

KENNETH C. BALDWIN

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Also admitted in Massachusetts  
and New York

June 6, 2022

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

**Re: Request of Cellco Partnership d/b/a Verizon Wireless for an Order to Approve the Shared Use of an Existing Tower at 183 Soundview Lane, New Canaan, Connecticut**

Dear Attorney Bachman:

Pursuant to Connecticut General Statutes (“C.G.S.”) §16-50aa, as amended, Cellco Partnership d/b/a Verizon Wireless (“Cellco”) hereby requests an order from the Siting Council (“Council”) to approve the shared use of an existing 90-foot monopine telecommunications tower located at 183 Soundview Lane in New Canaan, CT (the “Property”). The Property is owned by Keith and Marina Richey. The tower was approved by the Council in Docket No. 487 on September 24, 2020 for Homeland Towers LLC (“Homeland”). It was recently brought to our attention that Homeland intends to transfer the Docket No. 487 Certificate of Environmental Compatibility and Public Need to American Tower Corporation (“ATC”) soon. In an excess of caution, Cellco has received authorization from Homeland and ATC to submit this application. A copy of the Docket No. 487 Decision and Order is included in Attachment 1.

Cellco requests that the Council find that the proposed shared use of the existing tower satisfies the criteria of C.G.S § 16-50aa and issue an order approving this request. A copy of this filing is being sent to New Canaan’s First Selectman Kevin Moynihan and Lynn Brooks Avni, the Town Planner/Senior Enforcement Officer/Co-Director of Land Use.

## **Background**

Cellco is licensed by the Federal Communications Commission (“FCC”) to provide wireless services throughout the State of Connecticut. Cellco and Homeland have agreed to the proposed shared use of the Soundview Lane tower pursuant to mutually acceptable terms and conditions. Likewise, Homeland and Cellco have agreed to the proposed installation of equipment on the ground within the fenced compound area. ATC is aware of Cellco’s intent to share the existing tower. Homeland and ATC have both authorized Cellco to apply for all permits and approvals that may be required for its shared use. (*See Attachment 2*).

Cellco proposes to install nine (9) antennas and six (6) remote radio heads (“RRHs”) on new T-Arm antenna mounts at a height of 71 feet above ground level (“AGL”). Cellco will also install two equipment cabinets and a 50-kW diesel-fueled backup generator all within the existing fenced compound. Included in Attachment 3 are Cellco’s project plans showing the location of Cellco’s proposed facility improvements and tower elevation drawings. Attachment 4 contains specifications for Cellco’s proposed antennas, RRHs and generator.

C.G.S. § 16-50aa(c)(1) provides that, upon written request for approval of a proposed shared use, “if the council finds that the proposed shared use of the facility is technically, legally, environmentally and economically feasible and meets public safety concerns, the council shall issue an order approving such shared use.” Cellco respectfully submits that the shared use of the tower satisfies these criteria.

**A. Technical Feasibility.** The existing tower is structurally capable of supporting Cellco’s antennas, RRHs, T-Arm mounts and related equipment. The proposed shared use of this tower is, therefore, technically feasible. A Structural Analysis Report (“SA”) dated March 25, 2022 prepared by ATC confirms that the tower can support Cellco’s proposed tower loading. A separate Mount Analysis Report (“MA”), also dated May 25, 2022, was also prepared for the proposed antenna and RRH mount assembly. Copies of the SA and MA are included in Attachment 5.

**B. Legal Feasibility.** Under C.G.S. § 16-50aa, the Council has been authorized to issue orders approving the shared use of an existing tower, such as the existing Soundview Lane tower. This authority complements the Council’s prior-existing authority under C.G.S. § 16-50p to issue orders approving the construction of new towers that are subject to the Council’s jurisdiction. In addition, §16-50x(a) directs the Council to “give such consideration to other state laws and municipal regulations as it shall deem appropriate” in ruling on requests for the shared use of existing tower facilities. Under the statutory authority vested in the Council, an order by

the Council approving the requested shared use would permit the Applicant to obtain a building permit for the proposed installations.

**C. Environmental Feasibility.** The proposed shared use of the existing tower would have minimal environmental effects, for the following reasons:

1. The proposed installation of nine (9) antennas and six (6) RRHs on T-Arms at a height of 71 feet AGL on the existing 90-foot monopine tower would have an insignificant incremental visual impact on the area around the Property. As mentioned above, Cellco's ground-based equipment will be located within the existing fenced compound. Cellco's shared use of the existing tower would, therefore, not cause any significant change or alteration in the physical or environmental characteristics of the existing facility the Property or the surrounding area.
2. Noise associated with Cellco's proposed facility will comply with State and local noise standards. Noise associated with the backup generator is exempt from state and local noise standards.
3. Operation of Cellco's antennas at this site would not exceed the RF emissions standards adopted by the Federal Communications Commission ("FCC"). Included in Attachment 6 of this filing are Cellco's Far Field Emissions Calculations that demonstrate that the facility will operate well within the FCC's safety standards.
4. Under ordinary operating conditions, the proposed installation would not require the use of any water or sanitary facilities and would not generate air emissions or discharges to water bodies or sanitary facilities. After construction is complete the proposed installations would not generate any increased traffic to the facility other than periodic maintenance visits to the cell site.

The proposed shared use of the existing tower would, therefore, have a minimal environmental effect, and is environmentally feasible.

**D. Economic Feasibility.** As previously mentioned, Cellco has entered into an agreement with Homeland for the shared use of the existing tower subject to mutually agreeable terms. The proposed tower sharing is, therefore, economically feasible.

Melanie A. Bachman, Esq.  
June 6, 2022  
Page 4

**E. Public Safety Concerns.** As discussed above, the tower is structurally capable of supporting Cellco's antennas, T-Arm mounts, RRHs and all tower-mounted equipment. Cellco is not aware of any public safety concerns relative to the proposed sharing of the existing the Soundview Lane tower. In fact, the provision of new and improved wireless service through Cellco's shared use of the existing tower would enhance the safety and welfare of area residents and members of the general public living in and traveling through northern New Canaan.

### **Conclusion**

A Certificate of Mailing verifying that this filing was sent to municipal officials, the Property owners, Homeland and ATC is included in Attachment 7.

For the reasons discussed above, the proposed shared use of the existing tower at the Property satisfies the criteria stated in C.G.S. § 16-50aa and advances the General Assembly's and the Council's goal of preventing the unnecessary proliferation of towers in Connecticut. The Applicant, therefore, respectfully requests that the Council issue an order approving the proposed shared use.

Thank you for your consideration of this matter.

Very truly yours,



Kenneth C. Baldwin

Enclosures

Copy to:

Kevin Moynihan, First Selectman  
Lynn Brooks Avni, Town Planner/Senior Enforcement Officer/Co-Director of Land Use  
Keith and Marina Richey, Property Owners  
Homeland Towers LLC  
American Tower Corporation  
Tim Parks



# **ATTACHMENT 1**

<b>DOCKET NO. 487</b> – Homeland Towers, LLC and New Cingular Wireless PCS, LLC d/b/a AT&T application for a Certificate of Environmental Compatibility and Public Need for the construction, maintenance, and operation of a telecommunications facility located at 183 Soundview Lane, New Canaan, Connecticut.	} } }	Connecticut  Siting  Council
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September 24, 2020

### Decision and Order

Pursuant to Connecticut General Statutes §16-50p and the foregoing Findings of Fact and Opinion, the Connecticut Siting Council (Council) finds that the effects associated with the construction, maintenance, and operation of a telecommunications facility, including effects on the natural environment, ecological balance, public health and safety, scenic, historic, and recreational values, agriculture, forests and parks, air and water purity, and fish, aquaculture and wildlife are not disproportionate, either alone or cumulatively with other effects, when compared to need, are not in conflict with the policies of the State concerning such effects, and are not sufficient reason to deny the application, and therefore directs that a Certificate of Environmental Compatibility and Public Need, as provided by General Statutes § 16-50k, be issued to Homeland Towers, LLC, hereinafter referred to as the Certificate Holder, for a telecommunications facility at 183 Soundview Lane, New Canaan, Connecticut.

Unless otherwise approved by the Council, the facility shall be constructed, operated, and maintained substantially as specified in the Council’s record in this matter, and subject to the following conditions:

1. The tower shall be constructed as a stealth “tree” monopole at a height of 85 feet above ground level to provide the proposed wireless services, sufficient to accommodate the antennas of New Cingular Wireless PCS, LLC and other entities, both public and private. The height of the “tree branches” at the top of the monopole shall not exceed 90 feet above ground level and the density and configuration of the “tree branches” shall conceal the antennas. The height of the tower may be extended after the date of this Decision and Order pursuant to regulations of the Federal Communications Commission.
  
2. The Certificate Holder shall prepare a Development and Management (D&M) Plan for this site in compliance with Sections 16-50j-75 through 16-50j-77 of the Regulations of Connecticut State Agencies. The D&M Plan shall be submitted to and approved by the Council prior to the commencement of facility construction and shall include:
  - a) a certified letter from a wireless telecommunications carrier with a firm commitment to install associated wireless equipment at the facility upon completion of construction;
  - b) final site plan(s) for development of the facility that employ the governing standard in the State of Connecticut for tower design in accordance with the currently adopted International Building Code and include specifications for the tower, tower foundation, antennas and equipment compound including, but not limited to, fence design including finish/color, landscaping including taller plantings to conceal the equipment cabinet, lower growth plantings in front of the taller plantings and a warranty for the plantings, ground equipment, equipment cabinet including plans to minimize the cabinet’s total height above grade, access road, utility installation and emergency backup generator;
  - c) the tower shall be designed with a yield point to ensure that the tower setback radius remains within the boundaries of the subject property;
  - d) construction plans for site clearing, grading, landscaping, water drainage and stormwater control, and erosion and sedimentation controls consistent with the 2002 Connecticut Guidelines for Soil Erosion and Sediment Control, as amended; and

- e) proposed hours and days of the week for construction activities.
3. Prior to the commencement of operation, the Certificate Holder shall provide the Council worst-case modeling of the electromagnetic radio frequency power density of all proposed entities' antennas at the closest point of uncontrolled access to the tower base, consistent with Federal Communications Commission, Office of Engineering and Technology, Bulletin No. 65, August 1997. The Certificate Holder shall ensure a recalculated report of the electromagnetic radio frequency power density be submitted to the Council if and when circumstances in operation cause a change in power density above the levels calculated and provided pursuant to this Decision and Order.
  4. Upon the establishment of any new federal radio frequency standards applicable to frequencies of this facility, the facility granted herein shall be brought into compliance with such standards.
  5. The Certificate Holder shall provide the Council with a copy of necessary permits from any other state or federal agency with concurrent jurisdiction prior to the commencement of construction.
  6. The Certificate Holder shall permit public or private entities to share space on the proposed tower for fair consideration, or shall provide any requesting entity with specific legal, technical, environmental, or economic reasons precluding such tower sharing.
  7. Unless otherwise approved by the Council, if the facility authorized herein is not fully constructed with at least one fully operational wireless telecommunications carrier providing wireless service within eighteen months from the date of the mailing of the Council's Findings of Fact, Opinion, and Decision and Order (collectively called "Final Decision"), this Decision and Order shall be void, and the Certificate Holder shall dismantle the tower and remove all associated equipment or reapply for any continued or new use to the Council before any such use is made. The time between the filing and resolution of any appeals of the Council's Final 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 Certificate Holder shall provide written notice to the Executive Director of any schedule changes as soon as is practicable.
  8. Any request for extension of the time period referred to in Condition 7 shall be filed with the Council not later than 60 days prior to the expiration date of this Certificate and shall be served on all parties and intervenors, as listed in the service list, and the Town of New Canaan.
  9. If the facility ceases to provide wireless services for a period of one year, this Decision and Order shall be void, and the Certificate Holder shall dismantle the tower and remove all associated equipment or reapply for any continued or new use to the Council within 90 days from the one year period of cessation of service. The Certificate Holder 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.
  10. Any nonfunctioning antenna, and associated antenna mounting equipment, on this facility shall be removed within 60 days of the date the antenna ceased to function.
  11. In accordance with Section 16-50j-77 of the Regulations of Connecticut State Agencies, the Certificate Holder shall provide the Council with written notice two weeks prior to the commencement of site construction activities. In addition, the Certificate Holder shall provide the Council with written notice of the completion of site construction, and the commencement of site operation.

12. The Certificate Holder shall remit timely payments associated with annual assessments and invoices submitted by the Council for expenses attributable to the facility under Conn. Gen. Stat. §16-50v.
13. This Certificate may be transferred in accordance with Conn. Gen. Stat. §16-50k(b), provided both the Certificate Holder/transferor and the transferee are current with payments to the Council for their respective annual assessments and invoices under Conn. Gen. Stat. §16-50v. In addition, both the Certificate Holder/transferor and the transferee shall provide the Council 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. If construction has not been completed in accordance with Condition 7 of this Decision and Order at the time the Certificate is requested to be transferred, a certified letter from a wireless telecommunications carrier with a firm commitment to install associated wireless equipment at the facility upon completion of construction shall also be provided.
14. The Certificate Holder shall maintain the facility and associated equipment, including but not limited to, the tower, tower foundation, antennas, equipment compound, radio equipment, access road, utility line and landscaping in a reasonable physical and operational condition that is consistent with this Decision and Order and a Development and Management Plan to be approved by the Council.
15. If the Certificate Holder is a wholly-owned subsidiary of a corporation or other entity and is sold/transferred to another corporation or other entity, 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 Certificate Holder within 30 days of the sale and/or transfer.
16. This Certificate may be surrendered by the Certificate Holder upon written notification and acknowledgment by the Council.

We hereby direct that a copy of the Findings of Fact, Opinion, and Decision and Order be served on each person listed in the Service List, dated July 8, 2020, and notice of issuance published in The New Canaan Advertiser.

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

# **ATTACHMENT 2**



## Letter of Authorization

Municipality: Town of New Canaan  
Tax Map Number: Map 40, Block 105, Lot 74

### RE: **Owner Authorization**

Homeland Towers, LLC ("Homeland"), the lessee of property located at 183 Soundview Lane, New Canaan, Connecticut (identified as Map 40, Block 105, Lot 74) in the Town of New Canaan, County of Fairfield, State of Connecticut, (the "Property") does hereby authorize Cellco Partnership, a Delaware general partnership, d/b/a Verizon Wireless ("Verizon") and its agents and representatives, as Homeland's Agent for the purpose of completing, executing, and filing any application(s) with the Connecticut Siting Council and the Town of New Canaan and to obtain approvals necessary to permit Verizon's operation of a wireless communications facility on the Property.

HOMELAND TOWERS, LLC

By: \_\_\_\_\_

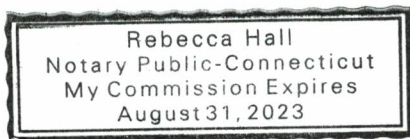
Name: Manuel J. Vicente

Title: President

Date: 5/16/2022

Sworn to before me this  
16 day of May, 2022

\_\_\_\_\_  
NOTARY PUBLIC





**AMERICAN TOWER®**  
CORPORATION

**LETTER OF AUTHORIZATION**

**ATC SITE#/NAME/PROJECT: 209477 / New Canaan 2 / OAA768680**

**SITE ADDRESS: 183 Soundview Ln New Canaan, CT 06840-2734**

**APN: NCAN M:0040 B:105 L:00074**

**LICENSEE: Cellco Partnership D/B/A Verizon Wireless LLC**

I, Margaret Robinson, Senior Counsel for American Tower\*, owner of the tower facility located at the address identified above (the “Tower Facility”), do hereby authorize **Cellco Partnership D/B/A Verizon Wireless LLC** its successors and assigns, and/or its agent, (collectively, the “Licensee”) to act as American Tower’s non-exclusive agent for the sole purpose of filing and consummating any land-use or building permit application(s) as may be required by the applicable permitting authorities for Licensee’s telecommunications’ installation.

We understand that this application may be denied, modified or approved with conditions. The above authorization is limited to the acceptance by Licensee only of conditions related to Licensee’s installation and any such conditions of approval or modifications will be Licensee’s sole responsibility.

Signature:

Print Name: Margaret Robinson  
Senior Counsel  
American Tower\*

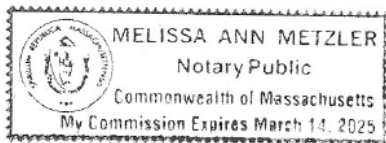
**NOTARY BLOCK**

Commonwealth of MASSACHUSETTS  
County of Middlesex

This instrument was acknowledged before me by Margaret Robinson, Senior Counsel for American Tower\*, personally known to me (or proved to me on the basis of satisfactory evidence) to be the person whose name is subscribed to the within instrument and acknowledged to me that he executed the same.

WITNESS my hand and official seal, this 30th day of March 2022

NOTARY SEAL



Notary Public   
My Commission Expires: March 14, 2025

\*American Tower includes all affiliates and subsidiaries of American Tower Corporation.

# **ATTACHMENT 3**



# verizon

## WIRELESS SERVICES FACILITY

**NEW CANAAN NE2 CT  
183 SOUNDVIEW LANE  
NEW CANAAN, CT 06840**

### DRAWING INDEX

- T-1 TITLE SHEET
- SP-1 SITE PLAN
- C-1 COMPOUND PLAN & SOUTH ELEVATION
- C-2 EQUIPMENT AREA PLAN & DETAILS
- C-3 EQUIPMENT DETAILS
- E-1 ELECTRICAL PLAN, SCHEDULES & NOTES
- E-2 SCHEMATIC ONE-LINE RISER DIAGRAM, DETAILS & NOTES
- E-3 EQUIPMENT GROUNDING PLANS & NOTES
- E-4 GROUNDING DETAILS
- B-1 RF BILL OF MATERIALS & MECHANICAL SPECIFICATIONS
- N-1 NOTES & SPECIFICATIONS

### SITE DIRECTIONS

**START: 20 ALEXANDER DRIVE  
WALLINGFORD, CONNECTICUT 06492**

**END: 183 SOUNDVIEW LANE  
NEW CANAAN, CT 06840**

1. FROM ALEXANDER DRIVE TURN RIGHT ONTO BARNES INDUSTRIAL RD S. 0.3 MI
2. TURN LEFT AT THE 1ST CROSS STREET ONTO CT-68W 0.4 MI
3. TURN RIGHT 0.2 MI
4. TURN RIGHT ONTO N COLONY RD 0.3 MI
5. TURN LEFT TO MERGE ONTO CT-15S TOWARD NEW HAVEN 0.3 MI
6. MERGE ONTO CT-15S 44.8 MI
7. TAKE EXIT 348 TOWARD CARTER ST 0.2 MI
8. CONTINUE ONTO CARTER ST 2.0 MI
9. TURN RIGHT ONTO CT-106N 43 FT
10. TURN LEFT ONTO CANOE HILL RD 1.1 MI
11. TURN RIGHT ONTO LAUREL RD 1.3 MI
12. TURN RIGHT ONTO SOUNDVIEW LN (DESTINATION ON THE RIGHT) 0.5 MI

### SITE INFORMATION

VZ SITE NAME: NEW CANAAN NE2 CT  
VZ PROJ. FUZE ID: 16474051  
VZ LOCATION CODE: 691194  
VZ PROJECT CODE: 20212261775

LOCATION: 183 SOUNDVIEW LANE  
NEW CANAAN, CT 06840

PROJECT SCOPE: INSTALLATION CONSISTS OF SIX (6) PANEL ANTENNAS, THREE (3) LSE ANTENNAS w/ INTEGRATED FRHs, SIX (6) DUAL-BAND REMOTE RADIO HEADS (RRHs) & ONE (1) 120VP MOUNTED TO AN EXIST. 90° AGL MONOPINE TOWER IN ADDITION TO BASE EQUIPMENT CABINETS & A 50kW DIESEL FUELED EMERGENCY STANDBY POWER GENERATOR LOCATED AT GRADE WITHIN EXIST. (1,763± SF) FENCED COMPOUND AREA.

MAP/BLOCK/LOT: 40-105-74

LATITUDE: 41° 11' 26.43" N (41.190675° N)

LONGITUDE: 73° 29' 42.16" W (73.495044° W)

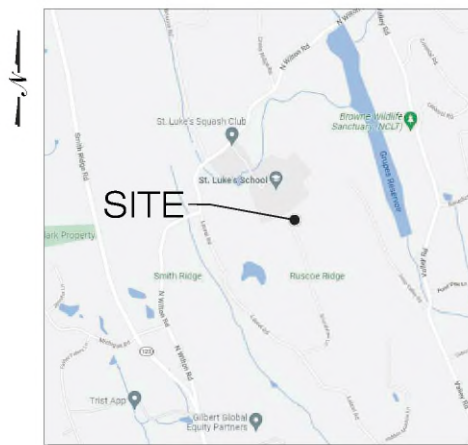
GROUND ELEVATION: 502.3± AMSL

TOWER OWNER: AMERICAN TOWER CORPORATION  
3500 REGENCY PARKWAY, SUITE 100  
CARY, N.C. 27516

APPLICANT: CELCO PARTNERSHIP  
d/b/a VERIZON WIRELESS  
20 ALEXANDER DRIVE  
WALLINGFORD, CT 06492

LEGAL/REGULATORY COUNSEL: ROBINSON & COLE, LLP  
KENNETH C. BALDWIN, ESQ.  
290 TRUMBULL STREET  
HARTFORD, CT 06103

ENGINEER CONTACT: ALL-POINTS TECHNOLOGY CORP., P.C.  
567 VAUXHALL STREET EXTENSION - SUITE 311  
WATERFORD, CT 06385  
660 663-1697



**LOCATION MAP**  
SCALE: 1" = 1000'

Cellco Partnership d/b/a

**verizon**

20 ALEXANDER DRIVE  
WALLINGFORD, CT 06492

**ALL-POINTS  
TECHNOLOGY CORPORATION**

567 VAUXHALL STREET EXTENSION - SUITE 311  
WATERFORD, CT 06385 PHONE: (860) 663-1697  
WWW.ALLPOINTS TECH.COM FAX: (860) 663-0806

### CONSTRUCTION DOCUMENTS

NO.	DATE	REVISION
0	02/03/22	FOR REVIEW -JRM
1	02/08/22	FOR FILING
2	03/16/22	FOR FILING
3	05/25/22	FOR FILING
4		
5		
6		



### DESIGN PROFESSIONALS OF RECORD

PROF: MICHAEL S. TRODDEN P.E.  
CCMP: ALL-POINTS TECHNOLOGY CORPORATION  
ADDRESS: 567 VAUXHALL STREET EXT. SUITE 311 WATERFORD, CT 06385  
OWNER: AMERICAN TOWER CORPORATION  
ADDRESS: 3500 REGENCY PARKWAY, SUITE 100 CARY, N.C. 27516

COORDINATES & GROUND ELEVATION INDICATED HEREIN WERE ESTABLISHED FROM AN FAA T-1 SURVEY CERTIFICATION, AS PREPARED BY LANGSAM CT, INC. DATED JUNE 24, 2019.

### NEW CANAAN NE2 CT

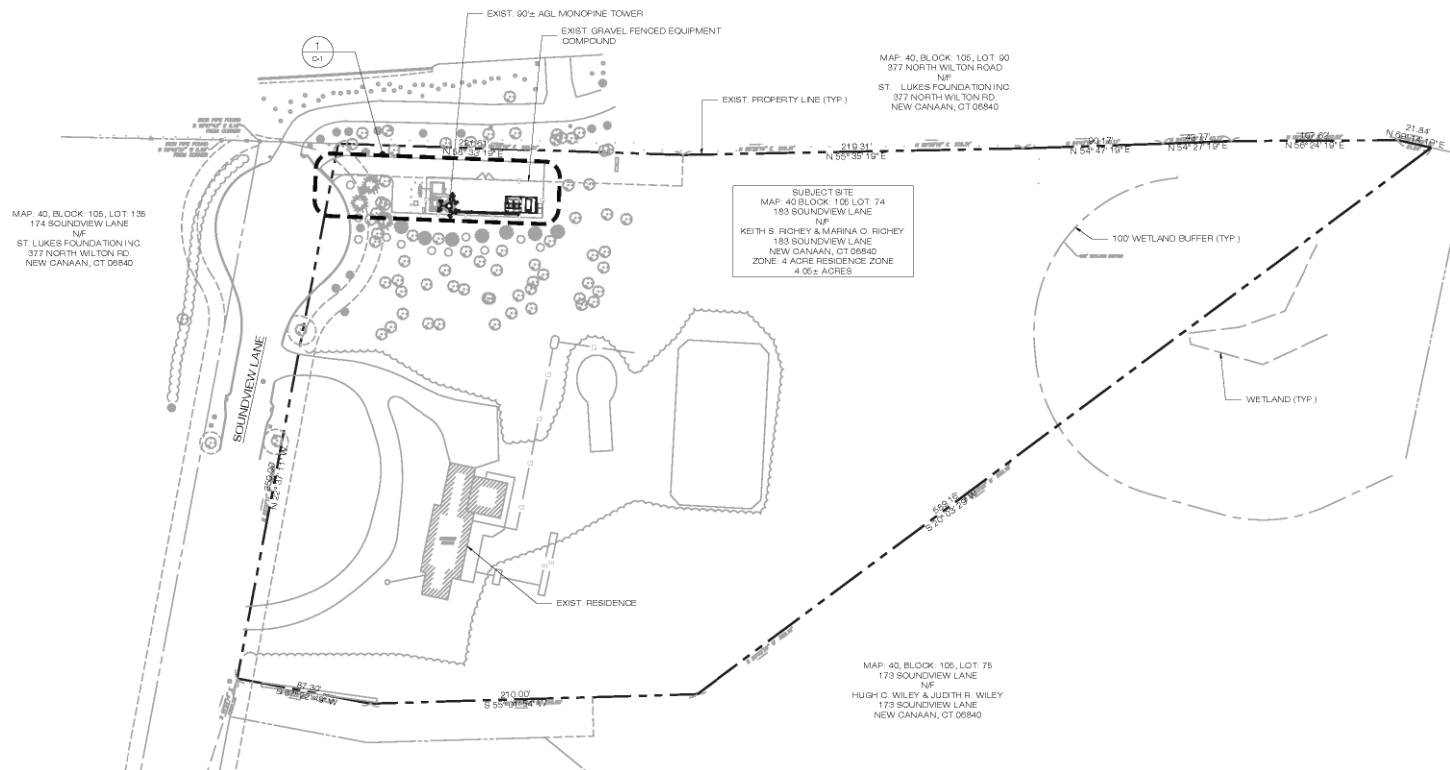
SITE: 183 SOUNDVIEW LANE  
ADDRESS: NEW CANAAN, CT 06840  
APT FILING NUMBER: CT141N015190  
DRAWN BY: CSH  
DATE: 02/03/22 CHECKED BY: JRM  
VZV PROJECT CODE: 20212261775  
VZV LOCATION CODE: 691194  
VZV FUZE ID: 16474051

### SHEET TITLE:

### TITLE SHEET

### SHEET NUMBER:

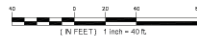
**T-1**



- SITE PLAN REFERENCE:**
- "V8-101 & 102, BOUNDARY & TOPOGRAPHIC SURVEY", 183 SOUNDVIEW LANE, NEW CANAAN, CT, PREPARED BY LANGAN CT, INC, 556 LONG WHARF DRIVE, NEW HAVEN, CT 06511, DATED MAY, 24, 20' 9
  - "TOWN OF NEW CANAAN, PROPERTY RECORDS INFORMATION NETWORK", 183 SOUNDVIEW LANE, MAP: 40 BLOCK: 105 PARCEL: 74
  - "HOMELAND TOWERS WIRELESS TELECOMMUNICATION FACILITY, NEW CANAAN NORTHEAST, 183 SOUNDVIEW LANE, NEW CANAAN, CT 06940 BY ALL-POINTS TECHNOLOGY CORPORATION DATED: 02/17/21, REVISED: 05/04/21



**1 SITE PLAN**  
SP-1 SCALE: 1" = 40'-0"



Cellco Partnership d/b/a  
**verizon**

20 ALEXANDER DRIVE  
WALLINGFORD, CT 06495

**ALL-POINTS  
TECHNOLOGY CORPORATION**

587 VAUXHALL STREET EXTENSION - SUITE 311  
WATERFORD, CT 06385 PHONE: (860) 493-1807  
WWW.ALLPOINTS.TECH.COM FAX: (860) 493-0806

**CONSTRUCTION DOCUMENTS**

NO.	DATE	REVISION
0	02/03/22	FOR REVIEW -JRM
1	02/08/22	FOR FILING
2	03/18/22	FOR FILING
3	05/25/22	FOR FILING
4		
5		
6		



**DESIGN PROFESSIONALS OF RECORD**

PROF: MICHAEL S. TRODDEN P.E.  
COMP: ALL-POINTS TECHNOLOGY CORPORATION  
ADDRESS: 587 VAUXHALL STREET EXT. SUITE 311 WATERFORD, CT 06385

OWNER: AMERICAN TOWER CORPORATION  
ADDRESS: 3800 REGENCY PARKWAY, SUITE 100 CARY, N.C. 27518

**NEW CANAAN NE2 CT**

SITE: 183 SOUNDVIEW LANE  
ADDRESS: NEW CANAAN, CT 06940

APT FILING NUMBER: CT141NB13190

DRAWN BY: CSH

DATE: 02/03/22 CHECKED BY: JRM

VZW PROJECT CODE: 20212261778

VZW LOCATION CODE: 691194

VZW FUZE ID: 18474051

SHEET TITLE:

**SITE PLAN**

SHEET NUMBER:

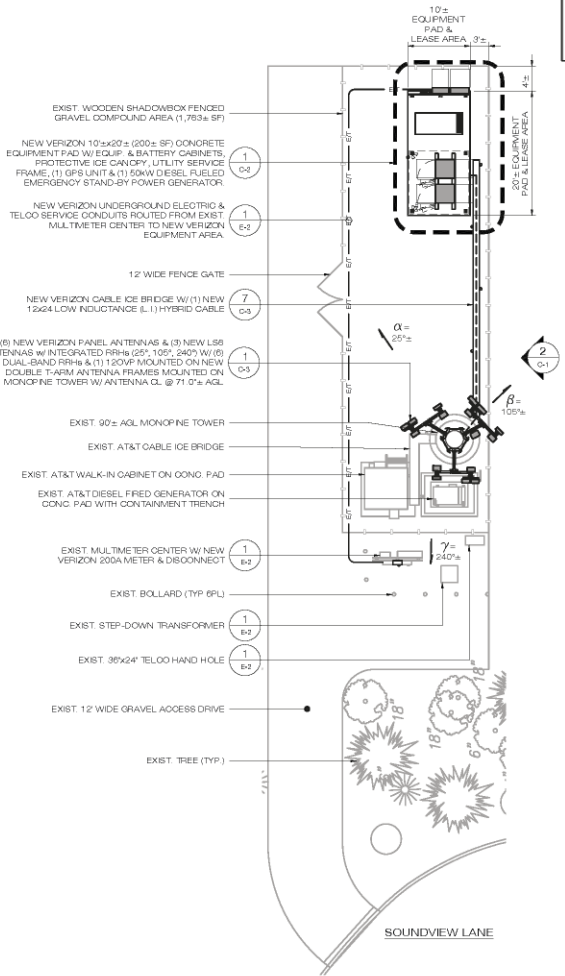
**SP-1**

**EXCAVATION & TRENCHING NOTES**

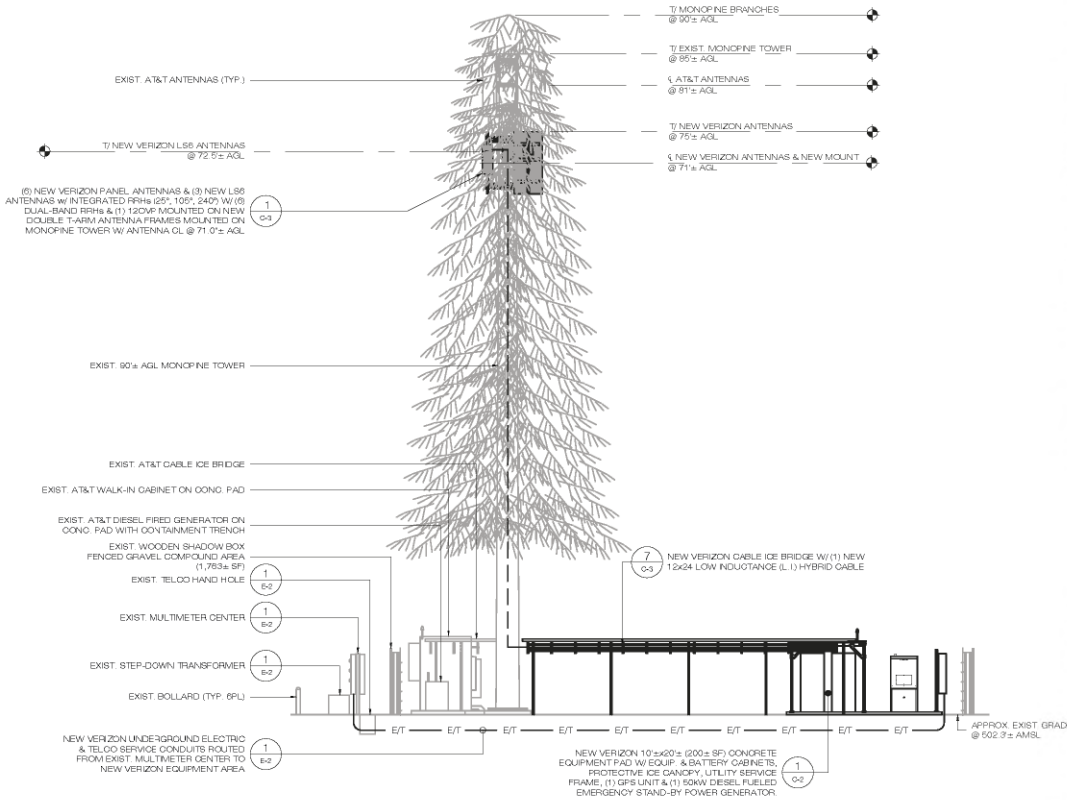
- CONTRACTOR SHALL ENGAGE THE SERVICES OF AN UNDERGROUND UTILITY LOCATING COMPANY TO LOCATE ALL UNDERGROUND UTILITIES, GROUNDING & EQUIPMENT IN THE TRENCHING AREA TO AVOID ANY DAMAGE.
- HAND EXCAVATE WITHIN 5' OF EXIST. UNDERGROUND UTILITIES (V.I.F.) MAINTAIN 18" MIN. CLEARANCE.
- CONTRACTOR TO COORDINATE TRENCHING OPERATIONS W/ OWNER AND/OR MANAGEMENT COMPANY SO AS TO MINIMIZE DISRUPTIONS TO THE EXIST. PROPERTY OPERATIONS.

**ANTENNA & APPURTENANCE CONFORMANCE NOTES**

- VERIZON'S EQUIPMENT SHALL BE INSTALLED REMOVING THE FEWEST FAUX BRANCHES AND LEAVES AS MANY BRANCHES AS POSSIBLE. VERIZON SHALL REINSTALL/RESTORE ANY DISLOCATED FAUX BRANCHES AFTER INSTALLATION OF ITS EQUIPMENT TO RESTORE THE EXISTING CONCEALMENT ELEMENTS IN PLACE AT THE VERIZON EQUIPMENT ELEVATION.
- VERIZON ANTENNAS SHALL BE PAINTED GREEN & WRAPPED W/ VALMONT SOCKS & WRAP AROUND BRANCHES. AFFURTECHANGES SHALL BE PAINTED GRAY/BROWN TO MATCH COLOR OF MONO-PINE TRUNK.
- COORDINATE INSTALLATION W/ OWNER (AMERICAN TOWER CORPORATION) & VERIZON CONSTRUCTION MANAGER.



**1 COMPOUND PLAN**  
SCALE: 1" = 10'-0"



**2 SOUTH ELEVATION**  
SCALE: 1" = 1'-0"

**STRUCTURAL ANALYSIS NOTE**

- REFER TO STRUCTURAL ANALYSIS REPORT PREPARED BY AMERICAN TOWER CORPORATION, ATC ENGINEERING NUMBER 0AA769690\_C3\_07 MARKED REVO DATED MARCH 26, 2022, AVAILABLE UNDER SEPARATE COVER.
- REFER TO MOUNT ANALYSIS PREPARED BY ALL-POINTS TECHNOLOGY CORPORATION P.C., MARKED REVO DATED MAY 22, 2022, AVAILABLE UNDER SEPARATE COVER.

Cellco Partnership d/b/a



20 ALEXANDER DRIVE  
WALLINGFORD, CT 06495



597 VAUXHALL STREET EXTENSION - SUITE 311  
WATERFORD, CT 06385 PHONE: (860) 463-1907  
WWW.ALLPOINTS.TECH.COM FAX: (860) 463-0006

**CONSTRUCTION DOCUMENTS**

NO.	DATE	REVISION
0	02/03/22	FOR REVIEW -JRM
1	02/28/22	FOR FILING
2	03/16/22	FOR FILING
3	05/22/22	FOR FILING
4		
5		
6		



**DESIGN PROFESSIONALS OF RECORD**

PROF. MICHAEL S. TRODDEN P.E.  
CCMP: ALL-POINTS TECHNOLOGY CORPORATION  
ADDRESS: 597 VAUXHALL STREET EXT. SUITE 311 WATERFORD, CT 06385

OWNER: AMERICAN TOWER CORPORATION  
ADDRESS: 3800 REGENCY PARKWAY, SUITE 100 CARY, N.C. 27518

**NEW CANAAN NE2 CT**

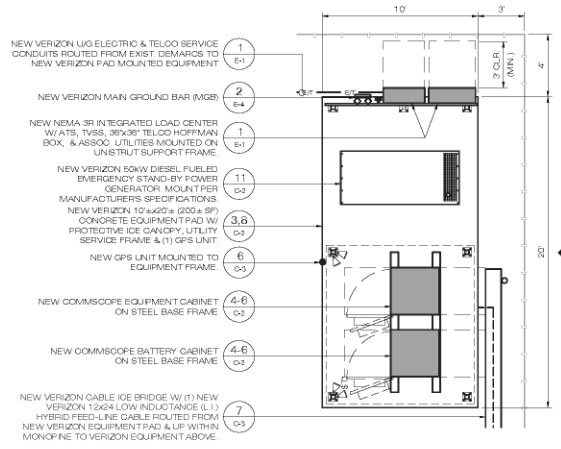
SITE: 183 SOUNDVIEW LANE  
ADDRESS: NEW CANAAN, CT 06840  
APT FILING NUMBER: CT14IND15190  
DRAWN BY: CSH  
DATE: 02/23/22 CHECKED BY: JRM  
VZW PROJECT CODE: 20212261778  
VZW LOCATION CODE: 691194  
VZW FUZE ID: 16474051

**SHEET TITLE:**

**COMPOUND PLAN & SOUTH ELEVATION**

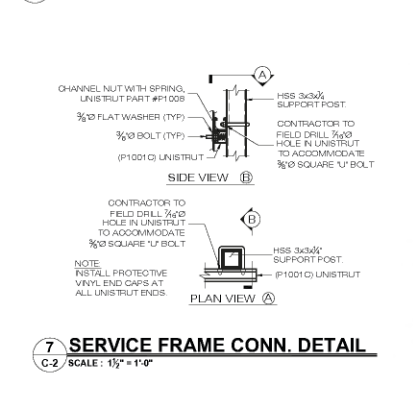
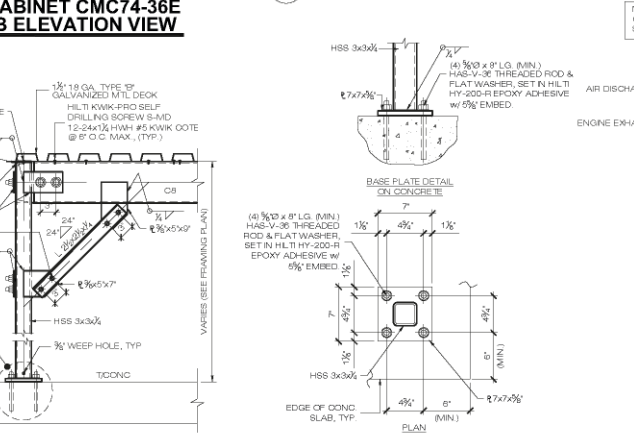
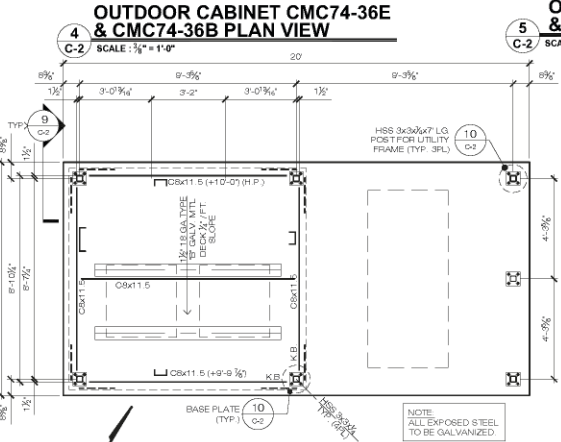
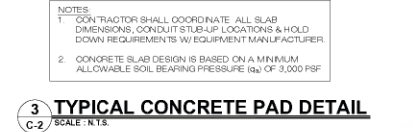
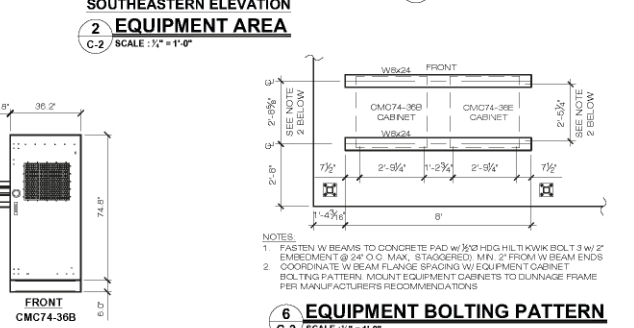
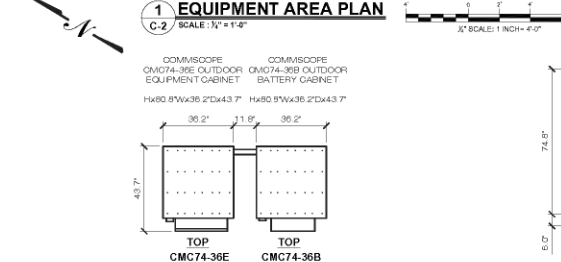
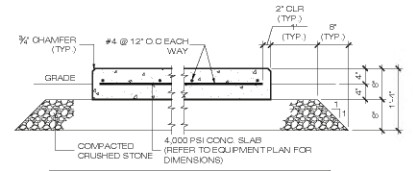
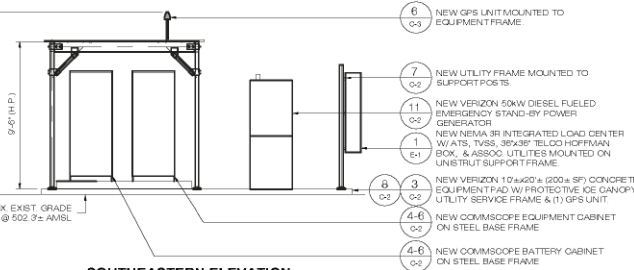
**SHEET NUMBER:**

**C-1**



**EXCAVATION & TRENCHING NOTES**

- CONTRACTOR SHALL ENGAGE THE SERVICES OF AN UNDERGROUND UTILITY LOCATING COMPANY TO LOCATE ALL UNDERGROUND UTILITIES, GROUNDING & EQUIPMENT IN THE TRENCHING AREA TO AVOID ANY DAMAGE.
- HAND EXCAVATE WITHIN 5' OF EXIST' UNDERGROUND UTILITIES (V.I.P.) MAINTAIN 18" MIN. CLEARANCE.
- CONTRACTOR TO COORDINATE TRENCHING OPERATIONS W/ OWNER AND/OR MANAGEMENT COMPANY SO AS TO MINIMIZE DISRUPTIONS TO THE EXIST' PROPERTY OPERATIONS.



Cellco Partnership d/b/a

**verizon**

20 ALEXANDER DRIVE  
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**STATE OF CONNECTICUT**  
MICHAEL S. TRODDEN  
33313  
LICENSED PROFESSIONAL ENGINEER

**DESIGN PROFESSIONALS OF RECORD**

PROF. MICHAEL S. TRODDEN P.E.  
CMP: ALL-POINTS TECHNOLOGY CORPORATION  
ADDRESS: 597 WAUHALL STREET EXT. SUITE 311 WATERFORD, CT 06385

OWNER: AMERICAN TOWER CORPORATION  
ADDRESS: 3800 REGENCY PARKWAY, SUITE 100 GARY, N.C. 27518

**NEW CANAAN NE2 CT**

SITE: 183 SOUNDVIEW LANE  
ADDRESS: NEW CANAAN, CT 06840

APT FILING NUMBER: CT141NB13190

DRAWN BY: CSH

DATE: 02/23/22 CHECKED BY: JRM

VZW PROJECT CODE: 20212281778

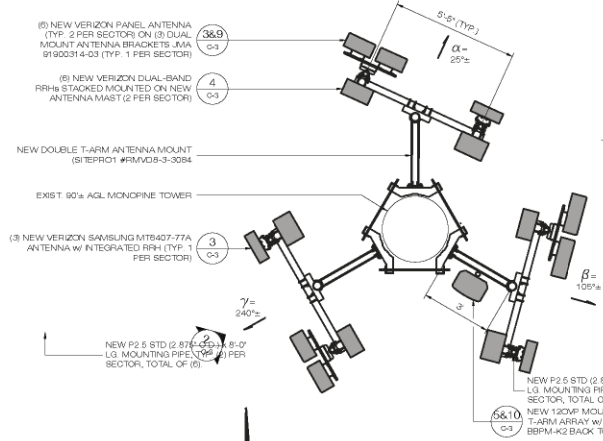
VZW LOCATION CODE: 691194

VZW FUZE ID: 16474051

**EQUIPMENT AREA PLAN & DETAILS**

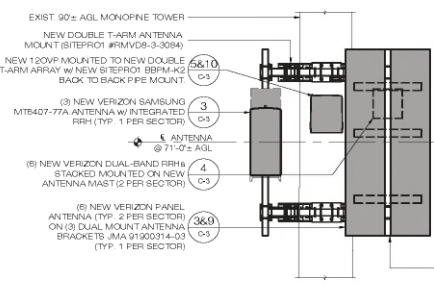
SHEET NUMBER: **C-2**



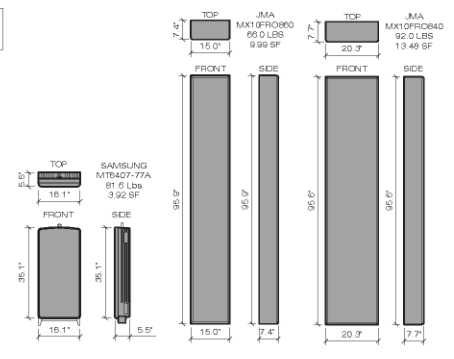


**1 ANTENNA MOUNT PLAN**  
C-3 SCALE: 3/4" = 1'-0"

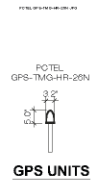
**NOTES:**  
1 PAINT MOUNTS, ANTENNAS, CABLES & APPURTENANCES TO MATCH TREE & INSTALL ANTENNA SOCKS ON ALL ANTENNAS. PAINT LUSERS ANTENNAS IN ACCORDANCE W/ MANUFACTURERS INSTALLATION REQUIREMENTS, VERIZON CONSTRUCTION MANAGER & OWNER.



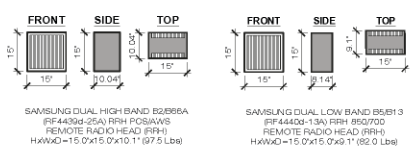
**2 ANTENNA MOUNT DETAIL**  
C-3 SCALE: 1/2" = 1'-0"



**PANEL ANTENNAS**  
**3 ANTENNA DETAILS**  
C-3 SCALE: 1/2" = 1'-0"

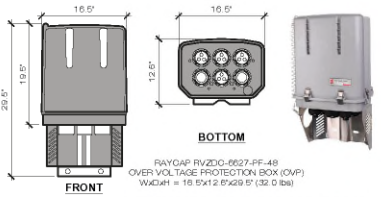


**GPS UNITS**

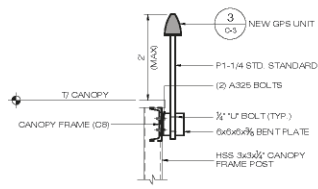


NOTE: WEIGHTS INCLUDE SOLAR SHIELD & MOUNTING BRACKET

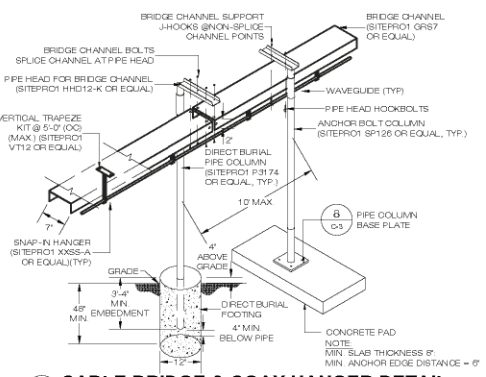
**4 RRH EQUIPMENT**  
C-3 SCALE: 3/4" = 1'-0"



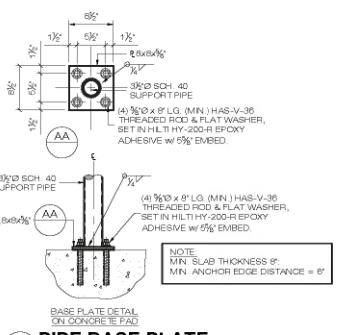
**5 MAIN DISTRIBUTION BOX (12 OVP)**  
C-3 SCALE: 1" = 1'-0"



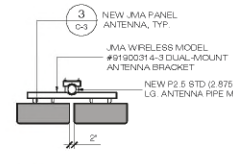
**6 GPS MOUNT**  
C-3 SCALE: N.T.S.



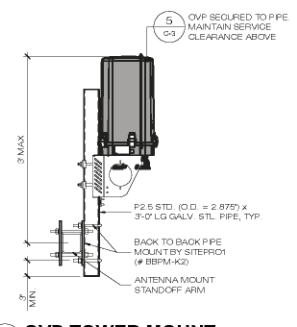
**7 CABLE BRIDGE & COAX HANGER DETAIL**  
C-3 SCALE: N.T.S.



**8 PIPE BASE PLATE**  
C-3 SCALE: N.T.S.



**9 DUAL-MOUNT BRACKET DETAIL**  
C-3 SCALE: N.T.S.



**10 OVP TOWER MOUNT**  
C-3 SCALE: 3/4" = 1'-0"

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**verizon**  
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**ALL-POINTS TECHNOLOGY CORPORATION**

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STATE OF CONNECTICUT  
MICHAEL S. TRODDEN  
33313 LICENSED PROFESSIONAL ENGINEER

**DESIGN PROFESSIONALS OF RECORD**  
PROF: MICHAEL S. TRODDEN P.E.  
CCMP: ALL-POINTS TECHNOLOGY CORPORATION  
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DRAWN BY: CSH  
DATE: 02/23/22 CHECKED BY: JRM  
VZW PROJECT CODE: 20212261778  
VZW LOCATION CODE: 691194  
VZW FUZE ID: 18474051

**SHEET TITLE:**  
**EQUIPMENT DETAILS**  
**C-3**

**SHEET NUMBER:**





### TYPICAL GROUNDING NOTES

- 1 GROUND PER NEC (NFPA-70), NESC AND MANUFACTURERS SPECIFICATIONS
- 2 #30 GREEN INSULATED STRANDED COPPER DOWN LEAD WITHIN 1'0" BETWEEN UPPER EQUIPMENT GROUND BAR AND LOWER EQUIPMENT GROUND BAR (EGB) AT BASE OF STRUCTURE. ROUTE GROUND CONDUIT ALONGSIDE HYBRID CABLES (WHERE APPLICABLE). COORDINATE W/ VERIZON CONSTRUCTION MANAGER AND OWNER. BOND CONDUIT TO GROUND BARS WITH #6 AWG GREEN INSULATED STRANDED COPPER WIRE (WHERE APPLICABLE). REFER TO E-4 FOR DETAILS.
- 3 BOND VERIZON MAIN GROUND BAR (MGB) TO NEW EXTERIOR GROUND RING (EGR) W/ #30 AWG GREEN INSULATED STRANDED COPPER WIRE (EGR) N 1'1" TYP. (2PL) REFER TO E-4 FOR DETAILS.
- 4 #30 GREEN INSULATED STRANDED COPPER DOWN LEAD WITHIN 1'0" BETWEEN ANTENNA SECTOR GROUND BAR & UPPER EQUIPMENT GROUND BAR (EGB). REFER TO E-4 FOR DETAILS.
- 5 #2 AWG SOLID TINNED BARE COPPER WIRE (STBC) EXTERNAL GROUND RING (EGR) AT PERMETER OF EQUIP. AREA & BETWEEN GROUND RINGS LOCATED MIN. 30" BELOW GRADE OR 6" BELOW FROST LINE, TYP.
- 6 BOND CANOPY POSTS, STEEL SERVICE FRAME POSTS & STEEL DUNNAGE FRAME (WHERE APPLICABLE) TO VERIZON EXTERIOR GROUND RING (EGR) W/ #2 AWG SOLID TINNED BARE COPPER WIRE (STBC) IN 1' LFTC.
- 7 BOND VERIZON INTEGRATED LOAD CENTER & TELCO HOFFMAN BOX TO EQUIPMENT GROUND BAR (EGB) W/ #6 AWG GREEN INSULATED STRANDED COPPER WIRE.
- 8 BOND VERIZON WIRELESS EQUIPMENT & BATTERY CABINETS TO VERIZON EQUIPMENT BAR (EGB) WITH #2 AWG GREEN INSULATED STRANDED COPPER WIRE PER MANUFACTURERS SPECIFICATIONS.
- 9 BOND HYBRID/COAXIAL CABLES TO ANTENNA SECTOR GROUND BARS & EQUIPMENT GROUND BAR (EGB) AT CANOPY W/ #6 AWG GREEN INSULATED STRANDED COPPER WIRE.
- 10 GROUND RRHS, QUAD DIPLEXERS & QWP TO ANTENNA GROUND BAR W/ #6 AWG GREEN INSULATED STRANDED COPPER WIRE PER MANUFACTURERS RECOMMENDATIONS.
- 11 BOND ANTENNA MOUNTING PIPE, ANTENNA MOUNTING BRACKETS & FRAMES TO ANTENNA GROUND BAR W/ #2 AWG GREEN INSULATED COPPER WIRE.
- 12 BOND GPS ANTENNA MOUNTING MAST (AS APPLICABLE) TO MAIN GROUND BAR W/ #2 AWG GREEN INSULATED COPPER WIRE.
- 13 BOND ALL ICE-BRIDGE POSTS TO EXTERNAL GROUND RING (EGR) WITH #2 SOLID TINNED WIRE.
- 14 BOND NEW GENERATOR PER MFR AND NEC REQUIREMENTS, TYP.

#### GROUNDING GENERAL NOTES:

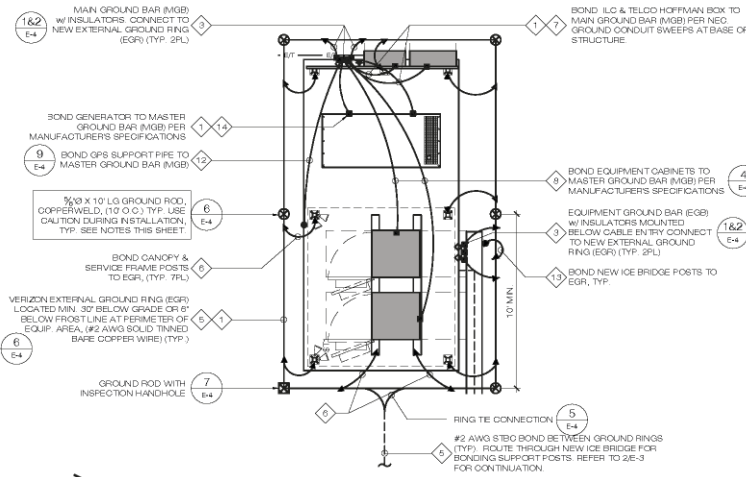
1. ALL SURGE SUPPRESSION DEVICES (WHERE APPLICABLE) SHALL BE BONDED TO EQUIPMENT GROUND BAR (EGB) PER MANUFACTURERS SPECIFICATIONS.
2. ALL IN-GROUND RINGS, RADIALS, AND BONDING CONDUCTORS SHALL BE #2 AWG SOLID BARE TINNED COPPER (SBTC) ALL AT SAME 30 IN. DEPTH OR 6 IN. BELOW FROST LINE WHICHEVER IS GREATER.
3. ALL GROUND RINGS SHALL BE MIN 2 FT FROM FOUNDATION BEING ENVICLED.
4. COMBINE IN-GROUND RINGS, RADIALS, AND BONDING CONDUCTORS INTO SINGLE CONDUCTOR FOR ALL PORTIONS PARALLEL 2 FT APART OR CLOSER.
5. UNLESS NOTED OTHERWISE, ALL ABOVE GROUND CONDUCTORS SHALL BE MIN #6 AWG INSULATED STRANDED COPPER.
6. CONDUCTORS BONDING ABOVE-GROUND CONNECTIONS TO IN-GROUND CONNECTIONS SHALL BE MIN #2 AWG SBTC UNLESS NOTED OTHERWISE AND SHALL BE PROTECTED BY LIQUID TIGHT FLEXIBLE NONMETALLIC CONDUIT FOR ALL PORTIONS ABOVE GROUND.
7. REFER TO GROUNDING NOTES & SPECIFICATIONS ON SHEET N-1 FOR MORE INFORMATION.

#### GROUNDING LEGEND

SYMBOL	DESCRIPTION
▶	EXOTHERMIC WELD
■	MECHANICAL CONNECTION
⊗	GROUND ROD
—	GROUND CONDUCTOR
—	GROUND ROD W/ INSPECTION HAND HOLE

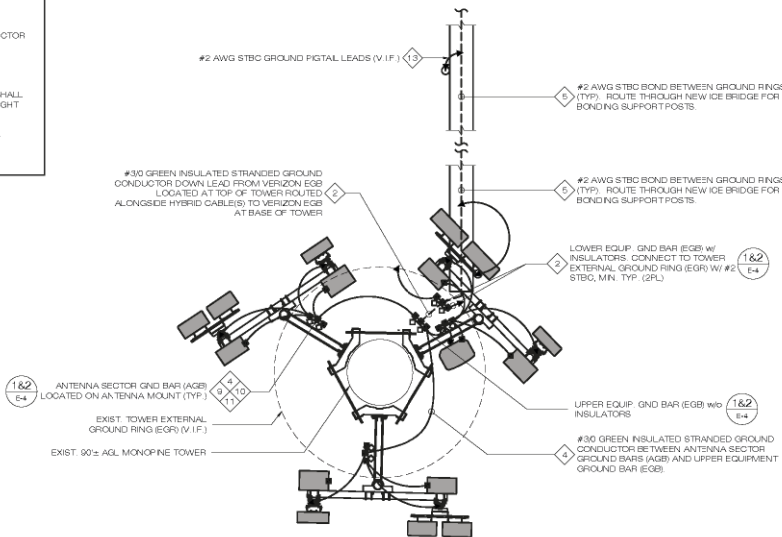
#### SITE UTILITY NOTES:

1. CONTRACTOR SHALL ENGAGE THE SERVICES OF AN UNDERGROUND UTILITY LOCATING COMPANY TO LOCATE ALL UNDERGROUND EQUIPMENT IN THE TRENCHING AREA TO AVOID ANY DAMAGE.
2. HAND EXCAVATE WITHIN 6' OF EXIST. UNDERGROUND UTILITIES (V.I.F.) MAINTAIN 18" MIN. CLEARANCE.
3. CONTRACTOR TO COORDINATE TRENCHING OPERATIONS W/ OWNER AND/OR MANAGEMENT COMPANY SO AS TO MINIMIZE DISRUPTIONS TO THE EXIST. PROPERTY OPERATIONS.



1 EQUIPMENT GROUNDING PLAN

E-3 SCALE: N.T.S.



2 ANTENNA GROUNDING PLAN

E-3 SCALE: N.T.S.

Celco Partnership d/b/a

**verizon**

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#### DESIGN PROFESSIONALS OF RECORD

PROF. MICHAEL S. TRODDEN P.E.  
COMP: ALL-POINTS TECHNOLOGY CORPORATION  
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WATERFORD, CT 06385

OWNER: AMERICAN TOWER CORPORATION  
ADDRESS: 3800 REGENCY PARKWAY,  
SUITE 100  
CARY, N.C. 27518

#### NEW CANAAN NE2 CT

SITE: 183 SOUNDVIEW LANE  
ADDRESS: NEW CANAAN, CT 06840  
APT FILING NUMBER: CT141NB15190

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VZW PROJECT CODE: 20212261778

VZW LOCATION CODE: 691194

VZW FUZE ID: 16474051

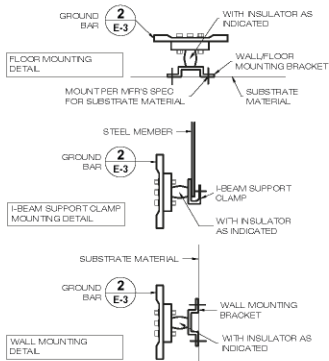
#### SHEET TITLE:

**EQUIPMENT  
GROUNDING PLANS &  
NOTES**

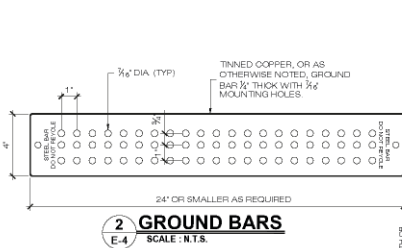
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**E-3**



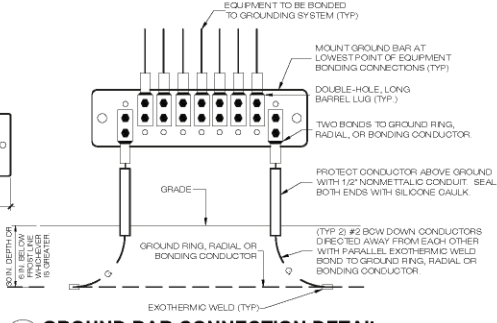


**1 GROUND BAR MOUNTING DETAILS**  
E-4 SCALE: N.T.S.



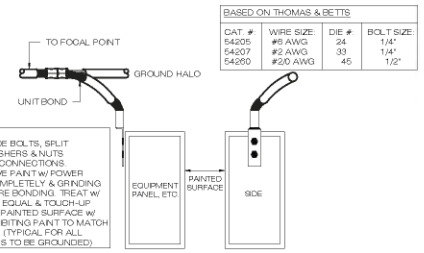
**2 GROUND BARS**  
E-4 SCALE: N.T.S.

- NOTES:
1. NO EXOTHERMIC WELDS TO GROUND BAR. ATTACH CONDUCTORS WITH (2) HOLE COPPER COMPRESSION TERMINATIONS AND ALL STAINLESS STEEL HARDWARE.
  2. DOUBLE UP CONNECTIONS ON BACKSIDE OF GROUND BAR ONLY AS NECESSARY.
  3. OXIDE INHIBITING COMPOUND TO BE USED AT ALL LOCATIONS.
  4. ALL STAINLESS STEEL MOUNTING HARDWARE.

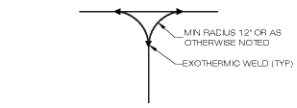


**3 GROUND BAR CONNECTION DETAIL**  
E-4 SCALE: N.T.S.

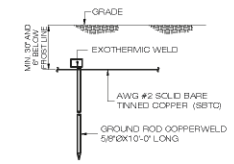
- NOTES:
1. PROVIDE BOLTS, SPLIT LOCKWASHERS & NUTS FOR ALL CONNECTIONS.
  2. REMOVE PAINT w/ POWER DRILL COMPLETELY & GRINDING BIT BEFORE BONDING. TREAT w/ NO-OK or EQUAL & TOUCH-UP AROUND PAINTED SURFACE w/ RUST INHIBITING PAINT TO MATCH EXISTING. TYPICAL FOR ALL SURFACES TO BE GROUNDING.



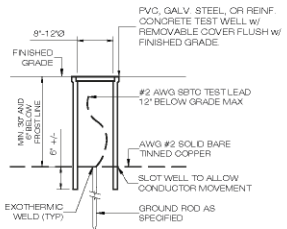
**4 (2) HOLE LUG BONDS**  
E-4 SCALE: N.T.S.



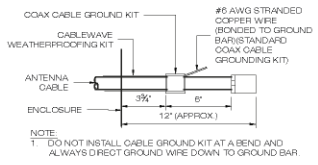
**5 TIE CONNECTION DETAIL**  
E-4 SCALE: N.T.S.



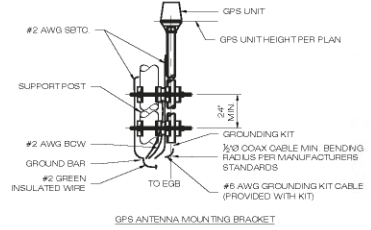
**6 GROUND ROD DETAIL**  
E-4 SCALE: N.T.S.



**7 TEST WELL DETAIL**  
E-4 SCALE: N.T.S.



**8 ANTENNA CABLE GROUNDING DETAIL**  
E-4 SCALE: N.T.S.

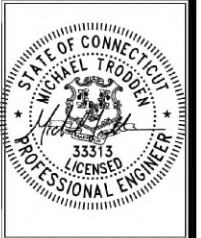


**9 GPS AND MOUNTING BRACKET GROUNDING DETAIL**  
E-4 SCALE: N.T.S.

Cellco Partnership d/b/a  
**verizon**  
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WALLINGFORD, CT 06495  
**ALL-POINTS TECHNOLOGY CORPORATION**  
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DESIGN PROFESSIONALS OF RECORD  
PROF: MICHAEL S. TRODDEN P.E.  
CCMP: ALL-POINTS TECHNOLOGY CORPORATION  
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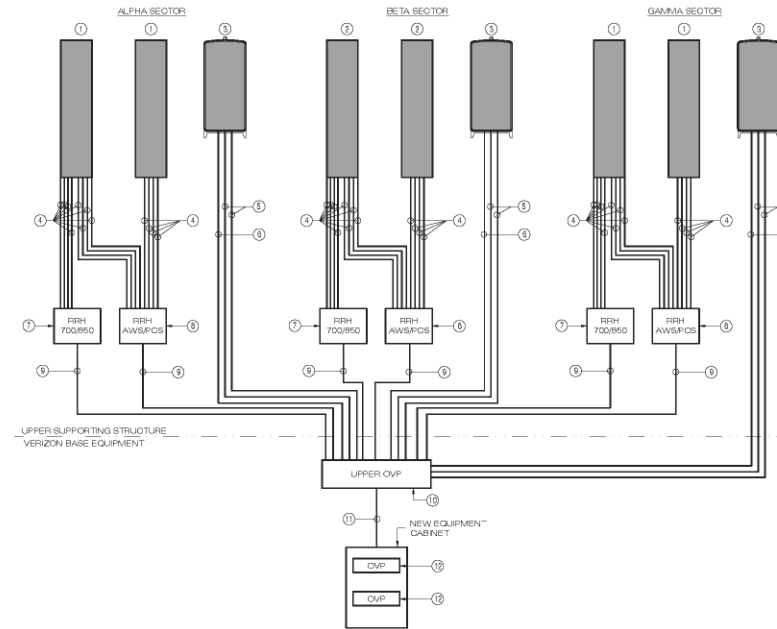
SHEET TITLE:  
**GROUNDING DETAILS**  
SHEET NUMBER:  
**E-4**

EQUIPMENT DATA								
EQUIPMENT SPECIFICATIONS								
SECTOR	ANTENNA MAKE/MODEL	QTY	AZMUTH	EQUIPMENT STATUS	HEIGHT (N)	WIDTH (IN)	DEPTH (IN)	WEIGHT (LBS)
ALPHA	700/850/1900 .JMA.MX1.DFRO960	1	25°	NEW	95.9	15.0	7.4	66.0 <sup>(1)</sup>
	1900 .JMA.MX1.DFRO960	1	25°	NEW	95.9	15.0	7.4	66.0 <sup>(1)</sup>
BETA	SAMSUNG MTR407-77A	1	25°	NEW	35.1	16.1	5.51	87.1 <sup>(1)</sup>
	700/850/2100 .JMA.MX1.DFRO940	1	105°	NEW	95.6	20.3	7.7	92.0 <sup>(1)</sup>
GAMMA	1900 .JMA.MX1.DFRO940	1	105°	NEW	95.6	20.3	7.7	92.0 <sup>(1)</sup>
	SAMSUNG MTR407-77A	1	105°	NEW	35.1	16.1	5.51	87.1 <sup>(1)</sup>
	700/850/2100 .JMA.MX1.DFRO960	1	240°	NEW	95.9	15.0	7.4	66.0 <sup>(1)</sup>
	1900 .JMA.MX1.DFRO960	1	240°	NEW	95.9	15.0	7.4	66.0 <sup>(1)</sup>
AFFURTENANCE MAKE/MODEL								
	SAMSUNG B2B56A RRH (RF4436d-25A)	3	-	NEW	15.0	15.0	10.1	97.5
	SAMSUNG B5B13 RRH (RF4440d-13A)	3	-	NEW	15.0	15.0	9.1	85.0
	RAYCAP RVZDC-6627-PF-4B	1	-	NEW	29.5	10.5	12.6	26.9

- (1) ETR DENOTES EXIST. TO REMAIN  
(2) WEIGHT WITHOUT MOUNTING BRACKET  
(3) ANTENNA DATA BASED ON LATEST VERIZON RFD'S  
(4) EQUIPMENT CONFIGURATION AS VIEWED FROM BEHIND  
(5) NOT TO EXCEED

BILL OF MATERIALS				
	EQUIPMENT DESCRIPTION	QUANTITY	LENGTH	COMMENTS
(1)	700/850/1900G2100	4		(JMA.MX1.DFRO960-XX)
(2)	700/850/1900G2100	2		(JMA.MX1.DFRO940-XX)
(3)	L86 ANTENNA w/ INTEGRATED RRH	3		(SAMSUNG MTR407-77A)
(4)	1/2" JUMPER CABLE	36	15 FT	ROUTED FROM RRHS TO ANTENNAS
(5)	ANTENNA LINK CABLES	6	15 M	ROUTE FROM UPPER OVP TO ANTENNAS
(6)	ANTENNA POWER CABLES	3	15 M	PROPRIETARY POWER CABLE FROM EXIST. OVP TO ANTENNAS
(7)	850/700 DUAL BAND RRH	3		SAMSUNG B5B13 RRH (RF4440d-13A) MOUNTED TO NEW ANTENNA MOUNT
(8)	POSIJAWS DUAL BAND RRH	3		SAMSUNG B2B56 RRH (RF4436d-25A) MOUNTED TO NEW ANTENNA MOUNT
(9)	RRH CABLES	6	15M	PROPRIETARY POWER & FIBER CABLES
(10)	UPPER 120VP	1		(RVZDC-6627-PF-4B) MOUNTED TO NEW ANTENNA MOUNT
(11)	HYBRID CABLE	1	125 FT	12x24 LOW INDUCTANCE (L.I.) HYBRID FEED-LINE CABLE ROUTED FROM LOWER OVP (6) TO UPPER OVP (10)
(12)	LOWER 60VP	2		(6 OVP) RACK MOUNTED IN NEW EQUIPMENT CABINET

- NOTES:  
1. INFORMATION SHOWN HEREON IS FOR USE BY VERIZON EQUIPMENT OPERATIONS.  
2. INFORMATION IS BASED ON LATEST VERIZON RFD'S.  
3. \* DENOTES EQUIPMENT DESIGNATED FOR LEASING ONLY\* (WHERE APPLICABLE)  
4. INSTALL ALARM BOARDS AT ALL OVP'S WHERE REQUIRED. COORDINATE W/ VERIZON EQUIPMENT ENGINEERING.  
5. INSTALL UP-CONVERTERS LOCATED AT BASE OVP'S WHERE REQUIRED. COORDINATE W/ VERIZON EQUIPMENT ENGINEERING AS NECESSARY.  
6. COORDINATE ANTENNA CABLING REQUIREMENTS WITH VERIZON ENGINEERING.  
7. CONTRACTOR SHALL INSTALL NEW SIDE-BY-SIDE & DUAL-MOUNT BRACKETS PER ANTENNA MOUNT MANUFACTURER RECOMMENDATIONS, INCLUDING VERIFICATION OF MINIMUM PIPE MAST DIAMETER REQUIRED TO INSTALL NEW MOUNT BRACKETS. CONTRACTOR SHALL NOTIFY ENGINEER OF RECORD SHOULD EXIST. PIPE MUST REQUIRE REPLACEMENT TO SUPPORT THE NEW MOUNT BRACKETS.



**1 PLUMBING DIAGRAM**  
B-1 SCALE: N.T.S.

- NOTE:  
1. INSTALL ALARM BOARDS AT ALL OVP'S WHERE REQUIRED.  
2. INSTALL UP-CONVERTERS LOCATED WITHIN NEW OVP RACK WHERE REQUIRED.  
3. COORDINATE WITH VERIZON EQUIPMENT ENGINEERING.

Cellco Partnership d/b/a

**verizon**

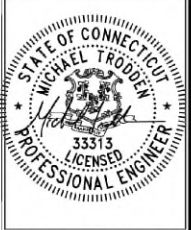
20 ALEXANDER DRIVE  
WALLINGFORD, CT 06495

**ALL-POINTS  
TECHNOLOGY CORPORATION**

587 VAUXHALL STREET EXTENSION - SUITE 311  
WATERFORD, CT 06385 PHONE: (860) 463-1907  
WWW.ALLPOINTS.TECH.COM FAX: (860) 463-0505

**CONSTRUCTION DOCUMENTS**

NO	DATE	REVISION
0	02/03/22	FOR REVIEW -JRM
1	02/28/22	FOR FILING
2	03/18/22	FOR FILING
3	05/22/22	FOR FILING
4		
5		
6		



**DESIGN PROFESSIONALS OF RECORD**

PROF. MICHAEL S. TRODDEN P.E.  
CCMP: ALL-POINTS TECHNOLOGY CORPORATION  
ADDRESS: 587 VAUXHALL STREET EXT. SUITE 311 WATERFORD, CT 06385  
OWNER: AMERICAN TOWER CORPORATION  
ADDRESS: 3800 REGENCY PARKWAY, SUITE 100 CARY, N.C. 27518

**NEW CANAAN NE2 CT**

SITE: 183 SOUNDVIEW LANE  
ADDRESS: NEW CANAAN, CT 06840  
APT FILING NUMBER: CT141NB13190  
DRAWN BY: CSR  
DATE: 02/23/22 CHECKED BY: JRM  
VZW PROJECT CODE: 20212291778  
VZW LOCATION CODE: 691194  
VZW FUZE ID: 18474051

**SHEET TITLE:**

**RF BILL OF MATERIALS & MECHANICAL SPECIFICATIONS**

SHEET NUMBER:

**B-1**



# **ATTACHMENT 4**



**Standby Power Rating**  
 50 kW, 63 kVA, 60 Hz

**Prime Power Rating\***  
 45 kW, 56 kVA, 60 Hz






Image used for illustration purposes only



\*EPA Certified Prime ratings are not available in the US or its Territories

## Codes and Standards

Not all codes and standards apply to all configurations. Contact factory for details.

-   UL2200, UL6200, UL1236, UL142
-  CSA C22.2
-   BS5514 and DIN 6271
-  SAE J1349
-  NFPA 37, 70, 99, 110
-  NEC700, 701, 702, 708
-  ISO 3046, 7637, 8528, 9001
-  NEMA ICS10, MG1, 250, ICS6, AB1
-  ANSI C62.41
-   IBC 2009, CBC 2010, IBC 2012, ASCE 7-05, ASCE 7-10, ICC-ES AC-156 (2012)

## Powering Ahead

For over 50 years, Generac has provided innovative design and superior manufacturing.

Generac ensures superior quality by designing and manufacturing most of its generator components, including alternators, enclosures and base tanks, control systems and communications software.

Generac gensets utilize a wide variety of options, configurations and arrangements, allowing us to meet the standby power needs of practically every application.

Generac searched globally to ensure the most reliable engines power our generators. We choose only engines that have already been proven in heavy-duty industrial applications under adverse conditions.

Generac is committed to ensuring our customers' service support continues after their generator purchase.

# SD050 | 3.4L | 50 kW INDUSTRIAL DIESEL GENERATOR SET

EPA Certified Stationary Emergency

## STANDARD FEATURES

### ENGINE SYSTEM

- Oil Drain Extension
- Air Cleaner
- Fan Guard
- Stainless Steel Flexible Exhaust Connection
- Factory Filled Oil and Coolant
- Radiator Duct Adapter (Open Set Only)
- Critical Silencer (Enclosed Units Only)

### Fuel System

- Fuel Lockoff Solenoid
- Primary Fuel Filter

### Cooling System

- Closed Coolant Recovery System
- UV/Ozone Resistant Hoses
- Factory-Installed Radiator
- Radiator Drain Extension
- 50/50 Ethylene Glycol Antifreeze
- 120 VAC Coolant Heater

### Electrical System

- Battery Charging Alternator
- Battery Cables
- Battery Tray
- Rubber-Booted Engine Electrical Connections
- Solenoid Activated Starter Motor

### ALTERNATOR SYSTEM

- UL2200 GENprotect™
- 12 Leads (3-Phase, Non 600V)
- Class H Insulation Material
- Vented Rotor
- 2/3 Pitch
- Skewed Stator
- Auxiliary Voltage Regulator Power Winding
- Brushless Excitation
- Sealed Bearing
- Automated Manufacturing (Winding, Insertion, Lacing, Varnishing)
- Rotor Dynamically Spin Balanced
- Full Load Capacity Alternator
- Protective Thermal Switch

### GENERATOR SET

- Internal Genset Vibration Isolation
- Separation of Circuits - High/Low Voltage
- Separation of Circuits - Multiple Breakers
- Wrapped Exhaust Piping
- Standard Factory Testing
- 2 Year Limited Warranty (Standby Rated Units)
- 1 Year Limited Warranty (Prime Rated Units)
- Silencer Mounted in the Discharge Hood (Enclosed Only)
- Silencer of Heat Shield

### ENCLOSURE (If Selected)

- Rust-Proof Fasteners with Nylon Washers to Protect Finish
- High Performance Sound-Absorbing Material (Sound Attenuated Enclosures)
- Gasketed Doors
- Stamped Air-Intake Louvers
- Upward Facing Discharge Hoods (Radiator and Exhaust)
- Stainless Steel Lift Off Door Hinges
- Stainless Steel Lockable Handles
- RhinoCoat™ - Textured Polyester Powder Coat Paint

### FUEL TANKS (If Selected)

- UL 142/ULC S-601
- Double Wall Construction
- Vents
- Sloped Top
- Sloped Bottom
- Factory Pressure Tested - 2 psi
- Rupture Basin Alarm
- Fuel Level
- Check Valve In Supply and Return Lines
- RhinoCoat™ - Textured Polyester Powder Coat Paint
- Stainless Steel Hardware

## CONTROL SYSTEM



### Digital H Control Panel- Dual 4x20 Display

#### Program Functions

- Programmable Crank Limiter
- 7-Day Programmable Exerciser
- Special Applications Programmable Logic Controller
- RS-232/485 Communications
- All Phase Sensing Digital Voltage Regulator
- 2-Wire Start Capability
- Date/Time Fault History (Event Log)
- Isochronous Governor Control
- Waterproof/Sealed Connectors

- Audible Alarms and Shutdowns
- Not in Auto (Flashing Light)
- Auto/Off/Manual Switch
- E-Stop (Red Mushroom-Type)
- NFPA110 Level I and II (Programmable)
- Customizable Alarms, Warnings, and Events
- Modbus® Protocol
- Predictive Maintenance Algorithm
- Sealed Boards
- Password Parameter Adjustment Protection
- Single Point Ground
- 16 Channel Remote Trending
- 0.2 msec High Speed Remote Trending
- Alarm Information Automatically Annunciated on the Display

#### Full System Status Display

- Power Output (kW)
- Power Factor
- kW Hours, Total, and Last Run
- Real/Reactive/Apparent Power
- All Phase AC Voltage
- All Phase Currents

- Oil Pressure
- Coolant Temperature
- Coolant Level
- Engine Speed
- Battery Voltage
- Frequency

#### Alarms and Warnings

- Oil Pressure
- Coolant Temperature
- Coolant Level
- Engine Overspeed
- Battery Voltage
- Alarms and Warnings Time and Date Stamped
- Snap Shots of Key Operation Parameters During Alarms and Warnings
- Alarms and Warnings Spelled Out (No Alarm Codes)

## CONFIGURABLE OPTIONS

### ENGINE SYSTEM

- Engine Coolant Heater
- Oil Heater
- Industrial Silencer (Open Set)
- Air Filter Restriction Indicator
- Fan and Belt Guards (Enclosed Units Only)

### FUEL SYSTEM

- Flexible Fuel Lines
- Primary Fuel Filter

### ELECTRICAL SYSTEM

- 10A UL Listed Battery Charger
- Battery Warmer

### ALTERNATOR SYSTEM

- Alternator Upsizing
- Anti-Condensation Heater
- Tropical Coating
- Permanent Magnet Excitation

### GENERATOR SET

- 8 Position Load Center

### CIRCUIT BREAKER OPTIONS

- Main Line Circuit Breaker
- 2nd Main Line Circuit Breaker
- Shunt Trip and Auxiliary Contact
- Electronic Trip Breakers

### ENCLOSURE

- Weather Protected Enclosure
- Level 1 Sound Attenuated
- Level 2 Sound Attenuated
- Level 2 Sound Attenuated with Motorized Dampers
- Steel Enclosure
- Aluminum Enclosure
- Up to 200 MPH Wind Load Rating (Contact Factory for Availability)
- AC/DC Enclosure Lighting Kit
- Door Open Alarm Switch
- Pad Vibration Isolator
- Enclosure Heater

### WARRANTY (Standby Gensets Only)

- 2 Year Extended Limited Warranty
- 5 Year Limited Warranty
- 5 Year Extended Limited Warranty
- 7 Year Extended Limited Warranty
- 10 Year Extended Limited Warranty

### CONTROL SYSTEM

- NFPA 110 Compliant 21-Light Remote Annunciator
- Remote Relay Assembly (8 or 16)
- Oil Temperature Sender with Alarm
- Remote E-Stop (Break Glass-Type, Surface Mount)
- Remote E-Stop (Red Mushroom-Type, Surface Mount)
- Remote E-Stop (Red Mushroom-Type, Flush Mount)
- Remote Communication - Modem
- 10A Engine Run Relay
- Ground Fault Indication and Protection Functions
- 100 dB Alarm Horn
- 120V GFCI and 240V Outlets

### FUEL TANKS (Size On Last Page)

- 8 in (203.2 mm) Fill Extension
- 13 in (330.2 mm) Fill Extension
- 19 in (482.6 mm) Fill Extension
- Overfill Protection Valve
- Vent Extensions
- Tank Risers
- Fuel Drop Tube
- Return Hose
- 90% Fuel Level Alarm

## ENGINEERED OPTIONS

### ENGINE SYSTEM

- Coolant Heater Ball Valves
- Fluid Containment Pan

### CONTROL SYSTEM

- Spare Inputs (x4) / Outputs (x4)
- Battery Disconnect Switch

### ALTERNATOR SYSTEM

- 3rd Breaker System

### GENERATOR SET

- Special Testing
- IBC Seismic Certification

### TANKS

- UL2085 Tank
- Stainless Steel Tanks

# SD050 | 3.4L | 50 kW INDUSTRIAL DIESEL GENERATOR SET

EPA Certified Stationary Emergency

## APPLICATION AND ENGINEERING DATA

### ENGINE SPECIFICATIONS

#### General

Make	Generac
EPA Emissions Compliance	Stationary Emergency
EPA Emissions Reference	See Emission Data Sheet
Cylinder #	4
Type	In-Line
Displacement - in <sup>3</sup> (L)	207.48 (3.4)
Bore - in (mm)	3.86 (98)
Stroke - in (mm)	4.45 (113)
Compression Ratio	18.5:1
Intake Air Method	Turbocharged/Aftercooled
Cylinder Head	Cast Iron OHV
Piston Type	Aluminum
Crankshaft Type	Forged Steel

#### Engine Governing

Governor	Electronic Isochronous
Frequency Regulation (Steady State)	±0.25%

#### Lubrication System

Oil Pump Type	Gear
Oil Filter Type	Full Flow Cartridge
Crankcase Capacity - qt (L)	7.4 (7)

#### Cooling System

Cooling System Type	Closed Recovery
Water Pump Type	Pre-Lubed, Self Sealing
Fan Type	Pusher
Fan Speed - rpm	2,250
Fan Diameter - in (mm)	560 (22)

#### Fuel System

Fuel Type	Ultra Low Sulfur Diesel Fuel #2
Fuel Specifications	ASTM
Fuel Filtering (microns)	10
Fuel Inject Pump	Bosch (VE)
Fuel Pump Type	Engine Driven Gear
Injector Type	Pintel - 2,100 psi (14,479 kPa)
Fuel Supply Line - in (mm)	0.312 (7.92) NPT
Fuel Return Line - in (mm)	0.312 (7.92) NPT

#### Engine Electrical System

System Voltage	12 VDC
Battery Charger Alternator	Standard
Battery Size	See Battery Index 0161970SBY
Battery Voltage	12 VDC
Ground Polarity	Negative

### ALTERNATOR SPECIFICATIONS

Standard Model	K0050124Y21
Poles	4
Field Type	Revolving
Insulation Class - Rotor	H
Insulation Class - Stator	H
Total Harmonic Distortion	<5% (3-Phase)
Telephone Interference Factor (TIF)	< 50

Standard Excitation	Synchronous Brushless
Bearings	Single Sealed Cartridge
Coupling	Direct via Flexible Disc
Load Capacity - Standby	100%
Prototype Short Circuit Test	Yes
Voltage Regulator Type	Digital
Number of Sensed Phases	All
Regulation Accuracy (Steady State)	±0.25%



# SD050 | 3.4L | 50 kW

## INDUSTRIAL DIESEL GENERATOR SET

EPA Certified Stationary Emergency

### OPERATING DATA

#### POWER RATINGS

		Standby
Single-Phase 120/240 VAC @1.0pf	50 kW	Amps: 208
Three-Phase 120/208 VAC @0.8pf	50 kW	Amps: 173
Three-Phase 120/240 VAC @0.8pf	50 kW	Amps: 150
Three-Phase 277/480 VAC @0.8pf	50 kW	Amps: 75
Three-Phase 346/600 VAC @0.8pf	50 kW	Amps: 60

#### MOTOR STARTING CAPABILITIES (skVA)

skVA vs. Voltage Dip			
277/480 VAC	30%	208/240 VAC	30%
K0050124Y21	98	K0050124Y21	75
K0060124Y21	124	K0060124Y21	95

#### FUEL CONSUMPTION RATES\*

Fuel Pump Lift - ft (m)	Diesel - gph (Lph)	
	Percent Load	Standby
3 (1)	25%	1.3 (4.9)
	50%	2.3 (8.7)
Total Fuel Pump Flow (Combustion + Return) - gph (Lph)	75%	3.3 (12.5)
3.6 (13.5)	100%	4.3 (16.4)

\* Fuel supply installation must accommodate fuel consumption rates at 100% load.

#### COOLING

		Standby
Coolant Flow	gpm (Lpm)	12.2 (46)
Coolant System Capacity	gal (L)	2.5 (9.5)
Heat Rejection to Coolant	BTU/hr (kW)	135,900 (39.8)
Inlet Air	scfm (m <sup>3</sup> /hr)	7,500 (212)
Maximum Operating Ambient Temperature	°F (°C)	122 (50)
Maximum Ambient Temperature (Before Derate)	See Bulletin No. 0199280SSD	
Maximum Radiator Backpressure	in H <sub>2</sub> O (kPa)	0.5 (0.12)

#### COMBUSTION AIR REQUIREMENTS

	Standby
Flow at Rated Power - scfm (m <sup>3</sup> /min)	166 (4.7)

#### ENGINE

		Standby
Rated Engine Speed	RPM	1,800
Horsepower at Rated kW**	hp	86
Piston Speed	ft/min (m/min)	1,335 (406.9)
BMEP	psi (kPa)	169 (1,165)

#### EXHAUST

		Standby
Exhaust Flow (Rated Output)	scfm (m <sup>3</sup> /min)	448 (12.7)
Max. Allowable Backpressure	inHg (kPa)	1.5 (5.1)
Exhaust Temp (Rated Output)	°F (°C)	1,044 (562)

\*\* Refer to "Emissions Data Sheet" for maximum bHP for EPA and SCAQMD permitting purposes.

Deration – Operational characteristics consider maximum ambient conditions. Derate factors may apply under atypical site conditions.

Please contact a Generac Power Systems Industrial Dealer for additional details. All performance ratings in accordance with ISO3046, BS5514, ISO8528, and DIN6271 standards.

Standby - See Bulletin 0187500SSB

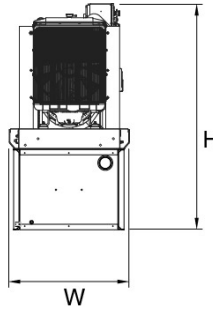
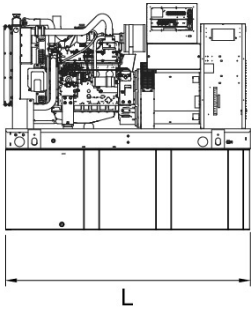
Prime - See Bulletin 0187510SSB

# SD050 | 3.4L | 50 kW

## INDUSTRIAL DIESEL GENERATOR SET

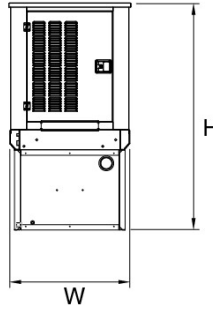
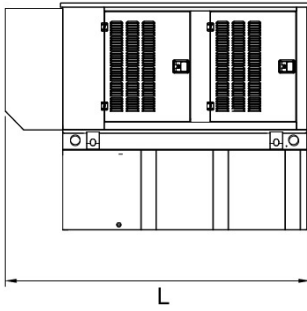
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### DIMENSIONS AND WEIGHTS\*



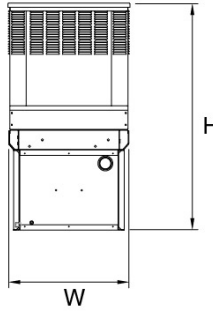
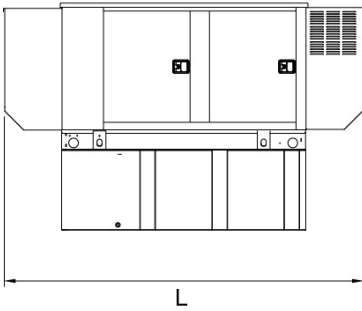
#### OPEN SET (Includes Exhaust Flex)

Run Time - Hours	Usable Capacity - Gal (L)	L x W x H - in (mm)	Minimum Weight - lbs (kg)	Maximum Weight - lbs (kg)
No Tank	-	76.7 (1,948) x 37.4 (950) x 45.2 (1,147)	1,710 (776)	1,836 (833)
12	54 (204)	76.7 (1,948) x 37.4 (950) x 58.2 (1,477)	2,190 (993)	2,316 (932)
30	132 (499)	76.7 (1,948) x 37.4 (950) x 70.2 (1,782)	2,420 (1,098)	2,546 (979)
44	190 (719)	76.7 (1,948) x 37.4 (950) x 82.2 (2,087)	2,629 (1,192)	2,755 (1,022)
49	211 (799)	106.0 (2,692) x 37.4 (950) x 71.2 (1,807)	2,634 (1,192)	2,760 (1,023)
69	300 (1,136)	92.9 (2,360) x 37.4 (950) x 85.7 (2,176)	2,692 (1,221)	2,818 (1,035)



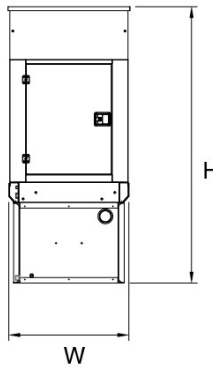
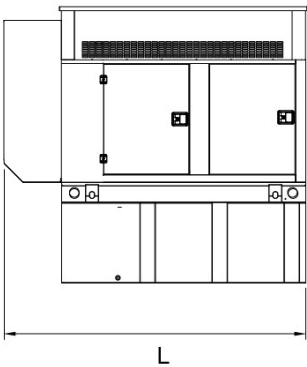
#### WEATHER PROTECTED ENCLOSURE

Run Time - Hours	Usable Capacity - Gal (L)	L x W x H - in (mm)	Steel Weight Minimum - lbs (kg)	Steel Weight Maximum - lbs (kg)	Aluminum Weight Minimum - lbs (kg)	Aluminum Weight Maximum - lbs (kg)
No Tank	-	94.8 (2,409) x 38.0 (965) x 49.5 (1,258)	2,158 (979)	2,286 (1,037)	1,935 (878)	2,965 (1,345)
12	54 (204)	94.8 (2,409) x 38.0 (965) x 62.5 (1,588)	2,638 (1,197)	2,766 (1,255)	2,415 (1,096)	3,445 (1,563)
30	132 (499)	94.8 (2,409) x 38.0 (965) x 74.5 (1,893)	2,868 (1,301)	2,996 (1,359)	2,645 (1,200)	3,675 (1,667)
44	190 (719)	94.8 (2,409) x 38.0 (965) x 86.5 (2,198)	3,077 (1,396)	3,205 (1,454)	2,854 (1,295)	3,884 (1,762)
49	211 (799)	106.0 (2,692) x 38.0 (965) x 99.0 (2,516)	4,316 (1,958)	4,572 (2,074)	3,870 (1,755)	5,930 (2,690)
69	300 (1,136)	94.8 (2,409) x 38.0 (965) x 90.0 (2,287)	3,140 (1,424)	3,268 (1,482)	2,917 (1,323)	3,947 (1,790)



#### LEVEL 1 SOUND ATTENUATED ENCLOSURE

Run Time - Hours	Usable Capacity - Gal (L)	L x W x H - in (mm)	Steel Weight Minimum - lbs (kg)	Steel Weight Maximum - lbs (kg)	Aluminum Weight Minimum - lbs (kg)	Aluminum Weight Maximum - lbs (kg)
No Tank	-	94.8 (2,409) x 38.0 (965) x 49.5 (1,258)	2,158 (979)	2,286 (1,037)	1,935 (878)	2,965 (1,345)
12	54 (204)	94.8 (2,409) x 38.0 (965) x 62.5 (1,588)	2,638 (1,197)	2,766 (1,255)	2,415 (1,096)	3,445 (1,563)
30	132 (499)	94.8 (2,409) x 38.0 (965) x 74.5 (1,893)	2,868 (1,301)	2,996 (1,359)	2,645 (1,200)	3,675 (1,667)
44	190 (719)	94.8 (2,409) x 38.0 (965) x 86.5 (2,198)	3,077 (1,396)	3,205 (1,454)	2,854 (1,295)	3,884 (1,762)
49	211 (799)	106.0 (2,692) x 38.0 (965) x 99.0 (2,516)	4,316 (1,958)	4,572 (2,074)	3,870 (1,755)	5,930 (2,690)
69	300 (1,136)	94.8 (2,409) x 38.0 (965) x 90.0 (2,287)	3,140 (1,424)	3,268 (1,482)	2,917 (1,323)	3,947 (1,790)



#### LEVEL 2 SOUND ATTENUATED ENCLOSURE

Run Time - Hours	Usable Capacity - Gal (L)	L x W x H - in (mm)	Steel Weight Minimum - lbs (kg)	Steel Weight Maximum - lbs (kg)	Aluminum Weight Minimum - lbs (kg)	Aluminum Weight Maximum - lbs (kg)
No Tank	-	94.8 (2,409) x 38 (965) x 70.1 (1,780)	2,389 (1,084)	2,517 (1,142)	2,035 (923)	2,163 (981)
12	54 (204)	94.8 (2,409) x 38 (965) x 62.5 (1,588)	2,638 (1,197)	2,766 (1,255)	2,415 (1,095)	3,445 (1,563)
30	132 (499)	94.8 (2,409) x 38 (965) x 74.5 (1,893)	2,868 (1,301)	2,996 (1,359)	2,645 (1,200)	3,675 (1,667)
44	190 (719)	94.8 (2,409) x 38 (965) x 86.5 (2,198)	3,077 (1,396)	3,205 (1,454)	2,854 (1,295)	3,884 (1,762)
49	211 (799)	106.0 (2,692) x 38 (965) x 99 (2,516)	4,316 (1,958)	4,572 (2,074)	3,870 (1,755)	5,930 (2,690)
69	300 (1,136)	94.8 (2,409) x 38 (965) x 110.6 (2,809)	3,371 (1,529)	3,499 (1,587)	3,017 (1,368)	3,145 (1,427)

\* All measurements are approximate and for estimation purposes only. Specification characteristics may change without notice. Please contact a Generac Power Systems Industrial Dealer for detailed installation drawings.

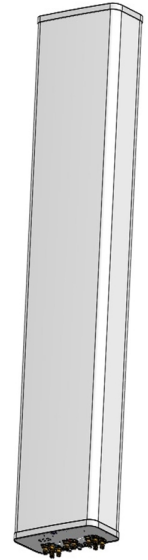
# MX10FRO840-xx

## NWAV™ X-Pol Ten-Port Antenna

**X-Pol Ten-Port 8 ft, 40° Fast Roll Off, with Smart Bias Ts, 698-4200 MHz:**

**2 ports 698-894 MHz, 4 ports 1695-2180 MHz, and 4 ports 3400-4200 MHz**

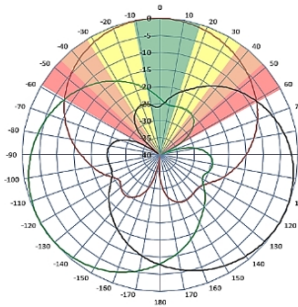
- Fast Roll Off (FRO™) azimuth beam pattern improves Intra- and Inter-cell SINR
- Excellent passive intermodulation (PIM) performance reduces harmful interference.
- Fully integrated (iRETs) with independent RET control for low band and mid band
- FET configured with internal RET for high band & ease of future network optimization.
- SON-Ready array spacing supports beamforming capabilities
- Suitable for 3G, 4G, and 5G interface technologies
- Integrated Smart Bias-Ts reduce leasing costs



### Fast Roll-Off antennas increase data throughput without compromising coverage

The horizontal beam produced by Fast Roll-Off (FRO) technology increases the Signal to Interference & Noise Ratio (SINR) by eliminating overlap between sectors.

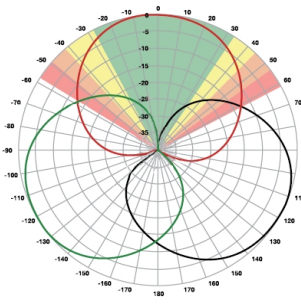
#### Non-FRO antenna



Large traditional antenna pattern overlap creates harmful interference.

JMA's FRO antenna pattern minimizes overlap, thereby minimizing interference.

#### JMA FRO antenna



LTE throughput	SINR	Speed (bps/Hz)	Speed increase	CQI
Excellent	>18	>4.5	333+%	8-10
Good	15-18	3.3-4.5	277%	6-7
Fair	10-15	2-3.3	160%	4-6
Poor	<10	<2	0%	1-3

The LTE radio automatically selects the best throughput based on measured SINR.

Electrical specification (minimum/maximum)	Ports 1, 2		Ports 3, 4, 5, 6		
	Frequency bands, MHz	698-798	824-894	1695-1880	1850-1990
Polarization	± 45°		± 45°		
Average gain over all tilts, dBi	17.4	17.8	18.9	19.6	20.2
Horizontal beamwidth (HBW), degrees <sup>1</sup>	44	40	39	36	34
Front-to-back ratio, co-polar power @180°± 30°, dB	>22.0	>22.0	>25.0	>25.0	>25.0
X-Pol discrimination (CPR) at boresight, dB	>21.0	>19.0	>18	>19	>20
Vertical beamwidth (VBW), degrees <sup>1</sup>	9.6	8.7	5.8	5.7	5.3
Electrical downtilt (EDT) range, degrees	2-12		0-9		
First upper side lobe (USLS) suppression, dB <sup>1</sup>	≤-18.0	≤-19.0	≤-16.0	≤-16.0	≤-16.0
Cross-polar isolation, port-to-port, dB <sup>1</sup>	25	25	25	25	25
Max VSWR / return loss, dB	1.5:1 / -14.0		1.5:1 / -14.0		
Max passive intermodulation (PIM), 2x20W carrier, dBc	-153		-153		
Max input power per any port, watts	300		250		
Total composite power all ports (1-10), watts	1500				

<sup>1</sup> Typical value over frequency and tilt

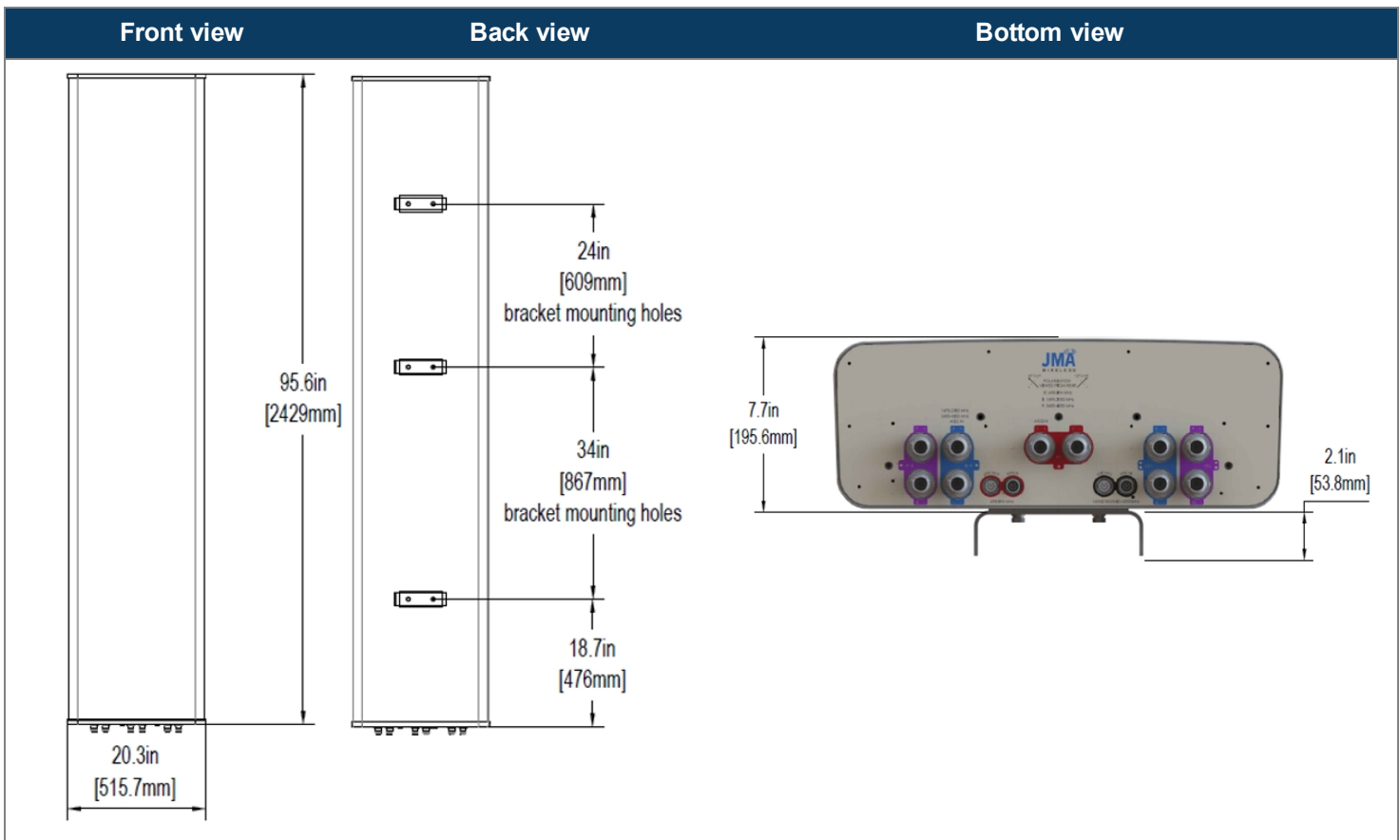
Electrical specification (minimum/maximum)	Ports 7, 8, 9, 10			
Frequency bands, MHz	3400-3550	3550-3700	3700-3950	3950-4200
Polarization	± 45°			
Average gain over all tilts, dBi	17.2	17.4	17.6	17.8
Horizontal beamwidth (HBW), degrees	44	42	40	39
Front-to-back ratio, co-polar power @180°± 30°, dB	>25	>25	>25	>25
Vertical beamwidth (VBW), degrees <sup>1</sup>	9.0	8.8	8.6	8.2
Electrical downtilt (EDT) range, degrees	2-12 orderable in 1 deg increments			
First upper side lobe (USLS) suppression, dB <sup>1</sup>	≤-16	≤-15	≤-16	≤-15
Cross-polar isolation, port-to-port, dB <sup>1</sup>	25	25	25	25
Max VSWR / return loss, dB	1.5:1 / -14.0			
Max input power per any port, watts	200			
Total composite power all ports (1-10), watts	1500			

<sup>1</sup> Typical value over frequency and tilt

\* For ports 7-10, the electrical downtilt is FET configured with internal RET, where the required electrical downtilt is defined at the time of order per the ordering information below.

Ordering information	
Antenna model	Description
MX10FRO840-xx (xx represents the FET in one degree increments for 3.4-4.2 GHz)	8F X- Pol 10 Port FRO 40° 2-12°/ 0-9°/ 2-12°, 4.3-10 & SBTs
	xx=02 thru 12 for each 1 degree tilt 3.4-4.2GHz Examples: MX10FRO840-02 – 2deg, MX10FRO840-09 – 9deg, MX10FRO840-12-12deg
Optional accessories	
<a href="#">AISG cables</a>	M/F cables for AISG connections
<a href="#">PCU-1000 RET controller</a>	Stand-alone controller for RET control and configurations
<a href="#">91900314-03</a>	Dual Mount Bracket (see 91900314 bracket document for details)

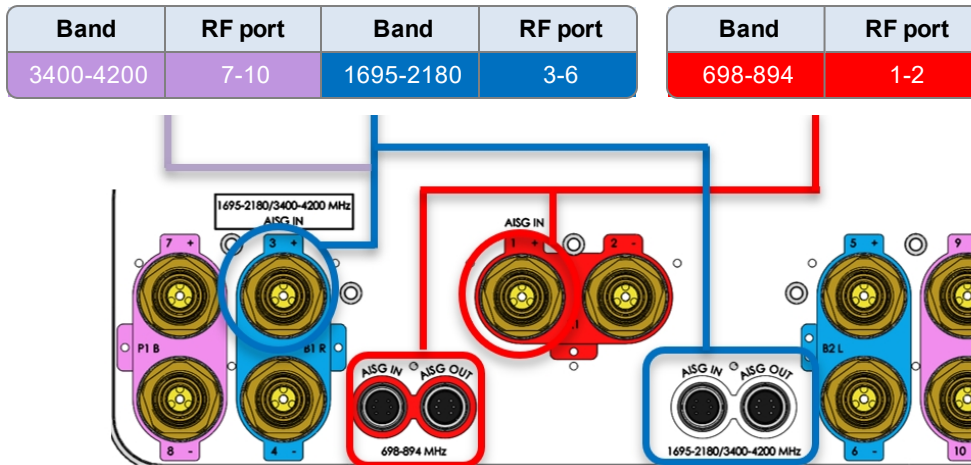
Mechanical specifications	
Dimensions height/width/depth, inches (mm)	95.6/ 20.3/ 7.7 (2429/ 515.7/ 195.6)
Shipping dimensions length/width/height, inches (mm)	100.6/ 23.8/ 14.5(2555/ 605/ 368)
No. of RF input ports, connector type, and location	10 x 4.3-10 female, bottom
RF connector torque	96 lbf-in (10.85 N·m or 8 lbf-ft)
Net antenna weight, lb (kg)	92 (41.7)
Shipping weight, lb (kg)	146.9 (66.6)
Antenna mounting and downtilt kit included with antenna	91900318, 91900319 (middle bracket)
Net weight of the mounting and downtilt kit, lb (kg)	29 (13.1)
Range of mechanical up/down tilt	-2° to 12°
Rated wind survival speed, mph (km/h)	150 (241)
Frontal, lateral, and rear wind loading @ 150 km/h, lbf (N)	247.4 (1101), 55.3 (246), 373.7 (1662)
Equivalent flat plate @ 100 mph and Cd=2, sq ft	4.98



Remote electrical tilt (RET 1000) information	
RET location	Integrated into antenna
RET interface connector type	8-pin AISG connector per IEC 60130-9 or RF port bias-t
RET connector torque	Min 0.5 N·m to max 1.0 N·m (hand pressure & finger tight)
RET interface connector quantity	2 pairs of AISG male/female connectors and 2 RF port Bias Ts
RET interface connector location	Bottom of the antenna
Total no. of internal RETs 698-894 MHz	1
Total no. of internal RETs 1695-2180 MHz	1
Total no. of internal RETs 3400-4200 MHz	1
RET input operating voltage, vdc	10-30
RET max power consumption, idle state, W	≤ 2.0
RET max power consumption, normal operating conditions, W	≤ 13.0
RET communication protocol	AISG 2.0 / 3GPP

### RET and RF connector topology

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

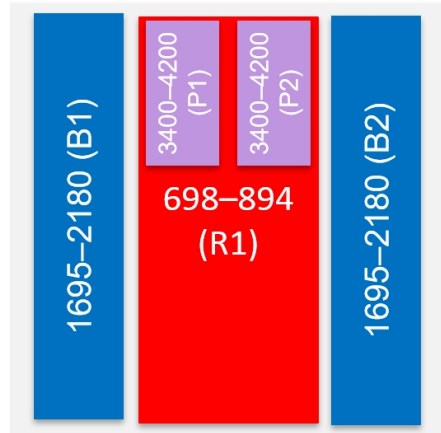


Note: The RET Device for 3400-4200 MHz is connected via the 1695-2180 Port 3 Bias T port or 1695-2180/3400-4200 MHz AISG ports.

### Array topology

5 sets of radiating arrays  
 R1: 698-894 MHz  
 B1: 1695-2180 MHz  
 B2: 1695-2180 MHz  
 P1: 3400-4200 MHz  
 P2: 3400-4200 MHz

Band	RF port
698-894	1-2
1695-2180	3-4
1695-2180	5-6
3400-4200	7-8
3400-4200	9-10



# MX10FRO860-xx

## NWAV™ X-Pol Ten-Port Antenna

**X-Pol Ten-Port 8 ft, 60° Fast Roll Off, with Smart Bias Ts, 698-4200 MHz:**

**2 ports 698-894 MHz, 4 ports 1695-2180 MHz, and 4 ports 3400-4200 MHz**

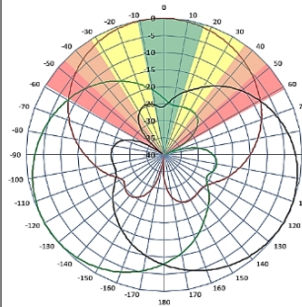
- Fast Roll Off (FRO™) azimuth beam pattern improves Intra- and Inter-cell SINR
- Excellent passive intermodulation (PIM) performance reduces harmful interference.
- Fully integrated (iRETs) with independent RET control for low band and mid band
- FET configured with internal RET for high band & ease of future network optimization.
- SON-Ready array spacing supports beamforming capabilities
- Suitable for 3G, 4G, and 5G interface technologies
- Integrated Smart Bias-Ts reduce leasing costs



### Fast Roll-Off antennas increase data throughput without compromising coverage

The horizontal beam produced by Fast Roll-Off (FRO) technology increases the Signal to Interference & Noise Ratio (SINR) by eliminating overlap between sectors.

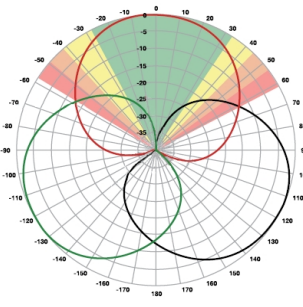
#### Non-FRO antenna



Large traditional antenna pattern overlap creates harmful interference.

JMA's FRO antenna pattern minimizes overlap, thereby minimizing interference.

#### JMA FRO antenna



	LTE throughput	SINR	Speed (bps/Hz)	Speed increase	CQI
Excellent	>18	>4.5	333+%	8-10	
Good	15-18	3.3-4.5	277%	6-7	
Fair	10-15	2-3.3	160%	4-6	
Poor	<10	<2	0%	1-3	

The LTE radio automatically selects the best throughput based on measured SINR.

Electrical specification (minimum/maximum)	Ports 1, 2		Ports 3, 4, 5, 6		
	Frequency bands, MHz	698-798	824-894	1695-1880	1850-1990
Polarization	± 45°		± 45°		
Average gain over all tilts, dBi	15.9	16.2	17.4	17.9	18.0
Horizontal beamwidth (HBW), degrees <sup>1</sup>	61.0	57.0	58.0	55.0	55.5
Front-to-back ratio, co-polar power @180°± 30°, dB	>22.0	>21.0	>25.0	>25.0	>25.0
X-Pol discrimination (CPR) at boresight, dB	>15.0	>15.0	>15	>15	>15
Vertical beamwidth (VBW), degrees <sup>1</sup>	9.5	8.5	5.7	5.3	5.1
Electrical downtilt (EDT) range, degrees	2-12		0-9		
First upper side lobe (USLS) suppression, dB <sup>1</sup>	≤-15.0	≤-15.0	≤-16.0	≤-16.0	≤-16.0
Cross-polar isolation, port-to-port, dB <sup>1</sup>	25	25	25	25	25
Max VSWR / return loss, dB	1.5:1 / -14.0		1.5:1 / -14.0		
Max passive intermodulation (PIM), 2x20W carrier, dBc	-153		-153		
Max input power per any port, watts	300		250		
Total composite power all ports (1-10), watts	1500				

<sup>1</sup> Typical value over frequency and tilt



Electrical specification (minimum/maximum)	Ports 7, 8, 9, 10			
Frequency bands, MHz	3400-3550	3550-3700	3700-3950	3950-4200
Polarization	± 45°			
Average gain over all tilts, dBi	16.6	16.8	17.5	17.5
Horizontal beamwidth (HBW), degrees	64	62	60	58
Front-to-back ratio, co-polar power @180°± 30°, dB	>25	>25	>25	>24
Vertical beamwidth (VBW), degrees <sup>1</sup>	9.0	8.2	7.7	7.2
Electrical downtilt (EDT) range, degrees	2-12 orderable in 1 deg increments			
First upper side lobe (USLS) suppression, dB <sup>1</sup>	≤-15	≤-15	≤-15	≤-15
Cross-polar isolation, port-to-port, dB <sup>1</sup>	25	25	25	25
Max VSWR / return loss, dB	1.5:1 / -14.0			
Max input power per any port, watts	200			
Total composite power all ports (1-10), watts	1500			

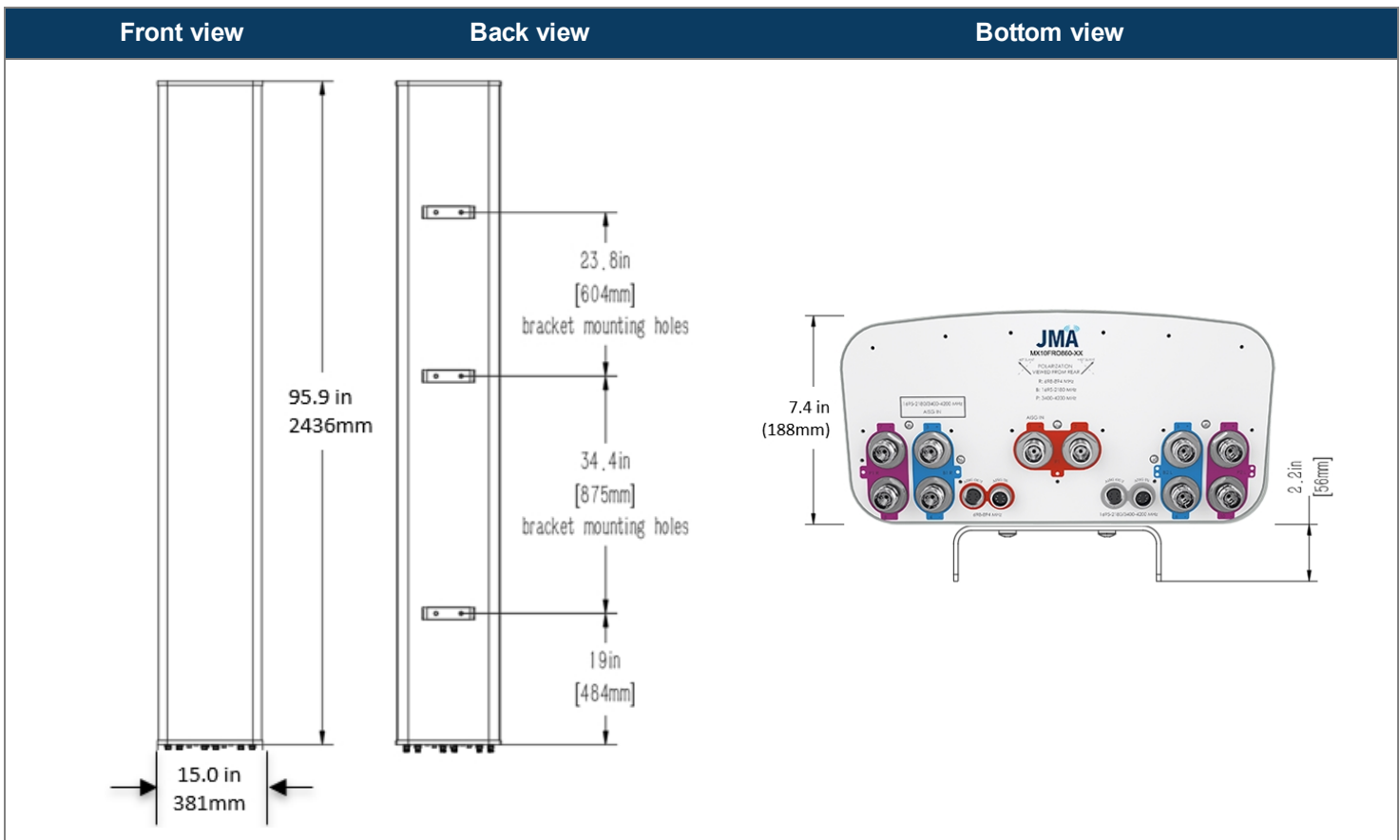
<sup>1</sup> Typical value over frequency and tilt

\* For ports 7-10, the electrical downtilt is FET configured with internal RET, where the required electrical downtilt is defined at the time of order per the ordering information below.

Ordering information	
Antenna model	Description
MX10FRO860-xx (xx represents the FET in one degree increments for 3.4-4.2 GHz)	8F X- Pol 10 Port FRO 60° 2-12°/ 0-9°/ 2-12°, 4.3-10 & SBTs
	xx=02 thru 12 for each 1 degree tilt 3.4-4.2 GHz Examples: MX10FRO860-02 – 2deg, MX10FRO860-09 – 9deg, MX10FRO860-12-12deg
Optional accessories	
<a href="#">AISG cables</a>	M/F cables for AISG connections
<a href="#">PCU-1000 RET controller</a>	Stand-alone controller for RET control and configurations
<a href="#">91900314-03</a>	Dual Mount Bracket (see 91900314 bracket document for details)



Mechanical specifications	
Dimensions height/width/depth, inches (mm)	95.9/ 15.0/ 7.4 (2436/ 381.0/ 188.0)
Shipping dimensions length/width/height, inches (mm)	106/ 20/ 14.5 (2692/ 508/ 368)
No. of RF input ports, connector type, and location	10 x 4.3-10 female, bottom
RF connector torque	96 lbf-in (10.85 N·m or 8 lbf-ft)
Net antenna weight, lb (kg)	66.0 (29.9)
Shipping weight, lb (kg)	119.9 (54.5)
Antenna mounting and downtilt kit included with antenna	91900318, 91900319 (middle bracket)
Net weight of the mounting and downtilt kit, lb (kg)	26 (11.82)
Range of mechanical up/down tilt	-2° to 12°
Rated wind survival speed, mph (km/h)	150 (241)
Frontal, lateral, and rear wind loading @ 150 km/h, lbf (N)	114.5 (509.9), 32.5 (144.7), 124.3 (553.6)
Equivalent flat plate @ 100 mph and Cd=2, sq ft	2.63

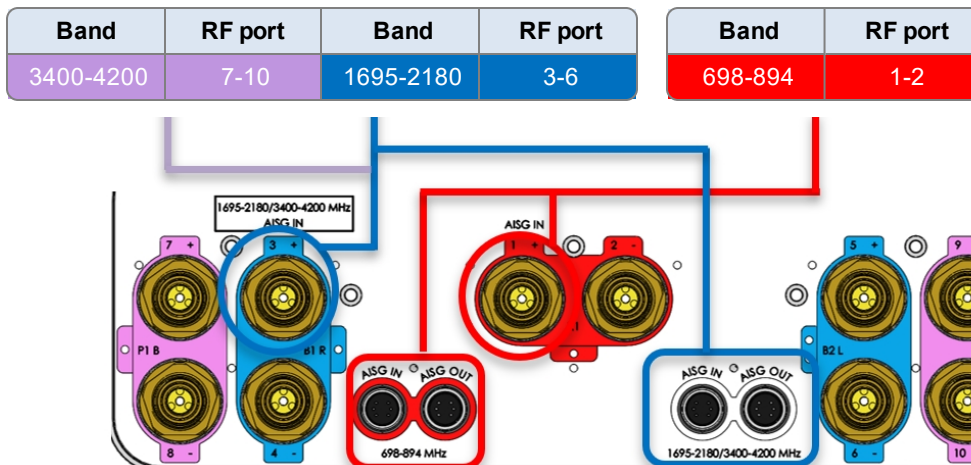


### Remote electrical tilt (RET 1000) information

<b>RET location</b>	Integrated into antenna
<b>RET interface connector type</b>	8-pin AISG connector per IEC 60130-9 or RF port bias-t
<b>RET connector torque</b>	Min 0.5 N·m to max 1.0 N·m (hand pressure & finger tight)
<b>RET interface connector quantity</b>	2 pairs of AISG male/female connectors and 2 RF port bias-ts
<b>RET interface connector location</b>	Bottom of the antenna
<b>Total no. of internal RETs 698-894 MHz</b>	1
<b>Total no. of internal RETs 1695-2180 MHz</b>	1
<b>Total no. of internal RETs 3400-4200 MHz</b>	1
<b>RET input operating voltage, vdc</b>	10-30
<b>RET max power consumption, idle state, W</b>	≤ 2.0
<b>RET max power consumption, normal operating conditions, W</b>	≤ 13.0
<b>RET communication protocol</b>	AISG 2.0 / 3GPP

### RET and RF connector topology

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



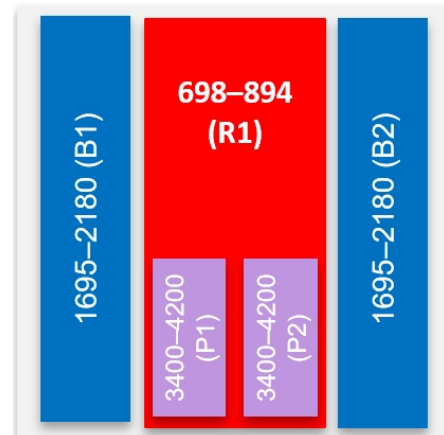
Note: The RET Device for 3400-4200 MHz is connected via the 1695-2180 Port 3 Bias T port or 1695-2180/3400-4200 MHz AISG ports.

### Array topology

5 sets of radiating arrays

- R1: 698-894 MHz
- B1: 1695-2180 MHz
- B2: 1695-2180 MHz
- P1: 3400-4200 MHz
- P2: 3400-4200 MHz

Band	RF port
698-894	1-2
1695-2180	3-4
1695-2180	5-6
3400-4200	7-8
3400-4200	9-10

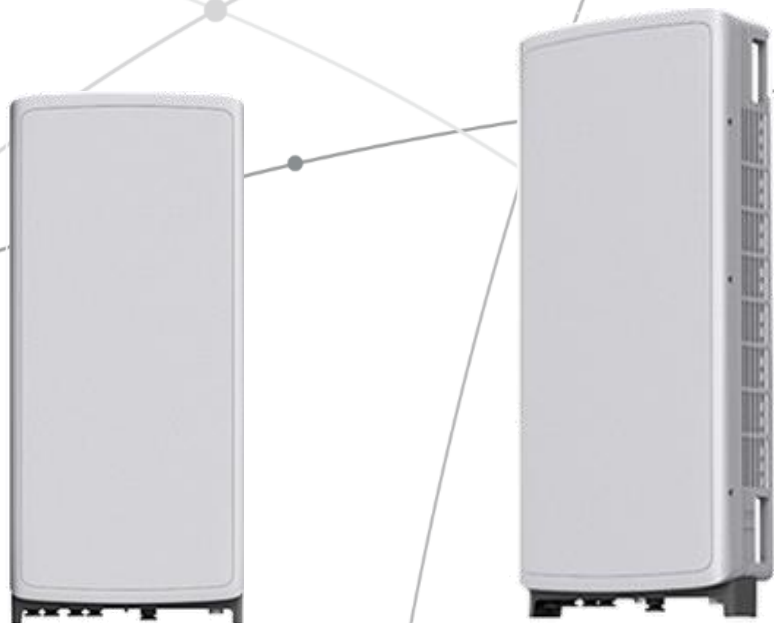


## **SAMSUNG** C-Band 64T64R Massive MIMO Radio

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



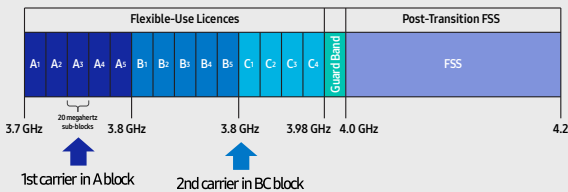
## Points of Differentiation

### 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

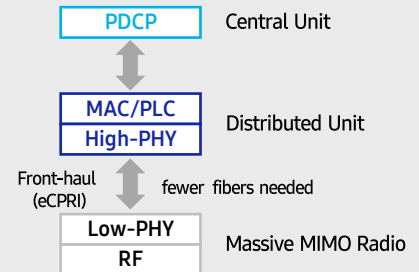
C-Band spectrum supported by Massive MIMO Radio



### 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.

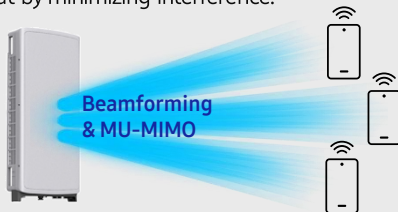


### Enhanced Performance

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.

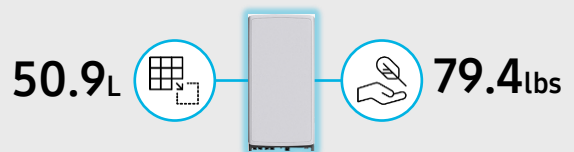
Furthermore, as C-Band massive MIMO Radio supports MU-MIMO (Multi-user MIMO), it enables to increase user throughput by minimizing interference.



### 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

The background features several thin, light gray curved lines that sweep across the page, creating a sense of motion and modern design. There are also a few small, solid gray dots scattered across the upper and middle sections of the page.

## **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

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# SAMSUNG

## 700/850MHZ MACRO RADIO

DUAL-BAND AND HIGH POWER  
FOR MACRO COVERAGE

Samsung's future proof dual-band radio is designed to help effectively increase the coverage areas in wireless networks. This 700/850MHz 4T4R dual-band radio has 4Tx/4Rx to 2Tx/2Rx RF chains options and a total output power of 320W, making it ideal for macro sites.

Model Code RF4440d-13A



Homepage  
[samsungnetworks.com](https://www.samsungnetworks.com)

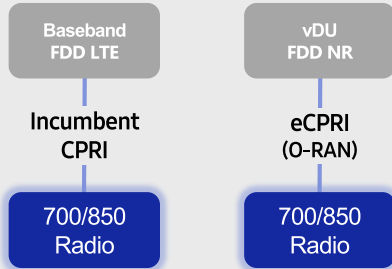


Youtube  
[www.youtube.com/samsung5g](https://www.youtube.com/samsung5g)

## Points of Differentiation

### Continuous Migration

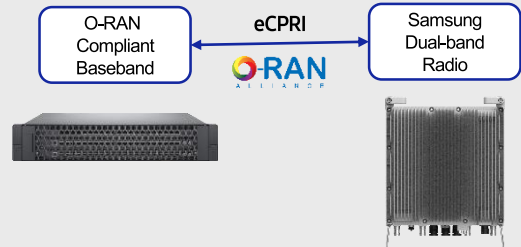
Samsung's 700/850MHz macro radio can support each incumbent CPRI interface as well as an advanced eCPRI interface. This feature provides installable options for both legacy LTE networks and added NR networks.



### O-RAN Compliant

A standardized O-RAN radio can help when implementing cost-effective networks because it is capable of sending more data without compromising additional investments.

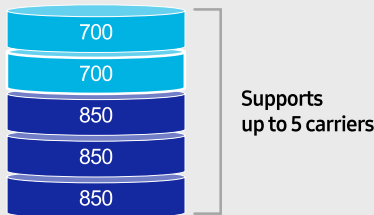
Samsung's state-of-the-art O-RAN technology will help accelerate the effort toward constructing a solid O-RAN ecosystem.



### Optimum Spectrum Utilization

The number of required carriers varies according to site (region). The ability to support many carriers is essential for using all frequencies that the operator has available.

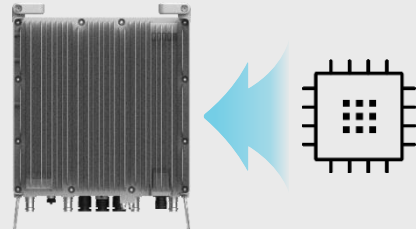
The new 700/850MHz dual-band radio can support up to 2 carriers in the B13 (700MHz) band and 3 carriers in the B5 (850MHz) band, respectively.



### Secured Integrity

Access to sensitive data is allowed only to authorized software.

The Samsung radio's CPU can protect root of trust, which is credential information to verify SW integrity, and secure storage provides access control to sensitive data by using dedicated hardware (TPM).



## Technical Specifications

Item	Specification
Tech	LTE / NR
Brand	B13(700MHz), B5(850MHz)
Frequency Band	DL: 746 – 756MHz, UL: 777 – 787MHz DL: 869 – 894MHz, UL: 824 – 849MHz
RF Power	(B13) 4 × 40W or 2 × 60W (B5) 4 × 40W or 2 × 60W
IBW/OBW	(B13) 10MHz / 10MHz (B5) 25MHz / 25MHz
Installation	Pole, Wall
Size/Weight	14.96 x 14.96 x 9.05inch (33.2L) / 70.33 lb

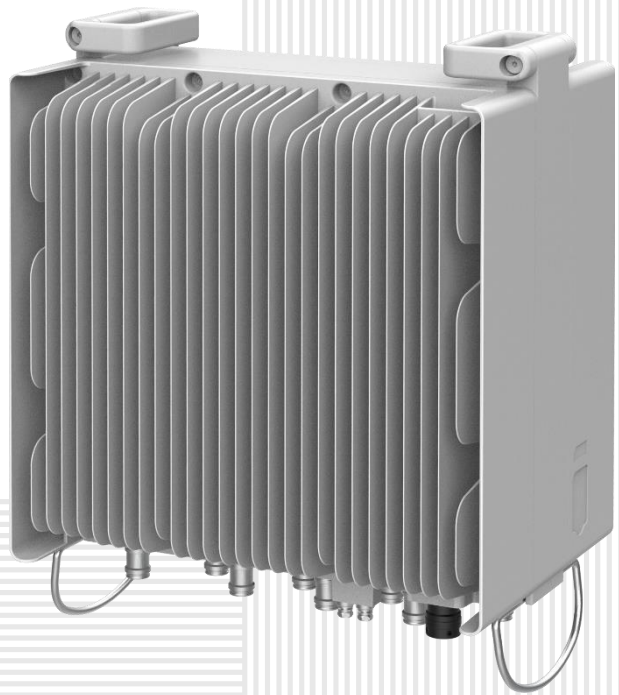
# SAMSUNG

## AWS/PCS MACRO RADIO

DUAL-BAND AND HIGH POWER  
FOR MACRO COVERAGE

Samsung's future proof dual-band radio is designed to help effectively increase the coverage areas in wireless networks. This AWS/PCS 4T4R dual-band radio has 4Tx/4Rx to 2Tx/2Rx RF chains options and a total output power of 320W, making it ideal for macro sites.

Model Code RF4439d-25A



Homepage  
[samsungnetworks.com](http://samsungnetworks.com)



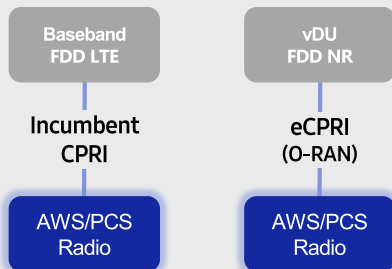
Youtube  
[www.youtube.com/samsung5g](http://www.youtube.com/samsung5g)



## Points of Differentiation

### Continuous Migration

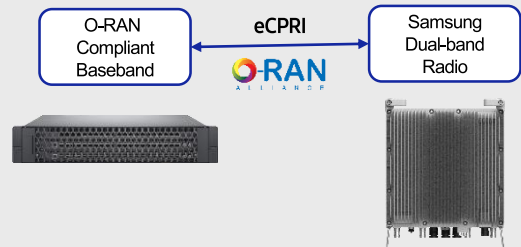
Samsung's AWS/PCS macro radio can support each incumbent CPRI interface as well as advanced eCPRI interfaces. This feature provides installable options for both legacy LTE networks and added NR networks.



### O-RAN Compliant

A standardized O-RAN radio can help in implementing cost-effective networks, which are capable of sending more data without compromising additional investments.

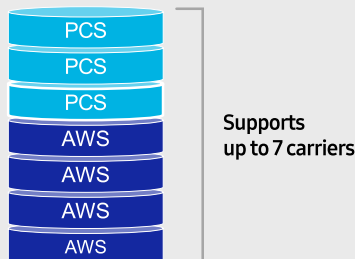
Samsung's state-of-the-art O-RAN technology will help accelerate the effort toward constructing a solid O-RAN ecosystem.



### Optimum Spectrum Utilization

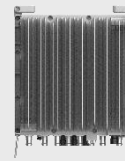
The number of required carriers varies according to site (region). Supporting many carriers is essential for using all frequencies that the operator has available.

The new AWS/PCS dual-band radio can support up to 3 carriers in the PCS (1.9GHz) band and 4 carriers in the AWS (2.1GHz) band, respectively.



### Brand New Features in a Compact Size

Samsung's AWS/PCS macro radio offers several features, such as dual connectivity for baseband for both CDU and vDU, O-RAN capability, more carriers and an enlarged PCS spectrum, combined into an incumbent radio volume of 36.8L.



- 2 FH connectivity
- O-RAN capability
- More carriers and spectrum

Same as an incumbent radio volume

## Technical Specifications

Item	Specification
Tech	LTE / NR
Brand	B25(PCS), B66(AWS)
Frequency Band	DL: 1930 – 1995MHz, UL: 1850 – 1915MHz DL: 2110 – 2200MHz, UL: 1710 – 1780MHz
RF Power	(B25) 4 × 40W or 2 × 60W (B66) 4 × 60W or 2 × 80W
IBW/OBW	(B25) 65MHz / 30MHz (B66) DL 90MHz, UL 70MHz / 60MHz
Installation	Pole, Wall
Size/Weight	14.96 x 14.96 x 10.04inch (36.8L) / 74.7lb

# **ATTACHMENT 5**



**AMERICAN TOWER®**  
CORPORATION

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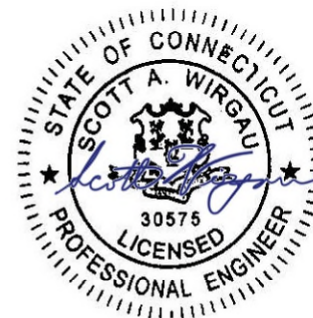
## Structural Analysis Report

**Structure** : 94 ft Monopine  
**ATC Site Name** : New Canaan 2, CT  
**ATC Site Number** : 209477  
**Engineering Number** : OAA768680\_C3\_07  
**Proposed Carrier** : VERIZON WIRELESS  
**Carrier Site Name** : New Canaan NE2 CT  
**Carrier Site Number** : 691194  
**Site Location** : 183 Soundview Lane  
New Canaan, CT 06840  
41.1907, -73.495  
**County** : Fairfield  
**Date** : March 25, 2022  
**Max Usage** : 75%  
**Result** : Pass

Prepared By:

Nathan Lyle  
Structural Engineer

Reviewed By:



Authorized by "EOR"  
25 Mar 2022 04:08:59

**COA : PEC.0001553**



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Calculations .....Attached

## **Introduction**

The purpose of this report is to summarize results of a structural analysis performed on the 94 ft Monopine to reflect the change in loading by VERIZON WIRELESS.

## **Supporting Documents**

<b>Tower Drawings</b>	Valmont Order #498211-P1, dated March 23, 2021
<b>Foundation Drawing</b>	Valmont Order #498211-P1, dated March 18, 2021
<b>Geotechnical Report</b>	Delta Oaks Group Project #GEO20-07085-08, dated October 16, 2020

## **Analysis**

The tower was analyzed using American Tower Corporation's tower analysis software. This program considers an elastic three-dimensional model and second-order effects per ANSI/TIA-222.

<b>Basic Wind Speed:</b>	116 mph (3-second gust)
<b>Basic Wind Speed w/ Ice:</b>	50 mph (3-second gust) w/ 1.00" radial ice concurrent
<b>Code:</b>	ANSI/TIA-222-H / 2015 IBC / 2018 Connecticut State Building Code
<b>Exposure Category:</b>	B
<b>Risk Category:</b>	II
<b>Topographic Factor Procedure:</b>	Method 1
<b>Topographic Category:</b>	1
<b>Spectral Response:</b>	$S_s = 0.25, S_i = 0.06$
<b>Site Class:</b>	D - Stiff Soil - Default

## **Conclusion**

Based on the analysis results, the structure meets the requirements per the applicable codes listed above. The tower and foundation can support the equipment as described in this report.

If you have any questions or require additional information, please contact American Tower via email at [Engineering@americantower.com](mailto:Engineering@americantower.com). Please include the American Tower site name, site number, and engineering number in the subject line for any questions.

**Existing and Reserved Equipment**

Elev. <sup>1</sup> (ft)	Qty	Equipment	Mount Type	Lines	Carrier
No loading was considered as existing or reserved as part of this analysis.					

**Equipment to be Removed**

Elev. <sup>1</sup> (ft)	Qty	Equipment	Mount Type	Lines	Carrier
No loading was considered as removed as part of this analysis.					

**Proposed Equipment**

Elev. <sup>1</sup> (ft)	Qty	Equipment	Mount Type	Lines	Carrier
71.0	3	Samsung RF4440d-13A	T-Arm	(1) 2.02 (51.2mm) Hybrid	VERIZON WIRELESS
	3	Samsung RF4439d-25A			
	1	Raycap RCMDC-6627-PF-48			
	3	Samsung MT6407-77A			
	4	JMA Wireless MX10FRO860-xx			
	2	JMA Wireless MX10FRO840-xx			

<sup>1</sup> Contracted elevations are shown for appurtenances within contracted installation tolerances. Appurtenances outside of contract limits are shown at installed elevations.

Install proposed lines inside the pole shaft.

### Structure Usages

Structural Component	Controlling Usage	Pass/Fail
Anchor Bolts	75%	Pass
Shaft	67%	Pass
Base Plate	25%	Pass
Flange	20%	Pass

### Foundations

Reaction Component	Analysis Reactions	% of Usage
Moment (Kips-Ft)	4674.6	65%
Axial (Kips)	37.0	11%
Shear (Kips)	87.0	39%

The structure base reactions resulting from this analysis were found to be acceptable through analysis based on geotechnical and foundation information, therefore no modification or reinforcement of the foundation will be required.

### Deflection, Twist and Sway\*

Antenna Elevation (ft)	Antenna	Carrier	Deflection (ft)	Sway (Rotation) (°)
71.0	Samsung RF4440d-13A	VERIZON WIRELESS	0.367	0.550
	Samsung RF4439d-25A			
	JMA Wireless MX10FRO840-xx			
	Samsung MT6407-77A			
	JMA Wireless MX10FRO860-xx			
	Raycap RCMDC-6627-PF-48			

\*Deflection, Twist and Sway was evaluated considering a design wind speed of 60 mph (3-Second Gust) per ANSI/TIA-222-H

## **Standard Conditions**

All engineering services performed by A.T. Engineering Service, PLLC are prepared on the basis that the information used is current and correct. This information may consist of, but is not limited to the following:

- Information supplied by the client regarding antenna, mounts and feed line loading
- Information from drawings, design and analysis documents, and field notes in the possession of A.T. Engineering Service, PLLC

It is the responsibility of the client to ensure that the information provided to A.T. Engineering Service, PLLC and used in the performance of our engineering services is correct and complete.

All assets of American Tower Corporation, its affiliates, and subsidiaries (collectively “American Tower”) are inspected at regular intervals. Based upon these inspections and in the absence of information to the contrary, American Tower assumes that all structures were constructed in accordance with the drawings and specifications.

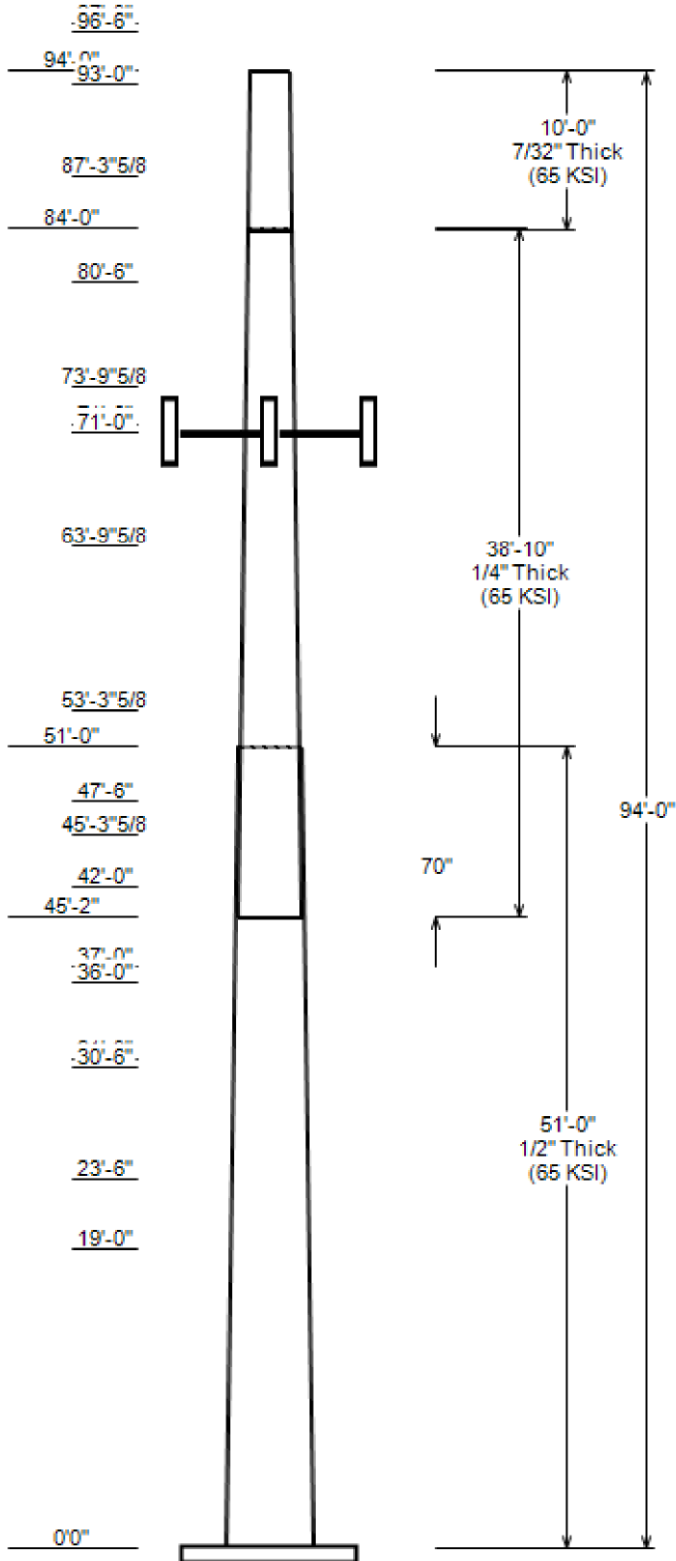
Unless explicitly agreed by both the client and A.T. Engineering Service, PLLC, all services will be performed in accordance with the current revision of ANSI/TIA-222.

All services are performed, results obtained, and recommendations made in accordance with generally accepted engineering principles and practices. A.T. Engineering Service, PLLC is not responsible for the conclusions, opinions and recommendations made by others based on the information supplied herein.



Asset : 209477, New Canaan 2  
 Client : VERIZON WIRELESS  
 Code : ANSI/TIA-222-H

Height : 94 ft  
 Base Width : 55  
 Shape : 18 Sides



**SITE PARAMETERS**

**Nominal Wind:** 116 mph wind with no ice      **Topo Category:** 1  
**Ice Wind:** 50 mph wind with 1" radial      **Topo Method:** Method 1  
**Base Elev (ft):** 0.00      **Taper :** 0.31900(ln/ft)      **Topo Feature:**  
**Structure Class:** II      **Exposure :** B      **S<sub>s</sub> :** 0.25      **S<sub>1</sub> :** 0.058

**SECTION PROPERTIES**

Shaft Section	Length (ft)	Diameter (in)		Thick Joint (in)	Overlap Length (in)	Steel Grade (ksi)
		Across Flats Top	Across Flats Bottom			
1	51.000	38.72	55.00	0.500	0.000	18 Sides 65
2	38.833	28.69	41.08	0.250	70.000	18 Sides 65
3	10.000	25.50	28.69	0.219	0.000	18 Sides 65

**DISCRETE APPURTENANCE**

Attach Elev (ft)	Force Elev (ft)	Qty	Description
97.0	97.0	1	(3) 6 ft Branches
96.5	96.5	1	5 ft Branches
93.0	93.0	9	8 ft Branches
87.3	87.3	19	8 ft Branches
80.5	80.5	19	8 ft Branches
73.8	73.8	9	10 ft Branches
71.5	71.5	18	8 ft Branches
71.0	71.0	3	Samsung RF4440d-13A
71.0	71.0	3	Samsung RF4439d-25A
71.0	71.0	1	Raycap RCMD-6627-PF-48
71.0	71.0	3	Samsung MT6407-77A
71.0	71.0	3	Generic Flat T-Arm
71.0	71.0	4	JMA Wireless MX10FRO860-xx
71.0	71.0	2	JMA Wireless MX10FRO840-xx
63.8	63.8	25	10 ft Branches
53.3	53.3	31	10 ft Branches
47.5	47.5	4	12 ft Branches
45.3	45.3	8	10 ft Branches
42.0	42.0	13	12 ft Branches
37.0	37.0	13	12 ft Branches
36.0	36.0	5	14 ft Branches
31.0	31.0	11	12 ft Branches
30.5	30.5	8	14 ft Branches
23.5	23.5	26	14 ft Branches
19.0	19.0	3	12 ft Branches

**LINEAR APPURTENANCE**

Elev From (ft)	Elev To (ft)	Description	Exp To Wind
0.0	71.0	2.02 (51.2mm) Hybrid	No

**LOAD CASES**

0.9D + 1.0W      116 mph wind with no ice  
 1.2D + 1.0Di + 1.0Wi      50 mph wind with 1" radial ice  
 1.2D + 1.0Ev + 1.0Eh      Seismic  
 0.9D - 1.0Ev + 1.0Eh      Seismic (Reduced DL)  
 1.0D + 1.0W      60 mph Wind with No Ice  
 1.2D + 1.0W      116 mph wind with no ice

**REACTIONS**

Load Case	Moment (kip-ft)	Shear (Kip)	Axial (Kip)
1.2D + 1.0W	4674.64	86.97	37.03

JOB INFORMATION

Asset : 209477, New Canaan 2  
 Client : VERIZON WIRELESS  
 Code : ANSI/TIA-222-H

Height : 94 ft  
 Base Width : 55  
 Shape : 18 Sides

**REACTIONS**

<b>Load Case</b>	<b>Moment (kip-ft)</b>	<b>Shear (Kip)</b>	<b>Axial (Kip)</b>
0.9D + 1.0W	4667.33	86.95	27.73
1.2D + 1.0Di + 1.0Wi	1249.90	23.15	47.18
1.2D + 1.0Ev + 1.0Eh	164.59	2.83	37.00
0.9D - 1.0Ev + 1.0Eh	164.24	2.83	25.00
1.0D + 1.0W	1118.06	20.82	30.98

**DISH DEFLECTIONS**

<b>Load Case</b>	<b>Attach Elev (ft)</b>	<b>Deflection (in)</b>	<b>Rotation (deg)</b>
------------------	-----------------------------	----------------------------	---------------------------

ASSET: 209477, New Canaan 2  
CUSTOMER: VERIZON WIRELESS

CODE: ANSI/TIA-222-H  
ENG NO: OAA768680\_C3\_07

### ANALYSIS PARAMETERS

<b>Location:</b>	Fairfield County,CT	<b>Height:</b>	94 ft
<b>Type and Shape:</b>	Taper, 18 Sides	<b>Base Diameter:</b>	55.00 in
<b>Manufacturer:</b>	Valmont	<b>Top Diameter:</b>	25.50 in
<b>K<sub>d</sub> (non-service):</b>	0.95	<b>Taper:</b>	0.3190 in/ft
<b>K<sub>θ</sub>:</b>	0.98	<b>Rotation:</b>	0.000°

### ICE & WIND PARAMETERS

<b>Exposure Category:</b>	B	<b>Design Wind Speed w/o Ice:</b>	116 mph
<b>Risk Category:</b>	II	<b>Design Wind Speed w/Ice:</b>	50 mph
<b>Topo Factor Procedure:</b>	Method 1	<b>Operational Wind Speed:</b>	60 mph
<b>Topographic Category:</b>	1	<b>Design Ice Thickness:</b>	1.00 in
<b>Crest Height:</b>	0 ft	<b>HMSL:</b>	502.00 ft

### SEISMIC PARAMETERS

<b>Analysis Method:</b>	Equivalent Lateral Force Method		
<b>Site Class:</b>	D - Stiff Soil	<b>Period Based on Rayleigh Method (sec):</b>	0.68
<b>T<sub>L</sub> (sec):</b>	6	<b>P:</b>	1
<b>S<sub>s</sub>:</b>	0.250	<b>S<sub>1</sub>:</b>	0.058
<b>F<sub>a</sub>:</b>	1.600	<b>F<sub>v</sub>:</b>	2.400
<b>S<sub>ds</sub>:</b>	0.267	<b>S<sub>dt</sub>:</b>	0.093
		<b>C<sub>s</sub>:</b>	0.092
		<b>C<sub>s</sub> Max:</b>	0.092
		<b>C<sub>s</sub> Min:</b>	0.030

### LOAD CASES

1.2D + 1.0W	116 mph wind with no ice
0.9D + 1.0W	116 mph wind with no ice
1.2D + 1.0Di + 1.0Wi	50 mph wind with 1" radial ice
1.2D + 1.0Ev + 1.0Eh	Seismic
0.9D - 1.0Ev + 1.0Eh	Seismic (Reduced DL)
1.0D + 1.0W	60 mph Wind with No Ice

ASSET: 209477, New Canaan 2  
 CUSTOMER: VERIZON WIRELESS

CODE: ANSI/TIA-222-H  
 ENG NO: OAA768680\_C3\_07

**SHAFT SECTION PROPERTIES**

Sect Info	Length (ft)	Thick (in)	Fy (ksi)	Joint Type	Slip Joint len (in)	Weight (lb)	Bottom						Top						
							Dia (in)	Elev (ft)	Area (in <sup>2</sup> )	Ix (in <sup>4</sup> )	W/t Ratio	D/t Ratio	Dia (in)	Elev (in)	Area (in <sup>2</sup> )	Ix (in <sup>4</sup> )	W/t Ratio	D/t Ratio	Taper (in/ft)
1-18	51.00	0.5000	65		0.00	12,768	55.00	0.000	86.49	32,456.7	17.63	110.00	38.72	51.00	60.66	11,197.0	11.89	77.45	0.3192
2-18	38.83	0.2500	65	Slip	70.00	3,632	41.08	45.167	32.40	6,826.3	27.21	164.34	28.69	84.00	22.57	2,306.4	18.47	114.76	0.3192
3-18	10.00	0.2188	65	Butt	0.00	635	28.69	84.000	19.77	2,025.2	21.36	131.13	25.50	94.00	17.56	1,417.7	18.79	116.54	0.3192

Shaft Weight 17,035

**DISCRETE APPURTENANCE PROPERTIES**

Attach Elev (ft)	Description	Qty	Ka	Vert Ecc (ft)	No Ice			Ice		
					Weight (lb)	EPAA (sf)	Orientation Factor	Weight (lb)	EPAA (sf)	Orientation Factor
97.00	(3) 6 ft Branches	1	1.00	0.000	120.00	7.500	1.00	173.27	10.829	1.00
96.50	5 ft Branches	1	1.00	0.000	33.00	2.250	1.00	47.65	3.249	1.00
93.00	8 ft Branches	9	1.00	0.000	39.50	9.360	1.00	57.00	13.506	1.00
87.30	8 ft Branches	19	1.00	0.000	39.50	9.360	1.00	56.89	13.481	1.00
80.50	8 ft Branches	19	1.00	0.000	39.50	9.360	1.00	56.77	13.452	1.00
73.80	10 ft Branches	9	1.00	0.000	45.10	11.460	1.00	64.62	16.420	1.00
71.50	8 ft Branches	18	1.00	0.000	39.50	9.360	1.00	56.56	13.404	1.00
71.00	Samsung RF4439d-25A	3	0.80	0.000	74.70	2.500	0.67	124.22	3.148	0.67
71.00	JMA Wireless MX10FRO840-xx	2	0.80	0.000	92.00	17.197	0.73	293.33	19.475	0.73
71.00	JMA Wireless MX10FRO860-xx	4	0.80	0.000	68.40	13.716	0.67	234.70	16.019	0.67
71.00	Generic Flat T-Arm	3	0.75	0.000	312.50	12.900	0.67	474.33	17.966	0.67
71.00	Samsung MT6407-77A	3	0.80	0.000	81.60	4.709	0.61	144.74	5.650	0.61
71.00	Raycap RCMDC-6627-PF-48	1	0.80	0.000	32.00	4.056	1.00	110.73	4.901	1.00
71.00	Samsung RF4440d-13A	3	0.80	0.000	70.30	1.875	0.50	107.68	2.434	0.50
63.80	10 ft Branches	25	1.00	0.000	45.10	11.460	1.00	64.31	16.342	1.00
53.30	10 ft Branches	31	1.00	0.000	45.10	11.460	1.00	63.98	16.259	1.00
47.50	12 ft Branches	4	1.00	0.000	57.60	13.670	1.00	81.44	19.328	1.00
45.30	10 ft Branches	8	1.00	0.000	45.10	11.460	1.00	63.72	16.191	1.00
42.00	12 ft Branches	13	1.00	0.000	57.60	13.670	1.00	81.15	19.258	1.00
37.00	12 ft Branches	13	1.00	0.000	57.60	13.670	1.00	80.87	19.193	1.00
36.00	14 ft Branches	5	1.00	0.000	79.10	17.330	1.00	110.97	24.313	1.00
31.00	12 ft Branches	11	1.00	0.000	57.60	13.670	1.00	80.48	19.100	1.00
30.50	14 ft Branches	8	1.00	0.000	79.10	17.330	1.00	110.47	24.202	1.00
23.50	14 ft Branches	26	1.00	0.000	79.10	17.330	1.00	109.45	23.979	1.00
19.00	12 ft Branches	3	1.00	0.000	57.60	13.670	1.00	79.16	18.787	1.00

Totals Num Loadings: 25 242 13,739.00 20,622.20

**LINEAR APPURTENANCE PROPERTIES**

Load Case Azimuth (deg) : \_

Elev From (ft)	Elev To (ft)	Qty	Description	Coax Dia (in)	Coax Wt (lb/ft)	Max Coax/ Row	Dist Between Rows (in)	Dist Between Cols (in)	Azimuth (deg)	Dist From Face (in)	Exposed To Wind	Carrier
0.00	71.00	1	2.02 (51.2mm) Hybrid	2.02	3.04	N	0	0	0	0	N	VERIZON WIREL

SEGMENT PROPERTIES

(Max Len: 5.ft)

Seg Top Elev (ft)	Description	Thick (in)	Flat Dia (in)	Area (in <sup>2</sup> )	Ix (in <sup>4</sup> )	W/t Ratio	D/t Ratio	F'y (ksi)	S (in <sup>3</sup> )	Z Weight (lb)
0.00		0.5000	55.000	86.488	32,456.70	17.63	110.00	80.7	1162.3	0.0 0.0
5.00		0.5000	53.404	83.956	29,688.40	17.07	106.81	81.3	1094.9	0.0 1,450.0
10.00		0.5000	51.809	81.424	27,082.10	16.51	103.62	82	1029.6	0.0 1,406.9
15.00		0.5000	50.213	78.891	24,633.00	15.94	100.43	82.6	966.2	0.0 1,363.8
19.00		0.5000	48.936	76.865	22,783.60	15.49	97.87	82.6	917.0	0.0 1,060.0
20.00		0.5000	48.617	76.359	22,336.20	15.38	97.23	82.6	904.9	0.0 260.7
23.50		0.5000	47.500	74.586	20,816.50	14.99	95.00	82.6	863.2	0.0 898.9
25.00		0.5000	47.021	73.827	20,186.80	14.82	94.04	82.6	845.6	0.0 378.8
30.00		0.5000	45.426	71.294	18,180.00	14.26	90.85	82.6	788.3	0.0 1,234.5
30.50		0.5000	45.266	71.041	17,986.90	14.20	90.53	82.6	782.6	0.0 121.1
31.00		0.5000	45.106	70.788	17,795.30	14.14	90.21	82.6	777.0	0.0 120.7
35.00		0.5000	43.830	68.762	16,310.70	13.69	87.66	82.6	733.0	0.0 949.7
36.00		0.5000	43.511	68.255	15,952.90	13.58	87.02	82.6	722.1	0.0 233.1
37.00		0.5000	43.191	67.749	15,600.40	13.47	86.38	82.6	711.4	0.0 231.4
40.00		0.5000	42.234	66.229	14,574.20	13.13	84.47	82.6	679.7	0.0 683.8
42.00		0.5000	41.596	65.217	13,915.70	12.91	83.19	82.6	658.9	0.0 447.3
45.00		0.5000	40.638	63.697	12,965.50	12.57	81.28	82.6	628.4	0.0 658.0
45.17	Bot - Section 2	0.5000	40.585	63.613	12,914.00	12.55	81.17	82.6	626.7	0.0 36.1
45.30		0.5000	40.543	63.545	12,873.00	12.53	81.09	82.6	625.4	0.0 43.5
47.50		0.5000	39.840	62.431	12,207.60	12.29	79.68	82.6	603.5	0.0 711.8
50.00		0.5000	39.043	61.165	11,479.80	12.01	78.09	82.6	579.1	0.0 793.6
51.00	Top - Section 1	0.2500	39.223	30.924	5,934.50	25.90	156.89	70.9	298.0	0.0 312.9
53.30		0.2500	38.489	30.342	5,605.50	25.38	153.96	71.5	286.9	0.0 239.7
55.00		0.2500	37.947	29.911	5,370.30	25.00	151.79	72	278.7	0.0 174.3
60.00		0.2500	36.351	28.645	4,716.70	23.88	145.40	73.3	255.6	0.0 498.1
63.80		0.2500	35.138	27.683	4,257.20	23.02	140.55	74.3	238.6	0.0 364.2
65.00		0.2500	34.755	27.379	4,118.50	22.75	139.02	74.6	233.4	0.0 112.4
70.00		0.2500	33.160	26.113	3,573.10	21.62	132.64	76	212.2	0.0 455.1
71.00		0.2500	32.840	25.860	3,470.20	21.40	131.36	76.2	208.1	0.0 88.4
71.50		0.2500	32.681	25.733	3,419.50	21.29	130.72	76.4	206.1	0.0 43.9
73.80		0.2500	31.947	25.150	3,192.50	20.77	127.79	77	196.8	0.0 199.1
75.00		0.2500	31.564	24.847	3,078.10	20.50	126.26	77.3	192.1	0.0 102.1
80.00		0.2500	29.968	23.580	2,631.10	19.37	119.87	78.6	172.9	0.0 412.0
80.50		0.2500	29.808	23.454	2,589.00	19.26	119.23	78.7	171.1	0.0 40.0
84.00	Top - Section 2	0.2500	28.691	22.567	2,306.40	18.47	114.77	79.7	158.3	0.0 274.0
84.00	Bot - Section 3	0.2188	28.691	19.773	2,025.20	21.36	131.13	76.3	139.0	0.0
85.00		0.2188	28.372	19.551	1,957.90	21.10	129.67	76.6	135.9	0.0 66.9
87.30		0.2188	27.638	19.041	1,808.70	20.51	126.32	77.3	128.9	0.0 151.0
90.00		0.2188	26.777	18.443	1,643.50	19.82	122.38	78.1	120.9	0.0 172.2
93.00		0.2188	25.819	17.778	1,472.10	19.04	118.00	79	112.3	0.0 184.9
94.00		0.2188	25.500	17.556	1,417.70	18.79	116.54	79.3	109.5	0.0 60.1

Totals: 17,035.0

Load Case: 1.2D + 1.0W	116 mph wind with no ice	17 Iterations
Gust Response Factor:	1.10	
Dead load Factor:	1.20	
Wind Load Factor:	1.00	

**CALCULATED FORCES**

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	Phi Pn (kips)	Phi Vn (kips)	Phi Tn (ft-kips)	Phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-37.03	-86.97	0.00	-4,674.6	0.00	4,674.64	6,278.64	1,517.87	7,472.14	7,031.52	0	0	0.674
5.00	-34.98	-86.68	0.00	-4,239.8	0.00	4,239.80	6,144.82	1,473.43	7,041.04	6,678.32	0.11	-0.2	0.644
10.00	-32.99	-86.38	0.00	-3,806.4	0.00	3,806.41	6,007.97	1,428.99	6,622.75	6,330.81	0.42	-0.39	0.610
15.00	-31.08	-86.12	0.00	-3,374.5	0.00	3,374.49	5,861.23	1,384.54	6,217.27	5,982.24	0.93	-0.58	0.573
19.00	-29.47	-84.94	0.00	-3,030.0	0.00	3,030.04	5,710.71	1,348.99	5,902.10	5,677.45	1.48	-0.72	0.543
20.00	-29.03	-84.81	0.00	-2,945.1	0.00	2,945.10	5,673.09	1,340.10	5,824.59	5,602.50	1.64	-0.76	0.535
23.50	-25.53	-73.47	0.00	-2,648.2	0.00	2,648.25	5,541.39	1,308.99	5,557.34	5,344.09	2.25	-0.89	0.503
25.00	-24.93	-73.28	0.00	-2,538.0	0.00	2,538.05	5,484.94	1,295.66	5,444.72	5,235.21	2.53	-0.94	0.493
30.00	-23.32	-73.10	0.00	-2,171.6	0.00	2,171.65	5,296.80	1,251.21	5,077.66	4,880.38	3.61	-1.11	0.453
30.50	-22.46	-69.60	0.00	-2,135.1	0.00	2,135.10	5,277.99	1,246.77	5,041.66	4,845.58	3.73	-1.12	0.448
31.00	-21.55	-65.69	0.00	-2,100.3	0.00	2,100.30	5,259.17	1,242.32	5,005.79	4,810.90	3.85	-1.14	0.443
35.00	-20.31	-65.52	0.00	-1,837.5	0.00	1,837.53	5,108.66	1,206.77	4,723.41	4,537.99	4.86	-1.27	0.412
36.00	-19.57	-63.19	0.00	-1,772.0	0.00	1,772.00	5,071.03	1,197.88	4,654.10	4,471.01	5.13	-1.3	0.403
37.00	-18.44	-58.37	0.00	-1,708.8	0.00	1,708.82	5,033.40	1,188.99	4,585.30	4,404.53	5.4	-1.33	0.394
40.00	-17.54	-58.19	0.00	-1,533.7	0.00	1,533.72	4,920.52	1,162.33	4,381.97	4,208.06	6.27	-1.42	0.371
42.00	-16.16	-53.16	0.00	-1,417.3	0.00	1,417.33	4,845.26	1,144.55	4,248.98	4,079.57	6.87	-1.47	0.353
45.00	-15.32	-53.04	0.00	-1,257.9	0.00	1,257.86	4,732.38	1,117.88	4,053.33	3,890.58	7.83	-1.56	0.329
45.17	-15.27	-53.03	0.00	-1,249.0	0.00	1,249.02	4,726.11	1,116.40	4,042.60	3,880.21	7.88	-1.56	0.327
45.30	-14.83	-50.39	0.00	-1,242.0	0.00	1,241.95	4,721.09	1,115.22	4,034.02	3,871.93	7.93	-1.56	0.326
47.50	-13.69	-48.66	0.00	-1,131.1	0.00	1,131.09	4,638.31	1,095.66	3,893.82	3,736.51	8.66	-1.62	0.308
50.00	-12.70	-48.52	0.00	-1,009.4	0.00	1,009.44	4,544.23	1,073.44	3,737.51	3,585.55	9.53	-1.68	0.286
51.00	-12.29	-48.40	0.00	-960.9	0.00	960.92	1,974.29	542.72	1,910.39	1,585.46	9.89	-1.71	0.620
53.30	-10.59	-37.85	0.00	-849.6	0.00	849.60	1,953.73	532.50	1,839.11	1,539.21	10.72	-1.76	0.562
55.00	-10.30	-37.64	0.00	-785.2	0.00	785.25	1,938.13	524.94	1,787.30	1,505.11	11.37	-1.83	0.532
60.00	-9.59	-37.34	0.00	-597.1	0.00	597.06	1,890.21	502.72	1,639.20	1,405.35	13.39	-2.02	0.435
63.80	-8.08	-28.33	0.00	-455.2	0.00	455.15	1,851.77	485.83	1,530.92	1,330.21	15.05	-2.14	0.350
65.00	-7.91	-28.13	0.00	-421.2	0.00	421.16	1,839.28	480.50	1,497.50	1,306.62	15.59	-2.17	0.330
70.00	-7.32	-27.92	0.00	-280.5	0.00	280.52	1,785.33	458.28	1,362.21	1,209.22	17.93	-2.29	0.240
71.00	-4.79	-25.07	0.00	-252.6	0.00	252.60	1,774.17	453.83	1,335.92	1,189.93	18.42	-2.31	0.218
71.50	-4.09	-19.61	0.00	-240.1	0.00	240.07	1,768.55	451.61	1,322.87	1,180.30	18.66	-2.32	0.208
73.80	-3.50	-16.19	0.00	-195.0	0.00	194.96	1,742.31	441.39	1,263.67	1,136.27	19.79	-2.37	0.175
75.00	-3.37	-16.02	0.00	-175.5	0.00	175.54	1,728.36	436.06	1,233.32	1,113.44	20.39	-2.38	0.161
80.00	-2.87	-15.85	0.00	-95.4	0.00	95.44	1,668.37	413.84	1,110.84	1,019.60	22.92	-2.45	0.097
80.50	-2.18	-9.88	0.00	-87.5	0.00	87.52	1,662.21	411.61	1,098.94	1,010.33	23.18	-2.45	0.089
84.00	-1.85	-9.75	0.00	-53.0	0.00	52.95	1,618.21	396.06	1,017.46	946.11	24.99	-2.48	0.058
84.00	-1.85	-9.75	0.00	-53.0	0.00	52.95	1,357.42	347.01	892.41	795.37	24.99	-2.48	0.069
85.00	-1.77	-9.66	0.00	-43.2	0.00	43.20	1,347.53	343.12	872.52	780.66	25.51	-2.49	0.057
87.30	-0.96	-3.52	0.00	-21.0	0.00	20.98	1,324.32	334.17	827.62	747.05	26.71	-2.5	0.029
90.00	-0.76	-3.37	0.00	-11.5	0.00	11.47	1,296.25	323.67	776.42	708.06	28.12	-2.5	0.017
93.00	-0.24	-0.37	0.00	-1.4	0.00	1.35	1,264.04	312.00	721.46	665.37	29.7	-2.51	0.002
94.00	0.00	-0.36	0.00	-1.0	0.00	0.97	1,253.06	308.11	703.58	651.30	30.22	-2.51	0.001

Load Case: 0.9D + 1.0W	116 mph wind with no ice	17 Iterations
Gust Response Factor:	1.10	
Dead load Factor:	0.90	
Wind Load Factor:	1.00	

**CALCULATED FORCES**

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	Phi Pn (kips)	Phi Vn (kips)	Phi Tn (ft-kips)	Phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-27.73	-86.95	0.00	-4,667.3	0.00	4,667.33	6,278.64	1,517.87	7,472.14	7,031.52	0	0	0.671
5.00	-26.12	-86.63	0.00	-4,232.6	0.00	4,232.57	6,144.82	1,473.43	7,041.04	6,678.32	0.11	-0.2	0.641
10.00	-24.56	-86.31	0.00	-3,799.4	0.00	3,799.41	6,007.97	1,428.99	6,622.75	6,330.81	0.42	-0.39	0.608
15.00	-23.07	-86.02	0.00	-3,367.8	0.00	3,367.85	5,861.23	1,384.54	6,217.27	5,982.24	0.93	-0.58	0.571
19.00	-21.83	-84.84	0.00	-3,023.8	0.00	3,023.76	5,710.71	1,348.99	5,902.10	5,677.45	1.48	-0.72	0.540
20.00	-21.47	-84.70	0.00	-2,938.9	0.00	2,938.92	5,673.09	1,340.10	5,824.59	5,602.50	1.63	-0.76	0.532
23.50	-18.85	-73.36	0.00	-2,642.5	0.00	2,642.47	5,541.39	1,308.99	5,557.34	5,344.09	2.24	-0.88	0.501
25.00	-18.37	-73.16	0.00	-2,532.4	0.00	2,532.42	5,484.94	1,295.66	5,444.72	5,235.21	2.53	-0.94	0.490
30.00	-17.14	-72.97	0.00	-2,166.6	0.00	2,166.62	5,296.80	1,251.21	5,077.66	4,880.38	3.6	-1.1	0.451
30.50	-16.50	-69.48	0.00	-2,130.1	0.00	2,130.13	5,277.99	1,246.77	5,041.66	4,845.58	3.72	-1.12	0.446
31.00	-15.82	-65.57	0.00	-2,095.4	0.00	2,095.39	5,259.17	1,242.32	5,005.79	4,810.90	3.84	-1.14	0.441
35.00	-14.87	-65.40	0.00	-1,833.1	0.00	1,833.10	5,108.66	1,206.77	4,723.41	4,537.99	4.85	-1.26	0.410
36.00	-14.32	-63.07	0.00	-1,767.7	0.00	1,767.70	5,071.03	1,197.88	4,654.10	4,471.01	5.12	-1.29	0.401
37.00	-13.48	-58.25	0.00	-1,704.6	0.00	1,704.63	5,033.40	1,188.99	4,585.30	4,404.53	5.39	-1.33	0.392
40.00	-12.79	-58.07	0.00	-1,529.9	0.00	1,529.89	4,920.52	1,162.33	4,381.97	4,208.06	6.26	-1.41	0.369
42.00	-11.77	-53.04	0.00	-1,413.7	0.00	1,413.74	4,845.26	1,144.55	4,248.98	4,079.57	6.86	-1.47	0.351
45.00	-11.13	-52.92	0.00	-1,254.6	0.00	1,254.62	4,732.38	1,117.88	4,053.33	3,890.58	7.81	-1.55	0.327
45.17	-11.10	-52.91	0.00	-1,245.8	0.00	1,245.80	4,726.11	1,116.40	4,042.60	3,880.21	7.87	-1.56	0.326
45.30	-10.78	-50.27	0.00	-1,238.7	0.00	1,238.74	4,721.09	1,115.22	4,034.02	3,871.93	7.91	-1.56	0.324
47.50	-9.92	-48.55	0.00	-1,128.1	0.00	1,128.14	4,638.31	1,095.66	3,893.82	3,736.51	8.65	-1.62	0.306
50.00	-9.17	-48.41	0.00	-1,006.8	0.00	1,006.76	4,544.23	1,073.44	3,737.51	3,585.55	9.51	-1.68	0.285
51.00	-8.85	-48.30	0.00	-958.4	0.00	958.35	1,974.29	542.72	1,910.39	1,585.46	9.87	-1.71	0.617
53.30	-7.65	-37.76	0.00	-847.3	0.00	847.27	1,953.73	532.50	1,839.11	1,539.21	10.7	-1.76	0.559
55.00	-7.41	-37.54	0.00	-783.1	0.00	783.08	1,938.13	524.94	1,787.30	1,505.11	11.34	-1.83	0.529
60.00	-6.86	-37.24	0.00	-595.4	0.00	595.37	1,890.21	502.72	1,639.20	1,405.35	13.36	-2.01	0.433
63.80	-5.80	-28.24	0.00	-453.8	0.00	453.85	1,851.77	485.83	1,530.92	1,330.21	15.02	-2.13	0.348
65.00	-5.66	-28.04	0.00	-420.0	0.00	419.96	1,839.28	480.50	1,497.50	1,306.62	15.56	-2.17	0.328
70.00	-5.21	-27.83	0.00	-279.8	0.00	279.76	1,785.33	458.28	1,362.21	1,209.22	17.9	-2.29	0.238
71.00	-3.34	-25.01	0.00	-251.9	0.00	251.93	1,774.17	453.83	1,335.92	1,189.93	18.38	-2.31	0.217
71.50	-2.87	-19.56	0.00	-239.4	0.00	239.42	1,768.55	451.61	1,322.87	1,180.30	18.62	-2.32	0.206
73.80	-2.46	-16.14	0.00	-194.4	0.00	194.43	1,742.31	441.39	1,263.67	1,136.27	19.75	-2.36	0.174
75.00	-2.36	-15.98	0.00	-175.1	0.00	175.06	1,728.36	436.06	1,233.32	1,113.44	20.35	-2.38	0.160
80.00	-1.99	-15.82	0.00	-95.2	0.00	95.18	1,668.37	413.84	1,110.84	1,019.60	22.88	-2.44	0.096
80.50	-1.53	-9.85	0.00	-87.3	0.00	87.27	1,662.21	411.61	1,098.94	1,010.33	23.13	-2.45	0.088
84.00	-1.29	-9.72	0.00	-52.8	0.00	52.80	1,618.21	396.06	1,017.46	946.11	24.94	-2.47	0.057
84.00	-1.29	-9.72	0.00	-52.8	0.00	52.80	1,357.42	347.01	892.41	795.37	24.94	-2.47	0.068
85.00	-1.23	-9.64	0.00	-43.1	0.00	43.08	1,347.53	343.12	872.52	780.66	25.46	-2.48	0.057
87.30	-0.68	-3.51	0.00	-20.9	0.00	20.91	1,324.32	334.17	827.62	747.05	26.65	-2.49	0.029
90.00	-0.53	-3.36	0.00	-11.4	0.00	11.44	1,296.25	323.67	776.42	708.06	28.06	-2.5	0.017
93.00	-0.18	-0.37	0.00	-1.3	0.00	1.34	1,264.04	312.00	721.46	665.37	29.63	-2.5	0.002
94.00	0.00	-0.36	0.00	-1.0	0.00	0.97	1,253.06	308.11	703.58	651.30	30.16	-2.5	0.001

Load Case: 1.2D + 1.0Di + 1.0Wi	50 mph wind with 1" radial ice		16 Iterations
Gust Response Factor: 1.10	Ice Dead Load Factor	1.00	
Dead load Factor: 1.20			Ice Importance Factor 1.00
Wind Load Factor: 1.00			

**CALCULATED FORCES**

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	Phi Pn (kips)	Phi Vn (kips)	Phi Tn (ft-kips)	Phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-47.18	-23.15	0.00	-1,249.9	0.00	1,249.90	6,278.64	1,517.87	7,472.14	7,031.52	0	0	0.186
5.00	-45.14	-23.07	0.00	-1,134.1	0.00	1,134.13	6,144.82	1,473.43	7,041.04	6,678.32	0.03	-0.05	0.177
10.00	-43.13	-22.98	0.00	-1,018.8	0.00	1,018.80	6,007.97	1,428.99	6,622.75	6,330.81	0.11	-0.1	0.168
15.00	-41.17	-22.89	0.00	-903.9	0.00	903.92	5,861.23	1,384.54	6,217.27	5,982.24	0.25	-0.15	0.158
19.00	-39.38	-22.59	0.00	-812.4	0.00	812.35	5,710.71	1,348.99	5,902.10	5,677.45	0.4	-0.19	0.150
20.00	-39.00	-22.55	0.00	-789.8	0.00	789.76	5,673.09	1,340.10	5,824.59	5,602.50	0.44	-0.2	0.148
23.50	-34.65	-19.62	0.00	-710.8	0.00	710.85	5,541.39	1,308.99	5,557.34	5,344.09	0.6	-0.24	0.139
25.00	-34.10	-19.56	0.00	-681.4	0.00	681.41	5,484.94	1,295.66	5,444.72	5,235.21	0.68	-0.25	0.137
30.00	-32.30	-19.51	0.00	-583.6	0.00	583.60	5,296.80	1,251.21	5,077.66	4,880.38	0.97	-0.3	0.126
30.50	-31.18	-18.60	0.00	-573.8	0.00	573.85	5,277.99	1,246.77	5,041.66	4,845.58	1	-0.3	0.125
31.00	-30.06	-17.58	0.00	-564.6	0.00	564.55	5,259.17	1,242.32	5,005.79	4,810.90	1.03	-0.31	0.123
35.00	-28.68	-17.52	0.00	-494.2	0.00	494.25	5,108.66	1,206.77	4,723.41	4,537.99	1.3	-0.34	0.115
36.00	-27.74	-16.91	0.00	-476.7	0.00	476.73	5,071.03	1,197.88	4,654.10	4,471.01	1.37	-0.35	0.112
37.00	-26.28	-15.64	0.00	-459.8	0.00	459.82	5,033.40	1,188.99	4,585.30	4,404.53	1.45	-0.36	0.110
40.00	-25.28	-15.59	0.00	-412.9	0.00	412.89	4,920.52	1,162.33	4,381.97	4,208.06	1.68	-0.38	0.103
42.00	-23.50	-14.26	0.00	-381.7	0.00	381.71	4,845.26	1,144.55	4,248.98	4,079.57	1.84	-0.4	0.099
45.00	-22.54	-14.22	0.00	-338.9	0.00	338.93	4,732.38	1,117.88	4,053.33	3,890.58	2.1	-0.42	0.092
45.17	-22.48	-14.22	0.00	-336.6	0.00	336.56	4,726.11	1,116.40	4,042.60	3,880.21	2.11	-0.42	0.092
45.30	-21.88	-13.52	0.00	-334.7	0.00	334.66	4,721.09	1,115.22	4,034.02	3,871.93	2.12	-0.42	0.091
47.50	-20.55	-13.06	0.00	-304.9	0.00	304.91	4,638.31	1,095.66	3,893.82	3,736.51	2.32	-0.44	0.086
50.00	-19.46	-13.02	0.00	-272.3	0.00	272.26	4,544.23	1,073.44	3,737.51	3,585.55	2.55	-0.45	0.080
51.00	-19.02	-12.98	0.00	-259.2	0.00	259.25	1,974.29	542.72	1,910.39	1,585.46	2.65	-0.46	0.174
53.30	-16.50	-10.19	0.00	-229.4	0.00	229.40	1,953.73	532.50	1,839.11	1,539.21	2.87	-0.47	0.158
55.00	-16.20	-10.12	0.00	-212.1	0.00	212.08	1,938.13	524.94	1,787.30	1,505.11	3.05	-0.49	0.150
60.00	-15.33	-10.03	0.00	-161.5	0.00	161.49	1,890.21	502.72	1,639.20	1,405.35	3.59	-0.54	0.123
63.80	-12.99	-7.62	0.00	-123.4	0.00	123.40	1,851.77	485.83	1,530.92	1,330.21	4.04	-0.57	0.100
65.00	-12.79	-7.56	0.00	-114.2	0.00	114.25	1,839.28	480.50	1,497.50	1,306.62	4.18	-0.58	0.095
70.00	-12.00	-7.49	0.00	-76.5	0.00	76.47	1,785.33	458.28	1,362.21	1,209.22	4.81	-0.62	0.070
71.00	-7.72	-6.81	0.00	-69.0	0.00	68.98	1,774.17	453.83	1,335.92	1,189.93	4.94	-0.62	0.063
71.50	-6.57	-5.35	0.00	-65.6	0.00	65.57	1,768.55	451.61	1,322.87	1,180.30	5.01	-0.63	0.059
73.80	-5.62	-4.43	0.00	-53.3	0.00	53.26	1,742.31	441.39	1,263.67	1,136.27	5.31	-0.64	0.050
75.00	-5.44	-4.37	0.00	-47.9	0.00	47.94	1,728.36	436.06	1,233.32	1,113.44	5.47	-0.64	0.046
80.00	-4.73	-4.31	0.00	-26.1	0.00	26.08	1,668.37	413.84	1,110.84	1,019.60	6.16	-0.66	0.029
80.50	-3.53	-2.71	0.00	-23.9	0.00	23.92	1,662.21	411.61	1,098.94	1,010.33	6.22	-0.66	0.026
84.00	-3.06	-2.66	0.00	-14.4	0.00	14.45	1,618.21	396.06	1,017.46	946.11	6.71	-0.67	0.017
84.00	-3.06	-2.66	0.00	-14.4	0.00	14.45	1,357.42	347.01	892.41	795.37	6.71	-0.67	0.020
85.00	-2.94	-2.63	0.00	-11.8	0.00	11.79	1,347.53	343.12	872.52	780.66	6.85	-0.67	0.017
87.30	-1.53	-0.97	0.00	-5.7	0.00	5.74	1,324.32	334.17	827.62	747.05	7.18	-0.67	0.009
90.00	-1.22	-0.92	0.00	-3.1	0.00	3.12	1,296.25	323.67	776.42	708.06	7.56	-0.67	0.005
93.00	-0.34	-0.10	0.00	-0.4	0.00	0.36	1,264.04	312.00	721.46	665.37	7.98	-0.68	0.001
94.00	0.00	-0.10	0.00	-0.3	0.00	0.26	1,253.06	308.11	703.58	651.30	8.12	-0.68	0.000



ASSET: 209477, New Canaan 2  
 CUSTOMER: VERIZON WIRELESS

CODE: ANSI/TIA-222-H  
 ENG NO: OAA768680\_C3\_07

Load Case: 1.0D + 1.0W	60 mph Wind with No Ice	16 Iterations
Gust Response Factor: 1.10		
Dead load Factor: 1.00		
Wind Load Factor: 1.00		

**CALCULATED FORCES**

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	Phi Pn (kips)	Phi Vn (kips)	Phi Tn (ft-kips)	Phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-30.98	-20.82	0.00	-1,118.1	0.00	1,118.06	6,278.64	1,517.87	7,472.14	7,031.52	0	0	0.164
5.00	-29.50	-20.74	0.00	-1,014.0	0.00	1,013.99	6,144.82	1,473.43	7,041.04	6,678.32	0.03	-0.05	0.157
10.00	-28.06	-20.67	0.00	-910.3	0.00	910.28	6,007.97	1,428.99	6,622.75	6,330.81	0.1	-0.09	0.149
15.00	-26.67	-20.60	0.00	-807.0	0.00	806.95	5,861.23	1,384.54	6,217.27	5,982.24	0.22	-0.14	0.140
19.00	-25.42	-20.32	0.00	-724.6	0.00	724.55	5,710.71	1,348.99	5,902.10	5,677.45	0.35	-0.17	0.132
20.00	-25.14	-20.29	0.00	-704.2	0.00	704.23	5,673.09	1,340.10	5,824.59	5,602.50	0.39	-0.18	0.130
23.50	-22.18	-17.57	0.00	-633.2	0.00	633.23	5,541.39	1,308.99	5,557.34	5,344.09	0.54	-0.21	0.123
25.00	-21.79	-17.52	0.00	-606.9	0.00	606.87	5,484.94	1,295.66	5,444.72	5,235.21	0.61	-0.22	0.120
30.00	-20.53	-17.48	0.00	-519.2	0.00	519.25	5,296.80	1,251.21	5,077.66	4,880.38	0.86	-0.26	0.110
30.50	-19.78	-16.64	0.00	-510.5	0.00	510.51	5,277.99	1,246.77	5,041.66	4,845.58	0.89	-0.27	0.109
31.00	-19.03	-15.71	0.00	-502.2	0.00	502.19	5,259.17	1,242.32	5,005.79	4,810.90	0.92	-0.27	0.108
35.00	-18.06	-15.67	0.00	-439.4	0.00	439.35	5,108.66	1,206.77	4,723.41	4,537.99	1.16	-0.3	0.101
36.00	-17.43	-15.11	0.00	-423.7	0.00	423.68	5,071.03	1,197.88	4,654.10	4,471.01	1.23	-0.31	0.098
37.00	-16.45	-13.96	0.00	-408.6	0.00	408.57	5,033.40	1,188.99	4,585.30	4,404.53	1.29	-0.32	0.096
40.00	-15.75	-13.91	0.00	-366.7	0.00	366.70	4,920.52	1,162.33	4,381.97	4,208.06	1.5	-0.34	0.090
42.00	-14.55	-12.71	0.00	-338.9	0.00	338.88	4,845.26	1,144.55	4,248.98	4,079.57	1.64	-0.35	0.086
45.00	-13.88	-12.68	0.00	-300.8	0.00	300.75	4,732.38	1,117.88	4,053.33	3,890.58	1.87	-0.37	0.080
45.17	-13.85	-12.68	0.00	-298.6	0.00	298.63	4,726.11	1,116.40	4,042.60	3,880.21	1.89	-0.37	0.080
45.30	-13.44	-12.05	0.00	-296.9	0.00	296.94	4,721.09	1,115.22	4,034.02	3,871.93	1.9	-0.37	0.080
47.50	-12.50	-11.63	0.00	-270.4	0.00	270.44	4,638.31	1,095.66	3,893.82	3,736.51	2.07	-0.39	0.075
50.00	-11.69	-11.60	0.00	-241.4	0.00	241.35	4,544.23	1,073.44	3,737.51	3,585.55	2.28	-0.4	0.070
51.00	-11.37	-11.57	0.00	-229.8	0.00	229.75	1,974.29	542.72	1,910.39	1,585.46	2.36	-0.41	0.151
53.30	-9.75	-9.05	0.00	-203.1	0.00	203.13	1,953.73	532.50	1,839.11	1,539.21	2.56	-0.42	0.137
55.00	-9.56	-9.00	0.00	-187.7	0.00	187.74	1,938.13	524.94	1,787.30	1,505.11	2.72	-0.44	0.130
60.00	-9.04	-8.93	0.00	-142.8	0.00	142.75	1,890.21	502.72	1,639.20	1,405.35	3.2	-0.48	0.107
63.80	-7.56	-6.77	0.00	-108.8	0.00	108.82	1,851.77	485.83	1,530.92	1,330.21	3.6	-0.51	0.086
65.00	-7.44	-6.72	0.00	-100.7	0.00	100.70	1,839.28	480.50	1,497.50	1,306.62	3.73	-0.52	0.081
70.00	-6.97	-6.67	0.00	-67.1	0.00	67.08	1,785.33	458.28	1,362.21	1,209.22	4.29	-0.55	0.060
71.00	-4.77	-6.00	0.00	-60.4	0.00	60.41	1,774.17	453.83	1,335.92	1,189.93	4.4	-0.55	0.054
71.50	-4.03	-4.69	0.00	-57.4	0.00	57.41	1,768.55	451.61	1,322.87	1,180.30	4.46	-0.56	0.051
73.80	-3.43	-3.87	0.00	-46.6	0.00	46.62	1,742.31	441.39	1,263.67	1,136.27	4.73	-0.57	0.043
75.00	-3.33	-3.83	0.00	-42.0	0.00	41.98	1,728.36	436.06	1,233.32	1,113.44	4.88	-0.57	0.040
80.00	-2.92	-3.79	0.00	-22.8	0.00	22.82	1,668.37	413.84	1,110.84	1,019.60	5.48	-0.59	0.024
80.50	-2.14	-2.36	0.00	-20.9	0.00	20.93	1,662.21	411.61	1,098.94	1,010.33	5.54	-0.59	0.022
84.00	-1.87	-2.33	0.00	-12.7	0.00	12.66	1,618.21	396.06	1,017.46	946.11	5.98	-0.59	0.015
84.00	-1.87	-2.33	0.00	-12.7	0.00	12.66	1,357.42	347.01	892.41	795.37	5.98	-0.59	0.017
85.00	-1.80	-2.31	0.00	-10.3	0.00	10.33	1,347.53	343.12	872.52	780.66	6.1	-0.59	0.015
87.30	-0.92	-0.84	0.00	-5.0	0.00	5.01	1,324.32	334.17	827.62	747.05	6.39	-0.6	0.007
90.00	-0.75	-0.81	0.00	-2.7	0.00	2.74	1,296.25	323.67	776.42	708.06	6.73	-0.6	0.004
93.00	-0.21	-0.09	0.00	-0.3	0.00	0.32	1,264.04	312.00	721.46	665.37	7.1	-0.6	0.001
94.00	0.00	-0.09	0.00	-0.2	0.00	0.23	1,253.06	308.11	703.58	651.30	7.23	-0.6	0.000

**EQUIVALENT LATERAL FORCES METHOD ANALYSIS**

*(Based on ASCE7-16 Chapters 11, 12 and 15)*

Spectral Response Acceleration for Short Period ( $S_S$ ):	0.250
Spectral Response Acceleration at 1.0 Second Period ( $S_1$ ):	0.058
Long-Period Transition Period ( $T_L$ – Seconds):	6
Importance Factor ( $I_e$ ):	1.000
Site Coefficient $F_a$ :	1.600
Site Coefficient $F_v$ :	2.400
Response Modification Coefficient (R):	1.500
Design Spectral Response Acceleration at Short Period ( $S_{ds}$ ):	0.267
Design Spectral Response Acceleration at 1.0 Second Period ( $S_{d1}$ ):	0.093
Seismic Response Coefficient ( $C_s$ ):	0.092
Upper Limit $C_s$ :	0.092
Lower Limit $C_s$ :	0.030
Period based on Rayleigh Method (sec):	0.680
Redundancy Factor ( $\rho$ ):	1.000
Seismic Force Distribution Exponent (k):	1.090
Total Unfactored Dead Load:	30.990 k
Seismic Base Shear (E):	2.840 k

**1.2D + 1.0Ev + 1.0Eh Seismic**

Segment	Height Above Base (ft)	Weight (lb)	$W_z$ (lb-ft)	$C_{vx}$	Horizontal Force (lb)	Vertical Force (lb)
39	93.5	60	8	0.004	13	75
38	91.5	185	25	0.013	38	232
37	88.65	172	23	0.012	34	216
36	86.15	151	19	0.010	29	189
35	84.5	67	8	0.004	12	84
34	82.25	274	33	0.018	50	343
33	80.25	40	5	0.002	7	50
32	77.5	412	47	0.025	70	516
31	74.4	102	11	0.006	17	128
30	72.65	199	21	0.011	31	250
29	71.25	44	5	0.002	7	55
28	70.5	91	9	0.005	14	115
27	67.5	470	46	0.024	69	589
26	64.4	116	11	0.006	16	145
25	61.9	376	33	0.018	50	471
24	57.5	513	42	0.022	63	643
23	54.15	179	14	0.007	21	225
22	52.15	247	18	0.010	27	309
21	50.5	316	23	0.012	34	396
20	48.75	801	55	0.029	82	1,004
19	46.4	718	47	0.025	70	900
18	45.2333	44	3	0.002	4	55
17	45.0833	37	2	0.001	3	46
16	43.5	667	40	0.021	60	836
15	41	453	26	0.014	38	568
14	38.5	693	37	0.019	55	869
13	36.5	234	12	0.006	18	294
12	35.5	236	11	0.006	17	296
11	33	962	43	0.023	64	1,206
10	30.75	122	5	0.003	8	153
9	30.25	123	5	0.003	7	154
8	27.5	1,250	46	0.024	69	1,566
7	24.25	383	12	0.006	18	480
6	21.75	909	26	0.014	39	1,140

Segment	Height Above Base (ft)	Weight (lb)	W <sub>z</sub> (lb-ft)	C <sub>vx</sub>	Horizontal Force (lb)	Vertical Force (lb)
5	19.5	264	7	0.004	10	331
4	17	1,072	23	0.012	35	1,344
3	12.5	1,379	22	0.011	32	1,728
2	7.5	1,422	13	0.007	19	1,782
1	2.5	1,465	4	0.002	6	1,836
(3) 6 ft Branches	94	120	17	0.009	25	150
5 ft Branches	94	33	5	0.002	7	41
8 ft Branches	93	356	49	0.026	73	446
8 ft Branches	87.3	750	97	0.051	145	941
8 ft Branches	80.5	750	89	0.047	133	941
8 ft Branches	71.5	711	74	0.039	110	891
10 ft Branches	73.8	406	44	0.023	65	509
10 ft Branches	63.8	1,128	104	0.054	155	1,413
10 ft Branches	53.3	1,398	106	0.056	158	1,752
10 ft Branches	45.3	361	23	0.012	34	452
Samsung RF4440d-13A	71	211	22	0.012	33	264
Samsung RF4439d-25A	71	224	23	0.012	35	281
Raycap RCMDC-6627-PF-48	71	32	3	0.002	5	40
Samsung MT6407-77A	71	245	25	0.013	38	307
Generic Flat T-Arm	71	938	97	0.051	145	1,175
JMA Wireless MX10FRO860-xx	71	274	28	0.015	42	343
JMA Wireless MX10FRO840-xx	71	184	19	0.010	28	231
12 ft Branches	47.5	230	15	0.008	23	289
12 ft Branches	42	749	44	0.023	65	938
12 ft Branches	37	749	38	0.020	57	938
12 ft Branches	31	634	27	0.014	40	794
12 ft Branches	19	173	4	0.002	6	217
14 ft Branches	36	396	19	0.010	29	496
14 ft Branches	30.5	633	26	0.014	39	793
14 ft Branches	23.5	2,057	64	0.034	95	2,578
		30,990	1,900	1.000	2,838	38,841

**0.9D - 1.0Ev + 1.0Eh Seismic (Reduced DL)**

Segment	Height Above Base (ft)	Weight (lb)	W <sub>z</sub> (lb-ft)	C <sub>vx</sub>	Horizontal Force (lb)	Vertical Force (lb)
39	93.5	60	8	0.004	13	51
38	91.5	185	25	0.013	38	157
37	88.65	172	23	0.012	34	146
36	86.15	151	19	0.010	29	128
35	84.5	67	8	0.004	12	57
34	82.25	274	33	0.018	50	232
33	80.25	40	5	0.002	7	34
32	77.5	412	47	0.025	70	349
31	74.4	102	11	0.006	17	86
30	72.65	199	21	0.011	31	169
29	71.25	44	5	0.002	7	37
28	70.5	91	9	0.005	14	77
27	67.5	470	46	0.024	69	398
26	64.4	116	11	0.006	16	98
25	61.9	376	33	0.018	50	318
24	57.5	513	42	0.022	63	435
23	54.15	179	14	0.007	21	152
22	52.15	247	18	0.010	27	209
21	50.5	316	23	0.012	34	268
20	48.75	801	55	0.029	82	678
19	46.4	718	47	0.025	70	608
18	45.2333	44	3	0.002	4	37
17	45.0833	37	2	0.001	3	31
16	43.5	667	40	0.021	60	565
15	41	453	26	0.014	38	384
14	38.5	693	37	0.019	55	587
13	36.5	234	12	0.006	18	198

Segment	Height Above Base (ft)	Weight (lb)	W <sub>z</sub> (lb-ft)	C <sub>vx</sub>	Horizontal Force (lb)	Vertical Force (lb)
12	35.5	236	11	0.006	17	200
11	33	962	43	0.023	64	814
10	30.75	122	5	0.003	8	103
9	30.25	123	5	0.003	7	104
8	27.5	1,250	46	0.024	69	1,058
7	24.25	383	12	0.006	18	325
6	21.75	909	26	0.014	39	770
5	19.5	264	7	0.004	10	223
4	17	1,072	23	0.012	35	908
3	12.5	1,379	22	0.011	32	1,168
2	7.5	1,422	13	0.007	19	1,204
1	2.5	1,465	4	0.002	6	1,241
(3) 6 ft Branches	94	120	17	0.009	25	102
5 ft Branches	94	33	5	0.002	7	28
8 ft Branches	93	356	49	0.026	73	301
8 ft Branches	87.3	750	97	0.051	145	635
8 ft Branches	80.5	750	89	0.047	133	635
8 ft Branches	71.5	711	74	0.039	110	602
10 ft Branches	73.8	406	44	0.023	65	344
10 ft Branches	63.8	1,128	104	0.054	155	955
10 ft Branches	53.3	1,398	106	0.056	158	1,184
10 ft Branches	45.3	361	23	0.012	34	305
Samsung RF4440d-13A	71	211	22	0.012	33	179
Samsung RF4439d-25A	71	224	23	0.012	35	190
Raycap RCMDC-6627-PF-48	71	32	3	0.002	5	27
Samsung MT6407-77A	71	245	25	0.013	38	207
Generic Flat T-Arm	71	938	97	0.051	145	794
JMA Wireless MX10FRO860-xx	71	274	28	0.015	42	232
JMA Wireless MX10FRO840-xx	71	184	19	0.010	28	156
12 ft Branches	47.5	230	15	0.008	23	195
12 ft Branches	42	749	44	0.023	65	634
12 ft Branches	37	749	38	0.020	57	634
12 ft Branches	31	634	27	0.014	40	536
12 ft Branches	19	173	4	0.002	6	146
14 ft Branches	36	396	19	0.010	29	335
14 ft Branches	30.5	633	26	0.014	39	536
14 ft Branches	23.5	2,057	64	0.034	95	1,741
		30,990	1,900	1.000	2,838	26,238

**1.2D + 1.0Ev + 1.0Eh Seismic**

**CALCULATED FORCES**

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (fr-kips)	Mu Mx (ft-kips)	Resultant Moment (ft-kips)	Phi Pn (kips)	Phi Vn (kips)	Phi Tn (kips)	Phi Mn (kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-37.00	-2.83	0.00	-164.59	0.00	164.59	6,278.64	1,517.87	7,472	7,031.52	0.00	0.00	0.03
5.00	-35.22	-2.82	0.00	-150.42	0.00	150.42	6,144.82	1,473.43	7,041	6,678.32	0.00	-0.01	0.03
10.00	-33.49	-2.79	0.00	-136.32	0.00	136.32	6,007.97	1,428.99	6,623	6,330.81	0.01	-0.01	0.03
15.00	-32.15	-2.76	0.00	-122.37	0.00	122.37	5,861.23	1,384.54	6,217	5,982.24	0.03	-0.02	0.03
19.00	-31.60	-2.74	0.00	-111.33	0.00	111.33	5,710.71	1,348.99	5,902	5,677.45	0.05	-0.03	0.03
20.00	-30.46	-2.71	0.00	-108.59	0.00	108.59	5,673.09	1,340.10	5,825	5,602.50	0.06	-0.03	0.03
23.50	-27.40	-2.59	0.00	-99.11	0.00	99.11	5,541.39	1,308.99	5,557	5,344.09	0.08	-0.03	0.02
25.00	-25.84	-2.53	0.00	-95.23	0.00	95.23	5,484.94	1,295.66	5,445	5,235.21	0.09	-0.03	0.02
30.00	-25.68	-2.52	0.00	-82.60	0.00	82.60	5,296.80	1,251.21	5,078	4,880.38	0.13	-0.04	0.02
30.50	-24.74	-2.47	0.00	-81.34	0.00	81.34	5,277.99	1,246.77	5,042	4,845.58	0.13	-0.04	0.02
31.00	-22.74	-2.37	0.00	-80.10	0.00	80.10	5,259.17	1,242.32	5,006	4,810.90	0.14	-0.04	0.02
35.00	-22.44	-2.35	0.00	-70.63	0.00	70.63	5,108.66	1,206.77	4,723	4,537.99	0.18	-0.05	0.02
36.00	-21.65	-2.30	0.00	-68.28	0.00	68.28	5,071.03	1,197.88	4,654	4,471.01	0.18	-0.05	0.02
37.00	-19.84	-2.19	0.00	-65.97	0.00	65.97	5,033.40	1,188.99	4,585	4,404.53	0.20	-0.05	0.02
40.00	-19.28	-2.15	0.00	-59.40	0.00	59.40	4,920.52	1,162.33	4,382	4,208.06	0.23	-0.05	0.02
42.00	-17.50	-2.03	0.00	-55.09	0.00	55.09	4,845.26	1,144.55	4,249	4,079.57	0.25	-0.05	0.02
45.00	-17.46	-2.03	0.00	-49.00	0.00	49.00	4,732.38	1,117.88	4,053	3,890.58	0.28	-0.06	0.02
45.17	-17.40	-2.02	0.00	-48.67	0.00	48.67	4,726.11	1,116.40	4,043	3,880.21	0.29	-0.06	0.02
45.30	-16.05	-1.92	0.00	-48.40	0.00	48.40	4,721.09	1,115.22	4,034	3,871.93	0.29	-0.06	0.02
47.50	-14.75	-1.81	0.00	-44.18	0.00	44.18	4,638.31	1,095.66	3,894	3,736.51	0.32	-0.06	0.02

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (fr-kips)	Mu Mx (ft-kips)	Resultant Moment (ft-kips)	Phi Pn (kips)	Phi Vn (kips)	Phi Tn (kips)	Phi Mn (kips)	Total Deflect (in)	Rotation (deg)	Ratio
50.00	-14.36	-1.78	0.00	-39.65	0.00	39.65	4,544.23	1,073.44	3,738	3,585.55	0.35	-0.06	0.01
51.00	-14.05	-1.75	0.00	-37.88	0.00	37.88	1,974.29	542.72	1,910	1,585.46	0.36	-0.06	0.03
53.30	-12.07	-1.57	0.00	-33.85	0.00	33.85	1,953.73	532.50	1,839	1,539.21	0.39	-0.07	0.03
55.00	-11.43	-1.51	0.00	-31.18	0.00	31.18	1,938.13	524.94	1,787	1,505.11	0.42	-0.07	0.03
60.00	-10.96	-1.46	0.00	-23.65	0.00	23.65	1,890.21	502.72	1,639	1,405.35	0.49	-0.08	0.02
63.80	-9.40	-1.29	0.00	-18.11	0.00	18.11	1,851.77	485.83	1,531	1,330.21	0.55	-0.08	0.02
65.00	-8.81	-1.22	0.00	-16.57	0.00	16.57	1,839.28	480.50	1,498	1,306.62	0.57	-0.08	0.02
70.00	-8.70	-1.20	0.00	-10.48	0.00	10.48	1,785.33	458.28	1,362	1,209.22	0.66	-0.09	0.01
71.00	-6.00	-0.87	0.00	-9.28	0.00	9.28	1,774.17	453.83	1,336	1,189.93	0.68	-0.09	0.01
71.50	-4.86	-0.72	0.00	-8.85	0.00	8.85	1,768.55	451.61	1,323	1,180.30	0.69	-0.09	0.01
73.80	-4.22	-0.64	0.00	-7.18	0.00	7.18	1,742.31	441.39	1,264	1,136.27	0.73	-0.09	0.01
75.00	-3.71	-0.57	0.00	-6.42	0.00	6.42	1,728.36	436.06	1,233	1,113.44	0.76	-0.09	0.01
80.00	-3.66	-0.56	0.00	-3.56	0.00	3.56	1,668.37	413.84	1,111	1,019.60	0.85	-0.09	0.01
80.50	-2.37	-0.38	0.00	-3.28	0.00	3.28	1,662.21	411.61	1,099	1,010.33	0.86	-0.09	0.01
84.00	-2.29	-0.37	0.00	-1.96	0.00	1.96	1,618.21	396.06	1,017	946.11	0.93	-0.09	0.00
84.00	-2.29	-0.37	0.00	-1.96	0.00	1.96	1,357.42	347.01	892	795.37	0.93	-0.09	0.00
85.00	-2.10	-0.34	0.00	-1.59	0.00	1.59	1,347.53	343.12	873	780.66	0.95	-0.09	0.00
87.30	-0.94	-0.16	0.00	-0.81	0.00	0.81	1,324.32	334.17	828	747.05	0.99	-0.09	0.00
90.00	-0.71	-0.12	0.00	-0.39	0.00	0.39	1,296.25	323.67	776	708.06	1.05	-0.09	0.00
93.00	-0.19	-0.03	0.00	-0.03	0.00	0.03	1,264.04	312.00	721	665.37	1.11	-0.09	0.00
94.00	0.00	-0.03	0.00	0.00	0.00	0.00	1,253.06	308.11	704	651.30	1.13	-0.09	0.00

**0.9D - 1.0Ev + 1.0Eh Seismic (Reduced DL)**

**CALCULATED FORCES**

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (fr-kips)	Mu Mx (ft-kips)	Resultant Moment (ft-kips)	Phi Pn (kips)	Phi Vn (kips)	Phi Tn (kips)	Phi Mn (kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-25.00	-2.83	0.00	-164.24	0.00	164.24	6,278.64	1,517.87	7,472	7,031.52	0.00	0.00	0.03
5.00	-23.79	-2.82	0.00	-150.08	0.00	150.08	6,144.82	1,473.43	7,041	6,678.32	0.00	-0.01	0.03
10.00	-22.63	-2.79	0.00	-135.99	0.00	135.99	6,007.97	1,428.99	6,623	6,330.81	0.01	-0.01	0.03
15.00	-21.72	-2.75	0.00	-122.05	0.00	122.05	5,861.23	1,384.54	6,217	5,982.24	0.03	-0.02	0.02
19.00	-21.35	-2.74	0.00	-111.03	0.00	111.03	5,710.71	1,348.99	5,902	5,677.45	0.05	-0.03	0.02
20.00	-20.58	-2.70	0.00	-108.29	0.00	108.29	5,673.09	1,340.10	5,825	5,602.50	0.06	-0.03	0.02
23.50	-18.51	-2.59	0.00	-98.84	0.00	98.84	5,541.39	1,308.99	5,557	5,344.09	0.08	-0.03	0.02
25.00	-17.45	-2.52	0.00	-94.96	0.00	94.96	5,484.94	1,295.66	5,445	5,235.21	0.09	-0.03	0.02
30.00	-17.35	-2.51	0.00	-82.36	0.00	82.36	5,296.80	1,251.21	5,078	4,880.38	0.13	-0.04	0.02
30.50	-16.71	-2.47	0.00	-81.10	0.00	81.10	5,277.99	1,246.77	5,042	4,845.58	0.13	-0.04	0.02
31.00	-15.36	-2.36	0.00	-79.87	0.00	79.87	5,259.17	1,242.32	5,006	4,810.90	0.14	-0.04	0.02
35.00	-15.16	-2.35	0.00	-70.42	0.00	70.42	5,108.66	1,206.77	4,723	4,537.99	0.17	-0.05	0.02
36.00	-14.63	-2.30	0.00	-68.07	0.00	68.07	5,071.03	1,197.88	4,654	4,471.01	0.18	-0.05	0.02
37.00	-13.40	-2.19	0.00	-65.77	0.00	65.77	5,033.40	1,188.99	4,585	4,404.53	0.19	-0.05	0.02
40.00	-13.02	-2.15	0.00	-59.21	0.00	59.21	4,920.52	1,162.33	4,382	4,208.06	0.23	-0.05	0.02
42.00	-11.82	-2.02	0.00	-54.92	0.00	54.92	4,845.26	1,144.55	4,249	4,079.57	0.25	-0.05	0.02
45.00	-11.79	-2.02	0.00	-48.85	0.00	48.85	4,732.38	1,117.88	4,053	3,890.58	0.28	-0.06	0.02
45.17	-11.75	-2.02	0.00	-48.51	0.00	48.51	4,726.11	1,116.40	4,043	3,880.21	0.29	-0.06	0.02
45.30	-10.84	-1.91	0.00	-48.24	0.00	48.24	4,721.09	1,115.22	4,034	3,871.93	0.29	-0.06	0.02
47.50	-9.97	-1.81	0.00	-44.04	0.00	44.04	4,638.31	1,095.66	3,894	3,736.51	0.31	-0.06	0.01
50.00	-9.70	-1.77	0.00	-39.52	0.00	39.52	4,544.23	1,073.44	3,738	3,585.55	0.35	-0.06	0.01
51.00	-9.49	-1.74	0.00	-37.75	0.00	37.75	1,974.29	542.72	1,910	1,585.46	0.36	-0.06	0.03
53.30	-8.15	-1.57	0.00	-33.74	0.00	33.74	1,953.73	532.50	1,839	1,539.21	0.39	-0.07	0.03
55.00	-7.72	-1.50	0.00	-31.08	0.00	31.08	1,938.13	524.94	1,787	1,505.11	0.41	-0.07	0.03
60.00	-7.40	-1.45	0.00	-23.57	0.00	23.57	1,890.21	502.72	1,639	1,405.35	0.49	-0.08	0.02
63.80	-6.35	-1.28	0.00	-18.05	0.00	18.05	1,851.77	485.83	1,531	1,330.21	0.55	-0.08	0.02
65.00	-5.95	-1.21	0.00	-16.51	0.00	16.51	1,839.28	480.50	1,498	1,306.62	0.57	-0.08	0.02
70.00	-5.87	-1.20	0.00	-10.45	0.00	10.45	1,785.33	458.28	1,362	1,209.22	0.66	-0.09	0.01
71.00	-4.05	-0.86	0.00	-9.25	0.00	9.25	1,774.17	453.83	1,336	1,189.93	0.68	-0.09	0.01
71.50	-3.28	-0.72	0.00	-8.82	0.00	8.82	1,768.55	451.61	1,323	1,180.30	0.69	-0.09	0.01
73.80	-2.85	-0.64	0.00	-7.16	0.00	7.16	1,742.31	441.39	1,264	1,136.27	0.73	-0.09	0.01
75.00	-2.50	-0.57	0.00	-6.39	0.00	6.39	1,728.36	436.06	1,233	1,113.44	0.75	-0.09	0.01
80.00	-2.47	-0.56	0.00	-3.55	0.00	3.55	1,668.37	413.84	1,111	1,019.60	0.85	-0.09	0.01
80.50	-1.60	-0.38	0.00	-3.27	0.00	3.27	1,662.21	411.61	1,099	1,010.33	0.86	-0.09	0.00
84.00	-1.55	-0.37	0.00	-1.95	0.00	1.95	1,618.21	396.06	1,017	946.11	0.93	-0.09	0.00
84.00	-1.55	-0.37	0.00	-1.95	0.00	1.95	1,357.42	347.01	892	795.37	0.93	-0.09	0.00
85.00	-1.42	-0.34	0.00	-1.58	0.00	1.58	1,347.53	343.12	873	780.66	0.95	-0.09	0.00
87.30	-0.64	-0.16	0.00	-0.81	0.00	0.81	1,324.32	334.17	828	747.05	0.99	-0.09	0.00
90.00	-0.48	-0.12	0.00	-0.39	0.00	0.39	1,296.25	323.67	776	708.06	1.04	-0.09	0.00
93.00	-0.13	-0.03	0.00	-0.03	0.00	0.03	1,264.04	312.00	721	665.37	1.10	-0.09	0.00
94.00	0.00	-0.03	0.00	0.00	0.00	0.00	1,253.06	308.11	704	651.30	1.12	-0.09	0.00

ANALYSIS SUMMARY

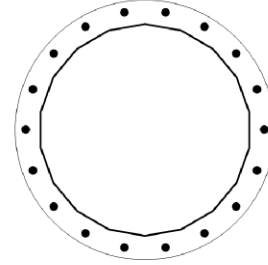
Load Case	Reactions						Max Usage	
	Shear FX (kips)	Shear FZ (kips)	Axial FY (kips)	Moment MX (ft-kips)	Moment MY (ft-kips)	Moment MZ (ft-kips)	Elev (ft)	Interaction Ratio
1.2D + 1.0W	86.97	0.00	37.03	0.00	0.00	4674.64	0.00	0.67
0.9D + 1.0W	86.95	0.00	27.73	0.00	0.00	4667.33	0.00	0.67
1.2D + 1.0Di + 1.0Wi	23.15	0.00	47.18	0.00	0.00	1249.90	0.00	0.19
1.2D + 1.0Ev + 1.0Eh	2.83	0.00	37.00	0.00	0.00	164.59	51.00	0.03
0.9D - 1.0Ev + 1.0Eh	2.83	0.00	25.00	0.00	0.00	164.24	51.00	0.03
1.0D + 1.0W	20.82	0.00	30.98	0.00	0.00	1118.06	0.00	0.16



**BASE PLATE ANALYSIS @ 0 FT**

**PLATE PARAMETERS (ID# 16601)**

Diameter:	68	in
Shape:	Round	
Thickness:	3	in
Grade:	A572-50	
Yield Strength:	50	ksi
Tensile Strength:	65	ksi
Rod Detail Type:	d	
Clear Distance	3	in
Base Weld Size:	0.125	in
Orientation Offset:	10	°
Analysis Type:	Plastic	
Neutral Axis:	50	°



**ANCHOR ROD PARAMETERS**

Class	Arrangement	Quantity	Diameter (in)	Circle (in)	Grade	Fy (ksi)	Fu (ksi)	Spacing (in)	Offset (°)
Original [ID# 16990]	Radial	18	2.25	62.5	A615-75	75	100	-	-

**ANCHOR ROD GEOMETRY AND APPLIED LOADS --- ORIGINAL (18) 2.25"Ø [ID 16990]**

Position	Radians	X (in)	Y (in)	Moment Arm (in)	Inertia (in <sup>4</sup> )	Axial Load (k)	Shear Load (k)
1	0.349	29.36	10.69	-14.969	728.528	-158.57	6.54
2	0.698	23.94	20.09	-5.199	88.609	-158.57	7.44
3	1.047	15.62	27.06	5.199	88.609	166.80	7.44
4	1.396	5.43	30.78	14.969	728.528	166.80	6.54
5	1.745	-5.43	30.78	22.933	1708.940	166.80	4.85
6	2.094	-15.62	27.06	28.132	2571.100	166.80	2.58
7	2.443	-23.94	20.09	29.938	2911.594	166.80	0.00
8	2.793	-29.36	10.69	28.132	2571.100	166.80	2.58
9	3.142	-31.25	0.00	22.933	1708.940	166.80	4.85
10	3.491	-29.36	-10.69	14.969	728.528	166.80	6.54
11	3.840	-23.94	-20.09	5.199	88.609	166.80	7.44
12	4.189	-15.62	-27.06	-5.199	88.609	-158.57	7.44
13	4.538	-5.43	-30.78	-14.969	728.528	-158.57	6.54
14	4.887	5.43	-30.78	-22.933	1708.940	-158.57	4.85
15	5.236	15.62	-27.06	-28.132	2571.100	-158.57	2.58
16	5.585	23.94	-20.09	-29.938	2911.594	-158.57	0.00
17	5.934	29.36	-10.69	-28.132	2571.100	-158.57	2.58
18	6.283	31.25	0.00	-22.933	1708.940	-158.57	4.85

**REACTION DISTRIBUTION**

Component	ID	Moment Mu (k-ft)	Axial Load Pu (k)	Shear Vu (k)	Moment Factor
Pole	55"Ø x 0.5" (18 Sides)	4674.6	37.03	86.97	1.000
Bolt Group	Original (18) 2.25"Ø	4674.6	-	86.97	1.000
<b>TOTALS</b>		<b>4674.64</b>	<b>37.03</b>	<b>86.97</b>	

ASSET: 209477, New Canaan 2  
 CUSTOMER: VERIZON WIRELESS

CODE: ANSI/TIA-222-H  
 ENG NO: OAA768680

**COMPONENT PROPERTIES**

Component	ID	Gross Area (in <sup>2</sup> )	Net Area (in <sup>2</sup> )	Individual Inertia (in <sup>4</sup> )	Moment of Inertia (in <sup>4</sup> )	Threads/in
Pole	55"ø x 0.5" (18 Sides)	85.1744	-	-	31630.80	-
Bolt Group	Original (18) 2.25"ø	3.9761	3.2477	0.8393	26211.90	4.5

**EXTERNAL BASE PLATE BEND LINE ANALYSIS @ 0 FT**

**POLE PROPERTIES**

Flat-to-Flat Diameter: 55.12 in  
 Point-to-Point Diameter: 55.98 in  
 Flat Width: 9.720 in  
 Flat Radians: 0.349 rad

**PLATE PROPERTIES**

Neutral Axis: 50 °  
 Bend Line Lower Limit: 1.883 rad  
 Bend Line Upper Limit: 3.004 rad

Bend Line	Chord Length (in)	Additional Length (in)	Section Modulus (in <sup>3</sup> )	Applied Moment Mu (k-in)	Moment Capacity φMn (k-in)	Ratio
Flat	36.093	0.00	81.210	724.1	3654.4	0.198
Corner	34.760	0.00	78.210	466.8	3519.4	0.133
Circumferential	46.639	0.00	104.938	1180.2	4722.2	0.250

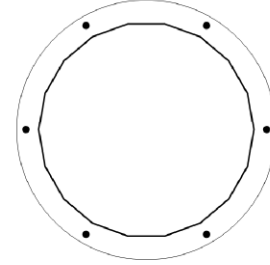
**PLASTIC ANCHOR ROD ANALYSIS**

Class	Group Quantity	Rod Diameter (in)	Applied Axial Load Pu (k)	Applied Shear Load Vu (k)	Compressive Capacity φPn (k)	Ratio
Original	18	2.25	166.9	7.4	243.6	0.746

**UPPER FLANGE PLATE ANALYSIS @ 84 FT**

**PLATE PARAMETERS (ID# 16602)**

Diameter:	35.01	in
Shape:	Round	
Thickness:	2	in
Grade:	A572-50	
Yield Strength:	50	ksi
Tensile Strength:	65	ksi
Pole Weld Size:	0.125	in
Orientation Offset:	-	°
Analysis Type:	Plastic	
Neutral Axis:	330	°



**FLANGE BOLT PARAMETERS**

Class	Arrangement	Quantity	Diameter (in)	Circle (in)	Grade	Fy (ksi)	Fu (ksi)	Spacing (in)	Offset (°)
Original [ID# 16991]	Radial	6	1	32.51	A325	92	120	-	-

**FLANGE BOLT GEOMETRY AND APPLIED LOADS --- ORIGINAL (6) 1"Ø [ID 16991]**

Position	Radians	X (in)	Y (in)	Moment Arm (in)	Inertia (in <sup>4</sup> )	Axial Load (k)	Shear Load (k)
1	1.047	8.13	14.08	15.630	148.011	10.78	0.00
2	2.094	-8.13	14.08	7.815	37.025	10.78	2.11
3	3.142	-16.26	0.00	-7.815	37.025	-9.55	2.11
4	4.189	-8.13	-14.08	-15.630	148.011	-9.55	0.00
5	5.236	8.13	-14.08	-7.815	37.025	-9.55	2.11
6	6.283	16.26	0.00	7.815	37.025	10.78	2.11

**REACTION DISTRIBUTION**

Component	ID	Moment Mu (k-ft)	Axial Load Pu (k)	Shear Vu (k)	Moment Factor
Pole	28.6914"Ø x 0.2188" (18 Sides)	53.0	1.85	9.75	1.000
Bolt Group	Original (6) 1"Ø	53.0	-	9.75	1.000
<b>TOTALS</b>		<b>52.95</b>	<b>1.85</b>	<b>9.75</b>	

**COMPONENT PROPERTIES**

Component	ID	Gross Area (in <sup>2</sup> )	Net Area (in <sup>2</sup> )	Individual Inertia (in <sup>4</sup> )	Moment of Inertia (in <sup>4</sup> )	Threads/in
Pole	28.6914"Ø x 0.2188" (18 Sides)	19.4723	-	-	1973.56	-
Bolt Group	Original (6) 1"Ø	0.7854	0.6057	0.0292	444.12	8.0

**EXTERNAL UPPER FLANGE PLATE BEND LINE ANALYSIS @ 84 FT**

**POLE PROPERTIES**

Flat-to-Flat Diameter: 28.82 in  
 Point-to-Point Diameter: 29.26 in  
 Flat Width: 5.081 in  
 Flat Radians: 0.349 rad

**PLATE PROPERTIES**

Neutral Axis: 330 °  
 Bend Line Lower Limit: 0.134 rad  
 Bend Line Upper Limit: 1.961 rad

Bend Line	Chord Length (in)	Additional Length (in)	Section Modulus (in <sup>3</sup> )	Applied Moment Mu (k-in)	Moment Capacity φMn (k-in)	Ratio
Flat	18.204	0.00	18.204	16.9	819.2	0.021
Corner	17.481	0.00	17.481	13.8	786.6	0.018
Circumferential	34.217	0.00	34.217	13.8	1539.8	0.009

**PLASTIC FLANGE BOLT ANALYSIS**

Class	Group Quantity	Bolt Diameter (in)	Applied Axial Load Pu (k)	Applied Shear Load Vu (k)	Compressive Capacity φPn (k)	Ratio
Original	6	1	10.8	2.1	54.5	0.198

## Monolithic Mat Foundation Analysis (ANSI/TIA-222-H)

### Foundation & Tower Parameters

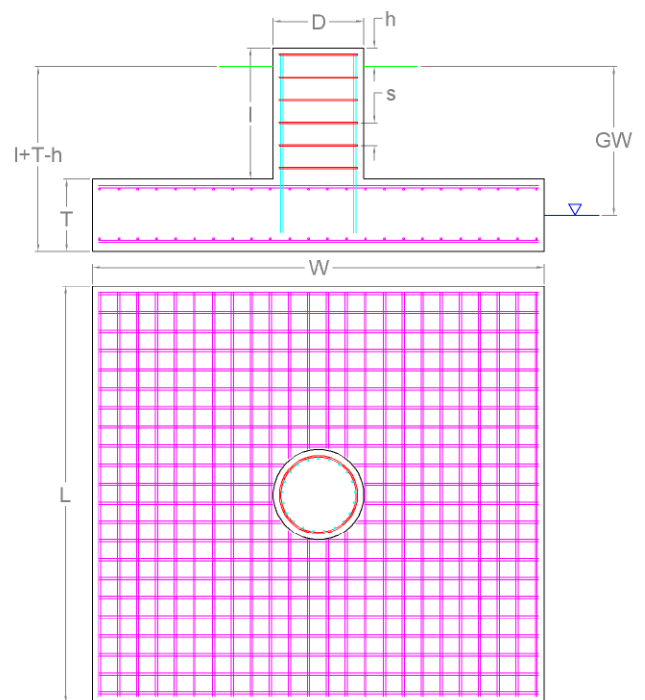
Ignore Mat Rebar?		N	
Ignore Pier Rebar?		N	
Foundation has Pier(s)?		Y	
Pier Shape		Round	
Pier Diameter	$D$	7	ft
Pier Height Above Ground	$h$	0.5	ft
Pier Length	$l$	4.5	ft
Mat Base Depth	$l+T-h$	7	ft
Mat Length	$L$	26	ft
Mat Width	$W$	26	ft
Mat Thickness	$T$	3	ft
Unit Weight of Concrete		150	pcf
Tower Eccentricity	ecc	0	ft
Tower Face Width	FW	4.58	ft
Tower Leg Count		1	

### Reactions

Moment, $M_u$	4,674.64	k-ft
Shear, $V_u$	86.97	k
Axial, $P_u$	37.03	k
Uplift, $T_u$	0	k
Tower Weight	37.03	k
Tower Dead Load Factor	0.9	

### Soil Parameters

Water Table Depth [BGL]	GW	-	ft
Unit Weight of Soil		130	pcf
Unit Weight of Soil [Submerged]		67.6	pcf
Shear Friction Coefficient		0.35	
Ultimate Bearing Pressure		30,000	psf
Bearing Pressure Type		Net	
Conical Failure Angle		15	°
Capacity Increase (Transient Loads)		1.00	
Soil Strength Reduction Factor, $\phi_s$		0.75	
Dead Load Factor		1.2	



### Soil Capacities

Design Moment, $M_u$	5,326.92	k-ft
Nominal Moment Capacity, $\phi_m M_n$	8,608.59	k-ft
$M_u / \phi_s M_n$	61.9%	
Net Bearing Pressure	2,572	k
Nominal Bearing Capacity, $\phi_b P_n$	23,182	k
Bearing Pressure Controlling Load Direction	Diagonal to Pad Edge	
$P_u / \phi_s P_n$	11.1%	
Ultimate Friction Resistance	242.39	k
Ultimate Passive Pressure Resistance	55.77	k
Nominal Shear Capacity, $\phi_s V_n$	223.62	k
$V_u / \phi_s V_n$	39.0%	



### Mat Reinforcement Parameters

Concrete Compressive Strength, $f'_c$	4,500	psi
Mat Rebar Quantity [Lower]	36	
Mat Rebar Size # [Lower]	9	
Mat Single Rebar Area [Lower]	1	in <sup>2</sup>
Mat Rebar Quantity [Upper]	36	
Mat Rebar Size # [Upper]	6	
Mat Single Rebar Area [Upper]	0.44	in <sup>2</sup>
Mat Rebar Yield Strength, $F_y$	60	ksi
Mat Clear Cover	3	in
Bending Reduction Factor, $\phi_B$	0.9	
Shear Reduction Factor, $\phi_V$	0.75	
Compression Reduction Factor, $\phi_C$	0.65	
Steel Elastic Modulus	29,000	ksi

### Mat Reinforcement Capacities

Compression Zone Factor, $\beta_1$	0.825	
Lower Reinforcement Spacing	8.73	in
Upper Reinforcement Spacing	8.73	in
One Way Design Shear, $V_u$	248.53	k
One Way Shear Capacity, $\phi V_c$	941.31	k
One Way Shear Controlling Load Direction	Diagonal to Pad Edge	
$V_u / \phi V_c$	26.4%	
Punching Design Shear Stress, $v_u$	55.33	psi
Punching Shear Capacity, $\phi_c V_n$	201.25	psi
$v_u / \phi_c V_n$	27.5%	
Moment Transfer Effective Flexural Width, $f$	16	in
Neutral Axis Depth	1.88	in
Moment Transfer Flexural Capacity, $\phi M_{sc,f}$	38,598.88	k-in
$\gamma_f M_{sc} / \phi M_{sc,f}$	0.0%	
Flexure Due to Soil Pressure, $M_u$	2,248.7	k-ft
Lower Steel Mat Moment Capacity, $\phi M_n$	5,039.13	k-ft
Flexural Steel Controlling Load Direction	Parallel to Pad Edge	
$M_u / \phi M_n$	44.6%	
Flexure Due to Uplift, $M_u$	1,138.05	k-ft
Upper Steel Mat Moment Capacity, $\phi M_n$	2,247.92	k-ft
$M_u / \phi M_n$	50.6%	

### Pier Reinforcement Parameters

Concrete Compressive Strength ( $f'_c$ )	4,500	psi
Pier Rebar Quantity	30	
Pier Rebar Size #	11	
Pier Single Rebar Area	1.56	in <sup>2</sup>
Pier Rebar Yield Strength ( $F_y$ )	60	ksi
Tie Rebar Size #	5	
Tie Rebar Area (Single)	0.31	in <sup>2</sup>
Tie Rebar Spacing	12	in
Tie Rebar Yield Strength ( $F_y$ )	60	ksi
Rebar Cage Diameter	75.38	in

### Pier Reinforcement Capacities

Design Moment ( $M_u$ )	5,066	k-ft
Nominal Moment Capacity ( $\phi_B M_n$ )	7,768.29	k-ft
$M_u / \phi_B M_n$	65.2%	
Design Shear ( $V_u$ )	86.97	k
Nominal Shear Capacity ( $\phi_V V_n$ )	715.73	k
$V_u / \phi_V V_n$	12.2%	
Design Compression ( $P_u$ )	37.03	k
Nominal Compression Capacity ( $\phi_P P_n$ )	10,978.17	k
$P_u / \phi_P P_n$	0.3%	
Pier Reinforcement Ratio	0.001	-
$M_u / \phi_B M_n + T_u / \phi_T T_n$	65.2%	





MOUNT ANALYSIS REPORT  
NEW CANAAN, CONNECTICUT

Prepared for  
Verizon Wireless



Site Ref:  
New Canaan NE2 CT

Site Address: 183 Soundview Lane, New Canaan, Connecticut 06840

APT Filing No. CT141NB\_13190

May 25, 2022



**Mount Analysis Report  
prepared for  
Verizon Wireless**

**EXECUTIVE SUMMARY:**

All-Points Technology Corporation, P.C. (APT) performed a structural analysis of the proposed Verizon installation on the existing host tower structure located at 183 Soundview Lane in New Canaan, Connecticut. This analysis was limited to a structural evaluation of the proposed mounting assembly with the proposed equipment installation and its connection to the host tower structure.

The Verizon installation consists of one (1) proposed SitePRO1 Double T-Arm antenna mount assembly (P/N RMVD8-3-3096) to the proposed antennas and related equipment. The proposed equipment configuration is included within the table on the following page. Reference is made to the Construction Drawings prepared by APT, marked Rev 3, dated 05/25/2022.

Our analysis indicates that the proposed installation meets the requirements of IBC 2015 as amended by the 2018 Connecticut State Building Code and the ANSI/TIA-222-H standard with proposed equipment installation

**REFERENCES:**

The following information was utilized in the preparation of this analysis:

- Equipment manufacturer's specifications, drawings, design documentation, etc.
- Structural Analysis Report prepared by American Tower Corporation, dated 03/25/2022.

**STRUCTURAL ANALYSIS:**

The analysis of the modified antenna mount assembly has been prepared in accordance with the following design codes & standards:

- ANSI/TIA-222-H-2018 – Structural Standard for Antenna Supporting Structures, Antennas and Small Wind Turbine Support Structures.
- ASCE/SEI 7-16 – Minimum Design Loads and Associated Criteria for Buildings and Other Structures.
- AISC – Manual of Steel Construction, 16<sup>th</sup> Edition.
- 2015 International Building Code (IBC) as amended by the 2018 Connecticut State Building Code

**DESIGN CRITERIA FOR STRUCTURAL ANALYSIS:**

The analysis of the modified antenna mount assembly was prepared utilizing the following design criteria:

- 120 mph (3-second gust) Ultimate Design Wind Speed.
- 50 mph (3-second gust) Design Wind Speed w/ 1.0" design ice thickness.
- 30 mph (3-second gust) Maintenance Wind Speed
- Risk Category II
- Exposure Category B
- Maintenance Live Load, LLm / LLv = 500 lbs / 250 lbs



**Equipment Summary:**

The proposed Verizon antenna/appurtenance and mount assembly loading consists of the following equipment (proposed and relocated equipment shown in **bold** text):

Antenna and Appurtenance Make/Model	Quantity	Status	Mount Type <sup>2</sup>	Elevation
JMA MX10FRO860 panel antennas	3	P	One (1) SitePRO1 Double T-Arm with antenna pipes, PN# RMVD8-3-3096.	71.0 ft± AGL
JMA MX10FRO840 panel antennas	3	P		
Samsung MT6407-77A panel antennas	3	P		
Samsung B2/B66A (RF4439d-25A) RRH Remote Radio Heads	3	P		
Samsung B5/13 (RF4440d-13A) RRH Remote Radio Heads	3	P		
12x24 Hybrid Cable	1	P	n/a	n/a

Notes:

1. ETR = Existing to Remain; ERL = Existing to be Relocated; P = Proposed.

**Antenna Mount Usage:**

The following table summarizes the usage under the proposed equipment loading utilizing the local design criteria:

Component	Usage
Mounting Members	0.35
Connection	0.23

Note:

1. Usage values noted above compared to unity (i.e. < 1.0) are deemed adequate.

**Conclusions and Recommendations:**

In conclusion, our mount analysis indicates that the proposed Verizon mount assembly and all related connections meet the requirements of the IBC 2015/2018 Connecticut State Building Code and ANSI/TIA-222-H standard with Verizon's proposed equipment installation.

If there are any further questions regarding this project or if we may be of further assistance, please do not hesitate to call.

Sincerely,  
 All-Points Technology Corp., P.C.



Michael S. Trodden, P.E.  
 Sr. Structural Engineer



Prepared by,  
 All-Points Technology Corp., P.C.



Jeremy P. Vassell  
 Project Structural Engineer

**LIMITATIONS:**

This report is based on the following:

1. Mount assembly/assemblies are properly installed and maintained.
2. All members are in an undeteriorated condition.
3. All required members are in place.
4. All bolts are in place and are properly tightened.
5. All mount assembly members were properly designed, detailed, fabricated, and installed and have been properly maintained since erection.

All-Points Technology Corporation, P.C. (APT) is not responsible for modifications completed prior to or hereafter which APT is not or was not directly involved. Modifications include but are not limited to:

1. Replacing or strengthening members.
2. Reinforcing vertical members in any manner.
3. Installing antenna stand-off mounts or side arms.

APT hereby states that this document represents the entire report and that it assumes no liability for any factual changes that may occur after the date of this report. All representations, recommendations, and conclusions are based upon the information contained and set forth herein. If you are aware of any information which is contrary to that which is contained herein, or you are aware of any defects arising from the original design, material, fabrication and erection deficiencies, you should disregard this report and immediately contact APT. APT disclaims all liability for any representation, recommendation, or conclusion not expressly stated herein.

# ***Appendix A***

*Design Criteria*

**(APPENDIX N) MUNICIPALITY - SPECIFIC STRUCTURAL DESIGN PARAMETERS**

Municipality	Ground Snow Load (psf)	MCE Spectral Accelerations (%g)		Wind Design Parameters								
		S <sub>s</sub>	S <sub>1</sub>	Ultimate Design Wind Speeds, V <sub>ult</sub> (mph)			Nominal Design Wind Speeds, V <sub>asd</sub> (mph)			Wind-Borne Debris Regions <sup>1</sup>		Hurricane-Prone Regions
				Risk Cat. I	Risk Cat. II	Risk Cat III-IV	Risk Cat. I	Risk Cat. II	Risk Cat. III-IV	Risk Cat. II & III except Occup I-2	Risk Cat III Occup I-2 & Risk Cat. IV	
Montville	30	0.165	0.059	125	135	145	97	105	112		Type A	Yes
Morris	35	0.187	0.065	110	120	125	85	93	97			Yes
Naugatuck	30	0.190	0.064	110	125	135	85	97	105			Yes
New Britain	30	0.183	0.064	115	125	135	89	97	105			Yes
New Canaan	30	0.240	0.068	110	120	130	85	93	101			Yes
New Fairfield	35	0.212	0.067	105	115	125	81	89	97			
New Hartford	40	0.180	0.065	110	120	130	85	93	101			Yes
New Haven	30	0.186	0.062	115	125	135	89	97	105		Type C	Yes
Newington	30	0.182	0.064	115	125	135	89	97	105			Yes
New London	30	0.161	0.058	125	135	145	97	105	112	Type B	Type A	Yes
New Milford	35	0.198	0.066	105	115	125	81	89	97			
Newtown	30	0.208	0.066	110	120	130	85	93	101			Yes
Norfolk	40	0.175	0.065	105	115	125	81	89	97			
North Branford	30	0.179	0.061	120	130	140	93	101	108			Yes
North Canaan	40	0.173	0.065	105	115	120	81	89	93			
North Haven	30	0.184	0.062	115	125	135	89	97	105			Yes
North Stonington	30	0.163	0.059	125	135	145	97	105	112		Type A	Yes
Norwalk	30	0.232	0.067	110	120	130	85	93	101			Yes
Norwich	30	0.168	0.060	125	135	145	97	105	112		Type A	Yes
Old Lyme	30	0.164	0.059	125	135	145	97	105	112	Type B	Type A	Yes
Old Saybrook	30	0.164	0.059	125	135	145	97	105	112	Type B	Type A	Yes
Orange	30	0.192	0.063	115	125	135	89	97	105			Yes
Oxford	30	0.196	0.064	110	125	130	85	97	101			Yes
Plainfield	35	0.170	0.061	125	135	145	97	105	112		Type A	Yes
Plainville	35	0.184	0.064	115	125	135	89	97	105			Yes
Plymouth	35	0.186	0.064	110	120	130	85	93	101			Yes
Pomfret	40	0.172	0.063	120	130	140	93	101	108			Yes
Portland	30	0.180	0.063	115	130	135	89	101	105			Yes
Preston	30	0.167	0.060	125	135	145	97	105	112		Type A	Yes
Prospect	30	0.188	0.064	115	125	135	89	97	105			Yes
Putnam	40	0.172	0.063	120	130	140	93	101	108			Yes
Redding	30	0.220	0.067	110	120	130	85	93	101			Yes
Ridgefield	30	0.230	0.068	110	120	125	85	93	97			Yes
Rocky Hill	30	0.181	0.063	115	125	135	89	97	105			Yes
Roxbury	35	0.197	0.065	110	120	125	85	93	97			Yes
Salem	30	0.170	0.060	120	135	140	93	105	108		Type A	Yes
Salisbury	40	0.173	0.065	105	115	120	81	89	93			
Scotland	30	0.172	0.061	120	130	140	93	101	108			Yes
Seymour	30	0.194	0.064	115	125	135	89	97	105			Yes
Sharon	40	0.179	0.065	105	115	120	81	89	93			
Shelton	30	0.199	0.064	115	125	135	89	97	105			Yes
Sherman	35	0.202	0.066	105	115	120	81	89	93			

## Ice

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**Results:**

Ice Thickness: 1.00 in.

Concurrent Temperature: 15 F

Gust Speed 50 mph

**Data Source:** Standard ASCE/SEI 7-16, Figs. 10-2 through 10-8

**Date Accessed:** Fri May 20 2022

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

Values provided are equivalent radial ice thicknesses due to freezing rain with concurrent 3-second gust speeds, for a 500-year mean recurrence interval, and temperatures concurrent with ice thicknesses due to freezing rain. Thicknesses for ice accretions caused by other sources shall be obtained from local meteorological studies. Ice thicknesses in exposed locations at elevations higher than the surrounding terrain and in valleys and gorges may exceed the mapped values.

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# ***Appendix B***

*Mount Analysis*



Project ID: CT141NB13190  
 Site Name: NEW CANAAN NE2 CT  
 Date: 5/23/2022

(Based on ANSI/TIA-222-H-2018)

<u>Site Name:</u>	NEW CANAAN NE2 CT
<u>Site Address:</u>	183 Soundview Lane New Canaan, CT 06840
<u>Site County:</u>	Fairfield

Design Criteria

Risk Category =	II	Sect. 2.2 & Table 2-1
Exposure Category =	B	Section 2.6.5
Ultimate Design Wind Speed, V =	120 mph	Fig. B-2 & ASCE 7-16 Fig. 26.5-1B
Design Wind Speed with Ice, V <sub>i</sub> =	50 mph	Fig. B-9
Design Ice Thickness, t <sub>i</sub> =	1.00 in	Fig. B-9
Importance Factor, I =	1.00	Table 2-3
Basic Wind Speed, V <sub>m</sub> =	30 mph	Section 16.3
Maintenance Load, L <sub>m</sub> =	500.0 lbs	Section 16.3
Maintenance Load, L <sub>v</sub> =	250.0 lbs	Section 16.3

Wind Pressure Analysis:

$q_z = 0.00256K_zK_{zt}K_sK_eK_dV^2$	Section 2.6.11.6
<u>K<sub>z</sub>:</u>	<b>See Next Sheet</b>
	z <sub>g</sub> = 1200 Table 2-4
	α = 7 Table 2-4
	K <sub>zmin</sub> = 0.7 Table 2-4
<u>K<sub>zt</sub>:</u>	<b>K<sub>zt</sub> = 1.00</b> Section 2.6.6
<u>K<sub>s</sub>:</u>	<b>K<sub>s</sub> = 1.00</b> Section 2.6.7
<u>K<sub>e</sub>:</u>	<b>K<sub>e</sub> = 1.00</b> Section 2.6.8
<u>K<sub>d</sub>:</u>	<b>K<sub>d</sub> = 0.95</b> Section 16.6

<b>q<sub>z</sub>' =</b>	<b>35.02</b>	<b>psf</b>
<b>q<sub>zi</sub>' =</b>	<b>6.08</b>	<b>psf</b>
<b>q<sub>zm</sub>' =</b>	<b>2.19</b>	<b>psf</b>

$F = q_z G_h (EPA)_A = q_z G_h K_a [(EPA)_N \cos^2(\theta) + (EPA)_T \sin^2(\theta)]$	Section 2.6.11.2
G <sub>h</sub> = 1.00	Section 16.6
K <sub>a</sub> = 0.90	Section 16.6

Design Criteria: (From Previous Sheet)

$G_h = 1.00$  Section 16.6  
 $K_s = 0.90$  Section 16.6

$q_s = 35.02$  psf  
 $q_{s1} = 6.08$  psf  
 $q_{sw} = 2.19$  psf  
 $t_s = 1.00$  in

Description	#/Sector	Elev. z, ft	$K_z$	$q_z$ , psf	Dimensions			Flat Panel Front Coefficient			Flat Panel Side Coefficient			Front Wind Side Wind				
					Height, in	Width, in	Depth, in	Area, ft <sup>2</sup>	Aspect Ratio	$C_{Af}$	Area, ft <sup>2</sup>	Aspect Ratio	$C_{As}$	Force, lbs	Force, lbs	Weight, lbs		
MT6407-77A	1.0	71.0	0.896	31.38	35.1	16.1	5.5	3.92	2.180	1.20	4.71	1.341	6.382	1.37	1.840	134.0	52.0	81.6
MX10FR0860	1.0	71.0	0.896	31.38	95.9	15.0	7.4	9.99	6.393	1.37	13.72	4.928	12.959	1.60	7.878	388.0	223.0	66
MX10FR0840	1.0	71.0	0.896	31.38	95.6	20.3	7.7	13.48	4.709	1.30	17.50	5.112	12.416	1.58	8.080	495.0	229.0	104
RVZDC-6627-PF-48	1.0	71.0	0.896	31.38	29.5	16.5	12.6	3.38	1.788	1.20	4.06	2.581	2.341	1.20	3.098	115.0	88.0	32
BZ/66A PCS/AWS RRH	1.0	71.0	0.896	31.38	15.0	15.0	10.0	1.56	1.000	1.20	1.88	1.046	1.494	1.20	1.255	53.0	36.0	97.5
B5/813 850/700 RRH	1.0	71.0	0.896	31.38	15.0	15.0	9.1	1.56	1.000	1.20	1.88	0.948	1.648	1.20	1.138	53.0	33.0	82.0

Description	#/Sector	z, ft	$K_z$	$q_{ice}$ , psf	Dimensions with Ice			Flat Panel Front Coefficient			Flat Panel Side Coefficient			Front Wind Side Wind				
					Ice Thick., $t_{ice}$ , in	Height, in	Dc, in	Area, ft <sup>2</sup>	Aspect Ratio	$C_{Af}$	Area, ft <sup>2</sup>	Aspect Ratio	$C_{As}$	Force, lbs	Force, lbs	Weight, lbs		
MT6407-77A	1.0	71.0	0.896	5.448	1.08	37.25	17.01	4.72	2.19	0.70	3.307	1.982	2.19	0.70	1.387	17.0	7.0	155.7
MX10FR0860	1.0	71.0	0.896	5.448	1.08	98.05	16.73	11.68	5.86	0.77	9.053	6.510	5.86	0.77	5.043	45.0	25.0	257.9
MX10FR0840	1.0	71.0	0.896	5.448	1.08	97.75	21.71	15.25	4.50	0.74	11.352	6.693	4.50	0.74	4.983	56.0	25.0	348.9
RVZDC-6627-PF-48	1.0	71.0	0.896	5.448	1.08	31.65	20.76	4.10	1.52	0.70	2.872	3.245	1.52	0.70	2.271	15.0	12.0	108.0
BZ/66A PCS/AWS RRH	1.0	71.0	0.896	5.448	1.08	17.15	18.05	2.04	0.95	0.70	1.431	1.454	0.95	0.70	1.018	8.0	5.0	133.6
B5/813 850/700 RRH	1.0	71.0	0.896	5.448	1.08	17.15	17.54	2.04	0.98	0.70	1.431	1.342	0.98	0.70	0.939	8.0	5.0	117.1

Description	#/Sector	Elev. z, ft	$K_z$	$q_z$ , psf	Dimensions			Flat Panel Front Coefficient			Flat Panel Side Coefficient			Front Wind Side Wind				
					Height, in	Width, in	Depth, in	Area, ft <sup>2</sup>	Aspect Ratio	$C_{Af}$	Area, ft <sup>2</sup>	Aspect Ratio	$C_{As}$	Force, lbs	Force, lbs	Weight, lbs		
MT6407-77A	1.0	71.0	0.896	1.96	35.1	16.1	5.5	3.92	2.180	1.20	4.71	1.341	6.382	1.37	1.840	9.0	4.0	81.6
MX10FR0860	1.0	71.0	0.896	1.96	95.9	15.0	7.4	9.99	6.393	1.37	13.72	4.928	12.959	1.60	7.878	25.0	14.0	66
MX10FR0840	1.0	71.0	0.896	1.96	95.6	20.3	7.7	13.48	4.709	1.30	17.50	5.112	12.416	1.58	8.080	31.0	15.0	104
RVZDC-6627-PF-48	1.0	71.0	0.896	1.96	29.5	16.5	12.6	3.38	1.788	1.20	4.06	2.581	2.341	1.20	3.098	8.0	6.0	32
BZ/66A PCS/AWS RRH	1.0	71.0	0.896	1.96	15.0	15.0	10.0	1.56	1.000	1.20	1.88	1.046	1.494	1.20	1.255	4.0	3.0	97.5
B5/813 850/700 RRH	1.0	71.0	0.896	1.96	15.0	15.0	9.1	1.56	1.000	1.20	1.88	0.948	1.648	1.20	1.138	4.0	3.0	82.0





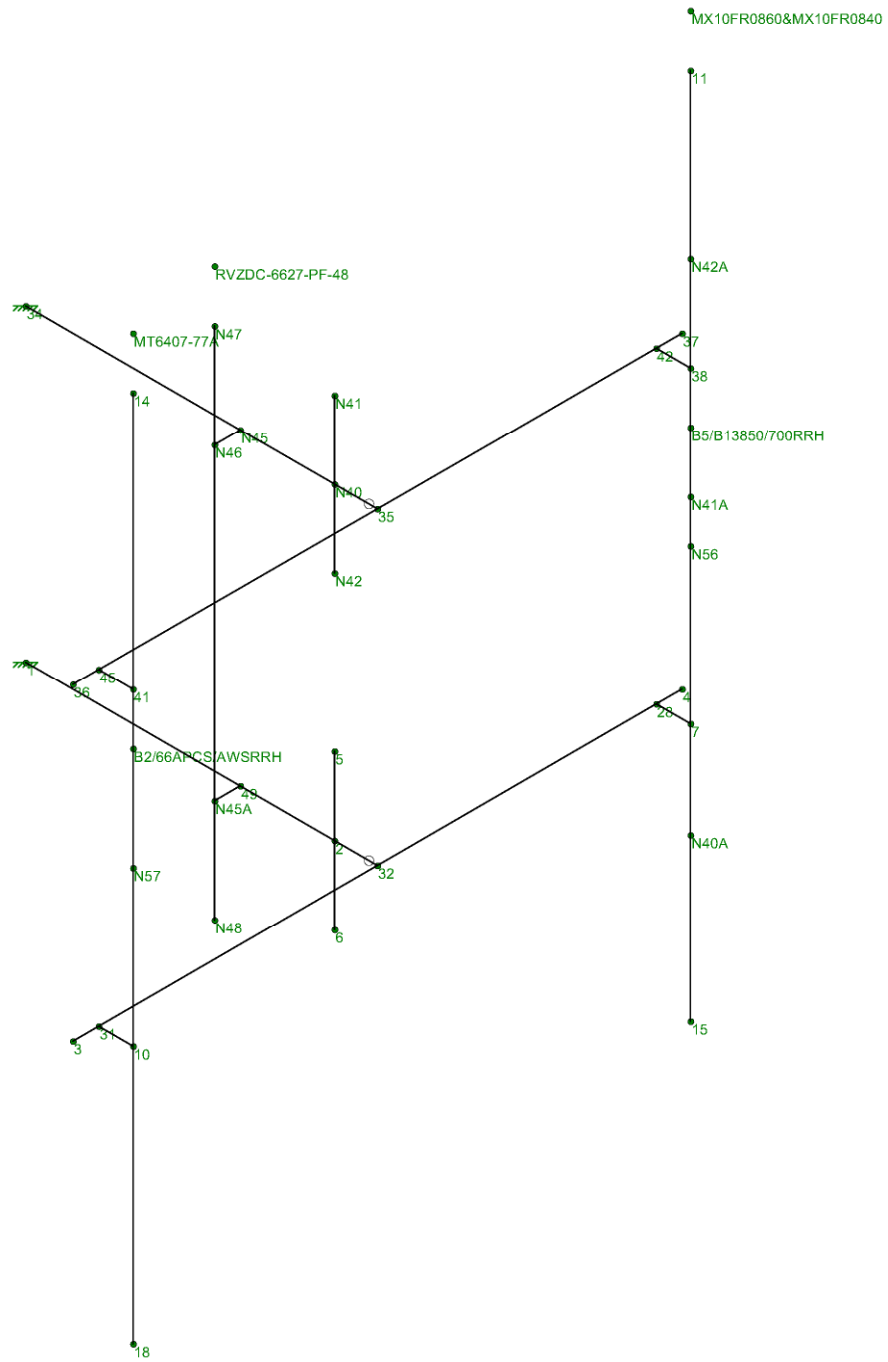
Based on ANSI/ITIA-222-H-2018

Project ID: CT141NB13190  
 Site Name: NEW CANAAN NE2 CT  
 Date: 5/23/2022

Design Criteria: (From Previous Sheet)

$q_t = 35.02$  psf       $G_h = 1.00$       Section 16.6  
 $q_{h1} = 6.08$  psf       $K_s = 0.90$       Section 16.6  
 $q_{sw} = 2.19$  psf  
 $t_s = 1.00$  in

Description	Elev. z, ft	$K_z$	$q_{tz}$ , psf	Ice Thick., $t_{ez}$ , in		$q_{ip}$ , psf	$q_{op}$ , psf	Dimensions			Loading, No Ice			With Ice			Maintenance				
				Width or Dia, in	Depth, in			Thickness, in	Weight, lbs/ft	Flat or Round	Ca	Wind, lbs/ft	Ca	Wind, lbs/ft	Ca	Wind, lbs/ft	Ca	Wind, lbs/ft			
HSS4x4x3/16	109.5	1.014	35.52	1.13	1.13	6.17	2.22	4.000	4.000	0.188	9.40	HSS	1.37	14.57	6.25	5.657	9.34	1.37	3.95	1.37	0.91
3" STD	109.5	1.014	35.52	1.13	1.13	6.17	2.22	3.500	3.500	0.216	7.59	ROUND	1.20	11.19	5.75	3.500	6.37	1.20	3.19	1.20	0.70
2.5" STD	109.5	1.014	35.52	1.13	1.13	6.17	2.22	2.875	2.875	0.203	5.84	ROUND	1.20	9.19	5.13	2.875	5.51	1.20	2.85	1.20	0.57
4" STD	109.5	1.014	35.52	1.13	1.13	6.17	2.22	4.500	4.500	0.237	10.87	ROUND	1.20	14.38	6.75	4.500	7.75	1.20	3.75	1.20	0.90



APT

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New Canaan NE2 CT

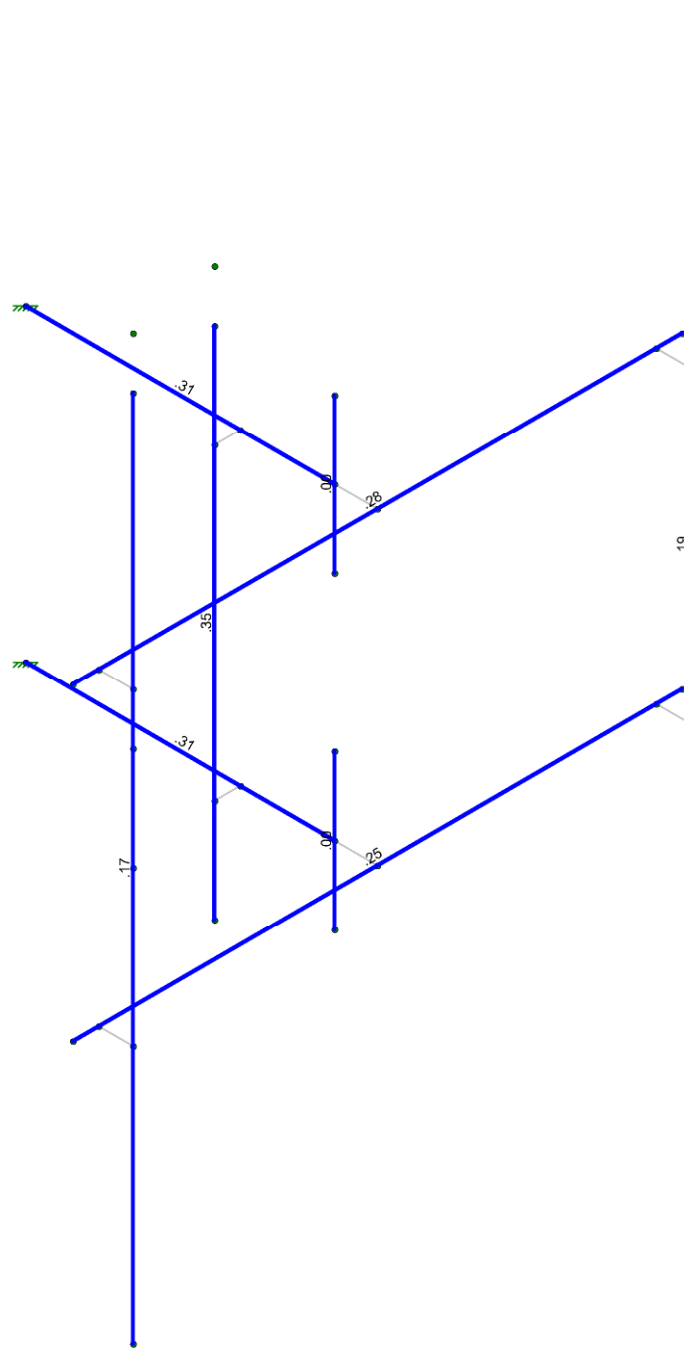
RMVD8-3-3096

Node & Member Labels

New Canaan NE2 CT - RMVD8-3-...



Code Check ( Env )	
Black	No Calc
Red	> 1.0
Magenta	.90-1.0
Green	.75-.90
Cyan	.50-.75
Blue	0-.50



Member Code Checks Displayed (Enveloped)  
Envelope Only Solution

APT

JV

New Canaan NE2 CT

RMVD8-3-3096

Max Bending Stresses

New Canaan NE2 CT - RMVD8-3-...



### Hot Rolled Steel Properties

	Label	E [ksi]	G [ksi]	Nu	Therm (/1E5 F)	Density[k/ft^3]	Yield[ksi]	Ry	Fu[ksi]	Rt
1	A992	29000	11154	.3	.65	.49	50	1.1	65	1.1
2	A36 Gr.36	29000	11154	.3	.65	.49	36	1.5	58	1.2
3	A572 Gr.50	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	1.5	58	1.2
7	A1085	29000	11154	.3	.65	.49	50	1.4	65	1.3
8	Q235	29000	11154	.3	.65	.49	35	1.5	58	1.2

### Hot Rolled Steel Section Sets

	Label	Shape	Type	Design List	Material	Design Ru...	A [in2]	Iyy [in4]	Izz [in4]	J [in4]
1	HSS4x4x3/16	HSS4X4X3	Beam	SquareTu...	Q235	Typical	2.58	6.21	6.21	10
2	3" STD	PIPE_3.0	Beam	Pipe	A53 Gr.B	Typical	2.07	2.85	2.85	5.69
3	2.5" STD	PIPE_2.5	Column	Pipe	A53 Gr.B	Typical	1.61	1.45	1.45	2.89
4	4" STD	PIPE_4.0	Column	Pipe	A53 Gr.B	Typical	2.96	6.82	6.82	13.6

### Hot Rolled Steel Design Parameters

	Label	Shape	Length[in]	Lbyy[in]	Lbzz[in]	Lcomp top[in]	Lcomp bot[in]	L-torq...	Kyy	Kzz	Cb	Function
1	M1	HSS4x4x3/16	36									Lateral
2	M2	4" STD	18									Lateral
3	M3	3" STD	71									Lateral
4	M4	2.5" STD	96									Lateral
5	M6	2.5" STD	96									Lateral
6	M11	HSS4x4x3/16	36									Lateral
7	M12	3" STD	71									Lateral
8	M19	4" STD	18									Lateral
9	M23	2.5" STD	60									Lateral

### Basic Load Cases

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distribut...	Area(Me...	Surface(...
1	DL	DL		-1.05		6	1			
2	WLX	WLX				6	1	7		
3	WLZ	WLZ				6	1	7		
4	DLi	OL1				6	1	9		
5	WLXi	WL+X				6	1	7		
6	WLZi	WL+Z				6	1	7		
7	Lv	LL				4				
8	WLXm	WL-X				6	1	8		
9	WLZm	WL-Z				6	1	7		
10	Lm (1)	OL2					1			
11	Lm (2)	OL3					1			

### Load Combinations

	Description	S...	P...	S...	B...	Fa...	BLC Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	
1	1.4DL	Yes	Y		DL	1.4																
2																						
3	1.2DL + WLX	Yes	Y		DL	1.2	WLX	1														
4	1.2DL + 0.75WLX + 0.25...	Yes	Y		DL	1.2	WLX	.75	W...	.25												
5	1.2DL + 0.25WLX + 0.75...	Yes	Y		DL	1.2	WLX	.25	W...	.75												
6	1.2DL + WLZ	Yes	Y		DL	1.2	WLZ	1														



**Load Combinations (Continued)**

	Description	S...	P...	S...	B...	Fa...	BLC	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...
7	1.2DL + 0.25WL-X + 0.75...	Yes	Y		DL	1.2	WLX	-.25	W...	.75												
8	1.2DL + 0.75WL-X + 0.25...	Yes	Y		DL	1.2	WLX	-.75	W...	.25												
9	1.2DL + WL-X	Yes	Y		DL	1.2	WLX	-1														
10	1.2DL + 0.75WL-X + 0.25...	Yes	Y		DL	1.2	WLX	-.75	W...	-.25												
11	1.2DL + 0.25WL-X + 0.75...	Yes	Y		DL	1.2	WLX	-.25	W...	-.75												
12	1.2DL + WL-Z	Yes	Y		DL	1.2	WLZ	-1														
13	1.2DL + 0.25WLX + 0.75...	Yes	Y		DL	1.2	WLX	.25	W...	-.75												
14	1.2DL + 0.75WLX + 0.25...	Yes	Y		DL	1.2	WLX	.75	W...	-.25												
15																						
16	1.2DL + DLi + WLXi	Yes	Y		DL	1.2	OL1	1	W...	1												
17	1.2DL + DLi + 0.75WLXi +...	Yes	Y		DL	1.2	OL1	1	W...	.75	W...	.25										
18	1.2DL + DLi + 0.25WLXi +...	Yes	Y		DL	1.2	OL1	1	W...	.25	W...	.75										
19	1.2DL + DLi + WLZi	Yes	Y		DL	1.2	OL1	1	W...	1												
20	1.2DL + DLi + 0.25WL-Xi ...	Yes	Y		DL	1.2	OL1	1	W...	-.25	W...	.75										
21	1.2DL + DLi + 0.75WL-Xi ...	Yes	Y		DL	1.2	OL1	1	W...	-.75	W...	.25										
22	1.2DL + DLi + WL-Xi	Yes	Y		DL	1.2	OL1	1	W...	-1												
23	1.2DL + DLi + 0.75WL-Xi ...	Yes	Y		DL	1.2	OL1	1	W...	-.75	W...	-.25										
24	1.2DL + DLi + 0.25WL-Xi ...	Yes	Y		DL	1.2	OL1	1	W...	-.25	W...	-.75										
25	1.2DL + DLi + WL-Zi	Yes	Y		DL	1.2	OL1	1	W...	-1												
26	1.2DL + DLi + 0.25WLXi +...	Yes	Y		DL	1.2	OL1	1	W...	.25	W...	-.75										
27	1.2DL + DLi + 0.75WLXi +...	Yes	Y		DL	1.2	OL1	1	W...	.75	W...	-.25										
28																						
29	1.2DL + 1.5Lm(1) + WLX	Yes	Y		DL	1.2	OL2	1.5	W...	1												
30	1.2DL + 1.5Lm(1) + 0.75...	Yes	Y		DL	1.2	OL2	1.5	W...	.75	W...	.25										
31	1.2DL + 1.5Lm(1) + 0.25...	Yes	Y		DL	1.2	OL2	1.5	W...	.25	W...	.75										
32	1.2DL + 1.5Lm(1) + WLZm	Yes	Y		DL	1.2	OL2	1.5	W...	1												
33	1.2DL + 1.5Lm(1) + 0.25...	Yes	Y		DL	1.2	OL2	1.5	W...	-.25	W...	.75										
34	1.2DL + 1.5Lm(1) + 0.75...	Yes	Y		DL	1.2	OL2	1.5	W...	-.75	W...	.25										
35	1.2DL + 1.5Lm(1) + WL-Xm	Yes	Y		DL	1.2	OL2	1.5	W...	-1												
36	1.2DL + 1.5Lm(1) + 0.75...	Yes	Y		DL	1.2	OL2	1.5	W...	-.75	W...	-.25										
37	1.2DL + 1.5Lm(1) + 0.25...	Yes	Y		DL	1.2	OL2	1.5	W...	-.25	W...	-.75										
38	1.2DL + 1.5Lm(1) + WL-Zm	Yes	Y		DL	1.2	OL2	1.5	W...	-1												
39	1.2DL + 1.5Lm(1) + 0.25...	Yes	Y		DL	1.2	OL2	1.5	W...	.25	W...	-.75										
40	1.2DL + 1.5Lm(1) + 0.75...	Yes	Y		DL	1.2	OL2	1.5	W...	.75	W...	-.25										
41																						
42	1.2DL + 1.5Lm(2) + WLXm	Yes	Y		DL	1.2	OL3	1.5	W...	1												
43	1.2DL + 1.5Lm(2) + 0.75...	Yes	Y		DL	1.2	OL3	1.5	W...	.75	W...	.25										
44	1.2DL + 1.5Lm(2) + 0.25...	Yes	Y		DL	1.2	OL3	1.5	W...	.25	W...	.75										
45	1.2DL + 1.5Lm(2) + WLZm	Yes	Y		DL	1.2	OL3	1.5	W...	1												
46	1.2DL + 1.5Lm(2) + 0.25...	Yes	Y		DL	1.2	OL3	1.5	W...	-.25	W...	.75										
47	1.2DL + 1.5Lm(2) + 0.75...	Yes	Y		DL	1.2	OL3	1.5	W...	-.75	W...	.25										
48	1.2DL + 1.5Lm(2) + WL-Xm	Yes	Y		DL	1.2	OL3	1.5	W...	-1												
49	1.2DL + 1.5Lm(2) + 0.75...	Yes	Y		DL	1.2	OL3	1.5	W...	-.75	W...	-.25										
50	1.2DL + 1.5Lm(2) + 0.25...	Yes	Y		DL	1.2	OL3	1.5	W...	-.25	W...	-.75										
51	1.2DL + 1.5Lm(2) + WL-Zm	Yes	Y		DL	1.2	OL3	1.5	W...	-1												
52	1.2DL + 1.5Lm(2) + 0.25...	Yes	Y		DL	1.2	OL3	1.5	W...	.25	W...	-.75										
53	1.2DL + 1.5Lm(2) + 0.75...	Yes	Y		DL	1.2	OL3	1.5	W...	.75	W...	-.25										
54																						
55																						
56	1.2DL + 1.5Lv	Yes	Y		DL	1.2	LL	1.5														

**Joint Reactions**

LC	Joint Label	X [lb]	Y [lb]	Z [lb]	MX [lb-ft]	MY [lb-ft]	MZ [lb-ft]
1	1	439.054	530.817	-46.155	58.35	137.576	1137.405
2	34	-439.054	531.021	46.155	58.396	-137.308	1137.193



Company : APT  
 Designer : JV  
 Job Number : New Canaan NE2 CT  
 Model Name : RMVD8-3-3096

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**Joint Reactions (Continued)**

LC	Joint Label	X [lb]	Y [lb]	Z [lb]	MX [lb-ft]	MY [lb-ft]	MZ [lb-ft]	
3	1	Totals:	0	1061.838	0			
4	1	COG (in):	X: 46.591	Y: 9.199	Z: 41.617			
5	3	1	-338.709	425.107	-44.798	53.413	1100.123	959.887
6	3	34	-1240.834	485.04	44.8	30.954	886.126	985.432
7	3	Totals:	-1579.543	910.147	.002			
8	3	COG (in):	X: 46.591	Y: 9.199	Z: 41.617			
9	4	1	-159.444	435.964	-162.218	42.133	1249.897	962.445
10	4	34	-1025.214	474.183	-90.668	37.177	1065.113	982.444
11	4	Totals:	-1184.658	910.147	-252.886			
12	4	COG (in):	X: 46.591	Y: 9.199	Z: 41.617			
13	5	1	199.079	457.698	-397.055	19.574	1548.779	967.572
14	5	34	-593.967	452.448	-361.605	49.627	1422.456	976.466
15	5	Totals:	-394.888	910.147	-758.661			
16	5	COG (in):	X: 46.591	Y: 9.199	Z: 41.617			
17	6	1	378.337	468.574	-514.472	8.295	1697.873	970.14
18	6	34	-378.34	441.573	-497.076	55.856	1600.791	973.474
19	6	Totals:	-.003	910.147	-1011.548			
20	6	COG (in):	X: 46.591	Y: 9.199	Z: 41.617			
21	7	1	556.587	472.676	-394.43	17.892	1055.976	975.1
22	7	34	-161.703	437.471	-364.231	59.203	918.795	971.117
23	7	Totals:	394.884	910.147	-758.661			
24	7	COG (in):	X: 46.591	Y: 9.199	Z: 41.617			
25	8	1	913.067	480.888	-154.311	37.106	-229.413	985.033
26	8	34	271.59	429.259	-98.577	65.925	-446.988	966.406
27	8	Totals:	1184.657	910.147	-252.888			
28	8	COG (in):	X: 46.591	Y: 9.199	Z: 41.617			
29	9	1	1091.297	484.998	-34.234	46.725	-872.9	990.006
30	9	34	488.246	425.149	34.232	69.301	-1130.773	964.053
31	9	Totals:	1579.544	910.147	-.002			
32	9	COG (in):	X: 46.591	Y: 9.199	Z: 41.617			
33	10	1	912.058	474.11	83.166	57.961	-1019.202	987.421
34	10	34	272.601	436.037	169.72	63.024	-1306.108	967.039
35	10	Totals:	1184.658	910.147	252.886			
36	10	COG (in):	X: 46.591	Y: 9.199	Z: 41.617			
37	11	1	553.573	452.35	317.968	80.436	-1312.535	982.266
38	11	34	-158.685	457.797	440.693	50.474	-1657.476	973.009
39	11	Totals:	394.888	910.147	758.661			
40	11	COG (in):	X: 46.591	Y: 9.199	Z: 41.617			
41	12	1	374.326	441.479	435.371	91.674	-1459.548	979.692
42	12	34	-374.323	468.668	576.177	44.204	-1833.497	975.992
43	12	Totals:	.003	910.147	1011.548			
44	12	COG (in):	X: 46.591	Y: 9.199	Z: 41.617			
45	13	1	196.077	437.382	315.311	82.098	-818.846	974.735
46	13	34	-590.96	472.765	443.351	40.877	-1152.709	978.35
47	13	Totals:	-394.884	910.147	758.662			
48	13	COG (in):	X: 46.591	Y: 9.199	Z: 41.617			
49	14	1	-160.441	429.196	75.226	62.967	460.99	964.832
50	14	34	-1024.216	480.951	177.662	34.252	207.105	983.07
51	14	Totals:	-1184.657	910.147	252.888			
52	14	COG (in):	X: 46.591	Y: 9.199	Z: 41.617			
53	16	1	636.218	913.935	-236.432	233.187	652.232	1976.277
54	16	34	-891.065	924.691	236.433	230.215	-429.84	1980.258
55	16	Totals:	-254.848	1838.626	0			
56	16	COG (in):	X: 46.59	Y: 8.428	Z: 36.848			
57	17	1	665.7	915.435	-257.392	231.622	691.838	1976.683
58	17	34	-856.836	923.191	213.193	231.111	-386.515	1979.913
59	17	Totals:	-191.136	1838.626	-44.199			



Company : APT  
 Designer : JV  
 Job Number : New Canaan NE2 CT  
 Model Name : RMVD8-3-3096

May 23, 2022  
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 Checked By: MST

**Joint Reactions (Continued)**

LC	Joint Label	X [lb]	Y [lb]	Z [lb]	MX [lb-ft]	MY [lb-ft]	MZ [lb-ft]
60	17	COG (in):	X: 46.59	Y: 8.428	Z: 36.848		
61	18	1	724.664	918.436	-299.313	228.491	771.051
62	18	34	-788.376	920.19	166.713	232.904	-299.864
63	18	Totals:	-63.712	1838.626	-132.599		
64	18	COG (in):	X: 46.59	Y: 8.428	Z: 36.848		
65	19	1	754.146	919.937	-320.273	226.926	810.659
66	19	34	-754.146	918.689	143.474	233.8	-256.536
67	19	Totals:	0	1838.626	-176.799		
68	19	COG (in):	X: 46.59	Y: 8.428	Z: 36.848		
69	20	1	783.501	920.834	-299.015	228.186	716.466
70	20	34	-719.789	917.792	166.415	234.102	-355.691
71	20	Totals:	63.712	1838.626	-132.6		
72	20	COG (in):	X: 46.59	Y: 8.428	Z: 36.848		
73	21	1	842.212	922.627	-256.497	230.705	528.038
74	21	34	-651.076	915.999	212.297	234.707	-554.047
75	21	Totals:	191.136	1838.626	-44.2		
76	21	COG (in):	X: 46.59	Y: 8.428	Z: 36.848		
77	22	1	871.567	923.524	-235.238	231.965	433.803
78	22	34	-616.719	915.102	235.238	235.01	-653.248
79	22	Totals:	254.848	1838.626	0		
80	22	COG (in):	X: 46.59	Y: 8.428	Z: 36.848		
81	23	1	842.085	922.023	-214.278	233.53	394.243
82	23	34	-650.949	916.603	258.478	234.114	-696.524
83	23	Totals:	191.136	1838.626	44.2		
84	23	COG (in):	X: 46.59	Y: 8.428	Z: 36.848		
85	24	1	783.122	919.021	-172.358	236.659	315.126
86	24	34	-719.409	919.605	304.958	232.32	-783.074
87	24	Totals:	63.713	1838.626	132.6		
88	24	COG (in):	X: 46.59	Y: 8.428	Z: 36.848		
89	25	1	753.64	917.52	-151.398	238.223	275.569
90	25	34	-753.64	921.106	328.199	231.423	-826.347
91	25	Totals:	0	1838.626	176.8		
92	25	COG (in):	X: 46.59	Y: 8.428	Z: 36.848		
93	26	1	724.285	916.624	-172.657	236.964	369.755
94	26	34	-787.996	922.002	305.257	231.121	-727.197
95	26	Totals:	-63.711	1838.626	132.6		
96	26	COG (in):	X: 46.59	Y: 8.428	Z: 36.848		
97	27	1	665.574	914.831	-215.174	234.446	558.087
98	27	34	-856.709	923.795	259.375	230.517	-528.944
99	27	Totals:	-191.136	1838.626	44.2		
100	27	COG (in):	X: 46.59	Y: 8.428	Z: 36.848		
101	29	1	676.733	827.929	-465.502	427.516	1048.036
102	29	34	-778.686	832.219	465.502	426.271	-920.245
103	29	Totals:	-101.953	1660.148	0		
104	29	COG (in):	X: 48.583	Y: 7.754	Z: 28.237		
105	30	1	688.232	828.632	-473.229	426.735	1058.706
106	30	34	-764.697	831.516	456.447	426.635	-907.339
107	30	Totals:	-76.465	1660.148	-16.782		
108	30	COG (in):	X: 48.583	Y: 7.754	Z: 28.237		
109	31	1	711.232	830.038	-488.684	425.172	1080.044
110	31	34	-736.72	830.11	438.337	427.363	-881.527
111	31	Totals:	-25.488	1660.148	-50.347		
112	31	COG (in):	X: 48.583	Y: 7.754	Z: 28.237		
113	32	1	722.731	830.74	-496.411	424.391	1090.712
114	32	34	-722.731	829.407	429.282	427.727	-868.623
115	32	Totals:	0	1660.148	-67.129		
116	32	COG (in):	X: 48.583	Y: 7.754	Z: 28.237		





Company : APT  
 Designer : JV  
 Job Number : New Canaan NE2 CT  
 Model Name : RMVD8-3-3096

May 23, 2022  
 4:50 PM  
 Checked By: MST

**Joint Reactions (Continued)**

LC	Joint Label	X [lb]	Y [lb]	Z [lb]	MX [lb-ft]	MY [lb-ft]	MZ [lb-ft]	
117	33	1	734.156	830.999	-488.519	425.061	1049.124	1862.022
118	33	34	-708.667	829.148	438.172	427.966	-913.138	1861.17
119	33	Totals:	25.489	1660.148	-50.347			
120	33	COG (in):	X: 48.583	Y: 7.754	Z: 28.237			
121	34	1	757.005	831.517	-472.734	426.402	965.941	1862.718
122	34	34	-680.54	828.631	455.952	428.444	-1002.177	1860.912
123	34	Totals:	76.465	1660.148	-16.782			
124	34	COG (in):	X: 48.583	Y: 7.754	Z: 28.237			
125	35	1	768.43	831.776	-464.842	427.072	924.347	1863.066
126	35	34	-666.476	828.372	464.842	428.682	-1046.699	1860.784
127	35	Totals:	101.954	1660.148	0			
128	35	COG (in):	X: 48.583	Y: 7.754	Z: 28.237			
129	36	1	756.93	831.073	-457.115	427.854	913.691	1862.892
130	36	34	-680.465	829.075	473.898	428.318	-1059.592	1860.964
131	36	Totals:	76.466	1660.148	16.783			
132	36	COG (in):	X: 48.583	Y: 7.754	Z: 28.237			
133	37	1	733.931	829.667	-441.66	429.416	892.376	1862.545
134	37	34	-708.442	830.481	492.008	427.59	-1085.379	1861.324
135	37	Totals:	25.489	1660.148	50.348			
136	37	COG (in):	X: 48.583	Y: 7.754	Z: 28.237			
137	38	1	722.432	828.964	-433.933	430.198	881.717	1862.371
138	38	34	-722.431	831.183	501.064	427.225	-1098.273	1861.504
139	38	Totals:	0	1660.148	67.131			
140	38	COG (in):	X: 48.583	Y: 7.754	Z: 28.237			
141	39	1	711.007	828.705	-441.825	429.527	923.3	1862.023
142	39	34	-736.495	831.442	492.173	426.987	-1053.763	1861.633
143	39	Totals:	-25.488	1660.148	50.348			
144	39	COG (in):	X: 48.583	Y: 7.754	Z: 28.237			
145	40	1	688.158	828.188	-457.61	428.187	1006.46	1861.327
146	40	34	-764.622	831.96	474.393	426.509	-964.749	1861.891
147	40	Totals:	-76.464	1660.148	16.783			
148	40	COG (in):	X: 48.583	Y: 7.754	Z: 28.237			
149	42	1	718.843	827.818	399.749	-306.105	-642.432	1797.795
150	42	34	-820.796	832.329	-399.749	-307.415	765.608	1798.926
151	42	Totals:	-101.953	1660.147	0			
152	42	COG (in):	X: 48.583	Y: 7.754	Z: 57.602			
153	43	1	730.341	828.523	392.033	-306.902	-631.804	1797.967
154	43	34	-806.806	831.625	-408.816	-307.065	778.56	1798.742
155	43	Totals:	-76.465	1660.147	-16.783			
156	43	COG (in):	X: 48.583	Y: 7.754	Z: 57.602			
157	44	1	753.337	829.932	376.602	-308.495	-610.549	1798.309
158	44	34	-778.825	830.216	-426.95	-306.365	804.463	1798.373
159	44	Totals:	-25.489	1660.147	-50.348			
160	44	COG (in):	X: 48.583	Y: 7.754	Z: 57.602			
161	45	1	764.835	830.636	368.887	-309.291	-599.923	1798.48
162	45	34	-764.835	829.511	-436.017	-306.016	817.413	1798.189
163	45	Totals:	0	1660.147	-67.13			
164	45	COG (in):	X: 48.583	Y: 7.754	Z: 57.602			
165	46	1	776.257	830.893	376.763	-308.612	-641.5	1798.826
166	46	34	-750.769	829.254	-427.111	-305.768	772.889	1798.059
167	46	Totals:	25.488	1660.147	-50.348			
168	46	COG (in):	X: 48.583	Y: 7.754	Z: 57.602			
169	47	1	799.102	831.407	392.516	-307.253	-724.662	1799.517
170	47	34	-722.638	828.741	-409.299	-305.274	683.835	1797.801
171	47	Totals:	76.465	1660.147	-16.783			
172	47	COG (in):	X: 48.583	Y: 7.754	Z: 57.602			
173	48	1	810.525	831.664	400.392	-306.573	-766.246	1799.863





Company : APT  
 Designer : JV  
 Job Number : New Canaan NE2 CT  
 Model Name : RMVD8-3-3096

May 23, 2022  
 4:50 PM  
 Checked By: MST

**Joint Reactions (Continued)**

LC	Joint Label	X [lb]	Y [lb]	Z [lb]	MX [lb-ft]	MY [lb-ft]	MZ [lb-ft]	
174	48	34	-708.572	828.484	-400.393	-305.026	639.304	1797.672
175	48	Totals:	101.953	1660.147	0			
176	48	COG (in):	X: 48.583	Y: 7.754	Z: 57.602			
177	49	1	799.027	830.959	408.108	-305.777	-776.861	1799.691
178	49	34	-722.562	829.188	-391.326	-305.376	626.366	1797.856
179	49	Totals:	76.465	1660.147	16.782			
180	49	COG (in):	X: 48.583	Y: 7.754	Z: 57.602			
181	50	1	776.031	829.55	423.539	-304.184	-798.093	1799.349
182	50	34	-750.543	830.597	-373.192	-306.076	600.488	1798.224
183	50	Totals:	25.488	1660.147	50.347			
184	50	COG (in):	X: 48.583	Y: 7.754	Z: 57.602			
185	51	1	764.533	828.845	431.255	-303.388	-808.711	1799.178
186	51	34	-764.533	831.302	-364.125	-306.426	587.548	1798.409
187	51	Totals:	0	1660.147	67.13			
188	51	COG (in):	X: 48.583	Y: 7.754	Z: 57.602			
189	52	1	753.11	828.589	423.378	-304.067	-767.138	1798.832
190	52	34	-778.599	831.559	-373.031	-306.673	632.067	1798.538
191	52	Totals:	-25.488	1660.147	50.347			
192	52	COG (in):	X: 48.583	Y: 7.754	Z: 57.602			
193	53	1	730.265	828.075	407.625	-305.426	-683.999	1798.141
194	53	34	-806.73	832.072	-390.843	-307.168	721.097	1798.797
195	53	Totals:	-76.465	1660.147	16.782			
196	53	COG (in):	X: 48.583	Y: 7.754	Z: 57.602			
197	56	1	944.827	1204.108	-25.527	71.105	164.13	2684.912
198	56	34	-944.827	1206.04	25.527	71.086	-163.226	2684.206
199	56	Totals:	0	2410.148	0			
200	56	COG (in):	X: 46.845	Y: 7.208	Z: 43.411			

**Envelope Joint Reactions**

Joint	X [lb]	LC	Y [lb]	LC	Z [lb]	LC	MX [lb-ft]	LC	MY [lb-ft]	LC	MZ [lb-ft]	LC		
1	1	max	1091.297	9	1204.108	56	435.371	12	430.198	38	1697.873	6	2684.912	56
2		min	-338.709	3	425.107	3	-514.472	6	-309.291	45	-1459.548	12	959.887	3
3	34	max	488.246	9	1206.04	56	576.177	12	428.682	35	1600.791	6	2684.206	56
4		min	-1240.834	3	425.149	9	-497.076	6	-307.415	42	-1833.497	12	964.053	9
5	Totals:	max	1579.544	9	2410.148	56	1011.548	12						
6		min	-1579.543	3	910.147	9	-1011.548	6						

**Envelope AISC 14th(360-10): LRFD Steel Code Checks**

Member	Shape	Code ...	Loc[in]	LC	Shear ...	Loc[in]	Dir	LC	phi*Pnc ...	phi*Pnt [...]	phi*Mn ...	phi*Mn ...	Cb	Eqn
1	M1	HSS4X4X3	.311	0	32	.112	25.5...	y	38	79060.9...	81270	9633.75	9633.75	1...H1-1b
2	M2	PIPE_4.0	.000	9	3	.000	9		3	92571.3...	93240	10631.25	10631.25	1...H1-1b
3	M3	PIPE_3.0	.252	35.5	9	.044	35.5		38	54062.4...	65205	5748.75	5748.75	1...H1-1b
4	M4	PIPE_2.5	.174	65.684	51	.034	48		56	30038.4...	50715	3596.25	3596.25	4...H1-1b
5	M6	PIPE_2.5	.188	65.684	32	.040	30.3...		56	30038.4...	50715	3596.25	3596.25	4...H1-1b
6	M11	HSS4X4X3	.312	0	38	.112	25.5...	y	38	79060.9...	81270	9633.75	9633.75	1...H1-1b
7	M12	PIPE_3.0	.284	35.5	3	.045	35.5		35	54062.4...	65205	5748.75	5748.75	1...H1-1b
8	M19	PIPE_4.0	.000	9	3	.000	9		3	92571.3...	93240	10631.25	10631.25	1...H1-1b
9	M23	PIPE_2.5	.353	47.368	56	.078	47.3...		35	41331.8...	50715	3596.25	3596.25	1...H1-1b



Project ID: CT141NB13190  
 Site Name: New Canaan NE2 CT  
 Prepared By: J. Vassell  
 Checked By: M. Trodden

## PROPOSED CONNECTION CHECK

>> Max Reactions per RISA Output: N34, LC6  
 (Axial) Fx = 378.3 lbs                      Mx = 55.9 lbs-ft  
           Fy = 441.6 lbs                      My = 1600.8 lbs-ft  
           Fz = 497.1 lbs                      Mz = 973.5 lbs-ft

>> Proposed Connection:

	L, in		W, in		
Member Size =	4	x	4		
	L, in		W, in		t, in
Plate =	8	x	8	x	0.75
Bolt Spac. =	6 in		Bolt Dia =	0.625 in	
# of Bolts =	4		Grade =	A325	

>> Check Proposed Bolts: 5/8" DIA A325 Bolts

Tall = 20700 lbs	Vall = 12400 lbs
T <sub>My</sub> = 1600.8 lbs	V <sub>Fyz</sub> = 166.22 lbs
T <sub>Mz</sub> = 973.47 lbs	V <sub>MX</sub> = 55.86 lbs
T <sub>Fa</sub> = 94.59 lbs	
Ft = 2668.9 lbs	Fv = 222.1 lbs

**>> Bolt Interaction:**  
 0.1289 + 0.018 = 0.147 < 1.0, OK

>> Check Existing Plate:

Sx = 0.75 in <sup>3</sup>	
Flange Arm = 1.0 in	(Face of Member to Centerline of Bolt)
f <sub>act.</sub> = 7.1 ksi	Fy = 36.0 ksi
	f <sub>all</sub> = 32.4 ksi

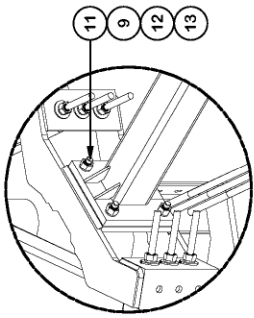
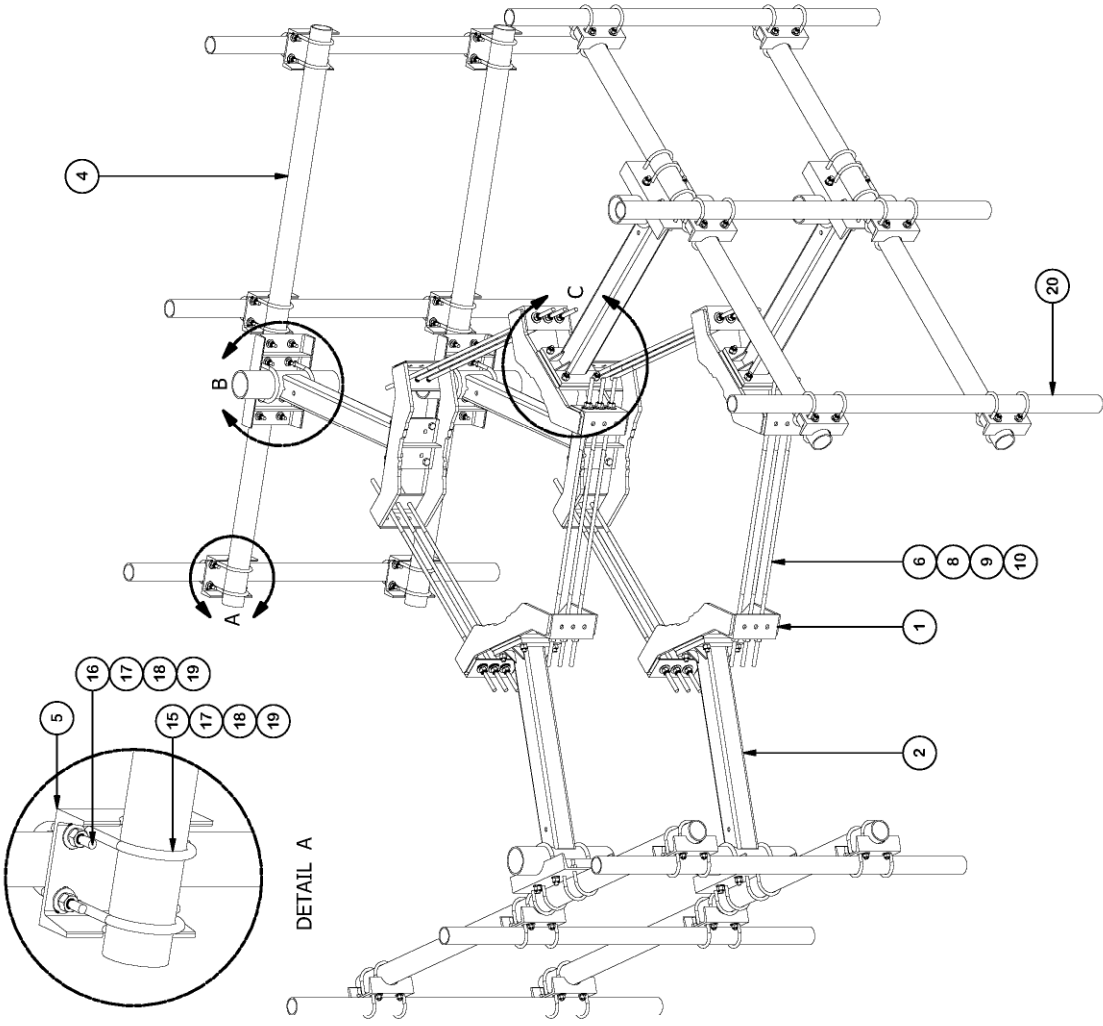
**>> Plate Interaction:** 0.220 < 1.0, OK

# ***Appendix C***

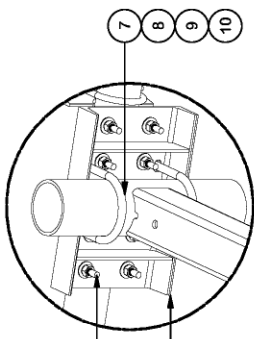
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PARTS LIST

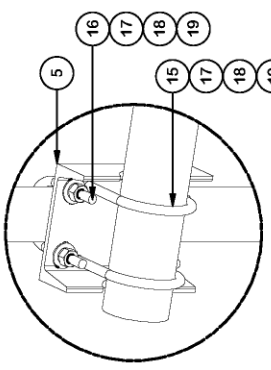
ITEM	QTY	PART NO.	PART DESCRIPTION	LENGTH	UNIT WT.	NET WT.
1	6	X-LWRM	RING MOUNT WELDMENT		68.81	412.85
2	6	X-SV197-36	SUPPORT ARM WELDMENT - 36"		67.93	407.60
3	6	X-SP216	LARGE SUPPORT CROSS PLATE		22.08	132.46
4	6	P396	3-1/2" X 96" (3" SCH 40) GALVANIZED PIPE	96.000 in	60.75	364.49
5	18	X-SP219	SMALL SUPPORT CROSS PLATE	8.250 in	8.61	154.99
6	18	G58R-24	5/8" x 24" THREADED ROD (HDG.)		2.09	37.63
6	18	G58R-48	5/8" x 48" GALV THREADED ROD		4.39	79.03
7	12	X-UB5458	5/8" X 4-5/8" X 7" X 3" U-BOLT (HDG.)		1.54	18.42
8	36	G58FW	5/8" HDG USS FLATWASHER	.122	0.07	2.54
9	84	G58LW	5/8" HDG LOCKWASHER		0.03	2.19
10	36	G58NUT	5/8" HDG HEAVY 2H HEX NUT		0.13	4.68
11	24	A58234	5/8" x 2-3/4" HDG A325 HEX BOLT	2.75	0.36	8.54
12	24	A58FW	5/8" HDG A325 FLATWASHER		0.03	0.82
13	48	A58NUT	5/8" HDG A325 HEX NUT		0.13	6.23
14	24	X-UB1358	1/2" X 3-5/8" X 5-1/2" X 3" U-BOLT (HDG.)		0.77	18.54
15	36	X-UB1306	1/2" X 3-5/8" X 6" X 3" U-BOLT (HDG.)		0.83	29.82
16	36	X-UB1300	1/2" X 3" X 5" X 2" U-BOLT (HDG.)		0.70	25.09
17	192	G12FW	1/2" HDG USS FLATWASHER	0.095	0.03	6.54
18	192	G12LW	1/2" HDG LOCKWASHER		0.01	2.67
19	192	G12NUT	1/2" HDG HEAVY 2H HEX NUT	.125	0.07	13.75
20	6	A	B	C	D	TABLE



DETAIL C



DETAIL B



DETAIL A

"ASSEMBLY NO."	PART NO. "A"	PART DESCRIPTION "B"	LENGTH "C"	UNIT WT. "D"	TOTAL WT.
RMVD8-3-3072	P3072	2-7/8" O.D. SCH. 40 PIPE	72"	34.84	2,042.45
RMVD8-3-3084	P3084	2-7/8" O.D. SCH. 40 PIPE	84"	40.85	2,094.71
RMVD8-3-3096	P3096	2-7/8" O.D. SCH. 40 PIPE	96"	46.45	2,172.06
RMVD8-3-3120	P3120	2-7/8" O.D. SCH. 40 PIPE	120"	80.49	2,251.49

TABLE

TOLERANCE NOTES

TOLERANCES ON DIMENSIONS, UNLESS OTHERWISE NOTED ARE:  
 SAWED, SHEARED AND GAS CUT EDGES (± 0.030")  
 DRILLED AND GAS CUT HOLES (± 0.030") - NO CONING OF HOLES  
 LASER CUT EDGES AND HOLES (± 0.010") - NO CONING OF HOLES  
 BENDS ARE ± 1/2 DEGREE  
 ALL OTHER MACHINING (± 0.030")  
 ALL OTHER MACHINING (± 0.060")

PROPRIETARY NOTE: DIMENSIONS CONTAINED IN THIS DRAWING ARE PROPRIETARY INFORMATION OF VALMONT INDUSTRIES AND CONSIDERED A TRADE SECRET. ANY USE OR DISCLOSURE WITHOUT THE CONSENT OF VALMONT INDUSTRIES IS STRICTLY PROHIBITED.

DESCRIPTION  
 8' DOUBLE MONOPOLE  
 TRIPLE T-ARM 12"-45"  
 W/ ANTENNA PIPES

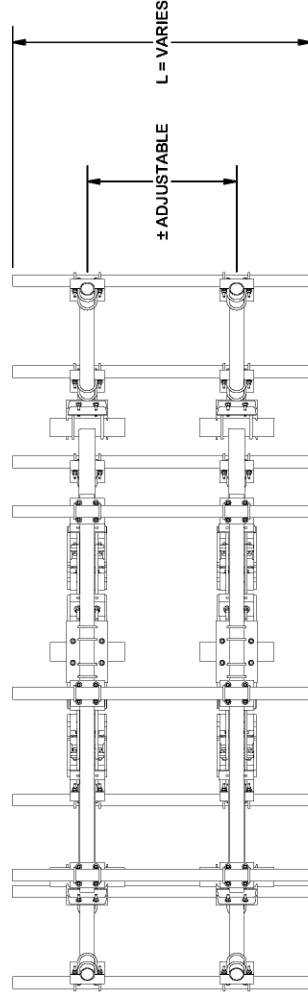
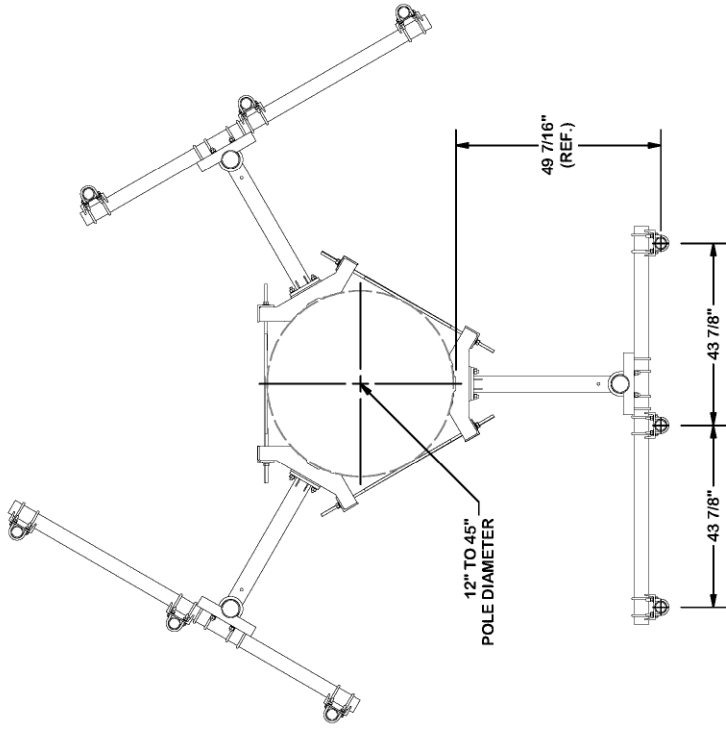
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	CMFL 10/25/2020	11/13/2020
CLASS/ SUB	DRAWING USAGE	CHECKED BY
87 02	CUSTOMER	BMC 11/13/2020



Locations:  
 New York, NY  
 Atlanta, GA  
 Los Angeles, CA  
 Plymouth, IN  
 Houston, TX  
 Dallas, TX

Engineering  
 Support Team:  
 1-888-753-7446

PART NO.	RMVD8-3-3XX
DWG. NO.	RMVD8-3-3XX



**TOLERANCE NOTES**

TOLERANCES ON DIMENSIONS, UNLESS OTHERWISE NOTED ARE:  
 SAWED, SHEARED AND GAS CUT EDGES ( $\pm 0.030''$ )  
 DRILLED AND GAS CUT HOLES ( $\pm 0.030''$ ) - NO CONING OF HOLES  
 LASER CUT EDGES AND HOLES ( $\pm 0.010''$ ) - NO CONING OF HOLES  
 BENDS ARE  $\pm 1/2$  DEGREE  
 ALL OTHER MACHINING ( $\pm 0.030''$ )  
 ALL OTHER ASSEMBLY ( $\pm 0.060''$ )

PROPRIETARY NOTE: DIMENSIONS CONTAINED IN THIS DRAWING ARE PROPRIETARY INFORMATION OF VALMONT INDUSTRIES AND CONSIDERED A TRADE SECRET. ANY USE OR DISCLOSURE WITHOUT THE CONSENT OF VALMONT INDUSTRIES IS STRICTLY PROHIBITED.

DESCRIPTION  
 8' DOUBLE MONOPOLE  
 TRIPLE T-ARM 12"-45"  
 W/ ANTENNA PIPES

CPD NO.	DRAWN BY	ENG. APPROVAL
	CMFL 10/25/2020	11/13/2020
CLASS	DRAWING USAGE	CHECKED BY
87	CUSTOMER	BMC
SUB		
02		



Locations:  
 New York, NY  
 Atlanta, GA  
 Los Angeles, CA  
 Plymouth, IN  
 Houston, TX  
 Dallas, TX

Engineering  
 Support Team:  
 1-888-753-7446

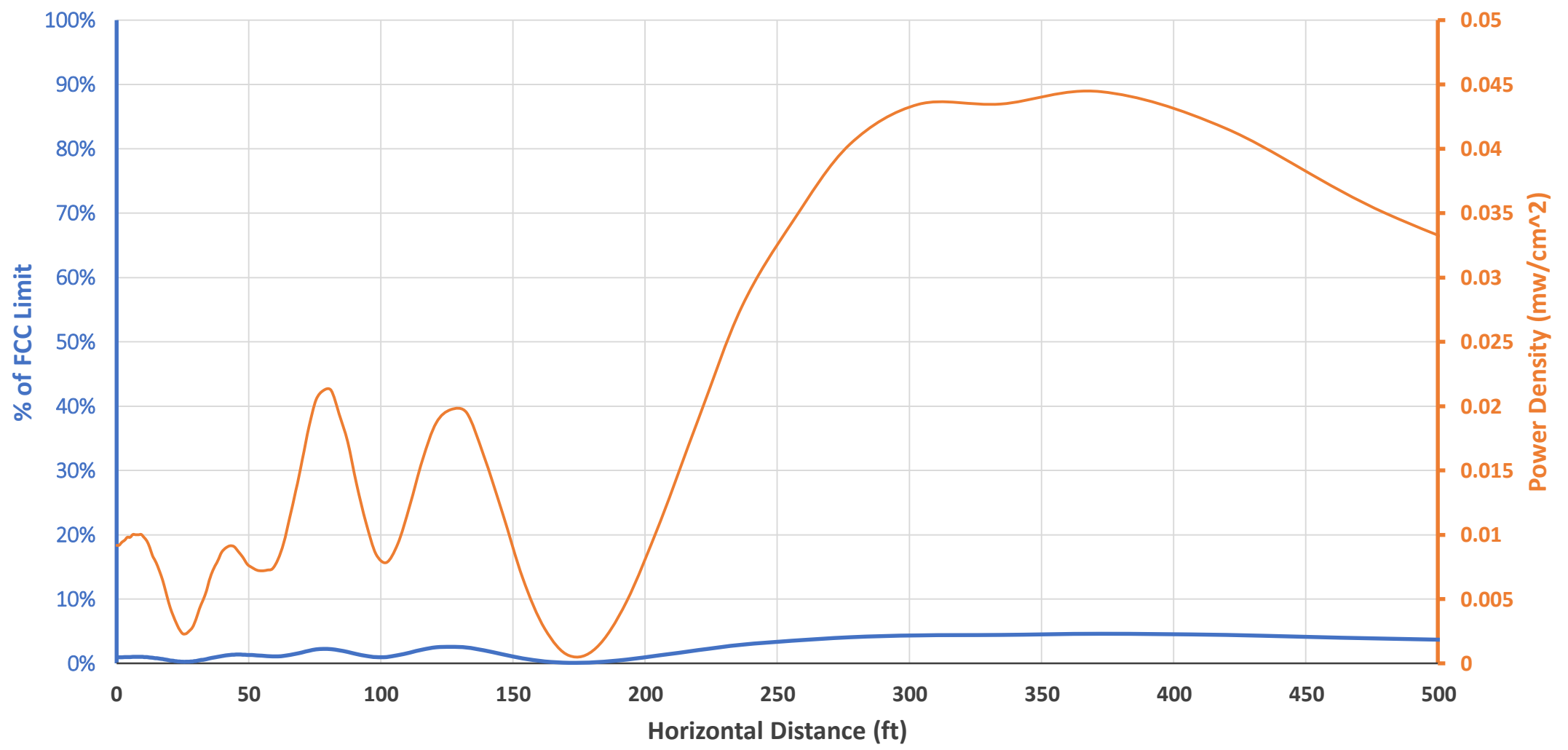
PART NO.	RMVD8-3-3XX
DWG. NO.	RMVD8-3-3XX

# **ATTACHMENT 6**

Location	New Canaan NE2				
Date	6/2/2022				
Band	C-Band	AWS	PCS	850-LTE	700
Operating Frequency (MHz)	3,700	2,145	1,970	880	746
General Population MPE (mW/cm <sup>2</sup> )	1	1	1	0.586666667	0.497333333
ERP Per Transmitter (Watts)	21,627	1,678	3,054	881	922
Number of Transmitters	1	4	4	4	4
Antenna Centerline (feet)	71	71	71	71	71
Total ERP (Watts)	21,627	6,712	12,216	3,523	3,688
Total ERP (dBm)	73	68	71	65	66
Maximum % of General Population Limit	4.6%				

### RF Exposure 6ft Above Ground Level Far Field Formula (per FCC OET65)

— Total %  
General  
Pop MPE      — Total  
Pwr Density  
(mW/cm<sup>2</sup>)





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	0.009099414	3.68866E-05	2.12298E-05	7.5314E-06	7.35882E-06	0.00%	0.00%	0.91%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0	0.00917242	0.92%	
89	0.00909713	5.20907E-05	2.32722E-05	6.26277E-06	1.06341E-05	0.00%	0.00%	0.91%	0.00%	0.01%	0.00%	0.00%	0.00%	0.00%	1.029848831	0.00918939	0.92%	
88	0.00930202	8.06182E-05	2.2208E-05	5.32647E-06	1.4668E-05	0.00%	0.00%	0.93%	0.00%	0.01%	0.00%	0.00%	0.00%	0.00%	2.0603254	0.009424841	0.94%	
87	0.009419584	0.000108614	2.06997E-05	5.08035E-06	1.9312E-05	0.00%	0.00%	0.94%	0.00%	0.01%	0.00%	0.00%	0.00%	0.00%	3.092058978	0.009573291	0.96%	
86	0.009622043	0.000124487	2.06633E-05	5.07142E-06	2.48349E-05	0.00%	0.00%	0.96%	0.00%	0.01%	0.00%	0.00%	0.00%	0.00%	4.125681905	0.009797099	0.98%	
85	0.009600264	0.000136188	2.10968E-05	5.1778E-06	3.11945E-05	0.00%	0.00%	0.96%	0.00%	0.01%	0.00%	0.00%	0.00%	0.01%	5.161831148	0.009793921	0.98%	
84	0.009796671	0.000148914	2.36054E-05	5.16346E-06	3.91627E-05	0.00%	0.00%	0.98%	0.00%	0.01%	0.00%	0.00%	0.00%	0.01%	6.201149881	0.010013516	1.01%	
83	0.009764548	0.00015542	3.03099E-05	4.9149E-06	4.69296E-05	0.00%	0.00%	0.98%	0.00%	0.02%	0.00%	0.00%	0.00%	0.01%	7.244289093	0.010002123	1.01%	
82	0.009727535	0.000165905	4.36451E-05	4.26447E-06	5.49285E-05	0.00%	0.00%	0.97%	0.00%	0.02%	0.00%	0.00%	0.00%	0.01%	8.291909247	0.009996277	1.01%	
81	0.009685651	0.000198602	5.59837E-05	3.3728E-06	6.42574E-05	0.00%	0.00%	0.97%	0.00%	0.02%	0.01%	0.00%	0.00%	0.01%	9.344681979	0.010007868	1.01%	
80	0.009419515	0.000226926	5.44454E-05	2.43159E-06	7.17502E-05	0.00%	0.00%	0.94%	0.00%	0.02%	0.01%	0.00%	0.00%	0.01%	10.40329186	0.009775068	0.98%	
79	0.009155876	0.00023097	3.83383E-05	1.67325E-06	8.00746E-05	0.00%	0.00%	0.92%	0.00%	0.02%	0.00%	0.00%	0.00%	0.02%	11.46843824	0.009506932	0.96%	
78	0.008692421	0.000219279	2.0002E-05	1.20504E-06	8.52973E-05	0.00%	0.00%	0.87%	0.00%	0.02%	0.00%	0.00%	0.00%	0.02%	12.54083714	0.009018204	0.91%	
77	0.008060251	0.000203331	1.19752E-05	1.11741E-06	9.29273E-05	0.00%	0.00%	0.81%	0.00%	0.02%	0.00%	0.00%	0.00%	0.02%	13.62122328	0.008369602	0.85%	
76	0.007644002	0.000192831	1.71891E-05	1.27404E-06	9.66308E-05	0.00%	0.00%	0.76%	0.00%	0.02%	0.00%	0.00%	0.00%	0.02%	14.71035217	0.007951926	0.81%	
75	0.007080345	0.000195844	3.48327E-05	1.66693E-06	0.000100427	0.00%	0.00%	0.71%	0.00%	0.02%	0.00%	0.00%	0.00%	0.02%	15.80900235	0.007413115	0.75%	
74	0.006405401	0.000213011	5.35154E-05	2.23053E-06	0.000101939	0.00%	0.00%	0.64%	0.00%	0.02%	0.01%	0.00%	0.00%	0.02%	16.91797776	0.006776097	0.69%	
73	0.005659696	0.000226281	5.81736E-05	2.84876E-06	9.87615E-05	0.00%	0.00%	0.57%	0.00%	0.02%	0.01%	0.00%	0.00%	0.02%	18.03811021	0.006045761	0.61%	
72	0.004772996	0.000229428	5.63279E-05	3.16704E-06	9.13242E-05	0.00%	0.00%	0.48%	0.00%	0.02%	0.01%	0.00%	0.00%	0.02%	19.17026208	0.005153243	0.52%	
71	0.003976823	0.000202485	7.02213E-05	3.20921E-06	7.69717E-05	0.00%	0.00%	0.40%	0.00%	0.02%	0.01%	0.00%	0.00%	0.02%	20.31532918	0.00432971	0.44%	
70	0.003349844	0.000162885	0.000110143	3.90739E-06	5.91315E-05	0.00%	0.00%	0.33%	0.00%	0.02%	0.01%	0.00%	0.00%	0.01%	21.47424382	0.003685911	0.37%	
69	0.002755823	0.000134001	0.000164886	7.03256E-06	3.86408E-05	0.00%	0.00%	0.28%	0.00%	0.01%	0.02%	0.00%	0.00%	0.01%	22.64797807	0.003100384	0.31%	
68	0.00226575	0.0001208	0.000200514	1.52081E-05	1.82813E-05	0.00%	0.00%	0.23%	0.00%	0.01%	0.02%	0.00%	0.00%	0.00%	23.83754732	0.002620553	0.26%	
67	0.001935981	0.000124956	0.000198077	3.1388E-05	4.43298E-06	0.00%	0.00%	0.19%	0.00%	0.01%	0.02%	0.01%	0.00%	0.00%	25.04401416	0.002294835	0.23%	
66	0.001955751	0.000138411	0.000151791	5.77E-05	2.19335E-06	0.00%	0.00%	0.20%	0.00%	0.01%	0.02%	0.01%	0.00%	0.00%	26.26849243	0.002305846	0.23%	
65	0.002164928	0.000133444	9.8941E-05	9.23221E-05	1.92858E-05	0.00%	0.00%	0.22%	0.00%	0.01%	0.01%	0.02%	0.00%	0.00%	27.51215183	0.002508921	0.26%	
64	0.002450669	9.75305E-05	5.74404E-05	0.000128572	6.44287E-05	0.00%	0.00%	0.25%	0.00%	0.01%	0.01%	0.02%	0.00%	0.01%	28.77622273	0.002798641	0.30%	
63	0.003032709	6.64793E-05	3.18246E-05	0.000159475	0.000148808	0.00%	0.00%	0.30%	0.00%	0.01%	0.00%	0.03%	0.00%	0.03%	30.06200152	0.003439296	0.37%	
62	0.003673456	6.69777E-05	1.43221E-05	0.000176172	0.000285673	0.00%	0.00%	0.37%	0.00%	0.01%	0.00%	0.03%	0.00%	0.06%	31.37085647	0.004216601	0.46%	
61	0.004149633	0.000102062	4.77466E-06	0.000169384	0.000477314	0.00%	0.00%	0.41%	0.00%	0.01%	0.00%	0.03%	0.00%	0.10%	32.70423404	0.004903168	0.55%	
60	0.004588044	0.000174375	1.29289E-05	0.000138513	0.000743742	0.00%	0.00%	0.46%	0.00%	0.02%	0.00%	0.02%	0.00%	0.15%	34.06366588	0.005657601	0.65%	
59	0.005175118	0.000265324	5.29484E-05	0.000103224	0.001080724	0.00%	0.00%	0.52%	0.00%	0.03%	0.01%	0.02%	0.00%	0.22%	35.45077652	0.006677339	0.78%	
58	0.005319605	0.000367904	0.000130561	9.03112E-05	0.00149856	0.00%	0.00%	0.53%	0.00%	0.04%	0.01%	0.02%	0.00%	0.30%	36.86729176	0.007406941	0.90%	
57	0.005205898	0.000443968	0.000238467	0.000134078	0.001937717	0.00%	0.00%	0.52%	0.00%	0.04%	0.02%	0.02%	0.00%	0.39%	38.315048	0.007960128	1.00%	
56	0.005102224	0.000523137	0.000345694	0.00027455	0.00239086	0.00%	0.00%	0.51%	0.00%	0.05%	0.03%	0.05%	0.00%	0.48%	39.79600249	0.008636466	1.12%	
55	0.004556809	0.000601889	0.000436108	0.000548938	0.002814851	0.00%	0.00%	0.46%	0.00%	0.06%	0.04%	0.09%	0.00%	0.57%	41.31224475	0.008958594	1.22%	
54	0.003910108	0.00064572	0.000513005	0.000977352	0.003090177	0.00%	0.00%	0.39%	0.00%	0.06%	0.05%	0.17%	0.00%	0.62%	42.86600915	0.009136362	1.29%	
53	0.003179303	0.00060282	0.000501493	0.001549509	0.003236879	0.00%	0.00%	0.32%	0.00%	0.06%	0.05%	0.26%	0.00%	0.65%	44.45968896	0.009070003	1.34%	
52	0.002333878	0.000467664	0.00041688	0.002238413	0.003234989	0.00%	0.00%	0.23%	0.00%	0.05%	0.04%	0.38%	0.00%	0.65%	46.09585196	0.008691824	1.35%	
51	0.001575487	0.000281365	0.00028797	0.003014928	0.003084675	0.00%	0.00%	0.16%	0.00%	0.03%	0.03%	0.51%	0.00%	0.62%	47.77725796	0.008244426	1.35%	
50	0.000925397	0.000125367	0.000173086	0.003786085	0.002679927	0.00%	0.00%	0.09%	0.00%	0.01%	0.02%	0.65%	0.00%	0.54%	49.50687824	0.007689862	1.31%	
49	0.000568596	4.74963E-05	0.00011661	0.004535929	0.002170695	0.00%	0.00%	0.06%	0.00%	0.00%	0.01%	0.77%	0.00%	0.44%	51.28791753	0.007439327	1.28%	
48	0.000516211	2.9153E-05	0.000136383	0.004950958	0.00160185	0.00%	0.00%	0.05%	0.00%	0.00%	0.01%	0.84%	0.00%	0.32%	53.12383861	0.007234554	1.23%	
47	0.000776928	3.64953E-05	0.000210046	0.005155171	0.001005022	0.00%	0.00%	0.08%	0.00%	0.00%	0.02%	0.88%	0.00%	0.20%	55.01839008	0.007183662	1.18%	
46	0.001356589	3.23076E-05	0.000315777	0.005003922	0.000536097	0.00%	0.00%	0.14%	0.00%	0.00%	0.03%	0.85%	0.00%	0.11%	56.97563771	0.007244693	1.13%	
45	0.002182786	1.247E-05	0.000519929	0.004424592	0.000216673	0.00%	0.00%	0.22%	0.00%	0.00%	0.05%	0.75%	0.00%	0.04%	59	0.00735645	1.07%	
44	0.003251243	7.7966E-06	0.001004575	0.003731742	9.59056E-05	0.00%	0.00%	0.33%	0.00%	0.00%	0.10%	0.64%	0.00%	0.02%	61.09628851	0.008091262	1.08%	
43	0.004545091	4.44016E-05	0.001851294	0.002737819	0.000172718	0.00%	0.00%	0.45%	0.00%	0.00%	0.19%	0.47%	0.00%	0.03%	63.26975389	0.009351323	1.15%	
42	0.006045999	8.96032E-05	0.002967569	0.001829491	0.000400187	0.00%	0.00%	0.60%	0.00%	0.01%	0.30%	0.31%	0.00%	0.08%	65.52613837	0.011332849	1.30%	
41	0.007512804	8.44613E-05	0.00413747	0.000992348	0.000686431	0.00%	0.00%	0.75%	0.00%	0.01%	0.41%	0.17%	0.00%	0.14%	67.87173603	0.013413514	1.48%	
40	0.008923166	6.0308E-05	0.005501127	0.000389387	0.000955682	0.00%	0.00%	0.89%	0.00%	0.01%	0.55%	0.07%	0.00%	0.19%	70.31346196	0.01582967	1.71%	
39	0.010199789	0.000192064	0.006815912	7.64634E-05	0.0011308	0.00%	0.00%	1.02%	0.00%	0.02%	0.68%	0.01%	0.00%	0.23%	72.85893224	0.018415029	1.96%	
38	0.011091474	0.000717538	0.007514879	2.11764E-05	0.001137061	0.00%	0.00%	1.11%	0.00%	0.07%	0.75%	0.00%	0.00%	0.23%	75.5165563	0.020482129	2.16%	
37	0.011134771	0.001768223	0.007204669	0.000140457	0.000971574	0.00%	0.00%	1.11%	0.00%	0.18%	0.72%	0.02%	0.00%	0.20%	78.29564448	0.021219694	2.23%	
36	0.011236547	0.003224694	0.005735425	0.00030796	0.000705387	0.00%	0.00%	1.12%	0.00%	0.32%	0.57%	0.05%	0.00%	0.14%	81.20653331	0.021210014	2.21%	
35	0.010181385	0.004662969	0.003704585	0.000406134	0.000425208	0.00%	0.00%	1.02%	0.00%	0.47%	0.37%	0.07%	0.00%	0.09%	84.2607324	0.019380281	2.01%	
34	0.009207948	0.005470393	0.001941313	0.000369849	0.000233323	0.00%	0.00%	0.92%	0.00%	0.55%	0.19%	0.06%	0.00%	0.05%	87.47109714	0.017222827		

23	0.010713889	0.000427369	0.00019538	0.003096059	0.001701147	0.00%	0.00%	1.07%	0.00%	0.04%	0.02%	0.53%	0.00%	0.34%	138.9952896	0.016133843	2.00%
22	0.008193183	0.000495802	4.9589E-05	0.002066878	0.000902085	0.00%	0.00%	0.82%	0.00%	0.05%	0.00%	0.35%	0.00%	0.18%	146.0301244	0.011707536	1.41%
21	0.004742793	0.000387159	9.28896E-05	0.001066341	0.00032948	0.00%	0.00%	0.47%	0.00%	0.04%	0.01%	0.18%	0.00%	0.07%	153.7002548	0.006618663	0.77%
20	0.001881546	0.000181289	0.000223073	0.000322387	6.14199E-05	0.00%	0.00%	0.19%	0.00%	0.02%	0.02%	0.05%	0.00%	0.01%	162.1011677	0.002669714	0.30%
19	0.000158377	9.04788E-05	0.000217082	2.49203E-05	9.91941E-05	0.00%	0.00%	0.02%	0.00%	0.01%	0.02%	0.00%	0.00%	0.02%	171.3484418	0.000590052	0.07%
18	0.00050272	0.000126527	7.45176E-05	0.000166797	0.000332752	0.00%	0.00%	0.05%	0.00%	0.01%	0.01%	0.03%	0.00%	0.07%	181.5833287	0.001203314	0.17%
17	0.003343057	0.000146218	0.000124473	0.000582111	0.000595578	0.00%	0.00%	0.33%	0.00%	0.01%	0.01%	0.10%	0.00%	0.12%	192.9803045	0.004791437	0.58%
16	0.0085274	0.000146107	0.000623375	0.000987822	0.000749223	0.00%	0.00%	0.85%	0.00%	0.01%	0.06%	0.17%	0.00%	0.15%	205.7574522	0.011033927	1.25%
15	0.015522252	0.000275937	0.001320953	0.001177109	0.000693026	0.00%	0.00%	1.55%	0.00%	0.03%	0.13%	0.20%	0.00%	0.14%	220.1909976	0.018989277	2.05%
14	0.023882929	0.000579353	0.001749929	0.001054265	0.00047085	0.00%	0.00%	2.39%	0.00%	0.06%	0.17%	0.18%	0.00%	0.09%	236.6360751	0.027737326	2.90%
13	0.030948548	0.000832714	0.001586986	0.000676866	0.00019518	0.00%	0.00%	3.09%	0.00%	0.08%	0.16%	0.12%	0.00%	0.04%	255.5570766	0.034240294	3.49%
12	0.038273649	0.000799384	0.001006544	0.000264705	1.48831E-05	0.00%	0.00%	3.83%	0.00%	0.08%	0.10%	0.05%	0.00%	0.00%	277.5731765	0.040359165	4.06%
11	0.042458767	0.000477335	0.00040635	5.35586E-05	6.1484E-05	0.00%	0.00%	4.25%	0.00%	0.05%	0.04%	0.01%	0.00%	0.01%	303.5286869	0.043457494	4.36%
10	0.042627179	0.000143728	0.000154035	0.000180946	0.000377991	0.00%	0.00%	4.26%	0.00%	0.01%	0.02%	0.03%	0.00%	0.08%	334.6056274	0.043483879	4.40%
9	0.042612338	5.33815E-05	0.000227755	0.000641797	0.000906421	0.00%	0.00%	4.26%	0.00%	0.01%	0.02%	0.11%	0.00%	0.18%	372.5113394	0.044441693	4.58%
8	0.038410726	0.000146659	0.000279502	0.001248288	0.001500539	0.00%	0.00%	3.84%	0.00%	0.01%	0.03%	0.21%	0.00%	0.30%	419.8068136	0.041585713	4.40%
7	0.030870851	0.000170374	0.000141736	0.001825621	0.001955885	0.00%	0.00%	3.09%	0.00%	0.02%	0.01%	0.31%	0.00%	0.39%	480.5164393	0.034964468	3.82%
6	0.024355229	5.35116E-05	6.73791E-05	0.002081873	0.002130036	0.00%	0.00%	2.44%	0.00%	0.01%	0.01%	0.35%	0.00%	0.43%	561.3475028	0.028688028	3.23%
5	0.016750339	3.09656E-05	0.000363878	0.001999336	0.001999025	0.00%	0.00%	1.68%	0.00%	0.00%	0.04%	0.34%	0.00%	0.40%	674.3730859	0.021143543	2.46%
4	0.010253065	0.000249867	0.000907374	0.001576579	0.001576334	0.00%	0.00%	1.03%	0.00%	0.02%	0.09%	0.27%	0.00%	0.32%	843.7393091	0.01456322	1.73%
3	0.005351583	0.000499273	0.001225787	0.000973519	0.00099604	0.00%	0.00%	0.54%	0.00%	0.05%	0.12%	0.17%	0.00%	0.20%	1125.787065	0.009046202	1.07%
2	0.002021442	0.000463999	0.000969603	0.000443122	0.000463934	0.00%	0.00%	0.20%	0.00%	0.05%	0.10%	0.08%	0.00%	0.09%	1689.538944	0.004362101	0.51%
1	0.000410978	0.000179752	0.000334774	0.000103438	0.0001134	0.00%	0.00%	0.04%	0.00%	0.02%	0.03%	0.02%	0.00%	0.02%	3380.107736	0.001142342	0.13%

degree below horizon	AT1K02 (39GHz)	AT1K01 (28GHz)	MT6407-77A (3,730MHz)	XXDWMM- 12.5-65 (3,550MHz)	AWS (2,155MHz)	PCS (1,962MHz)	850-LTE (880MHz)	850-CDMA (869MHz)	700-LTE (746MHz)
0	0.08	0.08	3.28	1.8	0	0	1	2.3	0.5
1	0.39	0.39	2.19	1.3	0.7	0.6	0.3	1.5	0.1
2	0.3	0.3	1.29	0.8	2.6	2	0	0.9	0
3	0	0	0.58	0.5	5.8	4.5	0.1	0.4	0.2
4	0.31	0.31	0.25	0.2	11.3	8.3	0.5	0.1	0.7
5	0.42	0.42	0.05	0.1	22.3	14.2	1.4	0	1.6
6	0.13	0.13	0	0	21.5	23.1	2.8	0	2.9
7	0.44	0.44	0.3	0	17.8	21.2	4.7	0.2	4.6
8	0.36	0.36	0.5	0.1	19.6	19.4	7.5	0.6	6.9
9	0.09	0.09	1.06	0.2	25	21.3	11.4	1.2	10.1
10	0.4	0.4	1.96	0.3	21.6	23.9	17.8	2	14.8
11	0.52	0.52	2.79	0.7	17.2	20.5	23.9	3	23.5
12	0.26	0.26	3.98	1	15.7	17.3	17.7	4.3	30.4
13	0.57	0.57	5.58	1.5	16.2	16	14.3	6	19.9
14	0.51	0.51	7.33	2	18.4	16.2	13	8	16.7
15	0.26	0.26	9.78	2.6	22.2	18	13.1	10.4	15.6
16	0.58	0.58	12.92	3.3	25.5	21.8	14.4	13.4	15.8
17	1.07	1.07	17.49	4.2	26	29.3	17.2	17.1	17.3
18	0.55	0.55	26.19	5.3	27.1	32	23.1	21	20.3
19	0.58	0.58	31.65	6.7	29	27.8	31.8	22.7	26
20	1.08	1.08	21.32	8.2	26.4	28.1	21.1	21.4	28.5
21	0.59	0.59	17.7	9.9	23.5	32.3	16.3	20.1	21.6
22	0.65	0.65	15.7	11.8	22.8	35.4	13.8	19.4	17.6
23	1.22	1.22	14.89	14.5	23.8	29.8	12.4	19.6	15.2
24	0.99	0.99	14.59	18.2	25.4	26.5	11.9	20.5	13.8
25	0.8	0.8	15.18	23.8	26.4	25.3	12.1	22.1	13
26	1.11	1.11	15.83	33.9	26.8	25.9	12.9	23.5	12.9
27	1.12	1.12	16.93	27.7	27.8	28.2	14.3	23.1	13.2
28	0.95	0.95	18.33	21.5	29	32.1	16.5	20.6	13.9

29	1.25	1.25	19.62	18	26.7	35.6	19.8	17.9	15.2
30	2.03	2.03	20.49	15.7	22.1	37.7	25	15.7	17.1
31	3.32	3.32	20.49	14.1	18.7	36.9	37	14	19.6
32	5.21	5.21	19.83	13	16.7	31.1	33.4	12.7	22.9
33	7.88	7.88	19.23	12.3	15.7	26.3	26.8	11.8	26.4
34	11.74	11.74	18.52	12.1	15.7	22.8	24.6	11.3	26.8
35	16.19	16.19	18.29	11.9	16.6	20.2	24.4	11	24.4
36	14.94	14.94	18.06	11.7	18.4	18.5	25.8	11	22.4
37	15.07	15.07	18.29	11.7	21.2	17.7	29.4	11.3	21.2
38	16.33	16.33	18.49	11.8	25.3	17.7	37.8	11.8	20.7
39	15.38	15.38	19.03	12	31.2	18.3	32.4	12.5	20.9
40	15.03	15.03	19.78	12.5	36.4	19.4	25.5	13.5	21.8
41	15.75	15.75	20.69	13.1	35.1	20.8	21.6	14.8	23.4
42	17.49	17.49	21.79	13.7	35	22.4	19.1	16.5	25.9
43	20.55	20.55	23.18	14.2	38.2	24.6	17.5	18.7	29.7
44	21.87	21.87	24.78	14.5	45.9	27.4	16.3	21.5	32.4
45	20.56	20.56	26.65	15.1	44	30.4	15.7	25.4	29
46	20.35	20.35	28.85	15.9	40	32.7	15.3	30	25.2
47	21.02	21.02	31.4	16.8	39.6	34.6	15.3	29.1	22.6
48	21.62	21.62	33.3	17.8	40.7	36.6	15.6	24.9	20.7
49	20.49	20.49	33	18.7	38.7	37.4	16.1	21.9	19.5
50	20.28	20.28	31	19.7	34.6	35.8	17	19.8	18.7
51	20.83	20.83	28.8	20.7	31.2	33.7	18.1	18.3	18.2
52	22.1	22.1	27.2	21.6	29.1	32.2	19.5	17.3	18.1
53	22.84	22.84	25.96	22.4	28.1	31.5	21.2	16.5	18.2
54	23.96	23.96	25.16	22.9	27.9	31.5	23.3	16.1	18.5
55	25.61	25.61	24.59	23.3	28.3	32.3	25.9	15.8	19
56	24.75	24.75	24.19	23.4	29	33.4	29	15.8	19.8
57	24.54	24.54	24.19	23.3	29.8	35.1	32.2	15.9	20.8
58	24.84	24.84	24.18	22.7	30.7	37.8	34	16.2	22
59	25.6	25.6	24.38	21.9	32.2	41.8	33.5	16.6	23.5
60	25.03	25.03	24.98	21.2	34.1	48	32.3	17.2	25.2

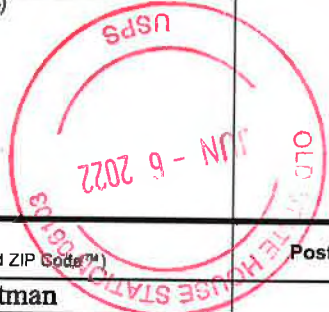
61	24.18	24.18	25.49	20.7	36.5	52.4	31.5	18	27.2
62	23.83	23.83	26.09	20.5	38.4	47.7	31.4	18.9	29.5
63	23.88	23.88	26.99	20.3	38.5	44.3	31.9	19.9	32.4
64	24.25	24.25	27.98	20.3	36.9	41.8	32.9	21.1	36.1
65	24.7	24.7	28.58	20.5	35.6	39.5	34.4	22.4	41.4
66	24.47	24.47	29.08	20.9	35.5	37.7	36.5	23.9	50.9
67	24.47	24.47	29.18	21.3	36	36.6	39.2	25.5	47.9
68	24.68	24.68	28.55	21.7	36.2	36.6	42.4	27.3	41.8
69	25.07	25.07	27.75	21.8	35.8	37.5	45.8	29.1	38.6
70	25.64	25.64	26.95	21.6	35	39.3	48.4	30.7	36.8
71	26.36	26.36	26.25	21.2	34.1	41.3	49.3	31.9	35.7
72	27.24	27.24	25.5	21	33.6	42.3	49.4	32.1	35
73	28.26	28.26	24.8	21	33.7	42.2	49.9	31.6	34.7
74	28.68	28.68	24.3	21.2	34	42.6	51	31	34.6
75	28.98	28.98	23.9	21.6	34.4	44.5	52.3	30.5	34.7
76	29.37	29.37	23.6	22.1	34.5	47.6	53.5	30.2	34.9
77	29.83	29.83	23.4	22.8	34.3	49.2	54.1	30.2	35.1
78	30.36	30.36	23.1	23.5	34	47	53.8	30.3	35.5
79	30.94	30.94	22.9	24.5	33.8	44.2	52.4	30.5	35.8
80	30.89	30.89	22.8	25.6	33.9	42.7	50.8	30.7	36.3
81	30.44	30.44	22.7	26.8	34.5	42.6	49.4	30.9	36.8
82	30.13	30.13	22.7	28.2	35.3	43.7	48.4	31	37.5
83	29.93	29.93	22.7	29.7	35.6	45.3	47.8	31	38.2
84	29.81	29.81	22.7	31.1	35.8	46.4	47.6	31.2	39
85	29.76	29.76	22.8	31.9	36.2	46.9	47.6	31.5	40
86	29.78	29.78	22.8	32.5	36.6	47	47.7	31.9	41
87	29.85	29.85	22.9	32.9	37.2	47	47.7	32.4	42.1
88	29.97	29.97	22.96	33.3	38.5	46.7	47.5	32.9	43.3
89	30.13	30.13	23.06	33.6	40.4	46.5	46.8	33.1	44.7
90	30.33	30.33	23.06	34.4	41.9	46.9	46	33.1	46.3

# **ATTACHMENT 7**



NEW CANAAN NE 2  
**Certificate of Mailing — Firm**

Name and Address of Sender  Kenneth C. Baldwin, Esq. Robinson & Cole LLP 280 Trumbull Street Hartford, CT 06103	TOTAL NO. of Pieces Listed by Sender  <div style="font-size: 2em; color: blue;">5</div>	TOTAL NO. of Pieces Received at Post Office™	Affix Stamp Here <i>Postmark with Date of Receipt.</i>  <div style="text-align: right;"> <p>neopost<sup>®</sup>            06/06/2022  <b>US POSTAGE \$003.65<sup>0</sup></b></p> <p>ZIP 06103            041L12203937</p> </div>
	Postmaster, per (name of receiving employee)		



USPS® Tracking Number Firm-specific Identifier	Address (Name, Street, City, State, and ZIP Code™)	Postage	Fee	Special Handling	Parcel Airlift
1.	<b>Kevin Moynihan, First Selectman</b> Town of New Canaan 77 Main Street New Canaan, CT 06840				
2.	<b>Lynn Brooks Avni, Town Planner/Senior Enforcement Officer/Co-Director of Land Use</b> Town of New Canaan 77 Main Street New Canaan, CT 06840				
3.	<b>Keith and Marina Richey</b> 183 Soundview Lane New Canaan, CT 06840				
4.	<b>Homeland Towers, LLC</b> 9 Harmony Street, 2 <sup>nd</sup> Floor Danbury, CT 06810				
5.	<b>American Tower Corporation</b> 10 Presidential Way Woburn, MA 01801				
6.					