installed at the 134-foot level of the tower.

This facility was approved by the Putnam Zoning Commission on October 29, 1998. This approval included no condition(s) that could feasibly be violated by this modification, including total facility height or mounting restrictions. This modification therefore complies with the aforementioned approval.

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 Barney Seney, Mayor of the Town of Putnam, and the Putnam Planning & Land Use Department as well as the property and tower owner.

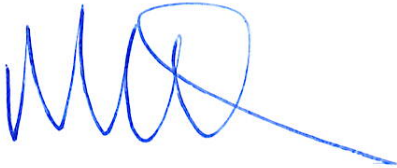
The planned modifications to the facility fall squarely within those activities explicitly provided for in R.C.S.A. § 16-50j-72(b)(2).

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,



Mark Roberts
QC Development
Consultant for AT&T

Attachments

cc: The Honorable Barney Seney - as Elected Official
Fred Wojick - as Local Land Use Agent
SBA - as Tower and Property Owner

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*							2.93%
AT&T GSM	1	283	134	0.0062	880	0.5867	0.11%
AT&T UMTS	2	262	134	0.0115	880	0.5867	0.20%
AT&T UMTS	2	317	134	0.0139	1900	1.0000	0.14%
AT&T LTE	1	1476	134	0.0324	734	0.4893	0.66%
AT&T LTE	4	2421	134	0.2126	1900	1.0000	2.13%
Site Total							6.16%

*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*							2.93%
AT&T UMTS	1	262	134	0.0058	880	0.5867	0.10%
AT&T LTE	1	1476	134	0.0324	734	0.4893	0.66%
AT&T LTE	2	4842	134	0.2126	1900	1.0000	2.13%
AT&T LTE	1	1285	134	0.0282	2300	1.0000	0.28%
Site Total							6.37%

*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: UNMANNED TELECOMMUNICATIONS FACILITY MODIFICATIONS
 SITE ADDRESS: 154 SAYLE AVENUE
 PUTNAM, CT 06260
 LATITUDE: 41° 55' 46" N
 LONGITUDE: 71° 53' 11" W
 JURISDICTION: NATIONAL, STATE & LOCAL CODES OR ORDINANCES
 CURRENT USE: TELECOMMUNICATIONS FACILITY
 PROPOSED USE: TELECOMMUNICATIONS FACILITY
 DESIGN GUIDELINE: LTE 3C

SITE NUMBER: CT1110
SITE NAME: PUTNAM SAYLE AVE

154 SAYLE AVENUE
 PUTNAM, CT 06260
 WINDHAM COUNTY

DRAWING INDEX

REV

LOCUS MAP

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- 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.
- 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.
- CONTRACTOR SHALL VERIFY ALL PLANS AND EXISTING DIMENSIONS AND CONDITIONS ON THE JOB SITE AND SHALL IMMEDIATELY NOTIFY THE AT&T REPRESENTATIVE IN WRITING OF DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR BE RESPONSIBLE FOR SAME.



- DRIVING DIRECTIONS FROM 550 COCHITUATE ROAD, FRAMINGHAM, MA:
- HEAD NORTHEAST, TURN RIGHT TOWARD SPEEN ST, TURN RIGHT ONTO SPEEN ST
 - TURN RIGHT ONTO COCHITUATE RD
 - USE THE RIGHT LANE TO TAKE THE RAMP TO I-90/MASSPIKE/SPRINGFIELD/BOSTON
 - KEEP LEFT AT THE FORK, FOLLOW SIGNS FOR INTERSTATE 90 W/MASSPIKE/WORCESTER/SPRINGFIELD AND MERGE ONTO I-90 W/MASSPIKE
 - MERGE ONTO I-90 W/MASSPIKE
 - TAKE EXIT 10 TOWARD MA-12 N/AUBURN/WORCESTER
 - KEEP RIGHT AT THE FORK, FOLLOW SIGNS FOR I-395 S/US-20 E/NORWICH CT
 - CONTINUE ONTO I-395 S
 - TAKE EXIT 47 FOR US-44 TOWARD PROVIDENCE/PUTNAM
 - TURN LEFT ONTO US-44 E
 - TURN LEFT ONTO MARY CREST DR
 - TURN LEFT ONTO SAYLES AVE
 - SAYLES TURNS INTO AZUD RD (SITE ENTRANCE ACROSS FROM SCRAP YARD)

CONNECTICUT



CALL BEFORE YOU DIG



CALL TOLL FREE: 800-922-4455

UNDERGROUND SERVICE ALERT



SAI COMMUNICATIONS
 27 NORTHWESTERN DRIVE
 SALEM, NH 03079

SITE NUMBER: CT1110
 SITE NAME: PUTNAM SAYLE AVE
 154 SAYLE AVENUE
 PUTNAM, CT 06260
 WINDHAM COUNTY



550 COCHITUATE ROAD, SUITE 13,
 FRAMINGHAM, MA 01701-4681

NO.	DATE	REVISIONS	BY	CHK
0	01/25/18	ISSUED FOR REVIEW	AAB	MRC

TITLE SHEET

SHEET NO. **T-1**

GENERAL NOTES

1. THE CONTRACTOR SHALL GIVE ALL NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY, MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS, AND LOCAL AND STATE JURISDICTIONAL CODES BEARING ON THE PERFORMANCE OF THE WORK. THE WORK PERFORMED ON THE PROJECT AND THE MATERIALS INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS, AND ORDINANCES.

2. THE ARCHITECT/ENGINEER HAVE MADE EVERY EFFORT TO SET FORTH IN THE CONSTRUCTION AND CONTRACT DOCUMENTS THE COMPLETE SCOPE OF WORK. THE CONTRACTOR BIDDING THE JOB IS NEVERTHELESS CAUTIONED THAT MINOR OMISSIONS OR ERRORS IN THE DRAWINGS AND OR SPECIFICATIONS SHALL NOT EXCUSE SAID CONTRACTOR FROM COMPLETING THE PROJECT AND IMPROVEMENTS IN ACCORDANCE WITH THE INTENT OF THESE DOCUMENTS.

3. THE CONTRACTOR OR BIDDER SHALL BEAR THE RESPONSIBILITY OF NOTIFYING (IN WRITING) THE LESEE/LICENSEE REPRESENTATIVE OF ANY CONFLICTS, ERRORS, OR OMISSIONS PRIOR TO THE SUBMISSION OF CONTRACTOR'S PROPOSAL OR PERFORMANCE OF WORK. IN THE EVENT OF DISCREPANCIES THE CONTRACTOR SHALL PRICE THE MORE COSTLY OR EXTENSIVE WORK, UNLESS DIRECTED IN WRITING OTHERWISE.

4. THE SCOPE OF WORK SHALL INCLUDE FURNISHING ALL MATERIALS, EQUIPMENT, LABOR AND ALL OTHER MATERIALS AND LABOR DEEMED NECESSARY TO COMPLETE THE WORK/PROJECT AS DESCRIBED HEREIN.

5. THE CONTRACTOR SHALL VISIT THE JOB SITE PRIOR TO THE SUBMISSION OF BIDS OR PERFORMING WORK TO FAMILIARIZE HIMSELF WITH THE FIELD CONDITIONS AND TO VERIFY THAT THE PROJECT CAN BE CONSTRUCTED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.

6. THE CONTRACTOR SHALL OBTAIN AUTHORIZATION TO PROCEED WITH CONSTRUCTION PRIOR TO STARTING WORK ON ANY ITEM NOT CLEARLY DEFINED BY THE CONSTRUCTION DRAWINGS / CONTRACT DOCUMENTS.

7. THE CONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS ACCORDING TO THE MANUFACTURER'S / VENDOR'S SPECIFICATIONS UNLESS NOTED OTHERWISE OR WHERE LOCAL CODES OR ORDINANCES TAKE PRECEDENCE.

8. THE CONTRACTOR SHALL PROVIDE A FULL SET OF CONSTRUCTION DOCUMENTS AT THE SITE UPDATED WITH THE LATEST REVISIONS AND ADDENDUMS OR CLARIFICATIONS AVAILABLE FOR THE USE BY ALL PERSONNEL INVOLVED WITH THE PROJECT.

9. THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE PROJECT DESCRIBED HEREIN. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES AND PROCEDURES AND FOR COORDINATING ALL PORTIONS OF THE WORK UNDER THE CONTRACT.

10. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ALL NECESSARY CONSTRUCTION CONTROL SURVEYS, ESTABLISHING AND MAINTAINING ALL LINES AND GRADES REQUIRED TO CONSTRUCT ALL IMPROVEMENTS AS SHOWN HEREIN.

11. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL PERMITS AND INSPECTIONS WHICH MAY BE REQUIRED FOR THE WORK BY THE ARCHITECT/ENGINEER, THE STATE, COUNTY OR LOCAL GOVERNMENT AUTHORITY.

12. THE CONTRACTOR SHALL MAKE NECESSARY PROVISIONS TO PROTECT EXISTING IMPROVEMENTS, EASEMENTS, PAVING, CURBING, ETC. DURING CONSTRUCTION. UPON COMPLETION OF WORK, THE CONTRACTOR SHALL REPAIR ANY DAMAGE THAT MAY HAVE OCCURRED DUE TO CONSTRUCTION ON OR ABOUT THE PROPERTY.

13. THE CONTRACTOR SHALL KEEP THE GENERAL WORK AREA CLEAN AND HAZARD FREE DURING CONSTRUCTION AND DISPOSE OF ALL DIRT, DEBRIS, RUBBISH AND REMOVE EQUIPMENT NOT SPECIFIED AS REMAINING ON THE PROPERTY. PREMISES SHALL BE LEFT IN CLEAN CONDITION AND FREE FROM PAINT SPOTS, DUST, OR SMUDGES OF ANY NATURE.

14. THE CONTRACTOR SHALL COMPLY WITH ALL OSHA REQUIREMENTS AS THEY APPLY TO THIS PROJECT.

15. THE CONTRACTOR SHALL NOTIFY THE LESEE/LICENSEE REPRESENTATIVE WHERE A CONFLICT OCCURS ON ANY OF THE CONTRACT DOCUMENTS. THE CONTRACTOR IS NOT TO ORDER MATERIAL OR CONSTRUCT ANY PORTION OF THE WORK THAT IS IN CONFLICT UNTIL CONFLICT IS RESOLVED BY THE LESEE/LICENSEE REPRESENTATIVE.

16. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS, ELEVATIONS, PROPERTY LINES, ETC. ON THE JOB.

17. ALL UNDERGROUND UTILITY INFORMATION WAS DETERMINED FROM SURFACE INVESTIGATIONS AND EXISTING PLANS OF RECORD. THE CONTRACTOR SHALL LOCATE ALL UNDERGROUND UTILITIES IN THE FIELD PRIOR TO ANY SITE WORK. CALL THE FOLLOWING FOR ALL PRE-CONSTRUCTION NOTIFICATION 72-HOURS PRIOR TO ANY EXCAVATION ACTIVITY: DIG SAFE SYSTEM (MA, ME, NH, RI, VT): 1-888-344-7233 CALL BEFORE YOU DIG (CT): 1-800-922-4455

18. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING ALL NECESSARY CONSTRUCTION CONTROL SURVEYS AND MAINTAINING ALL LINES AND GRADES REQUIRED TO CONSTRUCT ALL IMPROVEMENTS SHOWN HEREIN.

19. ALL DIMENSIONS SHOWN THUS ± ARE APPROXIMATE. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND ELEVATIONS WHICH EFFECT THE CONTRACTORS WORK. CONTRACTOR TO VERIFY ALL DIMENSIONS WITH PROJECT OWNER PRIOR TO CONSTRUCTION.

20. NORTH ARROW SHOWN ON PLANS REFERS TO APPROXIMATE TRUE NORTH. PRIOR TO THE START OF CONSTRUCTION, ORDERING OR FABRICATING OF ANTENNA MOUNTS, CONTRACTOR SHALL CONSULT WITH PROJECT OWNER'S RF ENGINEER AND FIELD VERIFY ALL ANTENNA SECTOR LOCATIONS AND ANTENNA AZIMUTHS.

21. THE CONTRACTOR AND OR HIS SUB CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL PERMITS AND INSPECTIONS WHICH MAY BE REQUIRED FOR THE WORK BY THE ARCHITECT/ENGINEER, THE STATE, COUNTY OR LOCAL GOVERNMENT AUTHORITY.

22. ANTENNA INSTALLATION SHALL BE CONDUCTED BY FIELD CREWS EXPERIENCED IN THE ASSEMBLY AND ERECTION OF RADIO ANTENNAS, TRANSMISSION LINES AND SUPPORT STRUCTURES.

23. COAXIAL CABLE CONNECTORS AND TRANSMITTER EQUIPMENT SHALL BE PROVIDED BY THE PROJECT OWNER AND IS NOT INCLUDED IN THESE CONSTRUCTION DOCUMENTS. A SCHEDULE OF PROJECT OWNER SUPPLIED MATERIALS IS ATTACHED TO THE BID DOCUMENTS (SEE EXHIBIT 3). ALL OTHER HARDWARE TO BE PROVIDED BY THE CONTRACTOR. CONNECTION HARDWARE SHALL BE STAINLESS STEEL.

24. WHEN "PAINT TO MATCH" IS SPECIFIED FOR ANTENNA CONCEALMENT, PAINT PRODUCT FOR ANTENNA RADOME SHALL BE SHERWIN WILLIAMS COROTHANE II. SURFACE PREPARATION AND APPLICATION SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS AND PROJECT OWNER'S GUIDELINE'S.

25. COORDINATION, LAYOUT, AND FURNISHING OF CONDUIT, CABLE AND ALL APPURTENANCES REQUIRED FOR PROPER INSTALLATION OF ELECTRICAL AND TELECOMMUNICATION SERVICE SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.

26. ALL UTILITY WORK SHALL BE IN ACCORDANCE WITH LOCAL UTILITY COMPANY REQUIREMENTS AND SPECIFICATIONS.

27. ALL (E)ACTIVE SEWER, WATER, GAS, ELECTRIC, AND OTHER UTILITIES WHERE ENCOUNTERED IN THE WORK, SHALL BE PROTECTED AT ALL TIMES, AND WHERE REQUIRED FOR THE PROPER EXECUTION OF THE WORK, SHALL BE RELOCATED AS DIRECTED BY ENGINEERS. EXTREME CAUTION SHOULD BE USED BY THE CONTRACTOR WHEN EXCAVATING OR PIER DRILLING AROUND OR NEAR UTILITIES. CONTRACTOR SHALL PROVIDE SAFETY TRAINING FOR THE WORKING CREW.

28. ALL (E)INACTIVE SEWER, WATER, GAS, ELECTRIC AND OTHER UTILITIES, WHICH INTERFERE WITH THE EXECUTION OF THE WORK, SHALL BE REMOVED AND/OR CAPPED, PLUGGED OR OTHERWISE DISCONTINUED AT POINTS WHICH WILL NOT INTERFERE WITH THE EXECUTION OF THE WORK, SUBJECT TO THE APPROVAL OF UTILITY COMPANY ENGINEERING. THE AREAS OF THE PROPERTY DISTURBED BY THE WORK AND NOT COVERED BY THE EQUIPMENT, DRIVEWAY OR

29. GRAVEL, SHALL BE GRADED TO A UNIFORM SLOPE, FERTILIZED, SEEDED AND COVERED WITH MULCH UNLESS OTHERWISE NOTED. THE CONTRACTOR SHALL ESTABLISH AND MAINTAIN SOIL EROSION AND SEDIMENTATION CONTROLS AT ALL TIMES

30. DURING CONSTRUCTION. PER FCC MANDATE, ENHANCED EMERGENCY (E911) SERVICE IS REQUIRED TO MEET NATIONWIDE STANDARDS

31. FOR WIRELESS COMMUNICATIONS SYSTEMS. PROJECT OWNER'S IMPLEMENTATION REQUIRES DEPLOYMENT OF EQUIPMENT AND ANTENNAS GENERALLY DEPICTED ON THIS PLAN, ATTACHED TO OR MOUNTED IN CLOSE PROXIMITY TO THE BTS RADIO CABINETS. PROJECT OWNER RESERVES THE RIGHT TO MAKE REASONABLE MODIFICATIONS TO E911 EQUIPMENT AND LOCATION AS TECHNOLOGY EVOLVES TO MEET REQUIRED SPECIFICATIONS.

32. 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:

2012 INTERNATIONAL BUILDING CODE
2016 CT STATE BUILDING CODE
ELECTRICAL CODE: NEC 2014
NFPA 780 2014

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, NINTH EDITION;

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

ANTENNA TOWER 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.

ELECTRICAL AND GROUNDING NOTES

1. ALL ELECTRICAL WORK SHALL CONFORM TO THE REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE (NEC) AS WELL AS APPLICABLE STATE AND LOCAL CODES.

2. ALL ELECTRICAL ITEMS SHALL BE U.L. APPROVED OR LISTED AND PROCURED PER SPECIFICATION REQUIREMENTS.

3. THE ELECTRICAL WORK INCLUDES ALL LABOR AND MATERIAL DESCRIBED BY DRAWINGS AND SPECIFICATION INCLUDING INCIDENTAL WORK TO PROVIDE COMPLETE OPERATING AND APPROVED ELECTRICAL SYSTEM.

4. GENERAL CONTRACTOR SHALL PAY FEES FOR PERMITS, AND IS RESPONSIBLE FOR OBTAINING SAID PERMITS AND COORDINATION OF INSPECTIONS.

5. ELECTRICAL AND TELCO WIRING OUTSIDE A BUILDING AND EXPOSED TO WEATHER SHALL BE IN WATER TIGHT GALVANIZED RIGID STEEL CONDUITS OR SCHEDULE 80 PVC (AS PERMITTED BY CODE) AND WHERE REQUIRED IN LIQUID TIGHT FLEXIBLE METAL OR NONMETALLIC CONDUITS.

6. BURIED CONDUIT SHALL BE SCHEDULE 40 PVC.

7. ELECTRICAL WIRING SHALL BE COPPER WITH TYPE XHHW, THWN, OR THHN INSULATION.

8. RUN ELECTRICAL CONDUIT OR CABLE BETWEEN ELECTRICAL UTILITY DEMARCATION POINT AND PROJECT OWNER CELL SITE PPC AS INDICATED ON THIS DRAWING. PROVIDE FULL LENGTH PULL ROPE. COORDINATE INSTALLATION WITH UTILITY COMPANY.

9. RUN TELCO CONDUIT OR CABLE BETWEEN TELEPHONE UTILITY DEMARCATION POINT AND PROJECT OWNER CELL SITE TELCO CABINET AND BTS CABINET AS INDICATED ON THIS DRAWING. PROVIDE FULL LENGTH PULL ROPE AND GREENLEE CONDUIT MEASURING TAPE IN EACH INSTALLED TELCO CONDUIT.

10. WHERE CONDUIT BETWEEN BTS AND PROJECT OWNER CELL SITE PPC AND BETWEEN BTS AND PROJECT OWNER CELL SITE TELCO SERVICE CABINET ARE UNDERGROUND USE PVC, SCHEDULE 40 CONDUIT. ABOVE THE GROUND PORTION OF THESE CONDUITS SHALL BE PVC CONDUIT.

11. ALL EQUIPMENT LOCATED OUTSIDE SHALL HAVE NEMA 3R ENCLOSURE.

12. PPC SUPPLIED BY PROJECT OWNER.

13. GROUNDING SHALL COMPLY WITH NEC ART. 250. ADDITIONALLY, GROUNDING, BONDING AND LIGHTNING PROTECTION SHALL BE DONE IN ACCORDANCE WITH "T-MOBILE BTS SITE GROUNDING STANDARDS".

14. GROUND COAXIAL CABLE SHIELDS MINIMUM AT BOTH ENDS USING MANUFACTURERS COAX CABLE GROUNDING KITS SUPPLIED BY PROJECT OWNER.

15. USE #6 COPPER STRANDED WIRE WITH GREEN COLOR INSULATION FOR ABOVE GRADE GROUNDING (UNLESS OTHERWISE SPECIFIED) AND #2 SOLID TINNED BARE COPPER WIRE FOR BELOW GRADE GROUNDING AS INDICATED ON THE DRAWING.

16. ALL GROUND CONNECTIONS TO BE BURNDY HYGROUND COMPRESSION TYPE CONNECTORS OR CADWELD EXOTHERMIC WELD. DO NOT ALLOW BARE COPPER WIRE TO BE IN CONTACT WITH GALVANIZED STEEL.

17. ROUTE GROUNDING CONDUCTORS ALONG THE SHORTEST AND STRAIGHTEST PATH POSSIBLE, EXCEPT AS OTHERWISE INDICATED. GROUNDING LEADS SHOULD NEVER BE BENT AT RIGHT ANGLE. ALWAYS MAKE AT LEAST 12" RADIUS BENDS. #6 WIRE CAN BE BENT AT 6" RADIUS WHEN NECESSARY. BOND ANY METAL OBJECTS WITHIN 6 FEET OF PROJECT OWNER EQUIPMENT OR CABINET TO MASTER GROUND BAR OR GROUNDING RING.

18. CONNECTIONS TO GROUND BARS SHALL BE MADE WITH TWO HOLE COMPRESSION TYPE COPPER LUGS. APPLY OXIDE INHIBITING COMPOUND TO ALL LOCATIONS.

19. BOND ANTENNA MOUNTING BRACKETS, COAXIAL CABLE GROUND KITS, AND ALNA TO EGB PLACED NEAR THE ANTENNA LOCATION.

20. APPLY OXIDE INHIBITING COMPOUND TO ALL COMPRESSION TYPE GROUND CONNECTIONS.

21. CONTRACTOR SHALL PROVIDE AND INSTALL OMNI DIRECTIONAL ELECTRONIC MARKER SYSTEM (EMS) BALLS OVER EACH GROUND ROD AND BONDING POINT BETWEEN EXISTING TOWER/ (E) MONOPOLE GROUNDING RING AND EQUIPMENT GROUNDING RING.

22. CONTRACTOR SHALL TEST COMPLETED GROUND SYSTEM AND RECORD RESULTS FOR PROJECT CLOSE-OUT DOCUMENTATION. 5 OHMS MAXIMUM RESISTANCE REQUIRED.

23. CONTRACTOR SHALL CONDUCT ANTENNA, COAX, AND LNA RETURN-LOSS AND DISTANCE- TO-FAULT MEASUREMENTS (SWEEP TESTS) AND RECORD RESULTS FOR PROJECT CLOSE OUT.



ABBREVIATIONS

AGL	ABOVE GRADE LEVEL	G.C.	GENERAL CONTRACTOR	RF	RADIO FREQUENCY
AWG	AMERICAN WIRE GAUGE	MGB	MASTER GROUND BUS		
BCW	BARE COPPER WIRE	MIN	MINIMUM	TBD	TO BE DETERMINED
BTS	BASE TRANSCEIVER STATION	(P)	PROPOSED/NEW	TBR	TO BE REMOVED
(E)	EXISTING	N.T.S.	NOT TO SCALE	TBRR	TO BE REMOVED AND REPLACED
EG	EQUIPMENT GROUND	REF	REFERENCE	TYP	TYPICAL
EGR	EQUIPMENT GROUND RING	REQ	REQUIRED		
(F)	FUTURE				



SAI COMMUNICATIONS
27 NORTHWESTERN DRIVE
SALEM, NH 03079

SITE NUMBER: CT1110

SITE NAME: PUTNAM SAYLE AVE

154 SAYLE AVENUE
PUTNAM, CT 06260
WINDHAM COUNTY



550 COCHITUATE ROAD, SUITE 13,
FRAMINGHAM, MA 01701-4681

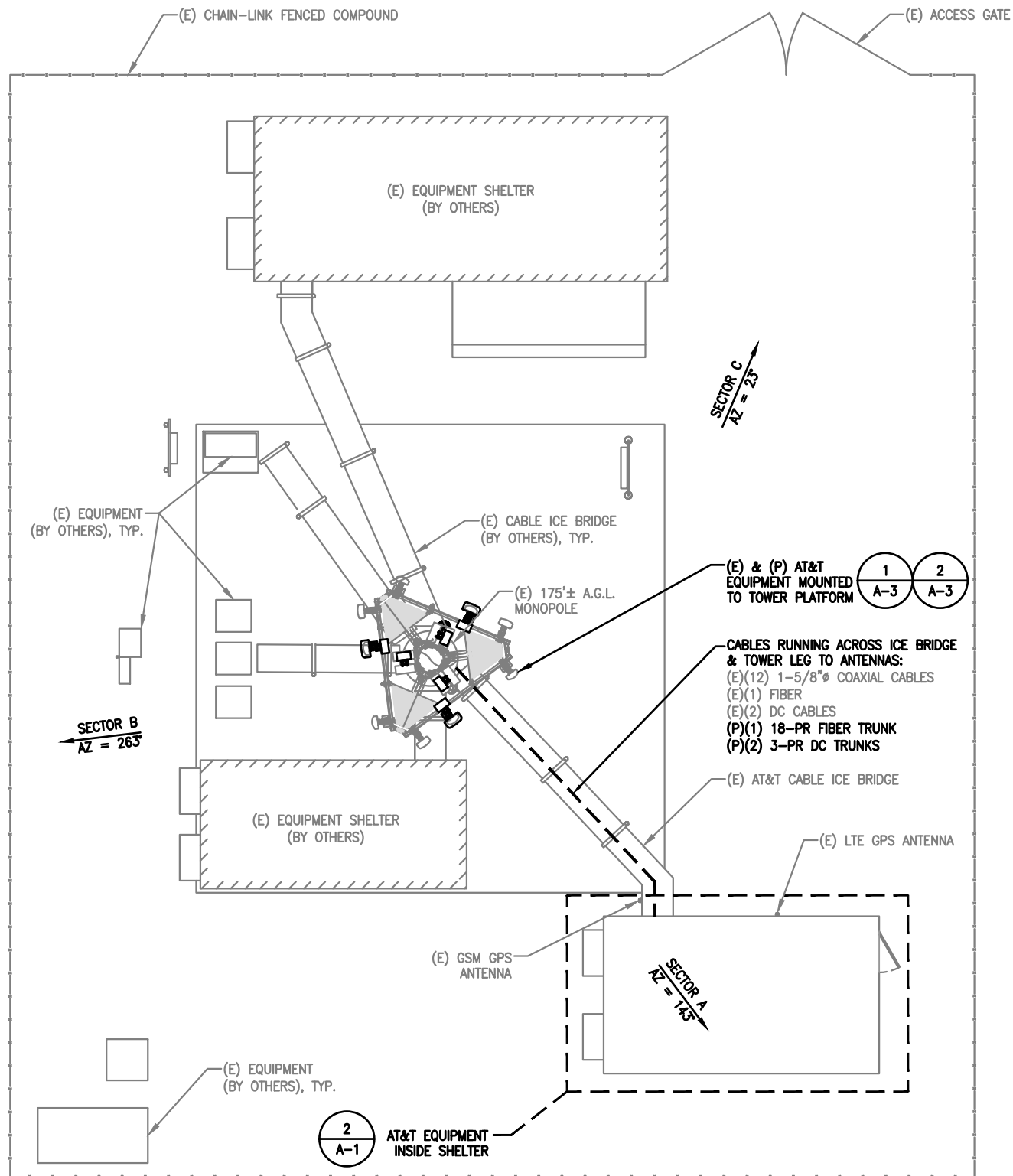
NO.	DATE	REVISIONS	BY	CHK
0	01/25/18	ISSUED FOR REVIEW	AAB	MRC

GENERAL NOTES

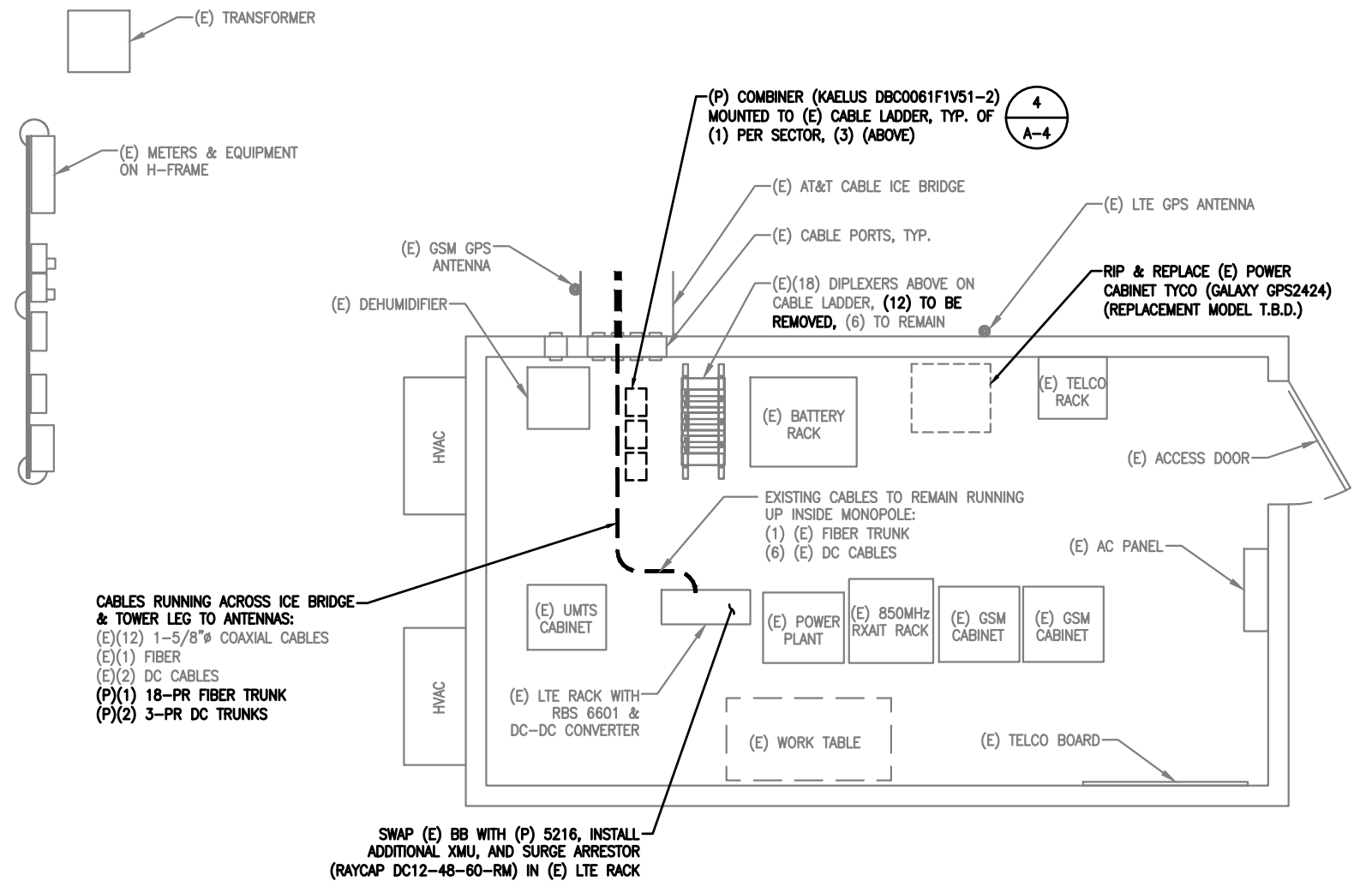
SHEET NO.

GN-1

HALF SIZE PRINT
THIS DRAWING IS SCALEABLE
AT HALF THE NOTED SCALE



1
A-1 COMPOUND PLAN
SCALE: 1"=10'-0"
NORTH

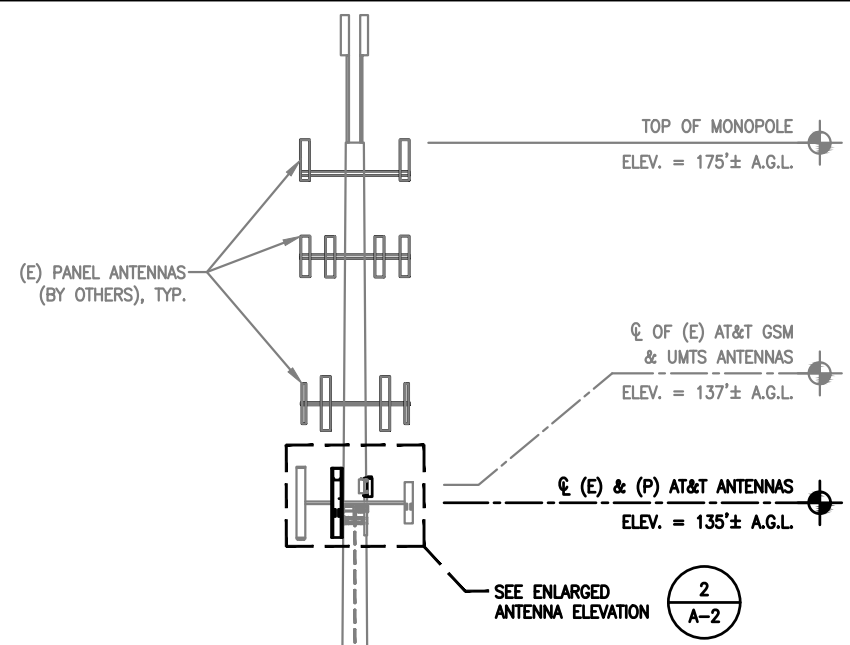


2
A-1 EQUIPMENT SHELTER PLAN
SCALE: 1/2"=1'-0"
NORTH

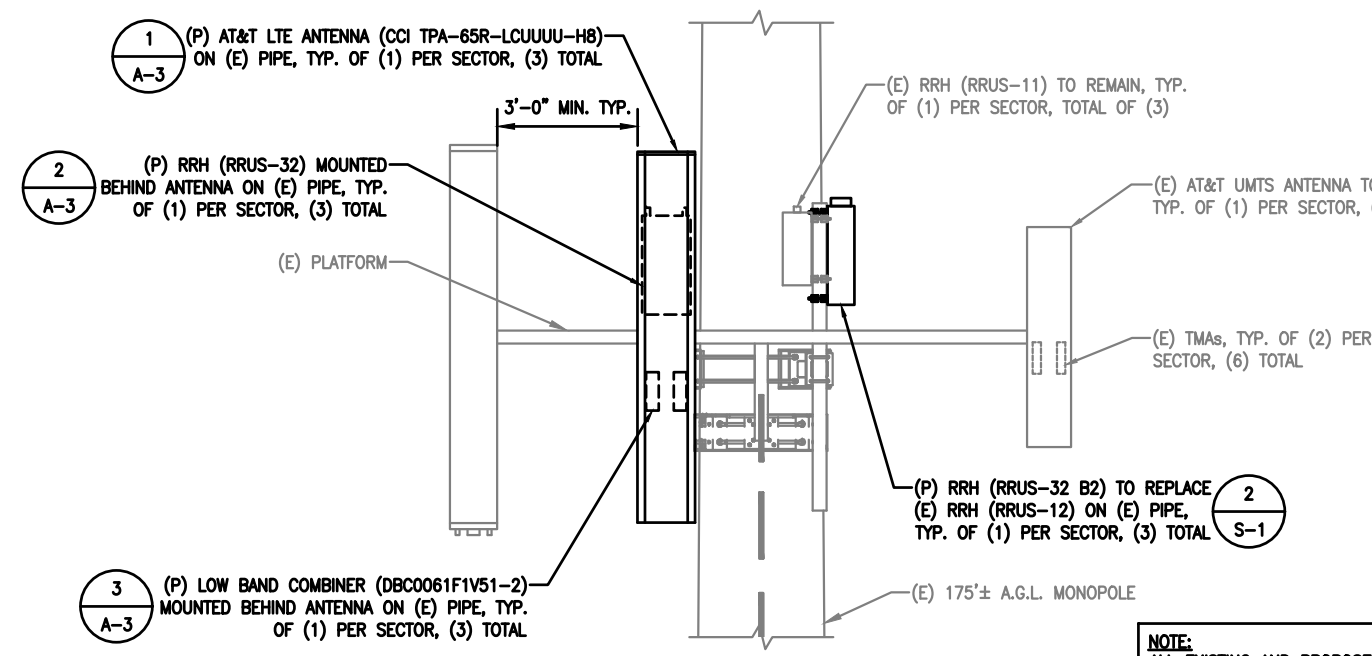


NO.	DATE	REVISIONS	BY	CHK
0	01/25/18	ISSUED FOR REVIEW	AAB	MRC

HALF SIZE PRINT
THIS DRAWING IS SCALEABLE
AT HALF THE NOTED SCALE



TOWER ANALYSIS NOTE:
AN ANALYSIS TO DETERMINE THE STRUCTURAL CAPACITY OF THE EXISTING TOWER SHALL BE PERFORMED PRIOR TO THE INSTALLATION OF THE PROPOSED EQUIPMENT. AEG HAS NOT CONDUCTED AN ANALYSIS OF THE TOWER.

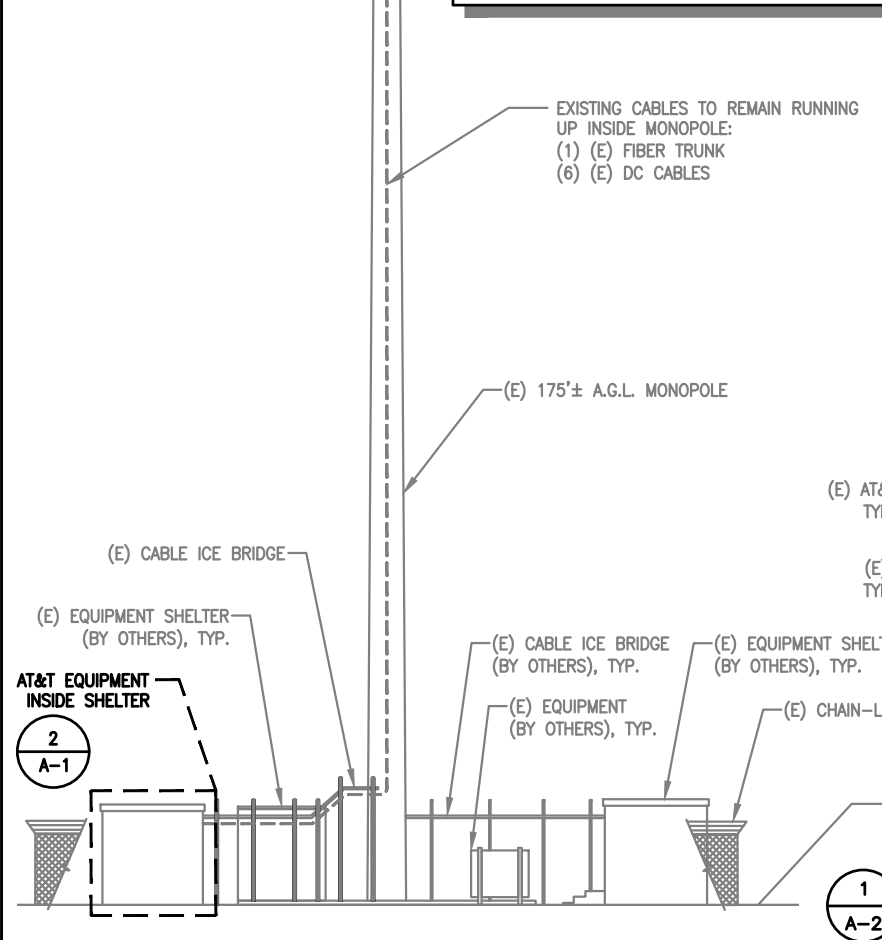


MOUNT ANALYSIS NOTE:
AN ANALYSIS TO DETERMINE THE STRUCTURAL CAPACITY OF THE EXISTING MOUNTS SHALL BE PERFORMED PRIOR TO THE INSTALLATION OF THE PROPOSED EQUIPMENT. AEG HAS NOT CONDUCTED AN ANALYSIS OF THE MOUNT.

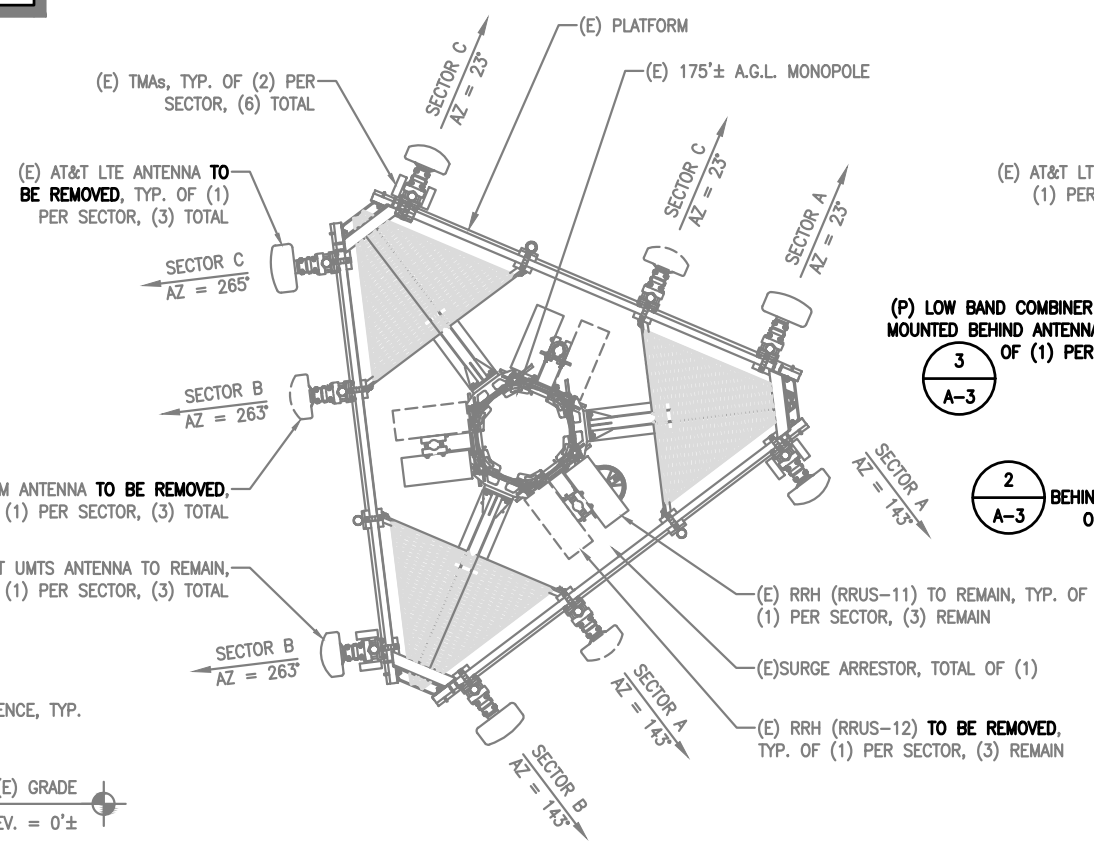


NOTE:
ALL EXISTING AND PROPOSED ANTENNAS ARE TO BE VERTICALLY CENTERED ON PLATFORM.

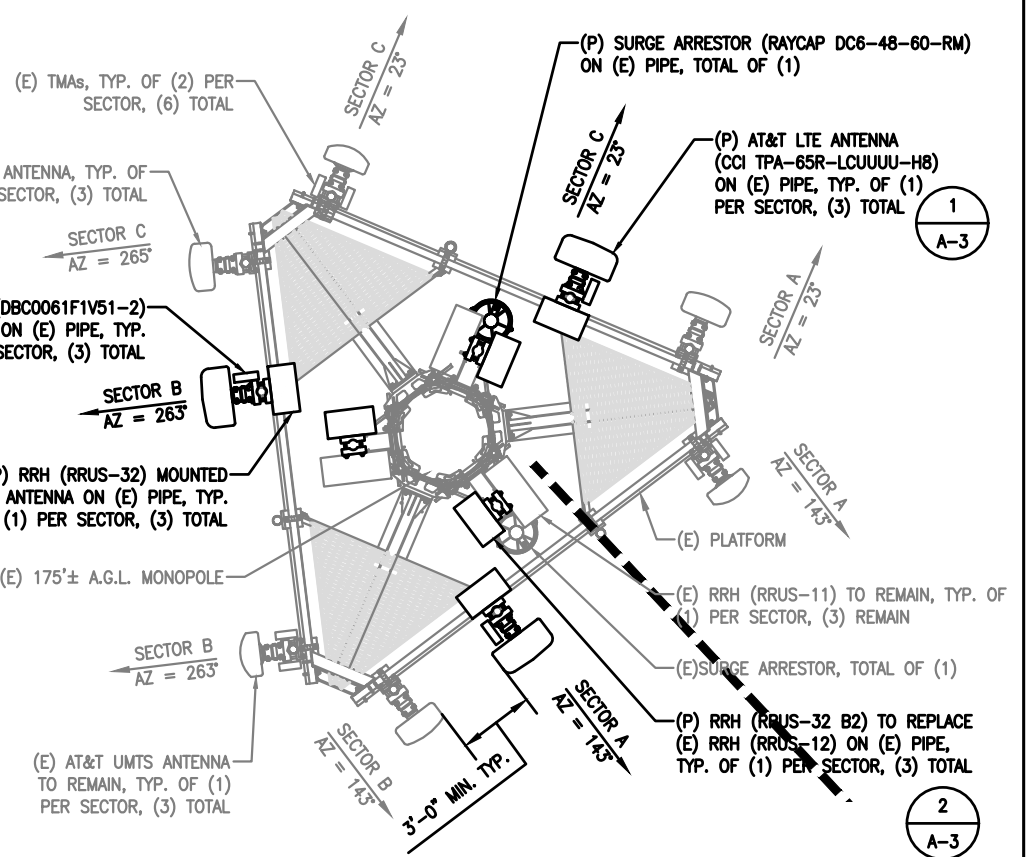
2 ENLARGED ANTENNA ELEVATION
SCALE: 1/2" = 1'-0"



1 ELEVATION
SCALE: 3/32" = 1'-0"



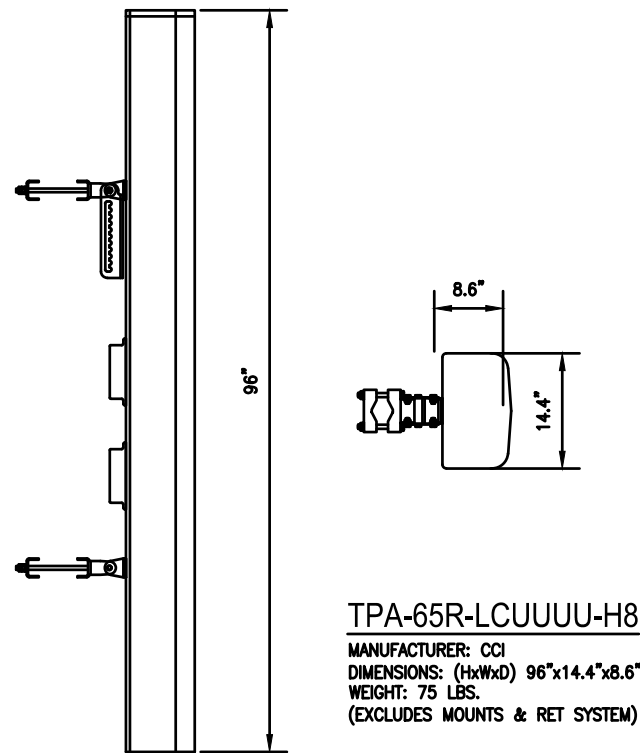
3 EXISTING ANTENNA PLAN
SCALE: 1/2" = 1'-0"



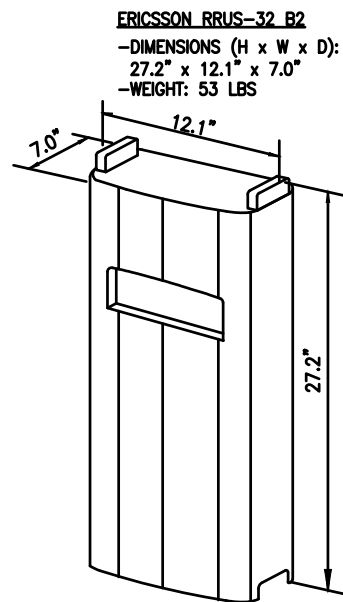
4 PROPOSED ANTENNA PLAN
SCALE: 1/2" = 1'-0"

NO.	DATE	REVISIONS	BY	CHK
0	01/25/18	ISSUED FOR REVIEW	AAB	MRC

HALF SIZE PRINT
THIS DRAWING IS SCALEABLE
AT HALF THE NOTED SCALE

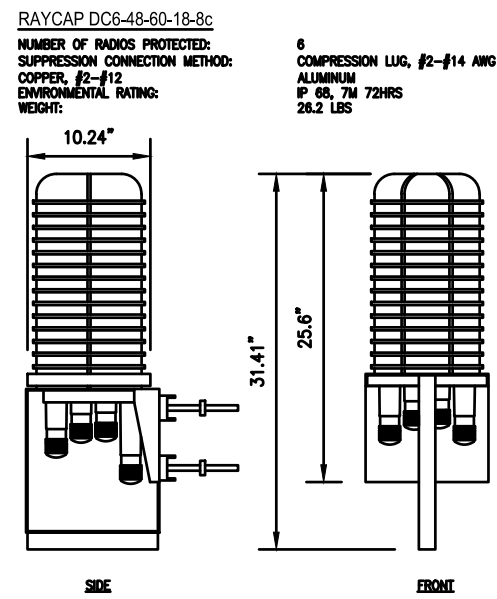


1 ANTENNA DETAIL
A-3 SCALE: N.T.S.



NOTES:
RRU CAN ONLY BE PAINTED ON SOLAR SHIELD.

2 RRH DETAIL
A-3 SCALE: N.T.S.



3 SURGE ARRESTOR DETAIL
A-3 SCALE: N.T.S.

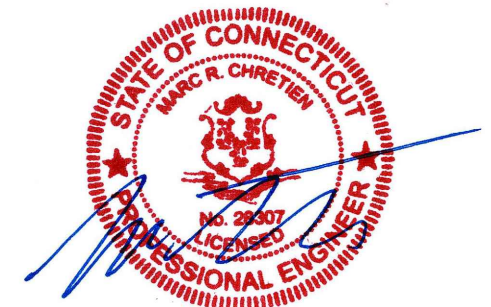


DBC0061F1V51-2
MANUFACTURER: KAEIUS
DIMENSIONS: (HxWxD) 8"x6.2"x3.2"
WEIGHT: 9.5 LBS.

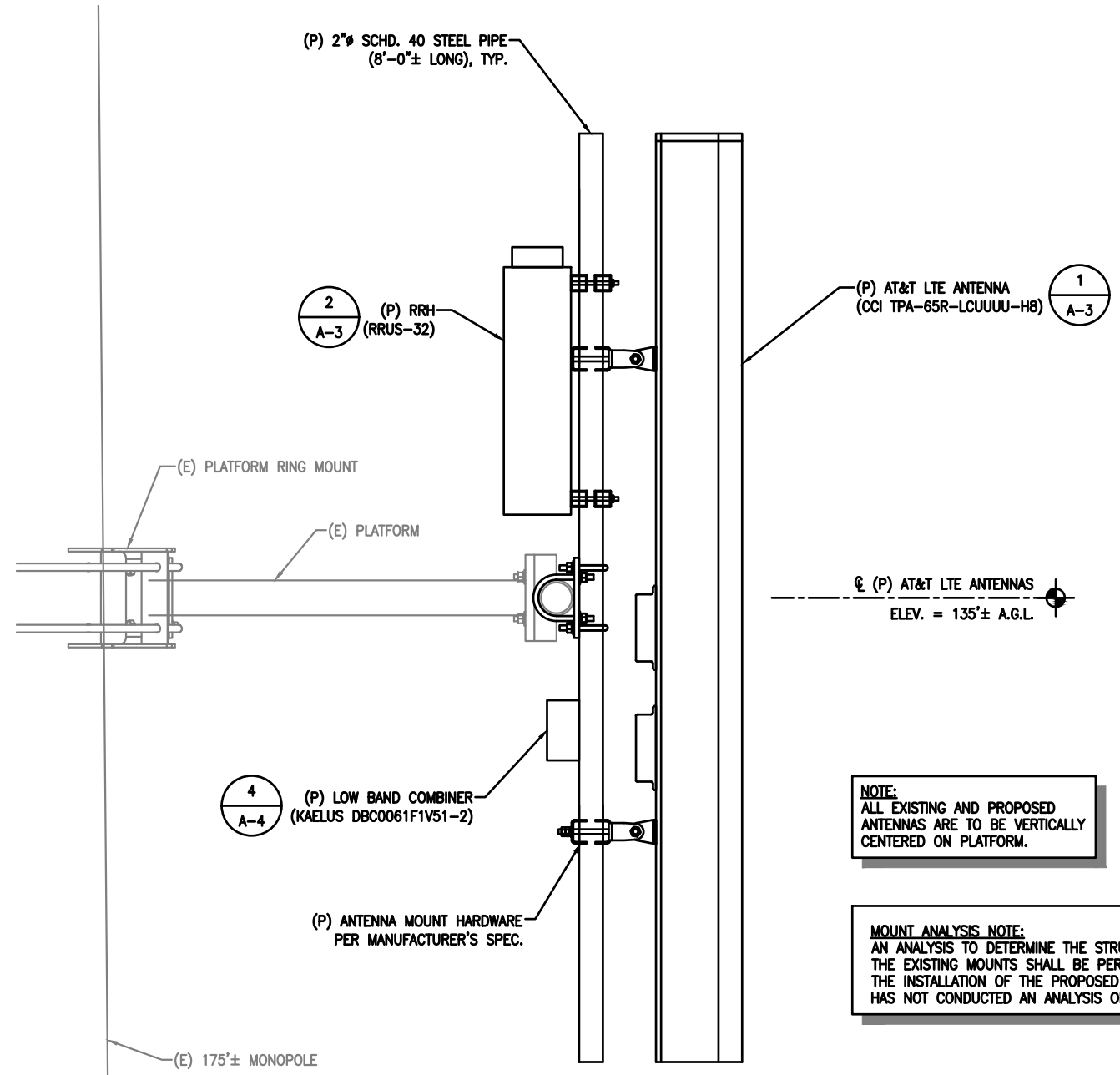
4 COMBINER DETAIL
A-3 SCALE: N.T.S.

RF SYSTEM SCHEDULE									
SECTOR	ANTENNA INFORMATION					RRH INFORMATION		TMA INFORMATION	
	POSITION	STATUS	MODEL	AZIMUTH	RAD CTR (A.G.L.)	STATUS	MODEL	STATUS	MODEL
ALPHA	I-A	EXISTING	7770	143°	137'	-	-	EXISTING, EXISTING	LGP21401, LGP21401
	II-A	-	-	-	-	-	-	-	-
	III-A	PROPOSED	TPA-65R-LCUUUU-H8	143°	135'	PROPOSED, PROPOSED	RRUS-32 B2, RRUS-32	-	-
	IV-A	EXISTING	AM-X-CD-17-65-00T-RET	35°	135'	EXISTING	RRUS-11	-	-
BETA	I-B	EXISTING	7770	263°	137'	-	-	EXISTING, EXISTING	LGP21401, LGP21401
	II-B	-	-	-	-	-	-	-	-
	III-B	PROPOSED	TPA-65R-LCUUUU-H8	263°	135'	PROPOSED, PROPOSED	RRUS-32 B2, RRUS-32	-	-
	IV-B	EXISTING	AM-X-CD-17-65-00T-RET	145°	135'	EXISTING	RRUS-11	-	-
GAMMA	I-C	EXISTING	7770	23°	137'	-	-	EXISTING, EXISTING	LGP21401, LGP21401
	II-C	-	-	-	-	-	-	-	-
	III-C	PROPOSED	TPA-65R-LCUUUU-H8	23°	135'	PROPOSED, PROPOSED	RRUS-32 B2, RRUS-32	-	-
	IV-C	EXISTING	AM-X-CD-17-65-00T-RET	265°	135'	EXISTING	RRUS-11	-	-

* CONTRACTOR TO VERIFY FINAL RFDS PRIOR TO CONSTRUCTION



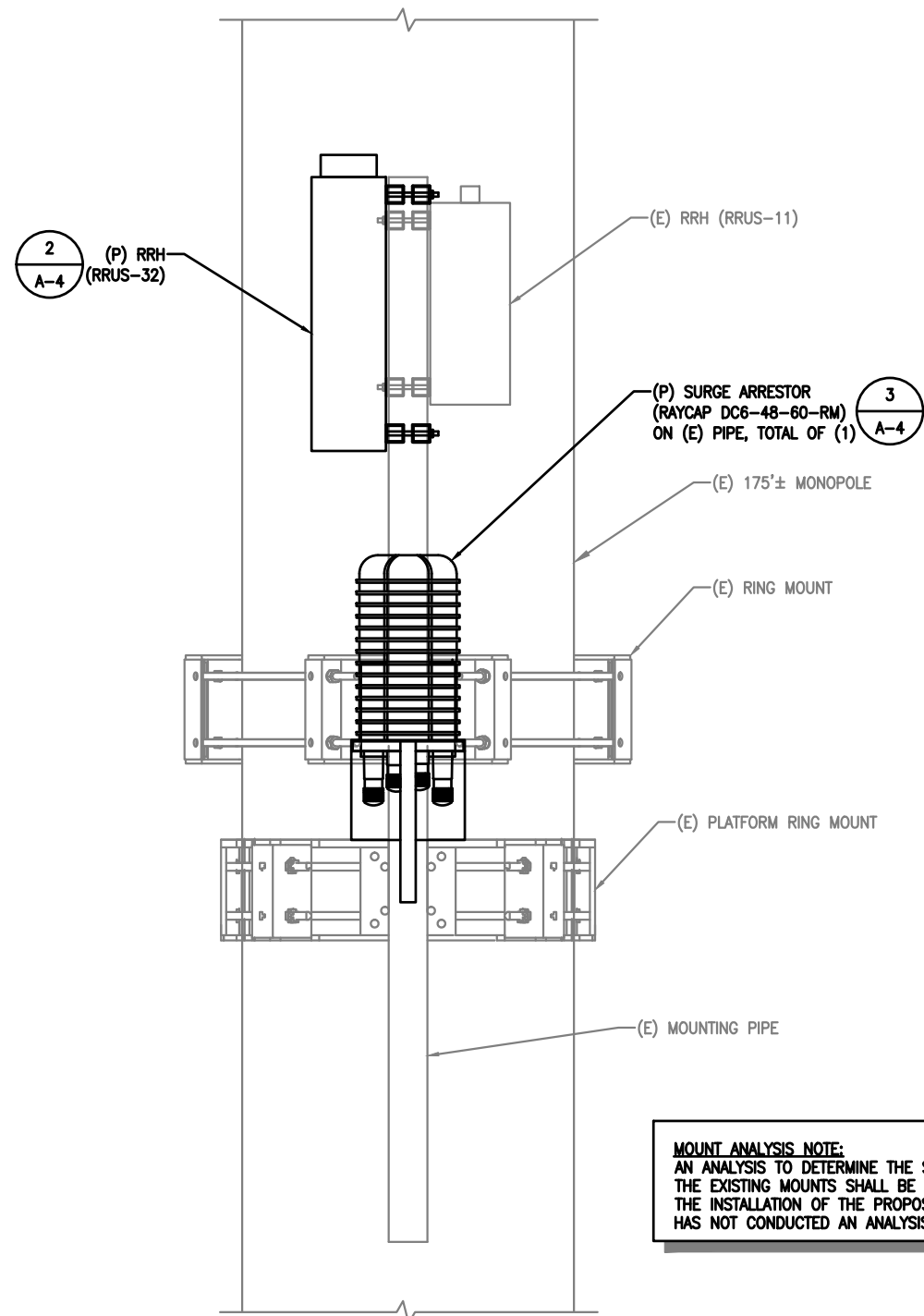
NO.	DATE	REVISIONS	BY	CHK
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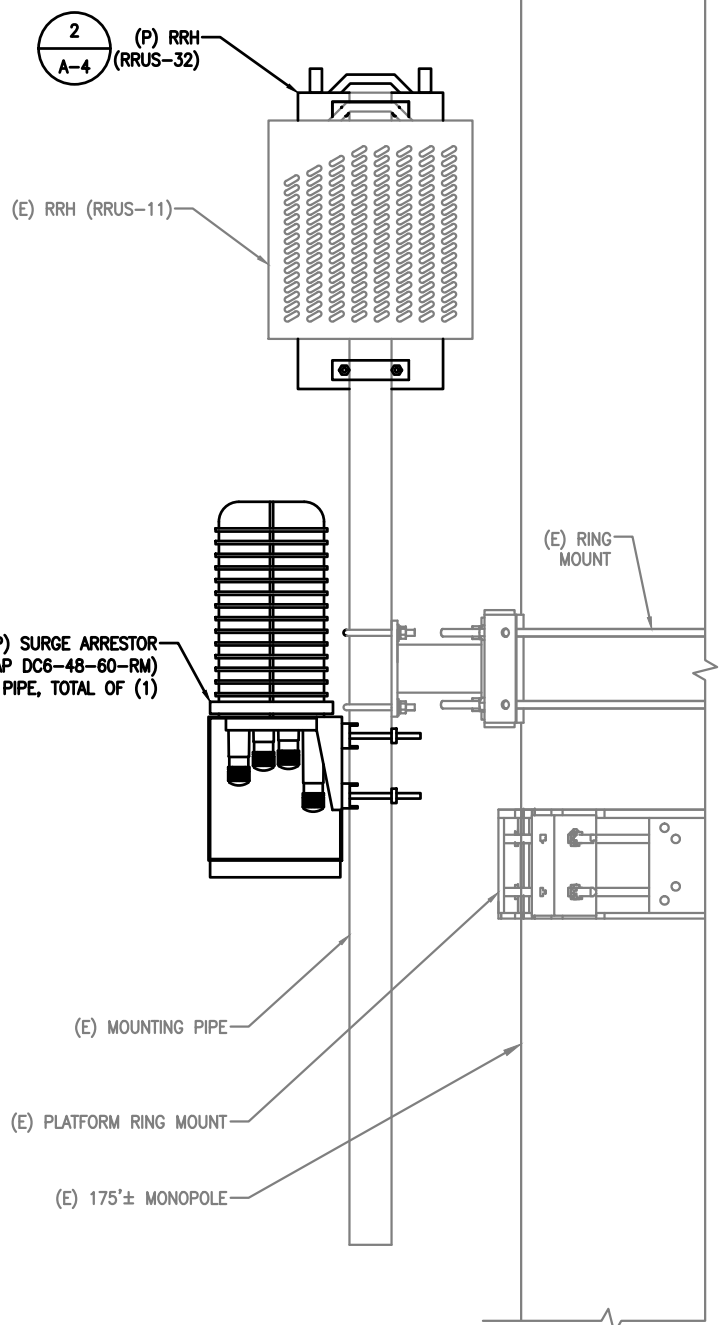
1 ANTENNA & RRH MOUNT DETAIL
S-1 SCALE: 1 1/2" = 1'-0"



NO.	DATE	REVISIONS	BY	CHK
0	01/25/18	ISSUED FOR REVIEW	AAB	MRC



FRONT



SIDE

MOUNT ANALYSIS NOTE:
 AN ANALYSIS TO DETERMINE THE STRUCTURAL CAPACITY OF THE EXISTING MOUNTS SHALL BE PERFORMED PRIOR TO THE INSTALLATION OF THE PROPOSED EQUIPMENT. AEG HAS NOT CONDUCTED AN ANALYSIS OF THE MOUNT.

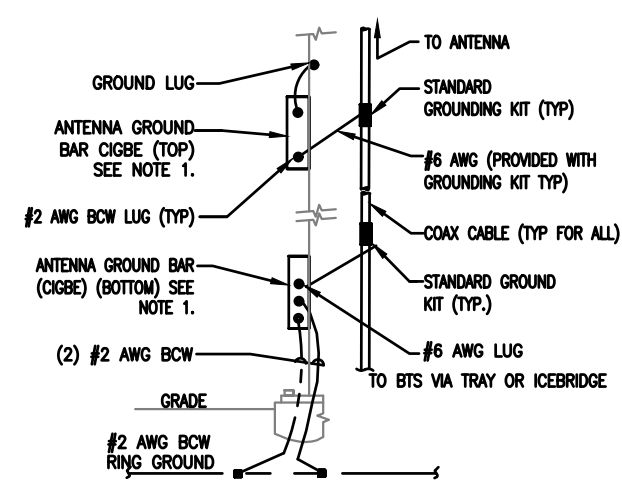
1 RRH MOUNT DETAILS
 S-2 SCALE: 1 1/2" = 1'-0"



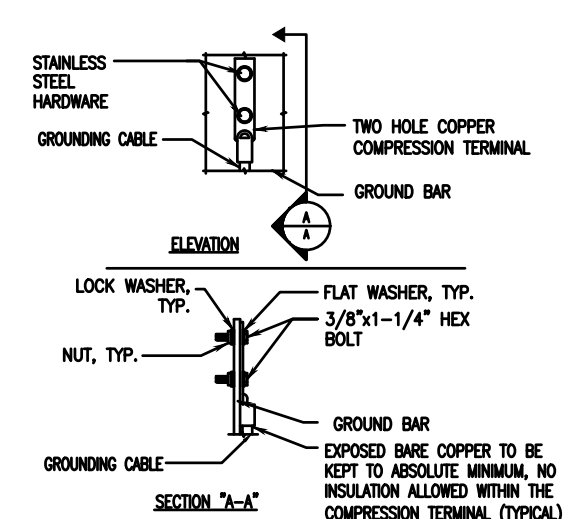
NO.	DATE	REVISIONS	BY	CHK
0	01/25/18	ISSUED FOR REVIEW	AAB	MRC

	CIRCUIT BREAKER	ACCA	ANTENNA CABLE COVER ASSEMBLY
	ELECTRIC BOX	AWG	AMERICAN WIRE GAUGE
	ELECTRICAL CONDUIT	BTWC	BARE TINNED COPPER WIRE
	EXOTHERMIC CONNECTION (CADWELD) TO GROUND RING AND COMPRESSION TO GROUND HALO	C	CONDUIT
	DISCONNECT SWITCH	CIGBE	COAX INSULATED GROUND BAR EXTERNAL CONDUIT ONLY
	GROUND ROD	CO	CONDUIT DRAWING
	GROUND ROD WITH ACCESS	DWG	DRAWING
	MECHANICAL GROUND CONN.	EGB	EXTERNAL GROUND BAR
	GROUND ACCESS WELL	EMT	ELECTRICAL METALLIC TUBING
	GROUNDING WIRE	(E)	EXISTING
	GENERATOR	(F)	FUTURE
	FUSE	GEN	GENERATOR
	GROUND BUS BAR	GFI	GROUND FAULT CIRCUIT INTERRUPTER
	REVISION	GND	GROUND
	TELEPHONE BOX	GPS	GLOBAL POSITIONING SYSTEM
	UTILITY METER	GR	GROWTH
	XIT GROUND ROD	IGR	INTERIOR GROUND RING (HALO)
		MIGB	MASTER ISOLATED GROUND BAR
		(P)	PROPOSED, NEW (PROVIDE AND INSTALL UNLESS NOTED OTHERWISE)
		PCS	PERSONAL COMMUNICATION SERVICE
		PPC	POWER PROTECTION CABINET
		PRC	PRIMARY RADIO CABINET
		PVC	POLYVINYL CHLORIDE CONDUIT
		RGS	RIGID GALVANIZED STEEL
		RWY	RACEWAY
		S.L.D.	SINGLE LINE DIAGRAM
		TEL	TELEPHONE
		TYP.	TYPICAL
		WP	WEATHER-PROOF EQUIPMENT

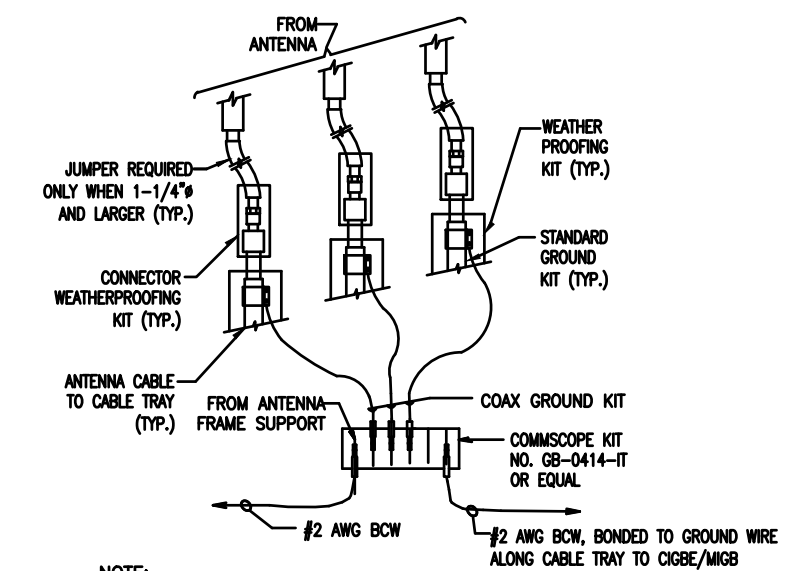
1 ELEC. / GROUNDING LEGEND
G-1 SCALE: N.T.S.



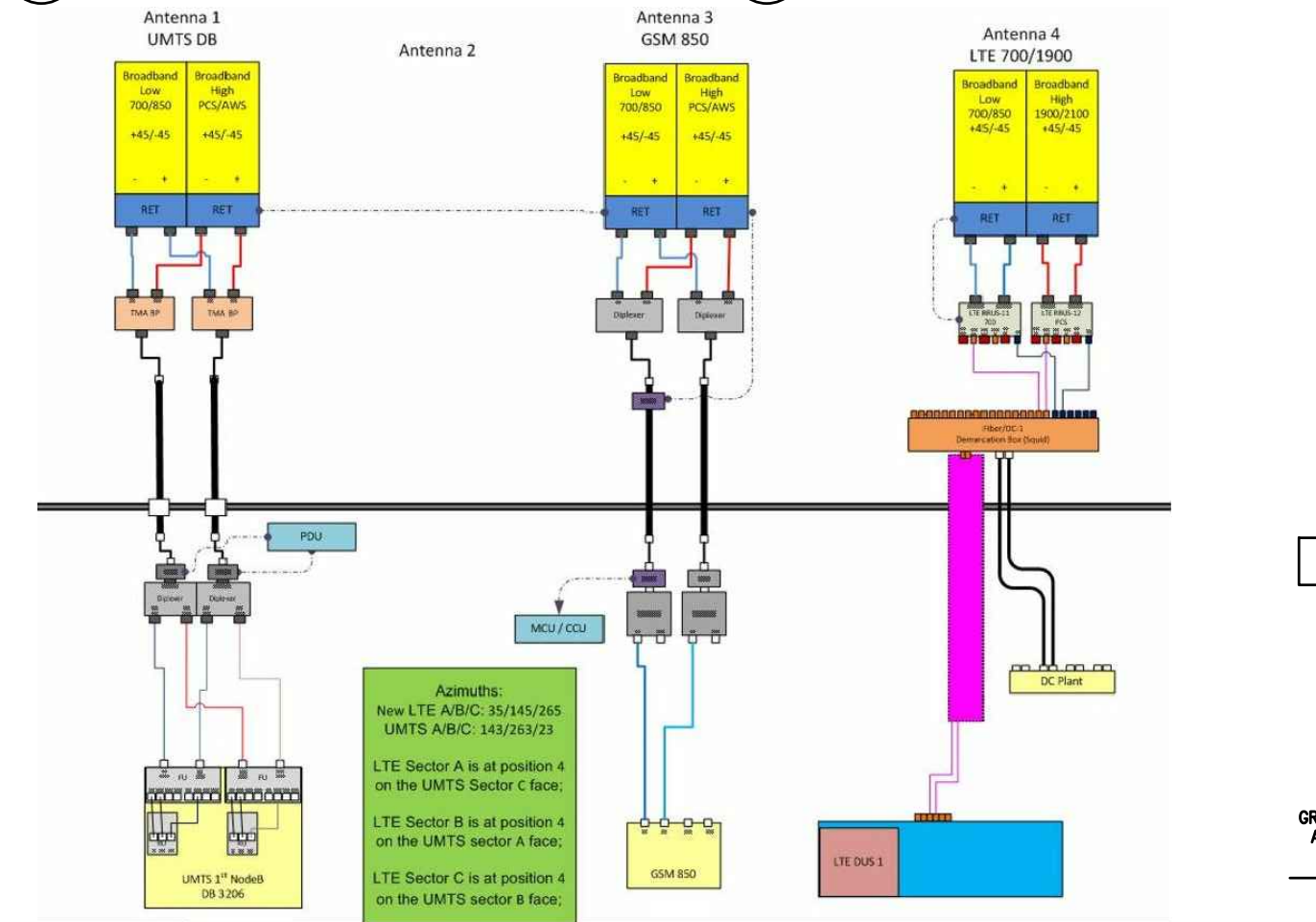
2 TYP. ANTENNA CABLE GROUNDING
G-1 SCALE: N.T.S.



3 TYP. GROUND BAR CONNECTION
G-1 SCALE: N.T.S.

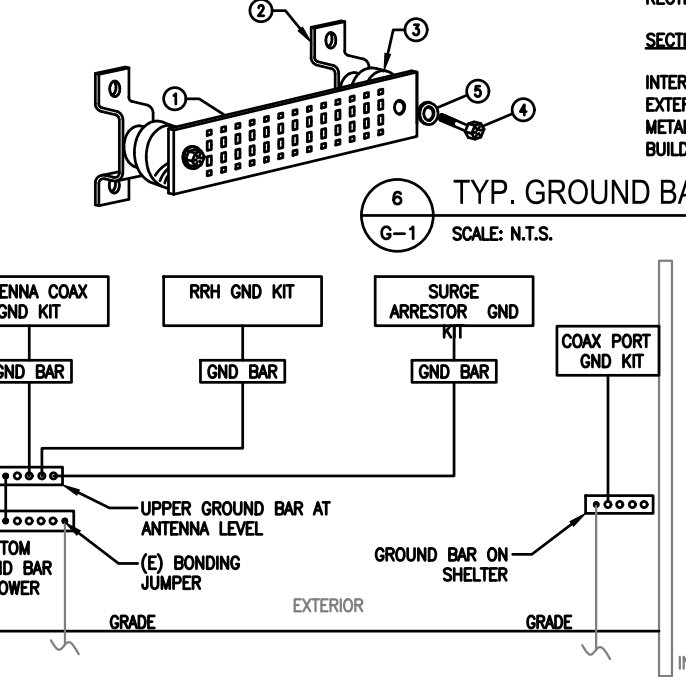


4 TYP. GROUND WIRE TO GROUND BAR CONN.
G-1 SCALE: N.T.S.



5 ONE LINE PLUMBING DIAGRAM
G-1 SCALE: N.T.S.

WIRELESS SOLUTIONS INC.			
NO.	REQ.	PART NO.	DESCRIPTION
1	1	HLGB-0420-IS	SOLID GND. BAR (20"x4"x1/4")
2	2		WALL MTG. BRKT.
3	2		INSULATORS
4	4		5/8"-11x1" H.H.C.S.
5	4		5/8 LOCKWASHER



6 TYP. GROUND BAR CONN.
G-1 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.

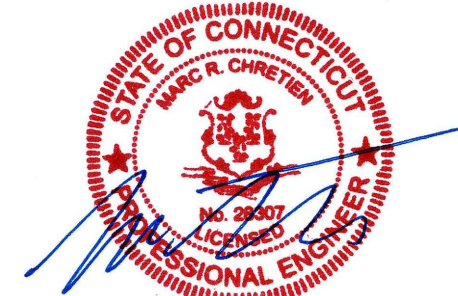
SECTION "P" - SURGE PRODUCERS

- 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)

GROUNDING NOTES:
ALL GROUNDING SHALL BE DONE IN ACCORDANCE WITH THE AT&T MOBILITY GROUNDING GUIDE.



NO.	DATE	REVISIONS	BY	CHK
0	01/25/18	ISSUED FOR REVIEW	AAB	MRC



Tower Engineering Solutions

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

Structural Analysis Report

Existing 175 ft Nudd Corporation Monopole

Customer Name: SBA Communications Corp

Customer Site Number: CT00680-S

Customer Site Name: Putnam

Carrier Name: AT&T

Carrier Site ID / Name: CT1110 / Putnam SBA

Site Location: 154 Sayle Avenue

Putnam, Connecticut

Windham County

Latitude: 41.929449

Longitude: -71.886272

Analysis Result:

Max Structural Usage: 97.4% [Pass]

Max Foundation Usage: 48.0% [Pass]

Report Prepared By: Mariana Franco





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Latitude: 41.929449

Longitude: -71.886272

Analysis Result:

Max Structural Usage: 97.4% [Pass]

Max Foundation Usage: 48.0% [Pass]

Report Prepared By: Mariana Franco

Introduction

The purpose of this report is to summarize the analysis results on the 175 ft Nudd Corporation Monopole to support the proposed antennas and transmission lines in addition to those currently installed. Any modification listed under Sources of Information was assumed completed and was included in this analysis.

Sources of Information

Tower Drawings	Tower Drawing prepared by Fred A. Nudd, Drawing #98-6220-1 dated 11/12/98 Previous Structural Analysis by TES Project#: 45226 Dated: 01/15/2018
Foundation Drawing	Foundation Drawing prepared by Fred A. Nudd, Drawing #98-6220-2 dated 11/12/98
Geotechnical Report	Geotechnical Report prepared by Jaworski Geotech, Project #C98291G dated 8/4/98
Modification Drawings	Modification Drawing prepared by o2wirelss Solutions, Job #2230-019 dated 5/30/02 Modification Drawing prepared by FDH, Project #12-01602E S2 dated 4/30/12 Modification Drawing prepared by TES, Job #17447 dated 12/21/15

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 $V_{ult} = 130.0$ mph (3-Sec. Gust)/ Nominal Design Wind Speed $V_{asd} = 101.0$ 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:	$S_s = 0.172g$, $S_1 = 0.063g$

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

Existing Antennas, Mounts and Transmission Lines

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

Items	Elevation (ft)	Qty.	Antenna Descriptions	Mount Type & Qty.	Transmission Lines	Owner
1	191.5	6	EMS - DR65-18-02DPL2Q - Panel	(3) 24' x 4.5 Pipe Mounts	(12) 1 5/8"	T-Mobile
2	188.5	6	Andrew - E15S09P9402 - TMA/TTA			
3	177.0	3	KMW - ETCR-654L12H6 - Panel	Platform w/ Handrail w/ Kicker	(4) 1 1/4" Fiber	Sprint Nextel
5		3	ALU - 1900MHz - RRU			
6		6	ALU - 800 MHz - RRU			
7		3	ALU - TD-RRH8x20-25 - RRU			
8	148.0	3	Amphenol - BXA-80080/4CF - Panel	Low Profile Platform	(11) 1 5/8" (2) 1 5/8" Hybrid	Verizon
9		6	Commscope - SBNHH-1D65B - Panel			
10		3	Amphenol - BXA-70063-6CF-EDIN-X - Panel			
11		6	RFS - FD9R6004-2C-3L - Diplexer			
12		3	ALU - RRH2X60-AWS - RRU			
13		3	ALU - RRH2X60-PCS - RRU			
14		3	ALU - RRH2X60-700 - RRU			
15	2	RFS - DB-T1-6Z-8AB-0Z - Distribution Box				
-	137.5	6	Powerwave - 7770 - Panel	Low Profile Platform	(12) 1 5/8" (1) 1/2" (1) 3" Innerduct w/ (2) 3/4" DC (1) 7/16" Fiber	AT&T
-		3	KMW - AM-X-CD-17-65-00T-RET - Panel			
-		1	Nokia - CS72188.01 - Omni			
-		6	Powerwave - LGP21903 - TMA/TTA			
-		6	Powerwave - LGP21401 - TMA/TTA			
-		6	Ericsson - RRUS-11 - RRU			
-		1	Raycap - DC6-48-60-18-8F - DC Surge			
26	124.0	6	Kathrein - 742 351 - Panel	Low Profile Platform	(12) 1 5/8" (1) 3/8" RET	Metro PCS
27	55.5	1	Lucent - GPS	Standoff	(1) 1/2"	Sprint

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
16	137.5	3	Powerwave 7770 - Panel	Low Profile Platform	(12) 1 5/8" ** (4) 3/4" DC **(2) 7/16" Fiber	AT&T
17		3	KMW AM-X-CD-17-65-00T-RET - Panel			
18		6	Powerwave LGP21401 TMA			
19		3	Ericsson RRUS 11			
20		1	Raycap DC6-48-60-18-8F - Surge			
21		3	Cci Antennas TPA-65R-LCUUUU-H8 - Panel			
22		6	Ericsson RRUS-32			
23		3	Kaelus DBC0061F1V51-2- Combiner			
24		1	Raycap DC6-48-60-18-8C - Surge			

**Existing (2) 3/4" DC and (1) 7/16" Fiber lines are routed in (1) 3" Flex Conduit.

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

Analysis Results

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

	Pole shafts	Anchor Bolts	Base Plate
Max. Usage:	97.4%	59.2%	78.0%
Pass/Fail	Pass	Pass	Pass

Foundations

	Moment (Kip-Ft)	Shear (Kips)	Axial (Kips)
Analysis Reactions	5331.6	43.0	56.9

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

Conclusions

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

Standard Conditions

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

Usage Diagram - Max Ratio 87.42% at 105.0ft

Structure: CT00680-S-SBA
Site Name: Putnam
Height: 175.00 (ft)
Base Elev: 0.000 (ft)

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

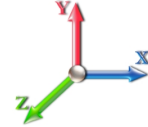
2/2/2018



Page: 1

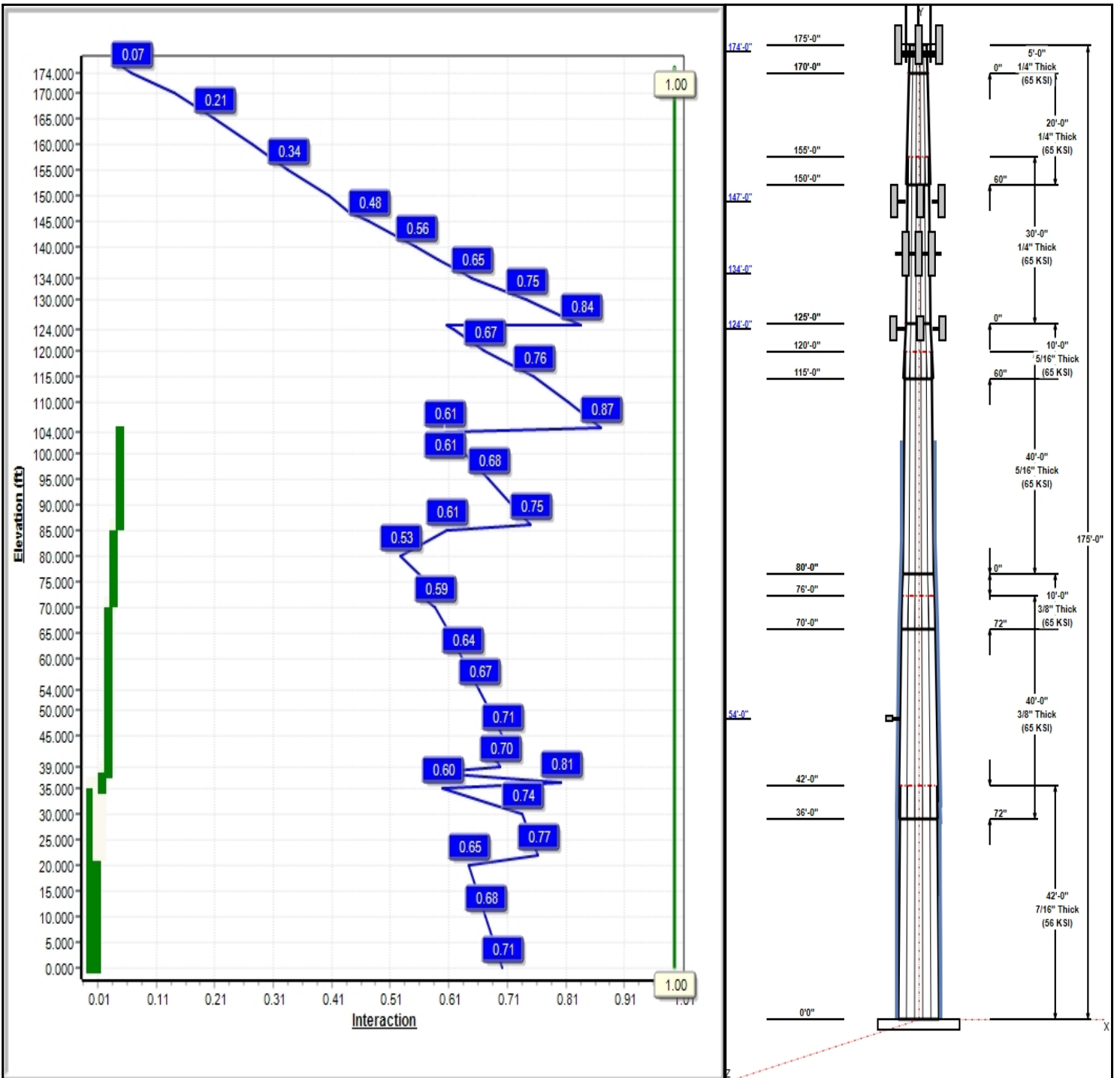
Dead Load Factor: 1.20
 Wind Load Factor: 1.60

Load Case : 1.2D + 1.6W 101 mph Wind



Iterations: 25

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Structure: CT00680-S-SBA

Type: Custom
Site Name: Putnam
Height: 175.00 (ft)
Base Elev: 0.00 (ft)

Base Shape: 12 Sided
Taper: 1.15000

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Page: 2



Shaft Properties

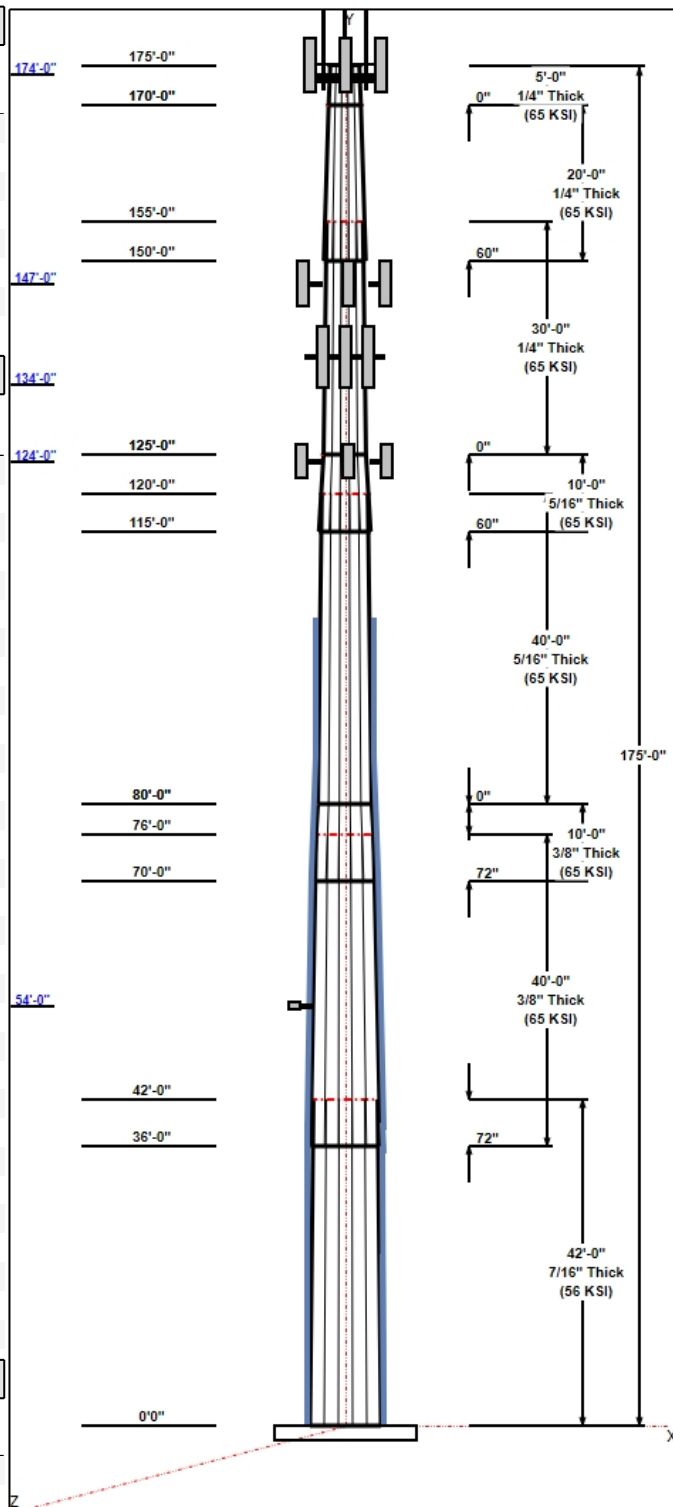
Seq	Length (ft)	Top (in)	Bottom (in)	Thick (in)	Joint Type	Taper	Grade (ksi)
1	42.00	45.88	54.00	0.438		0.19338	56
2	40.00	40.05	47.79	0.375	Slip	0.19338	65
3	10.00	40.03	41.96	0.375	Slip	0.19338	65
4	40.00	32.29	40.03	0.313	Butt	0.19338	65
5	10.00	31.95	33.89	0.313	Slip	0.19338	65
6	30.00	26.15	31.95	0.250	Butt	0.19338	65
7	20.00	23.75	27.62	0.250	Slip	0.19338	65
8	5.00	18.00	23.75	0.250	Butt	1.15000	65

Discrete Appurtenances

Attach Elev (ft)	Force Elev (ft)	Qty	Description	Carrier
175.00	191.50	6	DR65-18-02DPL2Q	T-Mobile
175.00	188.50	6	E15S09P94	T-Mobile
175.00	175.00	3	ETCR-654L12H6	Sprint Nextel
175.00	175.00	3	1900MHz	Sprint Nextel
175.00	175.00	6	800 MHz	Sprint Nextel
175.00	175.00	3	TD-RRH8x20-25	Sprint Nextel
175.00	175.00	1	Platform w/ Handrail w/	Sprint Nextel
174.00	184.00	3	4.5" x 24 FT Pipe	T-Mobile
147.00	147.00	3	BXA-70063-6CF-EDIN-X	Verizon
147.00	147.00	3	BXA-80080-4CF	Verizon
147.00	147.00	6	SBNHH-1D65B	Verizon
147.00	147.00	6	FD9R6004/2C-3L	Verizon
147.00	147.00	2	DB-T1-6Z-8AB-0Z	Verizon
147.00	144.00	3	RRH2X60-AWS	Verizon
147.00	144.00	3	RRH2X60-PCS	Verizon
147.00	144.00	3	RRH2X60-700	Verizon
147.00	147.00	3	T-Arms	Verizon
137.50	137.50	1	Low Profile	AT&T
134.00	137.50	3	TPA-65R-LCUUUU-H8	AT&T
134.00	137.50	6	RRUS-32	AT&T
134.00	137.50	3	DBC0061F1V51-2	AT&T
134.00	137.50	1	DC6-48-60-18-8C	AT&T
134.00	137.50	3	7770.00	AT&T
134.00	137.50	3	AM-X-CD-17-65-00T-RET	AT&T
134.00	137.50	6	LGP21401	AT&T
134.00	137.50	3	RRUS 11	AT&T
134.00	137.50	1	DC6-48-60-18-8F	AT&T
124.00	124.00	6	742 351	Metro PCS
124.00	124.00	3	T-Arms	Metro PCS
54.00	54.00	1	GPS	Sprint
54.00	54.00	1	Standoff	Sprint

Linear Appurtenances

Elev From (ft)	Elev To (ft)	Placement	Description	Carrier
0.00	175.00	Inside	1 5/8" Coax	T-Mobile
0.00	175.00	Inside	1-1/4" Hybrid	Sprint
0.00	147.00	Inside	1 5/8" Coax	Verizon
0.00	147.00	Inside	1 5/8" Hybrid	Verizon
0.00	134.00	Inside	1 5/8" Coax	AT&T
0.00	134.00	Inside	3/4" DC	AT&T
0.00	134.00	Inside	7/16" Fiber	AT&T



Structure: CT00680-S-SBA

Type: Custom
Site Name: Putnam
Height: 175.00 (ft)
Base Elev: 0.00 (ft)

Base Shape: 12 Sided
Taper: 1.15000

2/2/2018

Page: 3



0.00	124.00	Inside	1 5/8" Coax	Metro PCS
0.00	124.00	Inside	3/8" RET	Metro PCS
0.00	105.00	Outside	3" Chanel	
0.00	54.00	Inside	1/2" Coax	Sprint

Anchor Bolts

Qty	Specifications	Grade (ksi)	Arrangement
18	2.00" A687	105.0	Radial

Base Plate

Thickness (in)	Specifications (in)	Grade (ksi)	Geometry
1.5000	67.0	50.0	Round

Reactions

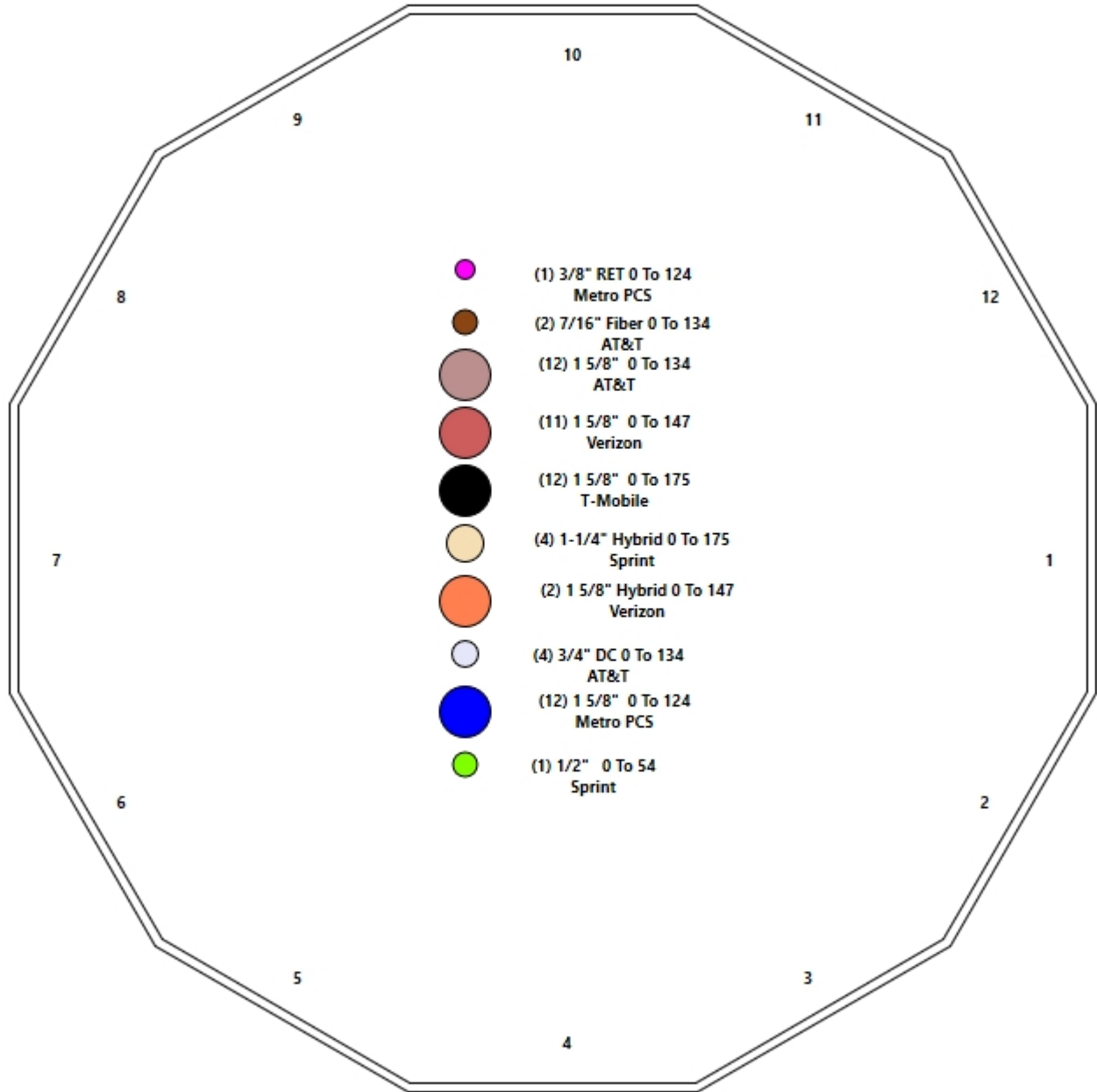
Load Case	Moment (FT-Kips)	Shear (Kips)	Axial (Kips)
1.2D + 1.6W 101 mph Wind	5331.6	43.0	56.9
0.9D + 1.6W 101 mph Wind	5274.2	42.9	42.6
1.2D + 1.0Di + 1.0Wi 50 mph Wind	1191.6	9.1	85.0
1.2D + 1.0E	285.3	2.1	56.9
0.9D + 1.0E	281.8	2.1	42.7
1.0D + 1.0W 60 mph Wind	1169.6	9.5	47.4

Structure: CT00680-S-SBA - Coax Line Placement

Type: Monopole
Site Name: Putnam
Height: 175.00 (ft)

2/2/2018

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Shaft Properties

Structure: CT00680-S-SBA	Code: EIA/TIA-222-G	2/2/2018
Site Name: Putnam	Exposure: B	
Height: 175.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Sec. No.	Shape	Length (ft)	Thick (in)	Fy (ksi)	Joint Type	Overlap (in)	Weight (lb)
1	12	42.000	0.4375	56		0.00	9,966
2	12	40.000	0.3750	65	Slip	72.00	7,157
3	12	10.000	0.3750	65	Slip	72.00	1,669
4	12	40.000	0.3125	65	Flange	0.00	4,910
5	12	10.000	0.3125	65	Slip	60.00	1,116
6	12	30.000	0.2500	65	Flange	0.00	2,367
7	12	20.000	0.2500	65	Slip	60.00	1,393
8	12	5.000	0.2500	65	Flange	0.00	282
Total Shaft Weight:							28,861

Bottom

Top

Sec. No.	Dia (in)	Elev (ft)	Area (sqin)	Ix (in^4)	W/t Ratio	D/t Ratio	Dia (in)	Elev (ft)	Area (sqin)	Ix (in^4)	W/t Ratio	D/t Ratio	Taper
1	54.00	0.00	75.46	27631.37	30.93	123.43	45.88	42.00	64.01	16871.2	25.95	104.8	0.193382
2	47.79	36.00	57.25	16427.51	32.00	127.44	40.05	76.00	47.91	9627.65	26.48	106.8	0.193382
3	41.96	70.00	50.22	11086.25	27.84	111.90	40.03	80.00	47.88	9610.54	26.46	106.7	0.193382
4	40.03	80.00	39.97	8046.71	32.18	128.09	32.29	120.00	32.18	4201.39	25.55	103.3	0.193382
5	33.89	115.0	33.78	4860.52	26.91	108.44	31.95	125.00	31.84	4068.08	25.25	102.2	0.193382
6	31.95	125.0	25.52	3273.79	32.10	127.81	26.15	155.00	20.85	1785.33	25.88	104.6	0.193382
7	27.62	150.0	22.03	2106.17	27.46	110.47	23.75	170.00	18.92	1333.48	23.31	95.00	0.193382
8	23.75	170.0	18.92	1333.48	23.31	95.00	18.00	175.00	14.29	574.61	17.15	72.00	1.150000

Additional Steel

Elev From (ft)	Elev To (ft)	Qty	Description	Fy (ksi)	Fu (ksi)	Offset (in)	Intermediate Connectors		Termination Connectors			
							Description	Spacing (in)	Description	Spacing (in)	Lower Qty	Upper Qty
0.00	36.00	3	PLT C10x30(1.5" Hole)	65	80	0.00	AJM20&sleeve	0.00	AJM20&sleeve	3.00		
0.00	22.00	3	PLT C10x30(1.5" Hole)	65	80	0.00	AJM20&sleeve	24.00	AJM20&sleeve	3.00		
35.00	39.00	3	LNP LP6X100-G-10TT	65	80	0.00	5/8" Hollo Bolt	24.00	5/8" Hollo Bolt	3.00	11	11
38.00	71.25	3	PLT C10x30(1.5" Hole)	65	80	0.00	AJM20&sleeve	24.00	AJM20&sleeve	3.00		
71.25	86.00	3	PLT C10x30(1.5" Hole)	65	80	0.00	AJM20&sleeve	24.00	AJM20&sleeve	3.00		
86.00	104.0	3	PLT C10x15.3(1.5" Hole)	65	80	0.00	AJM20&sleeve	24.00	AJM20&sleeve	3.00		

Load Summary

Structure: CT00680-S-SBA	Code: EIA/TIA-222-G	2/2/2018
Site Name: Putnam	Exposure: B	
Height: 175.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Discrete Appurtenances

No.	Elev (ft)	Description	Qty	No Ice			Ice			Hor. Ecc. (ft)	Vert Ecc (ft)
				Weight (lb)	CaAa (sf)	CaAa Factor	Weight (lb)	CaAa (sf)	CaAa Factor		
1	175.00	DR65-18-02DPL2Q	6	24.00	5.81	0.67	158.71	6.884	0.69	0.00	16.50
2	175.00	E15S09P94	6	14.60	0.66	0.75	32.11	1.273	0.75	0.00	13.50
3	175.00	ETCR-654L12H6	3	99.00	15.71	0.71	427.58	17.417	0.73	0.00	0.00
4	175.00	1900MHz	3	60.00	2.77	0.67	144.73	4.058	0.67	0.00	0.00
5	175.00	800 MHz	6	53.00	2.49	0.67	128.11	3.651	0.67	0.00	0.00
6	175.00	TD-RRH8x20-25	3	70.00	4.05	0.67	182.54	4.877	0.67	0.00	0.00
7	175.00	Platform w/ Handrail w/ Kicker	1	2645.00	51.70	1.00	5457.68	90.551	1.00	0.00	0.00
8	174.00	4.5" x 24 FT Pipe	3	259.20	13.50	1.00	513.18	20.585	1.00	0.00	10.00
9	147.00	BXA-70063-6CF-EDIN-X	3	17.00	7.57	0.77	165.00	10.328	0.77	0.00	0.00
10	147.00	BXA-80080-4CF	3	12.00	3.56	0.88	100.05	5.398	0.88	0.00	0.00
11	147.00	SBNHH-1D65B	6	50.71	8.08	0.82	251.83	9.369	0.82	0.00	0.00
12	147.00	FD9R6004/2C-3L	6	3.10	0.36	0.63	11.11	0.802	0.66	0.00	0.00
13	147.00	DB-T1-6Z-8AB-OZ	2	44.00	4.80	1.00	187.39	5.672	1.00	0.00	0.00
14	147.00	RRH2X60-AWS	3	60.00	3.50	0.76	147.11	4.288	0.78	0.00	-3.00
15	147.00	RRH2X60-PCS	3	55.00	2.20	0.89	139.32	2.835	0.90	0.00	-3.00
16	147.00	RRH2X60-700	3	60.00	3.50	0.76	147.11	4.288	0.78	0.00	-3.00
17	147.00	T-Arms	3	242.00	11.00	0.75	447.52	24.755	0.75	0.00	0.00
18	137.50	Low Profile Platform-Round	1	1500.00	22.00	1.00	2797.57	39.509	1.00	0.00	0.00
19	134.00	TPA-65R-LCUUUU-H8	3	75.00	13.30	0.83	383.08	14.927	0.83	0.00	3.50
20	134.00	RRUS-32	6	77.00	3.87	0.67	189.06	4.097	0.67	0.00	3.50
21	134.00	DBC0061F1V51-2 Combiner	3	10.00	0.60	0.69	31.13	0.960	0.69	0.00	3.50
22	134.00	DC6-48-60-18-8C	1	11.80	3.17	1.00	61.48	3.864	1.00	0.00	3.50
23	134.00	7770.00	3	35.00	5.50	0.73	168.32	6.552	0.75	0.00	3.50
24	134.00	AM-X-CD-17-65-00T-RET	3	30.80	11.31	0.75	141.54	15.502	0.77	0.00	3.50
25	134.00	LGP21401	6	14.10	1.29	0.75	38.82	2.116	0.77	0.00	3.50
26	134.00	RRUS 11	3	50.70	2.52	0.76	138.67	3.163	0.76	0.00	3.50
27	134.00	DC6-48-60-18-8F	1	14.50	2.92	1.00	77.02	4.121	1.00	0.00	3.50
28	124.00	742 351	6	29.80	5.38	0.61	123.30	7.329	0.63	0.00	0.00
29	124.00	T-Arms	3	242.00	8.19	0.75	444.05	18.258	0.75	0.00	0.00
30	54.00	GPS	1	10.00	1.00	1.00	36.47	1.643	1.00	0.00	0.00
31	54.00	Standoff	1	40.00	2.63	1.00	112.48	8.019	1.00	0.00	0.00
Totals:			104	10,040.26			25,678.60				

Linear Appurtenances

Bottom Elev. (ft)	Top Elev. (ft)	Description	Exposed Width	Exposed
0.00	175.00	(12) 1 5/8" Coax	0.00	Inside
0.00	175.00	(4) 1-1/4" Hybrid	0.00	Inside
0.00	147.00	(11) 1 5/8" Coax	0.00	Inside
0.00	147.00	(2) 1 5/8" Hybrid	0.00	Inside
0.00	134.00	(12) 1 5/8" Coax	0.00	Inside
0.00	134.00	(4) 3/4" DC	0.00	Inside
0.00	134.00	(2) 7/16" Fiber	0.00	Inside
0.00	124.00	(12) 1 5/8" Coax	0.00	Inside
0.00	124.00	(1) 3/8" RET	0.00	Inside
0.00	105.00	(1) 3" Chanel	3.25	Outside

Discrete Appurtenances

No.	Elev (ft)	Description	Qty	No Ice			Ice			Hor. Ecc. (ft)	Vert Ecc (ft)
				Weight (lb)	CaAa (sf)	CaAa Factor	Weight (lb)	CaAa (sf)	CaAa Factor		
0.00	54.00	(1) 1/2" Coax		0.00		Inside					

Shaft Section Properties

Structure: CT00680-S-SBA **Code:** EIA/TIA-222-G 2/2/2018
Site Name: Putnam **Exposure:** B
Height: 175.00 (ft) **Crest Height:** 0.00
Base Elev: 0.000 (ft) **Site Class:** D - Stiff Soil
Gh: 1.1 **Topography:** 1 **Struct Class:** II **Page:** 8



Increment Length: 5 (ft)

Elev (ft)	Description	Thick (in)	Flat Dia (in)	Area (in^2)	Ix (in^4)	W/t Ratio	D/t Ratio	Fy (ksi)	Fb (ksi)	Weight (lb)	Additional Reinforcing			
											Area (in^2)	Ixp (in^4)	Iyp (in^4)	Weight (lb)
0.00	RB1 RB2	0.4375	54.000	75.456	27631.4	30.93	123.43	56	63	0.0	52.92	24301.7	17345.4	
5.00		0.4375	53.033	74.094	26161.8	30.34	121.22	56	64	1272.2	52.92	23473.1	16754.3	900.0
10.00		0.4375	52.066	72.732	24745.3	29.74	119.01	56	64	1249.0	52.92	22658.9	16173.5	900.0
15.00		0.4375	51.099	71.370	23380.9	29.15	116.80	56	65	1225.9	52.92	21859.1	15603.0	900.0
20.00		0.4375	50.132	70.008	22067.5	28.56	114.59	56	65	1202.7	52.92	21073.7	15042.8	900.0
22.00	RT2	0.4375	49.746	69.463	21556.3	28.32	113.70	56	66	474.6	26.46	8941.3	8941.3	180.0
25.00		0.4375	49.165	68.645	20804.3	27.97	112.38	56	66	704.9	26.46	8743.1	8743.1	270.0
30.00		0.4375	48.199	67.283	19590.3	27.38	110.17	56	66	1156.3	26.46	8417.8	8417.8	450.0
35.00	RB3	0.4375	47.232	65.921	18424.4	26.78	107.96	56	67	1133.2	44.46	13360.5	13360.5	756.2
36.00	Bot - Section 2 RT1	0.4375	47.038	65.649	18196.9	26.67	107.52	56	67	223.9	18.00	5220.0	5220.0	61.2
38.00	RB4	0.4375	46.651	65.104	17747.6	26.43	106.63	56	67	833.0	44.46	13453.1	13453.1	302.5
39.00	RT3	0.4375	46.458	64.832	17525.7	26.31	106.19	56	67	413.9	26.46	8090.9	8090.9	90.0
40.00		0.4375	46.265	64.559	17305.7	26.19	105.75	56	67	412.2	26.46	8027.9	8027.9	90.0
42.00	Top - Section 1	0.3750	46.628	55.850	15250.7	31.17	124.34	65	71	819.2	26.46	7902.5	7902.5	180.0
45.00		0.3750	46.048	55.150	14684.0	30.76	122.79	65	71	566.6	26.46	7716.3	7716.3	270.0
50.00		0.3750	45.081	53.982	13771.1	30.07	120.22	65	72	928.4	26.46	7410.9	7410.9	450.0
54.00		0.3750	44.307	53.048	13068.5	29.52	118.15	65	73	728.4	26.46	7171.0	7171.0	360.0
55.00		0.3750	44.114	52.815	12896.7	29.38	117.64	65	73	180.1	26.46	7111.6	7111.6	90.0
60.00		0.3750	43.147	51.647	12060.2	28.69	115.06	65	73	888.7	26.46	6818.6	6818.6	450.0
65.00		0.3750	42.180	50.480	11260.6	28.00	112.48	65	74	868.8	26.46	6531.8	6531.8	450.0
70.00	Bot - Section 3	0.3750	41.213	49.312	10497.2	27.30	109.90	65	75	848.9	26.46	6251.1	6251.1	450.0
71.25	RT4 RB5	0.3750	40.972	49.020	10311.9	27.13	109.26	65	75	422.1	26.46	6397.9	6397.9	112.5
75.00		0.3750	40.246	48.145	9769.1	26.61	107.32	65	76	1251.4	26.46	6189.0	6189.0	337.5
76.00	Top - Section 2	0.3750	40.803	48.817	10184.0	27.01	108.81	65	75	329.9	26.46	6133.9	6133.9	90.0
80.00	Top - Section 3	0.3750	40.029	47.883	9610.5	26.46	106.75	65	76	658.1	26.46	5915.9	5915.9	360.0
80.00	Bot - Section 4	0.3125	40.029	39.965	8046.7	31.75	128.09	65	70					
85.00		0.3125	39.063	38.992	7473.2	31.35	125.00	65	71	671.7	26.46	5649.0	5649.0	450.0
86.00	RT5 RB6	0.3125	38.869	38.798	7361.9	31.18	124.38	65	71	132.4	13.47	3024.7	3024.7	45.9
90.00		0.3125	38.096	38.019	6927.6	30.52	121.91	65	71	522.8	13.47	2915.4	2915.4	183.6
95.00		0.3125	37.129	37.046	6409.3	29.69	118.81	65	72	638.6	13.47	2781.6	2781.6	229.5
100.00		0.3125	36.162	36.073	5917.4	28.86	115.72	65	73	622.0	13.47	2650.9	2650.9	229.5
104.00	RT6	0.3125	35.388	35.295	5542.6	28.20	113.24	65	74	485.7	13.47	2548.7	2548.7	183.6
105.00		0.3125	35.195	35.100	5451.4	28.03	112.62	65	74	119.8				
110.00		0.3125	34.228	34.127	5010.5	27.20	109.53	65	75	588.9				
115.00	Bot - Section 5	0.3125	33.261	33.154	4594.1	26.38	106.44	65	76	572.4				
120.00	Top - Section 4	0.3125	32.919	32.810	4452.6	26.08	105.34	65	76	1122.3				
124.00		0.3125	32.146	32.032	4143.1	25.42	102.87	65	77	441.3				
125.00	Top - Section 5	0.3125	31.952	31.837	4068.1	25.25	102.25	65	77	108.7				
125.00	Bot - Section 6	0.2500	31.952	25.520	3273.8	31.57	127.81	65	70					
130.00		0.2500	30.985	24.742	2983.3	31.07	123.94	65	71	427.6				
134.00		0.2500	30.212	24.119	2763.7	30.24	120.85	65	72	332.5				
135.00		0.2500	30.018	23.964	2710.5	30.03	120.07	65	72	81.8				
137.50		0.2500	29.535	23.574	2580.6	29.51	118.14	65	73	202.2				
140.00		0.2500	29.051	23.185	2454.9	28.99	116.21	65	73	198.9				
145.00		0.2500	28.085	22.407	2215.8	27.96	112.34	65	74	387.8				
147.00		0.2500	27.698	22.095	2124.7	27.54	110.79	65	75	151.4				
150.00	Bot - Section 7	0.2500	27.118	21.628	1992.8	26.92	108.47	65	75	223.2				
155.00	Top - Section 6	0.2500	26.651	21.253	1890.7	26.42	106.60	65	76	729.6				
160.00		0.2500	25.684	20.474	1690.5	25.38	102.74	65	77	355.0				
165.00		0.2500	24.717	19.696	1504.9	24.35	98.87	65	78	341.7				

Increment Length: 5 (ft)

Elev (ft)	Description	Thick (in)	Flat Dia (in)	Area (in^2)	Ix (in^4)	W/t Ratio	D/t Ratio	Fy (ksi)	Fb (ksi)	Weight (lb)	Additional Reinforcing			
											Area (in^2)	Ixp (in^4)	Iyp (in^4)	Weight (lb)
170.00	Top - Section 7	0.2500	23.750	18.918	1333.5	23.31	95.00	65	79	328.5				
170.00	Bot - Section 8	0.2500	23.750	18.918	1333.5	23.31	95.00	65	79					
174.00		0.2500	19.150	15.214	693.7	18.38	76.60	65	82	232.3				
175.00		0.2500	18.000	14.289	574.6	17.15	72.00	65	82	50.2				
Total Weight										28861.4	10722.1			

Wind Loading - Shaft

Structure: CT00680-S-SBA

Code: EIA/TIA-222-G

2/2/2018

Site Name: Putnam

Exposure: B



Height: 175.00 (ft)

Crest Height: 0.00

Base Elev: 0.000 (ft)

Site Class: D - Stiff Soil

Gh: 1.1

Topography: 1

Struct Class: II

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Load Case: 1.2D + 1.6W 101 mph Wind

Iterations 25

Dead Load Factor 1.20

Wind Load Factor 1.60



Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00	RB1 RB2	1.00	0.70	17.366	19.10	393.68	1.000	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.70	17.366	19.10	386.63	1.000	0.000	5.00	23.085	23.09	705.6	0.0	1526.7
10.00		1.00	0.70	17.366	19.10	379.58	1.000	0.000	5.00	22.668	22.67	692.8	0.0	1498.8
15.00		1.00	0.70	17.366	19.10	372.53	1.000	0.000	5.00	22.251	22.25	680.1	0.0	1471.0
20.00		1.00	0.70	17.366	19.10	365.48	1.000	0.000	5.00	21.834	21.83	667.3	0.0	1443.2
22.00	RT2	1.00	0.70	17.366	19.10	362.66	1.000	0.000	2.00	8.617	8.62	263.4	0.0	569.5
25.00		1.00	0.70	17.366	19.10	358.43	1.000	0.000	3.00	12.800	12.80	391.2	0.0	845.9
30.00		1.00	0.70	17.381	19.12	351.53	1.000	0.000	5.00	21.000	21.00	642.4	0.0	1387.6
35.00	RB3	1.00	0.73	18.163	19.98	352.15	1.000	0.000	5.00	20.583	20.58	658.0	0.0	1359.8
36.00	Bot - Section 2 RT1	1.00	0.74	18.310	20.14	352.12	1.000	0.000	1.00	4.066	4.07	131.0	0.0	268.6
38.00	RB4	1.00	0.75	18.595	20.45	351.93	1.000	0.000	2.00	8.212	8.21	268.8	0.0	999.6
39.00	RT3	1.00	0.76	18.734	20.61	351.78	1.000	0.000	1.00	4.081	4.08	134.6	0.0	496.7
40.00		1.00	0.76	18.870	20.76	351.58	1.000	0.000	1.00	4.064	4.06	135.0	0.0	494.6
42.00	Top - Section 1	1.00	0.77	19.135	21.05	351.08	1.000	0.000	2.00	8.079	8.08	272.1	0.0	983.0
45.00		1.00	0.79	19.516	21.47	355.87	1.000	0.000	3.00	11.993	11.99	411.9	0.0	679.9
50.00		1.00	0.81	20.112	22.12	353.68	1.000	0.000	5.00	19.655	19.65	695.7	0.0	1114.1
54.00	Appurtenance(s)	1.00	0.83	20.559	22.62	351.46	1.000	0.000	4.00	15.424	15.42	558.1	0.0	874.1
55.00		1.00	0.83	20.667	22.73	350.84	1.000	0.000	1.00	3.814	3.81	138.7	0.0	216.1
60.00		1.00	0.85	21.187	23.31	347.44	1.000	0.000	5.00	18.821	18.82	701.8	0.0	1066.4
65.00		1.00	0.87	21.678	23.85	343.56	1.000	0.000	5.00	18.404	18.40	702.1	0.0	1042.5
70.00	Bot - Section 3	1.00	0.89	22.142	24.36	339.26	1.000	0.000	5.00	17.986	17.99	700.9	0.0	1018.7
71.25	RT4 RB5	1.00	0.90	22.254	24.48	338.12	1.000	0.000	1.25	4.512	4.51	176.7	0.0	506.5
75.00		1.00	0.91	22.582	24.84	334.58	1.000	0.000	3.75	13.381	13.38	531.8	0.0	1501.7
76.00	Top - Section 2	1.00	0.91	22.668	24.93	333.61	1.000	0.000	1.00	3.529	3.53	140.8	0.0	395.9
80.00	Top - Section 3	1.00	0.93	23.003	25.30	335.86	1.000	0.000	4.00	13.947	13.95	564.6	0.0	789.7
85.00		1.00	0.94	23.404	25.74	330.60	1.000	0.000	5.00	17.059	17.06	702.7	0.0	806.0
86.00	RT5 RB6	1.00	0.95	23.483	25.83	329.51	1.000	0.000	1.00	3.362	3.36	138.9	0.0	158.8
90.00		1.00	0.96	23.790	26.17	325.06	1.000	0.000	4.00	13.280	13.28	556.0	0.0	627.3
95.00		1.00	0.97	24.160	26.58	319.27	1.000	0.000	5.00	16.225	16.22	689.9	0.0	766.3
100.00		1.00	0.99	24.517	26.97	313.24	1.000	0.000	5.00	15.807	15.81	682.1	0.0	746.4
104.00	RT6	1.00	1.00	24.793	27.27	308.26	1.000	0.000	4.00	12.346	12.35	538.7	0.0	582.8
105.00		1.00	1.00	24.861	27.35	307.00	1.000	0.000	1.00	3.045	3.04	133.2	0.0	143.7
110.00		1.00	1.02	25.194	27.71	300.55	1.000	0.000	5.00	14.973	14.97	663.9	0.0	706.7
115.00	Bot - Section 5	1.00	1.03	25.516	28.07	293.92	1.000	0.000	5.00	14.556	14.56	653.7	0.0	686.8
120.00	Top - Section 4	1.00	1.04	25.828	28.41	287.12	1.000	0.000	5.00	14.409	14.41	655.0	0.0	1346.8
124.00	Appurtenance(s)	1.00	1.05	26.071	28.68	287.14	1.000	0.000	4.00	11.227	11.23	515.1	0.0	529.5
125.00	Top - Section 5	1.00	1.05	26.131	28.74	285.74	1.000	0.000	1.00	2.765	2.76	127.2	0.0	130.4
130.00		1.00	1.07	26.425	29.07	278.65	1.000	0.000	5.00	13.575	13.57	631.3	0.0	513.1
134.00	Appurtenance(s)	1.00	1.07	26.655	29.32	272.87	1.000	0.000	4.00	10.559	10.56	495.4	0.0	399.0
135.00		1.00	1.08	26.712	29.38	271.41	1.000	0.000	1.00	2.598	2.60	122.1	0.0	98.2
137.50	Appurtenance(s)	1.00	1.08	26.852	29.54	267.74	1.000	0.000	2.50	6.422	6.42	303.5	0.0	242.6
140.00		1.00	1.09	26.991	29.69	264.04	1.000	0.000	2.50	6.318	6.32	300.1	0.0	238.7
145.00		1.00	1.10	27.263	29.99	256.53	1.000	0.000	5.00	12.323	12.32	591.3	0.0	465.4
147.00	Appurtenance(s)	1.00	1.10	27.370	30.11	253.50	1.000	0.000	2.00	4.813	4.81	231.8	0.0	181.7
150.00	Bot - Section 7	1.00	1.11	27.528	30.28	248.90	1.000	0.000	3.00	7.094	7.09	343.7	0.0	267.8
155.00	Top - Section 6	1.00	1.12	27.787	30.57	241.16	1.000	0.000	5.00	11.705	11.70	572.4	0.0	875.5
160.00		1.00	1.13	28.040	30.84	237.93	1.000	0.000	5.00	11.288	11.29	557.1	0.0	426.0

Wind Loading - Shaft

Structure: CT00680-S-SBA	Code: EIA/TIA-222-G	2/2/2018
Site Name: Putnam	Exposure: B	
Height: 175.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II
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165.00	1.00	1.14	28.288	31.12	229.98	1.000	0.000	5.00	10.871	10.87	541.2	0.0	410.1
170.00 Top - Section 7	1.00	1.15	28.530	31.38	221.93	1.000	0.000	5.00	10.453	10.45	524.9	0.0	394.2
174.00 Appurtenance(s)	1.00	1.16	28.721	31.59	179.54	1.000	0.000	4.00	7.402	7.40	374.2	0.0	278.7
175.00 Appurtenance(s)	1.00	1.16	28.768	31.64	168.90	1.000	0.000	1.00	1.603	1.60	81.1	0.0	60.2
Totals:								175.00			22,692.3		34,633.7

Discrete Appurtenance Forces

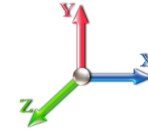
Structure: CT00680-S-SBA	Code: EIA/TIA-222-G	2/2/2018
Site Name: Putnam	Exposure: B	
Height: 175.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 1.2D + 1.6W 101 mph Wind

Dead Load Factor 1.20
Wind Load Factor 1.60



Iterations 25

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	CaAa x Ka	Ka	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)
1	175.00	Platform w/ Handrail w/	1	28.768	31.644	1.00	1.00	51.70	3174.00	0.000	0.000	2617.63	0.00	0.00
2	175.00	TD-RRH8x20-25	3	28.768	31.644	0.67	1.00	8.14	252.00	0.000	0.000	412.16	0.00	0.00
3	175.00	800 MHz	6	28.768	31.644	0.67	1.00	10.01	381.60	0.000	0.000	506.81	0.00	0.00
4	175.00	1900MHz	3	28.768	31.644	0.67	1.00	5.57	216.00	0.000	0.000	281.90	0.00	0.00
5	175.00	ETCR-654L12H6	3	28.768	31.644	0.71	1.00	33.46	356.40	0.000	0.000	1694.23	0.00	0.00
6	175.00	E15S09P94	6	29.385	32.323	0.75	1.00	2.97	105.12	0.000	13.500	153.60	0.00	2073.62
7	175.00	DR65-18-02DPL2Q	6	29.518	32.470	0.67	1.00	23.36	172.80	0.000	16.500	1213.39	0.00	20020.89
8	174.00	4.5" x 24 FT Pipe	3	29.183	32.101	1.00	1.00	40.50	933.12	0.000	10.000	2080.15	0.00	20801.51
9	147.00	T-Arms	3	27.370	30.107	0.56	0.75	18.56	871.20	0.000	0.000	894.17	0.00	0.00
10	147.00	RRH2X60-700	3	27.209	29.930	0.61	0.80	6.38	216.00	0.000	-3.000	305.72	0.00	-917.15
11	147.00	RRH2X60-PCS	3	27.209	29.930	0.71	0.80	4.71	198.00	0.000	-3.000	225.54	0.00	-676.62
12	147.00	RRH2X60-AWS	3	27.209	29.930	0.61	0.80	6.38	216.00	0.000	-3.000	305.72	0.00	-917.15
13	147.00	DB-T1-6Z-8AB-OZ	2	27.370	30.107	0.80	0.80	7.68	105.60	0.000	0.000	369.95	0.00	0.00
14	147.00	FD9R6004/2C-3L	6	27.370	30.107	0.50	0.80	1.09	22.32	0.000	0.000	52.36	0.00	0.00
15	147.00	SBNHH-1D65B	6	27.370	30.107	0.66	0.80	31.88	365.11	0.000	0.000	1535.70	0.00	0.00
16	147.00	BXA-80080-4CF	3	27.370	30.107	0.70	0.80	7.50	43.20	0.000	0.000	361.36	0.00	0.00
17	147.00	BXA-70063-6CF-EDIN-X	3	27.370	30.107	0.62	0.80	13.97	61.20	0.000	0.000	673.00	0.00	0.00
18	137.50	Low Profile	1	26.852	29.537	1.00	1.00	22.00	1800.00	0.000	0.000	1039.72	0.00	0.00
19	134.00	7770.00	3	26.852	29.537	0.58	0.80	9.64	126.00	0.000	3.500	455.40	0.00	1593.89
20	134.00	TPA-65R-LCUUUU-H8	3	26.852	29.537	0.66	0.80	26.49	270.00	0.000	3.500	1252.08	0.00	4382.30
21	134.00	RRUS-32	6	26.852	29.537	0.54	0.80	12.45	554.40	0.000	3.500	588.19	0.00	2058.67
22	134.00	DBC0061F1V51-2	3	26.852	29.537	0.55	0.80	0.99	36.00	0.000	3.500	46.96	0.00	164.35
23	134.00	DC6-48-60-18-8C	1	26.852	29.537	0.80	0.80	2.54	14.16	0.000	3.500	119.85	0.00	419.48
24	134.00	AM-X-CD-17-65-00T-RET	3	26.852	29.537	0.60	0.80	20.36	110.88	0.000	3.500	962.12	0.00	3367.41
25	134.00	LGP21401	6	26.852	29.537	0.60	0.80	4.64	101.52	0.000	3.500	219.47	0.00	768.16
26	134.00	RRUS 11	3	26.852	29.537	0.61	0.80	4.60	182.52	0.000	3.500	217.23	0.00	760.30
27	134.00	DC6-48-60-18-8F	1	26.852	29.537	0.80	0.80	2.34	17.40	0.000	3.500	110.40	0.00	386.40
28	124.00	T-Arms	3	26.071	28.678	0.56	0.75	13.82	871.20	0.000	0.000	634.16	0.00	0.00
29	124.00	742 351	6	26.071	28.678	0.49	0.80	15.75	214.56	0.000	0.000	722.81	0.00	0.00
30	54.00	Standoff	1	20.559	22.615	1.00	1.00	2.63	48.00	0.000	0.000	95.16	0.00	0.00
31	54.00	GPS	1	20.559	22.615	1.00	1.00	1.00	12.00	0.000	0.000	36.18	0.00	0.00

Totals: **12,048.31** **20,183.10**

Total Applied Force Summary

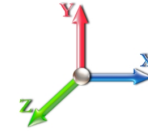
Structure: CT00680-S-SBA	Code: EIA/TIA-222-G	2/2/2018
Site Name: Putnam	Exposure: B	
Height: 175.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 1.2D + 1.6W 101 mph Wind

Dead Load Factor 1.20
Wind Load Factor 1.60



Iterations 25

Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00		0.00	0.00	0.00	0.00
5.00		705.59	1879.55	0.00	0.00
10.00		692.84	1851.74	0.00	0.00
15.00		680.09	1823.93	0.00	0.00
20.00		667.34	1796.12	0.00	0.00
22.00		263.37	710.66	0.00	0.00
25.00		391.23	1057.65	0.00	0.00
30.00		642.39	1740.50	0.00	0.00
35.00		657.98	1712.69	0.00	0.00
36.00		131.05	339.20	0.00	0.00
38.00		268.77	1140.71	0.00	0.00
39.00		134.56	567.26	0.00	0.00
40.00		134.98	565.19	0.00	0.00
42.00		272.07	1124.18	0.00	0.00
45.00		411.93	891.61	0.00	0.00
50.00		695.73	1466.95	0.00	0.00
54.00	(2) attachments	689.44	1216.40	0.00	0.00
55.00		138.74	286.52	0.00	0.00
60.00		701.82	1418.32	0.00	0.00
65.00		702.14	1394.48	0.00	0.00
70.00		700.92	1370.64	0.00	0.00
71.25		176.73	594.51	0.00	0.00
75.00		531.81	1765.66	0.00	0.00
76.00		140.77	466.31	0.00	0.00
80.00		564.65	1071.26	0.00	0.00
85.00		702.68	1157.96	0.00	0.00
86.00		138.94	229.21	0.00	0.00
90.00		556.03	908.89	0.00	0.00
95.00		689.90	1118.23	0.00	0.00
100.00		682.09	1098.37	0.00	0.00
104.00		538.71	864.39	0.00	0.00
105.00		133.22	214.11	0.00	0.00
110.00		663.93	1047.96	0.00	0.00
115.00		653.68	1028.09	0.00	0.00
120.00		654.98	1688.04	0.00	0.00
124.00	(9) attachments	1872.10	1888.31	0.00	0.00
125.00		127.16	183.60	0.00	0.00
130.00		631.33	779.11	0.00	0.00
134.00	(29) attachments	4467.07	2024.73	0.00	13900.95
135.00		122.14	134.09	0.00	0.00
137.50	(1) attachments	1343.23	2132.45	0.00	0.00
140.00		300.13	328.48	0.00	0.00
145.00		591.30	645.03	0.00	0.00
147.00	(32) attachments	4955.33	2352.20	0.00	-2510.91
150.00		343.68	326.47	0.00	0.00
155.00		572.43	973.26	0.00	0.00
160.00		557.06	523.74	0.00	0.00

Total Applied Force Summary

Structure: CT00680-S-SBA	Code: EIA/TIA-222-G	2/2/2018
Site Name: Putnam	Exposure: B	
Height: 175.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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165.00		541.21	507.85	0.00	0.00
170.00		524.90	491.95	0.00	0.00
174.00	(3) attachments	2454.32	1290.09	0.00	20801.51
175.00	(28) attachments	6960.85	4737.71	0.00	22094.50
Totals:		42,875.36	56,926.40	0.00	54,286.06

Linear Appurtenance Segment Forces (Factored)

Structure: CT00680-S-SBA	Code: EIA/TIA-222-G	2/2/2018
Site Name: Putnam	Exposure: B	
Height: 175.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II

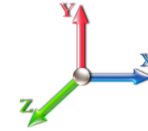


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Load Case: 1.2D + 1.6W 101 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60



Iterations 25

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
5.00	3" Chanel	Yes	5.00	0.000	3.25	1.35	0.00	0.059	0.000	17.366	0.00	10.68
10.00	3" Chanel	Yes	5.00	0.000	3.25	1.35	0.00	0.060	0.000	17.366	0.00	10.68
15.00	3" Chanel	Yes	5.00	0.000	3.25	1.35	0.00	0.061	0.000	17.366	0.00	10.68
20.00	3" Chanel	Yes	5.00	0.000	3.25	1.35	0.00	0.062	0.000	17.366	0.00	10.68
22.00	3" Chanel	Yes	2.00	0.000	3.25	0.54	0.00	0.063	0.000	17.366	0.00	4.27
25.00	3" Chanel	Yes	3.00	0.000	3.25	0.81	0.00	0.063	0.000	17.366	0.00	6.41
30.00	3" Chanel	Yes	5.00	0.000	3.25	1.35	0.00	0.064	0.000	17.381	0.00	10.68
35.00	3" Chanel	Yes	5.00	0.000	3.25	1.35	0.00	0.066	0.000	18.163	0.00	10.68
36.00	3" Chanel	Yes	1.00	0.000	3.25	0.27	0.00	0.067	0.000	18.310	0.00	2.14
38.00	3" Chanel	Yes	2.00	0.000	3.25	0.54	0.00	0.067	0.000	18.595	0.00	4.27
39.00	3" Chanel	Yes	1.00	0.000	3.25	0.27	0.00	0.067	0.000	18.734	0.00	2.14
40.00	3" Chanel	Yes	1.00	0.000	3.25	0.27	0.00	0.068	0.000	18.870	0.00	2.14
42.00	3" Chanel	Yes	2.00	0.000	3.25	0.54	0.00	0.068	0.000	19.135	0.00	4.27
45.00	3" Chanel	Yes	3.00	0.000	3.25	0.81	0.00	0.068	0.000	19.516	0.00	6.41
50.00	3" Chanel	Yes	5.00	0.000	3.25	1.35	0.00	0.069	0.000	20.112	0.00	10.68
54.00	3" Chanel	Yes	4.00	0.000	3.25	1.08	0.00	0.070	0.000	20.559	0.00	8.54
55.00	3" Chanel	Yes	1.00	0.000	3.25	0.27	0.00	0.071	0.000	20.667	0.00	2.14
60.00	3" Chanel	Yes	5.00	0.000	3.25	1.35	0.00	0.072	0.000	21.187	0.00	10.68
65.00	3" Chanel	Yes	5.00	0.000	3.25	1.35	0.00	0.074	0.000	21.678	0.00	10.68
70.00	3" Chanel	Yes	5.00	0.000	3.25	1.35	0.00	0.075	0.000	22.142	0.00	10.68
71.25	3" Chanel	Yes	1.25	0.000	3.25	0.34	0.00	0.076	0.000	22.254	0.00	2.67
75.00	3" Chanel	Yes	3.75	0.000	3.25	1.02	0.00	0.077	0.000	22.582	0.00	8.01
76.00	3" Chanel	Yes	1.00	0.000	3.25	0.27	0.00	0.078	0.000	22.668	0.00	2.14
80.00	3" Chanel	Yes	4.00	0.000	3.25	1.08	0.00	0.078	0.000	23.003	0.00	8.54
85.00	3" Chanel	Yes	5.00	0.000	3.25	1.35	0.00	0.079	0.000	23.404	0.00	10.68
86.00	3" Chanel	Yes	1.00	0.000	3.25	0.27	0.00	0.081	0.000	23.483	0.00	2.14
90.00	3" Chanel	Yes	4.00	0.000	3.25	1.08	0.00	0.082	0.000	23.790	0.00	8.54
95.00	3" Chanel	Yes	5.00	0.000	3.25	1.35	0.00	0.083	0.000	24.160	0.00	10.68
100.00	3" Chanel	Yes	5.00	0.000	3.25	1.35	0.00	0.086	0.000	24.517	0.00	10.68
104.00	3" Chanel	Yes	4.00	0.000	3.25	1.08	0.00	0.088	0.000	24.793	0.00	8.54
105.00	3" Chanel	Yes	1.00	0.000	3.25	0.27	0.00	0.089	0.000	24.861	0.00	2.14
Totals:											0.0	224.3

Calculated Forces

Structure: CT00680-S-SBA

Code: EIA/TIA-222-G

2/2/2018

Site Name: Putnam

Exposure: B

Height: 175.00 (ft)

Crest Height: 0.00

Base Elev: 0.000 (ft)

Site Class: D - Stiff Soil

Gh: 1.1

Topography: 1

Struct Class: II

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Load Case: 1.2D + 1.6W 101 mph Wind

Iterations 25

Dead Load Factor 1.20

Wind Load Factor 1.60



Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-56.86	-42.96	0.00	-5331.6	0.00	5331.62	4294.71	2147.35	9493.67	4688.57	0.00	0.000	0.000	0.706
5.00	-54.86	-42.41	0.00	-5116.8	0.00	5116.83	4251.62	2125.81	9227.39	4557.06	0.09	-0.165	0.000	0.692
10.00	-52.89	-41.86	0.00	-4904.7	0.00	4904.79	4207.27	2103.63	8961.88	4425.94	0.35	-0.331	0.000	0.677
15.00	-50.95	-41.32	0.00	-4695.4	0.00	4695.49	4161.65	2080.83	8697.29	4295.27	0.79	-0.498	0.000	0.662
20.00	-49.08	-40.73	0.00	-4488.9	0.00	4488.90	4114.76	2057.38	8433.78	4165.13	1.40	-0.665	0.000	0.647
22.00	-48.31	-40.54	0.00	-4407.4	0.00	4407.44	4095.66	2047.83	8328.71	4113.24	1.69	-0.733	0.000	0.766
25.00	-47.14	-40.27	0.00	-4285.8	0.00	4285.82	4066.61	2033.31	8171.50	4035.59	2.19	-0.855	0.000	0.757
30.00	-45.27	-39.76	0.00	-4084.4	0.00	4084.48	4017.20	2008.60	7910.59	3906.74	3.19	-1.056	0.000	0.740
35.00	-43.49	-39.15	0.00	-3885.7	0.00	3885.70	3966.51	1983.26	7651.22	3778.65	4.41	-1.259	0.000	0.603
36.00	-43.11	-39.06	0.00	-3846.5	0.00	3846.55	3956.22	1978.11	7599.55	3753.13	4.68	-1.293	0.000	0.805
38.00	-41.93	-38.81	0.00	-3768.4	0.00	3768.43	3935.49	1967.75	7496.40	3702.19	5.24	-1.386	0.000	0.586
39.00	-41.35	-38.69	0.00	-3729.6	0.00	3729.61	3925.05	1962.53	7444.93	3676.77	5.53	-1.420	0.000	0.702
40.00	-40.74	-38.59	0.00	-3690.9	0.00	3690.92	3914.56	1957.28	7393.54	3651.39	5.83	-1.461	0.000	0.698
42.00	-39.56	-38.36	0.00	-3613.7	0.00	3613.75	3554.53	1777.27	6785.59	3351.15	6.46	-1.543	0.000	0.671
45.00	-38.56	-38.03	0.00	-3498.6	0.00	3498.68	3532.39	1766.19	6658.05	3288.16	7.47	-1.666	0.000	0.705
50.00	-36.99	-37.42	0.00	-3308.5	0.00	3308.51	3494.22	1747.11	6445.54	3183.21	9.33	-1.882	0.000	0.683
54.00	-35.73	-36.76	0.00	-3158.8	0.00	3158.83	3462.54	1731.27	6275.67	3099.32	10.99	-2.056	0.000	0.665
55.00	-35.37	-36.69	0.00	-3122.0	0.00	3122.08	3454.46	1727.23	6233.23	3078.36	11.42	-2.100	0.000	0.661
60.00	-33.84	-36.06	0.00	-2938.6	0.00	2938.64	3413.12	1706.56	6021.34	2973.71	13.74	-2.315	0.000	0.638
65.00	-32.35	-35.42	0.00	-2758.3	0.00	2758.35	3370.20	1685.10	5810.04	2869.36	16.27	-2.530	0.000	0.615
70.00	-30.93	-34.73	0.00	-2581.2	0.00	2581.25	3325.69	1662.84	5599.53	2765.40	19.04	-2.743	0.000	0.592
71.25	-30.28	-34.58	0.00	-2537.8	0.00	2537.84	3314.31	1657.16	5547.04	2739.48	19.76	-2.798	0.000	0.578
75.00	-28.48	-34.01	0.00	-2408.1	0.00	2408.17	3279.60	1639.80	5389.99	2661.91	22.02	-2.956	0.000	0.560
76.00	-27.96	-33.90	0.00	-2374.1	0.00	2374.16	3306.32	1653.16	5510.48	2721.42	22.65	-2.998	0.000	0.570
80.00	-26.82	-33.36	0.00	-2238.5	0.00	2238.57	3269.04	1634.52	5343.14	2638.78	25.23	-3.165	0.000	0.531
80.00	-26.82	-33.36	0.00	-2238.5	0.00	2238.57	2504.08	1252.04	4105.75	2027.68	25.23	-3.165	0.000	0.579
85.00	-25.63	-32.65	0.00	-2071.7	0.00	2071.78	2474.85	1237.43	3958.27	1954.84	28.65	-3.362	0.000	0.610
86.00	-25.34	-32.55	0.00	-2039.1	0.00	2039.13	2468.82	1234.41	3928.75	1940.26	29.36	-3.407	0.000	0.753
90.00	-24.33	-32.04	0.00	-1908.9	0.00	1908.92	2444.04	1222.02	3810.67	1881.94	32.30	-3.623	0.000	0.722
95.00	-23.12	-31.39	0.00	-1748.7	0.00	1748.70	2411.64	1205.82	3663.14	1809.09	36.24	-3.887	0.000	0.682
100.00	-21.94	-30.72	0.00	-1591.7	0.00	1591.76	2377.66	1188.83	3515.87	1736.36	40.45	-4.146	0.000	0.640
104.00	-21.06	-30.16	0.00	-1468.8	0.00	1468.88	2349.34	1174.67	3398.38	1678.33	44.00	-4.349	0.000	0.607
104.00	-21.06	-30.16	0.00	-1468.8	0.00	1468.88	2349.34	1174.67	3398.38	1678.33	44.00	-4.349	0.000	0.607
105.00	-20.74	-30.09	0.00	-1438.7	0.00	1438.72	2342.10	1171.05	3369.07	1663.86	44.92	-4.400	0.000	0.874
110.00	-19.57	-29.47	0.00	-1288.2	0.00	1288.27	2304.95	1152.47	3222.91	1591.67	49.72	-4.756	0.000	0.819
115.00	-18.43	-28.84	0.00	-1140.9	0.00	1140.94	2266.22	1133.11	3077.59	1519.90	54.88	-5.101	0.000	0.759
120.00	-16.67	-28.11	0.00	-996.77	0.00	996.77	2252.14	1126.07	3026.44	1494.64	60.39	-5.432	0.000	0.675
124.00	-14.90	-26.11	0.00	-884.32	0.00	884.32	2219.57	1109.78	2911.24	1437.75	65.05	-5.687	0.000	0.622
125.00	-14.65	-26.01	0.00	-858.21	0.00	858.21	2211.27	1105.63	2882.56	1423.59	66.24	-5.747	0.000	0.610
125.00	-14.65	-26.01	0.00	-858.21	0.00	858.21	1600.93	800.47	2095.19	1034.73	66.24	-5.747	0.000	0.840
130.00	-13.83	-25.36	0.00	-728.18	0.00	728.18	1577.27	788.64	2000.77	988.11	72.40	-6.024	0.000	0.747
134.00	-12.24	-20.74	0.00	-612.83	0.00	612.83	1557.20	778.60	1925.20	950.79	77.55	-6.282	0.000	0.653
135.00	-12.08	-20.62	0.00	-592.09	0.00	592.09	1552.03	776.01	1906.32	941.46	78.87	-6.344	0.000	0.637
137.50	-10.06	-19.08	0.00	-540.53	0.00	540.53	1538.81	769.41	1859.13	918.16	82.23	-6.493	0.000	0.596
140.00	-9.70	-18.78	0.00	-492.84	0.00	492.84	1525.20	762.60	1812.01	894.88	85.66	-6.635	0.000	0.558
145.00	-9.08	-18.14	0.00	-398.96	0.00	398.96	1496.79	748.40	1718.05	848.48	92.74	-6.894	0.000	0.477
147.00	-7.31	-12.95	0.00	-362.68	0.00	362.68	1484.98	742.49	1680.60	829.98	95.64	-6.992	0.000	0.442
150.00	-6.99	-12.59	0.00	-323.83	0.00	323.83	1466.80	733.40	1624.61	802.34	100.07	-7.129	0.000	0.409

Calculated Forces

Structure: CT00680-S-SBA	Code: EIA/TIA-222-G	2/2/2018
Site Name: Putnam	Exposure: B	
Height: 175.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Page: 17
	Struct Class: II	



155.00	-6.06	-11.92	0.00	-260.86	0.00	260.86	1451.75	725.87	1579.74	780.18	107.63	-7.338	0.000	0.339
160.00	-5.58	-11.32	0.00	-201.25	0.00	201.25	1419.41	709.70	1487.45	734.60	115.39	-7.522	0.000	0.278
165.00	-5.12	-10.73	0.00	-144.66	0.00	144.66	1385.48	692.74	1396.17	689.51	123.33	-7.668	0.000	0.214
170.00	-4.69	-10.15	0.00	-91.03	0.00	91.03	1349.97	674.99	1306.08	645.02	131.40	-7.779	0.000	0.145
170.00	-4.69	-10.15	0.00	-91.03	0.00	91.03	1349.97	674.99	1306.08	645.02	131.40	-7.779	0.000	0.145
174.00	-3.74	-7.54	0.00	-29.64	0.00	29.64	1121.46	560.73	870.39	429.85	137.93	-7.840	0.000	0.072
175.00	0.00	-6.96	0.00	-22.09	0.00	22.09	1053.22	526.61	767.04	378.81	139.56	-7.850	0.000	0.059

Wind Loading - Shaft

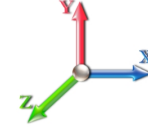
Structure: CT00680-S-SBA	Code: EIA/TIA-222-G	2/2/2018
Site Name: Putnam	Exposure: B	
Height: 175.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 0.9D + 1.6W 101 mph Wind

Dead Load Factor 0.90
Wind Load Factor 1.60



Iterations 25

Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00	RB1 RB2	1.00	0.70	17.366	19.10	393.68	1.000	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.70	17.366	19.10	386.63	1.000	0.000	5.00	23.085	23.09	705.6	0.0	1145.0
10.00		1.00	0.70	17.366	19.10	379.58	1.000	0.000	5.00	22.668	22.67	692.8	0.0	1124.1
15.00		1.00	0.70	17.366	19.10	372.53	1.000	0.000	5.00	22.251	22.25	680.1	0.0	1103.3
20.00		1.00	0.70	17.366	19.10	365.48	1.000	0.000	5.00	21.834	21.83	667.3	0.0	1082.4
22.00	RT2	1.00	0.70	17.366	19.10	362.66	1.000	0.000	2.00	8.617	8.62	263.4	0.0	427.1
25.00		1.00	0.70	17.366	19.10	358.43	1.000	0.000	3.00	12.800	12.80	391.2	0.0	634.4
30.00		1.00	0.70	17.381	19.12	351.53	1.000	0.000	5.00	21.000	21.00	642.4	0.0	1040.7
35.00	RB3	1.00	0.73	18.163	19.98	352.15	1.000	0.000	5.00	20.583	20.58	658.0	0.0	1019.8
36.00	Bot - Section 2 RT1	1.00	0.74	18.310	20.14	352.12	1.000	0.000	1.00	4.066	4.07	131.0	0.0	201.5
38.00	RB4	1.00	0.75	18.595	20.45	351.93	1.000	0.000	2.00	8.212	8.21	268.8	0.0	749.7
39.00	RT3	1.00	0.76	18.734	20.61	351.78	1.000	0.000	1.00	4.081	4.08	134.6	0.0	372.5
40.00		1.00	0.76	18.870	20.76	351.58	1.000	0.000	1.00	4.064	4.06	135.0	0.0	371.0
42.00	Top - Section 1	1.00	0.77	19.135	21.05	351.08	1.000	0.000	2.00	8.079	8.08	272.1	0.0	737.3
45.00		1.00	0.79	19.516	21.47	355.87	1.000	0.000	3.00	11.993	11.99	411.9	0.0	509.9
50.00		1.00	0.81	20.112	22.12	353.68	1.000	0.000	5.00	19.655	19.65	695.7	0.0	835.5
54.00	Appurtenance(s)	1.00	0.83	20.559	22.62	351.46	1.000	0.000	4.00	15.424	15.42	558.1	0.0	655.6
55.00		1.00	0.83	20.667	22.73	350.84	1.000	0.000	1.00	3.814	3.81	138.7	0.0	162.1
60.00		1.00	0.85	21.187	23.31	347.44	1.000	0.000	5.00	18.821	18.82	701.8	0.0	799.8
65.00		1.00	0.87	21.678	23.85	343.56	1.000	0.000	5.00	18.404	18.40	702.1	0.0	781.9
70.00	Bot - Section 3	1.00	0.89	22.142	24.36	339.26	1.000	0.000	5.00	17.986	17.99	700.9	0.0	764.0
71.25	RT4 RB5	1.00	0.90	22.254	24.48	338.12	1.000	0.000	1.25	4.512	4.51	176.7	0.0	379.9
75.00		1.00	0.91	22.582	24.84	334.58	1.000	0.000	3.75	13.381	13.38	531.8	0.0	1126.3
76.00	Top - Section 2	1.00	0.91	22.668	24.93	333.61	1.000	0.000	1.00	3.529	3.53	140.8	0.0	296.9
80.00	Top - Section 3	1.00	0.93	23.003	25.30	335.86	1.000	0.000	4.00	13.947	13.95	564.6	0.0	592.3
85.00		1.00	0.94	23.404	25.74	330.60	1.000	0.000	5.00	17.059	17.06	702.7	0.0	604.5
86.00	RT5 RB6	1.00	0.95	23.483	25.83	329.51	1.000	0.000	1.00	3.362	3.36	138.9	0.0	119.1
90.00		1.00	0.96	23.790	26.17	325.06	1.000	0.000	4.00	13.280	13.28	556.0	0.0	470.5
95.00		1.00	0.97	24.160	26.58	319.27	1.000	0.000	5.00	16.225	16.22	689.9	0.0	574.7
100.00		1.00	0.99	24.517	26.97	313.24	1.000	0.000	5.00	15.807	15.81	682.1	0.0	559.8
104.00	RT6	1.00	1.00	24.793	27.27	308.26	1.000	0.000	4.00	12.346	12.35	538.7	0.0	437.1
105.00		1.00	1.00	24.861	27.35	307.00	1.000	0.000	1.00	3.045	3.04	133.2	0.0	107.8
110.00		1.00	1.02	25.194	27.71	300.55	1.000	0.000	5.00	14.973	14.97	663.9	0.0	530.0
115.00	Bot - Section 5	1.00	1.03	25.516	28.07	293.92	1.000	0.000	5.00	14.556	14.56	653.7	0.0	515.1
120.00	Top - Section 4	1.00	1.04	25.828	28.41	287.12	1.000	0.000	5.00	14.409	14.41	655.0	0.0	1010.1
124.00	Appurtenance(s)	1.00	1.05	26.071	28.68	287.14	1.000	0.000	4.00	11.227	11.23	515.1	0.0	397.2
125.00	Top - Section 5	1.00	1.05	26.131	28.74	285.74	1.000	0.000	1.00	2.765	2.76	127.2	0.0	97.8
130.00		1.00	1.07	26.425	29.07	278.65	1.000	0.000	5.00	13.575	13.57	631.3	0.0	384.8
134.00	Appurtenance(s)	1.00	1.07	26.655	29.32	272.87	1.000	0.000	4.00	10.559	10.56	495.4	0.0	299.3
135.00		1.00	1.08	26.712	29.38	271.41	1.000	0.000	1.00	2.598	2.60	122.1	0.0	73.6
137.50	Appurtenance(s)	1.00	1.08	26.852	29.54	267.74	1.000	0.000	2.50	6.422	6.42	303.5	0.0	182.0
140.00		1.00	1.09	26.991	29.69	264.04	1.000	0.000	2.50	6.318	6.32	300.1	0.0	179.0
145.00		1.00	1.10	27.263	29.99	256.53	1.000	0.000	5.00	12.323	12.32	591.3	0.0	349.1
147.00	Appurtenance(s)	1.00	1.10	27.370	30.11	253.50	1.000	0.000	2.00	4.813	4.81	231.8	0.0	136.3
150.00	Bot - Section 7	1.00	1.11	27.528	30.28	248.90	1.000	0.000	3.00	7.094	7.09	343.7	0.0	200.9
155.00	Top - Section 6	1.00	1.12	27.787	30.57	241.16	1.000	0.000	5.00	11.705	11.70	572.4	0.0	656.6
160.00		1.00	1.13	28.040	30.84	237.93	1.000	0.000	5.00	11.288	11.29	557.1	0.0	319.5

Wind Loading - Shaft

Structure: CT00680-S-SBA	Code: EIA/TIA-222-G	2/2/2018
Site Name: Putnam	Exposure: B	
Height: 175.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II
		Page: 19



165.00	1.00	1.14	28.288	31.12	229.98	1.000	0.000	5.00	10.871	10.87	541.2	0.0	307.6
170.00 Top - Section 7	1.00	1.15	28.530	31.38	221.93	1.000	0.000	5.00	10.453	10.45	524.9	0.0	295.6
174.00 Appurtenance(s)	1.00	1.16	28.721	31.59	179.54	1.000	0.000	4.00	7.402	7.40	374.2	0.0	209.1
175.00 Appurtenance(s)	1.00	1.16	28.768	31.64	168.90	1.000	0.000	1.00	1.603	1.60	81.1	0.0	45.2
Totals:								175.00			22,692.3		25,975.3

Discrete Appurtenance Forces

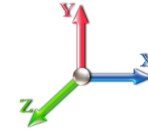
Structure: CT00680-S-SBA	Code: EIA/TIA-222-G	2/2/2018
Site Name: Putnam	Exposure: B	
Height: 175.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 0.9D + 1.6W 101 mph Wind

Dead Load Factor 0.90
Wind Load Factor 1.60



Iterations 25

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	CaAa x Ka	Ka	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)
1	175.00	Platform w/ Handrail w/	1	28.768	31.644	1.00	1.00	51.70	2380.50	0.000	0.000	2617.63	0.00	0.00
2	175.00	TD-RRH8x20-25	3	28.768	31.644	0.67	1.00	8.14	189.00	0.000	0.000	412.16	0.00	0.00
3	175.00	800 MHz	6	28.768	31.644	0.67	1.00	10.01	286.20	0.000	0.000	506.81	0.00	0.00
4	175.00	1900MHz	3	28.768	31.644	0.67	1.00	5.57	162.00	0.000	0.000	281.90	0.00	0.00
5	175.00	ETCR-654L12H6	3	28.768	31.644	0.71	1.00	33.46	267.30	0.000	0.000	1694.23	0.00	0.00
6	175.00	E15S09P94	6	29.385	32.323	0.75	1.00	2.97	78.84	0.000	13.500	153.60	0.00	2073.62
7	175.00	DR65-18-02DPL2Q	6	29.518	32.470	0.67	1.00	23.36	129.60	0.000	16.500	1213.39	0.00	20020.89
8	174.00	4.5" x 24 FT Pipe	3	29.183	32.101	1.00	1.00	40.50	699.84	0.000	10.000	2080.15	0.00	20801.51
9	147.00	T-Arms	3	27.370	30.107	0.56	0.75	18.56	653.40	0.000	0.000	894.17	0.00	0.00
10	147.00	RRH2X60-700	3	27.209	29.930	0.61	0.80	6.38	162.00	0.000	-3.000	305.72	0.00	-917.15
11	147.00	RRH2X60-PCS	3	27.209	29.930	0.71	0.80	4.71	148.50	0.000	-3.000	225.54	0.00	-676.62
12	147.00	RRH2X60-AWS	3	27.209	29.930	0.61	0.80	6.38	162.00	0.000	-3.000	305.72	0.00	-917.15
13	147.00	DB-T1-6Z-8AB-OZ	2	27.370	30.107	0.80	0.80	7.68	79.20	0.000	0.000	369.95	0.00	0.00
14	147.00	FD9R6004/2C-3L	6	27.370	30.107	0.50	0.80	1.09	16.74	0.000	0.000	52.36	0.00	0.00
15	147.00	SBNHH-1D65B	6	27.370	30.107	0.66	0.80	31.88	273.83	0.000	0.000	1535.70	0.00	0.00
16	147.00	BXA-80080-4CF	3	27.370	30.107	0.70	0.80	7.50	32.40	0.000	0.000	361.36	0.00	0.00
17	147.00	BXA-70063-6CF-EDIN-X	3	27.370	30.107	0.62	0.80	13.97	45.90	0.000	0.000	673.00	0.00	0.00
18	137.50	Low Profile	1	26.852	29.537	1.00	1.00	22.00	1350.00	0.000	0.000	1039.72	0.00	0.00
19	134.00	7770.00	3	26.852	29.537	0.58	0.80	9.64	94.50	0.000	3.500	455.40	0.00	1593.89
20	134.00	TPA-65R-LCUUUU-H8	3	26.852	29.537	0.66	0.80	26.49	202.50	0.000	3.500	1252.08	0.00	4382.30
21	134.00	RRUS-32	6	26.852	29.537	0.54	0.80	12.45	415.80	0.000	3.500	588.19	0.00	2058.67
22	134.00	DBC0061F1V51-2	3	26.852	29.537	0.55	0.80	0.99	27.00	0.000	3.500	46.96	0.00	164.35
23	134.00	DC6-48-60-18-8C	1	26.852	29.537	0.80	0.80	2.54	10.62	0.000	3.500	119.85	0.00	419.48
24	134.00	AM-X-CD-17-65-00T-RET	3	26.852	29.537	0.60	0.80	20.36	83.16	0.000	3.500	962.12	0.00	3367.41
25	134.00	LGP21401	6	26.852	29.537	0.60	0.80	4.64	76.14	0.000	3.500	219.47	0.00	768.16
26	134.00	RRUS 11	3	26.852	29.537	0.61	0.80	4.60	136.89	0.000	3.500	217.23	0.00	760.30
27	134.00	DC6-48-60-18-8F	1	26.852	29.537	0.80	0.80	2.34	13.05	0.000	3.500	110.40	0.00	386.40
28	124.00	T-Arms	3	26.071	28.678	0.56	0.75	13.82	653.40	0.000	0.000	634.16	0.00	0.00
29	124.00	742 351	6	26.071	28.678	0.49	0.80	15.75	160.92	0.000	0.000	722.81	0.00	0.00
30	54.00	Standoff	1	20.559	22.615	1.00	1.00	2.63	36.00	0.000	0.000	95.16	0.00	0.00
31	54.00	GPS	1	20.559	22.615	1.00	1.00	1.00	9.00	0.000	0.000	36.18	0.00	0.00

Totals: **9,036.23** **20,183.10**

Total Applied Force Summary

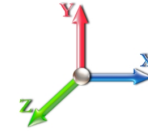
Structure: CT00680-S-SBA	Code: EIA/TIA-222-G	2/2/2018
Site Name: Putnam	Exposure: B	
Height: 175.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 0.9D + 1.6W 101 mph Wind

Dead Load Factor 0.90
Wind Load Factor 1.60



Iterations 25

Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00		0.00	0.00	0.00	0.00
5.00		705.59	1409.67	0.00	0.00
10.00		692.84	1388.81	0.00	0.00
15.00		680.09	1367.95	0.00	0.00
20.00		667.34	1347.09	0.00	0.00
22.00		263.37	533.00	0.00	0.00
25.00		391.23	793.24	0.00	0.00
30.00		642.39	1305.38	0.00	0.00
35.00		657.98	1284.52	0.00	0.00
36.00		131.05	254.40	0.00	0.00
38.00		268.77	855.53	0.00	0.00
39.00		134.56	425.44	0.00	0.00
40.00		134.98	423.89	0.00	0.00
42.00		272.07	843.14	0.00	0.00
45.00		411.93	668.71	0.00	0.00
50.00		695.73	1100.22	0.00	0.00
54.00	(2) attachments	689.44	912.30	0.00	0.00
55.00		138.74	214.89	0.00	0.00
60.00		701.82	1063.74	0.00	0.00
65.00		702.14	1045.86	0.00	0.00
70.00		700.92	1027.98	0.00	0.00
71.25		176.73	445.88	0.00	0.00
75.00		531.81	1324.24	0.00	0.00
76.00		140.77	349.73	0.00	0.00
80.00		564.65	803.45	0.00	0.00
85.00		702.68	868.47	0.00	0.00
86.00		138.94	171.91	0.00	0.00
90.00		556.03	681.66	0.00	0.00
95.00		689.90	838.67	0.00	0.00
100.00		682.09	823.77	0.00	0.00
104.00		538.71	648.29	0.00	0.00
105.00		133.22	160.58	0.00	0.00
110.00		663.93	785.97	0.00	0.00
115.00		653.68	771.07	0.00	0.00
120.00		654.98	1266.03	0.00	0.00
124.00	(9) attachments	1872.10	1416.23	0.00	0.00
125.00		127.16	137.70	0.00	0.00
130.00		631.33	584.33	0.00	0.00
134.00	(29) attachments	4467.07	1518.54	0.00	13900.95
135.00		122.14	100.57	0.00	0.00
137.50	(1) attachments	1343.23	1599.34	0.00	0.00
140.00		300.13	246.36	0.00	0.00
145.00		591.30	483.78	0.00	0.00
147.00	(32) attachments	4955.33	1764.15	0.00	-2510.91
150.00		343.68	244.86	0.00	0.00
155.00		572.43	729.95	0.00	0.00
160.00		557.06	392.80	0.00	0.00

Total Applied Force Summary

Structure: CT00680-S-SBA	Code: EIA/TIA-222-G	2/2/2018
Site Name: Putnam	Exposure: B	
Height: 175.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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165.00		541.21	380.88	0.00	0.00
170.00		524.90	368.97	0.00	0.00
174.00	(3) attachments	2454.32	967.56	0.00	20801.51
175.00	(28) attachments	6960.85	3553.28	0.00	22094.50
Totals:		42,875.36	42,694.80	0.00	54,286.06

Linear Appurtenance Segment Forces (Factored)

Structure: CT00680-S-SBA	Code: EIA/TIA-222-G	2/2/2018
Site Name: Putnam	Exposure: B	
Height: 175.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II

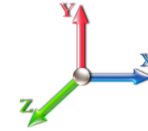


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Load Case: 0.9D + 1.6W 101 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



Iterations 25

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
5.00	3" Chanel	Yes	5.00	0.000	3.25	1.35	0.00	0.059	0.000	17.366	0.00	8.01
10.00	3" Chanel	Yes	5.00	0.000	3.25	1.35	0.00	0.060	0.000	17.366	0.00	8.01
15.00	3" Chanel	Yes	5.00	0.000	3.25	1.35	0.00	0.061	0.000	17.366	0.00	8.01
20.00	3" Chanel	Yes	5.00	0.000	3.25	1.35	0.00	0.062	0.000	17.366	0.00	8.01
22.00	3" Chanel	Yes	2.00	0.000	3.25	0.54	0.00	0.063	0.000	17.366	0.00	3.20
25.00	3" Chanel	Yes	3.00	0.000	3.25	0.81	0.00	0.063	0.000	17.366	0.00	4.81
30.00	3" Chanel	Yes	5.00	0.000	3.25	1.35	0.00	0.064	0.000	17.381	0.00	8.01
35.00	3" Chanel	Yes	5.00	0.000	3.25	1.35	0.00	0.066	0.000	18.163	0.00	8.01
36.00	3" Chanel	Yes	1.00	0.000	3.25	0.27	0.00	0.067	0.000	18.310	0.00	1.60
38.00	3" Chanel	Yes	2.00	0.000	3.25	0.54	0.00	0.067	0.000	18.595	0.00	3.20
39.00	3" Chanel	Yes	1.00	0.000	3.25	0.27	0.00	0.067	0.000	18.734	0.00	1.60
40.00	3" Chanel	Yes	1.00	0.000	3.25	0.27	0.00	0.068	0.000	18.870	0.00	1.60
42.00	3" Chanel	Yes	2.00	0.000	3.25	0.54	0.00	0.068	0.000	19.135	0.00	3.20
45.00	3" Chanel	Yes	3.00	0.000	3.25	0.81	0.00	0.068	0.000	19.516	0.00	4.81
50.00	3" Chanel	Yes	5.00	0.000	3.25	1.35	0.00	0.069	0.000	20.112	0.00	8.01
54.00	3" Chanel	Yes	4.00	0.000	3.25	1.08	0.00	0.070	0.000	20.559	0.00	6.41
55.00	3" Chanel	Yes	1.00	0.000	3.25	0.27	0.00	0.071	0.000	20.667	0.00	1.60
60.00	3" Chanel	Yes	5.00	0.000	3.25	1.35	0.00	0.072	0.000	21.187	0.00	8.01
65.00	3" Chanel	Yes	5.00	0.000	3.25	1.35	0.00	0.074	0.000	21.678	0.00	8.01
70.00	3" Chanel	Yes	5.00	0.000	3.25	1.35	0.00	0.075	0.000	22.142	0.00	8.01
71.25	3" Chanel	Yes	1.25	0.000	3.25	0.34	0.00	0.076	0.000	22.254	0.00	2.00
75.00	3" Chanel	Yes	3.75	0.000	3.25	1.02	0.00	0.077	0.000	22.582	0.00	6.01
76.00	3" Chanel	Yes	1.00	0.000	3.25	0.27	0.00	0.078	0.000	22.668	0.00	1.60
80.00	3" Chanel	Yes	4.00	0.000	3.25	1.08	0.00	0.078	0.000	23.003	0.00	6.41
85.00	3" Chanel	Yes	5.00	0.000	3.25	1.35	0.00	0.079	0.000	23.404	0.00	8.01
86.00	3" Chanel	Yes	1.00	0.000	3.25	0.27	0.00	0.081	0.000	23.483	0.00	1.60
90.00	3" Chanel	Yes	4.00	0.000	3.25	1.08	0.00	0.082	0.000	23.790	0.00	6.41
95.00	3" Chanel	Yes	5.00	0.000	3.25	1.35	0.00	0.083	0.000	24.160	0.00	8.01
100.00	3" Chanel	Yes	5.00	0.000	3.25	1.35	0.00	0.086	0.000	24.517	0.00	8.01
104.00	3" Chanel	Yes	4.00	0.000	3.25	1.08	0.00	0.088	0.000	24.793	0.00	6.41
105.00	3" Chanel	Yes	1.00	0.000	3.25	0.27	0.00	0.089	0.000	24.861	0.00	1.60
Totals:											0.0	168.2

Calculated Forces

Structure: CT00680-S-SBA

Code: EIA/TIA-222-G

2/2/2018

Site Name: Putnam

Exposure: B



Height: 175.00 (ft)

Crest Height: 0.00

Base Elev: 0.000 (ft)

Site Class: D - Stiff Soil

Gh: 1.1

Topography: 1

Struct Class: II

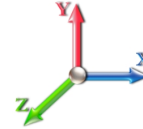
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Load Case: 0.9D + 1.6W 101 mph Wind

Iterations 25

Dead Load Factor 0.90

Wind Load Factor 1.60



Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-42.63	-42.94	0.00	-5274.1	0.00	5274.15	4294.71	2147.35	9493.67	4688.57	0.00	0.000	0.000	0.697
5.00	-41.10	-42.35	0.00	-5059.4	0.00	5059.47	4251.62	2125.81	9227.39	4557.06	0.09	-0.163	0.000	0.682
10.00	-39.60	-41.76	0.00	-4847.7	0.00	4847.74	4207.27	2103.63	8961.88	4425.94	0.35	-0.327	0.000	0.668
15.00	-38.12	-41.18	0.00	-4638.9	0.00	4638.93	4161.65	2080.83	8697.29	4295.27	0.78	-0.492	0.000	0.653
20.00	-36.69	-40.58	0.00	-4433.0	0.00	4433.02	4114.76	2057.38	8433.78	4165.13	1.38	-0.657	0.000	0.638
22.00	-36.10	-40.37	0.00	-4351.8	0.00	4351.87	4095.66	2047.83	8328.71	4113.24	1.67	-0.725	0.000	0.755
25.00	-35.20	-40.06	0.00	-4230.7	0.00	4230.78	4066.61	2033.31	8171.50	4035.59	2.17	-0.845	0.000	0.745
30.00	-33.77	-39.52	0.00	-4030.4	0.00	4030.47	4017.20	2008.60	7910.59	3906.74	3.16	-1.044	0.000	0.728
35.00	-32.42	-38.90	0.00	-3832.9	0.00	3832.90	3966.51	1983.26	7651.22	3778.65	4.36	-1.243	0.000	0.593
36.00	-32.12	-38.80	0.00	-3794.0	0.00	3794.00	3956.22	1978.11	7599.55	3753.13	4.62	-1.278	0.000	0.792
38.00	-31.23	-38.54	0.00	-3716.4	0.00	3716.41	3935.49	1967.75	7496.40	3702.19	5.18	-1.369	0.000	0.576
39.00	-30.78	-38.42	0.00	-3677.8	0.00	3677.87	3925.05	1962.53	7444.93	3676.77	5.47	-1.402	0.000	0.690
40.00	-30.32	-38.30	0.00	-3639.4	0.00	3639.45	3914.56	1957.28	7393.54	3651.39	5.77	-1.443	0.000	0.687
42.00	-29.42	-38.06	0.00	-3562.8	0.00	3562.85	3554.53	1777.27	6785.59	3351.15	6.39	-1.524	0.000	0.660
45.00	-28.65	-37.72	0.00	-3448.6	0.00	3448.66	3532.39	1766.19	6658.05	3288.16	7.38	-1.645	0.000	0.693
50.00	-27.45	-37.08	0.00	-3260.0	0.00	3260.09	3494.22	1747.11	6445.54	3183.21	9.22	-1.858	0.000	0.672
54.00	-26.49	-36.41	0.00	-3111.7	0.00	3111.78	3462.54	1731.27	6275.67	3099.32	10.85	-2.029	0.000	0.654
55.00	-26.20	-36.32	0.00	-3075.3	0.00	3075.37	3454.46	1727.23	6233.23	3078.36	11.28	-2.072	0.000	0.649
60.00	-25.04	-35.67	0.00	-2893.7	0.00	2893.77	3413.12	1706.56	6021.34	2973.71	13.56	-2.285	0.000	0.627
65.00	-23.89	-35.01	0.00	-2715.4	0.00	2715.42	3370.20	1685.10	5810.04	2869.36	16.07	-2.496	0.000	0.604
70.00	-22.82	-34.32	0.00	-2540.3	0.00	2540.35	3325.69	1662.84	5599.53	2765.40	18.80	-2.706	0.000	0.581
71.25	-22.32	-34.16	0.00	-2497.4	0.00	2497.45	3314.31	1657.16	5547.04	2739.48	19.51	-2.760	0.000	0.567
75.00	-20.96	-33.60	0.00	-2369.3	0.00	2369.34	3279.60	1639.80	5389.99	2661.91	21.74	-2.915	0.000	0.549
76.00	-20.56	-33.48	0.00	-2335.7	0.00	2335.74	3306.32	1653.16	5510.48	2721.42	22.36	-2.957	0.000	0.559
80.00	-19.69	-32.94	0.00	-2201.8	0.00	2201.82	3269.04	1634.52	5343.14	2638.78	24.90	-3.121	0.000	0.521
80.00	-19.69	-32.94	0.00	-2201.8	0.00	2201.82	2504.08	1252.04	4105.75	2027.68	24.90	-3.121	0.000	0.568
85.00	-18.79	-32.22	0.00	-2037.1	0.00	2037.14	2474.85	1237.43	3958.27	1954.84	28.27	-3.315	0.000	0.599
86.00	-18.56	-32.12	0.00	-2004.9	0.00	2004.91	2468.82	1234.41	3928.75	1940.26	28.97	-3.359	0.000	0.739
90.00	-17.78	-31.60	0.00	-1876.4	0.00	1876.44	2444.04	1222.02	3810.67	1881.94	31.88	-3.571	0.000	0.708
95.00	-16.85	-30.93	0.00	-1718.4	0.00	1718.47	2411.64	1205.82	3663.14	1809.09	35.75	-3.831	0.000	0.668
100.00	-15.95	-30.25	0.00	-1563.8	0.00	1563.83	2377.66	1188.83	3515.87	1736.36	39.90	-4.085	0.000	0.628
104.00	-15.28	-29.70	0.00	-1442.8	0.00	1442.81	2349.34	1174.67	3398.38	1678.33	43.41	-4.285	0.000	0.594
104.00	-15.28	-29.70	0.00	-1442.8	0.00	1442.81	2349.34	1174.67	3398.38	1678.33	43.41	-4.285	0.000	0.594
105.00	-15.03	-29.61	0.00	-1413.1	0.00	1413.11	2342.10	1171.05	3369.07	1663.86	44.31	-4.335	0.000	0.856
110.00	-14.12	-28.97	0.00	-1265.0	0.00	1265.05	2304.95	1152.47	3222.91	1591.67	49.03	-4.684	0.000	0.802
115.00	-13.25	-28.33	0.00	-1120.1	0.00	1120.19	2266.22	1133.11	3077.59	1519.90	54.12	-5.023	0.000	0.743
120.00	-11.91	-27.63	0.00	-978.52	0.00	978.52	2252.14	1126.07	3026.44	1494.64	59.55	-5.348	0.000	0.661
124.00	-10.61	-25.66	0.00	-868.01	0.00	868.01	2219.57	1109.78	2911.24	1437.75	64.13	-5.598	0.000	0.609
125.00	-10.41	-25.55	0.00	-842.36	0.00	842.36	2211.27	1105.63	2882.56	1423.59	65.31	-5.657	0.000	0.597
125.00	-10.41	-25.55	0.00	-842.36	0.00	842.36	1600.93	800.47	2095.19	1034.73	65.31	-5.657	0.000	0.822
130.00	-9.78	-24.91	0.00	-714.62	0.00	714.62	1577.27	788.64	2000.77	988.11	71.37	-5.929	0.000	0.730
134.00	-8.68	-20.33	0.00	-601.10	0.00	601.10	1557.20	778.60	1925.20	950.79	76.44	-6.183	0.000	0.638
135.00	-8.56	-20.21	0.00	-580.78	0.00	580.78	1552.03	776.01	1906.32	941.46	77.74	-6.243	0.000	0.623
137.50	-7.07	-18.72	0.00	-530.26	0.00	530.26	1538.81	769.41	1859.13	918.16	81.04	-6.389	0.000	0.583
140.00	-6.80	-18.41	0.00	-483.47	0.00	483.47	1525.20	762.60	1812.01	894.88	84.42	-6.529	0.000	0.545
145.00	-6.33	-17.79	0.00	-391.40	0.00	391.40	1496.79	748.40	1718.05	848.48	91.38	-6.782	0.000	0.466
147.00	-5.14	-12.67	0.00	-355.82	0.00	355.82	1484.98	742.49	1680.60	829.98	94.24	-6.878	0.000	0.432
150.00	-4.90	-12.31	0.00	-317.81	0.00	317.81	1466.80	733.40	1624.61	802.34	98.59	-7.014	0.000	0.400

Calculated Forces

Structure: CT00680-S-SBA	Code: EIA/TIA-222-G	2/2/2018
Site Name: Putnam	Exposure: B	
Height: 175.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II
		Page: 25



155.00	-4.21	-11.67	0.00	-256.25	0.00	256.25	1451.75	725.87	1579.74	780.18	106.03	-7.218	0.000	0.332
160.00	-3.86	-11.08	0.00	-197.90	0.00	197.90	1419.41	709.70	1487.45	734.60	113.67	-7.399	0.000	0.272
165.00	-3.53	-10.50	0.00	-142.51	0.00	142.51	1385.48	692.74	1396.17	689.51	121.48	-7.543	0.000	0.209
170.00	-3.22	-9.94	0.00	-90.01	0.00	90.01	1349.97	674.99	1306.08	645.02	129.42	-7.652	0.000	0.142
170.00	-3.22	-9.94	0.00	-90.01	0.00	90.01	1349.97	674.99	1306.08	645.02	129.42	-7.652	0.000	0.142
174.00	-2.59	-7.38	0.00	-29.47	0.00	29.47	1121.46	560.73	870.39	429.85	135.84	-7.712	0.000	0.071
175.00	0.00	-6.96	0.00	-22.09	0.00	22.09	1053.22	526.61	767.04	378.81	137.45	-7.723	0.000	0.059

Wind Loading - Shaft

Structure: CT00680-S-SBA

Code: EIA/TIA-222-G

2/2/2018

Site Name: Putnam

Exposure: B



Height: 175.00 (ft)

Crest Height: 0.00

Base Elev: 0.000 (ft)

Site Class: D - Stiff Soil

Gh: 1.1

Topography: 1

Struct Class: II

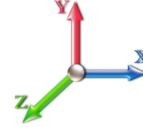
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Load Case: 1.2D + 1.0Di + 1.0Wi 50 mph Wind

Iterations 24

Dead Load Factor 1.20

Wind Load Factor 1.00



Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00	RB1 RB2	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	24.120	28.94	135.5	436.6	1963.3
10.00		1.00	0.70	4.256	4.68	0.00	1.200	1.331	5.00	23.777	28.53	133.6	460.4	1959.2
15.00		1.00	0.70	4.256	4.68	0.00	1.200	1.386	5.00	23.406	28.09	131.5	471.2	1942.2
20.00		1.00	0.70	4.256	4.68	0.00	1.200	1.427	5.00	23.023	27.63	129.3	476.4	1919.6
22.00	RT2	1.00	0.70	4.256	4.68	0.00	1.200	1.440	2.00	9.097	10.92	51.1	191.0	760.5
25.00		1.00	0.70	4.256	4.68	0.00	1.200	1.459	3.00	13.529	16.24	76.0	287.0	1132.9
30.00		1.00	0.70	4.260	4.69	0.00	1.200	1.486	5.00	22.238	26.69	125.0	478.0	1865.6
35.00	RB3	1.00	0.73	4.451	4.90	0.00	1.200	1.509	5.00	21.840	26.21	128.3	476.2	1836.0
36.00	Bot - Section 2 RT1	1.00	0.74	4.487	4.94	0.00	1.200	1.513	1.00	4.319	5.18	25.6	95.1	363.8
38.00	RB4	1.00	0.75	4.557	5.01	0.00	1.200	1.521	2.00	8.719	10.46	52.5	192.8	1192.3
39.00	RT3	1.00	0.76	4.591	5.05	0.00	1.200	1.525	1.00	4.335	5.20	26.3	96.3	592.9
40.00		1.00	0.76	4.625	5.09	0.00	1.200	1.529	1.00	4.319	5.18	26.4	96.1	590.7
42.00	Top - Section 1	1.00	0.77	4.689	5.16	0.00	1.200	1.537	2.00	8.591	10.31	53.2	191.7	1174.7
45.00		1.00	0.79	4.783	5.26	0.00	1.200	1.547	3.00	12.767	15.32	80.6	286.1	966.0
50.00		1.00	0.81	4.929	5.42	0.00	1.200	1.564	5.00	20.958	25.15	136.4	472.2	1586.3
54.00	Appurtenance(s)	1.00	0.83	5.039	5.54	0.00	1.200	1.576	4.00	16.474	19.77	109.6	374.5	1248.6
55.00		1.00	0.83	5.065	5.57	0.00	1.200	1.579	1.00	4.077	4.89	27.3	93.4	309.5
60.00		1.00	0.85	5.193	5.71	0.00	1.200	1.592	5.00	20.148	24.18	138.1	461.2	1527.6
65.00		1.00	0.87	5.313	5.84	0.00	1.200	1.605	5.00	19.741	23.69	138.4	455.0	1497.6
70.00	Bot - Section 3	1.00	0.89	5.426	5.97	0.00	1.200	1.617	5.00	19.334	23.20	138.5	448.4	1467.1
71.25	RT4 RB5	1.00	0.90	5.454	6.00	0.00	1.200	1.620	1.25	4.850	5.82	34.9	113.6	620.2
75.00		1.00	0.91	5.534	6.09	0.00	1.200	1.628	3.75	14.398	17.28	105.2	337.0	1838.7
76.00	Top - Section 2	1.00	0.91	5.555	6.11	0.00	1.200	1.631	1.00	3.800	4.56	27.9	89.6	485.5
80.00	Top - Section 3	1.00	0.93	5.637	6.20	0.00	1.200	1.639	4.00	15.040	18.05	111.9	353.6	1143.4
85.00		1.00	0.94	5.736	6.31	0.00	1.200	1.649	5.00	18.433	22.12	139.6	434.5	1240.5
86.00	RT5 RB6	1.00	0.95	5.755	6.33	0.00	1.200	1.651	1.00	3.637	4.36	27.6	86.6	245.4
90.00		1.00	0.96	5.830	6.41	0.00	1.200	1.658	4.00	14.385	17.26	110.7	341.4	968.7
95.00		1.00	0.97	5.921	6.51	0.00	1.200	1.667	5.00	17.614	21.14	137.7	418.7	1185.0
100.00		1.00	0.99	6.008	6.61	0.00	1.200	1.676	5.00	17.204	20.64	136.4	410.4	1156.8
104.00	RT6	1.00	1.00	6.076	6.68	0.00	1.200	1.682	4.00	13.467	16.16	108.0	322.9	905.8
105.00		1.00	1.00	6.093	6.70	0.00	1.200	1.684	1.00	3.325	3.99	26.7	80.4	224.1
110.00		1.00	1.02	6.174	6.79	0.00	1.200	1.692	5.00	16.383	19.66	133.5	393.3	1100.0
115.00	Bot - Section 5	1.00	1.03	6.253	6.88	0.00	1.200	1.699	5.00	15.972	19.17	131.8	384.5	1071.3
120.00	Top - Section 4	1.00	1.04	6.330	6.96	0.00	1.200	1.707	5.00	15.831	19.00	132.3	382.4	1729.2
124.00	Appurtenance(s)	1.00	1.05	6.389	7.03	0.00	1.200	1.712	4.00	12.368	14.84	104.3	300.1	829.7
125.00	Top - Section 5	1.00	1.05	6.404	7.04	0.00	1.200	1.714	1.00	3.051	3.66	25.8	74.7	205.1
130.00		1.00	1.07	6.476	7.12	0.00	1.200	1.720	5.00	15.008	18.01	128.3	364.1	877.2
134.00	Appurtenance(s)	1.00	1.07	6.532	7.19	0.00	1.200	1.726	4.00	11.710	14.05	101.0	285.3	684.3
135.00		1.00	1.08	6.546	7.20	0.00	1.200	1.727	1.00	2.886	3.46	24.9	70.9	169.1
137.50	Appurtenance(s)	1.00	1.08	6.581	7.24	0.00	1.200	1.730	2.50	7.143	8.57	62.1	175.0	417.6
140.00		1.00	1.09	6.615	7.28	0.00	1.200	1.733	2.50	7.040	8.45	61.5	172.6	411.3
145.00		1.00	1.10	6.681	7.35	0.00	1.200	1.739	5.00	13.773	16.53	121.5	335.6	801.0
147.00	Appurtenance(s)	1.00	1.10	6.708	7.38	0.00	1.200	1.742	2.00	5.393	6.47	47.8	132.7	314.4
150.00	Bot - Section 7	1.00	1.11	6.746	7.42	0.00	1.200	1.745	3.00	7.966	9.56	70.9	195.5	463.3
155.00	Top - Section 6	1.00	1.12	6.810	7.49	0.00	1.200	1.751	5.00	13.164	15.80	118.3	321.7	1197.2
160.00		1.00	1.13	6.872	7.56	0.00	1.200	1.757	5.00	12.751	15.30	115.7	311.7	737.7

Wind Loading - Shaft

Structure: CT00680-S-SBA	Code: EIA/TIA-222-G	2/2/2018
Site Name: Putnam	Exposure: B	
Height: 175.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Page: 27
	Struct Class: II	



165.00	1.00	1.14	6.933	7.63	0.00	1.200	1.762	5.00	12.339	14.81	112.9	301.7	711.8
170.00 Top - Section 7	1.00	1.15	6.992	7.69	0.00	1.200	1.767	5.00	11.926	14.31	110.1	291.6	685.8
174.00 Appurtenance(s)	1.00	1.16	7.039	7.74	0.00	1.200	1.771	4.00	8.583	10.30	79.7	191.6	470.4
175.00 Appurtenance(s)	1.00	1.16	7.050	7.76	0.00	1.200	1.772	1.00	1.898	2.28	17.7	45.3	105.5
Totals:								175.00			4,529.7		48,892.2

Discrete Appurtenance Forces

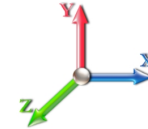
Structure: CT00680-S-SBA	Code: EIA/TIA-222-G	2/2/2018
Site Name: Putnam	Exposure: B	
Height: 175.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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

Dead Load Factor 1.20
Wind Load Factor 1.00



Iterations 24

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	175.00	Platform w/ Handrail w/	1	7.050	7.755	1.00	1.00	90.55	5231.68	0.000	0.000	702.24	0.00	0.00
2	175.00	TD-RRH8x20-25	3	7.050	7.755	0.67	1.00	9.80	589.63	0.000	0.000	76.02	0.00	0.00
3	175.00	800 MHz	6	7.050	7.755	0.67	1.00	14.68	705.65	0.000	0.000	113.84	0.00	0.00
4	175.00	1900MHz	3	7.050	7.755	0.67	1.00	8.16	398.49	0.000	0.000	63.26	0.00	0.00
5	175.00	ETCR-654L12H6	3	7.050	7.755	0.73	1.00	38.14	1342.13	0.000	0.000	295.80	0.00	0.00
6	175.00	E15S09P94	6	7.201	7.922	0.75	1.00	5.73	180.80	0.000	13.500	45.38	0.00	612.59
7	175.00	DR65-18-02DPL2Q	6	7.234	7.957	0.69	1.00	28.50	981.06	0.000	16.500	226.80	0.00	3742.19
8	174.00	4.5" x 24 FT Pipe	3	7.152	7.867	1.00	1.00	61.76	1475.17	0.000	10.000	485.84	0.00	4858.41
9	147.00	T-Arms	3	6.708	7.378	0.56	0.75	41.77	1310.76	0.000	0.000	308.22	0.00	0.00
10	147.00	RRH2X60-700	3	6.668	7.335	0.62	0.80	8.03	417.04	0.000	-3.000	58.87	0.00	-176.62
11	147.00	RRH2X60-PCS	3	6.668	7.335	0.72	0.80	6.10	450.95	0.000	-3.000	44.76	0.00	-134.29
12	147.00	RRH2X60-AWS	3	6.668	7.335	0.62	0.80	8.03	417.04	0.000	-3.000	58.87	0.00	-176.62
13	147.00	DB-T1-6Z-8AB-OZ	2	6.708	7.378	0.80	0.80	9.07	392.37	0.000	0.000	66.96	0.00	0.00
14	147.00	FD9R6004/2C-3L	6	6.708	7.378	0.53	0.80	2.56	60.18	0.000	0.000	18.87	0.00	0.00
15	147.00	SBNHH-1D65B	6	6.708	7.378	0.66	0.80	37.06	1571.84	0.000	0.000	273.42	0.00	0.00
16	147.00	BXA-80080-4CF	3	6.708	7.378	0.70	0.80	11.37	239.55	0.000	0.000	83.92	0.00	0.00
17	147.00	BXA-70063-6CF-EDIN-X	3	6.708	7.378	0.62	0.80	19.16	386.57	0.000	0.000	141.38	0.00	0.00
18	137.50	Low Profile	1	6.581	7.239	1.00	1.00	39.51	2797.57	0.000	0.000	286.00	0.00	0.00
19	134.00	7770.00	3	6.581	7.239	0.60	0.80	11.79	525.95	0.000	3.500	85.38	0.00	298.82
20	134.00	TPA-65R-LCUUUU-H8	3	6.581	7.239	0.66	0.80	29.73	1194.23	0.000	3.500	215.24	0.00	753.34
21	134.00	RRUS-32	6	6.581	7.239	0.54	0.80	13.17	1226.73	0.000	3.500	95.37	0.00	333.79
22	134.00	DBC0061F1V51-2	3	6.581	7.239	0.55	0.80	1.59	99.40	0.000	3.500	11.51	0.00	40.27
23	134.00	DC6-48-60-18-8C	1	6.581	7.239	0.80	0.80	3.09	47.14	0.000	3.500	22.37	0.00	78.31
24	134.00	AM-X-CD-17-65-00T-RET	3	6.581	7.239	0.62	0.80	28.65	346.51	0.000	3.500	207.38	0.00	725.83
25	134.00	LGP21401	6	6.581	7.239	0.62	0.80	7.82	207.25	0.000	3.500	56.62	0.00	198.18
26	134.00	RRUS 11	3	6.581	7.239	0.61	0.80	5.77	446.43	0.000	3.500	41.77	0.00	146.19
27	134.00	DC6-48-60-18-8F	1	6.581	7.239	0.80	0.80	3.30	61.82	0.000	3.500	23.87	0.00	83.53
28	124.00	T-Arms	3	6.389	7.028	0.56	0.75	30.81	1300.36	0.000	0.000	216.55	0.00	0.00
29	124.00	742 351	6	6.389	7.028	0.50	0.80	22.16	611.77	0.000	0.000	155.77	0.00	0.00
30	54.00	Standoff	1	5.039	5.542	1.00	1.00	8.02	97.48	0.000	0.000	44.44	0.00	0.00
31	54.00	GPS	1	5.039	5.542	1.00	1.00	1.64	30.47	0.000	0.000	9.11	0.00	0.00
Totals:									25,144.04			4,535.83		

Total Applied Force Summary

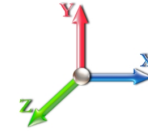
Structure: CT00680-S-SBA	Code: EIA/TIA-222-G	2/2/2018
Site Name: Putnam	Exposure: B	
Height: 175.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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

Dead Load Factor 1.20
Wind Load Factor 1.00



Iterations 24

Elev (ft)	Description	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		135.51	2343.99	0.00	0.00
10.00		133.58	2342.37	0.00	0.00
15.00		131.49	2326.96	0.00	0.00
20.00		129.34	2305.49	0.00	0.00
22.00		51.11	915.00	0.00	0.00
25.00		76.01	1364.98	0.00	0.00
30.00		125.04	2253.25	0.00	0.00
35.00		128.33	2224.32	0.00	0.00
36.00		25.58	441.45	0.00	0.00
38.00		52.45	1347.81	0.00	0.00
39.00		26.27	670.70	0.00	0.00
40.00		26.37	668.53	0.00	0.00
42.00		53.18	1330.38	0.00	0.00
45.00		80.60	1199.66	0.00	0.00
50.00		136.36	1976.28	0.00	0.00
54.00	(2) attachments	163.12	1688.81	0.00	0.00
55.00		27.26	387.44	0.00	0.00
60.00		138.09	1917.56	0.00	0.00
65.00		138.44	1887.89	0.00	0.00
70.00		138.49	1857.80	0.00	0.00
71.25		34.91	717.86	0.00	0.00
75.00		105.18	2131.99	0.00	0.00
76.00		27.87	563.73	0.00	0.00
80.00		111.92	1456.48	0.00	0.00
85.00		139.56	1632.25	0.00	0.00
86.00		27.63	323.77	0.00	0.00
90.00		110.71	1282.32	0.00	0.00
95.00		137.67	1577.27	0.00	0.00
100.00		136.45	1549.42	0.00	0.00
104.00		108.01	1220.00	0.00	0.00
105.00		26.74	302.68	0.00	0.00
110.00		133.52	1441.26	0.00	0.00
115.00		131.84	1412.57	0.00	0.00
120.00		132.27	2070.45	0.00	0.00
124.00	(9) attachments	476.63	3014.80	0.00	0.00
125.00		25.79	258.27	0.00	0.00
130.00		128.30	1143.18	0.00	0.00
134.00	(29) attachments	860.48	5052.58	0.00	2658.27
135.00		24.94	205.03	0.00	0.00
137.50	(1) attachments	348.05	3305.00	0.00	0.00
140.00		61.47	501.07	0.00	0.00
145.00		121.47	980.61	0.00	0.00
147.00	(32) attachments	1103.03	5632.54	0.00	-487.53
150.00		70.94	521.98	0.00	0.00
155.00		118.33	1294.93	0.00	0.00
160.00		115.67	835.48	0.00	0.00

Total Applied Force Summary

Structure: CT00680-S-SBA	Code: EIA/TIA-222-G	2/2/2018
Site Name: Putnam	Exposure: B	
Height: 175.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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165.00	112.91	809.57	0.00	0.00
170.00	110.07	783.56	0.00	0.00
174.00	(3) attachments	565.59	2023.75	0.00
175.00	(28) attachments	1541.00	9554.53	0.00
	Totals:	9,065.55	85,049.61	0.00
				11,383.93

Linear Appurtenance Segment Forces (Factored)

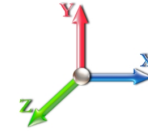
Structure: CT00680-S-SBA	Code: EIA/TIA-222-G	2/2/2018
Site Name: Putnam	Exposure: B	
Height: 175.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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

Dead Load Factor 1.20
Wind Load Factor 1.00



Iterations 24

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
5.00	3" Chanel	Yes	5.00	0.000	3.25	2.39	0.00	0.059	0.000	4.256	0.00	38.50
10.00	3" Chanel	Yes	5.00	0.000	3.25	2.46	0.00	0.060	0.000	4.256	0.00	40.94
15.00	3" Chanel	Yes	5.00	0.000	3.25	2.51	0.00	0.061	0.000	4.256	0.00	42.51
20.00	3" Chanel	Yes	5.00	0.000	3.25	2.54	0.00	0.062	0.000	4.256	0.00	43.68
22.00	3" Chanel	Yes	2.00	0.000	3.25	1.02	0.00	0.063	0.000	4.256	0.00	17.63
25.00	3" Chanel	Yes	3.00	0.000	3.25	1.54	0.00	0.063	0.000	4.256	0.00	26.77
30.00	3" Chanel	Yes	5.00	0.000	3.25	2.59	0.00	0.064	0.000	4.260	0.00	45.42
35.00	3" Chanel	Yes	5.00	0.000	3.25	2.61	0.00	0.066	0.000	4.451	0.00	46.11
36.00	3" Chanel	Yes	1.00	0.000	3.25	0.52	0.00	0.067	0.000	4.487	0.00	9.25
38.00	3" Chanel	Yes	2.00	0.000	3.25	1.05	0.00	0.067	0.000	4.557	0.00	18.60
39.00	3" Chanel	Yes	1.00	0.000	3.25	0.53	0.00	0.067	0.000	4.591	0.00	9.32
40.00	3" Chanel	Yes	1.00	0.000	3.25	0.53	0.00	0.068	0.000	4.625	0.00	9.35
42.00	3" Chanel	Yes	2.00	0.000	3.25	1.05	0.00	0.068	0.000	4.689	0.00	18.78
45.00	3" Chanel	Yes	3.00	0.000	3.25	1.59	0.00	0.068	0.000	4.783	0.00	28.37
50.00	3" Chanel	Yes	5.00	0.000	3.25	2.66	0.00	0.069	0.000	4.929	0.00	47.79
54.00	3" Chanel	Yes	4.00	0.000	3.25	2.13	0.00	0.070	0.000	5.039	0.00	38.53
55.00	3" Chanel	Yes	1.00	0.000	3.25	0.53	0.00	0.071	0.000	5.065	0.00	9.65
60.00	3" Chanel	Yes	5.00	0.000	3.25	2.68	0.00	0.072	0.000	5.193	0.00	48.68
65.00	3" Chanel	Yes	5.00	0.000	3.25	2.69	0.00	0.074	0.000	5.313	0.00	49.08
70.00	3" Chanel	Yes	5.00	0.000	3.25	2.70	0.00	0.075	0.000	5.426	0.00	49.45
71.25	3" Chanel	Yes	1.25	0.000	3.25	0.68	0.00	0.076	0.000	5.454	0.00	12.39
75.00	3" Chanel	Yes	3.75	0.000	3.25	2.03	0.00	0.077	0.000	5.534	0.00	37.36
76.00	3" Chanel	Yes	1.00	0.000	3.25	0.54	0.00	0.078	0.000	5.555	0.00	9.98
80.00	3" Chanel	Yes	4.00	0.000	3.25	2.18	0.00	0.078	0.000	5.637	0.00	40.11
85.00	3" Chanel	Yes	5.00	0.000	3.25	2.73	0.00	0.079	0.000	5.736	0.00	50.46
86.00	3" Chanel	Yes	1.00	0.000	3.25	0.55	0.00	0.081	0.000	5.755	0.00	10.10
90.00	3" Chanel	Yes	4.00	0.000	3.25	2.19	0.00	0.082	0.000	5.830	0.00	40.61
95.00	3" Chanel	Yes	5.00	0.000	3.25	2.74	0.00	0.083	0.000	5.921	0.00	51.05
100.00	3" Chanel	Yes	5.00	0.000	3.25	2.75	0.00	0.086	0.000	6.008	0.00	51.32
104.00	3" Chanel	Yes	4.00	0.000	3.25	2.20	0.00	0.088	0.000	6.076	0.00	41.23
105.00	3" Chanel	Yes	1.00	0.000	3.25	0.55	0.00	0.089	0.000	6.093	0.00	10.32
Totals:											0.0	993.3

Calculated Forces

Structure: CT00680-S-SBA

Site Name: Putnam

Height: 175.00 (ft)

Base Elev: 0.000 (ft)

Gh: 1.1

Topography: 1

Code: EIA/TIA-222-G

2/2/2018

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

Iterations 24

Dead Load Factor 1.20

Wind Load Factor 1.00



Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-85.05	-9.09	0.00	-1191.5	0.00	1191.59	4294.71	2147.35	9493.67	4688.57	0.00	0.000	0.000	0.168
5.00	-82.70	-9.01	0.00	-1146.1	0.00	1146.13	4251.62	2125.81	9227.39	4557.06	0.02	-0.037	0.000	0.165
10.00	-80.35	-8.93	0.00	-1101.0	0.00	1101.08	4207.27	2103.63	8961.88	4425.94	0.08	-0.074	0.000	0.161
15.00	-78.02	-8.84	0.00	-1056.4	0.00	1056.45	4161.65	2080.83	8697.29	4295.27	0.18	-0.112	0.000	0.158
20.00	-75.71	-8.74	0.00	-1012.2	0.00	1012.23	4114.76	2057.38	8433.78	4165.13	0.31	-0.149	0.000	0.155
22.00	-74.79	-8.72	0.00	-994.75	0.00	994.75	4095.66	2047.83	8328.71	4113.24	0.38	-0.165	0.000	0.184
25.00	-73.42	-8.68	0.00	-968.60	0.00	968.60	4066.61	2033.31	8171.50	4035.59	0.49	-0.192	0.000	0.182
30.00	-71.16	-8.61	0.00	-925.18	0.00	925.18	4017.20	2008.60	7910.59	3906.74	0.72	-0.238	0.000	0.178
35.00	-68.93	-8.50	0.00	-882.14	0.00	882.14	3966.51	1983.26	7651.22	3778.65	0.99	-0.284	0.000	0.146
36.00	-68.49	-8.49	0.00	-873.64	0.00	873.64	3956.22	1978.11	7599.55	3753.13	1.05	-0.292	0.000	0.194
38.00	-67.14	-8.45	0.00	-856.66	0.00	856.66	3935.49	1967.75	7496.40	3702.19	1.18	-0.313	0.000	0.142
39.00	-66.47	-8.43	0.00	-848.21	0.00	848.21	3925.05	1962.53	7444.93	3676.77	1.24	-0.320	0.000	0.170
40.00	-65.80	-8.41	0.00	-839.79	0.00	839.79	3914.56	1957.28	7393.54	3651.39	1.31	-0.330	0.000	0.169
42.00	-64.46	-8.38	0.00	-822.96	0.00	822.96	3554.53	1777.27	6785.59	3351.15	1.45	-0.348	0.000	0.162
45.00	-63.26	-8.33	0.00	-797.82	0.00	797.82	3532.39	1766.19	6658.05	3288.16	1.68	-0.376	0.000	0.171
50.00	-61.28	-8.23	0.00	-756.15	0.00	756.15	3494.22	1747.11	6445.54	3183.21	2.10	-0.426	0.000	0.166
54.00	-59.59	-8.08	0.00	-723.23	0.00	723.23	3462.54	1731.27	6275.67	3099.32	2.48	-0.465	0.000	0.162
55.00	-59.19	-8.08	0.00	-715.15	0.00	715.15	3454.46	1727.23	6233.23	3078.36	2.57	-0.475	0.000	0.161
60.00	-57.27	-7.98	0.00	-674.75	0.00	674.75	3413.12	1706.56	6021.34	2973.71	3.10	-0.525	0.000	0.156
65.00	-55.38	-7.87	0.00	-634.87	0.00	634.87	3370.20	1685.10	5810.04	2869.36	3.68	-0.574	0.000	0.151
70.00	-53.52	-7.74	0.00	-595.54	0.00	595.54	3325.69	1662.84	5599.53	2765.40	4.30	-0.623	0.000	0.145
71.25	-52.80	-7.72	0.00	-585.87	0.00	585.87	3314.31	1657.16	5547.04	2739.48	4.47	-0.636	0.000	0.142
75.00	-50.66	-7.61	0.00	-556.93	0.00	556.93	3279.60	1639.80	5389.99	2661.91	4.98	-0.672	0.000	0.138
76.00	-50.10	-7.59	0.00	-549.32	0.00	549.32	3306.32	1653.16	5510.48	2721.42	5.12	-0.682	0.000	0.140
80.00	-48.64	-7.50	0.00	-518.94	0.00	518.94	3269.04	1634.52	5343.14	2638.78	5.71	-0.721	0.000	0.131
80.00	-48.64	-7.50	0.00	-518.94	0.00	518.94	2504.08	1252.04	4105.75	2027.68	5.71	-0.721	0.000	0.143
85.00	-47.00	-7.36	0.00	-481.43	0.00	481.43	2474.85	1237.43	3958.27	1954.84	6.49	-0.767	0.000	0.152
86.00	-46.67	-7.36	0.00	-474.07	0.00	474.07	2468.82	1234.41	3928.75	1940.26	6.65	-0.777	0.000	0.187
90.00	-45.39	-7.27	0.00	-444.65	0.00	444.65	2444.04	1222.02	3810.67	1881.94	7.33	-0.827	0.000	0.180
95.00	-43.80	-7.16	0.00	-408.29	0.00	408.29	2411.64	1205.82	3663.14	1809.09	8.23	-0.889	0.000	0.171
100.00	-42.25	-7.04	0.00	-372.50	0.00	372.50	2377.66	1188.83	3515.87	1736.36	9.19	-0.949	0.000	0.161
104.00	-41.03	-6.93	0.00	-344.36	0.00	344.36	2349.34	1174.67	3398.38	1678.33	10.01	-0.997	0.000	0.153
104.00	-41.03	-6.93	0.00	-344.36	0.00	344.36	2349.34	1174.67	3398.38	1678.33	10.01	-0.997	0.000	0.153
105.00	-40.72	-6.93	0.00	-337.43	0.00	337.43	2342.10	1171.05	3369.07	1663.86	10.22	-1.009	0.000	0.220
110.00	-39.27	-6.83	0.00	-302.78	0.00	302.78	2304.95	1152.47	3222.91	1591.67	11.32	-1.093	0.000	0.207
115.00	-37.85	-6.72	0.00	-268.64	0.00	268.64	2266.22	1133.11	3077.59	1519.90	12.51	-1.174	0.000	0.193
120.00	-35.78	-6.59	0.00	-235.04	0.00	235.04	2252.14	1126.07	3026.44	1494.64	13.78	-1.252	0.000	0.173
124.00	-32.77	-6.06	0.00	-208.70	0.00	208.70	2219.57	1109.78	2911.24	1437.75	14.85	-1.312	0.000	0.160
125.00	-32.51	-6.06	0.00	-202.63	0.00	202.63	2211.27	1105.63	2882.56	1423.59	15.13	-1.326	0.000	0.157
125.00	-32.51	-6.06	0.00	-202.63	0.00	202.63	1600.93	800.47	2095.19	1034.73	15.13	-1.326	0.000	0.216
130.00	-31.36	-5.93	0.00	-172.36	0.00	172.36	1577.27	788.64	2000.77	988.11	16.55	-1.391	0.000	0.194
134.00	-26.33	-4.97	0.00	-145.96	0.00	145.96	1557.20	778.60	1925.20	950.79	17.75	-1.453	0.000	0.170
135.00	-26.12	-4.95	0.00	-141.00	0.00	141.00	1552.03	776.01	1906.32	941.46	18.05	-1.467	0.000	0.167
137.50	-22.83	-4.53	0.00	-128.63	0.00	128.63	1538.81	769.41	1859.13	918.16	18.83	-1.503	0.000	0.155
140.00	-22.32	-4.47	0.00	-117.31	0.00	117.31	1525.20	762.60	1812.01	894.88	19.63	-1.537	0.000	0.146
145.00	-21.34	-4.34	0.00	-94.95	0.00	94.95	1496.79	748.40	1718.05	848.48	21.27	-1.598	0.000	0.126
147.00	-15.74	-3.09	0.00	-86.27	0.00	86.27	1484.98	742.49	1680.60	829.98	21.94	-1.621	0.000	0.115
150.00	-15.22	-3.01	0.00	-77.02	0.00	77.02	1466.80	733.40	1624.61	802.34	22.97	-1.654	0.000	0.106

Calculated Forces

Structure: CT00680-S-SBA	Code: EIA/TIA-222-G	2/2/2018
Site Name: Putnam	Exposure: B	
Height: 175.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Page: 33
	Struct Class: II	



155.00	-13.93	-2.87	0.00	-61.96	0.00	61.96	1451.75	725.87	1579.74	780.18	24.73	-1.704	0.000	0.089
160.00	-13.09	-2.73	0.00	-47.63	0.00	47.63	1419.41	709.70	1487.45	734.60	26.54	-1.748	0.000	0.074
165.00	-12.29	-2.60	0.00	-33.96	0.00	33.96	1385.48	692.74	1396.17	689.51	28.39	-1.782	0.000	0.058
170.00	-11.51	-2.47	0.00	-20.95	0.00	20.95	1349.97	674.99	1306.08	645.02	30.27	-1.808	0.000	0.041
170.00	-11.51	-2.47	0.00	-20.95	0.00	20.95	1349.97	674.99	1306.08	645.02	30.27	-1.808	0.000	0.041
174.00	-9.50	-1.84	0.00	-6.20	0.00	6.20	1121.46	560.73	870.39	429.85	31.79	-1.821	0.000	0.023
175.00	0.00	-1.54	0.00	-4.35	0.00	4.35	1053.22	526.61	767.04	378.81	32.17	-1.824	0.000	0.012

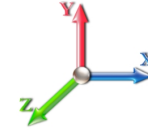
Seismic Segment Forces (Factored)

Structure: CT00680-S-SBA	Code: EIA/TIA-222-G	2/2/2018
Site Name: Putnam	Exposure: B	
Height: 175.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 1.2D + 1.0E					Iterations 22
Gust Response Factor	1.10			Sds 0.18	Ss 0.17
Dead Load Factor	1.20	Seismic Load Factor	1.00	Sd1 0.10	S1 0.06
Wind Load Factor	0.00	Structure Frequency	0.28	SA 0.03	Seismic Importance Factor 1.00



Top Elev (ft)	Description	Wz (lb)	a	b	c	Lateral Fs (lb)	R: 1.50
0.00	RB1 RB2	0.00	0.00	0.00	0.00	0.00	
5.00		1272.2	0.00	0.03	0.02	22.75	
10.00		1249.0	0.01	0.05	0.03	32.60	
15.00		1225.8	0.01	0.06	0.03	37.26	
20.00		1202.6	0.02	0.07	0.04	39.36	
22.00	RT2	474.59	0.03	0.07	0.04	15.83	
25.00		704.93	0.04	0.07	0.04	24.02	
30.00		1156.3	0.06	0.07	0.04	40.43	
35.00	RB3	1133.1	0.08	0.07	0.04	40.47	
36.00	Bot - Section 2 RT1	223.85	0.08	0.07	0.04	8.03	
38.00	RB4	832.96	0.09	0.07	0.04	30.12	
39.00	RT3	413.90	0.09	0.07	0.04	15.03	
40.00		412.18	0.10	0.07	0.04	15.03	
42.00	Top - Section 1	819.19	0.11	0.07	0.04	30.12	
45.00		566.56	0.12	0.07	0.03	21.09	
50.00		928.38	0.15	0.07	0.03	35.19	
54.00	Appurtenance(s)	778.40	0.18	0.07	0.03	29.78	
55.00		180.11	0.19	0.06	0.02	6.90	
60.00		888.65	0.22	0.06	0.02	33.83	
65.00		868.79	0.26	0.05	0.02	31.92	
70.00	Bot - Section 3	848.92	0.30	0.04	0.01	28.65	
71.25	RT4 RB5	422.11	0.31	0.04	0.01	13.79	
75.00		1251.4	0.35	0.03	0.01	35.62	
76.00	Top - Section 2	329.94	0.36	0.03	0.01	8.94	
80.00	Top - Section 3	658.09	0.39	0.02	0.01	13.43	
85.00		671.69	0.45	0.00	0.01	6.43	
86.00	RT5 RB6	132.35	0.46	0.00	0.01	0.94	
90.00		522.78	0.50	-0.02	0.01	-1.67	
95.00		638.58	0.56	-0.04	0.01	-10.34	
100.00		622.02	0.62	-0.06	0.02	-17.12	
104.00	RT6	485.70	0.67	-0.08	0.02	-16.72	
105.00		119.77	0.68	-0.08	0.03	-4.29	
110.00		588.92	0.75	-0.10	0.04	-23.75	
115.00	Bot - Section 5	572.36	0.82	-0.11	0.06	-23.47	
120.00	Top - Section 4	1122.3	0.89	-0.12	0.08	-42.57	
124.00	Appurtenance(s)	1346.0	0.95	-0.12	0.11	-44.23	
125.00	Top - Section 5	108.67	0.96	-0.12	0.11	-3.39	
130.00		427.58	1.04	-0.10	0.15	-9.01	
134.00	Appurtenance(s)	1509.9	1.11	-0.07	0.19	-15.77	
135.00		81.81	1.12	-0.05	0.20	-0.61	
137.50	Appurtenance(s)	1702.2	1.17	-0.02	0.23	1.11	
140.00		198.89	1.21	0.01	0.26	1.91	
145.00		387.85	1.30	0.12	0.33	11.68	
147.00	Appurtenance(s)	1900.2	1.33	0.17	0.37	74.69	
150.00	Bot - Section 7	223.17	1.39	0.26	0.42	12.08	
155.00	Top - Section 6	729.57	1.48	0.46	0.52	59.64	

Seismic Segment Forces (Factored)

Structure: CT00680-S-SBA	Code: EIA/TIA-222-G	2/2/2018	
Site Name: Putnam	Exposure: B		
Height: 175.00 (ft)	Crest Height: 0.00		
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil		
Gh: 1.1	Topography: 1	Struct Class: II	Page: 35



160.00	354.97	1.58	0.72	0.64	40.11	
165.00	341.72	1.68	1.05	0.78	50.57	
170.00 Top - Section 7	328.48	1.78	1.46	0.95	61.36	
174.00 Appurtenance(s)	1009.8	1.87	1.87	1.10	222.84	
175.00 Appurtenance(s)	3931.8	1.89	1.98	1.14	902.39	
Totals:	38,901.7				1,843.0	Total Wind: 42,875.4

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

Calculated Forces

Structure: CT00680-S-SBA
Site Name: Putnam
Height: 175.00 (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

2/2/2018
 Page: 36



Load Case: 1.2D + 1.0E



Iterations 22

Gust Response Factor 1.10 **Sds** 0.18 **Ss** 0.17
Dead Load Factor 1.20 **Seismic Load Factor** 1.00 **Sd1** 0.10 **S1** 0.06
Wind Load Factor 0.00 **Structure Frequency** 0.28 **SA** 0.03 **Seismic Importance Factor** 1.00

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-56.93	-2.06	0.00	-285.31	0.00	285.31	4294.71	2147.35	9493.67	4688.57	0.00	0.00	0.00	0.045
5.00	-55.05	-2.04	0.00	-275.01	0.00	275.01	4251.62	2125.81	9227.39	4557.06	0.00	-0.01	0.044	
10.00	-53.19	-2.02	0.00	-264.79	0.00	264.79	4207.27	2103.63	8961.88	4425.94	0.02	-0.02	0.043	
15.00	-51.37	-1.99	0.00	-254.69	0.00	254.69	4161.65	2080.83	8697.29	4295.27	0.04	-0.03	0.043	
20.00	-49.57	-1.96	0.00	-244.74	0.00	244.74	4114.76	2057.38	8433.78	4165.13	0.08	-0.04	0.042	
22.00	-48.86	-1.94	0.00	-240.83	0.00	240.83	4095.66	2047.83	8328.71	4113.24	0.09	-0.04	0.050	
25.00	-47.80	-1.93	0.00	-234.99	0.00	234.99	4066.61	2033.31	8171.50	4035.59	0.12	-0.05	0.049	
30.00	-46.06	-1.89	0.00	-225.36	0.00	225.36	4017.20	2008.60	7910.59	3906.74	0.17	-0.06	0.049	
35.00	-44.35	-1.86	0.00	-215.90	0.00	215.90	3966.51	1983.26	7651.22	3778.65	0.24	-0.07	0.040	
36.00	-44.01	-1.85	0.00	-214.04	0.00	214.04	3956.22	1978.11	7599.55	3753.13	0.25	-0.07	0.053	
38.00	-42.87	-1.82	0.00	-210.34	0.00	210.34	3935.49	1967.75	7496.40	3702.19	0.28	-0.08	0.039	
39.00	-42.30	-1.81	0.00	-208.52	0.00	208.52	3925.05	1962.53	7444.93	3676.77	0.30	-0.08	0.046	
40.00	-41.74	-1.79	0.00	-206.72	0.00	206.72	3914.56	1957.28	7393.54	3651.39	0.32	-0.08	0.046	
42.00	-40.61	-1.77	0.00	-203.13	0.00	203.13	3554.53	1777.27	6785.59	3351.15	0.35	-0.08	0.044	
45.00	-39.72	-1.75	0.00	-197.83	0.00	197.83	3532.39	1766.19	6658.05	3288.16	0.41	-0.09	0.047	
50.00	-38.26	-1.72	0.00	-189.08	0.00	189.08	3494.22	1747.11	6445.54	3183.21	0.51	-0.10	0.046	
54.00	-37.04	-1.69	0.00	-182.20	0.00	182.20	3462.54	1731.27	6275.67	3099.32	0.60	-0.11	0.045	
55.00	-36.75	-1.69	0.00	-180.51	0.00	180.51	3454.46	1727.23	6233.23	3078.36	0.62	-0.12	0.045	
60.00	-35.33	-1.66	0.00	-172.06	0.00	172.06	3413.12	1706.56	6021.34	2973.71	0.75	-0.13	0.044	
65.00	-33.94	-1.63	0.00	-163.76	0.00	163.76	3370.20	1685.10	5810.04	2869.36	0.89	-0.14	0.043	
70.00	-32.57	-1.60	0.00	-155.60	0.00	155.60	3325.69	1662.84	5599.53	2765.40	1.05	-0.15	0.042	
71.25	-31.97	-1.59	0.00	-153.59	0.00	153.59	3314.31	1657.16	5547.04	2739.48	1.09	-0.16	0.041	
75.00	-30.21	-1.56	0.00	-147.62	0.00	147.62	3279.60	1639.80	5389.99	2661.91	1.22	-0.17	0.040	
76.00	-29.74	-1.55	0.00	-146.06	0.00	146.06	3306.32	1653.16	5510.48	2721.42	1.25	-0.17	0.041	
80.00	-28.67	-1.54	0.00	-139.87	0.00	139.87	3269.04	1634.52	5343.14	2638.78	1.40	-0.18	0.038	
80.00	-28.67	-1.54	0.00	-139.87	0.00	139.87	2504.08	1252.04	4105.75	2027.68	1.40	-0.18	0.042	
85.00	-27.51	-1.53	0.00	-132.18	0.00	132.18	2474.85	1237.43	3958.27	1954.84	1.59	-0.19	0.045	
86.00	-27.28	-1.53	0.00	-130.65	0.00	130.65	2468.82	1234.41	3928.75	1940.26	1.63	-0.20	0.056	
90.00	-26.37	-1.54	0.00	-124.51	0.00	124.51	2444.04	1222.02	3810.67	1881.94	1.80	-0.21	0.055	
95.00	-25.25	-1.54	0.00	-116.82	0.00	116.82	2411.64	1205.82	3663.14	1809.09	2.03	-0.23	0.053	
100.00	-24.16	-1.54	0.00	-109.12	0.00	109.12	2377.66	1188.83	3515.87	1736.36	2.28	-0.24	0.051	
104.00	-23.29	-1.54	0.00	-102.95	0.00	102.95	2349.34	1174.67	3398.38	1678.33	2.49	-0.26	0.049	
104.00	-23.29	-1.54	0.00	-102.95	0.00	102.95	2349.34	1174.67	3398.38	1678.33	2.49	-0.26	0.049	
105.00	-23.08	-1.55	0.00	-101.40	0.00	101.40	2342.10	1171.05	3369.07	1663.86	2.54	-0.26	0.071	
110.00	-22.03	-1.55	0.00	-93.66	0.00	93.66	2304.95	1152.47	3222.91	1591.67	2.83	-0.29	0.068	
115.00	-21.00	-1.56	0.00	-85.90	0.00	85.90	2266.22	1133.11	3077.59	1519.90	3.15	-0.31	0.066	
120.00	-19.31	-1.56	0.00	-78.11	0.00	78.11	2252.14	1126.07	3026.44	1494.64	3.49	-0.34	0.061	
124.00	-17.42	-1.55	0.00	-71.89	0.00	71.89	2219.57	1109.78	2911.24	1437.75	3.78	-0.36	0.058	
125.00	-17.24	-1.55	0.00	-70.35	0.00	70.35	2211.27	1105.63	2882.56	1423.59	3.86	-0.36	0.057	
125.00	-17.24	-1.55	0.00	-70.35	0.00	70.35	1600.93	800.47	2095.19	1034.73	3.86	-0.36	0.079	
130.00	-16.46	-1.55	0.00	-62.59	0.00	62.59	1577.27	788.64	2000.77	988.11	4.25	-0.39	0.074	
134.00	-14.43	-1.54	0.00	-56.39	0.00	56.39	1557.20	778.60	1925.20	950.79	4.58	-0.41	0.069	
135.00	-14.30	-1.54	0.00	-54.84	0.00	54.84	1552.03	776.01	1906.32	941.46	4.67	-0.42	0.067	
137.50	-12.17	-1.53	0.00	-50.99	0.00	50.99	1538.81	769.41	1859.13	918.16	4.89	-0.43	0.063	
140.00	-11.84	-1.53	0.00	-47.16	0.00	47.16	1525.20	762.60	1812.01	894.88	5.12	-0.44	0.060	
145.00	-11.19	-1.52	0.00	-39.52	0.00	39.52	1496.79	748.40	1718.05	848.48	5.60	-0.47	0.054	
147.00	-8.84	-1.42	0.00	-36.49	0.00	36.49	1484.98	742.49	1680.60	829.98	5.79	-0.48	0.050	

Calculated Forces

Structure: CT00680-S-SBA	Code: EIA/TIA-222-G	2/2/2018
Site Name: Putnam	Exposure: B	
Height: 175.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Page: 37
	Struct Class: II	



150.00	-8.51	-1.41	0.00	-32.22	0.00	32.22	1466.80	733.40	1624.61	802.34	6.10	-0.49	0.046
155.00	-7.54	-1.35	0.00	-25.16	0.00	25.16	1451.75	725.87	1579.74	780.18	6.62	-0.51	0.037
160.00	-7.02	-1.30	0.00	-18.44	0.00	18.44	1419.41	709.70	1487.45	734.60	7.17	-0.53	0.030
165.00	-6.51	-1.25	0.00	-11.92	0.00	11.92	1385.48	692.74	1396.17	689.51	7.73	-0.54	0.022
170.00	-6.02	-1.18	0.00	-5.68	0.00	5.68	1349.97	674.99	1306.08	645.02	8.30	-0.55	0.013
170.00	-6.02	-1.18	0.00	-5.68	0.00	5.68	1349.97	674.99	1306.08	645.02	8.30	-0.55	0.013
174.00	-4.73	-0.95	0.00	-0.95	0.00	0.95	1121.46	560.73	870.39	429.85	8.77	-0.55	0.006
175.00	0.00	-0.90	0.00	0.00	0.00	0.00	1053.22	526.61	767.04	378.81	8.88	-0.55	0.000

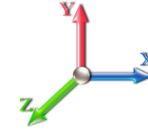
Seismic Segment Forces (Factored)

Structure: CT00680-S-SBA	Code: EIA/TIA-222-G	2/2/2018
Site Name: Putnam	Exposure: B	
Height: 175.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 0.9D + 1.0E					Iterations 22
Gust Response Factor	1.10		Sds	0.18	Ss 0.17
Dead Load Factor	0.90	Seismic Load Factor	1.00	Sd1 0.10	S1 0.06
Wind Load Factor	0.00	Structure Frequency	0.28	SA 0.03	Seismic Importance Factor 1.00



Top Elev (ft)	Description	Wz (lb)	a	b	c	Lateral Fs (lb)	R: 1.50
0.00	RB1 RB2	0.00	0.00	0.00	0.00	0.00	
5.00		1272.2	0.00	0.03	0.02	22.75	
10.00		1249.0	0.01	0.05	0.03	32.60	
15.00		1225.8	0.01	0.06	0.03	37.26	
20.00		1202.6	0.02	0.07	0.04	39.36	
22.00	RT2	474.59	0.03	0.07	0.04	15.83	
25.00		704.93	0.04	0.07	0.04	24.02	
30.00		1156.3	0.06	0.07	0.04	40.43	
35.00	RB3	1133.1	0.08	0.07	0.04	40.47	
36.00	Bot - Section 2 RT1	223.85	0.08	0.07	0.04	8.03	
38.00	RB4	832.96	0.09	0.07	0.04	30.12	
39.00	RT3	413.90	0.09	0.07	0.04	15.03	
40.00		412.18	0.10	0.07	0.04	15.03	
42.00	Top - Section 1	819.19	0.11	0.07	0.04	30.12	
45.00		566.56	0.12	0.07	0.03	21.09	
50.00		928.38	0.15	0.07	0.03	35.19	
54.00	Appurtenance(s)	778.40	0.18	0.07	0.03	29.78	
55.00		180.11	0.19	0.06	0.02	6.90	
60.00		888.65	0.22	0.06	0.02	33.83	
65.00		868.79	0.26	0.05	0.02	31.92	
70.00	Bot - Section 3	848.92	0.30	0.04	0.01	28.65	
71.25	RT4 RB5	422.11	0.31	0.04	0.01	13.79	
75.00		1251.4	0.35	0.03	0.01	35.62	
76.00	Top - Section 2	329.94	0.36	0.03	0.01	8.94	
80.00	Top - Section 3	658.09	0.39	0.02	0.01	13.43	
85.00		671.69	0.45	0.00	0.01	6.43	
86.00	RT5 RB6	132.35	0.46	0.00	0.01	0.94	
90.00		522.78	0.50	-0.02	0.01	-1.67	
95.00		638.58	0.56	-0.04	0.01	-10.34	
100.00		622.02	0.62	-0.06	0.02	-17.12	
104.00	RT6	485.70	0.67	-0.08	0.02	-16.72	
105.00		119.77	0.68	-0.08	0.03	-4.29	
110.00		588.92	0.75	-0.10	0.04	-23.75	
115.00	Bot - Section 5	572.36	0.82	-0.11	0.06	-23.47	
120.00	Top - Section 4	1122.3	0.89	-0.12	0.08	-42.57	
124.00	Appurtenance(s)	1346.0	0.95	-0.12	0.11	-44.23	
125.00	Top - Section 5	108.67	0.96	-0.12	0.11	-3.39	
130.00		427.58	1.04	-0.10	0.15	-9.01	
134.00	Appurtenance(s)	1509.9	1.11	-0.07	0.19	-15.77	
135.00		81.81	1.12	-0.05	0.20	-0.61	
137.50	Appurtenance(s)	1702.2	1.17	-0.02	0.23	1.11	
140.00		198.89	1.21	0.01	0.26	1.91	
145.00		387.85	1.30	0.12	0.33	11.68	
147.00	Appurtenance(s)	1900.2	1.33	0.17	0.37	74.69	
150.00	Bot - Section 7	223.17	1.39	0.26	0.42	12.08	
155.00	Top - Section 6	729.57	1.48	0.46	0.52	59.64	

Seismic Segment Forces (Factored)

Structure: CT00680-S-SBA	Code: EIA/TIA-222-G	2/2/2018
Site Name: Putnam	Exposure: B	
Height: 175.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



Page: 39

160.00	354.97	1.58	0.72	0.64	40.11
165.00	341.72	1.68	1.05	0.78	50.57
170.00 Top - Section 7	328.48	1.78	1.46	0.95	61.36
174.00 Appurtenance(s)	1009.8	1.87	1.87	1.10	222.84
175.00 Appurtenance(s)	3931.8	1.89	1.98	1.14	902.39
Totals:	38,901.7				1,843.0

Total Wind: 42,875.4

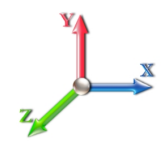
Seismic Base Shear is Less Than 50% of Wind Force - An Analysis is NOT Required

Calculated Forces

Structure: CT00680-S-SBA	Code: EIA/TIA-222-G	2/2/2018
Site Name: Putnam	Exposure: B	
Height: 175.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



Load Case: 0.9D + 1.0E							Iterations 22
Gust Response Factor	1.10				Sds	0.18	Ss 0.17
Dead Load Factor	0.90	Seismic Load Factor	1.00	Sd1	0.10		S1 0.06
Wind Load Factor	0.00	Structure Frequency	0.28	SA	0.03	Seismic Importance Factor	1.00



Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-42.69	-2.06	0.00	-281.83	0.00	281.83	4294.71	2147.35	9493.67	4688.57	0.00	0.00	0.00	0.043
5.00	-41.28	-2.04	0.00	-271.54	0.00	271.54	4251.62	2125.81	9227.39	4557.06	0.00	-0.01	0.042	
10.00	-39.90	-2.01	0.00	-261.33	0.00	261.33	4207.27	2103.63	8961.88	4425.94	0.02	-0.02	0.041	
15.00	-38.53	-1.98	0.00	-251.26	0.00	251.26	4161.65	2080.83	8697.29	4295.27	0.04	-0.03	0.040	
20.00	-37.18	-1.95	0.00	-241.34	0.00	241.34	4114.76	2057.38	8433.78	4165.13	0.07	-0.04	0.040	
22.00	-36.65	-1.93	0.00	-237.45	0.00	237.45	4095.66	2047.83	8328.71	4113.24	0.09	-0.04	0.047	
25.00	-35.85	-1.91	0.00	-231.65	0.00	231.65	4066.61	2033.31	8171.50	4035.59	0.12	-0.05	0.047	
30.00	-34.55	-1.88	0.00	-222.07	0.00	222.07	4017.20	2008.60	7910.59	3906.74	0.17	-0.06	0.046	
35.00	-33.26	-1.84	0.00	-212.67	0.00	212.67	3966.51	1983.26	7651.22	3778.65	0.24	-0.07	0.038	
36.00	-33.01	-1.84	0.00	-210.83	0.00	210.83	3956.22	1978.11	7599.55	3753.13	0.25	-0.07	0.050	
38.00	-32.15	-1.81	0.00	-207.16	0.00	207.16	3935.49	1967.75	7496.40	3702.19	0.28	-0.07	0.037	
39.00	-31.73	-1.79	0.00	-205.35	0.00	205.35	3925.05	1962.53	7444.93	3676.77	0.30	-0.08	0.044	
40.00	-31.30	-1.78	0.00	-203.56	0.00	203.56	3914.56	1957.28	7393.54	3651.39	0.31	-0.08	0.044	
42.00	-30.46	-1.75	0.00	-200.00	0.00	200.00	3554.53	1777.27	6785.59	3351.15	0.35	-0.08	0.042	
45.00	-29.79	-1.73	0.00	-194.76	0.00	194.76	3532.39	1766.19	6658.05	3288.16	0.40	-0.09	0.045	
50.00	-28.69	-1.70	0.00	-186.09	0.00	186.09	3494.22	1747.11	6445.54	3183.21	0.50	-0.10	0.044	
54.00	-27.78	-1.67	0.00	-179.29	0.00	179.29	3462.54	1731.27	6275.67	3099.32	0.59	-0.11	0.043	
55.00	-27.56	-1.67	0.00	-177.61	0.00	177.61	3454.46	1727.23	6233.23	3078.36	0.62	-0.11	0.043	
60.00	-26.50	-1.64	0.00	-169.27	0.00	169.27	3413.12	1706.56	6021.34	2973.71	0.74	-0.13	0.041	
65.00	-25.45	-1.61	0.00	-161.08	0.00	161.08	3370.20	1685.10	5810.04	2869.36	0.88	-0.14	0.040	
70.00	-24.42	-1.58	0.00	-153.03	0.00	153.03	3325.69	1662.84	5599.53	2765.40	1.03	-0.15	0.039	
71.25	-23.98	-1.57	0.00	-151.05	0.00	151.05	3314.31	1657.16	5547.04	2739.48	1.07	-0.16	0.039	
75.00	-22.65	-1.53	0.00	-145.17	0.00	145.17	3279.60	1639.80	5389.99	2661.91	1.20	-0.16	0.038	
76.00	-22.30	-1.53	0.00	-143.63	0.00	143.63	3306.32	1653.16	5510.48	2721.42	1.23	-0.17	0.039	
80.00	-21.50	-1.51	0.00	-137.53	0.00	137.53	3269.04	1634.52	5343.14	2638.78	1.38	-0.18	0.036	
80.00	-21.50	-1.51	0.00	-137.53	0.00	137.53	2504.08	1252.04	4105.75	2027.68	1.38	-0.18	0.040	
85.00	-20.63	-1.51	0.00	-129.97	0.00	129.97	2474.85	1237.43	3958.27	1954.84	1.57	-0.19	0.043	
86.00	-20.46	-1.51	0.00	-128.46	0.00	128.46	2468.82	1234.41	3928.75	1940.26	1.61	-0.19	0.053	
90.00	-19.78	-1.51	0.00	-122.42	0.00	122.42	2444.04	1222.02	3810.67	1881.94	1.78	-0.21	0.052	
95.00	-18.94	-1.51	0.00	-114.87	0.00	114.87	2411.64	1205.82	3663.14	1809.09	2.00	-0.22	0.050	
100.00	-18.11	-1.52	0.00	-107.30	0.00	107.30	2377.66	1188.83	3515.87	1736.36	2.25	-0.24	0.048	
104.00	-17.47	-1.52	0.00	-101.23	0.00	101.23	2349.34	1174.67	3398.38	1678.33	2.45	-0.25	0.047	
104.00	-17.47	-1.52	0.00	-101.23	0.00	101.23	2349.34	1174.67	3398.38	1678.33	2.45	-0.25	0.047	
105.00	-17.31	-1.52	0.00	-99.72	0.00	99.72	2342.10	1171.05	3369.07	1663.86	2.51	-0.26	0.067	
110.00	-16.52	-1.52	0.00	-92.12	0.00	92.12	2304.95	1152.47	3222.91	1591.67	2.79	-0.28	0.065	
115.00	-15.75	-1.53	0.00	-84.51	0.00	84.51	2266.22	1133.11	3077.59	1519.90	3.10	-0.31	0.063	
120.00	-14.48	-1.52	0.00	-76.88	0.00	76.88	2252.14	1126.07	3026.44	1494.64	3.44	-0.33	0.058	
124.00	-13.06	-1.52	0.00	-70.78	0.00	70.78	2219.57	1109.78	2911.24	1437.75	3.72	-0.35	0.055	
125.00	-12.93	-1.52	0.00	-69.27	0.00	69.27	2211.27	1105.63	2882.56	1423.59	3.80	-0.36	0.055	
125.00	-12.93	-1.52	0.00	-69.27	0.00	69.27	1600.93	800.47	2095.19	1034.73	3.80	-0.36	0.075	
130.00	-12.34	-1.52	0.00	-61.66	0.00	61.66	1577.27	788.64	2000.77	988.11	4.18	-0.38	0.070	
134.00	-10.82	-1.51	0.00	-55.57	0.00	55.57	1557.20	778.60	1925.20	950.79	4.51	-0.40	0.065	
135.00	-10.72	-1.52	0.00	-54.06	0.00	54.06	1552.03	776.01	1906.32	941.46	4.60	-0.41	0.064	
137.50	-9.12	-1.51	0.00	-50.27	0.00	50.27	1538.81	769.41	1859.13	918.16	4.82	-0.42	0.061	
140.00	-8.87	-1.50	0.00	-46.51	0.00	46.51	1525.20	762.60	1812.01	894.88	5.04	-0.44	0.058	
145.00	-8.39	-1.49	0.00	-38.99	0.00	38.99	1496.79	748.40	1718.05	848.48	5.51	-0.46	0.052	
147.00	-6.63	-1.40	0.00	-36.00	0.00	36.00	1484.98	742.49	1680.60	829.98	5.71	-0.47	0.048	

Calculated Forces

Structure: CT00680-S-SBA	Code: EIA/TIA-222-G	2/2/2018
Site Name: Putnam	Exposure: B	
Height: 175.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Page: 41
	Struct Class: II	



150.00	-6.38	-1.39	0.00	-31.79	0.00	31.79	1466.80	733.40	1624.61	802.34	6.01	-0.48	0.044
155.00	-5.65	-1.33	0.00	-24.83	0.00	24.83	1451.75	725.87	1579.74	780.18	6.52	-0.50	0.036
160.00	-5.26	-1.29	0.00	-18.20	0.00	18.20	1419.41	709.70	1487.45	734.60	7.06	-0.52	0.028
165.00	-4.88	-1.23	0.00	-11.77	0.00	11.77	1385.48	692.74	1396.17	689.51	7.61	-0.53	0.021
170.00	-4.51	-1.17	0.00	-5.61	0.00	5.61	1349.97	674.99	1306.08	645.02	8.18	-0.54	0.012
170.00	-4.51	-1.17	0.00	-5.61	0.00	5.61	1349.97	674.99	1306.08	645.02	8.18	-0.54	0.012
174.00	-3.54	-0.94	0.00	-0.94	0.00	0.94	1121.46	560.73	870.39	429.85	8.63	-0.54	0.005
175.00	0.00	-0.90	0.00	0.00	0.00	0.00	1053.22	526.61	767.04	378.81	8.75	-0.54	0.000

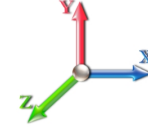
Wind Loading - Shaft

Structure: CT00680-S-SBA	Code: EIA/TIA-222-G	2/2/2018
Site Name: Putnam	Exposure: B	
Height: 175.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00
Wind Load Factor 1.00



Iterations 23

Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00	RB1 RB2	1.00	0.70	6.129	6.74	233.87	1.000	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.70	6.129	6.74	229.68	1.000	0.000	5.00	23.085	23.09	155.6	0.0	1272.2
10.00		1.00	0.70	6.129	6.74	225.49	1.000	0.000	5.00	22.668	22.67	152.8	0.0	1249.0
15.00		1.00	0.70	6.129	6.74	221.30	1.000	0.000	5.00	22.251	22.25	150.0	0.0	1225.9
20.00		1.00	0.70	6.129	6.74	217.12	1.000	0.000	5.00	21.834	21.83	147.2	0.0	1202.7
22.00	RT2	1.00	0.70	6.129	6.74	215.44	1.000	0.000	2.00	8.617	8.62	58.1	0.0	474.6
25.00		1.00	0.70	6.129	6.74	212.93	1.000	0.000	3.00	12.800	12.80	86.3	0.0	704.9
30.00		1.00	0.70	6.134	6.75	208.83	1.000	0.000	5.00	21.000	21.00	141.7	0.0	1156.3
35.00	RB3	1.00	0.73	6.410	7.05	209.20	1.000	0.000	5.00	20.583	20.58	145.1	0.0	1133.2
36.00	Bot - Section 2 RT1	1.00	0.74	6.462	7.11	209.18	1.000	0.000	1.00	4.066	4.07	28.9	0.0	223.9
38.00	RB4	1.00	0.75	6.562	7.22	209.07	1.000	0.000	2.00	8.212	8.21	59.3	0.0	833.0
39.00	RT3	1.00	0.76	6.611	7.27	208.98	1.000	0.000	1.00	4.081	4.08	29.7	0.0	413.9
40.00		1.00	0.76	6.659	7.33	208.86	1.000	0.000	1.00	4.064	4.06	29.8	0.0	412.2
42.00	Top - Section 1	1.00	0.77	6.753	7.43	208.56	1.000	0.000	2.00	8.079	8.08	60.0	0.0	819.2
45.00		1.00	0.79	6.887	7.58	211.41	1.000	0.000	3.00	11.993	11.99	90.9	0.0	566.6
50.00		1.00	0.81	7.098	7.81	210.11	1.000	0.000	5.00	19.655	19.65	153.5	0.0	928.4
54.00	Appurtenance(s)	1.00	0.83	7.255	7.98	208.79	1.000	0.000	4.00	15.424	15.42	123.1	0.0	728.4
55.00		1.00	0.83	7.294	8.02	208.42	1.000	0.000	1.00	3.814	3.81	30.6	0.0	180.1
60.00		1.00	0.85	7.477	8.22	206.40	1.000	0.000	5.00	18.821	18.82	154.8	0.0	888.7
65.00		1.00	0.87	7.650	8.42	204.10	1.000	0.000	5.00	18.404	18.40	154.9	0.0	868.8
70.00	Bot - Section 3	1.00	0.89	7.814	8.60	201.54	1.000	0.000	5.00	17.986	17.99	154.6	0.0	848.9
71.25	RT4 RB5	1.00	0.90	7.853	8.64	200.87	1.000	0.000	1.25	4.512	4.51	39.0	0.0	422.1
75.00		1.00	0.91	7.969	8.77	198.76	1.000	0.000	3.75	13.381	13.38	117.3	0.0	1251.4
76.00	Top - Section 2	1.00	0.91	8.000	8.80	198.18	1.000	0.000	1.00	3.529	3.53	31.0	0.0	329.9
80.00	Top - Section 3	1.00	0.93	8.118	8.93	199.52	1.000	0.000	4.00	13.947	13.95	124.5	0.0	658.1
85.00		1.00	0.94	8.260	9.09	196.40	1.000	0.000	5.00	17.059	17.06	155.0	0.0	671.7
86.00	RT5 RB6	1.00	0.95	8.287	9.12	195.75	1.000	0.000	1.00	3.362	3.36	30.6	0.0	132.4
90.00		1.00	0.96	8.396	9.24	193.10	1.000	0.000	4.00	13.280	13.28	122.6	0.0	522.8
95.00		1.00	0.97	8.526	9.38	189.66	1.000	0.000	5.00	16.225	16.22	152.2	0.0	638.6
100.00		1.00	0.99	8.652	9.52	186.08	1.000	0.000	5.00	15.807	15.81	150.4	0.0	622.0
104.00	RT6	1.00	1.00	8.750	9.62	183.13	1.000	0.000	4.00	12.346	12.35	118.8	0.0	485.7
105.00		1.00	1.00	8.774	9.65	182.37	1.000	0.000	1.00	3.045	3.04	29.4	0.0	119.8
110.00		1.00	1.02	8.891	9.78	178.55	1.000	0.000	5.00	14.973	14.97	146.4	0.0	588.9
115.00	Bot - Section 5	1.00	1.03	9.005	9.91	174.61	1.000	0.000	5.00	14.556	14.56	144.2	0.0	572.4
120.00	Top - Section 4	1.00	1.04	9.115	10.03	170.57	1.000	0.000	5.00	14.409	14.41	144.5	0.0	1122.3
124.00	Appurtenance(s)	1.00	1.05	9.201	10.12	170.58	1.000	0.000	4.00	11.227	11.23	113.6	0.0	441.3
125.00	Top - Section 5	1.00	1.05	9.222	10.14	169.75	1.000	0.000	1.00	2.765	2.76	28.0	0.0	108.7
130.00		1.00	1.07	9.326	10.26	165.53	1.000	0.000	5.00	13.575	13.57	139.3	0.0	427.6
134.00	Appurtenance(s)	1.00	1.07	9.407	10.35	162.10	1.000	0.000	4.00	10.559	10.56	109.3	0.0	332.5
135.00		1.00	1.08	9.427	10.37	161.24	1.000	0.000	1.00	2.598	2.60	26.9	0.0	81.8
137.50	Appurtenance(s)	1.00	1.08	9.476	10.42	159.06	1.000	0.000	2.50	6.422	6.42	66.9	0.0	202.2
140.00		1.00	1.09	9.525	10.48	156.86	1.000	0.000	2.50	6.318	6.32	66.2	0.0	198.9
145.00		1.00	1.10	9.621	10.58	152.40	1.000	0.000	5.00	12.323	12.32	130.4	0.0	387.8
147.00	Appurtenance(s)	1.00	1.10	9.659	10.62	150.59	1.000	0.000	2.00	4.813	4.81	51.1	0.0	151.4
150.00	Bot - Section 7	1.00	1.11	9.715	10.69	147.86	1.000	0.000	3.00	7.094	7.09	75.8	0.0	223.2
155.00	Top - Section 6	1.00	1.12	9.806	10.79	143.26	1.000	0.000	5.00	11.705	11.70	126.3	0.0	729.6
160.00		1.00	1.13	9.896	10.89	141.34	1.000	0.000	5.00	11.288	11.29	122.9	0.0	355.0

Wind Loading - Shaft

Structure: CT00680-S-SBA	Code: EIA/TIA-222-G	2/2/2018
Site Name: Putnam	Exposure: B	
Height: 175.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II
		Page: 43



165.00	1.00	1.14	9.983	10.98	136.62	1.000	0.000	5.00	10.871	10.87	119.4	0.0	341.7
170.00 Top - Section 7	1.00	1.15	10.069	11.08	131.84	1.000	0.000	5.00	10.453	10.45	115.8	0.0	328.5
174.00 Appurtenance(s)	1.00	1.16	10.136	11.15	106.66	1.000	0.000	4.00	7.402	7.40	82.5	0.0	232.3
175.00 Appurtenance(s)	1.00	1.16	10.152	11.17	100.33	1.000	0.000	1.00	1.603	1.60	17.9	0.0	50.2
Totals:								175.00				5,005.2	28,861.4

Discrete Appurtenance Forces

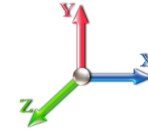
Structure: CT00680-S-SBA	Code: EIA/TIA-222-G	2/2/2018
Site Name: Putnam	Exposure: B	
Height: 175.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00
Wind Load Factor 1.00



Iterations 23

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	CaAa x Ka	Ka	Total CaAa (sf)	Dead Load (lb)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)
1	175.00	Platform w/ Handrail w/	1	10.152	11.168	1.00	1.00	51.70	2645.00	0.000	0.000	577.36	0.00	0.00
2	175.00	TD-RRH8x20-25	3	10.152	11.168	0.67	1.00	8.14	210.00	0.000	0.000	90.91	0.00	0.00
3	175.00	800 MHz	6	10.152	11.168	0.67	1.00	10.01	318.00	0.000	0.000	111.78	0.00	0.00
4	175.00	1900MHz	3	10.152	11.168	0.67	1.00	5.57	180.00	0.000	0.000	62.18	0.00	0.00
5	175.00	ETCR-654L12H6	3	10.152	11.168	0.71	1.00	33.46	297.00	0.000	0.000	373.69	0.00	0.00
6	175.00	E15S09P94	6	10.370	11.407	0.75	1.00	2.97	87.60	0.000	13.500	33.88	0.00	457.37
7	175.00	DR65-18-02DPL2Q	6	10.417	11.459	0.67	1.00	23.36	144.00	0.000	16.500	267.63	0.00	4415.94
8	174.00	4.5" x 24 FT Pipe	3	10.299	11.329	1.00	1.00	40.50	777.60	0.000	10.000	458.81	0.00	4588.12
9	147.00	T-Arms	3	9.659	10.625	0.56	0.75	18.56	726.00	0.000	0.000	197.22	0.00	0.00
10	147.00	RRH2X60-700	3	9.602	10.562	0.61	0.80	6.38	180.00	0.000	-3.000	67.43	0.00	-202.29
11	147.00	RRH2X60-PCS	3	9.602	10.562	0.71	0.80	4.71	165.00	0.000	-3.000	49.75	0.00	-149.24
12	147.00	RRH2X60-AWS	3	9.602	10.562	0.61	0.80	6.38	180.00	0.000	-3.000	67.43	0.00	-202.29
13	147.00	DB-T1-6Z-8AB-OZ	2	9.659	10.625	0.80	0.80	7.68	88.00	0.000	0.000	81.60	0.00	0.00
14	147.00	FD9R6004/2C-3L	6	9.659	10.625	0.50	0.80	1.09	18.60	0.000	0.000	11.55	0.00	0.00
15	147.00	SBNHH-1D65B	6	9.659	10.625	0.66	0.80	31.88	304.26	0.000	0.000	338.72	0.00	0.00
16	147.00	BXA-80080-4CF	3	9.659	10.625	0.70	0.80	7.50	36.00	0.000	0.000	79.70	0.00	0.00
17	147.00	BXA-70063-6CF-EDIN-X	3	9.659	10.625	0.62	0.80	13.97	51.00	0.000	0.000	148.44	0.00	0.00
18	137.50	Low Profile	1	9.476	10.424	1.00	1.00	22.00	1500.00	0.000	0.000	229.33	0.00	0.00
19	134.00	7770.00	3	9.476	10.424	0.58	0.80	9.64	105.00	0.000	3.500	100.45	0.00	351.56
20	134.00	TPA-65R-LCUUUU-H8	3	9.476	10.424	0.66	0.80	26.49	225.00	0.000	3.500	276.17	0.00	966.59
21	134.00	RRUS-32	6	9.476	10.424	0.54	0.80	12.45	462.00	0.000	3.500	129.74	0.00	454.07
22	134.00	DBC0061F1V51-2	3	9.476	10.424	0.55	0.80	0.99	30.00	0.000	3.500	10.36	0.00	36.25
23	134.00	DC6-48-60-18-8C	1	9.476	10.424	0.80	0.80	2.54	11.80	0.000	3.500	26.44	0.00	92.52
24	134.00	AM-X-CD-17-65-00T-RET	3	9.476	10.424	0.60	0.80	20.36	92.40	0.000	3.500	212.21	0.00	742.74
25	134.00	LGP21401	6	9.476	10.424	0.60	0.80	4.64	84.60	0.000	3.500	48.41	0.00	169.43
26	134.00	RRUS 11	3	9.476	10.424	0.61	0.80	4.60	152.10	0.000	3.500	47.91	0.00	167.70
27	134.00	DC6-48-60-18-8F	1	9.476	10.424	0.80	0.80	2.34	14.50	0.000	3.500	24.35	0.00	85.23
28	124.00	T-Arms	3	9.201	10.121	0.56	0.75	13.82	726.00	0.000	0.000	139.87	0.00	0.00
29	124.00	742 351	6	9.201	10.121	0.49	0.80	15.75	178.80	0.000	0.000	159.43	0.00	0.00
30	54.00	Standoff	1	7.255	7.981	1.00	1.00	2.63	40.00	0.000	0.000	20.99	0.00	0.00
31	54.00	GPS	1	7.255	7.981	1.00	1.00	1.00	10.00	0.000	0.000	7.98	0.00	0.00
Totals:								10,040.26				4,451.72		

Total Applied Force Summary

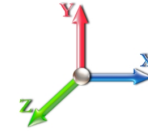
Structure: CT00680-S-SBA	Code: EIA/TIA-222-G	2/2/2018
Site Name: Putnam	Exposure: B	
Height: 175.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00
Wind Load Factor 1.00



Iterations 23

Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00		0.00	0.00	0.00	0.00
5.00		155.63	1566.30	0.00	0.00
10.00		152.82	1543.12	0.00	0.00
15.00		150.01	1519.94	0.00	0.00
20.00		147.19	1496.77	0.00	0.00
22.00		58.09	592.22	0.00	0.00
25.00		86.29	881.38	0.00	0.00
30.00		141.69	1450.42	0.00	0.00
35.00		145.13	1427.24	0.00	0.00
36.00		28.90	282.67	0.00	0.00
38.00		59.28	950.59	0.00	0.00
39.00		29.68	472.71	0.00	0.00
40.00		29.77	470.99	0.00	0.00
42.00		60.01	936.82	0.00	0.00
45.00		90.86	743.01	0.00	0.00
50.00		153.45	1222.46	0.00	0.00
54.00	(2) attachments	152.07	1013.67	0.00	0.00
55.00		30.60	238.77	0.00	0.00
60.00		154.80	1181.93	0.00	0.00
65.00		154.87	1162.07	0.00	0.00
70.00		154.60	1142.20	0.00	0.00
71.25		38.98	495.43	0.00	0.00
75.00		117.30	1471.38	0.00	0.00
76.00		31.05	388.59	0.00	0.00
80.00		124.54	892.72	0.00	0.00
85.00		154.99	964.97	0.00	0.00
86.00		30.65	191.01	0.00	0.00
90.00		122.64	757.41	0.00	0.00
95.00		152.17	931.86	0.00	0.00
100.00		150.45	915.30	0.00	0.00
104.00		118.82	720.32	0.00	0.00
105.00		29.38	178.43	0.00	0.00
110.00		146.44	873.30	0.00	0.00
115.00		144.18	856.74	0.00	0.00
120.00		144.47	1406.70	0.00	0.00
124.00	(9) attachments	412.92	1573.59	0.00	0.00
125.00		28.05	153.00	0.00	0.00
130.00		139.25	649.26	0.00	0.00
134.00	(29) attachments	985.29	1687.27	0.00	3066.09
135.00		26.94	111.74	0.00	0.00
137.50	(1) attachments	296.27	1777.04	0.00	0.00
140.00		66.20	273.73	0.00	0.00
145.00		130.42	537.53	0.00	0.00
147.00	(32) attachments	1092.98	1960.16	0.00	-553.82
150.00		75.81	272.06	0.00	0.00
155.00		126.26	811.05	0.00	0.00
160.00		122.87	436.45	0.00	0.00

Total Applied Force Summary

Structure: CT00680-S-SBA	Code: EIA/TIA-222-G	2/2/2018
Site Name: Putnam	Exposure: B	
Height: 175.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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165.00		119.37	423.20	0.00	0.00
170.00		115.78	409.96	0.00	0.00
174.00	(3) attachments	541.34	1075.07	0.00	4588.12
175.00	(28) attachments	1535.33	3948.09	0.00	4873.31
Totals:		9,456.87	47,438.67	0.00	11,973.69

Linear Appurtenance Segment Forces (Factored)

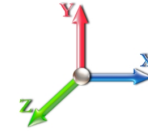
Structure: CT00680-S-SBA	Code: EIA/TIA-222-G	2/2/2018
Site Name: Putnam	Exposure: B	
Height: 175.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00
Wind Load Factor 1.00



Iterations 23

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
5.00	3" Chanel	Yes	5.00	0.000	3.25	1.35	0.00	0.059	0.000	6.129	0.00	8.90
10.00	3" Chanel	Yes	5.00	0.000	3.25	1.35	0.00	0.060	0.000	6.129	0.00	8.90
15.00	3" Chanel	Yes	5.00	0.000	3.25	1.35	0.00	0.061	0.000	6.129	0.00	8.90
20.00	3" Chanel	Yes	5.00	0.000	3.25	1.35	0.00	0.062	0.000	6.129	0.00	8.90
22.00	3" Chanel	Yes	2.00	0.000	3.25	0.54	0.00	0.063	0.000	6.129	0.00	3.56
25.00	3" Chanel	Yes	3.00	0.000	3.25	0.81	0.00	0.063	0.000	6.129	0.00	5.34
30.00	3" Chanel	Yes	5.00	0.000	3.25	1.35	0.00	0.064	0.000	6.134	0.00	8.90
35.00	3" Chanel	Yes	5.00	0.000	3.25	1.35	0.00	0.066	0.000	6.410	0.00	8.90
36.00	3" Chanel	Yes	1.00	0.000	3.25	0.27	0.00	0.067	0.000	6.462	0.00	1.78
38.00	3" Chanel	Yes	2.00	0.000	3.25	0.54	0.00	0.067	0.000	6.562	0.00	3.56
39.00	3" Chanel	Yes	1.00	0.000	3.25	0.27	0.00	0.067	0.000	6.611	0.00	1.78
40.00	3" Chanel	Yes	1.00	0.000	3.25	0.27	0.00	0.068	0.000	6.659	0.00	1.78
42.00	3" Chanel	Yes	2.00	0.000	3.25	0.54	0.00	0.068	0.000	6.753	0.00	3.56
45.00	3" Chanel	Yes	3.00	0.000	3.25	0.81	0.00	0.068	0.000	6.887	0.00	5.34
50.00	3" Chanel	Yes	5.00	0.000	3.25	1.35	0.00	0.069	0.000	7.098	0.00	8.90
54.00	3" Chanel	Yes	4.00	0.000	3.25	1.08	0.00	0.070	0.000	7.255	0.00	7.12
55.00	3" Chanel	Yes	1.00	0.000	3.25	0.27	0.00	0.071	0.000	7.294	0.00	1.78
60.00	3" Chanel	Yes	5.00	0.000	3.25	1.35	0.00	0.072	0.000	7.477	0.00	8.90
65.00	3" Chanel	Yes	5.00	0.000	3.25	1.35	0.00	0.074	0.000	7.650	0.00	8.90
70.00	3" Chanel	Yes	5.00	0.000	3.25	1.35	0.00	0.075	0.000	7.814	0.00	8.90
71.25	3" Chanel	Yes	1.25	0.000	3.25	0.34	0.00	0.076	0.000	7.853	0.00	2.23
75.00	3" Chanel	Yes	3.75	0.000	3.25	1.02	0.00	0.077	0.000	7.969	0.00	6.67
76.00	3" Chanel	Yes	1.00	0.000	3.25	0.27	0.00	0.078	0.000	8.000	0.00	1.78
80.00	3" Chanel	Yes	4.00	0.000	3.25	1.08	0.00	0.078	0.000	8.118	0.00	7.12
85.00	3" Chanel	Yes	5.00	0.000	3.25	1.35	0.00	0.079	0.000	8.260	0.00	8.90
86.00	3" Chanel	Yes	1.00	0.000	3.25	0.27	0.00	0.081	0.000	8.287	0.00	1.78
90.00	3" Chanel	Yes	4.00	0.000	3.25	1.08	0.00	0.082	0.000	8.396	0.00	7.12
95.00	3" Chanel	Yes	5.00	0.000	3.25	1.35	0.00	0.083	0.000	8.526	0.00	8.90
100.00	3" Chanel	Yes	5.00	0.000	3.25	1.35	0.00	0.086	0.000	8.652	0.00	8.90
104.00	3" Chanel	Yes	4.00	0.000	3.25	1.08	0.00	0.088	0.000	8.750	0.00	7.12
105.00	3" Chanel	Yes	1.00	0.000	3.25	0.27	0.00	0.089	0.000	8.774	0.00	1.78
Totals:											0.0	186.9

Calculated Forces

Structure: CT00680-S-SBA

Code: EIA/TIA-222-G

2/2/2018

Site Name: Putnam

Exposure: B



Height: 175.00 (ft)

Crest Height: 0.00

Base Elev: 0.000 (ft)

Site Class: D - Stiff Soil

Gh: 1.1

Topography: 1

Struct Class: II

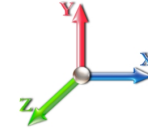
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Load Case: 1.0D + 1.0W 60 mph Wind

Iterations 23

Dead Load Factor 1.00

Wind Load Factor 1.00



Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-47.44	-9.47	0.00	-1169.6	0.00	1169.62	4294.71	2147.35	9493.67	4688.57	0.00	0.000	0.000	0.160
5.00	-45.86	-9.34	0.00	-1122.2	0.00	1122.27	4251.62	2125.81	9227.39	4557.06	0.02	-0.036	0.000	0.156
10.00	-44.31	-9.22	0.00	-1075.5	0.00	1075.55	4207.27	2103.63	8961.88	4425.94	0.08	-0.073	0.000	0.153
15.00	-42.79	-9.09	0.00	-1029.4	0.00	1029.46	4161.65	2080.83	8697.29	4295.27	0.17	-0.109	0.000	0.150
20.00	-41.29	-8.96	0.00	-984.00	0.00	984.00	4114.76	2057.38	8433.78	4165.13	0.31	-0.146	0.000	0.146
22.00	-40.69	-8.92	0.00	-966.08	0.00	966.08	4095.66	2047.83	8328.71	4113.24	0.37	-0.161	0.000	0.173
25.00	-39.81	-8.85	0.00	-939.33	0.00	939.33	4066.61	2033.31	8171.50	4035.59	0.48	-0.187	0.000	0.171
30.00	-38.35	-8.73	0.00	-895.08	0.00	895.08	4017.20	2008.60	7910.59	3906.74	0.70	-0.232	0.000	0.167
35.00	-36.92	-8.60	0.00	-851.41	0.00	851.41	3966.51	1983.26	7651.22	3778.65	0.97	-0.276	0.000	0.136
36.00	-36.64	-8.58	0.00	-842.81	0.00	842.81	3956.22	1978.11	7599.55	3753.13	1.03	-0.284	0.000	0.182
38.00	-35.68	-8.52	0.00	-825.65	0.00	825.65	3935.49	1967.75	7496.40	3702.19	1.15	-0.304	0.000	0.132
39.00	-35.21	-8.50	0.00	-817.13	0.00	817.13	3925.05	1962.53	7444.93	3676.77	1.21	-0.311	0.000	0.158
40.00	-34.74	-8.47	0.00	-808.63	0.00	808.63	3914.56	1957.28	7393.54	3651.39	1.28	-0.320	0.000	0.158
42.00	-33.80	-8.42	0.00	-791.69	0.00	791.69	3554.53	1777.27	6785.59	3351.15	1.42	-0.338	0.000	0.151
45.00	-33.05	-8.34	0.00	-766.44	0.00	766.44	3532.39	1766.19	6658.05	3288.16	1.64	-0.365	0.000	0.159
50.00	-31.82	-8.21	0.00	-724.71	0.00	724.71	3494.22	1747.11	6445.54	3183.21	2.05	-0.413	0.000	0.154
54.00	-30.81	-8.06	0.00	-691.88	0.00	691.88	3462.54	1731.27	6275.67	3099.32	2.41	-0.451	0.000	0.150
55.00	-30.56	-8.04	0.00	-683.83	0.00	683.83	3454.46	1727.23	6233.23	3078.36	2.50	-0.460	0.000	0.149
60.00	-29.38	-7.90	0.00	-643.61	0.00	643.61	3413.12	1706.56	6021.34	2973.71	3.01	-0.507	0.000	0.144
65.00	-28.21	-7.76	0.00	-604.10	0.00	604.10	3370.20	1685.10	5810.04	2869.36	3.57	-0.554	0.000	0.139
70.00	-27.06	-7.61	0.00	-565.30	0.00	565.30	3325.69	1662.84	5599.53	2765.40	4.17	-0.601	0.000	0.133
71.25	-26.57	-7.57	0.00	-555.80	0.00	555.80	3314.31	1657.16	5547.04	2739.48	4.33	-0.613	0.000	0.130
75.00	-25.09	-7.45	0.00	-527.39	0.00	527.39	3279.60	1639.80	5389.99	2661.91	4.83	-0.648	0.000	0.126
76.00	-24.70	-7.42	0.00	-519.94	0.00	519.94	3306.32	1653.16	5510.48	2721.42	4.96	-0.657	0.000	0.128
80.00	-23.81	-7.31	0.00	-490.25	0.00	490.25	3269.04	1634.52	5343.14	2638.78	5.53	-0.693	0.000	0.120
80.00	-23.81	-7.31	0.00	-490.25	0.00	490.25	2504.08	1252.04	4105.75	2027.68	5.53	-0.693	0.000	0.130
85.00	-22.84	-7.15	0.00	-453.72	0.00	453.72	2474.85	1237.43	3958.27	1954.84	6.28	-0.737	0.000	0.138
86.00	-22.65	-7.13	0.00	-446.57	0.00	446.57	2468.82	1234.41	3928.75	1940.26	6.44	-0.746	0.000	0.170
90.00	-21.88	-7.02	0.00	-418.06	0.00	418.06	2444.04	1222.02	3810.67	1881.94	7.08	-0.794	0.000	0.163
95.00	-20.95	-6.87	0.00	-382.98	0.00	382.98	2411.64	1205.82	3663.14	1809.09	7.94	-0.852	0.000	0.154
100.00	-20.03	-6.72	0.00	-348.63	0.00	348.63	2377.66	1188.83	3515.87	1736.36	8.87	-0.908	0.000	0.145
104.00	-19.31	-6.60	0.00	-321.74	0.00	321.74	2349.34	1174.67	3398.38	1678.33	9.65	-0.953	0.000	0.137
104.00	-19.31	-6.60	0.00	-321.74	0.00	321.74	2349.34	1174.67	3398.38	1678.33	9.65	-0.953	0.000	0.137
105.00	-19.12	-6.59	0.00	-315.14	0.00	315.14	2342.10	1171.05	3369.07	1663.86	9.85	-0.964	0.000	0.198
110.00	-18.24	-6.45	0.00	-282.21	0.00	282.21	2304.95	1152.47	3222.91	1591.67	10.90	-1.042	0.000	0.185
115.00	-17.38	-6.31	0.00	-249.97	0.00	249.97	2266.22	1133.11	3077.59	1519.90	12.03	-1.118	0.000	0.172
120.00	-15.97	-6.16	0.00	-218.42	0.00	218.42	2252.14	1126.07	3026.44	1494.64	13.24	-1.190	0.000	0.153
124.00	-14.40	-5.72	0.00	-193.80	0.00	193.80	2219.57	1109.78	2911.24	1437.75	14.26	-1.246	0.000	0.141
125.00	-14.25	-5.70	0.00	-188.08	0.00	188.08	2211.27	1105.63	2882.56	1423.59	14.53	-1.259	0.000	0.139
125.00	-14.25	-5.70	0.00	-188.08	0.00	188.08	1600.93	800.47	2095.19	1034.73	14.53	-1.259	0.000	0.191
130.00	-13.60	-5.56	0.00	-159.60	0.00	159.60	1577.27	788.64	2000.77	988.11	15.88	-1.320	0.000	0.170
134.00	-11.93	-4.54	0.00	-134.31	0.00	134.31	1557.20	778.60	1925.20	950.79	17.01	-1.376	0.000	0.149
135.00	-11.82	-4.51	0.00	-129.78	0.00	129.78	1552.03	776.01	1906.32	941.46	17.30	-1.390	0.000	0.145
137.50	-10.05	-4.18	0.00	-118.49	0.00	118.49	1538.81	769.41	1859.13	918.16	18.03	-1.423	0.000	0.136
140.00	-9.77	-4.11	0.00	-108.04	0.00	108.04	1525.20	762.60	1812.01	894.88	18.79	-1.454	0.000	0.127
145.00	-9.23	-3.98	0.00	-87.48	0.00	87.48	1496.79	748.40	1718.05	848.48	20.34	-1.510	0.000	0.109
147.00	-7.30	-2.83	0.00	-79.52	0.00	79.52	1484.98	742.49	1680.60	829.98	20.98	-1.532	0.000	0.101
150.00	-7.03	-2.76	0.00	-71.02	0.00	71.02	1466.80	733.40	1624.61	802.34	21.95	-1.562	0.000	0.093

Calculated Forces

Structure: CT00680-S-SBA	Code: EIA/TIA-222-G	2/2/2018
Site Name: Putnam	Exposure: B	
Height: 175.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Page: 49
	Struct Class: II	



155.00	-6.22	-2.61	0.00	-57.24	0.00	57.24	1451.75	725.87	1579.74	780.18	23.61	-1.608	0.000	0.078
160.00	-5.79	-2.48	0.00	-44.18	0.00	44.18	1419.41	709.70	1487.45	734.60	25.32	-1.648	0.000	0.064
165.00	-5.37	-2.35	0.00	-31.78	0.00	31.78	1385.48	692.74	1396.17	689.51	27.06	-1.680	0.000	0.050
170.00	-4.96	-2.23	0.00	-20.02	0.00	20.02	1349.97	674.99	1306.08	645.02	28.84	-1.705	0.000	0.035
170.00	-4.96	-2.23	0.00	-20.02	0.00	20.02	1349.97	674.99	1306.08	645.02	28.84	-1.705	0.000	0.035
174.00	-3.90	-1.65	0.00	-6.53	0.00	6.53	1121.46	560.73	870.39	429.85	30.27	-1.718	0.000	0.019
175.00	0.00	-1.54	0.00	-4.87	0.00	4.87	1053.22	526.61	767.04	378.81	30.63	-1.720	0.000	0.013

Final Analysis Summary

Structure: CT00680-S-SBA	Code: EIA/TIA-222-G	2/2/2018
Site Name: Putnam	Exposure: B	
Height: 175.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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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 101 mph Wind	43.0	0.00	56.86	0.00	0.00	5331.62
0.9D + 1.6W 101 mph Wind	42.9	0.00	42.63	0.00	0.00	5274.15
1.2D + 1.0Di + 1.0Wi 50 mph Wind	9.1	0.00	85.05	0.00	0.00	1191.59
1.2D + 1.0E	2.1	0.00	56.93	0.00	0.00	285.31
0.9D + 1.0E	2.1	0.00	42.69	0.00	0.00	281.83
1.0D + 1.0W 60 mph Wind	9.5	0.00	47.44	0.00	0.00	1169.62

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 101 mph Wind	-20.74	-30.09	0.00	-1438.7	0.00	-1438.7	2342.10	1171.0	3369.07	1663.86	105.00	0.874
0.9D + 1.6W 101 mph Wind	-15.03	-29.61	0.00	-1413.1	0.00	-1413.1	2342.10	1171.0	3369.07	1663.86	105.00	0.856
1.2D + 1.0Di + 1.0Wi 50 mph Wind	-40.72	-6.93	0.00	-337.43	0.00	-337.43	2342.10	1171.0	3369.07	1663.86	105.00	0.220
1.2D + 1.0E	-17.24	-1.55	0.00	-70.35	0.00	-70.35	2211.27	1105.6	2882.56	1423.59	125.00	0.079
0.9D + 1.0E	-12.93	-1.52	0.00	-69.27	0.00	-69.27	2211.27	1105.6	2882.56	1423.59	125.00	0.075
1.0D + 1.0W 60 mph Wind	-19.12	-6.59	0.00	-315.14	0.00	-315.14	2342.10	1171.0	3369.07	1663.86	105.00	0.198

Additional Steel Summary

Elev From (ft)	Elev To (ft)	Member	Intermediate Connectors			Lower Termination				Upper Termination				Max Member			
			VQ/I (lb/in)	Vu (kips)	phi Vn (kips)	MQ/I (kips)	phi Vn (kips)	Num Reqd	Num Actual	MQ/I (kips)	phi Vn (kips)	Num Reqd	Num Actual	Pu (kips)	phi Pn (kips)	phi Tn (kips)	Ratio
0.0	36.0	(3) PLT-C10x30(1.5" Hole)	321.7	0.00	37.1	352.7	37.1	10	0	318.6	37.1	9	0	397.15	516.0	468.64	0.847
0.0	22.0	(3) PLT-C10x30(1.5" Hole)	238.2	5.72	37.1	330.0	37.1	9	0	310.8	37.1	9	0	329.99	500.4	468.64	0.704
35.0	39.0	(3) LNP-LP6X100-G-10TT	244.5	5.87	25.3	212.3	25.3	9	11	209.7	25.3	9	11	284.92	297.8	292.50	0.974
38.0	71.3	(3) PLT-C10x30(1.5" Hole)	400.7	9.62	37.1	316.9	37.1	9	0	352.9	37.1			398.66	500.4	468.64	0.851
71.3	86.0	(3) PLT-C10x30(1.5" Hole)	454.8	10.92	37.1	352.9	37.1			341.9	37.1			352.89	500.4	468.64	0.753
86.0	104.0	(3) PLT-C10x15.3(1.5" Hole)	454.8	10.92	37.1	224.0	37.1			190.1	37.1	6	0	223.97	255.7	247.80	0.904

Base Plate Summary

Structure: CT00680-S-SB	Code: EIA/TIA-222-G	2/2/2018
Site Name: Putnam	Exposure: B	
Height: 175.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Reactions	Base Plate	Anchor Bolts
Original Design	Yield (ksi): 50.00	Bolt Circle: 61.00
Moment (kip-ft): 0.00	Width (in): 67.00	Number Bolts: 18.00
Axial (kip): 0.00	Style: Round	Bolt Type: 2.00" A687
Shear (kip): 0.00	Polygon Sides: 0.00	Bolt Diameter (in): 2.00
Analysis	Clip Length (in): 0.00	Yield (ksi): 105.00
Moment (kip-ft): 5331.62	Effective Len (in): 12.64	Ultimate (ksi): 150.00
Axial (kip): 85.05	Moment (kip-in): 249.69	Arrangement: Radial
Shear (kip): 42.96	Allow Stress (ksi): 67.50	Cluster Dist (in): 0.00
	Applied Stress (ksi): 0.00	Start Angle (deg): 0.00
Moment Design %: 0.00	Stress Ratio: 0.78	Compression
		Force (kip): 172.69
		Allowable (kip): 300.00
		Ratio: 0.59
		Tension
		Force (kip): 163.24
		Allowable (kip): 300.00
		Ratio: 0.56



Monopole Mat Foundation Design

Date

2/2/2018

Customer Name:	AT&T	EIA/TIA Standard:	EIA-222-G
Site Name:		Structure Height (Ft.):	175
Site Number:	CT00680-S-SBA	Engineer Name:	J. Tibbetts
Engr. Number:	46576	Engineer Login ID:	

Foundation Info Obtained from:

Drawings/Calculations

Structure Type:

Monopole

Analysis or Design?

Analysis

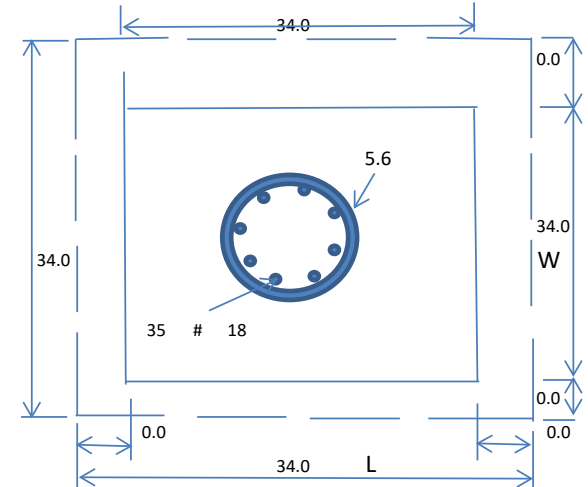
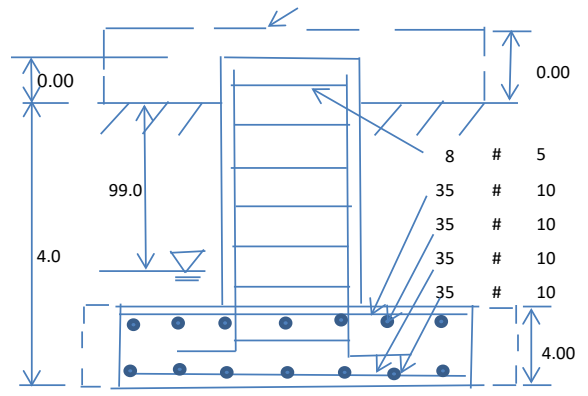
Base Reactions (Factored):

Axial Load (Kips):	56.9	Shear Force (Kips):	43.0
Uplift Force (Kips):	0.0	Moment (Kips-ft):	5331.6

Allowable overstress %: 5.0%

Foundation Geometries:

		Mods required -Yes/No ?:	No
Diameter of Pier (ft.):	5.6	Depth of Base BG (ft.):	4.0
Pier Height A. G. (ft.):	0.00	Thickness of Pad (ft):	4.00
Length of Pad (ft.):	34	Width of Pad (ft.):	34
Final Length of pad (ft)	34.0	Final width of pad (ft):	34.0
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 #:	18	Tie / Stirrup Size #:	5	
Qty. of Vertical Rebars:	35	Tie Spacing (in):	6.0	
Pad Rebar Yield (Ksi):	60	Pad Steel Rebar Size (#):	10	
Concrete Cover (in.):	3	Unit Weight of Concrete:	150.0	pcf
Rebar at the bottom of the concrete pad:				
Qty. of Rebar in Pad (L):	35	Qty. of Rebar in Pad (W):	35	
Rebar at the top of the concrete pad:				
Qty. of Rebar in Pad (L):	35	Qty. of Rebar in Pad (W):	35	

Apply 1.35 factor for e/w Per G: 1.35

Soil Design Parameters:

Soil Unit Weight (pcf):	100.0	Soil Buoyant Weight:	50.0	Pcf
Water Table B.G.S. (ft):	99.0	Unit Weight of Water:	62.4	pcf
Ultimate Bearing Pressure (psf):	40000	Ultimate Skin Friction:	0	Psf
Consider Friction for O.T.M. (Y/N):	No	Consider Friction for bearing (Y/N):	No	
Consider soil hori. force for O.T.M.:	No	Reduction factor on the maximum soil bearing pressure:	1.00	
		Angle from Top of Pad:	30	
		Angle from Bottm of Pad:	25	
		Angle from Bottm of Pad:	25	

Foundation Analysis and Design:

Uplift Strength Reduction Factor:	0.75	Compression Strength Reduction Factor:	0.75
Total Dry Soil Volume (cu. Ft.):	0.00	Total Dry Soil Weight (Kips):	0.00
Total Buoyant Soil Volume (cu. Ft.):	0.00	Total Buoyant Soil Weight (Kips):	0.00
Total Effective Soil Weight (Kips):	0.00	Weight from the Concrete Block at Top (K):	0.00
Total Dry Concrete Volume (cu. Ft.):	4624.12	Total Dry Concrete Weight (Kips):	693.62
Total Buoyant Concrete Volume (cu. Ft.):	0.00	Total Buoyant Concrete Weight (Kips):	0.00
Total Effective Concrete Weight (Kips):	693.62	Total Vertical Load on Base (Kips):	750.48

Check Soil Capacities:

Calculated Maxium Net Soil Pressure under the base (psf):	1651	<	Allowable Factored Soil Bearing (psf):	30000	0.06	OK!
Allowable Foundation Overturning Resistance (kips-ft.):	11579.0	>	Design Factored Momont (kips-ft):	5504	0.48	OK!
Factor of Safety Against Overturning (O. R. Moment/Design Moment):	2.10					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):	4.00	Tie / Stirrup Area (sq. in./each):	0.31		
Calculated Moment Capacity (Mn,Kips-Ft):	14212.6	> Design Factored Moment (Mu, Kips-Ft)	5331.6	0.38	OK!
Calculated Shear Capacity (Kips):	622.0	> Design Factored Shear (Kips):	43.0	0.07	OK!
Calculated Tension Capacity (Tn, Kips):	7560.0	> Design Factored Tension (Tu Kips):	0.0	0.00	OK!
Calculated Compression Capacity (Pn, Kips):	4489.4	> Design Factored Axial Load (Pu Kips):	56.9	0.01	OK!
Moment & Axial Strength Combination:	0.38	OK! Check Tie Spacing (Design/Required):		0.5	OK!
Pier Reinforcement Ratio:	0.040	Reinforcement Ratio is satisfied per ACI			

(2) Concrete Pad:

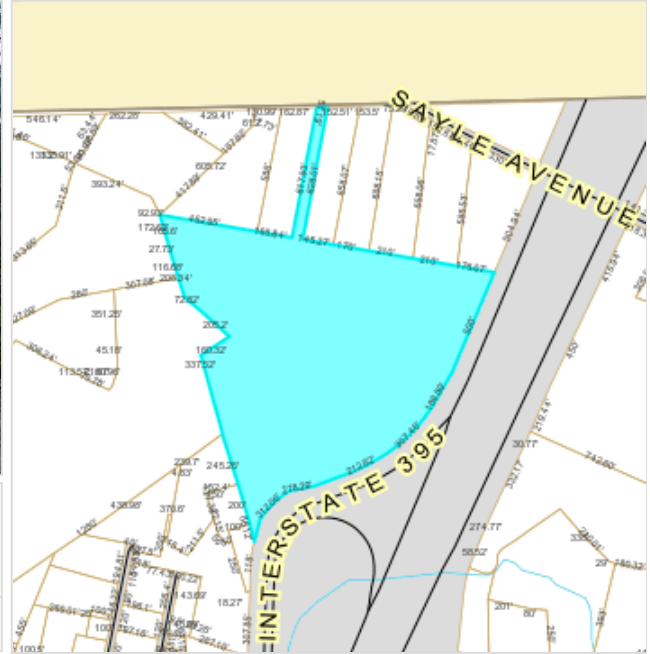
One-Way Design Shear Capacity (L-Direction, Kips):	1487.5	> One-Way Factored Shear (L-D. Kips):	339.8	0.23	OK!
One-Way Design Shear Capacity (W-Direction, Kips):	1487.5	> One-Way Factored Shear (W-D., Kips)	339.8	0.23	OK!
One-Way Design Shear Capacity (Corner-Corner. Kips):	1859.3	> One-Way Factored Shear (C-C, Kips):	526.1	0.28	OK!
Lower Steel Pad Reinforcement Ratio (L-Direct.):	0.0025	OK! Lower Steel Pad Reinf. Ratio (W-Direc	0.0025		
Lower Steel Pad Moment Capacity (L-Direction. Kips-ft):	8619.7	> Moment at Bottom (L-Direct. K-Ft):	1785.8	0.21	OK!
Lower Steel Pad Moment Capacity (W-Direction. Kips-ft):	8619.7	> Moment at Bottom (W-Direct. K-Ft):	1785.8	0.21	OK!
Lower Steel Pad Moment Capacity (Corner-Corner,K-ft):	12142.5	> Moment at Bottom (C-C Dir. K-Ft):	2525.4	0.21	OK!
Upper Steel Pad Reinforcement Ratio (L-Direct.):	0.0025	OK! Upper Steel Reinf. Ratio (W-Direct.):	0.0025		
Upper Steel Pad Moment Capacity (L-Direction. Kips-ft):	8619.7	> Moment at the top (L-Dir Kips-Ft):	113.3	0.01	OK!
Upper Steel Pad Moment Capacity (W-Direction. Kips-ft):	8619.7	> Moment at the top (W-Dir Kips-Ft):	113.3	0.01	OK!
Upper Steel Pad Moment Capacity (Corner-Corner. K-ft):	12142.5	> Moment at the top (C-C Direc. K-Ft):	912.2	0.08	OK!



Property Record Card

154 SAYLES AVE

ID: 021-023 Account #: 003961



Owner: SBA TOWER INC
 Co-Owner:
 Address: ATTN TAX DEPT, CT 00680-S
 BOCA RATON FL 33487

Assessment: Total: 618000
 Building: 0 Land: 0 Yard: 618000

Sales History

Grantor	Book / Page	Sale Date	Sale Price
SBA TOWER INC	0 / 0	2001-01-01	



MainStreetGIS, LLC
www.mainstreetgis.com

Land Information
 Land Area: 0 AC Zoning:
 Land Use: 5-1 - Res. Land MDL-00
 Neighborhood: 0040

Building Information
 Style:
 Year Built:
 Rooms: Bedrooms:
 Baths: Half Baths:
 Living Area:
 Gross Area:
 Stories:
 Heat Fuel:
 Heat Type:
 AC Type:
 Roof Structure:
 Roof Covering:

Extra Features Description	Area / Units	Assessment
Cell Tower		618000
Sub Areas Description	Living Area	Gross Area



TO: Office of the Putnam Town Clerk

FROM: Zoning Commission

In accordance with the provision of Public Act 75-317, State of Connecticut, the following; was APPROVED 10-29-98

SPECIAL PERMIT

is submitted to your office for recording with the Putnam Land Records, and indexing within the Grantor's index.

Information required:

1. Description of premises:
154 Sayles Avenue . Town Assessors Map 4T, Lot 16-B
Zoned R -40
2. Nature of permits:
Construction of a 180' multi tenant monopole
telecommunication tower
3. Zoning By-Law:
Sections 720
4. Name and Address of Owner of Records:
Ronald Blain Bill Moser
587 Riverside Dr. 34 Totem Pole Drive
N. Grosvenordale, CT 06255 Thompson, CT 06277
5. Name and Address of Applicant:
SBA Inc. Nextel Communications
125 Shaw Street, Suite 116 100 Corporate Place
New London, CT 06320 Rocky Hill, CT 06067

This information is certified by:

Anthony 11-20-98
Zoning Enforcement Officer Date

TOWN CLERK PUTNAM
S. J. [Signature]
99 APR 28 AM 9:54

Mayer's Office	943-6800	Economic Development	943-6804	Planning Commission	943-6803	Town Clerk	943-6807
Animal Control	943-6804	Fire Marshal	943-6805	Public Works	943-6813	Town Hall Fax	943-6814
Assessor	943-6802	Island Wetlands	943-6803	Revenue Collector	943-6806	Treasurer	943-6809
Building/Zoning	943-6803	Paths & Recreation	943-6811	Social Services	943-6810	ZBA Commission	943-6800

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Zoning Commission
Minutes of October 29, 1998 Meeting
Putnam High School Cafeteria

Present: Cynthia Dunne - Chairwoman, Peter Benoit, Patricia Hedenberg
Mike Lajeunesse
Absent: Joseph Vacariello

Opened public hearing at 6:35 P.M. on Docket # 98-15 SBA, Inc. request for an amendment to the Town of Putnam Zoning Regulations Section 720 (specifically page 27) to allow (By Special Permit) Telecommunication Towers in an Industrial Zone. Cynthia Dunne read aloud an affirmative recommendation from the Planning Commission. A positive recommendation was read into the record from Northeast Regional Planning Agency. Scott Thomae of SBA was present and reviewed his plans with the Commission. Public hearing closed at 6:50 P.M..

Opened public hearing at 6:50 P.M. on Docket # 98-17 M & M Transport Services, Inc. request for a special permit according to the Town of Putnam Zoning Regulations Section 720 to operate a motor freight terminal on Park Road. Property noted by location Town of Putnam Assessors Map 19T, Lot 4-1, 4.3+/- acres, Zoned Industrial and currently owned by the Town of Putnam. Janet Blanchette of J & D Civil Engineers and Mark Forsoski of M & M Transport were present and reviewed plans for the facility. Joe Flynn questioned if such a facility would require noise levels to be monitored. Peter Benoit informed Joe Flynn that there are required decibel levels in the Zoning Regulations. Public hearing closed.

Opened public hearing on Docket # 98-18 SBA, Inc. & Nextel Communications request for a special permit according to Section 720 of the Town of Putnam Zoning Regulations to construct a 180 foot multi tenant monopole telecommunications facility on property located at 154 Sayles Avenue, noted by location Town Assessors Map 4T, Lot 16-8, 30+/- acres, Zoned R-40 owned by William Moser and Ronald Blain. Scott Thomae of SBA reviewed his plans with the Commission. Public hearing closed at 7:20 P.M.

Opened public hearing at 7:20 P.M. on Docket # 98-20, The Town of Putnam Zoning Commission's proposed amendment to the Town of Putnam Zoning Regulations Section 923-5 to better clarify and define permitted uses in association with a residue facility special permit. Positive recommendations from Northeast Regional Planning Commission and the Putnam Planning Commission were read into the record. Attorney St. Onge stated that the proposal was an attempt at a compromise to meet the concerns of the residents and to clarify the regulations. Attorney Cotnoir was present on behalf of his clients Timothy P. Taft, Robert G. Viens, J. Robert Viens, Marguerite G. Viens. He reviewed the background with the Commission members. He stated that his clients are in favor of the application. Attorney Cotnoir asked the Commission if they could limit the footprint to 63 acre's without possible expansion on land that may or may not be grandfathered with Wheelabrator's original special permit. Robert Jacques stated that they support the amendment however he could not support the 63 acre limitation as this time. Attorney Cotnoir stated that the new amendments will regulate expansion onto land purchased in the future, but may not affect the land considered under the original

permit. Attorney Cotnoir expressed his concerns if Wheelabrator were to sell there is 180 acres and a new owner could go to D.E.P. for another permit. Peter Benoit made a motion for a five minute recess, seconded by Mike Lajeunesse. ALL WERE IN FAVOR. The meeting was reopened and after a brief discussion, the public hearing was closed at 8:10 P.M..

Opened public hearing at 8:10 P.M. on Docket # 98-21 Timothy P. Taft and Robert G. Viens request for an amendment to the Town of Putnam Zoning Regulations Section 923-5 to better clarify and define permitted uses in association with a residue facility special permit. Positive recommendation's were received from the Planning Commission and the Northeast Regional Planning Commission. Attorney Cotnoir reviewed the proposal on behalf of his clients. Public hearing closed at 8:20 P.M..

Regular Meeting:

Review minutes of the September 17, 1998 meeting.
Patricia Hedenberg made a motion to accept as read, seconded by Mike Lajeunesse. ALL WERE IN FAVOR.

Correspondence:

J & D Civil Engineer brochure outlining the services they provide.

New Business:

Docket # 98-15 SBA Inc. - Amendment to Regulations
Peter Benoit made a motion to approve as presented, seconded by Patricia Hedenberg. ALL WERE IN FAVOR.

Docket # 98-17 M & M Transport Services Inc. - Special Permit
Peter Benoit made a motion to accept as presented, seconded by Patricia Hedenberg. ALL WERE IN FAVOR.

Docket # 98-18 SBA Inc. & Nextel Communications Inc. - Special Permit
Peter Benoit made a motion to approve as presented, seconded by Patricia Hedenberg. ALL WERE IN FAVOR.

Docket # 98-20 Town of Putnam Zoning Comm. - Amendment to Regulations
Peter Benoit made a motion to approved Docket # 98-20 based on the amendment to Section 923-5 and subsections A1 & A2 and new section g, h, i, j, & k of the regulations, seconded by Patricia Hedenberg. ALL WERE IN FAVOR.

Docket # 98-21 Timothy P. Taft and Robert G. Viens - Amendment to Regulations
Peter Benoit made a motion to approve as presented, seconded by Patricia Hedenberg. ALL WERE IN FAVOR.

Other Business:

Danielson Oil Company - Jurisdictional ruling. Walter Popiak asked to be placed on next month's agenda due to a scheduling conflict.

Referral from Town of Killingly. Discussion was held about their proposed adult oriented business amendment and adopting one for

Putnam Peter Benoit made a motion that Killingly's proposal would

not have a negative impact on Putnam, seconded by Patricia Hedenberg. ALL WERE IN FAVOR. Robert Chenail and Attorney St. Onge will review for the December meeting.

Accepting of New Applications for public hearing on November 16, 1998/Z.E.O. Reports

Scott Thomae would submit an application. The Commission will accept contingent on Robert Chenail's review.

Melinda Copeland - Home Occupation - previously accepted for public hearing.


John Monahan - Transfer Station - Providence Street

Mike Lajeunesse made a motion to accept for public hearing contingent on a revised site plan, seconded by Patricia Hedenberg. ALL WERE IN FAVOR

Peter Benoit made a motion to adjourn, seconded by Patricia Hedenberg. ALL WERE IN FAVOR.

Respectfully submitted by Brenda Roy on November 12, 1998.

Robert Chenail 11-12-98
Robert Chenail, Z.E.O. Date




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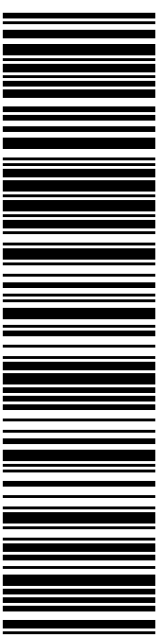
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 STORRS CT 06268-0916

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 TOWN OF PUTNAM
 126 CHURCH ST
 PUTNAM CT 06260-1831

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Cut on dotted line.

Instructions

- Each Click-N-Ship® label is unique. Labels are to be used as printed and used only once. DO NOT PHOTO COPY OR ALTER LABEL.
- Place your label so it does not wrap around the edge of the package.
- Adhere your label to the package. A self-adhesive label is recommended. If tape or glue is used, DO NOT TAPE OVER BARCODE. Be sure all edges are secure.
- To mail your package with PC Postage®, you may schedule a Package Pickup online, hand to your letter carrier, take to a Post Office™, or drop in a USPS collection box.
- Mail your package on the "Ship Date" you selected when creating this label.

Click-N-Ship® Label Record

**USPS TRACKING # / Insurance Number:
9405 8036 9930 0597 4198 27**

Trans. #:	428371321	Priority Mail® Postage:	\$6.70
Print Date:	02/24/2018	Insurance Fee	\$0.00
Ship Date:	02/24/2018	Total	\$6.70
Expected Delivery Date:	02/26/2018		
Insured Value:	\$50.00		

From: MARK J ROBERTS
 QC DEVELOPMENT
 PO BOX 916
 STORRS CT 06268-0916

To: MAYOR BARNEY SENEY
 TOWN OF PUTNAM
 126 CHURCH ST
 PUTNAM CT 06260-1831

* Retail Pricing Priority Mail rates apply. There is no fee for USPS Tracking® service on Priority Mail service with use of this electronic rate shipping label. Refunds for unused postage paid labels can be requested online 30 days from the print date.



Thank you for shipping with the United States Postal Service!
 Check the status of your shipment on the USPS Tracking® page at usps.com



Shipment Confirmation Acceptance Notice

A. Mailer Action

Note To Mailer: The labels and volume associated to this form online, **must** match the labeled packages being presented to the USPS® employee with this form.

Shipment Date: 02/24/18

Shipped From:

MARK J ROBERTS
QC DEVELOPMENT
PO BOX 916
STORRS CT 06268-0916

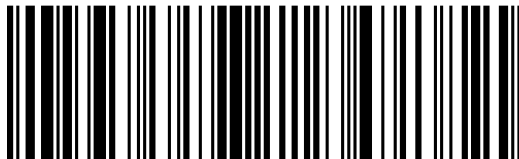
Type of Mail	Volume
Priority Mail®	2
Priority Mail Express™*	0
International Mail*	0
Other	0
Total Volume	2

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


B. USPS Action

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

USPS SCAN



9475 7036 9930 0261 9234 78




**UNITED STATES
POSTAL SERVICE®**

Click-N-Ship®

P

usps.com
US POSTAGE \$6.70
 Flat Rate Env
 9405 8036 9930 0597 4087 15 0067 0000 0063 3487



02/24/2018 Mailed from 06268 062S0000000311

PRIORITY MAIL 2-DAY™

Expected Delivery Date: 02/26/18

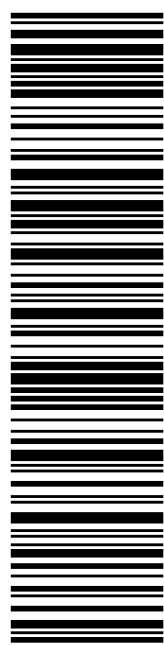
MARK J ROBERTS
 QC DEVELOPMENT
 PO BOX 916
 STORRS CT 06268-0916

0006

C036

SHIP TO: CARLA SHORTER
 SBA COMMUNICATIONS CORPORATION
 8051 CONGRESS AVE
 BOCA RATON FL 33487-1310

USPS TRACKING #



9405 8036 9930 0597 4087 15

Electronic Rate Approved #038555749



Cut on dotted line.

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Click-N-Ship® Label Record

**USPS TRACKING # / Insurance Number:
9405 8036 9930 0597 4087 15**

Trans. #:	428369065	Priority Mail® Postage:	\$6.70
Print Date:	02/24/2018	Insurance Fee	\$0.00
Ship Date:	02/24/2018	Total	\$6.70
Expected Delivery Date:	02/26/2018		
Insured Value:	\$50.00		

From: MARK J ROBERTS
 QC DEVELOPMENT
 PO BOX 916
 STORRS CT 06268-0916

To: CARLA SHORTER
 SBA COMMUNICATIONS CORPORATION
 8051 CONGRESS AVE
 BOCA RATON FL 33487-1310

* Retail Pricing Priority Mail rates apply. There is no fee for USPS Tracking® service on Priority Mail service with use of this electronic rate shipping label. Refunds for unused postage paid labels can be requested online 30 days from the print date.



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