

May 13, 2022

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

Regarding: Notice of Exempt Modification – AT&T Site CT5289 / FA# 10070918
Address: 10 Redwood Lane, Avon, CT 06001

Dear Ms. Bachman:

New Cingular Wireless, PCS, LLC (“AT&T”) currently maintains a wireless telecommunications facility on an existing +/- 106’ monopole at the above-referenced address, latitude 41.7721919, longitude -72.8799989. Said monopole is operated by SBA Towers, Inc.

AT&T desires to modify its existing telecommunications facility by swapping six (6) antennas, swapping three (3) remote radio units (RRUS), and adding one (1) new surge arrestor and accompanying feedlines as more fully described in the enclosed Construction Drawings prepared by Hudson Design Group, LLC last revised May 12, 2022. The centerline height of the existing antennas is and will remain at 97 feet. This modification may include B2, B5, B17, B14, B29, B30, B66, & n77 hardware that is 4G(LTE) and/or 5G NR capable through remote software configuration and either or both services may be turned off at various times.

Please accept this letter as notification pursuant to R.C.S.A §16-50j-73 for construction that constitutes an exempt modification pursuant to R.C.S.A. § 16-50j-72(b)(2). In accordance with R.C.S.A. § 16-50j-73, a copy of this letter is being sent to the following individuals: The Honorable Brandon Robertson, Town Manager of the Town of Avon, as elected official. Hiram Peck, Zoning Enforcement Officer and Planning Director of the Town of Avon. SBA Towers, Inc., as tower operator and Avon Water Company as property 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). Specifically:

1. The proposed modifications will not result in an increase in the height of the existing structure.
2. The proposed modifications will not require an 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 modified facility will not increase radio frequency emissions at the facility to a level at or above the Federal Communications Commission safety standard. *Please see the RF emissions calculation for AT&T's modified facility enclosed herewith.*

5. The proposed modifications will not cause an ineligible change or alteration in the physical or environmental characteristics of the site.

6. The existing structure and its foundation can support the proposed loading. *Please see the structural analysis dated May 9, 2022 and prepared by Tower Engineering Solutions enclosed herewith.*

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).

Sincerely,

Evan Renwick

Evan Renwick
Site Acquisition Specialist
Centerline Communications, LLC
750 West Center Street, Suite 301
West Bridgewater, MA 02379
erenwick@clinellc.com

Enclosures: Exhibit 1 – Construction Drawings
Exhibit 2 – Property Card and GIS
Exhibit 3 – Structural Analysis
Exhibit 4 – Mount Analysis
Exhibit 5 – RF Emissions Analysis Report Evaluation
Exhibit 6 – Original Tower Approval
Exhibit 7 – Notice Delivery Confirmations

cc: The Honorable Brandon Robertson, Town Manager, as elected official
Hiram Peck, Zoning Enforcement Officer and Planning Director
SBA Towers Inc., as tower operator
Avon Water Company, as property owner

EXHIBIT 1

PROJECT INFORMATION

SCOPE OF WORK: **ITEMS TO BE MOUNTED ON THE EXISTING MONOPOLE:**

- PROPOSED AT&T LTE ANTENNAS (AIR6449 N77D) @ POS. 3 (TYP. 1 PER SECTOR, TOTAL OF 3)(STACKED).
- PROPOSED AT&T LTE ANTENNAS (AIR6419 N77G) @ POS. 3 (TYP. OF 1 PER SECTOR, TOTAL OF 3)(STACKED).
- NEW AT&T RRUS: 4478 B14 (700/850) (TYP. OF 1 PER SECTOR, TOTAL OF 3).
- PROPOSED AT&T SURGE ARRESTOR: DC6-48-60-18-8F (TOTAL OF 1)
- ADD (1) 18 PAIR FIBER TRUNK
- ADD (6) Y CABLES.

ITEMS TO BE MOUNTED AT EQUIPMENT LOCATION:

- ADD 6648 FHG+ILDE CABLE XCEDE.
- FINAL: 1X6601 / 1X6630 / 1XXMU03 || XXXXX / 1X6630 MIXED-MODE / XXXXX + IDLE//1X6648+IDLE XCEDE.
- ADD (5) -48V RECTIFIERS FOR A TOTAL OF (10) -48V RECTIFIERS.
- REPLACE ALL BATTERIES AND INSTALL (3) BATTERY STRINGS BELOW POWERPLANT.
- DECOM GSM CABINET TO MAKE SPACE FOR NEW OD BATTERY CABINET.

ITEMS TO BE REMOVED:

- EXISTING AT&T ANTENNAS (HPA65R-BU6A) (TYP. 1 PER SECTOR, TOTAL OF 3).
- EXISTING AT&T ANTENNAS (800-10121) (TYP. 1 PER SECTOR, TOTAL OF 3).
- EXISTING AT&T RRUS: 4415 B25 (PCS) (TYP. OF 1 PER SECTOR, TOTAL OF 3).
- EXISTING AT&T DC ONLY SQUID (TOTAL OF 1)

ITEMS TO REMAIN:

- (6) ANTENNAS, (6) RRHS, (2) SURGE ARRESTOR, (6) 1-5/8" COAX CABLES, (6) DC POWER & (2) FIBER.

SITE ADDRESS: 10 REDWOOD LANE
AVON, CT 06001

LATITUDE: 41.77222° N 41° 46' 20.0" N
LONGITUDE: 72.88011° W 72° 52' 48.4" W
TYPE OF SITE: MONOPOLE/OUTDOOR EQUIPMENT
TOWER HEIGHT: 106'-0"±
RAD CENTER: 100'-0"±
CURRENT USE: TELECOMMUNICATIONS FACILITY
PROPOSED USE: TELECOMMUNICATIONS FACILITY

DRAWING INDEX

SHEET NO.	DESCRIPTION	REV.
T-1	TITLE SHEET	0
GN-1	GENERAL NOTES	0
A-1	COMPOUND PLAN AND EQUIPMENT PLAN	0
A-2	ANTENNA LAYOUTS & ELEVATION	0
A-3	DETAILS	0
G-1	GROUNDING DETAILS	0
RF-1	RF PLUMBING DIAGRAM	0

SBA SITE #: CT01498-S



SITE NUMBER: CT5289

SITE NAME: AVON SOUTH WEST

PACE ID: MRCTB054159, MRCTB054739, MRCTB054743, MRCTB053450, MRCTB053458, MRCTB055445

PROJECT: 5G NR RADIO, 5G NR 1SR CBAND, BBU RECONFIGURATION

ISSUED FOR PERMITTING

VICINITY MAP

DIRECTIONS TO SITE:
START OUT GOING NORTHEAST ON ENTERPRISE DR TOWARD CAPITOL BLVD. 0.4 MI. TURN LEFT ONTO CAPITOL BLVD. 0.3 MI. TURN LEFT ONTO WEST ST. 0.3 MI. MERGE ONTO I-91 S VIA THE RAMP ON THE LEFT TOWARD NEW HAVEN. IF YOU REACH CORPORATE PL YOU'VE GONE A LITTLE TOO FAR 1.7 MI. MERGE ONTO CT-9 N VIA EXIT 22N TOWARD NEW BRITAIN. 11.1 MI. MERGE ONTO I-84 W/US-6 W VIA EXIT 32 ON THE LEFT TOWARD WATERBURY/CT-4. 1.2 MI. MERGE ONTO CT-4 W/FARMINGTON AVE VIA EXIT 39 TOWARD FARMINGTON. 5.6 MI 8. TURN RIGHT ONTO W AVON RD/CT-167. W AVON RD IS 0.2 MILES PAST WALNUT ST. 0.5 MI. TAKE THE 2ND LEFT ONTO MALLARD DR. MALLARD DR IS 0.4 MILES PAST COTTAGE ST. IF YOU REACH CEDAR LN YOU'VE GONE A LITTLE TOO FAR. 0.06 MI. TURN RIGHT ONTO HERITAGE DR. 0.7 MI. TURN LEFT ONTO BYRON DR. 0.06 MI. TAKE THE 1ST RIGHT ONTO REDWOOD LN. 0.01 MI. 10 REDWOOD LN.



GENERAL NOTES

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

72 HOURS



CALL BEFORE YOU DIG



CALL TOLL FREE 1-800-922-4455

OR CALL 811

UNDERGROUND SERVICE ALERT

HGD HUDSON Design Group LLC
45 BEECHWOOD DRIVE NORTH ANDOVER, MA 01845
TEL: (978) 557-5553 FAX: (978) 336-5586

CENTERLINE COMMUNICATIONS
750 WEST CENTER STREET, SUITE #301 WEST BRIDGEWATER, MA 02379

SITE NUMBER: CT5289
SITE NAME: AVON SOUTH WEST
10 REDWOOD LANE
AVON, CT 06001
HARTFORD COUNTY

at&t
550 COCHITUATE ROAD FRAMINGHAM, MA 01701

0 05/12/22 ISSUED FOR PERMITTING		ME AT DPH		AT&T
A 02/10/22 ISSUED FOR REVIEW		ME AT DPH		TITLE SHEET (LTE 2C/3C/4C/4TX4RX)
NO.	DATE	REVISIONS	DR. CHK APP'D	SITE NUMBER
SCALE: AS SHOWN	DESIGNED BY: AT	DRAWN BY: MR		CT5289
				DRAWING NUMBER
				T-1
				REV
				0

GROUNDING NOTES

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

GENERAL NOTES

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

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

**BUILDING CODE: IBC 2015 WITH 2018 CT STATE BUILDING CODE AMENDMENTS
 ELECTRICAL CODE: 2017 NATIONAL ELECTRICAL CODE (NFPA 70-2017)**

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

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

AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC) MANUAL OF STEEL CONSTRUCTION, ASD, FOURTEENTH EDITION;

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

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

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

45 BEECHWOOD DRIVE
NORTH ANDOVER, MA 01845
TEL: (978) 557-5553
FAX: (978) 336-5586

750 WEST CENTER STREET, SUITE #301
WEST BRIDGEWATER, MA 02379

SITE NUMBER: CT5289
SITE NAME:
AVON SOUTH WEST
 10 REDWOOD LANE
 AVON, CT 06001
 HARTFORD COUNTY

550 COCHITUATE ROAD
FRAMINGHAM, MA 01701

0		05/12/22	ISSUED FOR PERMITTING	ME	AT	DPH					
A		02/10/22	ISSUED FOR REVIEW	M	AT	DPH					
NO.	DATE	REVISIONS		BY	CHK	APP'D					
SCALE:		AS SHOWN		DESIGNED BY:		AT		DRAWN BY:		MR	

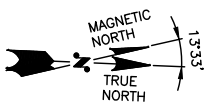
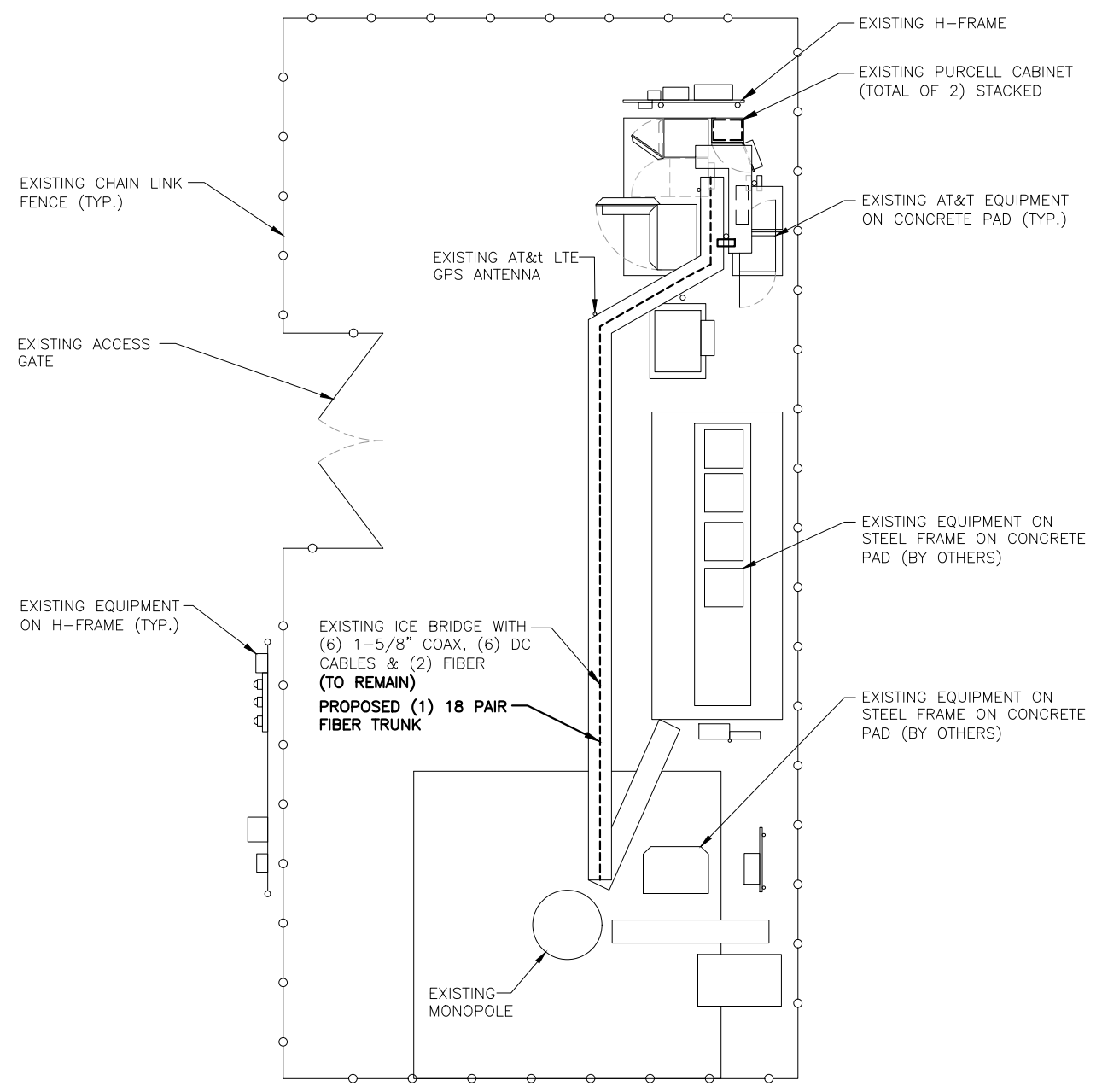
AT&T
 GENERAL NOTES
 (LTE 2C/3C/4C/4TX4RX)

SITE NUMBER	DRAWING NUMBER	REV
CT5289	GN-1	0

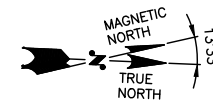
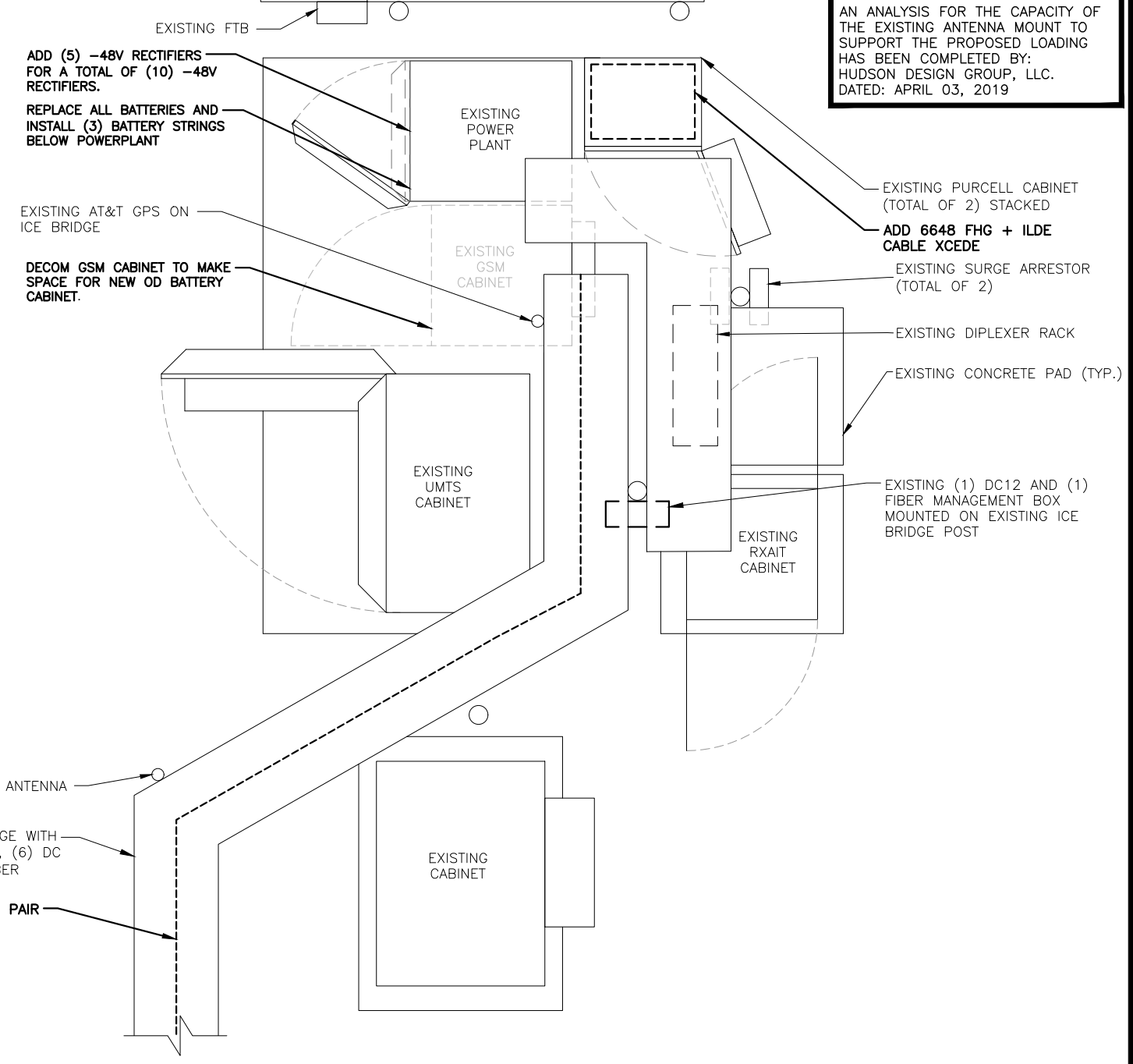
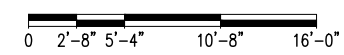


NOTE:
REFER TO THE PRELIMINARY/APPROVED RFDS V1.0 DATED: 01/10/2022 DATA SHEET FOR FINAL ANTENNA SETTINGS.

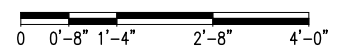
NOTE:
AN ANALYSIS FOR THE CAPACITY OF THE EXISTING ANTENNA MOUNT TO SUPPORT THE PROPOSED LOADING HAS BEEN COMPLETED BY: HUDSON DESIGN GROUP, LLC. DATED: APRIL 03, 2019



COMPOUND PLAN
22x34 SCALE: 3/16"=1'-0"
11x17 SCALE: 3/32"=1'-0"



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



HDG HUDSON Design Group LLC
45 BEECHWOOD DRIVE
NORTH ANDOVER, MA 01845
TEL: (978) 557-5553
FAX: (978) 336-5586

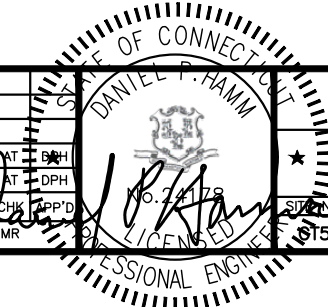
CENTERLINE COMMUNICATIONS
750 WEST CENTER STREET, SUITE #301
WEST BRIDGEWATER, MA 02379

SITE NUMBER: CT5289
SITE NAME:
AVON SOUTH WEST
10 REDWOOD LANE
AVON, CT 06001
HARTFORD COUNTY

at&t
550 COCHITUATE ROAD
FRAMINGHAM, MA 01701

NO.	DATE	REVISIONS	BY	CHK	APP'D
0	05/12/22	ISSUED FOR PERMITTING	MR	AT	DPH
A	02/10/22	ISSUED FOR REVIEW	MR	AT	DPH

SCALE: AS SHOWN DESIGNED BY: AT DRAWN BY: MR



AT&T
COMPOUND & EQUIPMENT PLAN
(LTE 2C/3C/4C/4TX4RX)
SITE NUMBER: CT5289 DRAWING NUMBER: A-1 REV: 0

ANTENNA SCHEDULE											
SECTOR	EXISTING/ PROPOSED	BAND	ANTENNA	SIZE (INCHES) (L x W x D)	ANTENNA CL HEIGHT	AZIMUTH	TMA/ DIPLEXER	RRU	SIZE (INCHES) (L x W x D)	FEEDER	RAYCAP
A1	-	-	-	-	-	-	-	-	-	(2) 1-5/8 COAX	--
A2	EXISTING	LTE 1900	800-10965	78.7X20X6.9	100'-0"	100'	-	(E) 8843 B2/B66A (PCS/AWS) (P) 4478 B14 (700)	16.5X13.4X5.9	(2) DC, (1)F (P)(1) Y-CABLE	(E) (1) RAYCAP DC6-48-60-18-8F
A3	PROPOSED	DoD C-BAND	AIR6419 B77G AIR6449 B77D	31.1"X16.1X7.3" 30.4"X15.9"X8.1"	100'-0"	100'	-	-	-	-	-
A4	EXISTING	LTE 700 BC/850/AWS	800-10965	78.7X20X6.9	100'-0"	100'	-	(E) 4449 B5/B12 (700)	-	(P)(1) Y-CABLE	(E) (1) RAYCAP DC6-48-60-18-8F
B1	-	-	-	-	-	-	-	-	-	(2) 1-5/8 COAX	-
B2	EXISTING	LTE 1900	800-10965	78.7X20X6.9	100'-0"	230'	-	(E) 8843 B2/B66A (PCS/AWS) (P) 4478 B14 (700)	16.5X13.4X5.9	(2) DC, (1)F (P)(1) Y-CABLE	(E) (1) RAYCAP DC6-48-60-18-8F
B3	PROPOSED	DoD C-BAND	AIR6419 B77G AIR6449 B77D	31.1"X16.1X7.3" 30.4"X15.9"X8.1"	100'-0"	230'	-	-	-	-	-
B4	EXISTING	LTE 700 BC/850/AWS	800-10965	78.7X20X6.9	100'-0"	230'	-	(E) 4449 B5/B12 (700)	-	(P)(1) Y-CABLE	(E) (1) RAYCAP DC6-48-60-18-8F
C1	-	-	-	-	-	-	-	-	-	(2) 1-5/8 COAX	-
C2	EXISTING	LTE 1900	800-10965	78.7X20X6.9	100'-0"	350'	-	(E) 8843 B2/B66A (PCS/AWS) (P) 4478 B14 (700)	16.5X13.4X5.9	(2) DC, (P)(1) 18 PAIR FIBER TRUNK (P)(1) Y-CABLE	(P) (1) RAYCAP DC6-48-60-0-8F
C3	PROPOSED	DoD C-BAND	AIR6419 B77G AIR6449 B77D	31.1"X16.1X7.3" 30.4"X15.9"X8.1"	100'-0"	350'	-	-	-	-	-
C4	EXISTING	LTE 700 BC/850/AWS	800-10965	78.7X20X6.9	100'-0"	350'	-	(E) 4449 B5/B12 (700)	-	(P)(1) Y-CABLE	(P) (1) RAYCAP DC6-48-60-0-8F

NOTE:
REFER TO THE
PRELIMINARY/APPROVED RFDS V1.0
DATED: 01/10/2022 DATA SHEET
FOR FINAL ANTENNA SETTINGS.

NOTE:
AN ANALYSIS FOR THE CAPACITY OF
THE EXISTING ANTENNA MOUNT TO
SUPPORT THE PROPOSED LOADING
HAS BEEN COMPLETED BY:
HUDSON DESIGN GROUP, LLC.
DATED: APRIL 03, 2019

RRU CHART				
QUANTITY	MODEL	L	W	D
3(P)	4478 B14	16.5"	13.4"	5.9"
3(E)	4449 B5/B12	14.9"	13.2"	10.4"
3(E)	RRUS-32 B30 (WCS)	27.2"	12.1"	7.0"

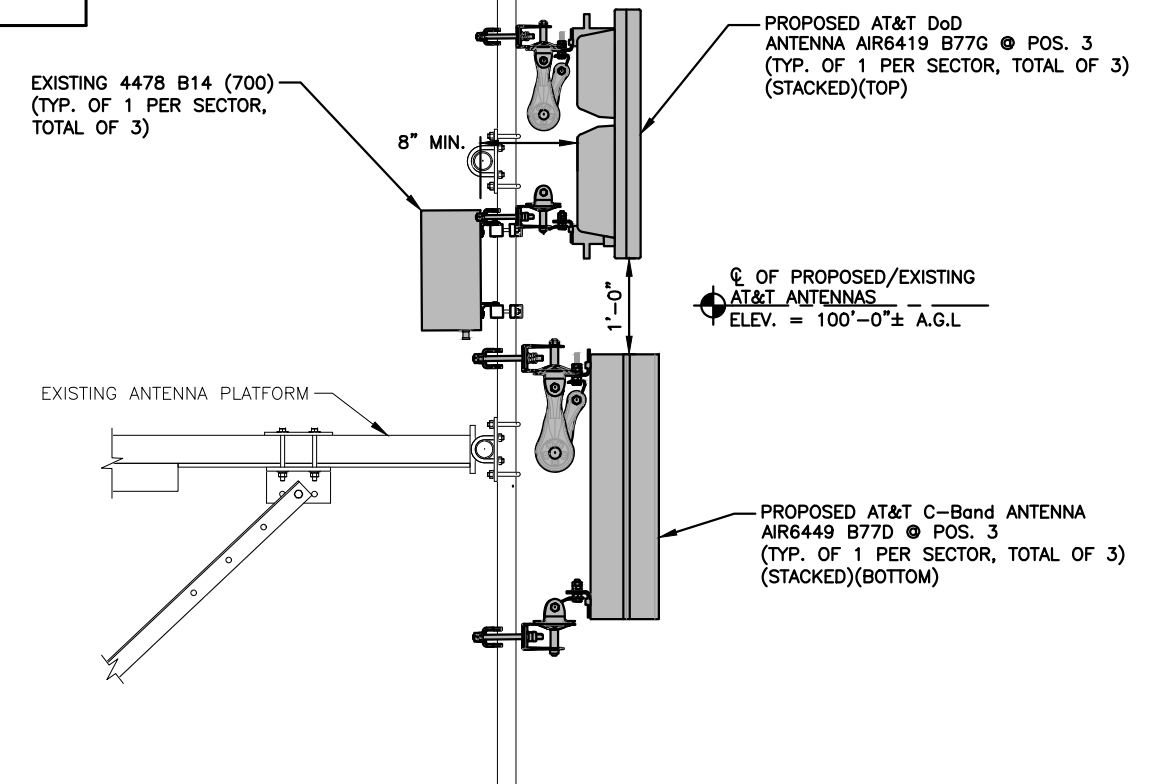
NOTE:
MOUNT PER MANUFACTURER'S SPECIFICATIONS

FINAL ANTENNA CONFIGURATION TABLE 1 A-3

PROPOSED RRU REFER TO THE
FINAL RFDS AND CHART FOR
QUANTITY, MODEL AND DIMENSIONS
NOTE:
MOUNT PER MANUFACTURER'S
SPECIFICATIONS.

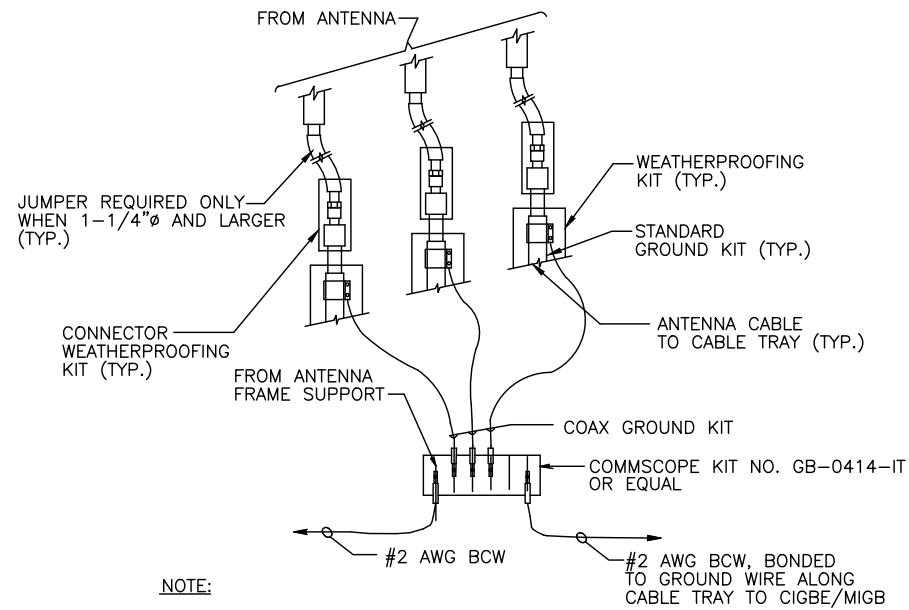
NOTE:
SEE RFDS FOR RRR
FREQUENCY AND
MODEL NUMBER

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



PROPOSED ANTENNA MOUNTING DETAIL 3 A-4

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



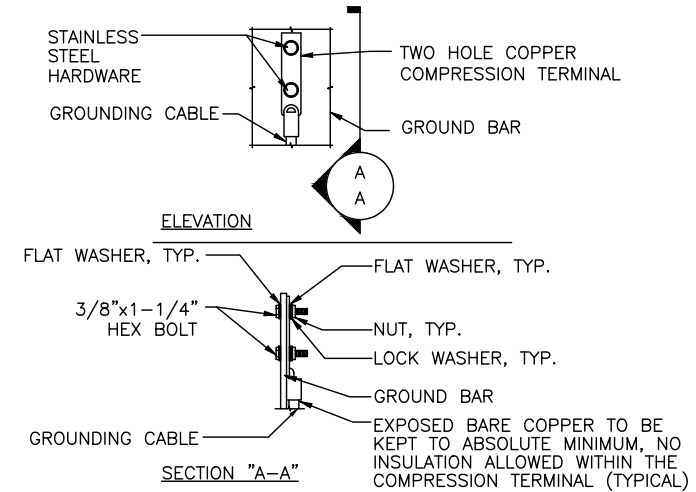
NOTE:

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

GROUND WIRE TO GROUND BAR CONNECTION DETAIL

SCALE: N.T.S

1
G-1



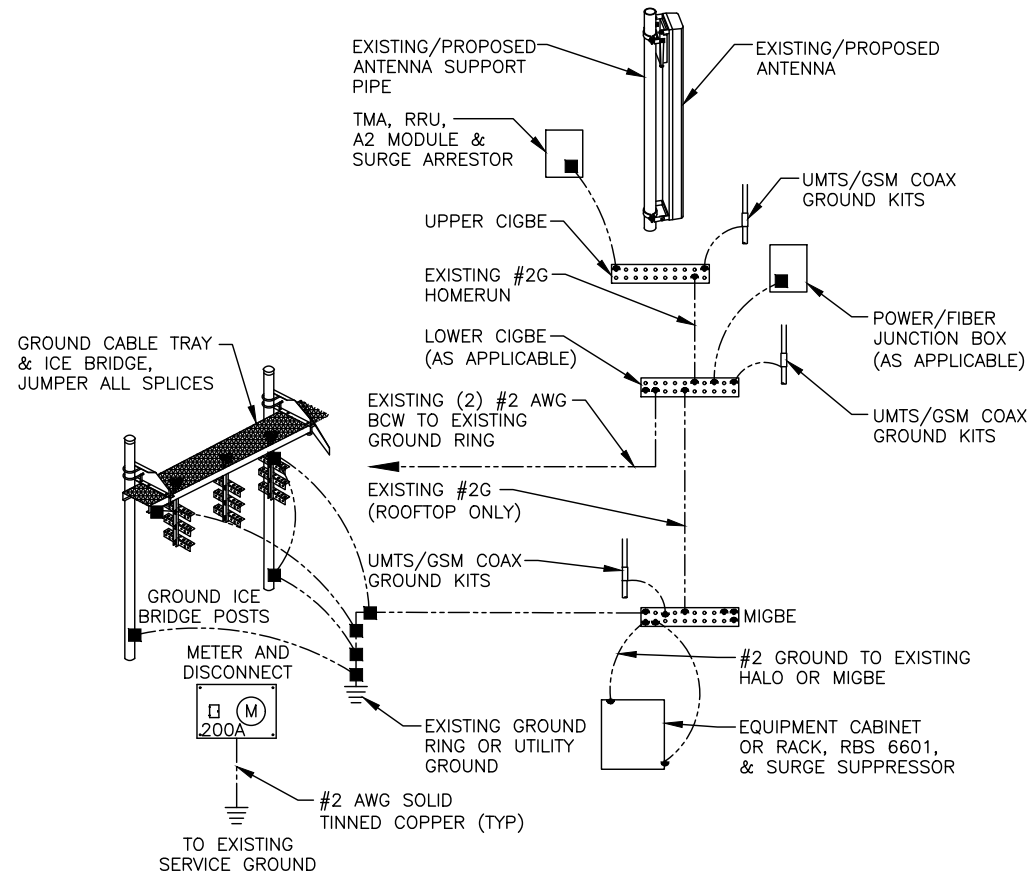
NOTES:

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

TYPICAL GROUND BAR CONNECTION DETAIL

SCALE: N.T.S

3
G-1



GROUNDING RISER DIAGRAM

SCALE: N.T.S

2
G-1

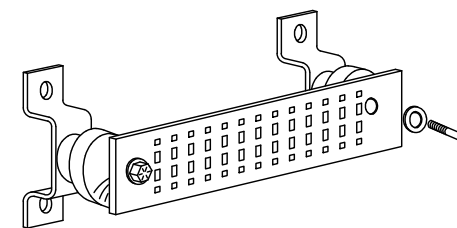
EACH GROUND CONDUCTOR TERMINATING ON ANY GROUND BAR SHALL HAVE AN IDENTIFICATION TAG ATTACHED AT EACH END THAT WILL IDENTIFY ITS ORIGIN AND DESTINATION.

SECTION "P" - SURGE PRODUCERS

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

SECTION "A" - SURGE ABSORBERS

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



GROUND BAR - DETAIL (AS REQUIRED)

SCALE: N.T.S

4
G-1



45 BEECHWOOD DRIVE
NORTH ANDOVER, MA 01845
TEL: (978) 557-5553
FAX: (978) 336-5586



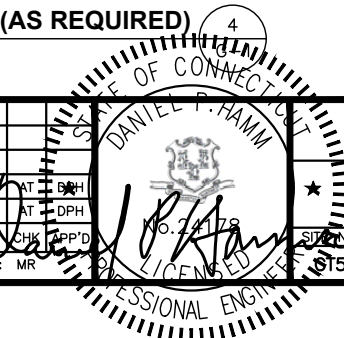
750 WEST CENTER STREET, SUITE #301
WEST BRIDGEWATER, MA 02379

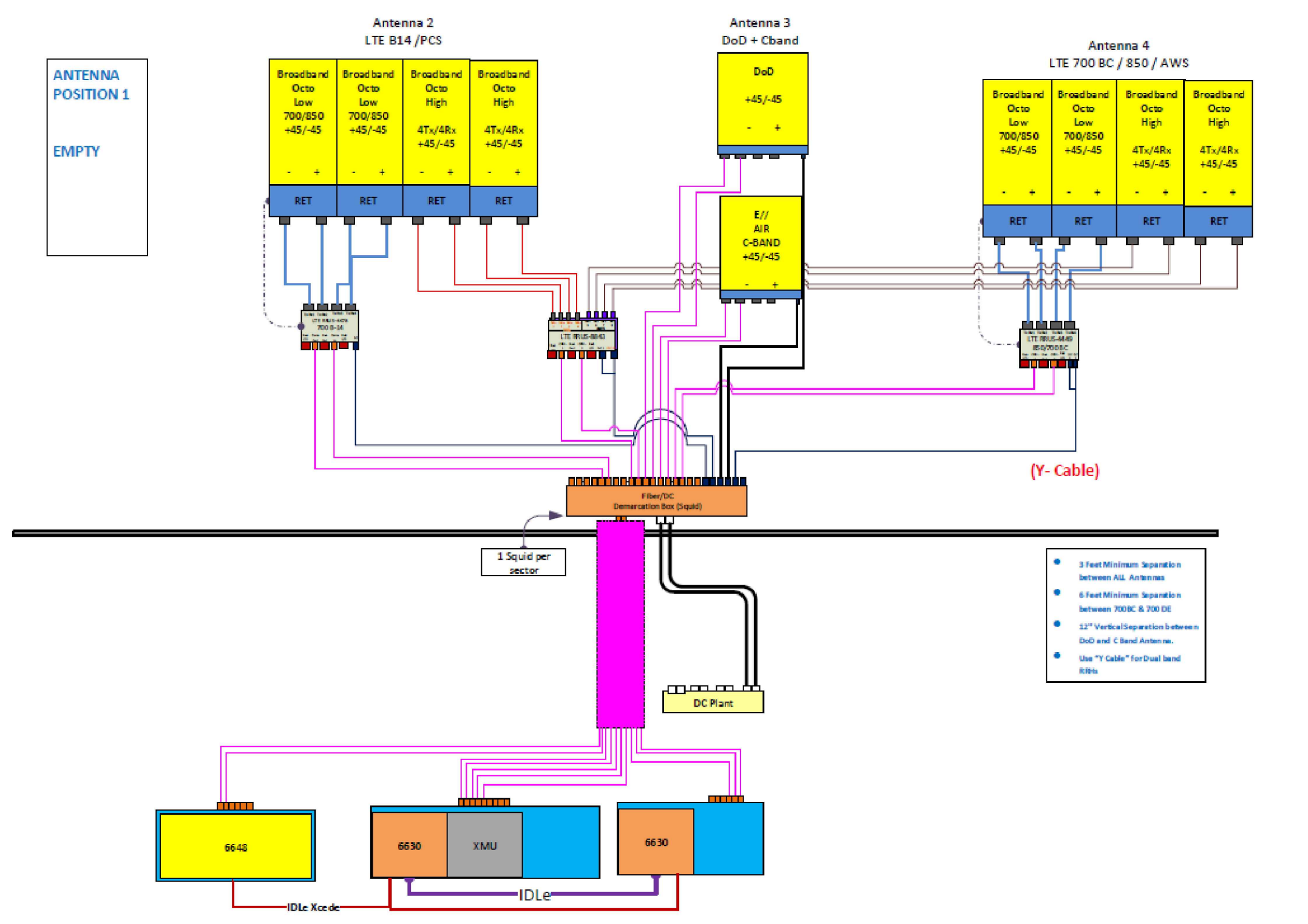
SITE NUMBER: CT5289
SITE NAME:
AVON SOUTH WEST
10 REDWOOD LANE
AVON, CT 06001
HARTFORD COUNTY



550 COCHITUATE ROAD
FRAMINGHAM, MA 01701

				AT&T	
				GROUNDING DETAILS (LTE 2C/3C/4C/4TX4RX)	
NO.	DATE	REVISIONS	BY	CHECKED	DATE
0	05/12/22	ISSUED FOR PERMITTING	MR. AT	DPH	
A	02/10/22	ISSUED FOR REVIEW	MR. AT	DPH	
SCALE: AS SHOWN		DESIGNED BY: AT	DRAWN BY: MR		
				SITE NUMBER	REV
				CT5289	0
				DRAWING NUMBER	
				G-1	





RF PLUMBING DIAGRAM 1
SCALE: N.T.S. RF-1

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

NOTE:
REFER TO THE PRELIMINARY/APPROVED RFDS V1.0 DATED: 01/10/2022 DATA SHEET FOR FINAL ANTENNA SETTINGS.

NO.	DATE	REVISIONS	BY	CHK	APP'D
0	05/12/22	ISSUED FOR PERMITTING	MB	AT	DPH
A	02/10/22	ISSUED FOR REVIEW	MR	AT	DPH
SCALE: AS SHOWN		DESIGNED BY: AT	DRAWN BY: MR		

AT&T		
RF PLUMBING DIAGRAM (LTE 2C/3C/4C/4TX4RX)		
SITE NUMBER	DRAWING NUMBER	REV
CT5289	RF-1	0

EXHIBIT 2

Property at 00010 REDWOOD LANE Prop ID 3680010

```

+-----Administrative Information-----+
| Owner name: AVON WATER COMPANY
| Second name: C/O CONNECTICUT WATER CO
| Address: 93 WEST MAIN STREET
| City/state: CLINTON CT Zip: 06413

```

```

+-----Location Information-----+

```

```

| Map: Clerk map:
| Lot: 3680010 Neigh.: FW Zone: Vol: 218 Page: 362

```

```

+-----Assessments-----+-----Exemptions-----+-----Last sale-----+

```

Assmt category	Qty	Amount	Exempt	Cat	Amount	Sale date: 02-Feb-1989
Pub Util Land	1.00	7,000				Sale price:
						Sale valid:

```

+-----Values-----+

```

```

| Mkt value :
| Cost value: 10,000

```

```

+-----Summary-----+-----Utilities-----+-----Sales ratios-----+

```

Total assessments	7,000	Water	None	Cost/sale :
Total exemptions		Sewer	None	Mkt/sale :
Net assessment	7,000	Gas	None	Assmt/sale:



Tighe & Bond

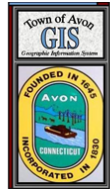
10 REDWOOD LANE

1/31/2022 4:36:18

1"=50'

Property Information

GISPin	3680010
Address	10 REDWOOD LANE
Sale Price	null



The information depicted on this map is for planning purposes only. It is not adequate for legal boundary definition, regulatory interpretation, or parcel-level analyses.

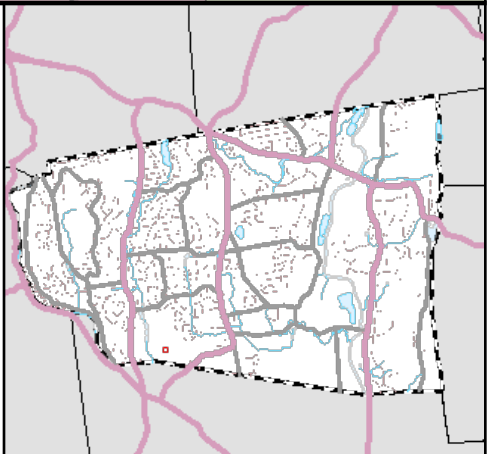


EXHIBIT 3



Tower Engineering Solutions

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

Structural Analysis Report

Existing 105 ft PIROD Monopole

Customer Name: SBA Communications Corp

Customer Site Number: CT01498-S

Customer Site Name: Avon

Carrier Name: AT&T (App#: 193802, V3)

Carrier Site ID / Name: CT5289 / Avon South West

Site Location: 10 Redwood Lane

Avon, Connecticut

Hartford County

Latitude: 41.772499

Longitude: -72.879999

Analysis Result:

Max Structural Usage: 76.3% [Pass]

Max Foundation Usage: 50.0% [Pass]

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

Report Prepared By: Anita Lama





Tower Engineering Solutions

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

Structural Analysis Report

Existing 105 ft PIROD Monopole

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Customer Site Name: Avon

Carrier Name: AT&T (App#: 193802, V3)

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Avon, Connecticut

Hartford County

Latitude: 41.772499

Longitude: -72.879999

Analysis Result:

Max Structural Usage: 76.3% [Pass]

Max Foundation Usage: 50.0% [Pass]

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

Report Prepared By: Anita Lama

Introduction

The purpose of this report is to summarize the analysis results on the 105 ft PIROD 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	Pirod, Inc., Eng. File #A-117586 dated September 26, 2000
Foundation Drawing	Pirod, Inc., Eng. File #A-117586 dated September 26, 2000
Geotechnical Report	Jaworski Geotech, Inc., Project #00301G dated August 31, 2000
Modification Drawings	N/A
Mount Analysis	MA by Hudson Design Group LLC, FA Number 10035012 dated 3/18/2022

Analysis Criteria

The rigorous analysis was performed in accordance with the requirements and stipulations of the TIA-222-G-2. 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 $V_{ult} = 120$ mph (3-Sec. Gust)/ Nominal Design Wind Speed $V_{asd} = 93.0$ mph (3-Sec. Gust)
Wind Speed with Ice:	50 mph (3-Sec. Gust) with 1" radial ice concurrent
Operational Wind Speed:	60 mph + 0" Radial ice
Standard/Codes:	TIA-222-G-2 / 2015 IBC / 2018 Connecticut State Building Code
Exposure Category:	B
Structure Class:	II
Topographic Category:	1
Crest Height:	0 ft
Seismic Parameters:	$S_S = 0.182$, $S_1 = 0.064$

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

Existing Antennas, Mounts and Transmission Lines

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

Items	Elevation (ft)	Qty.	Antenna Descriptions	Mount Type & Qty.	Transmission Lines	Owner
1	116.0	1	20' Omni	Direct	(1) 7/8"	Farmingt on Woods
2	110.0	3	RFS APXVAARR24_43-U-NA20 (Octa) Panel	Low Profile Platform w/ Inner Bracing, Kicker Kit (Perfect 10 PVBK), Collar Mount (PV-RM3060) and (3) Metrosite Support Rail Center Pipe Kit: MS-HRCP-35-2875 (1) Metrosite Support Rail with End Connection Kit: MS-HRECP-35_18 (9) Metrosite Crossover Channel Bracket Kit: MS-CHB 350-2875 (6) PST2375-8 (3) PST2875-9	(10) 1 5/8" (2) 1 1/4" Hybrid (1) 1 5/8" Fiber	T-Mobile
3		3	Ericsson AIR32 KRD901146-1_B66A (Octa) Panel			
4		3	Ericsson AIR6449 B41 Panel			
5		3	Ericsson KRY 112 144/2 TMA			
6		3	Ericsson 4449 B71 + B85 RRU			
7		3	Ericsson 4415 B25 RRU			
8		3	Commscope SDX1926Q-43 Diplexer			
-		97.0	3			
-	3		CCI HPA65R-BU6A Panel			
-	6		Kathrein 800 10965 Panel			
-	6		Powerwave LGP21401 TMA			
-	6		Kathrein 782-10250 RET			
-	6		Kathrein 860 10025 RET			
-	3		Ericsson RRUS 4415 B30 RRU			
-	3		Ericsson RRUS 8843 B2 B66A RRU			
-	3		Ericsson RRUS 4449 B5/12 RRU			
-	3		Raycap DC6-48-60-18-8F			
20	91.0		3	Andrew VHLP2.5 Dish	(3) Dish Mounts	(3) 1/2" (6) 5/16"
21		3	Horizon DUO Radios			
22		3	Samsung RRU Radios			
23	87.0	3	RFS APXVSP18-C-A20 Panel	Low Profile Platform	(4) 1-1/4" Hybrid	Sprint
24		3	RFS APXVTM14-C-120 Panel			
25		3	Alcatel Lucent 1900 MHz RRH			
26		3	Alcatel Lucent 800 MHz RRH			
27		3	Alcatel Lucent TD-RRH8x20-25 RRH			
28		3	Alcatel Lucent 800MHz Filter			
29		4	RFS ACU-A20-N RET			
30	75.0	1	GPS	(1) Standoff	(1) 1/2"	

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

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

Items	Elevation (ft)	Qty.	Antenna Descriptions	Mount Type & Qty.	Transmission Lines	Owner
1	98.8	3	AIR 6419 B77G - Panel	(1) Low Profile Platform w/ Support rail Kit (SitePro1 HRK-14) & Platform Reinforcement Kit (SitePro 1 PRK-1245L) & (6) Pipe masts (30"x2.88") & (6) Steel Angles (L2-1/2x2-1/2x1/4) & (1) Universal Ring Mount	(6) 1 5/8" (3) 3" Conduit [Each conduit housing (2) 3/4" DC power & (1) 1/2" Fiber cables]	AT&T
2	97.0	3	Kathrein - 800-10121 - Panel			
3		6	Kathrein 800 10965 - Panel			
4		6	Powerwave LGP21401 TMA			
5		6	Kathrein 782-10250 RET			
6		6	Kathrein 860 10025 RET			
7		3	Ericsson RRUS 8843 B2 B66A RRU			
8		3	Ericsson RRUS 4449 B5/12 RRU			
9		3	Ericsson B14 4478			
10		3	Raycap DC6-48-60-18-8F			
11		95.2	3			

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

Analysis Results

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

	Pole shafts	Anchor Bolts	Base Plate	Flanges
Max. Usage:	52.9%	43.1%	76.3%	57.9%
Pass/Fail	Pass	Pass	Pass	Pass

Foundations

	Moment (Kip-Ft)	Shear (Kips)
Analysis Reactions	1818.7	21.6

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 TIA-222 for the installed antennas. The maximum twist/sway at the elevation of the proposed equipment is 0.3013 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 TIA-222 Standard under the design basic wind speed as specified in the Analysis Criteria.

Standard Conditions

1. This analysis was performed based on the information supplied to **(TES) Tower Engineering Solutions, LLC**. Verification of the information provided was not included in the Scope of Work for **TES**. The accuracy of the analysis is dependent on the accuracy of the information provided.
2. The structural analysis was performance based upon the evidence available at the time of this report. All information provided by the client is considered to be accurate.
3. The analyses will be performed based on the codes as specified by the client or based on the best knowledge of the engineering staff of **TES**. In the absence of information to the contrary, all work will be performed in accordance with the latest relevant revision of ANSI/TIA-222. If wind speed and/or ice loads are different from the minimum values recommended by the ANSI/TIA-222 standard or other codes, **TES** should be notified in writing and the applicable minimum values provided by the client.
4. The configuration of the existing mounts, antennas, coax and other appurtenances were supplied by the customer for the current structural analysis. **TES** has not visited the tower site to verify the adequacy of the information provided. If there is any discrepancy found in the report regarding the existing conditions, **TES** should be notified immediately to evaluate the effect of the discrepancy on the analysis results.
5. The client will assume responsibility for rework associated with the differences in initially provided information, including tower and foundation information, existing and/or proposed equipment and transmission lines.
6. If a feasibility analysis was performed, final acceptance of changed conditions shall be based upon a rigorous structural analysis.

Usage Diagram - Max Ratio 52.87% at 0.0ft

Structure: CT01498-S-SBA
Site Name: Avon
Height: 105.00 (ft)
Base Elev: 0.000 (ft)

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

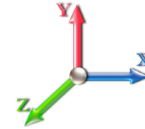
5/4/2022



Page: 1

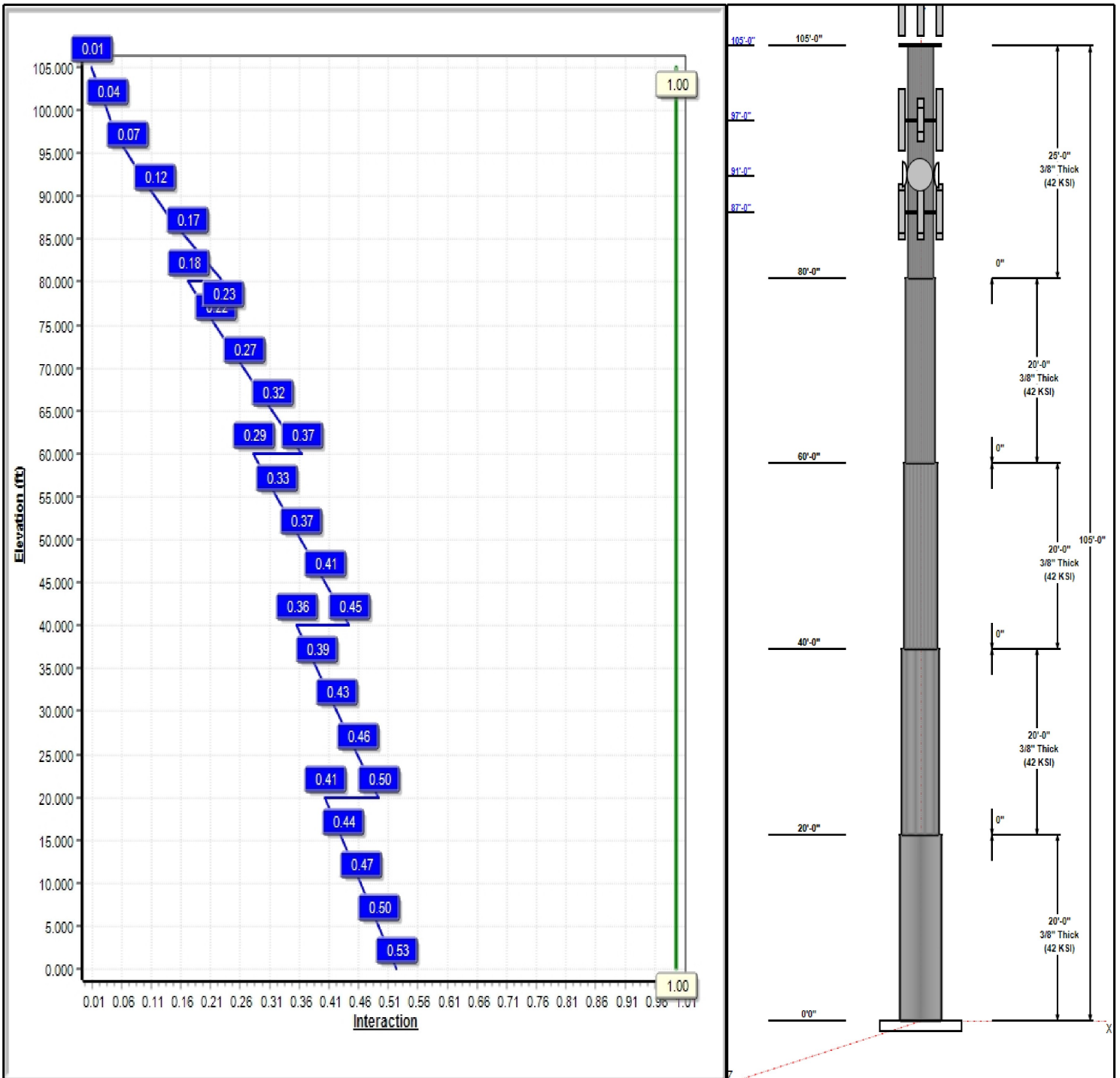
Dead Load Factor: 1.20
Wind Load Factor: 1.60

Load Case : 1.2D + 1.6W 93 mph Wind



Iterations: 16

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Structure: CT01498-S-SBA

Type: Stepped
Site Name: Avon
Height: 105.00 (ft)
Base Elev: 0.00 (ft)

Base Shape: Round
Taper: 0.00000

5/4/2022

Page: 2

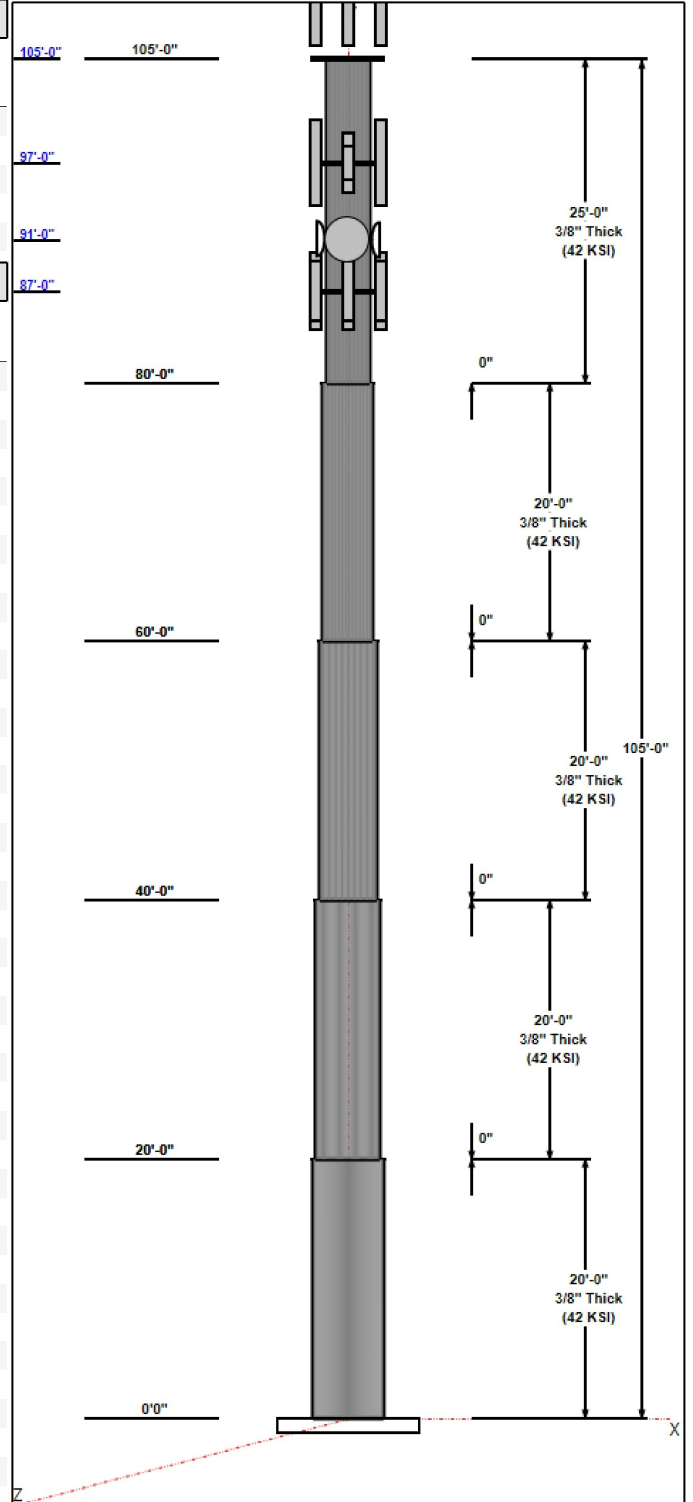


Shaft Properties

Seq	Length (ft)	Top (in)	Bottom (in)	Thick (in)	Joint Type	Taper	Grade (ksi)
1	20.00	60.00	60.00	0.375		0.00000	42
2	20.00	54.00	54.00	0.375		0.00000	42
3	20.00	48.00	48.00	0.375		0.00000	42
4	20.00	42.00	42.00	0.375		0.00000	42
5	25.00	36.00	36.00	0.375		0.00000	42

Discrete Appurtenances

Attach Elev (ft)	Force Elev (ft)	Qty	Description	Carrier
105.00	116.00	1	20' Omni	Farmington Woods
105.00	110.00	3	APXVAARR24_43-U-NA20	T-Mobile
105.00	110.00	3	AIR32	T-Mobile
105.00	110.00	3	AIR6449 B41	T-Mobile
105.00	110.00	3	KRY 112 144/2	T-Mobile
105.00	110.00	3	SDX1926Q-43	T-Mobile
105.00	110.00	3	4449 B71 + B85	T-Mobile
105.00	110.00	3	Radio 4415 Protruding w/o	T-Mobile
105.00	105.00	1	MS-HRECP	T-Mobile
105.00	105.00	1	Kicker kit	T-Mobile
105.00	105.00	1	Collar Mount	T-Mobile
105.00	105.00	1	Low Profile	T-Mobile
97.00	97.00	3	DC6-48-60-18-8F	AT&T
97.00	97.00	3	800-10121	AT&T
97.00	97.00	6	LGP21401	AT&T
97.00	97.00	6	782 10250	AT&T
97.00	97.00	6	Kathrein 800 10965	AT&T
97.00	97.00	3	B2 B66A 8843	AT&T
97.00	97.00	3	4449 B5/B12	AT&T
97.00	97.00	1	HRK14	AT&T
97.00	97.00	1	PRK-1245 (kicker kit)	AT&T
97.00	97.00	6	860 10025	AT&T
97.00	97.00	3	AIR 6419 B77G	AT&T
97.00	97.00	3	AIR 6449 B77D	AT&T
97.00	97.00	3	B14 4478	AT&T
97.00	97.00	1	Low Profile Platformw/	AT&T
97.00	97.00	1	Ring Mount	AT&T
91.00	91.00	3	Dish Mount	Clearwire
91.00	91.00	3	VHLP2.5	Clearwire
91.00	91.00	3	Horizon DUO Radios	Clearwire
91.00	91.00	3	RRU	Clearwire
87.00	87.00	3	RRUS-11 1900 MHz	Sprint
87.00	87.00	3	RRUS-11 800 MHz	Sprint
87.00	87.00	3	APXVSPP18-C-A20	Sprint
87.00	87.00	3	APXVTM14-C-120	Sprint
87.00	87.00	3	800MHz Filter	Sprint
87.00	87.00	3	TD-RRH8x20-25	Sprint
87.00	87.00	4	ACU-A20-N	Sprint
87.00	87.00	1	Low Profile	Sprint
75.00	75.00	1	Standoff Mount	
75.00	75.00	1	GPS	



Linear Appurtenances

Elev From (ft)	Elev To (ft)	Placement	Description	Carrier
----------------	--------------	-----------	-------------	---------

Structure: CT01498-S-SBA

Type: Stepped
Site Name: Avon
Height: 105.00 (ft)
Base Elev: 0.00 (ft)

Base Shape: Round
Taper: 0.00000

5/4/2022

Page: 3



0.00	105.00	Inside	1 1/4" Hybrid	T-Mobile
0.00	105.00	Inside	1 5/8" Coax	T-Mobile
0.00	105.00	Inside	1 5/8" Fiber	T-Mobile
0.00	105.00	Inside	7/8" Coax	Farmington Woods
0.00	105.00	Outside	Step bolts (ladder)	
0.00	97.00	Inside	1 5/8" Coax	AT&T
0.00	97.00	Inside	1/2" Fiber	AT&T
0.00	97.00	Inside	3" Conduit	AT&T
0.00	97.00	Inside	3/4" DC	AT&T
0.00	91.00	Inside	1/2" Coax	Clearwire
0.00	91.00	Inside	5/16" Coax	Clearwire
0.00	87.00	Inside	1-1/4" Hybrid	Sprint
0.00	75.00	Outside	1/2" Coax	Sprint

Anchor Bolts

Qty	Specifications	Grade (ksi)	Arrangement
48	1.00" A687	105.0	Radial

Base Plate

Thickness (in)	Specifications (in)	Grade (ksi)	Geometry
1.2500	66.1	36.0	Round

Reactions

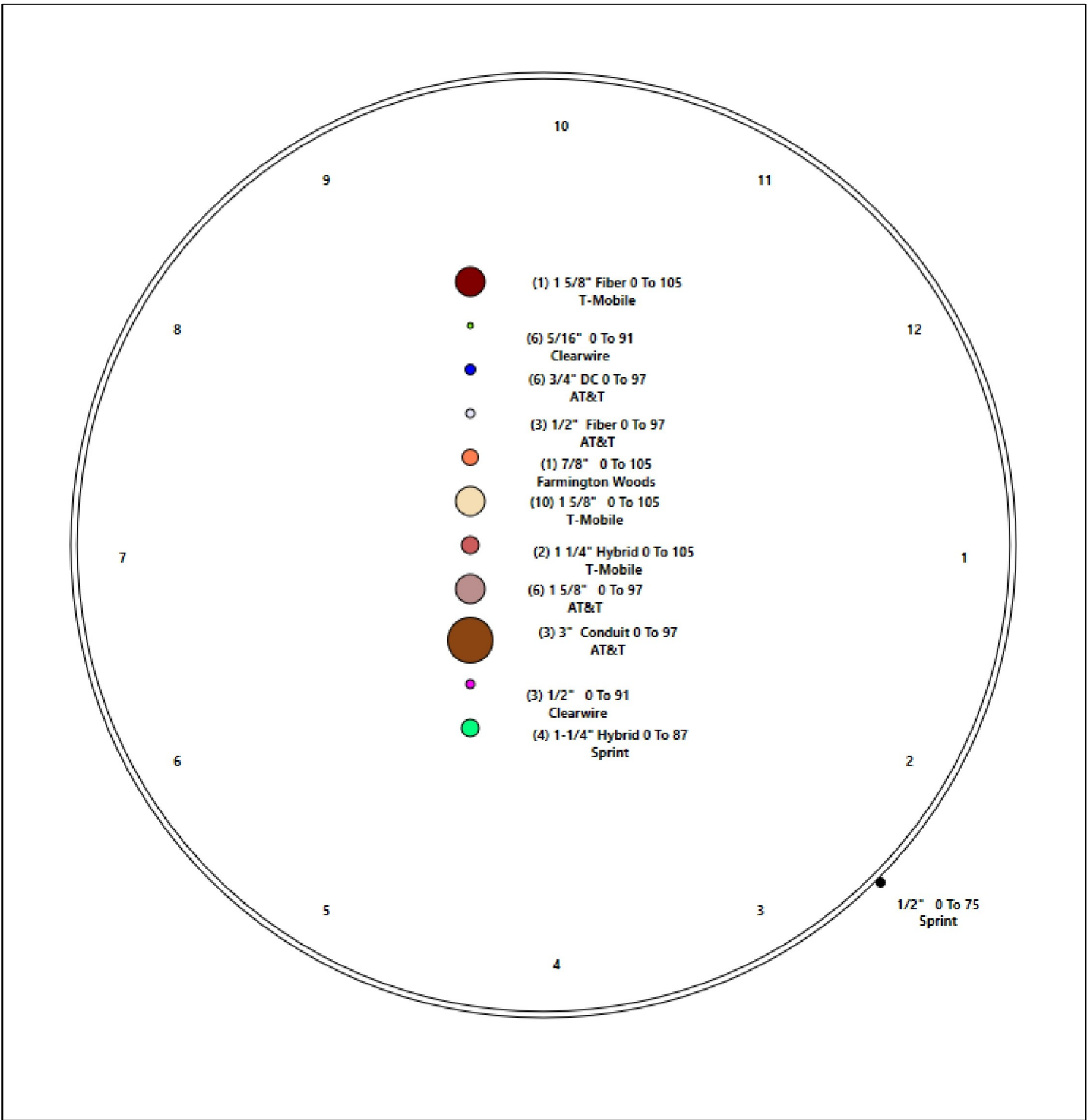
Load Case	Moment (FT-Kips)	Shear (Kips)	Axial (Kips)
1.2D + 1.6W 93 mph Wind	1818.7	21.6	42.5
0.9D + 1.6W 93 mph Wind	1811.7	21.6	31.9
1.2D + 1.0Di + 1.0Wi 50 mph Wind	580.4	7.1	75.3
1.2D + 1.0E	260.4	2.8	42.5
0.9D + 1.0E	259.4	2.8	31.9
1.0D + 1.0W 60 mph Wind	471.9	5.6	35.4

Structure: CT01498-S-SBA - Coax Line Placement

Type: Monopole
Site Name: Avon
Height: 105.00 (ft)

5/4/2022

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Shaft Properties

Structure: CT01498-S-SBA	Code: TIA-222-G	5/4/2022
Site Name: Avon	Exposure: B	
Height: 105.00 (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	R	20.000	0.3750	42		0.00	4,780
2	R	20.000	0.3750	42		0.00	4,299
3	R	20.000	0.3750	42		0.00	3,818
4	R	20.000	0.3750	42		0.00	3,337
5	R	25.000	0.3750	42		0.00	3,570
Total Shaft Weight:							19,806

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	60.00	0.00	70.24	31239.85	0.00	160.00	60.00	20.00	70.24	31239.8	0.00	160.0	0.000000
2	54.00	20.00	63.18	22726.14	0.00	144.00	54.00	40.00	63.18	22726.1	0.00	144.0	0.000000
3	48.00	40.00	56.11	15919.48	0.00	128.00	48.00	60.00	56.11	15919.4	0.00	128.0	0.000000
4	42.00	60.00	49.04	10628.86	0.00	112.00	42.00	80.00	49.04	10628.8	0.00	112.0	0.000000
5	36.00	80.00	41.97	6663.29	0.00	96.00	36.00	105.00	41.97	6663.29	0.00	96.00	0.000000

Load Summary

Structure: CT01498-S-SBA	Code: TIA-222-G	5/4/2022
Site Name: Avon	Exposure: B	
Height: 105.00 (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	105.00	20' Omni	1	55.00	6.00	1.00	248.84	15.129	1.00	0.00	11.00
2	105.00	APXVAARR24_43-U-NA20	3	128.00	20.24	0.70	685.47	22.711	0.71	0.00	5.00
3	105.00	AIR32	3	132.20	6.51	0.87	382.02	8.040	0.89	0.00	5.00
4	105.00	AIR6449 B41	3	103.00	5.65	0.71	279.42	6.873	0.72	0.00	5.00
5	105.00	KRY 112 144/2	3	11.00	0.41	0.75	24.87	1.021	0.77	0.00	5.00
6	105.00	SDX1926Q-43	3	7.90	0.32	0.50	33.18	0.698	0.50	0.00	5.00
7	105.00	4449 B71 + B85	3	73.20	1.97	0.67	147.49	2.703	0.69	0.00	5.00
8	105.00	Radio 4415 Protruding w/o Fan	3	46.30	1.86	0.67	130.88	2.609	0.69	0.00	5.00
9	105.00	MS-HRECP	1	514.00	12.25	1.00	1298.82	27.654	1.00	0.00	0.00
10	105.00	Kicker kit	1	367.00	5.33	1.00	1026.26	12.511	1.00	0.00	0.00
11	105.00	Collar Mount	1	313.00	2.50	1.00	875.25	5.868	1.00	0.00	0.00
12	105.00	Low Profile Platform-Round	1	1500.00	40.00	1.00	3184.06	81.316	1.00	0.00	0.00
13	97.00	DC6-48-60-18-8F	3	31.80	0.92	1.00	110.72	1.479	1.00	0.00	0.00
14	97.00	800-10121	3	44.10	5.15	0.79	190.72	7.839	0.79	0.00	0.00
15	97.00	LGP21401	6	14.10	1.29	0.67	46.01	2.357	0.67	0.00	0.00
16	97.00	782 10250	6	6.40	0.52	0.76	22.72	1.246	0.76	0.00	0.00
17	97.00	Kathrein 800 10965	6	108.60	13.81	0.71	505.00	15.852	0.72	0.00	0.00
18	97.00	B2 B66A 8843	3	70.00	1.64	0.67	128.70	2.299	0.69	0.00	0.00
19	97.00	4449 B5/B12	3	71.00	1.97	0.67	139.14	2.669	0.69	0.00	0.00
20	97.00	HRK14	1	302.36	8.13	1.00	760.38	18.272	1.00	0.00	0.00
21	97.00	PRK-1245 (kicker kit)	1	464.91	9.50	1.00	879.18	22.198	1.00	0.00	0.00
22	97.00	860 10025	6	1.20	0.18	0.50	8.85	0.664	0.50	0.00	0.00
23	97.00	AIR 6419 B77G	3	66.10	3.80	0.76	188.91	4.816	0.76	1.80	0.00
24	97.00	AIR 6449 B77D	3	88.00	4.13	0.85	272.72	5.245	0.85	-1.80	0.00
25	97.00	B14 4478	3	59.90	1.84	0.67	119.89	2.512	0.67	0.00	0.00
26	97.00	Low Profile Platformw/ Mods	1	1600.00	25.00	1.00	3382.16	50.618	1.00	0.00	0.00
27	97.00	Ring Mount	1	350.00	5.00	1.00	724.25	9.455	1.00	0.00	0.00
28	91.00	Dish Mount	3	150.00	3.00	0.75	309.37	5.656	0.75	0.00	0.00
29	91.00	VHLP2.5	3	47.60	8.43	1.00	266.63	10.595	1.00	0.00	0.00
30	91.00	Horizon DUO Radios	3	11.50	0.84	0.76	40.08	1.683	0.76	0.00	0.00
31	91.00	RRU	3	42.00	1.92	0.88	111.54	3.202	0.88	0.00	0.00
32	87.00	RRUS-11 1900 MHz	3	44.00	2.94	0.70	129.13	4.474	0.70	0.00	0.00
33	87.00	RRUS-11 800 MHz	3	54.00	2.94	0.75	149.39	4.474	0.75	0.00	0.00
34	87.00	APXVSP18-C-A20	3	57.00	8.02	0.83	275.25	11.547	0.83	0.00	0.00
35	87.00	APXVTM14-C-120	3	56.00	6.34	0.79	269.42	7.769	0.79	0.00	0.00
36	87.00	800MHz Filter	3	10.00	0.49	0.70	30.26	1.198	0.70	0.00	0.00
37	87.00	TD-RRH8x20-25	3	70.00	4.05	0.69	217.24	5.098	0.69	0.00	0.00
38	87.00	ACU-A20-N	4	1.00	0.14	0.79	6.42	0.515	0.79	0.00	0.00
39	87.00	Low Profile Platform-Round	1	1500.00	22.00	1.00	3152.69	44.300	1.00	0.00	0.00
40	75.00	Standoff Mount	1	20.00	2.00	1.00	40.84	3.737	1.00	0.00	0.00
41	75.00	GPS	1	10.00	1.00	1.00	46.47	1.886	1.00	0.00	0.00
Totals:			112	12,205.87			33,037.73				

Linear Appurtenances

Bottom Elev. (ft)	Top Elev. (ft)	Description	Exposed Width	Exposed
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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		
0.00	105.00	(2) 1 1/4" Hybrid		0.00		Inside					
0.00	105.00	(10) 1 5/8" Coax		0.00		Inside					
0.00	105.00	(1) 1 5/8" Fiber		0.00		Inside					
0.00	105.00	(1) 7/8" Coax		0.00		Inside					
0.00	105.00	(1) Step bolts (ladder)		0.63		Outside					
0.00	97.00	(6) 1 5/8" Coax		0.00		Inside					
0.00	97.00	(3) 1/2" Fiber		0.00		Inside					
0.00	97.00	(3) 3" Conduit		0.00		Inside					
0.00	97.00	(6) 3/4" DC		0.00		Inside					
0.00	91.00	(3) 1/2" Coax		0.00		Inside					
0.00	91.00	(6) 5/16" Coax		0.00		Inside					
0.00	87.00	(4) 1-1/4" Hybrid		0.00		Inside					
0.00	75.00	(1) 1/2" Coax		0.65		Outside					

Shaft Section Properties

Structure: CT01498-S-SBA	Code: TIA-222-G	5/4/2022
Site Name: Avon	Exposure: B	
Height: 105.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Page: 8
Struct Class: II		



Increment Length: 5 (ft)

Elev (ft)	Description	Thick (in)	Dia (in)	Area (in ²)	Ix (in ⁴)	W/t Ratio	D/t Ratio	Fpy (ksi)	S (in ³)	Weight (lb)
0.00		0.3750	60.000	70.244	31239.9	0.00	160.00	34.9	1041.	0.0
5.00		0.3750	60.000	70.244	31239.9	0.00	160.00	34.9	1041.	1195.1
10.00		0.3750	60.000	70.244	31239.9	0.00	160.00	34.9	1041.	1195.1
15.00		0.3750	60.000	70.244	31239.9	0.00	160.00	34.9	1041.	1195.1
20.00	Top - Section 1	0.3750	60.000	70.244	31239.9	0.00	160.00	34.9	1041.	1195.1
20.00	Bot - Section 2	0.3750	54.000	63.175	22726.1	0.00	160.00	35.6	841.7	
25.00		0.3750	54.000	63.175	22726.1	0.00	144.00	35.6	841.7	1074.9
30.00		0.3750	54.000	63.175	22726.1	0.00	144.00	35.6	841.7	1074.9
35.00		0.3750	54.000	63.175	22726.1	0.00	144.00	35.6	841.7	1074.9
40.00	Top - Section 2	0.3750	54.000	63.175	22726.1	0.00	144.00	35.6	841.7	1074.9
40.00	Bot - Section 3	0.3750	48.000	56.107	15919.5	0.00	144.00	36.6	663.3	
45.00		0.3750	48.000	56.107	15919.5	0.00	128.00	36.6	663.3	954.6
50.00		0.3750	48.000	56.107	15919.5	0.00	128.00	36.6	663.3	954.6
55.00		0.3750	48.000	56.107	15919.5	0.00	128.00	36.6	663.3	954.6
60.00	Top - Section 3	0.3750	48.000	56.107	15919.5	0.00	128.00	36.6	663.3	954.6
60.00	Bot - Section 4	0.3750	42.000	49.038	10628.9	0.00	128.00	37.8	506.1	
65.00		0.3750	42.000	49.038	10628.9	0.00	112.00	37.8	506.1	834.3
70.00		0.3750	42.000	49.038	10628.9	0.00	112.00	37.8	506.1	834.3
75.00		0.3750	42.000	49.038	10628.9	0.00	112.00	37.8	506.1	834.3
80.00	Top - Section 4	0.3750	42.000	49.038	10628.9	0.00	112.00	37.8	506.1	834.3
80.00	Bot - Section 5	0.3750	36.000	41.970	6663.3	0.00	112.00	39.4	370.2	
85.00		0.3750	36.000	41.970	6663.3	0.00	96.00	39.4	370.2	714.1
87.00		0.3750	36.000	41.970	6663.3	0.00	96.00	39.4	370.2	285.6
90.00		0.3750	36.000	41.970	6663.3	0.00	96.00	39.4	370.2	428.4
91.00		0.3750	36.000	41.970	6663.3	0.00	96.00	39.4	370.2	142.8
95.00		0.3750	36.000	41.970	6663.3	0.00	96.00	39.4	370.2	571.3
97.00		0.3750	36.000	41.970	6663.3	0.00	96.00	39.4	370.2	285.6
100.00		0.3750	36.000	41.970	6663.3	0.00	96.00	39.4	370.2	428.4
105.00		0.3750	36.000	41.970	6663.3	0.00	96.00	39.4	370.2	714.1

19806.0

Wind Loading - Shaft

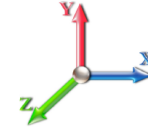
Structure: CT01498-S-SBA	Code: TIA-222-G	5/4/2022
Site Name: Avon	Exposure: B	
Height: 105.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 1.2D + 1.6W 93 mph Wind

Dead Load Factor 1.20
Wind Load Factor 1.60



Iterations 16

Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.70	14.724	16.20	389.05	0.600	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.70	14.724	16.20	389.05	0.600	0.000	5.00	25.000	15.00	388.7	0.0	1434.1
10.00		1.00	0.70	14.724	16.20	389.05	0.600	0.000	5.00	25.000	15.00	388.7	0.0	1434.1
15.00		1.00	0.70	14.724	16.20	389.05	0.600	0.000	5.00	25.000	15.00	388.7	0.0	1434.1
20.00	Top - Section 1	1.00	0.70	14.724	16.20	389.05	0.600	0.000	5.00	25.000	15.00	388.7	0.0	1434.1
25.00		1.00	0.70	14.724	16.20	350.14	0.600	0.000	5.00	22.500	13.50	349.8	0.0	1289.8
30.00		1.00	0.70	14.736	16.21	350.29	0.600	0.000	5.00	22.500	13.50	350.1	0.0	1289.8
35.00		1.00	0.73	15.400	16.94	358.09	0.600	0.000	5.00	22.500	13.50	365.9	0.0	1289.8
40.00	Top - Section 2	1.00	0.76	15.999	17.60	364.99	0.600	0.000	5.00	22.500	13.50	380.1	0.0	1289.8
45.00		1.00	0.79	16.546	18.20	329.94	0.600	0.000	5.00	20.000	12.00	349.5	0.0	1145.5
50.00		1.00	0.81	17.052	18.76	334.94	0.600	0.000	5.00	20.000	12.00	360.1	0.0	1145.5
55.00		1.00	0.83	17.523	19.28	339.53	0.600	0.000	5.00	20.000	12.00	370.1	0.0	1145.5
60.00	Top - Section 3	1.00	0.85	17.964	19.76	343.78	0.600	0.000	5.00	20.000	12.00	379.4	0.0	1145.5
65.00		1.00	0.87	18.380	20.22	304.27	0.600	0.000	5.00	17.500	10.50	339.7	0.0	1001.2
70.00		1.00	0.89	18.773	20.65	307.50	0.600	0.000	5.00	17.500	10.50	346.9	0.0	1001.2
75.00	Appurtenance(s)	1.00	0.91	19.147	21.06	310.55	0.600	0.000	5.00	17.500	10.50	353.8	0.0	1001.2
80.00	Top - Section 4	1.00	0.93	19.503	21.45	313.43	0.600	0.000	5.00	17.500	10.50	360.4	0.0	1001.2
85.00		1.00	0.94	19.844	21.83	270.99	0.600	0.000	5.00	15.000	9.00	314.3	0.0	856.9
87.00	Appurtenance(s)	1.00	0.95	19.976	21.97	271.89	0.600	0.000	2.00	6.000	3.60	126.6	0.0	342.8
90.00		1.00	0.96	20.170	22.19	273.21	0.600	0.000	3.00	9.000	5.40	191.7	0.0	514.1
91.00	Appurtenance(s)	1.00	0.96	20.234	22.26	273.64	0.600	0.000	1.00	3.000	1.80	64.1	0.0	171.4
95.00		1.00	0.97	20.484	22.53	275.33	0.600	0.000	4.00	12.000	7.20	259.6	0.0	685.5
97.00	Appurtenance(s)	1.00	0.98	20.607	22.67	276.15	0.600	0.000	2.00	6.000	3.60	130.6	0.0	342.8
100.00		1.00	0.99	20.787	22.87	277.35	0.600	0.000	3.00	9.000	5.40	197.6	0.0	514.1
105.00	Appurtenance(s)	1.00	1.00	21.079	23.19	279.29	0.600	0.000	5.00	15.000	9.00	333.9	0.0	856.9
Totals:									105.00			7,479.1		23,767.2

Discrete Appurtenance Forces

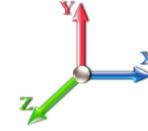
Structure: CT01498-S-SBA	Code: TIA-222-G	5/4/2022
Site Name: Avon	Exposure: B	
Height: 105.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 1.2D + 1.6W 93 mph Wind

Dead Load Factor 1.20
Wind Load Factor 1.60



Iterations 16

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	Orient Factor 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	105.00	SDX1926Q-43	3	21.361	23.497	0.45	0.90	0.43	28.44	0.000	5.000	16.24	0.00	81.20
2	105.00	20' Omni	1	21.687	23.856	1.00	1.00	6.00	66.00	0.000	11.000	229.02	0.00	2519.19
3	105.00	APXVAARR24_43-U-NA2	3	21.361	23.497	0.70	1.00	42.50	460.80	0.000	5.000	1597.93	0.00	7989.64
4	105.00	AIR32	3	21.361	23.497	0.87	1.00	16.99	475.92	0.000	5.000	638.78	0.00	3193.88
5	105.00	AIR6449 B41	3	21.361	23.497	0.71	1.00	12.03	370.80	0.000	5.000	452.43	0.00	2262.17
6	105.00	KRY 112 144/2	3	21.361	23.497	0.68	0.90	0.83	39.60	0.000	5.000	31.21	0.00	156.07
7	105.00	Low Profile	1	21.079	23.186	1.00	1.00	40.00	1800.00	0.000	0.000	1483.93	0.00	0.00
8	105.00	Radio 4415 Protruding w/o	3	21.361	23.497	0.60	0.90	3.36	166.68	0.000	5.000	126.50	0.00	632.48
9	105.00	MS-HRECP	1	21.079	23.186	1.00	1.00	12.25	616.80	0.000	0.000	454.45	0.00	0.00
10	105.00	Kicker kit	1	21.079	23.186	1.00	1.00	5.33	440.40	0.000	0.000	197.73	0.00	0.00
11	105.00	Collar Mount	1	21.079	23.186	1.00	1.00	2.50	375.60	0.000	0.000	92.75	0.00	0.00
12	105.00	4449 B71 + B85	3	21.361	23.497	0.60	0.90	3.56	263.52	0.000	5.000	133.98	0.00	669.89
13	97.00	AIR 6419 B77G	3	20.607	22.667	0.57	0.75	6.50	237.96	3.300	0.000	235.67	486.07	0.00
14	97.00	HRK14	1	20.607	22.667	1.00	1.00	8.13	362.83	0.000	0.000	294.86	0.00	0.00
15	97.00	PRK-1245 (kicker kit)	1	20.607	22.667	1.00	1.00	9.50	557.89	0.000	0.000	344.54	0.00	0.00
16	97.00	860 10025	6	20.607	22.667	0.38	0.75	0.41	8.64	0.000	0.000	14.69	0.00	0.00
17	97.00	Low Profile Platformw/	1	20.607	22.667	1.00	1.00	25.00	1920.00	0.000	0.000	906.69	0.00	0.00
18	97.00	AIR 6449 B77D	3	20.607	22.667	0.64	0.75	7.90	316.80	-0.300	0.000	286.47	-53.71	0.00
19	97.00	B14 4478	3	20.607	22.667	0.50	0.75	2.77	215.64	0.000	0.000	100.60	0.00	0.00
20	97.00	Ring Mount	1	20.607	22.667	1.00	1.00	5.00	420.00	0.000	0.000	181.34	0.00	0.00
21	97.00	4449 B5/B12	3	20.607	22.667	0.50	0.75	2.97	255.60	0.000	0.000	107.71	0.00	0.00
22	97.00	Kathrein 800 10965	6	20.607	22.667	0.53	0.75	44.12	781.92	0.000	0.000	1600.24	0.00	0.00
23	97.00	782 10250	6	20.607	22.667	0.57	0.75	1.78	46.08	0.000	0.000	64.50	0.00	0.00
24	97.00	LGP21401	6	20.607	22.667	0.50	0.75	3.89	101.52	0.000	0.000	141.06	0.00	0.00
25	97.00	800-10121	3	20.607	22.667	0.59	0.75	9.15	158.76	0.000	0.000	332.00	0.00	0.00
26	97.00	DC6-48-60-18-8F	3	20.607	22.667	1.00	1.00	2.76	114.48	0.000	0.000	100.10	0.00	0.00
27	97.00	B2 B66A 8843	3	20.607	22.667	0.50	0.75	2.47	252.00	0.000	0.000	89.66	0.00	0.00
28	91.00	VHLP2.5	3	20.234	22.258	1.00	1.00	25.29	171.36	0.000	0.000	900.63	0.00	0.00
29	91.00	Dish Mount	3	20.234	22.258	0.56	0.75	5.06	540.00	0.000	0.000	180.29	0.00	0.00
30	91.00	RRU	3	20.234	22.258	0.88	1.00	5.07	151.20	0.000	0.000	180.51	0.00	0.00
31	91.00	Horizon DUO Radios	3	20.234	22.258	0.76	1.00	1.92	41.40	0.000	0.000	68.20	0.00	0.00
32	87.00	APXVTM14-C-120	3	19.976	21.974	0.63	0.80	12.02	201.60	0.000	0.000	422.62	0.00	0.00
33	87.00	RRUS-11 1900 MHz	3	19.976	21.974	0.56	0.80	4.94	158.40	0.000	0.000	173.65	0.00	0.00
34	87.00	RRUS-11 800 MHz	3	19.976	21.974	0.60	0.80	5.29	194.40	0.000	0.000	186.05	0.00	0.00
35	87.00	APXVSPP18-C-A20	3	19.976	21.974	0.66	0.80	15.98	205.20	0.000	0.000	561.67	0.00	0.00
36	87.00	800MHz Filter	3	19.976	21.974	0.56	0.80	0.82	36.00	0.000	0.000	28.94	0.00	0.00
37	87.00	TD-RRH8x20-25	3	19.976	21.974	0.55	0.80	6.71	252.00	0.000	0.000	235.80	0.00	0.00
38	87.00	ACU-A20-N	4	19.976	21.974	0.63	0.80	0.35	4.80	0.000	0.000	12.44	0.00	0.00
39	87.00	Low Profile	1	19.976	21.974	1.00	1.00	22.00	1800.00	0.000	0.000	773.47	0.00	0.00
40	75.00	GPS	1	19.147	21.061	1.00	1.00	1.00	12.00	0.000	0.000	33.70	0.00	0.00
41	75.00	Standoff Mount	1	19.147	21.061	1.00	1.00	2.00	24.00	0.000	0.000	67.40	0.00	0.00

Totals: 14,647.04 14,080.45

Total Applied Force Summary

Structure: CT01498-S-SBA	Code: TIA-222-G	5/4/2022
Site Name: Avon	Exposure: B	
Height: 105.00 (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 93 mph Wind

Dead Load Factor 1.20
Wind Load Factor 1.60



Iterations 16

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		388.72	1642.09	0.00	0.00
10.00		388.72	1642.09	0.00	0.00
15.00		388.72	1642.09	0.00	0.00
20.00		388.72	1642.09	0.00	0.00
25.00		349.84	1497.77	0.00	0.00
30.00		350.14	1497.77	0.00	0.00
35.00		365.90	1497.77	0.00	0.00
40.00		380.13	1497.77	0.00	0.00
45.00		349.46	1353.45	0.00	0.00
50.00		360.14	1353.45	0.00	0.00
55.00		370.08	1353.45	0.00	0.00
60.00		379.40	1353.45	0.00	0.00
65.00		339.65	1209.13	0.00	0.00
70.00		346.92	1209.13	0.00	0.00
75.00	(2) attachments	454.92	1245.13	0.00	0.00
80.00		360.41	1208.17	0.00	0.00
85.00		314.32	1063.86	0.00	0.00
87.00	(23) attachments	2521.22	3277.94	0.00	0.00
90.00		191.70	624.58	0.00	0.00
91.00	(12) attachments	1393.74	1112.15	0.00	0.00
95.00		259.58	828.16	0.00	0.00
97.00	(49) attachments	4930.69	6164.20	432.35	0.00
100.00		197.56	569.07	0.00	0.00
105.00	(26) attachments	5788.84	6053.00	0.00	17504.52
	Totals:	21,559.52	42,537.76	432.35	17,504.52

Linear Appurtenance Segment Forces (Factored)

Structure: CT01498-S-SBA	Code: TIA-222-G	5/4/2022
Site Name: Avon	Exposure: B	
Height: 105.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II

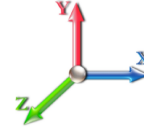


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Load Case: 1.2D + 1.6W 93 mph Wind

Iterations 16

Dead Load Factor 1.20
Wind Load Factor 1.60



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	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.021	0.000	14.724	0.00	6.24
5.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.021	0.000	14.724	0.00	0.96
10.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.021	0.000	14.724	0.00	6.24
10.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.021	0.000	14.724	0.00	0.96
15.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.021	0.000	14.724	0.00	6.24
15.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.021	0.000	14.724	0.00	0.96
20.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.021	0.000	14.724	0.00	6.24
20.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.021	0.000	14.724	0.00	0.96
25.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.024	0.000	14.724	0.00	6.24
25.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.024	0.000	14.724	0.00	0.96
30.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.024	0.000	14.736	0.00	6.24
30.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.024	0.000	14.736	0.00	0.96
35.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.024	0.000	15.400	0.00	6.24
35.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.024	0.000	15.400	0.00	0.96
40.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.024	0.000	15.999	0.00	6.24
40.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.024	0.000	15.999	0.00	0.96
45.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.027	0.000	16.546	0.00	6.24
45.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.027	0.000	16.546	0.00	0.96
50.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.027	0.000	17.052	0.00	6.24
50.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.027	0.000	17.052	0.00	0.96
55.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.027	0.000	17.523	0.00	6.24
55.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.027	0.000	17.523	0.00	0.96
60.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.027	0.000	17.964	0.00	6.24
60.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.027	0.000	17.964	0.00	0.96
65.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.030	0.000	18.380	0.00	6.24
65.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.030	0.000	18.380	0.00	0.96
70.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.030	0.000	18.773	0.00	6.24
70.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.030	0.000	18.773	0.00	0.96
75.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.030	0.000	19.147	0.00	6.24
75.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.030	0.000	19.147	0.00	0.96
80.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.015	0.000	19.503	0.00	6.24
85.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.017	0.000	19.844	0.00	6.24
87.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.018	0.000	19.976	0.00	2.50
90.00	Step bolts (ladder)	Yes	3.00	0.000	0.63	0.16	0.00	0.018	0.000	20.170	0.00	3.74
91.00	Step bolts (ladder)	Yes	1.00	0.000	0.63	0.05	0.00	0.018	0.000	20.234	0.00	1.25
95.00	Step bolts (ladder)	Yes	4.00	0.000	0.63	0.21	0.00	0.018	0.000	20.484	0.00	4.99
97.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.018	0.000	20.607	0.00	2.50
100.00	Step bolts (ladder)	Yes	3.00	0.000	0.63	0.16	0.00	0.018	0.000	20.787	0.00	3.74
105.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.017	0.000	21.079	0.00	6.24
Totals:											0.0	145.4

Calculated Forces

Structure: CT01498-S-SBA	Code: TIA-222-G	5/4/2022
Site Name: Avon	Exposure: B	
Height: 105.00 (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 93 mph Wind	Iterations 16
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	-42.52	-21.59	-0.43	-1818.7	0.00	1818.75	2204.43	1102.21	5439.15	3573.20	0.00	0.000	0.000	0.529
5.00	-40.85	-21.26	-0.43	-1710.8	0.00	1710.80	2204.43	1102.21	5439.15	3573.20	0.04	-0.080	0.000	0.498
10.00	-39.18	-20.91	-0.43	-1604.5	0.00	1604.52	2204.43	1102.21	5439.15	3573.20	0.17	-0.156	0.000	0.467
15.00	-37.52	-20.56	-0.43	-1499.9	0.00	1499.95	2204.43	1102.21	5439.15	3573.20	0.37	-0.227	0.000	0.437
20.00	-35.86	-20.21	-0.43	-1397.1	0.00	1397.13	2204.43	1102.21	5439.15	3573.20	0.64	-0.292	0.000	0.408
20.00	-35.86	-20.21	-0.43	-1397.1	0.00	1397.13	2026.00	1013.00	4492.72	2914.55	0.64	-0.292	0.000	0.497
25.00	-34.34	-19.89	-0.43	-1296.1	0.00	1296.10	2026.00	1013.00	4492.72	2914.55	0.98	-0.354	0.000	0.462
30.00	-32.81	-19.57	-0.43	-1196.6	0.00	1196.64	2026.00	1013.00	4492.72	2914.55	1.40	-0.432	0.000	0.427
35.00	-31.30	-19.23	-0.43	-1098.7	0.00	1098.77	2026.00	1013.00	4492.72	2914.55	1.89	-0.504	0.000	0.393
40.00	-29.78	-18.87	-0.43	-1002.6	0.00	1002.61	2026.00	1013.00	4492.72	2914.55	2.45	-0.569	0.000	0.359
40.00	-29.78	-18.87	-0.43	-1002.6	0.00	1002.61	1847.49	923.75	3635.30	2322.74	2.45	-0.569	0.000	0.448
45.00	-28.41	-18.54	-0.43	-908.25	0.00	908.25	1847.49	923.75	3635.30	2322.74	3.08	-0.629	0.000	0.407
50.00	-27.04	-18.20	-0.43	-815.54	0.00	815.54	1847.49	923.75	3635.30	2322.74	3.78	-0.706	0.000	0.366
55.00	-25.67	-17.84	-0.43	-724.54	0.00	724.54	1847.49	923.75	3635.30	2322.74	4.56	-0.775	0.000	0.326
60.00	-24.30	-17.47	-0.43	-635.33	0.00	635.33	1847.49	923.75	3635.30	2322.74	5.41	-0.836	0.000	0.287
60.00	-24.30	-17.47	-0.43	-635.33	0.00	635.33	1668.87	834.44	2866.90	1797.79	5.41	-0.836	0.000	0.368
65.00	-23.08	-17.13	-0.43	-547.99	0.00	547.99	1668.87	834.44	2866.90	1797.79	6.31	-0.889	0.000	0.319
70.00	-21.86	-16.79	-0.43	-462.32	0.00	462.32	1668.87	834.44	2866.90	1797.79	7.28	-0.956	0.000	0.271
75.00	-20.61	-16.33	-0.43	-378.36	0.00	378.36	1668.87	834.44	2866.90	1797.79	8.31	-1.013	0.000	0.223
80.00	-19.40	-15.96	-0.43	-296.70	-0.01	296.70	1668.87	834.44	2866.90	1797.79	9.40	-1.058	-0.001	0.177
80.00	-19.40	-15.96	-0.43	-296.70	-0.01	296.70	1490.10	745.05	2187.51	1339.68	9.40	-1.058	-0.001	0.235
85.00	-18.33	-15.64	-0.43	-216.87	-0.01	216.87	1490.10	745.05	2187.51	1339.68	10.53	-1.092	-0.001	0.175
87.00	-15.10	-13.06	-0.43	-185.60	-0.01	185.60	1490.10	745.05	2187.51	1339.68	10.99	-1.109	-0.001	0.149
90.00	-14.47	-12.86	-0.43	-146.42	-0.01	146.42	1490.10	745.05	2187.51	1339.68	11.69	-1.131	-0.001	0.119
91.00	-13.39	-11.45	-0.43	-133.56	-0.01	133.56	1490.10	745.05	2187.51	1339.68	11.93	-1.137	-0.001	0.109
95.00	-12.56	-11.17	-0.43	-87.77	-0.01	87.77	1490.10	745.05	2187.51	1339.68	12.89	-1.155	-0.001	0.074
97.00	-6.50	-6.12	0.00	-65.42	0.00	65.42	1490.10	745.05	2187.51	1339.68	13.38	-1.162	-0.001	0.053
100.00	-5.93	-5.91	0.00	-47.06	0.00	47.06	1490.10	745.05	2187.51	1339.68	14.11	-1.169	-0.001	0.039
105.00	0.00	-5.79	0.00	-17.50	0.00	17.50	1490.10	745.05	2187.51	1339.68	15.34	-1.176	-0.001	0.013

Wind Loading - Shaft

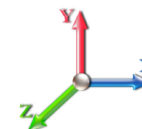
Structure: CT01498-S-SBA	Code: TIA-222-G	5/4/2022
Site Name: Avon	Exposure: B	
Height: 105.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Page: 14
	Struct Class: II	



Load Case: 0.9D + 1.6W 93 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



Iterations 16

Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.70	14.724	16.20	389.05	0.600	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.70	14.724	16.20	389.05	0.600	0.000	5.00	25.000	15.00	388.7	0.0	1075.6
10.00		1.00	0.70	14.724	16.20	389.05	0.600	0.000	5.00	25.000	15.00	388.7	0.0	1075.6
15.00		1.00	0.70	14.724	16.20	389.05	0.600	0.000	5.00	25.000	15.00	388.7	0.0	1075.6
20.00	Top - Section 1	1.00	0.70	14.724	16.20	389.05	0.600	0.000	5.00	25.000	15.00	388.7	0.0	1075.6
25.00		1.00	0.70	14.724	16.20	350.14	0.600	0.000	5.00	22.500	13.50	349.8	0.0	967.4
30.00		1.00	0.70	14.736	16.21	350.29	0.600	0.000	5.00	22.500	13.50	350.1	0.0	967.4
35.00		1.00	0.73	15.400	16.94	358.09	0.600	0.000	5.00	22.500	13.50	365.9	0.0	967.4
40.00	Top - Section 2	1.00	0.76	15.999	17.60	364.99	0.600	0.000	5.00	22.500	13.50	380.1	0.0	967.4
45.00		1.00	0.79	16.546	18.20	329.94	0.600	0.000	5.00	20.000	12.00	349.5	0.0	859.1
50.00		1.00	0.81	17.052	18.76	334.94	0.600	0.000	5.00	20.000	12.00	360.1	0.0	859.1
55.00		1.00	0.83	17.523	19.28	339.53	0.600	0.000	5.00	20.000	12.00	370.1	0.0	859.1
60.00	Top - Section 3	1.00	0.85	17.964	19.76	343.78	0.600	0.000	5.00	20.000	12.00	379.4	0.0	859.1
65.00		1.00	0.87	18.380	20.22	304.27	0.600	0.000	5.00	17.500	10.50	339.7	0.0	750.9
70.00		1.00	0.89	18.773	20.65	307.50	0.600	0.000	5.00	17.500	10.50	346.9	0.0	750.9
75.00	Appurtenance(s)	1.00	0.91	19.147	21.06	310.55	0.600	0.000	5.00	17.500	10.50	353.8	0.0	750.9
80.00	Top - Section 4	1.00	0.93	19.503	21.45	313.43	0.600	0.000	5.00	17.500	10.50	360.4	0.0	750.9
85.00		1.00	0.94	19.844	21.83	270.99	0.600	0.000	5.00	15.000	9.00	314.3	0.0	642.7
87.00	Appurtenance(s)	1.00	0.95	19.976	21.97	271.89	0.600	0.000	2.00	6.000	3.60	126.6	0.0	257.1
90.00		1.00	0.96	20.170	22.19	273.21	0.600	0.000	3.00	9.000	5.40	191.7	0.0	385.6
91.00	Appurtenance(s)	1.00	0.96	20.234	22.26	273.64	0.600	0.000	1.00	3.000	1.80	64.1	0.0	128.5
95.00		1.00	0.97	20.484	22.53	275.33	0.600	0.000	4.00	12.000	7.20	259.6	0.0	514.1
97.00	Appurtenance(s)	1.00	0.98	20.607	22.67	276.15	0.600	0.000	2.00	6.000	3.60	130.6	0.0	257.1
100.00		1.00	0.99	20.787	22.87	277.35	0.600	0.000	3.00	9.000	5.40	197.6	0.0	385.6
105.00	Appurtenance(s)	1.00	1.00	21.079	23.19	279.29	0.600	0.000	5.00	15.000	9.00	333.9	0.0	642.7
Totals:									105.00			7,479.1		17,825.4

Discrete Appurtenance Forces

Structure: CT01498-S-SBA
Site Name: Avon
Height: 105.00 (ft)
Base Elev: 0.000 (ft)
Gh: 1.1

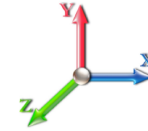
Code: TIA-222-G
Exposure: B
Crest Height: 0.00
Site Class: D - Stiff Soil
Struct Class: II

5/4/2022
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Load Case: 0.9D + 1.6W 93 mph Wind

Dead Load Factor 0.90
Wind Load Factor 1.60



Iterations 16

No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	Orient Factor 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	105.00	SDX1926Q-43	3	21.361	23.497	0.45	0.90	0.43	21.33	0.000	5.000	16.24	0.00	81.20
2	105.00	20' Omni	1	21.687	23.856	1.00	1.00	6.00	49.50	0.000	11.000	229.02	0.00	2519.19
3	105.00	APXVAARR24_43-U-NA2	3	21.361	23.497	0.70	1.00	42.50	345.60	0.000	5.000	1597.93	0.00	7989.64
4	105.00	AIR32	3	21.361	23.497	0.87	1.00	16.99	356.94	0.000	5.000	638.78	0.00	3193.88
5	105.00	AIR6449 B41	3	21.361	23.497	0.71	1.00	12.03	278.10	0.000	5.000	452.43	0.00	2262.17
6	105.00	KRY 112 144/2	3	21.361	23.497	0.68	0.90	0.83	29.70	0.000	5.000	31.21	0.00	156.07
7	105.00	Low Profile	1	21.079	23.186	1.00	1.00	40.00	1350.00	0.000	0.000	1483.93	0.00	0.00
8	105.00	Radio 4415 Protruding w/o	3	21.361	23.497	0.60	0.90	3.36	125.01	0.000	5.000	126.50	0.00	632.48
9	105.00	MS-HRECP	1	21.079	23.186	1.00	1.00	12.25	462.60	0.000	0.000	454.45	0.00	0.00
10	105.00	Kicker kit	1	21.079	23.186	1.00	1.00	5.33	330.30	0.000	0.000	197.73	0.00	0.00
11	105.00	Collar Mount	1	21.079	23.186	1.00	1.00	2.50	281.70	0.000	0.000	92.75	0.00	0.00
12	105.00	4449 B71 + B85	3	21.361	23.497	0.60	0.90	3.56	197.64	0.000	5.000	133.98	0.00	669.89
13	97.00	AIR 6419 B77G	3	20.607	22.667	0.57	0.75	6.50	178.47	3.300	0.000	235.67	486.07	0.00
14	97.00	HRK14	1	20.607	22.667	1.00	1.00	8.13	272.12	0.000	0.000	294.86	0.00	0.00
15	97.00	PRK-1245 (kicker kit)	1	20.607	22.667	1.00	1.00	9.50	418.42	0.000	0.000	344.54	0.00	0.00
16	97.00	860 10025	6	20.607	22.667	0.38	0.75	0.41	6.48	0.000	0.000	14.69	0.00	0.00
17	97.00	Low Profile Platformw/	1	20.607	22.667	1.00	1.00	25.00	1440.00	0.000	0.000	906.69	0.00	0.00
18	97.00	AIR 6449 B77D	3	20.607	22.667	0.64	0.75	7.90	237.60	-0.300	0.000	286.47	-53.71	0.00
19	97.00	B14 4478	3	20.607	22.667	0.50	0.75	2.77	161.73	0.000	0.000	100.60	0.00	0.00
20	97.00	Ring Mount	1	20.607	22.667	1.00	1.00	5.00	315.00	0.000	0.000	181.34	0.00	0.00
21	97.00	4449 B5/B12	3	20.607	22.667	0.50	0.75	2.97	191.70	0.000	0.000	107.71	0.00	0.00
22	97.00	Kathrein 800 10965	6	20.607	22.667	0.53	0.75	44.12	586.44	0.000	0.000	1600.24	0.00	0.00
23	97.00	782 10250	6	20.607	22.667	0.57	0.75	1.78	34.56	0.000	0.000	64.50	0.00	0.00
24	97.00	LGP21401	6	20.607	22.667	0.50	0.75	3.89	76.14	0.000	0.000	141.06	0.00	0.00
25	97.00	800-10121	3	20.607	22.667	0.59	0.75	9.15	119.07	0.000	0.000	332.00	0.00	0.00
26	97.00	DC6-48-60-18-8F	3	20.607	22.667	1.00	1.00	2.76	85.86	0.000	0.000	100.10	0.00	0.00
27	97.00	B2 B66A 8843	3	20.607	22.667	0.50	0.75	2.47	189.00	0.000	0.000	89.66	0.00	0.00
28	91.00	VHLP2.5	3	20.234	22.258	1.00	1.00	25.29	128.52	0.000	0.000	900.63	0.00	0.00
29	91.00	Dish Mount	3	20.234	22.258	0.56	0.75	5.06	405.00	0.000	0.000	180.29	0.00	0.00
30	91.00	RRU	3	20.234	22.258	0.88	1.00	5.07	113.40	0.000	0.000	180.51	0.00	0.00
31	91.00	Horizon DUO Radios	3	20.234	22.258	0.76	1.00	1.92	31.05	0.000	0.000	68.20	0.00	0.00
32	87.00	APXVTM14-C-120	3	19.976	21.974	0.63	0.80	12.02	151.20	0.000	0.000	422.62	0.00	0.00
33	87.00	RRUS-11 1900 MHz	3	19.976	21.974	0.56	0.80	4.94	118.80	0.000	0.000	173.65	0.00	0.00
34	87.00	RRUS-11 800 MHz	3	19.976	21.974	0.60	0.80	5.29	145.80	0.000	0.000	186.05	0.00	0.00
35	87.00	APXVSPP18-C-A20	3	19.976	21.974	0.66	0.80	15.98	153.90	0.000	0.000	561.67	0.00	0.00
36	87.00	800MHz Filter	3	19.976	21.974	0.56	0.80	0.82	27.00	0.000	0.000	28.94	0.00	0.00
37	87.00	TD-RRH8x20-25	3	19.976	21.974	0.55	0.80	6.71	189.00	0.000	0.000	235.80	0.00	0.00
38	87.00	ACU-A20-N	4	19.976	21.974	0.63	0.80	0.35	3.60	0.000	0.000	12.44	0.00	0.00
39	87.00	Low Profile	1	19.976	21.974	1.00	1.00	22.00	1350.00	0.000	0.000	773.47	0.00	0.00
40	75.00	GPS	1	19.147	21.061	1.00	1.00	1.00	9.00	0.000	0.000	33.70	0.00	0.00
41	75.00	Standoff Mount	1	19.147	21.061	1.00	1.00	2.00	18.00	0.000	0.000	67.40	0.00	0.00

Totals: 10,985.28 14,080.45

Total Applied Force Summary

Structure: CT01498-S-SBA	Code: TIA-222-G	5/4/2022
Site Name: Avon	Exposure: B	
Height: 105.00 (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 93 mph Wind

Dead Load Factor 0.90
Wind Load Factor 1.60



Iterations 16

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		388.72	1231.56	0.00	0.00
10.00		388.72	1231.56	0.00	0.00
15.00		388.72	1231.56	0.00	0.00
20.00		388.72	1231.56	0.00	0.00
25.00		349.84	1123.33	0.00	0.00
30.00		350.14	1123.33	0.00	0.00
35.00		365.90	1123.33	0.00	0.00
40.00		380.13	1123.33	0.00	0.00
45.00		349.46	1015.09	0.00	0.00
50.00		360.14	1015.09	0.00	0.00
55.00		370.08	1015.09	0.00	0.00
60.00		379.40	1015.09	0.00	0.00
65.00		339.65	906.85	0.00	0.00
70.00		346.92	906.85	0.00	0.00
75.00	(2) attachments	454.92	933.85	0.00	0.00
80.00		360.41	906.13	0.00	0.00
85.00		314.32	797.89	0.00	0.00
87.00	(23) attachments	2521.22	2458.46	0.00	0.00
90.00		191.70	468.43	0.00	0.00
91.00	(12) attachments	1393.74	834.11	0.00	0.00
95.00		259.58	621.12	0.00	0.00
97.00	(49) attachments	4930.69	4623.15	432.35	0.00
100.00		197.56	426.80	0.00	0.00
105.00	(26) attachments	5788.84	4539.75	0.00	17504.52
Totals:		21,559.52	31,903.32	432.35	17,504.52

Linear Appurtenance Segment Forces (Factored)

Structure: CT01498-S-SBA	Code: TIA-222-G	5/4/2022
Site Name: Avon	Exposure: B	
Height: 105.00 (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 93 mph Wind

Dead Load Factor 0.90
Wind Load Factor 1.60



Iterations 16

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	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.021	0.000	14.724	0.00	4.68
5.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.021	0.000	14.724	0.00	0.72
10.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.021	0.000	14.724	0.00	4.68
10.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.021	0.000	14.724	0.00	0.72
15.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.021	0.000	14.724	0.00	4.68
15.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.021	0.000	14.724	0.00	0.72
20.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.021	0.000	14.724	0.00	4.68
20.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.021	0.000	14.724	0.00	0.72
25.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.024	0.000	14.724	0.00	4.68
25.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.024	0.000	14.724	0.00	0.72
30.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.024	0.000	14.736	0.00	4.68
30.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.024	0.000	14.736	0.00	0.72
35.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.024	0.000	15.400	0.00	4.68
35.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.024	0.000	15.400	0.00	0.72
40.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.024	0.000	15.999	0.00	4.68
40.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.024	0.000	15.999	0.00	0.72
45.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.027	0.000	16.546	0.00	4.68
45.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.027	0.000	16.546	0.00	0.72
50.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.027	0.000	17.052	0.00	4.68
50.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.027	0.000	17.052	0.00	0.72
55.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.027	0.000	17.523	0.00	4.68
55.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.027	0.000	17.523	0.00	0.72
60.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.027	0.000	17.964	0.00	4.68
60.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.027	0.000	17.964	0.00	0.72
65.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.030	0.000	18.380	0.00	4.68
65.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.030	0.000	18.380	0.00	0.72
70.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.030	0.000	18.773	0.00	4.68
70.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.030	0.000	18.773	0.00	0.72
75.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.030	0.000	19.147	0.00	4.68
75.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.030	0.000	19.147	0.00	0.72
80.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.015	0.000	19.503	0.00	4.68
85.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.017	0.000	19.844	0.00	4.68
87.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.018	0.000	19.976	0.00	1.87
90.00	Step bolts (ladder)	Yes	3.00	0.000	0.63	0.16	0.00	0.018	0.000	20.170	0.00	2.81
91.00	Step bolts (ladder)	Yes	1.00	0.000	0.63	0.05	0.00	0.018	0.000	20.234	0.00	0.94
95.00	Step bolts (ladder)	Yes	4.00	0.000	0.63	0.21	0.00	0.018	0.000	20.484	0.00	3.74
97.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.018	0.000	20.607	0.00	1.87
100.00	Step bolts (ladder)	Yes	3.00	0.000	0.63	0.16	0.00	0.018	0.000	20.787	0.00	2.81
105.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.017	0.000	21.079	0.00	4.68
Totals:											0.0	109.1

Calculated Forces

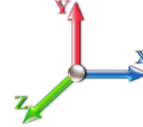
Structure: CT01498-S-SBA	Code: TIA-222-G	5/4/2022
Site Name: Avon	Exposure: B	
Height: 105.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Page: 18
	Struct Class: II	



Load Case: 0.9D + 1.6W 93 mph Wind

Iterations 16

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	-31.89	-21.58	-0.43	-1811.6	0.00	1811.68	2204.43	1102.21	5439.15	3573.20	0.00	0.000	0.000	0.522
5.00	-30.63	-21.23	-0.43	-1703.7	0.00	1703.77	2204.43	1102.21	5439.15	3573.20	0.04	-0.080	0.000	0.491
10.00	-29.37	-20.88	-0.43	-1597.6	0.00	1597.60	2204.43	1102.21	5439.15	3573.20	0.17	-0.155	0.000	0.461
15.00	-28.12	-20.52	-0.43	-1493.2	0.00	1493.20	2204.43	1102.21	5439.15	3573.20	0.37	-0.226	0.000	0.431
20.00	-26.86	-20.16	-0.43	-1390.6	0.00	1390.60	2204.43	1102.21	5439.15	3573.20	0.64	-0.291	0.000	0.402
20.00	-26.86	-20.16	-0.43	-1390.6	0.00	1390.60	2026.00	1013.00	4492.72	2914.55	0.64	-0.291	0.000	0.491
25.00	-25.72	-19.83	-0.43	-1289.8	0.00	1289.82	2026.00	1013.00	4492.72	2914.55	0.98	-0.352	0.000	0.456
30.00	-24.57	-19.51	-0.43	-1190.6	0.00	1190.66	2026.00	1013.00	4492.72	2914.55	1.39	-0.430	0.000	0.421
35.00	-23.43	-19.16	-0.43	-1093.1	0.00	1093.14	2026.00	1013.00	4492.72	2914.55	1.88	-0.501	0.000	0.387
40.00	-22.29	-18.79	-0.43	-997.34	0.00	997.34	2026.00	1013.00	4492.72	2914.55	2.44	-0.567	0.000	0.354
40.00	-22.29	-18.79	-0.43	-997.34	0.00	997.34	1847.49	923.75	3635.30	2322.74	2.44	-0.567	0.000	0.442
45.00	-21.26	-18.46	-0.43	-903.39	0.00	903.39	1847.49	923.75	3635.30	2322.74	3.07	-0.626	0.000	0.401
50.00	-20.22	-18.11	-0.43	-811.10	0.00	811.10	1847.49	923.75	3635.30	2322.74	3.77	-0.703	0.000	0.361
55.00	-19.19	-17.75	-0.43	-720.54	0.00	720.54	1847.49	923.75	3635.30	2322.74	4.54	-0.771	0.000	0.321
60.00	-18.16	-17.37	-0.43	-631.80	0.00	631.80	1847.49	923.75	3635.30	2322.74	5.38	-0.832	0.000	0.282
60.00	-18.16	-17.37	-0.43	-631.80	0.00	631.80	1668.87	834.44	2866.90	1797.79	5.38	-0.832	0.000	0.363
65.00	-17.25	-17.04	-0.43	-544.93	0.00	544.93	1668.87	834.44	2866.90	1797.79	6.28	-0.884	0.000	0.314
70.00	-16.33	-16.69	-0.43	-459.74	0.00	459.74	1668.87	834.44	2866.90	1797.79	7.25	-0.952	0.000	0.266
75.00	-15.39	-16.24	-0.43	-376.26	0.00	376.26	1668.87	834.44	2866.90	1797.79	8.27	-1.007	0.000	0.219
80.00	-14.48	-15.87	-0.43	-295.07	-0.01	295.07	1668.87	834.44	2866.90	1797.79	9.35	-1.052	-0.001	0.173
80.00	-14.48	-15.87	-0.43	-295.07	-0.01	295.07	1490.10	745.05	2187.51	1339.68	9.35	-1.052	-0.001	0.230
85.00	-13.68	-15.55	-0.43	-215.72	-0.01	215.72	1490.10	745.05	2187.51	1339.68	10.48	-1.087	-0.001	0.171
87.00	-11.26	-12.98	-0.43	-184.63	-0.01	184.63	1490.10	745.05	2187.51	1339.68	10.94	-1.104	-0.001	0.146
90.00	-10.80	-12.79	-0.43	-145.67	-0.01	145.67	1490.10	745.05	2187.51	1339.68	11.64	-1.125	-0.001	0.116
91.00	-9.99	-11.38	-0.43	-132.89	-0.01	132.89	1490.10	745.05	2187.51	1339.68	11.87	-1.131	-0.001	0.106
95.00	-9.37	-11.11	-0.43	-87.38	-0.01	87.38	1490.10	745.05	2187.51	1339.68	12.83	-1.150	-0.001	0.072
97.00	-4.84	-6.09	0.00	-65.16	0.00	65.16	1490.10	745.05	2187.51	1339.68	13.31	-1.156	-0.001	0.052
100.00	-4.42	-5.88	0.00	-46.91	0.00	46.91	1490.10	745.05	2187.51	1339.68	14.04	-1.163	-0.001	0.038
105.00	0.00	-5.79	0.00	-17.50	0.00	17.50	1490.10	745.05	2187.51	1339.68	15.27	-1.170	-0.001	0.013

Wind Loading - Shaft

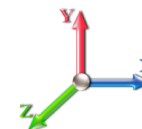
Structure: CT01498-S-SBA	Code: TIA-222-G	5/4/2022
Site Name: Avon	Exposure: B	
Height: 105.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Page: 19
	Struct Class: II	



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

Dead Load Factor 1.20

Wind Load Factor 1.00



Iterations 15

Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.70	4.256	4.68	0.00	1.200	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.70	4.256	4.68	0.00	1.200	1.656	5.00	26.380	31.66	148.2	623.7	2057.9
10.00		1.00	0.70	4.256	4.68	0.00	1.200	1.775	5.00	26.479	31.77	148.8	669.8	2103.9
15.00		1.00	0.70	4.256	4.68	0.00	1.200	1.848	5.00	26.540	31.85	149.1	698.3	2132.5
20.00	Top - Section 1	1.00	0.70	4.256	4.68	0.00	1.200	1.902	5.00	26.585	31.90	149.4	719.3	2153.5
25.00		1.00	0.70	4.256	4.68	0.00	1.200	1.945	5.00	24.121	28.95	135.5	664.8	1954.6
30.00		1.00	0.70	4.260	4.69	0.00	1.200	1.981	5.00	24.151	28.98	135.8	677.4	1967.3
35.00		1.00	0.73	4.451	4.90	0.00	1.200	2.012	5.00	24.177	29.01	142.1	688.4	1978.2
40.00	Top - Section 2	1.00	0.76	4.625	5.09	0.00	1.200	2.039	5.00	24.199	29.04	147.7	697.9	1987.8
45.00		1.00	0.79	4.783	5.26	0.00	1.200	2.063	5.00	21.719	26.06	137.1	630.9	1776.4
50.00		1.00	0.81	4.929	5.42	0.00	1.200	2.085	5.00	21.737	26.08	141.4	637.9	1783.4
55.00		1.00	0.83	5.065	5.57	0.00	1.200	2.105	5.00	21.754	26.10	145.4	644.2	1789.7
60.00	Top - Section 3	1.00	0.85	5.193	5.71	0.00	1.200	2.123	5.00	21.769	26.12	149.2	650.1	1795.6
65.00		1.00	0.87	5.313	5.84	0.00	1.200	2.140	5.00	19.284	23.14	135.2	577.1	1578.3
70.00		1.00	0.89	5.426	5.97	0.00	1.200	2.156	5.00	19.297	23.16	138.2	581.6	1582.8
75.00	Appurtenance(s)	1.00	0.91	5.534	6.09	0.00	1.200	2.171	5.00	19.309	23.17	141.1	585.8	1587.0
80.00	Top - Section 4	1.00	0.93	5.637	6.20	0.00	1.200	2.185	5.00	19.321	23.19	143.8	589.8	1591.0
85.00		1.00	0.94	5.736	6.31	0.00	1.200	2.198	5.00	16.832	20.20	127.4	513.0	1369.9
87.00	Appurtenance(s)	1.00	0.95	5.774	6.35	0.00	1.200	2.204	2.00	6.735	8.08	51.3	205.7	548.5
90.00		1.00	0.96	5.830	6.41	0.00	1.200	2.211	3.00	10.106	12.13	77.8	309.7	823.8
91.00	Appurtenance(s)	1.00	0.96	5.849	6.43	0.00	1.200	2.214	1.00	3.369	4.04	26.0	103.3	274.7
95.00		1.00	0.97	5.921	6.51	0.00	1.200	2.223	4.00	13.482	16.18	105.4	415.3	1100.8
97.00	Appurtenance(s)	1.00	0.98	5.956	6.55	0.00	1.200	2.228	2.00	6.743	8.09	53.0	208.1	550.8
100.00		1.00	0.99	6.008	6.61	0.00	1.200	2.234	3.00	10.117	12.14	80.2	313.1	827.3
105.00	Appurtenance(s)	1.00	1.00	6.093	6.70	0.00	1.200	2.245	5.00	16.871	20.25	135.7	524.6	1381.5
Totals:									105.00			2,944.8	36,697.1	

Discrete Appurtenance Forces

Structure: CT01498-S-SBA

Code: TIA-222-G

5/4/2022

Site Name: Avon

Exposure: B



Height: 105.00 (ft)

Crest Height: 0.00

Base Elev: 0.000 (ft)

Site Class: D - Stiff Soil

Gh: 1.1

Topography: 1

Struct Class: II

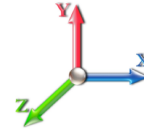
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Load Case: 1.2D + 1.0Di + 1.0Wi 50 mph Wind

Iterations 15

Dead Load Factor 1.20

Wind Load Factor 1.00



No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	Orient Factor 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	105.00	SDX1926Q-43	3	6.174	6.792	0.45	0.90	0.94	104.27	0.000	5.000	6.40	0.00	31.99
2	105.00	20' Omni	1	6.269	6.896	1.00	1.00	15.13	216.74	0.000	11.000	104.32	0.00	1147.56
3	105.00	APXVAARR24_43-U-NA2	3	6.174	6.792	0.71	1.00	48.37	2133.22	0.000	5.000	328.55	0.00	1642.73
4	105.00	AIR32	3	6.174	6.792	0.89	1.00	21.47	1225.39	0.000	5.000	145.80	0.00	728.98
5	105.00	AIR6449 B41	3	6.174	6.792	0.72	1.00	14.85	804.96	0.000	5.000	100.83	0.00	504.14
6	105.00	KRY 112 144/2	3	6.174	6.792	0.69	0.90	2.12	71.91	0.000	5.000	14.42	0.00	72.10
7	105.00	Low Profile	1	6.093	6.702	1.00	1.00	81.32	3184.06	0.000	0.000	544.98	0.00	0.00
8	105.00	Radio 4415 Protruding w/o	3	6.174	6.792	0.62	0.90	4.86	420.41	0.000	5.000	33.01	0.00	165.07
9	105.00	MS-HRECP	1	6.093	6.702	1.00	1.00	27.65	1915.62	0.000	0.000	185.34	0.00	0.00
10	105.00	Kicker kit	1	6.093	6.702	1.00	1.00	12.51	1256.66	0.000	0.000	83.85	0.00	0.00
11	105.00	Collar Mount	1	6.093	6.702	1.00	1.00	5.87	1033.95	0.000	0.000	39.33	0.00	0.00
12	105.00	4449 B71 + B85	3	6.174	6.792	0.62	0.90	5.03	311.20	0.000	5.000	34.20	0.00	170.98
13	97.00	AIR 6419 B77G	3	5.956	6.552	0.57	0.75	8.24	538.28	3.300	0.000	53.96	178.06	0.00
14	97.00	HRK14	1	5.956	6.552	1.00	1.00	18.27	1123.22	0.000	0.000	119.72	0.00	0.00
15	97.00	PRK-1245 (kicker kit)	1	5.956	6.552	1.00	1.00	22.20	877.07	0.000	0.000	145.44	0.00	0.00
16	97.00	860 10025	6	5.956	6.552	0.38	0.75	1.49	44.96	0.000	0.000	9.78	0.00	0.00
17	97.00	Low Profile Platformw/	1	5.956	6.552	1.00	1.00	50.62	3502.16	0.000	0.000	331.65	0.00	0.00
18	97.00	AIR 6449 B77D	3	5.956	6.552	0.64	0.75	10.03	870.96	-0.300	0.000	65.72	-19.72	0.00
19	97.00	B14 4478	3	5.956	6.552	0.50	0.75	3.79	360.52	0.000	0.000	24.81	0.00	0.00
20	97.00	Ring Mount	1	5.956	6.552	1.00	1.00	9.46	694.25	0.000	0.000	61.95	0.00	0.00
21	97.00	4449 B5/B12	3	5.956	6.552	0.52	0.75	4.14	419.21	0.000	0.000	27.15	0.00	0.00
22	97.00	Kathrein 800 10965	6	5.956	6.552	0.54	0.75	51.36	3160.30	0.000	0.000	336.52	0.00	0.00
23	97.00	782 10250	6	5.956	6.552	0.57	0.75	4.26	122.41	0.000	0.000	27.93	0.00	0.00
24	97.00	LGP21401	6	5.956	6.552	0.50	0.75	7.11	250.40	0.000	0.000	46.56	0.00	0.00
25	97.00	800-10121	3	5.956	6.552	0.59	0.75	13.93	499.91	0.000	0.000	91.30	0.00	0.00
26	97.00	DC6-48-60-18-8F	3	5.956	6.552	1.00	1.00	4.44	298.13	0.000	0.000	29.07	0.00	0.00
27	97.00	B2 B66A 8843	3	5.956	6.552	0.52	0.75	3.57	394.19	0.000	0.000	23.39	0.00	0.00
28	91.00	VHLP2.5	3	5.849	6.434	1.00	1.00	31.78	680.25	0.000	0.000	204.48	0.00	0.00
29	91.00	Dish Mount	3	5.849	6.434	0.56	0.75	9.54	118.12	0.000	0.000	61.41	0.00	0.00
30	91.00	RRU	3	5.849	6.434	0.88	1.00	8.45	312.72	0.000	0.000	54.38	0.00	0.00
31	91.00	Horizon DUO Radios	3	5.849	6.434	0.76	1.00	3.84	107.94	0.000	0.000	24.68	0.00	0.00
32	87.00	APXVTM14-C-120	3	5.774	6.351	0.63	0.80	14.73	841.87	0.000	0.000	93.56	0.00	0.00
33	87.00	RRUS-11 1900 MHz	3	5.774	6.351	0.56	0.80	7.52	355.89	0.000	0.000	47.74	0.00	0.00
34	87.00	RRUS-11 800 MHz	3	5.774	6.351	0.60	0.80	8.05	415.76	0.000	0.000	51.15	0.00	0.00
35	87.00	APXVSPP18-C-A20	3	5.774	6.351	0.66	0.80	23.00	711.45	0.000	0.000	146.10	0.00	0.00
36	87.00	800MHz Filter	3	5.774	6.351	0.56	0.80	2.01	82.99	0.000	0.000	12.79	0.00	0.00
37	87.00	TD-RRH8x20-25	3	5.774	6.351	0.55	0.80	8.44	693.72	0.000	0.000	53.62	0.00	0.00
38	87.00	ACU-A20-N	4	5.774	6.351	0.63	0.80	1.30	21.30	0.000	0.000	8.26	0.00	0.00
39	87.00	Low Profile	1	5.774	6.351	1.00	1.00	44.30	3152.69	0.000	0.000	281.37	0.00	0.00
40	75.00	GPS	1	5.534	6.088	1.00	1.00	1.89	40.47	0.000	0.000	11.48	0.00	0.00
41	75.00	Standoff Mount	1	5.534	6.088	1.00	1.00	3.74	4.84	0.000	0.000	22.75	0.00	0.00

Totals: 33,374.38

4,089.74

Total Applied Force Summary

Structure: CT01498-S-SBA	Code: TIA-222-G	5/4/2022
Site Name: Avon	Exposure: B	
Height: 105.00 (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 15

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		148.20	2307.87	0.00	0.00
10.00		148.76	2359.50	0.00	0.00
15.00		149.10	2391.66	0.00	0.00
20.00		149.35	2415.41	0.00	0.00
25.00		135.51	2218.77	0.00	0.00
30.00		135.79	2233.33	0.00	0.00
35.00		142.06	2245.88	0.00	0.00
40.00		147.72	2256.94	0.00	0.00
45.00		137.12	2046.92	0.00	0.00
50.00		141.43	2055.10	0.00	0.00
55.00		145.44	2062.58	0.00	0.00
60.00		149.21	2069.49	0.00	0.00
65.00		135.23	1853.15	0.00	0.00
70.00		138.22	1858.57	0.00	0.00
75.00	(2) attachments	175.29	1908.97	0.00	0.00
80.00		143.77	1832.62	0.00	0.00
85.00		127.44	1611.88	0.00	0.00
87.00	(23) attachments	745.92	6920.98	0.00	0.00
90.00		77.77	955.48	0.00	0.00
91.00	(12) attachments	370.96	1537.66	0.00	0.00
95.00		105.37	1272.02	0.00	0.00
97.00	(49) attachments	1447.96	13792.49	158.34	0.00
100.00		80.24	903.86	0.00	0.00
105.00	(26) attachments	1756.70	14187.85	0.00	4463.54
	Totals:	7,034.57	75,298.98	158.34	4,463.54

Linear Appurtenance Segment Forces (Factored)

Structure: CT01498-S-SBA	Code: TIA-222-G	5/4/2022
Site Name: Avon	Exposure: B	
Height: 105.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



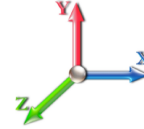
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Load Case: 1.2D + 1.0Di + 1.0Wi 50 mph Wind

Iterations 15

Dead Load Factor 1.20

Wind Load Factor 1.00



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	Step bolts (ladder)	Yes	5.00	0.000	0.63	1.64	0.00	0.021	0.000	4.256	0.00	27.18
5.00	1/2" Coax	Yes	5.00	0.000	0.65	1.65	0.00	0.021	0.000	4.256	0.00	22.08
10.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	1.74	0.00	0.021	0.000	4.256	0.00	29.96
10.00	1/2" Coax	Yes	5.00	0.000	0.65	1.75	0.00	0.021	0.000	4.256	0.00	24.87
15.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	1.80	0.00	0.021	0.000	4.256	0.00	31.77
15.00	1/2" Coax	Yes	5.00	0.000	0.65	1.81	0.00	0.021	0.000	4.256	0.00	26.68
20.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	1.85	0.00	0.021	0.000	4.256	0.00	33.13
20.00	1/2" Coax	Yes	5.00	0.000	0.65	1.86	0.00	0.021	0.000	4.256	0.00	28.05
25.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	1.88	0.00	0.024	0.000	4.256	0.00	34.25
25.00	1/2" Coax	Yes	5.00	0.000	0.65	1.89	0.00	0.024	0.000	4.256	0.00	29.17
30.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	1.91	0.00	0.024	0.000	4.260	0.00	35.19
30.00	1/2" Coax	Yes	5.00	0.000	0.65	1.92	0.00	0.024	0.000	4.260	0.00	30.12
35.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	1.94	0.00	0.024	0.000	4.451	0.00	36.02
35.00	1/2" Coax	Yes	5.00	0.000	0.65	1.95	0.00	0.024	0.000	4.451	0.00	30.95
40.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	1.96	0.00	0.024	0.000	4.625	0.00	36.75
40.00	1/2" Coax	Yes	5.00	0.000	0.65	1.97	0.00	0.024	0.000	4.625	0.00	31.68
45.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	1.98	0.00	0.027	0.000	4.783	0.00	37.42
45.00	1/2" Coax	Yes	5.00	0.000	0.65	1.99	0.00	0.027	0.000	4.783	0.00	32.35
50.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	2.00	0.00	0.027	0.000	4.929	0.00	38.02
50.00	1/2" Coax	Yes	5.00	0.000	0.65	2.01	0.00	0.027	0.000	4.929	0.00	32.96
55.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	2.02	0.00	0.027	0.000	5.065	0.00	38.58
55.00	1/2" Coax	Yes	5.00	0.000	0.65	2.02	0.00	0.027	0.000	5.065	0.00	33.52
60.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	2.03	0.00	0.027	0.000	5.193	0.00	39.10
60.00	1/2" Coax	Yes	5.00	0.000	0.65	2.04	0.00	0.027	0.000	5.193	0.00	34.04
65.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	2.05	0.00	0.030	0.000	5.313	0.00	39.59
65.00	1/2" Coax	Yes	5.00	0.000	0.65	2.05	0.00	0.030	0.000	5.313	0.00	34.53
70.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	2.06	0.00	0.030	0.000	5.426	0.00	40.04
70.00	1/2" Coax	Yes	5.00	0.000	0.65	2.07	0.00	0.030	0.000	5.426	0.00	34.99
75.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	2.07	0.00	0.030	0.000	5.534	0.00	40.47
75.00	1/2" Coax	Yes	5.00	0.000	0.65	2.08	0.00	0.030	0.000	5.534	0.00	35.42
80.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	2.08	0.00	0.015	0.000	5.637	0.00	40.88
85.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	2.09	0.00	0.017	0.000	5.736	0.00	41.27
87.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.84	0.00	0.018	0.000	5.774	0.00	16.57
90.00	Step bolts (ladder)	Yes	3.00	0.000	0.63	1.26	0.00	0.018	0.000	5.830	0.00	24.98
91.00	Step bolts (ladder)	Yes	1.00	0.000	0.63	0.42	0.00	0.018	0.000	5.849	0.00	8.34
95.00	Step bolts (ladder)	Yes	4.00	0.000	0.63	1.69	0.00	0.018	0.000	5.921	0.00	33.60
97.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.85	0.00	0.018	0.000	5.956	0.00	16.85
100.00	Step bolts (ladder)	Yes	3.00	0.000	0.63	1.27	0.00	0.018	0.000	6.008	0.00	25.40
105.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	2.13	0.00	0.017	0.000	6.093	0.00	42.66
Totals:											0.0	1,249.4

Calculated Forces

Structure: CT01498-S-SBA	Code: TIA-222-G	5/4/2022
Site Name: Avon	Exposure: B	
Height: 105.00 (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 15

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	-75.30	-7.05	-0.16	-580.41	0.00	580.41	2204.43	1102.21	5439.15	3573.20	0.00	0.000	0.000	0.197
5.00	-72.99	-6.93	-0.16	-545.16	0.00	545.16	2204.43	1102.21	5439.15	3573.20	0.01	-0.026	0.000	0.186
10.00	-70.62	-6.81	-0.16	-510.49	0.00	510.49	2204.43	1102.21	5439.15	3573.20	0.05	-0.050	0.000	0.175
15.00	-68.23	-6.69	-0.16	-476.43	0.00	476.43	2204.43	1102.21	5439.15	3573.20	0.12	-0.072	0.000	0.164
20.00	-65.81	-6.56	-0.16	-442.99	0.00	442.99	2204.43	1102.21	5439.15	3573.20	0.21	-0.093	0.000	0.154
20.00	-65.81	-6.56	-0.16	-442.99	0.00	442.99	2026.00	1013.00	4492.72	2914.55	0.21	-0.093	0.000	0.185
25.00	-63.59	-6.44	-0.16	-410.21	0.00	410.21	2026.00	1013.00	4492.72	2914.55	0.31	-0.112	0.000	0.172
30.00	-61.36	-6.33	-0.16	-378.00	0.00	378.00	2026.00	1013.00	4492.72	2914.55	0.44	-0.137	0.000	0.160
35.00	-59.11	-6.20	-0.16	-346.36	0.00	346.36	2026.00	1013.00	4492.72	2914.55	0.60	-0.160	0.000	0.148
40.00	-56.85	-6.07	-0.16	-315.36	0.00	315.36	2026.00	1013.00	4492.72	2914.55	0.78	-0.181	0.000	0.136
40.00	-56.85	-6.07	-0.16	-315.36	0.00	315.36	1847.49	923.75	3635.30	2322.74	0.78	-0.181	0.000	0.167
45.00	-54.80	-5.94	-0.16	-285.03	0.00	285.03	1847.49	923.75	3635.30	2322.74	0.98	-0.199	0.000	0.152
50.00	-52.74	-5.82	-0.16	-255.31	0.00	255.31	1847.49	923.75	3635.30	2322.74	1.20	-0.223	0.000	0.139
55.00	-50.68	-5.68	-0.16	-226.24	0.00	226.24	1847.49	923.75	3635.30	2322.74	1.45	-0.245	0.000	0.125
60.00	-48.61	-5.54	-0.16	-197.84	0.00	197.84	1847.49	923.75	3635.30	2322.74	1.71	-0.264	0.000	0.112
60.00	-48.61	-5.54	-0.16	-197.84	0.00	197.84	1668.87	834.44	2866.90	1797.79	1.71	-0.264	0.000	0.139
65.00	-46.76	-5.41	-0.16	-170.16	0.00	170.16	1668.87	834.44	2866.90	1797.79	2.00	-0.280	0.000	0.123
70.00	-44.90	-5.27	-0.16	-143.13	0.00	143.13	1668.87	834.44	2866.90	1797.79	2.31	-0.301	0.000	0.107
75.00	-42.99	-5.10	-0.16	-116.76	0.00	116.76	1668.87	834.44	2866.90	1797.79	2.63	-0.319	0.000	0.091
80.00	-41.15	-4.96	-0.16	-91.25	0.00	91.25	1668.87	834.44	2866.90	1797.79	2.97	-0.333	0.000	0.075
80.00	-41.15	-4.96	-0.16	-91.25	0.00	91.25	1490.10	745.05	2187.51	1339.68	2.97	-0.333	0.000	0.096
85.00	-39.54	-4.82	-0.16	-66.48	0.00	66.48	1490.10	745.05	2187.51	1339.68	3.33	-0.343	0.000	0.076
87.00	-32.63	-4.04	-0.16	-56.83	0.00	56.83	1490.10	745.05	2187.51	1339.68	3.47	-0.348	0.000	0.064
90.00	-31.67	-3.96	-0.16	-44.71	0.00	44.71	1490.10	745.05	2187.51	1339.68	3.69	-0.355	0.000	0.055
91.00	-30.13	-3.58	-0.16	-40.76	0.00	40.76	1490.10	745.05	2187.51	1339.68	3.77	-0.357	0.000	0.051
95.00	-28.86	-3.47	-0.16	-26.44	0.00	26.44	1490.10	745.05	2187.51	1339.68	4.07	-0.363	0.000	0.039
97.00	-15.08	-1.93	0.00	-19.50	0.00	19.50	1490.10	745.05	2187.51	1339.68	4.22	-0.364	0.000	0.025
100.00	-14.18	-1.85	0.00	-13.70	0.00	13.70	1490.10	745.05	2187.51	1339.68	4.45	-0.367	0.000	0.020
105.00	0.00	-1.76	0.00	-4.46	0.00	4.46	1490.10	745.05	2187.51	1339.68	4.84	-0.369	0.000	0.003

Seismic Segment Forces (Factored)

Structure: CT01498-S-SBA	Code: TIA-222-G	5/4/2022
Site Name: Avon	Exposure: B	
Height: 105.00 (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 15
Gust Response Factor	1.10	Sds	0.19	Ss 0.18
Dead Load Factor	1.20	Seismic Load Factor	1.00	S1 0.06
Wind Load Factor	0.00	Structure Frequency (f1)	0.69	SA 0.07
				Seismic Importance Factor 1.00



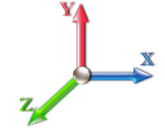
Top Elev (ft)	Description	Wz (lb)	a	b	c	Lateral Fs (lb)	R: 1.50
0.00		0.00	0.00	0.00	0.00	0.00	
5.00		1195.1	0.00	0.04	0.02	16.80	
10.00		1195.1	0.02	0.06	0.04	24.28	
15.00		1195.1	0.04	0.07	0.04	27.85	
20.00	Top - Section 1	1195.1	0.07	0.07	0.04	30.04	
25.00		1074.8	0.11	0.07	0.04	28.75	
30.00		1074.8	0.15	0.07	0.03	30.42	
35.00		1074.8	0.21	0.06	0.02	31.63	
40.00	Top - Section 2	1074.8	0.27	0.05	0.01	31.59	
45.00		954.60	0.35	0.03	0.01	26.14	
50.00		954.60	0.43	0.01	0.01	21.77	
55.00		954.60	0.52	-0.02	0.01	15.05	
60.00	Top - Section 3	954.60	0.62	-0.06	0.02	7.18	
65.00		834.33	0.72	-0.09	0.03	0.45	
70.00		834.33	0.84	-0.12	0.07	-1.70	
75.00	Appurtenance(s)	864.33	0.96	-0.12	0.11	2.34	
80.00	Top - Section 4	834.33	1.10	-0.07	0.19	14.08	
85.00		714.07	1.24	0.04	0.28	29.76	
87.00	Appurtenance(s)	2662.6	1.30	0.12	0.33	145.67	
90.00		428.44	1.39	0.26	0.42	33.28	
91.00	Appurtenance(s)	896.11	1.42	0.32	0.45	77.31	
95.00		571.25	1.55	0.62	0.60	71.55	
97.00	Appurtenance(s)	5077.4	1.61	0.82	0.69	749.18	
100.00		428.44	1.71	1.18	0.84	79.08	
105.00	Appurtenance(s)	4967.8	1.89	1.98	1.14	1271.06	
Totals:		32,011.9				2,763.6	Total Wind: 21,559.5

Calculated Forces

Structure: CT01498-S-SBA	Code: TIA-222-G	5/4/2022
Site Name: Avon	Exposure: B	
Height: 105.00 (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 15
Gust Response Factor	1.10			Sds	0.19	Ss	0.18
Dead Load Factor	1.20	Seismic Load Factor	1.00	Sd1	0.10	S1	0.06
Wind Load Factor	0.00	Structure Frequency (f1)	0.69	SA	0.07	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	-42.54	-2.77	0.00	-260.42	0.00	260.42	2204.43	1102.21	5439.15	3573.20	0.00	0.00	0.00	0.092
5.00	-40.89	-2.76	0.00	-246.57	0.00	246.57	2204.43	1102.21	5439.15	3573.20	0.01	-0.01	0.088	
10.00	-39.25	-2.74	0.00	-232.77	0.00	232.77	2204.43	1102.21	5439.15	3573.20	0.02	-0.02	0.083	
15.00	-37.61	-2.72	0.00	-219.06	0.00	219.06	2204.43	1102.21	5439.15	3573.20	0.05	-0.03	0.078	
20.00	-35.97	-2.70	0.00	-205.45	0.00	205.45	2204.43	1102.21	5439.15	3573.20	0.09	-0.04	0.074	
20.00	-35.97	-2.70	0.00	-205.45	0.00	205.45	2026.00	1013.00	4492.72	2914.55	0.09	-0.04	0.088	
25.00	-34.47	-2.67	0.00	-191.98	0.00	191.98	2026.00	1013.00	4492.72	2914.55	0.14	-0.05	0.083	
30.00	-32.97	-2.65	0.00	-178.62	0.00	178.62	2026.00	1013.00	4492.72	2914.55	0.20	-0.06	0.078	
35.00	-31.47	-2.62	0.00	-165.39	0.00	165.39	2026.00	1013.00	4492.72	2914.55	0.27	-0.07	0.072	
40.00	-29.97	-2.59	0.00	-152.29	0.00	152.29	2026.00	1013.00	4492.72	2914.55	0.36	-0.08	0.067	
40.00	-29.97	-2.59	0.00	-152.29	0.00	152.29	1847.49	923.75	3635.30	2322.74	0.36	-0.08	0.082	
45.00	-28.62	-2.57	0.00	-139.34	0.00	139.34	1847.49	923.75	3635.30	2322.74	0.45	-0.09	0.075	
50.00	-27.27	-2.55	0.00	-126.51	0.00	126.51	1847.49	923.75	3635.30	2322.74	0.55	-0.10	0.069	
55.00	-25.91	-2.54	0.00	-113.77	0.00	113.77	1847.49	923.75	3635.30	2322.74	0.67	-0.12	0.063	
60.00	-24.56	-2.53	0.00	-101.09	0.00	101.09	1847.49	923.75	3635.30	2322.74	0.80	-0.13	0.057	
60.00	-24.56	-2.53	0.00	-101.09	0.00	101.09	1668.87	834.44	2866.90	1797.79	0.80	-0.13	0.071	
65.00	-23.35	-2.53	0.00	-88.45	0.00	88.45	1668.87	834.44	2866.90	1797.79	0.93	-0.13	0.063	
70.00	-22.14	-2.53	0.00	-75.80	0.00	75.80	1668.87	834.44	2866.90	1797.79	1.08	-0.14	0.055	
75.00	-20.89	-2.53	0.00	-63.14	0.00	63.14	1668.87	834.44	2866.90	1797.79	1.23	-0.15	0.048	
80.00	-19.69	-2.51	0.00	-50.50	0.00	50.50	1668.87	834.44	2866.90	1797.79	1.40	-0.16	0.040	
80.00	-19.69	-2.51	0.00	-50.50	0.00	50.50	1490.10	745.05	2187.51	1339.68	1.40	-0.16	0.051	
85.00	-18.62	-2.48	0.00	-37.93	0.00	37.93	1490.10	745.05	2187.51	1339.68	1.57	-0.17	0.041	
87.00	-15.34	-2.33	0.00	-32.97	0.00	32.97	1490.10	745.05	2187.51	1339.68	1.64	-0.17	0.035	
90.00	-14.72	-2.29	0.00	-25.99	0.00	25.99	1490.10	745.05	2187.51	1339.68	1.75	-0.17	0.029	
91.00	-13.61	-2.21	0.00	-23.69	0.00	23.69	1490.10	745.05	2187.51	1339.68	1.79	-0.18	0.027	
95.00	-12.78	-2.14	0.00	-14.84	0.00	14.84	1490.10	745.05	2187.51	1339.68	1.94	-0.18	0.020	
97.00	-6.62	-1.37	0.00	-10.56	0.00	10.56	1490.10	745.05	2187.51	1339.68	2.01	-0.18	0.012	
100.00	-6.05	-1.29	0.00	-6.45	0.00	6.45	1490.10	745.05	2187.51	1339.68	2.12	-0.18	0.009	
105.00	0.00	-1.27	0.00	0.00	0.00	0.00	1490.10	745.05	2187.51	1339.68	2.31	-0.18	0.000	

Seismic Segment Forces (Factored)

Structure: CT01498-S-SBA	Code: TIA-222-G	5/4/2022
Site Name: Avon	Exposure: B	
Height: 105.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II

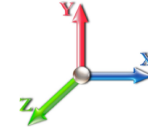


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Load Case: 0.9D + 1.0E

Iterations 15

Gust Response Factor 1.10	Sds 0.19	Ss 0.18	
Dead Load Factor 0.90	Seismic Load Factor 1.00	Sd1 0.10	S1 0.06
Wind Load Factor 0.00	Structure Frequency (f1) 0.69	SA 0.07	Seismic Importance Factor 1.00



Top Elev (ft)	Description	Wz (lb)	a	b	c	Lateral Fs (lb)	R: 1.50
0.00		0.00	0.00	0.00	0.00	0.00	
5.00		1195.1	0.00	0.04	0.02	16.80	
10.00		1195.1	0.02	0.06	0.04	24.28	
15.00		1195.1	0.04	0.07	0.04	27.85	
20.00	Top - Section 1	1195.1	0.07	0.07	0.04	30.04	
25.00		1074.8	0.11	0.07	0.04	28.75	
30.00		1074.8	0.15	0.07	0.03	30.42	
35.00		1074.8	0.21	0.06	0.02	31.63	
40.00	Top - Section 2	1074.8	0.27	0.05	0.01	31.59	
45.00		954.60	0.35	0.03	0.01	26.14	
50.00		954.60	0.43	0.01	0.01	21.77	
55.00		954.60	0.52	-0.02	0.01	15.05	
60.00	Top - Section 3	954.60	0.62	-0.06	0.02	7.18	
65.00		834.33	0.72	-0.09	0.03	0.45	
70.00		834.33	0.84	-0.12	0.07	-1.70	
75.00	Appurtenance(s)	864.33	0.96	-0.12	0.11	2.34	
80.00	Top - Section 4	834.33	1.10	-0.07	0.19	14.08	
85.00		714.07	1.24	0.04	0.28	29.76	
87.00	Appurtenance(s)	2662.6	1.30	0.12	0.33	145.67	
90.00		428.44	1.39	0.26	0.42	33.28	
91.00	Appurtenance(s)	896.11	1.42	0.32	0.45	77.31	
95.00		571.25	1.55	0.62	0.60	71.55	
97.00	Appurtenance(s)	5077.4	1.61	0.82	0.69	749.18	
100.00		428.44	1.71	1.18	0.84	79.08	
105.00	Appurtenance(s)	4967.8	1.89	1.98	1.14	1271.06	
Totals:		32,011.9				2,763.6	Total Wind: 21,559.5

Calculated Forces

Structure: CT01498-S-SBA	Code: TIA-222-G	5/4/2022
Site Name: Avon	Exposure: B	
Height: 105.00 (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 15
Gust Response Factor	1.10					Sds	0.19	Ss 0.18
Dead Load Factor	0.90	Seismic Load Factor	1.00	Sd1	0.10			S1 0.06
Wind Load Factor	0.00	Structure Frequency (f1)	0.69	SA	0.07	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	-31.90	-2.77	0.00	-259.36	0.00	259.36	2204.43	1102.21	5439.15	3573.20	0.00	0.00	0.00	0.087
5.00	-30.67	-2.76	0.00	-245.52	0.00	245.52	2204.43	1102.21	5439.15	3573.20	0.01	-0.01	0.083	
10.00	-29.44	-2.74	0.00	-231.74	0.00	231.74	2204.43	1102.21	5439.15	3573.20	0.02	-0.02	0.078	
15.00	-28.21	-2.71	0.00	-218.05	0.00	218.05	2204.43	1102.21	5439.15	3573.20	0.05	-0.03	0.074	
20.00	-26.97	-2.69	0.00	-204.47	0.00	204.47	2204.43	1102.21	5439.15	3573.20	0.09	-0.04	0.069	
20.00	-26.97	-2.69	0.00	-204.47	0.00	204.47	2026.00	1013.00	4492.72	2914.55	0.09	-0.04	0.083	
25.00	-25.85	-2.66	0.00	-191.03	0.00	191.03	2026.00	1013.00	4492.72	2914.55	0.14	-0.05	0.078	
30.00	-24.73	-2.64	0.00	-177.72	0.00	177.72	2026.00	1013.00	4492.72	2914.55	0.20	-0.06	0.073	
35.00	-23.60	-2.61	0.00	-164.54	0.00	164.54	2026.00	1013.00	4492.72	2914.55	0.27	-0.07	0.068	
40.00	-22.48	-2.58	0.00	-151.50	0.00	151.50	2026.00	1013.00	4492.72	2914.55	0.36	-0.08	0.063	
40.00	-22.48	-2.58	0.00	-151.50	0.00	151.50	1847.49	923.75	3635.30	2322.74	0.36	-0.08	0.077	
45.00	-21.46	-2.55	0.00	-138.61	0.00	138.61	1847.49	923.75	3635.30	2322.74	0.45	-0.09	0.071	
50.00	-20.45	-2.53	0.00	-125.83	0.00	125.83	1847.49	923.75	3635.30	2322.74	0.55	-0.10	0.065	
55.00	-19.43	-2.52	0.00	-113.16	0.00	113.16	1847.49	923.75	3635.30	2322.74	0.67	-0.11	0.059	
60.00	-18.42	-2.52	0.00	-100.55	0.00	100.55	1847.49	923.75	3635.30	2322.74	0.79	-0.12	0.053	
60.00	-18.42	-2.52	0.00	-100.55	0.00	100.55	1668.87	834.44	2866.90	1797.79	0.79	-0.12	0.067	
65.00	-17.51	-2.52	0.00	-87.98	0.00	87.98	1668.87	834.44	2866.90	1797.79	0.93	-0.13	0.059	
70.00	-16.60	-2.52	0.00	-75.40	0.00	75.40	1668.87	834.44	2866.90	1797.79	1.07	-0.14	0.052	
75.00	-15.67	-2.51	0.00	-62.82	0.00	62.82	1668.87	834.44	2866.90	1797.79	1.23	-0.15	0.044	
80.00	-14.76	-2.50	0.00	-50.25	0.00	50.25	1668.87	834.44	2866.90	1797.79	1.39	-0.16	0.037	
80.00	-14.76	-2.50	0.00	-50.25	0.00	50.25	1490.10	745.05	2187.51	1339.68	1.39	-0.16	0.047	
85.00	-13.96	-2.47	0.00	-37.76	0.00	37.76	1490.10	745.05	2187.51	1339.68	1.56	-0.17	0.038	
87.00	-11.51	-2.32	0.00	-32.82	0.00	32.82	1490.10	745.05	2187.51	1339.68	1.63	-0.17	0.032	
90.00	-11.04	-2.28	0.00	-25.87	0.00	25.87	1490.10	745.05	2187.51	1339.68	1.74	-0.17	0.027	
91.00	-10.20	-2.20	0.00	-23.59	0.00	23.59	1490.10	745.05	2187.51	1339.68	1.78	-0.17	0.024	
95.00	-9.58	-2.13	0.00	-14.78	0.00	14.78	1490.10	745.05	2187.51	1339.68	1.93	-0.18	0.017	
97.00	-4.96	-1.37	0.00	-10.52	0.00	10.52	1490.10	745.05	2187.51	1339.68	2.00	-0.18	0.011	
100.00	-4.54	-1.29	0.00	-6.43	0.00	6.43	1490.10	745.05	2187.51	1339.68	2.11	-0.18	0.008	
105.00	0.00	-1.27	0.00	0.00	0.00	0.00	1490.10	745.05	2187.51	1339.68	2.30	-0.18	0.000	

Wind Loading - Shaft

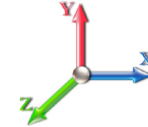
Structure: CT01498-S-SBA	Code: TIA-222-G	5/4/2022
Site Name: Avon	Exposure: B	
Height: 105.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00
Wind Load Factor 1.00



Iterations 15

Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.70	6.129	6.74	251.00	0.600	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.70	6.129	6.74	251.00	0.600	0.000	5.00	25.000	15.00	101.1	0.0	1195.1
10.00		1.00	0.70	6.129	6.74	251.00	0.600	0.000	5.00	25.000	15.00	101.1	0.0	1195.1
15.00		1.00	0.70	6.129	6.74	251.00	0.600	0.000	5.00	25.000	15.00	101.1	0.0	1195.1
20.00	Top - Section 1	1.00	0.70	6.129	6.74	251.00	0.600	0.000	5.00	25.000	15.00	101.1	0.0	1195.1
25.00		1.00	0.70	6.129	6.74	225.90	0.600	0.000	5.00	22.500	13.50	91.0	0.0	1074.9
30.00		1.00	0.70	6.134	6.75	225.99	0.600	0.000	5.00	22.500	13.50	91.1	0.0	1074.9
35.00		1.00	0.73	6.410	7.05	231.03	0.600	0.000	5.00	22.500	13.50	95.2	0.0	1074.9
40.00	Top - Section 2	1.00	0.76	6.659	7.33	235.47	0.600	0.000	5.00	22.500	13.50	98.9	0.0	1074.9
45.00		1.00	0.79	6.887	7.58	212.86	0.600	0.000	5.00	20.000	12.00	90.9	0.0	954.6
50.00		1.00	0.81	7.098	7.81	216.09	0.600	0.000	5.00	20.000	12.00	93.7	0.0	954.6
55.00		1.00	0.83	7.294	8.02	219.05	0.600	0.000	5.00	20.000	12.00	96.3	0.0	954.6
60.00	Top - Section 3	1.00	0.85	7.477	8.22	221.79	0.600	0.000	5.00	20.000	12.00	98.7	0.0	954.6
65.00		1.00	0.87	7.650	8.42	196.30	0.600	0.000	5.00	17.500	10.50	88.4	0.0	834.3
70.00		1.00	0.89	7.814	8.60	198.39	0.600	0.000	5.00	17.500	10.50	90.3	0.0	834.3
75.00	Appurtenance(s)	1.00	0.91	7.969	8.77	200.35	0.600	0.000	5.00	17.500	10.50	92.0	0.0	834.3
80.00	Top - Section 4	1.00	0.93	8.118	8.93	202.21	0.600	0.000	5.00	17.500	10.50	93.8	0.0	834.3
85.00		1.00	0.94	8.260	9.09	174.83	0.600	0.000	5.00	15.000	9.00	81.8	0.0	714.1
87.00	Appurtenance(s)	1.00	0.95	8.315	9.15	175.41	0.600	0.000	2.00	6.000	3.60	32.9	0.0	285.6
90.00		1.00	0.96	8.396	9.24	176.26	0.600	0.000	3.00	9.000	5.40	49.9	0.0	428.4
91.00	Appurtenance(s)	1.00	0.96	8.422	9.26	176.54	0.600	0.000	1.00	3.000	1.80	16.7	0.0	142.8
95.00		1.00	0.97	8.526	9.38	177.63	0.600	0.000	4.00	12.000	7.20	67.5	0.0	571.3
97.00	Appurtenance(s)	1.00	0.98	8.577	9.43	178.16	0.600	0.000	2.00	6.000	3.60	34.0	0.0	285.6
100.00		1.00	0.99	8.652	9.52	178.94	0.600	0.000	3.00	9.000	5.40	51.4	0.0	428.4
105.00	Appurtenance(s)	1.00	1.00	8.774	9.65	180.19	0.600	0.000	5.00	15.000	9.00	86.9	0.0	714.1
Totals:									105.00			1,945.6		19,806.0

Discrete Appurtenance Forces

Structure: CT01498-S-SBA

Code: TIA-222-G

5/4/2022

Site Name: Avon

Exposure: B

Height: 105.00 (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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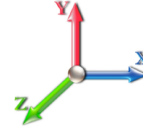


Load Case: 1.0D + 1.0W 60 mph Wind

Iterations 15

Dead Load Factor 1.00

Wind Load Factor 1.00



No.	Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	Orient Factor 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	105.00	SDX1926Q-43	3	8.891	9.780	0.45	0.90	0.43	23.70	0.000	5.000	4.23	0.00	21.13
2	105.00	20' Omni	1	9.027	9.930	1.00	1.00	6.00	55.00	0.000	11.000	59.58	0.00	655.36
3	105.00	APXVAARR24_43-U-NA2	3	8.891	9.780	0.70	1.00	42.50	384.00	0.000	5.000	415.69	0.00	2078.47
4	105.00	AIR32	3	8.891	9.780	0.87	1.00	16.99	396.60	0.000	5.000	166.17	0.00	830.87
5	105.00	AIR6449 B41	3	8.891	9.780	0.71	1.00	12.03	309.00	0.000	5.000	117.70	0.00	588.49
6	105.00	KRY 112 144/2	3	8.891	9.780	0.68	0.90	0.83	33.00	0.000	5.000	8.12	0.00	40.60
7	105.00	Low Profile	1	8.774	9.651	1.00	1.00	40.00	1500.00	0.000	0.000	386.04	0.00	0.00
8	105.00	Radio 4415 Protruding w/o	3	8.891	9.780	0.60	0.90	3.36	138.90	0.000	5.000	32.91	0.00	164.54
9	105.00	MS-HRECP	1	8.774	9.651	1.00	1.00	12.25	514.00	0.000	0.000	118.22	0.00	0.00
10	105.00	Kicker kit	1	8.774	9.651	1.00	1.00	5.33	367.00	0.000	0.000	51.44	0.00	0.00
11	105.00	Collar Mount	1	8.774	9.651	1.00	1.00	2.50	313.00	0.000	0.000	24.13	0.00	0.00
12	105.00	4449 B71 + B85	3	8.891	9.780	0.60	0.90	3.56	219.60	0.000	5.000	34.85	0.00	174.27
13	97.00	AIR 6419 B77G	3	8.577	9.435	0.57	0.75	6.50	198.30	3.300	0.000	61.31	202.32	0.00
14	97.00	HRK14	1	8.577	9.435	1.00	1.00	8.13	302.36	0.000	0.000	76.71	0.00	0.00
15	97.00	PRK-1245 (kicker kit)	1	8.577	9.435	1.00	1.00	9.50	464.91	0.000	0.000	89.63	0.00	0.00
16	97.00	860 10025	6	8.577	9.435	0.38	0.75	0.41	7.20	0.000	0.000	3.82	0.00	0.00
17	97.00	Low Profile Platformw/	1	8.577	9.435	1.00	1.00	25.00	1600.00	0.000	0.000	235.87	0.00	0.00
18	97.00	AIR 6449 B77D	3	8.577	9.435	0.64	0.75	7.90	264.00	-0.300	0.000	74.52	-22.36	0.00
19	97.00	B14 4478	3	8.577	9.435	0.50	0.75	2.77	179.70	0.000	0.000	26.17	0.00	0.00
20	97.00	Ring Mount	1	8.577	9.435	1.00	1.00	5.00	350.00	0.000	0.000	47.17	0.00	0.00
21	97.00	4449 B5/B12	3	8.577	9.435	0.50	0.75	2.97	213.00	0.000	0.000	28.02	0.00	0.00
22	97.00	Kathrein 800 10965	6	8.577	9.435	0.53	0.75	44.12	651.60	0.000	0.000	416.30	0.00	0.00
23	97.00	782 10250	6	8.577	9.435	0.57	0.75	1.78	38.40	0.000	0.000	16.78	0.00	0.00
24	97.00	LGP21401	6	8.577	9.435	0.50	0.75	3.89	84.60	0.000	0.000	36.70	0.00	0.00
25	97.00	800-10121	3	8.577	9.435	0.59	0.75	9.15	132.30	0.000	0.000	86.37	0.00	0.00
26	97.00	DC6-48-60-18-8F	3	8.577	9.435	1.00	1.00	2.76	95.40	0.000	0.000	26.04	0.00	0.00
27	97.00	B2 B66A 8843	3	8.577	9.435	0.50	0.75	2.47	210.00	0.000	0.000	23.33	0.00	0.00
28	91.00	VHLP2.5	3	8.422	9.264	1.00	1.00	25.29	142.80	0.000	0.000	234.30	0.00	0.00
29	91.00	Dish Mount	3	8.422	9.264	0.56	0.75	5.06	450.00	0.000	0.000	46.90	0.00	0.00
30	91.00	RRU	3	8.422	9.264	0.88	1.00	5.07	126.00	0.000	0.000	46.96	0.00	0.00
31	91.00	Horizon DUO Radios	3	8.422	9.264	0.76	1.00	1.92	34.50	0.000	0.000	17.74	0.00	0.00
32	87.00	APXVTM14-C-120	3	8.315	9.146	0.63	0.80	12.02	168.00	0.000	0.000	109.94	0.00	0.00
33	87.00	RRUS-11 1900 MHz	3	8.315	9.146	0.56	0.80	4.94	132.00	0.000	0.000	45.17	0.00	0.00
34	87.00	RRUS-11 800 MHz	3	8.315	9.146	0.60	0.80	5.29	162.00	0.000	0.000	48.40	0.00	0.00
35	87.00	APXVSPP18-C-A20	3	8.315	9.146	0.66	0.80	15.98	171.00	0.000	0.000	146.12	0.00	0.00
36	87.00	800MHz Filter	3	8.315	9.146	0.56	0.80	0.82	30.00	0.000	0.000	7.53	0.00	0.00
37	87.00	TD-RRH8x20-25	3	8.315	9.146	0.55	0.80	6.71	210.00	0.000	0.000	61.34	0.00	0.00
38	87.00	ACU-A20-N	4	8.315	9.146	0.63	0.80	0.35	4.00	0.000	0.000	3.24	0.00	0.00
39	87.00	Low Profile	1	8.315	9.146	1.00	1.00	22.00	1500.00	0.000	0.000	201.21	0.00	0.00
40	75.00	GPS	1	7.969	8.766	1.00	1.00	1.00	10.00	0.000	0.000	8.77	0.00	0.00
41	75.00	Standoff Mount	1	7.969	8.766	1.00	1.00	2.00	20.00	0.000	0.000	17.53	0.00	0.00

Totals: 12,205.87

3,662.97

Total Applied Force Summary

Structure: CT01498-S-SBA	Code: TIA-222-G	5/4/2022
Site Name: Avon	Exposure: B	
Height: 105.00 (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 15

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		101.12	1368.40	0.00	0.00
10.00		101.12	1368.40	0.00	0.00
15.00		101.12	1368.40	0.00	0.00
20.00		101.12	1368.40	0.00	0.00
25.00		91.01	1248.14	0.00	0.00
30.00		91.09	1248.14	0.00	0.00
35.00		95.19	1248.14	0.00	0.00
40.00		98.89	1248.14	0.00	0.00
45.00		90.91	1127.88	0.00	0.00
50.00		93.69	1127.88	0.00	0.00
55.00		96.28	1127.88	0.00	0.00
60.00		98.70	1127.88	0.00	0.00
65.00		88.36	1007.61	0.00	0.00
70.00		90.25	1007.61	0.00	0.00
75.00	(2) attachments	118.35	1037.61	0.00	0.00
80.00		93.76	1006.81	0.00	0.00
85.00		81.77	886.55	0.00	0.00
87.00	(23) attachments	655.88	2731.62	0.00	0.00
90.00		49.87	520.48	0.00	0.00
91.00	(12) attachments	362.57	926.79	0.00	0.00
95.00		67.53	690.13	0.00	0.00
97.00	(49) attachments	1282.70	5136.84	179.96	0.00
100.00		51.39	474.22	0.00	0.00
105.00	(26) attachments	1505.94	5044.17	0.00	4553.72
Totals:		5,608.62	35,448.13	179.96	4,553.72

Linear Appurtenance Segment Forces (Factored)

Structure: CT01498-S-SBA	Code: TIA-222-G	5/4/2022
Site Name: Avon	Exposure: B	
Height: 105.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



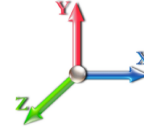
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Load Case: 1.0D + 1.0W 60 mph Wind

Iterations 15

Dead Load Factor 1.00

Wind Load Factor 1.00



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	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.021	0.000	6.129	0.00	5.20
5.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.021	0.000	6.129	0.00	0.80
10.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.021	0.000	6.129	0.00	5.20
10.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.021	0.000	6.129	0.00	0.80
15.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.021	0.000	6.129	0.00	5.20
15.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.021	0.000	6.129	0.00	0.80
20.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.021	0.000	6.129	0.00	5.20
20.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.021	0.000	6.129	0.00	0.80
25.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.024	0.000	6.129	0.00	5.20
25.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.024	0.000	6.129	0.00	0.80
30.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.024	0.000	6.134	0.00	5.20
30.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.024	0.000	6.134	0.00	0.80
35.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.024	0.000	6.410	0.00	5.20
35.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.024	0.000	6.410	0.00	0.80
40.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.024	0.000	6.659	0.00	5.20
40.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.024	0.000	6.659	0.00	0.80
45.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.027	0.000	6.887	0.00	5.20
45.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.027	0.000	6.887	0.00	0.80
50.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.027	0.000	7.098	0.00	5.20
50.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.027	0.000	7.098	0.00	0.80
55.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.027	0.000	7.294	0.00	5.20
55.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.027	0.000	7.294	0.00	0.80
60.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.027	0.000	7.477	0.00	5.20
60.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.027	0.000	7.477	0.00	0.80
65.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.030	0.000	7.650	0.00	5.20
65.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.030	0.000	7.650	0.00	0.80
70.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.030	0.000	7.814	0.00	5.20
70.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.030	0.000	7.814	0.00	0.80
75.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.030	0.000	7.969	0.00	5.20
75.00	1/2" Coax	Yes	5.00	0.000	0.65	0.27	0.00	0.030	0.000	7.969	0.00	0.80
80.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.015	0.000	8.118	0.00	5.20
85.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.017	0.000	8.260	0.00	5.20
87.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.018	0.000	8.315	0.00	2.08
90.00	Step bolts (ladder)	Yes	3.00	0.000	0.63	0.16	0.00	0.018	0.000	8.396	0.00	3.12
91.00	Step bolts (ladder)	Yes	1.00	0.000	0.63	0.05	0.00	0.018	0.000	8.422	0.00	1.04
95.00	Step bolts (ladder)	Yes	4.00	0.000	0.63	0.21	0.00	0.018	0.000	8.526	0.00	4.16
97.00	Step bolts (ladder)	Yes	2.00	0.000	0.63	0.10	0.00	0.018	0.000	8.577	0.00	2.08
100.00	Step bolts (ladder)	Yes	3.00	0.000	0.63	0.16	0.00	0.018	0.000	8.652	0.00	3.12
105.00	Step bolts (ladder)	Yes	5.00	0.000	0.63	0.26	0.00	0.017	0.000	8.774	0.00	5.20
Totals:											0.0	121.2

Calculated Forces

Structure: CT01498-S-SBA	Code: TIA-222-G	5/4/2022
Site Name: Avon	Exposure: B	
Height: 105.00 (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 15
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	-35.45	-5.61	-0.18	-471.91	0.00	471.91	2204.43	1102.21	5439.15	3573.20	0.00	0.000	0.000	0.148
5.00	-34.08	-5.53	-0.18	-443.84	0.00	443.84	2204.43	1102.21	5439.15	3573.20	0.01	-0.021	0.000	0.140
10.00	-32.71	-5.43	-0.18	-416.21	0.00	416.21	2204.43	1102.21	5439.15	3573.20	0.04	-0.040	0.000	0.131
15.00	-31.34	-5.34	-0.18	-389.04	0.00	389.04	2204.43	1102.21	5439.15	3573.20	0.10	-0.059	0.000	0.123
20.00	-29.97	-5.25	-0.18	-362.33	0.00	362.33	2204.43	1102.21	5439.15	3573.20	0.17	-0.076	0.000	0.115
20.00	-29.97	-5.25	-0.18	-362.33	0.00	362.33	2026.00	1013.00	4492.72	2914.55	0.17	-0.076	0.000	0.139
25.00	-28.72	-5.16	-0.18	-336.09	0.00	336.09	2026.00	1013.00	4492.72	2914.55	0.26	-0.092	0.000	0.130
30.00	-27.47	-5.08	-0.18	-310.27	0.00	310.27	2026.00	1013.00	4492.72	2914.55	0.36	-0.112	0.000	0.120
35.00	-26.22	-4.99	-0.18	-284.87	0.00	284.87	2026.00	1013.00	4492.72	2914.55	0.49	-0.131	0.000	0.111
40.00	-24.97	-4.90	-0.18	-259.92	0.00	259.92	2026.00	1013.00	4492.72	2914.55	0.64	-0.148	0.000	0.102
40.00	-24.97	-4.90	-0.18	-259.92	0.00	259.92	1847.49	923.75	3635.30	2322.74	0.64	-0.148	0.000	0.125
45.00	-23.84	-4.81	-0.18	-235.45	0.00	235.45	1847.49	923.75	3635.30	2322.74	0.80	-0.163	0.000	0.114
50.00	-22.71	-4.72	-0.18	-211.40	0.00	211.40	1847.49	923.75	3635.30	2322.74	0.98	-0.183	0.000	0.103
55.00	-21.58	-4.63	-0.18	-187.81	0.00	187.81	1847.49	923.75	3635.30	2322.74	1.18	-0.201	0.000	0.093
60.00	-20.45	-4.53	-0.18	-164.68	0.00	164.68	1847.49	923.75	3635.30	2322.74	1.40	-0.217	0.000	0.082
60.00	-20.45	-4.53	-0.18	-164.68	0.00	164.68	1668.87	834.44	2866.90	1797.79	1.40	-0.217	0.000	0.104
65.00	-19.44	-4.44	-0.18	-142.04	0.00	142.04	1668.87	834.44	2866.90	1797.79	1.64	-0.230	0.000	0.091
70.00	-18.44	-4.35	-0.18	-119.83	0.00	119.83	1668.87	834.44	2866.90	1797.79	1.89	-0.248	0.000	0.078
75.00	-17.40	-4.23	-0.18	-98.08	0.00	98.08	1668.87	834.44	2866.90	1797.79	2.16	-0.263	0.000	0.065
80.00	-16.39	-4.14	-0.18	-76.91	0.00	76.91	1668.87	834.44	2866.90	1797.79	2.44	-0.274	0.000	0.053
80.00	-16.39	-4.14	-0.18	-76.91	0.00	76.91	1490.10	745.05	2187.51	1339.68	2.44	-0.274	0.000	0.068
85.00	-15.50	-4.05	-0.18	-56.23	0.00	56.23	1490.10	745.05	2187.51	1339.68	2.73	-0.283	0.000	0.052
87.00	-12.78	-3.38	-0.18	-48.12	0.00	48.12	1490.10	745.05	2187.51	1339.68	2.85	-0.288	0.000	0.045
90.00	-12.26	-3.33	-0.18	-37.97	0.00	37.97	1490.10	745.05	2187.51	1339.68	3.03	-0.293	0.000	0.037
91.00	-11.33	-2.97	-0.18	-34.63	0.00	34.63	1490.10	745.05	2187.51	1339.68	3.09	-0.295	0.000	0.033
95.00	-10.64	-2.90	-0.18	-22.77	0.00	22.77	1490.10	745.05	2187.51	1339.68	3.34	-0.300	0.000	0.024
97.00	-5.51	-1.59	0.00	-16.98	0.00	16.98	1490.10	745.05	2187.51	1339.68	3.47	-0.301	0.000	0.016
100.00	-5.04	-1.53	0.00	-12.22	0.00	12.22	1490.10	745.05	2187.51	1339.68	3.66	-0.303	0.000	0.013
105.00	0.00	-1.51	0.00	-4.55	0.00	4.55	1490.10	745.05	2187.51	1339.68	3.98	-0.305	0.000	0.003

Final Analysis Summary

Structure: CT01498-S-SBA	Code: TIA-222-G	5/4/2022
Site Name: Avon	Exposure: B	
Height: 105.00 (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 93 mph Wind	21.6	0.00	42.52	0.00	0.43	1818.75
0.9D + 1.6W 93 mph Wind	21.6	0.00	31.89	0.00	0.43	1811.68
1.2D + 1.0Di + 1.0Wi 50 mph Wind	7.1	0.00	75.30	0.00	0.16	580.41
1.2D + 1.0E	2.8	0.00	42.54	0.00	0.00	260.42
0.9D + 1.0E	2.8	0.00	31.90	0.00	0.00	259.36
1.0D + 1.0W 60 mph Wind	5.6	0.00	35.45	0.00	0.18	471.91

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 93 mph Wind	-42.52	-21.59	-0.43	-1818.7	0.00	-1818.7	2204.43	1102.2	5439.15	3573.20	0.00	0.529
0.9D + 1.6W 93 mph Wind	-31.89	-21.58	-0.43	-1811.6	0.00	-1811.6	2204.43	1102.2	5439.15	3573.20	0.00	0.522
1.2D + 1.0Di + 1.0Wi 50 mph Wind	-75.30	-7.05	-0.16	-580.41	0.00	-580.41	2204.43	1102.2	5439.15	3573.20	0.00	0.197
1.2D + 1.0E	-42.54	-2.77	0.00	-260.42	0.00	-260.42	2204.43	1102.2	5439.15	3573.20	0.00	0.092
0.9D + 1.0E	-31.90	-2.77	0.00	-259.36	0.00	-259.36	2204.43	1102.2	5439.15	3573.20	0.00	0.087
1.0D + 1.0W 60 mph Wind	-35.45	-5.61	-0.18	-471.91	0.00	-471.91	2204.43	1102.2	5439.15	3573.20	0.00	0.148

Base Plate Summary

Structure: CT01498-S-SB	Code: TIA-222-G	5/4/2022
Site Name: Avon	Exposure: B	
Height: 105.00 (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): 36.00	Bolt Circle: 63.00
Moment (kip-ft): 2555.30	Width (in): 66.13	Number Bolts: 48.00
Axial (kip): 40.60	Style: Round	Bolt Type: 1.00" A687
Shear (kip): 31.10	Polygon Sides: 0.00	Bolt Diameter (in): 1.00
Analysis (1.2D + 1.6W)	Clip Length (in): 0.00	Yield (ksi): 105.00
Moment (kip-ft): 1818.75	Effective Len (in): 4.73	Ultimate (ksi): 150.00
Axial (kip): 42.52	Moment (kip-in): 45.66	Arrangement: Radial
Shear (kip): 21.59	Allow Stress (ksi): 48.60	Cluster Dist (in): 0.00
	Applied Stress (ksi): 36.94	Start Angle (deg): 0.00
	Stress Ratio: 0.76	Compression
		Force (kip): 30.44
		Allowable (kip): 72.72
		Ratio: 0.43
		Tension
		Force (kip): 27.30
		Allowable (kip): 72.72
		Ratio: 0.39



Monopole Mat Foundation Design

Date

Customer Name:	SBA	EIA/TIA Standard:	EIA-222-G
Site Name:	Avon	Structure Height (Ft.):	300
Site Number:	CT01498-S-SBA	Engineer Name:	A. Lama
Engr. Number:		Engineer Login ID:	

Foundation Info Obtained from:

Mapping Operation
Monopole
Analysis

Structure Type:

Analysis or Design?

Base Reactions (Factored):

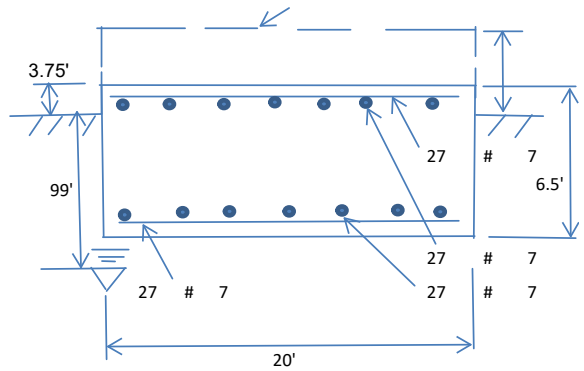
Axial Load (Kips):	42.5	Shear Force (Kips):	21.6
Uplift Force (Kips):	0.0	Moment (Kips-ft):	1818.7

Allowable overstress %: 5.0%

Foundation Geometries:

Anchor Bolt Circle (ft.):	5.25	Depth of Base BG (ft.):	2.75	Mods required -Yes/No ?:	No
Thickness of Pad (ft.):	6.50	Width of Pad (ft.):	20		
Length of Pad (ft.):	20				

Final Length of pad (ft) 20.0 Final width of pad (ft): 20.0



Material Properties and Rebar Info:

Concrete Strength (psi):	4000	Steel Elastic Modulus:	29000	ksi
Pad Rebar Yield (Ksi):	60	Tie Spacing (in):	12.0	
Pad Steel Rebar Size (#):	7	Unit Weight of Concrete:	150.0	pcf
Concrete Cover (in.):	3			

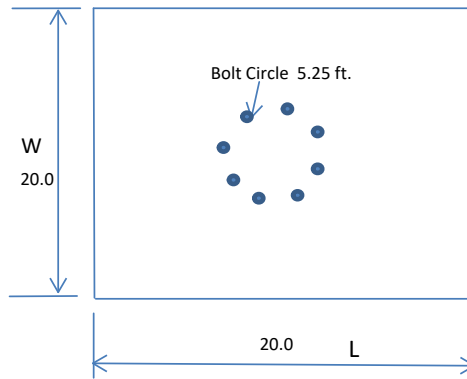
Rebar at the bottom of the concrete pad:

Qty. of Rebar in Pad (L):	27	Qty. of Rebar in Pad (W):	27
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Rebar at the top of the concrete pad:

Qty. of Rebar in Pad (L):	27	Qty. of Rebar in Pad (W):	27
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Apply 1.35 factor for e/w Per G: 1.35



Soil Design Parameters:

Water Table B.G.S. (ft):	99.0	Unit Weight of Water:	62.4	pcf	Angle from Top of Pad:	30
Ultimate Bearing Pressure (psf):	60000	Ultimate Skin Friction:	0	Psf	Angle from Bottm of Pad:	25
Consider Friction for O.T.M. (Y/N):	No	Consider Friction for bearing (Y/N):	No		Angle from Bottm of Pad:	25
Consider soil hor. resist. for OTM.:	No	Reduction factor on the maximum soil bearing pressure:	1.00			

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.):	2600.00	Total Dry Concrete Weight (Kips):	390.00
Total Buoyant Concrete Volume (cu. Ft.):	0.00	Total Buoyant Concrete Weight (Kips):	0.00
Total Effective Concrete Weight (Kips):	390.00	Total Vertical Load on Base (Kips):	432.50

Check Soil Capacities:

Calculated Maxium Net Soil Pressure under the base (psf):	3193	<	Allowable Factored Soil Bearing (psf):	45000	0.07	OK!
Allowable Foundation Overturning Resistance (kips-ft.):	3935.0	>	Design Factored Momnt (kips-ft):	1960	0.50	OK!
Factor of Safety Against Overturning (O. R. Moment/Design Moment):	2.01					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

Concrete Pad:

One-Way Design Shear Capacity (L-Direction, Kips):	1697.7	>	One-Way Factored Shear (L-D. Kips):	45.4	0.03	OK!
One-Way Design Shear Capacity (W-Direction, Kips):	1697.7	>	One-Way Factored Shear (W-D., Kips)	45.4	0.03	OK!
One-Way Design Shear Capacity (Corner-Corner, Kips):	1912.8	>	One-Way Factored Shear (C-C, Kips):	389.4	0.20	OK!
Lower Steel Pad Reinforcement Ratio (L-Direct.):	0.0009	OK!	Lower Steel Pad Reinf. Ratio (W-Direc	0.0009		
Lower Steel Pad Moment Capacity (L-Direction, Kips-ft):	5392.2	>	Moment at Bottom (L-Direct. K-Ft):	20.7	0.00	OK!
Lower Steel Pad Moment Capacity (W-Direction, Kips-ft):	5392.2	>	Moment at Bottom (W-Direct. K-Ft):	20.7	0.00	OK!
Lower Steel Pad Moment Capacity (Corner-Corner, K-ft):	7610.0	>	Moment at Bottom (C-C Dir. K-Ft):	29.3	0.00	OK!
Upper Steel Pad Reinforcement Ratio (L-Direct.):	0.0009	OK!	Upper Steel Reinf. Ratio (W-Direct.):	0.0009		
Upper Steel Pad Moment Capacity (L-Direction, Kips-ft):	5392.2	>	Moment at the top (L-Dir Kips-Ft):	35.1	0.01	OK!
Upper Steel Pad Moment Capacity (W-Direction, Kips-ft):	5392.2	>	Moment at the top (W-Dir Kips-Ft):	35.1	0.01	OK!
Upper Steel Pad Moment Capacity (Corner-Corner, K-ft):	7610.0	>	Moment at the top (C-C Direc. K-Ft):	231.6	0.03	OK!

EXHIBIT 4

March 18, 2022



Centerline Communications
750 West Center Street, Suite #301
West Bridgewater, MA 02379

RE: Site Number: CT5289
 FA Number: 10035012
 PACE Number: MRCTB054159
 PT Number: 2051A11PAW
 Site Name: AVON SOUTH WEST
 Site Address: 10 Redwood Lane
 Avon, CT 06001

To Whom It May Concern:

Hudson Design Group LLC (HDG) has been authorized by Centerline Communications to perform a mount analysis on the existing AT&T antenna/RRH mount to determine its capability of supporting the following additional loading:

- (6) 800-10965 Antennas (78.7"x20.0"x6.9" – Wt. = 109 lbs. /each)
- (3) 8843 B2/B66A RRH's (14.9"x13.2"x10.9" – Wt. = 72 lbs. /each)
- (3) 4449 B5/B12 RRH's (17.9"x13.2"x9.4" – Wt. = 73 lbs. /each)
- (3) DC6-48-60-18 Surge Arrestors (31.4"x10.2" Ø – Wt. = 33 lbs.) (Tower Mounted)
- **(3) AIR6419 Antennas (31.0"x16.1"x7.3" – Wt. = 66 lbs. /each)**
- **(3) AIR6449 Antennas (30.6"x15.9"x10.6" – Wt. = 82 lbs. /each)**
- **(3) 4478 B14 RRH's (18.1"x13.4"x8.3" – Wt. = 60 lbs. /each)**

*Proposed equipment shown in bold.

No original structural design documents or fabrication drawings were available for the existing mount. HDG's subconsultant, ProVertic LLC, conducted a survey climb and mapping of the existing AT&T antenna mount on March 8, 2022.

Mount Analysis Methods:

- This analysis was conducted in accordance with EIA/TIA-222-H, Structural Standards for Steel Antenna Towers and Antenna Supporting Structures, the International Building Code 2015 with 2018 Connecticut State Building Code, and AT&T Mount Technical Directive – R16.
- HDG considers this mount to be asymmetrical and has applied wind loads in 30 degree increments all around the mount. Per TIA-222-H and Appendix N of the Connecticut State Building Code, the max basic wind speed for this site is equal to 120 mph with a max basic wind speed with ice of 50 mph and a max ice thickness of 1.5 in. An escalated ice thickness of 1.68 in was used for this analysis.
- HDG considers this site to be exposure category B; tower is located in an urban/suburban or wooded area with numerous closely spaced obstructions.
- HDG considers this site to be topographic category 1; tower is located on flat terrain or the bottom of a hill or ridge.
- HDG considers this site to have a spectral response acceleration parameter at short periods, S_s , of 0.181 and a spectral response acceleration parameter at a period of 1 second, S_1 , of 0.064.
- The mount has been analyzed with load combinations consisting of 500 lbs live load using a service wind speed of 30 mph wind on the worst case antenna. Analysis performed on each antenna pipe to determine worst case location; worst case location was antenna position 2.
- The mount has been analyzed with load combinations consisting of a 250 lbs live load in a worst case location on the mount.
- The existing mount is secured to the existing monopole with ring mounts and threaded rods. HDG considers the threaded rods to be the governing connection member.

Based on our evaluation, we have determined that the existing mount **IS CAPABLE** of supporting the proposed installation.

	Component	Controlling Load Case	Stress Ratio	Pass/Fail
Existing Mount Rating	42	LC11	70%	PASS

Reference Documents:

- Mount mapping report prepared by ProVertic LLC.

This determination was based on the following limitations and assumptions:

1. HDG is not responsible for any modifications completed prior to and hereafter which HDG was not directly involved.
2. All structural members and their connections are assumed to be in good condition and are free from defects with no deterioration to its member capacities.
3. All antennas, coax cables and waveguide cables are assumed to be properly installed and supported as per the manufacturer's requirements.
4. The existing mount has been adequately secured to the tower structure per the mount manufacturer's specifications.
5. All components pertaining to AT&T's mount must be tightened and re-plumbed prior to the installation of new appurtenances.
6. HDG performed a localized analysis on the mount itself and not on the supporting tower structure.

Please feel free to contact our office should you have any questions.

Respectfully Submitted,
Hudson Design Group LLC



Michael Cabral
Vice President



Daniel P. Hamm, PE
Principal

FIELD PHOTOS:



FIELD PHOTOS (CONT.):





HUDSON
Design Group LLC

Wind & Ice
Calculations

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 Project No.: CT5289
 Designed By: KSBM Checked By: MSC



2.6.5.2 Velocity Pressure Coeff:

$$K_z = 2.01 (z/z_g)^{2/\alpha}$$

$K_z =$ **0.988** $z =$ 101 (ft)
 $z_g =$ 1200 (ft)
 $\alpha =$ 7

$K_{zmin} \leq K_z \leq 2.01$

Table 2-4

Exposure	Z_g	α	K_{zmin}	K_c
B	1200 ft	7.0	0.70	0.9
C	900 ft	9.5	0.85	1.0
D	700 ft	11.5	1.03	1.1

2.6.6.2 Topographic Factor:

Table 2-5

Topo. Category	K_t	f
2	0.43	1.25
3	0.53	2.0
4	0.72	1.5

$$K_{zt} = [1 + (K_c K_t / K_h)]^2$$

$$K_h = e^{(fz/H)}$$

$K_{zt} =$ **1**

$K_h =$ 1

(If Category 1 then $K_{zt} = 1.0$)

$K_c =$ 0.9 (from Table 2-4)

$K_t =$ 0 (from Table 2-5)

$f =$ 0 (from Table 2-5)

Category = **1**

$z =$ 101

$z_s =$ 440 (Mean elevation of base of structure above sea level)

$H =$ 0 (Ht. of the crest above surrounding terrain)

$K_{zt} =$ 1.00 (from 2.6.6.2.1)

$K_e =$ 0.98 (from 2.6.8)

2.6.10 Design Ice Thickness

Max Ice Thickness =

$t_i =$ 1.50 in

Importance Factor =

$I =$ 1.00 (from Table 2-3)

$K_{iz} =$ 1.12 (from Sec. 2.6.10)

$$t_{iz} = t_i * I * K_{iz} * (K_{zt})^{0.35}$$

$t_{iz} =$ 1.68 in

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2.6.9 Gust Effect Factor

2.6.9.1 Self Supporting Lattice Structures

$G_h = 1.0$ Latticed Structures > 600 ft

$G_h = 0.85$ Latticed Structures 450 ft or less

$G_h = 0.85 + 0.15 [h/150 - 3.0]$ $h =$ ht. of structure

$h =$ 106

$G_h =$ 0.85

2.6.9.2 Guyed Masts

$G_h =$ 0.85

2.6.9.3 Pole Structures

$G_h =$ 1.1

2.6.9 Appurtenances

$G_h =$ 1.0

2.6.9.4 Structures Supported on Other Structures

(Cantilevered tubular or latticed spines, pole, structures on buildings (ht. : width ratio > 5))

$G_h =$ 1.35

$G_h =$ 1.00

2.6.11.2 Design Wind Force on Appurtenances

$F = q_z * G_h * (EPA)_A$

$q_z = 0.00256 * K_z * K_{zt} * K_s * K_e * K_d * V_{max}^2$

$K_z =$ 0.988 (from 2.6.5.2)

$K_{zt} =$ 1.0 (from 2.6.6.2.1)

$K_s =$ 1.0 (from 2.6.7)

$K_e =$ 0.98 (from 2.6.8)

$K_d =$ 0.95 (from Table 2-2)

$V_{max} =$ 120 mph (Ultimate Wind Speed)

$V_{max(ice)} =$ 50 mph

$V_{30} =$ 30 mph

$q_z =$	34.06
$q_{z(ice)} =$	5.91
$q_{z(30)} =$	2.13

Table 2-2

Structure Type	Wind Direction Probability Factor, K_d
Latticed structures with triangular, square or rectangular cross sections	0.85
Tubular pole structures, latticed structures with other cross sections, appurtenances	0.95
Tubular pole structures supporting antennas enclosed within a cylindrical shroud	1.00

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Determine Ca:

Table 2-9

Force Coefficients (Ca) for Appurtenances				
Member Type		Aspect Ratio ≤ 2.5	Aspect Ratio = 7	Aspect Ratio ≥ 25
		Ca	Ca	Ca
Flat		1.2	1.4	2.0
Square/Rectangular HSS		1.2 - 2.8($r_s \geq 0.85$)	1.4 - 4.0($r_s \geq 0.90$)	2.0 - 6.0($r_s \geq 1.25$)
Round	C < 39 (Subcritical)	0.7	0.8	1.2
	39 ≤ C ≤ 78 (Transitional)	4.14/(C ^{0.485})	3.66/(C ^{0.415})	46.8/(C ^{1.0})
	C > 78 (Supercritical)	0.5	0.6	0.6

Aspect Ratio is the overall length/width ratio in the plane normal to the wind direction.
 (Aspect ratio is independent of the spacing between support points of a linear appurtenance,
 Note: Linear interpolation may be used for aspect ratios other than those shown.

Ice Thickness = **1.68 in** **Angle = 0 (deg)** **Equivalent Angle = 180 (deg)**

<u>Appurtenances</u>	<u>Height</u>	<u>Width</u>	<u>Depth</u>	<u>Flat Area</u>	<u>Aspect Ratio</u>	<u>Ca</u>	<u>Force (lbs)</u>	<u>Force (lbs) (w/ Ice)</u>	<u>Force (lbs) (30 mph)</u>
800-10965 Antenna	78.7	20.0	6.9	10.93	3.94	1.26	471	99	29
AIR6419 Antenna	31.0	16.1	7.3	3.47	1.93	1.20	142	33	9
AIR6449 Antenna	30.6	15.9	10.6	3.38	1.92	1.20	138	32	9
4478 B14 RRH (Side)	27.2	7.0	12.1	1.32	3.89	1.26	57	16	4
4478 B14 RRH (Shielded)	27.2	3.5	12.1	0.66	7.77	1.43	32	12	2
8843 B2/B66A RRH (Side)	14.9	10.9	13.2	1.13	1.37	1.20	46	13	3
8843 B2/B66A RRH (Shielded)	14.9	5.5	13.2	0.56	2.73	1.21	23	8	1
4449 B5/B12 RRH	17.9	13.2	9.4	1.64	1.36	1.20	67	17	4
4449 B5/B12 RRH (Shielded)	17.9	0.0	9.4	0.00	0.00	1.20	0	4	0
DC6-48-60-18 Surge Arrestor	31.4	10.2	10.2	2.22	3.08	0.70	53	14	3
Plate 6x5/8	6.0	12.0		0.50	0.50	2.00		34	
1-1/2x2-1/2 Angle	1.5	12.0		0.13	0.13	2.00		9	
2x2 Angle	2.0	12.0		0.17	0.17	2.00		11	
2-1/2x2-1/2 Angle	2.5	12.0		0.21	0.21	2.00		14	
2" Pipe	2.4	12.0		0.20	0.20	1.20		8	
2-1/2" Pipe	2.9	12.0		0.24	0.24	1.20		10	
3" Pipe	3.5	12.0		0.29	0.29	1.20		12	
HSS 3x3	3.0	12.0		0.25	0.25	1.25		11	

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WIND LOADS

Angle = **30** (deg)

Ice Thickness = **1.68** in.

Equivalent Angle = **210** (deg)

WIND LOADS WITH NO ICE:

Appurtenances	Height	Width	Depth	Flat Area (normal)	Flat Area (side)	Aspect Ratio	Aspect Ratio	Ca (normal)	Ca (side)	Force (lbs)	Force (lbs)	Force (lbs)
800-10965 Antenna	78.7	20.0	6.9	10.93	3.77	3.94	11.41	1.26	1.55	471	199	403
AIR6419 Antenna	31.0	16.1	7.3	3.47	1.57	1.93	4.25	1.20	1.28	142	68	123
AIR6449 Antenna	30.6	15.9	10.6	3.38	2.25	1.92	2.89	1.20	1.22	138	93	127
4478 B14 RRH (Side)	27.2	7.0	12.1	1.32	2.29	3.89	2.25	1.26	1.20	57	93	66
4478 B14 RRH (Shielded)	27.2	3.5	12.1	0.66	2.29	7.77	2.25	1.43	1.20	32	93	47
8843 B2/B66A RRH (Side)	14.9	10.9	13.2	1.13	1.37	1.37	1.13	1.20	1.20	46	56	49
8843 B2/B66A RRH (Shielded)	14.9	5.5	13.2	0.56	1.37	2.73	1.13	1.21	1.20	23	56	31
4449 B5/B12 RRH	17.9	13.2	9.4	1.64	1.17	1.36	1.90	1.20	1.20	67	48	62
4449 B5/B12 RRH (Shielded)	17.9	0.0	9.4	0.00	1.17	0.00	1.90	1.20	1.20	0	48	12

WIND LOADS WITH ICE:

800-10965 Antenna	82.1	23.4	10.3	13.31	5.84	3.51	8.00	1.25	1.43	98	50	86
AIR6419 Antenna	34.4	19.5	10.7	4.64	2.54	1.77	3.22	1.20	1.23	33	19	29
AIR6449 Antenna	34.0	19.3	14.0	4.54	3.29	1.76	2.43	1.20	1.20	32	23	30
4478 B14 RRH (Side)	30.6	10.4	15.5	2.20	3.28	2.95	1.98	1.22	1.20	16	23	18
4478 B14 RRH (Shielded)	30.6	6.9	15.5	1.45	3.28	4.46	1.98	1.29	1.20	11	23	14
8843 B2/B66A RRH (Side)	18.3	14.3	16.6	1.81	2.10	1.28	1.10	1.20	1.20	13	15	13
8843 B2/B66A RRH (Shielded)	18.3	8.8	16.6	1.12	2.10	2.07	1.10	1.20	1.20	8	15	10
4449 B5/B12 RRH	21.3	16.6	12.8	2.44	1.88	1.28	1.67	1.20	1.20	17	13	16
4449 B5/B12 RRH (Shielded)	21.3	3.4	12.8	0.49	1.88	6.34	1.67	1.37	1.20	4	13	6

WIND LOADS AT 30 MPH:

800-10965 Antenna	78.7	20.0	6.9	10.93	3.77	3.94	11.41	1.26	1.55	29	12	25
AIR6419 Antenna	31.0	16.1	7.3	3.47	1.57	1.93	4.25	1.20	1.28	9	4	8
AIR6449 Antenna	30.6	15.9	10.6	3.38	2.25	1.92	2.89	1.20	1.22	9	6	8
4478 B14 RRH (Side)	27.2	7.0	12.1	1.32	2.29	3.89	2.25	1.26	1.20	4	6	4
4478 B14 RRH (Shielded)	27.2	3.5	12.1	0.66	2.29	7.77	2.25	1.43	1.20	2	6	3
8843 B2/B66A RRH (Side)	14.9	10.9	13.2	1.13	1.37	1.37	1.13	1.20	1.20	3	3	3
8843 B2/B66A RRH (Shielded)	14.9	5.5	13.2	0.56	1.37	2.73	1.13	1.21	1.20	1	3	2
4449 B5/B12 RRH	17.9	13.2	9.4	1.64	1.17	1.36	1.90	1.20	1.20	4	3	4
4449 B5/B12 RRH (Shielded)	17.9	0.0	9.4	0.00	1.17	0.00	1.90	1.20	1.20	0	3	1

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WIND LOADS

Angle = **60** (deg) Ice Thickness = **1.68** in. Equivalent Angle = **240** (deg)

WIND LOADS WITH NO ICE:

Appurtenances	Height	Width	Depth	Flat Area (normal)	Flat Area (side)	Ratio (normal)	Ratio (side)	Ca (normal)	Ca (side)	Force (lbs)	Force (lbs)	Force (lbs)
800-10965 Antenna	78.7	20.0	6.9	10.93	3.77	3.94	11.41	1.26	1.55	471	199	267
AIR6419 Antenna	31.0	16.1	7.3	3.47	1.57	1.93	4.25	1.20	1.28	142	68	87
AIR6449 Antenna	30.6	15.9	10.6	3.38	2.25	1.92	2.89	1.20	1.22	138	93	105
4478 B14 RRH (Side)	27.2	7.0	12.1	1.32	2.29	3.89	2.25	1.26	1.20	57	93	84
4478 B14 RRH (Shielded)	27.2	3.5	12.1	0.66	2.29	7.77	2.25	1.43	1.20	32	93	78
8843 B2/B66A RRH (Side)	14.9	10.9	13.2	1.13	1.37	1.37	1.13	1.20	1.20	46	56	53
8843 B2/B66A RRH (Shielded)	14.9	5.5	13.2	0.56	1.37	2.73	1.13	1.21	1.20	23	56	48
4449 B5/B12 RRH	17.9	13.2	9.4	1.64	1.17	1.36	1.90	1.20	1.20	67	48	53
4449 B5/B12 RRH (Shielded)	17.9	0.0	9.4	0.00	1.17	0.00	1.90	1.20	1.20	0	48	36

WIND LOADS WITH ICE:

800-10965 Antenna	82.1	23.4	10.3	13.31	5.84	3.51	8.00	1.25	1.43	98	50	62
AIR6419 Antenna	34.4	19.5	10.7	4.64	2.54	1.77	3.22	1.20	1.23	33	19	22
AIR6449 Antenna	34.0	19.3	14.0	4.54	3.29	1.76	2.43	1.20	1.20	32	23	26
4478 B14 RRH (Side)	30.6	10.4	15.5	2.20	3.28	2.95	1.98	1.22	1.20	16	23	21
4478 B14 RRH (Shielded)	30.6	6.9	15.5	1.45	3.28	4.46	1.98	1.29	1.20	11	23	20
8843 B2/B66A RRH (Side)	18.3	14.3	16.6	1.81	2.10	1.28	1.10	1.20	1.20	13	15	14
8843 B2/B66A RRH (Shielded)	18.3	8.8	16.6	1.12	2.10	2.07	1.10	1.20	1.20	8	15	13
4449 B5/B12 RRH	21.3	16.6	12.8	2.44	1.88	1.28	1.67	1.20	1.20	17	13	14
4449 B5/B12 RRH (Shielded)	21.3	3.4	12.8	0.49	1.88	6.34	1.67	1.37	1.20	4	13	11

WIND LOADS AT 30 MPH:

800-10965 Antenna	78.7	20.0	6.9	10.93	3.77	3.94	11.41	1.26	1.55	29	12	17
AIR6419 Antenna	31.0	16.1	7.3	3.47	1.57	1.93	4.25	1.20	1.28	9	4	5
AIR6449 Antenna	30.6	15.9	10.6	3.38	2.25	1.92	2.89	1.20	1.22	9	6	7
4478 B14 RRH (Side)	27.2	7.0	12.1	1.32	2.29	3.89	2.25	1.26	1.20	4	6	5
4478 B14 RRH (Shielded)	27.2	3.5	12.1	0.66	2.29	7.77	2.25	1.43	1.20	2	6	5
8843 B2/B66A RRH (Side)	14.9	10.9	13.2	1.13	1.37	1.37	1.13	1.20	1.20	3	3	3
8843 B2/B66A RRH (Shielded)	14.9	5.5	13.2	0.56	1.37	2.73	1.13	1.21	1.20	1	3	3
4449 B5/B12 RRH	17.9	13.2	9.4	1.64	1.17	1.36	1.90	1.20	1.20	4	3	3
4449 B5/B12 RRH (Shielded)	17.9	0.0	9.4	0.00	1.17	0.00	1.90	1.20	1.20	0	3	2

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WIND LOADS

Angle = **90** (deg) Ice Thickness = **1.68** in. Equivalent Angle = **270** (deg)

WIND LOADS WITH NO ICE:

Appurtenances	Height	Width	Depth	Flat Area (normal)	Flat Area (side)	Ratio (normal)	Ratio (side)	Ca (normal)	Ca (side)	Force (lbs)	Force (lbs)	Force (lbs)
800-10965 Antenna	78.7	20.0	6.9	10.93	3.77	3.94	11.41	1.26	1.55	471	199	199
AIR6419 Antenna	31.0	16.1	7.3	3.47	1.57	1.93	4.25	1.20	1.28	142	68	68
AIR6449 Antenna	30.6	15.9	10.6	3.38	2.25	1.92	2.89	1.20	1.22	138	93	93
4478 B14 RRH (Side)	27.2	7.0	12.1	1.32	2.29	3.89	2.25	1.26	1.20	57	93	93
4478 B14 RRH (Shielded)	27.2	3.5	12.1	0.66	2.29	7.77	2.25	1.43	1.20	32	93	93
8843 B2/B66A RRH (Side)	14.9	10.9	13.2	1.13	1.37	1.37	1.13	1.20	1.20	46	56	56
8843 B2/B66A RRH (Shielded)	14.9	5.5	13.2	0.56	1.37	2.73	1.13	1.21	1.20	23	56	56
4449 B5/B12 RRH	17.9	13.2	9.4	1.64	1.17	1.36	1.90	1.20	1.20	67	48	48
4449 B5/B12 RRH (Shielded)	17.9	0.0	9.4	0.00	1.17	0.00	1.90	1.20	1.20	0	48	48

WIND LOADS WITH ICE:

800-10965 Antenna	82.1	23.4	10.3	13.31	5.84	3.51	8.00	1.25	1.43	98	50	50
AIR6419 Antenna	34.4	19.5	10.7	4.64	2.54	1.77	3.22	1.20	1.23	33	19	19
AIR6449 Antenna	34.0	19.3	14.0	4.54	3.29	1.76	2.43	1.20	1.20	32	23	23
4478 B14 RRH (Side)	30.6	10.4	15.5	2.20	3.28	2.95	1.98	1.22	1.20	16	23	23
4478 B14 RRH (Shielded)	30.6	6.9	15.5	1.45	3.28	4.46	1.98	1.29	1.20	11	23	23
8843 B2/B66A RRH (Side)	18.3	14.3	16.6	1.81	2.10	1.28	1.10	1.20	1.20	13	15	15
8843 B2/B66A RRH (Shielded)	18.3	8.8	16.6	1.12	2.10	2.07	1.10	1.20	1.20	8	15	15
4449 B5/B12 RRH	21.3	16.6	12.8	2.44	1.88	1.28	1.67	1.20	1.20	17	13	13
4449 B5/B12 RRH (Shielded)	21.3	3.4	12.8	0.49	1.88	6.34	1.67	1.37	1.20	4	13	13

WIND LOADS AT 30 MPH:

800-10965 Antenna	78.7	20.0	6.9	10.93	3.77	3.94	11.41	1.26	1.55	29	12	12
AIR6419 Antenna	31.0	16.1	7.3	3.47	1.57	1.93	4.25	1.20	1.28	9	4	4
AIR6449 Antenna	30.6	15.9	10.6	3.38	2.25	1.92	2.89	1.20	1.22	9	6	6
4478 B14 RRH (Side)	27.2	7.0	12.1	1.32	2.29	3.89	2.25	1.26	1.20	4	6	6
4478 B14 RRH (Shielded)	27.2	3.5	12.1	0.66	2.29	7.77	2.25	1.43	1.20	2	6	6
8843 B2/B66A RRH (Side)	14.9	10.9	13.2	1.13	1.37	1.37	1.13	1.20	1.20	3	3	3
8843 B2/B66A RRH (Shielded)	14.9	5.5	13.2	0.56	1.37	2.73	1.13	1.21	1.20	1	3	3
4449 B5/B12 RRH	17.9	13.2	9.4	1.64	1.17	1.36	1.90	1.20	1.20	4	3	3
4449 B5/B12 RRH (Shielded)	17.9	0.0	9.4	0.00	1.17	0.00	1.90	1.20	1.20	0	3	3

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WIND LOADS

Angle = **120** (deg) Ice Thickness = **1.68** in. Equivalent Angle = **300** (deg)

WIND LOADS WITH NO ICE:

Appurtenances	Height	Width	Depth	Flat Area (normal)	Flat Area (side)	Ratio (normal)	Ratio (side)	Ca (normal)	Ca (side)	Force (lbs)	Force (lbs)	Force (lbs)
800-10965 Antenna	78.7	20.0	6.9	10.93	3.77	3.94	11.41	1.26	1.55	471	199	267
AIR6419 Antenna	31.0	16.1	7.3	3.47	1.57	1.93	4.25	1.20	1.28	142	68	87
AIR6449 Antenna	30.6	15.9	10.6	3.38	2.25	1.92	2.89	1.20	1.22	138	93	105
4478 B14 RRH (Side)	27.2	7.0	12.1	1.32	2.29	3.89	2.25	1.26	1.20	57	93	84
4478 B14 RRH (Shielded)	27.2	3.5	12.1	0.66	2.29	7.77	2.25	1.43	1.20	32	93	78
8843 B2/B66A RRH (Side)	14.9	10.9	13.2	1.13	1.37	1.37	1.13	1.20	1.20	46	56	53
8843 B2/B66A RRH (Shielded)	14.9	5.5	13.2	0.56	1.37	2.73	1.13	1.21	1.20	23	56	48
4449 B5/B12 RRH	17.9	13.2	9.4	1.64	1.17	1.36	1.90	1.20	1.20	67	48	53
4449 B5/B12 RRH (Shielded)	17.9	0.0	9.4	0.00	1.17	0.00	1.90	1.20	1.20	0	48	36

WIND LOADS WITH ICE:

800-10965 Antenna	82.1	23.4	10.3	13.31	5.84	3.51	8.00	1.25	1.43	98	50	62
AIR6419 Antenna	34.4	19.5	10.7	4.64	2.54	1.77	3.22	1.20	1.23	33	19	22
AIR6449 Antenna	34.0	19.3	14.0	4.54	3.29	1.76	2.43	1.20	1.20	32	23	26
4478 B14 RRH (Side)	30.6	10.4	15.5	2.20	3.28	2.95	1.98	1.22	1.20	16	23	21
4478 B14 RRH (Shielded)	30.6	6.9	15.5	1.45	3.28	4.46	1.98	1.29	1.20	11	23	20
8843 B2/B66A RRH (Side)	18.3	14.3	16.6	1.81	2.10	1.28	1.10	1.20	1.20	13	15	14
8843 B2/B66A RRH (Shielded)	18.3	8.8	16.6	1.12	2.10	2.07	1.10	1.20	1.20	8	15	13
4449 B5/B12 RRH	21.3	16.6	12.8	2.44	1.88	1.28	1.67	1.20	1.20	17	13	14
4449 B5/B12 RRH (Shielded)	21.3	3.4	12.8	0.49	1.88	6.34	1.67	1.37	1.20	4	13	11

WIND LOADS AT 30 MPH:

800-10965 Antenna	78.7	20.0	6.9	10.93	3.77	3.94	11.41	1.26	1.55	29	12	17
AIR6419 Antenna	31.0	16.1	7.3	3.47	1.57	1.93	4.25	1.20	1.28	9	4	5
AIR6449 Antenna	30.6	15.9	10.6	3.38	2.25	1.92	2.89	1.20	1.22	9	6	7
4478 B14 RRH (Side)	27.2	7.0	12.1	1.32	2.29	3.89	2.25	1.26	1.20	4	6	5
4478 B14 RRH (Shielded)	27.2	3.5	12.1	0.66	2.29	7.77	2.25	1.43	1.20	2	6	5
8843 B2/B66A RRH (Side)	14.9	10.9	13.2	1.13	1.37	1.37	1.13	1.20	1.20	3	3	3
8843 B2/B66A RRH (Shielded)	14.9	5.5	13.2	0.56	1.37	2.73	1.13	1.21	1.20	1	3	3
4449 B5/B12 RRH	17.9	13.2	9.4	1.64	1.17	1.36	1.90	1.20	1.20	4	3	3
4449 B5/B12 RRH (Shielded)	17.9	0.0	9.4	0.00	1.17	0.00	1.90	1.20	1.20	0	3	2

Date: 3/17/2022
 Project Name: AVON SOUTH WEST
 Project No.: CT5289
 Designed By: KSBM Checked By: MSC



WIND LOADS

Angle = 150 (deg) Ice Thickness = 1.68 in. Equivalent Angle = 330 (deg)

WIND LOADS WITH NO ICE:

Appurtenances	Height	Width	Depth	Flat Area (normal)	Flat Area (side)	Ratio (normal)	Ratio (side)	Ca (normal)	Ca (side)	Force (lbs)	Force (lbs)	Force (lbs)
800-10965 Antenna	78.7	20.0	6.9	10.93	3.77	3.94	11.41	1.26	1.55	471	199	403
AIR6419 Antenna	31.0	16.1	7.3	3.47	1.57	1.93	4.25	1.20	1.28	142	68	123
AIR6449 Antenna	30.6	15.9	10.6	3.38	2.25	1.92	2.89	1.20	1.22	138	93	127
4478 B14 RRH (Side)	27.2	7.0	12.1	1.32	2.29	3.89	2.25	1.26	1.20	57	93	66
4478 B14 RRH (Shielded)	27.2	3.5	12.1	0.66	2.29	7.77	2.25	1.43	1.20	32	93	47
8843 B2/B66A RRH (Side)	14.9	10.9	13.2	1.13	1.37	1.37	1.13	1.20	1.20	46	56	49
8843 B2/B66A RRH (Shielded)	14.9	5.5	13.2	0.56	1.37	2.73	1.13	1.21	1.20	23	56	31
4449 B5/B12 RRH	17.9	13.2	9.4	1.64	1.17	1.36	1.90	1.20	1.20	67	48	62
4449 B5/B12 RRH (Shielded)	17.9	0.0	9.4	0.00	1.17	0.00	1.90	1.20	1.20	0	48	12

WIND LOADS WITH ICE:

800-10965 Antenna	82.1	23.4	10.3	13.31	5.84	3.51	8.00	1.25	1.43	98	50	86
AIR6419 Antenna	34.4	19.5	10.7	4.64	2.54	1.77	3.22	1.20	1.23	33	19	29
AIR6449 Antenna	34.0	19.3	14.0	4.54	3.29	1.76	2.43	1.20	1.20	32	23	30
4478 B14 RRH (Side)	30.6	10.4	15.5	2.20	3.28	2.95	1.98	1.22	1.20	16	23	18
4478 B14 RRH (Shielded)	30.6	6.9	15.5	1.45	3.28	4.46	1.98	1.29	1.20	11	23	14
8843 B2/B66A RRH (Side)	18.3	14.3	16.6	1.81	2.10	1.28	1.10	1.20	1.20	13	15	13
8843 B2/B66A RRH (Shielded)	18.3	8.8	16.6	1.12	2.10	2.07	1.10	1.20	1.20	8	15	10
4449 B5/B12 RRH	21.3	16.6	12.8	2.44	1.88	1.28	1.67	1.20	1.20	17	13	16
4449 B5/B12 RRH (Shielded)	21.3	3.4	12.8	0.49	1.88	6.34	1.67	1.37	1.20	4	13	6

WIND LOADS AT 30 MPH:

800-10965 Antenna	78.7	20.0	6.9	10.93	3.77	3.94	11.41	1.26	1.55	29	12	25
AIR6419 Antenna	31.0	16.1	7.3	3.47	1.57	1.93	4.25	1.20	1.28	9	4	8
AIR6449 Antenna	30.6	15.9	10.6	3.38	2.25	1.92	2.89	1.20	1.22	9	6	8
4478 B14 RRH (Side)	27.2	7.0	12.1	1.32	2.29	3.89	2.25	1.26	1.20	4	6	4
4478 B14 RRH (Shielded)	27.2	3.5	12.1	0.66	2.29	7.77	2.25	1.43	1.20	2	6	3
8843 B2/B66A RRH (Side)	14.9	10.9	13.2	1.13	1.37	1.37	1.13	1.20	1.20	3	3	3
8843 B2/B66A RRH (Shielded)	14.9	5.5	13.2	0.56	1.37	2.73	1.13	1.21	1.20	1	3	2
4449 B5/B12 RRH	17.9	13.2	9.4	1.64	1.17	1.36	1.90	1.20	1.20	4	3	4
4449 B5/B12 RRH (Shielded)	17.9	0.0	9.4	0.00	1.17	0.00	1.90	1.20	1.20	0	3	1

Date: 3/17/2022

Project Name: AVON SOUTH WEST

Project No.: CT5289

Designed By: KSBM Checked By: MSC



ICE WEIGHT CALCULATIONS

Thickness of ice: 1.68 in.
Density of ice: 56 pcf

800-10965 Antenna

Weight of ice based on total radial SF area:
Height (in): 78.7
Width (in): 20.0
Depth (in): 6.9
Total weight of ice on object: 307 lbs
Weight of object: 109.0 lbs
Combined weight of ice and object: 416 lbs

AIR6419 Antenna

Weight of ice based on total radial SF area:
Height (in): 31.0
Width (in): 16.1
Depth (in): 7.3
Total weight of ice on object: 103 lbs
Weight of object: 66.0 lbs
Combined weight of ice and object: 169 lbs

AIR6449 Antenna

Weight of ice based on total radial SF area:
Height (in): 30.6
Width (in): 15.9
Depth (in): 10.6
Total weight of ice on object: 109 lbs
Weight of object: 82.0 lbs
Combined weight of ice and object: 191 lbs

4478 B14 RRH

Weight of ice based on total radial SF area:
Height (in): 18.1
Width (in): 13.4
Depth (in): 8.3
Total weight of ice on object: 54 lbs
Weight of object: 60.0 lbs
Combined weight of ice and object: 114 lbs

8843 B2/B66A RRH

Weight of ice based on total radial SF area:
Height (in): 14.9
Width (in): 13.2
Depth (in): 10.9
Total weight of ice on object: 48 lbs
Weight of object: 72.0 lbs
Combined weight of ice and object: 120 lbs

4449 B5/B12 RRH

Weight of ice based on total radial SF area:
Height (in): 17.9
Width (in): 13.2
Depth (in): 9.4
Total weight of ice on object: 55 lbs
Weight of object: 73.0 lbs
Combined weight of ice and object: 128 lbs

DC6-48-60-18 Surge Arrestor

Weight of ice based on total radial SF area:
Depth (in): 31.4
Diameter(in): 10.2
Total weight of ice on object: 64 lbs
Weight of object: 33 lbs
Combined weight of ice and object: 97 lbs

L 2x2 Angles

Weight of ice based on total radial SF area:
Height (in): 2
Width (in): 2
Per foot weight of ice on object: 9 plf

L 1-1/2x2-1/2 Angles

Weight of ice based on total radial SF area:
Height (in): 1.5
Width (in): 2.5
Per foot weight of ice on object: 9 plf

L 2-1/2x2-1/2 Angles

Weight of ice based on total radial SF area:
Height (in): 2.5
Width (in): 2.5
Per foot weight of ice on object: 11 plf

PL 6x5/8

Weight of ice based on total radial SF area:
Height (in): 6
Width (in): 0.63
Per foot weight of ice on object: 16 plf

2" pipe

Per foot weight of ice:
diameter (in): 2.38
Per foot weight of ice on object: 8 plf

HSS 3x3

Weight of ice based on total radial SF area:
Height (in): 3
Width (in): 3
Per foot weight of ice on object: 12 plf

2-1/2" pipe

Per foot weight of ice:
diameter (in): 2.88
Per foot weight of ice on object: 9 plf

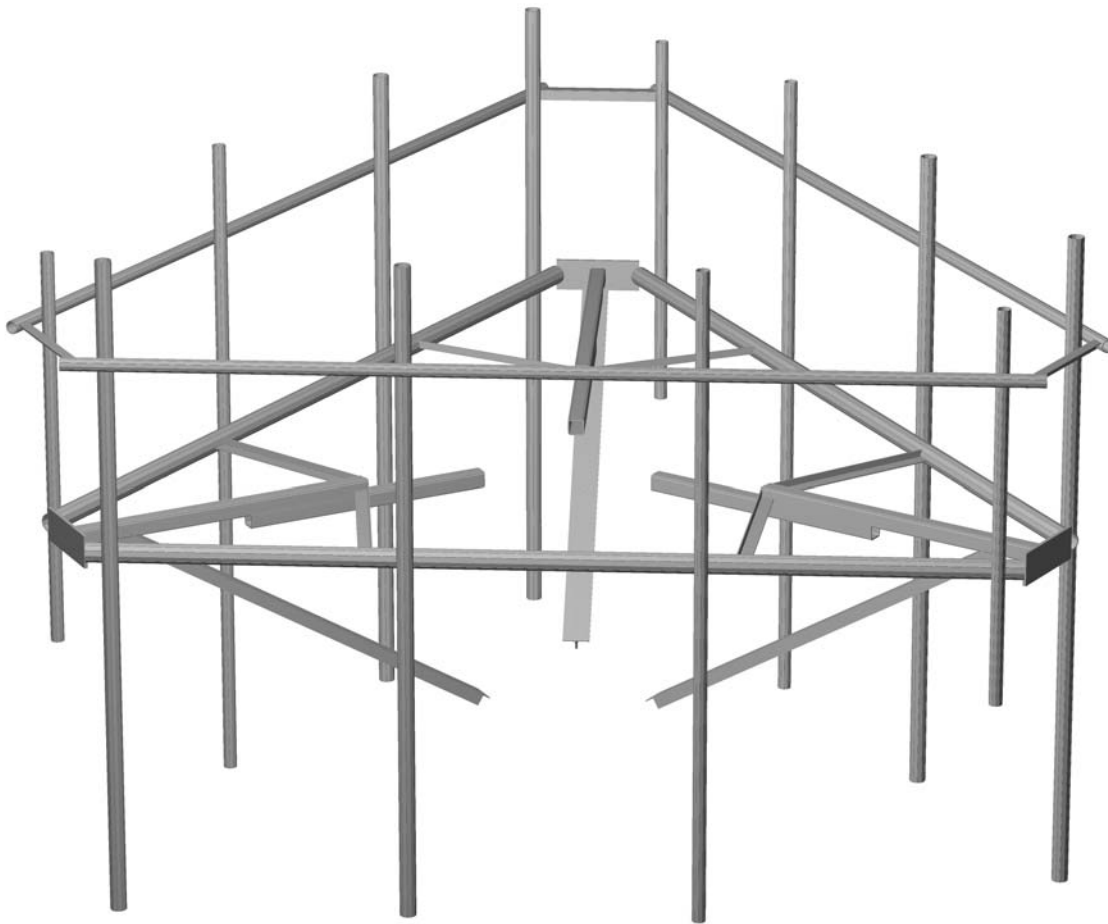
3" Pipe

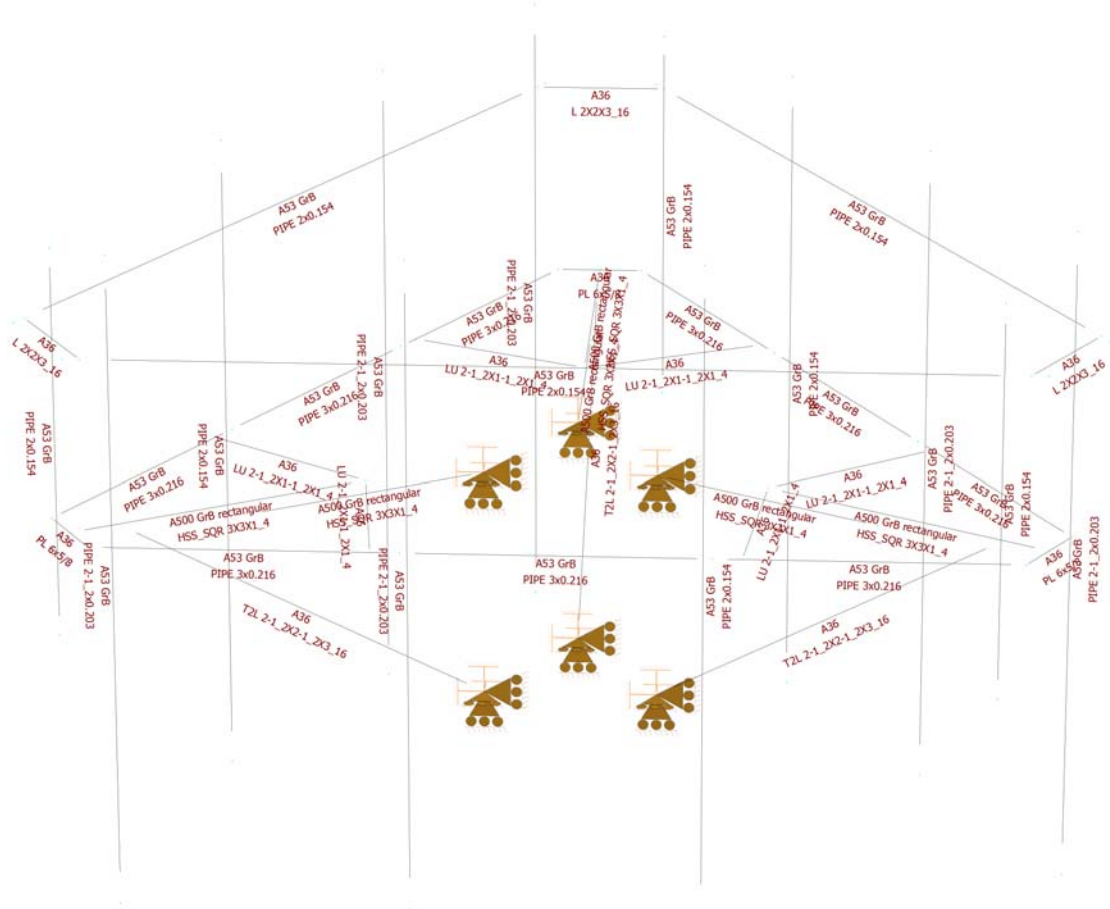
Per foot weight of ice:
diameter (in): 3.5
Per foot weight of ice on object: 11 plf

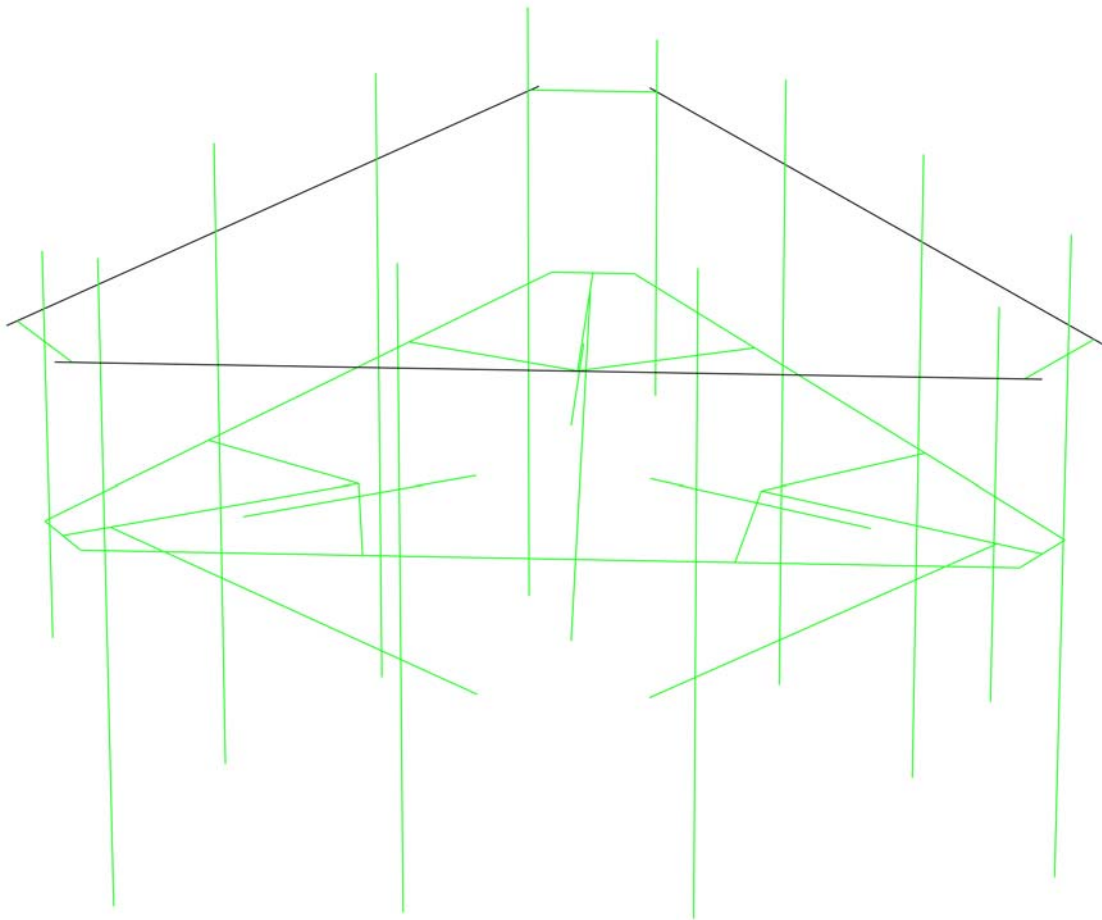


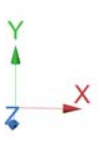
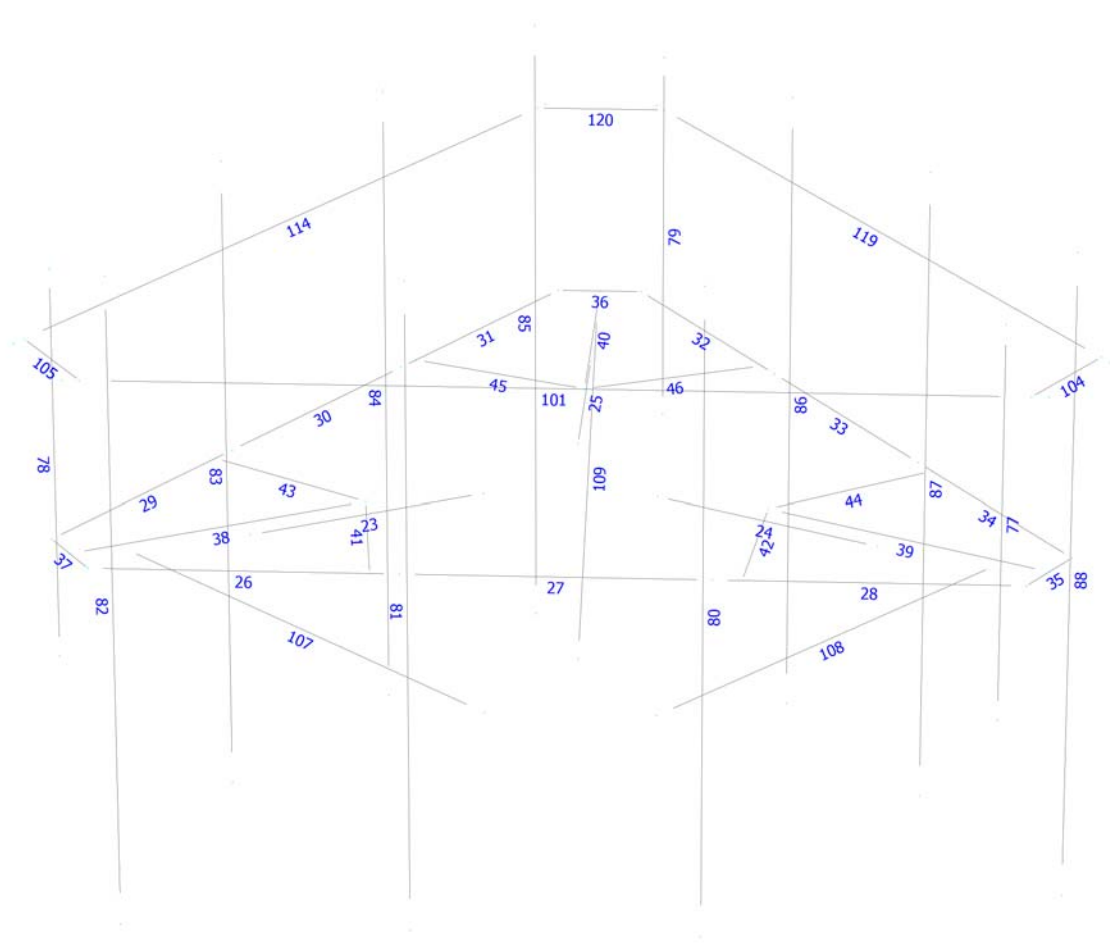
HUDSON
Design Group LLC

**Mount Calculations
(Existing Conditions)**









Load data

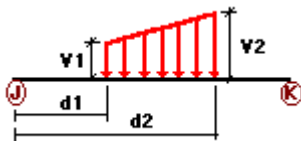
GLOSSARY

Comb : Indicates if load condition is a load combination

Load Conditions

Condition	Description	Comb.	Category
DL	Dead Load	No	DL
W0	Wind Load 0/60/120 deg	No	WIND
W30	Wind Load 30/90/150 deg	No	WIND
Di	Ice Load	No	LL
Wi0	Ice Wind Load 0/60/120 deg	No	WIND
Wi30	Ice Wind Load 30/90/150 deg	No	WIND
WL0	WL 30 mph 0/60/120 deg	No	WIND
WL30	WL 30 mph 30/90/150 deg	No	WIND
LL1	250 lb Live Load Center of Mount	No	LL
LL2	250 lb Live Load End of Mount	No	LL
LLa1	500 lb Live Load Antenna 1	No	LL
LLa2	500 lb Live Load Antenna 2	No	LL
LLa3	500 lb Live Load Antenna 3	No	LL
LLa4	500 lb Live Load Antenna 4	No	LL

Distributed force on members



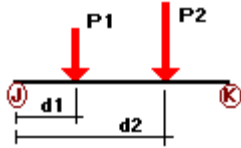
Condition	Member	Dir1	Val1 [Kip/ft]	Val2 [Kip/ft]	Dist1 [ft]	%	Dist2 [ft]	%
DL	26	Y	-0.01	-0.01	0.00	Yes	90.00	Yes
	28	Y	-0.01	-0.01	10.00	Yes	100.00	Yes
	29	Y	-0.01	-0.01	0.00	Yes	90.00	Yes
	31	Y	-0.01	-0.01	10.00	Yes	100.00	Yes
	32	Y	-0.01	-0.01	0.00	Yes	90.00	Yes
	34	Y	-0.01	-0.01	10.00	Yes	100.00	Yes
W0	23	z	-0.011	0.00	0.00	No	0.00	No
	24	z	-0.011	0.00	0.00	No	0.00	No
	25	z	-0.011	0.00	0.00	No	0.00	No
	26	z	-0.012	0.00	0.00	No	0.00	No
	27	z	-0.012	0.00	0.00	No	0.00	No
	28	z	-0.012	0.00	0.00	No	0.00	No
	29	z	-0.012	0.00	0.00	No	0.00	No
	30	z	-0.012	0.00	0.00	No	0.00	No
	31	z	-0.012	0.00	0.00	No	0.00	No
	32	z	-0.012	0.00	0.00	No	0.00	No

W30

33	z	-0.012	0.00	0.00	No	0.00	No
34	z	-0.012	0.00	0.00	No	0.00	No
35	z	-0.034	0.00	0.00	No	0.00	No
36	z	-0.034	0.00	0.00	No	0.00	No
37	z	-0.034	0.00	0.00	No	0.00	No
38	z	-0.011	0.00	0.00	No	0.00	No
39	z	-0.011	0.00	0.00	No	0.00	No
40	z	-0.011	0.00	0.00	No	0.00	No
41	z	-0.009	0.00	0.00	No	0.00	No
42	z	-0.009	0.00	0.00	No	0.00	No
43	z	-0.009	0.00	0.00	No	0.00	No
44	z	-0.009	0.00	0.00	No	0.00	No
45	z	-0.009	0.00	0.00	No	0.00	No
46	z	-0.009	0.00	0.00	No	0.00	No
77	z	-0.008	0.00	0.00	No	0.00	No
78	z	-0.008	0.00	0.00	No	0.00	No
79	z	-0.008	0.00	0.00	No	0.00	No
83	z	-0.008	0.00	0.00	No	0.00	No
84	z	-0.01	0.00	0.00	No	0.00	No
85	z	-0.01	0.00	0.00	No	0.00	No
86	z	-0.008	0.00	0.00	No	0.00	No
87	z	-0.01	0.00	0.00	No	0.00	No
88	z	-0.01	0.00	0.00	No	0.00	No
101	z	-0.008	0.00	0.00	No	0.00	No
104	z	-0.011	0.00	0.00	No	0.00	No
105	z	-0.011	0.00	0.00	No	0.00	No
107	z	-0.014	0.00	0.00	No	0.00	No
108	z	-0.014	0.00	0.00	No	0.00	No
109	z	-0.014	0.00	0.00	No	0.00	No
114	z	-0.008	0.00	0.00	No	0.00	No
119	z	-0.008	0.00	0.00	No	0.00	No
120	z	-0.011	0.00	0.00	No	0.00	No
23	x	-0.011	0.00	0.00	No	0.00	No
24	x	-0.011	0.00	0.00	No	0.00	No
25	x	-0.011	0.00	0.00	No	0.00	No
29	x	-0.012	0.00	0.00	No	0.00	No
30	x	-0.012	0.00	0.00	No	0.00	No
31	x	-0.012	0.00	0.00	No	0.00	No
32	x	-0.012	0.00	0.00	No	0.00	No
33	x	-0.012	0.00	0.00	No	0.00	No
34	x	-0.012	0.00	0.00	No	0.00	No
35	x	-0.034	0.00	0.00	No	0.00	No
36	x	-0.034	0.00	0.00	No	0.00	No
37	x	-0.034	0.00	0.00	No	0.00	No
38	x	-0.011	0.00	0.00	No	0.00	No
39	x	-0.011	0.00	0.00	No	0.00	No
40	x	-0.011	0.00	0.00	No	0.00	No
41	x	-0.009	0.00	0.00	No	0.00	No
42	x	-0.009	0.00	0.00	No	0.00	No
43	x	-0.009	0.00	0.00	No	0.00	No
44	x	-0.009	0.00	0.00	No	0.00	No
45	x	-0.009	0.00	0.00	No	0.00	No
46	x	-0.009	0.00	0.00	No	0.00	No
77	x	-0.008	0.00	0.00	No	0.00	No
78	x	-0.008	0.00	0.00	No	0.00	No
79	x	-0.008	0.00	0.00	No	0.00	No
80	x	-0.008	0.00	0.00	No	0.00	No
81	x	-0.01	0.00	0.00	No	0.00	No
82	x	-0.01	0.00	0.00	No	0.00	No
83	x	-0.008	0.00	0.00	No	0.00	No

	84	x	-0.01	0.00	0.00	No	0.00	No
	85	x	-0.01	0.00	0.00	No	0.00	No
	86	x	-0.008	0.00	0.00	No	0.00	No
	87	x	-0.01	0.00	0.00	No	0.00	No
	88	x	-0.01	0.00	0.00	No	0.00	No
	104	x	-0.011	0.00	0.00	No	0.00	No
	105	x	-0.011	0.00	0.00	No	0.00	No
	107	x	-0.014	0.00	0.00	No	0.00	No
	108	x	-0.014	0.00	0.00	No	0.00	No
	109	x	-0.014	0.00	0.00	No	0.00	No
	114	x	-0.008	0.00	0.00	No	0.00	No
	119	x	-0.008	0.00	0.00	No	0.00	No
	120	x	-0.011	0.00	0.00	No	0.00	No
Di	23	y	-0.012	0.00	0.00	No	0.00	No
	24	y	-0.012	0.00	0.00	No	0.00	No
	25	y	-0.012	0.00	0.00	No	0.00	No
	26	y	-0.011	0.00	0.00	No	0.00	No
	27	y	-0.011	0.00	0.00	No	0.00	No
	28	y	-0.011	0.00	0.00	No	0.00	No
	29	y	-0.011	0.00	0.00	No	0.00	No
	30	y	-0.011	0.00	0.00	No	0.00	No
	31	y	-0.011	0.00	0.00	No	0.00	No
	32	y	-0.011	0.00	0.00	No	0.00	No
	33	y	-0.011	0.00	0.00	No	0.00	No
	34	y	-0.011	0.00	0.00	No	0.00	No
	35	y	-0.016	0.00	0.00	No	0.00	No
	36	y	-0.016	0.00	0.00	No	0.00	No
	37	y	-0.016	0.00	0.00	No	0.00	No
	38	y	-0.012	0.00	0.00	No	0.00	No
	39	y	-0.012	0.00	0.00	No	0.00	No
	40	y	-0.012	0.00	0.00	No	0.00	No
	41	y	-0.009	0.00	0.00	No	0.00	No
	42	y	-0.009	0.00	0.00	No	0.00	No
	43	y	-0.009	0.00	0.00	No	0.00	No
	44	y	-0.009	0.00	0.00	No	0.00	No
	45	y	-0.009	0.00	0.00	No	0.00	No
	46	y	-0.009	0.00	0.00	No	0.00	No
	77	y	-0.008	0.00	0.00	No	0.00	No
	78	y	-0.008	0.00	0.00	No	0.00	No
	79	y	-0.008	0.00	0.00	No	0.00	No
	80	y	-0.008	0.00	0.00	No	0.00	No
	81	y	-0.009	0.00	0.00	No	0.00	No
	82	y	-0.009	0.00	0.00	No	0.00	No
	83	y	-0.008	0.00	0.00	No	0.00	No
	84	y	-0.009	0.00	0.00	No	0.00	No
	85	y	-0.009	0.00	0.00	No	0.00	No
	86	y	-0.008	0.00	0.00	No	0.00	No
	87	y	-0.009	0.00	0.00	No	0.00	No
	88	y	-0.009	0.00	0.00	No	0.00	No
	101	y	-0.008	0.00	0.00	No	0.00	No
	104	y	-0.009	0.00	0.00	No	0.00	No
	105	y	-0.009	0.00	0.00	No	0.00	No
	107	y	-0.011	0.00	0.00	No	0.00	No
	108	y	-0.011	0.00	0.00	No	0.00	No
	109	y	-0.011	0.00	0.00	No	0.00	No
	114	y	-0.008	0.00	0.00	No	0.00	No
	119	y	-0.008	0.00	0.00	No	0.00	No
	120	y	-0.009	0.00	0.00	No	0.00	No

Concentrated forces on members



Condition	Member	Dir1	Value1 [Kip]	Dist1 [ft]	%
DL	80	y	-0.055	2.00	No
		y	-0.055	7.50	No
		y	-0.06	3.50	No
		y	-0.072	3.50	No
	81	y	-0.033	2.25	No
		y	-0.033	4.00	No
		y	-0.041	6.00	No
		y	-0.041	7.75	No
	82	y	-0.055	2.00	No
		y	-0.055	7.50	No
		y	-0.073	3.50	No
	83	y	-0.055	2.00	No
		y	-0.055	7.50	No
		y	-0.06	3.50	No
	84	y	-0.072	3.50	No
		y	-0.033	2.25	No
		y	-0.033	4.00	No
		y	-0.041	6.00	No
	85	y	-0.041	7.75	No
		y	-0.055	2.00	No
		y	-0.055	7.50	No
		y	-0.073	3.50	No
	86	y	-0.055	2.00	No
		y	-0.055	7.50	No
y		-0.06	3.50	No	
y		-0.072	3.50	No	
87	y	-0.033	2.25	No	
	y	-0.033	4.00	No	
	y	-0.041	6.00	No	
88	y	-0.041	7.75	No	
	y	-0.055	2.00	No	
	y	-0.055	7.50	No	
	y	-0.073	3.50	No	
WO	80	z	-0.236	2.00	No
		z	-0.236	7.50	No
		z	-0.032	3.50	No
		z	-0.023	3.50	No
	81	z	-0.071	2.25	No
		z	-0.071	4.00	No
		z	-0.07	6.00	No
		z	-0.07	7.75	No
	82	z	-0.236	2.00	No
		z	-0.236	7.50	No
	83	z	-0.134	2.00	No
		z	-0.134	7.50	No
84	z	-0.078	3.50	No	
	z	-0.044	2.25	No	
	z	-0.044	4.00	No	
	z	-0.053	6.00	No	
85	z	-0.053	7.75	No	
	z	-0.134	2.00	No	
	z	-0.134	7.50	No	
		z	-0.036	3.50	No

	86	z	-0.134	2.00	No
		z	-0.134	7.50	No
		z	-0.078	3.50	No
	87	z	-0.044	2.25	No
		z	-0.044	4.00	No
		z	-0.053	6.00	No
		z	-0.053	7.75	No
	88	z	-0.134	2.00	No
		z	-0.134	7.50	No
		z	-0.036	3.50	No
W30	80	x	-0.10	2.00	No
		x	-0.10	7.50	No
		x	-0.093	3.50	No
	81	x	-0.035	2.25	No
		x	-0.035	4.00	No
		x	-0.047	6.00	No
		x	-0.047	7.75	No
	82	x	-0.10	2.00	No
		x	-0.10	7.50	No
		x	-0.048	3.50	No
	83	x	-0.202	2.00	No
		x	-0.202	7.50	No
		x	-0.047	3.50	No
	84	x	-0.062	2.25	No
		x	-0.062	4.00	No
		x	-0.064	6.00	No
		x	-0.064	7.75	No
	85	x	-0.202	2.00	No
		x	-0.202	7.50	No
		x	-0.012	3.50	No
	86	x	-0.202	2.00	No
		x	-0.202	7.50	No
		x	-0.047	3.50	No
	87	x	-0.062	2.25	No
		x	-0.062	4.00	No
		x	-0.064	6.00	No
		x	-0.064	7.75	No
	88	x	-0.202	2.00	No
		x	-0.202	7.50	No
		x	-0.012	3.50	No
Di	80	y	-0.154	2.00	No
		y	-0.154	7.50	No
		y	-0.054	3.50	No
		y	-0.048	3.50	No
	81	y	-0.052	2.25	No
		y	-0.052	4.00	No
		y	-0.055	6.00	No
		y	-0.055	7.75	No
	82	y	-0.154	2.00	No
		y	-0.154	7.50	No
		y	-0.055	3.50	No
	83	y	-0.154	2.00	No
		y	-0.154	7.50	No
		y	-0.054	3.50	No
		y	-0.048	3.50	No
	84	y	-0.052	2.25	No
		y	-0.052	4.00	No
		y	-0.055	6.00	No
		y	-0.055	7.75	No
	85	y	-0.154	2.00	No

		y	-0.154	7.50	No
		y	-0.055	3.50	No
	86	y	-0.154	2.00	No
		y	-0.154	7.50	No
		y	-0.054	3.50	No
		y	-0.048	3.50	No
	87	y	-0.052	2.25	No
		y	-0.052	4.00	No
		y	-0.055	6.00	No
		y	-0.055	7.75	No
	88	y	-0.154	2.00	No
		y	-0.154	7.50	No
		y	-0.055	3.50	No
Wi0	80	z	-0.05	2.00	No
		z	-0.05	7.50	No
		z	-0.012	3.50	No
		z	-0.008	3.50	No
	81	z	-0.017	2.25	No
		z	-0.017	4.00	No
		z	-0.017	6.00	No
		z	-0.017	7.75	No
	82	z	-0.05	2.00	No
		z	-0.05	7.50	No
		z	-0.004	3.50	No
	83	z	-0.031	2.00	No
		z	-0.031	7.50	No
		z	-0.02	3.50	No
	84	z	-0.012	2.25	No
		z	-0.012	4.00	No
		z	-0.013	6.00	No
		z	-0.013	7.75	No
	85	z	-0.031	2.00	No
		z	-0.031	7.50	No
		z	-0.011	3.50	No
	86	z	-0.031	2.00	No
		z	-0.031	7.50	No
		z	-0.02	3.50	No
	87	z	-0.012	2.25	No
		z	-0.012	4.00	No
		z	-0.013	6.00	No
		z	-0.013	7.75	No
	88	z	-0.031	2.00	No
		z	-0.031	7.50	No
		z	-0.011	3.50	No
Wi30	80	x	-0.025	2.00	No
		x	-0.025	7.50	No
		x	-0.023	3.50	No
	81	x	-0.01	2.25	No
		x	-0.01	4.00	No
		x	-0.012	6.00	No
		x	-0.012	7.75	No
	82	x	-0.025	2.00	No
		x	-0.025	7.50	No
		x	-0.013	3.50	No
	83	x	-0.043	2.00	No
		x	-0.043	7.50	No
		x	-0.014	3.50	No
	84	x	-0.015	2.25	No
		x	-0.015	4.00	No
		x	-0.015	6.00	No

		x	-0.015	7.75	No
	85	x	-0.043	2.00	No
		x	-0.043	7.50	No
		x	-0.006	3.50	No
	86	x	-0.043	2.00	No
		x	-0.043	7.50	No
		x	-0.014	3.50	No
	87	x	-0.015	2.25	No
		x	-0.015	4.00	No
		x	-0.015	6.00	No
		x	-0.015	7.75	No
	88	x	-0.043	2.00	No
		x	-0.043	7.50	No
		x	-0.006	3.50	No
WLO	80	z	-0.015	2.00	No
		z	-0.015	7.50	No
		z	-0.002	3.50	No
		z	-0.001	3.50	No
	81	z	-0.005	2.25	No
		z	-0.005	4.00	No
		z	-0.005	6.00	No
		z	-0.005	7.75	No
	82	z	-0.015	2.00	No
		z	-0.015	7.50	No
	83	z	-0.009	2.00	No
		z	-0.009	7.50	No
		z	-0.005	3.50	No
	84	z	-0.003	2.25	No
		z	-0.003	4.00	No
		z	-0.004	6.00	No
		z	-0.004	7.75	No
	85	z	-0.009	2.00	No
		z	-0.009	7.50	No
		z	-0.002	3.50	No
	86	z	-0.009	2.00	No
		z	-0.009	7.50	No
		z	-0.005	3.50	No
	87	z	-0.003	2.25	No
		z	-0.003	4.00	No
		z	-0.004	6.00	No
		z	-0.004	7.75	No
	88	z	-0.009	2.00	No
		z	-0.009	7.50	No
		z	-0.002	3.50	No
WL30	80	x	-0.007	2.00	No
		x	-0.007	7.50	No
		x	-0.006	3.50	No
	81	x	-0.003	2.25	No
		x	-0.003	4.00	No
		x	-0.003	6.00	No
		x	-0.003	7.75	No
	82	x	-0.007	2.00	No
		x	-0.007	7.50	No
		x	-0.003	3.50	No
	83	x	-0.013	2.00	No
		x	-0.013	7.50	No
		x	-0.003	3.50	No
	84	x	-0.004	2.25	No
		x	-0.004	4.00	No
		x	-0.004	6.00	No

		x	-0.004	7.75	No
85		x	-0.013	2.00	No
		x	-0.013	7.50	No
		x	-0.001	3.50	No
86		x	-0.013	2.00	No
		x	-0.013	7.50	No
		x	-0.003	3.50	No
87		x	-0.004	2.25	No
		x	-0.004	4.00	No
		x	-0.004	6.00	No
		x	-0.004	7.75	No
88		x	-0.013	2.00	No
		x	-0.013	7.50	No
		x	-0.001	3.50	No
LL1	27	y	-0.25	50.00	Yes
LL2	26	y	-0.25	0.00	No
LLa1	77	y	-0.50	50.00	Yes
LLa2	80	y	-0.50	50.00	Yes
LLa3	81	y	-0.50	50.00	Yes
LLa4	82	y	-0.50	50.00	Yes

Self weight multipliers for load conditions

Condition	Description	Self weight multiplier			
		Comb.	MultX	MultY	MultZ
DL	Dead Load	No	0.00	-1.00	0.00
W0	Wind Load 0/60/120 deg	No	0.00	0.00	0.00
W30	Wind Load 30/90/150 deg	No	0.00	0.00	0.00
Di	Ice Load	No	0.00	0.00	0.00
Wi0	Ice Wind Load 0/60/120 deg	No	0.00	0.00	0.00
Wi30	Ice Wind Load 30/90/150 deg	No	0.00	0.00	0.00
WL0	WL 30 mph 0/60/120 deg	No	0.00	0.00	0.00
WL30	WL 30 mph 30/90/150 deg	No	0.00	0.00	0.00
LL1	250 lb Live Load Center of Mount	No	0.00	0.00	0.00
LL2	250 lb Live Load End of Mount	No	0.00	0.00	0.00
LLa1	500 lb Live Load Antenna 1	No	0.00	0.00	0.00
LLa2	500 lb Live Load Antenna 2	No	0.00	0.00	0.00
LLa3	500 lb Live Load Antenna 3	No	0.00	0.00	0.00
LLa4	500 lb Live Load Antenna 4	No	0.00	0.00	0.00

Earthquake (Dynamic analysis only)

Condition	a/g	Ang. [Deg]	Damp. [%]
DL	0.00	0.00	0.00
W0	0.00	0.00	0.00
W30	0.00	0.00	0.00
Di	0.00	0.00	0.00
Wi0	0.00	0.00	0.00
Wi30	0.00	0.00	0.00
WL0	0.00	0.00	0.00

WL30	0.00	0.00	0.00
LL1	0.00	0.00	0.00
LL2	0.00	0.00	0.00
LLa1	0.00	0.00	0.00
LLa2	0.00	0.00	0.00
LLa3	0.00	0.00	0.00
LLa4	0.00	0.00	0.00

Steel Code Check

Report: Summary - Group by member

Load conditions to be included in design :

- LC1=1.2DL+W0
- LC2=1.2DL+W30
- LC3=1.2DL-W0
- LC4=1.2DL-W30
- LC5=0.9DL+W0
- LC6=0.9DL+W30
- LC7=0.9DL-W0
- LC8=0.9DL-W30
- LC9=1.2DL+Di+Wi0
- LC10=1.2DL+Di+Wi30
- LC11=1.2DL+Di-Wi0
- LC12=1.2DL+Di-Wi30
- LC13=1.2DL
- LC15=1.2DL+1.5LL1
- LC16=1.2DL+1.5LL2
- LC17=1.2DL+W0+1.5LLa1
- LC18=1.2DL+W30+1.5LLa1
- LC19=1.2DL-W0+1.5LLa1
- LC20=1.2DL-W30+1.5LLa1
- LC21=1.2DL+W0+1.5LLa2
- LC22=1.2DL+W30+1.5LLa2
- LC23=1.2DL-W0+1.5LLa2
- LC24=1.2DL-W30+1.5LLa2
- LC25=1.2DL+W0+1.5LLa3
- LC26=1.2DL+W30+1.5LLa3
- LC27=1.2DL-W0+1.5LLa3
- LC28=1.2DL-W30+1.5LLa3
- LC29=1.2DL+W0+1.5LLa4
- LC30=1.2DL+W30+1.5LLa4
- LC31=1.2DL-W0+1.5LLa4
- LC32=1.2DL-W30+1.5LLa4

Description	Section	Member	Ctrl Eq.	Ratio	Status	Reference
	HSS_SQR 3X3X1_4	23	LC3 at 0.00%	0.16	OK	
		24	LC3 at 0.00%	0.14	OK	
		25	LC2 at 0.00%	0.24	OK	
		38	LC11 at 83.75%	0.12	OK	
		39	LC12 at 83.75%	0.12	OK	
		40	LC9 at 83.75%	0.12	OK	
	L 2X2X3_16	104	LC11 at 100.00%	0.16	OK	
		105	LC25 at 0.00%	0.17	OK	
		120	LC12 at 100.00%	0.16	OK	
	LU 2-1_2X1-1_2X1_4	41	LC11 at 100.00%	0.64	OK	
		42	LC11 at 0.00%	0.70	OK	
		43	LC10 at 0.00%	0.70	OK	
		44	LC12 at 100.00%	0.65	OK	
		45	LC9 at 100.00%	0.64	OK	
		46	LC12 at 0.00%	0.70	OK	
	PIPE 2-1_2x0.203	81	LC1 at 43.75%	0.16	OK	

	82	LC3 at 43.75%	0.23	OK
	84	LC4 at 43.75%	0.17	OK
	85	LC4 at 43.75%	0.23	OK
	87	LC4 at 43.75%	0.16	OK
	88	LC4 at 43.75%	0.25	OK
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PIPE 2x0.154	77	LC11 at 64.58%	0.30	OK
	78	LC10 at 64.58%	0.34	OK
	79	LC10 at 64.58%	0.29	OK
	80	LC1 at 43.75%	0.38	OK
	83	LC2 at 45.83%	0.38	OK
	86	LC2 at 45.83%	0.38	OK
	101	LC23 at 65.63%	0.31	With warnings
	114	LC10 at 65.63%	0.26	With warnings
	119	LC9 at 95.31%	0.26	With warnings
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PIPE 3x0.216	26	LC28 at 100.00%	0.24	OK
	27	LC22 at 98.44%	0.26	OK
	28	LC22 at 0.00%	0.25	OK
	29	LC12 at 100.00%	0.21	OK
	30	LC12 at 2.08%	0.22	OK
	31	LC11 at 0.00%	0.17	OK
	32	LC11 at 100.00%	0.21	OK
	33	LC11 at 2.08%	0.21	OK
	34	LC2 at 91.67%	0.17	OK
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PL 6x5/8	35	LC2 at 46.88%	0.31	OK
	36	LC3 at 46.88%	0.27	OK
	37	LC1 at 50.00%	0.26	OK
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T2L 2-1_2X2-1_2X3_16	107	LC9 at 100.00%	0.56	OK
	108	LC10 at 100.00%	0.56	OK
	109	LC12 at 100.00%	0.56	OK

Geometry data

GLOSSARY

Cb22, Cb33	: Moment gradient coefficients
Cm22, Cm33	: Coefficients applied to bending term in interaction formula
d0	: Tapered member section depth at J end of member
DJX	: Rigid end offset distance measured from J node in axis X
DJY	: Rigid end offset distance measured from J node in axis Y
DJZ	: Rigid end offset distance measured from J node in axis Z
DKX	: Rigid end offset distance measured from K node in axis X
DKY	: Rigid end offset distance measured from K node in axis Y
DKZ	: Rigid end offset distance measured from K node in axis Z
dL	: Tapered member section depth at K end of member
Ig factor	: Inertia reduction factor (Effective Inertia/Gross Inertia) for reinforced concrete members
K22	: Effective length factor about axis 2
K33	: Effective length factor about axis 3
L22	: Member length for calculation of axial capacity
L33	: Member length for calculation of axial capacity
LB pos	: Lateral unbraced length of the compression flange in the positive side of local axis 2
LB neg	: Lateral unbraced length of the compression flange in the negative side of local axis 2
RX	: Rotation about X
RY	: Rotation about Y
RZ	: Rotation about Z
TO	: 1 = Tension only member 0 = Normal member
TX	: Translation in X
TY	: Translation in Y
TZ	: Translation in Z

Nodes

Node	X [ft]	Y [ft]	Z [ft]	Rigid Floor
6	0.00	-0.20	-1.50	0
7	0.00	0.00	-8.177	0
8	-7.415	0.00	3.5109	0
14	7.415	0.00	3.5109	0
15	0.667	0.00	-8.177	0
16	-0.667	0.00	-8.177	0
17	6.75	0.00	4.667	0
18	-6.75	0.00	4.667	0
19	-7.0825	0.00	4.0889	0
20	7.0825	0.00	4.0889	0
22	-1.299	-0.20	0.75	0
25	1.299	-0.20	0.75	0
30	2.9167	0.00	-4.2821	0
31	5.1667	0.00	-0.3849	0
51	-5.1667	0.00	-0.3849	0
52	-2.9167	0.00	-4.2821	0
58	2.25	0.00	4.667	0
59	-2.25	0.00	4.667	0
89	-4.5992	-0.20	2.6563	0
92	4.60	-0.20	2.6549	0
95	-0.0008	-0.20	-5.3112	0
114	5.381	0.00	-0.0138	0
116	-2.9754	0.00	1.7188	0

119	2.9762	0.00	1.7174	0
120	-0.0008	0.00	-3.4362	0
159	2.7025	0.00	-4.6532	0
164	-2.7025	0.00	-4.6532	0
165	-5.381	0.00	-0.0138	0
166	-2.6786	0.00	4.667	0
167	2.6786	0.00	4.667	0
244	6.375	-2.00	4.867	0
245	-7.4024	-2.00	3.0874	0
246	1.0274	-2.00	-7.9544	0
247	6.375	4.00	4.867	0
248	-7.4024	4.00	3.0874	0
249	1.0274	4.00	-7.9544	0
250	2.125	-5.50	4.867	0
251	-2.125	-5.50	4.867	0
252	-6.375	-5.50	4.867	0
253	-5.2774	-5.50	-0.5932	0
254	-3.1524	-5.50	-4.2738	0
255	-1.0274	-5.50	-7.9544	0
256	3.1524	-5.50	-4.2738	0
257	5.2774	-5.50	-0.5932	0
258	7.4024	-5.50	3.0874	0
259	2.125	4.50	4.867	0
260	-2.125	4.50	4.867	0
261	-5.2774	4.50	-0.5932	0
262	-3.1524	4.50	-4.2738	0
263	-1.0274	4.50	-7.9544	0
264	3.1524	4.50	-4.2738	0
265	5.2774	4.50	-0.5932	0
266	7.4024	4.50	3.0874	0
267	-6.375	4.50	4.867	0
310	7.00	3.00	5.067	0
311	6.75	3.00	5.067	0
312	-7.00	3.00	5.067	0
313	-6.75	3.00	5.067	0
317	1.299	-3.714	0.75	0
318	0.00	-3.714	-1.50	0
319	-1.299	-3.714	0.75	0
320	-6.4329	0.00	3.7141	0
321	-1.39E-05	0.00	-7.4281	0
322	6.4329	0.00	3.714	0
341	-7.8882	3.00	3.5287	0
342	0.8882	3.00	-8.5957	0
343	-7.7632	3.00	3.3122	0
344	1.0132	3.00	-8.3792	0
345	-0.8882	3.00	-8.5957	0
346	7.8882	3.00	3.5287	0
347	-1.0132	3.00	-8.3792	0
348	7.7632	3.00	3.3122	0

Restraints

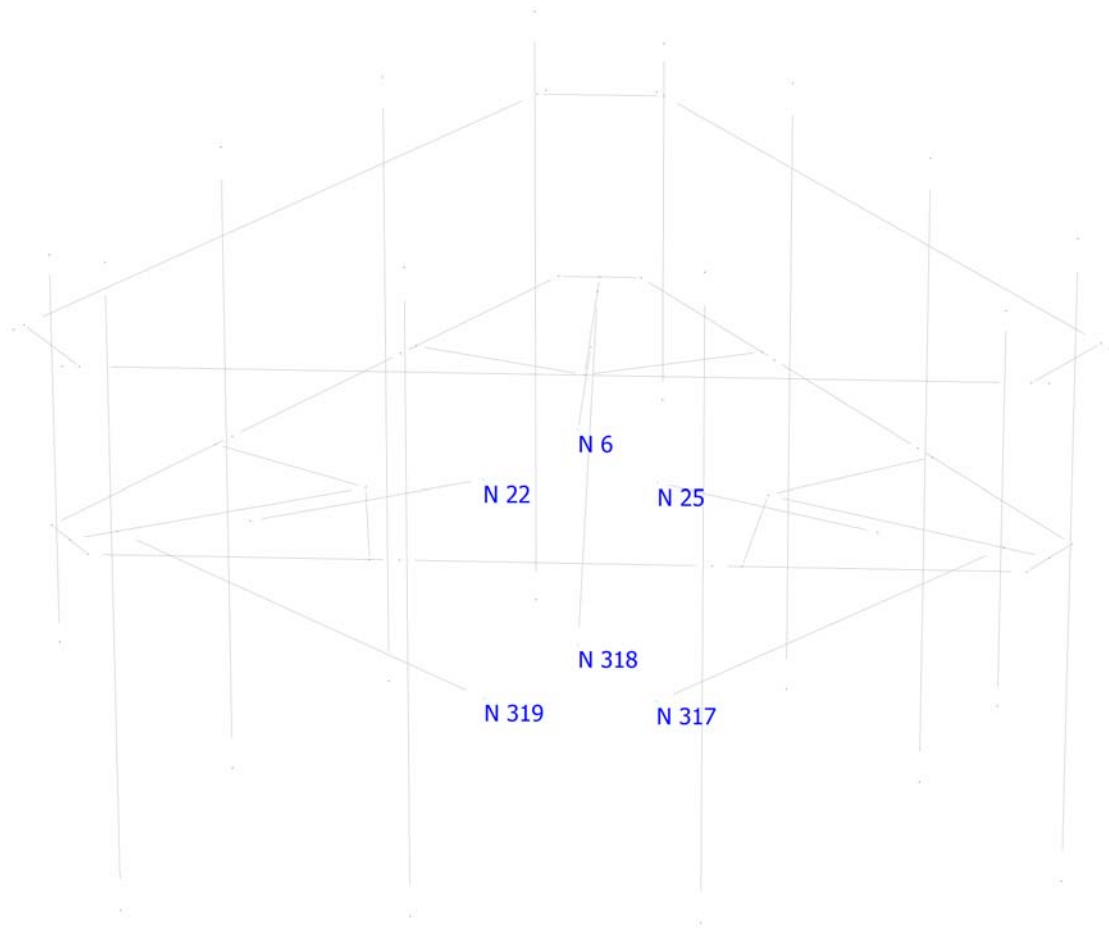
Node	TX	TY	TZ	RX	RY	RZ
6	1	1	1	1	1	1
22	1	1	1	1	1	1
25	1	1	1	1	1	1
317	1	1	1	1	1	1
318	1	1	1	1	1	1
319	1	1	1	1	1	1

Members

Member	NJ	NK	Description	Section	Material	d0 [in]	dL [in]	Ig factor
23	22	89		HSS_SQR 3X3X1_4	A500 GrB rectangular	0.00	0.00	0.00
24	25	92		HSS_SQR 3X3X1_4	A500 GrB rectangular	0.00	0.00	0.00
25	6	95		HSS_SQR 3X3X1_4	A500 GrB rectangular	0.00	0.00	0.00
26	18	59		PIPE 3x0.216	A53 GrB	0.00	0.00	0.00
27	59	58		PIPE 3x0.216	A53 GrB	0.00	0.00	0.00
28	58	17		PIPE 3x0.216	A53 GrB	0.00	0.00	0.00
29	8	51		PIPE 3x0.216	A53 GrB	0.00	0.00	0.00
30	51	52		PIPE 3x0.216	A53 GrB	0.00	0.00	0.00
31	52	16		PIPE 3x0.216	A53 GrB	0.00	0.00	0.00
32	15	30		PIPE 3x0.216	A53 GrB	0.00	0.00	0.00
33	30	31		PIPE 3x0.216	A53 GrB	0.00	0.00	0.00
34	31	14		PIPE 3x0.216	A53 GrB	0.00	0.00	0.00
35	14	17		PL 6x5/8	A36	0.00	0.00	0.00
36	16	15		PL 6x5/8	A36	0.00	0.00	0.00
37	8	18		PL 6x5/8	A36	0.00	0.00	0.00
38	116	19		HSS_SQR 3X3X1_4	A500 GrB rectangular	0.00	0.00	0.00
39	119	20		HSS_SQR 3X3X1_4	A500 GrB rectangular	0.00	0.00	0.00
40	120	7		HSS_SQR 3X3X1_4	A500 GrB rectangular	0.00	0.00	0.00
41	166	116		LU 2-1_2X1-1_2X1_4	A36	0.00	0.00	0.00
42	119	167		LU 2-1_2X1-1_2X1_4	A36	0.00	0.00	0.00
43	116	165		LU 2-1_2X1-1_2X1_4	A36	0.00	0.00	0.00
44	114	119		LU 2-1_2X1-1_2X1_4	A36	0.00	0.00	0.00
45	164	120		LU 2-1_2X1-1_2X1_4	A36	0.00	0.00	0.00
46	120	159		LU 2-1_2X1-1_2X1_4	A36	0.00	0.00	0.00
77	247	244		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
78	248	245		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
79	249	246		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
80	259	250		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
81	260	251		PIPE 2-1_2x0.203	A53 GrB	0.00	0.00	0.00
82	267	252		PIPE 2-1_2x0.203	A53 GrB	0.00	0.00	0.00
83	261	253		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
84	262	254		PIPE 2-1_2x0.203	A53 GrB	0.00	0.00	0.00
85	263	255		PIPE 2-1_2x0.203	A53 GrB	0.00	0.00	0.00
86	264	256		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
87	265	257		PIPE 2-1_2x0.203	A53 GrB	0.00	0.00	0.00
88	266	258		PIPE 2-1_2x0.203	A53 GrB	0.00	0.00	0.00
101	312	310		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
104	348	311		L 2X2X3_16	A36	0.00	0.00	0.00
105	343	313		L 2X2X3_16	A36	0.00	0.00	0.00
107	319	320		T2L 2-1_2X2-1_2X3_16	A36	0.00	0.00	0.00
108	317	322		T2L 2-1_2X2-1_2X3_16	A36	0.00	0.00	0.00
109	318	321		T2L 2-1_2X2-1_2X3_16	A36	0.00	0.00	0.00
114	345	341		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
119	346	342		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
120	347	344		L 2X2X3_16	A36	0.00	0.00	0.00

Orientation of local axes

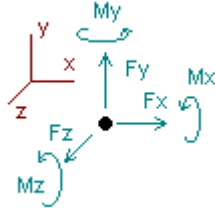
Member	Rotation [Deg]	Axes23	NX	NY	NZ
41	270.00	0	0.00	0.00	0.00
42	270.00	0	0.00	0.00	0.00
43	270.00	0	0.00	0.00	0.00
44	270.00	0	0.00	0.00	0.00
45	270.00	0	0.00	0.00	0.00
46	270.00	0	0.00	0.00	0.00
104	180.00	0	0.00	0.00	0.00
105	90.00	0	0.00	0.00	0.00
120	180.00	0	0.00	0.00	0.00



Analysis result

Envelope for nodal reactions

Note.- I_c is the controlling load condition



Direction of positive forces and moments

Envelope of nodal reactions for :

- LC1=1.2DL+W0
- LC2=1.2DL+W30
- LC3=1.2DL-W0
- LC4=1.2DL-W30
- LC5=0.9DL+W0
- LC6=0.9DL+W30
- LC7=0.9DL-W0
- LC8=0.9DL-W30
- LC9=1.2DL+Di+Wi0
- LC10=1.2DL+Di+Wi30
- LC11=1.2DL+Di-Wi0
- LC12=1.2DL+Di-Wi30
- LC13=1.2DL
- LC15=1.2DL+1.5LL1
- LC16=1.2DL+1.5LL2
- LC17=1.2DL+W0+1.5LLa1
- LC18=1.2DL+W30+1.5LLa1
- LC19=1.2DL-W0+1.5LLa1
- LC20=1.2DL-W30+1.5LLa1
- LC21=1.2DL+W0+1.5LLa2
- LC22=1.2DL+W30+1.5LLa2
- LC23=1.2DL-W0+1.5LLa2
- LC24=1.2DL-W30+1.5LLa2
- LC25=1.2DL+W0+1.5LLa3
- LC26=1.2DL+W30+1.5LLa3
- LC27=1.2DL-W0+1.5LLa3
- LC28=1.2DL-W30+1.5LLa3
- LC29=1.2DL+W0+1.5LLa4
- LC30=1.2DL+W30+1.5LLa4
- LC31=1.2DL-W0+1.5LLa4
- LC32=1.2DL-W30+1.5LLa4

Node		Forces						Moments					
		Fx [Kip]	I_c	Fy [Kip]	I_c	Fz [Kip]	I_c	Mx [Kip*ft]	I_c	My [Kip*ft]	I_c	Mz [Kip*ft]	I_c
6	Max	1.175	LC2	0.122	LC3	4.195	LC1	0.21935	LC11	1.85505	LC8	0.14457	LC8
	Min	-1.164	LC8	-0.057	LC5	-0.972	LC7	0.04887	LC5	-1.87815	LC2	-0.18258	LC2
22	Max	3.602	LC10	0.105	LC4	0.598	LC5	0.04050	LC5	1.13212	LC5	0.10164	LC31
	Min	-0.692	LC8	-0.081	LC30	-2.219	LC3	-0.26312	LC27	-1.15498	LC3	-0.17258	LC9

25	Max	0.760	LC6	0.107	LC2	0.550	LC5	0.08046	LC5	1.02306	LC7	0.21712	LC9
	Min	-3.626	LC12	-0.083	LC20	-2.152	LC3	-0.22150	LC23	-1.04640	LC1	-0.08265	LC19
317	Max	3.787	LC11	2.770	LC12	2.170	LC12	0.07998	LC5	0.15399	LC3	0.04468	LC4
	Min	1.260	LC5	0.916	LC6	0.708	LC6	-0.10212	LC3	-0.13268	LC5	-0.03268	LC6
318	Max	0.124	LC6	2.772	LC9	-1.428	LC7	0.04871	LC1	0.33239	LC4	0.20818	LC4
	Min	-0.136	LC4	0.882	LC7	-4.364	LC9	-0.02712	LC7	-0.31131	LC6	-0.19515	LC6
319	Max	-1.254	LC5	2.771	LC10	2.200	LC9	0.11337	LC1	0.19695	LC1	0.02552	LC7
	Min	-3.773	LC11	0.911	LC8	0.729	LC8	-0.11292	LC7	-0.17610	LC7	-0.05053	LC1



HUDSON
Design Group LLC

Connection Check

Date: 3/17/2022
Project Name: AVON SOUTH WEST
Project No.: CT5289
Designed By: KSBM Checked By: MSC



CHECK CONNECTION CAPACITY (Worst Case)

Reference: AISC Steel Construction Manual 14th Edition (ASD)

Bolt Type = A36 5/8" (Threaded Rod)

Allowable Tensile Load =

$F_{Tall} = 6673$ lbs.

Allowable Shear Load =

$F_{Vall} = 4004$ lbs.

TENSILE FORCES

Reaction $F = 2219$ lbs. (See Bentley Output)

SHEAR FORCES

Reactions in X direction: 3602 lbs. (See Bentley Output)
Reactions in Y direction: 105 lbs. (See Bentley Output)

Resultant: 3604 lbs.

No. of Supports = 1
No. of Bolts / Support = 2

Tension Design Load /Bolts =

$f_t = 1109.50$ lbs. < 6673 lbs. **Therefore, OK !**

Shear Design Load / Bolts=

$f_v = 1801.77$ lbs. < 4004 lbs. **Therefore, OK !**

CHECK COMBINED TENSION AND SHEAR

$f_t / F_T + f_v / F_V \leq 1.0$
0.166 + 0.450 = 0.616 < 1.0 **Therefore, OK !**

EXHIBIT 5



Radio Frequency Exposure Analysis Report

April 7, 2022

Centerline on behalf of AT&T
Centerline Communications Project Number: 566620

AT&T Site Name: AVON SOUTH WEST
Site Number: CT5289
FA#: 10070918
USID: 25929

Site Address: 10 REDWOOD LANE, AVON, CT 06001

Site Compliance Summary

AT&T Compliance Status:	Compliant
Cumulative Calculated Power Density (Ground Level):	3.24691 $\mu\text{W}/\text{cm}^2$
Cumulative General Population % MPE (Ground Level):	0.42992999999999998%



April 7, 2022

Centerline
Attn: Jennifer Iliades, Project Manager
750 W Center St, Suite 301
West Bridgewater, MA 02379

RF Exposure Analysis for Site: **AVON SOUTH WEST**

Centerline Communications, LLC ("Centerline") was contracted to analyze the proposed AT&T facility at **10 REDWOOD LANE, AVON, CT 06001** for the purpose of determining whether the predictive exposure from the proposed facility is within specified federal limits.

All information used in this report was analyzed as a percentage of the Maximum Permissible Exposure (% MPE) limits as detailed in 47 CFR § 1.1310 as well as Federal Communications Commission (FCC) OET Bulletin 65 Edition 97-01. The FCC MPE limits are typically expressed in units of milliwatts per square centimeter (mW/cm^2) or microwatts per square centimeter ($\mu\text{W}/\text{cm}^2$). The exposure limits vary depending upon the frequencies being utilized. The General Population/Uncontrolled MPE limit (in mW/cm^2) for frequencies between 300 and 1500 is defined as frequency (in MHz) divided by 1500 ($f_{\text{MHz}}/1500$). Frequencies between 1500 and 100,000 MHz have a General Population/Uncontrolled MPE limit of $1 \text{ mW}/\text{cm}^2$ ($1000 \mu\text{W}/\text{cm}^2$). The calculated power density at each sample point divided by the limit at each calculated frequency provides a result in % MPE. Summing the calculated % MPE from all contributors provides a cumulative % MPE at a particular sample point. Wireless carriers use different frequency bands with varying MPE limits; therefore, it is useful to report results in terms of % MPE as opposed to power density.

All results were compared to the FCC radio frequency exposure rules as detailed in 47 CFR § 1.1307(b) to determine compliance with the MPE limits for General Population/Uncontrolled environments as defined below.

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

Occupational/controlled exposure limits apply to situations in which persons are exposed as a consequence of their employment and in which those persons who are exposed have been made fully aware of the potential for exposure and can exercise control over their exposure. Occupational/controlled exposure limits also apply where exposure is of a transient nature as a result of incidental passage through a location where exposure levels may be above general population/uncontrolled limits, as long as the exposed person has been made fully aware of the potential for exposure and can exercise control over his or her exposure by leaving the area or by some other appropriate means. Additional details can be found in FCC OET 65.



Calculation Methodology

Centerline Communications, LLC has performed theoretical modeling of the site using a software tool, RoofMaster®, which incorporates calculation methodologies detailed in FCC OET 65. RoofMaster® uses a cylindrical model for conservative power density predictions within the near field of the antenna where the antenna pattern has not truly formed yet. Within this area power density values tend to decrease based upon an inverse distance function. At the point where it is appropriate for modeling to change from near-field calculations to far-field calculations, the power decreases inversely with the square of the distance. The modeling is based on worst-case assumptions in terms of transmitter power and duty cycle. No losses were included in the power calculations unless they were specifically provided for the project.

In OET 65, a far field model is presented to calculate the spatial peak power density. The RoofMaster® implementation of this model incorporates antenna manufacturer's horizontal and vertical pattern data to determine the power density in all directions. This model yields the power density at a single point in space. In order to determine the spatial power density for comparison to the FCC limits, the average of several points calculated within the human profile (0-6') must be conducted. RoofMaster® calculates seven power density values between 0-6' above the specified study plane and performs a linear spatial average.



Data & Results

The following table details the antennas and operating parameters for the AT&T antenna system as well as any other antenna systems at the site. This is based on antenna information provided by the client and data compiled from other sources where necessary. The data below was input into Roofmaster® to perform the theoretical exposure calculations at the Ground Level.

The theoretical calculations performed in Roofmaster® determine the cumulative exposure at all sample points at ground level (0-6' spatial average). The results from highest cumulative sample point at ground level surrounding the site are displayed in the table below. The contribution from directional antennas to the maximum cumulative totals varies greatly depending on location; therefore, the contribution from one antenna sector at the highest calculated exposure point may be greater or less than other sectors since sectorized directional antennas are pointed in different directions and there is not much overlapping exposure.

The contribution to the cumulative power density and % MPE for each antenna/frequency band is listed in the table. The cumulative power density and cumulative % MPE are displayed at the bottom of the table.



Maximum Calculated Cumulative Power Density (Location: approximately 6' East of site)

Antenna ID	Make / Model	Frequency Band (MHz)	Antenna Gain (dBd)	Antenna Centerline (ft)	Channel Count	TX Power/Channel (watts)	ERP (watts)	Calculated Power Density ($\mu\text{W}/\text{cm}^2$)	General Population MPE Limit ($\mu\text{W}/\text{cm}^2$)	General Population % MPE
AT&T A 1	KATHREIN 80010965	700	12.05	97.00	4.00	40.00	2565.19	0.00074	466.67	0.00016
AT&T A 1	KATHREIN 80010965	1900	15.65	97.00	4.00	40.00	5876.52	0.00056	1000.00	0.00006
AT&T A 2	ERICSSON SON_AIR6449	3700	23.55	97.00	1.00	108.40	24548.74	0.02325	1000.00	0.00233
AT&T A 3	ERICSSON SON_AIR6419	3450	23.55	97.00	1.00	0.00	0.00	0.00025	1000.00	0.00002
AT&T A 4	KATHREIN 80010965	700	11.85	97.00	4.00	40.00	2449.74	0.00084	466.67	0.00018
AT&T A 4	KATHREIN 80010965	850	13.55	97.00	4.00	40.00	3623.43	0.00083	566.67	0.00015
AT&T A 4	KATHREIN 80010965	2100	16.45	97.00	4.00	40.00	7065.13	0.00035	1000.00	0.00004
AT&T B 5	KATHREIN 80010965	700	12.05	97.00	4.00	40.00	2565.19	0.00056	466.67	0.00012
AT&T B 5	KATHREIN 80010965	1900	15.65	97.00	4.00	40.00	5876.52	0.00004	1000.00	0.00000
AT&T B 6	ERICSSON SON_AIR6449	3700	23.55	97.00	1.00	108.40	24548.74	0.01201	1000.00	0.00120
AT&T B 7	ERICSSON SON_AIR6419	3450	23.55	97.00	1.00	0.00	0.00	0.00013	1000.00	0.00001
AT&T B 8	KATHREIN 80010965	700	11.85	97.00	4.00	40.00	2449.74	0.00040	466.67	0.00009
AT&T B 8	KATHREIN 80010965	850	13.55	97.00	4.00	40.00	3623.43	0.00019	566.67	0.00003
AT&T B 8	KATHREIN 80010965	2100	16.45	97.00	4.00	40.00	7065.13	0.00006	1000.00	0.00001
AT&T C 9	KATHREIN 80010965	700	12.05	97.00	4.00	40.00	2565.19	0.13414	466.67	0.02874
AT&T C 9	KATHREIN 80010965	1900	15.65	97.00	4.00	40.00	5876.52	0.13196	1000.00	0.01320
AT&T C 10	ERICSSON SON_AIR6449	3700	23.55	97.00	1.00	108.40	24548.74	1.57307	1000.00	0.15731
AT&T C 11	ERICSSON SON_AIR6419	3450	23.55	97.00	1.00	0.00	0.00	0.01654	1000.00	0.00165
AT&T C 12	KATHREIN 80010965	700	11.85	97.00	4.00	40.00	2449.74	0.12962	466.67	0.02778
AT&T C 12	KATHREIN 80010965	850	13.55	97.00	4.00	40.00	3623.43	0.14139	566.67	0.02495
AT&T C 12	KATHREIN 80010965	2100	16.45	97.00	4.00	40.00	7065.13	0.14442	1000.00	0.01444
T-Mobile A 13	GENERIC PANEL 6FT	1900	15.84	91.00	2.00	60.00	4604.49	0.00008	1000.00	0.00001
T-Mobile A 13	GENERIC PANEL 6FT	2100	16.39	91.00	2.00	60.00	5226.14	0.00023	1000.00	0.00002
T-Mobile A 14	GENERIC PANEL 6FT	600	0.00	91.00	2.00	60.00	120.00	0.00088	400.00	0.00022
T-Mobile A 14	GENERIC PANEL 6FT	700	12.33	91.00	2.00	60.00	2052.02	0.00088	466.67	0.00019
T-Mobile B 15	GENERIC PANEL 6FT	1900	15.84	91.00	2.00	60.00	4604.49	0.00022	1000.00	0.00002
T-Mobile B 15	GENERIC PANEL 6FT	2100	16.39	91.00	2.00	60.00	5226.14	0.00014	1000.00	0.00001
T-Mobile B 16	GENERIC PANEL 6FT	600	0.00	91.00	2.00	60.00	120.00	0.00031	400.00	0.00008
T-Mobile B 16	GENERIC PANEL 6FT	700	12.33	91.00	2.00	60.00	2052.02	0.00031	466.67	0.00007
T-Mobile C 17	GENERIC PANEL 6FT	1900	15.84	91.00	2.00	60.00	4604.49	0.15786	1000.00	0.01579
T-Mobile C 17	GENERIC PANEL 6FT	2100	16.39	91.00	2.00	60.00	5226.14	0.16613	1000.00	0.01661
T-Mobile C 18	GENERIC PANEL 6FT	600	0.00	91.00	2.00	60.00	120.00	0.15327	400.00	0.03832
T-Mobile C 18	GENERIC PANEL 6FT	700	12.33	91.00	2.00	60.00	2052.02	0.15327	466.67	0.03284
Unknown A 19	GENERIC PANEL 6FT	850	12.62	77.00	1.00	100.00	1828.10	0.00006	566.67	0.00001
Unknown B 20	GENERIC PANEL 6FT	850	12.62	77.00	1.00	100.00	1828.10	0.00049	566.67	0.00009



Antenna ID	Make / Model	Frequency Band (MHz)	Antenna Gain (dBd)	Antenna Centerline (ft)	Channel Count	TX Power/ Channel (watts)	ERP (watts)	Calculated Power Density ($\mu\text{W}/\text{cm}^2$)	General Population MPE Limit ($\mu\text{W}/\text{cm}^2$)	General Population % MPE
Unknown C 21	GENERIC PANEL 6FT	850	12.62	77.00	1.00	100.00	1828.10	0.18904	566.67	0.03336
Unknown A 22	GENERIC PANEL 6FT	850	12.62	107.00	1.00	60.00	1096.86	0.00002	566.67	0.00000
Unknown A 23	GENERIC PANEL 6FT	850	12.62	107.00	1.00	60.00	1096.86	0.00002	566.67	0.00000
Unknown B 24	GENERIC PANEL 6FT	850	12.62	107.00	1.00	60.00	1096.86	0.00015	566.67	0.00003
Unknown B 25	GENERIC PANEL 6FT	850	12.62	107.00	1.00	60.00	1096.86	0.00015	566.67	0.00003
Unknown C 26	GENERIC PANEL 6FT	850	12.62	107.00	1.00	60.00	1096.86	0.05606	566.67	0.00989
Unknown C 27	GENERIC PANEL 6FT	850	12.62	107.00	1.00	60.00	1096.86	0.05606	566.67	0.00989
							Cumulative Power Density:	3.24691 $\mu\text{W}/\text{cm}^2$	Cumulative % MPE:	0.42993%



Summary

The theoretical calculations performed for this analysis yielded cumulative power density totals in all areas at Ground Level that are within the allowable federal limits for public exposure to RF energy. Therefore, the site is **Compliant** with FCC rules and regulations.

Matt Schulzinger
RF EME Technical Writer
Centerline Communications, LLC

Matthew Schulzinger

EXHIBIT 6

APPLICATION FOR BUILDING PERMIT TOWN OF AVON

PERMIT NO. 001413

Tel. (860) 409-4316 • Fax (860) 409-4364
60 West Main Street • Avon, Connecticut 06001-3743

All work done under this permit must comply with the State of Connecticut Building Code effective May 1, 1999.

LOCATION OF JOB (NO. & STREET) <u>10 Redwood Ln</u>		LOT <u>7</u>	GIS No. <u>3680010</u>	ZONE <u>R-30</u>	CONST. TYPE	USE GROUP <u>U</u>	OCCUPANCY <u>N/A</u>	CBYD <u>2006</u> <u>450 3111</u>		
TITLE		ADDRESS (No., Street, Town, State, Zip)				TEL.	FAX	PAGER		
OWNER <u>SBA INC / AVON WATER Company</u>		<u>14 West Main Street</u>				<u>(860)</u>				
		<u>AVON CT 06001</u>				<u>678 0001</u>	<u>678-0521</u>			
TENANT <u>N/A</u>										
APPLICANT <u>SBA, INC.</u>		<u>80 Eastern Blvd</u>				<u>(860)</u>	<u>(860)</u>			
		<u>Glastonbury CT 06033</u>				<u>659 9101</u>	<u>659 9140</u>	<u>NA</u>		
BUILDER <u>DICIN Electric Co.</u>	LICENSE # <u>900247</u>	<u>199 Nantic River Rd.</u>				<u>860</u>				
		<u>Waterford CT 06385</u>				<u>442-0826</u>	<u>442-4734</u>			
ARCHITECT <u>ERDMAN ANTHONY CONSULTING ENGINEERS</u>	LICENSE # <u>21309</u>	<u>317 Brick Church Rd.</u>				<u>(518)</u>	<u>(518)</u>			
		<u>TROY, NY 12180</u>				<u>279-0505</u>	<u>279-0555</u>			
ENGINEER <u>ERDMAN ANTHONY & ASSOCIATES, INC</u>	LICENSE # <u>21300</u>	<u>317 Brick Church Rd.</u>				<u>(518)</u>	<u>(518)</u>			
		<u>TROY, NY 12180</u>				<u>279-0505</u>	<u>279-0555</u>			
INTERIOR DESIGNER <u>N/A</u>	LICENSE #									
SPECIAL INSPECTOR <u>STRUCTURAL ENGINEERS COALITION</u>	LICENSE # <u>22118</u>	<u>114 Woodlawn Rd.</u>				<u>860</u>				
		<u>Berlin CT 06037</u>				<u>829 1725</u>	<u>829-1745</u>			
CONTACT PERSON <u>Erik Pearson</u>		<u>80 Eastern Blvd</u>				<u>860</u>	<u>860</u>	<u>860</u>		
		<u>Glastonbury CT 06033</u>				<u>659-9101</u>	<u>659-9140</u>	<u>338 0256</u>		
PERMIT TYPE		PROJECT TYPE		Occ. Load			PERMIT FEE CALCULATION			
<input checked="" type="checkbox"/> Foundation <input type="checkbox"/> Building <input type="checkbox"/> Tenant Fitout <input type="checkbox"/> Sign <input type="checkbox"/> Change of Use <input type="checkbox"/> Change of Occupancy <input type="checkbox"/> Move Lot Line <input type="checkbox"/> Article 34 <input type="checkbox"/> Other _____		<input checked="" type="checkbox"/> New Construction <input type="checkbox"/> Addition <input type="checkbox"/> Alteration <input type="checkbox"/> Repair/Replace <input type="checkbox"/> Other _____		Story	Gross Sq. Ft.	Use	Occ.	Phase	Est. Value	Fee
		<u>N/A</u> # DWELLING UNITS		_____	_____	_____	_____	Const.	<u>130,000</u>	<u>1690</u>
		SPRINKLERS		_____	_____	_____	_____	Plng.	_____	_____
		Required <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		_____	_____	_____	_____	Mech.	_____	_____
		Provided <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		_____	_____	_____	_____	Elect.	<u>30,000</u>	<u>390</u>
				Total	_____	_____	_____	Spnklr.	_____	_____
				Building Height	<u>110</u>	ft.	<u>Communication TOWER</u>	Other	_____	_____
				INS.	<u>G.C.</u>	H.O.	~ S.P.	Total	<u>160,000</u>	<u>2080</u>
				A sworn affidavit of value required prior to issuance of a Certificate of Occupancy.						
Description of Work/Remarks: <u>Installation of 110' Foot Communication tower with associated antennas, Installation of 35' x 70' fenced equipment compound</u>										
All work covered by this application has been authorized by the owner of this property or an authorized agent and will be done in compliance with all local, state and federal regulations. This permit shall lapse if work does not commence within 6 months.										
Owner Signature _____				Date _____		Agent Signature <u>[Signature]</u>			Date <u>10/12/00</u>	
PRE-APPROVAL BY OTHER AGENCIES						APPROVAL CONSTITUTES ISSUANCE OF THIS BUILDING PERMIT				
Zoning	Sign <u>SK</u>	Date <u>11-17-00</u>	Fire Marshal	Sign <u>[Signature]</u>	Date <u>12/4/00</u>	<input checked="" type="checkbox"/> Approved		<input type="checkbox"/> Disapproved		
Welland			Water			<u>[Signature]</u>		<u>12/5/00</u>		
Town Eng.	<u>TD</u>	<u>11-17-00</u>	Sewerage							

Zoning

Approved

TOWN OF AVON
PLANNING AND ZONING COMMISSION

APPLICATION # 3624

SPECIAL EXCEPTION APPLICATION

1. APPLICANT

Name SBA INC. BY THOMAS F. FLYNN III
Business Address 80 EASTERN BLVD. Phone 860-659-9101
~~Home Address~~ GLASTONBURY, CT. 06033 Phone 860-659-9140

2. OWNER(S) OF RECORD

Name THE AVON WATER COMPANY
Business Address PO BOX 424 14 WEST MAIN ST. Phone 860-678-0001
Home Address AVON, CT. 06001 Phone _____
Name _____
Business Address _____ Phone _____
Home Address _____ Phone _____

3. DESCRIPTION OF PARCEL

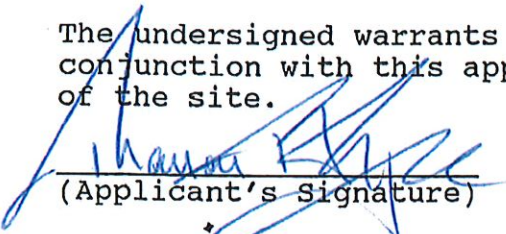
Location FARMINGTON WOODS CONDOMINIUM REDWOOD LANE #10
Area (acres) _____ (Square Feet, if less than 2 acres) 3500 sq.
Assessor's Map No. 17 Parcel No. 7 Zone R-30
Vol. 218 Pg. 362

4. SPECIAL EXCEPTION INFORMATION

Under Section I.V.A. 4.a of the Zoning Regulations, Special Exception approval is hereby requested to permit the removal and rebuilding of an existing 80' tower for a new wireless tele-communications facility at the same site. Please see attached project description.

5. APPLICANT'S SIGNATURE

The undersigned warrants the truth of all statements made in conjunction with this application and consents to inspection of the site.


(Applicant's Signature)

THOMAS F. FLYNN III for SBA, Inc.
(Print or Type Name and Title)
ZONING SPECIALIST

6. OWNERS' SIGNATURES

The undersigned owner(s) of record consent(s) to the submission of this application and to inspections of the site.

(Owner's Signature) (Print or Type Name)

(Owner's Signature) (Print or Type Name)

Approved

TOWN OF AVON
PLANNING AND ZONING COMMISSION

APPLICATION # 3626

SITE PLAN APPLICATION

1. APPLICANT

Name SBA INC. BY THOMAS F. FLYNN III
Business Address 80 EASTERN BLVD Phone 860-659-9101
Home Address GLASTONBURY, CT. 06033 Phone _____

2. OWNER(S) OF RECORD

Name THE AVON WATER COMPANY
Business Address PO BOX 424 14 WEST MAIN ST Phone 860-678-0001
Home Address _____ Phone _____

Name _____
Business Address _____ Phone _____
Home Address _____ Phone _____

3. DESCRIPTION OF PARCEL

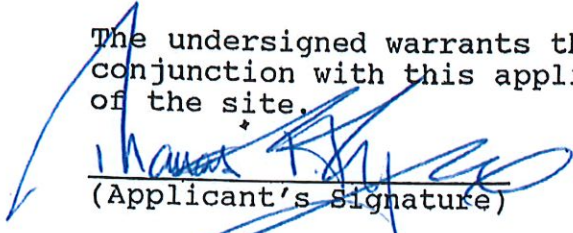
Location FARMINGTON WOODS CONDOMINIUM REDWOOD LANE
Area (acres) _____ (Square Feet, if less than 2 acres) 3500 sq.
Assessor's Map No. 17 Parcel No. 7 Zone R-30

4. PRESENT USE (Please indicate use and describe; i.e.: restaurant with seating capacity for 75 persons.)
WATER TANK AND 80' LATTICE TOWER

5. PROPOSED USE (Please indicate use and list activities for which approval is requested; i.e.: restaurant - requesting building addition, parking lot expansion or renovation, consolidated parcel agreement.)
The removal and replacement of the tower with a new 110 foot wireless telecommunications facility at the same site. Please see attached project description.

6. APPLICANT'S SIGNATURE

The undersigned warrants the truth of all statements made in conjunction with this application and consents to inspection of the site.


(Applicant's Signature) THOMAS F. FLYNN III FOR SBA INC.
ZONING SPECIALIST
(Print or Type Name and Title)

7. OWNERS' SIGNATURES

The undersigned owner(s) of record consent(s) to the submission of this application and to inspections of the site.

PLEASE SEE ATTACHED AUTHORIZATION
(Owner's Signature) (Print or Type Name)

(Owner's Signature) (Print or Type Name)

EXHIBIT 7

From: [UPS](#)
To: [Evan Renwick](#)
Subject: UPS Delivery Notification, Tracking Number 1Z9Y45030330532945
Date: Monday, May 16, 2022 9:24:03 AM



Hello, your package has been delivered.

Delivery Date: Monday, 05/16/2022

Delivery Time: 9:22 AM

Signed by: JULIAN

CENTERLINE SITE ACQUISITION

Tracking Number:	1Z9Y45030330532945
Ship To:	AVON WATER COMPANY 93 WEST MAIN STREET CLINTON, CT 064131645 US
Number of Packages:	1
UPS Service:	UPS Ground
Package Weight:	1.0 LBS
Reference Number:	CT5289-CSC AVON WATER COMPANY

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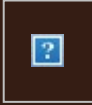
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From: [UPS](#)
To: [Evan Renwick](#)
Subject: UPS Delivery Notification, Tracking Number 1Z9Y45030310901744
Date: Wednesday, May 18, 2022 1:59:56 PM



Hello, your package has been delivered.

Delivery Date: Wednesday, 05/18/2022

Delivery Time: 1:54 PM

Left At: MAIL ROOM

Signed by: ID Verified

CENTERLINE SITE ACQUISITION

Tracking Number:	1Z9Y45030310901744
Ship To:	SBA TOWERS, LLC 8051 CONGRESS AVENUE 2ND FLOOR BOCA RATON, FL 334871307 US
Number of Packages:	1
UPS Service:	UPS Ground
Package Weight:	1.0 LBS
Reference Number:	CT5289-CSC SBA TOWERS, LLC

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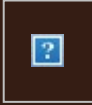
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From: [UPS](#)
To: [Evan Renwick](#)
Subject: UPS Delivery Notification, Tracking Number 1Z9Y45030319205721
Date: Monday, May 16, 2022 10:50:10 AM



Hello, your package has been delivered.

Delivery Date: Monday, 05/16/2022

Delivery Time: 10:48 AM

Signed by: WORSMAN

CENTERLINE SITE ACQUISITION

Tracking Number:	1Z9Y45030319205721
Ship To:	OFFICE OF TOWN MANAGER 60 WEST MAIN STREET AVON TOWN HALL AVON, CT 060013719 US
Number of Packages:	1
UPS Service:	UPS Ground
Package Weight:	1.0 LBS
Reference Number:	CT5289-CSC TOWN MANAGER

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From: [UPS](#)
To: [Evan Renwick](#)
Subject: UPS Delivery Notification, Tracking Number 1Z9Y45030300352731
Date: Monday, May 16, 2022 10:50:10 AM



Hello, your package has been delivered.

Delivery Date: Monday, 05/16/2022

Delivery Time: 10:48 AM

Signed by: WORSMAN

CENTERLINE SITE ACQUISITION

Tracking Number:	1Z9Y45030300352731
Ship To:	PLANNING & ZONING DEPARTMENT 60 WEST MAIN STREET AVON TOWN HALL AVON, CT 060013719 US
Number of Packages:	1
UPS Service:	UPS Ground
Package Weight:	1.0 LBS
Reference Number:	CT5289-CSC ZEO/TOWN PLANNER

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