Robinson+Cole

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Also admitted in Massachusetts
and New York

August 6, 2021

Via Electronic Mail

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

Re: **Notice of Exempt Modification – Facility Modification**
35-37 Danbury Road, Ridgefield, Connecticut

Dear Attorney Bachman:

Cellco Partnership d/b/a Verizon Wireless ("Cellco") currently maintains an existing wireless telecommunications facility at the above-referenced property address (the "Property"). The facility consists of antennas and remote radio heads attached to a roof-top tower, surrounded by a screened enclosure. Equipment associated with the antennas is located on the ground adjacent to the building. Cellco's roof-top tower was approved by the Siting Council in January of 2017 (Petition No. 1280). A copy of the Council's Petition No. 1280 approval is included in Attachment 1.

Cellco now intends to modify its facility by replacing its existing antennas with three (3) new Samsung MT6407-77A antennas and three (3) NHH4-65B-R6H4 antennas on Cellco's existing antenna mount structure within a slightly expanded screening enclosure. Cellco also intends to remove its existing remote radio heads ("RRHs") and install six (6) new RRHs behind its antennas also within the screening enclosure. A set of project plans showing Cellco's proposed facility modifications and new antennas and RRHs specifications are included in Attachment 2.

Please accept this letter as notification pursuant to R.C.S.A. § 16-50j-73, for construction that constitutes an exempt modification pursuant to R.C.S.A. § 16-50j-72(b)(2). In accordance with R.C.S.A. § 16-50j-73, a copy of this letter is being sent to Ridgefield's Chief Elected Official and Land Use Officer.

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

1. The proposed modifications will not result in an increase in the height of the existing tower. Cellco's replacement antennas will be installed on Cellco's existing antenna mounts.

2. The proposed modifications will not involve any change to ground-mounted equipment and, therefore, will not require the extension of the site boundary.

3. The proposed modifications will not increase noise levels at the facility by six decibels or more, or to levels that exceed state and local criteria.

4. The installation of Cellco's new antennas and RRHs will not increase radio frequency (RF) emissions at the facility to a level at or above the Federal Communications Commission (FCC) safety standard. Far Field Calculations for Cellco's modified facility are included in Attachment 3. The modified facility will be capable of providing Cellco's 5G wireless service.

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

6. According to the attached Structural Analysis, which includes the Mount Analysis ("SA/MA"), the modified antenna enclosure and host building can support Cellco's proposed modifications. A copy of the SA/MA is included in Attachment 4.

A copy of the parcel map and Property owner information is included in Attachment 5. A Certificate of Mailing verifying that this filing was sent to municipal officials and the property owner is included in Attachment 6.

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

Sincerely,

Kenneth C. Baldwin

Enclosures
Copy to:
Rudy Marconi, Ridgefield First Selectman
Richard Baldelli, Director of Planning & Zoning/ZEO
Eppoliti Realty Co., Inc., Property Owner
Aleksey Tyurin

ATTACHMENT 1

STATE OF CONNECTICUT
CONNECTICUT SITING COUNCIL
Ten Franklin Square, New Britain, CT 06051
Phone: (860) 827-2935 Fax: (860) 827-2950
E-Mail: siting.council@ct.gov
www.ct.gov/csc

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

January 20, 2017

Kenneth C. Baldwin, Esq.
Robinson & Cole LLP
280 Trumbull Street
Hartford, CT 06103-3597

RE: **PETITION NO. 1280** - Cellco Partnership d/b/a Verizon Wireless petition for a declaratory ruling that no Certificate of Environmental Compatibility and Public Need is required for the proposed installation of a wireless telecommunications facility on the roof of an existing commercial building located at 35-37 Danbury Road, Ridgefield, Connecticut.

Dear Attorney Baldwin:

At a public meeting held on January 19, 2017, the Connecticut Siting Council (Council) considered and ruled that the above-referenced proposal would not have a substantial adverse environmental effect, and pursuant to Connecticut General Statutes § 16-50k, would not require a Certificate of Environmental Compatibility and Public Need with the following conditions:

1. Use of off-road construction equipment that meets the latest EPA or California Air Resources Board standards, or in the alternative, equipment with the best available controls on diesel emissions, including, but not limited to, retrofitting with diesel oxidation catalysts, particulate filters and use of ultra-low sulfur fuel;

2. Compliance with the provisions of Section 22a-174-18(b)(3)(C) of the Regulations of Connecticut State Agencies that limit the idling of mobile sources to 3 minutes;

3. Approval of any minor project changes be delegated to Council staff;

4. Unless otherwise approved by the Council, if the facility authorized herein is not fully constructed within three years from the date of the mailing of the Council's decision, this decision shall be void, and the facility owner/operator shall dismantle the facility and remove all associated equipment or reapply for any continued or new use to the Council before any such use is made. The time between the filing and resolution of any appeals of the Council's decision shall not be counted in calculating this deadline. Authority to monitor and modify this schedule, as necessary, is delegated to the Executive Director. The facility owner/operator shall provide written notice to the Executive Director of any schedule changes as soon as is practicable;

5. Any request for extension of the time period to fully construct the facility shall be filed with the Council not later than 60 days prior to the expiration date of this decision and shall be served on all parties and intervenors, if applicable, and the Town of Ridgefield;

6. Within 45 days after completion of construction, the Council shall be notified in writing that construction has been completed;

7. Any nonfunctioning antenna and associated antenna mounting equipment on this facility owned and operated by the Petitioner shall be removed within 60 days of the date the antenna ceased to function;

8. If the facility ceases to provide wireless services for a period of one year the Petitioner shall dismantle the tower and remove all associated equipment or reapply for any continued or new use to the Council within 90 days from the one year period of cessation of service. The Petitioner may submit a written request to the Council for an extension of the 90 day period not later than 60 days prior to the expiration of the 90 day period; and

9. This Declaratory Ruling may be transferred or partially transferred, provided both the facility owner/operator/transferor and the transferee are current with payments to the Council for their respective annual assessments and invoices under Conn. Gen. Stat. §16-50v. The Council shall be notified of such sale and/or transfer and of any change in contact information for the individual or representative responsible for management and operations of the facility within 30 days of the sale and/or transfer. Both the facility owner/operator/transferor and the transferee shall provide the Council with a written agreement as to the entity responsible for any quarterly assessment charges under Conn. Gen. Stat. §16-50v(b)(2) that may be associated with this facility.

This decision is under the exclusive jurisdiction of the Council and is not applicable to any other modification or construction. All work is to be implemented as specified in the petition dated December 14, 2016 and additional information dated January 5, 2017.

Enclosed for your information is a copy of the staff report on this project.

Very truly yours,

Robert Stein

Robert Stein
Chairman

RS/MP/cm

Enclosure: Staff Report dated January 19, 2017

c: The Honorable Rudolph P. Marconi, First Selectman, Town of Ridgefield
Joanne P. Meder, AICP, Director of Planning, Town of Ridgefield

STATE OF CONNECTICUT
CONNECTICUT SITING COUNCIL
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Petition No. 1280
Cellco Partnership d/b/a Verizon Wireless
35-37 Danbury Road, Ridgefield
Rooftop Telecommunications Facility
Staff Report
January 19, 2017

On December 16, 2016, the Connecticut Siting Council (Council) received a petition from Cellco Partnership d/b/a Verizon Wireless (Cellco) for a declaratory ruling that no Certificate of Environmental Compatibility and Public Need is required for the proposed installation of a telecommunications facility on the roof of the building located at 35-37 Danbury Road, Ridgefield, Connecticut. Currently, Cellco has identified a need for improved wireless service along Danbury Road (Route 35) and for the surrounding commercial and residential areas in central portions of Ridgefield. In an effort to improve Cellco's wireless services in the area, Cellco proposes to install a rooftop telecommunications facility. On January 5, 2017, Cellco provided the corrected site specifications in response to Council staff interrogatories.

Specifically, Cellco would install a tower on the northern portion of the roof of an existing commercial office building owned by Eppoliti Realty Company Inc. The tower would have six panel antennas and six remote radio heads (RRH). The tower, panel antennas, RRHs and associated T-arm mounts would be concealed inside an RF transparent 8-foot by 8-foot "box" or small "penthouse" designed to match the color, texture, and architectural design of the building. The proposed stealth enclosure would extend to a maximum height of 39-feet above ground level (agl). This is approximately 7-feet 6-inches above the existing maximum roof parapet height of 31-feet 6-inches agl. Cellco's equipment would be installed inside the building within the first floor telecommunications room. Electrical and telephone service would connect to existing service in the building.

The subject property is located within Ridgefield's B-1 Business Zone. The visual impact is not expected to be significant due to the stealth design and limited height (i.e. less than eight feet above the existing roof of the building). An outdoor equipment compound is not proposed.

The calculated power density would be 22.2 percent of the applicable limit using a -10 dB off-beam adjustment. Notice is not required to the Federal Aviation Administration.

Notice was provided to the Town of Ridgefield, the property owner, and abutting property owners on or about December 14, 2016. No comments have been received to date.

Cellco contends that this proposed project would not have a substantial adverse environmental impact.

Staff recommends the following conditions:

1. Use of off-road construction equipment that meets the latest EPA or California Air Resources Board standards, or in the alternative, equipment with the best available controls on diesel emissions, including, but not limited to, retrofitting with diesel oxidation catalysts, particulate filters and use of ultra-low sulfur fuel;
2. Compliance with the provisions of Section 22a-174-18(b)(3)(C) of the Regulations of Connecticut State Agencies that limit the idling of mobile sources to 3 minutes; and
3. Approval of any minor project changes be delegated to Council staff.

Site Location

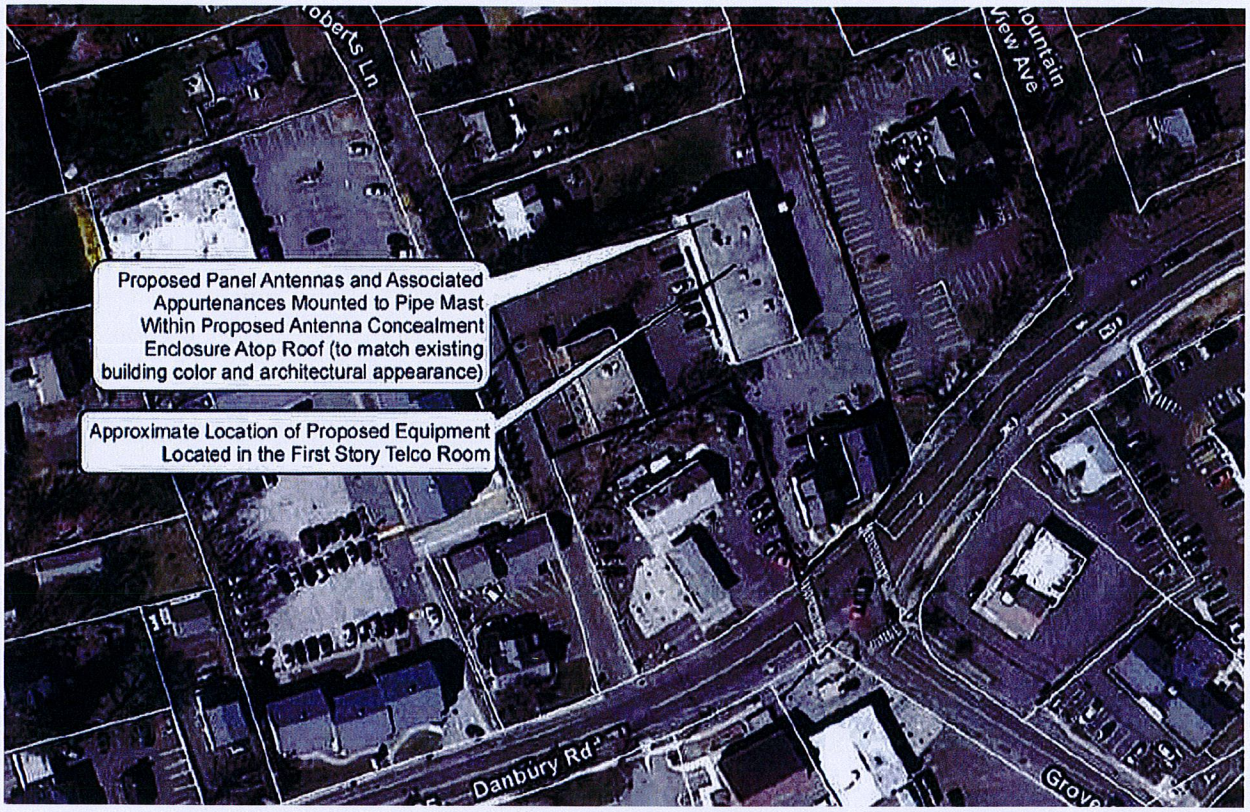
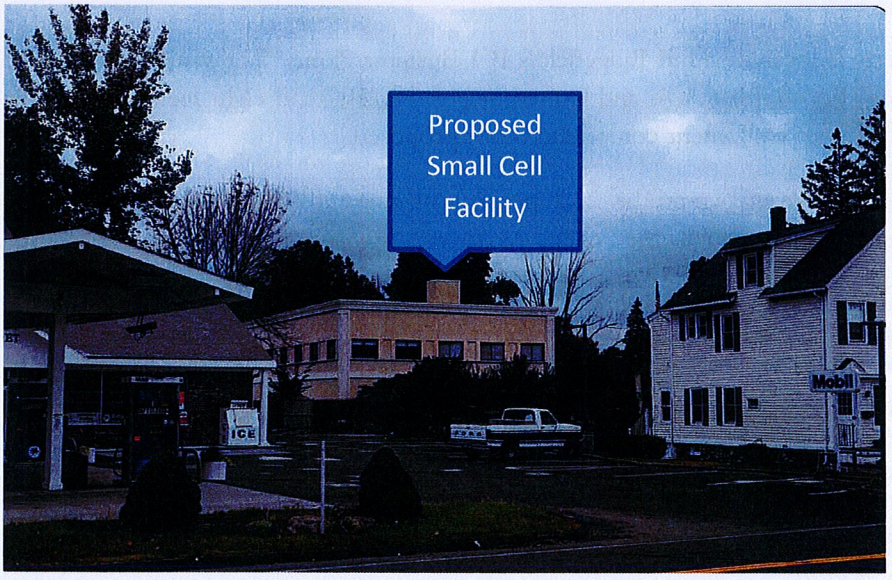


Photo-simulation as viewed from Danbury Road*



*With the proposed stealth enclosure to be located on the northern portion of the roof, this is a conservative (or worst-case) view from Danbury Road.

ATTACHMENT 2

verizon

WIRELESS COMMUNICATIONS FACILITY UPGRADE

RIDGEFIELD 5 CT – A
37 DANBURY RD,
RIDGEFIELD, CT 06877

GENERAL NOTES

1. ALL WORK SHALL BE IN ACCORDANCE WITH THE 2015 INTERNATIONAL BUILDING CODE AS MODIFIED BY THE 2018 CONNECTICUT SUPPLEMENT, INCLUDING THE TIA/EIA–222 REVISION "G" STRUCTURAL STANDARDS FOR STEEL ANTENNA TOWERS AND SUPPORTING STRUCTURES, 2017 CONNECTICUT FIRE SAFETY CODE, NATIONAL ELECTRICAL CODE, AND LOCAL CODES.
2. SHOULD ANY FIELD CONDITIONS PRECLUDE COMPLIANCE WITH THE DRAWINGS, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER AND SHALL NOT PROCEED WITH ANY AFFECTED WORK.
3. CONTRACTOR SHALL REVIEW ALL DRAWINGS AND SPECIFICATIONS IN THE CONTRACT DOCUMENT SET. CONTRACTOR SHALL COORDINATE ALL WORK SHOWN IN THE SET OF DRAWINGS. THE CONTRACTOR SHALL PROVIDE A COMPLETE SET OF DRAWINGS TO ALL SUBCONTRACTORS AND ALL RELATED PARTIES. THE SUBCONTRACTORS SHALL EXAMINE ALL THE DRAWINGS AND SPECIFICATIONS FOR THE INFORMATION THAT AFFECTS THEIR WORK.
4. CONTRACTOR SHALL PROVIDE A COMPLETE BUILD–OUT WITH ALL FINISHES, STRUCTURAL, MECHANICAL, AND ELECTRICAL COMPONENTS AND PROVIDE ALL ITEMS AS SHOWN OR INDICATED ON THE DRAWINGS OR IN THE WRITTEN SPECIFICATIONS.
5. CONTRACTOR SHALL FURNISH ALL MATERIAL, LABOR AND EQUIPMENT TO COMPLETE THE WORK AND FURNISH A COMPLETED JOB ALL IN ACCORDANCE WITH LOCAL AND STATE GOVERNING AUTHORITIES AND OTHER AUTHORITIES HAVING LAWFUL JURISDICTION OVER THE WORK.
6. CONTRACTOR SHALL SECURE AND PAY FOR ALL PERMITS AND ALL INSPECTIONS REQUIRED AND SHALL ALSO PAY FEES REQUIRED FOR THE GENERAL CONSTRUCTION, AND ALL TRADES AS APPLICABLE PERMITS SHALL BE PAID FOR BY THE RESPECTIVE SUBCONTRACTORS.
7. CONTRACTOR SHALL MAINTAIN A CURRENT SET OF DRAWINGS AND SPECIFICATIONS ON SITE AT ALL TIMES AND INSURE DISTRIBUTION OF NEW DRAWINGS TO SUBCONTRACTORS AND OTHER RELEVANT PARTIES AS SOON AS THEY ARE MADE AVAILABLE. ALL OLD DRAWINGS SHALL BE MARKED VOID AND REMOVED FROM THE CONTRACT AREA. THE CONTRACTOR SHALL FURNISH AN 'AS–BUILT' SET OF DRAWINGS TO OWNER UPON COMPLETION OF PROJECT.
8. LOCATION OF EQUIPMENT, AND WORK SUPPLIED BY OTHERS THAT IS DIAGRAMMATICALLY INDICATED ON THE DRAWINGS SHALL BE DETERMINED BY THE CONTRACTOR. THE CONTRACTOR SHALL DETERMINE LOCATIONS AND DIMENSIONS SUBJECT TO STRUCTURAL CONDITIONS AND WORK OF THE SUBCONTRACTORS.
9. THE CONTRACTOR IS SOLELY RESPONSIBLE TO DETERMINE CONSTRUCTION PROCEDURE AND SEQUENCE, AND TO ENSURE THE SAFETY OF THE EXISTING STRUCTURES AND ITS COMPONENT PARTS DURING CONSTRUCTION. THIS INCLUDES THE ADDITION OF WHATEVER SHORING, BRACING, UNDERPINNING, ETC. THAT MAY BE NECESSARY. MAINTAIN EXISTING BUILDING'S/PROPERTY'S OPERATIONS, COORDINATE WORK WITH BUILDING/PROPERTY OWNER.
10. DRAWINGS INDICATE THE MINIMUM STANDARDS, BUT IF ANY WORK SHOULD BE INDICATED TO BE SUBSTANDARD TO ANY ORDINANCES, LAWS, CODES, RULES, OR REGULATIONS BEARING ON THE WORK, THE CONTRACTOR SHALL INCLUDE IN HIS WORK AND SHALL EXECUTE THE WORK CORRECTLY IN ACCORDANCE WITH SUCH ORDINANCES, LAWS, CODES, RULES OR REGULATIONS WITH NO INCREASE IN COSTS.
11. ALL UTILITY WORK SHALL BE IN ACCORDANCE WITH LOCAL UTILITY COMPANY REQUIREMENTS AND SPECIFICATIONS.
12. ALL EQUIPMENT AND PRODUCTS PURCHASED ARE TO BE REVIEWED BY CONTRACTOR AND ALL APPLICABLE SUBCONTRACTORS FOR ANY CONDITION PER MFR.'S RECOMMENDATIONS. CONTRACTOR TO SUPPLY THESE ITEMS AT NO COST TO OWNER OR CONSTRUCTION MANAGER.
13. ANY AND ALL ERRORS, DISCREPANCIES, AND 'MISSED" ITEMS ARE TO BE BROUGHT TO THE ATTENTION OF THE VERIZON WIRELESS CONSTRUCTION MANAGER DURING THE BIDDING PROCESS BY THE CONTRACTOR. ALL THESE ITEMS ARE TO BE INCLUDED IN THE BID. NO 'EXTRA' WILL BE ALLOWED FOR MISSED ITEMS.
14. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL ON–SITE SAFETY FROM THE TIME THE JOB IS AWARDED UNTIL ALL WORK IS COMPLETE AND ACCEPTED BY THE OWNER.
15. CONTRACTOR TO REVIEW ALL SHOP DRAWINGS AND SUBMIT COPY TO ENGINEER FOR APPROVAL. DRAWINGS MUST BEAR THE CHECKER'S INITIALS BEFORE SUBMITTING TO THE CONSTRUCTION MANAGER FOR REVIEW.
16. THE CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS, ELEVATIONS, ANGLES, AND EXISTING CONDITIONS AT THE SITE, PRIOR TO FABRICATION AND/OR INSTALLATION OF ANY WORK IN THE CONTRACT AREA.
17. COORDINATION, LAYOUT, FURNISHING AND INSTALLATION OF CONDUIT AND ALL APPURTENANCES REQUIRED FOR PROPER INSTALLATION OF ELECTRICAL AND TELECOMMUNICATION SERVICE SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
18. ALL EQUIPMENT AND PRODUCTS PURCHASED ARE TO BE REVIEWED BY CONTRACTOR AND ALL APPLICABLE SUB– CONTRACTORS FOR ANY CONDITION PER THE MANUFACTURER'S RECOMMENDATIONS. CONTRACTOR TO SUPPLY THESE ITEMS AT NO COST TO OWNER OR CONSTRUCTION MANAGER.
19. ALL DAMAGE CAUSED TO ANY EXISTING STRUCTURE SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR WILL BE HELD LIABLE FOR ALL REPAIRS REQUIRED FOR EXISTING STRUCTURES IF DAMAGED DURING CONSTRUCTION ACTIVITIES.
20. THE CONTRACTOR SHALL CONTACT "CALL BEFORE YOU DIG" AT LEAST 48 HOURS PRIOR TO ANY EXCAVATIONS AT 1–800–922–4455. ALL UTILITIES SHALL BE IDENTIFIED AND CLEARLY MARKED PRIOR TO ANY EXCAVATION WORK. CONTRACTOR SHALL MAINTAIN AND PROTECT MARKED UTILITIES THROUGHOUT PROJECT COMPLETION.

SITE DIRECTIONS

FROM: 20 ALEXANDER DRIVE
WALLINGFORD, CONNECTICUT

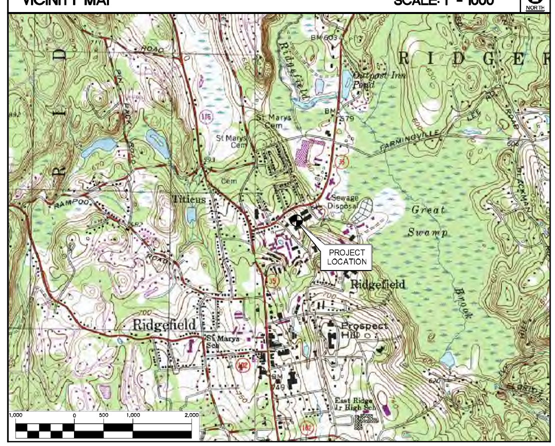
TO: 37 DANBURY RD,
RIDGEFIELD, CT 06877

1.	START OUT GOING NORTH ON ALEXANDER DR TOWARD BARNES INDUSTRIAL RD.	0.18 MI
2.	TURN RIGHT ONTO BARNES INDUSTRIAL RD.	0.11 MI
3.	TAKE THE 1ST LEFT ONTO CT–68.	4.35 MI
4.	TURN LEFT ONTO S MERIDEN RD/CT–70/CT–68. CONTINUE TO FOLLOW CT–70/CT–68.	1.24 MI
5.	TURN RIGHT ONTO S MAIN ST/CT–10/CT–70/CT–68.	0.15 MI
6.	TURN LEFT ONTO MAIN ST/CT–70/CT–68.	0.29 MI
7.	TURN LEFT ONTO W MAIN ST/CT–70/CT–68. CONTINUE TO FOLLOW CT–70.	4.06 MI
8.	MERGE ONTO I–84 W VIA THE RAMP ON THE LEFT.	34.31 MI
9.	MERGE ONTO US–7 S VIA EXIT 3 ON THE LEFT TOWARD NORWALK.	4.72 MI
10.	TURN RIGHT ONTO DANBURY RD/CT–35.	2.57 MI
11.	37 CT HIGHWAY 35, RIDGEFIELD, CT 06877–4033, 37 CT HIGHWAY 35.	

VICINITY MAP

SCALE: 1" = 1000'

NORTH



PROJECT SUMMARY

1. THE PROPOSED UPGRADE SCOPE OF WORK AT THE EXISTING UNMANNED TELECOMMUNICATIONS FACILITY GENERALLY INCLUDES THE FOLLOWING:

A. <u>AT THE EXISTING ROOFTOP MOUNTED ANTENNA SECTORS</u>:

- PERFORM ANTENNA ENCLOSURE MODIFICATION/EXPANSION WORK AS INCLUDED IN THESE CONSTRUCTION DRAWINGS.
- REMOVE (4) EXISTING ANDREW ANTENNAS.
- REMOVE (6) EXISTING NOKIA RRHs.
- RETAIN (2) EXISTING HYBRID CABLES & (2) EXISTING OVP BOXES.
- INSTALL (3) NEW COMMSCOPE NNH4–65B–R6H4 ANTENNAS.
- INSTALL (3) SAMSUNG MT6407–77A ALL–IN–ONE ANTENNA/ RRH.
- INSTALL (3) NEW SAMSUNG B5/B13 RRH–BR04C AND (3) NEW SAMSUNG B2/B66A RRH–BR049 RADIOS.
- CAP AND WEATHERPROOF UNUSED PORTS/CONNECTORS.

PROJECT INFORMATION

SITE NAME:	RIDGEFIELD 5 CT–A
SITE ADDRESS:	37 DANBURY RD, RIDGEFIELD, CT 06877
LESSEE/TENANT:	CELLCO PARTNERSHIP d.b.a. VERIZON WIRELESS 20 ALEXANDER DRIVE WALLINGFORD, CT 06492
CONTACT PERSON:	WALTER CHARCZNSKI (CONSTRUCTION MANAGER) VERIZON WIRELESS (860) 306–1806
ENGINEER:	CENTEK ENGINEERING, INC. 63–2 NORTH BRANFORD RD. BRANFORD, CT. 06405 (203) 488–0580
PROJECT COORDINATES:	LATITUDE: 41°–17'–25.948"N LONGITUDE: 73°–29'–52.606"W COORDINATES REFERENCED FROM VERIZON WIRELESS RFDS DATED MAY 24, 2021.

SHEET INDEX

SHT. NO.	DESCRIPTION	REV.
T–1	TITLE SHEET	0
N–1	NOTES AND SPECIFICATIONS	0
B–1	RF BILL OF MATERIALS	0
C–1	ROOFTOP PLAN AND BUILDING ELEVATION	0
C–2	ANTENNA SECTOR CONFIGURATION DETAILS	0
C–3	RF DETAILS	0
S–1	ENCLOSURE FRAMING MODIFICATION PLANS AND DETAILS	0
E–1	ELECTRICAL DETAILS AND SPECIFICATIONS	0

REV.	DATE	DRAWN BY	CHK'D BY	DESCRIPTION
0	07/27/21	DMD	TJL	CONSTRUCTION DRAWINGS – ISSUED FOR CONSTRUCTION
A	06/15/21	LAA	DMD	CONSTRUCTION DRAWINGS – ISSUED FOR CLIENT REVIEW

PROFESSIONAL ENGINEER SEAL

verizon

CENTEK engineering
Centered on Solutions℠
(203) 488-0580
(203) 488-8587 Fax
63-2 North Branford Road
Branford, CT 06405
www.CentekEng.com

Cellco Partnership d/b/a Verizon Wireless

RIDGEFIELD 5 CT – A

37 DANBURY RD,
RIDGEFIELD, CT 06877

DATE:	06/15/21
SCALE:	AS NOTED
JOB NO.	21007.31

TITLE SHEET

T–1

Sheet No. 1 of 8

NOTES AND SPECIFICATIONS

DESIGN BASIS:

GOVERNING CODE: 2015 INTERNATIONAL BUILDING (IBC) AS MODIFIED BY THE 2018 CT STATE BUILDING CODE AND AMENDMENTS.

1. DESIGN CRITERIA:

- RISK CATEGORY: II (BASED ON TABLE 1604.5 OF THE 2015 IBC)
- ULTIMATE DESIGN SPEED (BUILDING): 120 MPH (Vult) (EXPOSURE B/IMPORTANCE FACTOR 1.0 BASED ON ASCE 7-10) PER 2015 INTERNATIONAL BUILDING CODE (IBC) AS MODIFIED BY THE 2018 CONNECTICUT STATE BUILDING CODE.
- SEISMIC LOAD (DOES NOT CONTROL): PER ASCE 7-10 MINIMUM DESIGN LOADS FOR BUILDING AND OTHER STRUCTURES.

GENERAL NOTES:

1. ALL CONSTRUCTION SHALL BE IN COMPLIANCE WITH THE GOVERNING BUILDING CODE.
2. DRAWINGS INDICATE THE MINIMUM STANDARDS, BUT IF ANY WORK SHOULD BE INDICATED TO BE SUBSTANDARD TO ANY ORDINANCES, LAWS, CODES, RULES, OR REGULATIONS BEARING ON THE WORK, THE CONTRACTOR SHALL INCLUDE IN HIS WORK AND SHALL EXECUTE THE WORK CORRECTLY IN ACCORDANCE WITH SUCH ORDINANCES, LAWS, CODES, RULES OR REGULATIONS WITH NO INCREASE IN COSTS.
3. BEFORE BEGINNING THE WORK, THE CONTRACTOR IS RESPONSIBLE FOR MAKING SUCH INVESTIGATIONS CONCERNING PHYSICAL CONDITIONS (SURFACE AND SUBSURFACE) AT OR CONTIGUOUS TO THE SITE WHICH MAY AFFECT PERFORMANCE AND COST OF THE WORK.
4. DIMENSIONS AND DETAILS SHALL BE CHECKED AGAINST EXISTING FIELD CONDITIONS.
5. THE CONTRACTOR SHALL VERIFY AND COORDINATE THE SIZE AND LOCATION OF ALL OPENINGS, SLEEVES AND ANCHOR BOLTS AS REQUIRED BY ALL TRADES.
6. ALL DIMENSIONS, ELEVATIONS, AND OTHER REFERENCES TO EXISTING STRUCTURES, SURFACE, AND SUBSURFACE CONDITIONS ARE APPROXIMATE. NO GUARANTEE IS MADE FOR THE ACCURACY OR COMPLETENESS OF THE INFORMATION SHOWN. THE CONTRACTOR SHALL VERIFY AND COORDINATE ALL DIMENSIONS, ELEVATIONS, ANGLES WITH EXISTING CONDITIONS AND WITH ARCHITECTURAL AND SITE DRAWINGS BEFORE PROCEEDING WITH ANY WORK.
7. AS THE WORK PROGRESSES, THE CONTRACTOR SHALL NOTIFY THE OWNER OF ANY CONDITIONS WHICH ARE IN CONFLICT OR OTHERWISE NOT CONSISTENT WITH THE CONSTRUCTION DOCUMENTS AND SHALL NOT PROCEED WITH SUCH WORK UNTIL THE CONFLICT IS SATISFACTORILY RESOLVED.
8. THE CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE SAFETY CODES AND REGULATIONS DURING ALL PHASES OF CONSTRUCTION. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR PROVIDING AND MAINTAINING ADEQUATE SHORING, BRACING, AND BARRICADES AS MAY BE REQUIRED FOR THE PROTECTION OF EXISTING PROPERTY, CONSTRUCTION WORKERS, AND FOR PUBLIC SAFETY.
9. THE CONTRACTOR IS SOLELY RESPONSIBLE TO DETERMINE CONSTRUCTION PROCEDURE AND SEQUENCE, AND TO ENSURE THE SAFETY OF THE EXISTING STRUCTURES AND ITS COMPONENT PARTS DURING CONSTRUCTION. THIS INCLUDES THE ADDITION OF WHATEVER SHORING, BRACING, UNDERPINNING, ETC. THAT MAY BE NECESSARY. MAINTAIN EXISTING SITE OPERATIONS, COORDINATE WORK WITH NORTHEAST UTILITIES
10. ALL DAMAGE CAUSED TO ANY EXISTING STRUCTURE SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR WILL BE HELD LIABLE FOR ALL REPAIRS REQUIRED FOR EXISTING STRUCTURES IF DAMAGED DURING CONSTRUCTION ACTIVITIES.
11. REFER TO DRAWING T1 FOR ADDITIONAL NOTES AND REQUIREMENTS.

STRUCTURAL STEEL

1. ALL STRUCTURAL STEEL IS DESIGNED BY ALLOWABLE STRESS DESIGN (ASD)

   A. STRUCTURAL STEEL (W SHAPES)---ASTM A992 (FY = 50 KSI)
   B. STRUCTURAL STEEL (OTHER SHAPES)---ASTM A36 (FY = 36 KSI)
   C. STRUCTURAL HSS (RECTANGULAR SHAPES)---ASTM A500 GRADE B, (FY = 46 KSI)
   D. STRUCTURAL HSS (ROUND SHAPES)---ASTM A500 GRADE B, (FY = 42 KSI)
   E. PIPE---ASTM A53 (FY = 35 KSI)
   F. CONNECTION BOLTS---ASTM A325-N
   G. U-BOLTS---ASTM A36
   H. ANCHOR RODS---ASTM F 1554
   I. WELDING ELECTRODE---ASTM E 70XX

2. CONTRACTOR TO REVIEW ALL SHOP DRAWINGS AND SUBMIT COPY TO ENGINEER FOR APPROVAL. DRAWINGS MUST BEAR THE CHECKER'S INITIALS BEFORE SUBMITTING TO THE ENGINEER FOR REVIEW. SHOP DRAWINGS SHALL INCLUDE THE FOLLOWING: SECTION PROFILES, SIZES, CONNECTION ATTACHMENTS, REINFORCING, ANCHORAGE, SIZE AND TYPE OF FASTENERS AND ACCESSORIES. INCLUDE ERECTION DRAWINGS, ELEVATIONS AND DETAILS.
3. STRUCTURAL STEEL SHALL BE DETAILED, FABRICATED AND ERECTED IN ACCORDANCE WITH THE LATEST PROVISIONS OF AISC MANUAL OF STEEL CONSTRUCTION.
4. PROVIDE ALL PLATES, CLIP ANGLES, CLOSURE PIECES, STRAP ANCHORS, MISCELLANEOUS PIECES AND HOLES REQUIRED TO COMPLETE THE STRUCTURE.
5. FIT AND SHOP ASSEMBLE FABRICATIONS IN THE LARGEST PRACTICAL SECTIONS FOR DELIVERY TO SITE.
6. INSTALL FABRICATIONS PLUMB AND LEVEL, ACCURATELY FITTED, AND FREE FROM DISTORTIONS OR DEFECTS.
7. AFTER ERECTION OF STRUCTURES, TOUCHUP ALL WELDS, ABRASIONS AND NON-GALVANIZED SURFACES WITH A 95% ORGANIC ZINC RICH PAINT IN ACCORDANCE WITH ASTM 780.
8. ALL STEEL MATERIAL (EXPOSED TO WEATHER) SHALL BE GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH ASTM A123 "ZINC (HOT DIPPED GALVANIZED) COATINGS" ON IRONS AND STEEL PRODUCTS.
9. ALL BOLTS, ANCHORS AND MISCELLANEOUS HARDWARE SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A153 "ZINC COATING (HOT-DIP) ON IRON AND STEEL HARDWARE".
10. THE ENGINEER SHALL BE NOTIFIED OF ANY INCORRECTLY FABRICATED, DAMAGED OR OTHERWISE MISFITTING OR NON CONFORMING MATERIALS OR CONDITIONS TO REMEDIAL OR CORRECTIVE ACTION. ANY SUCH ACTION SHALL REQUIRE ENGINEER REVIEW.
11. CONNECTION ANGLES SHALL HAVE A MINIMUM THICKNESS OF 1/4 INCHES.
12. STRUCTURAL CONNECTION BOLTS SHALL CONFORM TO ASTM A325. ALL BOLTS SHALL BE 3/4" DIAMETER MINIMUM AND SHALL HAVE A MINIMUM OF TWO BOLTS, UNLESS OTHERWISE ON THE DRAWINGS.
13. LOCK WASHER ARE NOT PERMITTED FOR A325 STEEL ASSEMBLIES.
14. SHOP CONNECTIONS SHALL BE WELDED OR HIGH STRENGTH BOLTED.
15. MILL BEARING ENDS OF COLUMNS, STIFFENERS, AND OTHER BEARING SURFACES TO TRANSFER LOAD OVER ENTIRE CROSS SECTION.
16. FABRICATE BEAMS WITH MILL CAMBER UP.
17. LEVEL AND PLUMB INDIVIDUAL MEMBERS OF THE STRUCTURE TO AN ACCURACY OF 1:500, BUT NOT TO EXCEED 1/4" IN THE FULL HEIGHT OF THE COLUMN.
18. COMMENCEMENT OF STRUCTURAL STEEL WORK WITHOUT NOTIFYING THE ENGINEER OF ANY DISCREPANCIES WILL BE CONSIDERED ACCEPTANCE OF PRECEDING WORK.
19. INSPECTION AND TESTING OF ALL WELDING AND HIGH STRENGTH BOLTING SHALL BE PERFORMED BY AN INDEPENDENT TESTING LABORATORY.
20. FOUR COPIES OF ALL INSPECTION TEST REPORTS SHALL BE SUBMITTED TO THE ENGINEER WITHIN TEN (10) WORKING DAYS OF THE DATE OF INSPECTION.

FRP ENCLOSURE

1. THE EXISTING FRP SYSTEM AT THE VERIZON WIRELESS ANTENNA CONCEALMENT ENCLOSURE SHALL BE REPLACED IN IT'S ENTIRETY TO ACCOMMODATE THE ENCLOSURE MODIFICATION/EXPANSION.
2. THE REPLACEMENT FRP SYSTEM INCLUDING ITS ATTACHMENT TO THE MODIFIED STEEL SUB FRAME SHALL BE ENGINEERED BY A CONNECTICUT STATE LICENSED ENGINEER EXPERIENCED IN THE DESIGN OF THESE SYSTEMS.
3. CONTRACTOR SHALL CONDUCT A DETAILED FIELD SURVEY FOR USE IN REPLICATING THE COLOR AND ARCHITECTURAL APPEARANCE OF THE EXISTING ENCLOSURE.
4. THE CONTRACTOR SHALL SUBMIT DETAILED SHOP DRAWINGS AND CALCULATIONS BEARING THE SEAL OF THE RESPONSIBLE DESIGN PROFESSIONAL FOR REVIEW AND APPROVAL BY THE ENGINEER OF RECORD PRIOR TO FABRICATION.
5. THE FRP STRUCTURE SYSTEM SHALL BE DESIGNED TO MEET OR EXCEED THE 120 MPH (Vult) WIND SPEED FOR RIDGEFIELD, CONNECTICUT AS REQUIRED IN THE CT STATE BUILDING CODE APPENDIX N.

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NOTES AND SPECIFICATIONS

N-1

Sheet No. 2 of 8

PLUMBING DIAGRAM NOTES:

1. PORTS 1 & 2 ARE FOR LOW BAND (698–896 MHz).
2. PORTS 3, 4, 5 & 5 ARE FOR HIGH BAND (1695–2360 MHz).
3. SMART BIAS TEE (SBT) IS THROUGH ANTENNA PORTS 1 & 3 (1 FOR LOW BAND AND 3 FOR HIGH BAND).
4. AISG CABLE IS ONLY NEEDED WHEN DRAWN IN THE DIAGRAMS ABOVE. IF IT IS NOT DRAWN THEN SBT IS ENOUGH TO CONTROL ALL RET MOTORS.
5. NOT ALL SBT PORTS ARE NEEDED TO CONTROL RET. ONLY GREEN PORT CONNECTION TO GREEN PORT WILL CONTROL RET.

RET DC SIGNAL PASS FOR RET
(PORT THAT WILL CONTROL RET)

PLUMBING DIAGRAM COMMENTS:

A. DIAGRAMS SHOW ANTENNA PORT CONFIGURATIONS AS VIEWED FROM BELOW ANTENNAS.

B. ANTENNA POSITIONS ARE INDICATED AS VIEWED FROM IN FRONT OF ANTENNAS.

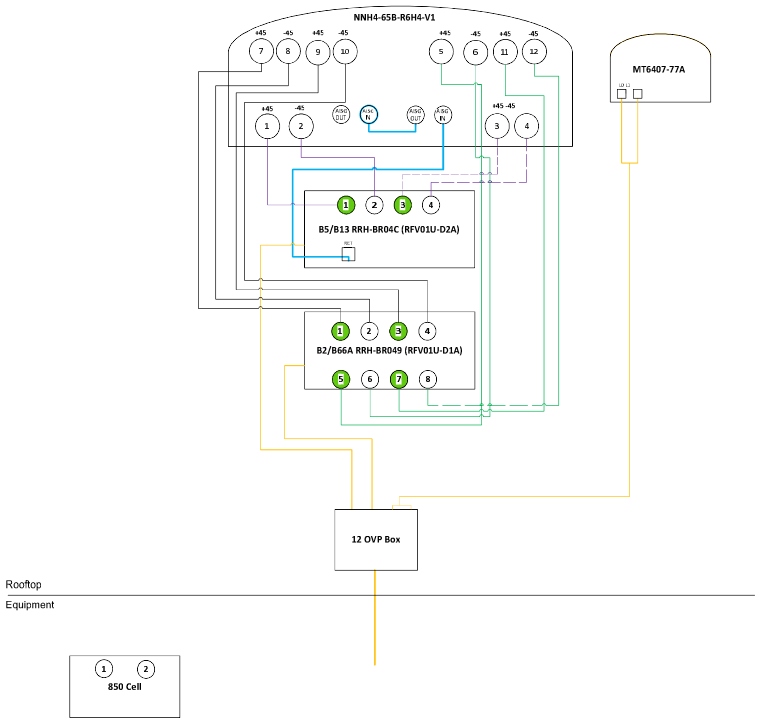
C. CAP AND WEATHERPROOF UNUSED ANTENNA PORTS.

D. ALL PLUMBING DIAGRAM COLORS ARE IRRELEVANT EXCEPT FOR AISG AND HYBRIFLEX CABLE. (FOR THE COAX COLORS, FOLLOW COAX COLORS GUIDE ABOVE)

DC SIGNAL CAPABLE PORT

AISG CABLE

RET DC SIGNAL PASS FOR RET (PORT THAT WILL CONTROL RET)



NOTES:

1. INFORMATION SHOWN HEREIN IS FOR USE BY VERIZON WIRELESS EQUIPMENT OPERATIONS.
2. THIS B.O.M. DRAWING IS BASED ON FACILITY UPGRADE DESIGN DRAWINGS PREPARED BY CENTEK ENGINEERING (REV.0 DATED: 07.27.21), & VERIZON WIRELESS RF ANTENNA EQUIPMENT RECOMMENDATION (DATED 05.24.21).

BILL OF MATERIALS

TECHNOLOGY	QUANTITY	ANTENNA
LTE 700	3	COMMSCOPE ANTENNA MODEL: NNH4-65B-R6H4
LTE 850		
LTE PCS 1900		
LTE AWS 2100		
5G	3	SAMSUNG ANTENNA MODEL: MT6407-77A

RADIOS	QUANTITY	COMMENTS
LTE 700	3	SAMSUNG MODEL: B5/B13 RRH-BR04C
LTE 850		
LTE PCS 1900	3	SAMSUNG MODEL: B2/B66A RRH-BR049
LTE AWS 2100		
5G	3	INTEGRATED INTO MT6407-77A ANTENNA

DIPLEXERS	QUANTITY	COMMENTS
LTE 700	0	-
LTE 850		

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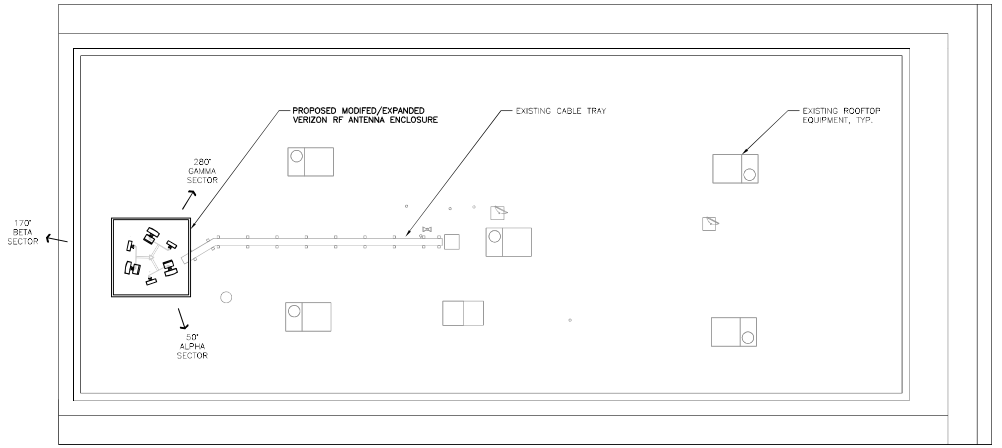
RF BILL OF MATERIALS

B-1

Sheet No. 3 of 8

STRUCTURAL ANALYSIS REFERENCE NOTE:

REFER TO PASSING STRUCTURAL ANALYSIS REPORT FOR THE MODIFIED ANTENNA CONCEALMENT ENCLOSURE AND HOST BUILDING AS PREPARED BY CENTEK ENGINEERING, INC. FOR VERIZON WIRELESS, DATED JUNE 15, 2021.

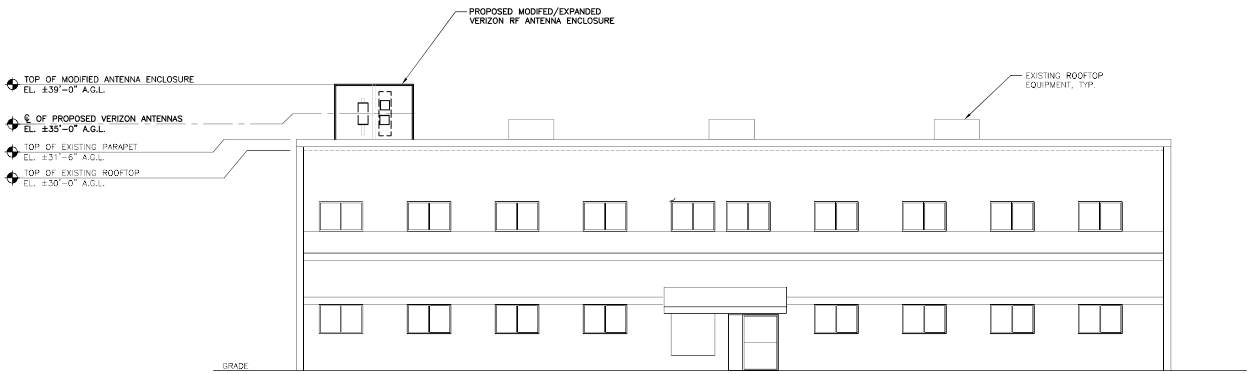


2 / C-1

1 / C-1 **ROOFTOP PLAN - PROPOSED**

SCALE: 1/8" = 1'-0"

APPROXIMATE NORTH



2 / C-1 **EAST BUILDING ELEVATION - PROPOSED**

SCALE: 1/8" = 1'-0"

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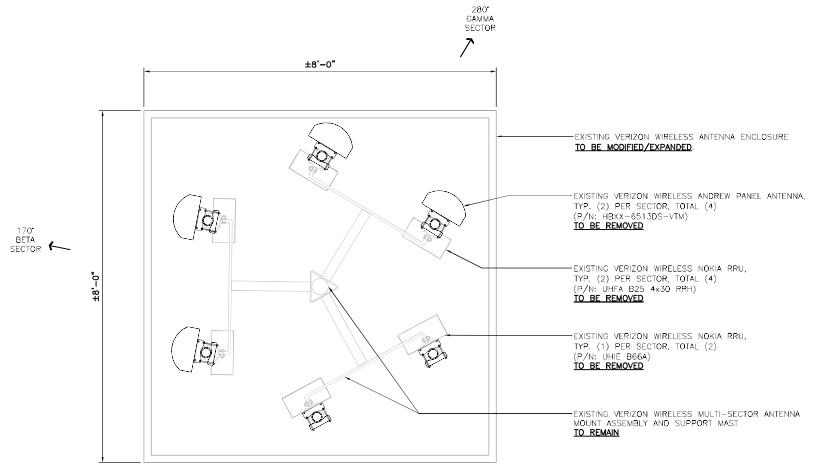
SITE PLAN AND ELEVATION

C-1

Sheet No. 4 of 8

EXISTING ANTENNA CONFIGURATIONS



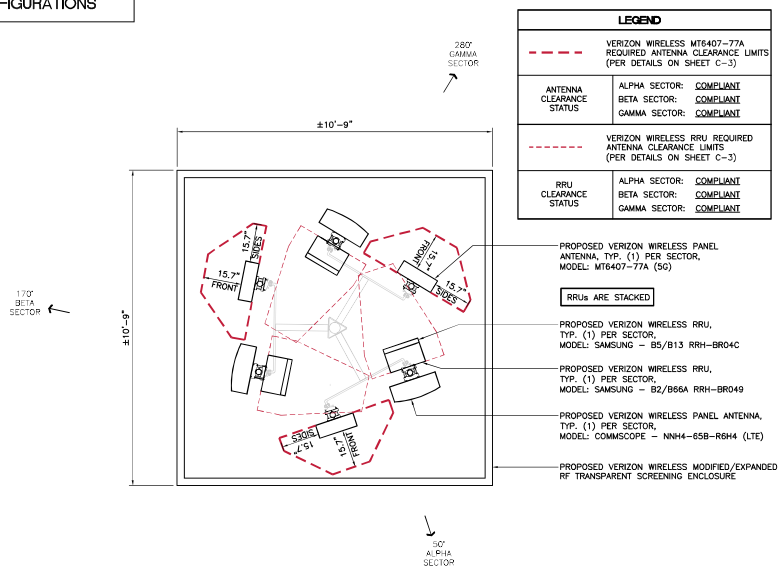
1 C-2 **EXISTING SECTOR CONFIGURATION PLAN**
SCALE: 3/4" = 1'-0"

APPROXIMATE NORTH

CONCEALMENT ENCLOSURE NOTES

1. ANTENNA CONCEALMENT ENCLOSURE **PANELS AND FRAMING** TO BE DESIGN BY ANTENNA CONCEALMENT MANUFACTURER AND SUBMITTED FOR REVIEW. REFERENCE SHEET N-1 FOR DESIGN REQUIREMENTS.
2. REFERENCE 'DESIGN BASIS' ON SHEET N-1 FOR CONCEALMENT ENCLOSURE LOADING REQUIREMENTS.
3. ENGINEERED PANELS SHALL TAKE INTO CONSIDERATION ALL FRAMING AND FASTENING DENOTED WITHIN THE CONTRACT DOCUMENTS. IF ADDITIONAL FRAMING OR FASTENING IS NECESSARY, ANTENNA CONCEALMENT MANUFACTURER SHALL CONTACT THE ENGINEER OF RECORD IMMEDIATELY.
4. FRP MANUFACTURER SHALL VERIFY ALL OUTSIDE DIMENSIONS OF ENCLOSURE FRAMING PRIOR TO FABRICATION OF FRP ENCLOSURE PANELS AND RELATED FRAMING.
5. TWO PANELS ON THE ANTENNA CONCEALMENT ENCLOSURE SHALL BE DESIGNED TO HAVE REMOVABLE PANELS FOR ACCESS TO VERIZON WIRELESS EQUIPMENT FOR MAINTENANCE AND UPGRADE PURPOSES.

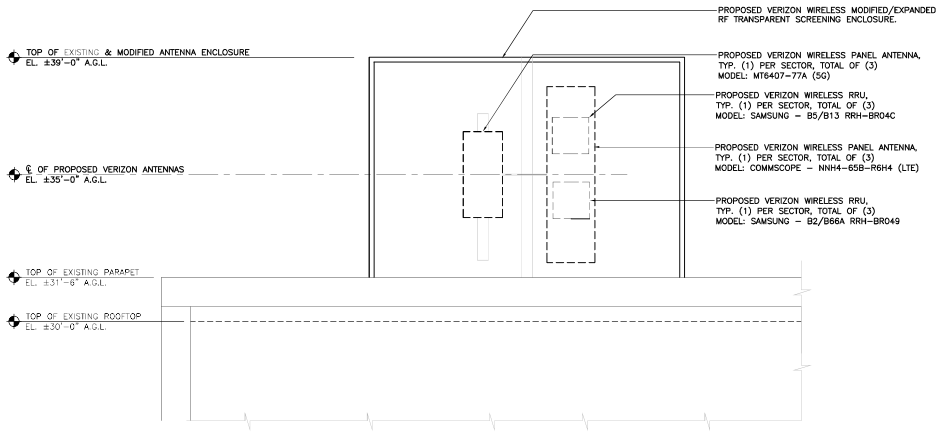
PROPOSED ANTENNA CONFIGURATIONS



LEGEND		
- - -	VERIZON WIRELESS MT6407-77A REQUIRED ANTENNA CLEARANCE LIMITS (PER DETAILS ON SHEET C-3)	
ANTENNA CLEARANCE STATUS	ALPHA SECTOR: COMPLIANT BETA SECTOR: COMPLIANT GAMMA SECTOR: COMPLIANT	
- - -	VERIZON WIRELESS RRU REQUIRED ANTENNA CLEARANCE LIMITS (PER DETAILS ON SHEET C-3)	
RRU CLEARANCE STATUS	ALPHA SECTOR: COMPLIANT BETA SECTOR: COMPLIANT GAMMA SECTOR: COMPLIANT	

2 C-2 **PROPOSED SECTOR CONFIGURATION PLAN**
SCALE: 1/2" = 1'-0"

NORTH



FACE OF ANTENNA ELEVATION PERSPECTIVE

TYPICAL SECTOR

2A C-2 **PROPOSED SECTOR CONFIGURATION ELEVATION**
SCALE: 1/2" = 1'-0"

REV.	DATE	DRAWN BY	CHK'D BY	DESCRIPTION
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ANTENNA SECTOR CONFIGURATION DETAILS

C-2

Sheet No. 5 of 8

ANTENNA FRONT

SECTOR ANTENNA		
EQUIPMENT	DIMENSIONS	WEIGHT
MAKE: SAMSUNG MODEL: MT6407-77A	35.1"h x 16.1"W x 5.5"D (NOT TO EXCEED)	87 LBS. (NOT TO EXCEED)
CLEARANCES AND SERVICE AREA		
TOP: 31.5"	HORIZONTAL DISTANCE: 31.5" (ANT. TO ANT.)	
FRONT, SIDES & BOTTOM: 15.7"	VERTICAL DISTANCE: 63.0" (ANT. TO ANT.)	
NOTES: 1. THIS ANTENNA HAS ITS OWN BUILT-IN RRH (VZS01).		

1 / C-3 **SECTOR ANTENNA DETAIL**
NOT TO SCALE

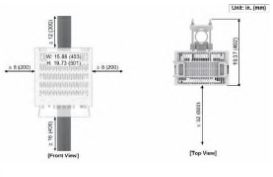
ELEVATION - ISOMETRIC

BOTTOM

12-PORT SECTOR ANTENNA		
EQUIPMENT	DIMENSIONS	WEIGHT
MAKE: COMMSCOPE MODEL: NNH4-65B-R6H4	72"L x 19.6"W x 7.7"D	84.4 LBS. (W/OUT MOUNT KIT)

2 / C-3 **SECTOR ANTENNA DETAIL**
NOT TO SCALE

RRH ISOMETRIC

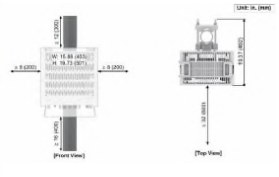


RRH CLEARANCES

DUAL BAND RRU (REMOTE RADIO UNIT)			
EQUIPMENT	BANDS	DIMENSIONS	WEIGHT
MAKE: SAMSUNG MODEL: B2/B66A RRH-BR049 (RFV01U-D1A)	B2: PCS (1900 MHz) B66: AWS (2100 MHz)	15.0"H x 15.0"W x 10.0"D	84.4 LBS.
NOTES: 1. CONTRACTOR TO COORDINATE FINAL EQUIPMENT MODEL SELECTION WITH VERIZON WIRELESS CONSTRUCTION MANAGER PRIOR TO ORDERING.			

3 / C-3 **DUAL-BAND AWS/PCS RADIO UNIT DETAIL**
NOT TO SCALE

RRH ISOMETRIC



RRH CLEARANCES

DUAL BAND RRU (REMOTE RADIO UNIT)			
EQUIPMENT	BANDS	DIMENSIONS	WEIGHT
MAKE: SAMSUNG MODEL: B5/B13 RRH-BR04C (RFV01U-D2A)	B5: 850 MHz B13: 700 MHz	15.0"H x 15.0"W x 8.1"D	70.3 LBS.
NOTES: 1. CONTRACTOR TO COORDINATE FINAL EQUIPMENT MODEL SELECTION WITH VERIZON WIRELESS CONSTRUCTION MANAGER PRIOR TO ORDERING.			

4 / C-3 **DUAL-BAND 700/850 MHZ RADIO UNIT DETAIL**
NOT TO SCALE

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RF DETAILS

C-3

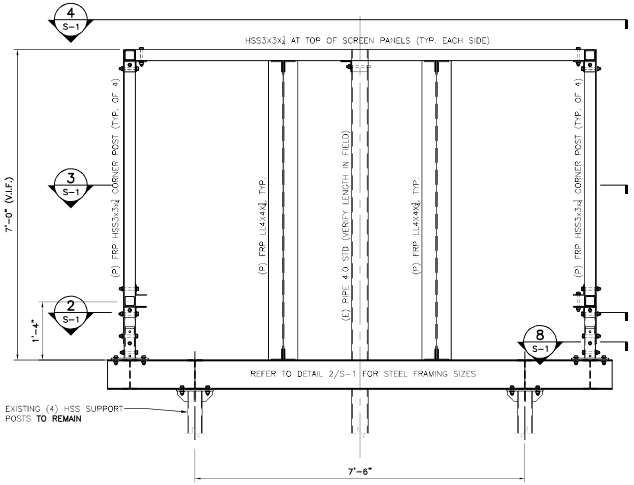
Sheet No. 6 of 8

GENERAL NOTES

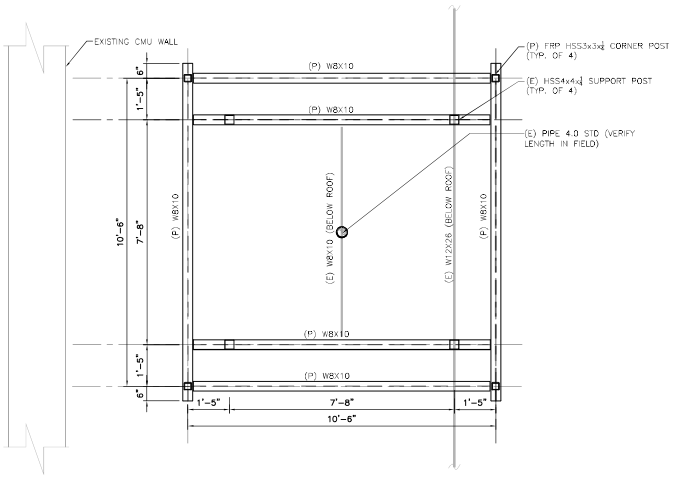
1. VERIFY ALL DIMENSIONS, ELEVATIONS, EXISTING FRAMING MEMBER SIZES AND GENERAL CONDITIONS PRIOR TO COMMENCEMENT OF WORK. NOTIFY ENGINEER OF RECORD OF ANY DISCREPANCIES BETWEEN THESE DRAWINGS AND EXISTING CONDITIONS.
2. REFER TO CIVIL DRAWINGS FOR ANTENNA LAYOUT AND CONFIGURATION.

STRUCTURAL ANALYSIS NOTE

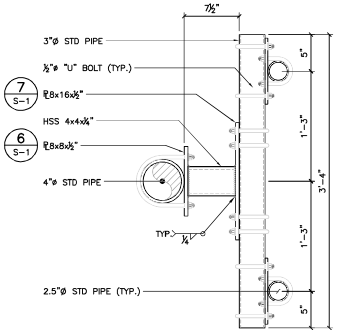
1. REFER TO FINAL VERIZON WIRELESS ANTENNA ENCLOSURE MODIFICATION DESIGN ANALYSIS PREPARED BY CENTEK ENGINEERING DATED 06/15/2021.



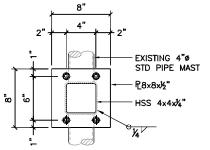
1 S-1 **MODIFIED ENCLOSURE ELEVATION**
SCALE: 1½" = 1'-0"



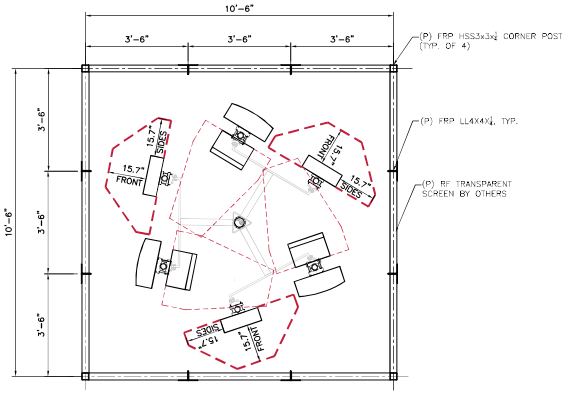
2 S-1 **ENCLOSURE FRAMING SECTION (BOTTOM)**
SCALE: 3/4" = 1'-0"



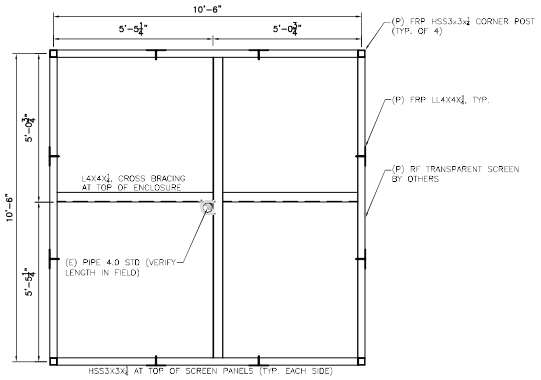
5 S-1 **ANTENNA MOUNT**
SCALE: 1½" = 1'-0"



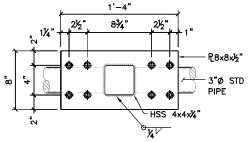
6 S-1 **PLATE DETAIL**
SCALE: 1½" = 1'-0"



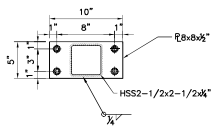
3 S-1 **ENCLOSURE FRAMING PLAN (INTERMEDIATE)**
SCALE: 3/4" = 1'-0"



4 S-1 **ENCLOSURE FRAMING PLAN (TOP)**
SCALE: 3/4" = 1'-0"



7 S-1 **PLATE DETAIL**
SCALE: 1½" = 1'-0"



8 S-1 **BASEPLATE DETAIL**
SCALE: 1½" = 1'-0"

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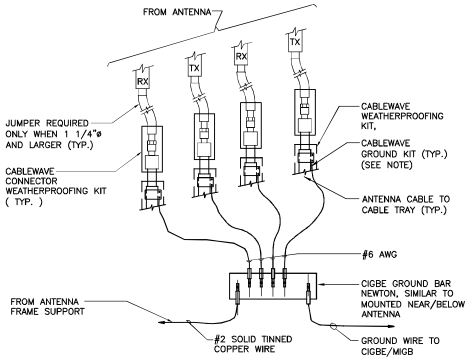
ENCLOSURE FRAMING MODIFICATION PLANS AND DETAILS

S-1

Sheet No. 7 of 8

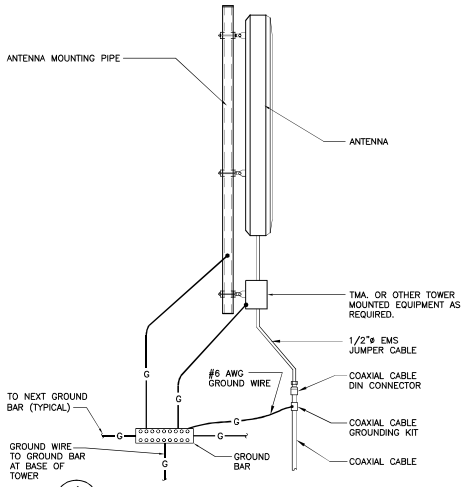


NOTES:

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

1 E-1 CONNECTION OF GROUND WIRES TO GROUND BAR

NOT TO SCALE

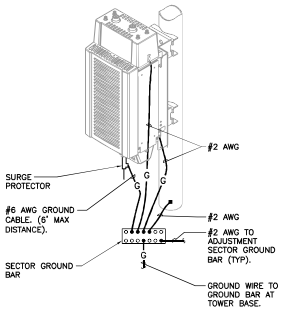


4 E-1 TYPICAL ANTENNA GROUNDING DETAIL

NOT TO SCALE

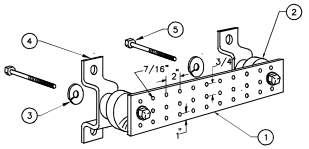
EACH RRH CABINET SHALL BE GROUNDED IN THE FOLLOWING MANNER:

1. AT TOP OF THE CABINET
2. AT RIGHT SIDE OF THE CABINET.



2 E-1 RRH POLE MOUNT GROUNDING

NOT TO SCALE

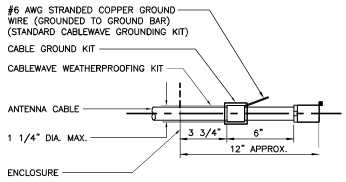


NOTES

1. TINNED COPPER GROUND BAR, 1/4" x 4" x 20", NEWTON INSTRUMENT CO. HOLE CENTERS TO MATCH NEMA DOUBLE LUG CONFIGURATION.
2. INSULATORS, NEWTON INSTRUMENT CAT. NO. 3061-4.
3. 5/8" LOCK WASHERS, NEWTON INSTRUMENT CO. CAT. NO. 3015-8.
4. WALL MOUNTING BRACKET, NEWTON INSTRUMENT CO. CAT NO. A-6056.
5. 5/8-11 x 1" STAINLESS STEEL TRUSS SPANNER MACHINE SCREWS.

5 E-1 GROUND BAR DETAIL

NOT TO SCALE



NOTES:

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

3 E-1 ANTENNA CABLE GROUNDING DETAIL

NOT TO SCALE

ELECTRICAL SPECIFICATIONS

SECTION 16010

1.01. SCOPE OF WORK

A. WORK SHALL INCLUDE ALL LABOR, EQUIPMENT AND SERVICES REQUIRED TO COMPLETE (MAKE READY FOR OPERATION) ALL THE ELECTRICAL WORK INCLUDING, BUT NOT LIMITED TO, THE FOLLOWING:

1. CELLULAR GROUNDING SYSTEMS CONSISTING OF ANTENNA GROUNDING, GROUND BARS, ETC.

1.02. GENERAL REQUIREMENTS

A. THE ENTIRE ELECTRICAL INSTALLATION SHALL BE MADE IN STRICT ACCORDANCE WITH ALL LOCAL, STATE AND NATIONAL CODES AND REGULATIONS WHICH MAY APPLY AND NOTHING IN THE DRAWINGS OR SPECIFICATIONS SHALL BE INTERPRETED AS AN INFRINGEMENT OF SUCH CODES OR REGULATIONS.

B. THE ELECTRICAL CONTRACTOR IS TO BE RESPONSIBLE FOR THE COMPLETE INSTALLATION AND COORDINATION OF THE ENTIRE ELECTRICAL SERVICE. ALL ACTIVITIES TO BE COORDINATED THROUGH OWNERS REPRESENTATIVE, DESIGN ENGINEER AND OTHER AUTHORITIES HAVING JURISDICTION OF TRADES.

C. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL PERMITS AND PAY ALL FEES THAT MAY BE REQUIRED FOR THE ELECTRICAL WORK AND FOR SCHEDULING OF ALL INSPECTIONS THAT MAY BE REQUIRED BY THE LOCAL AUTHORITY.

D. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION WITH THE BUILDING OWNER FOR NEW AND/OR DEMOLITION WORK INVOLVED.

E. NO MATERIAL OTHER THAN THAT CONTAINED IN THE "LATEST LIST OF ELECTRICAL FITTINGS" APPROVED BY THE UNDERWRITERS' LABORATORIES, SHALL BE USED IN ANY PART OF THE WORK. ALL MATERIAL FOR WHICH LABEL SERVICE HAS BEEN ESTABLISHED SHALL BEAR THE U.L. LABEL.

F. THE CONTRACTOR SHALL GUARANTEE ALL NEW WORK FOR A PERIOD OF ONE YEAR FROM THE ACCEPTANCE DATE BY THE OWNER. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING WARRANTIES FROM ALL EQUIPMENT MANUFACTURERS FOR SUBMISSION TO THE OWNER.

G. DRAWINGS INDICATE GENERAL ARRANGEMENT OF WORK INCLUDED IN CONTRACT. CONTRACTOR SHALL, WITHOUT EXTRA CHARGE, MAKE MODIFICATIONS TO THE LAYOUT OF THE WORK TO PREVENT CONFLICT WITH WORK OF OTHER TRADES AND FOR THE PROPER INSTALLATION OF WORK. CHECK ALL DRAWINGS AND VISIT JOB SITE TO VERIFY SPACE AND TYPE OF EXISTING CONDITIONS IN WHICH WORK WILL BE DONE, PRIOR TO SUBMITTAL OF BID.

H. THE ELECTRICAL CONTRACTOR SHALL SUPPLY THREE (3) COMPLETE SETS OF APPROVED DRAWINGS, ENGINEERING DATA SHEETS, MAINTENANCE AND OPERATING INSTRUCTION MANUALS FOR ALL SYSTEMS AND THEIR RESPECTIVE EQUIPMENT. THESE MANUALS SHALL BE INSERTED IN VINYL COVERED 3-RING BINDERS AND TURNED OVER TO OWNER'S REPRESENTATIVE ONE (1) WEEK PRIOR TO FINAL PUNCH LIST.

I. ALL WORK SHALL BE INSTALLED IN A NEAT AND WORKMAN LIKE MANNER AND WILL BE SUBJECT TO THE APPROVAL OF THE OWNER'S REPRESENTATIVE.

J. ALL EQUIPMENT AND MATERIALS TO BE INSTALLED SHALL BE NEW, UNLESS OTHERWISE NOTED.

K. BEFORE FINAL PAYMENT, THE CONTRACTOR SHALL PROVIDE A COMPLETE SET OF PRINTS (AS-BUILTS), LEGIBLY MARKED IN RED PENCIL TO SHOW ALL CHANGES FROM THE ORIGINAL PLANS.

L. ENTIRE ELECTRICAL INSTALLATION SHALL BE IN ACCORDANCE WITH OWNER'S SPECIFICATIONS, AND REQUIREMENTS OF ALL LOCAL AUTHORITIES HAVING JURISDICTION. IT IS THE CONTRACTOR'S RESPONSIBILITY TO COORDINATE WITH APPROPRIATE INDIVIDUALS TO OBTAIN ALL SUCH SPECIFICATIONS AND REQUIREMENTS. NOTHING CONTAINED IN, OR OMITTED FROM, THESE DOCUMENTS SHALL RELIEVE CONTRACTOR FROM THIS OBLIGATION.

SECTION 16450

1.01. GROUNDING

A. ALL NON-CURRENT CARRYING PARTS OF THE ELECTRICAL AND TELEPHONE CONDUIT SYSTEMS SHALL BE MECHANICALLY AND ELECTRICALLY CONNECTED TO PROVIDE AN INDEPENDENT RETURN PATH TO THE EQUIPMENT GROUNDING SOURCES.

B. GROUNDING SYSTEM WILL BE IN ACCORDANCE WITH THE LATEST ACCEPTABLE EDITION OF THE NATIONAL ELECTRICAL CODE AND REQUIREMENTS PER LOCAL INSPECTOR HAVING JURISDICTION.

C. EQUIPMENT GROUNDING CONDUCTOR:

1. EACH EQUIPMENT GROUND CONDUCTOR SHALL BE SIZED IN ACCORDANCE WITH THE N.E.C. ARTICLE 250-122.

2. THE MINIMUM SIZE OF EQUIPMENT GROUND CONDUCTOR SHALL BE #12 AWG COPPER.

D. CELLULAR GROUNDING SYSTEM:

PROVIDE THE CELLULAR GROUNDING SYSTEM AS SPECIFIED ON DRAWINGS, INCLUDING, BUT NOT LIMITED TO:

1. GROUND BARS
2. ANTENNA GROUND CONNECTIONS AND PLATES.

E. ALL EQUIPMENT SHALL BE BONDED TO GROUND AS REQUIRED BY N.E.C., MFG. SPECIFICATIONS, AND OWNER'S SPECIFICATIONS.

REV.	DATE	DRAWN BY	CHK'D BY	DESCRIPTION
A	01/27/21	DMD	TJL	CONSTRUCTION DRAWINGS – ISSUED FOR CONSTRUCTION
	06/15/21	LAA	DMD	CONSTRUCTION DRAWINGS – ISSUED FOR CLIENT REVIEW

PROFESSIONAL ENGINEER SEAL

verizon

CENTEK engineering
Centered on Solutions
(203) 488-0580
(203) 488-8587 Fax
63-2 North Branford Road
Branford, CT 06405
www.CentekEng.com

Cellco Partnership d/b/a Verizon Wireless

RIDGEFIELD 5 CT - A

37 DANBURY RD.
RIDGEFIELD, CT 06877

DATE: 06/15/21
SCALE: AS NOTED
JOB NO. 21007.31

ELECTRICAL DETAILS AND SPECIFICATIONS

E-1

Sheet No. 8 of 8

SAMSUNG

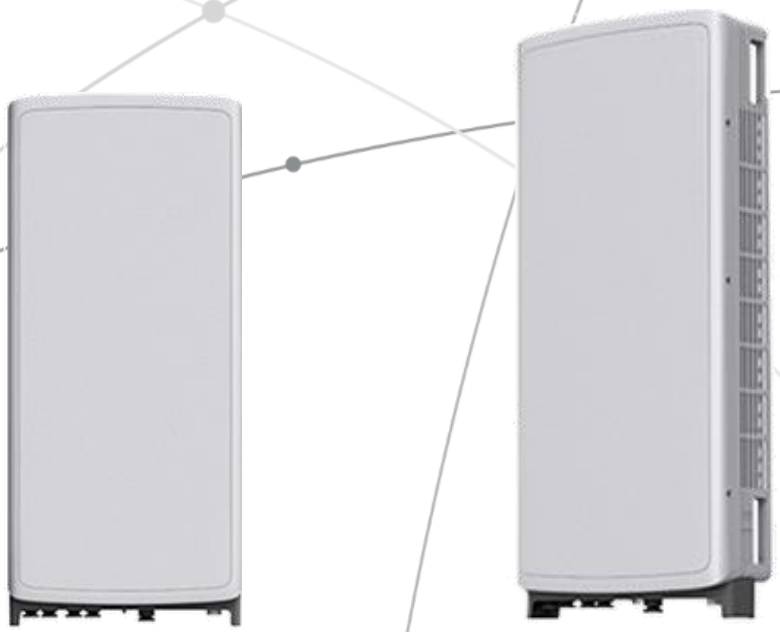
SAMSUNG

C-Band 64T64R Massive MIMO Radio

for High Capacity and Wide Coverage

Samsung C-Band 64T64R Massive MIMO Radio enables mobile operators to increase coverage range, boost data speeds and ultimately offer enriched 5G experiences to users in the U.S..

Model Code : MT6407-77A

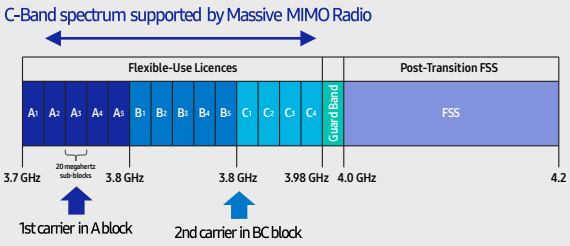


Points of Differentiation

Wide Bandwidth

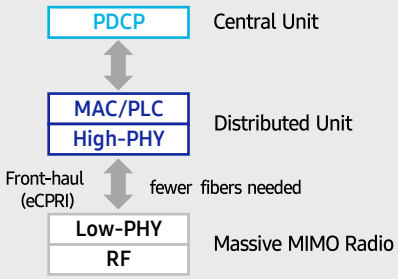
With capability to support up to 2 CC carrier configuration, Samsung C-Band massive MIMO Radio supports 200 MHz bandwidth in the C-Band spectrum.

Samsung C-Band massive MIMO Radio covers the entire C-Band 280 MHz spectrum, so it can meet the operator's needs in current A block and future B/C blocks



Future Proof Product

Samsung C-Band 64T64R Massive MIMO radio supports not only CPRI but also eCPRI as front-haul interface.
It enables operators can cut down on OPEX/CAPEX by reducing front-haul bandwidth through low layer split and using ethernet based higher efficient line.



Enhanced Performance

C-Band massive MIMO Radio creates sharp beams and extends networks' coverage on the critical mid-band spectrum using a large number of antenna elements and high output power to boost data speeds.

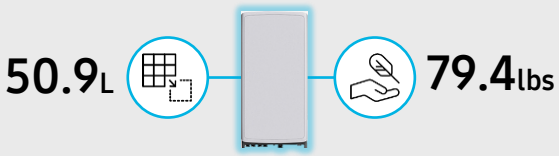
This helps operators reduce their CAPEX as they now need less products to cover the same area than before.

Furthermore, as C-Band massive MIMO Radio supports MU-MIMO(Multi-user MIMO) , it enables to increase user throughput by minimizing interference.

Well Matched Design

Samsung C-Band Massive MIMO radio utilizes 64 antennas, supports up to 280MHz bandwidth, and delivers a 200W output power. despite the above advanced performance, the Radio has a compact size of 50.9L and 79.4lbs. This makes it easy to install the Radio.

It is designed to look solid and compact, with a low profile appearance so that, when installed, harmonizes well with the surrounding environment..



Technical Specifications

Item	Specification
Tech	NR
Band	n77
Frequency Band	3700 - 3980 MHz
EIRP	78.5dBm (53.0 dBm+25.5 dBi)
IBW/OBW	280 MHz / 200 MHz
Installation	Pole/Wall
Size/ Weight	16.06 x 35.06 x 5.51 inch (50.86L)/ 79.4 lbs

SAMSUNG

About Samsung Electronics Co., Ltd.

Samsung inspires the world and shapes the future with transformative ideas and technologies. The company is redefining the worlds of TVs, smartphones, wearable devices, tablets, digital appliances, network systems, and memory, system LSI, foundry and LED solutions.

129 Samsung-ro, Yeongtong-gu, Suwon-si Gyeonggi-do, Korea

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

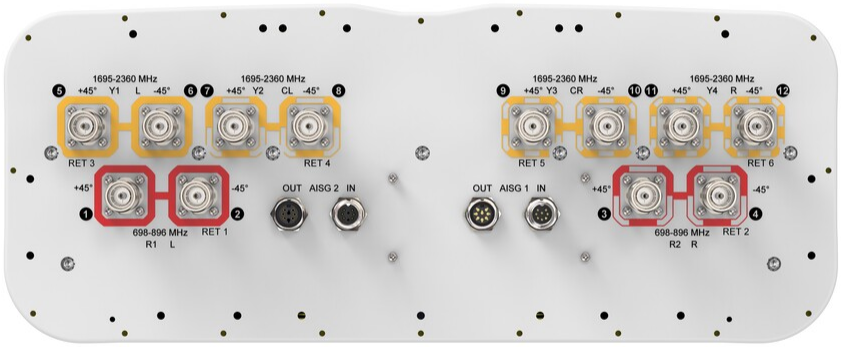
Array Layout

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

(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

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 m² | 6.997 ft²
Effective Projective Area (EPA), lateral	0.22 m² | 2.368 ft²
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	Classification
CHINA-ROHS	Above maximum concentration value
ISO 9001:2015	Designed, manufactured and/or distributed under this quality management system
ROHS	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

SAMSUNG

Dual-Band Radio Unit
AWS/PCS (B66/B2)
RFV01U-D1A

Samsung's RFV01U-D1A is a compact remote Radio Unit (RU) designed for deployments that require flexibility in installation and rapid onlining, without compromising on coverage, capacity or operational expenses.

The RFV01U-D1A RU targets dual-band support across Band 66 (AWS) and Band 2 (PCS), making it an ideal product for broad coverage footprints across multiple common mid-range frequencies.

The RU handles all Radio Frequency (RF) processing in a single, compact unit, and is designed to interface via CPRI with Samsung's CDU baseband offerings, in both distributed- and central-RAN configurations.

In addition to its minimal footprint and ease of installation, the RU is also designed to reduce cost of ownership through its integrated spectrum analyzer, which allows for remote RF monitoring, greatly reducing the need for on-site maintenance visits.

Features and Benefits

- Dual-band support for broad frequency coverage
- Minimal footprint reduces site costs
- Rapid, easy installation
- Flexibly deployable in any location
- Remote RF monitoring capability
- Convection cooled, silent operation
- Built-in Broadcast Auxiliary Services (BAS) filter ensures compliant AWS operation without impacting footprint

Key Technical Specifications

Duplex Type: FDD
Operating Frequencies:
    B66: DL(2,110-2,180MHz)/UL(1,710-1,780MHz)
    B2: DL(1,930-1,990MHz)/UL(1,850-1,910MHz)
Instantaneous Bandwidth:
    70MHz(B66) + 60MHz(B2)
RF Chain: 4T4R/2T4R/2T2R
Output Power: Total 320W
DU-RU Interface: CPRI (10Gbps)
Dimensions: 380 x 380 x 255mm (36.8L)
Weight: 38.3kg
Input Power: -48V DC
Operating Temp.: -40 - 55°(w/o solar load)
Cooling: Natural convection

SAMSUNG

Dual-Band Radio Unit
700/850MHz (B13/B5)
RFV01U-D2A

Samsung's RFV01U-D2A is a compact remote Radio Unit (RU) designed for deployments that require flexibility in installation and rapid onlining, without compromising on coverage, capacity or operational expenses.

The RFV01U-D2A RU targets dual-band support across Band 13 (700MHz) and Band 5 (850MHz), making it an ideal product for broad coverage footprints across multiple common low-end, long-range frequencies.

The RU handles all Radio Frequency (RF) processing in a single, compact unit, and is designed to interface via CPRI with Samsung's CDU baseband offerings, in both distributed- and central-RAN configurations.

In addition to its minimal footprint and ease of installation, the RU is also designed to reduce cost of ownership through its integrated spectrum analyzer, which allows for remote RF monitoring, greatly reducing the need for on-site maintenance visits.

Features and Benefits

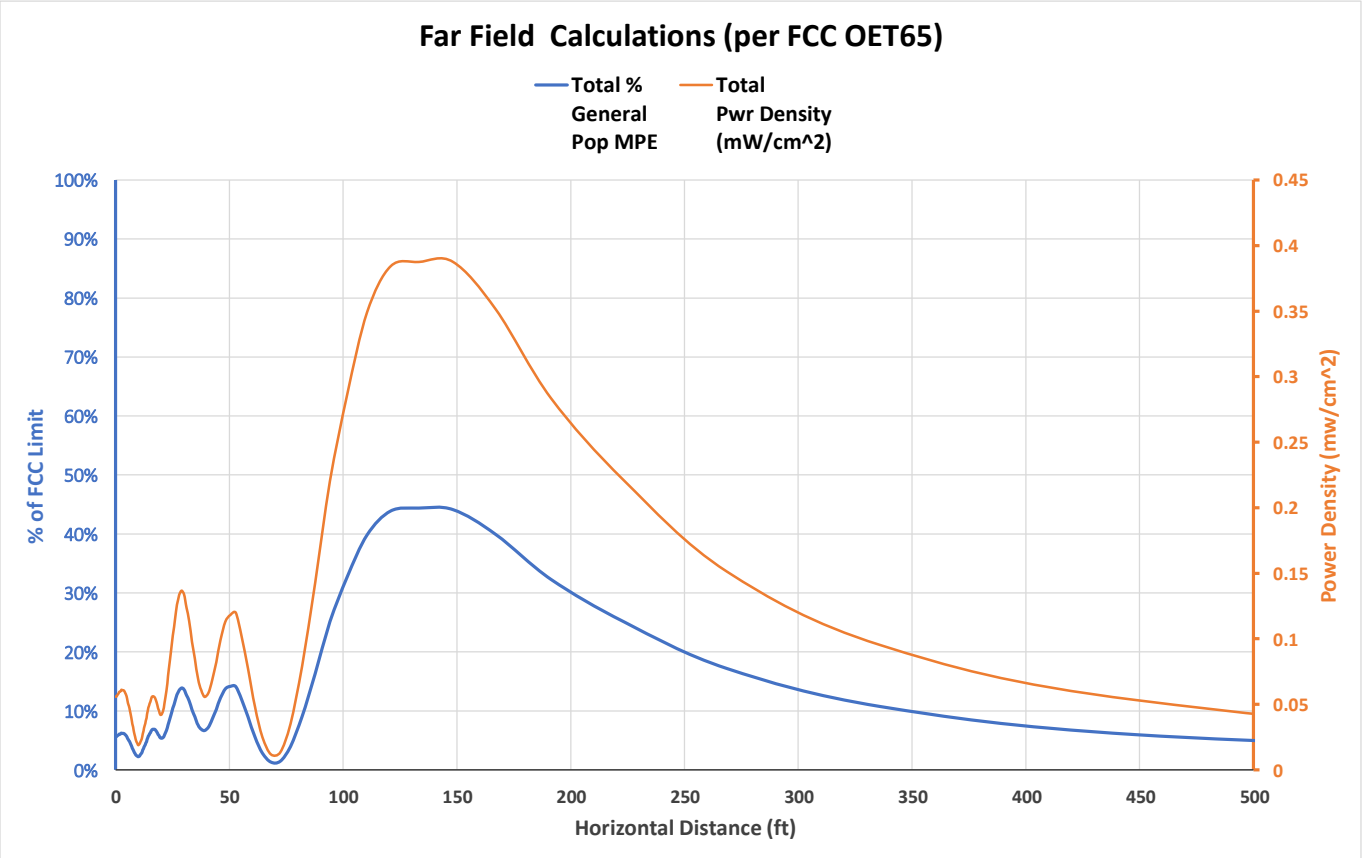
- Dual-band support for broad frequency coverage
- Minimal footprint reduces site costs
- Rapid, easy installation
- Flexibly deployable in any location
- Remote RF monitoring capability
- Convection cooled, silent operation

Key Technical Specifications

Duplex Type: FDD
Operating Frequencies:
B13: DL(746-756MHz)/UL(777-787MHz)
B5: DL(869-894MHz)/UL(824-849MHz)
Instantaneous Bandwidth: 10MHz(B13) + 25MHz(B5)
RF Chain: 4T4R/2T4R/2T2R
Output Power: Total 320W
DU-RU Interface: CPRI (10Gbps)
Dimensions: 380 x 380 x 207mm (29.9L)
Weight: 31.9kg
Input Power: -48V DC
Operating Temp.: -40 - 55°(w/o solar load)
Cooling: Natural convection

ATTACHMENT 3

Band	C-Band	AWS	PCS	850-LTE	700
Operating Frequency (MHz)	3,700	2,145	1,970	880	746
General Population MPE (mW/cm^2)	1	1	1	0.586666667	0.497333333
ERP Per Transmitter (Watts)	26,002	1,265	1,135	665	586
Number of Transmitters	1	4	4	4	4
Antenna Centerline (feet)	35	35	35	35	35
Total ERP (Watts)	26,002	5,060	4,540	2,660	2,344
Total ERP (dBm)	74	67	67	64	64
Maximum % of General Population Limit	**44.4%**				


Far Field Calculations (per FCC OET65)
Total % General Pop MPE
Total Pwr Density (mW/cm^2)
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
% of FCC Limit
0.45
0.4
0.35
0.3
0.25
0.2
0.15
0.1
0.05
0
Power Density (mw/cm^2)
0
50
100
150
200
250
300
350
400
450
500
Horizontal Distance (ft)

Angle Below Horizon	Power Density (mW/cm^2)					Percent of General Population MPE									Distance	Total Pwr Density (mW/cm^2)	Total % General Pop MPE
	C-Band	AWS	PCS	850-LTE	700 MHz	39GHz	28GHz	C-Band	CBRS	AWS	PCS	Cellular	CDMA	700 MHz			
90	0.054960996	1.14868E-05	3.3121E-06	0.000656039	0.000205119	0.00%	0.00%	5.50%	0.00%	0.00%	0.00%	0.11%	0.00%	0.04%	0	0.055836952	5.65%
89	0.054950002	2.07545E-05	5.75462E-07	0.000732559	0.000179853	0.00%	0.00%	5.50%	0.00%	0.00%	0.00%	0.12%	0.00%	0.04%	0.410194026	0.055883744	5.66%
88	0.056196202	4.93004E-05	2.75903E-06	0.000850319	0.000156552	0.00%	0.00%	5.62%	0.00%	0.00%	0.00%	0.14%	0.00%	0.03%	0.820638083	0.057255132	5.80%
87	0.056920935	9.44965E-05	1.06004E-05	0.001009594	0.000138428	0.00%	0.00%	5.69%	0.00%	0.01%	0.00%	0.17%	0.00%	0.03%	1.231582813	0.058174054	5.90%
86	0.058165083	0.000141191	2.10238E-05	0.001181782	0.000123485	0.00%	0.00%	5.82%	0.00%	0.01%	0.00%	0.20%	0.00%	0.02%	1.643280081	0.059632564	6.06%
85	0.058060022	0.000169052	3.22795E-05	0.001345092	0.000106863	0.00%	0.00%	5.81%	0.00%	0.02%	0.00%	0.23%	0.00%	0.02%	2.055983593	0.059713309	6.08%
84	0.059281007	0.000163328	5.01146E-05	0.001461472	8.62713E-05	0.00%	0.00%	5.93%	0.00%	0.02%	0.01%	0.25%	0.00%	0.02%	2.469949529	0.061042193	6.22%
83	0.059125701	0.000127034	8.01356E-05	0.001519327	6.21909E-05	0.00%	0.00%	5.91%	0.00%	0.01%	0.01%	0.26%	0.00%	0.01%	2.885437181	0.060914388	6.20%
82	0.05894649	8.25281E-05	0.000116817	0.001514722	3.65939E-05	0.00%	0.00%	5.89%	0.00%	0.01%	0.01%	0.26%	0.00%	0.01%	3.302709616	0.060697151	6.18%
81	0.058743373	5.52208E-05	0.000145549	0.001461618	2.10334E-05	0.00%	0.00%	5.87%	0.00%	0.01%	0.01%	0.25%	0.00%	0.00%	3.722034348	0.060426793	6.15%
80	0.057184352	5.59012E-05	0.000161557	0.001396857	1.88464E-05	0.00%	0.00%	5.72%	0.00%	0.01%	0.02%	0.24%	0.00%	0.00%	4.143684047	0.058817514	5.98%
79	0.055643036	7.18711E-05	0.000174767	0.001343649	2.80131E-05	0.00%	0.00%	5.56%	0.00%	0.01%	0.02%	0.23%	0.00%	0.01%	4.567937265	0.057261336	5.82%
78	0.052888027	8.11897E-05	0.000196068	0.00132505	5.47404E-05	0.00%	0.00%	5.29%	0.00%	0.01%	0.02%	0.23%	0.00%	0.01%	4.995079199	0.054545075	5.55%
77	0.049103704	7.28212E-05	0.000227595	0.001342731	9.20588E-05	0.00%	0.00%	4.91%	0.00%	0.01%	0.02%	0.23%	0.00%	0.02%	5.425402491	0.05083891	5.19%
76	0.046631418	5.29447E-05	0.000272099	0.001391725	0.000133238	0.00%	0.00%	4.66%	0.00%	0.01%	0.03%	0.24%	0.00%	0.03%	5.859208067	0.048481426	4.96%
75	0.043256101	3.34342E-05	0.00035083	0.001465285	0.000174984	0.00%	0.00%	4.33%	0.00%	0.00%	0.04%	0.25%	0.00%	0.04%	6.296806022	0.045280634	4.65%
74	0.039193777	2.17952E-05	0.00049919	0.001545582	0.000244438	0.00%	0.00%	3.92%	0.00%	0.00%	0.05%	0.26%	0.00%	0.05%	6.738516565	0.041504782	4.28%
73	0.034688396	2.16934E-05	0.000743418	0.0016183	0.000379433	0.00%	0.00%	3.47%	0.00%	0.00%	0.07%	0.28%	0.00%	0.08%	7.184671014	0.037451241	3.90%
72	0.029305204	3.49211E-05	0.00107645	0.001666555	0.000555771	0.00%	0.00%	2.93%	0.00%	0.00%	0.11%	0.28%	0.00%	0.11%	7.635612861	0.032638901	3.44%
71	0.024462142	5.50349E-05	0.001474156	0.001680232	0.00078063	0.00%	0.00%	2.45%	0.00%	0.01%	0.15%	0.29%	0.00%	0.16%	8.091698912	0.028452196	3.04%
70	0.020645665	6.44129E-05	0.001904925	0.00166611	0.001061157	0.00%	0.00%	2.06%	0.00%	0.01%	0.19%	0.28%	0.00%	0.21%	8.553300505	0.025342271	2.76%
69	0.017019355	5.01287E-05	0.002344187	0.001636131	0.001402471	0.00%	0.00%	1.70%	0.00%	0.01%	0.23%	0.28%	0.00%	0.28%	9.020804823	0.022452273	2.50%
68	0.014022711	2.24893E-05	0.002740824	0.001609559	0.001802116	0.00%	0.00%	1.40%	0.00%	0.00%	0.27%	0.27%	0.00%	0.36%	9.494616307	0.0201977	2.32%
67	0.012008535	8.27244E-06	0.00300981	0.001604593	0.002256529	0.00%	0.00%	1.20%	0.00%	0.00%	0.30%	0.27%	0.00%	0.45%	9.975158181	0.01888774	2.23%
66	0.012159379	2.01398E-05	0.003090014	0.001632248	0.002772441	0.00%	0.00%	1.22%	0.00%	0.00%	0.31%	0.28%	0.00%	0.56%	10.4628741	0.019674222	2.36%
65	0.013492418	4.72317E-05	0.002925088	0.001682537	0.003334576	0.00%	0.00%	1.35%	0.00%	0.00%	0.29%	0.29%	0.00%	0.67%	10.95822997	0.021481851	2.60%
64	0.015311531	8.8341E-05	0.002494984	0.00175345	0.003953388	0.00%	0.00%	1.53%	0.00%	0.01%	0.25%	0.30%	0.00%	0.79%	11.46171583	0.023601695	2.88%
63	0.018997256	0.000189162	0.001852422	0.001830483	0.004609372	0.00%	0.00%	1.90%	0.00%	0.02%	0.19%	0.31%	0.00%	0.93%	11.97384806	0.027478696	3.34%
62	0.023072737	0.00043176	0.001096852	0.001927409	0.005309455	0.00%	0.00%	2.31%	0.00%	0.04%	0.11%	0.33%	0.00%	1.07%	12.49517164	0.031838214	3.86%
61	0.026135776	0.000871724	0.000421002	0.002070667	0.006028181	0.00%	0.00%	2.61%	0.00%	0.09%	0.04%	0.35%	0.00%	1.21%	13.02626271	0.035527351	4.31%
60	0.028979535	0.001490168	6.12549E-05	0.00229597	0.006745937	0.00%	0.00%	2.90%	0.00%	0.15%	0.01%	0.39%	0.00%	1.36%	13.56773133	0.039572865	4.80%
59	0.032783724	0.002217186	0.000248718	0.002651754	0.007406434	0.00%	0.00%	3.28%	0.00%	0.22%	0.02%	0.45%	0.00%	1.49%	14.12022455	0.045307815	5.47%
58	0.033800773	0.002978999	0.001148089	0.003175423	0.007977696	0.00%	0.00%	3.38%	0.00%	0.30%	0.11%	0.54%	0.00%	1.60%	14.68442977	0.049080981	5.94%
57	0.033180776	0.003681547	0.002824461	0.003879372	0.008410802	0.00%	0.00%	3.32%	0.00%	0.37%	0.28%	0.66%	0.00%	1.69%	15.26107844	0.051976958	6.32%
56	0.03262327	0.004204083	0.005218871	0.004757758	0.008639296	0.00%	0.00%	3.26%	0.00%	0.42%	0.52%	0.81%	0.00%	1.74%	15.85095015	0.055443279	6.75%
55	0.029230644	0.00432496	0.0081262	0.005790463	0.008645482	0.00%	0.00%	2.92%	0.00%	0.43%	0.81%	0.99%	0.00%	1.74%	16.45487715	0.056117749	6.89%
54	0.025165608	0.003819013	0.011216478	0.006913251	0.008370633	0.00%	0.00%	2.52%	0.00%	0.38%	1.12%	1.18%	0.00%	1.68%	17.07374941	0.055484983	6.88%
53	0.02053157	0.002676492	0.014140712	0.008022266	0.007841028	0.00%	0.00%	2.05%	0.00%	0.27%	1.41%	1.37%	0.00%	1.58%	17.70852018	0.053212068	6.68%
52	0.015124095	0.001258384	0.016585115	0.009006256	0.00707327	0.00%	0.00%	1.51%	0.00%	0.13%	1.66%	1.54%	0.00%	1.42%	18.36021222	0.04904712	6.25%
51	0.010245547	0.000373834	0.018474991	0.009669634	0.00613036	0.00%	0.00%	1.02%	0.00%	0.04%	1.85%	1.65%	0.00%	1.23%	19.02992478	0.044894365	5.79%
50	0.00603955	0.001014258	0.020047197	0.009928404	0.005069387	0.00%	0.00%	0.60%	0.00%	0.10%	2.00%	1.69%	0.00%	1.02%	19.71884133	0.042098794	5.42%
49	0.003724448	0.003892295	0.021483797	0.009636888	0.003990367	0.00%	0.00%	0.37%	0.00%	0.39%	2.15%	1.64%	0.00%	0.80%	20.42823834	0.042727794	5.36%
48	0.003393834	0.008991546	0.023160061	0.008821968	0.002962385	0.00%	0.00%	0.34%	0.00%	0.90%	2.32%	1.50%	0.00%	0.60%	21.15949504	0.047329793	5.65%
47	0.005127112	0.015488758	0.025172244	0.007529181	0.002045614	0.00%	0.00%	0.51%	0.00%	1.55%	2.52%	1.28%	0.00%	0.41%	21.91410452	0.055362908	6.27%
46	0.008986484	0.02196512	0.027710152	0.005949284	0.001322942	0.00%	0.00%	0.90%	0.00%	2.20%	2.77%	1.01%	0.00%	0.27%	22.69368621	0.065933982	7.15%
45	0.01451515	0.027162222	0.030822697	0.004262814	0.000903176	0.00%	0.00%	1.45%	0.00%	2.72%	3.08%	0.73%	0.00%	0.18%	23.5	0.07766606	8.16%
44	0.021704346	0.030387185	0.034323835	0.002675602	0.000823185	0.00%	0.00%	2.17%	0.00%	3.04%	3.43%	0.46%	0.00%	0.17%	24.33496237	0.089914153	9.26%
43	0.030460891	0.03176043	0.03800071	0.001379169	0.000958724	0.00%	0.00%	3.05%	0.00%	3.18%	3.80%	0.24%	0.00%	0.19%	25.20066469	0.102559923	10.45%
42	0.040680384	0.032101757	0.040778772	0.000494607	0.001141132	0.00%	0.00%	4.07%	0.00%	3.21%	4.08%	0.08%	0.00%	0.23%	26.0993941	0.115196652	11.67%
41	0.050751415	0.032254619	0.041447396	9.98442E-05	0.001337824	0.00%	0.00%	5.08%	0.00%	3.23%	4.14%	0.02%	0.00%	0.27%	27.03365757	0.125891099	12.73%
40	0.060520749	0.032964619	0.038278366	0.000207386	0.0015483	0.00%	0.00%	6.05%	0.00%	3.30%	3.83%	0.04%	0.00%	0.31%	28.00620943	0.133519419	13.52%
39	0.06945825	0.034108891	0.030958003	0.000425205	0.001776948	0.00%	0.00%	6.95%	0.00%	3.41%	3.10%	0.07%	0.00%	0.36%	29.02008318	0.136727298	13.88%
38	0.075835933	0.035076706	0.020460872	0.000564612	0.00204092	0.00%	0.00%	7.58%	0.00%	3.51%	2.05%	0.10%	0.00%	0.41%	30.07862836	0.133979042	13.64%
37	0.076440541	0.034392799	0.009780766	0.000673285	0.002372874	0.00%	0.00%	7.64%	0.00%	3.44%	0.98%	0.11%	0.00%	0.48%	31.18555331	0.123660264	12.65%
36	0.077452111	0.030491376	0.002296584	0.000812659	0.002811798	0.00%	0.00%	7.75%	0.00%	3.05%	0.23%	0.14%	0.00%	0.57%	32.34497513	0.113864527	11.73%
35	0.070463453	0.022861656	7.56856E-05	0.000965692	0.003403414	0.00%	0.00%	7.05%	0.00%	2.29%	0.01%	0.16%	0.00%	0.68%	33.56147816	0.097769901	10.19%
34	0.063984228	0.012918637	0.002501048	0.001134874	0.004236662	0.00%	0.00%	6.40%	0.00%	1.29%	0.25%	0.19%	0.00%	0.85%	34.84018276	0.084775449	8.99%
33	0.051917514	0.004240896	0.006506733	0.001432811	0.005348903	0.00%	0.00%	5.19%	0.00%	0.42%	0.65%	0.24%	0.00%	1.08%	36.18682665	0.069446857	7.59%
32	0.043115796	0.000196237	0.008564174	0.002053578	0.006801227	0.00%	0.00%	4.31%	0.00%	0.02%	0.86%	0.35%	0.00%	1.37%	37.60786143	0.060731012	6.91%
31	0.03523592	0.001730332	0.007112704	0.003161262	0.008549416	0.00%	0.00%	3.52%	0.00%	0.17%	0.71%	0.54%	0.00%	1.72%	39.11056784	0.055789635	6.67%
30	0.033442722	0.006345201	0.003510352	0.004777234	0.010453277	0.00%	0.00%	3.34%	0.00%	0.63%	0.35%	0.81%	0.00%	2.10%	40.70319398	0.058528787	7.25%
29	0.038682878	0.009900623	0.000657004	0.006813867	0.012315999	0.00%	0.00%	3.87%	0.00%	0.99%	0.07%	1.16%	0.00%	2.48%	42.39512225	0.068370371	8.56%
28	0.049154688	0.009856182	0.000492736	0.00900409	0.013884038	0.00%	0.00%	4.92%	0.00%	0.99%	0.05%	1.53%	0.00%	2.79%	44.19707194	0.082391734	10.28%
27	0.06387936	0.007022703	0.002423314	0.011046773	0.014835815	0.00%	0.00%	6.39%	0.00%	0.70%	0.24%	1.88%	0.00%	2.98%	46.12134688	0.099207965	12.20%
26	0.077235595	0.004245817	0.00409135	0.01258034	0.014954378	0.00%	0.00%	7.72%	0.00%	0.42%	0.41%	2.14%	0.00%	3.01%	48.18214028	0.113107479	13.71%
25	0.08391465	0.003364973	0.003688815	0.013234656	0.014021312	0.00%	0.00%	8.39%	0.00%	0.34%	0.37%	2.26%	0.00%	2.82%	50.39591263	0.118224406	14.17%
24	0.089600822	0.003642971	0.001707501	0.012828825	0.012085451	0.00%	0.00%	8.96%	0.00%	0.36%	0.17%	2.19%	0.00%	2.43%	52.78186419	0.11986557	14.11%
23	0.077645674	0.003164179	0.000360717	0.011323799	0.009377091	0.00%	0.00%	7.76%	0.00%	0.32%	0.04%	1.93%	0.00%	1.89%	55.3625306	0.101871459	11.93%

22	0.059581986	0.001497127	0.001250731	0.008850949	0.006238294	0.00%	0.00%	5.96%	0.00%	0.15%	0.13%	1.51%	0.00%	1.25%	58.16454106	0.077419088	9.00%
21	0.034605714	0.000448014	0.003657606	0.005888744	0.003236672	0.00%	0.00%	3.46%	0.00%	0.04%	0.37%	1.00%	0.00%	0.65%	61.21959302	0.04783675	5.53%
20	0.013773239	0.001824651	0.005177084	0.003033269	0.001104045	0.00%	0.00%	1.38%	0.00%	0.18%	0.52%	0.52%	0.00%	0.22%	64.56571936	0.024912289	2.82%
19	0.001162983	0.004860903	0.00416507	0.001045799	0.000462939	0.00%	0.00%	0.12%	0.00%	0.49%	0.42%	0.18%	0.00%	0.09%	68.24895563	0.011697693	1.29%
18	0.00370271	0.00663229	0.001565196	0.000641792	0.000888118	0.00%	0.00%	0.37%	0.00%	0.66%	0.16%	0.11%	0.00%	0.18%	72.32556312	0.013430107	1.48%
17	0.024694266	0.005208826	1.10827E-05	0.002185098	0.003087073	0.00%	0.00%	2.47%	0.00%	0.52%	0.00%	0.37%	0.00%	0.62%	76.86503653	0.035186347	3.98%
16	0.063164431	0.001966149	0.001179021	0.005988906	0.006893241	0.00%	0.00%	6.32%	0.00%	0.20%	0.12%	1.02%	0.00%	1.39%	81.95423943	0.079191747	9.04%
15	0.115280664	8.37337E-05	0.003970138	0.011712008	0.011877015	0.00%	0.00%	11.53%	0.00%	0.01%	0.40%	2.00%	0.00%	2.39%	87.70319398	0.142923558	16.32%
14	0.177817553	0.00092922	0.005610786	0.01861442	0.017375027	0.00%	0.00%	17.78%	0.00%	0.09%	0.56%	3.17%	0.00%	3.49%	94.25335194	0.220347006	25.10%
13	0.230966829	0.002652732	0.004504003	0.02561088	0.022568384	0.00%	0.00%	23.10%	0.00%	0.27%	0.45%	4.37%	0.00%	4.54%	101.789683	0.286302828	32.72%
12	0.286263588	0.002722136	0.00181057	0.031596647	0.026774228	0.00%	0.00%	28.63%	0.00%	0.27%	0.18%	5.39%	0.00%	5.38%	110.5588076	0.349167169	39.85%
11	0.318216632	0.00109362	0.0001548	0.035448491	0.029354435	0.00%	0.00%	31.82%	0.00%	0.11%	0.02%	6.04%	0.00%	5.90%	120.8970194	0.384267979	43.89%
10	0.320082237	8.55865E-06	0.000782187	0.036655273	0.030006299	0.00%	0.00%	32.01%	0.00%	0.00%	0.08%	6.25%	0.00%	6.03%	133.2751228	0.387534554	44.37%
9	0.320522162	0.000853104	0.00240939	0.035053626	0.028695178	0.00%	0.00%	32.05%	0.00%	0.09%	0.24%	5.98%	0.00%	5.77%	148.3731606	0.387533459	44.12%
8	0.289367221	0.002347432	0.002874077	0.030926033	0.025668482	0.00%	0.00%	28.94%	0.00%	0.23%	0.29%	5.27%	0.00%	5.16%	167.2111885	0.351183246	39.89%
7	0.23288648	0.002411504	0.00164132	0.025235921	0.021384305	0.00%	0.00%	23.29%	0.00%	0.24%	0.16%	4.30%	0.00%	4.30%	191.3921411	0.283559531	32.30%
6	0.183954317	0.001030039	0.000242526	0.018818494	0.016468758	0.00%	0.00%	18.40%	0.00%	0.10%	0.02%	3.21%	0.00%	3.31%	223.5875647	0.220514134	25.04%
5	0.126644229	0.00016208	0.0003537	0.012689961	0.011548784	0.00%	0.00%	12.66%	0.00%	0.02%	0.04%	2.16%	0.00%	2.32%	268.6062291	0.151398753	17.20%
4	0.077585464	0.000986107	0.001818986	0.007527578	0.007206613	0.00%	0.00%	7.76%	0.00%	0.10%	0.18%	1.28%	0.00%	1.45%	336.065657	0.095124749	10.77%
3	0.040522261	0.00230058	0.002902303	0.003746007	0.00380754	0.00%	0.00%	4.05%	0.00%	0.23%	0.29%	0.64%	0.00%	0.77%	448.4067122	0.053278691	5.98%
2	0.015313579	0.002245021	0.002355732	0.001405891	0.001527663	0.00%	0.00%	1.53%	0.00%	0.22%	0.24%	0.24%	0.00%	0.31%	672.9519521	0.022847886	2.54%
1	0.003114271	0.000858025	0.00081359	0.000282638	0.000332895	0.00%	0.00%	0.31%	0.00%	0.09%	0.08%	0.05%	0.00%	0.07%	1346.314098	0.005401419	0.59%

ATTACHMENT 4

CENTEK engineering

Centered on Solutions℠

Structural Analysis Report

Modified Antenna Enclosure and Host Building

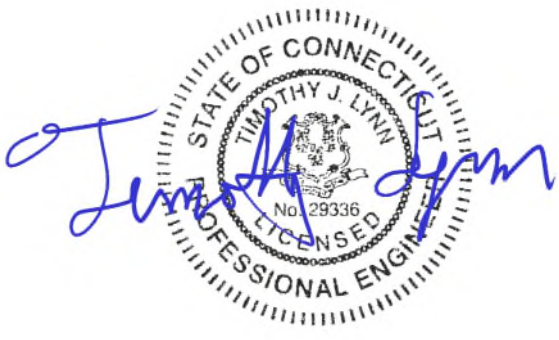
Proposed Verizon Antenna Upgrade

Site Ref: Ridgefield 5 CT

37 Danbury Road
Ridgefield, CT

CENTEK Project No. 21007.31

Date: June 15, 2021



Prepared for:

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Introduction

The purpose of this structural analysis report (SAR) is to summarize the results, of the impacted structural components, by the equipment upgrade proposed by Verizon Wireless on the existing host building located in Ridgefield, CT.

The antennas are mounted within an existing/modified antenna enclosure attached to existing steel framing in the building roof.

The existing mounts member sizes information and roof framing information were obtained from construction documents as prepared by Hudson Design Group LLC, dated March 8, 2017.

The existing mount framing consists of steel framing members anchored into adjacent CMU walls. The Verizon Wireless elevated mounts are attached to the existing roof framing members as indicated in the aforementioned documents.

Primary Assumptions Used in the Analysis

The host structure's theoretical capacity not including any assessment of the condition of the host structure.

The existing elevated steel antenna frames carry the horizontal and vertical loads due to the weight of equipment, and wind and transfers into host structure.

Proposed reinforcement and support steel will be properly installed and maintained.

Structure is in plumb condition.

Loading for equipment and enclosure as listed in this report.

All bolts are appropriately tightened providing the necessary connection continuity.

All welds are fabricated with ER-70S-6 electrodes.

All members are assumed to be as observed during roof framing mapping.

All members are "hot dipped" galvanized in accordance with ASTM A123 and ASTM A153 Standards.

All member protective coatings are in good condition.

Antenna and Equipment Summary

Location	Appurtenance / Equipment	Rad Center Elevation (AGL)	Mount Type
Alpha/Beta/Gamma Sector	~~(4) Andrew HBXX-6513DS Antenna~~ ~~(2) Nokia UHIE B66A RRH 4x45~~ ~~(4) Nokia UHFA B25 RRH 4x30~~ **(3) Samsung MT6407 Antenna** **(3) Commscope NNH4-65B** **(3) Samsung B5/B13 RRH – BR04C** **(3) Samsung B2/B66A RRH – BR049**	35-ft	Modified FRP enclosure attached to building rooftop

~~Equipment~~ – Indicates equipment to be removed.
Equipment – Indicates equipment to be installed.

Analysis

The existing antenna enclosure frame was analyzed using a comprehensive computer program titled Risa3D. The program analyzes the equipment platform and antenna mounts considering the worst case code prescribed loading condition. The structures were considered to be loaded by concentric forces, and the model assumes that the members are subjected to bending, axial, and shear forces.

Design Loading

Loading was determined per the requirements of the 2015 International Building Code amended by the 2018 CSBC and ASCE 7-10 "Minimum Design Loads for Buildings and Other Structures".

Wind Speed:	V_{ult} = 120 mph	*Appendix N of the 2018 CT State Building Code*
Risk Category:	II	*2015 IBC; Table 1604.05*
Exposure Category:	Surface Roughness C	*ASCE 7-10; Section 26.7.2*
Ground Snow Load	30 psf	*Appendix N of the 2018 CT State Building Code*
Dead Load	Equipment and framing self-weight	*Identified within SAR design calculations*

Reference Standards

2015 International Building Code:

1. ACI 318-14, *Building Code Requirements for Structural Concrete*.
2. ACI 530-13, *Building Code Requirements for Masonry Structures*.
3. AISC 360-10, *Specification for Structural Steel Buildings*
4. AWS D1.1 – 00, *Structural Welding Code – Steel*.
5. AF&PA-12, Span Tables for Joists and Rafters.

Results

- Calculated stresses for the antenna enclosure and host building were found to **be within allowable** limits.

Sector	Component	Stress Ratio (percentage of capacity)	Result
Alpha/Beta/Gamma Sector	W12X26 (Existing Roof Member)	89%	**PASS**
	W8X10 (Existing Roof Member)	42%	**PASS**
	W8X10 (Proposed Framing Member)	52%	**PASS**
	Pipe 4.0STD Post (Enclosure Framing Member)	32%	**PASS**
	FRP HSS3x3x1/4 (Enclosure Framing Member)	18%	**PASS**
	FRP LL4X4X1/4 (Enclosure Framing Member)	57%	**PASS**

Conclusion

This analysis shows that the modified antenna enclosure and host building **have sufficient capacity** to support the proposed modified antenna configuration.

The analysis is based, in part, on the information provided to this office by Verizon. If the existing conditions are different than the information in this report, Centek Engineering, Inc. must be contacted for resolution of any potential issues Please feel free to call with any questions or comments.

Respectfully Submitted by:

Timothy J. Lynn, PE
Structural Engineer

STATE OF CONNECTICUT
TIMOTHY J. LYNN
No. 29336
LICENSED
PROFESSIONAL ENGINEER

Prepared by:

Luke Amiot
Engineer

Standard Conditions for Furnishing of Professional Engineering Services on Existing Structures

All engineering services are performed on the basis that the information used is current and correct. This information may consist of, but is not necessarily limited to:

Information supplied by the client regarding the structure itself, its foundations, the soil conditions, the antenna and feed line loading on the structure and its components, or other relevant information.

Information from the field and/or drawings in the possession of Centek Engineering, Inc. or generated by field inspections or measurements of the structure.

It is the responsibility of the client to ensure that the information provided to Centek Engineering, Inc. and used in the performance of our engineering services is correct and complete. In the absence of information to the contrary, we assume that all structures were constructed in accordance with the drawings and specifications and are in an un-corroded condition and have not deteriorated. It is therefore assumed that its capacity has not significantly changed from the “as new” condition.

All services will be performed to the codes specified by the client, and we do not imply to meet any other codes or requirements unless explicitly agreed in writing. If wind and ice loads or other relevant parameters are to be different from the minimum values recommended by the codes, the client shall specify the exact requirement. In the absence of information to the contrary, all work will be performed in accordance with the latest revision of ANSI/ASCE10 & ANSI/EIA-222

All services performed, results obtained, and recommendations made are in accordance with generally accepted engineering principles and practices. Centek Engineering, Inc. is not responsible for the conclusions, opinions and recommendations made by others based on the information we supply.

WIND LOADING ANALYSIS - Roof Components and Cladding

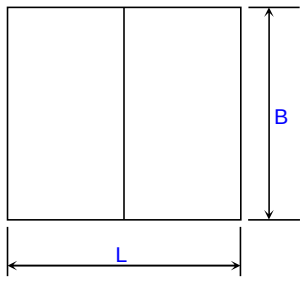
Per ASCE 7-10 Code for Bldgs. of Any Height with Gable Roof θ <= 45° or Monoslope Roof θ <= 3°

Using Part 1 & 3: Analytical Procedure (Section 30.4 & 30.6)

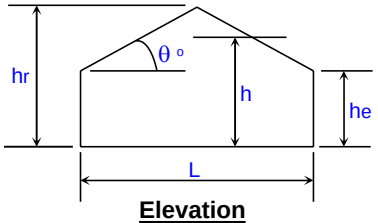
Job Name:	Ridgefield 5 CT	Subject:	Antenna Enclosure		
Job Number:	21007.31	Originator:	LAA	Checker:	TJL

Input Data:

Wind Speed, V =	120	mph (Wind Map, Figure 26.5-1A-C)
Bldg. Classification =	II	(Table 1.5-1 Risk Category)
Exposure Category =	C	(Sect. 26.7)
Ridge Height, hr =	38.00	ft. (hr >= he)
Eave Height, he =	38.00	ft. (he <= hr)
Building Width =	60.00	ft. (Normal to Building Ridge)
Building Length =	26.00	ft. (Parallel to Building Ridge)
Roof Type =	Monoslope	(Gable or Monoslope)
Topo. Factor, Kzt =	1.00	(Sect. 26.8 & Figure 26.8-1)
Direct. Factor, Kd =	0.85	(Table 26.6)
Enclosed? (Y/N)	Y	(Sect. 28.6-1 & Figure 26.11-1)
Hurricane Region?	Y	
Component Name =	Decking	(Purlin, Joist, Decking, or Fastener)
Effective Area, Ae =	90	ft.^2 (Area Tributary to C&C)
Overhangs? (Y/N)	N	(if used, overhangs on all sides)



Plan



Elevation

Resulting Parameters and Coefficients:

Roof Angle, θ =	0.00	deg.
Mean Roof Ht., h =	38.00	ft. (h = he, for roof angle <=10 deg.)

Roof External Pressure Coefficients, GCp:

GCp Zone 1-3 Pos. =	0.20	(Fig. 30.4-2A, 30.4-2B, and 30.4-2C)
GCp Zone 1 Neg. =	-0.90	(Fig. 30.4-2A, 30.4-2B, and 30.4-2C)
GCp Zone 2 Neg. =	-1.13	(Fig. 30.4-2A, 30.4-2B, and 30.4-2C)
GCp Zone 3 Neg. =	-1.18	(Fig. 30.4-2A, 30.4-2B, and 30.4-2C)

Positive & Negative Internal Pressure Coefficients, GCpi (Figure 26.11-1):

+GCpi Coef. =	0.18	(positive internal pressure)
-GCpi Coef. =	-0.18	(negative internal pressure)

If z <= 15 then: Kz = 2.01*(15/zg)^(2/α) , If z > 15 then: Kz = 2.01*(z/zg)^(2/α) (Table 30.3-1)

α =	9.50	(Table 26.9-1)
zg =	900	(Table 26.9-1)
Kh =	1.03	(Kh = Kz evaluated at z = h)

Velocity Pressure: qz = 0.00256*Kz*Kzt*Kd*V^2 (Sect. 30.3.2, Eq. 30.3-1)

qh = 32.35 psf qh = 0.00256*Kh*Kzt*Kd*V^2 (qz evaluated at z = h)

Design Net External Wind Pressures (Sect. 30.4 & 30.6):

For h <= 60 ft.: p = qh*((GCp) - (+/-GCpi)) (psf)

For h > 60 ft.: p = q*(GCp) - qi*(+/-GCpi) (psf)

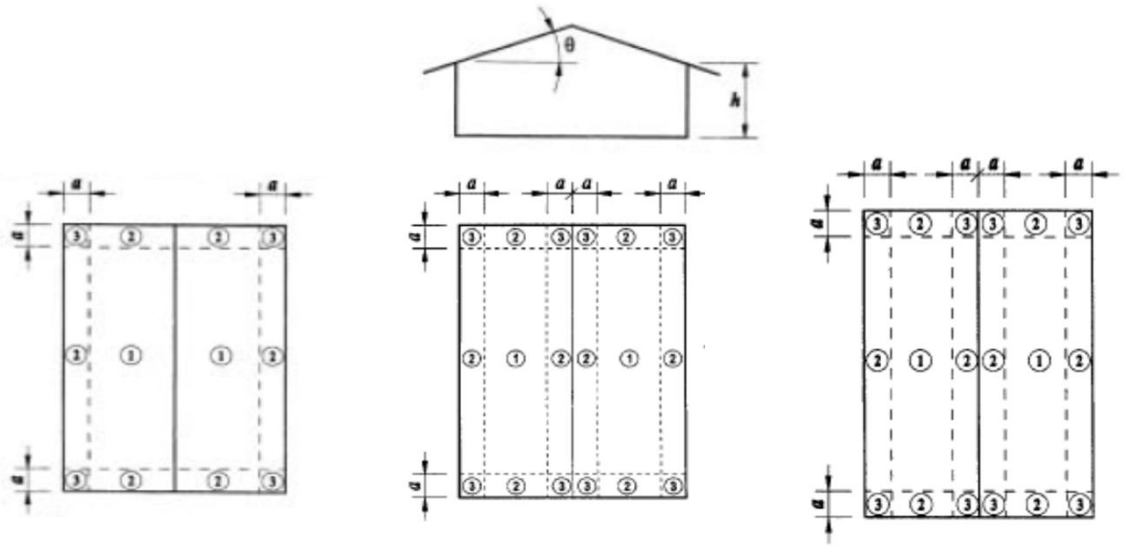
where: q = qh for roof

qi = qh for roof (conservatively assumed per Sect. 30.6)

Wind Load Tabulation for Roof Components & Cladding							
Component	z (ft.)	Kh	qh (psf)	p = Net Design Pressures (psf)			
				Zone 1,2,3 (+)	Zone 1 (-)	Zone 2 (-)	Zone 3 (-)
Decking	0	1.03	32.35	12.44	-35.08	-42.44	-43.92
	15.00	1.03	32.35	12.44	-35.08	-42.44	-43.92
	20.00	1.03	32.35	12.44	-35.08	-42.44	-43.92
	25.00	1.03	32.35	12.44	-35.08	-42.44	-43.92
	30.00	1.03	32.35	12.44	-35.08	-42.44	-43.92
	35.00	1.03	32.35	12.44	-35.08	-42.44	-43.92
For z = hr:	38.00	1.03	32.35	12.44	-35.08	-42.44	-43.92
For z = he:	38.00	1.03	32.35	12.44	-35.08	-42.44	-43.92
For z = h:	38.00	1.03	32.35	12.44	-35.08	-42.44	-43.92

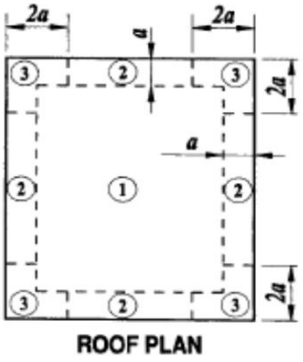
Notes: 1. (+) and (-) signs signify wind pressures acting toward & away from respective surfaces.
2. Width of Zone 2 (edge), 'a' = 3.00 ft.
3. Width of Zone 3 (corner), 'a' = 3.00 ft.
4. For monoslope roofs with θ <= 3 degrees, use Fig. 30.4-2A for 'GCp' values with 'qh'.
5. For buildings with h > 60' and θ > 10 degrees, use Fig. 30.6-1 for 'GCpi' values with 'qh'.
6. For all buildings with overhangs, use Fig. 30.4-2B for 'GCp' values per Sect. 30.10.
7. If a parapet >= 3' in height is provided around perimeter of roof with θ <= 10 degrees, Zone 3 shall be treated as Zone 2.
8. Per Code Section 30.2.2, the minimum wind load for C&C shall not be less than 16 psf.
9. References : a. ASCE 7-02, "Minimum Design Loads for Buildings and Other Structures".
b. "Guide to the Use of the Wind Load Provisions of ASCE 7-02"
by: Kishor C. Mehta and James M. Delahay (2004).

Roof Components and Cladding:



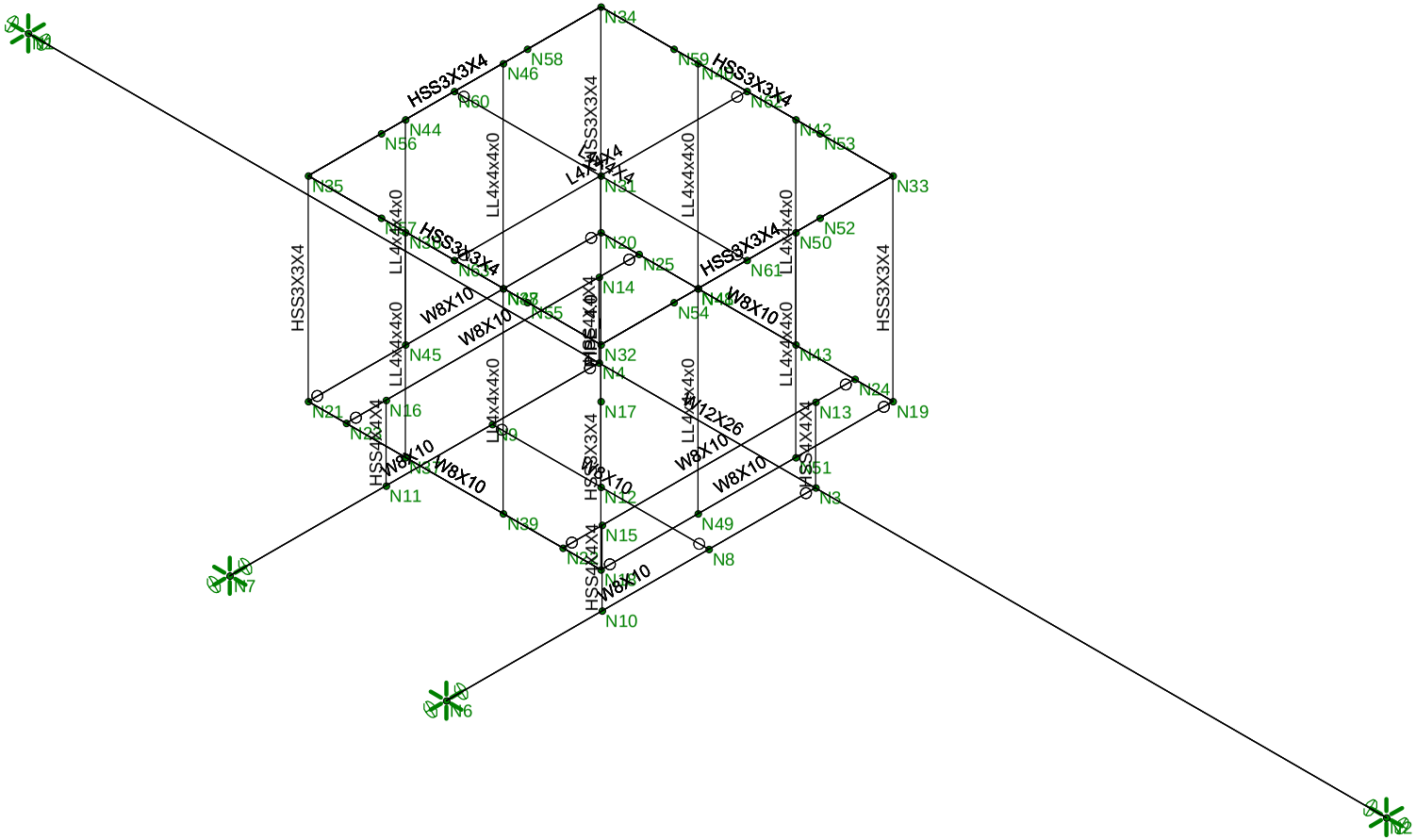
θ <= 7 deg. **7 deg. < θ <= 27 deg.** **27 deg. < θ <= 45 deg.**

Roof Zones for Buildings with h <= 60 ft.
(for Gable Roofs <= 45° and Monoslope Roofs <= 3°)



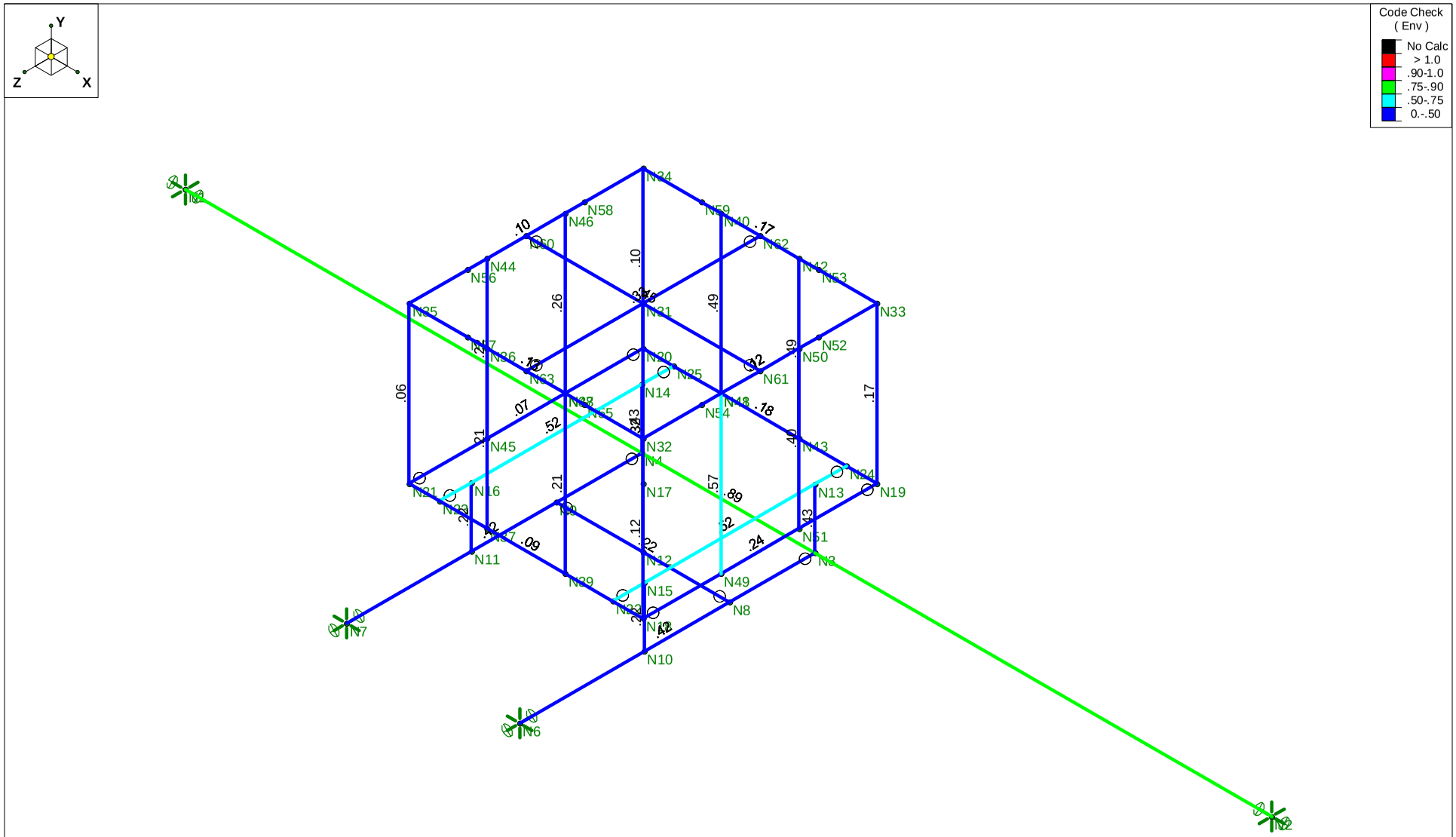
ROOF PLAN

Roof Zones for Buildings with h > 60 ft.
(for Gable Roofs <= 10° and Monoslope Roofs <= 3°)



Envelope Only Solution

Centek Engineering Inc.		
LAA	Ridgefield CT	June 15, 2021 at 11:24 AM
21007.31	Member Framing	Modified Antenna Enclosure.r3d



Member Code Checks Displayed (Enveloped)
Envelope Only Solution

Centek Engineering Inc.		
LAA	Ridgefield CT	June 15, 2021 at 11:24 AM
21007.31	Unity Check	Modified Antenna Enclosure.r3d

(Global) Model Settings

Display Sections for Member Calcs	5
Max Internal Sections for Member Calcs	97
Include Shear Deformation?	Yes
Increase Nailing Capacity for Wind?	Yes
Include Warping?	Yes
Trans Load Btwn Intersecting Wood Wall?	Yes
Area Load Mesh (in^2)	144
Merge Tolerance (in)	.12
P-Delta Analysis Tolerance	0.50%
Include P-Delta for Walls?	Yes
Automatically Iterate Stiffness for Walls?	Yes
Max Iterations for Wall Stiffness	3
Gravity Acceleration (ft/sec^2)	32.2
Wall Mesh Size (in)	12
Eigensolution Convergence Tol. (1.E-)	4
Vertical Axis	Y
Global Member Orientation Plane	XZ
Static Solver	Sparse Accelerated
Dynamic Solver	Accelerated Solver

Hot Rolled Steel Code	AISC 15th(360-16): ASD
Adjust Stiffness?	Yes(Iterative)
RISAConnection Code	AISC 14th(360-10): ASD
Cold Formed Steel Code	AISI S100-10: ASD
Wood Code	AWC NDS-12: ASD
Wood Temperature	< 100F
Concrete Code	ACI 318-11
Masonry Code	ACI 530-11: ASD
Aluminum Code	AA ADM1-10: ASD - Building
Stainless Steel Code	AISC 14th(360-10): ASD
Adjust Stiffness?	Yes(Iterative)

Number of Shear Regions	4
Region Spacing Increment (in)	4
Biaxial Column Method	Exact Integration
Parme Beta Factor (PCA)	.65
Concrete Stress Block	Rectangular
Use Cracked Sections?	Yes
Use Cracked Sections Slab?	Yes
Bad Framing Warnings?	No
Unused Force Warnings?	Yes
Min 1 Bar Diam. Spacing?	No
Concrete Rebar Set	REBAR_SET_ASTMA615
Min % Steel for Column	1
Max % Steel for Column	8

(Global) Model Settings, Continued

Seismic Code	ASCE 7-10
Seismic Base Elevation (ft)	Not Entered
Add Base Weight?	Yes
Ct X	.02
Ct Z	.02
T X (sec)	Not Entered
T Z (sec)	Not Entered
R X	3
R Z	3
Ct Exp. X	.75
Ct Exp. Z	.75
SD1	1
SDS	1
S1	1
TL (sec)	5
Risk Cat	I or II
Drift Cat	Other
Om Z	1
Om X	1
Cd Z	4
Cd X	4
Rho Z	1
Rho X	1
Footing Overturning Safety Factor	1
Optimize for OTM/Sliding	No
Check Concrete Bearing	No
Footing Concrete Weight (k/ft^3)	0
Footing Concrete f'c (ksi)	4
Footing Concrete Ec (ksi)	3644
Lambda	1
Footing Steel fy (ksi)	60
Minimum Steel	0.0018
Maximum Steel	0.0075
Footing Top Bar	#3
Footing Top Bar Cover (in)	2
Footing Bottom Bar	#3
Footing Bottom Bar Cover (in)	3.5
Pedestal Bar	#3
Pedestal Bar Cover (in)	1.5
Pedestal Ties	#3

Hot Rolled Steel Properties

	Label	E [ksi]	G [ksi]	Nu	Therm (\...	Density[k/ft^3]	Yield[ksi]	Ry	Fu[ksi]	Rt
1	A36 Gr.36	29000	11154	.3	.65	.49	36	1.5	58	1.2
2	A572 Gr.50	29000	11154	.3	.65	.49	50	1.1	65	1.1
3	A992	29000	11154	.3	.65	.49	50	1.1	65	1.1
4	A500 Gr.B RND	29000	11154	.3	.65	.527	42	1.4	58	1.3
5	A500 Gr.B Rect	29000	11154	.3	.65	.527	46	1.4	58	1.3
6	A53 Gr.B	29000	11154	.3	.65	.49	35	1.6	60	1.2
7	A1085	29000	11154	.3	.65	.49	50	1.4	65	1.3

Hot Rolled Steel Properties (Continued)

	Label	E [ksi]	G [ksi]	Nu	Therm (\...	Density[k/ft^3]	Yield[ksi]	Ry	Fu[ksi]	Rt
8	FRP	2800	420	.35	.44	.07	16.67	1.5	50	1.2

Hot Rolled Steel Section Sets

	Label	Shape	Type	Design List	Material	Design Ru...	A [in2]	Iyy [in4]	Izz [in4]	J [in4]
1	(E) W16	W16X26	Beam	Wide Flange	A36 Gr.36	Typical	7.68	9.59	301	.262
2	(E)Posts	PIPE_3.5	Column	Pipe	A53 Gr.B	Typical	2.5	4.52	4.52	9.04
3	(E) Dunnage Beam	HSS4X4X4	Beam	SquareTube	A500 Gr.B ...	Typical	3.37	7.8	7.8	12.8
4	(E) K.B.	L3.5X3.5X4	VBrace	Single Angle	A36 Gr.36	Typical	1.7	2	2	.039
5	(E)Stub	HSS3X3X4	Column	SquareTube	A500 Gr.B ...	Typical	2.44	3.02	3.02	5.08
6	(E)Roof Beam	W8X18	Beam	Wide Flange	A992	Typical	5.26	7.97	61.9	.172
7	(E) Pipe 3.0 STD_Ante...	PIPE_3.0	Column	Pipe	A53 Gr.B	Typical	2.07	2.85	2.85	5.69
8	(P)Mount Pipe (2.4" Dia)	PIPE_2.0	Column	Pipe	A53 Gr.B	Typical	1.02	.627	.627	1.25
9	(P) Face Horizontals	PIPE_2.0	Column	Pipe	A53 Gr.B	Typical	1.02	.627	.627	1.25

Hot Rolled Steel Design Parameters

	Label	Shape	Length[ft]	Lbyy[ft]	Lbzz[ft]	Lcomp top[...	Lcomp bot[...	L-torq...	Kyy	Kzz	Cb	Functi...
1	M1	W12X26	48.75			Segment						Lateral
2	M2	W8X10	13.25	Segment		Lbyy						Lateral
3	M3	W8X10	13.25	Segment		Lbyy						Lateral
4	M4	W8X10	7.767			Lbyy						Lateral
5	M5	HSS4X4X4	2.667			Lbyy						Lateral
6	M6	HSS4X4X4	2.667			Lbyy						Lateral
7	M7	HSS4X4X4	2.667			Lbyy						Lateral
8	M8	HSS4X4X4	2.667			Lbyy						Lateral
9	M9	W8X10	10.5	Segment		Lbyy						Lateral
10	M10	W8X10	10.5	Segment		Lbyy						Lateral
11	M11	W8X10	10.5	Segment		Lbyy						Lateral
12	M12	W8X10	10.5	Segment		Lbyy						Lateral
13	M13	W8X10	10.5	Segment		Lbyy						Lateral
14	M14	W8X10	10.5	Segment		Lbyy						Lateral
15	M15	HSS3X3X4	7	.5	.5	Lbyy						Lateral
16	M16	HSS3X3X4	7	.5	.5	Lbyy						Lateral
17	M17	HSS3X3X4	7	.5	.5	Lbyy						Lateral
18	M18	HSS3X3X4	7	.5	.5	Lbyy						Lateral
19	M19	HSS3X3X4	10.5			Lbyy						Lateral
20	M20	HSS3X3X4	10.5			Lbyy						Lateral
21	M21	HSS3X3X4	10.5			Lbyy						Lateral
22	M22	HSS3X3X4	10.5			Lbyy						Lateral
23	M23	LL4x4x4x0	7	.5		Lbyy						Lateral
24	M24	LL4x4x4x0	7	.5		Lbyy						Lateral
25	M25	LL4x4x4x0	7	.5		Lbyy						Lateral
26	M26	LL4x4x4x0	7	.5		Lbyy						Lateral
27	M27	LL4x4x4x0	7	.5		Lbyy						Lateral
28	M28	LL4x4x4x0	7	.5		Lbyy						Lateral
29	M29	LL4x4x4x0	7	.5	.5	Lbyy						Lateral
30	M30	LL4x4x4x0	7	.5		Lbyy						Lateral
31	M31	PIPE_4.0	9.667			Lbyy						Lateral
32	M36	L4X4X4	10.5			Lbyy						Lateral
33	M37	L4X4X4	10.5			Lbyy						Lateral

Member Primary Data

	Label	I Joint	J Joint	K Joint	Rotate(...	Section/Shape	Type	Design List	Material	Design R...
1	M1	N1	N2			W12X26	Beam	Wide Flange	A992	Typical
2	M2	N7	N4			W8X10	Beam	Wide Flange	A992	Typical
3	M3	N6	N3			W8X10	Beam	Wide Flange	A992	Typical
4	M4	N8	N9			W8X10	Beam	Wide Flange	A992	Typical
5	M5	N11	N16			HSS4X4X4	Beam	Tube	A500 Gr.B Rect	Typical
6	M6	N4	N14			HSS4X4X4	Beam	Tube	A500 Gr.B Rect	Typical
7	M7	N3	N13			HSS4X4X4	Beam	Tube	A500 Gr.B Rect	Typical
8	M8	N10	N15			HSS4X4X4	Beam	Tube	A500 Gr.B Rect	Typical
9	M9	N25	N23			W8X10	Beam	Wide Flange	A992	Typical
10	M10	N24	N22			W8X10	Beam	Wide Flange	A992	Typical
11	M11	N21	N18			W8X10	Beam	Wide Flange	A992	Typical
12	M12	N20	N19			W8X10	Beam	Wide Flange	A992	Typical
13	M13	N21	N20			W8X10	Beam	Wide Flange	A992	Typical
14	M14	N18	N19			W8X10	Beam	Wide Flange	A992	Typical
15	M15	N21	N35		180	HSS3X3X4	Beam	Tube	FRP	Typical
16	M16	N20	N34		90	HSS3X3X4	Beam	Tube	FRP	Typical
17	M17	N18	N32		270	HSS3X3X4	Beam	Tube	FRP	Typical
18	M18	N19	N33			HSS3X3X4	Beam	Tube	FRP	Typical
19	M19	N33	N34		180	HSS3X3X4	Beam	Tube	A36 Gr.36	Typical
20	M20	N32	N35		90	HSS3X3X4	Beam	Tube	A36 Gr.36	Typical
21	M21	N35	N34		90	HSS3X3X4	Beam	Tube	A36 Gr.36	Typical
22	M22	N32	N33		180	HSS3X3X4	Beam	Tube	A36 Gr.36	Typical
23	M23	N36	N37		270	LL4x4x4x0	Beam	Double An...	FRP	Typical
24	M24	N38	N39		270	LL4x4x4x0	Beam	Double An...	FRP	Typical
25	M25	N40	N41		90	LL4x4x4x0	Beam	Double An...	FRP	Typical
26	M26	N42	N43		90	LL4x4x4x0	Beam	Double An...	FRP	Typical
27	M27	N44	N45			LL4x4x4x0	Beam	Double An...	FRP	Typical
28	M28	N46	N47			LL4x4x4x0	Beam	Double An...	FRP	Typical
29	M29	N48	N49		180	LL4x4x4x0	Beam	Double An...	FRP	Typical
30	M30	N50	N51		180	LL4x4x4x0	Beam	Double An...	FRP	Typical
31	M31	N12	N31			PIPE 4.0	Beam	HSS Pipe	A53 Gr.B	Typical
32	M36	N60	N61			L4X4X4	Beam	Single Angle	A36 Gr.36	Typical
33	M37	N62	N63			L4X4X4	Beam	Single Angle	A36 Gr.36	Typical

Joint Coordinates and Temperatures

	Label	X [ft]	Y [ft]	Z [ft]	Temp [F]	Detach From Diap...
1	N1	0	0	0	0	
2	N2	48.75	0	0	0	
3	N3	28.25	0	0	0	
4	N4	20.483	0	0	0	
5	N6	28.25	0	13.25	0	
6	N7	20.483	0	13.25	0	
7	N8	28.25	0	3.83	0	
8	N9	20.483	0	3.83	0	
9	N10	28.25	0	7.66	0	
10	N11	20.483	0	7.66	0	
11	N12	24.3665	0	3.83	0	
12	N13	28.25	2.667	0	0	
13	N14	20.483	2.667	0	0	

Joint Coordinates and Temperatures (Continued)

	Label	X [ft]	Y [ft]	Z [ft]	Temp [F]	Detach From Diap...
14	N15	28.25	2.667	7.66	0	
15	N16	20.483	2.667	7.66	0	
16	N17	24.3665	2.667	3.83	0	
17	N18	29.6165	2.667	9.08	0	
18	N19	29.6165	2.667	-1.42	0	
19	N20	19.1165	2.667	-1.42	0	
20	N21	19.1165	2.667	9.08	0	
21	N22	28.25	2.667	9.08	0	
22	N23	20.483	2.667	9.08	0	
23	N24	28.25	2.667	-1.42	0	
24	N25	20.483	2.667	-1.42	0	
25	N31	24.3665	9.667	3.83	0	
26	N32	29.6165	9.667	9.08	0	
27	N33	29.6165	9.667	-1.42	0	
28	N34	19.1165	9.667	-1.42	0	
29	N35	19.1165	9.667	9.08	0	
30	N36	22.6165	9.667	9.08	0	
31	N37	22.6165	2.667	9.08	0	
32	N38	26.1165	9.667	9.08	0	
33	N39	26.1165	2.667	9.08	0	
34	N40	22.6165	9.667	-1.42	0	
35	N41	22.6165	2.667	-1.42	0	
36	N42	26.1165	9.667	-1.42	0	
37	N43	26.1165	2.667	-1.42	0	
38	N44	19.1165	9.667	5.58	0	
39	N45	19.1165	2.667	5.58	0	
40	N46	19.1165	9.667	2.08	0	
41	N47	19.1165	2.667	2.08	0	
42	N48	29.6165	9.667	5.58	0	
43	N49	29.6165	2.667	5.58	0	
44	N50	29.6165	9.667	2.08	0	
45	N51	29.6165	2.667	2.08	0	
46	N52	29.6165	9.667	1.205	0	
47	N53	26.9915	9.667	-1.42	0	
48	N54	29.6165	9.667	6.455	0	
49	N55	26.9915	9.667	9.08	0	
50	N56	19.1165	9.667	6.455	0	
51	N57	21.7415	9.667	9.08	0	
52	N58	19.1165	9.667	1.205	0	
53	N59	21.7415	9.667	-1.42	0	
54	N60	19.1165	9.667	3.83	0	
55	N61	29.6165	9.667	3.83	0	
56	N62	24.3665	9.667	-1.42	0	
57	N63	24.3665	9.667	9.08	0	

Joint Boundary Conditions

	Joint Label	X [k/in]	Y [k/in]	Z [k/in]	X Rot.[k-ft/rad]	Y Rot.[k-ft/rad]	Z Rot.[k-ft/rad]
1	N1	Reaction	Reaction	Reaction	Reaction		
2	N2	Reaction	Reaction	Reaction	Reaction		
3	N7	Reaction	Reaction	Reaction			Reaction

Joint Boundary Conditions (Continued)

	Joint Label	X [k/in]	Y [k/in]	Z [k/in]	X Rot.[k-ft/rad]	Y Rot.[k-ft/rad]	Z Rot.[k-ft/rad]
4	N6	Reaction	Reaction	Reaction			Reaction

Member Point Loads (BLC 2 : Dead: FRP (50 plf))

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	M18	Y	-.15	%50
2	M26	Y	-.15	%50
3	M25	Y	-.15	%50
4	M16	Y	-.15	%50
5	M28	Y	-.15	%50
6	M27	Y	-.15	%50
7	M15	Y	-.15	%50
8	M23	Y	-.15	%50
9	M24	Y	-.15	%50
10	M17	Y	-.15	%50
11	M29	Y	-.15	%50
12	M30	Y	-.15	%50

Member Point Loads (BLC 8 : Dead: Eq. Weight)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	M31	Y	-1.2	%50

Member Distributed Loads (BLC 9 : BLC 5 Transient Area Loads)

	Member Label	Direction	Start Magnitude[k/ft,F,ksf]	End Magnitude[k/f...	Start Location[ft,%]	End Location[ft,%]
1	M17	X	.063	.063	0	7
2	M18	X	.063	.063	5.551e-16	7
3	M29	X	.126	.126	1.221e-15	7
4	M30	X	.126	.126	1.11e-15	7

Member Distributed Loads (BLC 10 : BLC 6 Transient Area Loads)

	Member Label	Direction	Start Magnitude[k/ft,F,ksf]	End Magnitude[k/f...	Start Location[ft,%]	End Location[ft,%]
1	M16	Z	.063	.063	0	7
2	M18	Z	.063	.063	1.998e-15	7
3	M25	Z	.126	.126	4.441e-15	7
4	M26	Z	.126	.126	4.552e-15	7

Basic Load Cases

	BLC Description	Category	X Gra...	Y Gra...	Z Gra...	Joint	Point	Distrib...	Area(...	Surfa...
1	Dead: Self	DL		-1						
2	Dead: FRP (50 plf)	DL					12			
3	Snow (30 psf)	SL								
4	Dead: (E) Roof (15psf)	DL								
5	Wind X- Dir	WLX							1	
6	Wind Z-Dir	WLZ							1	
7	Dead: Misc (7 psf)	DL								
8	Dead: Eq. Weight	DL					1			
9	BLC 5 Transient Area Loads	None						4		

Basic Load Cases (Continued)

	BLC Description	Category	X Gra...	Y Gra...	Z Gra...	Joint	Point	Distrib...	Area(...	Surfa...
10	BLC 6 Transient Area Loads	None						4		

Load Combinations

	Description	Solve	P...	S...	B...	Fa...	BLC	Fact...	BLC	Fa...	BLC	Fa...	BLC	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...
1	Deflection 1	Yes	Y		DL	1																		
2	Deflection 2	Yes	Y		LL	1																		
3	Deflection 3	Yes	Y		DL	1	LL	1																
4	IBC 16-8	Yes	Y		DL	1																		
5	IBC 16-9	Yes	Y		DL	1	LL	1	LLS	1														
6	IBC 16-10 (b)	Yes	Y		DL	1	SL	1	SLN	1														
7	IBC 16-11 (b)	Yes	Y		DL	1	LL	.75	LLS	.75	SL	.75	SLN	.75										
8	IBC 16-12 (a) (a)	Yes	Y		DL	1	WLX	.6																
9	IBC 16-12 (a) (b)	Yes	Y		DL	1	WLZ	.6																
10	IBC 16-12 (a) (c)	Yes	Y		DL	1	WLX	-.6																
11	IBC 16-12 (a) (d)	Yes	Y		DL	1	WLZ	-.6																
12	IBC 16-13 (a) (a)	Yes	Y		DL	1	WLX	.45	LL	.75	LLS	.75												
13	IBC 16-13 (a) (b)	Yes	Y		DL	1	WLZ	.45	LL	.75	LLS	.75												
14	IBC 16-13 (a) (c)	Yes	Y		DL	1	WLX	-.45	LL	.75	LLS	.75												
15	IBC 16-13 (a) (d)	Yes	Y		DL	1	WLZ	-.45	LL	.75	LLS	.75												
16	IBC 16-13 (b) (a)	Yes	Y		DL	1	WLX	.45	LL	.75	LLS	.75	SL	.75	S...	.75								
17	IBC 16-13 (b) (b)	Yes	Y		DL	1	WLZ	.45	LL	.75	LLS	.75	SL	.75	S...	.75								
18	IBC 16-13 (b) (c)	Yes	Y		DL	1	WLX	-.45	LL	.75	LLS	.75	SL	.75	S...	.75								
19	IBC 16-13 (b) (d)	Yes	Y		DL	1	WLZ	-.45	LL	.75	LLS	.75	SL	.75	S...	.75								
20	IBC 16-15 (a)	Yes	Y		DL	.6	WLX	.6																
21	IBC 16-15 (b)	Yes	Y		DL	.6	WLZ	.6																
22	IBC 16-15 (c)	Yes	Y		DL	.6	WLX	-.6																
23	IBC 16-15 (d)	Yes	Y		DL	.6	WLZ	-.6																

Envelope Joint Reactions

	Joint		X [k]	LC	Y [k]	LC	Z [k]	LC	MX [k-ft]	LC	MY [k-ft]	LC	MZ [k-ft]	LC
1	N1	max	.824	10	2.703	11	0	2	.039	11	0	23	0	23
2		min	-.551	20	0	2	-.019	8	0	2	0	1	0	1
3	N2	max	.551	22	2.698	11	0	2	.038	11	0	23	0	23
4		min	-.823	8	0	2	-.019	10	0	2	0	1	0	1
5	N7	max	.17	10	1.058	9	.819	11	0	23	0	23	.011	8
6		min	-.123	20	0	2	-.793	21	0	1	0	1	-.009	10
7	N6	max	.123	22	1.047	9	.802	11	0	23	0	23	.009	8
8		min	-.171	8	0	2	-.782	21	0	1	0	1	-.011	10
9	Totals:	max	1.588	22	6.103	19	1.588	23						
10		min	-1.588	8	0	2	-1.588	9						

Envelope Joint Displacements

	Joint		X [in]	LC	Y [in]	LC	Z [in]	LC	X Rotation [rad]	LC	Y Rotatio...	LC	Z Rotation [rad]	LC
1	N1	max	0	23	0	23	0	23	0	23	0	2	0	2
2		min	0	1	0	1	0	1	0	1	-4.828e-04	8	-2.168e-02	11
3	N2	max	0	23	0	23	0	23	0	23	4.823e-04	10	2.167e-02	11
4		min	0	1	0	1	0	1	0	1	0	2	0	2

Envelope Joint Displacements (Continued)

	Joint		X [in]	LC	Y [in]	LC	Z [in]	LC	X Rotation [rad]	LC	Y Rotatio...	LC	Z Rotation [rad]	LC
5	N3	max	.001	8	0	2	0	21	0	2	0	2	5.525e-03	11
6		min	0	22	-4.004	11	-.001	11	-2.552e-02	11	-9.618e-04	10	0	2
7	N4	max	0	20	0	2	0	21	0	2	9.63e-04	8	0	2
8		min	-.001	10	-4.004	11	-.001	11	-2.555e-02	11	0	2	-5.534e-03	11
9	N6	max	0	23	0	23	0	23	0	2	4.061e-03	22	0	23
10		min	0	1	0	1	0	1	-2.674e-02	11	-4.988e-03	8	0	1
11	N7	max	0	23	0	23	0	23	0	2	4.925e-03	10	0	23
12		min	0	1	0	1	0	1	-2.667e-02	11	-4.091e-03	20	0	1
13	N8	max	.096	20	0	2	0	21	0	2	1.371e-03	20	1.204e-02	10
14		min	-.094	22	-2.923	11	0	11	-2.418e-02	11	-1.338e-03	22	-6.837e-03	20
15	N9	max	.096	20	0	2	0	21	0	2	1.359e-03	20	6.881e-03	22
16		min	-.094	22	-2.92	11	0	11	-2.421e-02	11	-1.348e-03	22	-1.197e-02	8
17	N10	max	.16	20	0	2	0	21	0	2	2.894e-03	8	1.865e-02	10
18		min	-.145	22	-1.773	11	0	11	-2.577e-02	11	-1.677e-03	22	-1.591e-02	8
19	N11	max	.146	20	0	2	0	21	0	2	1.659e-03	20	1.606e-02	10
20		min	-.159	22	-1.77	11	0	11	-2.576e-02	11	-2.919e-03	10	-1.85e-02	8
21	N12	max	.096	20	0	2	.031	9	0	2	6.521e-04	8	1.299e-03	10
22		min	-.094	22	-2.955	11	-.026	23	-3.071e-02	11	-6.799e-04	10	-1.322e-03	8
23	N13	max	.01	20	0	2	0	2	0	2	0	2	4.138e-03	10
24		min	-.146	10	-4.005	11	-.813	11	-2.502e-02	11	-4.673e-03	10	-1.371e-03	20
25	N14	max	.146	8	0	2	0	2	0	2	4.679e-03	8	1.364e-03	22
26		min	-.009	22	-4.005	11	-.814	11	-2.506e-02	11	0	2	-4.14e-03	8
27	N15	max	.668	8	0	2	0	2	0	2	6.673e-03	8	1.862e-02	10
28		min	-.728	10	-1.773	11	-.813	11	-2.432e-02	11	-4.185e-03	22	-1.588e-02	8
29	N16	max	.726	8	0	2	0	2	0	2	4.163e-03	20	1.603e-02	10
30		min	-.669	10	-1.77	11	-.814	11	-2.436e-02	11	-6.698e-03	10	-1.846e-02	8
31	N17	max	.207	20	0	2	0	2	0	2	1.498e-03	8	5.287e-03	10
32		min	-.205	22	-2.956	11	-1	11	-3.035e-02	11	-1.562e-03	10	-5.353e-03	8
33	N18	max	.794	8	0	2	0	2	0	2	2.177e-03	11	6.459e-04	22
34		min	-.796	10	-1.361	11	-.847	11	-3.231e-02	11	-1.912e-03	21	-9.805e-04	8
35	N19	max	.045	20	0	2	0	2	6.097e-03	21	2.317e-03	11	8.802e-04	22
36		min	-.046	22	-4.442	11	-.847	11	-3.949e-02	11	-2.043e-03	21	-1.265e-03	8
37	N20	max	.046	20	0	2	0	2	6.216e-03	21	2.074e-03	21	1.439e-03	10
38		min	-.045	22	-4.442	11	-.848	11	-3.966e-02	11	-2.358e-03	11	-1.064e-03	20
39	N21	max	.794	8	0	2	0	2	0	2	1.943e-03	21	1.148e-03	10
40		min	-.795	10	-1.355	11	-.848	11	-3.249e-02	11	-2.22e-03	11	-8.458e-04	20
41	N22	max	.794	8	0	2	0	2	0	2	1.81e-03	11	6.481e-04	22
42		min	-.796	10	-1.36	11	-.813	11	-3.267e-02	11	-1.567e-03	21	-8.587e-04	8
43	N23	max	.794	8	0	2	0	2	4.278e-05	21	1.593e-03	21	1.047e-03	10
44		min	-.795	10	-1.356	11	-.814	11	-3.282e-02	11	-1.844e-03	11	-8.682e-04	20
45	N24	max	.045	20	0	2	0	2	6.737e-03	21	1.342e-03	11	8.235e-04	22
46		min	-.046	22	-4.435	11	-.814	11	-4.017e-02	11	-1.094e-03	21	-1.075e-03	8
47	N25	max	.046	20	0	2	0	2	6.833e-03	21	1.12e-03	21	1.269e-03	10
48		min	-.045	22	-4.435	11	-.814	11	-4.032e-02	11	-1.376e-03	11	-1.029e-03	20
49	N31	max	.74	8	0	2	0	2	0	2	3.717e-03	8	4.613e-03	10
50		min	-.73	10	-2.956	11	-3.415	11	-2.651e-02	11	-3.877e-03	10	-4.627e-03	8
51	N32	max	.98	8	0	2	0	2	0	2	2.485e-03	8	2.219e-04	20
52		min	-.982	10	-1.36	11	-3.365	11	-2.542e-02	11	-2.873e-03	10	-4.117e-04	10
53	N33	max	.462	20	0	2	0	2	0	2	3.363e-03	8	3.226e-05	21
54		min	-.466	10	-4.444	11	-3.366	11	-2.287e-02	11	-3.408e-03	10	-2.55e-04	11
55	N34	max	.462	20	0	2	0	2	0	2	3.408e-03	8	1.54e-03	10
56		min	-.466	10	-4.444	11	-3.379	11	-2.293e-02	11	-3.087e-03	22	-1.33e-03	20

Envelope Joint Displacements (Continued)

	Joint		X [in]	LC	Y [in]	LC	Z [in]	LC	X Rotation [rad]	LC	Y Rotatio...	LC	Z Rotation [rad]	LC
57	N35	max	.98	8	0	2	0	2	0	2	2.888e-03	8	1.232e-03	10
58		min	-.982	10	-1.354	11	-3.378	11	-2.545e-02	11	-2.9e-03	10	-1.089e-03	20
59	N36	max	.98	8	0	2	0	2	0	2	1.868e-03	8	9.653e-04	22
60		min	-.982	10	-1.36	11	-3.409	11	-2.696e-02	11	-1.68e-03	10	-9.303e-04	20
61	N37	max	.794	8	0	2	0	2	3.959e-04	21	6.424e-04	21	8.903e-04	22
62		min	-.796	10	-1.359	11	-.781	11	-3.332e-02	11	-7.695e-04	11	-9.003e-04	8
63	N38	max	.98	8	0	2	0	2	0	2	1.665e-03	8	1.093e-03	22
64		min	-.982	10	-1.362	11	-3.403	11	-2.695e-02	11	-1.912e-03	10	-1.152e-03	8
65	N39	max	.794	8	0	2	0	2	2.972e-04	21	7.552e-04	11	7.626e-04	22
66		min	-.796	10	-1.361	11	-.781	11	-3.324e-02	11	-6.279e-04	21	-7.742e-04	20
67	N40	max	.462	20	0	2	0	2	0	2	1.699e-03	8	1.367e-03	10
68		min	-.466	10	-4.434	11	-3.416	11	-2.203e-02	11	-1.617e-03	10	-1.295e-03	20
69	N41	max	.045	20	0	2	0	2	7.797e-03	21	1.857e-04	23	1.039e-03	10
70		min	-.045	22	-4.431	11	-.805	11	-4.135e-02	11	-2.699e-04	9	-1.033e-03	8
71	N42	max	.462	20	0	2	0	2	0	2	1.382e-03	20	1.475e-03	22
72		min	-.466	10	-4.433	11	-3.407	11	-2.201e-02	11	-1.742e-03	10	-1.55e-03	8
73	N43	max	.045	20	0	2	0	2	7.736e-03	21	2.845e-04	9	9.021e-04	10
74		min	-.045	22	-4.431	11	-.805	11	-4.122e-02	11	-1.999e-04	23	-9.267e-04	8
75	N44	max	.831	8	0	2	0	2	0	2	4.109e-03	8	1.873e-03	10
76		min	-.825	10	-2.407	11	-3.378	11	-2.529e-02	11	-4.354e-03	10	-1.77e-03	20
77	N45	max	.557	8	0	2	0	2	0	2	5.747e-03	8	3.861e-03	22
78		min	-.556	10	-2.407	11	-.848	11	-2.495e-02	11	-5.797e-03	10	-3.955e-03	8
79	N46	max	.641	8	0	2	0	2	0	2	4.746e-03	8	2.039e-03	10
80		min	-.633	10	-3.443	11	-3.378	11	-2.497e-02	11	-4.571e-03	10	-1.916e-03	20
81	N47	max	.308	8	0	2	0	2	0	2	6.124e-03	8	4.739e-03	22
82		min	-.306	10	-3.44	11	-.848	11	-2.428e-02	11	-6.128e-03	10	-4.869e-03	8
83	N48	max	.839	8	0	2	0	2	0	2	4.377e-03	8	3.003e-03	20
84		min	-.83	10	-2.411	11	-3.365	11	-2.525e-02	11	-4.498e-03	10	-3.172e-03	10
85	N49	max	.825	8	0	2	0	2	0	2	1.942e-03	8	7.531e-03	22
86		min	-.826	10	-2.411	11	-.847	11	-2.49e-02	11	-1.95e-03	10	-7.585e-03	8
87	N50	max	.645	8	0	2	0	2	0	2	4.625e-03	8	2.852e-03	20
88		min	-.64	10	-3.445	11	-3.365	11	-2.489e-02	11	-4.331e-03	10	-3.019e-03	10
89	N51	max	.575	8	0	2	0	2	0	2	9.947e-03	8	8.426e-03	22
90		min	-.576	10	-3.442	11	-.847	11	-2.422e-02	11	-9.957e-03	10	-8.436e-03	20
91	N52	max	.595	8	0	2	0	2	0	2	4.69e-03	8	2.128e-03	20
92		min	-.594	10	-3.703	11	-3.365	11	-2.428e-02	11	-4.396e-03	10	-2.303e-03	10
93	N53	max	.462	20	0	2	0	2	0	2	1.65e-03	20	1.162e-03	22
94		min	-.466	10	-4.435	11	-3.398	11	-2.222e-02	11	-2.01e-03	10	-1.353e-03	8
95	N54	max	.882	8	0	2	0	2	0	2	3.815e-03	8	2.308e-03	20
96		min	-.875	10	-2.148	11	-3.365	11	-2.495e-02	11	-4.03e-03	10	-2.482e-03	10
97	N55	max	.98	8	0	2	0	2	0	2	1.768e-03	20	9.511e-04	22
98		min	-.982	10	-1.362	11	-3.393	11	-2.656e-02	11	-2.096e-03	10	-1.107e-03	8
99	N56	max	.873	8	0	2	0	2	0	2	3.843e-03	8	1.713e-03	10
100		min	-.87	10	-2.143	11	-3.378	11	-2.499e-02	11	-4.104e-03	10	-1.599e-03	20
101	N57	max	.98	8	0	2	0	2	0	2	2.054e-03	8	9.473e-04	10
102		min	-.982	10	-1.359	11	-3.402	11	-2.658e-02	11	-1.834e-03	10	-8.207e-04	20
103	N58	max	.591	8	0	2	0	2	0	2	4.608e-03	8	1.914e-03	10
104		min	-.586	10	-3.702	11	-3.378	11	-2.435e-02	11	-4.358e-03	10	-1.769e-03	20
105	N59	max	.462	20	0	2	0	2	0	2	2.009e-03	8	1.197e-03	10
106		min	-.466	10	-4.435	11	-3.41	11	-2.226e-02	11	-1.83e-03	10	-1.014e-03	20
107	N60	max	.74	8	0	2	0	2	0	2	4.591e-03	8	1.956e-03	10
108		min	-.73	10	-2.927	11	-3.378	11	-2.444e-02	11	-4.649e-03	10	-1.843e-03	20

Envelope Joint Displacements (Continued)

	Joint		X [in]	LC	Y [in]	LC	Z [in]	LC	X Rotation [rad]	LC	Y Rotatio...	LC	Z Rotation [rad]	LC
109	N61	max	.741	8	0	2	0	2	0	2	4.7e-03	8	2.927e-03	20
110		min	-.731	10	-2.93	11	-3.365	11	-2.44e-02	11	-4.577e-03	10	-3.096e-03	10
111	N62	max	.462	20	0	2	0	2	0	2	1.315e-03	8	8.136e-04	10
112		min	-.466	10	-4.434	11	-3.415	11	-2.202e-02	11	-1.489e-03	10	-8.253e-04	8
113	N63	max	.98	8	0	2	0	2	0	2	1.655e-03	8	7.939e-04	22
114		min	-.982	10	-1.361	11	-3.415	11	-2.695e-02	11	-1.663e-03	10	-8.062e-04	8

Envelope AISC 15th(360-16): ASD Steel Code Checks

	Member	Shape	Code Check	Lo...	LC	She...	Lo...	Dir	...	Pnc/...	Pnt/o...	Mny...	Mnz...	Cb	Eqn
1	M1	W12X26	.892	20...	11	.068	14...	y	...	7.598	229....	20.384	57.67	1.6...	H1-...
2	M29	LL4x4x4x0	.566	4....	8	.052	0	z	...	.857	38.531	3.494	.91	2.2...	H1-...
3	M9	W8X10	.521	1....	10	.141	9....	y	8	75.824	88.623	4.071	18.622	1.8...	H1-...
4	M10	W8X10	.520	1....	8	.144	9....	y	...	75.824	88.623	4.071	18.65	1.8...	H1-...
5	M25	LL4x4x4x0	.493	3....	11	.041	0	z	...	3.716	38.531	3.494	.91	2.2...	H1-...
6	M26	LL4x4x4x0	.491	3....	11	.042	0	z	...	3.716	38.531	3.494	.91	2.2...	H1-...
7	M36	L4X4X4	.450	5.25	10	.014	10.5	y	8	11.203	41.605	2.088	3.477	1.3...	H2-1
8	M6	HSS4X4X4	.427	0	10	.170	0	y	8	90.104	92.826	10.765	10.765	1.6...	H1-...
9	M7	HSS4X4X4	.427	0	8	.169	0	y	...	90.104	92.826	10.765	10.765	1.6...	H1-...
10	M3	W8X10	.418	5....	8	.059	13...	y	8	55.613	88.623	4.071	21.87	1.6...	H1-...
11	M2	W8X10	.416	5....	10	.058	13...	y	...	55.613	88.623	4.071	21.87	1.6...	H1-...
12	M30	LL4x4x4x0	.398	4....	8	.058	0	z	...	3.716	38.531	3.494	.91	2.2...	H1-...
13	M37	L4X4X4	.330	5.25	11	.017	0	y	...	11.203	41.605	2.088	3.555	1.4...	H2-1
14	M31	PIPE_4.0	.318	0	8	.074	0		...	46.006	62.036	7.073	7.073	2.2...	H1-...
15	M28	LL4x4x4x0	.264	7	11	.058	0	z	...	3.716	38.531	3.494	.91	2.2...	H1-...
16	M14	W8X10	.242	7	8	.032	10.5	y	8	71.379	88.623	4.071	21.87	1.1...	H1-...
17	M5	HSS4X4X4	.223	0	9	.159	0	z	...	90.104	92.826	10.765	10.765	1.3...	H1-...
18	M8	HSS4X4X4	.221	0	9	.159	0	z	8	90.104	92.826	10.765	10.765	1.5...	H1-...
19	M4	W8X10	.219	3....	8	.042	0	y	...	36.047	88.623	4.071	21.502	1.4...	H1-...
20	M27	LL4x4x4x0	.217	7	9	.053	0	z	...	3.716	38.531	3.494	.91	2.2...	H1-...
21	M23	LL4x4x4x0	.210	0	9	.015	0	z	...	3.716	38.531	3.494	.91	2.1...	H1-...
22	M24	LL4x4x4x0	.210	0	9	.015	0	z	...	3.716	38.531	3.494	.91	2.2...	H1-...
23	M12	W8X10	.180	1....	11	.029	7	y	8	75.824	88.623	4.071	18.473	1.8...	H1-...
24	M19	HSS3X3X4	.173	0	8	.053	7	z	9	26.774	52.599	4.455	4.455	2.8...	H1-...
25	M18	HSS3X3X4	.167	0	10	.032	0	y	...	24.178	24.356	2.063	2.063	1	H1-...
26	M20	HSS3X3X4	.132	0	8	.052	3.5	y	...	26.774	52.599	4.455	4.455	2.07	H1-...
27	M22	HSS3X3X4	.123	10.5	8	.101	3.5	z	...	26.774	52.599	4.455	4.455	1.4...	H1-...
28	M17	HSS3X3X4	.121	0	10	.027	0	z	...	24.178	24.356	2.063	2.063	1.8...	H1-...
29	M21	HSS3X3X4	.103	10.5	9	.026	7	z	...	26.774	52.599	4.455	4.455	2.0...	H1-...
30	M16	HSS3X3X4	.098	3....	11	.026	7	y	...	24.178	24.356	2.063	2.063	1	H1-...
31	M11	W8X10	.091	1....	9	.026	1....	y	9	75.824	88.623	4.071	18.812	1.9...	H1-...
32	M13	W8X10	.075	7	11	.022	10.5	y	...	71.379	88.623	4.071	21.87	1.4...	H1-...
33	M15	HSS3X3X4	.057	7	9	.005	0	y	8	24.178	24.356	2.063	2.063	2.2...	H1-...

ATTACHMENT 5

35 danbury rd

Search Results

Parcel Details

EPPOLITI REALTY CO INC

10 ROBERTS LA
RIDGEFIELD, CT 06877

Parcel ID: E14-0144
Lot Size (AC): 0
Total Value:

Links | Abutters

Property Sketch | Add Parcel
Photo | Remove Parcel
Google Map | Print Labels
Abutter Distance: | Export List

Adjacent
- Adjacent
- 50 ft
- 100 ft
- 200 ft
- 300 ft
- 400 ft
- 500 ft

Find Abutters
Clear Abutters

Parcel ID E14-0144
Street Address 35 D/
TY CO INC
OBERTS LA
Zip Code 06877
Land Area (AC) 0
Devl/Plot A1 & A
Zone B-1
SketchURL http://www.prophecyone.us/ridgefiel images/Ridgefield/Graphics/E140144.gif
Link E140144

About
Layers
Identify

Summary

35 DANBURY RD
EPPOLITI REALTY CO INC
Parcel ID: E14-0144 View Details

Email Map Link

Copy and paste the following string into an email to link to the current map view:

40m
200ft

Close

Print Map

Size:

Scale: 1" = ft. Title:

Close Print

lat:41.2909, long:-73.4963

Tighe&Bond

ATTACHMENT 6

RIDGEFIELD 5

UNITED STATES POSTAL SERVICE®

Certificate of Mailing — Firm

Name and Address of Sender	TOTAL NO. of Pieces Listed by Sender	TOTAL NO. of Pieces Received at Post Office™	Affix Stamp Here ***Postmark with Date of Receipt.***
Kenneth C. Baldwin, Esq. Robinson & Cole LLP 280 Trumbull Street Hartford, CT 06103	3	3	neopost 08/06/2021 US POSTAGE $002.89⁰ ZIP 06103 041L12203937
	Postmaster, per *(name of receiving employee)* Y.P		

USPS® Tracking Number / Firm-specific Identifier	Address (Name, Street, City, State, and ZIP Code™)	Postage	Fee	Special Handling	Parcel Airlift
1.	Rudy Marconi, First Selectman Town of Ridgefield 400 Main Street Ridgefield, CT 06877				
2.	Richard Baldelli, Director of Planning & Zoning/ZEO Town Hall Annex 66 Prospect Street Ridgefield, CT 06877				
3.	Eppoliti Realty Co., Inc. 37 Danbury Road Ridgefield, CT 06877				
4.					
5.					
6.					

OLD STATE HOUSE STATION 06103
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