

STATE OF CONNECTICUT
CONNECTICUT SITING COUNCIL

IN RE:	:	
	:	
A PETITION OF CELLCO PARTNERSHIP	:	SUB-PETITION NO. 1133
D/B/A VERIZON WIRELESS FOR	:	395 ROUND HILL ROAD
MODIFICATIONS TO AN EXISTING	:	GREENWICH, CT
WIRELESS TELECOMMUNICATIONS	:	
FACILITY AT 395 ROUND HILL ROAD IN	:	
GREENWICH, CONNECTICUT	:	MARCH 9, 2022

SUB-PETITION FOR DECLARATORY RULING:
ELIGIBLE FACILITIES REQUEST FOR MODIFICATIONS
THAT WILL NOT SUBSTANTIALLY CHANGE THE
PHYSICAL DIMENSIONS OF AN EXISTING BASE STATION

I. Introduction

Pursuant to Section 6409(a) of the Middle Class Tax Relief and Job Creation Act of 2012, codified at 47 U.S.C. § 1455(a) (“Section 6409(a)”) and the October 21, 2014 Report and Order (FCC-14-153) issued by the Federal Communications Commission (“FCC”) (the “FCC Order”), Cellco Partnership d/b/a Verizon Wireless (“Cellco”) hereby petitions the Connecticut Siting Council (the “Council”) for a declaratory ruling (“Sub-Petition”) that the installation of replacement antennas and related telecommunications equipment at the existing wireless telecommunications base station at the Round Hill Community Church, 395 Round Hill Road in Greenwich, Connecticut (the “Property”) constitutes an Eligible Facilities Request (“EFR”) under the FCC Order. Cellco has designated this site as its “Round Hill Facility”.

II. Factual Background

On February 6, 2007, the Council approved Cellco’s application for a Certificate of Environmental Compatibility and Public Need for the construction, maintenance and operation of a wireless telecommunications facility at the Property (Docket No. 309). The approved facility

consists of two 115-foot flagpole towers and a single equipment structure within a fenced compound area. The westerly flagpole tower currently supports Cellco antennas at heights of 100 feet and 110 feet above ground level (“AGL”) and AT&T antennas at a height of 90 feet AGL. All antennas are located within an RF transparent screening shroud 30-inches in diameter. Equipment associated with the existing antennas is also located inside a shared equipment shelter.

III. Cellco’s Proposed Round Hill Facility Modifications

Cellco is licensed to provide wireless telecommunications services in the 700 MHz, 850 MHz, 1900 MHz, 2100 MHz and 3700 MHz frequency ranges in Greenwich and throughout the State of Connecticut. Cellco intends to remove its six (6) existing antennas and install three (3) model NNH4-65B-R6H4 antennas at the 110-foot level and three (3) model MX08IT265-01 antennas at the 100-foot level on the tower. Cellco will also install three (3) remote radio heads (“RRHs”) below Cellco’s lowest antenna level. To accommodate Cellco’s antenna modifications, the existing antenna screening shroud will need to be replaced with a larger (36.5” diameter) shroud. The larger shroud will provide screening to the Cellco and AT&T antennas. There are no changes proposed to any ground-based equipment.

Project Plans and Specifications for Cellco’s proposed Round Hill Facility modifications are included in Attachment 1. According to the attached Structural Analysis (“SA”) and Mount Analysis (“MA”), the existing tower, tower foundation, and antenna mounts can support Cellco’s proposed modifications. No modifications to Cellco’s existing antenna mounts are required as part of this facility modification. The attached SA therefore, does not reference the MA provided. Copies of the SA and MA are included in Attachment 2.

IV. Discussion

A. The Proposed Modification Will Not Cause a Substantial Change to the Physical Dimensions of the Existing Base Station

Section 6409(a) provides, in relevant part, that “a State or local government may not deny, and shall approve, any eligible facilities request for a modification of an existing wireless tower or base station that does not substantially change the physical dimensions of such tower or base station.” Pursuant to the FCC Order, the proposed modification does not substantially change the physical dimensions of the base station if the following criteria are satisfied.

1. *The proposed modified facility will not increase the height of the tower by more than ten (10) percent of the height.* Cellco does not intend to increase the height of the existing tower. Cellco’s antennas and RRHs will be located at the same 110-foot and 100-foot levels within the existing 115-foot flagpole tower.

2. *The proposed facility modification will not protrude from the edge of the structure more than six (6) feet.* Cellco’s antennas and RRHs will be located inside the flagpole tower screening shroud and will not protrude more than six (6) feet from the face of the tower.

3. *The proposed facility does not involve installation of more than the standard number of new equipment cabinets for the technology involved, but not to exceed four cabinets.* No changes in ground equipment are planned as part of these facility modifications.

4. *The proposed facility does not entail any excavation or deployment outside the current site of the base station.* Cellco’s proposed facility modifications will remain within the limits of the Property and the existing fenced compound.

5. *The proposed facility does not defeat the existing concealment elements of the base station.* The existing facility consists of two flagpole towers, each containing antenna screening shrouds. To accommodate Cellco’s new antennas and RRHs, the antenna screening

shroud will need to increase from 30 inches in diameter to 36.5 inches in diameter. All new antennas will remain concealed.

6. *The proposed facility complies with conditions associated with the prior approval of construction or modification of the base station.* Cellco's proposed facility modifications are consistent with the Siting Council's approval in Docket No. 309.

B. FCC Compliance

Included in Attachment 3 is a cumulative power density calculation table for Cellco's proposed modifications confirming that the facility will operate within the FCC safety standards for radio frequency emissions.

C. Notice to the Town, Property Owner and Abutting Landowners

On March 9, 2022, a copy of this Sub-Petition was sent to Greenwich's First Selectman, Fred Camillo, Katie DeLuca, Greenwich's Director of Planning and Zoning; and Round Hill Community Church, Inc., the owner of the Property. Copies of the letters sent to First Selectman Camillo, Ms. Deluca, and Round Hill Community Church are included in Attachment 4. A copy of this Sub-Petition was also sent to the owners of land that abut the Property. A sample abutter's letter and the list of those abutting landowners who were sent notice and a copy of this filing is included in Attachment 5.

V. Conclusion

Based on the information provided above, Cellco respectfully submits that the proposed modification of the existing base station at the Property constitutes an "eligible facilities request" under Section 6409(a) and the FCC Order.

Respectfully submitted,

CELLCO PARTNERSHIP d/b/a VERIZON
WIRELESS

By 

Kenneth C. Baldwin, Esq.
Robinson & Cole LLP
280 Trumbull Street
Hartford, CT 06103-3597
(860) 275-8200
Its Attorneys

ATTACHMENT 1

verizon[✓]

WIRELESS COMMUNICATIONS FACILITY

LOCATION MAP



ROUND HILL CT
395 ROUND HILL RD
GREENWICH, CT 06831

PROJECT:
L-SUB6-CARRIER ADD

DRAWING INDEX

NO.	DESCRIPTION
T-1	TITLE SHEET
A-1	TOWER ELEVATION & COMPOUND PLAN
A-2	ANTENNA CONFIGURATION & SCOPE OF WORK
A-3	EQUIPMENT SPECIFICATIONS, BILL OF MATERIALS & PLUMBING DIAGRAM
S-1	STRUCTURAL DETAILS
SN-1	STRUCTURAL NOTES

RFDS PROJECT SCOPE

RFDS SOW: 850-LTE, 5G_850, PCS-LTE, 5G_L-SUB6 ADD:

- 1 - REPLACE EXISTING LTE ANTENNAS WITH COMMSCOPE NNH4-65B-R6 (@110FT) AND JMA MX08FIT265-01 (@100FT)
- 2 - ADD COMMSCOPE CBC81923T-DS-43 COMBINERS IN FLAGPOLE AND SHELTER
- 3 - ADD INBAND DIPLEXER COMMSCOPE TD-850B-LTE78-43 | E14X00P06 TO USE WITH 700/850 LB RRR. CONNECT JUMPERS TO THIS COMBINER FOR 850 CDMA EQUIPMENT IN SHELTER
- 5 - ADD 6 PORTS OVP BOX AND 6X12 LI HYBRID POWER/ FIBER CABLE
- 6 - INSTALL L-SUB6 RRR RT8808-77A IN FLAGPOLE NEAR ANTENNAS
- 7 - REUSE EXISTING COAX LINES

SUMMARY:

- ADDING 6, REMOVING 6, RETAINING 0 (FINAL ANTENNA COUNT: 6)
- ADDING 9 RRU'S, REMOVING 6, RETAINING 0 (FINAL RRU COUNT: 9)

SUPPORTING DOCUMENTS

RADIO FREQUENCY (RF) DESIGN: 09/28/21
 MOUNT MAPPING REPORT: 10/26/21 (BY STRUCTURAL COMPONENTS, LLC)
 MOUNT ANALYSIS: 11/09/21 (BY CENTERLINE COMMUNICATIONS, LLC)
 STRUCTURAL ANALYSIS: (FLAGPOLE): 11/09/21 (BY CENTERLINE COMMUNICATIONS, LLC)

PROJECT INFORMATION

SITE NAME: ROUND HILL CT
 LOCATION CODE: 467146
 SITE ADDRESS: 395 ROUND HILL RD
 GREENWICH, CT 06831
 LATITUDE: 41° 05' 42.42"N
 LONGITUDE: 73° 39' 51.19"W

BUILDING CODES

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 & CONNECTICUT STATE BUILDING CODE 2018
- ELECTRICAL CODE: 2017 NATIONAL ELECTRICAL CODE
- LIGHTENING CODE: NFPA 70-2017
- TELECOMMUNICATIONS INDUSTRY ASSOCIATION ANSI (TIA) 222-H, STRUCTURAL STANDARDS FOR STEEL ANTENNA TOWER AND ANTENNA SUPPORTING STRUCTURES; REFER TO ELECTRICAL DRAWINGS FOR SPECIFIC ELECTRICAL STANDARDS.

CELLCO PARTNERSHIP d/b/a VERIZON WIRELESS



20 ALEXANDER DRIVE
 WALLINGFORD, CT 06492



750 W CENTER ST, SUITE 301
 WEST BRIDGEWATER, MA 02379
 PHONE: 781.713.4725

REVISIONS

NO.	DATE	DESCRIPTION
2	02/24/22	ISSUED FOR CONSTRUCTION
1	01/06/22	REVISED FOR REVIEW
0	12/10/21	ISSUED FOR REVIEW

DESIGNED BY: KL
 APPROVED BY: DC



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SITE NAME:
ROUND HILL CT

SITE ADDRESS:
**395 ROUND HILL RD
 GREENWICH, CT 06831
 FAIRFIELD**

LOCATION CODE:
467146

SHEET TITLE:
TITLE SHEET

SHEET #: T-1 REVISION: 2



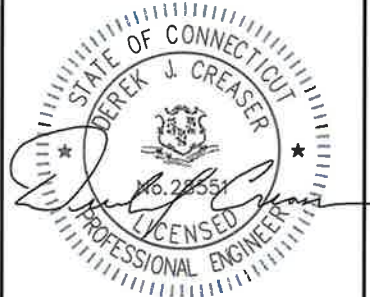
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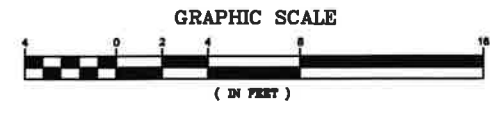
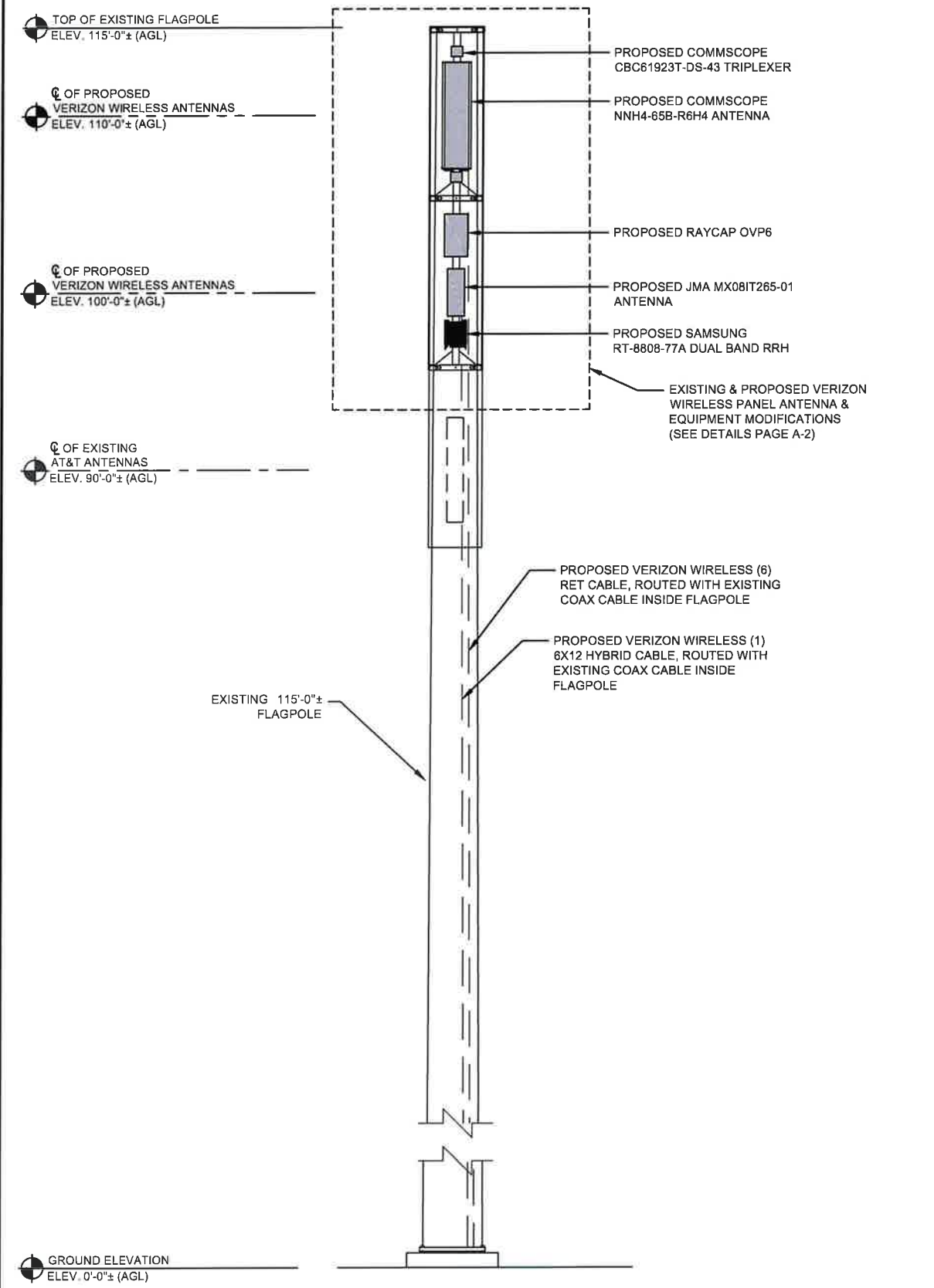
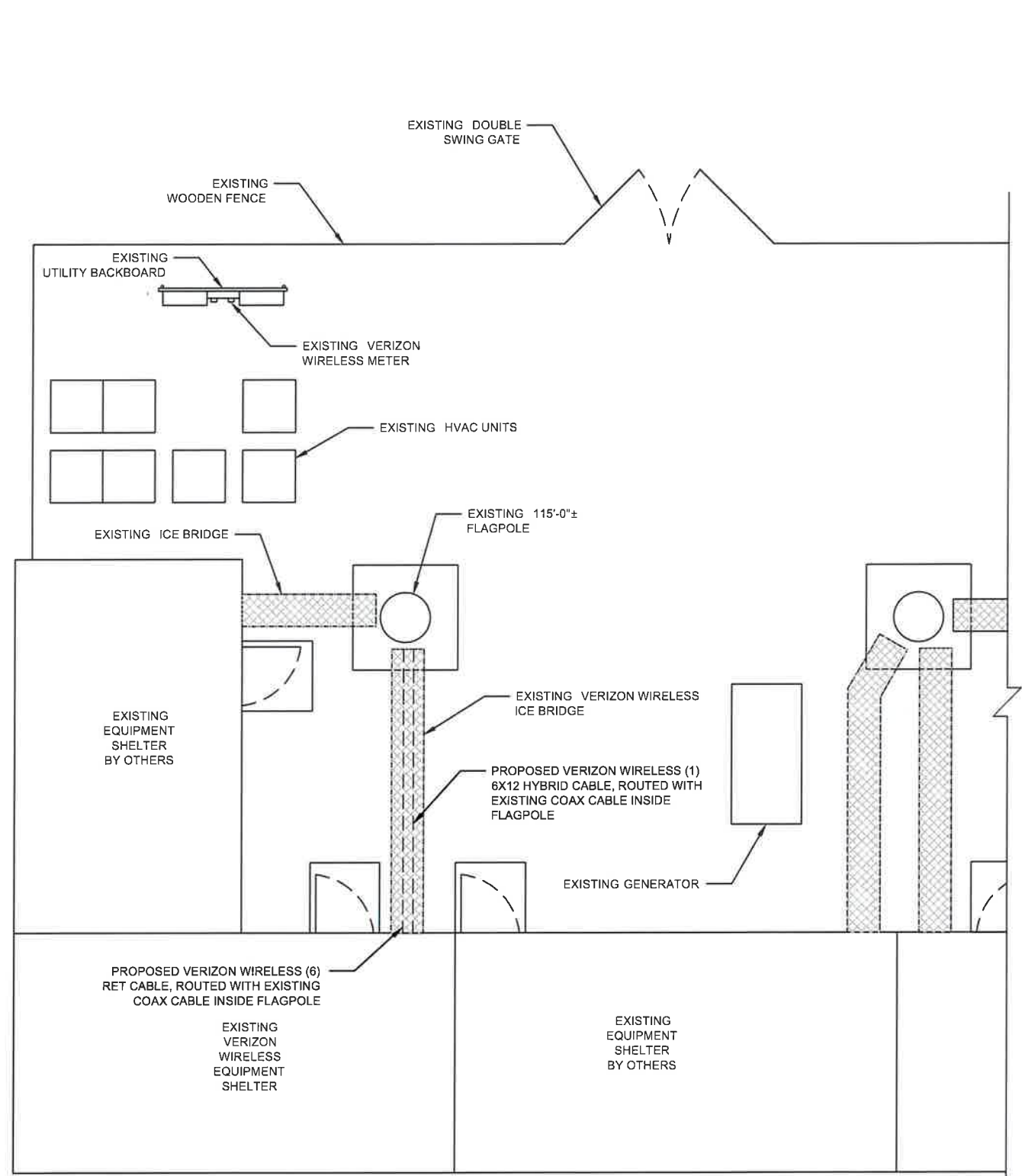
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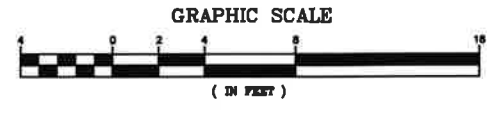
SHEET TITLE:
TOWER ELEVATION &
COMPOUND PLAN

SHEET #: A-1 REVISION: 2



2
A-1

COMPOUND PLAN
SCALE: 1/4" = 1'-0" (22"X34")
1/8" = 1'-0" (11"X17")



1
A-1

TOWER ELEVATION
SCALE: 1/4" = 1'-0" (22"X34")
1/8" = 1'-0" (11"X17")

NOTES

- IF SHOWN, ANTENNA SPACING DIMENSIONS ARE TO THE CENTER OF THE EXIST. ANTENNA AND PROP. ANTENNA FACE.
- REFER TO THE FINAL RFDS PROVIDED BY VERIZON FOR THE LATEST INFORMATION REGARDING EQUIPMENT MODELS, REQUIRED CABLING & DOWN-TILT INFORMATION.

GENERAL ABBREVIATION LIST

- ABP ABOVE BASE PLATE
- AGL ABOVE GRADE LEVEL
- AMSL ABOVE MEAN SEA LEVEL
- AWS ADVANCED WIRELESS SERVICE
- HDG HOT DIPPED GALVANIZED
- OVP OVER VOLTAGE PROTECTION
- RRH REMOTE RADIO HEAD
- V.I.F. VERIFY IN FIELD
- W.P. WORK POINT
- A.F.R. ABOVE FINISH ROOF

SCOPE OF WORK (ALL) SECTORS

- 1 EXIST. ANTENNA (TO BE REPLACED)
MODEL: AMPHENOL
BXA-70063-6BF-EDIN -0
- 2 EXIST. ANTENNA (TO BE REPLACED)
MODEL: AMPHENOL
QXW-638063120BF-EDIN
- 3 NEW ANTENNA
MODEL: JMA MX08FIT265-01
MOUNTED ON EXIST. PIPE MAST
- 4 NEW ANTENNA
MODEL: COMMSCOPE NNH4-65B-R6H4
MOUNTED ON EXIST. PIPE MAST
- 5 NEW DUAL BAND RRH
MODEL: SAMSUNG RT-8808-77A
(BELOW JMA ANTENNAS)
- 6 NEW TRIPLEXER
MODEL: COMMSCOPE CBC61923T-DS-43
(ABOVE AND BELOW COMMSCOPE ANTENNAS)
- 7 NEW OVP BOX MOUNTED TO EXISTING PIPE MAST (ABOVE JMA ANTENNAS)
MODEL: RAYCAP OVP6
- 8 PROPOSED SHROUD ATTACHMENT
REFER TO PAGE S-1 FOR DETAILS

CELLCO PARTNERSHIP d/b/a VERIZON WIRELESS



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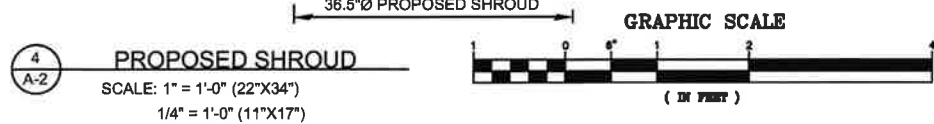
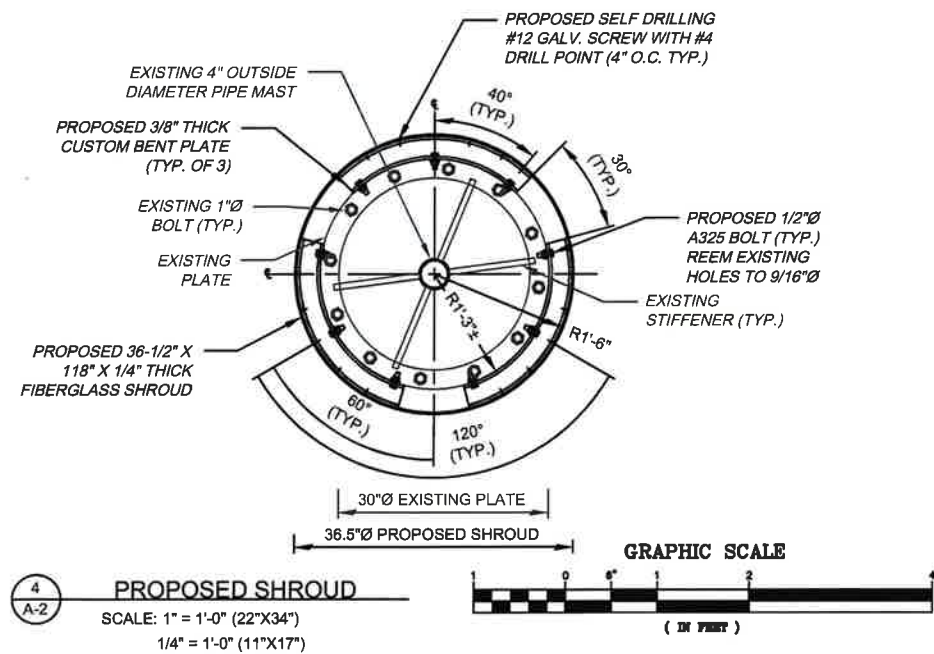
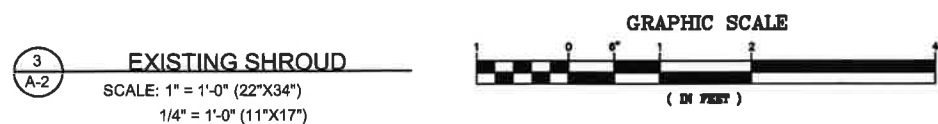
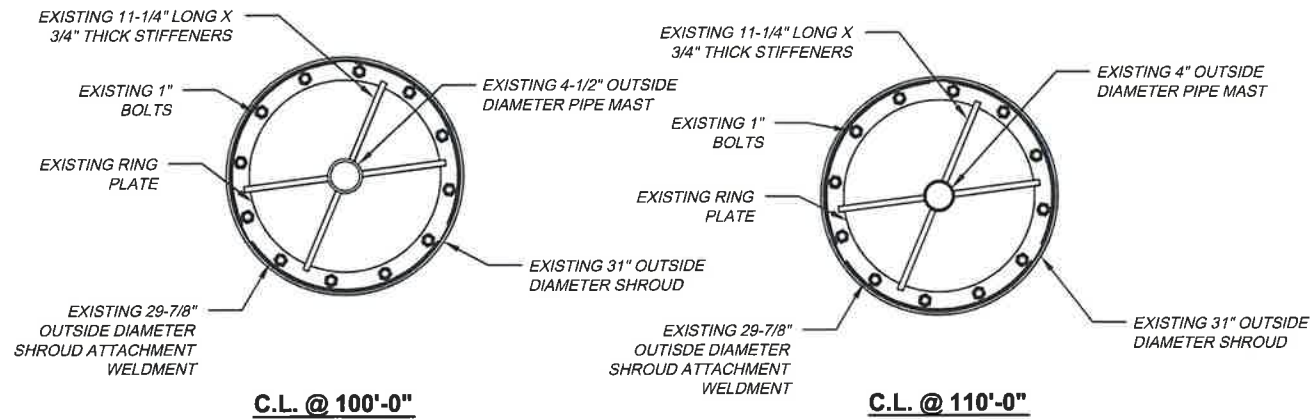
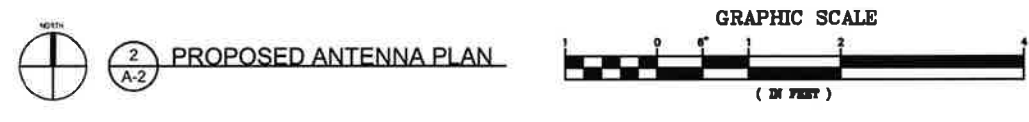
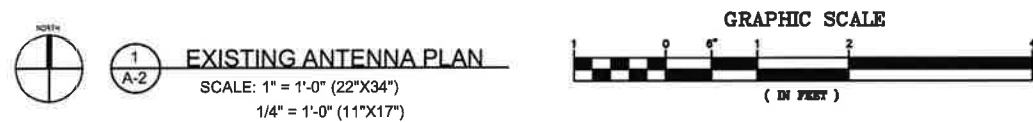
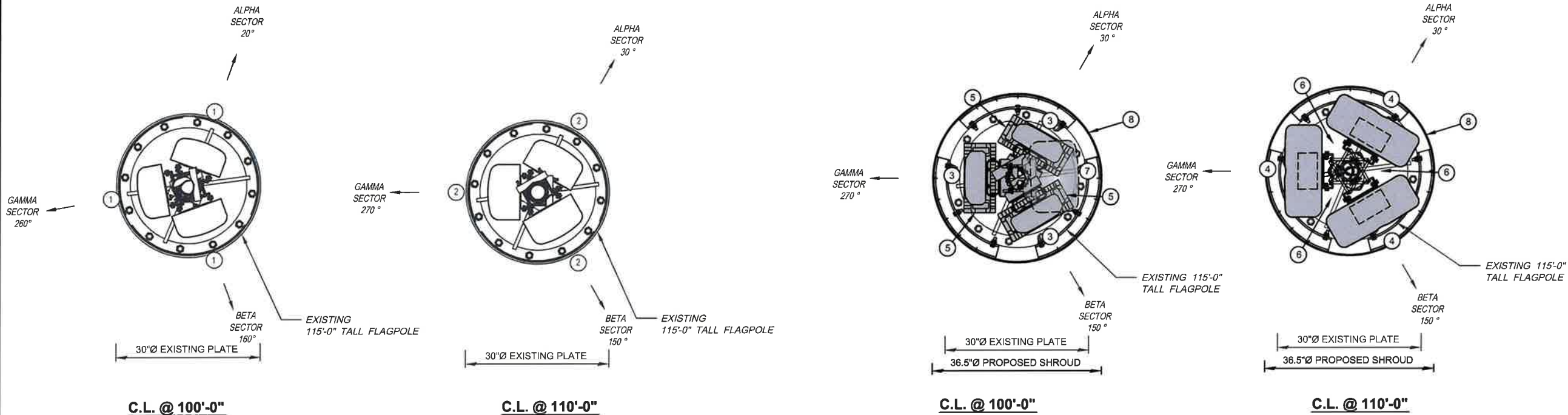
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GREENWICH, CT 06831
FAIRFIELD

LOCATION CODE:
467146

SHEET TITLE:
ANTENNA CONFIGURATION &
SCOPE OF WORK
SHEET # A-2 REVISION: 2



BILL OF MATERIALS				
ITEM	DESCRIPTION	QTY.	LENGTH	COMMENTS
①	L-SUB6 ANTENNA	3	-	(JMA MX08FIT265-01) MOUNTED TO EXISTING ANTENNA PIPE
②	LTE 700/850/PCS/AWS ANTENNA	3	-	(COMMSCOPE NNH4-65B-R6H4) MOUNTED TO EXIST. PIPE MAST
③	1x2 LI HYBRID CABLE	3	15'	ROUTE FROM NEW UPPER OVP TO L-SUB6 ANTENNA
④	1/2" JUMPER CABLE	60	10'	ROUTE FROM NEW RRH TO ANTENNA
⑤	TRIPLEXER	12	-	(COMMSCOPE CBC61923T-DS-43) MOUNTED TO EXISTING FRAME & IN EQUIPMENT SHELTER
⑥	DIPLEXER	3	-	(COMMSCOPE TD-850B-LTE43) MOUNTED IN EQUIPMENT SHELTER
⑦	LTE 700/850 RRH	3	-	(SAMSUNG RF4440D-13A (RFV01U-D2A)) MOUNTED IN EQUIPMENT SHELTER
⑧	LTE PCS/AWS RRH	3	-	(SAMSUNG RF4439D-25A (RFV01U-D1A)) MOUNTED IN EQUIPMENT SHELTER
⑨	5G L-SUB6 RRH	3	-	(SAMSUNG RT-8808-77A) MOUNTED TO EXISTING PIPE MAST
⑩	UPPER OVP6	1	-	NEW UPPER OVP MOUNTED TO EXISTING PIPE MAST
⑪	RET CABLE	9	140'	(6) ROUTED FROM RRHS IN SHELTER TO ANTENNAS @110FT & (3) ROUTED FROM SUB6 RRHS TO ANTENNAS @110FT
⑫	6x12 LI HYBRID CABLE	1	130'	ROUTE FROM LOWER OVP RACK TO UPPER OVP BOX
⑬	LOWER OVP6	1	-	LOWER OVP RACK MOUNTED WITHIN EXISTING RACK IN EQUIPMENT AREA

NOTES: 1. INFORMATION SHOWN HEREON IS FOR USE BY VERIZON EQUIPMENT OPERATIONS.
2. INFORMATION IS BASED ON RFDS DATED 09/28/21.

EQUIPMENT DATA									
EQUIPMENT SPECIFICATIONS									
SECTOR	ANTENNA MAKE/MODEL	QTY	AZIMUTH	EQUIPMENT STATUS	HEIGHT (IN)	WIDTH (IN)	DEPTH (IN)	WEIGHT (LBS)	
ALPHA	JMA MX08FIT265-01	1	30	NEW	32.0	11.6	4.5	23.2	
	LTE 700/850/PCS/AWS COMMSCOPE NNH4-65B-R6H4	1	30	NEW	72.0	19.6	7.8	75.0	
BETA	JMA MX08FIT265-01	1	150	NEW	32.0	11.6	4.5	23.2	
	LTE 700/850/PCS/AWS COMMSCOPE NNH4-65B-R6H4	1	150	NEW	72.0	19.6	7.8	75.0	
GAMMA	JMA MX08FIT265-01	1	270	NEW	32.0	11.6	4.5	23.2	
	LTE 700/850/PCS/AWS COMMSCOPE NNH4-65B-R6H4	1	270	NEW	72.0	19.6	7.8	75.0	
ALL	APPURTENANCE MAKE/MODEL								
	SAMSUNG RF4439D-25A (RFV01U-D1A)	3	-	NEW	14.9	14.9	10.04	97.5	
	SAMSUNG RF4440D-13A (RFV01U-D2A)	3	-	NEW	14.9	14.9	8.14	82.0	
	SAMSUNG RT-8808-77A	3	-	NEW	14.9	14.9	6.8	TBD	
	RAYCAP OVP6	2	-	NEW					
	COMMSCOPE CBC619238-DS-43	12	-	NEW	6.9	7.8	4.2	11.7	
	COMMSCOPE 7D-850B-LTE-43	3	-	NEW	15.4	15.2	6.4	52.9	

NOTES: 1. "ETR" DENOTES EXISTING TO REMAIN.
2. WEIGHTS LISTED ARE WITHOUT MOUNTING BRACKET.
3. INFORMATION IS BASED ON RFDS DATED 09/28/21.

CELLCO PARTNERSHIP d/b/a VERIZON WIRELESS

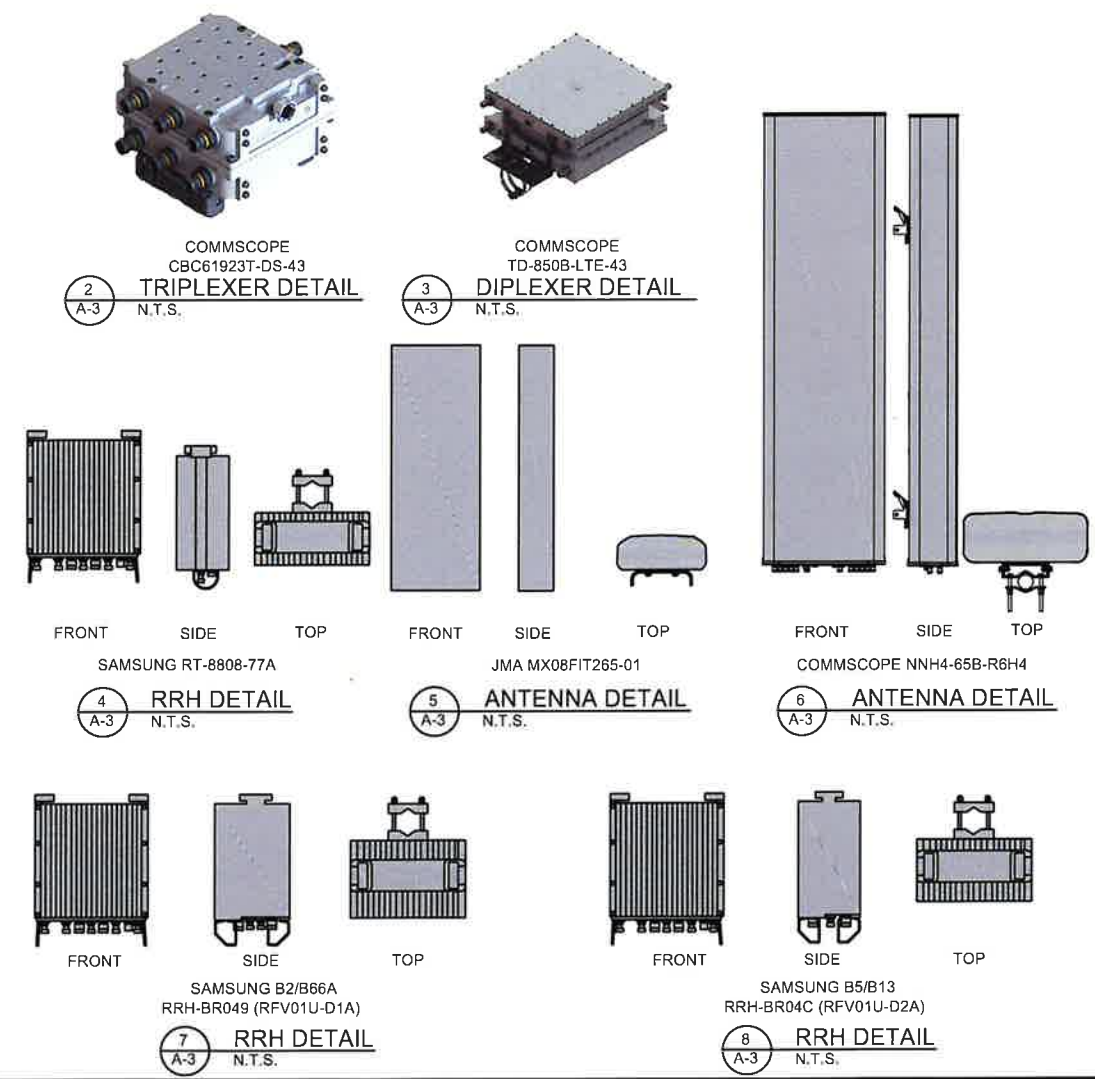
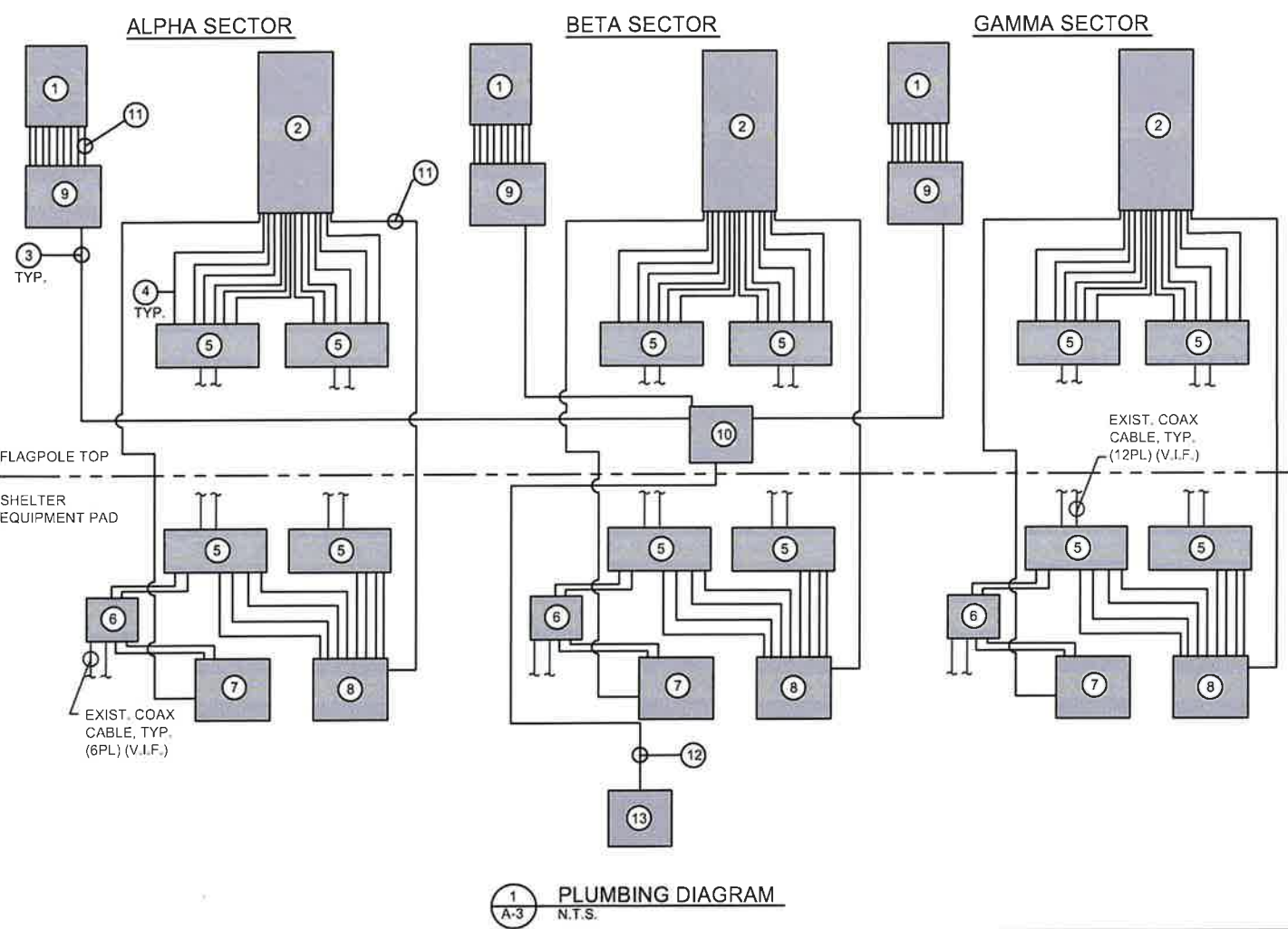
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SITE NAME: ROUND HILL CT

SITE ADDRESS: 395 ROUND HILL RD
GREENWICH, CT 06831
FAIRFIELD

LOCATION CODE: 467146

SHEET TITLE: EQUIPMENT SPECIFICATIONS, BILL OF MATERIALS & PLUMBING DIAGRAM

SHEET #: A-3 REVISION: 2

REVISIONS

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GREENWICH, CT 06831
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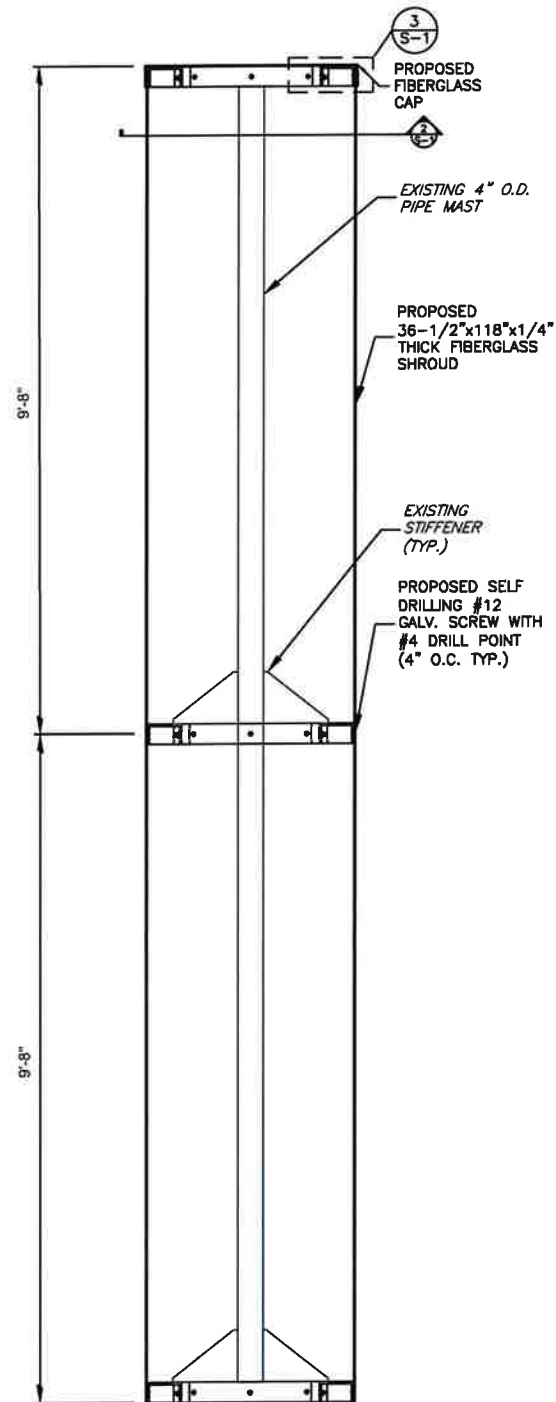
LOCATION CODE:
467146

SHEET TITLE:
STRUCTURAL DETAILS

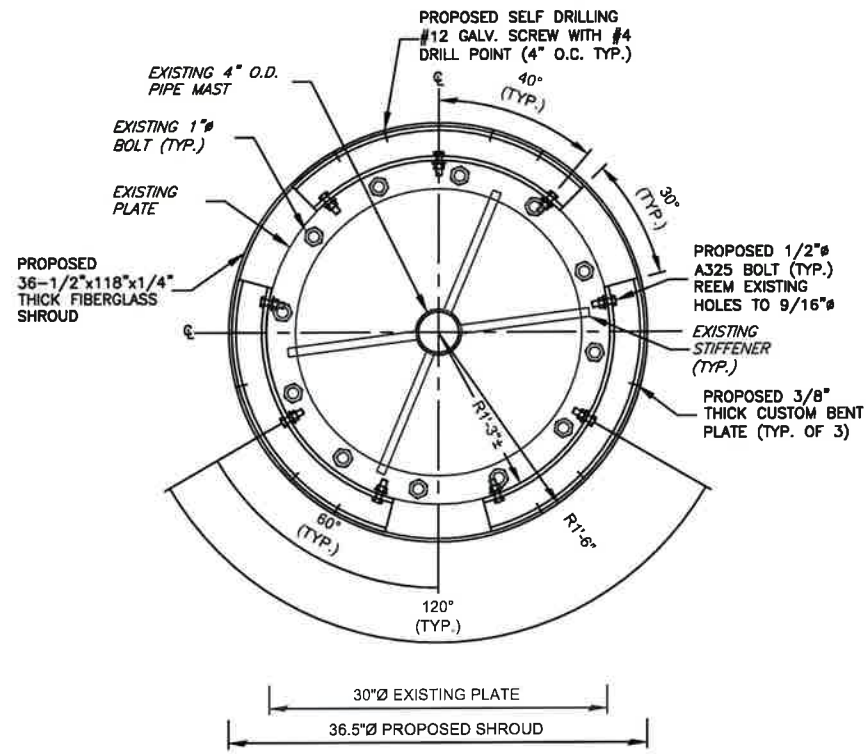
SHEET #: S-1 REVISION: 2

NOTES

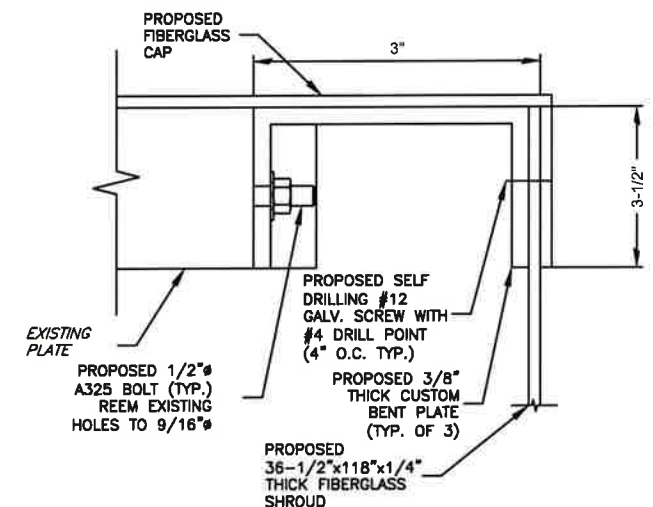
- SHOP DRAWING ENGINEER REVIEW & APPROVAL REQUIRED BEFORE ORDERING MATERIAL.
- VERIFY DIMENSIONS IN FIELD PRIOR TO ORDERING STEEL.



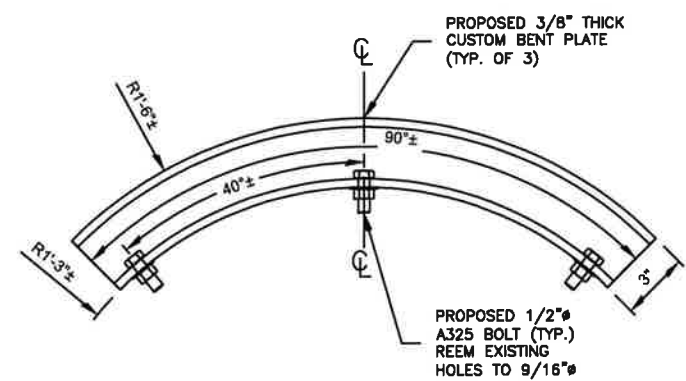
1 PROPOSED RADOME ELEVATION
SCALE: 3/4" = 1'-0"



2 PROPOSED TYPICAL SHROUD ATTACHMENT
SCALE: 1-1/2" = 1'-0"



3 PROPOSED TYPICAL CONNECTION DETAIL
SCALE: 6" = 1'-0"



4 PROPOSED BENT PLATE DETAIL
SCALE: 3" = 1'-0"

STRUCTURAL NOTES:

- DESIGN REQUIREMENTS ARE PER STATE BUILDING CODE AND APPLICABLE SUPPLEMENTS, INTERNATIONAL BUILDING CODE, EIA/TIA-222-G STRUCTURAL STANDARDS FOR STEEL ANTENNA, TOWERS AND ANTENNA SUPPORTING STRUCTURES.
- CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS IN THE FIELD PRIOR TO FABRICATION AND ERECTION OF ANY MATERIAL. ANY UNUSUAL CONDITIONS SHALL BE REPORTED TO THE ATTENTION OF THE CONSTRUCTION MANAGER AND ENGINEER OF RECORD.
- DESIGN AND CONSTRUCTION OF STRUCTURAL STEEL SHALL CONFORM TO THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION "SPECIFICATION FOR THE DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS".
- STRUCTURAL STEEL SHALL CONFORM TO ASTM A992 (Fy=50 ksi), MISCELLANEOUS STEEL SHALL CONFORM TO ASTM A36 UNLESS OTHERWISE INDICATED.
- STEEL PIPE SHALL CONFORM TO ASTM A500 "COLD-FORMED WELDED & SEAMLESS CARBON STEEL STRUCTURAL TUBING", GRADE B, OR ASTM A53 PIPE STEEL BLACK AND HOT-DIPPED ZINC-COATED WELDED AND SEAMLESS TYPE E OR S, GRADE B. PIPE SIZES INDICATED ARE NOMINAL. ACTUAL OUTSIDE DIAMETER IS LARGER.
- STRUCTURAL CONNECTION BOLTS SHALL BE HIGH STRENGTH BOLTS (BEARING TYPE) AND CONFORM TO ASTM A325 TYPE-X "HIGH STRENGTH BOLTS FOR STRUCTURAL JOINTS, INCLUDING SUITABLE NUTS AND PLAIN HARDENED WASHERS". ALL BOLTS SHALL BE 3/4" DIA UON.
- ALL STEEL MATERIALS SHALL BE GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH ASTM A123 "ZINC (HOT-DIP GALVANIZED) COATINGS ON IRON AND STEEL PRODUCTS", UNLESS OTHERWISE NOTED.
- ALL BOLTS, ANCHORS AND MISCELLANEOUS HARDWARE SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A153 "ZINC-COATING (HOT-DIP) ON IRON AND STEEL HARDWARE", UNLESS OTHERWISE NOTED.
- FIELD WELDS, DRILL HOLES, SAW CUTS AND ALL DAMAGED GALVANIZED SURFACES SHALL BE REPAIRED WITH AN ORGANIC ZINC REPAIR PAINT COMPLYING WITH REQUIREMENTS OF ASTM A780. GALVANIZING REPAIR PAINT SHALL HAVE 65 PERCENT ZINC BY WEIGHT, ZIRP BY DUNCAN GALVANIZING, GALVA BRIGHT PREMIUM BY CROWN OR EQUAL. THICKNESS OF APPLIED GALVANIZING REPAIR PAINT SHALL BE NOT LESS THAN 4 COATS (ALLOW TIME TO DRY BETWEEN COATS) WITH A RESULTING COATING THICKNESS REQUIRED BY ASTM A123 OR A153 AS APPLICABLE.
- CONTRACTOR SHALL COMPLY WITH AWS CODE FOR PROCEDURES, APPEARANCE AND QUALITY OF WELDS, AND FOR METHODS USED IN CORRECTING WELDING. ALL WELDERS AND WELDING PROCESSES SHALL BE QUALIFIED IN ACCORDANCE WITH AWS "STANDARD QUALIFICATION PROCEDURES". ALL WELDING SHALL BE DONE USING E70XX ELECTRODES AND WELDING SHALL CONFORM TO AISC AND D.I.I. WHERE FILLET WELD SIZES ARE NOT SHOWN, PROVIDE THE MINIMUM SIZE PER TABLE J2.4 IN THE AISC "STEEL CONSTRUCTION MANUAL", 14TH EDITION.
- INCORRECTLY FABRICATED, DAMAGED OR OTHERWISE MISFITTING OR NON-CONFORMING MATERIALS OR CONDITIONS SHALL BE REPORTED TO THE CONSTRUCTION MANAGER PRIOR TO REMEDIAL OR CORRECTIVE ACTION. ANY SUCH ACTION SHALL REQUIRE CONSTRUCTION MANAGER APPROVAL.
- UNISTRUT SHALL BE FORMED STEEL CHANNEL STRUT FRAMING AS MANUFACTURED BY UNISTRUT CORP., WAYNE, MI OR EQUAL. STRUT MEMBERS SHALL BE 1 5/8"x1 5/8"x12GA, UNLESS OTHERWISE NOTED, AND SHALL BE HOT-DIP GALVANIZED AFTER FABRICATION.
- EPOXY ANCHOR ASSEMBLY SHALL CONSIST OF STAINLESS STEEL ANCHOR ROD WITH NUTS & WASHERS. AN INTERNALLY THREADED INSERT, A SCREEN TUBE AND A EPOXY ADHESIVE. THE ANCHORING SYSTEM SHALL BE THE HILTI-HIT HY-270 AND OR HY-200 SYSTEMS (AS SPECIFIED IN DWG.) OR ENGINEERS APPROVED EQUAL.
- EXPANSION BOLTS SHALL CONFORM TO FEDERAL SPECIFICATION FF-S-325, GROUP II, TYPE 4, CLASS I, HILTI KWIK BOLT III OR APPROVED EQUAL. INSTALLATION SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
- LUMBER SHALL COMPLY WITH THE REQUIREMENTS OF THE AMERICAN INSTITUTE OF TIMBER CONSTRUCTION AND THE NATIONAL FOREST PRODUCTS ASSOCIATION'S NATIONAL DESIGN SPECIFICATION FOR WOOD CONSTRUCTION. ALL LUMBER SHALL BE PRESSURE TREATED AND SHALL BE STRUCTURAL GRADE NO. 2 OR BETTER.
- WHERE ROOF PENETRATIONS ARE REQUIRED, THE CONTRACTOR SHALL CONTACT AND COORDINATE RELATED WORK WITH THE BUILDING OWNER AND THE EXISTING ROOF INSTALLER. WORK SHALL BE PERFORMED IN SUCH A MANNER AS TO NOT VOID THE EXISTING ROOF WARRANTY. ROOF SHALL BE WATERTIGHT.
- ALL FIBERGLASS MEMBERS USED ARE AS MANUFACTURED BY STRONGWELL COMPANY OF BRISTOL, VA 24203. ALL DESIGN CRITERIA FOR THESE MEMBERS IS BASED ON INFORMATION PROVIDED IN THE DESIGN MANUAL. ALL REQUIREMENTS PUBLISHED IN SAID MANUAL MUST BE STRICTLY ADHERED TO.
- NO MATERIALS TO BE ORDERED AND NO WORK TO BE COMPLETED UNTIL SHOP DRAWINGS HAVE BEEN REVIEWED AND APPROVED IN WRITING.
- SUBCONTRACTOR SHALL FIREPROOF ALL STEEL TO PRE-EXISTING CONDITIONS.

SPECIAL INSPECTIONS (REFERENCE IBC CHAPTER 17):

GENERAL: WHERE APPLICATION IS MADE FOR CONSTRUCTION, THE OWNER OR THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE ACTING AS THE OWNER'S AGENT SHALL EMPLOY ONE OR MORE APPROVED AGENCIES TO PERFORM INSPECTIONS DURING CONSTRUCTION ON THE TYPES OF WORK LISTED IN THE INSPECTION CHECKLIST ABOVE.

THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE AND ENGINEERS OF RECORD INVOLVED IN THE DESIGN OF THE PROJECT ARE PERMITTED TO ACT AS THE APPROVED AGENCY AND THEIR PERSONNEL ARE PERMITTED TO ACT AS THE SPECIAL INSPECTOR FOR THE WORK DESIGNED BY THEM, PROVIDED THOSE PERSONNEL MEET THE QUALIFICATION REQUIREMENTS.

STATEMENT OF SPECIAL INSPECTIONS: THE APPLICANT SHALL SUBMIT A STATEMENT OF SPECIAL INSPECTIONS PREPARED BY THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE IN ACCORDANCE WITH SECTION 107.1 AS A CONDITION FOR ISSUANCE. THIS STATEMENT SHALL BE IN ACCORDANCE WITH SECTION 1705.

REPORT REQUIREMENT: SPECIAL INSPECTORS SHALL KEEP RECORDS OF INSPECTIONS. THE SPECIAL INSPECTOR SHALL FURNISH INSPECTION REPORTS TO THE BUILDING OFFICIAL, AND TO THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE. REPORTS SHALL INDICATE THAT WORK INSPECTED WAS OR WAS NOT COMPLETED IN CONFORMANCE TO APPROVED CONSTRUCTION DOCUMENTS. DISCREPANCIES SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE CONTRACTOR FOR CORRECTION. IF THEY ARE NOT CORRECTED, THE DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE BUILDING OFFICIAL AND TO THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE. A FINAL REPORT DOCUMENTING REQUIRED SPECIAL INSPECTIONS SHALL BE SUBMITTED.

SPECIAL INSPECTION CHECKLIST	
BEFORE CONSTRUCTION	
CONSTRUCTION/INSTALLATION INSPECTIONS AND TESTING REQUIRED (COMPLETED BY ENGINEER OF RECORD)	REPORT ITEM
REQUIRED	ENGINEER OF RECORD APPROVED SHOP DRAWINGS ¹
N/A	MATERIAL SPECIFICATIONS REPORT ²
N/A	FABRICATOR NDE INSPECTION
N/A	PACKING SLIPS ³
ADDITIONAL TESTING AND INSPECTIONS:	
DURING CONSTRUCTION	
CONSTRUCTION/INSTALLATION INSPECTIONS AND TESTING REQUIRED (COMPLETED BY ENGINEER OF RECORD)	REPORT ITEM
REQUIRED	STEEL INSPECTIONS
N/A	HIGH STRENGTH BOLT INSPECTIONS
N/A	HIGH WIND ZONE INSPECTIONS ⁴
N/A	FOUNDATION INSPECTIONS
N/A	CONCRETE COMP. STRENGTH, SLUMP TESTS AND PLACEMENT
N/A	POST INSTALLED ANCHOR VERIFICATION ⁵
N/A	GROUT VERIFICATION
N/A	CERTIFIED WELD INSPECTION
N/A	EARTHWORK: LIFT AND DENSITY
N/A	ON SITE COLD GALVANIZING VERIFICATION
N/A	GUY WIRE TENSION REPORT
ADDITIONAL TESTING AND INSPECTIONS:	
AFTER CONSTRUCTION	
CONSTRUCTION/INSTALLATION INSPECTIONS AND TESTING REQUIRED (COMPLETED BY ENGINEER OF RECORD)	REPORT ITEM
REQUIRED	MODIFICATION INSPECTOR REDLINE OR RECORD DRAWINGS ⁶
N/A	POST INSTALLED ANCHOR PULL-OUT TESTING
REQUIRED	PHOTOGRAPHS
ADDITIONAL TESTING AND INSPECTIONS:	

NOTES:

- REQUIRED FOR ANY NEW SHOP FABRICATED FRP OR STEEL.
- PROVIDED BY MANUFACTURER, REQUIRED IF HIGH STRENGTH BOLTS OR STEEL.
- PROVIDED BY GENERAL CONTRACTOR; PROOF OF MATERIALS.
- HIGH WIND ZONE INSPECTION CATB 120MPH OR CAT C,D 110MPH INSPECT FRAMING OF WALLS, ANCHORING, FASTENING SCHEDULE.
- ADHESIVE FOR REBAR AND ANCHORS SHALL HAVE BEEN TESTED IN ACCORDANCE WITH ACI 355.4 AND ICC-ES AC308 FOR CRACKED CONCRETE AND SEISMIC APPLICATIONS. DESIGN ADHESIVE BOND STRENGTH HAS BEEN BASED ON ACI 355.4 TEMPERATURE CATEGORY B WITH INSTALLATIONS INTO DRY HOLES DRILLED USING A CARBIDE BIT INTO CRACKED CONCRETE THAT HAS CURED FOR AT LEAST 21 DAYS. ADHESIVE ANCHORS REQUIRING CERTIFIED INSTALLATIONS SHALL BE INSTALLED BY A CERTIFIED ADHESIVE ANCHOR INSTALLER PER ACI 318-11 D.9.2.2. INSTALLATIONS REQUIRING CERTIFIED INSTALLERS SHALL BE INSPECTED PER ACI 318-11 D.8.2.4.
- AS REQUIRED; FOR ANY FIELD CHANGES TO THE ITEMS IN THIS TABLE.

NOTES:

- ALL CONNECTIONS TO BE SHOP WELDED & FIELD BOLTED USING 3/4" A325-X BOLTS, UNLESS OTHERWISE NOTIFIED.
- SHOP DRAWING ENGINEER REVIEW & APPROVAL REQUIRED BEFORE ORDERING MATERIAL.
- SHOP DRAWING ENGINEER REVIEW & APPROVAL REQUIRED PRIOR TO STEEL FABRICATION.
- VERIFICATION OF EXISTING ROOF CONSTRUCTION IS REQUIRED PRIOR TO THE INSTALLATION OF THE ROOF PLATFORM. ENGINEER OF RECORD IS TO APPROVE EXISTING CONDITIONS IN ORDER TO MOVE FORWARD.
- CENTERLINE OF PROPOSED STEEL PLATFORM SUPPORT COLUMNS TO BE CENTRALLY LOCATED OVER THE EXISTING BUILDING COLUMNS.
- EXISTING BRICK MASONRY COLUMNS/BEARING TO BE REPAIRED/REPLACED AT ALL PROPOSED PLATFORM SUPPORT POINTS. ENGINEER OF RECORD TO REVIEW AND APPROVE.

CELLCO PARTNERSHIP d/b/a VERIZON WIRELESS



20 ALEXANDER DRIVE
WALLINGFORD, CT 06492

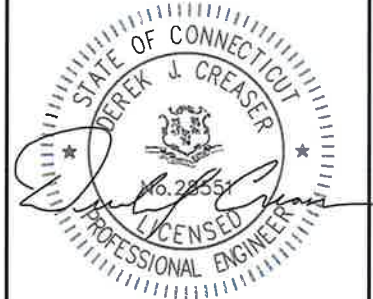


750 W CENTER ST, SUITE 301
WEST BRIDGEWATER, MA 02379
PHONE: 781.713.4725

REVISIONS

NO.	DATE	DESCRIPTION
2	02/24/22	ISSUED FOR CONSTRUCTION
1	01/06/22	REVISED FOR REVIEW
0	12/10/21	ISSUED FOR REVIEW

DESIGNED BY: KL	APPROVED BY: DC
--------------------	--------------------



IT IS A VIOLATION OF LAW FOR ANY PERSON UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER TO ALTER THIS DOCUMENT, UNLESS EXPLICITLY AGREED TO BY THE ENGINEER IN WRITING. THE ENGINEER DISCLAIMS ALL LIABILITY ASSOCIATED WITH THE REUSE, ALTERATION OR MODIFICATION OF THE CONTENTS HEREIN.

SITE NAME:
ROUND HILL CT

SITE ADDRESS:
395 ROUND HILL RD
GREENWICH, CT 06831
FAIRFIELD

LOCATION CODE:
467146

SHEET TITLE:
STRUCTURAL NOTES

SHEET #: SN-1 REVISION: 2

NNH4-65B-R6H4



12-port sector antenna, 4x 698–896 and 8x 1695–2360 MHz, 65° HPBW, 6x RET

- Features broadband Low Band (698-896 MHz) and High Band (1695-2360 MHz) arrays for 4T4R (4X MIMO) capability for Band 14, AWS, PCS and WCS applications
- Non-stacked high band array design provides higher gain and narrower vertical beamwidth than traditional antenna designs.
- Independent tilt for all arrays.
- Array configuration provides capability for 4T4R (4x MIMO) on Low band and Dual 4T4R (4x MIMO) on High band
- Optimized SPR performance across all operating bands
- Excellent wind loading characteristics
- Supports re-configurable antenna sharing capability enabling control of the internal RET system using up to two separate RET compatible OEM radios

General Specifications

Antenna Type	Sector
Band	Multiband
Color	Light gray
Grounding Type	RF connector inner conductor and body grounded to reflector and mounting bracket
Performance Note	Outdoor usage Wind loading figures are validated by wind tunnel measurements described in white paper WP-112534-EN
Radome Material	Fiberglass, UV resistant
Radiator Material	Low loss circuit board
Reflector Material	Aluminum
RF Connector Interface	4.3-10 Female
RF Connector Location	Bottom
RF Connector Quantity, high band	8
RF Connector Quantity, low band	4
RF Connector Quantity, total	12

Remote Electrical Tilt (RET) Information

RET Hardware	CommRET v2
RET Interface	8-pin DIN Female 8-pin DIN Male
RET Interface, quantity	2 female 2 male


NNH4-65B-R6H4

Input Voltage	10–30 Vdc
Internal RET	High band (4) Low band (2)
Power Consumption, active state, maximum	8 W
Power Consumption, idle state, maximum	1 W
Protocol	3GPP/AISG 2.0 (Multi-RET)

Dimensions

Width	498 mm 19.606 in
Depth	197 mm 7.756 in
Length	1828 mm 71.969 in
Net Weight, without mounting kit	34 kg 74.957 lb

Array Layout



Array	Freq (MHz)	Conns	RET (MRET)	AISG RET UID
R1	698-896	1-2	1	CPxxxxxxxxxxxxxxxxmm.1
R2	698-896	3-4	2	CPxxxxxxxxxxxxxxxxmm.2
Y1	1695-2360	5-6	3	CPxxxxxxxxxxxxxxxxmm.3
Y2	1695-2360	7-8	4	CPxxxxxxxxxxxxxxxxmm.4
Y3	1695-2360	9-10	5	CPxxxxxxxxxxxxxxxxmm.5
Y4	1695-2360	11-12	6	CPxxxxxxxxxxxxxxxxmm.6

Left Bottom Right Bottom

(Sizes of colored boxes are not true depictions of array sizes)

Port Configuration

NNH4-65B-R6H4



Electrical Specifications

Impedance	50 ohm
Operating Frequency Band	1695 – 2360 MHz 698 – 896 MHz
Polarization	±45°
Total Input Power, maximum	900 W @ 50 °C

Electrical Specifications

Frequency Band, MHz	698–806	806–896	1695–1880	1850–1990	1920–2180	2300–2360
Gain, dBi	14.2	14.8	16.7	17.3	17.9	18.4
Beamwidth, Horizontal, degrees	68	64	70	67	61	59
Beamwidth, Vertical, degrees	11.5	10.2	6.9	6.5	6	5.4
Beam Tilt, degrees	2–14	2–14	2–12	2–12	2–12	2–12
USLS (First Lobe), dB	16	18	16	19	19	19
Front-to-Back Ratio at 180°, dB	30	30	33	34	34	34
Isolation, Cross Polarization, dB	25	25	25	25	25	25
Isolation, Inter-band, dB	25	25	25	25	25	25
VSWR Return loss, dB	1.5 14.0	1.5 14.0	1.5 14.0	1.5 14.0	1.5 14.0	1.5 14.0

NNH4-65B-R6H4

PIM, 3rd Order, 2 x 20 W, dBc	-150	-150	-150	-150	-150	-150
Input Power per Port at 50°C, maximum, watts	300	300	250	250	250	200

Electrical Specifications, BASTA

Frequency Band, MHz	698–806	806–896	1695–1880	1850–1990	1920–2180	2300–2360
Gain by all Beam Tilts, average, dBi	13.8	14.5	16.1	16.9	17.5	18
Gain by all Beam Tilts Tolerance, dB	±0.6	±0.5	±0.7	±0.6	±0.6	±0.5
Gain by Beam Tilt, average, dBi	2° 14.0 8° 13.9 14° 13.5	2° 14.6 8° 14.6 14° 14.1	2° 15.9 7° 16.2 12° 16.0	2° 16.6 7° 17.0 12° 16.9	2° 17.1 7° 17.6 12° 17.4	2° 17.7 7° 18.0 12° 17.9
Beamwidth, Horizontal Tolerance, degrees	±5.7	±3.2	±6.4	±7.5	±5.9	±3.6
Beamwidth, Vertical Tolerance, degrees	±0.9	±0.7	±0.5	±0.3	±0.4	±0.2
USLS, beampeak to 20° above beampeak, dB	16	15	12	15	15	16
Front-to-Back Total Power at 180° ± 30°, dB	20	21	27	26	27	28
CPR at Boresight, dB	24	23	19	19	20	17
CPR at Sector, dB	12	10	7	5	6	8

Mechanical Specifications

Effective Projective Area (EPA), frontal	0.65 m ² 6.997 ft ²
Effective Projective Area (EPA), lateral	0.22 m ² 2.368 ft ²
Wind Loading at Velocity, frontal	156.0 lbf @ 150 km/h 694.0 N @ 150 km/h
Wind Loading at Velocity, lateral	235.0 N @ 150 km/h 52.8 lbf @ 150 km/h
Wind Loading at Velocity, maximum	202.3 lbf @ 150 km/h 900.0 N @ 150 km/h
Wind Loading at Velocity, rear	128.4 lbf @ 150 km/h 571.0 N @ 150 km/h
Wind Speed, maximum	241.402 km/h 150 mph

Packaging and Weights

Width, packed	608 mm 23.937 in
Depth, packed	352 mm 13.858 in
Length, packed	2030 mm 79.921 in
Weight, gross	47.8 kg 105.381 lb

NNH4-65B-R6H4

Regulatory Compliance/Certifications

Agency

CHINA-ROHS

ISO 9001:2015

ROHS



Classification

Above maximum concentration value

Designed, manufactured and/or distributed under this quality management system

Compliant/Exempted

Included Products

BSAMNT-3

- Wide Profile Antenna Downtilt Mounting Kit for 2.4 - 4.5 in (60 - 115 mm) OD round members. Kit contains one scissor top bracket set and one bottom bracket set.

* Footnotes

Performance Note

Severe environmental conditions may degrade optimum performance

MX08FIT265-01

NWAV™ Panel Antenna

8-Port 32 in. FIT (Form in Tighter), 3700 - 4200 MHz

- 5G C-Band 8T8R beamforming antenna
- Optimized antenna array design for all C-Band beamforming combinations
- Excellent passive intermodulation (PIM) performance reduces harmful interference
- Integrated (internal RET) for remote electrical tilt control



Electrical specification (minimum/maximum)	Ports 1, 2, 3, 4, 5, 6, 7, 8
Frequency bands, MHz	3700-4200
Gain, dBi	17.1
Horizontal beamwidth (HBW), degrees	85
Horizontal beamwidth tolerance, degrees	±5
Front-to-back ratio, co-polar power @180°± 30°, dB	27
Vertical beamwidth (VBW), degrees ¹	5.5
Vertical beamwidth tolerance, degrees	±0.3
Remote electrical downtilt (EDT) range, degrees	2-12
First upper side lobe (USLS) suppression, dB ¹	15
Coupling level, Amp, Antenna port to Cal port, dB	26
Coupling level, max Amp Δ, Antenna port to Cal port, dB	±0.6
Coupler, max Amp Δ, Antenna port to Cal port, dB	0.65
Coupler, max Phase Δ, Antenna port to Cal port, degrees	4
Cross-polar isolation, port-to-port, dB ¹	25
Max VSWR / return loss, dB	1.5:1 / -14.0
Max passive intermodulation (PIM), 2x20W carrier, dBc	-145
Max input power per port at 50 °C, watts	75

¹ Typical value over frequency and tilt



MX08FIT265-01
NWAV™ Panel Antenna

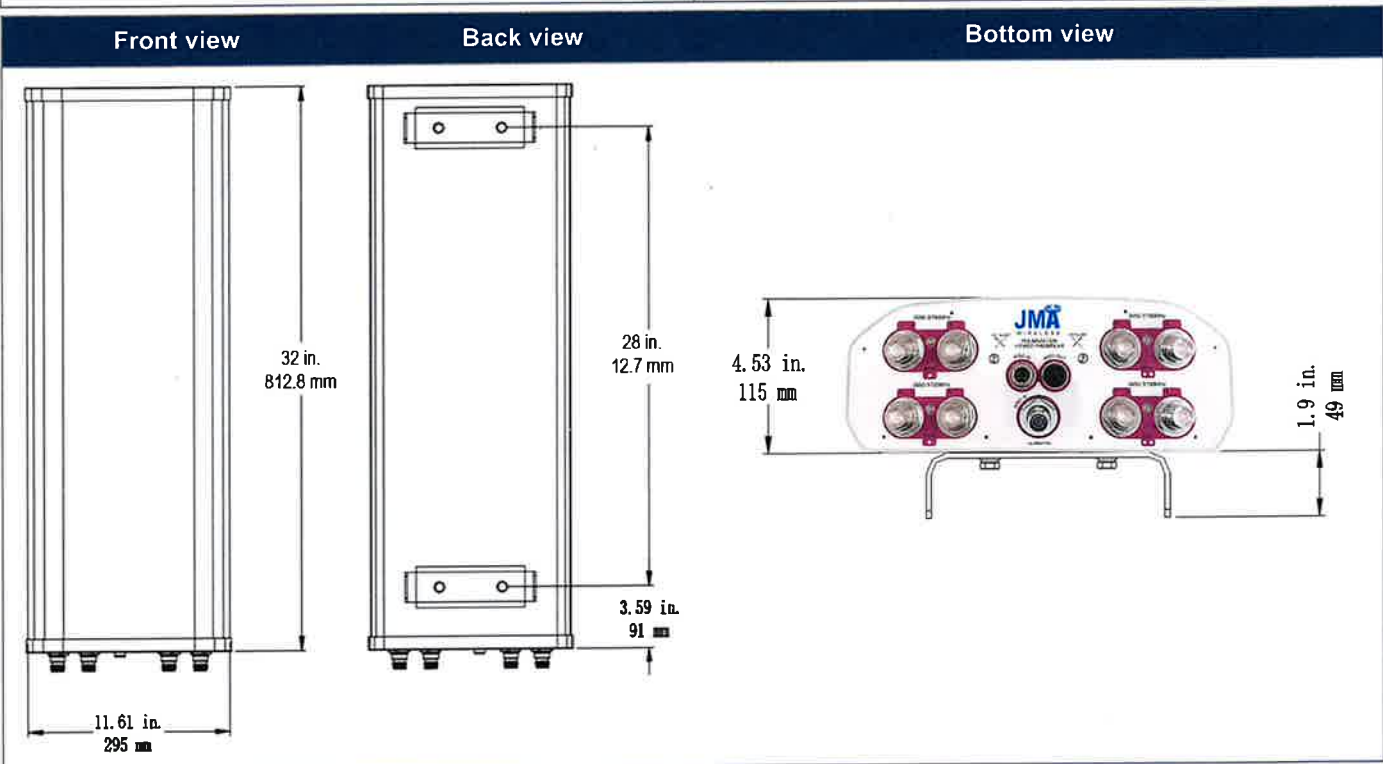
Electrical specification, Broadcast 65°	Ports 1, 2, 3, 4, 5, 6, 7, 8
Frequency bands, MHz	3700-4200
Gain over all tilts, dBi	22.5
Horizontal beamwidth (HBW), degrees ¹	65
Horizontal beamwidth tolerance, degrees	±6
Vertical beamwidth (VBW), degrees ¹	5.5
Vertical beamwidth tolerance, degrees	±0.3
First upper side lobe (USLS) suppression, dB ¹	<-16

Electrical specification, Service Beam	Ports 1, 2, 3, 4, 5, 6, 7, 8
Frequency bands, MHz	3700-4200
Steered 0° gain, dBi	22.5
Steered 0° Gain tolerance, dBi	±0.6
Steered 0° Beamwidth, Horizontal, degrees	22
Steered 0° CPR at beampeak, dB	18
Steered 0° Horizontal Sidelobe, dB	12
Steered 30° Gain, dBi (max)	21.8
Steered 30° Gain tolerance, dBi	±0.6
Steered 30° Gain, dBi	21
Steered 30° Beamwidth, Horizontal, degree	22.2
Steered 30° CPR at beampeak, dB	18
Steered 30° Horizontal Sidelobe, dB	10

Electrical specification, Soft Split	Ports 1, 2, 3, 4, 5, 6, 7, 8
Frequency bands, MHz	3700-4200
Gain over all tilts, dBi	21.8
Horizontal beamwidth (HBW), degrees ¹	32
First upper side lobe (USLS) suppression, dB ¹	15

Beamforming weighting table available upon request

Mechanical specifications	
Dimensions height/width/depth, inches (mm)	32.0/ 11.6/ 4.53 (812.8/ 295/ 115)
Shipping dimensions length/width/height, inches (mm)	37.0/ 16.9/ 11.8 (939.8/ 430/ 300)
No. of RF input ports, connector type, and location	8 x 4.3-10 female, bottom
Calibration interface port, connector type, and location	1 x 4.3-10 female, bottom
RF connector torque	96 lbf-in (10.85 N·m or 8 lbf-ft)
Net antenna weight, lb (kg)	23.2 (10.52)
Weight with supplied pipe mount bracket, lb (kg)	26.5 (12.02)
Shipping weight, lb (kg)	49.1 (22.27)
Rated wind survival speed, mph (km/h)	150 (241)
Frontal wind loading @ 150 km/h, lbf (N)	56.9



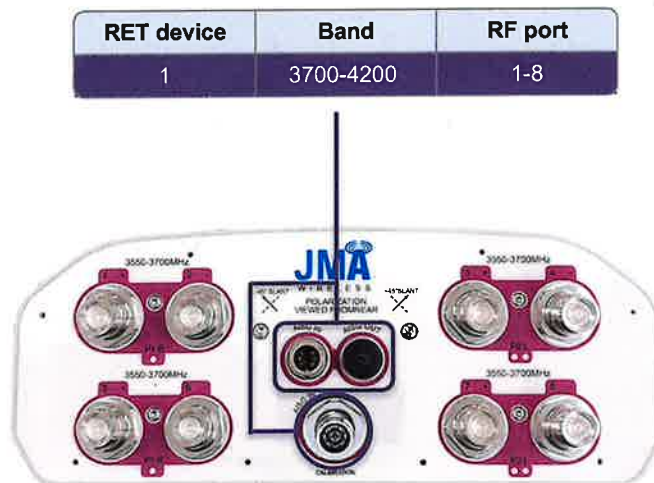
Ordering information	
Antenna model	Description
MX08FIT265-01	32-inch 8T8R beamforming antenna, 3700-4200 MHz with RET
Mounting kit (included)	91900330 BRACKET KIT, range of mechanical up/down tilt -2° to 12°
Optional accessories	
AISG cables	M/F cables for AISG connections
PCU-1000 RET controller	Stand-alone controller for RET control and configurations

Remote electrical tilt (RET 1000) information

RET location	Integrated into antenna
RET interface connector type	8-pin AISG connector per IEC 60130-9 or RF port Bias-T
RET connector torque	Min 0.5 N·m to max 1.0 N·m (hand pressure & finger tight)
RET interface connector quantity	1 pair of AISG male/female connectors and 1 RF port Bias-T
RET interface connector location	Bottom of the antenna
Total no. of internal RETs	1
RET input operating voltage, vdc	10-30
RET max power consumption, idle state, W	≤ 2.0
RET max power consumption, normal operating conditions, W	≤ 13.0
RET communication protocol	AISG 2.0 / 3GPP

RET and RF connector topology

Each RET device can be controlled either via the designated external AISG connector or RF port as shown below:



Array topology

1 set of radiating arrays
P1: 3700-4200 MHz

Band	RF port
3700-4200	1-8



SAMSUNG

102 RRU
Product Specification

for RT8808-77A

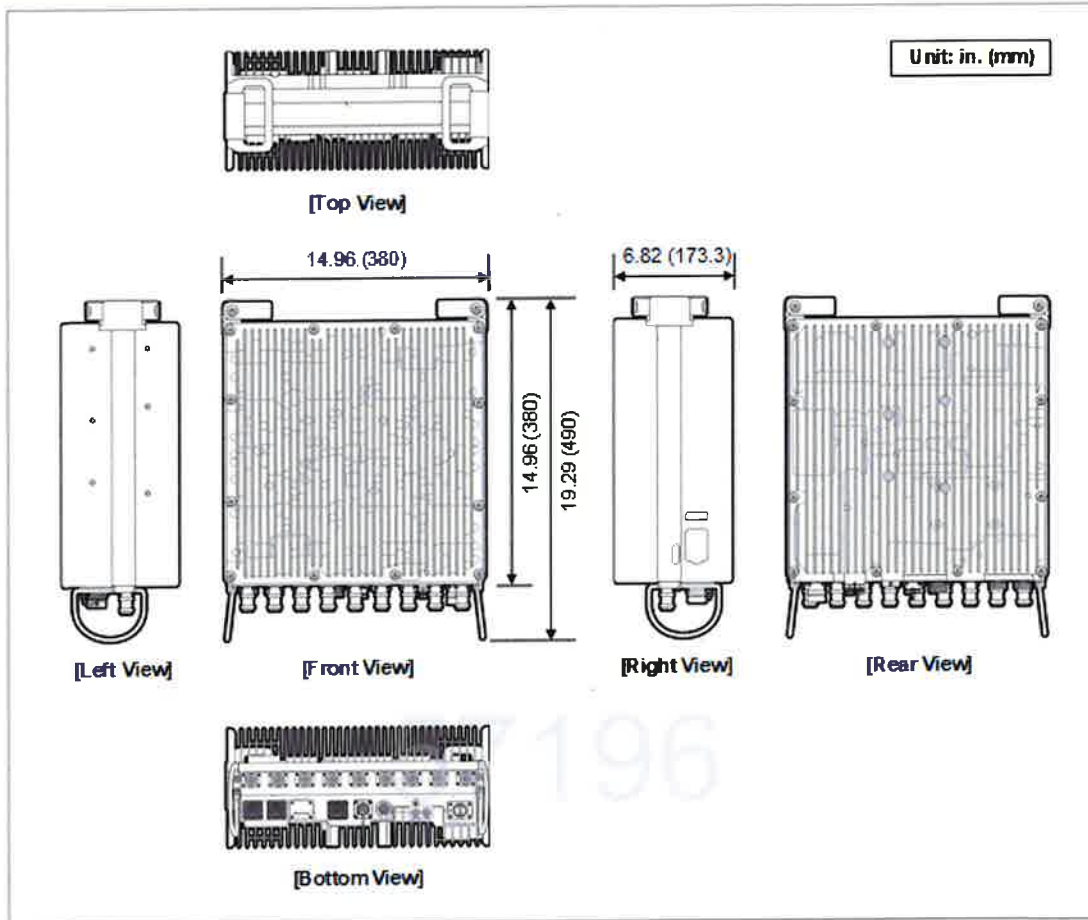
Specifies hardware configuration, functions, specifications, components, ports, and LED information for the radio units.

Document Version 1.0
June 2021

Radio Access Network

Document Number: 2600-00T7PZGA2

Figure 1. Appearance



The RT8808-77A can be mounted on a wall or pole as displayed in the following installation scenario:

Specifications

The following table outlines the main specifications of RT8808-77A.

Table 2. Specifications (RT8808-77A)

Item	RT8808-77A
Radio Technology	5G NR
Operating Frequency	3700 to 3980 MHz
Channel Bandwidth	20/40/60/80/100 MHz
RF Chain	<ul style="list-style-type: none"> • 8T8R, 4T4R+4T4R Bi-sector • 2T2R+2T2R+2T2R Tri-sector • 4T8R+4T8R split mode
RF Output Power	Max. 320W (8 x 40W)
Capacity	Total Max 2C
CPRI interface	15km, 2 ports (25Gbps x 2), SFP28, single mode, Bi-di (Option: Duplex)
Input Voltage	-48 V DC (-38 V DC to -57 V DC)
Power Consumption (Max.)	1,192 W (100% load, 25°C) (w/o RET)
Operating Humidity	5% to 100%RH (Condensing, not to exceed 30g/m3 absolute humidity)
Operating Temperature	-40°C to 55°C (without solar load)
Dimension (in./mm)	14.96/380 (W) × 6.82/173.3(D) × 14.96/380 (H)
Weight (kg)	27 or less than
Cooling	Natural convection
Waterproof/Dustproof	IP65
Wind Resistance	Telcordia GR-487-CORE Issue5 <ul style="list-style-type: none"> • Wind Resistance (Section 3.36)
Earthquake Specification	Telcordia GR-63-CORE, Issue5, <ul style="list-style-type: none"> □ Earthquake (Section 4.4.1)
Vibration Specification	Telcordia GR-63-CORE, Issue5, <ul style="list-style-type: none"> • Office Vibration (Section 4.4.4) • Transportation Vibration (Section 4.4.5)
Altitude	Telcordia GR-63-CORE, Issue5, <ul style="list-style-type: none"> • Altitude (Section 4.1.3)
EMC	FCC Title 47 CFR Part 15
RF	FCC Title 47 CFR Part 27, 24
Safety	UL 62368-1, 2nd Edition
Installation	Pole, Wall, Tower



The power consumption is predicted with a simulation and the measured value is subject to change by ±10%

ATTACHMENT 2

Structural Analysis Report

Location Code: 467146
Site Name: Round Hill CT
Project Name: L-SUB6-CARRIER ADD
Address: 395 Round Hill Rd
Greenwich, CT 06831

Client:



verizon

**20 ALEXANDER DRIVE
WALINGFORD, CT 06492**

Date: 11/9/2021



Digitally signed by: Derek J.
Creaser, P.E.
DN: CN = Derek J. Creaser, P.E.
email = dcreaser@clinellc.com C
= US O = Centerline
Communications OU = Director -
A&E Services
Date: 2021.11.10 16:33:13 -05'00'

Scope of Work:

Centerline Communications was authorized by Verizon Wireless to perform an analysis of the existing 114 ft. monopole to determine its capacity to support the proposed and existing Verizon equipment listed in this report.

Existing & Proposed Equipment:

Carrier	Mounting Level (ft)	Center Line Elevation (ft)	Number of Appurtenances	Antenna Manufacturer	Appurtenance Model	Feed Lines (in)
Verizon Wireless	110.0	110.0	3	Commscope	NNH4-65B-R6H4	(1) 6x12 Hybrid (9) RET Cables
		110.0	6	Commscope	CBC61923T-DS-43	
	100.0	100.0	3	JMA	MX08FIT265-01	
		100.0	3	Samsung	RT-8808-77A	
		100.0	1	Raycap	6 OVP	
AT&T	88.9	88.9	3	Amphenol	BXA-70063-6CF-EDIN	(6) 1-5/8

*Note: Proposed equipment shown in **bold**.*



Design Criteria:

Design Codes:

2018 Connecticut State Building Code
 2015 International Building Code
 ASCE 7-10
 TIA-222-G Standards

Ultimate Design Wind Speed (V_{ult})	120 mph
Nominal Design Wind Speed (V_{asd})	93 mph
Wind Speed with Ice	50 mph
Ice Thickness	0.75 in.
Exposure Category	C
Topographic Category	1
Risk Category	II
Site Soil Class (Assumed)	D – Stiff Soil
Seismic Design Category	B
Spectral Response Acceleration Parameter at a Short Periods, S_s	0.259 g
Spectral Response Acceleration Parameter at a Period of 1 Second, S_1	0.070 g
Short Period Site Coefficient, F_a	1.60
Long Period Site Coefficient, F_v	2.40

***Refer to calculations for additional design criteria.**

Conclusion:

Tower Section Capacity (Summary)

Section No.	Elevation ft	Component Type	Size	Critical Element	P lb	ϕP_{allow} lb	% Capacity	Pass Fail
L1	114 - 104.5	Pole	TP4x4x2	1	-928	395841	16.2	Pass
L2	104.5 - 104	Pole	TP4.5x4x2	2	-929	395841	16.2	Pass
L3	104 - 94.5	Pole	TP4.5x4.5x2.25	3	-2198	715694	33.1	Pass
L4	94.5 - 94	Pole	TP6x4.5x2.25	4	-2203	715694	33.1	Pass
L5	94 - 84.5	Pole	TP6x6x3	5	-3643	1272350	31.3	Pass
L6	84.5 - 84	Pole	TP29.25x6x3	6	-3647	1272350	31.2	Pass
L7	84 - 47.842	Pole	TP34.46x29.25x0.1875	7	-6672	1190470	20.9	Pass
L8	47.842 - 0	Pole	TP41x33.3912x0.25	8	-14196	2023190	32.4	Pass
							Summary	
							Pole (L3)	33.1 Pass
							RATING =	33.1 Pass

Structure Rating (max from all components) =	33.1%
---	--------------

Foundation Capacity (Summary)

Component	% Capacity	Pass/Fail
Anchor Rod	53.8	Pass
Base Plate	38.3	Pass
Foundation - Soil Rating	53.2	Pass
Foundation - Structural Rating	23.0	Pass

Foundation Rating (max from all components) =	53.8%
--	--------------


Recommendations:

The existing tower and its foundation have sufficient capacity to support the existing and proposed loading for the final loading configuration. Modifications to the structure are not required.

Reference Documents:

- Verizon RFDS, dated September 28, 2021
- Site Notes and Photos by Centerline Communications, dated October 7, 2021
- Monopole Tower Mapping Report by Structural Components, dated October 26, 2021
- Structural Analysis Report by Semaan Engineering, dated September 16, 2019
- Construction Drawings by Cherundolo Consulting, dated February 26, 2019

Assumptions and Limitations:

- The tower and structures were built and maintained with the manufacturer's specifications.
 - The configuration of antennas, transmission cables, mounts and other appurtenances are as specified in this report and the referenced drawings.
 - Existing appurtenance information obtained from the previous Structural Analysis by Semaan Engineering, dated September 16, 2019 and the Monopole Tower Mapping Report by Structural Components, dated October 26, 2021.
- 

Design Calculations



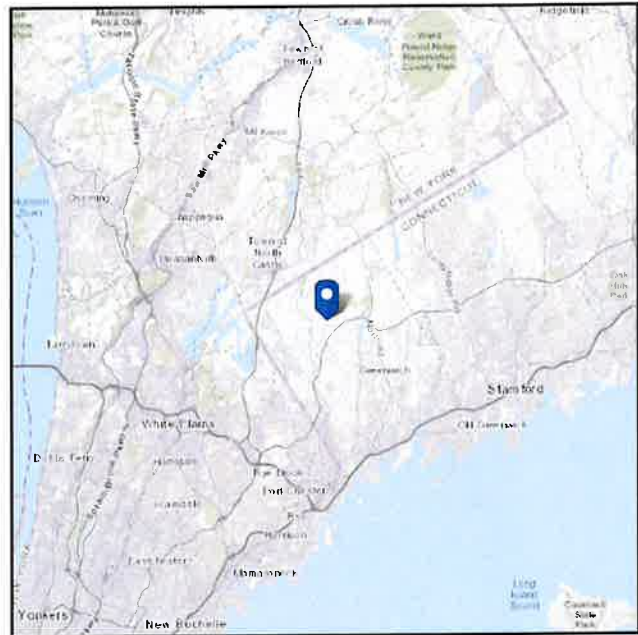
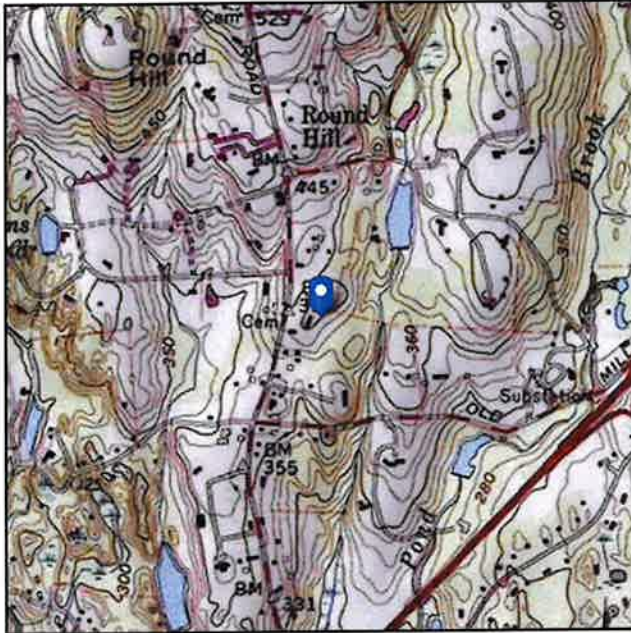


ASCE 7 Hazards Report

Address:
395 Round Hill Rd
Greenwich, Connecticut
06831

Standard: ASCE/SEI 7-10
Risk Category: II
Soil Class: D - Stiff Soil

Elevation: 400.59 ft (NAVD 88)
Latitude: 41.095694
Longitude: -73.665433



Wind

Results:

Wind Speed:	116 Vmph
10-year MRI	76 Vmph
25-year MRI	85 Vmph
50-year MRI	90 Vmph
100-year MRI	96 Vmph

Data Source: ASCE/SEI 2010, Fig. 26.5-1A and Figs. CC-1–CC-4, and Section 26.5.2, incorporating errata of March 12, 2014

Value provided is 3-second gust wind speeds at 33 ft above ground for Exposure C Category, based on linear interpolation between contours. Wind speeds are interpolated in accordance with the 7-10 Standard. Wind speeds correspond to approximately a 7% probability of exceedance in 50 years (annual exceedance probability = 0.00143, MRI = 700 years).

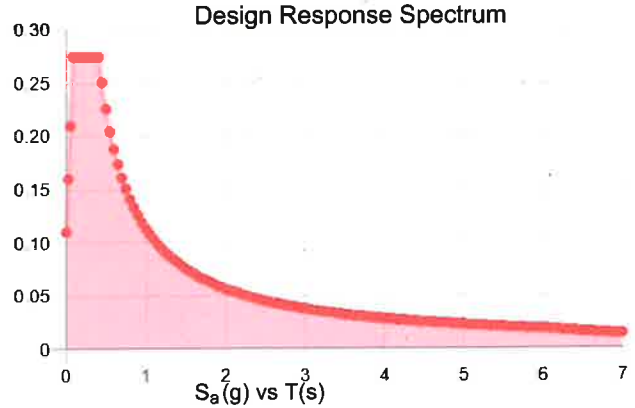
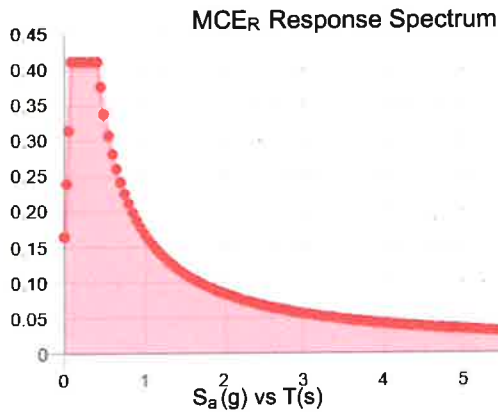
Site is in a hurricane-prone region as defined in ASCE/SEI 7-10 Section 26.2. Glazed openings need not be protected against wind-borne debris.

Site Soil Class: D - Stiff Soil

Results:

S_s :	0.259	S_{DS} :	0.275
S_1 :	0.071	S_{D1} :	0.113
F_a :	1.593	T_L :	6
F_v :	2.4	PGA :	0.152
S_{MS} :	0.412	PGA _M :	0.228
S_{M1} :	0.169	F _{PGA} :	1.495
		I_e :	1

Seismic Design Category B



Data Accessed:

Fri Nov 05 2021

Date Source:

USGS Seismic Design Maps based on ASCE/SEI 7-10, incorporating Supplement 1 and errata of March 31, 2013, and ASCE/SEI 7-10 Table 1.5-2. Additional data for site-specific ground motion procedures in accordance with ASCE/SEI 7-10 Ch. 21 are available from USGS.

Ice

Results:

Ice Thickness: 0.75 in.
Concurrent Temperature: 15 F
Gust Speed: 50 mph

Data Source: Standard ASCE/SEI 7-10, Figs. 10-2 through 10-8

Date Accessed: Fri Nov 05 2021

Ice thicknesses on structures in exposed locations at elevations higher than the surrounding terrain and in valleys and gorges may exceed the mapped values.

Values provided are equivalent radial ice thicknesses due to freezing rain with concurrent 3-second gust speeds, for a 50-year mean recurrence interval, and temperatures concurrent with ice thicknesses due to freezing rain. Thicknesses for ice accretions caused by other sources shall be obtained from local meteorological studies. Ice thicknesses in exposed locations at elevations higher than the surrounding terrain and in valleys and gorges may exceed the mapped values.

Snow

Results:

Ground Snow Load, p_g : 30 lb/ft²
Elevation: 400.6 ft

Data Source: ASCE/SEI 7-10, Fig. 7-1.

Date Accessed: Fri Nov 05 2021

Values provided are ground snow loads. In areas designated "case study required," extreme local variations in ground snow loads preclude mapping at this scale. Site-specific case studies are required to establish ground snow loads at elevations not covered.

The ASCE 7 Hazard Tool is provided for your convenience, for informational purposes only, and is provided "as is" and without warranties of any kind. The location data included herein has been obtained from information developed, produced, and maintained by third party providers; or has been extrapolated from maps incorporated in the ASCE 7 standard. While ASCE has made every effort to use data obtained from reliable sources or methodologies, ASCE does not make any representations or warranties as to the accuracy, completeness, reliability, currency, or quality of any data provided herein. Any third-party links provided by this Tool should not be construed as an endorsement, affiliation, relationship, or sponsorship of such third-party content by or from ASCE.

ASCE does not intend, nor should anyone interpret, the results provided by this Tool to replace the sound judgment of a competent professional, having knowledge and experience in the appropriate field(s) of practice, nor to substitute for the standard of care required of such professionals in interpreting and applying the contents of this Tool or the ASCE 7 standard.

In using this Tool, you expressly assume all risks associated with your use. Under no circumstances shall ASCE or its officers, directors, employees, members, affiliates, or agents be liable to you or any other person for any direct, indirect, special, incidental, or consequential damages arising from or related to your use of, or reliance on, the Tool or any information obtained therein. To the fullest extent permitted by law, you agree to release and hold harmless ASCE from any and all liability of any nature arising out of or resulting from any use of data provided by the ASCE 7 Hazard Tool.

Section	8	7	5	4	3	2	1
Length (ft)	52.66	36.16	9.50	0.50	9.50	0.50	9.50
Number of Sides	16	16	1	1	1	1	1
Thickness (in)	0.2500	0.1875	3.0000	2.2500	2.0000	2.0000	2.0000
Socket Length (ft)		4.82					
Top Dia (in)	33.3912	29.2500	6.0000	4.5000	4.5000	4.0000	4.0000
Bot Dia (in)	41.0000	34.4600	29.2500	6.0000	4.5000	4.5000	4.0000
Grade	A572-65	A572-50	A139-35				
Weight (lb)	10185.5	5515.6	2434.7	246.2	959.7	37.9	539.8
							426.5

114.0 ft
104.5 ft
94.5 ft
84.5 ft
47.8 ft
0.0 ft

DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION	TYPE	ELEVATION
NNH4-65B-R6H4 (Verizon)	110	JMA MX06FIT265-01 (Verizon)	100
NNH4-65B-R6H4 (Verizon)	110	JMA MX06FIT265-01 (Verizon)	100
NNH4-65B-R6H4 (Verizon)	110	Raycap OVP6 (Verizon)	100
(2) CBC61923T-DS-43 (Verizon)	110	Samsung RT-8808-77A (Verizon)	100
(2) CBC61923T-DS-43 (Verizon)	110	36"x10' Shroud (Verizon)	99
(2) CBC61923T-DS-43 (Verizon)	110	36"x10' Shroud (ATI)	89
36"x10' Shroud (Verizon)	109	BXA-70063-6CF-EDIN (ATI)	88.9
Samsung RT-8808-77A (Verizon)	100	BXA-70063-6CF-EDIN (ATI)	88.9
Samsung RT-8808-77A (Verizon)	100	BXA-70063-6CF-EDIN (ATI)	88.9
JMA MX06FIT265-01 (Verizon)	100		

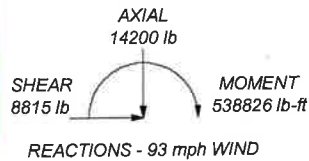
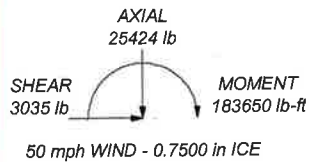
MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A139-35	35 ksi	60 ksi	A572-65	65 ksi	80 ksi
A572-50	50 ksi	65 ksi			

TOWER DESIGN NOTES

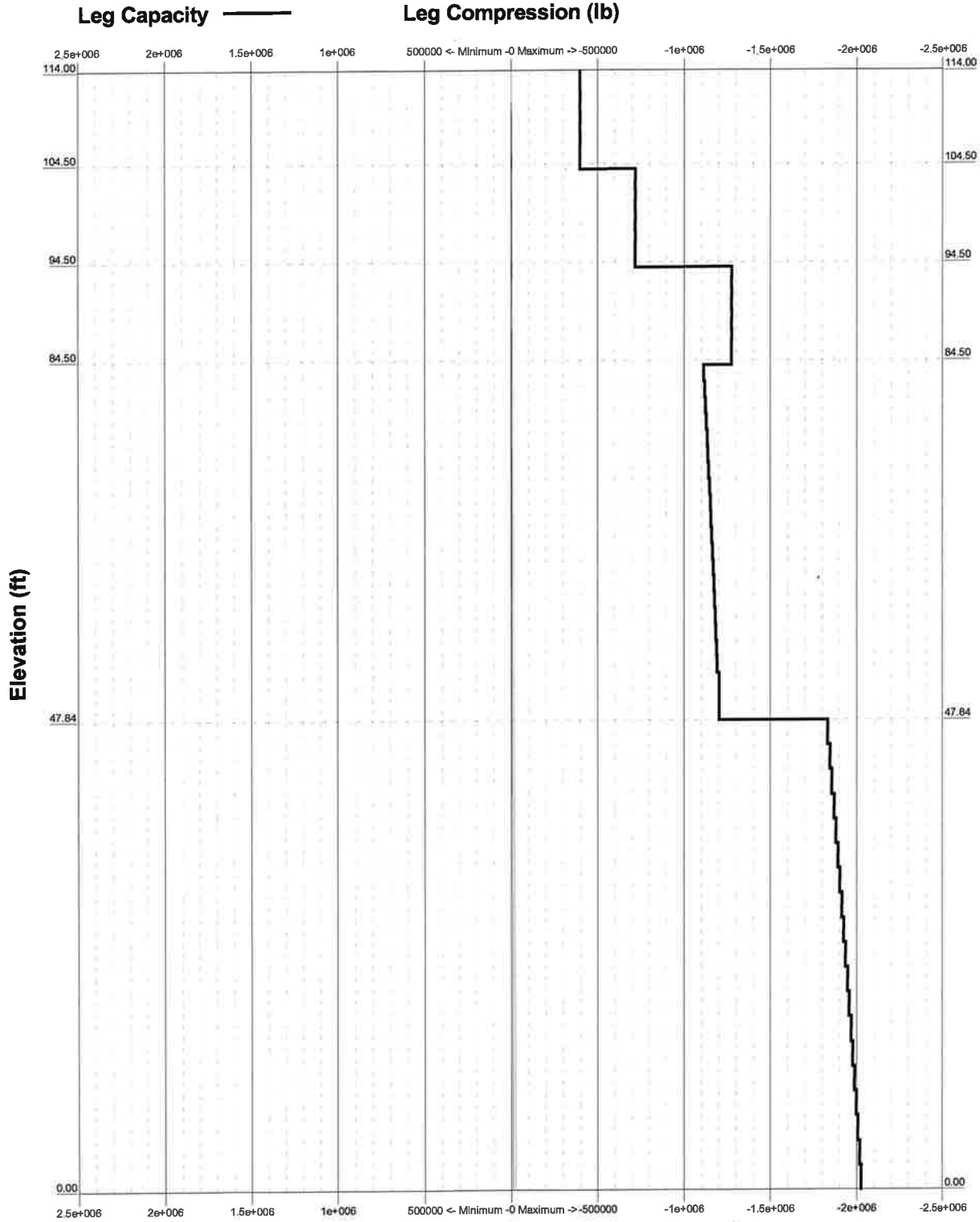
1. Tower is located in Fairfield County, Connecticut.
2. Tower designed for Exposure C to the TIA-222-G Standard.
3. Tower designed for a 93 mph basic wind in accordance with the TIA-222-G Standard.
4. Tower is also designed for a 50 mph basic wind with 0.75 in ice. Ice is considered to increase in thickness with height.
5. Deflections are based upon a 60 mph wind.
6. Tower Structure Class II.
7. Topographic Category 1 with Crest Height of 0.00 ft
8. TOWER RATING: 33.1%

ALL REACTIONS ARE FACTORED



Centerline Communications 750 West Center Street, Suite 301 West Bridgewater, MA 02379 Phone: (781) 713-4725 FAX:	Job: Round Hill CT		
	Project: L-SUB6-CARRIER ADD		
	Client: Verizon	Drawn by: Joshua Gildert	App'd:
	Code: TIA-222-G	Date: 11/09/21	Scale: NTS
	Path:		Dwg No. E-1

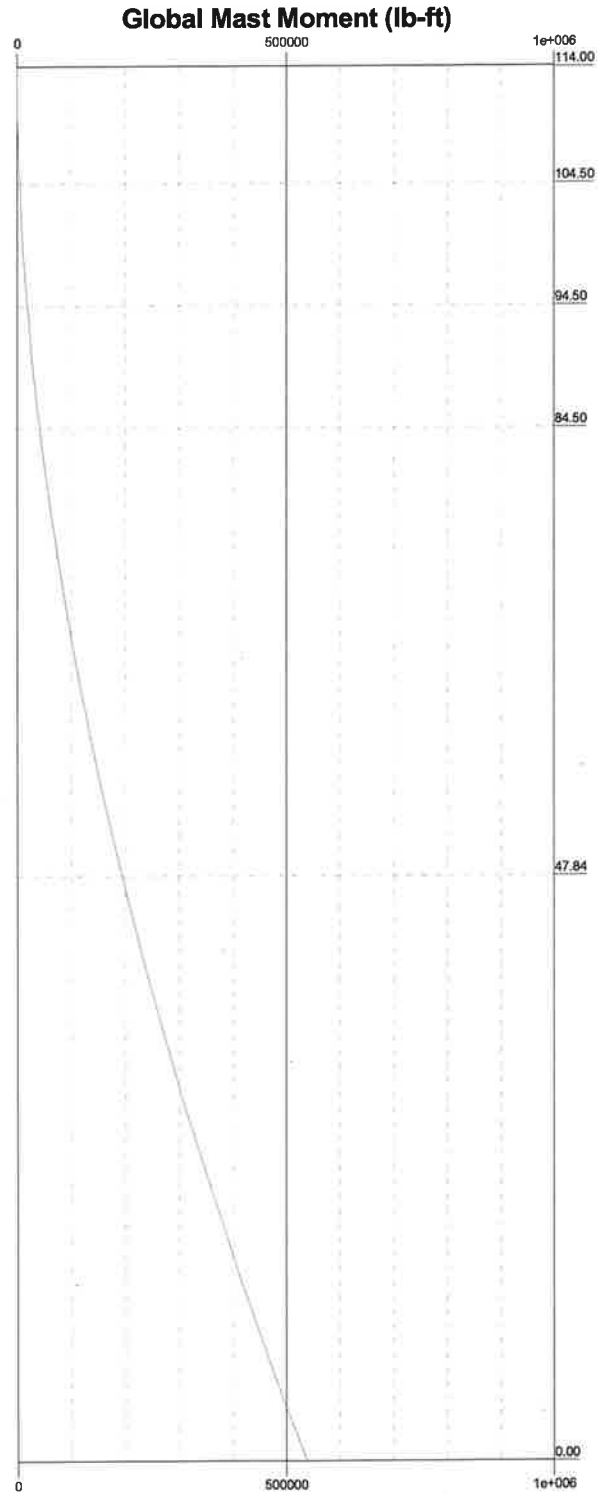
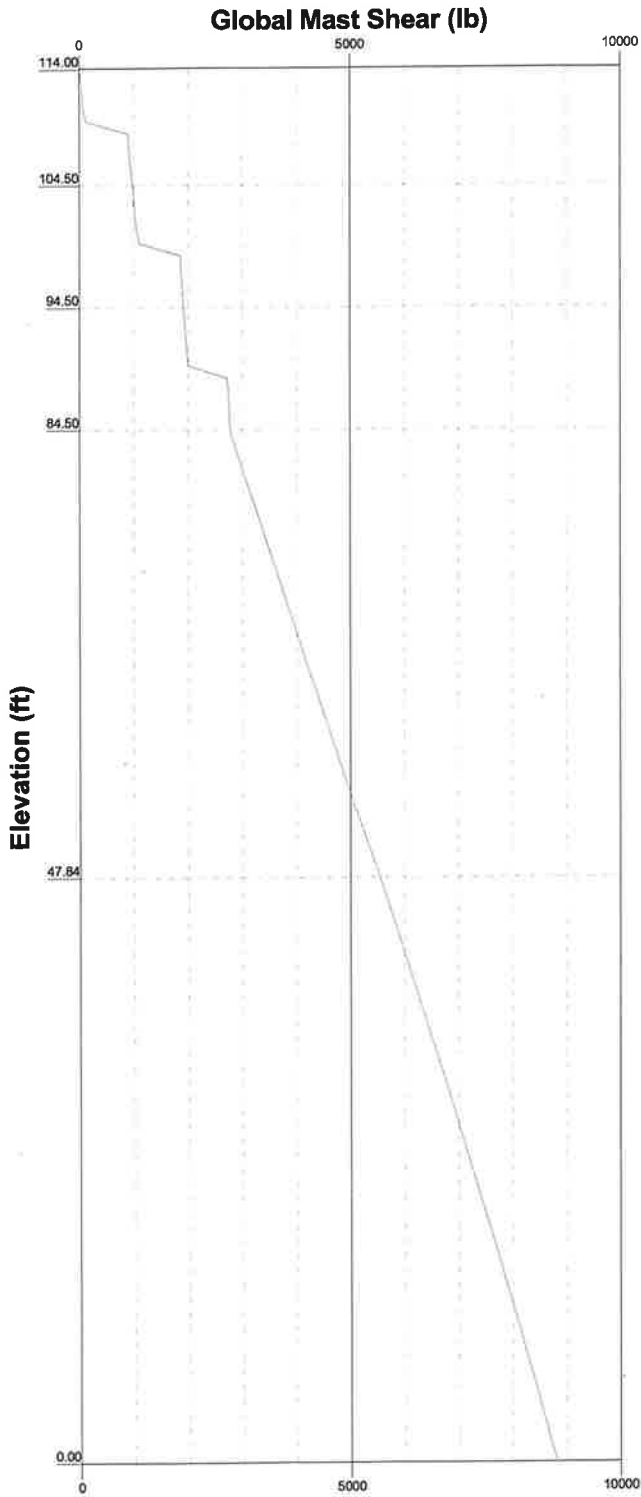
TIA-222-G - 93 mph/50 mph 0.7500 in Ice Exposure C



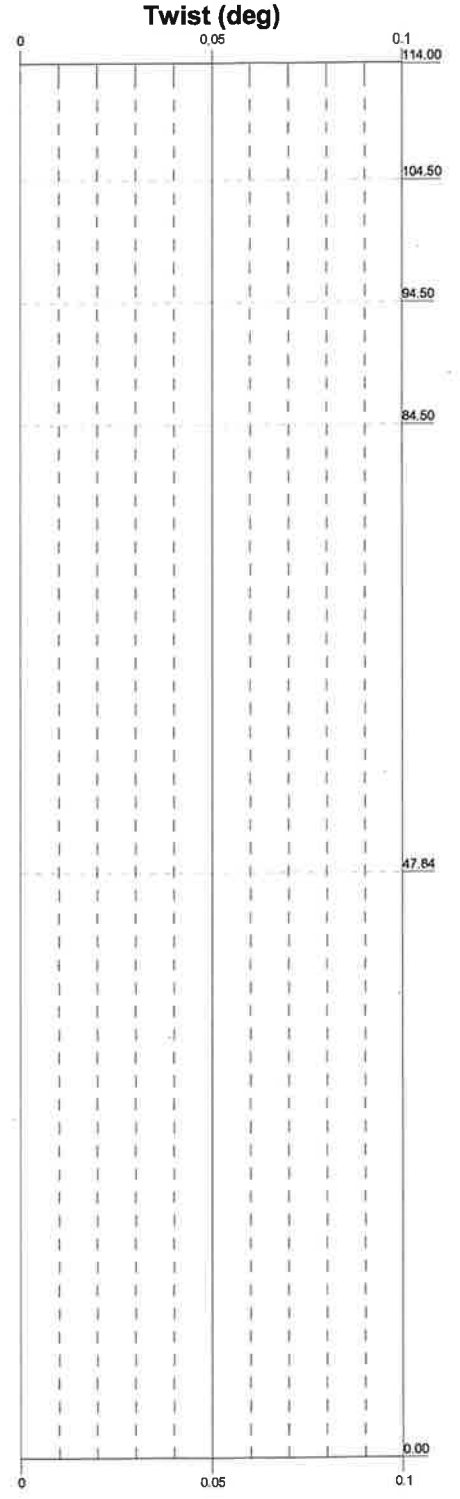
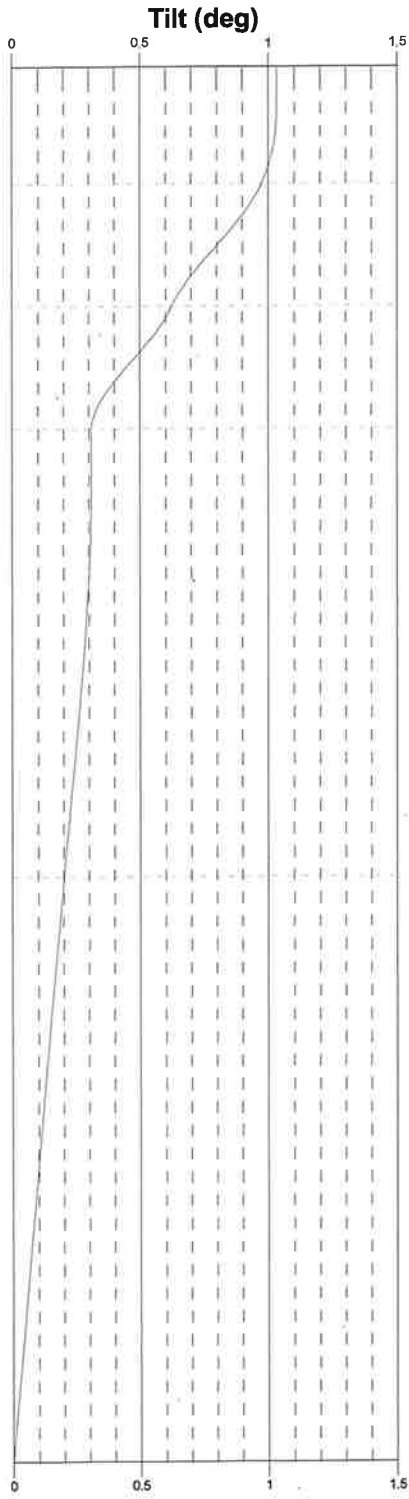
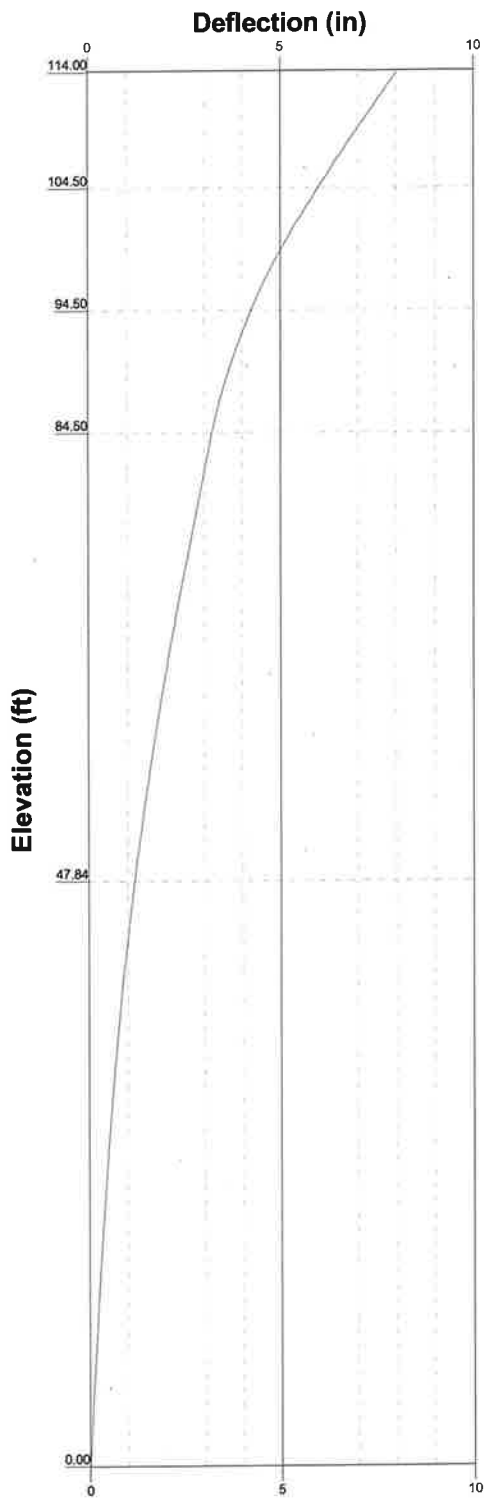
Centerline Communications 750 West Center Street, Suite 301 West Bridgewater, MA 02379 Phone: (781) 713-4725 FAX:	Job: Round Hill CT		
	Project: L-SUB6-CARRIER ADD		
	Client: Verizon	Drawn by: Joshua Gildert	
	Code: TIA-222-G	Date: 11/09/21	
	Path:	Scale: NTS	Dwg No. E-3

— Vx — Vz

— Mx — Mz



Centerline Communications		Job: Round Hill CT	
750 West Center Street, Suite 301		Project: L-SUB6-CARRIER ADD	
West Bridgewater, MA 02379		Client: Verizon	Drawn by: Joshua Gildert
Phone: (781) 713-4725		Code: TIA-222-G	Date: 11/09/21
FAX:		Path:	App'd:
			Scale: NTS
			Dwg No. E-4

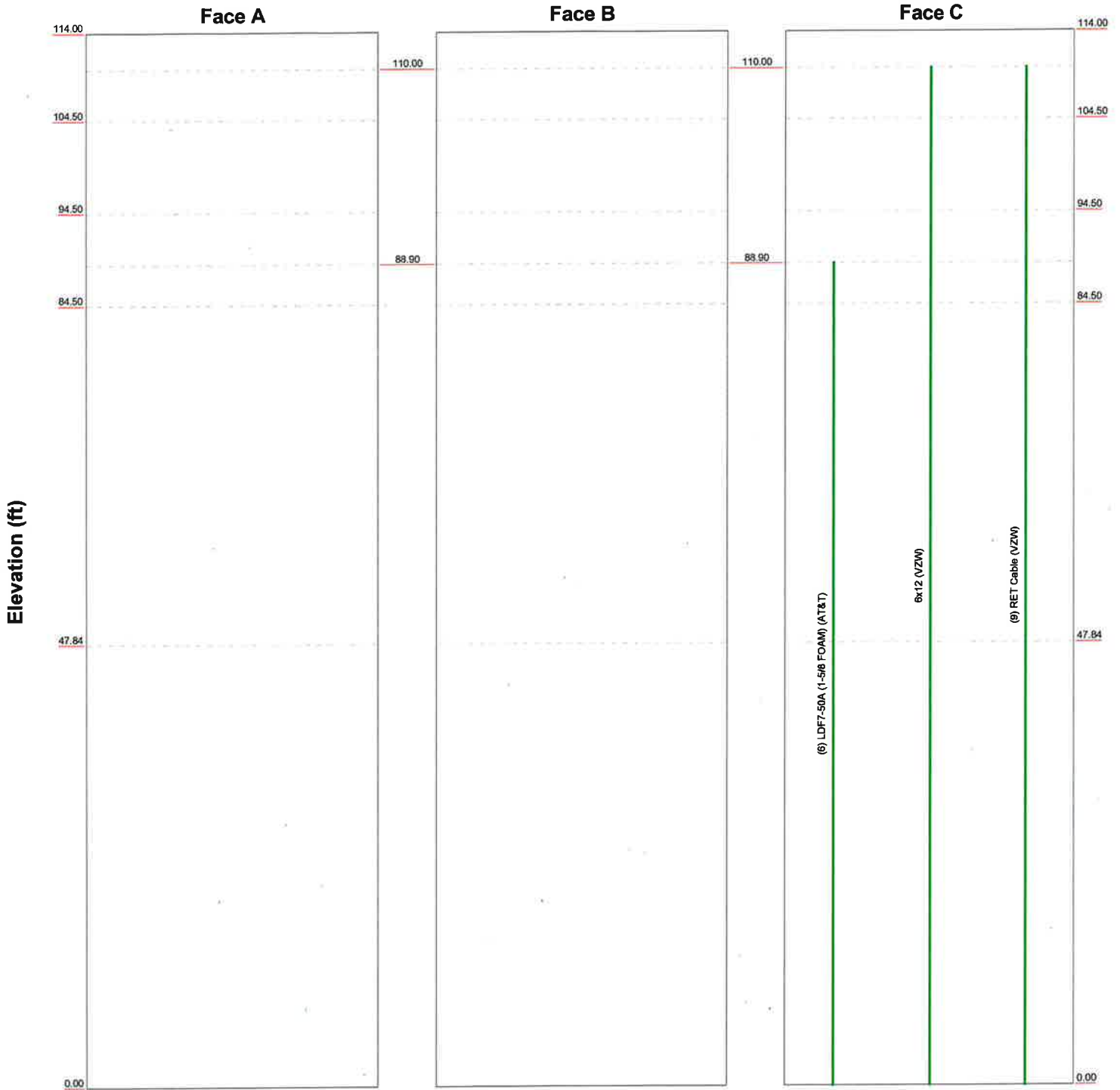


Centerline Communications		Job: Round Hill CT	
750 West Center Street, Suite 301		Project: L-SUB6-CARRIER ADD	
West Bridgewater, MA 02379		Client: Verizon	Drawn by: Joshua Gildert
Phone: (781) 713-4725		Code: TIA-222-G	Date: 11/09/21
FAX:		Path:	Scale: NTS
		Dwg No. E-5	

Feed Line Distribution Chart

0' - 114'

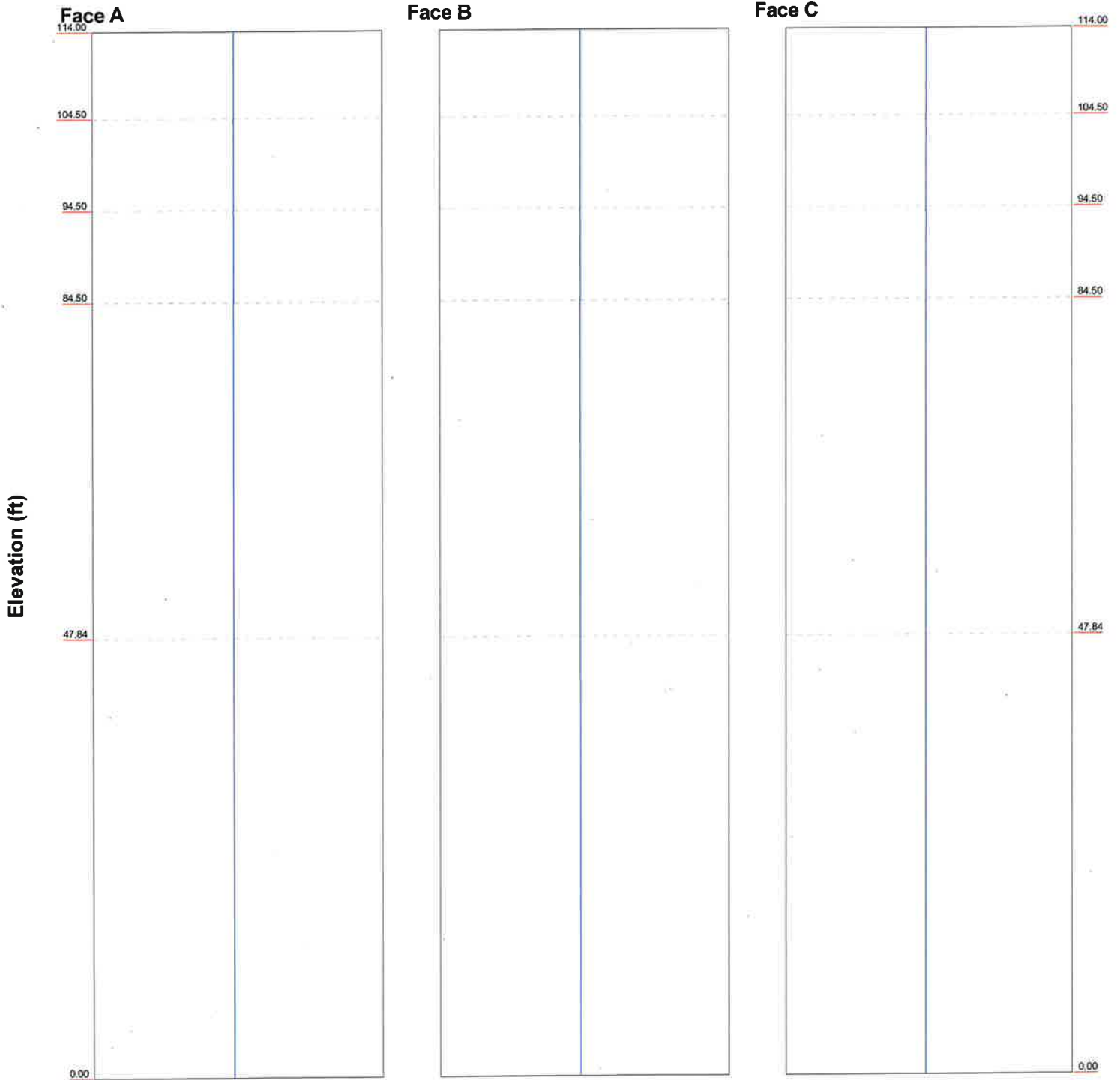
— Round
 — Flat
 — App In Face
 — App Out Face
 — Truss Leg



Centerline Communications 750 West Center Street, Suite 301 West Bridgewater, MA 02379 Phone: (781) 713-4725 FAX:		Job: Round Hill CT	
		Project: L-SUB6-CARRIER ADD	
Client: Verizon	Drawn by: Joshua Gildert	App'd:	
Code: TIA-222-G	Date: 11/09/21	Scale: NTS	
Path:		Dwg No. E-7	

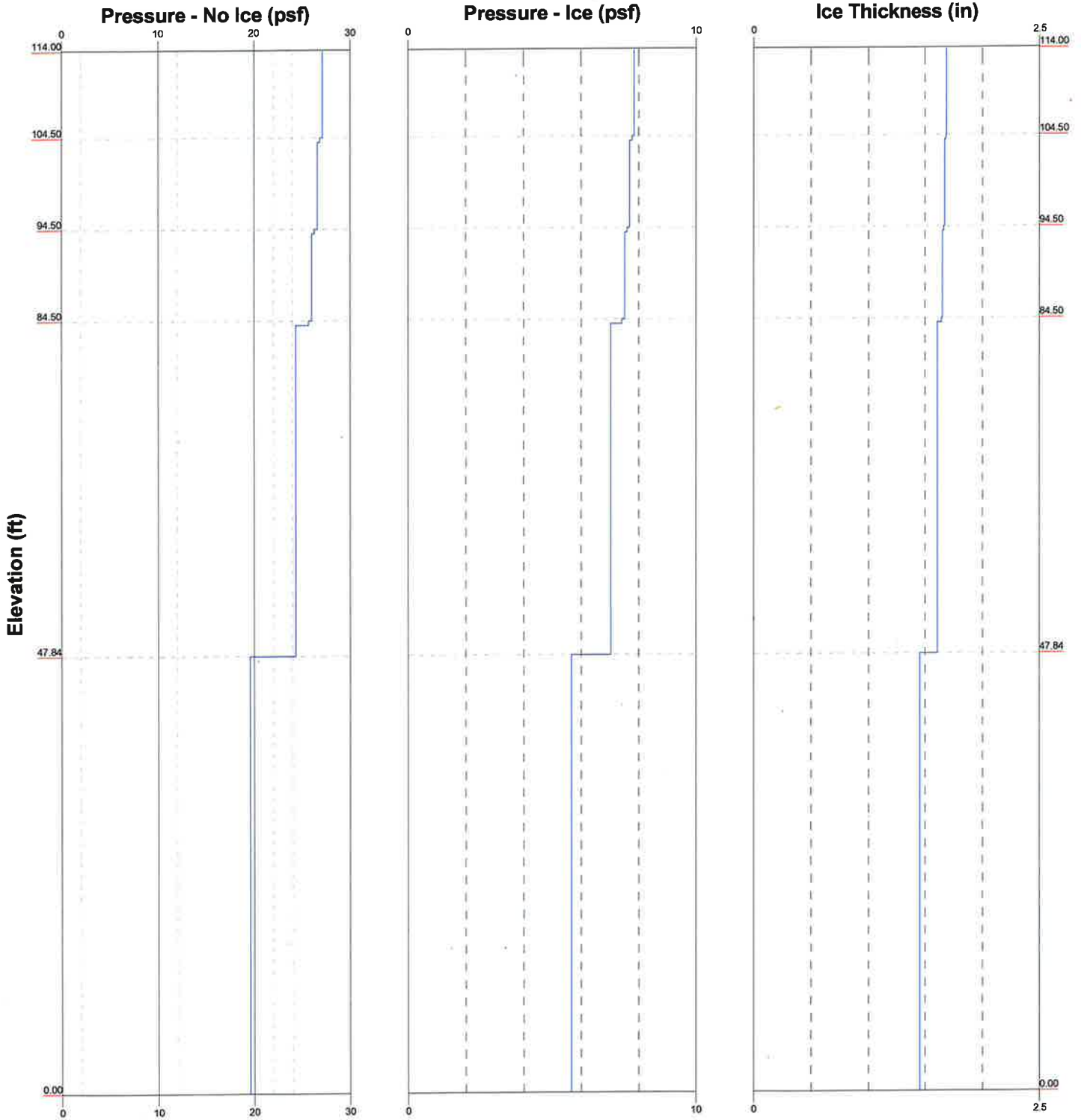
Stress Distribution Chart
0' - 114'

█ > 100%
 █ 90%-100%
 █ 75%-90%
 █ 50%-75%
 █ < 50% Overstress



Centerline Communications		Job: Round Hill CT	
750 West Center Street, Suite 301		Project: L-SUB6-CARRIER ADD	
West Bridgewater, MA 02379		Client: Verizon	Drawn by: Joshua Gildert
Phone: (781) 713-4725		Code: TIA-222-G	Date: 11/09/21
FAX:		Path:	Scale: NTS
		Dwg No. E-8	

Wind Pressures and Ice Thickness
TIA-222-G - 93 mph/50 mph 0.7500 in Ice Exposure C



Centerline Communications 750 West Center Street, Suite 301 West Bridgewater, MA 02379 Phone: (781) 713-4725 FAX:	Job: Round Hill CT		
	Project: L-SUB6-CARRIER ADD		
	Client: Verizon	Drawn by: Joshua Gildert	App'd:
	Code: TIA-222-G	Date: 11/09/21	Scale: NTS
	Path:		Dwg No. E-9

tnxTower Centerline Communications 750 West Center Street, Suite 301 West Bridgewater, MA 02379 Phone: (781) 713-4725 FAX:	Job Round Hill CT	Page 2 of 14
	Project L-SUB6-CARRIER ADD	Date 15:21:50 11/09/21
	Client Verizon	Designed by Joshua Gildert

Section	Elevation ft	Section Length ft	Splice Length ft	Number of Sides	Top Diameter in	Bottom Diameter in	Wall Thickness in	Bend Radius in	Pole Grade
L1	114.00-104.50	9.50	0.00	Round	4.0000	4.0000	2.0000		A139-35 (35 ksi)
L2	104.50-104.00	0.50	0.00	Round	4.0000	4.5000	2.0000		A139-35 (35 ksi)
L3	104.00-94.50	9.50	0.00	Round	4.5000	4.5000	2.2500		A572-50 (50 ksi)
L4	94.50-94.00	0.50	0.00	Round	4.5000	6.0000	2.2500		A572-50 (50 ksi)
L5	94.00-84.50	9.50	0.00	Round	6.0000	6.0000	3.0000		A572-50 (50 ksi)
L6	84.50-84.00	0.50	0.00	Round	6.0000	29.2500	3.0000		A572-50 (50 ksi)
L7	84.00-47.84	36.16	4.82	18	29.2500	34.4600	0.1875	0.7500	A572-65 (65 ksi)
L8	47.84-0.00	52.66		18	33.3912	41.0000	0.2500	1.0000	A572-65 (65 ksi)

Tapered Pole Properties

Section	Tip Dia. in	Area in ²	I in ⁴	r in	C in	I/C in ³	J in ⁴	I/Q in ²	w in	w/t
L1	4.0000	12.5664	12.5664	1.0000	2.0000	6.2832	25.1327	6.2794	0.0000	0
L2	4.0000	12.5664	12.5664	1.0000	2.0000	6.2832	25.1327	6.2794	0.0000	0
L3	4.5000	15.7080	20.1258	1.1319	2.2500	8.9448	40.2517	7.8493	0.0000	0
L4	4.5000	15.9043	20.1289	1.1250	2.2500	8.9462	40.2578	7.9474	0.0000	0
L5	6.0000	26.5072	63.3687	1.5462	3.0000	21.1229	126.7375	13.2457	0.0000	0
L6	6.0000	28.2743	63.6173	1.5000	3.0000	21.2058	127.2345	14.1287	0.0000	0
L7	29.2500	247.4004	21587.6196	9.3412	14.6250	1476.0766	43175.2392	123.6264	0.0000	0
L8	29.6723	17.2958	1845.6296	10.3172	14.8590	124.2095	3693.6878	8.6496	4.8180	25.696
	34.9627	20.3964	3026.7949	12.1667	17.5057	172.9036	6057.5726	10.2001	5.7350	30.586
	34.5742	26.2975	3649.1302	11.7651	16.9627	215.1263	7303.0621	13.1513	5.4369	21.747
	41.5939	32.3351	6783.7092	14.4663	20.8280	325.7014	13576.3445	16.1706	6.7760	27.104

Tower Elevation ft	Gusset Area (per face) ft ²	Gusset Thickness in	Gusset Grade	Adjust. Factor A _f	Adjust. Factor A _r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals in	Double Angle Stitch Bolt Spacing Horizontals in	Double Angle Stitch Bolt Spacing Redundants in
L1 114.00-104.50				1.05	1	1.05			
L2 104.50-104.00				1.05	1	1.05			
L3 104.00-94.50				1.05	1	1.05			
L4 94.50-94.00				1.05	1	1.05			
L5 94.00-84.50				1.05	1	1.05			
L6 84.50-84.00				1.05	1	1.05			
L7 84.00-47.84				1.05	1	1.05			
L8 47.84-0.00				1.05	1	1.05			

tnxTower Centerline Communications 750 West Center Street, Suite 301 West Bridgewater, MA 02379 Phone: (781) 713-4725 FAX:	Job Round Hill CT	Page 3 of 14
	Project L-SUB6-CARRIER ADD	Date 15:21:50 11/09/21
	Client Verizon	Designed by Joshua Gildert

Feed Line/Linear Appurtenances - Entered As Round Or Flat

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Total Number	Number Per Row	Clear Spacing in	Width or Diameter in	Perimeter in	Weight plf

Feed Line/Linear Appurtenances - Entered As Area

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Total Number		C _{AA} ft ² /ft	Weight plf
LDF7-50A (1-5/8 FOAM) (AT&T)	C	No	No	Inside Pole	88.90 - 0.00	6	No Ice 1/2" Ice 1" Ice	0.00 0.00 0.00	0.82 0.82 0.82

6x12 (VZW)	C	No	No	Inside Pole	110.00 - 0.00	1	No Ice 1/2" Ice 1" Ice	0.00 0.00 0.00	0.82 0.82 0.82

RET Cable (VZW)	C	No	No	Inside Pole	110.00 - 0.00	9	No Ice 1/2" Ice 1" Ice	0.00 0.00 0.00	0.08 0.08 0.08

Feed Line/Linear Appurtenances Section Areas

Tower Section	Tower Elevation ft	Face	A _R ft ²	A _F ft ²	C _{AA} In Face ft ²	C _{AA} Out Face ft ²	Weight lb
L1	114.00-104.50	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	8.47
L2	104.50-104.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	0.77
L3	104.00-94.50	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	14.63
L4	94.50-94.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	0.77
L5	94.00-84.50	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	36.28
L6	84.50-84.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	3.23
L7	84.00-47.84	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00

tnxTower Centerline Communications 750 West Center Street, Suite 301 West Bridgewater, MA 02379 Phone: (781) 713-4725 FAX:	Job Round Hill CT	Page 4 of 14
	Project L-SUB6-CARRIER ADD	Date 15:21:50 11/09/21
	Client Verizon	Designed by Joshua Gildert

Tower Section	Tower Elevation ft	Face	A _R ft ²	A _F ft ²	C _{AA} In Face ft ²	C _{AA} Out Face ft ²	Weight lb
L8	47.84-0.00	C	0.000	0.000	0.000	0.000	233.58
		A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	309.06

Feed Line/Linear Appurtenances Section Areas - With Ice

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A _R ft ²	A _F ft ²	C _{AA} In Face ft ²	C _{AA} Out Face ft ²	Weight lb
L1	114.00-104.50	A	1.691	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	8.47
L2	104.50-104.00	A	1.683	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	0.77
L3	104.00-94.50	A	1.675	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	14.63
L4	94.50-94.00	A	1.666	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	0.77
L5	94.00-84.50	A	1.657	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	36.28
L6	84.50-84.00	A	1.647	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	3.23
L7	84.00-47.84	A	1.607	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	233.58
L8	47.84-0.00	A	1.455	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	309.06

Feed Line Center of Pressure

Section	Elevation ft	CP _X in	CP _Z in	CP _X Ice in	CP _Z Ice in
L1	114.00-104.50	0.0000	0.0000	0.0000	0.0000
L2	104.50-104.00	0.0000	0.0000	0.0000	0.0000
L3	104.00-94.50	0.0000	0.0000	0.0000	0.0000
L4	94.50-94.00	0.0000	0.0000	0.0000	0.0000
L5	94.00-84.50	0.0000	0.0000	0.0000	0.0000
L6	84.50-84.00	0.0000	0.0000	0.0000	0.0000
L7	84.00-47.84	0.0000	0.0000	0.0000	0.0000
L8	47.84-0.00	0.0000	0.0000	0.0000	0.0000

Note: For pole sections, center of pressure calculations do not consider feed line shielding.

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Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	C _{AA} Front	C _{AA} Side	Weight
			Horz	Lateral					
			ft	ft	°	ft	ft ²	ft ²	lb
JMA MX08FIT265-01 (Verizon)	A	From Leg	0.25	0.0000	100.00	No Ice	0.00	0.00	23.20
			0.00			1/2" Ice	0.00	0.00	43.18
			0.00			1" Ice	0.00	0.00	66.47
JMA MX08FIT265-01 (Verizon)	B	From Leg	0.25	0.0000	100.00	No Ice	0.00	0.00	23.20
			0.00			1/2" Ice	0.00	0.00	43.18
			0.00			1" Ice	0.00	0.00	66.47
JMA MX08FIT265-01 (Verizon)	C	From Leg	0.25	0.0000	100.00	No Ice	0.00	0.00	23.20
			0.00			1/2" Ice	0.00	0.00	43.18
			0.00			1" Ice	0.00	0.00	66.47
NNH4-65B-R6H4 (Verizon)	A	From Leg	0.25	0.0000	110.00	No Ice	0.00	0.00	75.00
			0.00			1/2" Ice	0.00	0.00	147.14
			0.00			1" Ice	0.00	0.00	225.92
NNH4-65B-R6H4 (Verizon)	B	From Leg	0.25	0.0000	110.00	No Ice	0.00	0.00	75.00
			0.00			1/2" Ice	0.00	0.00	147.14
			0.00			1" Ice	0.00	0.00	225.92
NNH4-65B-R6H4 (Verizon)	C	From Leg	0.25	0.0000	110.00	No Ice	0.00	0.00	75.00
			0.00			1/2" Ice	0.00	0.00	147.14
			0.00			1" Ice	0.00	0.00	225.92
Samsung RT-8808-77A (Verizon)	A	From Leg	0.25	0.0000	100.00	No Ice	0.00	0.00	97.50
			0.00			1/2" Ice	0.00	0.00	115.71
			0.00			1" Ice	0.00	0.00	136.71
Samsung RT-8808-77A (Verizon)	B	From Leg	0.25	0.0000	100.00	No Ice	0.00	0.00	97.50
			0.00			1/2" Ice	0.00	0.00	115.71
			0.00			1" Ice	0.00	0.00	136.71
Samsung RT-8808-77A (Verizon)	C	From Leg	0.25	0.0000	100.00	No Ice	0.00	0.00	97.50
			0.00			1/2" Ice	0.00	0.00	115.71
			0.00			1" Ice	0.00	0.00	136.71
(2) CBC61923T-DS-43 (Verizon)	A	From Leg	0.25	0.0000	110.00	No Ice	0.00	0.00	11.70
			0.00			1/2" Ice	0.00	0.00	16.09
			0.00			1" Ice	0.00	0.00	21.90
(2) CBC61923T-DS-43 (Verizon)	B	From Leg	0.25	0.0000	110.00	No Ice	0.00	0.00	11.70
			0.00			1/2" Ice	0.00	0.00	16.09
			0.00			1" Ice	0.00	0.00	21.90
(2) CBC61923T-DS-43 (Verizon)	C	From Leg	0.25	0.0000	110.00	No Ice	0.00	0.00	11.70
			0.00			1/2" Ice	0.00	0.00	16.09
			0.00			1" Ice	0.00	0.00	21.90
Raycap OVP6 (Verizon)	C	From Leg	0.25	0.0000	100.00	No Ice	0.00	0.00	32.80
			0.00			1/2" Ice	0.00	0.00	47.92
			0.00			1" Ice	0.00	0.00	65.37

BXA-70063-6CF-EDIN (AT&T)	A	From Leg	0.25	0.0000	88.90	No Ice	0.00	0.00	17.00
			0.00			1/2" Ice	0.00	0.00	61.90
			0.00			1" Ice	0.00	0.00	112.71
BXA-70063-6CF-EDIN (AT&T)	B	From Leg	0.25	0.0000	88.90	No Ice	0.00	0.00	17.00
			0.00			1/2" Ice	0.00	0.00	61.90
			0.00			1" Ice	0.00	0.00	112.71
BXA-70063-6CF-EDIN (AT&T)	C	From Leg	0.25	0.0000	88.90	No Ice	0.00	0.00	17.00
			0.00			1/2" Ice	0.00	0.00	61.90
			0.00			1" Ice	0.00	0.00	112.71

36"x10" Shroud	C	None		0.0000	89.00	No Ice	15.56	15.56	100.00

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Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert	Azimuth Adjustment	Placement	C _{AA} Front	C _{AA} Side	Weight
			ft ft ft	°	ft	ft ²	ft ²	lb
(AT&T)						1/2" Ice 22.30	22.30	357.81
						1" Ice 23.04	23.04	625.55
36"x10' Shroud (Verizon)	C	None		0.0000	99.00	No Ice 15.56	15.56	100.00
						1/2" Ice 22.30	22.30	357.81
						1" Ice 23.04	23.04	625.55
36"x10' Shroud (Verizon)	C	None		0.0000	109.00	No Ice 15.56	15.56	100.00
						1/2" Ice 22.30	22.30	357.81
						1" Ice 23.04	23.04	625.55

Load Combinations

Comb. No.	Description
1	Dead Only
2	1.2 Dead+1.6 Wind 0 deg - No Ice
3	0.9 Dead+1.6 Wind 0 deg - No Ice
4	1.2 Dead+1.6 Wind 30 deg - No Ice
5	0.9 Dead+1.6 Wind 30 deg - No Ice
6	1.2 Dead+1.6 Wind 60 deg - No Ice
7	0.9 Dead+1.6 Wind 60 deg - No Ice
8	1.2 Dead+1.6 Wind 90 deg - No Ice
9	0.9 Dead+1.6 Wind 90 deg - No Ice
10	1.2 Dead+1.6 Wind 120 deg - No Ice
11	0.9 Dead+1.6 Wind 120 deg - No Ice
12	1.2 Dead+1.6 Wind 150 deg - No Ice
13	0.9 Dead+1.6 Wind 150 deg - No Ice
14	1.2 Dead+1.6 Wind 180 deg - No Ice
15	0.9 Dead+1.6 Wind 180 deg - No Ice
16	1.2 Dead+1.6 Wind 210 deg - No Ice
17	0.9 Dead+1.6 Wind 210 deg - No Ice
18	1.2 Dead+1.6 Wind 240 deg - No Ice
19	0.9 Dead+1.6 Wind 240 deg - No Ice
20	1.2 Dead+1.6 Wind 270 deg - No Ice
21	0.9 Dead+1.6 Wind 270 deg - No Ice
22	1.2 Dead+1.6 Wind 300 deg - No Ice
23	0.9 Dead+1.6 Wind 300 deg - No Ice
24	1.2 Dead+1.6 Wind 330 deg - No Ice
25	0.9 Dead+1.6 Wind 330 deg - No Ice
26	1.2 Dead+1.0 Ice+1.0 Temp
27	1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp
28	1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp
29	1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp
30	1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp
31	1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp
32	1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp
33	1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp
34	1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp
35	1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp
36	1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp
37	1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp

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Comb. No.	Description
38	1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp
39	Dead+Wind 0 deg - Service
40	Dead+Wind 30 deg - Service
41	Dead+Wind 60 deg - Service
42	Dead+Wind 90 deg - Service
43	Dead+Wind 120 deg - Service
44	Dead+Wind 150 deg - Service
45	Dead+Wind 180 deg - Service
46	Dead+Wind 210 deg - Service
47	Dead+Wind 240 deg - Service
48	Dead+Wind 270 deg - Service
49	Dead+Wind 300 deg - Service
50	Dead+Wind 330 deg - Service

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical lb	Horizontal, X lb	Horizontal, Z lb
Pole	Max. Vert	26	25424.25	0.00	-0.00
	Max. H _x	21	10650.27	8814.48	0.00
	Max. H _z	3	10650.27	-0.00	8814.48
	Max. M _x	2	538680.60	-0.00	8814.13
	Max. M _z	8	538673.81	-8814.13	0.00
	Max. Torsion	12	0.01	-4407.65	-7634.28
	Min. Vert	21	10650.27	8814.48	0.00
	Min. H _x	9	10650.27	-8814.48	0.00
	Min. H _z	15	10650.27	-0.00	-8814.48
	Min. M _x	14	-538699.14	-0.00	-8814.12
	Min. M _z	20	-538705.93	8814.12	0.00
	Min. Torsion	24	-0.01	4407.65	7634.28

Tower Mast Reaction Summary

Load Combination	Vertical lb	Shear _x lb	Shear _z lb	Overturning Moment, M _x lb-ft	Overturning Moment, M _z lb-ft	Torque lb-ft
Dead Only	11833.66	-0.00	0.00	7.18	12.43	0.00
1.2 Dead+1.6 Wind 0 deg - No Ice	14200.35	0.00	-8814.13	-538680.60	16.11	0.01
0.9 Dead+1.6 Wind 0 deg - No Ice	10650.27	0.00	-8814.48	-536089.73	11.84	0.01
1.2 Dead+1.6 Wind 30 deg - No Ice	14200.39	4407.65	-7634.28	-466611.39	-269387.48	0.01
0.9 Dead+1.6 Wind 30 deg - No Ice	10650.29	4407.65	-7634.27	-464336.09	-268076.70	0.01
1.2 Dead+1.6 Wind 60 deg - No Ice	14200.39	7634.28	-4407.65	-269394.30	-466604.58	-0.00
0.9 Dead+1.6 Wind 60 deg - No Ice	10650.29	7634.27	-4407.65	-268081.71	-464331.09	-0.00
1.2 Dead+1.6 Wind 90 deg - No Ice	14200.35	8814.13	-0.00	9.30	-538673.81	-0.01
0.9 Dead+1.6 Wind 90 deg - No Ice	10650.27	8814.48	-0.00	6.84	-536084.74	-0.00
1.2 Dead+1.6 Wind 120 deg - No Ice	14200.39	7634.28	4407.65	269412.92	-466604.55	-0.01

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Load Combination	Vertical lb	Shear _x lb	Shear _y lb	Overturning Moment, M _x lb-ft	Overturning Moment, M _y lb-ft	Torque lb-ft
No Ice						
0.9 Dead+1.6 Wind 120 deg - No Ice	10650.29	7634.27	4407.65	268095.40	-464331.07	-0.01
1.2 Dead+1.6 Wind 150 deg - No Ice	14200.39	4407.65	7634.28	466629.98	-269387.45	-0.01
0.9 Dead+1.6 Wind 150 deg - No Ice	10650.29	4407.65	7634.27	464349.76	-268076.68	-0.01
1.2 Dead+1.6 Wind 180 deg - No Ice	14200.35	0.00	8814.12	538699.14	16.11	-0.01
0.9 Dead+1.6 Wind 180 deg - No Ice	10650.27	0.00	8814.48	536103.36	11.84	-0.01
1.2 Dead+1.6 Wind 210 deg - No Ice	14200.39	-4407.65	7634.28	466629.94	269419.71	-0.01
0.9 Dead+1.6 Wind 210 deg - No Ice	10650.29	-4407.65	7634.27	464349.73	268100.38	-0.00
1.2 Dead+1.6 Wind 240 deg - No Ice	14200.39	-7634.28	4407.65	269412.88	466636.75	-0.00
0.9 Dead+1.6 Wind 240 deg - No Ice	10650.29	-7634.27	4407.65	268095.36	464354.73	-0.00
1.2 Dead+1.6 Wind 270 deg - No Ice	14200.35	-8814.12	-0.00	9.30	538705.93	0.01
0.9 Dead+1.6 Wind 270 deg - No Ice	10650.27	-8814.48	-0.00	6.84	536108.35	0.00
1.2 Dead+1.6 Wind 300 deg - No Ice	14200.39	-7634.28	-4407.65	-269394.26	466636.78	0.01
0.9 Dead+1.6 Wind 300 deg - No Ice	10650.29	-7634.27	-4407.65	-268081.68	464354.75	0.01
1.2 Dead+1.6 Wind 330 deg - No Ice	14200.39	-4407.65	-7634.28	-466611.35	269419.73	0.01
0.9 Dead+1.6 Wind 330 deg - No Ice	10650.29	-4407.65	-7634.27	-464336.06	268100.40	0.01
1.2 Dead+1.0 Ice+1.0 Temp	25424.25	-0.00	0.00	22.04	38.18	0.00
1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp	25424.25	0.00	-3035.09	-183568.40	46.93	0.01
1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp	25424.25	1517.55	-2628.47	-158971.28	-91750.83	0.01
1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp	25424.25	2628.47	-1517.55	-91770.66	-158951.45	-0.00
1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp	25424.25	3035.09	-0.00	27.10	-183548.57	-0.01
1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp	25424.25	2628.47	1517.55	91824.85	-158951.44	-0.01
1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp	25424.25	1517.55	2628.47	159025.46	-91750.82	-0.01
1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp	25424.25	0.00	3035.09	183622.58	46.93	-0.01
1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp	25424.25	-1517.55	2628.47	159025.44	91844.68	-0.01
1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp	25424.25	-2628.47	1517.55	91824.84	159045.28	-0.00
1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp	25424.25	-3035.09	-0.00	27.10	183642.41	0.01
1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp	25424.25	-2628.47	-1517.55	-91770.65	159045.29	0.01
1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp	25424.25	-1517.55	-2628.47	-158971.26	91844.68	0.01
Dead+Wind 0 deg - Service	11833.65	0.00	-2085.61	-128256.88	13.25	0.00
Dead+Wind 30 deg - Service	11833.65	1042.81	-1806.19	-111072.70	-64119.03	0.00
Dead+Wind 60 deg - Service	11833.65	1806.19	-1042.81	-64124.63	-111067.10	-0.00
Dead+Wind 90 deg - Service	11833.65	2085.61	-0.00	7.65	-128251.28	-0.00
Dead+Wind 120 deg - Service	11833.65	1806.19	1042.81	64139.94	-111067.10	-0.00

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Load Combination	Vertical lb	Shear _x lb	Shear _y lb	Overturning Moment, M _x lb-ft	Overturning Moment, M _y lb-ft	Torque lb-ft
Dead+Wind 150 deg - Service	11833.65	1042.81	1806.19	111088.00	-64119.03	-0.00
Dead+Wind 180 deg - Service	11833.65	0.00	2085.61	128272.18	13.25	-0.00
Dead+Wind 210 deg - Service	11833.65	-1042.81	1806.19	111088.00	64145.53	-0.00
Dead+Wind 240 deg - Service	11833.65	-1806.19	1042.81	64139.93	111093.60	-0.00
Dead+Wind 270 deg - Service	11833.65	-2085.61	-0.00	7.65	128277.78	0.00
Dead+Wind 300 deg - Service	11833.65	-1806.19	-1042.81	-64124.63	111093.60	0.00
Dead+Wind 330 deg - Service	11833.65	-1042.81	-1806.19	-111072.70	64145.54	0.00

Solution Summary

Load Comb.	Sum of Applied Forces			Sum of Reactions			% Error
	PX lb	PY lb	PZ lb	PX lb	PY lb	PZ lb	
1	0.00	-11833.66	0.00	0.00	11833.66	-0.00	0.000%
2	0.00	-14200.39	-8815.34	-0.00	14200.35	8814.13	0.007%
3	0.00	-10650.29	-8815.34	-0.00	10650.27	8814.48	0.006%
4	4407.67	-14200.39	-7634.31	-4407.65	14200.39	7634.28	0.000%
5	4407.67	-10650.29	-7634.31	-4407.65	10650.29	7634.27	0.000%
6	7634.31	-14200.39	-4407.67	-7634.28	14200.39	4407.65	0.000%
7	7634.31	-10650.29	-4407.67	-7634.27	10650.29	4407.65	0.000%
8	8815.34	-14200.39	0.00	-8814.13	14200.35	0.00	0.007%
9	8815.34	-10650.29	0.00	-8814.48	10650.27	0.00	0.006%
10	7634.31	-14200.39	4407.67	-7634.28	14200.39	-4407.65	0.000%
11	7634.31	-10650.29	4407.67	-7634.27	10650.29	-4407.65	0.000%
12	4407.67	-14200.39	7634.31	-4407.65	14200.39	-7634.28	0.000%
13	4407.67	-10650.29	7634.31	-4407.65	10650.29	-7634.27	0.000%
14	0.00	-14200.39	8815.34	-0.00	14200.35	-8814.12	0.007%
15	0.00	-10650.29	8815.34	-0.00	10650.27	-8814.48	0.006%
16	-4407.67	-14200.39	7634.31	4407.65	14200.39	-7634.28	0.000%
17	-4407.67	-10650.29	7634.31	4407.65	10650.29	-7634.27	0.000%
18	-7634.31	-14200.39	4407.67	7634.28	14200.39	-4407.65	0.000%
19	-7634.31	-10650.29	4407.67	7634.27	10650.29	-4407.65	0.000%
20	-8815.34	-14200.39	0.00	8814.12	14200.35	0.00	0.007%
21	-8815.34	-10650.29	0.00	8814.48	10650.27	0.00	0.006%
22	-7634.31	-14200.39	-4407.67	7634.28	14200.39	4407.65	0.000%
23	-7634.31	-10650.29	-4407.67	7634.27	10650.29	4407.65	0.000%
24	-4407.67	-14200.39	-7634.31	4407.65	14200.39	7634.28	0.000%
25	-4407.67	-10650.29	-7634.31	4407.65	10650.29	7634.27	0.000%
26	0.00	-25424.25	0.00	0.00	25424.25	-0.00	0.000%
27	0.00	-25424.25	-3035.14	-0.00	25424.25	3035.09	0.000%
28	1517.57	-25424.25	-2628.51	-1517.55	25424.25	2628.47	0.000%
29	2628.51	-25424.25	-1517.57	-2628.47	25424.25	1517.55	0.000%
30	3035.14	-25424.25	0.00	-3035.09	25424.25	0.00	0.000%
31	2628.51	-25424.25	1517.57	-2628.47	25424.25	-1517.55	0.000%
32	1517.57	-25424.25	2628.51	-1517.55	25424.25	-2628.47	0.000%
33	0.00	-25424.25	3035.14	-0.00	25424.25	-3035.09	0.000%
34	-1517.57	-25424.25	2628.51	1517.55	25424.25	-2628.47	0.000%
35	-2628.51	-25424.25	1517.57	2628.47	25424.25	-1517.55	0.000%
36	-3035.14	-25424.25	0.00	3035.09	25424.25	0.00	0.000%
37	-2628.51	-25424.25	-1517.57	2628.47	25424.25	1517.55	0.000%
38	-1517.57	-25424.25	-2628.51	1517.55	25424.25	2628.47	0.000%
39	0.00	-11833.66	-2086.04	-0.00	11833.65	2085.61	0.004%
40	1043.02	-11833.66	-1806.56	-1042.81	11833.65	1806.19	0.004%
41	1806.56	-11833.66	-1043.02	-1806.19	11833.65	1042.81	0.004%
42	2086.04	-11833.66	0.00	-2085.61	11833.65	0.00	0.004%
43	1806.56	-11833.66	1043.02	-1806.19	11833.65	-1042.81	0.004%
44	1043.02	-11833.66	1806.56	-1042.81	11833.65	-1806.19	0.004%
45	0.00	-11833.66	2086.04	-0.00	11833.65	-2085.61	0.004%

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Load Comb.	Sum of Applied Forces			Sum of Reactions			% Error
	PX lb	PY lb	PZ lb	PX lb	PY lb	PZ lb	
46	-1043.02	-11833.66	1806.56	1042.81	11833.65	-1806.19	0.004%
47	-1806.56	-11833.66	1043.02	1806.19	11833.65	-1042.81	0.004%
48	-2086.04	-11833.66	0.00	2085.61	11833.65	0.00	0.004%
49	-1806.56	-11833.66	-1043.02	1806.19	11833.65	1042.81	0.004%
50	-1043.02	-11833.66	-1806.56	1042.81	11833.65	1806.19	0.004%

Non-Linear Convergence Results

Load Combination	Converged?	Number of Cycles	Displacement Tolerance	Force Tolerance
1	Yes	6	0.00000001	0.00000001
2	Yes	16	0.00014308	0.00009456
3	Yes	16	0.00010146	0.00008107
4	Yes	22	0.00000001	0.00008961
5	Yes	21	0.00000001	0.00013277
6	Yes	22	0.00000001	0.00008961
7	Yes	21	0.00000001	0.00013277
8	Yes	16	0.00014308	0.00009455
9	Yes	16	0.00010145	0.00008106
10	Yes	22	0.00000001	0.00008964
11	Yes	21	0.00000001	0.00013279
12	Yes	22	0.00000001	0.00008965
13	Yes	21	0.00000001	0.00013281
14	Yes	16	0.00014309	0.00009459
15	Yes	16	0.00010146	0.00008108
16	Yes	22	0.00000001	0.00008969
17	Yes	21	0.00000001	0.00013285
18	Yes	22	0.00000001	0.00008970
19	Yes	21	0.00000001	0.00013286
20	Yes	16	0.00014310	0.00009460
21	Yes	16	0.00010146	0.00008109
22	Yes	22	0.00000001	0.00008967
23	Yes	21	0.00000001	0.00013283
24	Yes	22	0.00000001	0.00008966
25	Yes	21	0.00000001	0.00013282
26	Yes	6	0.00000001	0.00000001
27	Yes	22	0.00000001	0.00010330
28	Yes	22	0.00000001	0.00011013
29	Yes	22	0.00000001	0.00011010
30	Yes	22	0.00000001	0.00010319
31	Yes	22	0.00000001	0.00011028
32	Yes	22	0.00000001	0.00011040
33	Yes	22	0.00000001	0.00010360
34	Yes	22	0.00000001	0.00011072
35	Yes	22	0.00000001	0.00011075
36	Yes	22	0.00000001	0.00010370
37	Yes	22	0.00000001	0.00011056
38	Yes	22	0.00000001	0.00011045
39	Yes	15	0.00000001	0.00004540
40	Yes	15	0.00000001	0.00007885
41	Yes	15	0.00000001	0.00007883
42	Yes	15	0.00000001	0.00004538
43	Yes	15	0.00000001	0.00007890
44	Yes	15	0.00000001	0.00007895
45	Yes	15	0.00000001	0.00004545
46	Yes	15	0.00000001	0.00007906

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47	Yes	15	0.00000001	0.00007908
48	Yes	15	0.00000001	0.00004547
49	Yes	15	0.00000001	0.00007901
50	Yes	15	0.00000001	0.00007896

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	114 - 104.5	8.012	47	1.0316	0.0000
L2	104.5 - 104	5.982	47	0.9728	0.0000
L3	104 - 94.5	5.880	47	0.9650	0.0000
L4	94.5 - 94	4.228	47	0.6231	0.0000
L5	94 - 84.5	4.164	47	0.6130	0.0000
L6	84.5 - 84	3.206	47	0.3122	0.0000
L7	84 - 47.842	3.173	47	0.3121	0.0000
L8	52.657 - 0	1.374	47	0.2232	0.0000

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
110.00	NNH4-65B-R6H4	47	7.141	1.0202	0.0000	7188
109.00	36"x10' Shroud	47	6.925	1.0154	0.0000	7188
100.00	JMA MX08FIT265-01	47	5.106	0.8311	0.0000	1785
99.00	36"x10' Shroud	47	4.927	0.7871	0.0000	1574
89.00	36"x10' Shroud	47	3.587	0.4300	0.0000	1841
88.90	BXA-70063-6CF-EDIN	47	3.577	0.4259	0.0000	1831

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	114 - 104.5	33.590	20	4.3436	0.0001
L2	104.5 - 104	25.051	18	4.0933	0.0001
L3	104 - 94.5	24.625	18	4.0599	0.0001
L4	94.5 - 94	17.693	18	2.6112	0.0000
L5	94 - 84.5	17.422	18	2.5683	0.0000
L6	84.5 - 84	13.415	18	1.3043	0.0000
L7	84 - 47.842	13.278	18	1.3040	0.0000
L8	52.657 - 0	5.759	18	0.9344	0.0000

Critical Deflections and Radius of Curvature - Design Wind

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Elevation	Appurtenance	Gov. Load	Deflection	Tilt	Twist	Radius of Curvature
ft		Comb.	in	°	°	ft
110.00	NNH4-65B-R6H4	20	29.925	4.2955	0.0001	1705
109.00	36"x10' Shroud	20	29.019	4.2748	0.0001	1705
100.00	JMA MX08FIT265-01	18	21.372	3.4918	0.0001	424
99.00	36"x10' Shroud	18	20.621	3.3053	0.0000	374
89.00	36"x10' Shroud	18	15.008	1.7989	0.0000	439
88.90	BXA-70063-6CF-EDIN	18	14.966	1.7818	0.0000	437

Compression Checks

Pole Design Data

Section No.	Elevation	Size	L	L _u	Kl/r	A	P _u	φP _n	Ratio P _u / φP _n
	ft		ft	ft		in ²	lb	lb	
L1	114 - 104.5 (1)	TP4x4x2	9.50	0.00	0.0	12.5664	-928.12	395841.00	0.002
L2	104.5 - 104 (2)	TP4.5x4x2	0.50	0.00	0.0	12.5664	-929.25	395841.00	0.002
L3	104 - 94.5 (3)	TP4.5x4.5x2.25	9.50	0.00	0.0	15.9043	-2197.57	715694.00	0.003
L4	94.5 - 94 (4)	TP6x4.5x2.25	0.50	0.00	0.0	15.9043	-2202.76	715694.00	0.003
L5	94 - 84.5 (5)	TP6x6x3	9.50	0.00	0.0	28.2743	-3642.69	1272350.00	0.003
L6	84.5 - 84 (6)	TP29.25x6x3	0.50	0.00	0.0	28.2743	-3647.36	1272350.00	0.003
L7	84 - 47.842 (7)	TP34.46x29.25x0.1875	36.16	0.00	0.0	19.9835	-6672.33	1190470.00	0.006
L8	47.842 - 0 (8)	TP41x33.3912x0.25	52.66	0.00	0.0	32.3351	-14196.00	2023190.00	0.007

Pole Bending Design Data

Section No.	Elevation	Size	M _{ux}	φM _{ux}	Ratio M _{ux} / φM _{ux}	M _{uy}	φM _{uy}	Ratio M _{uy} / φM _{uy}
	ft		lb-ft	lb-ft		lb-ft	lb-ft	
L1	114 - 104.5 (1)	TP4x4x2	4481.59	28000.00	0.160	0.00	28000.00	0.000
L2	104.5 - 104 (2)	TP4.5x4x2	4481.51	28000.00	0.160	0.00	28000.00	0.000
L3	104 - 94.5 (3)	TP4.5x4.5x2.25	18663.83	56953.17	0.328	0.00	56953.17	0.000
L4	94.5 - 94 (4)	TP6x4.5x2.25	18663.83	56953.17	0.328	0.00	56953.17	0.000
L5	94 - 84.5 (5)	TP6x6x3	41799.00	135000.00	0.310	0.00	135000.00	0.000
L6	84.5 - 84 (6)	TP29.25x6x3	41797.50	135000.00	0.310	0.00	135000.00	0.000
L7	84 - 47.842 (7)	TP34.46x29.25x0.1875	167529.17	823866.67	0.203	0.00	823866.67	0.000
L8	47.842 - 0 (8)	TP41x33.3912x0.25	538825.83	1698250.00	0.317	0.00	1698250.00	0.000

Pole Shear Design Data

Section No.	Elevation	Size	Actual V _u	φV _n	Ratio V _u / φV _n	Actual T _u	φT _n	Ratio T _u / φT _n
	ft		lb	lb		lb-ft	lb-ft	
L1	114 - 104.5 (1)	TP4x4x2	976.79	197920.00	0.005	0.00	32986.75	0.000
L2	104.5 - 104 (2)	TP4.5x4x2	986.79	247400.00	0.004	0.00	32986.75	0.000
L3	104 - 94.5 (3)	TP4.5x4.5x2.25	1913.88	357847.00	0.005	0.00	67096.33	0.000
L4	94.5 - 94 (4)	TP6x4.5x2.25	1918.71	596412.00	0.003	0.00	67096.33	0.000

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Section No.	Elevation ft	Size	Actual V_u lb	ϕV_n lb	Ratio $\frac{V_u}{\phi V_n}$	Actual T_u lb-ft	ϕT_n lb-ft	Ratio $\frac{T_u}{\phi T_n}$
L5	94 - 84.5 (5)	TP6x6x3	2777.50	636173.00	0.004	0.00	159043.33	0.000
L6	84.5 - 84 (6)	TP29.25x6x3	2804.22	5566510.00	0.001	0.00	159043.33	0.000
L7	84 - 47.842 (7)	TP34.46x29.25x0.1875	5154.07	595235.00	0.009	0.00	1651141.67	0.000
L8	47.842 - 0 (8)	TP41x33.3912x0.25	8822.35	1011600.00	0.009	0.00	3403808.33	0.000

Pole Interaction Design Data

Section No.	Elevation ft	Ratio P_u ϕP_n	Ratio M_{ux} ϕM_{nx}	Ratio M_{uy} ϕM_{ny}	Ratio V_u ϕV_n	Ratio T_u ϕT_n	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
L1	114 - 104.5 (1)	0.002	0.160	0.000	0.005	0.000	0.162	1.000	4.8.2 ✓
L2	104.5 - 104 (2)	0.002	0.160	0.000	0.004	0.000	0.162	1.000	4.8.2 ✓
L3	104 - 94.5 (3)	0.003	0.328	0.000	0.005	0.000	0.331	1.000	4.8.2 ✓
L4	94.5 - 94 (4)	0.003	0.328	0.000	0.003	0.000	0.331	1.000	4.8.2 ✓
L5	94 - 84.5 (5)	0.003	0.310	0.000	0.004	0.000	0.313	1.000	4.8.2 ✓
L6	84.5 - 84 (6)	0.003	0.310	0.000	0.001	0.000	0.312	1.000	4.8.2 ✓
L7	84 - 47.842 (7)	0.006	0.203	0.000	0.009	0.000	0.209	1.000	4.8.2 ✓
L8	47.842 - 0 (8)	0.007	0.317	0.000	0.009	0.000	0.324	1.000	4.8.2 ✓

Section Capacity Table

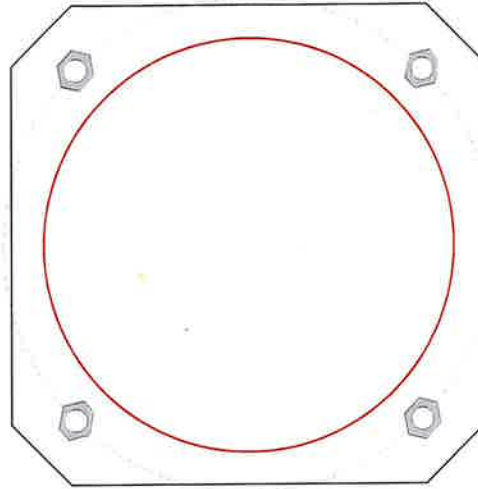
Section No.	Elevation ft	Component Type	Size	Critical Element	P lb	ϕP_{allow} lb	% Capacity	Pass Fail
L1	114 - 104.5	Pole	TP4x4x2	1	-928.12	395841.00	16.2	Pass
L2	104.5 - 104	Pole	TP4.5x4x2	2	-929.25	395841.00	16.2	Pass
L3	104 - 94.5	Pole	TP4.5x4.5x2.25	3	-2197.57	715694.00	33.1	Pass
L4	94.5 - 94	Pole	TP6x4.5x2.25	4	-2202.76	715694.00	33.1	Pass
L5	94 - 84.5	Pole	TP6x6x3	5	-3642.69	1272350.00	31.3	Pass
L6	84.5 - 84	Pole	TP29.25x6x3	6	-3647.36	1272350.00	31.2	Pass
L7	84 - 47.842	Pole	TP34.46x29.25x0.1875	7	-6672.33	1190470.00	20.9	Pass
L8	47.842 - 0	Pole	TP41x33.3912x0.25	8	-14196.00	2023190.00	32.4	Pass
Summary								
Pole (L3)							33.1	Pass
RATING =							33.1	Pass

Monopole Base Plate Connection

Site Info	
BU #	
Site Name	Round Hill CT
Order #	

Analysis Considerations	
TIA-222 Revision	G
Grout Considered:	No
l_{ar} (in)	0
Eta Factor, η	0.5

Applied Loads	
Moment (kip-ft)	538.83
Axial Force (kips)	14.20
Shear Force (kips)	8.82



Connection Properties

Anchor Rod Data
(4) 2-1/4" bolts (A615-75 N; Fy=75 ksi, Fu=100 ksi) on 49" BC
Base Plate Data
47.5" OD x 2" Plate (A572-60; Fy=60 ksi, Fu=75 ksi)
Stiffener Data
N/A
Pole Data
41" x 0.25" 18-sided pole (A572-65; Fy=65 ksi, Fu=80 ksi)

Analysis Results

Anchor Rod Summary		<i>(units of kips, kip-in)</i>	
Pu_c = 135.39	$\phi Pn_t = 260$		Stress Rating
Vu = 2.21	$\phi Vn = n/a$		53.8%
Mu = n/a	$\phi Mn = n/a$		Pass
Base Plate Summary			
Max Stress (ksi):	20.69		(Flexural)
Allowable Stress (ksi):	54		
Stress Rating:	38.3%		Pass

Pier and Pad Foundation

BU #:
 Site Name: Round Hill CT
 App. Number:

TIA-222 Revision:
 Tower Type:

Top & Bot. Pad Rein. Different?:
 Block Foundation?:

Superstructure Analysis Reactions		
Compression, P_{comp} :	14.2	kips
Base Shear, Vu_{comp} :	8.82	kips
Moment, M_u :	538.83	ft-kips
Tower Height, H :	114	ft
BP Dist. Above Fdn, bp_{dist} :	0	in

Foundation Analysis Checks				
	Capacity	Demand	Rating	Check
<i>Lateral (Sliding) (kips)</i>	58.33	8.82	15.1%	Pass
<i>Bearing Pressure (ksf)</i>	9.00	1.71	19.0%	Pass
<i>Overturning (kip*ft)</i>	1111.80	591.75	53.2%	Pass
<i>Pier Flexure (Comp.) (kip*ft)</i>	2461.67	565.29	23.0%	Pass
<i>Pier Compression (kip)</i>	17996.05	29.47	0.2%	Pass
<i>Pad Flexure (kip*ft)</i>	1756.48	149.48	8.5%	Pass
<i>Pad Shear - 1-way (kips)</i>	537.90	30.29	5.6%	Pass
<i>Pad Shear - 2-way (Comp) (ksi)</i>	0.190	0.009	4.5%	Pass

Pier Properties		
Pier Shape:	Circular	
Pier Diameter, $dpier$:	6	ft
Ext. Above Grade, E :	1	ft
Pier Rebar Size, Sc :	8	
Pier Rebar Quantity, mc :	22	
Pier Tie/Spiral Size, St :	4	
Pier Tie/Spiral Quantity, mt :	6	
Pier Reinforcement Type:	Tie	
Pier Clear Cover, cc_{pier} :	3	in

Soil Rating:	53.2%
Structural Rating:	23.0%

Pad Properties		
Depth, D :	5	ft
Pad Width, W :	15	ft
Pad Thickness, T :	3	ft
Pad Rebar Size (Bottom), Sp :	8	
Pad Rebar Quantity (Bottom), mp :	16	
Pad Clear Cover, cc_{pad} :	3	in

Material Properties		
Rebar Grade, Fy :	60	ksi
Concrete Compressive Strength, $F'c$:	4	ksi
Dry Concrete Density, δc :	150	pcf

Soil Properties		
Total Soil Unit Weight, γ :	130	pcf
Ultimate Gross Bearing, Q_{ult} :	12.000	ksf
Cohesion, Cu :		ksf
Friction Angle, ϕ :		degrees
SPT Blow Count, N_{blows} :		
Base Friction, μ :	0.35	
Neglected Depth, N :	0.00	ft
Foundation Bearing on Rock?	No	
Groundwater Depth, gw :	N/A	ft

<--Toggle between Gross and Net

Mount Analysis Report

Location Code: 467146
Site Name: Round Hill CT
Project Name: L-SUB6-CARRIER ADD
Address: 395 Round Hill Rd
Greenwich, CT 06831

Client:

verizon
20 ALEXANDER DRIVE
WALINGFORD, CT 06492

Date: 11/9/2021



Digitally signed by: Derek J.
Creaser, P.E.
DN: CN = Derek J. Creaser, P.E.
email = dcreaser@clinellc.com
C = US O = Centerline
Communications OU = Director -
A&E Services
Date: 2021.11.10 16:33:40 -
05'00'

Scope of Work:

Centerline Communications was authorized by Verizon Wireless to perform an analysis of the existing mount to determine its capacity to support the proposed and existing Verizon equipment listed in this report.

Existing & Proposed Equipment:

Carrier	Mounting Level (ft)	Center Line Elevation (ft)	Number of Appurtenances	Antenna Manufacturer	Appurtenance Model	Feed Lines (in)
Verizon Wireless	110.0	110.0	3	Commscope	NNH4-65B-R6H4	(1) 6x12 Hybrid (9) RET Cables
		110.0	6	Commscope	CBC61923T-DS-43	
	100.0	100.0	3	JMA	MX08FIT265-01	
		100.0	3	Samsung	RT-8808-77A	
		100.0	1	Raycap	6 OVP	
AT&T	88.9	88.9	3	Amphenol	BXA-70063-6CF-EDIN	(6) 1-5/8

*Note: Proposed equipment shown in **bold**.*



Design Criteria:

Design Codes:

2018 Connecticut State Building Code
 2015 International Building Code
 ASCE 7-10
 TIA-222-G Standards

Ultimate Design Wind Speed (V_{ult})	120 mph
Nominal Design Wind Speed (V_{asd})	93 mph
Wind Speed with Ice	50 mph
Ice Thickness	0.75 in.
Exposure Category	C
Topographic Category	1
Risk Category	II
Site Soil Class (Assumed)	D – Stiff Soil
Seismic Design Category	B
Spectral Response Acceleration Parameter at a Short Periods, S_s	0.259 g
Spectral Response Acceleration Parameter at a Period of 1 Second, S_1	0.070 g
Short Period Site Coefficient, F_a	1.60
Long Period Site Coefficient, F_v	2.40

*Refer to calculations for additional design criteria.



Conclusion:

Based on the results of the analysis, we have determined that the existing mount *is adequate* to support the proposed and existing Verizon equipment loading upon completion of modifications. Centerline Communications recommends the following:

- Install (2) 36" diameter x 10' shrouds at the proposed Verizon Wireless mounting elevations. Attach the proposed shrouds to the existing plate weldments with new bent plate attachments. See Centerline Communications drawings for details.

	Capacity	Overall Result
Flange @ 104'	1.1%	PASS
Flange @ 94'	4.9%	PASS
Flange @ 84'	28.7%	PASS

Reference Documents:

- Verizon RFDS, dated September 28, 2021
- Site Notes and Photos by Centerline Communications, dated October 7, 2021
- Monopole Tower Mapping Report by Structural Components, dated October 26, 2021
- Structural Analysis Report by Semaan Engineering, dated September 16, 2019
- Construction Drawings by Cherundolo Consulting, dated February 26, 2019

Assumptions and Limitations:

- The tower and structures were built and maintained with the manufacturer's specifications.
- The configuration of antennas, transmission cables, mounts and other appurtenances are as specified in this report and the referenced drawings.
- Existing appurtenance information obtained from the previous Structural Analysis by Semaan Engineering, dated September 16, 2019 and the Monopole Tower Mapping Report by Structural Components, dated October 26, 2021.

Design Calculations



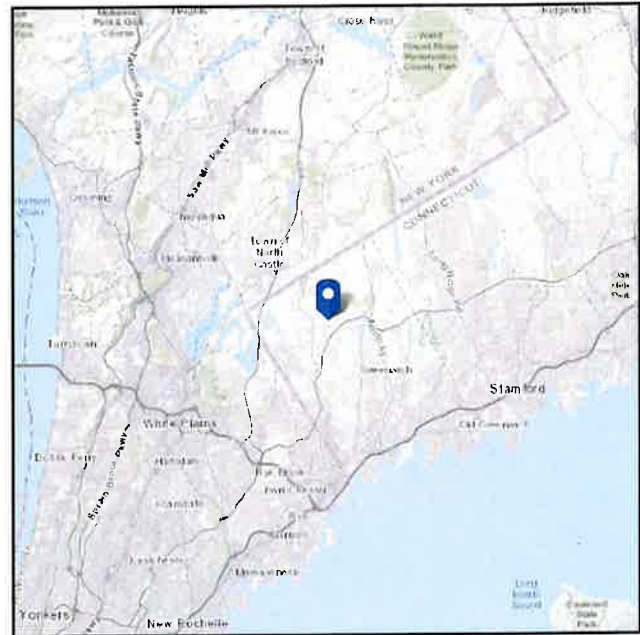
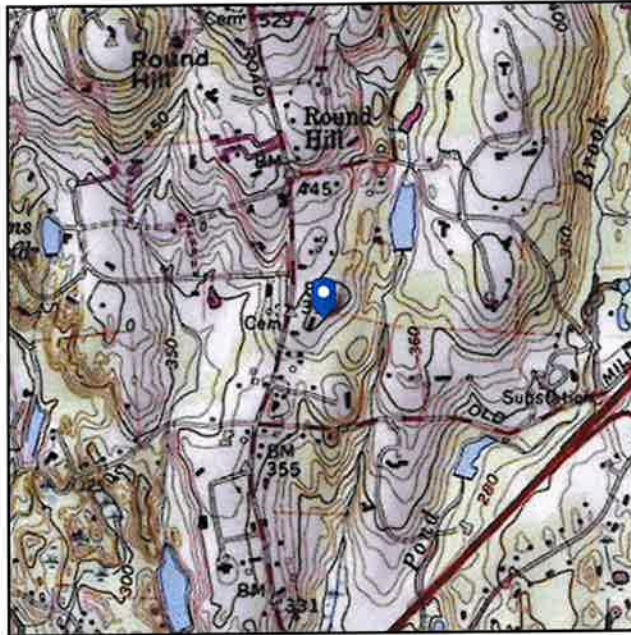


ASCE 7 Hazards Report

Address:
395 Round Hill Rd
Greenwich, Connecticut
06831

Standard: ASCE/SEI 7-10
Risk Category: II
Soil Class: D - Stiff Soil

Elevation: 400.59 ft (NAVD 88)
Latitude: 41.095694
Longitude: -73.665433



Wind

Results:

Wind Speed:	116 Vmph
10-year MRI	76 Vmph
25-year MRI	85 Vmph
50-year MRI	90 Vmph
100-year MRI	96 Vmph

Data Source: ~~ASCE/SEI 7-10~~ ASCE/SEI 7-10, Fig. 26.5-1A and Figs. CC-1–CC-4, and Section 26.5.2, incorporating errata of March 12, 2014

Value provided is 3-second gust wind speeds at 33 ft above ground for Exposure C Category, based on linear interpolation between contours. Wind speeds are interpolated in accordance with the 7-10 Standard. Wind speeds correspond to approximately a 7% probability of exceedance in 50 years (annual exceedance probability = 0.00143, MRI = 700 years).

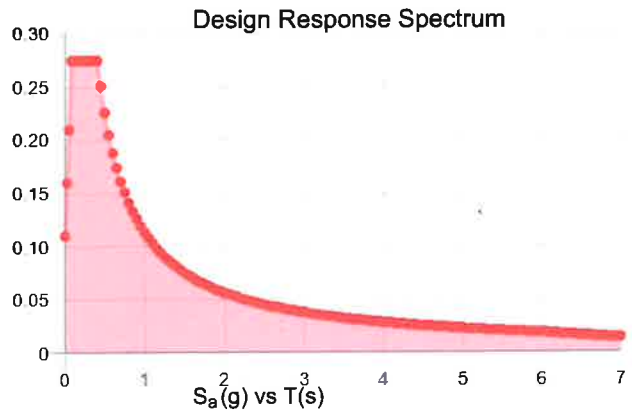
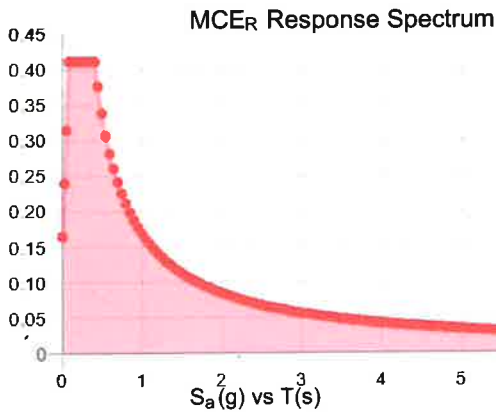
Site is in a hurricane-prone region as defined in ASCE/SEI 7-10 Section 26.2. Glazed openings need not be protected against wind-borne debris.

Site Soil Class: D - Stiff Soil

Results:

S_S :	0.259	S_{DS} :	0.275
S_1 :	0.071	S_{D1} :	0.113
F_a :	1.593	T_L :	6
F_v :	2.4	PGA :	0.152
S_{MS} :	0.412	PGA _M :	0.228
S_{M1} :	0.169	F_{PGA} :	1.495
		I_e :	1

Seismic Design Category B



Data Accessed:

Fri Nov 05 2021

Date Source:

USGS Seismic Design Maps based on ASCE/SEI 7-10, incorporating Supplement 1 and errata of March 31, 2013, and ASCE/SEI 7-10 Table 1.5-2. Additional data for site-specific ground motion procedures in accordance with ASCE/SEI 7-10 Ch. 21 are available from USGS.

Ice

Results:

Ice Thickness: 0.75 in.
Concurrent Temperature: 15 F
Gust Speed: 50 mph

Data Source: Standard ASCE/SEI 7-10, Figs. 10-2 through 10-8

Date Accessed: Fri Nov 05 2021

Ice thicknesses on structures in exposed locations at elevations higher than the surrounding terrain and in valleys and gorges may exceed the mapped values.

Values provided are equivalent radial ice thicknesses due to freezing rain with concurrent 3-second gust speeds, for a 50-year mean recurrence interval, and temperatures concurrent with ice thicknesses due to freezing rain. Thicknesses for ice accretions caused by other sources shall be obtained from local meteorological studies. Ice thicknesses in exposed locations at elevations higher than the surrounding terrain and in valleys and gorges may exceed the mapped values.

Snow

Results:

Ground Snow Load, p_g : 30 lb/ft²
Elevation: 400.6 ft

Data Source: ASCE/SEI 7-10, Fig. 7-1.

Date Accessed: Fri Nov 05 2021

Values provided are ground snow loads. In areas designated "case study required," extreme local variations in ground snow loads preclude mapping at this scale. Site-specific case studies are required to establish ground snow loads at elevations not covered.

The ASCE 7 Hazard Tool is provided for your convenience, for informational purposes only, and is provided "as is" and without warranties of any kind. The location data included herein has been obtained from information developed, produced, and maintained by third party providers; or has been extrapolated from maps incorporated in the ASCE 7 standard. While ASCE has made every effort to use data obtained from reliable sources or methodologies, ASCE does not make any representations or warranties as to the accuracy, completeness, reliability, currency, or quality of any data provided herein. Any third-party links provided by this Tool should not be construed as an endorsement, affiliation, relationship, or sponsorship of such third-party content by or from ASCE.

ASCE does not intend, nor should anyone interpret, the results provided by this Tool to replace the sound judgment of a competent professional, having knowledge and experience in the appropriate field(s) of practice, nor to substitute for the standard of care required of such professionals in interpreting and applying the contents of this Tool or the ASCE 7 standard.

In using this Tool, you expressly assume all risks associated with your use. Under no circumstances shall ASCE or its officers, directors, employees, members, affiliates, or agents be liable to you or any other person for any direct, indirect, special, incidental, or consequential damages arising from or related to your use of, or reliance on, the Tool or any information obtained therein. To the fullest extent permitted by law, you agree to release and hold harmless ASCE from any and all liability of any nature arising out of or resulting from any use of data provided by the ASCE 7 Hazard Tool.

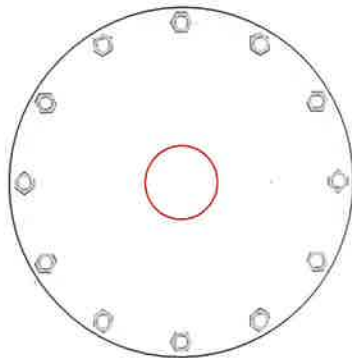
Monopole Flange Plate Connection

Elevation = 84 ft.

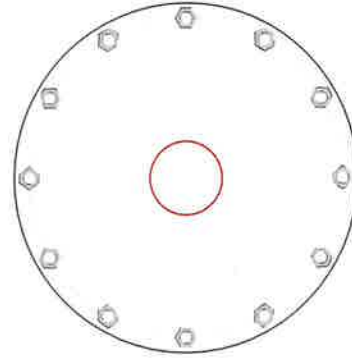
BU #	
Site Name	Round Hill CT
Order #	
TIA-222 Revision	G

Applied Loads	
Moment (kip-ft)	41.80
Axial Force (kips)	3.65
Shear Force (kips)	2.81

Top Plate - External



Bottom Plate - External



Connection Properties

Bolt Data

(12) 1" bolts (A325 N; Fy=92 ksi, Fu=120 ksi) on 26" BC

Top Plate Data

28.5" OD x 1.25" Plate (A572-60; Fy=60 ksi, Fu=75 ksi)

Bottom Plate Data

28.5" OD x 1.25" Plate (A572-60; Fy=60 ksi, Fu=75 ksi)

Top Stiffener Data

N/A

Bottom Stiffener Data

N/A

Top Pole Data

6" x 3" round pole (A572-50; Fy=50 ksi, Fu=65 ksi)

Bottom Pole Data

6" x 3" round pole (A572-50; Fy=50 ksi, Fu=65 ksi)

Analysis Results

Bolt Capacity

Max Load (kips)	15.67
Allowable (kips)	54.54
Stress Rating:	28.7% Pass

Top Plate Capacity

Max Stress (ksi):	-
Allowable Stress (ksi):	-
Stress Rating:	N/A
Tension Side Stress Rating:	N/A

Bottom Plate Capacity

Max Stress (ksi):	-
Allowable Stress (ksi):	-
Stress Rating:	N/A
Tension Side Stress Rating:	N/A

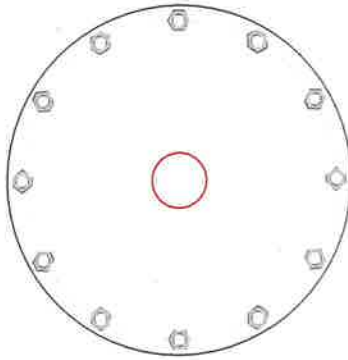
Monopole Flange Plate Connection

Elevation = 94 ft.

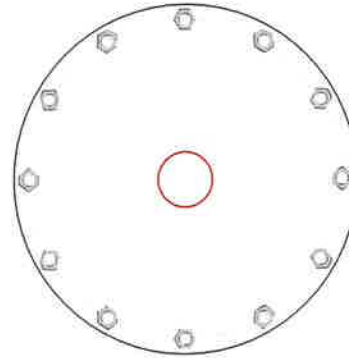
BU #	
Site Name	Round Hill CT
Order #	
TIA-222 Revision	G

Applied Loads	
Moment (kip-ft)	18.66
Axial Force (kips)	2.20
Shear Force (kips)	1.92

Top Plate - External



Bottom Plate - External



Connection Properties

Bolt Data

(12) 1" bolts (A325 N; Fy=92 ksi, Fu=120 ksi) on 26" BC

Top Plate Data

28.5" OD x 1.25" Plate (A572-60; Fy=60 ksi, Fu=75 ksi)

Bottom Plate Data

28.5" OD x 1.25" Plate (A572-60; Fy=60 ksi, Fu=75 ksi)

Top Stiffener Data

N/A

Bottom Stiffener Data

N/A

Top Pole Data

4.5" x 2.25" round pole (A572-50; Fy=50 ksi, Fu=65 ksi)

Bottom Pole Data

4.5" x 2.25" round pole (A572-50; Fy=50 ksi, Fu=65 ksi)

Analysis Results

Bolt Capacity

Max Load (kips)	2.69
Allowable (kips)	54.54
Stress Rating:	4.9% Pass

Top Plate Capacity

Max Stress (ksi):	-
Allowable Stress (ksi):	-
Stress Rating:	N/A
Tension Side Stress Rating:	N/A

Bottom Plate Capacity

Max Stress (ksi):	-
Allowable Stress (ksi):	-
Stress Rating:	N/A
Tension Side Stress Rating:	N/A

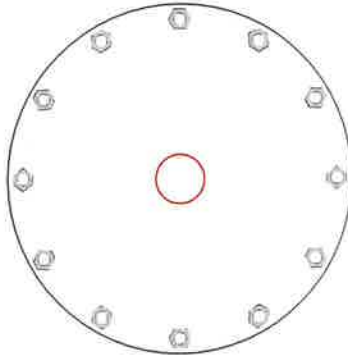
Monopole Flange Plate Connection

Elevation = 104 ft.

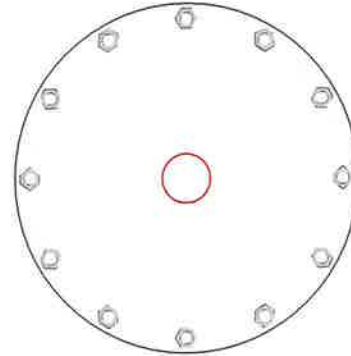
BU #	
Site Name	Round Hill CT
Order #	
TIA-222 Revision	G

Applied Loads	
Moment (kip-ft)	4.48
Axial Force (kips)	0.93
Shear Force (kips)	0.99

Top Plate - External



Bottom Plate - External



Connection Properties

Bolt Data

(12) 1" bolts (A325 N; Fy=92 ksi, Fu=120 ksi) on 26" BC

Top Plate Data

28.5" OD x 1.25" Plate (A572-60; Fy=60 ksi, Fu=75 ksi)

Bottom Plate Data

28.5" OD x 1.25" Plate (A572-60; Fy=60 ksi, Fu=75 ksi)

Top Stiffener Data

N/A

Bottom Stiffener Data

N/A

Top Pole Data

4" x 2" round pole (A139-35; Fy=35 ksi, Fu=60 ksi)

Bottom Pole Data

4" x 2" round pole (A139-35; Fy=35 ksi, Fu=60 ksi)

Analysis Results

Bolt Capacity

Max Load (kips)	0.61
Allowable (kips)	54.54
Stress Rating:	1.1% Pass

Top Plate Capacity

Max Stress (ksi):	-
Allowable Stress (ksi):	-
Stress Rating:	N/A
Tension Side Stress Rating:	N/A

Bottom Plate Capacity

Max Stress (ksi):	-
Allowable Stress (ksi):	-
Stress Rating:	N/A
Tension Side Stress Rating:	N/A

ATTACHMENT 3

General		Power	Density						
CARRIER	# OF CHAN.	WATTS ERP	HEIGHT	FREQ.	CALC. POWER DENS	MAX. PERMISS.EXP.	FRACTION MPE	Total	
*AT&T	2	409	88	850	0.04374915	0.566666667	0.77%		
*AT&T	4	971	88	1900	0.20772824	1	2.08%		
*AT&T	4	917	88	2300	0.196175897	1	1.96%		
*AT&T	2	509	88	700	0.054445764	0.466666667	1.17%		
*AT&T	4	971	88	1900	0.20772824	1	2.08%		
VZW 700	4	472	110	751	0.0056	0.5007	1.12%		
VZW CDMA	2	497	110	878.49	0.0030	0.5857	0.50%		
VZW Cellular	4	970	110	874	0.0115	0.5827	1.98%		
VZW PCS	4	957	110	1975	0.0114	1.0000	1.14%		
VZW AWS	4	1063	110	2120	0.0129	1.0000	1.25%		
VZW CBAND	2	7940	100	3730.08	0.0571	1.0000	5.71%		
								19.80%	

* Source: Siting Council

ATTACHMENT 4

March 9, 2022

Via Certificate of Mailing

Fred Camillo, First Selectman
Town of Greenwich
101 Field Point Road
Greenwich, CT 06830

Re: **Proposed Modifications to an Existing Telecommunications Facility at 395 Round Hill Road in Greenwich, Connecticut**

Dear Mr. Camillo:

This firm represents Cellco Partnership d/b/a Verizon Wireless (“Cellco”). Today, Cellco filed a Sub-Petition for Declaratory Ruling (“Sub-Petition”) with the Connecticut Siting Council (“Council”) seeking approval to modify its existing wireless telecommunications facility at Round Hill Community Church, 395 Round Hill Road in Greenwich, Connecticut (the “Property”). Cellco intends to replace six (6) existing antennas with six (6) new antennas at the same levels inside the existing flag pole tower behind an antenna screening shroud. In order to accommodate Cellco’s larger replacement antennas, the upper portion of the flag pole tower shroud will need to be increased from 30 inches in diameter to 36.5 inches in diameter. Cellco is not proposing any changes to ground based equipment as part of these facility modifications.

As presented in the Sub-Petition, the proposed facility modifications constitute an eligible facility request pursuant to Section 6409(a) of the Federal Middle Class Tax Relief and Job Creation act of 2012 (47 U.S.C. § 1455(a)) and the October 21, 2014 Order of the Federal Communications Commission (FCC-14-153). A copy of the full Sub-Petition is attached for your review. Landowners whose property abuts the Property were also sent notice of this filing along with a copy of the Sub-Petition.

24191882-v1

Robinson+Cole

Fred Camillo, First Selectman
March 9, 2022
Page 2

Pursuant to its decision in Petition No. 1133, comments or concerns regarding this proposal should be submitted to the Council within thirty (30) days of the date of the attached Sub-Petition.

Please contact me if you have any questions regarding this proposal.

Sincerely,

A handwritten signature in black ink, appearing to read "Kenneth C. Baldwin". The signature is fluid and cursive, with a long horizontal stroke at the end.

Kenneth C. Baldwin

Attachment

March 9, 2022

Via Certificate of Mailing

Katie DeLuca, Director of Planning and Zoning
Town of Greenwich
101 Field Point Road
Greenwich, CT 06830

Re: **Proposed Modifications to an Existing Telecommunications Facility at 395 Round Hill Road in Greenwich, Connecticut**

Dear Ms. DeLuca:

This firm represents Cellco Partnership d/b/a Verizon Wireless (“Cellco”). Today, Cellco filed a Sub-Petition for Declaratory Ruling (“Sub-Petition”) with the Connecticut Siting Council (“Council”) seeking approval to modify its existing wireless telecommunications facility at Round Hill Community Church, 395 Round Hill Road in Greenwich, Connecticut (the “Property”). Cellco intends to replace six (6) existing antennas with six (6) new antennas at the same levels inside the existing flag pole tower behind an antenna screening shroud. In order to accommodate Cellco’s larger replacement antennas, the upper portion of the flag pole tower shroud will need to be increased from 30 inches in diameter to 36.5 inches in diameter. Cellco is not proposing any changes to ground based equipment as part of these facility modifications.

As presented in the Sub-Petition, the proposed facility modifications constitute an eligible facility request pursuant to Section 6409(a) of the Federal Middle Class Tax Relief and Job Creation act of 2012 (47 U.S.C. § 1455(a)) and the October 21, 2014 Order of the Federal Communications Commission (FCC-14-153). A copy of the full Sub-Petition is attached for your review. Landowners whose property abuts the Property were also sent notice of this filing along with a copy of the Sub-Petition.

24192372-v1

Robinson+Cole

Katie DeLuca, Director of Planning and Zoning
March 9, 2022
Page 2

Pursuant to its decision in Petition No. 1133, comments or concerns regarding this proposal should be submitted to the Council within thirty (30) days of the date of the attached Sub-Petition.

Please contact me if you have any questions regarding this proposal.

Sincerely,

A handwritten signature in black ink, appearing to read "Kenneth C. Baldwin". The signature is fluid and cursive, with a long horizontal stroke at the end.

Kenneth C. Baldwin

Attachment

March 9, 2022

Via Certificate of Mailing

Round Hill Community Church, Inc.
395 Round Hill Road
Greenwich, CT 06831

Re: **Proposed Modifications to an Existing Telecommunications Facility at 395 Round Hill Road in Greenwich, Connecticut**

Dear Sir or Madam:

This firm represents Cellco Partnership d/b/a Verizon Wireless (“Cellco”). Today, Cellco filed a Sub-Petition for Declaratory Ruling (“Sub-Petition”) with the Connecticut Siting Council (“Council”) seeking approval to modify its existing wireless telecommunications facility at Round Hill Community Church, 395 Round Hill Road in Greenwich, Connecticut (the “Property”). Cellco intends to replace six (6) existing antennas with six (6) new antennas at the same levels inside the existing flag pole tower behind an antenna screening shroud. In order to accommodate Cellco’s larger replacement antennas, the upper portion of the flag pole tower shroud will need to be increased from 30 inches in diameter to 36.5 inches in diameter. Cellco is not proposing any changes to ground based equipment as part of these facility modifications.

As presented in the Sub-Petition, the proposed facility modifications constitute an eligible facility request pursuant to Section 6409(a) of the Federal Middle Class Tax Relief and Job Creation act of 2012 (47 U.S.C. § 1455(a)) and the October 21, 2014 Order of the Federal Communications Commission (FCC-14-153). A copy of the full Sub-Petition is attached for your review. Landowners whose property abuts the Property were also sent notice of this filing along with a copy of the Sub-Petition.

24192542-v1

Robinson+Cole

Round Hill Community Church, Inc.
March 9, 2022
Page 2

Pursuant to its decision in Petition No. 1133, comments or concerns regarding this proposal should be submitted to the Council within thirty (30) days of the date of the attached Sub-Petition.

Please contact me if you have any questions regarding this proposal.

Sincerely,

A handwritten signature in black ink, appearing to read "Kenneth C. Baldwin". The signature is fluid and cursive, with a long horizontal stroke at the end.

Kenneth C. Baldwin

Attachment

ATTACHMENT 5

KENNETH C. BALDWIN

280 Trumbull Street
Hartford, CT 06103-3597
Main (860) 275-8200
Fax (860) 275-8299
kbaldwin@rc.com
Direct (860) 275-8345

Also admitted in Massachusetts
and New York

March 9, 2022

Via Certificate of Mailing

«Name_and_Address»

**Re: Proposed Modifications to an Existing Wireless Telecommunications Facility at
Round Hill Community Church, 395 Round Hill Road in Greenwich, Connecticut**

Dear «Salutation»:

This firm represents Cellco Partnership d/b/a Verizon Wireless (“Cellco”). Today, Cellco filed a Sub-Petition for Declaratory Ruling (“Sub-Petition”) with the Connecticut Siting Council (“Council”) seeking approval to modify its existing wireless telecommunications facility at Round Hill Community Church, 395 Round Hill Road in Greenwich, Connecticut (the “Property”). Cellco intends to replace six (6) existing antennas with six (6) new antennas at the same levels inside the existing flag pole tower behind an antenna screening shroud. In order to accommodate Cellco’s larger replacement antennas, the upper portion of the flag pole tower shroud will need to be increased from 30 inches in diameter to 36.5 inches in diameter. Cellco is not proposing any changes to ground based equipment as part of these facility modifications.

As presented in the Sub-Petition, the proposed facility improvements at the Property constitute an eligible facility request pursuant to Section 6409(a) of the Federal Middle Class Tax Relief and Job Creation act of 2012 (47 U.S.C. § 1455(a)) and the October 21, 2014 Order of the Federal Communications Commission (FCC-14-153). A copy of the full Sub-Petition is attached for your review.

March 9, 2022

Page 2

Pursuant to its decision in Petition No. 1133, comments or concerns regarding this proposal should be submitted to the Council within thirty (30) days of the date of the Sub-Petition.

This notice is being sent to you because you are listed as an owner of land that abuts the Property. If you have any questions regarding the Sub-Petition, the Council's process for reviewing the Sub-Petition or the details of the filing itself, please feel free to contact me at the number listed above. You may also contact the Council directly at 860-827-2935.

Sincerely,

A handwritten signature in black ink, appearing to read "Kenneth C. Baldwin". The signature is fluid and cursive, with a long horizontal stroke at the end.

Kenneth C. Baldwin

Attachment

**ABUTTING PROPERTY OWNERS
395 ROUND HILL ROAD, GREENWICH, CT**

	<u>Parcel ID</u>	<u>Property Owner & Mailing Address</u>	<u>Property Address</u>
1	10-1442	Susan Satter 1640 S. Ocean Boulevard Manalapan, FL 33462	414 Round Hill Road
2	10-1250	Edward and Melissa Schiff 404 Round Hill Road Greenwich, CT 06831	404 Round Hill Road
3	10-4015	Calvary – St. Barnabus Cemetery c/o Parish of St. Barnabus Church 954 Lake Avenue Greenwich, CT 06830	402 Round Hill Road
4	10-1219	John and Reina Honts 396 Round Hill Road Greenwich, CT 06831	396 Round Hill Road
5	10-1794	Robert and Molly Calhoun 390 Round Hill Road Greenwich, CT 06831	390 Round Hill Road
6	10-1408	Kevin O’Keefe and Margaret Stevens 391 Round Hill Road Greenwich, CT 06831	391 Round Hill Road
7	10-1266 10-3023 (Merged with 1266)	131 Old Mill LLC 170 Mason Street Greenwich, CT 06830	131 Old Mill Road
8	10-1997	John C. and Darcy Hadjipateras 50 Cherry Valley Road Greenwich, CT 06831	50 Cherry Valley Road
9	10-1426	Adam and Sarah Dolder 97 Elm Street Greenwich, CT 06830	407 Round Hill Road

	<u>Parcel ID</u>	<u>Property Owner & Mailing Address</u>	<u>Property Address</u>
10	10-1293	409 Round Hill Road LLC and 409 RHR LLC 409 Round Hill Road Greenwich, CT 06831	409 Round Hill Road