



QC Development

PO Box 916

Storrs, CT 06268

860-670-9068

Mark.Roberts@QCDevelopment.net

March 13, 2020

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

Notice of Exempt Modification – New Cingular Wireless PCS, LLC (AT&T) – CT2203

500 Moose Hill Road, Monroe, CT 06468

N 41.31833333

W 73.20083333

Dear Ms. Bachman:

AT&T currently maintains nine (9) antennas at the 138-foot level of the existing 149-foot Monopole at 500 Moose Hill Road, Monroe, CT. The tower is owned by SBA and the property is owned by the Saint John the Baptist Greek Catholic Cemetery Association, Inc. AT&T now intends to install three (3) CommScope ION-M23 SDARS remote units and three (3) CommScope Diplexers. These new components will also be installed at the 138-foot level of the tower. The addition of these components changes the tower structural loading, but Power Density levels are not impacted (see attachments).

This facility was approved by the Siting Council on March 21, 2002 in Docket # 207. The approval included a tower height limitation of 130 feet. Subsequently, in Petition # 628T a 20-foot height extension was approved by the Council on June 19, 2003. Since no changes are proposed to the overall tower height, this modification complies with the aforementioned approvals.

Please accept this letter as notification pursuant to Regulations of Connecticut State Agencies § 16-50j-73, for construction that constitutes an exempt modification pursuant to R.C.S.A. § 16-50j-72(b)(2). In accordance with R.C.S.A. § 16-50j-73, a copy of this letter is being sent to Kenneth Kellogg, First Selectman of the Town of Monroe, and the Monroe Planning & Zoning Office, as

well as the property owner and the tower owner.

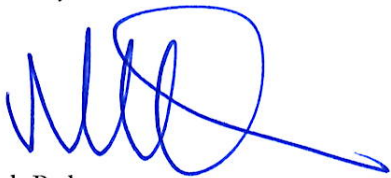
The planned modifications to the facility fall squarely within those activities explicitly provided for in R.C.S.A. § 16-50j-72(b)(2).

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

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

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

Sincerely,



Mark Roberts
QC Development
Consultant for AT&T

Attachments

cc: Ken Kellogg - Elected Official
Rick Schultz – Town Planner
Saint John the Baptist Greek Catholic Cemetery Association, Inc - Property Owner
SBA - Tower Owner (via e-mail)

Power Density

Existing Loading on Tower

Carrier	# of Channels	ERP/Ch (W)	Antenna Centerline Height (ft)	Power Density (mW/cm ²)	Freq. Band (MHz ^{**})	Limit S (mW/cm ²)	%MPE
Other Carriers*							12.68%
AT&T UMTS	1	257	138	0.0053	850	0.5667	0.05%
AT&T LTE	1	1476	138	0.0305	700	0.4667	0.54%
AT&T LTE	1	1000	138	0.0206	850	0.5667	0.36%
AT&T LTE	1	1000	138	0.0206	850	1.0000	0.36%
AT&T LTE	2	4842	138	0.1999	1900	1.0000	3.51%
AT&T LTE	1	1285	138	0.0265	2300	1.0000	0.47%
Site Total							17.97%

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

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

Proposed Loading on Tower

Carrier	# of Channels	ERP/Ch (W)	Antenna Centerline Height (ft)	Power Density (mW/cm ²)	Freq. Band (MHz ^{**})	Limit S (mW/cm ²)	%MPE
Other Carriers*							12.68%
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AT&T LTE	2	4842	138	0.1999	1900	1.0000	3.51%
AT&T LTE	1	1285	138	0.0265	2300	1.0000	0.47%
Site Total							17.97%

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

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

PROJECT INFORMATION

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

- NEW AT&T SDARS REMOTE (TYP. OF 1 PER SECTOR, TOTAL OF 3).
- NEW AT&T DIPLEXERS CBC23SR-43 (TYP. OF 1 PER SECTOR, TOTAL OF 3).
- NEW TRIPLE RRU MOUNT COMMSCOPE PART# RR-FA3 (TYP. OF 1 PER SECTOR, TOTAL OF 3).
- NEW AT&T DC ONLY SURGE ARRESTOR DC6-48-60-0-8C-EV (TOTAL OF 1) WITH (2) DC POWER RUN.

ITEMS TO REMAIN:

- (9) ANTENNAS, (9) RRU'S, (6) TMA'S (2) SURGE ARRESTOR, (12) DIPLEXERS, (12) COAX CABLES, (4) DC POWER & (2) FIBER.

SITE ADDRESS: 500 MOOSE HILL ROAD
MONROE, CT 06468

LATITUDE: 41.320956° N, 41° 19' 15.44" N
LONGITUDE: 73.201423° W, 73° 12' 05.12" W
TYPE OF SITE: MONOPOLE / EQUIPMENT SHELTER
STRUCTURE HEIGHT: 149'-0"±
RAD CENTER: 138'-0"±
CURRENT USE: TELECOMMUNICATIONS FACILITY
PROPOSED USE: TELECOMMUNICATIONS FACILITY



SITE NUMBER: CT2203
SITE NAME: MONROE CENTER
FA CODE: 10035397
PACE ID: MRCTB045081
PROJECT: LTE RF MOD/WCS FILTER 2020 UPGRADE

DRAWING INDEX

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

VICINITY MAP

DIRECTIONS TO SITE:
HEAD SOUTH TOWARD ENTERPRISE DR, TURN LEFT ONTO ENTERPRISE DR, TURN LEFT ONTO CAPITAL BLVD, USE THE LEFT 2 LANES TO TURN LEFT ONTO STATE HWY 411, TURN LEFT TO MERGE ONTO I-91 S, MERGE ONTO I-91 S, TAKE EXIT 17 TO MERGE ONTO CT-15 S/WILBUR CROSS PKWY, TAKE EXIT 58 TO MERGE ONTO CT-34 W/DERBY AVE/DERBY TURNPIKE TOWARD DERBY, MERGE ONTO CT-34 W/DERBY AVE/DERBY TURNPIKE, CONTINUE TO FOLLOW CT-34 W/DERBY AVE, USE THE LEFT 2 LANES TO TURN LEFT ONTO MAIN ST, TURN LEFT ONTO BRIDGE ST, TURN RIGHT ONTO HOWE AVE, CONTINUE ONTO CT-110 N/LEAVENWORTH RD, CONTINUE TO FOLLOW CT-110 N, TURN LEFT ONTO MOOSE HILL RD, TURN LEFT.



GENERAL NOTES

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

SBA SITE NAME: MOOSEHILL
SBA SITE #: CT13056

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

SAI
12 INDUSTRIAL WAY
SALEM, NH 03079

SITE NUMBER: CT2203
SITE NAME: MONROE CENTER
SBA SITE # ID: CT13056
500 MOOSE HILL ROAD
MONROE, CT 06468
FAIRFIELD COUNTY

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

NO.	DATE	REVISIONS	BY	CHK	APP'D
1	03/09/20	ISSUED FOR CONSTRUCTION	RP	HC	DPH
A	02/06/20	ISSUED FOR REVIEW	RP	HC	DPH

SCALE: AS SHOWN DESIGNED BY: HC DRAWN BY: RP

Daniel P. Hamm
No. 24178
PROFESSIONAL ENGINEER
STATE OF CONNECTICUT

AT&T	
TITLE SHEET	
LTE RF MOD/WCS FILTER 2020 UPGRADE	
SITE NUMBER	DRAWING NUMBER
CT2203	T-1
REV	1

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

14. ANY NEW CONCRETE NEEDED FOR THE CONSTRUCTION SHALL BE AIR-ENTRAINED AND SHALL HAVE 4000 PSI STRENGTH AT 28 DAYS. ALL CONCRETE WORK SHALL BE DONE IN ACCORDANCE WITH ACI 318 CODE REQUIREMENTS.
15. ALL STRUCTURAL STEEL WORK SHALL BE DETAILED, FABRICATED AND ERECTED IN ACCORDANCE WITH AISC SPECIFICATIONS. ALL STRUCTURAL STEEL SHALL BE ASTM A36 (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 (ANTENNA)	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



12 INDUSTRIAL WAY
SALEM, NH 03079

**SITE NUMBER: CT2203
 SITE NAME: MONROE CENTER
 SBA SITE # ID: CT13056**

500 MOOSE HILL ROAD
MONROE, CT 06468
FAIRFIELD COUNTY



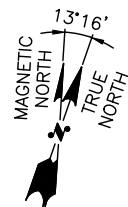
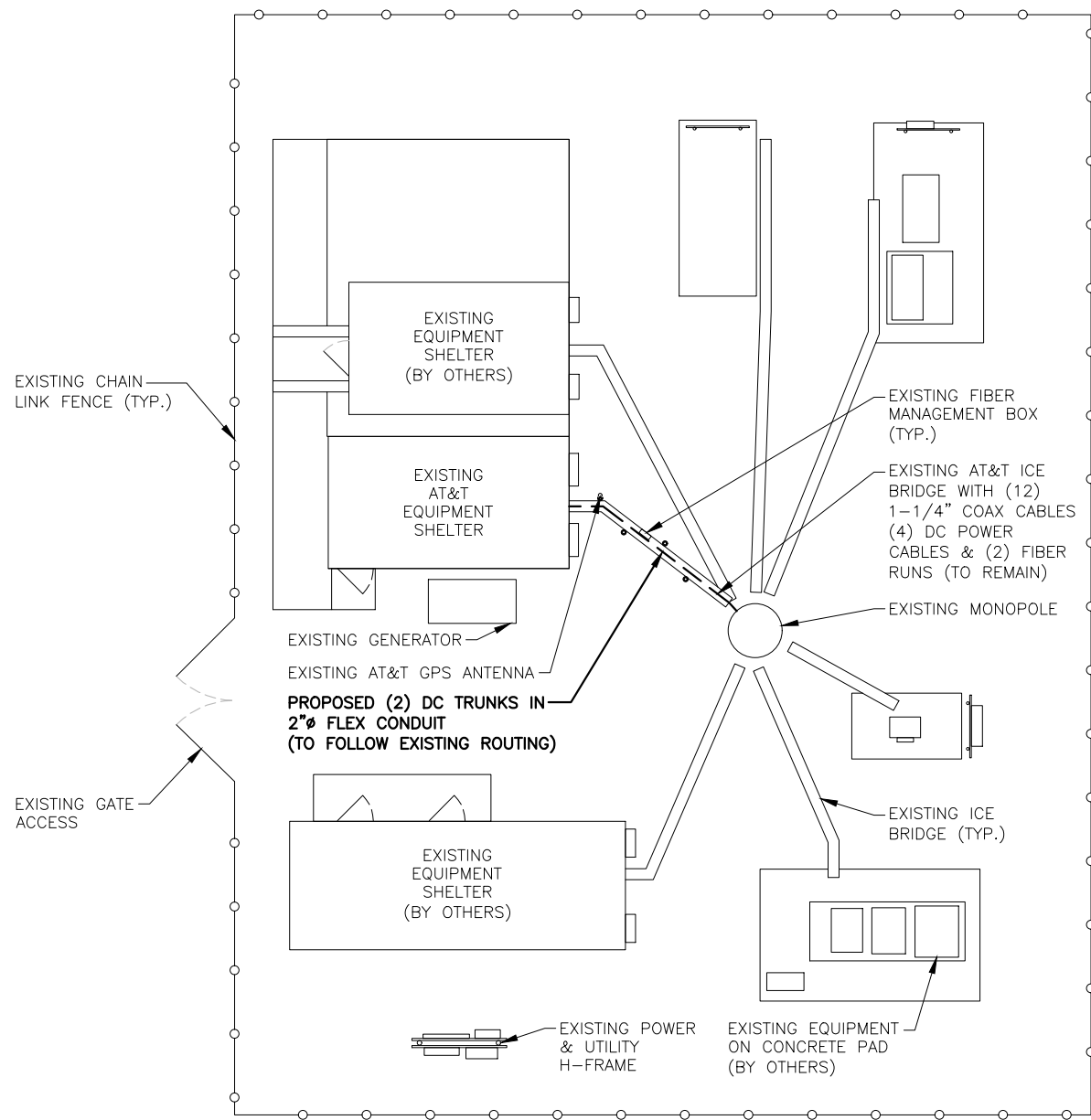
500 ENTERPRISE DRIVE, SUITE 3A
ROCKY HILL, CT 06067

				AT&T	
				GENERAL NOTES	
				LTE RF MOD/WCS FILTER 2020 UPGRADE	
NO.		DATE		REVISIONS	
SCALE: AS SHOWN		DESIGNED BY: HC		DRAWN BY: RP	
SITE NUMBER		DRAWING NUMBER		REV	
CT2203		GN-1		1	

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

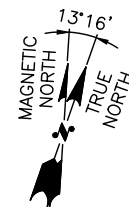
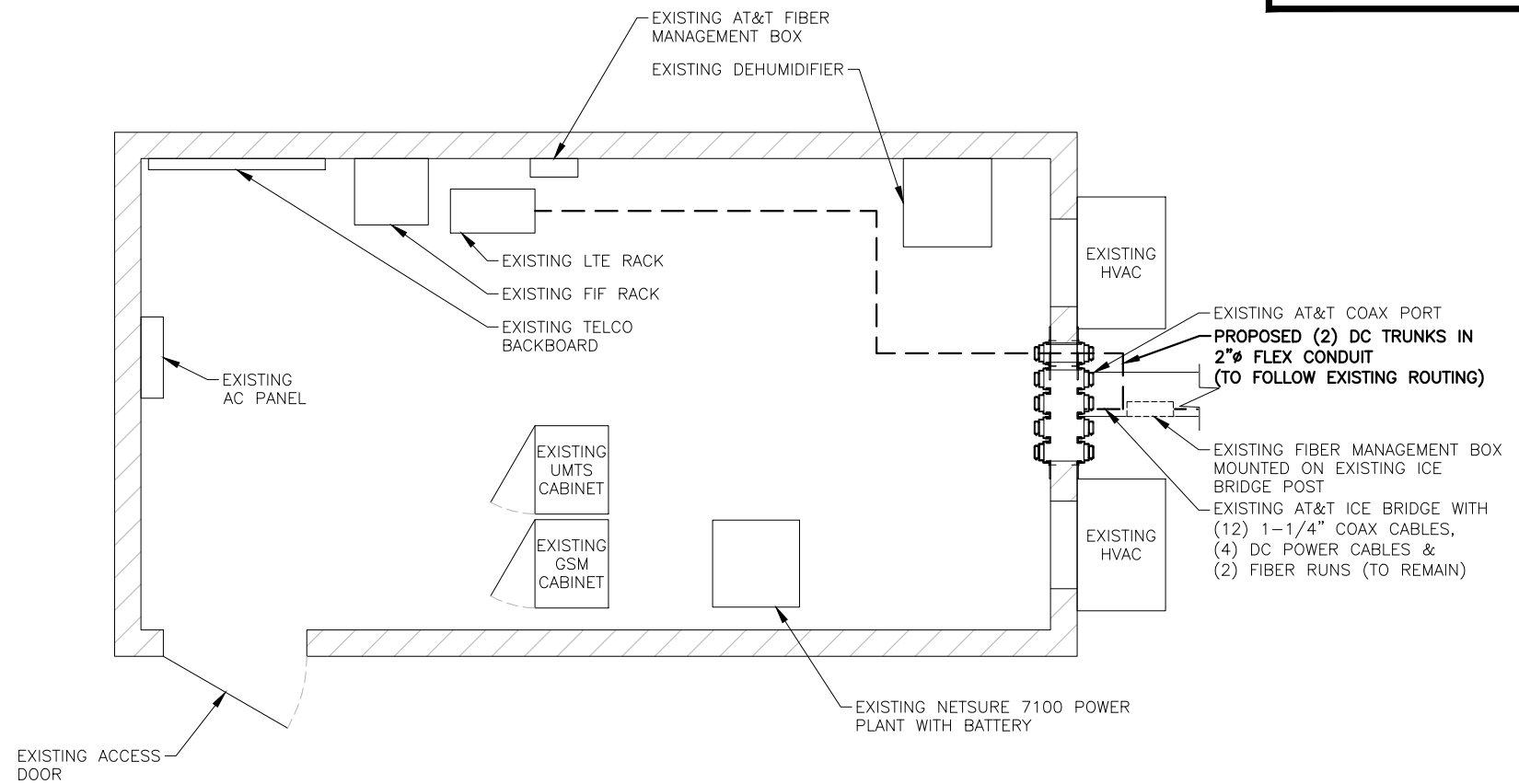
NOTE:
REFER TO MOUNT ANALYSIS BY: HUDSON DESIGN GROUP, LLC, DATED: **FEBRUARY 11, 2020** FOR THE CAPACITY OF THE EXISTING MOUNT TO SUPPORT THE PROPOSED EQUIPMENT.

NOTE:
REFER TO STRUCTURAL ANALYSIS BY: TOWER ENGINEERING SOLUTIONS, DATED: **MARCH 03, 2020**, FOR THE CAPACITY OF THE EXISTING STRUCTURES TO SUPPORT THE PROPOSED EQUIPMENT.



COMPOUND PLAN
22x34 SCALE: 1/8"=1'-0"
11x17 SCALE: 1/16"=1'-0"

1
A-1

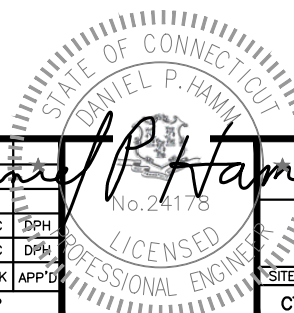


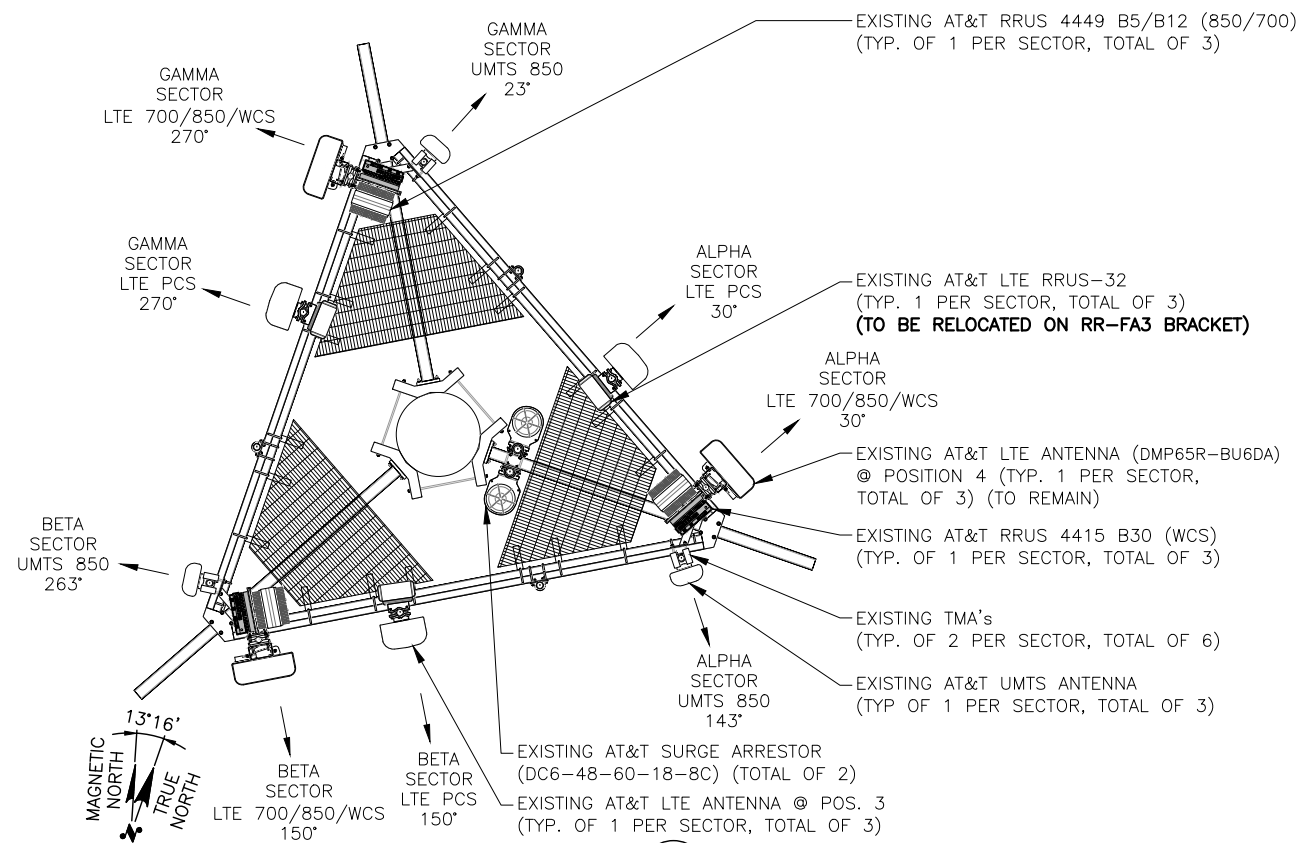
EQUIPMENT PLAN
22x34 SCALE: 1/2"=1'-0"
11x17 SCALE: 1/4"=1'-0"

2
A-1

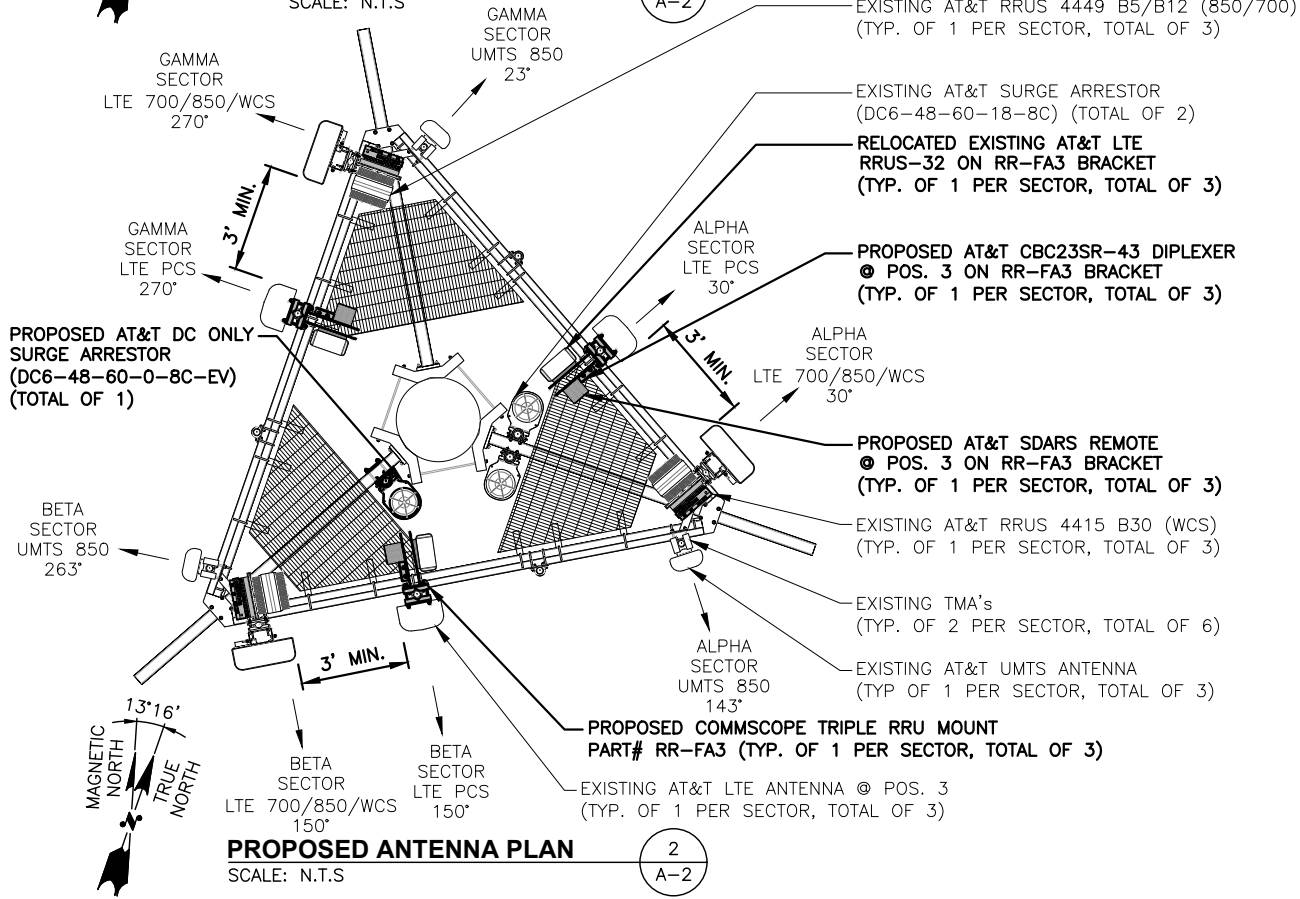


1	03/09/20	ISSUED FOR CONSTRUCTION	RP	HC	DPH
A	02/06/20	ISSUED FOR REVIEW	RP	HC	DPH
NO.	DATE	REVISIONS	BY	CHK	APP'D
SCALE: AS SHOWN		DESIGNED BY: HC	DRAWN BY: RP		

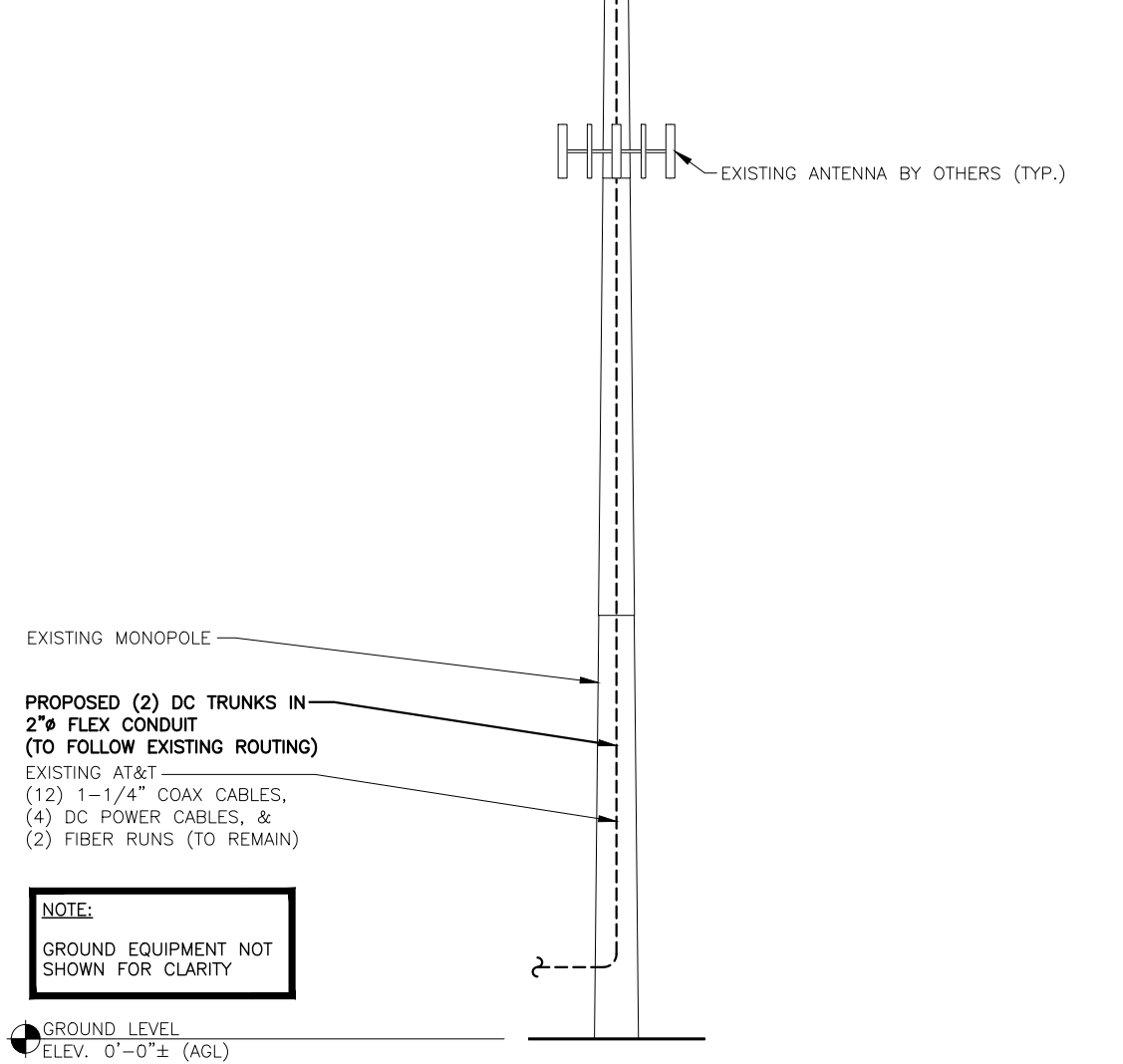
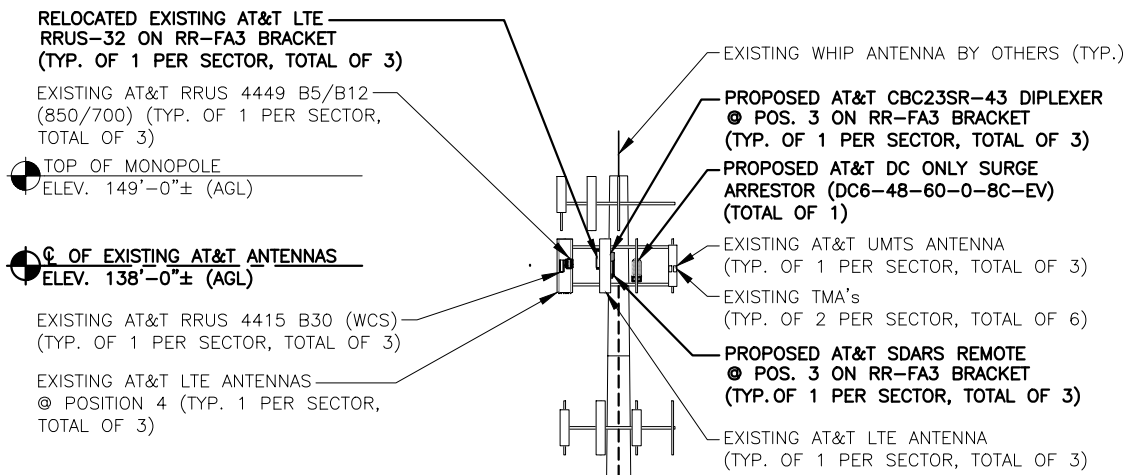




EXISTING ANTENNA PLAN
SCALE: N.T.S.



PROPOSED ANTENNA PLAN
SCALE: N.T.S.



ELEVATION
22x34 SCALE: 3/32"=1'-0"
11x17 SCALE: 3/64"=1'-0"

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

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

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Daniel P. Hamm
STATE OF CONNECTICUT
No. 24178
LICENSED PROFESSIONAL ENGINEER

AT&T
ANTENNA LAYOUTS & ELEVATION
LTE RF MOD/WCS FILTER 2020 UPGRADE
SITE NUMBER: CT2203
DRAWING NUMBER: A-2
REV: 1

ANTENNA SCHEDULE

SECTOR	EXISTING/PROPOSED	BAND	ANTENNA	SIZE (INCHES) (L x W x D)	ANTENNA CL HEIGHT	AZIMUTH	TMA/ DIPLEXER	RRU	FREQUENCY	SIZE (INCHES) (L x W x D)	FEEDER	RAYCAP
A1	EXISTING	UMTS 850	7770	55X11X5	138'-0"±	143°	(2)(E) LGP13519 (2)(E)(G) LGP21901	-	-	-	(2)1-1/4 COAX	(E) (1) RAYCAP DC6-48-60-18-8F
A2	-	----	-	-	-	-	-	-	-	-	-	
A3	EXISTING	LTE PCS	HPA-65R-BUU-H6	72X14.8X9	138'-0"±	30°	(2)(E)(G) LGP21901	(E)(1) RRUS-32 B2	(PCS)	-	(2)1-1/4 COAX	
A4	EXISTING	LTE 700/850/WCS	DMP65R-BU6DA	71.2X20.7X7.7	138'-0"±	30°	(1)(P) CBC23SR-43	(E)(1) 4449 B5/B12 (E)(1) 4415 B30 (P)(1) SDARS	(850/700) (WCS)	- 32.7X6.1X5.8	(2)(E) DC & (1)(E) FIBER	(E) (1) RAYCAP DC6-48-60-18-8F
B1	EXISTING	UMTS 850	7770	55X11X5	138'-0"±	263°	(2)(E) LGP13519 (2)(E)(G) LGP21901	-	-	-	(2)1-1/4 COAX	
B2	-	----	-	-	-	-	-	-	-	-	-	
B3	EXISTING	LTE PCS	HPA-65R-BUU-H6	72X14.8X9	138'-0"±	150°	(2)(E)(G) LGP21901	(E)(1) RRUS-32 B2	(PCS)	-	(2)1-1/4 COAX	(E) (1) RAYCAP DC6-48-60-18-8F
B4	EXISTING	LTE 700/850/WCS	DMP65R-BU6DA	71.2X20.7X7.7	138'-0"±	150°	(1)(P) CBC23SR-43	(E)(1) 4449 B5/B12 (E)(1) 4415 B30 (P)(1) SDARS	(850/700) (WCS)	- 32.7X6.1X5.8	(2)(E) DC & (1)(E) FIBER	
C1	EXISTING	UMTS 850	7770	55X11X5	138'-0"±	23°	(2)(E) LGP13519 (2)(E)(G) LGP21901	-	-	-	(2)1-1/4 COAX	
C2	-	----	-	-	-	-	-	-	-	-	-	(P) (1) RAYCAP DC6-48-60-0-8C-EV
C3	EXISTING	LTE PCS	HPA-65R-BUU-H6	72X14.8X9	138'-0"±	270°	(2)(E)(G) LGP21901	(E)(1) RRUS-32 B2	(PCS)	-	(2)1-1/4 COAX	
C4	EXISTING	LTE 700/850/WCS	DMP65R-BU6DA	71.2X20.7X7.7	138'-0"±	270°	(1)(P) CBC23SR-43	(E)(1) 4449 B5/B12 (E)(1) 4415 B30 (P)(1) SDARS	(850/700) (WCS)	- 32.7X6.1X5.8	(2)(P) DC	

RRU CHART

QUANTITY	MODEL	SIZE (L x W x D)
E(3)	4449 (850/700)	17.9"x13.2"x10.4"
E(3)	4415	16.5"x13.4"x5.9"
E(3)	RRUS-32 (WCS)	27.2"x12.1"x7.0"
P(3)	SDARS	32.7"x6.1"x5.8"

NOTE:
MOUNT PER MANUFACTURER'S SPECIFICATIONS

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

NOTE:
REFER TO MOUNT ANALYSIS BY: HUDSON DESIGN GROUP, LLC, DATED: FEBRUARY 11, 2020 FOR THE CAPACITY OF THE EXISTING MOUNT TO SUPPORT THE PROPOSED EQUIPMENT.

NOTE:
REFER TO STRUCTURAL ANALYSIS BY: TOWER ENGINEERING SOLUTIONS, DATED: MARCH 03, 2020, FOR THE CAPACITY OF THE EXISTING STRUCTURES TO SUPPORT THE PROPOSED EQUIPMENT.

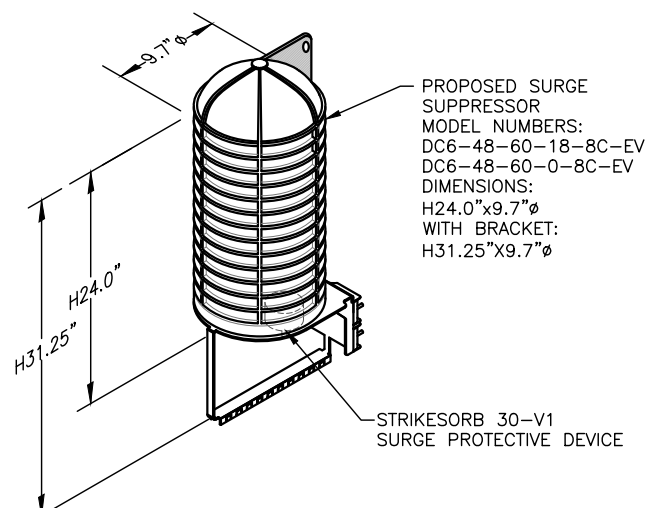


PROPOSED RRU REFER TO THE FINAL RFDS AND CHART FOR QUANTITY, MODEL AND DIMENSIONS

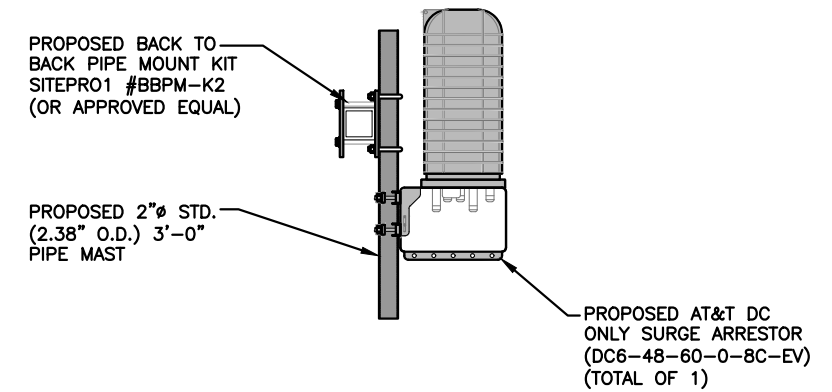
NOTE:
MOUNT PER MANUFACTURER'S SPECIFICATIONS.

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

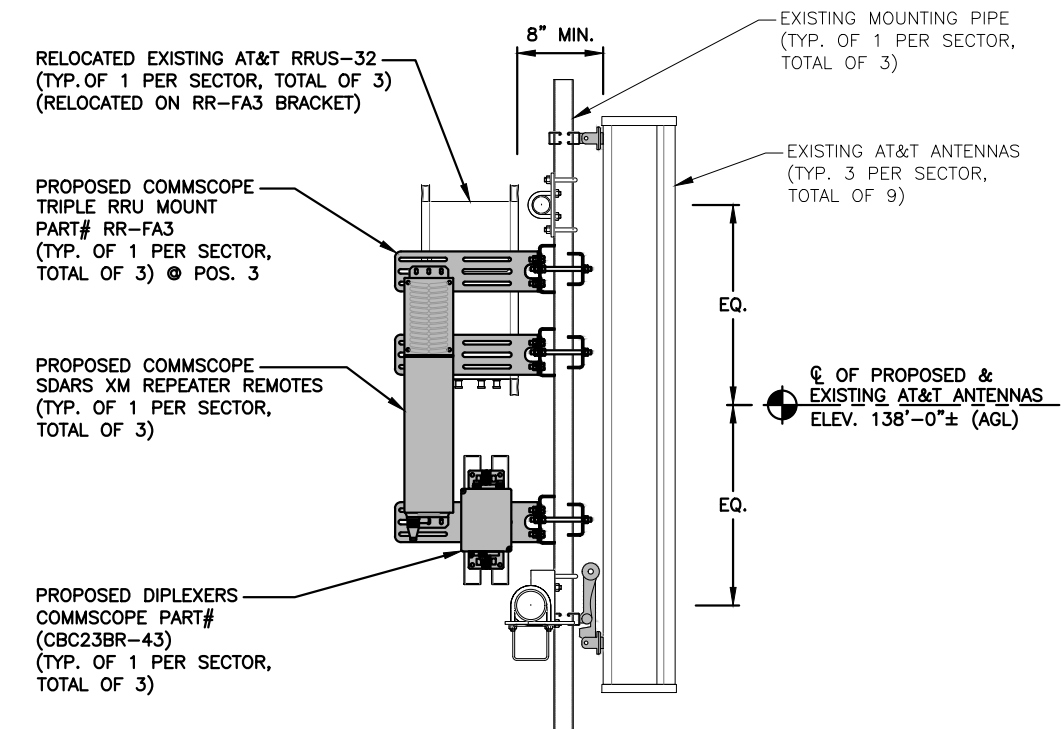
FINAL ANTENNA SCHEDULE 1
SCALE: N.T.S. A-3



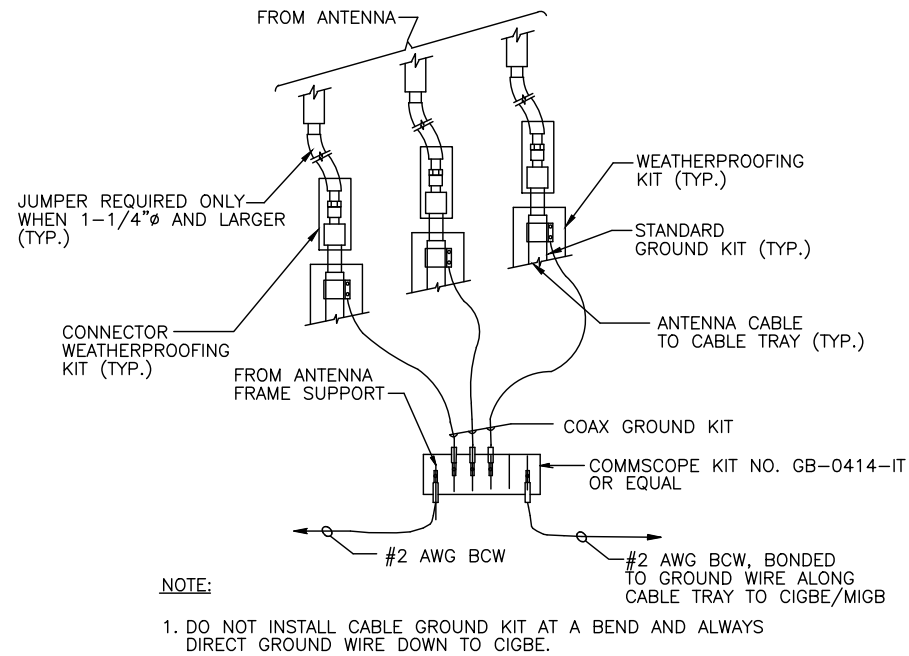
DC SURGE SUPPRESSOR DETAIL 3
SCALE: N.T.S. A-3



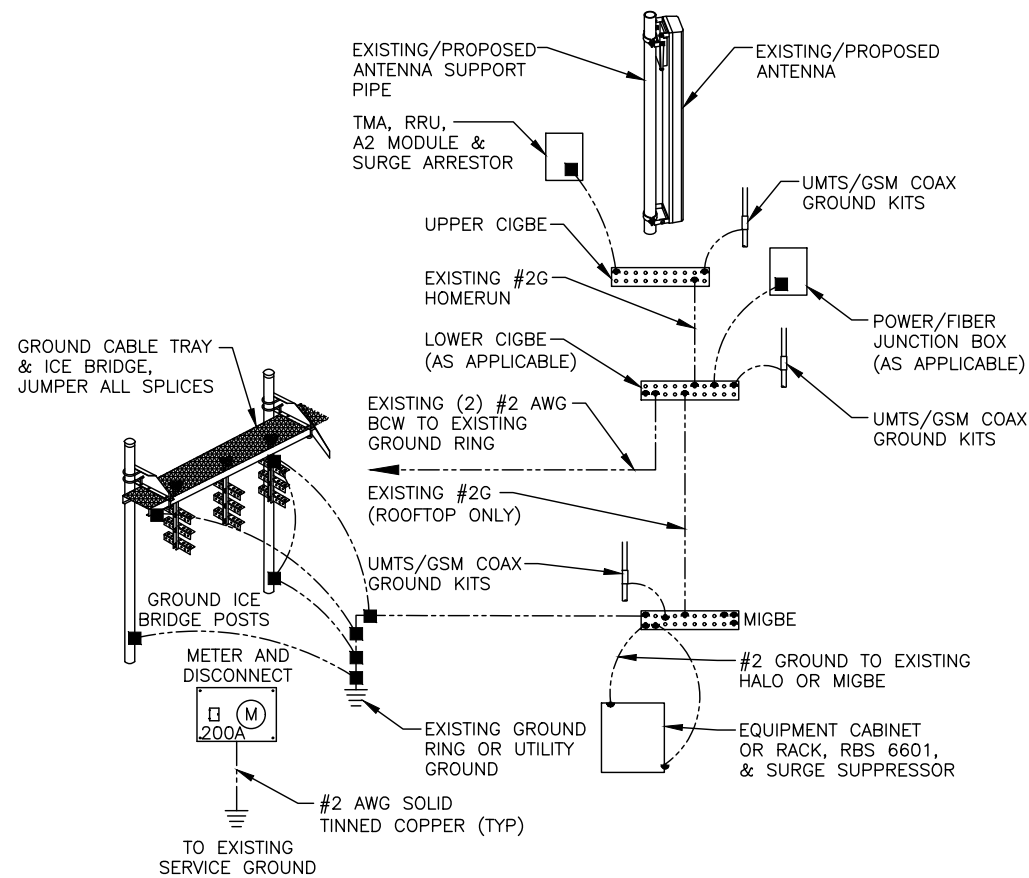
PROPOSED SURGE ARRESTOR MOUNTING DETAIL 4
22x34 SCALE: 1"=1'-0" A-3
11x17 SCALE: 1/2"=1'-0"
0 0'-6" 1'-0" 2'-0" 3'-0"



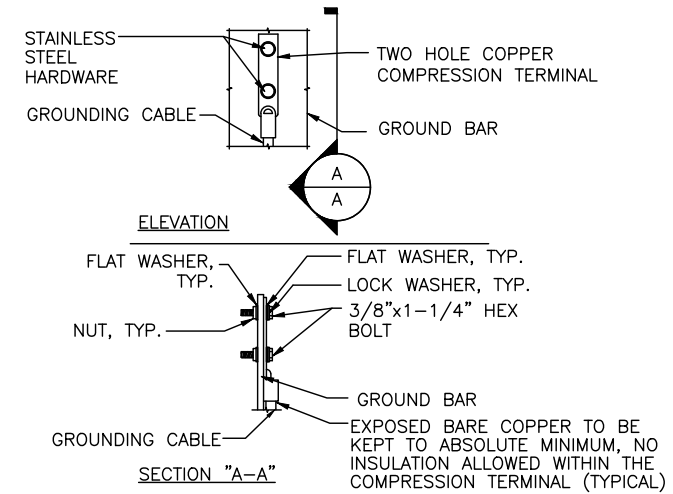
PROPOSED LTE ANTENNA MOUNTING DETAIL 5
22x34 SCALE: 1"=1'-0" A-3
11x17 SCALE: 1/2"=1'-0"
0 0'-6" 1'-0" 2'-0" 3'-0"



GROUND WIRE TO GROUND BAR CONNECTION DETAIL 1
SCALE: N.T.S. G-1



GROUNDING RISER DIAGRAM 2
SCALE: N.T.S. G-1



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

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

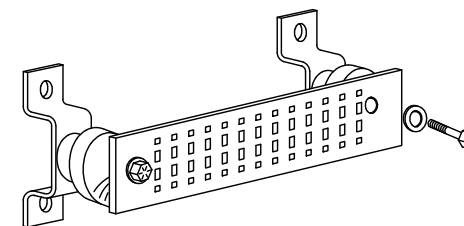
EACH GROUND CONDUCTOR TERMINATING ON ANY GROUND BAR SHALL HAVE AN IDENTIFICATION TAG ATTACHED AT EACH END THAT WILL IDENTIFY ITS ORIGIN AND DESTINATION.

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.

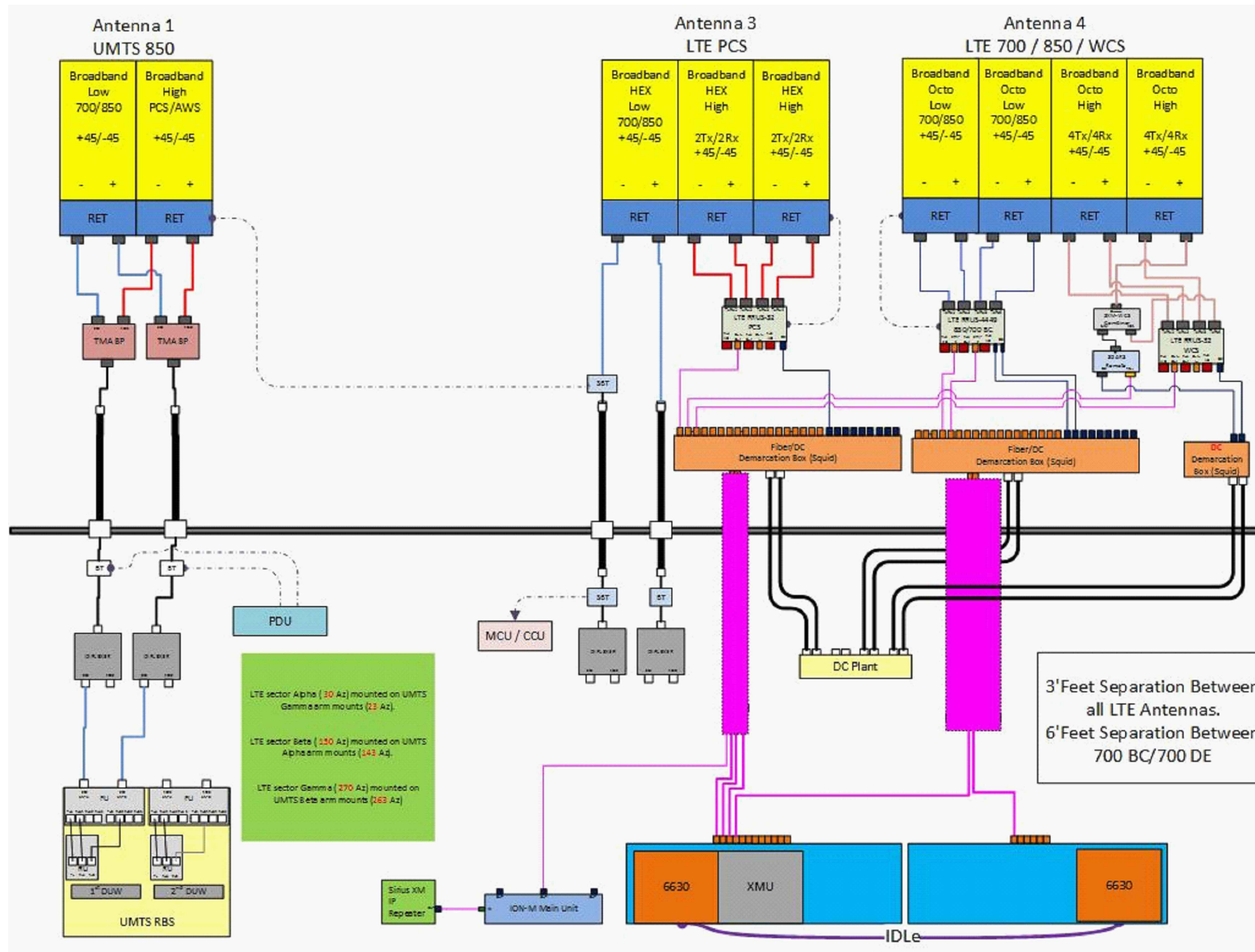
SECTION "A" - SURGE ABSORBERS

- 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) 4
SCALE: N.T.S. G-1

		AT&T	
		GROUNDING DETAILS	
		LTE RF MOD/WCS FILTER 2020 UPGRADE	
		SITE NUMBER DRAWING NUMBER REV	
		CT2203 G-1 1	
NO.	DATE	REVISIONS	BY CHK APP'D
1	03/09/20	ISSUED FOR CONSTRUCTION	RP HC DPH
A	02/06/20	ISSUED FOR REVIEW	RP HC DPH
SCALE: AS SHOWN		DESIGNED BY: HC	DRAWN BY: RP



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 FINAL RF DATA SHEET FOR FINAL ANTENNA SETTINGS.

NO.	DATE	REVISIONS	BY	CHK	APP'D
1	03/09/20	ISSUED FOR CONSTRUCTION	RP	HC	DPH
A	02/06/20	ISSUED FOR REVIEW	RP	HC	DPH
SCALE: AS SHOWN		DESIGNED BY: HC	DRAWN BY: RP		

AT&T		
RF PLUMBING DIAGRAM		
LTE RF MOD/WCS FILTER 2020 UPGRADE		
SITE NUMBER	DRAWING NUMBER	REV
CT2203	RF-1	1



Tower Engineering Solutions

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

Structural Analysis Report

Existing 149 ft SABRE Monopole

Customer Name: SBA Communications Corp

Customer Site Number: CT13056-A

Customer Site Name: Moosehill

Carrier Name: AT&T (App#: 129611, V2)

Carrier Site ID / Name: CT2203 / Monroe Center

Site Location: 500 Moosehill Road

Monroe, Connecticut

Fairfield County

Latitude: 41.320966

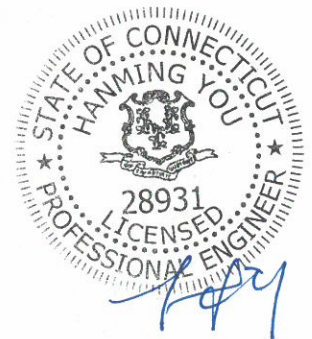
Longitude: -73.201422

Analysis Result:

Max Structural Usage: 79.8% [Pass]

Max Foundation Usage: 75.0% [Pass]

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



3/3/2020

Report Prepared By: Younus Alkarawi



Tower Engineering Solutions

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Longitude: -73.201422

Analysis Result:

Max Structural Usage: 79.8% [Pass]

Max Foundation Usage: 75.0% [Pass]

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

Report Prepared By: Younus Alkarawi

Introduction

The purpose of this report is to summarize the analysis results on the 149 ft SABRE Monopole to support the proposed antennas and transmission lines in addition to those currently installed. Any modification listed under Sources of Information was assumed completed and was included in this analysis.

Sources of Information

Tower Drawings	Structural design report prepared by Sabre communication corporation. job #: 02-03107. dated 04/03/2002.
Foundation Drawing	Foundation report prepared by Sabre communication corporation. job #: 02-03107. dated 04/03/2002.
Geotechnical Report	Geotechnical report prepared by ST. Johns Cemetary. dated 03/20/2002.
Modification Drawings	N/A

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 $V_{ult} = 125.0$ mph (3-Sec. Gust)/ Nominal Design Wind Speed $V_{asd} = 97.0$ mph (3-Sec. Gust)
Wind Speed with Ice:	50 mph (3-Sec. Gust) with 3/4" radial ice concurrent
Operational Wind Speed:	60 mph + 0" Radial ice
Standard/Codes:	TIA-222-G-2 / 2015 IBC / 2018 Connecticut State Building Code
Exposure Category:	C
Structure Class:	II
Topographic Category:	1
Crest Height:	0 ft
Seismic Parameters:	$S_S = 0.205$, $S_1 = 0.065$

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	152.5	1	Decibel DB404-B - Whip	Pipe Mount	(1) 7/8"	Town of Monroe
2	147.0	1	Andrew VHLP2-11 - Dish	12.5' Low Profile Platform	(4) 1 1/4" (2) 1/2" (6) 5/16"	Sprint/ Clearwire
3		1	Andrew VHLP800-11-DW1 - Dish			
4		3	Argus LLPX310R - Panel			
5		4	RFS ACU-A20-N			
6		3	RFS APXVSP18-C-A20 - Panel			
7		3	RFS APXVTM14-C-120 - Panel			
8		3	ALU 800MHz RRH w/ filter			
9		3	ALU 1900MHz RRH			
10		3	ALU 800MHz RRH			
11		3	ALU TD-RRH8x20-25			
12		3	U-RAS Flexible RRH ODUs			
-	139.0	6	Powerwave LGP13519 TMAs	13' Low Profile Platform	(12) 1 1/4" (2) 1/2" Fiber (4) 3/4" DC Power	AT&T
-		12	Powerwave 7020.00 RET			
-		3	Ericsson RRUS 32 B2			
-		6	Powerwave LGP21901 Diplexer			
-		3	CCI DMP65R-BU6DA - Panel			
-		3	Ericsson 4415 B30			
-		3	Ericsson 4449 B5/B12			
-		3	Powerwave - 7770 - Panel			
-		3	CCI - HPA-65R-BUU-H6 - Panel			
-		2	Raycap DC6-48-60-18-8F			
-		3	Commscope ABT-DFDM-ADBH Bias-T			
-	128.0	-	-	12.5' Low Profile Platform	-	-
27	121.0	3	Commscope LNX-6515DS - Panel	13' Low Profile Platform SitePro PRK1245	(12) 1 5/8" (1) 1 5/8" Fiber	T-Mobile
28		3	Ericsson Air 21 B2A/B4P - Panel			
29		3	Ericsson AIR21 B4A/B12P - Panel			
30		3	Ericsson KRY 112 144/1			
31		3	Ericsson S11B12			
32	99.0	2	Antel BXA-171063-8BF - Panel	12.5' Low Profile Platform	(1) 1 5/8" Fiber (12) 1 5/8"	Verizon
33		1	Antel BXA-70063-4CF - Panel			
34		1	Antel BXA-70063-6CF - Panel			
35		2	Antel LPA-80063-6CF - Panel			
36		1	BXA-171063-12BF - Panel			
37		3	Kathrein 7442213_2110_P45_02.0 - Panel			
38		3	ALU RRH2x40-AWS			
39		4	RFS APL866513-42T0 - Panel			
40		1	RFS DB-T1-6Z-8AB-OZ			
41		6	RFS FD9R6004/2C-3L			
42		1	Swedcom SLCP 2x6014F - Panel			
43	65.5	1	Decibel 26OB	3' Standoff @ 64.0	(1) 1/2"	Sprint

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

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

Items	Elevation (ft)	Qty.	Antenna Descriptions	Mount Type & Qty.	Transmission Lines	Owner
13	139.0	3	Powerwave 7770- Panel	13' Low Profile Platform	(12) 1-1/4" (4) 3/4" DC (2) 1/2" Fiber (1) 2" Conduit*	AT&T
14		3	Cci DMP65R-BU6DA- Panel			
15		3	Cci HPA-65R-BUU-H6- Panel			
16		6	Powerwave LGP13519 Diplexer-TMAs			
17		6	Powerwave LGP21901 Diplexer			
18		3	Commscope CBC23SR-43			
19		12	Powerwave 7020.00 RET			
20		3	Ericsson RRUS 32 B2			
21		3	Ericsson 4449 B5/B12			
22		3	Ericsson 4415 B30			
23		2	Raycap DC6-48-60-18-8F			
24		1	Raycap DC6-48-60-0-8C-EV			
25		3	Commscope ABT-DFDM-ADBH			
26		3	Commscope SDARS XM Remote			

*(Housing (2) 3/4" DC cables)

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

Analysis Results

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

	Pole shafts	Anchor Bolts	Base Plate
Max. Usage:	79.8%	76.5%	65.6%
Pass/Fail	Pass	Pass	Pass

Foundations

	Moment (Kip-Ft)	Shear (Kips)	Axial (Kips)
Analysis Reactions	4160.8	38.1	82.0

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):

The maximum twist and sway of the microwave dishes under the operational wind speed as specified in the Analysis Criteria are listed in the table below:

Elevation (ft)	Antenna / Dish	Carrier	Twist (deg)	Sway (deg)
147.0	Andrew VHLP2-11 - Dish	Sprint/Clearwire	0.000	1.348
	Andrew VHLP800-11-DW1 - Dish		0.000	1.348

It is recommended that the carriers review the twist and sway values of the microwave dishes.

Conclusions

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

Standard Conditions

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

Usage Diagram - Max Ratio 79.81% at 53.3ft

Structure: CT13056-A-SBA
Site Name: Moosehill
Height: 149.00 (ft)
Base Elev: 0.000 (ft)

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

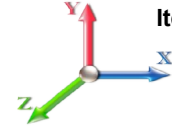
3/3/2020



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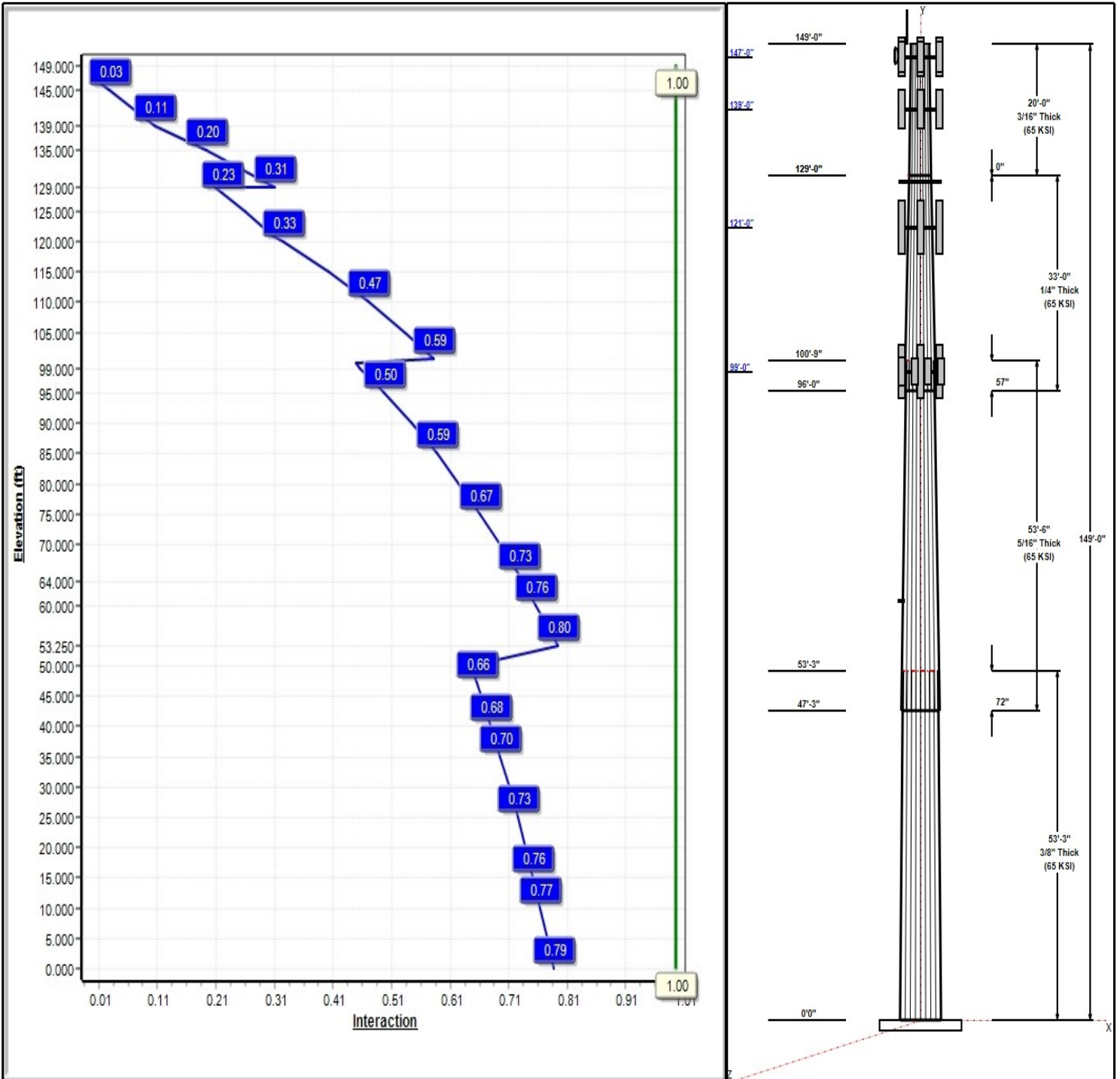
Dead Load Factor: 1.20
Wind Load Factor: 1.60

Load Case : 1.2D + 1.6W 97 mph Wind



Iterations: 24

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Structure: CT13056-A-SBA

Type: Tapered
Site Name: Moosehill
Height: 149.00 (ft)
Base Elev: 0.00 (ft)

Base Shape: 18 Sided
Taper: 0.24185

3/3/2020

Page: 2

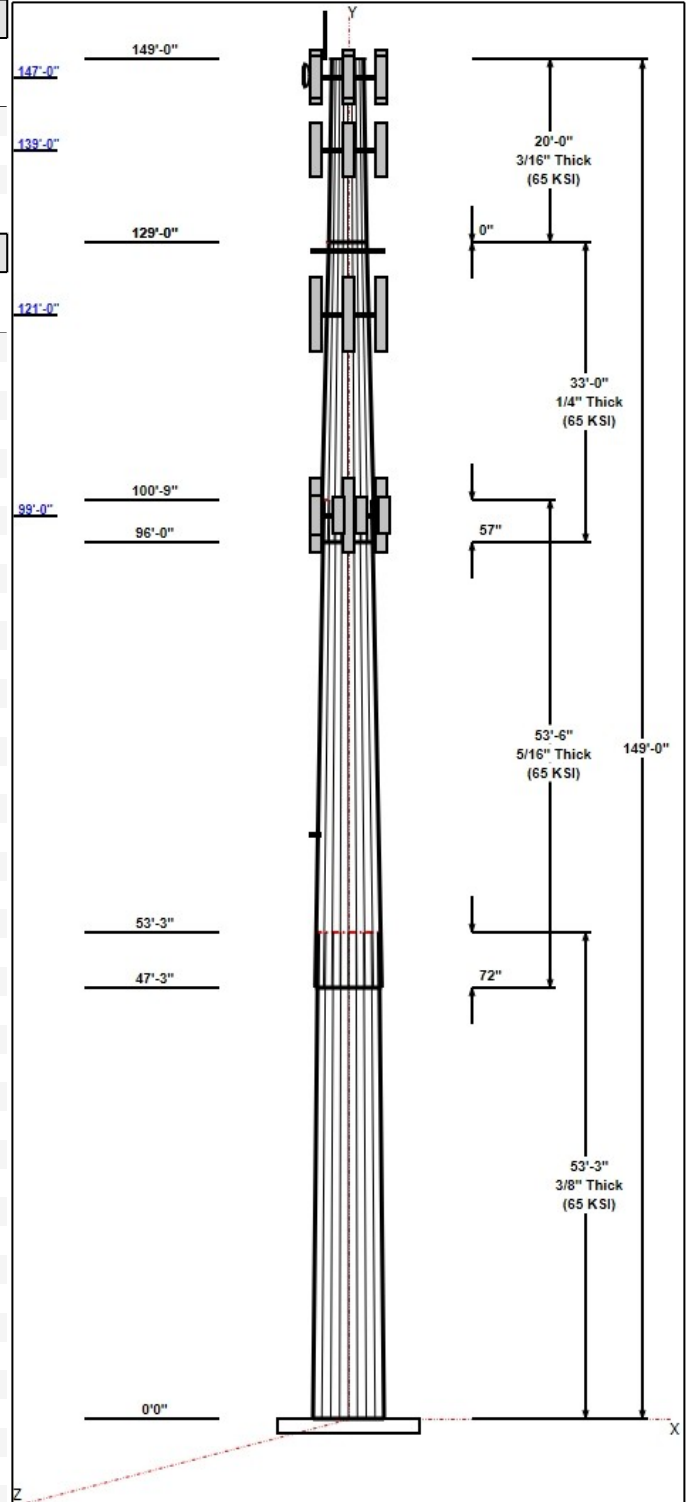


Shaft Properties

Seq	Length (ft)	Top (in)	Bottom (in)	Thick (in)	Joint Type	Taper	Grade (ksi)
1	53.25	46.03	58.91	0.375		0.24185	65
2	53.50	35.17	48.11	0.313	Slip	0.24185	65
3	33.00	28.84	36.82	0.250	Slip	0.24185	65
4	20.00	24.00	28.84	0.188	Butt	0.24185	65

Discrete Appurtenances

Attach Elev (ft)	Force Elev (ft)	Qty	Description	Carrier
149.00	151.50	1	Decibel DB404-B	Town of Monroe
149.00	149.00	1	Pipe Mount	Town of Monroe
147.00	147.00	3	RFS APXVTM14-C-120	Sprint/Clearwire
147.00	147.00	3	ALU TD-RRH8x20-25	Sprint/Clearwire
147.00	147.00	3	RFS APXVSP18-C-A20	Sprint/Clearwire
147.00	147.00	3	ALU 1900MHz RRH	Sprint/Clearwire
147.00	147.00	3	ALU 800MHz RRH	Sprint/Clearwire
147.00	147.00	3	800MHz RRH w/ filter	Sprint/Clearwire
147.00	147.00	4	RFS ACU-A20-N	Sprint/Clearwire
147.00	147.00	3	Argus LLPX310R	Sprint/Clearwire
147.00	147.00	1	Andrew VHLP2-11	Sprint/Clearwire
147.00	147.00	1	Andrew VHLP800-11-DW1	Sprint/Clearwire
147.00	147.00	3	U-RAS Flexible RRH	Sprint/Clearwire
147.00	147.00	1	12.5' Low Profile Platform	Sprint/Clearwire
139.00	139.00	1	Low Profile Platform	AT&T
139.00	139.00	6	Powerwave LGP13519	AT&T
139.00	139.00	12	Powerwave 7020.00 RET	AT&T
139.00	139.00	3	Ericsson RRUS-32 B2s	AT&T
139.00	139.00	6	Powerwave LGP21901	AT&T
139.00	139.00	3	7770	AT&T
139.00	139.00	3	HPA-65R-BUU-H6	AT&T
139.00	139.00	2	Raycap DC6-48-60-18-8F	AT&T
139.00	139.00	3	Commscope	AT&T
139.00	139.00	3	DMP65R-BU6DA	AT&T
139.00	139.00	3	4415 B30	AT&T
139.00	139.00	3	4449 B5/B12	AT&T
139.00	139.00	3	CBC23SR-43	AT&T
139.00	139.00	1	DC6-48-60-0-8C-EV	AT&T
139.00	139.00	3	SDARS XM Remote	AT&T
128.00	128.00	1	Low Profile Platform	Unknown
121.00	121.00	3	Ericsson AIR21 B4A/B12P	T-Mobile
121.00	121.00	3	Ericsson Air 21 B2A/B4P	T-Mobile
121.00	121.00	3	Commscope LNX-6515DS	T-Mobile
121.00	121.00	3	Ericsson S11B12	T-Mobile
121.00	121.00	3	Ericsson KRY 112 144/1	T-Mobile
121.00	121.00	1	Low Profile Platform	T-Mobile
121.00	121.00	1	SitePro PRK1245	T-Mobile
99.00	99.00	1	Antel BXA-70063-4CF	Verizon
99.00	99.00	2	Antel BXA-171063-8BF	Verizon
99.00	99.00	1	Antel BXA-70063-6CF	Verizon
99.00	99.00	1	BXA-171063-12BF	Verizon
99.00	99.00	4	RFS APL866513-42T0	Verizon
99.00	99.00	2	Antel LPA-80063-6CF	Verizon
99.00	99.00	1	Swedcom SLCP 2x6014F	Verizon
99.00	99.00	3	Kathrein	Verizon



Structure: CT13056-A-SBA

Type: Tapered
Site Name: Moosehill
Height: 149.00 (ft)
Base Elev: 0.00 (ft)

Base Shape: 18 Sided
Taper: 0.24185

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99.00	99.00	3	ALU RRH2x40-AWS	Verizon
99.00	99.00	6	RFS FD9R6004/2C-3L	Verizon
99.00	99.00	1	RFS DB-T1-6Z-8AB-0Z	Verizon
99.00	99.00	1	12.5' Low Profile Platform	Verizon
65.50	65.50	1	Decibel 260B	Sprint
64.00	64.00	1	3 ft Standoff	Sprint

Linear Appurtenances

Elev From (ft)	Elev To (ft)	Placement	Description	Carrier
0.00	152.50	Inside	7/8" Coax	Town of Monroe
0.00	147.00	Outside	1 1/4" Coax	Sprint/Clearwire
0.00	147.00	Inside	1/2" Coax	Sprint/Clearwire
0.00	147.00	Inside	5/16" Coax	Sprint/Clearwire
0.00	139.00	Inside	1-1/4" Coax	AT&T
0.00	139.00	Inside	1/2" Fiber	AT&T
0.00	139.00	Inside	2" Conduit	AT&T
0.00	139.00	Inside	3/4" DC	AT&T
0.00	121.00	Inside	1 5/8" Coax	T-Mobile
0.00	121.00	Inside	1 5/8" Fiber	T-Mobile
0.00	99.00	Outside	1 5/8" Coax	Verizon
0.00	99.00	Inside	1 5/8" Fiber	Verizon
0.00	64.00	Outside	1/2" Coax	Sprint

Anchor Bolts

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

Base Plate

Thickness (in)	Specifications (in)	Grade (ksi)	Geometry
3.0000	64.0	60.0	Clipped

Reactions

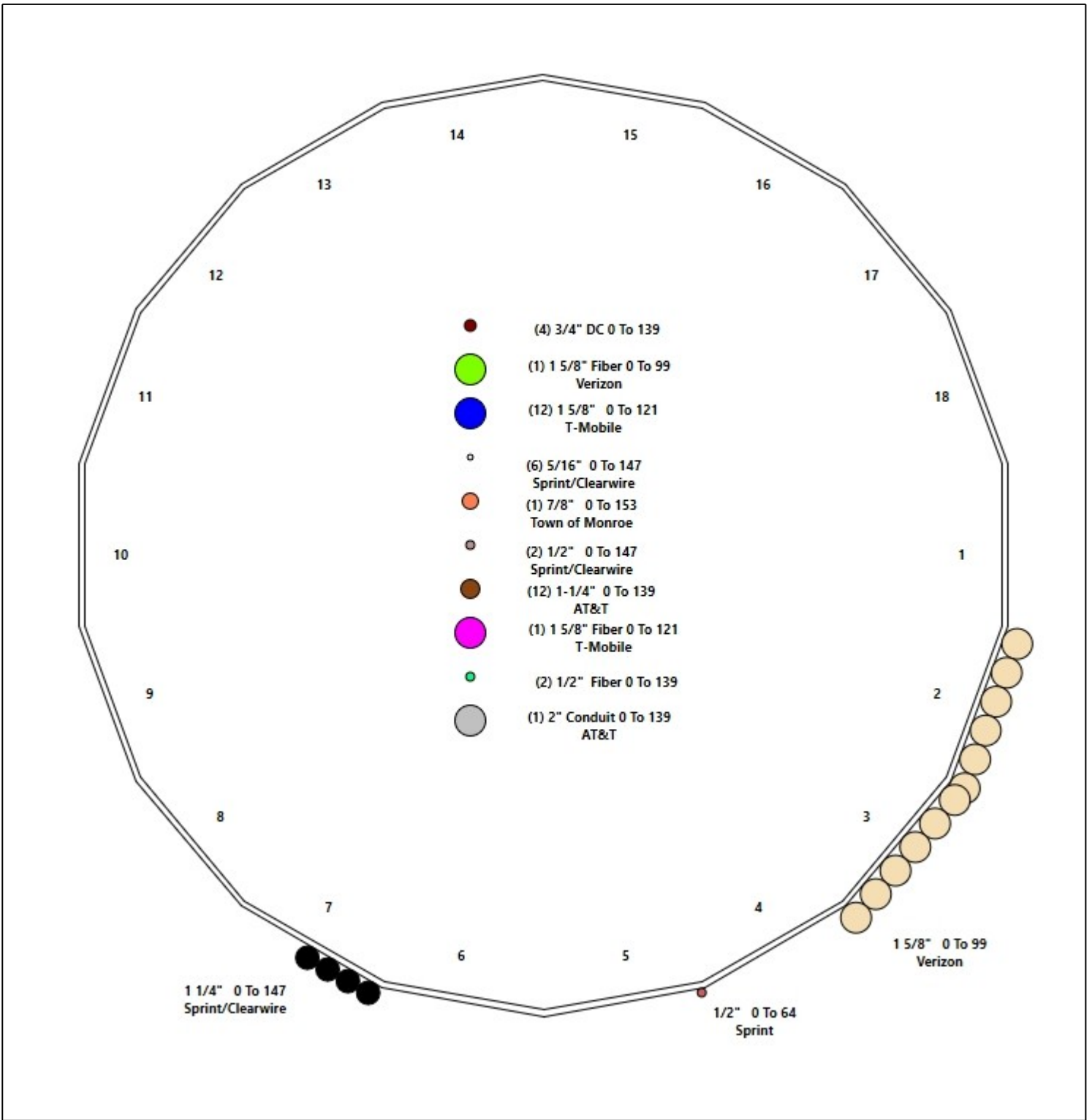
Load Case	Moment (FT-Kips)	Shear (Kips)	Axial (Kips)
1.2D + 1.6W 97 mph Wind	4160.8	38.1	48.9
0.9D + 1.6W 97 mph Wind	4120.2	38.1	36.7
1.2D + 1.0Di + 1.0Wi 50 mph Wind	1145.7	10.6	82.0
1.2D + 1.0E	270.0	2.2	49.0
0.9D + 1.0E	267.1	2.2	36.7
1.0D + 1.0W 60 mph Wind	989.7	9.1	40.8

Structure: CT13056-A-SBA - Coax Line Placement

Type: Monopole
Site Name: Moosehill
Height: 149.00 (ft)

3/3/2020

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Shaft Properties

Structure: CT13056-A-SBA	Code: EIA/TIA-222-G	3/3/2020
Site Name: Moosehill	Exposure: C	
Height: 149.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Sec. No.	Shape	Length (ft)	Thick (in)	Fy (ksi)	Joint Type	Overlap (in)	Weight (lb)
1	18	53.250	0.3750	65		0.00	11,235
2	18	53.500	0.3125	65	Slip	72.00	7,462
3	18	33.000	0.2500	65	Slip	57.00	2,903
4	18	20.000	0.1875	65	Flange	0.00	1,062
Total Shaft Weight:							22,662

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	58.91	0.00	69.67	30159.39	26.29	157.09	46.03	53.25	54.34	14311.6	20.23	122.7	0.241846
2	48.11	47.25	47.41	13682.01	25.73	153.94	35.17	100.75	34.57	5306.98	18.43	112.5	0.241846
3	36.82	96.00	29.02	4902.09	24.56	147.27	28.84	129.00	22.68	2342.00	18.93	115.3	0.241846
4	28.84	129.0	17.05	1768.04	25.71	153.80	24.00	149.00	14.17	1015.22	21.16	128.0	0.241846

Load Summary

Structure: CT13056-A-SBA	Code: EIA/TIA-222-G	3/3/2020
Site Name: Moosehill	Exposure: C	
Height: 149.00 (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	149.00	Decibel DB404-B	1	14.00	1.03	1.00	46.44	3.836	1.00	0.00	2.50
2	149.00	Pipe Mount	1	350.00	5.00	1.00	643.00	8.488	1.00	0.00	0.00
3	147.00	RFS APXVTM14-C-120	3	56.00	6.34	0.79	216.02	7.451	0.79	0.00	0.00
4	147.00	ALU TD-RRH8x20-25	3	70.00	4.05	0.67	180.19	4.861	0.67	0.00	0.00
5	147.00	RFS APXVSP18-C-A20	3	57.00	8.02	0.83	229.50	10.808	0.83	0.00	0.00
6	147.00	ALU 1900MHz RRH	3	44.00	3.80	0.67	152.94	5.187	0.67	0.00	0.00
7	147.00	ALU 800MHz RRH	3	59.50	2.64	0.67	137.35	3.795	0.67	0.00	0.00
8	147.00	800MHz RRH w/ filter	3	68.30	3.46	1.00	158.57	4.771	1.00	0.00	0.00
9	147.00	RFS ACU-A20-N	4	1.00	0.14	0.79	5.29	0.436	0.79	0.00	0.00
10	147.00	Argus LLPX310R	3	28.60	4.30	0.69	118.72	5.957	0.69	0.00	0.00
11	147.00	Andrew VHLP2-11	1	27.00	4.68	1.00	124.66	5.952	1.00	0.00	0.00
12	147.00	Andrew VHLP800-11-DW1	1	49.00	6.70	1.00	186.88	8.222	1.00	0.00	0.00
13	147.00	U-RAS Flexible RRH ODUs	3	50.70	2.23	0.78	109.37	3.290	0.78	0.00	0.00
14	147.00	12.5' Low Profile Platform	1	1500.00	22.00	1.00	2806.27	39.626	1.00	0.00	0.00
15	139.00	Low Profile Platform	1	1500.00	22.00	1.00	2798.98	39.528	1.00	0.00	0.00
16	139.00	Powerwave LGP13519 TMAs	6	5.30	0.34	1.00	14.73	0.791	1.00	0.00	0.00
17	139.00	Powerwave 7020.00 RET	12	2.20	0.40	0.67	12.36	0.880	0.67	0.00	0.00
18	139.00	Ericsson RRUS-32 B2s RRUs	3	60.00	2.74	0.67	147.18	3.463	0.67	0.00	0.00
19	139.00	Powerwave LGP21901 Diplexer	6	5.50	0.23	0.75	13.13	0.595	0.75	0.00	0.00
20	139.00	7770	3	35.00	5.50	0.73	168.92	6.557	0.73	0.00	0.00
21	139.00	HPA-65R-BUU-H6	3	51.00	9.66	0.85	296.92	11.015	0.85	0.00	0.00
22	139.00	Raycap DC6-48-60-18-8F DC Surge	2	32.80	1.47	1.00	94.15	2.165	1.00	0.00	0.00
23	139.00	Commscope ABT-DRDM-ADBH Bias	3	1.60	0.05	0.98	4.82	0.241	0.98	0.00	0.00
24	139.00	DMP65R-BU6DA	3	79.40	12.71	0.73	364.36	14.186	0.73	0.00	0.00
25	139.00	4415 B30	3	46.00	1.64	0.67	86.79	2.151	0.67	0.00	0.00
26	139.00	4449 B5/B12	3	71.00	1.97	0.67	123.98	2.513	0.67	0.00	0.00
27	139.00	CBC23SR-43	3	4.90	0.42	0.70	15.96	0.701	0.70	0.00	0.00
28	139.00	DC6-48-60-0-8C-EV	1	16.00	4.78	1.00	138.80	5.658	1.00	0.00	0.00
29	139.00	SDARS XM Remote	3	22.00	1.84	0.98	272.60	2.507	0.98	0.00	0.00
30	128.00	Low Profile Platform	1	1500.00	22.00	1.00	2788.32	39.384	1.00	0.00	0.00
31	121.00	Ericsson AIR21 B4A/B12P	3	123.00	11.54	0.89	401.19	13.162	0.89	0.00	0.00
32	121.00	Ericsson Air 21 B2A/B4P	3	91.50	6.09	0.86	256.12	7.162	0.86	0.00	0.00
33	121.00	Commscope LNX-6515DS	3	49.80	11.47	0.80	274.47	14.667	0.80	0.00	0.00
34	121.00	Ericsson S11B12	3	51.00	2.83	0.70	119.12	3.487	0.70	0.00	0.00
35	121.00	Ericsson KRY 112 144/1	3	11.00	0.41	0.70	21.55	0.875	0.70	0.00	0.00
36	121.00	Low Profile Platform	1	1500.00	22.00	1.00	2781.09	39.286	1.00	0.00	0.00
37	121.00	SitePro PRK1245	1	350.00	5.00	1.00	636.96	8.416	1.00	0.00	0.00
38	99.00	Antel BXA-70063-4CF	1	9.90	4.72	0.73	107.60	6.493	0.73	0.00	0.00
39	99.00	Antel BXA-171063-8BF	2	10.50	2.94	0.84	73.38	4.531	0.84	0.00	0.00
40	99.00	Antel BXA-70063-6CF	1	17.00	7.57	0.73	182.64	8.775	0.73	0.00	0.00
41	99.00	AXA-171063-12BF	1	15.00	4.74	0.84	106.07	6.994	0.84	0.00	0.00
42	99.00	RFS APL866513-42T0	4	15.70	4.05	0.93	120.46	5.837	0.93	0.00	0.00
43	99.00	Antel LPA-80063-6CF	2	27.00	9.76	0.93	277.84	12.401	0.93	0.00	0.00
44	99.00	Swedcom SLCP 2x6014F	1	20.00	6.49	0.89	189.07	8.481	0.89	0.00	0.00
45	99.00	Kathrein 7442213_2110_P45_02.0	3	57.30	10.56	0.77	245.94	13.714	0.77	0.00	0.00
46	99.00	ALU RRH2x40-AWS	3	44.00	2.52	0.67	102.25	3.693	0.67	0.00	0.00
47	99.00	RFS FD9R6004/2C-3L	6	3.10	0.36	1.00	10.80	0.785	1.00	0.00	0.00
48	99.00	RFS DB-T1-6Z-8AB-OZ	1	18.90	4.80	0.71	155.78	5.636	0.71	0.00	0.00
49	99.00	12.5' Low Profile Platform	1	1500.00	22.00	1.00	2755.64	38.943	1.00	0.00	0.00
50	65.50	Decibel 260B	1	50.00	2.00	1.00	210.64	5.213	1.00	0.00	0.00

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		
51	64.00	3 ft Standoff	1	40.00	2.63	1.00	113.73	8.111	1.00	0.00	0.00
Totals:			134	12,491.80			31,161.02				

Linear Appurtenances

Bottom Elev. (ft)	Top Elev. (ft)	Description	Exposed Width	Exposed
0.00	152.50	(1) 7/8" Coax	0.00	Inside
0.00	147.00	(4) 1 1/4" Coax	0.00	Outside
0.00	147.00	(2) 1/2" Coax	0.00	Inside
0.00	147.00	(6) 5/16" Coax	0.00	Inside
0.00	139.00	(12) 1-1/4" Coax	0.00	Inside
0.00	139.00	(2) 1/2" Fiber	0.00	Inside
0.00	139.00	(1) 2" Conduit	0.00	Inside
0.00	139.00	(4) 3/4" DC	0.00	Inside
0.00	121.00	(12) 1 5/8" Coax	0.00	Inside
0.00	121.00	(1) 1 5/8" Fiber	0.00	Inside
0.00	99.00	(12) 1 5/8" Coax	0.00	Outside
0.00	99.00	(1) 1 5/8" Fiber	0.00	Inside
0.00	64.00	(1) 1/2" Coax	0.00	Outside

Shaft Section Properties

Structure: CT13056-A-SBA	Code: EIA/TIA-222-G	3/3/2020
Site Name: Moosehill	Exposure: C	
Height: 149.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Increment Length: 5 (ft)

Elev (ft)	Description	Thick (in)	Dia (in)	Area (in ²)	Ix (in ⁴)	W/t Ratio	D/t Ratio	Fpy (ksi)	S (in ³)	Weight (lb)
0.00		0.3750	58.910	69.669	30159.4	26.29	157.09	70.5	1008.	0.0
5.00		0.3750	57.701	68.230	28328.6	25.72	153.87	71.1	967.0	1173.1
10.00		0.3750	56.492	66.790	26573.5	25.15	150.64	71.8	926.5	1148.6
15.00		0.3750	55.282	65.351	24892.4	24.58	147.42	72.5	886.9	1124.1
20.00		0.3750	54.073	63.912	23283.7	24.01	144.19	73.2	848.1	1099.6
25.00		0.3750	52.864	62.473	21745.9	23.45	140.97	73.8	810.2	1075.1
30.00		0.3750	51.655	61.033	20277.3	22.88	137.75	74.5	773.2	1050.7
35.00		0.3750	50.445	59.594	18876.4	22.31	134.52	75.2	737.0	1026.2
40.00		0.3750	49.236	58.155	17541.5	21.74	131.30	75.8	701.7	1001.7
45.00		0.3750	48.027	56.716	16271.1	21.17	128.07	76.5	667.3	977.2
47.25	Bot - Section 2	0.3750	47.483	56.068	15720.1	20.92	126.62	76.8	652.1	431.8
50.00		0.3750	46.818	55.276	15063.6	20.60	124.85	77.2	633.7	961.5
53.25	Top - Section 1	0.3125	46.657	45.966	12473.3	24.92	149.30	0.0	0.0	1118.8
55.00		0.3125	46.233	45.546	12134.7	24.68	147.95	72.4	517.0	272.5
60.00		0.3125	45.024	44.347	11201.1	23.99	144.08	73.2	490.0	764.7
64.00		0.3125	44.057	43.387	10489.7	23.45	140.98	73.8	469.0	597.1
65.00		0.3125	43.815	43.148	10316.6	23.31	140.21	74.0	463.8	147.2
65.50		0.3125	43.694	43.028	10230.8	23.24	139.82	74.1	461.2	73.3
70.00		0.3125	42.606	41.948	9480.0	22.63	136.34	74.8	438.3	650.6
75.00		0.3125	41.397	40.749	8689.9	21.95	132.47	75.6	413.5	703.5
80.00		0.3125	40.187	39.549	7945.0	21.26	128.60	76.4	389.4	683.1
85.00		0.3125	38.978	38.350	7243.8	20.58	124.73	77.2	366.0	662.7
90.00		0.3125	37.769	37.151	6585.2	19.90	120.86	78.0	343.4	642.3
95.00		0.3125	36.560	35.951	5967.8	19.22	116.99	78.8	321.5	621.9
96.00	Bot - Section 3	0.3125	36.318	35.711	5849.2	19.08	116.22	79.0	317.2	121.9
99.00		0.3125	35.592	34.992	5502.7	18.67	113.90	79.4	304.5	654.1
100.00		0.3125	35.350	34.752	5390.3	18.54	113.12	79.6	300.3	215.1
100.75	Top - Section 2	0.2500	35.669	28.104	4454.5	23.75	142.68	0.0	0.0	160.4
105.00		0.2500	34.641	27.288	4077.8	23.02	138.56	74.3	231.9	400.5
110.00		0.2500	33.432	26.329	3662.6	22.17	133.73	75.3	215.8	456.1
115.00		0.2500	32.223	25.369	3276.6	21.32	128.89	76.3	200.3	439.8
120.00		0.2500	31.014	24.410	2918.7	20.46	124.05	77.3	185.4	423.5
121.00		0.2500	30.772	24.218	2850.4	20.29	123.09	77.5	182.4	82.7
125.00		0.2500	29.804	23.450	2587.9	19.61	119.22	78.3	171.0	324.4
128.00		0.2500	29.079	22.875	2401.9	19.10	116.32	78.9	162.7	236.5
129.00	Top - Section 3	0.2500	28.837	22.683	2342.0	18.93	115.35	79.1	160.0	77.5
129.00	Bot - Section 4	0.1875	28.837	17.049	1768.0	25.24	153.80	71.2	120.8	
130.00		0.1875	28.595	16.905	1723.6	25.48	152.51	71.4	118.7	57.8
135.00		0.1875	27.386	16.186	1512.8	24.34	146.06	72.8	108.8	281.5
139.00		0.1875	26.418	15.610	1357.0	23.43	140.90	73.8	101.2	216.4
140.00		0.1875	26.177	15.466	1319.8	23.21	139.61	74.1	99.3	52.9
145.00		0.1875	24.967	14.747	1144.0	22.07	133.16	75.4	90.3	257.0
147.00		0.1875	24.484	14.459	1078.4	21.61	130.58	76.0	86.7	99.4
149.00		0.1875	24.000	14.171	1015.2	21.16	128.00	76.5	83.3	97.4

22662.1

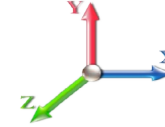
Wind Loading - Shaft

Structure: CT13056-A-SBA	Code: EIA/TIA-222-G	3/3/2020
Site Name: Moosehill	Exposure: C	
Height: 149.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



Load Case: 1.2D + 1.6W 97 mph Wind

Dead Load Factor 1.20
Wind Load Factor 1.60



Iterations 24

Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.85	19.450	21.40	445.80	0.650	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.85	19.450	21.40	436.65	0.650	0.000	5.00	24.669	16.03	548.9	0.0	1407.7
10.00		1.00	0.85	19.450	21.40	427.50	0.650	0.000	5.00	24.157	15.70	537.5	0.0	1378.3
15.00		1.00	0.85	19.450	21.40	418.35	0.650	0.000	5.00	23.645	15.37	526.1	0.0	1348.9
20.00		1.00	0.90	20.638	22.70	421.50	0.650	0.000	5.00	23.134	15.04	546.2	0.0	1319.6
25.00		1.00	0.95	21.630	23.79	421.87	0.650	0.000	5.00	22.622	14.70	559.8	0.0	1290.2
30.00		1.00	0.98	22.477	24.72	420.20	0.650	0.000	5.00	22.111	14.37	568.5	0.0	1260.8
35.00		1.00	1.01	23.218	25.54	417.08	0.650	0.000	5.00	21.599	14.04	573.7	0.0	1231.4
40.00		1.00	1.04	23.880	26.27	412.84	0.650	0.000	5.00	21.087	13.71	576.1	0.0	1202.0
45.00		1.00	1.07	24.479	26.93	407.73	0.650	0.000	5.00	20.576	13.37	576.2	0.0	1172.6
47.25	Bot - Section 2	1.00	1.08	24.732	27.21	405.18	0.650	0.000	2.25	9.092	5.91	257.3	0.0	518.1
50.00		1.00	1.09	25.029	27.53	401.90	0.650	0.000	2.75	11.117	7.23	318.3	0.0	1153.8
53.25	Top - Section 1	1.00	1.11	25.363	27.90	397.78	0.650	0.000	3.25	12.939	8.41	375.4	0.0	1342.5
55.00		1.00	1.12	25.536	28.09	400.88	0.650	0.000	1.75	6.878	4.47	200.9	0.0	327.0
60.00		1.00	1.14	26.008	28.61	393.99	0.650	0.000	5.00	19.305	12.55	574.4	0.0	917.7
64.00	Appurtenance(s)	1.00	1.15	26.364	29.00	388.15	0.650	0.000	4.00	15.076	9.80	454.7	0.0	716.5
65.00		1.00	1.16	26.450	29.09	386.65	0.650	0.000	1.00	3.718	2.42	112.5	0.0	176.7
65.50	Appurtenance(s)	1.00	1.16	26.493	29.14	385.90	0.650	0.000	0.50	1.851	1.20	56.1	0.0	88.0
70.00		1.00	1.17	26.866	29.55	378.93	0.650	0.000	4.50	16.431	10.68	505.0	0.0	780.7
75.00		1.00	1.19	27.259	29.98	370.85	0.650	0.000	5.00	17.770	11.55	554.2	0.0	844.2
80.00		1.00	1.21	27.632	30.39	362.48	0.650	0.000	5.00	17.259	11.22	545.6	0.0	819.7
85.00		1.00	1.22	27.987	30.79	353.82	0.650	0.000	5.00	16.747	10.89	536.2	0.0	795.2
90.00		1.00	1.24	28.325	31.16	344.91	0.650	0.000	5.00	16.236	10.55	526.1	0.0	770.7
95.00		1.00	1.25	28.650	31.51	335.77	0.650	0.000	5.00	15.724	10.22	515.4	0.0	746.3
96.00	Bot - Section 3	1.00	1.25	28.713	31.58	333.92	0.650	0.000	1.00	3.083	2.00	101.3	0.0	146.3
99.00	Appurtenance(s)	1.00	1.26	28.900	31.79	328.31	0.650	0.000	3.00	9.254	6.02	306.0	0.0	785.0
100.00		1.00	1.27	28.961	31.86	326.43	0.650	0.000	1.00	3.044	1.98	100.8	0.0	258.1
100.75	Top - Section 2	1.00	1.27	29.006	31.91	325.01	0.650	0.000	0.75	2.269	1.48	75.3	0.0	192.4
105.00		1.00	1.28	29.260	32.19	321.52	0.650	0.000	4.25	12.643	8.22	423.2	0.0	480.6
110.00		1.00	1.29	29.548	32.50	311.82	0.650	0.000	5.00	14.401	9.36	486.8	0.0	547.3
115.00		1.00	1.30	29.826	32.81	301.96	0.650	0.000	5.00	13.889	9.03	473.9	0.0	527.8
120.00		1.00	1.32	30.094	33.10	291.93	0.650	0.000	5.00	13.377	8.70	460.6	0.0	508.2
121.00	Appurtenance(s)	1.00	1.32	30.147	33.16	289.91	0.650	0.000	1.00	2.614	1.70	90.2	0.0	99.3
125.00		1.00	1.33	30.354	33.39	281.75	0.650	0.000	4.00	10.252	6.66	356.0	0.0	389.3
128.00	Appurtenance(s)	1.00	1.33	30.506	33.56	275.58	0.650	0.000	3.00	7.474	4.86	260.8	0.0	283.7
129.00	Top - Section 3	1.00	1.34	30.556	33.61	273.51	0.650	0.000	1.00	2.450	1.59	85.7	0.0	93.0
130.00		1.00	1.34	30.605	33.67	271.44	0.650	0.000	1.00	2.430	1.58	85.1	0.0	69.3
135.00		1.00	1.35	30.850	33.93	261.00	0.650	0.000	5.00	11.843	7.70	417.9	0.0	337.8
139.00	Appurtenance(s)	1.00	1.36	31.040	34.14	252.55	0.650	0.000	4.00	9.106	5.92	323.3	0.0	259.7
140.00		1.00	1.36	31.087	34.20	250.43	0.650	0.000	1.00	2.225	1.45	79.1	0.0	63.4
145.00		1.00	1.37	31.317	34.45	239.75	0.650	0.000	5.00	10.819	7.03	387.6	0.0	308.4
147.00	Appurtenance(s)	1.00	1.37	31.408	34.55	235.44	0.650	0.000	2.00	4.184	2.72	150.4	0.0	119.3
149.00	Appurtenance(s)	1.00	1.38	31.497	34.65	231.12	0.650	0.000	2.00	4.103	2.67	147.8	0.0	116.9
Totals:									149.00			15,356.8	27,194.5	

Discrete Appurtenance Forces

Structure: CT13056-A-SBA	Code: EIA/TIA-222-G	3/3/2020
Site Name: Moosehill	Exposure: C	
Height: 149.00 (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 97 mph Wind

Dead Load Factor 1.20
Wind Load Factor 1.60



Iterations 24

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	149.00	Decibel DB404-B	1	31.608	34.768	1.00	1.00	1.03	16.80	0.000	2.500	57.30	0.00	143.25
2	149.00	Pipe Mount	1	31.497	34.647	1.00	1.00	5.00	420.00	0.000	0.000	277.17	0.00	0.00
3	147.00	800MHz RRH w/ filter	3	31.408	34.548	0.90	0.90	9.34	245.88	0.000	0.000	516.40	0.00	0.00
4	147.00	RFS APXVTM14-C-120	3	31.408	34.548	0.71	0.90	13.52	201.60	0.000	0.000	747.53	0.00	0.00
5	147.00	RFS APXVSP18-C-A20	3	31.408	34.548	0.75	0.90	17.97	205.20	0.000	0.000	993.49	0.00	0.00
6	147.00	ALU 1900MHz RRH	3	31.408	34.548	0.60	0.90	6.87	158.40	0.000	0.000	379.99	0.00	0.00
7	147.00	ALU 800MHz RRH	3	31.408	34.548	0.60	0.90	4.78	214.20	0.000	0.000	263.99	0.00	0.00
8	147.00	ALU TD-RRH8x20-25	3	31.408	34.548	0.60	0.90	7.33	252.00	0.000	0.000	404.99	0.00	0.00
9	147.00	RFS ACU-A20-N	4	31.408	34.548	0.71	0.90	0.40	4.80	0.000	0.000	22.01	0.00	0.00
10	147.00	Argus LLPX310R	3	31.408	34.548	0.62	0.90	8.01	102.96	0.000	0.000	442.82	0.00	0.00
11	147.00	Andrew VHLP2-11	1	31.408	34.548	1.00	1.00	4.68	32.40	0.000	0.000	258.70	0.00	0.00
12	147.00	Andrew VHLP800-11-DW1	1	31.408	34.548	1.00	1.00	6.70	58.80	0.000	0.000	370.36	0.00	0.00
13	147.00	U-RAS Flexible RRH	3	31.408	34.548	0.78	1.00	5.22	182.52	0.000	0.000	288.45	0.00	0.00
14	147.00	12.5' Low Profile Platform	1	31.408	34.548	1.00	1.00	22.00	1800.00	0.000	0.000	1216.10	0.00	0.00
15	139.00	Powerwave LGP21901	6	31.040	34.144	0.60	0.80	0.83	39.60	0.000	0.000	45.23	0.00	0.00
16	139.00	Ericsson RRUS-32 B2s	3	31.040	34.144	0.54	0.80	4.41	216.00	0.000	0.000	240.70	0.00	0.00
17	139.00	7770	3	31.040	34.144	0.58	0.80	9.64	126.00	0.000	0.000	526.41	0.00	0.00
18	139.00	Powerwave 7020.00 RET	12	31.040	34.144	0.54	0.80	2.57	31.68	0.000	0.000	140.55	0.00	0.00
19	139.00	Powerwave LGP13519	6	31.040	34.144	0.80	0.80	1.63	38.16	0.000	0.000	89.16	0.00	0.00
20	139.00	DMP65R-BU6DA	3	31.040	34.144	0.58	0.80	22.27	285.84	0.000	0.000	1216.50	0.00	0.00
21	139.00	HPA-65R-BUU-H6	3	31.040	34.144	0.68	0.80	19.71	183.60	0.000	0.000	1076.56	0.00	0.00
22	139.00	Raycap DC6-48-60-18-8F	2	31.040	34.144	0.80	0.80	2.35	78.72	0.000	0.000	128.49	0.00	0.00
23	139.00	Commscope	3	31.040	34.144	0.78	0.80	0.12	5.76	0.000	0.000	6.42	0.00	0.00
24	139.00	4415 B30	3	31.040	34.144	0.54	0.80	2.64	165.60	0.000	0.000	144.07	0.00	0.00
25	139.00	4449 B5/B12	3	31.040	34.144	0.54	0.80	3.17	255.60	0.000	0.000	173.05	0.00	0.00
26	139.00	Low Profile Platform	1	31.040	34.144	1.00	1.00	22.00	1800.00	0.000	0.000	1201.86	0.00	0.00
27	139.00	DC6-48-60-0-8C-EV	1	31.040	34.144	1.00	1.00	4.78	19.20	0.000	0.000	261.13	0.00	0.00
28	139.00	CBC23SR-43	3	31.040	34.144	0.56	0.80	0.71	17.64	0.000	0.000	38.55	0.00	0.00
29	139.00	SDARS XM Remote	3	31.040	34.144	0.78	0.80	4.33	79.20	0.000	0.000	236.42	0.00	0.00
30	128.00	Low Profile Platform	1	30.506	33.556	1.00	1.00	22.00	1800.00	0.000	0.000	1181.18	0.00	0.00
31	121.00	Commscope LNX-6515DS	3	30.147	33.161	0.64	0.80	22.02	179.28	0.000	0.000	1168.47	0.00	0.00
32	121.00	Ericsson AIR21 B4A/B12P	3	30.147	33.161	0.71	0.80	24.65	442.80	0.000	0.000	1307.85	0.00	0.00
33	121.00	Ericsson Air 21 B2A/B4P	3	30.147	33.161	0.69	0.80	12.57	329.40	0.000	0.000	666.93	0.00	0.00
34	121.00	Low Profile Platform	1	30.147	33.161	1.00	1.00	22.00	1800.00	0.000	0.000	1167.28	0.00	0.00
35	121.00	Ericsson S11B12	3	30.147	33.161	0.56	0.80	4.75	183.60	0.000	0.000	252.26	0.00	0.00
36	121.00	Ericsson KRY 112 144/1	3	30.147	33.161	0.56	0.80	0.69	39.60	0.000	0.000	36.55	0.00	0.00
37	121.00	SitePro PRK1245	1	30.147	33.161	1.00	1.00	5.00	420.00	0.000	0.000	265.29	0.00	0.00
38	99.00	BXA-171063-12BF	1	28.900	31.790	0.67	0.80	3.19	18.00	0.000	0.000	162.01	0.00	0.00
39	99.00	Antel BXA-70063-6CF	1	28.900	31.790	0.58	0.80	4.42	20.40	0.000	0.000	224.86	0.00	0.00
40	99.00	RFS APL866513-42T0	4	28.900	31.790	0.74	0.80	12.05	75.36	0.000	0.000	613.04	0.00	0.00
41	99.00	Antel LPA-80063-6CF	2	28.900	31.790	0.74	0.80	14.52	64.80	0.000	0.000	738.68	0.00	0.00
42	99.00	Antel BXA-171063-8BF	2	28.900	31.790	0.67	0.80	3.95	25.20	0.000	0.000	200.98	0.00	0.00
43	99.00	Antel BXA-70063-4CF	1	28.900	31.790	0.58	0.80	2.76	11.88	0.000	0.000	140.20	0.00	0.00
44	99.00	RFS DB-T1-6Z-8AB-0Z	1	28.900	31.790	0.57	0.80	2.73	22.68	0.000	0.000	138.67	0.00	0.00
45	99.00	Swedcom SLCP 2x6014F	1	28.900	31.790	0.71	0.80	4.62	24.00	0.000	0.000	235.03	0.00	0.00
46	99.00	Kathrein	3	28.900	31.790	0.62	0.80	19.51	206.28	0.000	0.000	992.59	0.00	0.00
47	99.00	ALU RRH2x40-AWS	3	28.900	31.790	0.54	0.80	4.05	158.40	0.000	0.000	206.11	0.00	0.00

Discrete Appurtenance Forces

Structure: CT13056-A-SBA	Code: EIA/TIA-222-G	3/3/2020
Site Name: Moosehill	Exposure: C	
Height: 149.00 (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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48	99.00	RFS FD9R6004/2C-3L	6	28.900	31.790	0.80	0.80	1.73	22.32	0.000	0.000	87.89	0.00	0.00
49	99.00	12.5' Low Profile Platform	1	28.900	31.790	0.80	0.80	17.60	1800.00	0.000	0.000	895.19	0.00	0.00
50	65.50	Decibel 26OB	1	26.493	29.142	0.80	0.80	1.60	60.00	0.000	0.000	74.60	0.00	0.00
51	64.00	3 ft Standoff	1	26.364	29.000	1.00	1.00	2.63	48.00	0.000	0.000	122.03	0.00	0.00

Totals:	14,990.16	22,642.09
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Total Applied Force Summary

Structure: CT13056-A-SBA	Code: EIA/TIA-222-G	3/3/2020
Site Name: Moosehill	Exposure: C	
Height: 149.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II

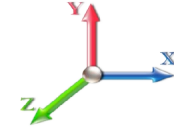


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Load Case: 1.2D + 1.6W 97 mph Wind

Dead Load Factor 1.20

Wind Load Factor 1.60



Iterations 24

Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00		0.00	0.00	0.00	0.00
5.00		548.91	1685.26	0.00	0.00
10.00		537.52	1655.88	0.00	0.00
15.00		526.14	1626.49	0.00	0.00
20.00		546.18	1597.11	0.00	0.00
25.00		559.79	1567.72	0.00	0.00
30.00		568.53	1538.34	0.00	0.00
35.00		573.70	1508.95	0.00	0.00
40.00		576.08	1479.57	0.00	0.00
45.00		576.21	1450.19	0.00	0.00
47.25		257.25	643.00	0.00	0.00
50.00		318.32	1306.42	0.00	0.00
53.25		375.43	1522.94	0.00	0.00
55.00		200.92	424.11	0.00	0.00
60.00		574.39	1195.21	0.00	0.00
64.00	(1) attachments	576.72	986.53	0.00	0.00
65.00		112.50	231.99	0.00	0.00
65.50	(1) attachments	130.71	175.63	0.00	0.00
70.00		504.99	1029.64	0.00	0.00
75.00		554.16	1120.79	0.00	0.00
80.00		545.56	1096.30	0.00	0.00
85.00		536.19	1071.81	0.00	0.00
90.00		526.10	1047.33	0.00	0.00
95.00		515.36	1022.84	0.00	0.00
96.00		101.28	201.63	0.00	0.00
99.00	(26) attachments	4941.22	3400.24	0.00	0.00
100.00		100.85	297.15	0.00	0.00
100.75		75.31	221.71	0.00	0.00
105.00		423.20	646.49	0.00	0.00
110.00		486.78	742.45	0.00	0.00
115.00		473.90	722.86	0.00	0.00
120.00		460.55	703.27	0.00	0.00
121.00	(17) attachments	4954.77	3532.98	0.00	0.00
125.00		355.99	480.20	0.00	0.00
128.00	(1) attachments	1442.01	2151.92	0.00	0.00
129.00		85.65	115.74	0.00	0.00
130.00		85.08	92.05	0.00	0.00
135.00		417.95	451.43	0.00	0.00
139.00	(55) attachments	5848.44	3693.17	0.00	0.00
140.00		79.14	68.20	0.00	0.00
145.00		387.62	332.18	0.00	0.00
147.00	(31) attachments	6055.17	3587.52	0.00	0.00
149.00	(2) attachments	482.30	554.95	0.00	143.25
Totals:		37,998.87	48,980.20	0.00	143.25

Linear Appurtenance Segment Forces (Factored)

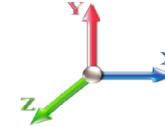
Structure: CT13056-A-SBA	Code: EIA/TIA-222-G	3/3/2020
Site Name: Moosehill	Exposure: C	
Height: 149.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 1.2D + 1.6W 97 mph Wind

Dead Load Factor 1.20
Wind Load Factor 1.60



Iterations 24

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
5.00	1 1/4" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	19.450	0.00	15.84
5.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	19.450	0.00	74.88
5.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	19.450	0.00	0.96
10.00	1 1/4" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	19.450	0.00	15.84
10.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	19.450	0.00	74.88
10.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	19.450	0.00	0.96
15.00	1 1/4" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	19.450	0.00	15.84
15.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	19.450	0.00	74.88
15.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	19.450	0.00	0.96
20.00	1 1/4" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	20.638	0.00	15.84
20.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	20.638	0.00	74.88
20.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	20.638	0.00	0.96
25.00	1 1/4" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	21.630	0.00	15.84
25.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	21.630	0.00	74.88
25.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	21.630	0.00	0.96
30.00	1 1/4" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	22.477	0.00	15.84
30.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	22.477	0.00	74.88
30.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	22.477	0.00	0.96
35.00	1 1/4" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	23.218	0.00	15.84
35.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	23.218	0.00	74.88
35.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	23.218	0.00	0.96
40.00	1 1/4" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	23.880	0.00	15.84
40.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	23.880	0.00	74.88
40.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	23.880	0.00	0.96
45.00	1 1/4" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	24.479	0.00	15.84
45.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	24.479	0.00	74.88
45.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	24.479	0.00	0.96
47.25	1 1/4" Coax	Yes	2.25	0.000	0.00	0.00	0.00	0.000	0.000	24.732	0.00	7.13
47.25	1 5/8" Coax	Yes	2.25	0.000	0.00	0.00	0.00	0.000	0.000	24.732	0.00	33.70
47.25	1/2" Coax	Yes	2.25	0.000	0.00	0.00	0.00	0.000	0.000	24.732	0.00	0.43
50.00	1 1/4" Coax	Yes	2.75	0.000	0.00	0.00	0.00	0.000	0.000	25.029	0.00	8.71
50.00	1 5/8" Coax	Yes	2.75	0.000	0.00	0.00	0.00	0.000	0.000	25.029	0.00	41.18
50.00	1/2" Coax	Yes	2.75	0.000	0.00	0.00	0.00	0.000	0.000	25.029	0.00	0.53
53.25	1 1/4" Coax	Yes	3.25	0.000	0.00	0.00	0.00	0.000	0.000	25.363	0.00	10.30
53.25	1 5/8" Coax	Yes	3.25	0.000	0.00	0.00	0.00	0.000	0.000	25.363	0.00	48.67
53.25	1/2" Coax	Yes	3.25	0.000	0.00	0.00	0.00	0.000	0.000	25.363	0.00	0.62
55.00	1 1/4" Coax	Yes	1.75	0.000	0.00	0.00	0.00	0.000	0.000	25.536	0.00	5.54
55.00	1 5/8" Coax	Yes	1.75	0.000	0.00	0.00	0.00	0.000	0.000	25.536	0.00	26.21
55.00	1/2" Coax	Yes	1.75	0.000	0.00	0.00	0.00	0.000	0.000	25.536	0.00	0.34
60.00	1 1/4" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	26.008	0.00	15.84
60.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	26.008	0.00	74.88
60.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	26.008	0.00	0.96
64.00	1 1/4" Coax	Yes	4.00	0.000	0.00	0.00	0.00	0.000	0.000	26.364	0.00	12.67
64.00	1 5/8" Coax	Yes	4.00	0.000	0.00	0.00	0.00	0.000	0.000	26.364	0.00	59.90
64.00	1/2" Coax	Yes	4.00	0.000	0.00	0.00	0.00	0.000	0.000	26.364	0.00	0.77
65.00	1 1/4" Coax	Yes	1.00	0.000	0.00	0.00	0.00	0.000	0.000	26.450	0.00	3.17
65.00	1 5/8" Coax	Yes	1.00	0.000	0.00	0.00	0.00	0.000	0.000	26.450	0.00	14.98

Linear Appurtenance Segment Forces (Factored)

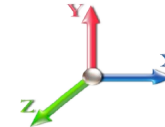
Structure: CT13056-A-SBA	Code: EIA/TIA-222-G	3/3/2020
Site Name: Moosehill	Exposure: C	
Height: 149.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



Page: 14

Load Case: 1.2D + 1.6W 97 mph Wind

Dead Load Factor 1.20
Wind Load Factor 1.60



Iterations 24

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
65.50	1 1/4" Coax	Yes	0.50	0.000	0.00	0.00	0.00	0.000	0.000	26.493	0.00	1.58
65.50	1 5/8" Coax	Yes	0.50	0.000	0.00	0.00	0.00	0.000	0.000	26.493	0.00	7.49
70.00	1 1/4" Coax	Yes	4.50	0.000	0.00	0.00	0.00	0.000	0.000	26.866	0.00	14.26
70.00	1 5/8" Coax	Yes	4.50	0.000	0.00	0.00	0.00	0.000	0.000	26.866	0.00	67.39
75.00	1 1/4" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	27.259	0.00	15.84
75.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	27.259	0.00	74.88
80.00	1 1/4" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	27.632	0.00	15.84
80.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	27.632	0.00	74.88
85.00	1 1/4" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	27.987	0.00	15.84
85.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	27.987	0.00	74.88
90.00	1 1/4" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	28.325	0.00	15.84
90.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	28.325	0.00	74.88
95.00	1 1/4" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	28.650	0.00	15.84
95.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	28.650	0.00	74.88
96.00	1 1/4" Coax	Yes	1.00	0.000	0.00	0.00	0.00	0.000	0.000	28.713	0.00	3.17
96.00	1 5/8" Coax	Yes	1.00	0.000	0.00	0.00	0.00	0.000	0.000	28.713	0.00	14.98
99.00	1 1/4" Coax	Yes	3.00	0.000	0.00	0.00	0.00	0.000	0.000	28.900	0.00	9.50
99.00	1 5/8" Coax	Yes	3.00	0.000	0.00	0.00	0.00	0.000	0.000	28.900	0.00	44.93
100.00	1 1/4" Coax	Yes	1.00	0.000	0.00	0.00	0.00	0.000	0.000	28.961	0.00	3.17
100.75	1 1/4" Coax	Yes	0.75	0.000	0.00	0.00	0.00	0.000	0.000	29.006	0.00	2.38
105.00	1 1/4" Coax	Yes	4.25	0.000	0.00	0.00	0.00	0.000	0.000	29.260	0.00	13.46
110.00	1 1/4" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	29.548	0.00	15.84
115.00	1 1/4" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	29.826	0.00	15.84
120.00	1 1/4" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	30.094	0.00	15.84
121.00	1 1/4" Coax	Yes	1.00	0.000	0.00	0.00	0.00	0.000	0.000	30.147	0.00	3.17
125.00	1 1/4" Coax	Yes	4.00	0.000	0.00	0.00	0.00	0.000	0.000	30.354	0.00	12.67
128.00	1 1/4" Coax	Yes	3.00	0.000	0.00	0.00	0.00	0.000	0.000	30.506	0.00	9.50
129.00	1 1/4" Coax	Yes	1.00	0.000	0.00	0.00	0.00	0.000	0.000	30.556	0.00	3.17
130.00	1 1/4" Coax	Yes	1.00	0.000	0.00	0.00	0.00	0.000	0.000	30.605	0.00	3.17
135.00	1 1/4" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	30.850	0.00	15.84
139.00	1 1/4" Coax	Yes	4.00	0.000	0.00	0.00	0.00	0.000	0.000	31.040	0.00	12.67
140.00	1 1/4" Coax	Yes	1.00	0.000	0.00	0.00	0.00	0.000	0.000	31.087	0.00	3.17
145.00	1 1/4" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	31.317	0.00	15.84
147.00	1 1/4" Coax	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	31.408	0.00	6.34
Totals:											0.0	1,960.6

Calculated Forces

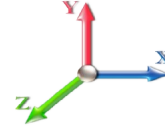
Structure: CT13056-A-SBA **Code:** EIA/TIA-222-G 3/3/2020
Site Name: Moosehill **Exposure:** C
Height: 149.00 (ft) **Crest Height:** 0.00
Base Elev: 0.000 (ft) **Site Class:** D - Stiff Soil
Gh: 1.1 **Topography:** 1 **Struct Class:** II Page: 15



Load Case: 1.2D + 1.6W 97 mph Wind

Iterations 24

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	-48.91	-38.08	0.00	-4160.7	0.00	4160.79	4419.23	2209.62	10644.5	5330.19	0.00	0.000	0.000	0.792
5.00	-47.10	-37.69	0.00	-3970.3	0.00	3970.38	4369.00	2184.50	10304.7	5160.05	0.10	-0.192	0.000	0.781
10.00	-45.32	-37.30	0.00	-3781.9	0.00	3781.94	4317.04	2158.52	9966.05	4990.43	0.41	-0.386	0.000	0.769
15.00	-43.57	-36.91	0.00	-3595.4	0.00	3595.44	4263.35	2131.68	9628.61	4821.46	0.92	-0.584	0.000	0.756
20.00	-41.85	-36.49	0.00	-3410.8	0.00	3410.89	4207.92	2103.96	9292.72	4653.26	1.64	-0.784	0.000	0.743
25.00	-40.17	-36.05	0.00	-3228.4	0.00	3228.43	4150.77	2075.38	8958.64	4485.98	2.57	-0.987	0.000	0.730
30.00	-38.51	-35.59	0.00	-3048.1	0.00	3048.17	4091.88	2045.94	8626.63	4319.73	3.71	-1.192	0.000	0.715
35.00	-36.89	-35.12	0.00	-2870.2	0.00	2870.21	4031.25	2015.63	8296.96	4154.65	5.08	-1.400	0.000	0.700
40.00	-35.30	-34.64	0.00	-2694.6	0.00	2694.61	3968.90	1984.45	7969.88	3990.86	6.65	-1.609	0.000	0.684
45.00	-33.77	-34.11	0.00	-2521.4	0.00	2521.43	3904.81	1952.40	7645.65	3828.51	8.45	-1.821	0.000	0.668
47.25	-33.08	-33.89	0.00	-2444.6	0.00	2444.69	3875.40	1937.70	7500.75	3755.95	9.34	-1.919	0.000	0.660
50.00	-31.70	-33.60	0.00	-2351.4	0.00	2351.49	3838.99	1919.49	7324.54	3667.71	10.48	-2.038	0.000	0.650
53.25	-30.13	-33.23	0.00	-2242.2	0.00	2242.29	2982.57	1491.28	5685.98	2847.22	11.91	-2.179	0.000	0.798
55.00	-29.62	-33.09	0.00	-2184.1	0.00	2184.15	2966.84	1483.42	5604.01	2806.17	12.73	-2.256	0.000	0.789
60.00	-28.33	-32.58	0.00	-2018.6	0.00	2018.68	2920.75	1460.37	5370.68	2689.33	15.22	-2.502	0.000	0.761
64.00	-27.30	-32.02	0.00	-1888.3	0.00	1888.36	2882.62	1441.31	5185.10	2596.40	17.40	-2.701	0.000	0.737
65.00	-27.05	-31.91	0.00	-1856.3	0.00	1856.34	2872.92	1436.46	5138.87	2573.25	17.98	-2.752	0.000	0.731
65.50	-26.81	-31.83	0.00	-1840.3	0.00	1840.39	2868.04	1434.02	5115.78	2561.69	18.27	-2.777	0.000	0.728
70.00	-25.68	-31.38	0.00	-1697.1	0.00	1697.14	2823.36	1411.68	4908.84	2458.07	20.99	-2.998	0.000	0.700
75.00	-24.46	-30.87	0.00	-1540.2	0.00	1540.24	2772.06	1386.03	4680.84	2343.90	24.26	-3.241	0.000	0.666
80.00	-23.28	-30.36	0.00	-1385.9	0.00	1385.90	2719.04	1359.52	4455.15	2230.89	27.78	-3.481	0.000	0.630
85.00	-22.12	-29.84	0.00	-1234.1	0.00	1234.11	2664.28	1332.14	4232.01	2119.15	31.55	-3.715	0.000	0.591
90.00	-21.00	-29.33	0.00	-1084.8	0.00	1084.89	2607.79	1303.89	4011.70	2008.83	35.57	-3.943	0.000	0.549
95.00	-19.95	-28.79	0.00	-938.24	0.00	938.24	2549.57	1274.78	3794.46	1900.05	39.81	-4.162	0.000	0.502
96.00	-19.71	-28.70	0.00	-909.45	0.00	909.45	2537.71	1268.86	3751.41	1878.49	40.69	-4.206	0.000	0.492
99.00	-16.65	-23.55	0.00	-823.34	0.00	823.34	2501.74	1250.87	3623.07	1814.23	43.37	-4.332	0.000	0.461
100.00	-16.35	-23.43	0.00	-799.79	0.00	799.79	2489.61	1244.80	3580.57	1792.94	44.28	-4.374	0.000	0.453
100.75	-16.09	-23.37	0.00	-782.22	0.00	782.22	1858.32	929.16	2706.71	1355.36	44.97	-4.405	0.000	0.586
105.00	-15.40	-22.95	0.00	-682.89	0.00	682.89	1825.33	912.67	2580.97	1292.40	48.97	-4.572	0.000	0.537
110.00	-14.62	-22.46	0.00	-568.14	0.00	568.14	1784.92	892.46	2434.45	1219.03	53.87	-4.790	0.000	0.475
115.00	-13.87	-21.97	0.00	-455.85	0.00	455.85	1742.78	871.39	2289.70	1146.55	58.99	-4.989	0.000	0.406
120.00	-13.17	-21.47	0.00	-346.00	0.00	346.00	1698.90	849.45	2146.98	1075.09	64.31	-5.163	0.000	0.330
121.00	-10.08	-16.23	0.00	-324.53	0.00	324.53	1689.92	844.96	2118.70	1060.93	65.39	-5.196	0.000	0.312
125.00	-9.61	-15.85	0.00	-259.61	0.00	259.61	1653.30	826.65	2006.56	1004.77	69.79	-5.313	0.000	0.265
128.00	-7.59	-14.22	0.00	-212.06	0.00	212.06	1625.10	812.55	1923.51	963.18	73.15	-5.390	0.000	0.225
129.00	-7.48	-14.13	0.00	-197.84	0.00	197.84	1615.56	807.78	1896.04	949.43	74.28	-5.415	0.000	0.213
129.00	-7.48	-14.13	0.00	-197.84	0.00	197.84	1091.97	545.98	1287.15	644.53	74.28	-5.415	0.000	0.314
130.00	-7.37	-14.04	0.00	-183.71	0.00	183.71	1086.82	543.41	1270.20	636.04	75.42	-5.438	0.000	0.296
135.00	-6.94	-13.59	0.00	-113.50	0.00	113.50	1060.04	530.02	1185.82	593.79	81.18	-5.560	0.000	0.198
139.00	-3.83	-7.42	0.00	-59.12	0.00	59.12	1037.37	518.68	1118.90	560.28	85.86	-5.625	0.000	0.109
140.00	-3.77	-7.33	0.00	-51.71	0.00	51.71	1031.53	515.76	1102.27	551.95	87.04	-5.637	0.000	0.098
145.00	-3.48	-6.92	0.00	-15.04	0.00	15.04	1001.28	500.64	1019.81	510.66	92.96	-5.673	0.000	0.033
147.00	-0.50	-0.53	0.00	-1.21	0.00	1.21	988.70	494.35	987.19	494.33	95.33	-5.677	0.000	0.003
149.00	0.00	-0.48	0.00	-0.14	0.00	0.14	975.84	487.92	954.81	478.11	97.70	-5.677	0.000	0.000

Wind Loading - Shaft

Structure: CT13056-A-SBA	Code: EIA/TIA-222-G	3/3/2020
Site Name: Moosehill	Exposure: C	
Height: 149.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



Load Case: 0.9D + 1.6W 97 mph Wind

Dead Load Factor 0.90
Wind Load Factor 1.60



Iterations 24

Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.85	19.450	21.40	445.80	0.650	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.85	19.450	21.40	436.65	0.650	0.000	5.00	24.669	16.03	548.9	0.0	1055.8
10.00		1.00	0.85	19.450	21.40	427.50	0.650	0.000	5.00	24.157	15.70	537.5	0.0	1033.7
15.00		1.00	0.85	19.450	21.40	418.35	0.650	0.000	5.00	23.645	15.37	526.1	0.0	1011.7
20.00		1.00	0.90	20.638	22.70	421.50	0.650	0.000	5.00	23.134	15.04	546.2	0.0	989.7
25.00		1.00	0.95	21.630	23.79	421.87	0.650	0.000	5.00	22.622	14.70	559.8	0.0	967.6
30.00		1.00	0.98	22.477	24.72	420.20	0.650	0.000	5.00	22.111	14.37	568.5	0.0	945.6
35.00		1.00	1.01	23.218	25.54	417.08	0.650	0.000	5.00	21.599	14.04	573.7	0.0	923.6
40.00		1.00	1.04	23.880	26.27	412.84	0.650	0.000	5.00	21.087	13.71	576.1	0.0	901.5
45.00		1.00	1.07	24.479	26.93	407.73	0.650	0.000	5.00	20.576	13.37	576.2	0.0	879.5
47.25	Bot - Section 2	1.00	1.08	24.732	27.21	405.18	0.650	0.000	2.25	9.092	5.91	257.3	0.0	388.6
50.00		1.00	1.09	25.029	27.53	401.90	0.650	0.000	2.75	11.117	7.23	318.3	0.0	865.3
53.25	Top - Section 1	1.00	1.11	25.363	27.90	397.78	0.650	0.000	3.25	12.939	8.41	375.4	0.0	1006.9
55.00		1.00	1.12	25.536	28.09	400.88	0.650	0.000	1.75	6.878	4.47	200.9	0.0	245.2
60.00		1.00	1.14	26.008	28.61	393.99	0.650	0.000	5.00	19.305	12.55	574.4	0.0	688.2
64.00	Appurtenance(s)	1.00	1.15	26.364	29.00	388.15	0.650	0.000	4.00	15.076	9.80	454.7	0.0	537.4
65.00		1.00	1.16	26.450	29.09	386.65	0.650	0.000	1.00	3.718	2.42	112.5	0.0	132.5
65.50	Appurtenance(s)	1.00	1.16	26.493	29.14	385.90	0.650	0.000	0.50	1.851	1.20	56.1	0.0	66.0
70.00		1.00	1.17	26.866	29.55	378.93	0.650	0.000	4.50	16.431	10.68	505.0	0.0	585.5
75.00		1.00	1.19	27.259	29.98	370.85	0.650	0.000	5.00	17.770	11.55	554.2	0.0	633.1
80.00		1.00	1.21	27.632	30.39	362.48	0.650	0.000	5.00	17.259	11.22	545.6	0.0	614.8
85.00		1.00	1.22	27.987	30.79	353.82	0.650	0.000	5.00	16.747	10.89	536.2	0.0	596.4
90.00		1.00	1.24	28.325	31.16	344.91	0.650	0.000	5.00	16.236	10.55	526.1	0.0	578.1
95.00		1.00	1.25	28.650	31.51	335.77	0.650	0.000	5.00	15.724	10.22	515.4	0.0	559.7
96.00	Bot - Section 3	1.00	1.25	28.713	31.58	333.92	0.650	0.000	1.00	3.083	2.00	101.3	0.0	109.7
99.00	Appurtenance(s)	1.00	1.26	28.900	31.79	328.31	0.650	0.000	3.00	9.254	6.02	306.0	0.0	588.7
100.00		1.00	1.27	28.961	31.86	326.43	0.650	0.000	1.00	3.044	1.98	100.8	0.0	193.6
100.75	Top - Section 2	1.00	1.27	29.006	31.91	325.01	0.650	0.000	0.75	2.269	1.48	75.3	0.0	144.3
105.00		1.00	1.28	29.260	32.19	321.52	0.650	0.000	4.25	12.643	8.22	423.2	0.0	360.5
110.00		1.00	1.29	29.548	32.50	311.82	0.650	0.000	5.00	14.401	9.36	486.8	0.0	410.5
115.00		1.00	1.30	29.826	32.81	301.96	0.650	0.000	5.00	13.889	9.03	473.9	0.0	395.8
120.00		1.00	1.32	30.094	33.10	291.93	0.650	0.000	5.00	13.377	8.70	460.6	0.0	381.1
121.00	Appurtenance(s)	1.00	1.32	30.147	33.16	289.91	0.650	0.000	1.00	2.614	1.70	90.2	0.0	74.5
125.00		1.00	1.33	30.354	33.39	281.75	0.650	0.000	4.00	10.252	6.66	356.0	0.0	292.0
128.00	Appurtenance(s)	1.00	1.33	30.506	33.56	275.58	0.650	0.000	3.00	7.474	4.86	260.8	0.0	212.8
129.00	Top - Section 3	1.00	1.34	30.556	33.61	273.51	0.650	0.000	1.00	2.450	1.59	85.7	0.0	69.8
130.00		1.00	1.34	30.605	33.67	271.44	0.650	0.000	1.00	2.430	1.58	85.1	0.0	52.0
135.00		1.00	1.35	30.850	33.93	261.00	0.650	0.000	5.00	11.843	7.70	417.9	0.0	253.4
139.00	Appurtenance(s)	1.00	1.36	31.040	34.14	252.55	0.650	0.000	4.00	9.106	5.92	323.3	0.0	194.8
140.00		1.00	1.36	31.087	34.20	250.43	0.650	0.000	1.00	2.225	1.45	79.1	0.0	47.6
145.00		1.00	1.37	31.317	34.45	239.75	0.650	0.000	5.00	10.819	7.03	387.6	0.0	231.3
147.00	Appurtenance(s)	1.00	1.37	31.408	34.55	235.44	0.650	0.000	2.00	4.184	2.72	150.4	0.0	89.4
149.00	Appurtenance(s)	1.00	1.38	31.497	34.65	231.12	0.650	0.000	2.00	4.103	2.67	147.8	0.0	87.7
Totals:									149.00			15,356.8	20,395.9	

Discrete Appurtenance Forces

Structure: CT13056-A-SBA
Site Name: Moosehill
Height: 149.00 (ft)
Base Elev: 0.000 (ft)
Gh: 1.1

Topography: 1

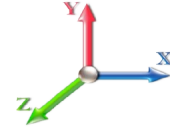
Code: EIA/TIA-222-G
Exposure: C
Crest Height: 0.00
Site Class: D - Stiff Soil
Struct Class: II

3/3/2020
 Page: 17



Load Case: 0.9D + 1.6W 97 mph Wind

Dead Load Factor 0.90
Wind Load Factor 1.60



Iterations 24

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	149.00	Decibel DB404-B	1	31.608	34.768	1.00	1.00	1.03	12.60	0.000	2.500	57.30	0.00	143.25	
2	149.00	Pipe Mount	1	31.497	34.647	1.00	1.00	5.00	315.00	0.000	0.000	277.17	0.00	0.00	
3	147.00	800MHz RRH w/ filter	3	31.408	34.548	0.90	0.90	9.34	184.41	0.000	0.000	516.40	0.00	0.00	
4	147.00	RFS APXVTM14-C-120	3	31.408	34.548	0.71	0.90	13.52	151.20	0.000	0.000	747.53	0.00	0.00	
5	147.00	RFS APXVSP18-C-A20	3	31.408	34.548	0.75	0.90	17.97	153.90	0.000	0.000	993.49	0.00	0.00	
6	147.00	ALU 1900MHz RRH	3	31.408	34.548	0.60	0.90	6.87	118.80	0.000	0.000	379.99	0.00	0.00	
7	147.00	ALU 800MHz RRH	3	31.408	34.548	0.60	0.90	4.78	160.65	0.000	0.000	263.99	0.00	0.00	
8	147.00	ALU TD-RRH8x20-25	3	31.408	34.548	0.60	0.90	7.33	189.00	0.000	0.000	404.99	0.00	0.00	
9	147.00	RFS ACU-A20-N	4	31.408	34.548	0.71	0.90	0.40	3.60	0.000	0.000	22.01	0.00	0.00	
10	147.00	Argus LLPX310R	3	31.408	34.548	0.62	0.90	8.01	77.22	0.000	0.000	442.82	0.00	0.00	
11	147.00	Andrew VHLP2-11	1	31.408	34.548	1.00	1.00	4.68	24.30	0.000	0.000	258.70	0.00	0.00	
12	147.00	Andrew VHLP800-11-DW1	1	31.408	34.548	1.00	1.00	6.70	44.10	0.000	0.000	370.36	0.00	0.00	
13	147.00	U-RAS Flexible RRH	3	31.408	34.548	0.78	1.00	5.22	136.89	0.000	0.000	288.45	0.00	0.00	
14	147.00	12.5' Low Profile Platform	1	31.408	34.548	1.00	1.00	22.00	1350.00	0.000	0.000	1216.10	0.00	0.00	
15	139.00	Powerwave LGP21901	6	31.040	34.144	0.60	0.80	0.83	29.70	0.000	0.000	45.23	0.00	0.00	
16	139.00	Ericsson RRUS-32 B2s	3	31.040	34.144	0.54	0.80	4.41	162.00	0.000	0.000	240.70	0.00	0.00	
17	139.00	7770	3	31.040	34.144	0.58	0.80	9.64	94.50	0.000	0.000	526.41	0.00	0.00	
18	139.00	Powerwave 7020.00 RET	12	31.040	34.144	0.54	0.80	2.57	23.76	0.000	0.000	140.55	0.00	0.00	
19	139.00	Powerwave LGP13519	6	31.040	34.144	0.80	0.80	1.63	28.62	0.000	0.000	89.16	0.00	0.00	
20	139.00	DMP65R-BU6DA	3	31.040	34.144	0.58	0.80	22.27	214.38	0.000	0.000	1216.50	0.00	0.00	
21	139.00	HPA-65R-BUU-H6	3	31.040	34.144	0.68	0.80	19.71	137.70	0.000	0.000	1076.56	0.00	0.00	
22	139.00	Raycap DC6-48-60-18-8F	2	31.040	34.144	0.80	0.80	2.35	59.04	0.000	0.000	128.49	0.00	0.00	
23	139.00	Commscope	3	31.040	34.144	0.78	0.80	0.12	4.32	0.000	0.000	6.42	0.00	0.00	
24	139.00	4415 B30	3	31.040	34.144	0.54	0.80	2.64	124.20	0.000	0.000	144.07	0.00	0.00	
25	139.00	4449 B5/B12	3	31.040	34.144	0.54	0.80	3.17	191.70	0.000	0.000	173.05	0.00	0.00	
26	139.00	Low Profile Platform	1	31.040	34.144	1.00	1.00	22.00	1350.00	0.000	0.000	1201.86	0.00	0.00	
27	139.00	DC6-48-60-0-8C-EV	1	31.040	34.144	1.00	1.00	4.78	14.40	0.000	0.000	261.13	0.00	0.00	
28	139.00	CBC23SR-43	3	31.040	34.144	0.56	0.80	0.71	13.23	0.000	0.000	38.55	0.00	0.00	
29	139.00	SDARS XM Remote	3	31.040	34.144	0.78	0.80	4.33	59.40	0.000	0.000	236.42	0.00	0.00	
30	128.00	Low Profile Platform	1	30.506	33.556	1.00	1.00	22.00	1350.00	0.000	0.000	1181.18	0.00	0.00	
31	121.00	Commscope LNX-6515DS	3	30.147	33.161	0.64	0.80	22.02	134.46	0.000	0.000	1168.47	0.00	0.00	
32	121.00	Ericsson AIR21 B4A/B12P	3	30.147	33.161	0.71	0.80	24.65	332.10	0.000	0.000	1307.85	0.00	0.00	
33	121.00	Ericsson Air 21 B2A/B4P	3	30.147	33.161	0.69	0.80	12.57	247.05	0.000	0.000	666.93	0.00	0.00	
34	121.00	Low Profile Platform	1	30.147	33.161	1.00	1.00	22.00	1350.00	0.000	0.000	1167.28	0.00	0.00	
35	121.00	Ericsson S11B12	3	30.147	33.161	0.56	0.80	4.75	137.70	0.000	0.000	252.26	0.00	0.00	
36	121.00	Ericsson KRY 112 144/1	3	30.147	33.161	0.56	0.80	0.69	29.70	0.000	0.000	36.55	0.00	0.00	
37	121.00	SitePro PRK1245	1	30.147	33.161	1.00	1.00	5.00	315.00	0.000	0.000	265.29	0.00	0.00	
38	99.00	BXA-171063-12BF	1	28.900	31.790	0.67	0.80	3.19	13.50	0.000	0.000	162.01	0.00	0.00	
39	99.00	Antel BXA-70063-6CF	1	28.900	31.790	0.58	0.80	4.42	15.30	0.000	0.000	224.86	0.00	0.00	
40	99.00	RFS APL866513-42T0	4	28.900	31.790	0.74	0.80	12.05	56.52	0.000	0.000	613.04	0.00	0.00	
41	99.00	Antel LPA-80063-6CF	2	28.900	31.790	0.74	0.80	14.52	48.60	0.000	0.000	738.68	0.00	0.00	
42	99.00	Antel BXA-171063-8BF	2	28.900	31.790	0.67	0.80	3.95	18.90	0.000	0.000	200.98	0.00	0.00	
43	99.00	Antel BXA-70063-4CF	1	28.900	31.790	0.58	0.80	2.76	8.91	0.000	0.000	140.20	0.00	0.00	
44	99.00	RFS DB-T1-6Z-8AB-0Z	1	28.900	31.790	0.57	0.80	2.73	17.01	0.000	0.000	138.67	0.00	0.00	
45	99.00	Swedcom SLC2P 2x6014F	1	28.900	31.790	0.71	0.80	4.62	18.00	0.000	0.000	235.03	0.00	0.00	
46	99.00	Kathrein	3	28.900	31.790	0.62	0.80	19.51	154.71	0.000	0.000	992.59	0.00	0.00	
47	99.00	ALU RRH2x40-AWS	3	28.900	31.790	0.54	0.80	4.05	118.80	0.000	0.000	206.11	0.00	0.00	

Discrete Appurtenance Forces

Structure: CT13056-A-SBA	Code: EIA/TIA-222-G	3/3/2020
Site Name: Moosehill	Exposure: C	
Height: 149.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II
		Page: 18



48	99.00	RFS FD9R6004/2C-3L	6	28.900	31.790	0.80	0.80	1.73	16.74	0.000	0.000	87.89	0.00	0.00
49	99.00	12.5' Low Profile Platform	1	28.900	31.790	0.80	0.80	17.60	1350.00	0.000	0.000	895.19	0.00	0.00
50	65.50	Decibel 26OB	1	26.493	29.142	0.80	0.80	1.60	45.00	0.000	0.000	74.60	0.00	0.00
51	64.00	3 ft Standoff	1	26.364	29.000	1.00	1.00	2.63	36.00	0.000	0.000	122.03	0.00	0.00

Totals:	11,242.62	22,642.09
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Total Applied Force Summary

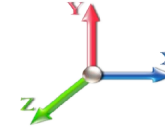
Structure: CT13056-A-SBA	Code: EIA/TIA-222-G	3/3/2020
Site Name: Moosehill	Exposure: C	
Height: 149.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 0.9D + 1.6W 97 mph Wind

Dead Load Factor 0.90
Wind Load Factor 1.60



Iterations 24

Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00		0.00	0.00	0.00	0.00
5.00		548.91	1263.94	0.00	0.00
10.00		537.52	1241.91	0.00	0.00
15.00		526.14	1219.87	0.00	0.00
20.00		546.18	1197.83	0.00	0.00
25.00		559.79	1175.79	0.00	0.00
30.00		568.53	1153.75	0.00	0.00
35.00		573.70	1131.72	0.00	0.00
40.00		576.08	1109.68	0.00	0.00
45.00		576.21	1087.64	0.00	0.00
47.25		257.25	482.25	0.00	0.00
50.00		318.32	979.82	0.00	0.00
53.25		375.43	1142.21	0.00	0.00
55.00		200.92	318.08	0.00	0.00
60.00		574.39	896.41	0.00	0.00
64.00	(1) attachments	576.72	739.90	0.00	0.00
65.00		112.50	173.99	0.00	0.00
65.50	(1) attachments	130.71	131.72	0.00	0.00
70.00		504.99	772.23	0.00	0.00
75.00		554.16	840.59	0.00	0.00
80.00		545.56	822.22	0.00	0.00
85.00		536.19	803.86	0.00	0.00
90.00		526.10	785.49	0.00	0.00
95.00		515.36	767.13	0.00	0.00
96.00		101.28	151.22	0.00	0.00
99.00	(26) attachments	4941.22	2550.18	0.00	0.00
100.00		100.85	222.86	0.00	0.00
100.75		75.31	166.28	0.00	0.00
105.00		423.20	484.87	0.00	0.00
110.00		486.78	556.84	0.00	0.00
115.00		473.90	542.15	0.00	0.00
120.00		460.55	527.45	0.00	0.00
121.00	(17) attachments	4954.77	2649.74	0.00	0.00
125.00		355.99	360.15	0.00	0.00
128.00	(1) attachments	1442.01	1613.94	0.00	0.00
129.00		85.65	86.80	0.00	0.00
130.00		85.08	69.04	0.00	0.00
135.00		417.95	338.58	0.00	0.00
139.00	(55) attachments	5848.44	2769.88	0.00	0.00
140.00		79.14	51.15	0.00	0.00
145.00		387.62	249.14	0.00	0.00
147.00	(31) attachments	6055.17	2690.64	0.00	0.00
149.00	(2) attachments	482.30	416.21	0.00	143.25
Totals:		37,998.87	36,735.15	0.00	143.25

Linear Appurtenance Segment Forces (Factored)

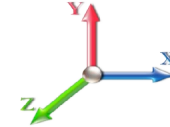
Structure: CT13056-A-SBA	Code: EIA/TIA-222-G	3/3/2020
Site Name: Moosehill	Exposure: C	
Height: 149.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 0.9D + 1.6W 97 mph Wind

Dead Load Factor 0.90
Wind Load Factor 1.60



Iterations 24

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
5.00	1 1/4" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	19.450	0.00	11.88
5.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	19.450	0.00	56.16
5.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	19.450	0.00	0.72
10.00	1 1/4" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	19.450	0.00	11.88
10.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	19.450	0.00	56.16
10.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	19.450	0.00	0.72
15.00	1 1/4" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	19.450	0.00	11.88
15.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	19.450	0.00	56.16
15.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	19.450	0.00	0.72
20.00	1 1/4" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	20.638	0.00	11.88
20.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	20.638	0.00	56.16
20.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	20.638	0.00	0.72
25.00	1 1/4" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	21.630	0.00	11.88
25.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	21.630	0.00	56.16
25.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	21.630	0.00	0.72
30.00	1 1/4" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	22.477	0.00	11.88
30.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	22.477	0.00	56.16
30.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	22.477	0.00	0.72
35.00	1 1/4" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	23.218	0.00	11.88
35.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	23.218	0.00	56.16
35.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	23.218	0.00	0.72
40.00	1 1/4" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	23.880	0.00	11.88
40.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	23.880	0.00	56.16
40.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	23.880	0.00	0.72
45.00	1 1/4" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	24.479	0.00	11.88
45.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	24.479	0.00	56.16
45.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	24.479	0.00	0.72
47.25	1 1/4" Coax	Yes	2.25	0.000	0.00	0.00	0.00	0.000	0.000	24.732	0.00	5.35
47.25	1 5/8" Coax	Yes	2.25	0.000	0.00	0.00	0.00	0.000	0.000	24.732	0.00	25.27
47.25	1/2" Coax	Yes	2.25	0.000	0.00	0.00	0.00	0.000	0.000	24.732	0.00	0.32
50.00	1 1/4" Coax	Yes	2.75	0.000	0.00	0.00	0.00	0.000	0.000	25.029	0.00	6.53
50.00	1 5/8" Coax	Yes	2.75	0.000	0.00	0.00	0.00	0.000	0.000	25.029	0.00	30.89
50.00	1/2" Coax	Yes	2.75	0.000	0.00	0.00	0.00	0.000	0.000	25.029	0.00	0.40
53.25	1 1/4" Coax	Yes	3.25	0.000	0.00	0.00	0.00	0.000	0.000	25.363	0.00	7.72
53.25	1 5/8" Coax	Yes	3.25	0.000	0.00	0.00	0.00	0.000	0.000	25.363	0.00	36.50
53.25	1/2" Coax	Yes	3.25	0.000	0.00	0.00	0.00	0.000	0.000	25.363	0.00	0.47
55.00	1 1/4" Coax	Yes	1.75	0.000	0.00	0.00	0.00	0.000	0.000	25.536	0.00	4.16
55.00	1 5/8" Coax	Yes	1.75	0.000	0.00	0.00	0.00	0.000	0.000	25.536	0.00	19.66
55.00	1/2" Coax	Yes	1.75	0.000	0.00	0.00	0.00	0.000	0.000	25.536	0.00	0.25
60.00	1 1/4" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	26.008	0.00	11.88
60.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	26.008	0.00	56.16
60.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	26.008	0.00	0.72
64.00	1 1/4" Coax	Yes	4.00	0.000	0.00	0.00	0.00	0.000	0.000	26.364	0.00	9.50
64.00	1 5/8" Coax	Yes	4.00	0.000	0.00	0.00	0.00	0.000	0.000	26.364	0.00	44.93
64.00	1/2" Coax	Yes	4.00	0.000	0.00	0.00	0.00	0.000	0.000	26.364	0.00	0.58
65.00	1 1/4" Coax	Yes	1.00	0.000	0.00	0.00	0.00	0.000	0.000	26.450	0.00	2.38
65.00	1 5/8" Coax	Yes	1.00	0.000	0.00	0.00	0.00	0.000	0.000	26.450	0.00	11.23

Linear Appurtenance Segment Forces (Factored)

Structure: CT13056-A-SBA	Code: EIA/TIA-222-G	3/3/2020
Site Name: Moosehill	Exposure: C	
Height: 149.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II

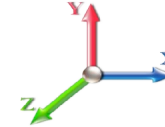


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Load Case: 0.9D + 1.6W 97 mph Wind

Dead Load Factor 0.90

Wind Load Factor 1.60



Iterations 24

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
65.50	1 1/4" Coax	Yes	0.50	0.000	0.00	0.00	0.00	0.000	0.000	26.493	0.00	1.19
65.50	1 5/8" Coax	Yes	0.50	0.000	0.00	0.00	0.00	0.000	0.000	26.493	0.00	5.62
70.00	1 1/4" Coax	Yes	4.50	0.000	0.00	0.00	0.00	0.000	0.000	26.866	0.00	10.69
70.00	1 5/8" Coax	Yes	4.50	0.000	0.00	0.00	0.00	0.000	0.000	26.866	0.00	50.54
75.00	1 1/4" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	27.259	0.00	11.88
75.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	27.259	0.00	56.16
80.00	1 1/4" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	27.632	0.00	11.88
80.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	27.632	0.00	56.16
85.00	1 1/4" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	27.987	0.00	11.88
85.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	27.987	0.00	56.16
90.00	1 1/4" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	28.325	0.00	11.88
90.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	28.325	0.00	56.16
95.00	1 1/4" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	28.650	0.00	11.88
95.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	28.650	0.00	56.16
96.00	1 1/4" Coax	Yes	1.00	0.000	0.00	0.00	0.00	0.000	0.000	28.713	0.00	2.38
96.00	1 5/8" Coax	Yes	1.00	0.000	0.00	0.00	0.00	0.000	0.000	28.713	0.00	11.23
99.00	1 1/4" Coax	Yes	3.00	0.000	0.00	0.00	0.00	0.000	0.000	28.900	0.00	7.13
99.00	1 5/8" Coax	Yes	3.00	0.000	0.00	0.00	0.00	0.000	0.000	28.900	0.00	33.70
100.00	1 1/4" Coax	Yes	1.00	0.000	0.00	0.00	0.00	0.000	0.000	28.961	0.00	2.38
100.75	1 1/4" Coax	Yes	0.75	0.000	0.00	0.00	0.00	0.000	0.000	29.006	0.00	1.78
105.00	1 1/4" Coax	Yes	4.25	0.000	0.00	0.00	0.00	0.000	0.000	29.260	0.00	10.10
110.00	1 1/4" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	29.548	0.00	11.88
115.00	1 1/4" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	29.826	0.00	11.88
120.00	1 1/4" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	30.094	0.00	11.88
121.00	1 1/4" Coax	Yes	1.00	0.000	0.00	0.00	0.00	0.000	0.000	30.147	0.00	2.38
125.00	1 1/4" Coax	Yes	4.00	0.000	0.00	0.00	0.00	0.000	0.000	30.354	0.00	9.50
128.00	1 1/4" Coax	Yes	3.00	0.000	0.00	0.00	0.00	0.000	0.000	30.506	0.00	7.13
129.00	1 1/4" Coax	Yes	1.00	0.000	0.00	0.00	0.00	0.000	0.000	30.556	0.00	2.38
130.00	1 1/4" Coax	Yes	1.00	0.000	0.00	0.00	0.00	0.000	0.000	30.605	0.00	2.38
135.00	1 1/4" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	30.850	0.00	11.88
139.00	1 1/4" Coax	Yes	4.00	0.000	0.00	0.00	0.00	0.000	0.000	31.040	0.00	9.50
140.00	1 1/4" Coax	Yes	1.00	0.000	0.00	0.00	0.00	0.000	0.000	31.087	0.00	2.38
145.00	1 1/4" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	31.317	0.00	11.88
147.00	1 1/4" Coax	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	31.408	0.00	4.75
Totals:											0.0	1,470.5

Calculated Forces

Structure: CT13056-A-SBA	Code: EIA/TIA-222-G	3/3/2020
Site Name: Moosehill	Exposure: C	
Height: 149.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II

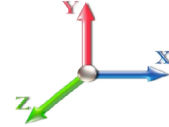


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Load Case: 0.9D + 1.6W 97 mph Wind

Iterations 24

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	-36.67	-38.06	0.00	-4120.2	0.00	4120.22	4419.23	2209.62	10644.5	5330.19	0.00	0.000	0.000	0.782
5.00	-35.28	-37.63	0.00	-3929.9	0.00	3929.92	4369.00	2184.50	10304.7	5160.05	0.10	-0.190	0.000	0.770
10.00	-33.92	-37.20	0.00	-3741.7	0.00	3741.79	4317.04	2158.52	9966.05	4990.43	0.41	-0.382	0.000	0.758
15.00	-32.58	-36.77	0.00	-3555.7	0.00	3555.79	4263.35	2131.68	9628.61	4821.46	0.91	-0.578	0.000	0.745
20.00	-31.26	-36.32	0.00	-3371.9	0.00	3371.92	4207.92	2103.96	9292.72	4653.26	1.62	-0.776	0.000	0.732
25.00	-29.96	-35.85	0.00	-3190.3	0.00	3190.31	4150.77	2075.38	8958.64	4485.98	2.54	-0.976	0.000	0.719
30.00	-28.70	-35.36	0.00	-3011.0	0.00	3011.05	4091.88	2045.94	8626.63	4319.73	3.68	-1.179	0.000	0.704
35.00	-27.45	-34.86	0.00	-2834.2	0.00	2834.23	4031.25	2015.63	8296.96	4154.65	5.02	-1.384	0.000	0.689
40.00	-26.23	-34.35	0.00	-2659.9	0.00	2659.92	3968.90	1984.45	7969.88	3990.86	6.58	-1.591	0.000	0.673
45.00	-25.07	-33.81	0.00	-2488.1	0.00	2488.15	3904.81	1952.40	7645.65	3828.51	8.36	-1.800	0.000	0.657
47.25	-24.54	-33.59	0.00	-2412.0	0.00	2412.07	3875.40	1937.70	7500.75	3755.95	9.23	-1.896	0.000	0.649
50.00	-23.49	-33.29	0.00	-2319.7	0.00	2319.71	3838.99	1919.49	7324.54	3667.71	10.36	-2.014	0.000	0.639
53.25	-22.31	-32.91	0.00	-2211.5	0.00	2211.53	2982.57	1491.28	5685.98	2847.22	11.78	-2.153	0.000	0.785
55.00	-21.90	-32.76	0.00	-2153.9	0.00	2153.93	2966.84	1483.42	5604.01	2806.17	12.58	-2.229	0.000	0.775
60.00	-20.91	-32.23	0.00	-1990.1	0.00	1990.13	2920.75	1460.37	5370.68	2689.33	15.05	-2.472	0.000	0.748
64.00	-20.13	-31.66	0.00	-1861.2	0.00	1861.21	2882.62	1441.31	5185.10	2596.40	17.20	-2.668	0.000	0.724
65.00	-19.94	-31.56	0.00	-1829.5	0.00	1829.55	2872.92	1436.46	5138.87	2573.25	17.77	-2.718	0.000	0.718
65.50	-19.75	-31.46	0.00	-1813.7	0.00	1813.77	2868.04	1434.02	5115.78	2561.69	18.05	-2.743	0.000	0.715
70.00	-18.88	-31.00	0.00	-1672.1	0.00	1672.19	2823.36	1411.68	4908.84	2458.07	20.75	-2.961	0.000	0.687
75.00	-17.94	-30.47	0.00	-1517.2	0.00	1517.22	2772.06	1386.03	4680.84	2343.90	23.97	-3.200	0.000	0.654
80.00	-17.03	-29.95	0.00	-1364.8	0.00	1364.87	2719.04	1359.52	4455.15	2230.89	27.45	-3.436	0.000	0.619
85.00	-16.14	-29.43	0.00	-1215.1	0.00	1215.12	2664.28	1332.14	4232.01	2119.15	31.17	-3.667	0.000	0.580
90.00	-15.28	-28.91	0.00	-1067.9	0.00	1067.99	2607.79	1303.89	4011.70	2008.83	35.13	-3.891	0.000	0.538
95.00	-14.49	-28.37	0.00	-923.44	0.00	923.44	2549.57	1274.78	3794.46	1900.05	39.32	-4.106	0.000	0.492
96.00	-14.31	-28.28	0.00	-895.07	0.00	895.07	2537.71	1268.86	3751.41	1878.49	40.19	-4.150	0.000	0.483
99.00	-12.09	-23.19	0.00	-810.21	0.00	810.21	2501.74	1250.87	3623.07	1814.23	42.84	-4.274	0.000	0.452
100.00	-11.86	-23.08	0.00	-787.03	0.00	787.03	2489.61	1244.80	3580.57	1792.94	43.73	-4.315	0.000	0.444
100.75	-11.66	-23.01	0.00	-769.72	0.00	769.72	1858.32	929.16	2706.71	1355.36	44.41	-4.346	0.000	0.575
105.00	-11.14	-22.59	0.00	-671.94	0.00	671.94	1825.33	912.67	2580.97	1292.40	48.36	-4.510	0.000	0.527
110.00	-10.54	-22.09	0.00	-559.01	0.00	559.01	1784.92	892.46	2434.45	1219.03	53.19	-4.725	0.000	0.465
115.00	-9.97	-21.61	0.00	-448.54	0.00	448.54	1742.78	871.39	2289.70	1146.55	58.25	-4.921	0.000	0.398
120.00	-9.45	-21.12	0.00	-340.50	0.00	340.50	1698.90	849.45	2146.98	1075.09	63.49	-5.092	0.000	0.323
121.00	-7.23	-15.96	0.00	-319.38	0.00	319.38	1689.92	844.96	2118.70	1060.93	64.56	-5.124	0.000	0.306
125.00	-6.88	-15.58	0.00	-255.54	0.00	255.54	1653.30	826.65	2006.56	1004.77	68.90	-5.239	0.000	0.259
128.00	-5.39	-14.00	0.00	-208.80	0.00	208.80	1625.10	812.55	1923.51	963.18	72.21	-5.315	0.000	0.220
129.00	-5.31	-13.91	0.00	-194.79	0.00	194.79	1615.56	807.78	1896.04	949.43	73.32	-5.339	0.000	0.209
129.00	-5.31	-13.91	0.00	-194.79	0.00	194.79	1091.97	545.98	1287.15	644.53	73.32	-5.339	0.000	0.308
130.00	-5.23	-13.83	0.00	-180.88	0.00	180.88	1086.82	543.41	1270.20	636.04	74.44	-5.362	0.000	0.290
135.00	-4.91	-13.39	0.00	-111.75	0.00	111.75	1060.04	530.02	1185.82	593.79	80.12	-5.483	0.000	0.193
139.00	-2.71	-7.30	0.00	-58.20	0.00	58.20	1037.37	518.68	1118.90	560.28	84.74	-5.547	0.000	0.107
140.00	-2.67	-7.22	0.00	-50.90	0.00	50.90	1031.53	515.76	1102.27	551.95	85.90	-5.558	0.000	0.095
145.00	-2.45	-6.81	0.00	-14.80	0.00	14.80	1001.28	500.64	1019.81	510.66	91.74	-5.594	0.000	0.032
147.00	-0.37	-0.52	0.00	-1.18	0.00	1.18	988.70	494.35	987.19	494.33	94.08	-5.598	0.000	0.003
149.00	0.00	-0.48	0.00	-0.14	0.00	0.14	975.84	487.92	954.81	478.11	96.42	-5.598	0.000	0.000

Wind Loading - Shaft

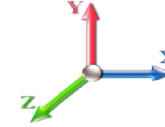
Structure: CT13056-A-SBA	Code: EIA/TIA-222-G	3/3/2020
Site Name: Moosehill	Exposure: C	
Height: 149.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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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 23

Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		1.00	0.85	5.168	5.68	0.00	1.200	0.000	0.00	0.000	0.00	0.0	0.0	0.0
5.00		1.00	0.85	5.168	5.68	0.00	1.200	1.242	5.00	25.704	30.84	175.3	458.6	1866.3
10.00		1.00	0.85	5.168	5.68	0.00	1.200	1.331	5.00	25.266	30.32	172.4	482.2	1860.5
15.00		1.00	0.85	5.168	5.68	0.00	1.200	1.386	5.00	24.801	29.76	169.2	492.1	1841.1
20.00		1.00	0.90	5.483	6.03	0.00	1.200	1.427	5.00	24.323	29.19	176.1	496.0	1815.6
25.00		1.00	0.95	5.747	6.32	0.00	1.200	1.459	5.00	23.838	28.61	180.8	496.4	1786.6
30.00		1.00	0.98	5.972	6.57	0.00	1.200	1.486	5.00	23.349	28.02	184.1	494.6	1755.4
35.00		1.00	1.01	6.169	6.79	0.00	1.200	1.509	5.00	22.856	27.43	186.1	491.0	1722.4
40.00		1.00	1.04	6.345	6.98	0.00	1.200	1.529	5.00	22.362	26.83	187.3	486.2	1688.3
45.00		1.00	1.07	6.504	7.15	0.00	1.200	1.547	5.00	21.865	26.24	187.7	480.4	1653.1
47.25	Bot - Section 2	1.00	1.08	6.571	7.23	0.00	1.200	1.555	2.25	9.675	11.61	83.9	214.9	733.0
50.00		1.00	1.09	6.650	7.32	0.00	1.200	1.564	2.75	11.834	14.20	103.9	264.0	1417.8
53.25	Top - Section 1	1.00	1.11	6.739	7.41	0.00	1.200	1.574	3.25	13.792	16.55	122.7	309.0	1651.5
55.00		1.00	1.12	6.785	7.46	0.00	1.200	1.579	1.75	7.338	8.81	65.7	165.5	492.4
60.00		1.00	1.14	6.910	7.60	0.00	1.200	1.592	5.00	20.632	24.76	188.2	464.9	1382.6
64.00	Appurtenance(s)	1.00	1.15	7.005	7.71	0.00	1.200	1.603	4.00	16.144	19.37	149.3	366.7	1083.2
65.00		1.00	1.16	7.028	7.73	0.00	1.200	1.605	1.00	3.985	4.78	37.0	91.3	268.0
65.50	Appurtenance(s)	1.00	1.16	7.039	7.74	0.00	1.200	1.606	0.50	1.985	2.38	18.4	45.6	133.5
70.00		1.00	1.17	7.138	7.85	0.00	1.200	1.617	4.50	17.644	21.17	166.2	403.1	1183.8
75.00		1.00	1.19	7.243	7.97	0.00	1.200	1.628	5.00	19.127	22.95	182.9	438.8	1283.0
80.00		1.00	1.21	7.342	8.08	0.00	1.200	1.639	5.00	18.625	22.35	180.5	429.3	1249.0
85.00		1.00	1.22	7.436	8.18	0.00	1.200	1.649	5.00	18.121	21.75	177.9	419.5	1214.8
90.00		1.00	1.24	7.526	8.28	0.00	1.200	1.658	5.00	17.618	21.14	175.0	409.5	1180.2
95.00		1.00	1.25	7.612	8.37	0.00	1.200	1.667	5.00	17.113	20.54	172.0	399.1	1145.4
96.00	Bot - Section 3	1.00	1.25	7.629	8.39	0.00	1.200	1.669	1.00	3.362	4.03	33.9	79.4	225.7
99.00	Appurtenance(s)	1.00	1.26	7.679	8.45	0.00	1.200	1.674	3.00	10.091	12.11	102.3	237.6	1022.5
100.00		1.00	1.27	7.695	8.46	0.00	1.200	1.676	1.00	3.323	3.99	33.8	78.8	336.9
100.75	Top - Section 2	1.00	1.27	7.707	8.48	0.00	1.200	1.677	0.75	2.479	2.97	25.2	58.8	251.3
105.00		1.00	1.28	7.774	8.55	0.00	1.200	1.684	4.25	13.836	16.60	142.0	325.6	806.3
110.00		1.00	1.29	7.851	8.64	0.00	1.200	1.692	5.00	15.811	18.97	163.8	372.1	919.5
115.00		1.00	1.30	7.925	8.72	0.00	1.200	1.699	5.00	15.305	18.37	160.1	361.0	888.7
120.00		1.00	1.32	7.996	8.80	0.00	1.200	1.707	5.00	14.800	17.76	156.2	349.7	857.8
121.00	Appurtenance(s)	1.00	1.32	8.010	8.81	0.00	1.200	1.708	1.00	2.899	3.48	30.6	69.5	168.8
125.00		1.00	1.33	8.065	8.87	0.00	1.200	1.714	4.00	11.394	13.67	121.3	270.6	659.8
128.00	Appurtenance(s)	1.00	1.33	8.105	8.92	0.00	1.200	1.718	3.00	8.333	10.00	89.2	198.7	482.5
129.00	Top - Section 3	1.00	1.34	8.119	8.93	0.00	1.200	1.719	1.00	2.737	3.28	29.3	65.8	158.8
130.00		1.00	1.34	8.132	8.95	0.00	1.200	1.720	1.00	2.717	3.26	29.2	65.3	134.6
135.00		1.00	1.35	8.197	9.02	0.00	1.200	1.727	5.00	13.282	15.94	143.7	314.8	652.6
139.00	Appurtenance(s)	1.00	1.36	8.247	9.07	0.00	1.200	1.732	4.00	10.260	12.31	111.7	244.2	503.9
140.00		1.00	1.36	8.260	9.09	0.00	1.200	1.733	1.00	2.514	3.02	27.4	60.6	124.0
145.00		1.00	1.37	8.321	9.15	0.00	1.200	1.739	5.00	12.269	14.72	134.8	290.8	599.2
147.00	Appurtenance(s)	1.00	1.37	8.345	9.18	0.00	1.200	1.742	2.00	4.765	5.72	52.5	114.4	233.6
149.00	Appurtenance(s)	1.00	1.38	8.369	9.21	0.00	1.200	1.744	2.00	4.684	5.62	51.7	112.4	229.3
Totals:									149.00			5,081.2	39,663.5	

Discrete Appurtenance Forces

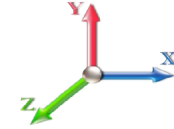
Structure: CT13056-A-SBA	Code: EIA/TIA-222-G	3/3/2020
Site Name: Moosehill	Exposure: C	
Height: 149.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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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 23

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	149.00	Decibel DB404-B	1	8.398	9.238	1.00	1.00	3.84	39.94	0.000	2.500	35.44	0.00	88.59
2	149.00	Pipe Mount	1	8.369	9.206	1.00	1.00	8.49	613.00	0.000	0.000	78.14	0.00	0.00
3	147.00	800MHz RRH w/ filter	3	8.345	9.180	0.90	0.90	12.88	438.98	0.000	0.000	118.26	0.00	0.00
4	147.00	RFS APXVTM14-C-120	3	8.345	9.180	0.71	0.90	15.89	681.67	0.000	0.000	145.89	0.00	0.00
5	147.00	RFS APXVSP18-C-A20	3	8.345	9.180	0.75	0.90	24.22	574.21	0.000	0.000	222.34	0.00	0.00
6	147.00	ALU 1900MHz RRH	3	8.345	9.180	0.60	0.90	9.38	391.63	0.000	0.000	86.14	0.00	0.00
7	147.00	ALU 800MHz RRH	3	8.345	9.180	0.60	0.90	6.87	380.54	0.000	0.000	63.02	0.00	0.00
8	147.00	ALU TD-RRH8x20-25	3	8.345	9.180	0.60	0.90	8.79	582.58	0.000	0.000	80.73	0.00	0.00
9	147.00	RFS ACU-A20-N	4	8.345	9.180	0.71	0.90	1.24	16.75	0.000	0.000	11.39	0.00	0.00
10	147.00	Argus LLPX310R	3	8.345	9.180	0.62	0.90	11.10	295.62	0.000	0.000	101.87	0.00	0.00
11	147.00	Andrew VHLP2-11	1	8.345	9.180	1.00	1.00	5.95	102.06	0.000	0.000	54.63	0.00	0.00
12	147.00	Andrew VHLP800-11-DW1	1	8.345	9.180	1.00	1.00	8.22	157.18	0.000	0.000	75.47	0.00	0.00
13	147.00	U-RAS Flexible RRH	3	8.345	9.180	0.78	1.00	7.70	308.13	0.000	0.000	70.66	0.00	0.00
14	147.00	12.5' Low Profile Platform	1	8.345	9.180	1.00	1.00	39.63	2806.27	0.000	0.000	363.75	0.00	0.00
15	139.00	Powerwave LGP21901	6	8.247	9.072	0.60	0.80	2.14	72.19	0.000	0.000	19.44	0.00	0.00
16	139.00	Ericsson RRUS-32 B2s	3	8.247	9.072	0.54	0.80	5.57	477.54	0.000	0.000	50.51	0.00	0.00
17	139.00	7770	3	8.247	9.072	0.58	0.80	11.49	527.75	0.000	0.000	104.21	0.00	0.00
18	139.00	Powerwave 7020.00 RET	12	8.247	9.072	0.54	0.80	5.66	118.78	0.000	0.000	51.36	0.00	0.00
19	139.00	Powerwave LGP13519	6	8.247	9.072	0.80	0.80	3.79	78.51	0.000	0.000	34.43	0.00	0.00
20	139.00	DMP65R-BU6DA	3	8.247	9.072	0.58	0.80	24.85	1140.73	0.000	0.000	225.48	0.00	0.00
21	139.00	HPA-65R-BUU-H6	3	8.247	9.072	0.68	0.80	22.47	921.35	0.000	0.000	203.86	0.00	0.00
22	139.00	Raycap DC6-48-60-18-8F	2	8.247	9.072	0.80	0.80	3.46	166.03	0.000	0.000	31.42	0.00	0.00
23	139.00	Commscope	3	8.247	9.072	0.78	0.80	0.57	14.82	0.000	0.000	5.14	0.00	0.00
24	139.00	4415 B30	3	8.247	9.072	0.54	0.80	3.46	259.77	0.000	0.000	31.38	0.00	0.00
25	139.00	4449 B5/B12	3	8.247	9.072	0.54	0.80	4.04	373.73	0.000	0.000	36.66	0.00	0.00
26	139.00	Low Profile Platform	1	8.247	9.072	1.00	1.00	39.53	2798.98	0.000	0.000	358.60	0.00	0.00
27	139.00	DC6-48-60-0-8C-EV	1	8.247	9.072	1.00	1.00	5.66	112.20	0.000	0.000	51.33	0.00	0.00
28	139.00	CBC23SR-43	3	8.247	9.072	0.56	0.80	1.18	43.61	0.000	0.000	10.69	0.00	0.00
29	139.00	SDARS XM Remote	3	8.247	9.072	0.79	0.80	5.92	794.10	0.000	0.000	53.70	0.00	0.00
30	128.00	Low Profile Platform	1	8.105	8.916	1.00	1.00	39.38	2788.32	0.000	0.000	351.14	0.00	0.00
31	121.00	Commscope LNX-6515DS	3	8.010	8.811	0.64	0.80	28.16	655.90	0.000	0.000	248.13	0.00	0.00
32	121.00	Ericsson AIR21 B4A/B12P	3	8.010	8.811	0.71	0.80	28.11	1277.37	0.000	0.000	247.72	0.00	0.00
33	121.00	Ericsson Air 21 B2A/B4P	3	8.010	8.811	0.69	0.80	14.78	823.25	0.000	0.000	130.26	0.00	0.00
34	121.00	Low Profile Platform	1	8.010	8.811	1.00	1.00	39.29	2781.09	0.000	0.000	346.15	0.00	0.00
35	121.00	Ericsson S11B12	3	8.010	8.811	0.56	0.80	5.86	339.67	0.000	0.000	51.62	0.00	0.00
36	121.00	Ericsson KRY 112 144/1	3	8.010	8.811	0.56	0.80	1.47	61.96	0.000	0.000	12.95	0.00	0.00
37	121.00	SitePro PRK1245	1	8.010	8.811	1.00	1.00	8.42	606.96	0.000	0.000	74.16	0.00	0.00
38	99.00	BXA-171063-12BF	1	7.679	8.447	0.67	0.80	4.70	81.87	0.000	0.000	39.70	0.00	0.00
39	99.00	Antel BXA-70063-6CF	1	7.679	8.447	0.58	0.80	5.12	186.04	0.000	0.000	43.29	0.00	0.00
40	99.00	RFS APL866513-42T0	4	7.679	8.447	0.74	0.80	17.37	369.20	0.000	0.000	146.73	0.00	0.00
41	99.00	Antel LPA-80063-6CF	2	7.679	8.447	0.74	0.80	18.45	416.68	0.000	0.000	155.86	0.00	0.00
42	99.00	Antel BXA-171063-8BF	2	7.679	8.447	0.67	0.80	6.09	113.35	0.000	0.000	51.43	0.00	0.00
43	99.00	Antel BXA-70063-4CF	1	7.679	8.447	0.58	0.80	3.79	80.48	0.000	0.000	32.03	0.00	0.00
44	99.00	RFS DB-T1-6Z-8AB-OZ	1	7.679	8.447	0.57	0.80	3.20	159.56	0.000	0.000	27.04	0.00	0.00
45	99.00	Swedcom SCLP 2x6014F	1	7.679	8.447	0.71	0.80	6.04	142.67	0.000	0.000	51.00	0.00	0.00
46	99.00	Kathrein	3	7.679	8.447	0.62	0.80	25.34	603.29	0.000	0.000	214.07	0.00	0.00
47	99.00	ALU RRH2x40-AWS	3	7.679	8.447	0.54	0.80	5.94	280.96	0.000	0.000	50.16	0.00	0.00

Discrete Appurtenance Forces

Structure: CT13056-A-SBA	Code: EIA/TIA-222-G	3/3/2020
Site Name: Moosehill	Exposure: C	
Height: 149.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Page: 25
	Struct Class: II	



48	99.00	RFS FD9R6004/2C-3L	6	7.679	8.447	0.80	0.80	3.77	54.72	0.000	0.000	31.84	0.00	0.00
49	99.00	12.5' Low Profile Platform	1	7.679	8.447	0.80	0.80	31.15	2755.64	0.000	0.000	263.15	0.00	0.00
50	65.50	Decibel 26OB	1	7.039	7.743	0.80	0.80	4.17	170.64	0.000	0.000	32.29	0.00	0.00
51	64.00	3 ft Standoff	1	7.005	7.705	1.00	1.00	8.11	98.73	0.000	0.000	62.50	0.00	0.00

Totals:	30,136.98	5,439.15
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Total Applied Force Summary

Structure: CT13056-A-SBA	Code: EIA/TIA-222-G	3/3/2020
Site Name: Moosehill	Exposure: C	
Height: 149.00 (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 23

Elev (ft)	Description	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00		0.00	0.00	0.00	0.00
5.00		175.34	2343.83	0.00	0.00
10.00		172.36	2352.83	0.00	0.00
15.00		169.18	2342.66	0.00	0.00
20.00		176.05	2324.09	0.00	0.00
25.00		180.84	2300.66	0.00	0.00
30.00		184.06	2274.04	0.00	0.00
35.00		186.12	2245.14	0.00	0.00
40.00		187.29	2214.50	0.00	0.00
45.00		187.73	2182.51	0.00	0.00
47.25		83.93	971.84	0.00	0.00
50.00		103.88	1710.52	0.00	0.00
53.25		122.68	1998.65	0.00	0.00
55.00		65.72	679.66	0.00	0.00
60.00		188.20	1920.00	0.00	0.00
64.00	(1) attachments	211.78	1613.28	0.00	0.00
65.00		36.97	371.75	0.00	0.00
65.50	(1) attachments	50.74	356.09	0.00	0.00
70.00		166.25	1652.37	0.00	0.00
75.00		182.87	1805.33	0.00	0.00
80.00		180.49	1773.02	0.00	0.00
85.00		177.87	1740.31	0.00	0.00
90.00		175.02	1707.24	0.00	0.00
95.00		171.96	1673.84	0.00	0.00
96.00		33.85	331.47	0.00	0.00
99.00	(26) attachments	1208.57	6584.74	0.00	0.00
100.00		33.75	388.23	0.00	0.00
100.75		25.22	289.79	0.00	0.00
105.00		141.99	1024.76	0.00	0.00
110.00		163.85	1176.88	0.00	0.00
115.00		160.10	1146.48	0.00	0.00
120.00		156.21	1115.90	0.00	0.00
121.00	(17) attachments	1141.64	6766.58	0.00	0.00
125.00		121.30	801.37	0.00	0.00
128.00	(1) attachments	440.30	3377.04	0.00	0.00
129.00		29.33	194.22	0.00	0.00
130.00		29.16	170.08	0.00	0.00
135.00		143.71	830.08	0.00	0.00
139.00	(55) attachments	1379.92	8546.13	0.00	0.00
140.00		27.41	141.60	0.00	0.00
145.00		134.76	687.41	0.00	0.00
147.00	(31) attachments	1446.63	7004.57	0.00	0.00
149.00	(2) attachments	165.32	883.52	0.00	88.59
Totals:		10,520.37	82,015.00	0.00	88.59

Linear Appurtenance Segment Forces (Factored)

Structure: CT13056-A-SBA	Code: EIA/TIA-222-G	3/3/2020
Site Name: Moosehill	Exposure: C	
Height: 149.00 (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 23

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
5.00	1 1/4" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	5.168	0.00	59.22
5.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	5.168	0.00	218.70
5.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	5.168	0.00	13.70
10.00	1 1/4" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	5.168	0.00	62.77
10.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	5.168	0.00	228.34
10.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	5.168	0.00	15.33
15.00	1 1/4" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	5.168	0.00	65.01
15.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	5.168	0.00	234.34
15.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	5.168	0.00	16.38
20.00	1 1/4" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	5.483	0.00	66.68
20.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	5.483	0.00	238.78
20.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	5.483	0.00	17.18
25.00	1 1/4" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	5.747	0.00	68.03
25.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	5.747	0.00	242.32
25.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	5.747	0.00	17.83
30.00	1 1/4" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	5.972	0.00	69.16
30.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	5.972	0.00	245.28
30.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	5.972	0.00	18.38
35.00	1 1/4" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	6.169	0.00	70.14
35.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	6.169	0.00	247.84
35.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	6.169	0.00	18.86
40.00	1 1/4" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	6.345	0.00	71.00
40.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	6.345	0.00	250.09
40.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	6.345	0.00	19.29
45.00	1 1/4" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	6.504	0.00	71.78
45.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	6.504	0.00	252.10
45.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	6.504	0.00	19.67
47.25	1 1/4" Coax	Yes	2.25	0.000	0.00	0.00	0.00	0.000	0.000	6.571	0.00	32.45
47.25	1 5/8" Coax	Yes	2.25	0.000	0.00	0.00	0.00	0.000	0.000	6.571	0.00	113.82
47.25	1/2" Coax	Yes	2.25	0.000	0.00	0.00	0.00	0.000	0.000	6.571	0.00	8.93
50.00	1 1/4" Coax	Yes	2.75	0.000	0.00	0.00	0.00	0.000	0.000	6.650	0.00	39.87
50.00	1 5/8" Coax	Yes	2.75	0.000	0.00	0.00	0.00	0.000	0.000	6.650	0.00	139.66
50.00	1/2" Coax	Yes	2.75	0.000	0.00	0.00	0.00	0.000	0.000	6.650	0.00	11.01
53.25	1 1/4" Coax	Yes	3.25	0.000	0.00	0.00	0.00	0.000	0.000	6.739	0.00	47.39
53.25	1 5/8" Coax	Yes	3.25	0.000	0.00	0.00	0.00	0.000	0.000	6.739	0.00	165.77
53.25	1/2" Coax	Yes	3.25	0.000	0.00	0.00	0.00	0.000	0.000	6.739	0.00	13.16
55.00	1 1/4" Coax	Yes	1.75	0.000	0.00	0.00	0.00	0.000	0.000	6.785	0.00	25.60
55.00	1 5/8" Coax	Yes	1.75	0.000	0.00	0.00	0.00	0.000	0.000	6.785	0.00	89.46
55.00	1/2" Coax	Yes	1.75	0.000	0.00	0.00	0.00	0.000	0.000	6.785	0.00	7.12
60.00	1 1/4" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	6.910	0.00	73.73
60.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	6.910	0.00	257.14
60.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	6.910	0.00	20.65
64.00	1 1/4" Coax	Yes	4.00	0.000	0.00	0.00	0.00	0.000	0.000	7.005	0.00	59.35
64.00	1 5/8" Coax	Yes	4.00	0.000	0.00	0.00	0.00	0.000	0.000	7.005	0.00	206.63
64.00	1/2" Coax	Yes	4.00	0.000	0.00	0.00	0.00	0.000	0.000	7.005	0.00	16.70
65.00	1 1/4" Coax	Yes	1.00	0.000	0.00	0.00	0.00	0.000	0.000	7.028	0.00	14.86
65.00	1 5/8" Coax	Yes	1.00	0.000	0.00	0.00	0.00	0.000	0.000	7.028	0.00	51.71

Linear Appurtenance Segment Forces (Factored)

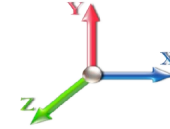
Structure: CT13056-A-SBA	Code: EIA/TIA-222-G	3/3/2020
Site Name: Moosehill	Exposure: C	
Height: 149.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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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 23

Top Elev (ft)	Description	Wind Exposed	Length (ft)	Ca	Exposed Width (in)	Area (sqft)	CaAa (sqft)	Ra	Cf Adjust Factor	qz (psf)	F X (lb)	Dead Load (lb)
65.50	1 1/4" Coax	Yes	0.50	0.000	0.00	0.00	0.00	0.000	0.000	7.039	0.00	7.43
65.50	1 5/8" Coax	Yes	0.50	0.000	0.00	0.00	0.00	0.000	0.000	7.039	0.00	25.87
70.00	1 1/4" Coax	Yes	4.50	0.000	0.00	0.00	0.00	0.000	0.000	7.138	0.00	67.33
70.00	1 5/8" Coax	Yes	4.50	0.000	0.00	0.00	0.00	0.000	0.000	7.138	0.00	233.92
75.00	1 1/4" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	7.243	0.00	75.31
75.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	7.243	0.00	261.17
80.00	1 1/4" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	7.342	0.00	75.77
80.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	7.342	0.00	262.35
85.00	1 1/4" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	7.436	0.00	76.21
85.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	7.436	0.00	263.47
90.00	1 1/4" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	7.526	0.00	76.63
90.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	7.526	0.00	264.54
95.00	1 1/4" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	7.612	0.00	77.03
95.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	7.612	0.00	265.55
96.00	1 1/4" Coax	Yes	1.00	0.000	0.00	0.00	0.00	0.000	0.000	7.629	0.00	15.42
96.00	1 5/8" Coax	Yes	1.00	0.000	0.00	0.00	0.00	0.000	0.000	7.629	0.00	53.15
99.00	1 1/4" Coax	Yes	3.00	0.000	0.00	0.00	0.00	0.000	0.000	7.679	0.00	46.40
99.00	1 5/8" Coax	Yes	3.00	0.000	0.00	0.00	0.00	0.000	0.000	7.679	0.00	159.80
100.00	1 1/4" Coax	Yes	1.00	0.000	0.00	0.00	0.00	0.000	0.000	7.695	0.00	15.48
100.75	1 1/4" Coax	Yes	0.75	0.000	0.00	0.00	0.00	0.000	0.000	7.707	0.00	11.62
105.00	1 1/4" Coax	Yes	4.25	0.000	0.00	0.00	0.00	0.000	0.000	7.774	0.00	66.11
110.00	1 1/4" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	7.851	0.00	78.13
115.00	1 1/4" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	7.925	0.00	78.47
120.00	1 1/4" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	7.996	0.00	78.79
121.00	1 1/4" Coax	Yes	1.00	0.000	0.00	0.00	0.00	0.000	0.000	8.010	0.00	15.77
125.00	1 1/4" Coax	Yes	4.00	0.000	0.00	0.00	0.00	0.000	0.000	8.065	0.00	63.29
128.00	1 1/4" Coax	Yes	3.00	0.000	0.00	0.00	0.00	0.000	0.000	8.105	0.00	47.58
129.00	1 1/4" Coax	Yes	1.00	0.000	0.00	0.00	0.00	0.000	0.000	8.119	0.00	15.87
130.00	1 1/4" Coax	Yes	1.00	0.000	0.00	0.00	0.00	0.000	0.000	8.132	0.00	15.88
135.00	1 1/4" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	8.197	0.00	79.71
139.00	1 1/4" Coax	Yes	4.00	0.000	0.00	0.00	0.00	0.000	0.000	8.247	0.00	63.95
140.00	1 1/4" Coax	Yes	1.00	0.000	0.00	0.00	0.00	0.000	0.000	8.260	0.00	16.00
145.00	1 1/4" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	8.321	0.00	80.27
147.00	1 1/4" Coax	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	8.345	0.00	32.15
Totals:											0.0	7,379.6

Calculated Forces

Structure: CT13056-A-SBA	Code: EIA/TIA-222-G	3/3/2020
Site Name: Moosehill	Exposure: C	
Height: 149.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II

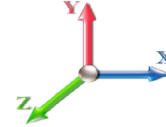


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Load Case: 1.2D + 1.0Di + 1.0Wi 50 mph Wind

Iterations 23

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	-82.01	-10.56	0.00	-1145.6	0.00	1145.69	4419.23	2209.62	10644.5	5330.19	0.00	0.000	0.000	0.234
5.00	-79.66	-10.46	0.00	-1092.9	0.00	1092.90	4369.00	2184.50	10304.7	5160.05	0.03	-0.053	0.000	0.230
10.00	-77.29	-10.35	0.00	-1040.6	0.00	1040.62	4317.04	2158.52	9966.05	4990.43	0.11	-0.106	0.000	0.226
15.00	-74.94	-10.25	0.00	-988.85	0.00	988.85	4263.35	2131.68	9628.61	4821.46	0.25	-0.161	0.000	0.223
20.00	-72.61	-10.14	0.00	-937.60	0.00	937.60	4207.92	2103.96	9292.72	4653.26	0.45	-0.216	0.000	0.219
25.00	-70.30	-10.01	0.00	-886.92	0.00	886.92	4150.77	2075.38	8958.64	4485.98	0.71	-0.271	0.000	0.215
30.00	-68.02	-9.89	0.00	-836.85	0.00	836.85	4091.88	2045.94	8626.63	4319.73	1.02	-0.328	0.000	0.210
35.00	-65.76	-9.75	0.00	-787.42	0.00	787.42	4031.25	2015.63	8296.96	4154.65	1.40	-0.385	0.000	0.206
40.00	-63.54	-9.61	0.00	-738.66	0.00	738.66	3968.90	1984.45	7969.88	3990.86	1.83	-0.442	0.000	0.201
45.00	-61.35	-9.45	0.00	-690.60	0.00	690.60	3904.81	1952.40	7645.65	3828.51	2.32	-0.500	0.000	0.196
47.25	-60.38	-9.39	0.00	-669.34	0.00	669.34	3875.40	1937.70	7500.75	3755.95	2.57	-0.527	0.000	0.194
50.00	-58.66	-9.31	0.00	-643.51	0.00	643.51	3838.99	1919.49	7324.54	3667.71	2.88	-0.560	0.000	0.191
53.25	-56.66	-9.19	0.00	-613.27	0.00	613.27	2982.57	1491.28	5685.98	2847.22	3.28	-0.598	0.000	0.234
55.00	-55.97	-9.16	0.00	-597.18	0.00	597.18	2966.84	1483.42	5604.01	2806.17	3.50	-0.619	0.000	0.232
60.00	-54.05	-9.01	0.00	-551.36	0.00	551.36	2920.75	1460.37	5370.68	2689.33	4.18	-0.687	0.000	0.224
64.00	-52.43	-8.81	0.00	-515.31	0.00	515.31	2882.62	1441.31	5185.10	2596.40	4.78	-0.741	0.000	0.217
65.00	-52.06	-8.78	0.00	-506.50	0.00	506.50	2872.92	1436.46	5138.87	2573.25	4.94	-0.755	0.000	0.215
65.50	-51.70	-8.75	0.00	-502.12	0.00	502.12	2868.04	1434.02	5115.78	2561.69	5.02	-0.762	0.000	0.214
70.00	-50.04	-8.62	0.00	-462.73	0.00	462.73	2823.36	1411.68	4908.84	2458.07	5.77	-0.822	0.000	0.206
75.00	-48.23	-8.47	0.00	-419.63	0.00	419.63	2772.06	1386.03	4680.84	2343.90	6.66	-0.888	0.000	0.196
80.00	-46.45	-8.31	0.00	-377.31	0.00	377.31	2719.04	1359.52	4455.15	2230.89	7.63	-0.953	0.000	0.186
85.00	-44.70	-8.15	0.00	-335.77	0.00	335.77	2664.28	1332.14	4232.01	2119.15	8.66	-1.017	0.000	0.175
90.00	-42.99	-7.99	0.00	-295.02	0.00	295.02	2607.79	1303.89	4011.70	2008.83	9.76	-1.079	0.000	0.163
95.00	-41.31	-7.81	0.00	-255.08	0.00	255.08	2549.57	1274.78	3794.46	1900.05	10.92	-1.139	0.000	0.150
96.00	-40.98	-7.79	0.00	-247.27	0.00	247.27	2537.71	1268.86	3751.41	1878.49	11.16	-1.151	0.000	0.148
99.00	-34.42	-6.46	0.00	-223.91	0.00	223.91	2501.74	1250.87	3623.07	1814.23	11.90	-1.185	0.000	0.137
100.00	-34.03	-6.42	0.00	-217.45	0.00	217.45	2489.61	1244.80	3580.57	1792.94	12.15	-1.196	0.000	0.135
100.75	-33.74	-6.41	0.00	-212.64	0.00	212.64	1858.32	929.16	2706.71	1355.36	12.34	-1.205	0.000	0.175
105.00	-32.71	-6.27	0.00	-185.41	0.00	185.41	1825.33	912.67	2580.97	1292.40	13.43	-1.250	0.000	0.161
110.00	-31.53	-6.11	0.00	-154.05	0.00	154.05	1784.92	892.46	2434.45	1219.03	14.77	-1.309	0.000	0.144
115.00	-30.38	-5.95	0.00	-123.48	0.00	123.48	1742.78	871.39	2289.70	1146.55	16.17	-1.363	0.000	0.125
120.00	-29.27	-5.78	0.00	-93.72	0.00	93.72	1698.90	849.45	2146.98	1075.09	17.63	-1.410	0.000	0.104
121.00	-22.53	-4.48	0.00	-87.93	0.00	87.93	1689.92	844.96	2118.70	1060.93	17.92	-1.419	0.000	0.096
125.00	-21.73	-4.35	0.00	-70.00	0.00	70.00	1653.30	826.65	2006.56	1004.77	19.13	-1.451	0.000	0.083
128.00	-18.37	-3.83	0.00	-56.94	0.00	56.94	1625.10	812.55	1923.51	963.18	20.05	-1.472	0.000	0.070
129.00	-18.17	-3.80	0.00	-53.11	0.00	53.11	1615.56	807.78	1896.04	949.43	20.35	-1.478	0.000	0.067
129.00	-18.17	-3.80	0.00	-53.11	0.00	53.11	1091.97	545.98	1287.15	644.53	20.35	-1.478	0.000	0.099
130.00	-18.00	-3.77	0.00	-49.31	0.00	49.31	1086.82	543.41	1270.20	636.04	20.67	-1.485	0.000	0.094
135.00	-17.17	-3.61	0.00	-30.46	0.00	30.46	1060.04	530.02	1185.82	593.79	22.24	-1.517	0.000	0.068
139.00	-8.67	-2.01	0.00	-16.01	0.00	16.01	1037.37	518.68	1118.90	560.28	23.52	-1.535	0.000	0.037
140.00	-8.53	-1.98	0.00	-14.00	0.00	14.00	1031.53	515.76	1102.27	551.95	23.84	-1.538	0.000	0.034
145.00	-7.84	-1.82	0.00	-4.12	0.00	4.12	1001.28	500.64	1019.81	510.66	25.46	-1.548	0.000	0.016
147.00	-0.88	-0.19	0.00	-0.47	0.00	0.47	988.70	494.35	987.19	494.33	26.11	-1.549	0.000	0.002
149.00	0.00	-0.17	0.00	-0.09	0.00	0.09	975.84	487.92	954.81	478.11	26.76	-1.549	0.000	0.000

Seismic Segment Forces (Factored)

Structure: CT13056-A-SBA	Code: EIA/TIA-222-G	3/3/2020
Site Name: Moosehill	Exposure: C	
Height: 149.00 (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 21

Gust Response Factor 1.10	Sds 0.22	Ss 0.21	
Dead Load Factor 1.20	Seismic Load Factor 1.00	Sd1 0.10	
Wind Load Factor 0.00	Structure Frequency (f1) 0.38	S1 0.07	
	SA 0.04	Seismic Importance Factor 1.00	

Top Elev (ft)	Description	Wz (lb)	a	b	c	Lateral Fs (lb)	R: 1.50
0.00		0.00	0.00	0.00	0.00	0.00	
5.00		1173.0	0.00	0.03	0.02	25.02	
10.00		1148.6	0.01	0.05	0.03	35.38	
15.00		1124.1	0.02	0.06	0.04	39.83	
20.00		1099.6	0.03	0.07	0.04	41.57	
25.00		1075.1	0.05	0.07	0.04	42.12	
30.00		1050.6	0.08	0.07	0.04	42.25	
35.00		1026.1	0.10	0.07	0.04	42.28	
40.00		1001.6	0.14	0.07	0.03	42.22	
45.00		977.20	0.17	0.07	0.03	41.84	
47.25	Bot - Section 2	431.75	0.19	0.06	0.02	18.53	
50.00		961.48	0.21	0.06	0.02	41.09	
53.25	Top - Section 1	1118.7	0.24	0.06	0.02	46.94	
55.00		272.47	0.26	0.05	0.02	11.23	
60.00		764.72	0.31	0.04	0.01	28.56	
64.00	Appurtenance(s)	637.08	0.35	0.03	0.01	20.37	
65.00		147.23	0.36	0.03	0.01	4.46	
65.50	Appurtenance(s)	123.31	0.37	0.03	0.01	3.62	
70.00		650.60	0.42	0.01	0.01	12.62	
75.00		703.50	0.48	-0.01	0.01	3.60	
80.00		683.09	0.54	-0.03	0.01	-7.36	
85.00		662.69	0.62	-0.06	0.02	-16.92	
90.00		642.28	0.69	-0.08	0.03	-23.48	
95.00		621.88	0.77	-0.11	0.05	-26.26	
96.00	Bot - Section 3	121.93	0.78	-0.11	0.05	-5.20	
99.00	Appurtenance(s)	2695.2	0.83	-0.12	0.06	-114.48	
100.00		215.11	0.85	-0.12	0.07	-9.02	
100.75	Top - Section 2	160.37	0.86	-0.12	0.07	-6.63	
105.00		400.54	0.94	-0.12	0.10	-14.27	
110.00		456.12	1.03	-0.10	0.15	-10.68	
115.00		439.80	1.13	-0.05	0.20	-2.37	
120.00		423.47	1.23	0.03	0.27	7.80	
121.00	Appurtenance(s)	2911.6	1.25	0.05	0.29	69.52	
125.00		324.41	1.33	0.16	0.36	15.59	
128.00	Appurtenance(s)	1736.4	1.39	0.27	0.43	119.23	
129.00	Top - Section 3	77.51	1.42	0.32	0.45	5.89	
130.00		57.77	1.44	0.36	0.47	4.83	
135.00		281.51	1.55	0.64	0.61	35.23	
139.00	Appurtenance(s)	3001.8	1.64	0.92	0.73	488.85	
140.00		52.87	1.67	1.01	0.77	9.14	
145.00		257.02	1.79	1.49	0.96	58.32	
147.00	Appurtenance(s)	2981.6	1.84	1.72	1.05	746.43	
149.00	Appurtenance(s)	461.42	1.89	1.98	1.14	126.79	
Totals:		35,153.9				1,994.5	Total Wind: 37,998.9

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

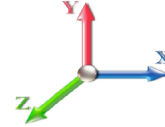
Calculated Forces

Structure: CT13056-A-SBA	Code: EIA/TIA-222-G	3/3/2020
Site Name: Moosehill	Exposure: C	
Height: 149.00 (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 21
Gust Response Factor 1.10						Sds 0.22				Ss 0.21
Dead Load Factor 1.20		Seismic Load Factor 1.00		Sd1 0.10				S1 0.07		
Wind Load Factor 0.00		Structure Frequency (f1) 0.38		SA 0.04		Seismic Importance Factor 1.00				



Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-48.98	-2.24	0.00	-270.02	0.00	270.02	4419.23	2209.62	10644.5	5330.19	0.00	0.00	0.00	0.062
5.00	-47.29	-2.22	0.00	-258.85	0.00	258.85	4369.00	2184.50	10304.7	5160.05	0.01	-0.01	0.061	
10.00	-45.64	-2.19	0.00	-247.75	0.00	247.75	4317.04	2158.52	9966.05	4990.43	0.03	-0.03	0.060	
15.00	-44.01	-2.16	0.00	-236.77	0.00	236.77	4263.35	2131.68	9628.61	4821.46	0.06	-0.04	0.059	
20.00	-42.41	-2.13	0.00	-225.95	0.00	225.95	4207.92	2103.96	9292.72	4653.26	0.11	-0.05	0.059	
25.00	-40.85	-2.10	0.00	-215.30	0.00	215.30	4150.77	2075.38	8958.64	4485.98	0.17	-0.06	0.058	
30.00	-39.31	-2.06	0.00	-204.81	0.00	204.81	4091.88	2045.94	8626.63	4319.73	0.24	-0.08	0.057	
35.00	-37.80	-2.03	0.00	-194.50	0.00	194.50	4031.25	2015.63	8296.96	4154.65	0.33	-0.09	0.056	
40.00	-36.32	-1.99	0.00	-184.37	0.00	184.37	3968.90	1984.45	7969.88	3990.86	0.44	-0.11	0.055	
45.00	-34.87	-1.95	0.00	-174.41	0.00	174.41	3904.81	1952.40	7645.65	3828.51	0.56	-0.12	0.054	
47.25	-34.22	-1.94	0.00	-170.02	0.00	170.02	3875.40	1937.70	7500.75	3755.95	0.62	-0.13	0.054	
50.00	-32.92	-1.90	0.00	-164.69	0.00	164.69	3838.99	1919.49	7324.54	3667.71	0.69	-0.14	0.053	
53.25	-31.39	-1.85	0.00	-158.51	0.00	158.51	2982.57	1491.28	5685.98	2847.22	0.79	-0.15	0.066	
55.00	-30.97	-1.85	0.00	-155.27	0.00	155.27	2966.84	1483.42	5604.01	2806.17	0.84	-0.15	0.066	
60.00	-29.77	-1.82	0.00	-146.04	0.00	146.04	2920.75	1460.37	5370.68	2689.33	1.01	-0.17	0.064	
64.00	-28.79	-1.80	0.00	-138.75	0.00	138.75	2882.62	1441.31	5185.10	2596.40	1.16	-0.18	0.063	
65.00	-28.55	-1.80	0.00	-136.95	0.00	136.95	2872.92	1436.46	5138.87	2573.25	1.20	-0.19	0.063	
65.50	-28.38	-1.80	0.00	-136.05	0.00	136.05	2868.04	1434.02	5115.78	2561.69	1.22	-0.19	0.063	
70.00	-27.35	-1.79	0.00	-127.94	0.00	127.94	2823.36	1411.68	4908.84	2458.07	1.41	-0.21	0.062	
75.00	-26.23	-1.79	0.00	-118.98	0.00	118.98	2772.06	1386.03	4680.84	2343.90	1.63	-0.22	0.060	
80.00	-25.13	-1.80	0.00	-110.01	0.00	110.01	2719.04	1359.52	4455.15	2230.89	1.88	-0.24	0.059	
85.00	-24.06	-1.80	0.00	-101.02	0.00	101.02	2664.28	1332.14	4232.01	2119.15	2.14	-0.26	0.057	
90.00	-23.01	-1.80	0.00	-92.02	0.00	92.02	2607.79	1303.89	4011.70	2008.83	2.43	-0.28	0.055	
95.00	-21.99	-1.80	0.00	-83.00	0.00	83.00	2549.57	1274.78	3794.46	1900.05	2.73	-0.30	0.052	
96.00	-21.79	-1.80	0.00	-81.20	0.00	81.20	2537.71	1268.86	3751.41	1878.49	2.80	-0.30	0.052	
99.00	-18.38	-1.79	0.00	-75.79	0.00	75.79	2501.74	1250.87	3623.07	1814.23	2.99	-0.32	0.049	
100.00	-18.09	-1.79	0.00	-74.00	0.00	74.00	2489.61	1244.80	3580.57	1792.94	3.06	-0.32	0.049	
100.75	-17.87	-1.79	0.00	-72.66	0.00	72.66	1858.32	929.16	2706.71	1355.36	3.11	-0.32	0.063	
105.00	-17.22	-1.79	0.00	-65.05	0.00	65.05	1825.33	912.67	2580.97	1292.40	3.40	-0.34	0.060	
110.00	-16.48	-1.79	0.00	-56.10	0.00	56.10	1784.92	892.46	2434.45	1219.03	3.77	-0.36	0.055	
115.00	-15.75	-1.79	0.00	-47.13	0.00	47.13	1742.78	871.39	2289.70	1146.55	4.15	-0.38	0.050	
120.00	-15.05	-1.78	0.00	-38.16	0.00	38.16	1698.90	849.45	2146.98	1075.09	4.56	-0.40	0.044	
121.00	-11.52	-1.69	0.00	-36.38	0.00	36.38	1689.92	844.96	2118.70	1060.93	4.65	-0.40	0.041	
125.00	-11.04	-1.67	0.00	-29.61	0.00	29.61	1653.30	826.65	2006.56	1004.77	4.99	-0.41	0.036	
128.00	-8.88	-1.54	0.00	-24.59	0.00	24.59	1625.10	812.55	1923.51	963.18	5.25	-0.42	0.031	
129.00	-8.77	-1.53	0.00	-23.05	0.00	23.05	1615.56	807.78	1896.04	949.43	5.34	-0.43	0.030	
129.00	-8.77	-1.53	0.00	-23.05	0.00	23.05	1091.97	545.98	1287.15	644.53	5.34	-0.43	0.044	
130.00	-8.68	-1.53	0.00	-21.51	0.00	21.51	1086.82	543.41	1270.20	636.04	5.43	-0.43	0.042	
135.00	-8.22	-1.49	0.00	-13.86	0.00	13.86	1060.04	530.02	1185.82	593.79	5.89	-0.44	0.031	
139.00	-4.54	-0.98	0.00	-7.89	0.00	7.89	1037.37	518.68	1118.90	560.28	6.26	-0.45	0.018	
140.00	-4.47	-0.97	0.00	-6.91	0.00	6.91	1031.53	515.76	1102.27	551.95	6.36	-0.45	0.017	
145.00	-4.14	-0.91	0.00	-2.07	0.00	2.07	1001.28	500.64	1019.81	510.66	6.84	-0.46	0.008	
147.00	-0.55	-0.13	0.00	-0.26	0.00	0.26	988.70	494.35	987.19	494.33	7.03	-0.46	0.001	
149.00	0.00	-0.13	0.00	0.00	0.00	0.00	975.84	487.92	954.81	478.11	7.22	-0.46	0.000	

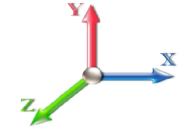
Seismic Segment Forces (Factored)

Structure: CT13056-A-SBA	Code: EIA/TIA-222-G	3/3/2020
Site Name: Moosehill	Exposure: C	
Height: 149.00 (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 21
Gust Response Factor 1.10	Sds 0.22	Ss 0.21
Dead Load Factor 0.90	Seismic Load Factor 1.00	S1 0.07
Wind Load Factor 0.00	Structure Frequency (f1) 0.38	SA 0.04
		Seismic Importance Factor 1.00



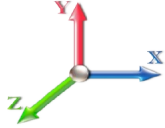
Top Elev (ft)	Description	Wz (lb)	a	b	c	Lateral Fs (lb)	R: 1.50
0.00		0.00	0.00	0.00	0.00	0.00	
5.00		1173.0	0.00	0.03	0.02	25.02	
10.00		1148.6	0.01	0.05	0.03	35.38	
15.00		1124.1	0.02	0.06	0.04	39.83	
20.00		1099.6	0.03	0.07	0.04	41.57	
25.00		1075.1	0.05	0.07	0.04	42.12	
30.00		1050.6	0.08	0.07	0.04	42.25	
35.00		1026.1	0.10	0.07	0.04	42.28	
40.00		1001.6	0.14	0.07	0.03	42.22	
45.00		977.20	0.17	0.07	0.03	41.84	
47.25	Bot - Section 2	431.75	0.19	0.06	0.02	18.53	
50.00		961.48	0.21	0.06	0.02	41.09	
53.25	Top - Section 1	1118.7	0.24	0.06	0.02	46.94	
55.00		272.47	0.26	0.05	0.02	11.23	
60.00		764.72	0.31	0.04	0.01	28.56	
64.00	Appurtenance(s)	637.08	0.35	0.03	0.01	20.37	
65.00		147.23	0.36	0.03	0.01	4.46	
65.50	Appurtenance(s)	123.31	0.37	0.03	0.01	3.62	
70.00		650.60	0.42	0.01	0.01	12.62	
75.00		703.50	0.48	-0.01	0.01	3.60	
80.00		683.09	0.54	-0.03	0.01	-7.36	
85.00		662.69	0.62	-0.06	0.02	-16.92	
90.00		642.28	0.69	-0.08	0.03	-23.48	
95.00		621.88	0.77	-0.11	0.05	-26.26	
96.00	Bot - Section 3	121.93	0.78	-0.11	0.05	-5.20	
99.00	Appurtenance(s)	2695.2	0.83	-0.12	0.06	-114.48	
100.00		215.11	0.85	-0.12	0.07	-9.02	
100.75	Top - Section 2	160.37	0.86	-0.12	0.07	-6.63	
105.00		400.54	0.94	-0.12	0.10	-14.27	
110.00		456.12	1.03	-0.10	0.15	-10.68	
115.00		439.80	1.13	-0.05	0.20	-2.37	
120.00		423.47	1.23	0.03	0.27	7.80	
121.00	Appurtenance(s)	2911.6	1.25	0.05	0.29	69.52	
125.00		324.41	1.33	0.16	0.36	15.59	
128.00	Appurtenance(s)	1736.4	1.39	0.27	0.43	119.23	
129.00	Top - Section 3	77.51	1.42	0.32	0.45	5.89	
130.00		57.77	1.44	0.36	0.47	4.83	
135.00		281.51	1.55	0.64	0.61	35.23	
139.00	Appurtenance(s)	3001.8	1.64	0.92	0.73	488.85	
140.00		52.87	1.67	1.01	0.77	9.14	
145.00		257.02	1.79	1.49	0.96	58.32	
147.00	Appurtenance(s)	2981.6	1.84	1.72	1.05	746.43	
149.00	Appurtenance(s)	461.42	1.89	1.98	1.14	126.79	
Totals:		35,153.9				1,994.5	Total Wind: 37,998.9

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

Calculated Forces

Structure: CT13056-A-SBA	Code: EIA/TIA-222-G	3/3/2020
Site Name: Moosehill	Exposure: C	
Height: 149.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



Load Case: 0.9D + 1.0E							Iterations 21
Gust Response Factor	1.10			Sds	0.22	Ss	0.21
Dead Load Factor	0.90	Seismic Load Factor	1.00	Sd1	0.10	S1	0.07
Wind Load Factor	0.00	Structure Frequency (f1)	0.38	SA	0.04	Seismic Importance Factor	1.00

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (-) (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation Sway (deg)	Rotation Twist (deg)	Stress Ratio
0.00	-36.73	-2.23	0.00	-267.13	0.00	267.13	4419.23	2209.62	10644.5	5330.19	0.00	0.00	0.00	0.058
5.00	-35.47	-2.22	0.00	-255.97	0.00	255.97	4369.00	2184.50	10304.7	5160.05	0.01	-0.01	0.058	
10.00	-34.23	-2.19	0.00	-244.88	0.00	244.88	4317.04	2158.52	9966.05	4990.43	0.03	-0.02	0.057	
15.00	-33.01	-2.16	0.00	-233.94	0.00	233.94	4263.35	2131.68	9628.61	4821.46	0.06	-0.04	0.056	
20.00	-31.81	-2.12	0.00	-223.17	0.00	223.17	4207.92	2103.96	9292.72	4653.26	0.11	-0.05	0.056	
25.00	-30.63	-2.08	0.00	-212.57	0.00	212.57	4150.77	2075.38	8958.64	4485.98	0.17	-0.06	0.055	
30.00	-29.48	-2.05	0.00	-202.15	0.00	202.15	4091.88	2045.94	8626.63	4319.73	0.24	-0.08	0.054	
35.00	-28.35	-2.01	0.00	-191.91	0.00	191.91	4031.25	2015.63	8296.96	4154.65	0.33	-0.09	0.053	
40.00	-27.24	-1.97	0.00	-181.86	0.00	181.86	3968.90	1984.45	7969.88	3990.86	0.43	-0.11	0.052	
45.00	-26.15	-1.93	0.00	-172.00	0.00	172.00	3904.81	1952.40	7645.65	3828.51	0.55	-0.12	0.052	
47.25	-25.67	-1.92	0.00	-167.65	0.00	167.65	3875.40	1937.70	7500.75	3755.95	0.61	-0.13	0.051	
50.00	-24.69	-1.88	0.00	-162.37	0.00	162.37	3838.99	1919.49	7324.54	3667.71	0.68	-0.13	0.051	
53.25	-23.54	-1.83	0.00	-156.27	0.00	156.27	2982.57	1491.28	5685.98	2847.22	0.78	-0.14	0.063	
55.00	-23.23	-1.82	0.00	-153.07	0.00	153.07	2966.84	1483.42	5604.01	2806.17	0.83	-0.15	0.062	
60.00	-22.33	-1.80	0.00	-143.95	0.00	143.95	2920.75	1460.37	5370.68	2689.33	1.00	-0.17	0.061	
64.00	-21.59	-1.78	0.00	-136.75	0.00	136.75	2882.62	1441.31	5185.10	2596.40	1.15	-0.18	0.060	
65.00	-21.41	-1.78	0.00	-134.97	0.00	134.97	2872.92	1436.46	5138.87	2573.25	1.19	-0.19	0.060	
65.50	-21.28	-1.78	0.00	-134.08	0.00	134.08	2868.04	1434.02	5115.78	2561.69	1.20	-0.19	0.060	
70.00	-20.51	-1.77	0.00	-126.09	0.00	126.09	2823.36	1411.68	4908.84	2458.07	1.39	-0.20	0.059	
75.00	-19.67	-1.77	0.00	-117.26	0.00	117.26	2772.06	1386.03	4680.84	2343.90	1.61	-0.22	0.057	
80.00	-18.85	-1.77	0.00	-108.43	0.00	108.43	2719.04	1359.52	4455.15	2230.89	1.85	-0.24	0.056	
85.00	-18.04	-1.77	0.00	-99.59	0.00	99.59	2664.28	1332.14	4232.01	2119.15	2.12	-0.26	0.054	
90.00	-17.26	-1.77	0.00	-90.74	0.00	90.74	2607.79	1303.89	4011.70	2008.83	2.40	-0.28	0.052	
95.00	-16.49	-1.77	0.00	-81.87	0.00	81.87	2549.57	1274.78	3794.46	1900.05	2.70	-0.30	0.050	
96.00	-16.34	-1.77	0.00	-80.10	0.00	80.10	2537.71	1268.86	3751.41	1878.49	2.76	-0.30	0.049	
99.00	-13.79	-1.76	0.00	-74.78	0.00	74.78	2501.74	1250.87	3623.07	1814.23	2.95	-0.31	0.047	
100.00	-13.56	-1.76	0.00	-73.02	0.00	73.02	2489.61	1244.80	3580.57	1792.94	3.02	-0.32	0.046	
100.75	-13.40	-1.76	0.00	-71.70	0.00	71.70	1858.32	929.16	2706.71	1355.36	3.07	-0.32	0.060	
105.00	-12.91	-1.76	0.00	-64.20	0.00	64.20	1825.33	912.67	2580.97	1292.40	3.36	-0.33	0.057	
110.00	-12.35	-1.77	0.00	-55.38	0.00	55.38	1784.92	892.46	2434.45	1219.03	3.72	-0.35	0.052	
115.00	-11.81	-1.77	0.00	-46.55	0.00	46.55	1742.78	871.39	2289.70	1146.55	4.10	-0.37	0.047	
120.00	-11.28	-1.76	0.00	-37.72	0.00	37.72	1698.90	849.45	2146.98	1075.09	4.50	-0.39	0.042	
121.00	-8.63	-1.67	0.00	-35.97	0.00	35.97	1689.92	844.96	2118.70	1060.93	4.58	-0.40	0.039	
125.00	-8.27	-1.65	0.00	-29.29	0.00	29.29	1653.30	826.65	2006.56	1004.77	4.92	-0.41	0.034	
128.00	-6.66	-1.52	0.00	-24.33	0.00	24.33	1625.10	812.55	1923.51	963.18	5.18	-0.42	0.029	
129.00	-6.57	-1.52	0.00	-22.80	0.00	22.80	1615.56	807.78	1896.04	949.43	5.27	-0.42	0.028	
129.00	-6.57	-1.52	0.00	-22.80	0.00	22.80	1091.97	545.98	1287.15	644.53	5.27	-0.42	0.041	
130.00	-6.50	-1.51	0.00	-21.28	0.00	21.28	1086.82	543.41	1270.20	636.04	5.36	-0.42	0.039	
135.00	-6.17	-1.48	0.00	-13.72	0.00	13.72	1060.04	530.02	1185.82	593.79	5.81	-0.44	0.029	
139.00	-3.40	-0.97	0.00	-7.81	0.00	7.81	1037.37	518.68	1118.90	560.28	6.18	-0.45	0.017	
140.00	-3.35	-0.96	0.00	-6.84	0.00	6.84	1031.53	515.76	1102.27	551.95	6.28	-0.45	0.016	
145.00	-3.10	-0.90	0.00	-2.06	0.00	2.06	1001.28	500.64	1019.81	510.66	6.75	-0.45	0.007	
147.00	-0.42	-0.13	0.00	-0.26	0.00	0.26	988.70	494.35	987.19	494.33	6.94	-0.45	0.001	
149.00	0.00	-0.13	0.00	0.00	0.00	0.00	975.84	487.92	954.81	478.11	7.13	-0.45	0.000	

Wind Loading - Shaft

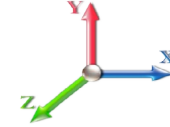
Structure: CT13056-A-SBA	Code: EIA/TIA-222-G	3/3/2020
Site Name: Moosehill	Exposure: C	
Height: 149.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00
Wind Load Factor 1.00



Iterations 22

Elev (ft)	Description	Kzt	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)	
0.00		1.00	0.85	7.442	8.19	275.75	0.650	0.000	0.00	0.000	0.00	0.0	0.0	0.0	
5.00		1.00	0.85	7.442	8.19	270.09	0.650	0.000	5.00	24.669	16.03	131.3	0.0	1173.1	
10.00		1.00	0.85	7.442	8.19	264.43	0.650	0.000	5.00	24.157	15.70	128.5	0.0	1148.6	
15.00		1.00	0.85	7.442	8.19	258.77	0.650	0.000	5.00	23.645	15.37	125.8	0.0	1124.1	
20.00		1.00	0.90	7.896	8.69	260.72	0.650	0.000	5.00	23.134	15.04	130.6	0.0	1099.6	
25.00		1.00	0.95	8.276	9.10	260.95	0.650	0.000	5.00	22.622	14.70	133.9	0.0	1075.1	
30.00		1.00	0.98	8.600	9.46	259.92	0.650	0.000	5.00	22.111	14.37	136.0	0.0	1050.7	
35.00		1.00	1.01	8.883	9.77	257.99	0.650	0.000	5.00	21.599	14.04	137.2	0.0	1026.2	
40.00		1.00	1.04	9.137	10.05	255.37	0.650	0.000	5.00	21.087	13.71	137.8	0.0	1001.7	
45.00		1.00	1.07	9.366	10.30	252.20	0.650	0.000	5.00	20.576	13.37	137.8	0.0	977.2	
47.25	Bot - Section 2	1.00	1.08	9.463	10.41	250.63	0.650	0.000	2.25	9.092	5.91	61.5	0.0	431.8	
50.00		1.00	1.09	9.576	10.53	248.60	0.650	0.000	2.75	11.117	7.23	76.1	0.0	961.5	
53.25	Top - Section 1	1.00	1.11	9.704	10.67	246.05	0.650	0.000	3.25	12.939	8.41	89.8	0.0	1118.8	
55.00		1.00	1.12	9.770	10.75	247.97	0.650	0.000	1.75	6.878	4.47	48.0	0.0	272.5	
60.00		1.00	1.14	9.951	10.95	243.70	0.650	0.000	5.00	19.305	12.55	137.4	0.0	764.7	
64.00	Appurtenance(s)	1.00	1.15	10.087	11.10	240.09	0.650	0.000	4.00	15.076	9.80	108.7	0.0	597.1	
65.00		1.00	1.16	10.120	11.13	239.17	0.650	0.000	1.00	3.718	2.42	26.9	0.0	147.2	
65.50	Appurtenance(s)	1.00	1.16	10.136	11.15	238.70	0.650	0.000	0.50	1.851	1.20	13.4	0.0	73.3	
70.00		1.00	1.17	10.279	11.31	234.39	0.650	0.000	4.50	16.431	10.68	120.8	0.0	650.6	
75.00		1.00	1.19	10.430	11.47	229.39	0.650	0.000	5.00	17.770	11.55	132.5	0.0	703.5	
80.00		1.00	1.21	10.572	11.63	224.21	0.650	0.000	5.00	17.259	11.22	130.5	0.0	683.1	
85.00		1.00	1.22	10.708	11.78	218.86	0.650	0.000	5.00	16.747	10.89	128.2	0.0	662.7	
90.00		1.00	1.24	10.838	11.92	213.35	0.650	0.000	5.00	16.236	10.55	125.8	0.0	642.3	
95.00		1.00	1.25	10.962	12.06	207.70	0.650	0.000	5.00	15.724	10.22	123.2	0.0	621.9	
96.00	Bot - Section 3	1.00	1.25	10.986	12.08	206.55	0.650	0.000	1.00	3.083	2.00	24.2	0.0	121.9	
99.00	Appurtenance(s)	1.00	1.26	11.057	12.16	203.08	0.650	0.000	3.00	9.254	6.02	73.2	0.0	654.1	
100.00		1.00	1.27	11.081	12.19	201.91	0.650	0.000	1.00	3.044	1.98	24.1	0.0	215.1	
100.75	Top - Section 2	1.00	1.27	11.098	12.21	201.04	0.650	0.000	0.75	2.269	1.48	18.0	0.0	160.4	
105.00		1.00	1.28	11.195	12.31	198.88	0.650	0.000	4.25	12.643	8.22	101.2	0.0	400.5	
110.00		1.00	1.29	11.305	12.44	192.88	0.650	0.000	5.00	14.401	9.36	116.4	0.0	456.1	
115.00		1.00	1.30	11.412	12.55	186.78	0.650	0.000	5.00	13.889	9.03	113.3	0.0	439.8	
120.00		1.00	1.32	11.514	12.67	180.57	0.650	0.000	5.00	13.377	8.70	110.1	0.0	423.5	
121.00	Appurtenance(s)	1.00	1.32	11.534	12.69	179.32	0.650	0.000	1.00	2.614	1.70	21.6	0.0	82.7	
125.00		1.00	1.33	11.614	12.78	174.28	0.650	0.000	4.00	10.252	6.66	85.1	0.0	324.4	
128.00	Appurtenance(s)	1.00	1.33	11.672	12.84	170.46	0.650	0.000	3.00	7.474	4.86	62.4	0.0	236.5	
129.00	Top - Section 3	1.00	1.34	11.691	12.86	169.18	0.650	0.000	1.00	2.450	1.59	20.5	0.0	77.5	
130.00		1.00	1.34	11.710	12.88	167.90	0.650	0.000	1.00	2.430	1.58	20.3	0.0	57.8	
135.00		1.00	1.35	11.803	12.98	161.44	0.650	0.000	5.00	11.843	7.70	99.9	0.0	281.5	
139.00	Appurtenance(s)	1.00	1.36	11.876	13.06	156.22	0.650	0.000	4.00	9.106	5.92	77.3	0.0	216.4	
140.00		1.00	1.36	11.894	13.08	154.90	0.650	0.000	1.00	2.225	1.45	18.9	0.0	52.9	
145.00		1.00	1.37	11.982	13.18	148.30	0.650	0.000	5.00	10.819	7.03	92.7	0.0	257.0	
147.00	Appurtenance(s)	1.00	1.37	12.017	13.22	145.63	0.650	0.000	2.00	4.184	2.72	36.0	0.0	99.4	
149.00	Appurtenance(s)	1.00	1.38	12.051	13.26	142.96	0.650	0.000	2.00	4.103	2.67	35.4	0.0	97.4	
Totals:									149.00				3,672.3	22,662.1	

Discrete Appurtenance Forces

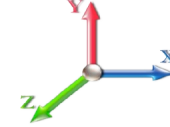
Structure: CT13056-A-SBA	Code: EIA/TIA-222-G	3/3/2020
Site Name: Moosehill	Exposure: C	
Height: 149.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00
Wind Load Factor 1.00



Iterations 22

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	149.00	Decibel DB404-B	1	12.093	13.303	1.00	1.00	1.03	14.00	0.000	2.500	13.70	0.00	34.25
2	149.00	Pipe Mount	1	12.051	13.256	1.00	1.00	5.00	350.00	0.000	0.000	66.28	0.00	0.00
3	147.00	800MHz RRH w/ filter	3	12.017	13.219	0.90	0.90	9.34	204.90	0.000	0.000	123.49	0.00	0.00
4	147.00	RFS APXVTM14-C-120	3	12.017	13.219	0.71	0.90	13.52	168.00	0.000	0.000	178.76	0.00	0.00
5	147.00	RFS APXVSP18-C-A20	3	12.017	13.219	0.75	0.90	17.97	171.00	0.000	0.000	237.58	0.00	0.00
6	147.00	ALU 1900MHz RRH	3	12.017	13.219	0.60	0.90	6.87	132.00	0.000	0.000	90.87	0.00	0.00
7	147.00	ALU 800MHz RRH	3	12.017	13.219	0.60	0.90	4.78	178.50	0.000	0.000	63.13	0.00	0.00
8	147.00	ALU TD-RRH8x20-25	3	12.017	13.219	0.60	0.90	7.33	210.00	0.000	0.000	96.85	0.00	0.00
9	147.00	RFS ACU-A20-N	4	12.017	13.219	0.71	0.90	0.40	4.00	0.000	0.000	5.26	0.00	0.00
10	147.00	Argus LLPX310R	3	12.017	13.219	0.62	0.90	8.01	85.80	0.000	0.000	105.89	0.00	0.00
11	147.00	Andrew VHLP2-11	1	12.017	13.219	1.00	1.00	4.68	27.00	0.000	0.000	61.86	0.00	0.00
12	147.00	Andrew VHLP800-11-DW1	1	12.017	13.219	1.00	1.00	6.70	49.00	0.000	0.000	88.56	0.00	0.00
13	147.00	U-RAS Flexible RRH	3	12.017	13.219	0.78	1.00	5.22	152.10	0.000	0.000	68.98	0.00	0.00
14	147.00	12.5' Low Profile Platform	1	12.017	13.219	1.00	1.00	22.00	1500.00	0.000	0.000	290.81	0.00	0.00
15	139.00	Powerwave LGP21901	6	11.876	13.064	0.60	0.80	0.83	33.00	0.000	0.000	10.82	0.00	0.00
16	139.00	Ericsson RRUS-32 B2s	3	11.876	13.064	0.54	0.80	4.41	180.00	0.000	0.000	57.56	0.00	0.00
17	139.00	7770	3	11.876	13.064	0.58	0.80	9.64	105.00	0.000	0.000	125.88	0.00	0.00
18	139.00	Powerwave 7020.00 RET	12	11.876	13.064	0.54	0.80	2.57	26.40	0.000	0.000	33.61	0.00	0.00
19	139.00	Powerwave LGP13519	6	11.876	13.064	0.80	0.80	1.63	31.80	0.000	0.000	21.32	0.00	0.00
20	139.00	DMP65R-BU6DA	3	11.876	13.064	0.58	0.80	22.27	238.20	0.000	0.000	290.90	0.00	0.00
21	139.00	HPA-65R-BUU-H6	3	11.876	13.064	0.68	0.80	19.71	153.00	0.000	0.000	257.44	0.00	0.00
22	139.00	Raycap DC6-48-60-18-8F	2	11.876	13.064	0.80	0.80	2.35	65.60	0.000	0.000	30.73	0.00	0.00
23	139.00	Commscope	3	11.876	13.064	0.78	0.80	0.12	4.80	0.000	0.000	1.54	0.00	0.00
24	139.00	4415 B30	3	11.876	13.064	0.54	0.80	2.64	138.00	0.000	0.000	34.45	0.00	0.00
25	139.00	4449 B5/B12	3	11.876	13.064	0.54	0.80	3.17	213.00	0.000	0.000	41.38	0.00	0.00
26	139.00	Low Profile Platform	1	11.876	13.064	1.00	1.00	22.00	1500.00	0.000	0.000	287.40	0.00	0.00
27	139.00	DC6-48-60-0-8C-EV	1	11.876	13.064	1.00	1.00	4.78	16.00	0.000	0.000	62.45	0.00	0.00
28	139.00	CBC23SR-43	3	11.876	13.064	0.56	0.80	0.71	14.70	0.000	0.000	9.22	0.00	0.00
29	139.00	SDARS XM Remote	3	11.876	13.064	0.78	0.80	4.33	66.00	0.000	0.000	56.54	0.00	0.00
30	128.00	Low Profile Platform	1	11.672	12.839	1.00	1.00	22.00	1500.00	0.000	0.000	282.46	0.00	0.00
31	121.00	Commscope LNX-6515DS	3	11.534	12.688	0.64	0.80	22.02	149.40	0.000	0.000	279.42	0.00	0.00
32	121.00	Ericsson AIR21 B4A/B12P	3	11.534	12.688	0.71	0.80	24.65	369.00	0.000	0.000	312.75	0.00	0.00
33	121.00	Ericsson Air 21 B2A/B4P	3	11.534	12.688	0.69	0.80	12.57	274.50	0.000	0.000	159.48	0.00	0.00
34	121.00	Low Profile Platform	1	11.534	12.688	1.00	1.00	22.00	1500.00	0.000	0.000	279.13	0.00	0.00
35	121.00	Ericsson S11B12	3	11.534	12.688	0.56	0.80	4.75	153.00	0.000	0.000	60.32	0.00	0.00
36	121.00	Ericsson KRY 112 144/1	3	11.534	12.688	0.56	0.80	0.69	33.00	0.000	0.000	8.74	0.00	0.00
37	121.00	SitePro PRK1245	1	11.534	12.688	1.00	1.00	5.00	350.00	0.000	0.000	63.44	0.00	0.00
38	99.00	BXA-171063-12BF	1	11.057	12.163	0.67	0.80	3.19	15.00	0.000	0.000	38.74	0.00	0.00
39	99.00	Antel BXA-70063-6CF	1	11.057	12.163	0.58	0.80	4.42	17.00	0.000	0.000	53.77	0.00	0.00
40	99.00	RFS APL866513-42T0	4	11.057	12.163	0.74	0.80	12.05	62.80	0.000	0.000	146.60	0.00	0.00
41	99.00	Antel LPA-80063-6CF	2	11.057	12.163	0.74	0.80	14.52	54.00	0.000	0.000	176.64	0.00	0.00
42	99.00	Antel BXA-171063-8BF	2	11.057	12.163	0.67	0.80	3.95	21.00	0.000	0.000	48.06	0.00	0.00
43	99.00	Antel BXA-70063-4CF	1	11.057	12.163	0.58	0.80	2.76	9.90	0.000	0.000	33.53	0.00	0.00
44	99.00	RFS DB-T1-6Z-8AB-OZ	1	11.057	12.163	0.57	0.80	2.73	18.90	0.000	0.000	33.16	0.00	0.00
45	99.00	Swedcom SLCF 2x6014F	1	11.057	12.163	0.71	0.80	4.62	20.00	0.000	0.000	56.20	0.00	0.00
46	99.00	Kathrein	3	11.057	12.163	0.62	0.80	19.51	171.90	0.000	0.000	237.36	0.00	0.00
47	99.00	ALU RRH2x40-AWS	3	11.057	12.163	0.54	0.80	4.05	132.00	0.000	0.000	49.29	0.00	0.00

Discrete Appurtenance Forces

Structure: CT13056-A-SBA	Code: EIA/TIA-222-G	3/3/2020
Site Name: Moosehill	Exposure: C	
Height: 149.00 (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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48	99.00	RFS FD9R6004/2C-3L	6	11.057	12.163	0.80	0.80	1.73	18.60	0.000	0.000	21.02	0.00	0.00
49	99.00	12.5' Low Profile Platform	1	11.057	12.163	0.80	0.80	17.60	1500.00	0.000	0.000	214.07	0.00	0.00
50	65.50	Decibel 26OB	1	10.136	11.150	0.80	0.80	1.60	50.00	0.000	0.000	17.84	0.00	0.00
51	64.00	3 ft Standoff	1	10.087	11.096	1.00	1.00	2.63	40.00	0.000	0.000	29.18	0.00	0.00

Totals: 12,491.80

5,414.47

Total Applied Force Summary

Structure: CT13056-A-SBA	Code: EIA/TIA-222-G	3/3/2020
Site Name: Moosehill	Exposure: C	
Height: 149.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II

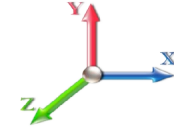


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Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00

Wind Load Factor 1.00



Iterations 22

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		131.26	1404.38	0.00	0.00
10.00		128.54	1379.90	0.00	0.00
15.00		125.82	1355.41	0.00	0.00
20.00		130.61	1330.92	0.00	0.00
25.00		133.86	1306.44	0.00	0.00
30.00		135.96	1281.95	0.00	0.00
35.00		137.19	1257.46	0.00	0.00
40.00		137.76	1232.97	0.00	0.00
45.00		137.79	1208.49	0.00	0.00
47.25		61.52	535.83	0.00	0.00
50.00		76.12	1088.69	0.00	0.00
53.25		89.78	1269.12	0.00	0.00
55.00		48.05	353.42	0.00	0.00
60.00		137.36	996.01	0.00	0.00
64.00	(1) attachments	137.91	822.11	0.00	0.00
65.00		26.90	193.33	0.00	0.00
65.50	(1) attachments	31.26	146.36	0.00	0.00
70.00		120.76	858.04	0.00	0.00
75.00		132.52	933.99	0.00	0.00
80.00		130.46	913.58	0.00	0.00
85.00		128.22	893.18	0.00	0.00
90.00		125.81	872.77	0.00	0.00
95.00		123.24	852.37	0.00	0.00
96.00		24.22	168.02	0.00	0.00
99.00	(26) attachments	1181.61	2833.54	0.00	0.00
100.00		24.12	247.63	0.00	0.00
100.75		18.01	184.76	0.00	0.00
105.00		101.20	538.74	0.00	0.00
110.00		116.41	618.71	0.00	0.00
115.00		113.33	602.39	0.00	0.00
120.00		110.13	586.06	0.00	0.00
121.00	(17) attachments	1184.85	2944.15	0.00	0.00
125.00		85.13	400.16	0.00	0.00
128.00	(1) attachments	344.83	1793.27	0.00	0.00
129.00		20.48	96.45	0.00	0.00
130.00		20.34	76.71	0.00	0.00
135.00		99.94	376.20	0.00	0.00
139.00	(55) attachments	1398.55	3077.64	0.00	0.00
140.00		18.92	56.83	0.00	0.00
145.00		92.69	276.82	0.00	0.00
147.00	(31) attachments	1447.99	2989.60	0.00	0.00
149.00	(2) attachments	115.33	462.46	0.00	34.25
Totals:		9,086.77	40,816.83	0.00	34.25

Linear Appurtenance Segment Forces (Factored)

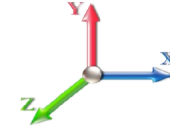
Structure: CT13056-A-SBA	Code: EIA/TIA-222-G	3/3/2020
Site Name: Moosehill	Exposure: C	
Height: 149.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II



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Load Case: 1.0D + 1.0W 60 mph Wind

Dead Load Factor 1.00
Wind Load Factor 1.00



Iterations 22

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	1 1/4" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	7.442	0.00	13.20
5.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	7.442	0.00	62.40
5.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	7.442	0.00	0.80
10.00	1 1/4" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	7.442	0.00	13.20
10.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	7.442	0.00	62.40
10.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	7.442	0.00	0.80
15.00	1 1/4" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	7.442	0.00	13.20
15.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	7.442	0.00	62.40
15.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	7.442	0.00	0.80
20.00	1 1/4" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	7.896	0.00	13.20
20.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	7.896	0.00	62.40
20.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	7.896	0.00	0.80
25.00	1 1/4" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	8.276	0.00	13.20
25.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	8.276	0.00	62.40
25.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	8.276	0.00	0.80
30.00	1 1/4" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	8.600	0.00	13.20
30.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	8.600	0.00	62.40
30.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	8.600	0.00	0.80
35.00	1 1/4" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	8.883	0.00	13.20
35.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	8.883	0.00	62.40
35.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	8.883	0.00	0.80
40.00	1 1/4" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	9.137	0.00	13.20
40.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	9.137	0.00	62.40
40.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	9.137	0.00	0.80
45.00	1 1/4" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	9.366	0.00	13.20
45.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	9.366	0.00	62.40
45.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	9.366	0.00	0.80
47.25	1 1/4" Coax	Yes	2.25	0.000	0.00	0.00	0.00	0.000	0.000	9.463	0.00	5.94
47.25	1 5/8" Coax	Yes	2.25	0.000	0.00	0.00	0.00	0.000	0.000	9.463	0.00	28.08
47.25	1/2" Coax	Yes	2.25	0.000	0.00	0.00	0.00	0.000	0.000	9.463	0.00	0.36
50.00	1 1/4" Coax	Yes	2.75	0.000	0.00	0.00	0.00	0.000	0.000	9.576	0.00	7.26
50.00	1 5/8" Coax	Yes	2.75	0.000	0.00	0.00	0.00	0.000	0.000	9.576	0.00	34.32
50.00	1/2" Coax	Yes	2.75	0.000	0.00	0.00	0.00	0.000	0.000	9.576	0.00	0.44
53.25	1 1/4" Coax	Yes	3.25	0.000	0.00	0.00	0.00	0.000	0.000	9.704	0.00	8.58
53.25	1 5/8" Coax	Yes	3.25	0.000	0.00	0.00	0.00	0.000	0.000	9.704	0.00	40.56
53.25	1/2" Coax	Yes	3.25	0.000	0.00	0.00	0.00	0.000	0.000	9.704	0.00	0.52
55.00	1 1/4" Coax	Yes	1.75	0.000	0.00	0.00	0.00	0.000	0.000	9.770	0.00	4.62
55.00	1 5/8" Coax	Yes	1.75	0.000	0.00	0.00	0.00	0.000	0.000	9.770	0.00	21.84
55.00	1/2" Coax	Yes	1.75	0.000	0.00	0.00	0.00	0.000	0.000	9.770	0.00	0.28
60.00	1 1/4" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	9.951	0.00	13.20
60.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	9.951	0.00	62.40
60.00	1/2" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	9.951	0.00	0.80
64.00	1 1/4" Coax	Yes	4.00	0.000	0.00	0.00	0.00	0.000	0.000	10.087	0.00	10.56
64.00	1 5/8" Coax	Yes	4.00	0.000	0.00	0.00	0.00	0.000	0.000	10.087	0.00	49.92
64.00	1/2" Coax	Yes	4.00	0.000	0.00	0.00	0.00	0.000	0.000	10.087	0.00	0.64
65.00	1 1/4" Coax	Yes	1.00	0.000	0.00	0.00	0.00	0.000	0.000	10.120	0.00	2.64
65.00	1 5/8" Coax	Yes	1.00	0.000	0.00	0.00	0.00	0.000	0.000	10.120	0.00	12.48

Linear Appurtenance Segment Forces (Factored)

Structure: CT13056-A-SBA	Code: EIA/TIA-222-G	3/3/2020
Site Name: Moosehill	Exposure: C	
Height: 149.00 (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 22

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)
65.50	1 1/4" Coax	Yes	0.50	0.000	0.00	0.00	0.00	0.000	0.000	10.136	0.00	1.32
65.50	1 5/8" Coax	Yes	0.50	0.000	0.00	0.00	0.00	0.000	0.000	10.136	0.00	6.24
70.00	1 1/4" Coax	Yes	4.50	0.000	0.00	0.00	0.00	0.000	0.000	10.279	0.00	11.88
70.00	1 5/8" Coax	Yes	4.50	0.000	0.00	0.00	0.00	0.000	0.000	10.279	0.00	56.16
75.00	1 1/4" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	10.430	0.00	13.20
75.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	10.430	0.00	62.40
80.00	1 1/4" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	10.572	0.00	13.20
80.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	10.572	0.00	62.40
85.00	1 1/4" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	10.708	0.00	13.20
85.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	10.708	0.00	62.40
90.00	1 1/4" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	10.838	0.00	13.20
90.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	10.838	0.00	62.40
95.00	1 1/4" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	10.962	0.00	13.20
95.00	1 5/8" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	10.962	0.00	62.40
96.00	1 1/4" Coax	Yes	1.00	0.000	0.00	0.00	0.00	0.000	0.000	10.986	0.00	2.64
96.00	1 5/8" Coax	Yes	1.00	0.000	0.00	0.00	0.00	0.000	0.000	10.986	0.00	12.48
99.00	1 1/4" Coax	Yes	3.00	0.000	0.00	0.00	0.00	0.000	0.000	11.057	0.00	7.92
99.00	1 5/8" Coax	Yes	3.00	0.000	0.00	0.00	0.00	0.000	0.000	11.057	0.00	37.44
100.00	1 1/4" Coax	Yes	1.00	0.000	0.00	0.00	0.00	0.000	0.000	11.081	0.00	2.64
100.75	1 1/4" Coax	Yes	0.75	0.000	0.00	0.00	0.00	0.000	0.000	11.098	0.00	1.98
105.00	1 1/4" Coax	Yes	4.25	0.000	0.00	0.00	0.00	0.000	0.000	11.195	0.00	11.22
110.00	1 1/4" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	11.305	0.00	13.20
115.00	1 1/4" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	11.412	0.00	13.20
120.00	1 1/4" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	11.514	0.00	13.20
121.00	1 1/4" Coax	Yes	1.00	0.000	0.00	0.00	0.00	0.000	0.000	11.534	0.00	2.64
125.00	1 1/4" Coax	Yes	4.00	0.000	0.00	0.00	0.00	0.000	0.000	11.614	0.00	10.56
128.00	1 1/4" Coax	Yes	3.00	0.000	0.00	0.00	0.00	0.000	0.000	11.672	0.00	7.92
129.00	1 1/4" Coax	Yes	1.00	0.000	0.00	0.00	0.00	0.000	0.000	11.691	0.00	2.64
130.00	1 1/4" Coax	Yes	1.00	0.000	0.00	0.00	0.00	0.000	0.000	11.710	0.00	2.64
135.00	1 1/4" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	11.803	0.00	13.20
139.00	1 1/4" Coax	Yes	4.00	0.000	0.00	0.00	0.00	0.000	0.000	11.876	0.00	10.56
140.00	1 1/4" Coax	Yes	1.00	0.000	0.00	0.00	0.00	0.000	0.000	11.894	0.00	2.64
145.00	1 1/4" Coax	Yes	5.00	0.000	0.00	0.00	0.00	0.000	0.000	11.982	0.00	13.20
147.00	1 1/4" Coax	Yes	2.00	0.000	0.00	0.00	0.00	0.000	0.000	12.017	0.00	5.28
Totals:											0.0	1,633.8

Calculated Forces

Structure: CT13056-A-SBA	Code: EIA/TIA-222-G	3/3/2020
Site Name: Moosehill	Exposure: C	
Height: 149.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II

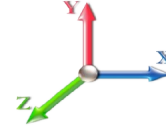


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Load Case: 1.0D + 1.0W 60 mph Wind

Iterations 22

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	-40.81	-9.10	0.00	-989.68	0.00	989.68	4419.23	2209.62	10644.5	5330.19	0.00	0.000	0.000	0.195
5.00	-39.40	-9.00	0.00	-944.17	0.00	944.17	4369.00	2184.50	10304.7	5160.05	0.02	-0.046	0.000	0.192
10.00	-38.01	-8.90	0.00	-899.16	0.00	899.16	4317.04	2158.52	9966.05	4990.43	0.10	-0.092	0.000	0.189
15.00	-36.65	-8.80	0.00	-854.65	0.00	854.65	4263.35	2131.68	9628.61	4821.46	0.22	-0.139	0.000	0.186
20.00	-35.31	-8.70	0.00	-810.63	0.00	810.63	4207.92	2103.96	9292.72	4653.26	0.39	-0.186	0.000	0.183
25.00	-34.00	-8.59	0.00	-767.13	0.00	767.13	4150.77	2075.38	8958.64	4485.98	0.61	-0.235	0.000	0.179
30.00	-32.71	-8.48	0.00	-724.18	0.00	724.18	4091.88	2045.94	8626.63	4319.73	0.88	-0.283	0.000	0.176
35.00	-31.45	-8.36	0.00	-681.81	0.00	681.81	4031.25	2015.63	8296.96	4154.65	1.21	-0.333	0.000	0.172
40.00	-30.21	-8.24	0.00	-640.01	0.00	640.01	3968.90	1984.45	7969.88	3990.86	1.58	-0.383	0.000	0.168
45.00	-29.00	-8.11	0.00	-598.81	0.00	598.81	3904.81	1952.40	7645.65	3828.51	2.01	-0.433	0.000	0.164
47.25	-28.46	-8.06	0.00	-580.56	0.00	580.56	3875.40	1937.70	7500.75	3755.95	2.22	-0.456	0.000	0.162
50.00	-27.37	-7.99	0.00	-558.40	0.00	558.40	3838.99	1919.49	7324.54	3667.71	2.49	-0.484	0.000	0.159
53.25	-26.09	-7.90	0.00	-532.43	0.00	532.43	2982.57	1491.28	5685.98	2847.22	2.83	-0.518	0.000	0.196
55.00	-25.74	-7.87	0.00	-518.61	0.00	518.61	2966.84	1483.42	5604.01	2806.17	3.03	-0.536	0.000	0.194
60.00	-24.73	-7.74	0.00	-479.28	0.00	479.28	2920.75	1460.37	5370.68	2689.33	3.62	-0.595	0.000	0.187
64.00	-23.91	-7.61	0.00	-448.32	0.00	448.32	2882.62	1441.31	5185.10	2596.40	4.14	-0.642	0.000	0.181
65.00	-23.71	-7.58	0.00	-440.71	0.00	440.71	2872.92	1436.46	5138.87	2573.25	4.27	-0.654	0.000	0.180
65.50	-23.57	-7.56	0.00	-436.92	0.00	436.92	2868.04	1434.02	5115.78	2561.69	4.34	-0.660	0.000	0.179
70.00	-22.70	-7.45	0.00	-402.90	0.00	402.90	2823.36	1411.68	4908.84	2458.07	4.99	-0.712	0.000	0.172
75.00	-21.76	-7.33	0.00	-365.64	0.00	365.64	2772.06	1386.03	4680.84	2343.90	5.77	-0.770	0.000	0.164
80.00	-20.84	-7.21	0.00	-328.99	0.00	328.99	2719.04	1359.52	4455.15	2230.89	6.60	-0.827	0.000	0.155
85.00	-19.95	-7.08	0.00	-292.96	0.00	292.96	2664.28	1332.14	4232.01	2119.15	7.50	-0.883	0.000	0.146
90.00	-19.07	-6.96	0.00	-257.54	0.00	257.54	2607.79	1303.89	4011.70	2008.83	8.45	-0.937	0.000	0.136
95.00	-18.21	-6.83	0.00	-222.73	0.00	222.73	2549.57	1274.78	3794.46	1900.05	9.46	-0.988	0.000	0.124
96.00	-18.04	-6.81	0.00	-215.90	0.00	215.90	2537.71	1268.86	3751.41	1878.49	9.67	-0.999	0.000	0.122
99.00	-15.23	-5.59	0.00	-195.46	0.00	195.46	2501.74	1250.87	3623.07	1814.23	10.31	-1.029	0.000	0.114
100.00	-14.98	-5.56	0.00	-189.87	0.00	189.87	2489.61	1244.80	3580.57	1792.94	10.53	-1.039	0.000	0.112
100.75	-14.80	-5.55	0.00	-185.70	0.00	185.70	1858.32	929.16	2706.71	1355.36	10.69	-1.046	0.000	0.145
105.00	-14.25	-5.45	0.00	-162.13	0.00	162.13	1825.33	912.67	2580.97	1292.40	11.64	-1.086	0.000	0.133
110.00	-13.63	-5.33	0.00	-134.91	0.00	134.91	1784.92	892.46	2434.45	1219.03	12.81	-1.138	0.000	0.118
115.00	-13.03	-5.21	0.00	-108.26	0.00	108.26	1742.78	871.39	2289.70	1146.55	14.02	-1.185	0.000	0.102
120.00	-12.44	-5.10	0.00	-82.19	0.00	82.19	1698.90	849.45	2146.98	1075.09	15.29	-1.226	0.000	0.084
121.00	-9.52	-3.85	0.00	-77.09	0.00	77.09	1689.92	844.96	2118.70	1060.93	15.55	-1.234	0.000	0.078
125.00	-9.12	-3.76	0.00	-61.68	0.00	61.68	1653.30	826.65	2006.56	1004.77	16.59	-1.262	0.000	0.067
128.00	-7.34	-3.38	0.00	-50.40	0.00	50.40	1625.10	812.55	1923.51	963.18	17.39	-1.280	0.000	0.057
129.00	-7.24	-3.36	0.00	-47.02	0.00	47.02	1615.56	807.78	1896.04	949.43	17.66	-1.286	0.000	0.054
129.00	-7.24	-3.36	0.00	-47.02	0.00	47.02	1091.97	545.98	1287.15	644.53	17.66	-1.286	0.000	0.080
130.00	-7.17	-3.34	0.00	-43.66	0.00	43.66	1086.82	543.41	1270.20	636.04	17.93	-1.292	0.000	0.075
135.00	-6.79	-3.23	0.00	-26.98	0.00	26.98	1060.04	530.02	1185.82	593.79	19.30	-1.321	0.000	0.052
139.00	-3.75	-1.76	0.00	-14.05	0.00	14.05	1037.37	518.68	1118.90	560.28	20.41	-1.336	0.000	0.029
140.00	-3.69	-1.74	0.00	-12.29	0.00	12.29	1031.53	515.76	1102.27	551.95	20.69	-1.339	0.000	0.026
145.00	-3.41	-1.64	0.00	-3.57	0.00	3.57	1001.28	500.64	1019.81	510.66	22.10	-1.347	0.000	0.010
147.00	-0.46	-0.13	0.00	-0.29	0.00	0.29	988.70	494.35	987.19	494.33	22.67	-1.348	0.000	0.001
149.00	0.00	-0.12	0.00	-0.03	0.00	0.03	975.84	487.92	954.81	478.11	23.23	-1.348	0.000	0.000

Final Analysis Summary

Structure: CT13056-A-SBA	Code: EIA/TIA-222-G	3/3/2020
Site Name: Moosehill	Exposure: C	
Height: 149.00 (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 97 mph Wind	38.1	0.00	48.91	0.00	0.00	4160.79
0.9D + 1.6W 97 mph Wind	38.1	0.00	36.67	0.00	0.00	4120.22
1.2D + 1.0Di + 1.0Wi 50 mph Wind	10.6	0.00	82.01	0.00	0.00	1145.69
1.2D + 1.0E	2.2	0.00	48.98	0.00	0.00	270.02
0.9D + 1.0E	2.2	0.00	36.73	0.00	0.00	267.13
1.0D + 1.0W 60 mph Wind	9.1	0.00	40.81	0.00	0.00	989.68

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 97 mph Wind	-30.13	-33.23	0.00	-2242.2	0.00	-2242.2	2982.57	1491.2	5685.98	2847.22	53.25	0.798
0.9D + 1.6W 97 mph Wind	-22.31	-32.91	0.00	-2211.5	0.00	-2211.5	2982.57	1491.2	5685.98	2847.22	53.25	0.785
1.2D + 1.0Di + 1.0Wi 50 mph Wind	-56.66	-9.19	0.00	-613.27	0.00	-613.27	2982.57	1491.2	5685.98	2847.22	53.25	0.234
1.2D + 1.0E	-31.39	-1.85	0.00	-158.51	0.00	-158.51	2982.57	1491.2	5685.98	2847.22	53.25	0.066
0.9D + 1.0E	-23.54	-1.83	0.00	-156.27	0.00	-156.27	2982.57	1491.2	5685.98	2847.22	53.25	0.063
1.0D + 1.0W 60 mph Wind	-26.09	-7.90	0.00	-532.43	0.00	-532.43	2982.57	1491.2	5685.98	2847.22	53.25	0.196

Base Plate Summary

Structure: CT13056-A-SB	Code: EIA/TIA-222-G	3/3/2020
Site Name: Moosehill	Exposure: C	
Height: 149.00 (ft)	Crest Height: 0.00	
Base Elev: 0.000 (ft)	Site Class: D - Stiff Soil	
Gh: 1.1	Topography: 1	Struct Class: II
		Page: 42



Reactions	Base Plate	Anchor Bolts
Original Design	Yield (ksi): 60.00	Bolt Circle: 66.00
Moment (kip-ft): 4184.00	Width (in): 64.00	Number Bolts: 16.00
Axial (kip): 45.00	Style: Clipped	Bolt Type: 2.25" 18J
Shear (kip): 39.00	Polygon Sides: 4.00	Bolt Diameter (in): 2.25
Analysis	Clip Length (in): 12.00	Yield (ksi): 75.00
Moment (kip-ft): 4160.79	Effective Len (in): 8.64	Ultimate (ksi): 100.00
Axial (kip): 82.01	Moment (kip-in): 688.63	Arrangement: Clustered
Shear (kip): 38.08	Allow Stress (ksi): 81.00	Cluster Dist (in): 6.00
	Applied Stress (ksi): 2.87650958467324	Start Angle (deg): 45.00
Moment Design %: 99.45	Stress Ratio: 0.66	Compression
		Force (kip): 194.25
		Allowable (kip): 260.00
		Ratio: 0.77
		Tension
		Force (kip): 184.00
		Allowable (kip): 260.00
		Ratio: 0.73



Monopole Mat Foundation Design

Date

3/3/2020

Customer Name:	AT&T	EIA/TIA Standard:	EIA-222-G
Site Name:		Structure Height (Ft.):	149
Site Number:	CT13056-A-SBA	Engineer Name:	T. Alajaj
Engr. Number:	92249	Engineer Login ID:	

Foundation Info Obtained from:

Drawings/Calculations

Structure Type:

Monopole

Analysis or Design?

Analysis

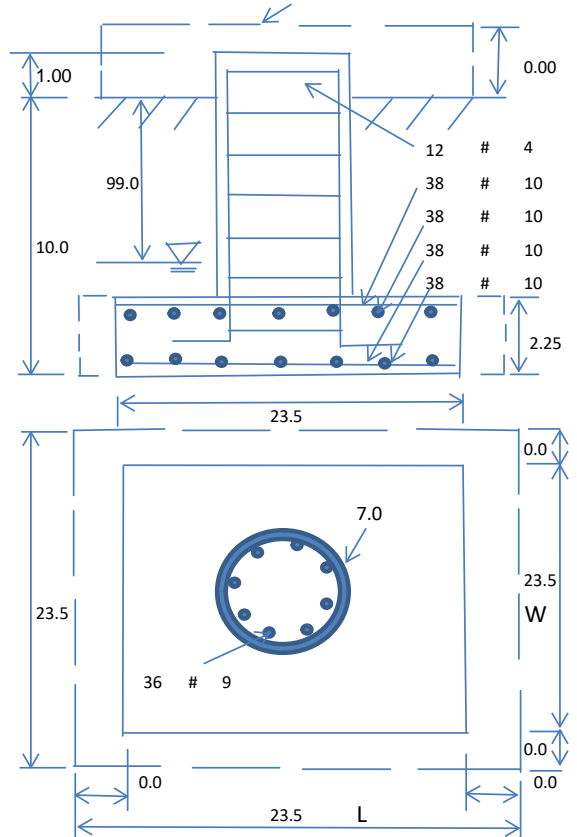
Base Reactions (Factored):

Axial Load (Kips):	82.0	Shear Force (Kips):	38.1
Uplift Force (Kips):	0.0	Moment (Kips-ft):	4160.8

Allowable overstress %: 5.0%

Foundation Geometries:

Diameter of Pier (ft.):	7.0	Mods required -Yes/No ?:	No
Pier Height A. G. (ft.):	1.00	Depth of Base BG (ft.):	10.0
Length of Pad (ft.):	23.5	Thickness of Pad (ft.):	2.25
Final Length of pad (ft)	23.5	Width of Pad (ft.):	23.5
Final width of pad (ft):	23.5		



Material Properties and Rebar Info:

Concrete Strength (psi):	4000	Steel Elastic Modulus:	29000	ksi
Vertical bar yield (ksi)	60	Tie steel yield (ksi):	60	
Vertical Rebar Size #:	9	Tie / Stirrup Size #:	4	
Qty. of Vertical Rebars:	36	Tie Spacing (in):	12.0	
Pad Rebar Yield (Ksi):	60	Pad Steel Rebar Size (#):	10	
Concrete Cover (in.):	3	Unit Weight of Concrete:	150.0	pcf

Rebar at the bottom of the concrete pad:

Qty. of Rebar in Pad (L):	38	Qty. of Rebar in Pad (W):	38
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Rebar at the top of the concrete pad:

Qty. of Rebar in Pad (L):	38	Qty. of Rebar in Pad (W):	38
---------------------------	----	---------------------------	----

Apply 1.35 factor for e/w Per G: 1.35

Soil Design Parameters:

Soil Unit Weight (pcf):	100.0	Soil Buoyant Weight:	50.0	Pcf	Angle from Top of Pad:	30
Water Table B.G.S. (ft):	99.0	Unit Weight of Water:	62.4	pcf	Angle from Bottm of Pad:	25
Ultimate Bearing Pressure (psf):	8000	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		Reduction factor on the maximum soil bearing pressure:	1.00
Consider soil hor. resist. for OTM.:	No					

Foundation Analysis and Design:

Uplift Strength Reduction Factor:	0.75	Compression Strength Reduction Factor:	0.75
Total Dry Soil Volume (cu. Ft.):	3981.68	Total Dry Soil Weight (Kips):	398.17
Total Buoyant Soil Volume (cu. Ft.):	0.00	Total Buoyant Soil Weight (Kips):	0.00
Total Effective Soil Weight (Kips):	398.17	Weight from the Concrete Block at Top (K):	0.00
Total Dry Concrete Volume (cu. Ft.):	1579.30	Total Dry Concrete Weight (Kips):	236.90
Total Buoyant Concrete Volume (cu. Ft.):	0.00	Total Buoyant Concrete Weight (Kips):	0.00
Total Effective Concrete Weight (Kips):	236.90	Total Vertical Load on Base (Kips):	717.06

Check Soil Capacities:

Calculated Maxium Net Soil Pressure under the base (psf):	3908	< Allowable Factored Soil Bearing (psf):	6000	0.65	OK!
Allowable Foundation Overturning Resistance (kips-ft.):	7679.3	> Design Factored Momont (kips-ft):	4580	0.60	OK!
Factor of Safety Against Overturning (O. R. Moment/Design Moment):	1.68				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

(1) Concrete Pier:

					Load/ Capacity Ratio	
Vertical Steel Rebar Area (sq. in./each):	1.00	Tie / Stirrup Area (sq. in./each):	0.20			
Calculated Moment Capacity (Mn,Kips-Ft):	6026.1	> Design Factored Moment (Mu, Kips-F	4494.2	0.75	OK!	
Calculated Shear Capacity (Kips):	660.1	> Design Factored Shear (Kips):	38.1	0.06	OK!	
Calculated Tension Capacity (Tn, Kips):	1944.0	> Design Factored Tension (Tu Kips):	0.0	0.00	OK!	
Calculated Compression Capacity (Pn, Kips):	9734.2	> Design Factored Axial Load (Pu Kips):	82.0	0.01	OK!	
Moment & Axial Strength Combination:	0.75	OK! Check Tie Spacing (Design/Required):	1		OK!	
Pier Reinforcement Ratio:	0.006	Reinforcement Ratio is satisfied per ACI				

(2).Concrete Pad:

One-Way Design Shear Capacity (L-Direction, Kips):	625.3	> One-Way Factored Shear (L-D. Kips):	312.7	0.50	OK!
One-Way Design Shear Capacity (W-Direction, Kips):	625.3	> One-Way Factored Shear (W-D., Kips)	312.7	0.50	OK!
One-Way Design Shear Capacity (Corner-Corner, Kips):	594.4	> One-Way Factored Shear (C-C, Kips):	308.4	0.52	OK!
Lower Steel Pad Reinforcement Ratio (L-Direct.):	0.0073	OK! Lower Steel Pad Reinf. Ratio (W-Direc	0.0073		
Lower Steel Pad Moment Capacity (L-Direction, Kips-ft):	4748.4	> Moment at Bottom (L-Dir. K-Ft):	1495.1	0.31	OK!
Lower Steel Pad Moment Capacity (W-Direction, Kips-ft):	4748.4	> Moment at Bottom (W-Dir. K-Ft):	1495.1	0.31	OK!
Lower Steel Pad Moment Capacity (Corner-Corner,K-ft):	6591.5	> Moment at Bottom (C-C Dir. K-Ft):	2114.4	0.32	OK!
Upper Steel Pad Reinforcement Ratio (L-Direct.):	0.0073	OK! Upper Steel Reinf. Ratio (W-Dir.):	0.0073		
Upper Steel Pad Moment Capacity (L-Direc. Kips-ft):	4748.4	> Moment at the top (L-Dir K-Ft):	636.7	0.13	OK!
Upper Steel Pad Moment Capacity (W-Direc. Kips-ft):	4748.4	> Moment at the top (W-Dir K-Ft):	636.7	0.13	OK!
Upper Steel Pad Moment Capacity (Corner-Corner, K-ft):	6591.5	> Moment at the top (C-C Dir. K-Ft):	599.0	0.09	OK!

(3).Check Punching Shear Capacity due to Moment in the Pier:

Moment transferred by punching shear:	1664.3	k-ft.	Max. factored shear stress $v_{u,CD}$:	1.9	Psi
Max. factored shear stress $v_{u,AB}$:	18.9	Psi	Factored shear Strength ϕv_n :	189.7	Psi
Max. factored shear stress v_u :	18.9	Psi	Check Usage of Punching Shear Capacity:	0.10	OK!

February 11, 2020



SAI Communications
12 Industrial Way
Salem NH, 03079

RE: Site Number: CT2203 (RF MODS)
 FA Number: 10035397
 PACE Number: MRCTB045081
 PT Number: 2051AOSPZ5
 Site Name: MONROE CENTER
 Site Address: 500 Moose Hill Road
 Monroe, CT 06468

To Whom It May Concern:

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

- (3) 7770 Antennas (55.0"x11.0"x5.0" - Wt. = 35 lbs. /each)
- (3) HPA-65R-BUU-H6 Antennas (72.0"x14.8"x7.4" – Wt. = 51 lbs. /each)
- (3) DMP65R-BU6DA Antennas (71.2"x20.7"x7.7" – Wt. = 80 lbs. /each)
- (3) RRUS-32 B2 RRH's (27.2"x12.1"x7.0" – Wt. = 60 lbs. /each)
- (3) 4449 B5/B12 RRH's (14.9"x13.2"x10.4" – Wt. = 73 lbs. /each)
- (3) 4415 B30 RRH's (16.5"x13.4"x5.9" – Wt. = 46 lbs. /each)
- (6) LGP21401 TMA's (14.4"x9.0"x2.7" – Wt. = 19 lbs. /each)
- (2) Squid Surge Arrestor (24.0"x9.7" Φ – Wt. = 33 lbs. /each)
- **(3) SDARS XM Remote Repeaters (32.7"x6.1"x5.8" – Wt. = 22 lbs. /each)**
- **(3) CBC23SR-43 Diplexers (8.0"x6.3"x2.1" – Wt. = 6 lbs. /each)**
- **(1) Squid Surge Arrestor (24.0"x9.7" Φ – Wt. = 33 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 May 28, 2019.

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 – R13.
- 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 1.0 in. An escalated ice thickness of 1.15 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.
- The mount has been analyzed with load combinations consisting of 250 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 1.
- 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 a ring mount. The connection is considered OK by visual inspection.

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 (RF MODS) Mount Rating	91	LC4	76%	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:







HUDSON
Design Group LLC

**Wind & Ice
Calculations**

Date: 2/11/2020
 Project Name: MONROE CENTER
 Project No.: CT2203
 Designed By: LBW Checked By: MSC



2.6.5.2 Velocity Pressure Coeff:

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

$K_z =$ **1.083** $z =$ 138 (ft)
 $z_g =$ 1200 (ft)
 $\alpha =$ 7.0

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

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

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

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

$K_{zt} =$ #DIV/0!

$K_h =$ #DIV/0!

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

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

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

$z =$ 138

$z_s =$ 620 (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)

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

Category = 1

2.6.10 Design Ice Thickness

Max Ice Thickness =

$t_i =$ 1.00 in

Importance Factor =

$I =$ 1.0 (from Table 2-3)

$K_{iz} =$ 1.15 (from Sec. 2.6.10)

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

$t_{iz} =$ 1.15 in

Date: 2/11/2020
 Project Name: MONROE CENTER
 Project No.: CT2203
 Designed By: LBW Checked By: MSC



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= 151

$G_h = 0.85$

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

(Cantilivered 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

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

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

- $K_z = 1.083$ (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

$q_z = 37.10$
 $q_z(ice) = 6.44$
 $q_z(30) = 2.32$

Table 2-2

Structure Type	Wind Direction Probability Factor, Kd
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

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) ≥ 0.85	1.4 - 4.0(r _s) ≥ 0.90	2.0 - 6.0(r _s) ≥ 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 = **1.15 in** Angle = **0 (deg)** Equivalent Angle = **180 (deg)**

Appurtenances	Height	Width	Depth	Flat Area	Aspect Ratio	Ca	Force (lbs)	Force (lbs) (w/ Ice)	Force (lbs) (30 mph)
7770 Antenna	55.0	11.0	5.0	4.20	5.00	1.31	204	45	13
HPA-65R-BUU-H6 Antenna	72.0	14.8	7.4	7.40	4.86	1.31	358	74	22
DMP65R-BU6DA Antenna	71.2	20.7	7.7	10.24	3.44	1.24	472	94	29
RRUS-32 B2 RRH (Side)	27.2	7.0	12.1	1.32	3.89	1.26	62	15	4
4449 B5/B12 RRH (Side)	14.9	10.4	13.2	1.08	1.43	1.20	48	12	3
4449 B5/B12 RRH (Shielded)	14.9	5.2	13.2	0.54	2.87	1.22	24	7	2
4415 B30 RRH (Side)	16.5	5.9	13.4	0.68	2.80	1.21	30	8	2
4415 B30 RRH (Shielded)	16.5	3.0	13.4	0.34	5.59	1.34	17	6	1
SDARS XM Remote Repeater (Side)	32.7	5.8	6.1	1.32	5.64	1.34	65	17	4
LGP21401 TMA	14.4	2.7	9.0	0.27	5.33	1.33	13	5	1
CBC235R-43 Diplexer (Side)	8.0	2.1	6.3	0.12	3.81	1.26	5	3	0
Surge Arrestor	24.0	9.7	9.7	1.62	2.47	0.70	42	10	3
L 2-1/2x2-1/2 Angles	2.5	12.0		0.21	0.21	2.00	15		
HSS 4x4	4.0	12.0		0.33	0.33	2.00	25		
PL 6-1/2x1/2	0.5	12.0		0.04	0.04	2.00	3		
2" Pipe	2.4	12.0		0.20	0.20	1.20	9		
3" Pipe	3.5	12.0		0.29	0.29	1.20	13		

Date: 2/11/2020
 Project Name: MONROE CENTER
 Project No.: CT2203
 Designed By: LBW Checked By: MSC



WIND LOADS

Angle = 30 (deg) Ice Thickness = 1.15 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) (normal)	Force (lbs) (side)	Force (lbs) (angle)
7770 Antenna	55.0	11.0	5.0	4.20	1.91	5.00	11.00	1.31	1.53	204	109	180
HPA-65R-BUU-H6 Antenna	72.0	14.8	7.4	7.40	3.70	4.86	9.73	1.31	1.49	358	205	320
DMP65R-BU6DA Antenna	71.2	20.7	7.7	10.24	3.81	3.44	9.25	1.24	1.47	472	208	406
RRUS-32 B2 RRH (Side)	27.2	7.0	12.1	1.32	2.29	3.89	2.25	1.26	1.20	62	102	72
4449 B5/B12 RRH (Side)	14.9	10.4	13.2	1.08	1.37	1.43	1.13	1.20	1.20	48	61	51
4449 B5/B12 RRH (Shielded)	14.9	5.2	13.2	0.54	1.37	2.87	1.13	1.22	1.20	24	61	33
4415 B30 RRH (Side)	16.5	5.9	13.4	0.68	1.54	2.80	1.23	1.21	1.20	30	68	40
4415 B30 RRH (Shielded)	16.5	3.0	13.4	0.34	1.54	5.59	1.23	1.34	1.20	17	68	30
SDARS XM Remote Repeater (Side)	32.7	5.8	6.1	1.32	1.39	5.64	5.36	1.34	1.33	65	68	66
LGP21401 TMA	14.4	2.7	9.0	0.27	0.90	5.33	1.60	1.33	1.20	13	40	20
CBC23SR-43 Diplexer (Side)	8.0	2.1	6.3	0.12	0.35	3.81	1.27	1.26	1.20	5	16	8

WIND LOADS WITH ICE:

7770 Antenna	57.3	13.3	7.3	5.30	2.91	4.31	7.84	1.28	1.43	44	27	39
HPA-65R-BUU-H6 Antenna	74.3	17.1	9.7	8.83	5.01	4.34	7.65	1.28	1.42	73	46	66
DMP65R-BU6DA Antenna	73.5	23.0	10.0	11.74	5.11	3.19	7.35	1.23	1.41	93	46	81
RRUS-32 B2 RRH (Side)	29.5	9.3	14.4	1.91	2.95	3.17	2.05	1.23	1.20	15	23	17
4449 B5/B12 RRH (Side)	17.2	12.7	15.5	1.52	1.85	1.35	1.11	1.20	1.20	12	14	12
4449 B5/B12 RRH (Shielded)	17.2	6.4	15.5	0.76	1.85	2.71	1.11	1.21	1.20	6	14	8
4415 B30 RRH (Side)	18.8	8.2	15.7	1.07	2.05	2.29	1.20	1.20	1.20	8	16	10
4415 B30 RRH (Shielded)	18.8	4.1	15.7	0.54	2.05	4.58	1.20	1.29	1.20	4	16	7
SDARS XM Remote Repeater (Side)	35.0	8.1	8.4	1.97	2.04	4.32	4.16	1.28	1.27	16	17	16
LGP21401 TMA	16.7	5.0	11.3	0.58	1.31	3.34	1.48	1.24	1.20	5	10	6
CBC23SR-43 Diplexer (Side)	10.3	4.4	8.6	0.32	0.62	2.34	1.20	1.20	1.20	2	5	3

WIND LOADS AT 30 MPH:

7770 Antenna	55.0	11.0	5.0	4.20	1.91	5.00	11.00	1.31	1.53	13	7	11
HPA-65R-BUU-H6 Antenna	72.0	14.8	7.4	7.40	3.70	4.86	9.73	1.31	1.49	22	13	20
DMP65R-BU6DA Antenna	71.2	20.7	7.7	10.24	3.81	3.44	9.25	1.24	1.47	29	13	25
RRUS-32 B2 RRH (Side)	27.2	7.0	12.1	1.32	2.29	3.89	2.25	1.26	1.20	4	6	4
4449 B5/B12 RRH (Side)	14.9	10.4	13.2	1.08	1.37	1.43	1.13	1.20	1.20	3	4	3
4449 B5/B12 RRH (Shielded)	14.9	5.2	13.2	0.54	1.37	2.87	1.13	1.22	1.20	2	4	2
4415 B30 RRH (Side)	16.5	5.9	13.4	0.68	1.54	2.80	1.23	1.21	1.20	2	4	2
4415 B30 RRH (Shielded)	16.5	3.0	13.4	0.34	1.54	5.59	1.23	1.34	1.20	1	4	2
SDARS XM Remote Repeater (Side)	32.7	5.8	6.1	1.32	1.39	5.64	5.36	1.34	1.33	4	4	4
LGP21401 TMA	14.4	2.7	9.0	0.27	0.90	5.33	1.60	1.33	1.20	1	3	1
CBC23SR-43 Diplexer (Side)	8.0	2.1	6.3	0.12	0.35	3.81	1.27	1.26	1.20	0	1	0

Date: 2/11/2020
 Project Name: MONROE CENTER
 Project No.: CT2203
 Designed By: LBW Checked By: MSC



WIND LOADS

Angle = 60 (deg) Ice Thickness = 1.15 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) (normal)	Force (lbs) (side)	Force (lbs) (angle)
7770 Antenna	55.0	11.0	5.0	4.20	1.91	5.00	11.00	1.31	1.53	204	109	133
HPA-65R-BUU-H6 Antenna	72.0	14.8	7.4	7.40	3.70	4.86	9.73	1.31	1.49	358	205	243
DMP65R-BU6DA Antenna	71.2	20.7	7.7	10.24	3.81	3.44	9.25	1.24	1.47	472	208	274
RRUS-32 B2 RRH (Side)	27.2	7.0	12.1	1.32	2.29	3.89	2.25	1.26	1.20	62	102	92
4449 B5/B12 RRH (Side)	14.9	10.4	13.2	1.08	1.37	1.43	1.13	1.20	1.20	48	61	58
4449 B5/B12 RRH (Shielded)	14.9	7.8	13.2	0.81	1.37	1.91	1.13	1.20	1.20	36	61	55
4415 B30 RRH (Side)	16.5	5.9	13.4	0.68	1.54	2.80	1.23	1.21	1.20	30	68	59
4415 B30 RRH (Shielded)	16.5	4.4	13.4	0.51	1.54	3.73	1.23	1.25	1.20	24	68	57
SDARS XM Remote Repeater (Side)	32.7	5.8	6.1	1.32	1.39	5.64	5.36	1.34	1.33	65	68	68
LGP21401 TMA	14.4	2.7	9.0	0.27	0.90	5.33	1.60	1.33	1.20	13	40	33
CBC235R-43 Diplexer (Side)	8.0	2.1	6.3	0.12	0.35	3.81	1.27	1.26	1.20	5	16	13

WIND LOADS WITH ICE:

7770 Antenna	57.3	13.3	7.3	5.30	2.91	4.31	7.84	1.28	1.43	44	27	31
HPA-65R-BUU-H6 Antenna	74.3	17.1	9.7	8.83	5.01	4.34	7.65	1.28	1.42	73	46	53
DMP65R-BU6DA Antenna	73.5	23.0	10.0	11.74	5.11	3.19	7.35	1.23	1.41	93	46	58
RRUS-32 B2 RRH (Side)	29.5	9.3	14.4	1.91	2.95	3.17	2.05	1.23	1.20	15	23	21
4449 B5/B12 RRH (Side)	17.2	12.7	15.5	1.52	1.85	1.35	1.11	1.20	1.20	12	14	14
4449 B5/B12 RRH (Shielded)	17.2	9.5	15.5	1.14	1.85	1.81	1.11	1.20	1.20	9	14	13
4415 B30 RRH (Side)	18.8	8.2	15.7	1.07	2.05	2.29	1.20	1.20	1.20	8	16	14
4415 B30 RRH (Shielded)	18.8	6.2	15.7	0.80	2.05	3.06	1.20	1.22	1.20	6	16	13
SDARS XM Remote Repeater (Side)	35.0	8.1	8.4	1.97	2.04	4.32	4.16	1.28	1.27	16	17	17
LGP21401 TMA	16.7	5.0	11.3	0.58	1.31	3.34	1.48	1.24	1.20	5	10	9
CBC235R-43 Diplexer (Side)	10.3	4.4	8.6	0.32	0.62	2.34	1.20	1.20	1.20	2	5	4

WIND LOADS AT 30 MPH:

7770 Antenna	55.0	11.0	5.0	4.20	1.91	5.00	11.00	1.31	1.53	13	7	8
HPA-65R-BUU-H6 Antenna	72.0	14.8	7.4	7.40	3.70	4.86	9.73	1.31	1.49	22	13	15
DMP65R-BU6DA Antenna	71.2	20.7	7.7	10.24	3.81	3.44	9.25	1.24	1.47	29	13	17
RRUS-32 B2 RRH (Side)	27.2	7.0	12.1	1.32	2.29	3.89	2.25	1.26	1.20	4	6	6
4449 B5/B12 RRH (Side)	14.9	10.4	13.2	1.08	1.37	1.43	1.13	1.20	1.20	3	4	4
4449 B5/B12 RRH (Shielded)	14.9	7.8	13.2	0.81	1.37	1.91	1.13	1.20	1.20	2	4	3
4415 B30 RRH (Side)	16.5	5.9	13.4	0.68	1.54	2.80	1.23	1.21	1.20	2	4	4
4415 B30 RRH (Shielded)	16.5	4.4	13.4	0.51	1.54	3.73	1.23	1.25	1.20	1	4	4
SDARS XM Remote Repeater (Side)	32.7	5.8	6.1	1.32	1.39	5.64	5.36	1.34	1.33	4	4	4
LGP21401 TMA	14.4	2.7	9.0	0.27	0.90	5.33	1.60	1.33	1.20	1	3	2
CBC235R-43 Diplexer (Side)	8.0	2.1	6.3	0.12	0.35	3.81	1.27	1.26	1.20	0	1	1

Date: 2/11/2020
 Project Name: MONROE CENTER
 Project No.: CT2203
 Designed By: LBW Checked By: MSC



WIND LOADS

Angle = 90 (deg) Ice Thickness = 1.15 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) (normal)	Force (lbs) (side)	Force (lbs) (angle)
7770 Antenna	55.0	11.0	5.0	4.20	1.91	5.00	11.00	1.31	1.53	204	109	109
HPA-65R-BUU-H6 Antenna	72.0	14.8	7.4	7.40	3.70	4.86	9.73	1.31	1.49	358	205	205
DMP65R-BU6DA Antenna	71.2	20.7	7.7	10.24	3.81	3.44	9.25	1.24	1.47	472	208	208
RRUS-32 B2 RRH (Side)	27.2	7.0	12.1	1.32	2.29	3.89	2.25	1.26	1.20	62	102	102
4449 B5/B12 RRH (Side)	14.9	10.4	13.2	1.08	1.37	1.43	1.13	1.20	1.20	48	61	61
4449 B5/B12 RRH (Shielded)	14.9	5.2	13.2	0.54	1.37	2.87	1.13	1.22	1.20	24	61	61
4415 B30 RRH (Side)	16.5	5.9	13.4	0.68	1.54	2.80	1.23	1.21	1.20	30	68	68
4415 B30 RRH (Shielded)	16.5	3.0	13.4	0.34	1.54	5.59	1.23	1.34	1.20	17	68	68
SDARS XM Remote Repeater (Side)	32.7	5.8	6.1	1.32	1.39	5.64	5.36	1.34	1.33	65	68	68
LGP21401 TMA	14.4	2.7	9.0	0.27	0.90	5.33	1.60	1.33	1.20	13	40	40
CBC235R-43 Diplexer (Side)	8.0	2.1	6.3	0.12	0.35	3.81	1.27	1.26	1.20	5	16	16

WIND LOADS WITH ICE:

7770 Antenna	57.3	13.3	7.3	5.30	2.91	4.31	7.84	1.28	1.43	44	27	27
HPA-65R-BUU-H6 Antenna	74.3	17.1	9.7	8.83	5.01	4.34	7.65	1.28	1.42	73	46	46
DMP65R-BU6DA Antenna	73.5	23.0	10.0	11.74	5.11	3.19	7.35	1.23	1.41	99	46	46
RRUS-32 B2 RRH (Side)	29.5	9.3	14.4	1.91	2.95	3.17	2.05	1.23	1.20	15	23	23
4449 B5/B12 RRH (Side)	17.2	12.7	15.5	1.52	1.85	1.35	1.11	1.20	1.20	12	14	14
4449 B5/B12 RRH (Shielded)	17.2	7.5	15.5	0.90	1.85	2.29	1.11	1.20	1.20	7	14	14
4415 B30 RRH (Side)	18.8	8.2	15.7	1.07	2.05	2.29	1.20	1.20	1.20	8	16	16
4415 B30 RRH (Shielded)	18.8	5.3	15.7	0.69	2.05	3.58	1.20	1.25	1.20	6	16	16
SDARS XM Remote Repeater (Side)	35.0	8.1	8.4	1.97	2.04	4.32	4.16	1.28	1.27	16	17	17
LGP21401 TMA	16.7	5.0	11.3	0.58	1.31	3.34	1.48	1.24	1.20	5	10	10
CBC235R-43 Diplexer (Side)	10.3	4.4	8.6	0.32	0.62	2.34	1.20	1.20	1.20	2	5	5

WIND LOADS AT 30 MPH:

7770 Antenna	55.0	11.0	5.0	4.20	1.91	5.00	11.00	1.31	1.53	13	7	7
HPA-65R-BUU-H6 Antenna	72.0	14.8	7.4	7.40	3.70	4.86	9.73	1.31	1.49	22	13	13
DMP65R-BU6DA Antenna	71.2	20.7	7.7	10.24	3.81	3.44	9.25	1.24	1.47	29	13	13
RRUS-32 B2 RRH (Side)	27.2	7.0	12.1	1.32	2.29	3.89	2.25	1.26	1.20	4	6	6
4449 B5/B12 RRH (Side)	14.9	10.4	13.2	1.08	1.37	1.43	1.13	1.20	1.20	3	4	4
4449 B5/B12 RRH (Shielded)	14.9	5.2	13.2	0.54	1.37	2.87	1.13	1.22	1.20	2	4	4
4415 B30 RRH (Side)	16.5	5.9	13.4	0.68	1.54	2.80	1.23	1.21	1.20	2	4	4
4415 B30 RRH (Shielded)	16.5	3.0	13.4	0.34	1.54	5.59	1.23	1.34	1.20	1	4	4
SDARS XM Remote Repeater (Side)	32.7	5.8	6.1	1.32	1.39	5.64	5.36	1.34	1.33	4	4	4
LGP21401 TMA	14.4	2.7	9.0	0.27	0.90	5.33	1.60	1.33	1.20	1	3	3
CBC235R-43 Diplexer (Side)	8.0	2.1	6.3	0.12	0.35	3.81	1.27	1.26	1.20	0	1	1

Date: 2/11/2020
 Project Name: MONROE CENTER
 Project No.: CT2203
 Designed By: LBW Checked By: MSC



WIND LOADS

Angle = 120 (deg) Ice Thickness = 1.15 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) (normal)	Force (lbs) (side)	Force (lbs) (angle)
7770 Antenna	55.0	11.0	5.0	4.20	1.91	5.00	11.00	1.31	1.53	204	109	133
HPA-65R-BUU-H6 Antenna	72.0	14.8	7.4	7.40	3.70	4.86	9.73	1.31	1.49	358	205	243
DMP65R-BU6DA Antenna	71.2	20.7	7.7	10.24	3.81	3.44	9.25	1.24	1.47	472	208	274
RRUS-32 B2 RRH (Side)	27.2	7.0	12.1	1.32	2.29	3.89	2.25	1.26	1.20	62	102	92
4449 B5/B12 RRH (Side)	14.9	10.4	13.2	1.08	1.37	1.43	1.13	1.20	1.20	48	61	58
4449 B5/B12 RRH (Shielded)	14.9	7.8	13.2	0.81	1.37	1.91	1.13	1.20	1.20	36	61	55
4415 B30 RRH (Side)	16.5	5.9	13.4	0.68	1.54	2.80	1.23	1.21	1.20	30	68	59
4415 B30 RRH (Shielded)	16.5	4.4	13.4	0.51	1.54	3.73	1.23	1.25	1.20	24	68	57
SDARS XM Remote Repeater (Side)	32.7	5.8	6.1	1.32	1.39	5.64	5.36	1.34	1.33	65	68	68
LGP21401 TMA	14.4	2.7	9.0	0.27	0.90	5.33	1.60	1.33	1.20	13	40	33
CBC235R-43 Diplexer (Side)	8.0	2.1	6.3	0.12	0.35	3.81	1.27	1.26	1.20	5	16	13

WIND LOADS WITH ICE:

7770 Antenna	57.3	13.3	7.3	5.30	2.91	4.31	7.84	1.28	1.43	44	27	31
HPA-65R-BUU-H6 Antenna	74.3	17.1	9.7	8.83	5.01	4.34	7.65	1.28	1.42	73	46	53
DMP65R-BU6DA Antenna	73.5	23.0	10.0	11.74	5.11	3.19	7.35	1.23	1.41	93	46	58
RRUS-32 B2 RRH (Side)	29.5	9.3	14.4	1.91	2.95	3.17	2.05	1.23	1.20	15	23	21
4449 B5/B12 RRH (Side)	17.2	12.7	15.5	1.52	1.85	1.35	1.11	1.20	1.20	12	14	14
4449 B5/B12 RRH (Shielded)	17.2	9.5	15.5	1.14	1.85	1.81	1.11	1.20	1.20	9	14	13
4415 B30 RRH (Side)	18.8	8.2	15.7	1.07	2.05	2.29	1.20	1.20	1.20	8	16	14
4415 B30 RRH (Shielded)	18.8	6.2	15.7	0.80	2.05	3.06	1.20	1.22	1.20	6	16	13
SDARS XM Remote Repeater (Side)	35.0	8.1	8.4	1.97	2.04	4.32	4.16	1.28	1.27	16	17	17
LGP21401 TMA	16.7	5.0	11.3	0.58	1.31	3.34	1.48	1.24	1.20	5	10	9
CBC235R-43 Diplexer (Side)	10.3	4.4	8.6	0.32	0.62	2.34	1.20	1.20	1.20	2	5	4

WIND LOADS AT 30 MPH:

7770 Antenna	55.0	11.0	5.0	4.20	1.91	5.00	11.00	1.31	1.53	13	7	8
HPA-65R-BUU-H6 Antenna	72.0	14.8	7.4	7.40	3.70	4.86	9.73	1.31	1.49	22	13	15
DMP65R-BU6DA Antenna	71.2	20.7	7.7	10.24	3.81	3.44	9.25	1.24	1.47	29	13	17
RRUS-32 B2 RRH (Side)	27.2	7.0	12.1	1.32	2.29	3.89	2.25	1.26	1.20	4	6	6
4449 B5/B12 RRH (Side)	14.9	10.4	13.2	1.08	1.37	1.43	1.13	1.20	1.20	3	4	4
4449 B5/B12 RRH (Shielded)	14.9	7.8	13.2	0.81	1.37	1.91	1.13	1.20	1.20	2	4	3
4415 B30 RRH (Side)	16.5	5.9	13.4	0.68	1.54	2.80	1.23	1.21	1.20	2	4	4
4415 B30 RRH (Shielded)	16.5	4.4	13.4	0.51	1.54	3.73	1.23	1.25	1.20	1	4	4
SDARS XM Remote Repeater (Side)	32.7	5.8	6.1	1.32	1.39	5.64	5.36	1.34	1.33	4	4	4
LGP21401 TMA	14.4	2.7	9.0	0.27	0.90	5.33	1.60	1.33	1.20	1	3	2
CBC235R-43 Diplexer (Side)	8.0	2.1	6.3	0.12	0.35	3.81	1.27	1.26	1.20	0	1	1

Date: 2/11/2020
 Project Name: MONROE CENTER
 Project No.: CT2203
 Designed By: LBW Checked By: MSC



WIND LOADS

Angle = 150 (deg) Ice Thickness = 1.15 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) (normal)	Force (lbs) (side)	Force (lbs) (angle)
7770 Antenna	55.0	11.0	5.0	4.20	1.91	5.00	11.00	1.31	1.53	204	109	180
HPA-65R-BUU-H6 Antenna	72.0	14.8	7.4	7.40	3.70	4.86	9.73	1.31	1.49	358	205	320
DMP65R-BU6DA Antenna	71.2	20.7	7.7	10.24	3.81	3.44	9.25	1.24	1.47	472	208	406
RRUS-32 B2 RRH (Side)	27.2	7.0	12.1	1.32	2.29	3.89	2.25	1.26	1.20	62	102	72
4449 B5/B12 RRH (Side)	14.9	10.4	13.2	1.08	1.37	1.43	1.13	1.20	1.20	48	61	51
4449 B5/B12 RRH (Shielded)	14.9	5.2	13.2	0.54	1.37	2.87	1.13	1.22	1.20	24	61	33
4415 B30 RRH (Side)	16.5	5.9	13.4	0.68	1.54	2.80	1.23	1.21	1.20	30	68	40
4415 B30 RRH (Shielded)	16.5	3.0	13.4	0.34	1.54	5.59	1.23	1.34	1.20	17	68	30
SDARS XM Remote Repeater (Side)	32.7	5.8	6.1	1.32	1.39	5.64	5.36	1.34	1.33	65	68	66
LGP21401 TMA	14.4	2.7	9.0	0.27	0.90	5.33	1.60	1.33	1.20	13	40	20
CBC235R-43 Diplexer (Side)	8.0	2.1	6.3	0.12	0.35	3.81	1.27	1.26	1.20	5	16	8

WIND LOADS WITH ICE:

7770 Antenna	57.3	13.3	7.3	5.30	2.91	4.31	7.84	1.28	1.43	44	27	39
HPA-65R-BUU-H6 Antenna	74.3	17.1	9.7	8.83	5.01	4.34	7.65	1.28	1.42	73	46	66
DMP65R-BU6DA Antenna	73.5	23.0	10.0	11.74	5.11	3.19	7.35	1.23	1.41	93	46	81
RRUS-32 B2 RRH (Side)	29.5	9.3	14.4	1.91	2.95	3.17	2.05	1.23	1.20	15	23	17
4449 B5/B12 RRH (Side)	17.2	12.7	15.5	1.52	1.85	1.35	1.11	1.20	1.20	12	14	12
4449 B5/B12 RRH (Shielded)	17.2	6.4	15.5	0.76	1.85	2.71	1.11	1.21	1.20	6	14	8
4415 B30 RRH (Side)	18.8	8.2	15.7	1.07	2.05	2.29	1.20	1.20	1.20	8	16	10
4415 B30 RRH (Shielded)	18.8	4.1	15.7	0.54	2.05	4.58	1.20	1.29	1.20	4	16	7
SDARS XM Remote Repeater (Side)	35.0	8.1	8.4	1.97	2.04	4.32	4.16	1.28	1.27	16	17	16
LGP21401 TMA	16.7	5.0	11.3	0.58	1.31	3.34	1.48	1.24	1.20	5	10	6
CBC235R-43 Diplexer (Side)	10.3	4.4	8.6	0.32	0.62	2.34	1.20	1.20	1.20	2	5	3

WIND LOADS AT 30 MPH:

7770 Antenna	55.0	11.0	5.0	4.20	1.91	5.00	11.00	1.31	1.53	13	7	11
HPA-65R-BUU-H6 Antenna	72.0	14.8	7.4	7.40	3.70	4.86	9.73	1.31	1.49	22	13	20
DMP65R-BU6DA Antenna	71.2	20.7	7.7	10.24	3.81	3.44	9.25	1.24	1.47	29	13	25
RRUS-32 B2 RRH (Side)	27.2	7.0	12.1	1.32	2.29	3.89	2.25	1.26	1.20	4	6	4
4449 B5/B12 RRH (Side)	14.9	10.4	13.2	1.08	1.37	1.43	1.13	1.20	1.20	3	4	3
4449 B5/B12 RRH (Shielded)	14.9	5.2	13.2	0.54	1.37	2.87	1.13	1.22	1.20	2	4	2
4415 B30 RRH (Side)	16.5	5.9	13.4	0.68	1.54	2.80	1.23	1.21	1.20	2	4	2
4415 B30 RRH (Shielded)	16.5	3.0	13.4	0.34	1.54	5.59	1.23	1.34	1.20	1	4	2
SDARS XM Remote Repeater (Side)	32.7	5.8	6.1	1.32	1.39	5.64	5.36	1.34	1.33	4	4	4
LGP21401 TMA	14.4	2.7	9.0	0.27	0.90	5.33	1.60	1.33	1.20	1	3	1
CBC235R-43 Diplexer (Side)	8.0	2.1	6.3	0.12	0.35	3.81	1.27	1.26	1.20	0	1	0

Date: 2/11/2020

Project Name: MONROE CENTER

Project No.: CT2203

Designed By: LBW Checked By: MSC



ICE WEIGHT CALCULATIONS

Thickness of ice: 1.15 in.
Density of ice: 56 pcf

7770 Antenna

Weight of ice based on total radial SF area:
Height (in): 55.0
Width (in): 11.0
Depth (in): 5.0
Total weight of ice on object: 85 lbs
Weight of object: 35.0 lbs
Combined weight of ice and object: 120 lbs

HPA-65R-BUU-H6 Antenna

Weight of ice based on total radial SF area:
Height (in): 72.0
Width (in): 14.8
Depth (in): 7.4
Total weight of ice on object: 149 lbs
Weight of object: 51.0 lbs
Combined weight of ice and object: 200 lbs

DMP65R-BU6DA Antenna

Weight of ice based on total radial SF area:
Height (in): 71.2
Width (in): 20.7
Depth (in): 7.7
Total weight of ice on object: 194 lbs
Weight of object: 80.0 lbs
Combined weight of ice and object: 274 lbs

RRUS-32 B2 RRH

Weight of ice based on total radial SF area:
Height (in): 27.2
Width (in): 12.1
Depth (in): 7.0
Total weight of ice on object: 48 lbs
Weight of object: 60.0 lbs
Combined weight of ice and object: 108 lbs

4449 B5/B12 RRH

Weight of ice based on total radial SF area:
Height (in): 14.9
Width (in): 13.2
Depth (in): 10.4
Total weight of ice on object: 31 lbs
Weight of object: 73.0 lbs
Combined weight of ice and object: 104 lbs

4415 B30 RRH

Weight of ice based on total radial SF area:
Height (in): 16.5
Width (in): 13.4
Depth (in): 5.9
Total weight of ice on object: 31 lbs
Weight of object: 46.0 lbs
Combined weight of ice and object: 77 lbs

SDARS XM Remote Repeater

Weight of ice based on total radial SF area:
Height (in): 32.7
Width (in): 6.1
Depth (in): 5.8
Total weight of ice on object: 37 lbs
Weight of object: 22.0 lbs
Combined weight of ice and object: 59 lbs

LGP21401 TMA

Weight of ice based on total radial SF area:
Height (in): 14.4
Width (in): 2.7
Depth (in): 9.0
Total weight of ice on object: 18 lbs
Weight of object: 19.0 lbs
Combined weight of ice and object: 37 lbs

CBC23SR-43 Diplexer

Weight of ice based on total radial SF area:
Height (in): 8.0
Width (in): 6.3
Depth (in): 2.1
Total weight of ice on object: 7 lbs
Weight of object: 6.0 lbs
Combined weight of ice and object: 13 lbs

Squid Surge Arrestor

Weight of ice based on total radial SF area:
Depth (in): 24.0
Diameter(in): 9.7
Total weight of ice on object: 30 lbs
Weight of object: 33 lbs
Combined weight of ice and object: 63 lbs

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: 7 plf

HSS 4x4

Weight of ice based on total radial SF area:
Height (in): 4
Width (in): 4
Per foot weight of ice on object: 10 plf

PL 6-1/2x1/2

Weight of ice based on total radial SF area:
Height (in): 6.5
Width (in): 0.5
Per foot weight of ice on object: 11 plf

2" pipe

Per foot weight of ice:
diameter (in): 2.38
Per foot weight of ice on object: 5 plf

3" Pipe

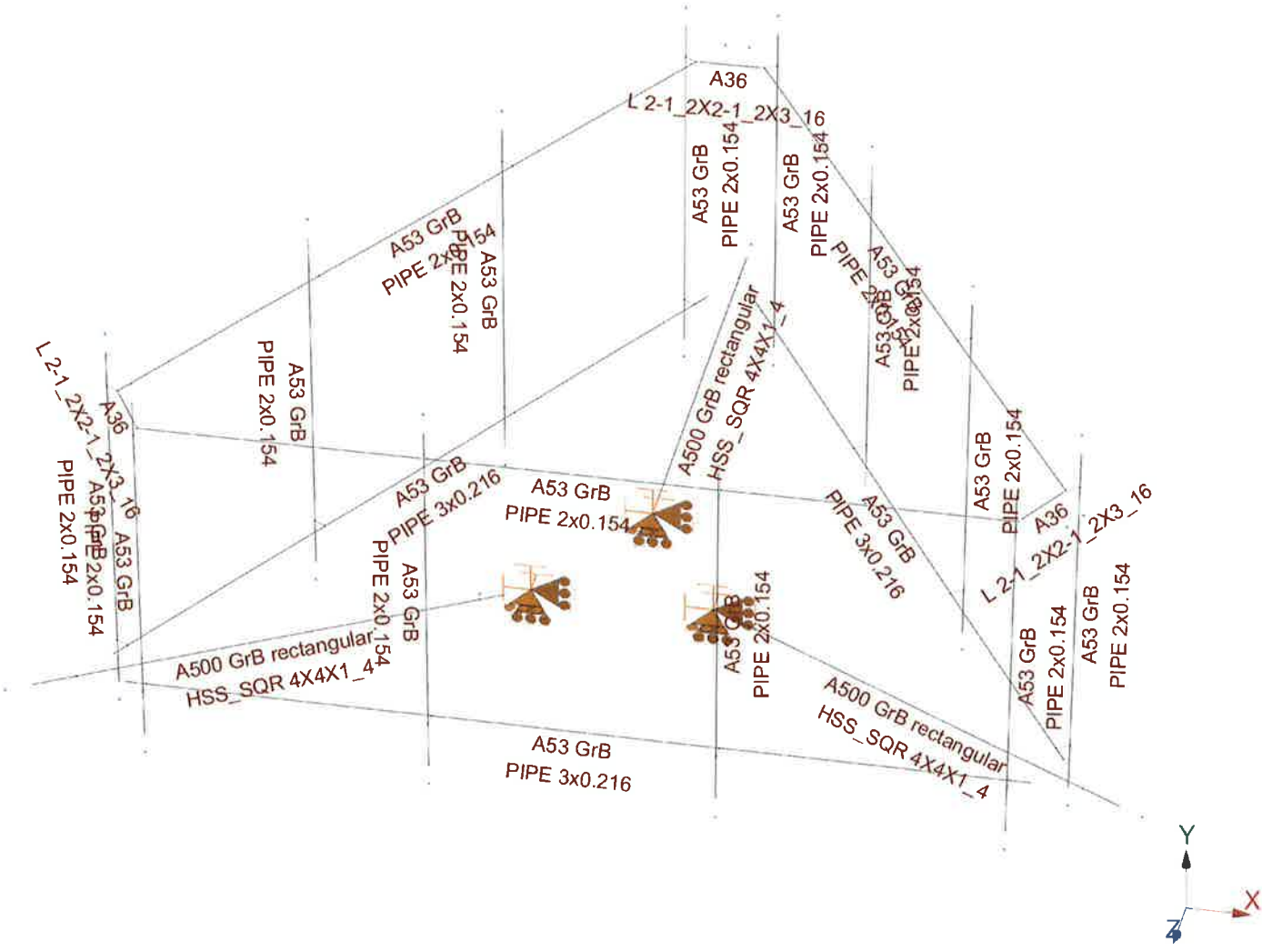
Per foot weight of ice:
diameter (in): 3.5
Per foot weight of ice on object: 7 plf



HUDSON
Design Group LLC

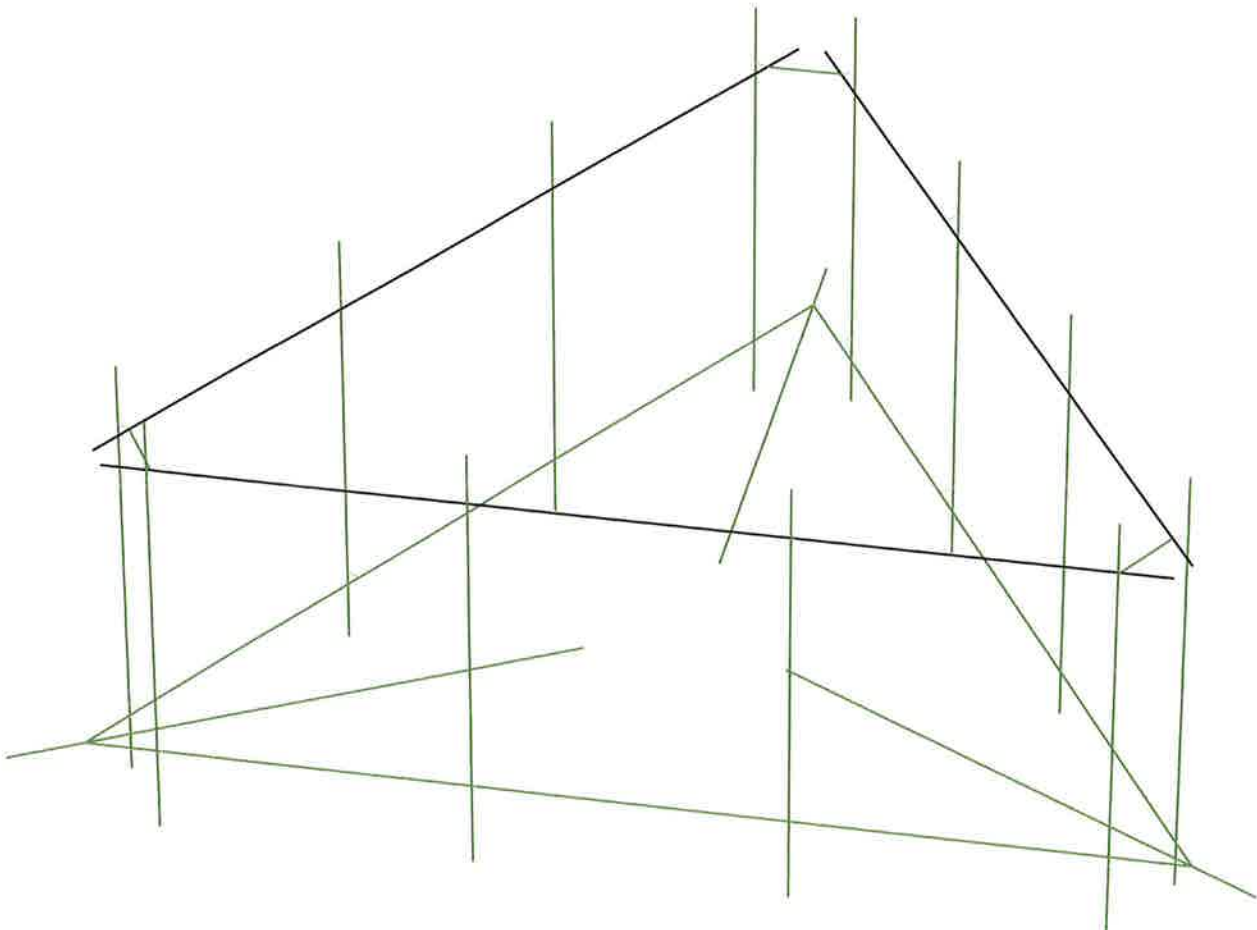
**Mount Calculations
(Existing Conditions)**

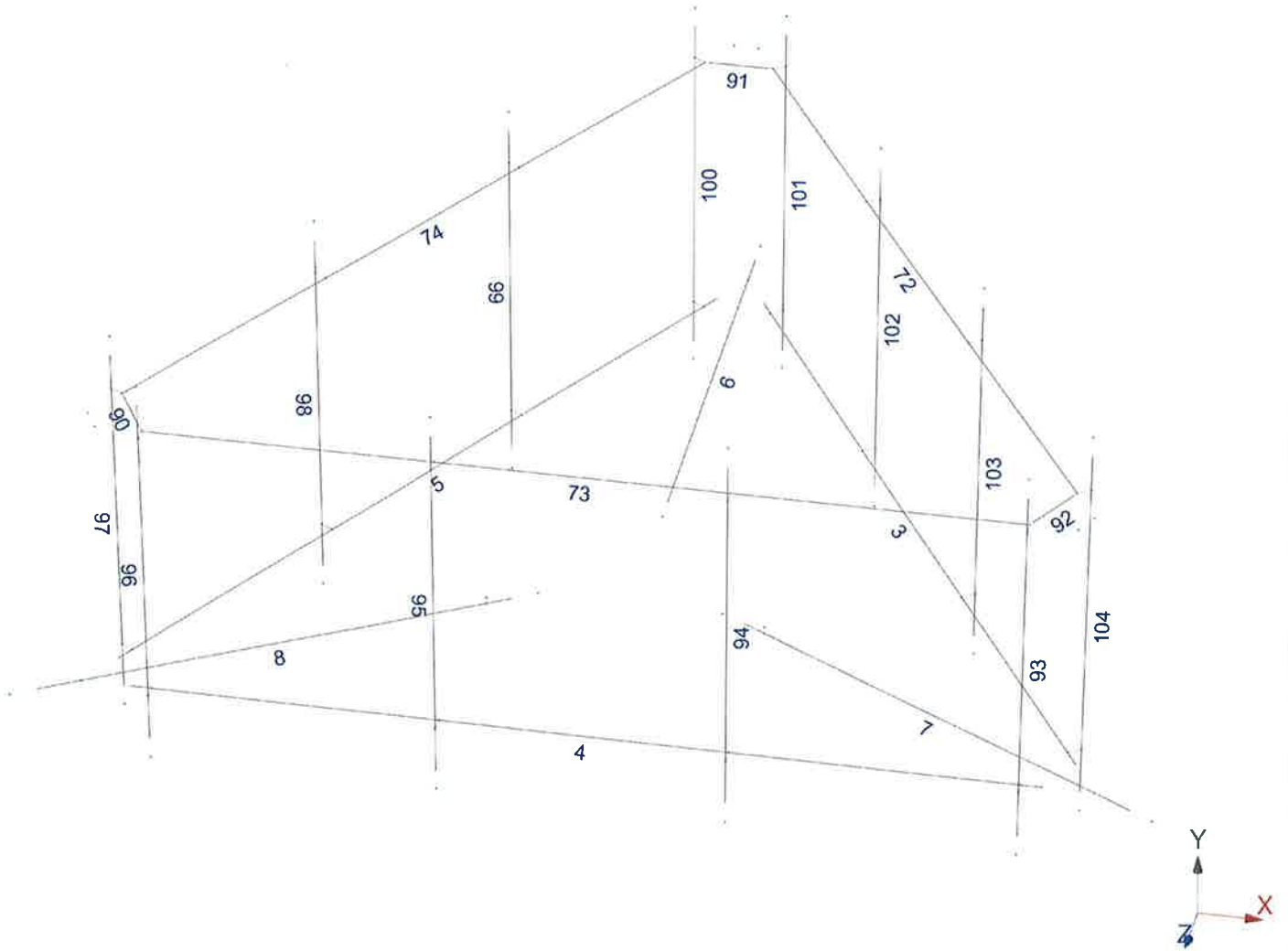




Design status

-  Not designed
-  Error on design
-  Design O.K.
-  With warnings





Load data

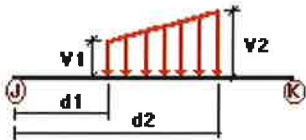
GLOSSARY

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	250 lb Live Load Antenna 1	No	LL
LLa2	250 lb Live Load Antenna 2	No	LL
LLa3	250 lb Live Load Antenna 3	No </td <td>LL</td>	LL
LLa4	250 lb Live Load Antenna 4	No	LL

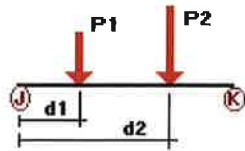
Distributed force on members



Condition	Member	Dir1	Val1 [Kip/ft]	Val2 [Kip/ft]	Dist1 [ft]	%	Dist2 [ft]	%	
DL	3	y	-0.01	-0.01	3.00	No	10.00	No	
	4	y	-0.01	-0.01	3.00	No	10.00	No	
	5	y	-0.01	-0.01	3.00	No	10.00	No	
	6	y	-0.01	-0.01	4.00	No	7.00	No	
	7	y	-0.01	-0.01	4.00	No	7.00	No	
	8	y	-0.01	-0.01	4.00	No	7.00	No	
	W0	3	z	-0.013	0.00	0.00	No	0.00	No
		4	z	-0.013	0.00	0.00	No	0.00	No
5		z	-0.013	0.00	0.00	No	0.00	No	
7		z	-0.025	0.00	0.00	No	0.00	No	
8		z	-0.025	0.00	0.00	No	0.00	No	
72		z	-0.009	0.00	0.00	No	0.00	No	
73		z	-0.009	0.00	0.00	No	0.00	No	
74		z	-0.009	0.00	0.00	No	0.00	No	
90	z	-0.015	0.00	0.00	No	0.00	No		

	91	z	-0.015	0.00	0.00	No	0.00	No
	92	z	-0.015	0.00	0.00	No	0.00	No
	94	z	-0.009	0.00	0.00	No	0.00	No
	97	z	-0.009	0.00	0.00	No	0.00	No
	98	z	-0.009	0.00	0.00	No	0.00	No
	99	z	-0.009	0.00	0.00	No	0.00	No
	100	z	-0.009	0.00	0.00	No	0.00	No
	101	z	-0.009	0.00	0.00	No	0.00	No
	102	z	-0.009	0.00	0.00	No	0.00	No
	103	z	-0.009	0.00	0.00	No	0.00	No
	104	z	-0.009	0.00	0.00	No	0.00	No
W30	3	x	-0.013	0.00	0.00	No	0.00	No
	5	x	-0.013	0.00	0.00	No	0.00	No
	6	x	-0.025	0.00	0.00	No	0.00	No
	7	x	-0.025	0.00	0.00	No	0.00	No
	8	x	-0.025	0.00	0.00	No	0.00	No
	72	x	-0.009	0.00	0.00	No	0.00	No
	74	x	-0.009	0.00	0.00	No	0.00	No
	90	x	-0.015	0.00	0.00	No	0.00	No
	92	x	-0.015	0.00	0.00	No	0.00	No
	93	x	-0.009	0.00	0.00	No	0.00	No
	94	x	-0.009	0.00	0.00	No	0.00	No
	95	x	-0.009	0.00	0.00	No	0.00	No
	96	x	-0.009	0.00	0.00	No	0.00	No
	97	x	-0.009	0.00	0.00	No	0.00	No
	98	x	-0.009	0.00	0.00	No	0.00	No
	99	x	-0.009	0.00	0.00	No	0.00	No
	100	x	-0.009	0.00	0.00	No	0.00	No
	101	x	-0.009	0.00	0.00	No	0.00	No
	102	x	-0.009	0.00	0.00	No	0.00	No
	103	x	-0.009	0.00	0.00	No	0.00	No
	104	x	-0.009	0.00	0.00	No	0.00	No
Di	3	y	-0.007	0.00	0.00	No	0.00	No
	4	y	-0.007	0.00	0.00	No	0.00	No
	5	y	-0.007	0.00	0.00	No	0.00	No
	6	y	-0.01	0.00	0.00	No	0.00	No
	7	y	-0.01	0.00	0.00	No	0.00	No
	8	y	-0.01	0.00	0.00	No	0.00	No
	72	y	-0.005	0.00	0.00	No	0.00	No
	73	y	-0.005	0.00	0.00	No	0.00	No
	74	y	-0.005	0.00	0.00	No	0.00	No
	90	y	-0.007	0.00	0.00	No	0.00	No
	91	y	-0.007	0.00	0.00	No	0.00	No
	92	y	-0.007	0.00	0.00	No	0.00	No
	93	y	-0.005	0.00	0.00	No	0.00	No
	94	y	-0.005	0.00	0.00	No	0.00	No
	95	y	-0.005	0.00	0.00	No	0.00	No
	96	y	-0.005	0.00	0.00	No	0.00	No
	97	y	-0.005	0.00	0.00	No	0.00	No
	98	y	-0.005	0.00	0.00	No	0.00	No
	99	y	-0.005	0.00	0.00	No	0.00	No
	100	y	-0.005	0.00	0.00	No	0.00	No
	101	y	-0.005	0.00	0.00	No	0.00	No
	102	y	-0.005	0.00	0.00	No	0.00	No
	103	y	-0.005	0.00	0.00	No	0.00	No
	104	y	-0.005	0.00	0.00	No	0.00	No

Concentrated forces on members



Condition	Member	Dir1	Value1 [Kip]	Dist1 [ft]	%
DL	93	y	-0.018	1.00	No
		y	-0.018	5.00	No
		y	-0.038	3.00	No
	95	y	-0.026	0.50	No
		y	-0.026	5.50	No
		y	-0.044	2.50	No
	96	y	-0.044	4.00	No
		y	-0.04	0.50	No
		y	-0.04	5.50	No
	97	y	-0.073	3.00	No
		y	-0.046	3.00	No
		y	-0.018	1.00	No
	99	y	-0.018	5.00	No
		y	-0.038	3.00	No
		y	-0.026	0.50	No
	100	y	-0.026	5.50	No
		y	-0.044	2.50	No
		y	-0.044	4.00	No
	101	y	-0.04	0.50	No
		y	-0.04	5.50	No
		y	-0.073	3.00	No
	103	y	-0.046	3.00	No
		y	-0.018	1.00	No
		y	-0.018	5.00	No
	104	y	-0.038	3.00	No
		y	-0.026	0.50	No
		y	-0.026	5.50	No
	105	y	-0.044	2.50	No
		y	-0.044	4.00	No
		y	-0.04	0.50	No
106	y	-0.04	5.50	No	
	y	-0.073	3.00	No	
	y	-0.046	3.00	No	
W0	93	z	-0.033	0.00	No
		z	-0.066	0.00	No
		z	-0.103	1.00	No
	95	z	-0.103	5.00	No
		z	-0.18	0.50	No
		z	-0.18	5.50	No
	96	z	-0.066	2.50	No
		z	-0.066	4.00	No
		z	-0.237	0.50	No
	97	z	-0.237	5.50	No
		z	-0.024	3.00	No
		z	-0.017	3.00	No
99	z	-0.067	1.00	No	
	z	-0.067	5.00	No	
	z	-0.033	3.00	No	
100	z	-0.122	0.50	No	
	z	-0.122	5.50	No	
	z	-0.087	2.50	No	
	z	-0.087	4.00	No	
	z	-0.138	0.50	No	
	z	-0.138	5.50	No	

		z	-0.057	3.00	No
	101	z	-0.067	1.00	No
		z	-0.067	5.00	No
		z	-0.033	3.00	No
	103	z	-0.122	0.50	No
		z	-0.122	5.50	No
		z	-0.087	2.50	No
		z	-0.087	4.00	No
	104	z	-0.138	0.50	No
		z	-0.138	5.50	No
		z	-0.057	3.00	No
	105	z	-0.042	0.00	No
	106	z	-0.042	0.00	No
W30	93	x	-0.055	1.00	No
		x	-0.055	5.00	No
		x	-0.04	3.00	No
	95	x	-0.103	0.50	No
		x	-0.103	5.50	No
		x	-0.093	2.50	No
		x	-0.093	4.00	No
	96	x	-0.105	0.50	No
		x	-0.105	5.50	No
		x	-0.069	3.00	No
	97	x	-0.091	1.00	No
		x	-0.091	5.00	No
		x	-0.02	3.00	No
	99	x	-0.161	0.50	No
		x	-0.161	5.50	No
		x	-0.073	2.50	No
		x	-0.073	4.00	No
	100	x	-0.204	0.50	No
		x	-0.204	5.50	No
		x	-0.033	3.00	No
	101	x	-0.091	1.00	No
		x	-0.091	5.00	No
		x	-0.02	3.00	No
	103	x	-0.161	0.50	No
		x	-0.161	5.50	No
		x	-0.073	2.50	No
		x	-0.073	4.00	No
	104	x	-0.204	0.50	No
		x	-0.204	5.50	No
		x	-0.033	3.00	No
	105	x	-0.042	0.00	No
	106	x	-0.042	0.00	No
Di	93	y	-0.043	1.00	No
		y	-0.043	5.00	No
		y	-0.036	3.00	No
	95	y	-0.075	0.50	No
		y	-0.075	5.50	No
		y	-0.046	2.50	No
		y	-0.046	4.00	No
	96	y	-0.097	0.50	No
		y	-0.097	5.50	No
		y	-0.031	3.00	No
		y	-0.031	3.00	No
	97	y	-0.043	1.00	No
		y	-0.043	5.00	No
		y	-0.036	3.00	No
	99	y	-0.075	0.50	No

		y	-0.075	5.50	No
		y	-0.046	2.50	No
		y	-0.046	4.00	No
	100	y	-0.097	0.50	No
		y	-0.097	5.50	No
		y	-0.031	3.00	No
		y	-0.031	3.00	No
	101	y	-0.043	1.00	No
		y	-0.043	5.00	No
		y	-0.036	3.00	No
	103	y	-0.075	0.50	No
		y	-0.075	5.50	No
		y	-0.046	2.50	No
		y	-0.046	4.00	No
	104	y	-0.097	0.50	No
		y	-0.097	5.50	No
		y	-0.031	3.00	No
		y	-0.031	3.00	No
	105	y	-0.03	0.00	No
	106	y	-0.06	0.00	No
Wi0	93	z	-0.023	1.00	No
		z	-0.023	5.00	No
	95	z	-0.038	0.50	No
		z	-0.038	5.50	No
		z	-0.018	2.50	No
		z	-0.018	4.00	No
	96	z	-0.048	0.50	No
		z	-0.048	5.50	No
		z	-0.007	3.00	No
		z	-0.006	3.00	No
	97	z	-0.016	1.00	No
		z	-0.016	5.00	No
		z	-0.009	3.00	No
	99	z	-0.027	0.50	No
		z	-0.027	5.50	No
		z	-0.025	2.50	No
		z	-0.025	4.00	No
	100	z	-0.03	0.50	No
		z	-0.03	5.50	No
		z	-0.014	3.00	No
	101	z	-0.016	1.00	No
		z	-0.016	5.00	No
		z	-0.009	3.00	No
	103	z	-0.027	0.50	No
		z	-0.027	5.50	No
		z	-0.025	2.50	No
		z	-0.025	4.00	No
	104	z	-0.03	0.50	No
		z	-0.03	5.50	No
		z	-0.014	3.00	No
	105	z	-0.01	0.00	No
	106	z	-0.01	0.00	No
Wi30	93	x	-0.014	1.00	No
		x	-0.014	5.00	No
		x	-0.01	3.00	No
	95	x	-0.023	0.50	No
		x	-0.023	5.50	No
		x	-0.023	2.50	No
		x	-0.023	4.00	No
	96	x	-0.024	0.50	No

		x	-0.024	5.50	No	
		x	-0.016	3.00	No	
97		x	-0.02	1.00	No	
		x	-0.02	5.00	No	
		x	-0.006	3.00	No	
99		x	-0.034	0.50	No	
		x	-0.034	5.50	No	
		x	-0.018	2.50	No	
		x	-0.018	4.00	No	
100		x	-0.041	0.50	No	
		x	-0.041	5.50	No	
		x	-0.008	3.00	No	
101		x	-0.02	1.00	No	
		x	-0.02	5.00	No	
		x	-0.006	3.00	No	
103		x	-0.034	0.50	No	
		x	-0.034	5.50	No	
		x	-0.018	2.50	No	
		x	-0.018	4.00	No	
104		x	-0.041	0.50	No	
		x	-0.041	5.50	No	
		x	-0.008	3.00	No	
105		x	-0.01	0.00	No	
106		x	-0.01	0.00	No	
WLO		93	z	-0.007	1.00	No
			z	-0.007	5.00	No
95		z	-0.012	0.50	No	
		z	-0.012	5.50	No	
		z	-0.004	2.50	No	
		z	-0.004	4.00	No	
96		z	-0.015	0.50	No	
		z	-0.015	5.50	No	
		z	-0.002	3.00	No	
		z	-0.001	3.00	No	
97		z	-0.005	1.00	No	
		z	-0.005	5.00	No	
		z	-0.002	3.00	No	
99		z	-0.008	0.50	No	
		z	-0.008	5.50	No	
		z	-0.006	2.50	No	
		z	-0.006	4.00	No	
100		z	-0.009	0.50	No	
		z	-0.009	5.50	No	
		z	-0.004	3.00	No	
101		z	-0.005	1.00	No	
		z	-0.005	5.00	No	
		z	-0.002	3.00	No	
103		z	-0.008	0.50	No	
		z	-0.008	5.50	No	
		z	-0.006	2.50	No	
		z	-0.006	4.00	No	
104		z	-0.009	0.50	No	
		z	-0.009	5.50	No	
		z	-0.004	3.00	No	
105		z	-0.003	0.00	No	
106		z	-0.003	0.00	No	
WL30		93	x	-0.004	1.00	No
			x	-0.004	5.00	No
			x	-0.003	3.00	No
95		x	-0.007	0.50	No	

		x	-0.007	5.50	No
		x	-0.006	2.50	No
		x	-0.006	4.00	No
96		x	-0.007	0.50	No
		x	-0.007	5.50	No
		x	-0.004	3.00	No
97		x	-0.006	1.00	No
		x	-0.006	5.00	No
		x	-0.001	3.00	No
99		x	-0.011	0.50	No
		x	-0.011	5.50	No
		x	-0.008	2.50	No
		x	-0.008	4.00	No
100		x	-0.013	0.50	No
		x	-0.013	5.50	No
		x	-0.002	3.00	No
101		x	-0.006	1.00	No
		x	-0.006	5.00	No
		x	-0.001	3.00	No
103		x	-0.011	0.50	No
		x	-0.011	5.50	No
		x	-0.008	2.50	No
		x	-0.008	4.00	No
104		x	-0.013	0.50	No
		x	-0.013	5.50	No
		x	-0.002	3.00	No
105		x	-0.003	0.00	No
106		x	-0.003	0.00	No
LL1	4	y	-0.25	50.00	Yes
LL2	8	y	-0.25	0.00	Yes
LLa1	93	y	-0.25	50.00	Yes
LLa2	94	y	-0.25	50.00	Yes
LLa3	95	y	-0.25	50.00	Yes
LLa4	96	y	-0.25	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	250 lb Live Load Antenna 1	No	0.00	0.00	0.00
LLa2	250 lb Live Load Antenna 2	No	0.00	0.00	0.00
LLa3	250 lb Live Load Antenna 3	No	0.00	0.00	0.00
LLa4	250 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+W0
 LC10=1.2DL+Di+W30
 LC11=1.2DL+Di-W0
 LC12=1.2DL+Di-W30
 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 4X4X1_4	6	LC9 at 100.00%	0.75	OK	Eq. H1-1b
		7	LC12 at 100.00%	0.76	OK	Eq. H1-1b
		8	LC10 at 100.00%	0.75	OK	Eq. H1-1b
	L 2-1_2X2-1_2X3_16	90	LC1 at 0.00%	0.66	OK	Eq. H3-8
		91	LC4 at 0.00%	0.76	OK	Eq. H3-8
		92	LC3 at 0.00%	0.58	OK	Eq. H3-8
	PIPE 2x0.154	72	LC1 at 35.00%	0.41	With warnings	Eq. H1-1b
		73	LC4 at 5.00%	0.45	With warnings	Eq. H1-1b
		74	LC2 at 65.00%	0.46	With warnings	Eq. H1-1b
		93	LC2 at 81.25%	0.37	OK	Eq. H1-1b
		94	LC4 at 81.25%	0.61	OK	Eq. H1-1b
		95	LC2 at 81.25%	0.61	OK	Eq. H1-1b
		96	LC2 at 81.25%	0.41	OK	Eq. H1-1b
		97	LC1 at 81.25%	0.42	OK	Eq. H1-1b
		98	LC3 at 81.25%	0.62	OK	Eq. H1-1b
		99	LC1 at 81.25%	0.67	OK	Eq. H1-1b

	100	LC3 at 81.25%	0.41	OK	Eq. H1-1b
	101	LC4 at 81.25%	0.36	OK	Eq. H1-1b
	102	LC1 at 81.25%	0.64	OK	Eq. H1-1b
	103	LC3 at 81.25%	0.60	OK	Eq. H1-1b
	104	LC1 at 81.25%	0.41	OK	Eq. H1-1b
	<hr/>				
PIPE 3x0.216	3	LC4 at 0.00%	0.75	OK	Eq. H1-1b
	4	LC3 at 100.00%	0.73	OK	Eq. H1-1b
	5	LC12 at 100.00%	0.67	OK	Eq. H1-1b
	<hr/>				

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
16	7.866	0.00	4.5413	0
17	-1.299	0.00	0.75	0
18	0.00	0.00	-1.50	0
19	1.299	0.00	0.75	0
20	0.00	0.00	-9.0828	0
21	-7.8659	0.00	4.5415	0
71	4.6732	-1.00	-0.3886	0
72	2.6732	-1.00	-3.8528	0
73	4.6732	5.00	-0.3886	0
74	2.6732	5.00	-3.8528	0
77	0.6732	-1.00	-7.3169	0
78	0.6732	5.00	-7.3169	0
103	6.6732	-1.00	3.0755	0
104	6.6732	5.00	3.0755	0
131	-0.6732	-1.00	-7.3169	0
132	-0.6732	5.00	-7.3169	0
135	-2.6732	-1.00	-3.8528	0
136	-2.6732	5.00	-3.8528	0
139	-4.6732	-1.00	-0.3887	0
140	-4.6732	5.00	-0.3887	0
141	-6.6732	-1.00	3.0754	0
142	-6.6732	5.00	3.0754	0

147	-6.00	-1.00	4.2414	0
148	-6.00	5.00	4.2414	0
151	-2.00	-1.00	4.2414	0
152	-2.00	5.00	4.2414	0
155	2.00	-1.00	4.2414	0
156	2.00	5.00	4.2414	0
157	6.00	-1.00	4.2415	0
158	6.00	5.00	4.2415	0
159	6.00	0.00	4.0415	0
172	0.1771	4.167	-7.7762	0
173	6.8228	4.167	3.7348	0
174	-6.823	4.167	3.7347	0
175	-0.177	4.167	-7.7761	0
176	6.6458	4.167	4.0415	0
177	-6.6458	4.167	4.0413	0
192	6.00	4.167	4.0415	0
194	-9.69E-05	0.00	-8.0829	0
195	6.9999	0.00	4.0415	0
196	-7.00	0.00	4.0413	0

Restraints

Node	TX	TY	TZ	RX	RY	RZ
17	1	1	1	1	1	1
18	1	1	1	1	1	1
19	1	1	1	1	1	1

Members

Member	NJ	NK	Description	Section	Material	d0 [in]	dL [in]	Ig factor
3	195	194		PIPE 3x0.216	A53 GrB	0.00	0.00	0.00
4	195	196		PIPE 3x0.216	A53 GrB	0.00	0.00	0.00
5	196	194		PIPE 3x0.216	A53 GrB	0.00	0.00	0.00
6	20	18		HSS_SQR 4X4X1_4	A500 GrB rectangular	0.00	0.00	0.00
7	16	19		HSS_SQR 4X4X1_4	A500 GrB rectangular	0.00	0.00	0.00
8	21	17		HSS_SQR 4X4X1_4	A500 GrB rectangular	0.00	0.00	0.00
72	173	172		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
73	176	177		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
74	174	175		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
90	184	186		L 2-1_2X2-1_2X3_16	A36	0.00	0.00	0.00
91	168	178		L 2-1_2X2-1_2X3_16	A36	0.00	0.00	0.00
92	192	170		L 2-1_2X2-1_2X3_16	A36	0.00	0.00	0.00
93	158	157		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
94	156	155		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
95	152	151		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
96	148	147		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
97	142	141		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
98	140	139		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
99	136	135		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
100	132	131		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00

101	78	77	PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
102	74	72	PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
103	73	71	PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
104	104	103	PIPE 2x0.154	A53 GrB	0.00	0.00	0.00

Orientation of local axes

Member	Rotation [Deg]	Axes23	NX	NY	NZ
90	90.00	0	0.00	0.00	0.00
91	90.00	0	0.00	0.00	0.00
92	90.00	0	0.00	0.00	0.00

Rigid end offsets

Member	DJX [in]	DJY [in]	DJZ [in]	DKX [in]	DKY [in]	DKZ [in]
6	0.00	-2.00	0.00	0.00	-2.00	0.00
7	0.00	-2.00	0.00	0.00	-2.00	0.00
8	0.00	-2.00	0.00	0.00	-2.00	0.00

500 MOOSE HILL RD

Location 500 MOOSE HILL RD

Map/Lot 051/ 067/ 0C/ /

Acct# 0510670C

Owner ST JOHN THE BAPTIST
GREEK CATHOLIC CEM

Assessment \$902,300

Appraisal \$1,288,900

PID 8045

Building Count 1

Survey 2806 2859

Affordable

Current Value

Appraisal			
Valuation Year	Improvements	Land	Total
2014	\$60,500	\$1,228,400	\$1,288,900

Assessment			
Valuation Year	Improvements	Land	Total
2014	\$42,400	\$859,900	\$902,300

Owner of Record

Owner	ST JOHN THE BAPTIST GREEK CATHOLIC CEM	Sale Price	\$0
Co-Owner	ASSOC INC	Certificate	1
Address	50 PARADISE GREEN PL STRATFORD, CT 33487	Book & Page	176/ 349
		Sale Date	08/01/1978
		Instrument	

Ownership History

Ownership History					
Owner	Sale Price	Certificate	Book & Page	Instrument	Sale Date
ST JOHN THE BAPTIST GREEK CATHOLIC CEM	\$0	1	176/ 349		08/01/1978

Building Information

Building 1 : Section 1

Year Built:

Living Area: 0

Building Attributes	
Field	Description
Style	Vacant Land
Model	
Stories:	
Occupancy	
Exterior Wall 1	
Heat Fuel	
Heat Type:	
AC Type:	
Total Bedrooms:	
Total Bthrms:	
Total Half Baths:	
Total Rooms:	
Fireplaces	
Basement Gar.	
Basement	
In Law Apt	

Building Photo

No Image is Available

(http://images.vgsi.com/photos/MonroeCTPhotos/\00\00\01/25.JPG)

Building Layout

(http://images.vgsi.com/photos/MonroeCTPhotos//Sketches/8045_8045.jpg)

Building Sub-Areas (sq ft)	Legend
No Data for Building Sub-Areas	

Extra Features

Extra Features	Legend
No Data for Extra Features	

Land

Land Use

Use Code 906V
Description Church
Zone RF1
Neighborhood
Alt Land Approved No
Category

Land Line Valuation

Size (Acres) 52.42
Appraised Value \$1,228,400

Outbuildings

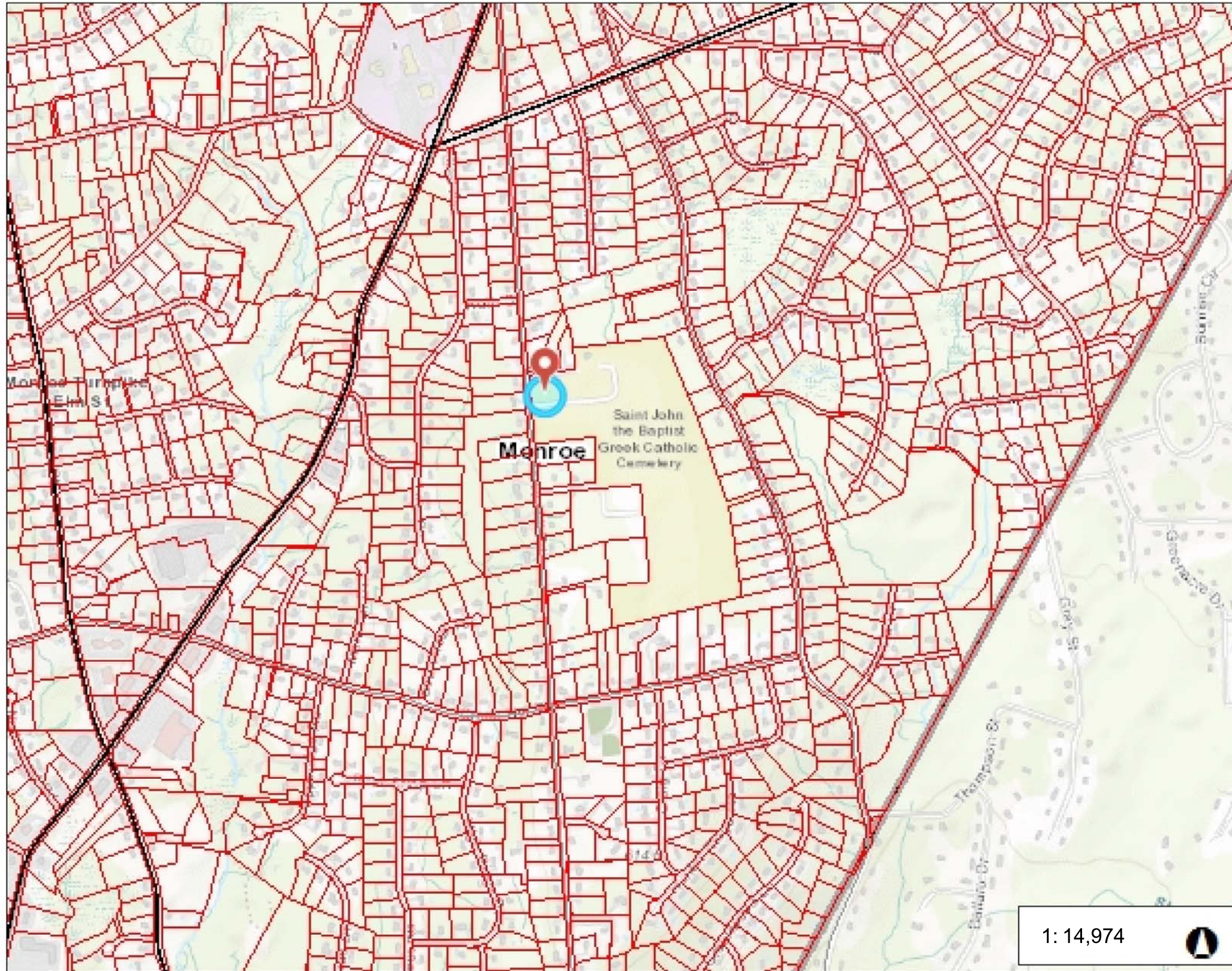
Outbuildings						Legend
Code	Description	Sub Code	Sub Description	Size	Value	Bldg #
RG5	Garage 1/2S			1920 S.F.	\$60,500	1

Valuation History

Appraisal			
Valuation Year	Improvements	Land	Total
2018	\$60,500	\$1,228,400	\$1,288,900
2017	\$60,500	\$1,228,400	\$1,288,900

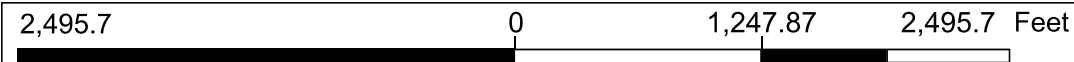
Assessment			
Valuation Year	Improvements	Land	Total
2018	\$42,400	\$859,900	\$902,300
2017	\$42,400	\$859,900	\$902,300

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- Legend**
- Parcels
 - Streetname
 - Roadways
 - Local
 - Collector
 - Minor Collector
 - Minor Arterial
 - Major Collector
 - PA Other
 - PA Other Expwy
 - PA Interstate
 - Town Boundary

1: 14,974



WGS_1984_Web_Mercator_Auxiliary_Sphere
Created by Greater Bridgeport Regional Council

This map is a user generated static output from an Internet mapping site and is for reference only. Data layers that appear on this map may or may not be accurate, current, or otherwise reliable.
THIS MAP IS NOT TO BE USED FOR NAVIGATION



DOCKET NO 207 - James E. Dwyer Co., Inc. application for a Certificate of Environmental Compatibility and Public Need for the construction, maintenance and operation of a cellular telecommunications facility at 500 Moose Hill Road, Monroe, Connecticut.	Connecticut
	} Siting
	} Council
	} March 21, 2002

Decision and Order

Pursuant to the foregoing Findings of Fact and Opinion, the Connecticut Siting Council (Council) finds that the effects associated with the construction, operation, and maintenance of a telecommunications facility at the proposed site in Monroe, Connecticut, including effects on the natural environment; ecological integrity and balance; public health and safety; scenic, historic, and recreational values; forests and parks; air and water purity; and fish and wildlife are not disproportionate either alone or cumulatively with other effects when compared to need, are not in conflict with the policies of the State concerning such effects, and are not sufficient reason to deny the application and therefore directs that a Certificate of Environmental Compatibility and Public Need, as provided by General Statutes § 16-50k, be issued to James E. Dwyer Co., Inc. for the construction, maintenance and operation of a cellular telecommunications facility at the proposed site located at 500 Moose Hill Road, Monroe, Connecticut.

The facility shall be constructed, operated, and maintained substantially as specified in the Council's record in this matter, and subject to the following conditions:

1. The tower shall be constructed as a monopole facility, no taller than necessary to provide the proposed telecommunications services, sufficient to accommodate the antennas of AT&T and other entities, both public and private, but such tower shall not exceed a height of 130 feet above ground level (AGL).

2. The Certificate Holder shall prepare a D&M Plan for this site in compliance with Sections 16-50j-75 through 16-50j-77 of the Regulations of Connecticut State Agencies. The D&M Plan shall be submitted to and approved by the Council prior to the commencement of facility construction and shall include: a final site plan(s) for site development to include the location and specifications for the tower foundation, placement of carrier antennas, tower height, provisions for tower extension, equipment buildings, security fence, access road, and utility line; construction plans for site clearing, tree trimming, water drainage, and erosion and sedimentation controls consistent with the Connecticut Guidelines for Soil Erosion and Sediment Control, as amended; landscaping and provisions to protect the existing vegetative buffer that would extend around the facility compound; a tower finish that may include painting; and provisions for the prevention and containment of spills and/or other discharge into surface water and groundwater bodies. The applicant must have commitments from at least two carriers prior to commencement of construction of the facility.

3. The Certificate Holder shall, prior to the commencement of operation, provide the Council worst-case modeling of electromagnetic radio frequency power density of all proposed

entities' antennas at the closest point of uncontrolled access to the tower base, consistent with Federal Communications Commission, Office of Engineering and Technology, Bulletin No. 65, August 1997. The Certificate Holder shall provide a recalculated report of electromagnetic radio frequency power density if and when circumstances in operation cause a change in power density above the levels calculated and provided pursuant to this Decision and Order.

4. Upon the establishment of any new State or Federal radio frequency standards applicable to frequencies of this facility, the facility granted herein shall be brought into compliance with such standards.

5. The Certificate Holder shall permit public or private entities to share space on the proposed tower for fair consideration, or shall provide any requesting entity with specific legal, technical, environmental, or economic reasons precluding such tower sharing.

6. If the facility does not initially provide, or permanently ceases to provide cellular services following completion of construction, this Decision and Order shall be void, and the Certificate Holder shall dismantle the tower and remove all associated equipment or reapply for any continued or new use to the Council before any such use is made.

7. Any antenna that becomes obsolete and ceases to function shall be removed within 60 days after such antenna becomes obsolete and ceases to function.


8. Unless otherwise approved by the Council, this Decision and Order shall be void if all construction authorized herein is not completed and the site in operation as a telecommunications facility within one year of the effective date of this Decision and Order or within one year after all appeals to this Decision and Order have been resolved.

Pursuant to General Statutes § 16-50p, we hereby direct that a copy of the Findings of Fact, Opinion, and Decision and Order be served on each person listed below, and notice of issuance shall be published in The Hartford Courant and The Advocate.

By this Decision and Order, the Council disposes of the legal rights, duties, and privileges of each party named or admitted to the proceeding in accordance with Section 16-50j-17 of the Regulations of Connecticut State Agencies.

The parties and intervenors to this proceeding are:

James E. Dwyer Co., Inc.
(Dwyer)
Dennis Morrissey, P.E.
Attorney at Law
106 Sherman Street
Fairfield, CT 06430




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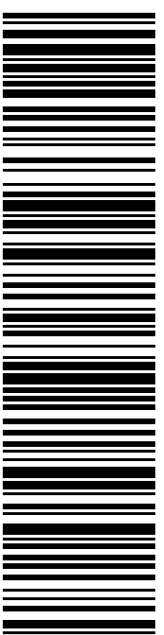
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