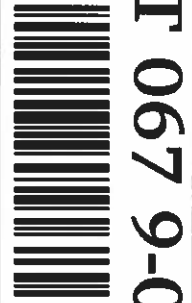
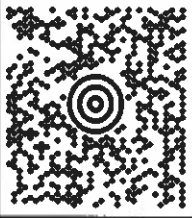


PATRICIA NOWAK  
508.265.5599  
CENTERLINE COMMUNICATIONS, LLC  
750 WEST CENTER STREET  
WEST BRIDGEWATER, MA 02379

1 LBS

1 OF 1

**SHIP TO:**  
MELANIE A. BACHMAN  
18608272935  
CONNECTICUT SITING COUNCIL  
EXECUTIVE DIRECTOR  
TEN FRANKLIN SQUARE  
NEW BRITAIN CT 06051-2655



CT 067 9-06

**UPS GROUND**

TRACKING #: 1Z 9Y4 503 03 1618 0432



BILLING: P/P

Reference # 1: CTSZ70-CSC

CS 22.0.11

WNTWVS0 28.0A.04/2020



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UPS Access Point™  
CVS STORE # 972  
555 WASHINGTON ST  
SOUTH EASTON, MA 02375

UPS Access Point™  
CVS STORE # 7232  
689 DEPOT ST  
NORTH EASTON, MA 02356

UPS Access Point™  
TOWN LINE GENERAL STORE  
450 E CENTER ST  
WEST BRIDGEWATER, MA 02379

1. Ensure there are no other shipping or tracking labels attached to your package. Select the Print button on the print dialog box that appears. Note: If your browser does not support this function select Print from the File menu to print the label.
2. Fold the printed label at the solid line below. Place the label in a UPS Shipping Pouch. If you do not have a pouch, affix the folded label using clear plastic shipping tape over the entire label.
3. GETTING YOUR SHIPMENT TO UPS  
Customers with a Daily Pickup  
Your driver will pickup your shipment(s) as usual.  
Customers without a Daily Pickup  
Take your package to any location of The UPS Store®, UPS Access Point™(TM) location, UPS Drop Box, UPS Customer Center, Staples® or Authorized Shipping Outlet near you. Items sent via UPS Return Services(SM) (including via Ground) are also accepted at Drop Boxes. To find the location nearest you, please visit the Resources area of CampusShip and select UPS Locations.  
Schedule a same day or future day Pickup to have a UPS driver pickup all your CampusShip packages.  
Hand the package to any UPS driver in your area.

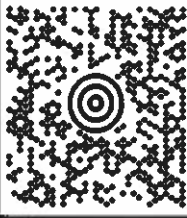
UPS CampusShip: View/Print Label

PATRICIA NOWAK  
508-265-5599  
CENTERLINE COMMUNICATIONS, LLC  
750 WEST CENTER STREET  
WEST BRIDGEWATER, MA 02379

1 LBS

1 OF 1

**SHIP TO:**  
J. CHRISTOPHER KERVICK  
TOWN OF WINDSOR LOCKS  
FIRST SELECTMAN'S OFFICE  
50 CHURCH STREET  
WINDSOR LOCKS CT 06096-2331



CT 060 9-02

**UPS GROUND**

TRACKING #: 1Z 9Y4 503 03 1749 3423



BILLING: P/P

Reference # 1: CT5270 - Select office

CS 22.0 11

WNTNVS0 28:0A 04/2020



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CVS STORE # 972  
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SOUTH EASTON, MA 02375

UPS Access Point™  
CVS STORE # 7232  
689 DEPT ST  
NORTH EASTON, MA 02356

UPS Access Point™  
TOWN LINE GENERAL STORE  
450 E CENTER ST  
WEST BRIDGEWATER, MA 02379

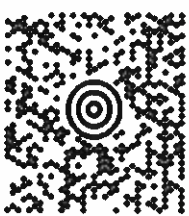
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3. GETTING YOUR SHIPMENT TO UPS  
**Customers with a Daily Pickup**  
Your driver will pickup your shipment(s) as usual.  
**Customers without a Daily Pickup**  
Take your package to any location of The UPS Store®, UPS Access Point™(TM) location, UPS Drop Box, UPS Customer Center, Staples® or Authorized Shipping Outlet near you. Items sent via UPS Return Services(SM) (including via Ground) are also accepted at Drop Boxes. To find the location nearest you, please visit the Resources area of CampusShip and select UPS Locations.  
Schedule a same day or future day Pickup to have a UPS driver pickup all your CampusShip packages.  
Hand the package to any UPS driver in your area.

PATRICIA NOWAK  
508-265-5599  
CENTERLINE COMMUNICATIONS, LLC  
750 WEST CENTER STREET  
WEST BRIDGEWATER, MA 02379

1 LBS

1 OF 1

**SHIP TO:**  
JENNIFER V. RODRIGUEZ  
TOWN OF WINDSOR LOCKS  
TOWN PLANNER  
50 CHURCH STREET  
WINDSOR LOCKS CT 06096-2331



**CT 060 9-02**



**UPS GROUND**

TRACKING #: 1Z 9Y4 503 03 1226 9443



BILLING: P/P

Reference # 1: CT2570- Twm Plan

CS 22.0.11

WNTNVS0 28.0A.04/2020



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SOUTH EASTON, MA 02375

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CVS STORE # 7232  
689 DEPOT ST  
NORTH EASTON, MA 02356

UPS Access Point™  
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450 E CENTER ST  
WEST BRIDGEWATER, MA 02379

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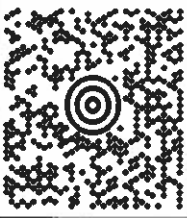
UPS CampusShip: View/Print Label

PATRICIA NOWAK  
508.265.5599  
CENTERLINE COMMUNICATIONS, LLC  
750 WEST CENTER STREET  
WEST BRIDGEWATER MA 02379

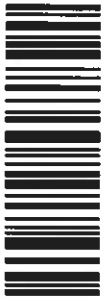
1 LBS

1 OF 1

**SHIP TO:**  
SITE ADMINISTRATION  
MGM ACQUISITION 2017 LLC  
2ND FLOOR  
8051 CONGRESS AVENUE  
BOCA RATON FL 33487-1307



FL 332 6-07



UPS GROUND

TRACKING #: 1Z 9Y4 503 03 0616 0455



BILLING: P/P

Reference # 1: CTS270-SBA

CS 22.0.11

WNTNVS0 28.0A 04/2020



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UPS Access Point™  
TOWN LINE GENERAL STORE  
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Schedule a same day or future day Pickup to have a UPS driver pickup all your CampusShip packages.  
Hand the package to any UPS driver in your area.

UPS CampusShip: View/Print Label

June 19, 2020

Via UPS Delivery 1Z9Y45030316180432 and Electronic Mail

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

**Regarding: Notice of Exempt Modification – AT&T Site CT5270**  
**Address: 2-4 Volunteer Drive, Windsor Locks, CT 06096**

Dear Ms. Bachman:

New Cingular Wireless, PCS, LLC ( hereinafter “AT&T”) currently maintains a wireless telecommunications facility on an existing 195’ Self-Support Tower (the “Tower”) at the above-referenced address, latitude 41.928100, longitude -72.646800. Said Tower is owned by MCM Acquisition 2017 LLC, an SBA entity.

Please note that AT&T’s proposed modifications under Exempt Modification file number EM-CING-165-200401 was approved on May 26, 2020, however, AT&T changed the scope of work to be completed, therefore, we are filing a new exempt modification request. A copy of the above referenced approval is enclosed for reference. AT&T desires to modify its existing telecommunications facility on the Tower by swapping (6) antennas and (3) remote radio units as well as adding (6) remote radio units, (3) diplexers, (2) dc only surge arrestors and (4) DC power lines, as more particularly detailed and described in the enclosed Construction Drawings prepared by Centerline Communications dated February 21, 2020 and last revised on May 21, 2020. Enclosed please also find a Mount Analysis Report prepared by Centerline Communications dated February 21, 2020 and last revised May 15, 2020. The centerline height of the antennas will be at 164 feet.

The Town of Windsor Locks, Connecticut issued Building Permit No. 23004 on June 29, 1999 for the construction of the Tower, which included Zoning sign-off. A copy of the above referenced permit was not readily available.

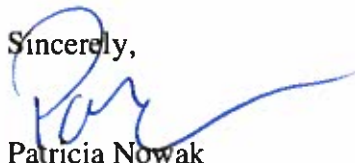
Please accept this letter as notification pursuant to R.C.S.A §16-50j-73 for construction that constitutes an exempt modification pursuant to R.C.S.A. § 16-50j-72(b)(2). In accordance with R.C.S.A. § 16-50j-73, a copy of this letter is being sent to the following individuals: The Honorable J. Christopher Kervick, First Selectman of the Town of Windsor Locks; Jennifer V. Rodriguez, Town Planner and Director of Planning and Development of the Town of Windsor Locks; and MCM Acquisition 2017 LLC, as Tower owner. Please note that the property is owned by the Town of Windsor Locks, CT. Enclosed please find a property card and a GIS map of the property.

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

1. The proposed modifications will not result in an increase in the height of the existing structure.
2. The proposed modifications will not require an extension of the site boundary.
3. The proposed modifications will not increase noise levels at the facility by six decibels or more, or to levels that exceed state and local criteria.
4. The operation of the modified facility will not increase radio frequency emissions at the facility to a level at or above the Federal Communications Commission safety standard. *Please see the RF Emissions Analysis Report for AT&T's modified facility enclosed herewith.*
5. The proposed modifications will not cause an ineligible change or alteration in the physical or environmental characteristics of the site.
6. The existing structure and its foundation can support the proposed loading. *Please see the Structural Analysis Report dated June 8, 2020 and prepared by Tower Engineering Solutions.*

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

Sincerely,



Patricia Nowak  
Site Acquisition Consultant  
Centerline Communications, LLC  
750 West Center Street, Suite 301  
West Bridgewater, MA 02379  
pnowak@clinellc.com

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Enclosures:    Exhibit 1 – Prior EM Approval  
                  Exhibit 2 - Construction Drawings  
                  Exhibit 3 - Mount Analysis  
                  Exhibit 4 – Property Cards and GIS Map  
                  Exhibit 5 – RF Emissions Analysis Report  
                  Exhibit 6 – Structural Analysis

cc:           Honorable J. Christopher Kervick, First Selectman of the Town of Windsor Locks  
              Jennifer V. Rodriguez, Town Planner of Town of Windsor Locks  
              MCM Acquisition 2017 LLC, as Tower owner

# EXHIBIT 1





STATE OF CONNECTICUT  
*CONNECTICUT SITING COUNCIL*

Ten Franklin Square, New Britain, CT 06051  
Phone: (860) 827-2935 Fax: (860) 827-2950  
E-Mail: [siting.council@ct.gov](mailto:siting.council@ct.gov)  
Web Site: [www.ct.gov/csc](http://www.ct.gov/csc)

**VIA ELECTRONIC MAIL**

May 26, 2020

Patricia Nowak  
Site Acquisition Consultant  
Centerline Communications, LLC  
750 West Center Street, Suite 301  
West Bridgewater, MA 02379

RE: **EM-CING-165-200401** – New Cingular Wireless PCS, LLC (AT&T) notice of intent to modify an existing telecommunications facility located at 2-4 Volunteer Drive, Windsor Locks, Connecticut.

Dear Ms. Nowak:

The Connecticut Siting Council (Council) hereby acknowledges your notice to modify this existing telecommunications facility, pursuant to Section 16-50j-73 of the Regulations of Connecticut State Agencies with the following conditions:

1. Prior to AT&T's antenna installation, the antenna mount modifications shall be installed in accordance with the Mount Analysis prepared by Centerline Communications, dated February 21, 2020 and stamped and signed by Derek J. Creaser;
2. Within 45 days following completion of equipment installation, AT&T shall provide documentation certified by a Professional Engineer that its installation complied with the recommendations of the Mount Analysis;
3. Any deviation from the proposed modification as specified in this notice and supporting materials with the Council shall render this acknowledgement invalid;
4. Any material changes to this modification as proposed shall require the filing of a new notice with the Council;
5. Within 45 days after completion of construction, the Council shall be notified in writing that construction has been completed;
6. Any nonfunctioning antenna and associated antenna mounting equipment on this facility owned and operated by AT&T shall be removed within 60 days of the date the antenna ceased to function;
7. The validity of this action shall expire one year from the date of this letter; and
8. The applicant may file a request for an extension of time beyond the one year deadline provided that such request is submitted to the Council not less than 60 days prior to the expiration.

The proposed modifications including the placement of all necessary equipment and shelters within the tower compound are to be implemented as specified here and in your notice dated April 1, 2020. The modifications are in compliance with the exception criteria in Section 16-50j-72 (b) of the Regulations of Connecticut State Agencies as changes to an existing facility site that would not increase tower height, extend the boundaries of the tower site by any dimension, increase noise levels at the tower site boundary by six decibels or more, and increase the total radio frequencies electromagnetic radiation power density measured at the tower site boundary to or above the standards adopted by the Federal Communications Commission pursuant to Section 704 of the Telecommunications Act of 1996 and by the state Department of Energy and Environmental Protection pursuant to Connecticut General Statutes § 22a-162. This facility has also been carefully modeled to ensure that radio frequency emissions are conservatively below state and federal standards applicable to the frequencies now used on this tower.

This decision is under the exclusive jurisdiction of the Council. Please be advised that the validity of this action shall expire one year from the date of this letter. Any additional change to this facility will require explicit notice to this agency pursuant to Regulations of Connecticut State Agencies Section 16-50j-73. Such notice shall include all relevant information regarding the proposed change with cumulative worst-case modeling of radio frequency exposure at the closest point of uncontrolled access to the tower base, consistent with Federal Communications Commission, Office of Engineering and Technology, Bulletin 65. Thank you for your attention and cooperation.

Sincerely,

*s/ Melanie A. Bachman*

Melanie A. Bachman  
Executive Director

MAB/IN/emr

c: The Honorable J. Christopher Kervick, First Selectman, Town of Windsor Locks  
Jennifer Rodriguez, Town Planner, Town of Windsor Locks

## EXHIBIT 2

# PROJECT INFORMATION

TOWER OWNER: SBA  
 SBA ID: CT22108  
 SITE NAME: WINDSOR LOCKS  
 SITE ADDRESS: 2 VOLUNTEER DRIVE  
 WINDSOR LOCKS, CT 06096  
 LATITUDE: 41° 55' 40.05"  
 LONGITUDE: -72° 38' 51.00"  
 TOWER HEIGHT: 195'-0"± AGL  
 RAD CENTER: 164'-0"± AGL  
 ZONING JURISDICTION: WINDSOR LOCKS  
 COUNTY: HARTFORD

DESCRIPTION OF WORK:  
TELECOMMUNICATIONS FACILITY UPGRADE (LTE 5C, 6C, BWE, 5G NR, 4C & RETROFIT):

**SELF SUPPORT TOWER:**

- INSTALL:**
- (6) TPA65R-BU8D ANTENNAS (TWO PER SECTOR)
  - (3) 4449 B5/B12 RRUS (ONE PER SECTOR)
  - (3) 8843 B2/B66A RRUS (ONE PER SECTOR)
  - (3) 4478 B14 RRUS (ONE PER SECTOR)
  - (3) DBCT108F1V92-1 DIPLEXER (ONE PER SECTOR)
  - (2) DC6-48-60-18-8C-EV SURGE ARRESTORS
  - (4) DC POWER LINES

- REMOVE:**
- (3) SBNH-1D6565C ANTENNAS
  - (3) 800-10121 ANTENNAS
  - (3) TPA-65R-LCUU-H8 ANTENNAS
  - (3) RRUS-11 B12
  - (6) LGP 21401 TMA

- EXISTING TO REMAIN:**
- (3) RRUS-32 B2 (ONE PER SECTOR)
  - (3) RRUS-32 B30 (ONE PER SECTOR)
  - (2) DC6-48-60-18-8F SURGE ARRESTOR
  - (9) LINES OF 1-5/8" COAX
  - (4) 8 AWG DC POWER LINES
  - (2) 18 PAIR FIBER
  - (2) 2" FLEX CONDUITS

**EQUIPMENT AREA/GROUND:**

- INSTALL:**
- (1) 6630
  - (1) IDLE

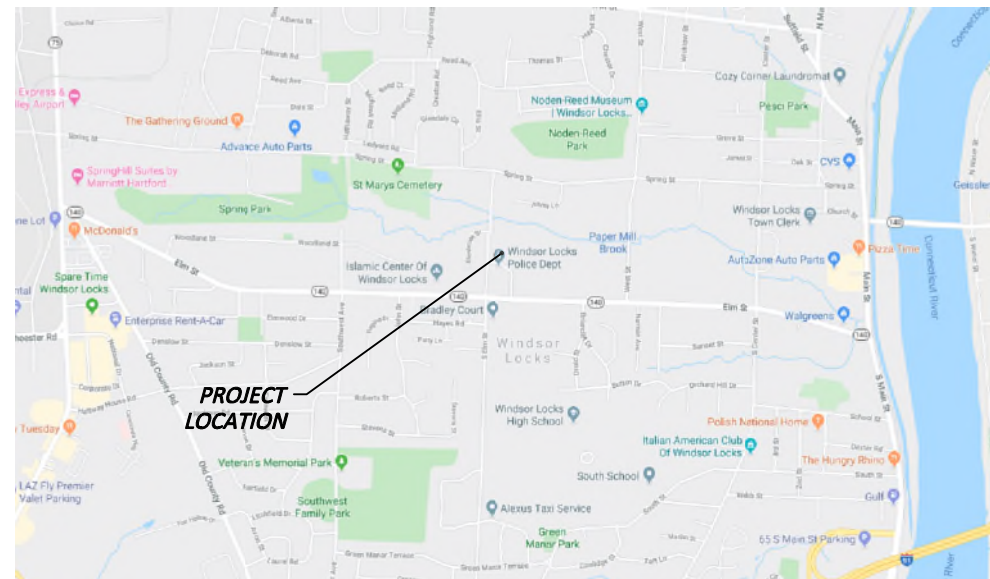
# PROJECT DIRECTORY

A&E / PROJECT MANAGER:  
 CENTERLINE COMMUNICATIONS  
 750 WEST CENTER ST, SUITE 301  
 WEST BRIDGEWATER, MA 02379  
 CONTACT: DAVID FORD  
 PHONE 844.748.8878

APPLICANT:  
 at&t MOBILITY CORP.  
 500 ENTERPRISE DRIVE  
 ROCKY HILL, CT 06067



**SITE NUMBER: CT5270**  
**FA# 10071333**  
**SITE NAME: WINDSOR LOCKS**  
**SBA ID: CT22108**  
**PACE ID: 5C-MRCTB045479, 6C-MRCTB045512, BWE-MRCTB045489,**  
**5G NR-MRCTB045535, 4C-MRCTB045541, RETRO-MRCTB045525**  
**PROJECT: LTE 5C, 6C, BWE, 5G NR, 4C & RETROFIT**



VICINITY MAP  
NOT TO SCALE



LOCATION MAP  
NOT TO SCALE

**DIRECTIONS:**

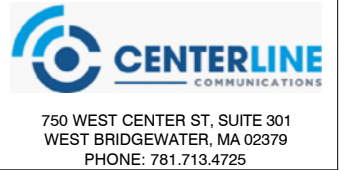
DEPART HEAD TOWARD CAPITOL BLVD ON ENTERPRISE DR. GO FOR 1703 FT. // TURN LEFT ONTO CAPITOL BLVD. GO FOR 1430 FT. // TURN LEFT ONTO WEST ST. GO FOR 833 FT. // TURN LEFT AND TAKE RAMP ONTO I-91 N TOWARD HARTFORD. GO FOR 10.7 MI. KEEP RIGHT ONTO I-91. GO FOR 7.0 MI. // KEEP RIGHT ONTO I-91 (RICHARD P HORAN MEMORIAL HWY). GO FOR 2.2 MI. TAKE EXIT 42 TOWARD WINDSOR LOCKS/CT-159. GO FOR 1243 FT. // TURN LEFT ONTO LAWNACRE RD. GO FOR 942 FT. CONTINUE ON S MAIN ST (CT-159). GO FOR 0.9 MI. // TURN LEFT ONTO ELM ST (CT-140). GO FOR 1.0 MI. // TURN RIGHT. GO FOR 453 FT. // TURN RIGHT. GO FOR 49 FT. // TURN LEFT. GO FOR 115 FT. // ARRIVE AT YOUR DESTINATION ON THE RIGHT.

## GENERAL NOTES:

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

## DRAWING INDEX

NO.	DESCRIPTION	REV.	DATE
T-1	TITLE SHEET	4	05/21/20
GN-1	GENERAL NOTES	4	05/21/20
A-1	COMPOUND & EQUIPMENT PLANS	4	05/21/20
A-2	ANTENNA LAYOUT & ELEVATIONS	4	05/21/20
A-3	DETAILS	4	05/21/20
SN-1	STRUCTURAL NOTES	4	05/21/20
S-1	STRUCTURAL DETAILS	4	05/21/20
RF-1	RF PLUMBING DIAGRAM	4	05/21/20
G-1	GROUNDING DETAILS	4	05/21/20



REVISIONS		
NO.	DATE	DESCRIPTION
4	5/21/20	CONSTRUCTION REVISED
3	5/11/20	CONSTRUCTION REVISED
2	3/30/20	ISSUED FOR CONSTRUCTION
1	3/25/20	ISSUED FOR PERMITTING
0	2/21/20	ISSUED FOR REVIEW

DESIGNED BY: BPC  
 APPROVED BY: DC



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SITE NAME: WINDSOR LOCKS  
 SITE NUMBER: CT5270  
 SITE ADDRESS: 2 VOLUNTEER DRIVE WINDSOR LOCKS, CT 06096  
 PROJECT TYPE: LTE 5C, 6C, BWE, 5G NR, 4C & RETROFIT  
 SHEET TITLE: TITLE SHEET  
 DRAWING #: T-1 REVISION: 4



# GENERAL NOTES

- FOR THE PURPOSE OF CONSTRUCTION DRAWING, THE FOLLOWING DEFINITIONS SHALL APPLY:  
 CONTRACTOR – CENTERLINE COMMUNICATIONS  
 SUBCONTRACTOR – GENERAL CONTRACTOR (CONSTRUCTION)  
 OWNER – AT&T MOBILITY
- PRIOR TO THE SUBMISSION OF BIDS, THE BIDDING SUBCONTRACTOR SHALL VISIT THE CELL SITE TO FAMILIARIZE WITH THE EXISTING CONDITIONS AND TO CONFIRM THAT THE WORK CAN BE ACCOMPLISHED AS SHOWN ON THE CONSTRUCTION DRAWINGS. ANY DISCREPANCY FOUND SHALL BE BROUGHT TO THE ATTENTION OF CONTRACTOR.
- ALL MATERIALS FURNISHED AND INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS, AND ORDINANCES. SUBCONTRACTOR SHALL ISSUE ALL APPROPRIATE NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS, AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY REGARDING THE PERFORMANCE OF THE WORK. ALL WORK CARRIED OUT SHALL COMPLY WITH ALL APPLICABLE MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS AND LOCAL JURISDICTIONAL CODES, ORDINANCES AND APPLICABLE REGULATIONS.
- DRAWINGS PROVIDED HERE ARE NOT TO BE SCALED AND ARE INTENDED TO SHOW OUTLINE ONLY.
- UNLESS NOTED OTHERWISE, THE WORK SHALL INCLUDE FURNISHING MATERIALS, EQUIPMENT, APPURTENANCES, AND LABOR NECESSARY TO COMPLETE ALL INSTALLATIONS AS INDICATED ON THE DRAWINGS.
- "KITTING LIST" SUPPLIED WITH THE BID PACKAGE IDENTIFIES ITEMS THAT WILL BE SUPPLIED BY CONTRACTOR. ITEMS NOT INCLUDED IN THE BILL OF MATERIALS AND KITTING LIST SHALL BE SUPPLIED BY THE SUBCONTRACTOR.
- THE SUBCONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.
- IF THE SPECIFIED EQUIPMENT CANNOT BE INSTALLED AS SHOWN ON THESE DRAWINGS, THE SUBCONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION SPACE FOR APPROVAL BY THE CONTRACTOR.
- SUBCONTRACTOR SHALL DETERMINE ACTUAL ROUTING OF CONDUIT, POWER AND T1 CABLES, GROUNDING CABLES AS SHOWN ON THE POWER, GROUNDING AND TELCO PLAN DRAWING. SUBCONTRACTOR SHALL UTILIZE EXISTING TRAYS AND/OR SHALL ADD NEW TRAYS AS NECESSARY. SUBCONTRACTOR SHALL CONFIRM THE ACTUAL ROUTING WITH THE CONTRACTOR.
- THE SUBCONTRACTOR SHALL PROTECT EXISTING IMPROVEMENTS, PAVEMENTS, CURBS, LANDSCAPING AND STRUCTURES. ANY DAMAGED PART SHALL BE REPAIRED AT SUBCONTRACTOR'S EXPENSE TO THE SATISFACTION OF OWNER.
- SUBCONTRACTOR SHALL LEGALLY AND PROPERLY DISPOSE OF ALL SCRAP MATERIALS SUCH AS COAXIAL CABLES AND OTHER ITEMS REMOVED FROM THE EXISTING FACILITY. ANTENNAS REMOVED SHALL BE RETURNED TO THE OWNER'S DESIGNATED LOCATION.
- SUBCONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION.
- ALL CONCRETE REPAIR WORK SHALL BE DONE IN ACCORDANCE WITH AMERICAN CONCRETE INSTITUTE (ACI) 301.
- ANY NEW CONCRETE NEEDED FOR THE CONSTRUCTION SHALL BE AIR-ENTRAINED AND SHALL HAVE 4000 PSI STRENGTH AT 28 DAYS. ALL CONCRETE WORK SHALL BE DONE IN ACCORDANCE WITH ACI 318 CODE REQUIREMENTS.

- ALL STRUCTURAL STEEL WORK SHALL BE DETAILED, FABRICATED AND ERECTED IN ACCORDANCE WITH AISC SPECIFICATIONS. ALL STRUCTURAL STEEL SHALL BE ASTM A36 (Fy = 36 ksi) UNLESS OTHERWISE NOTED. PIPES SHALL BE ASTM A53 TYPE E (Fy = 36 ksi). ALL STEEL EXPOSED TO WEATHER SHALL BE HOT DIPPED GALVANIZED. TOUCHUP ALL SCRATCHES AND OTHER MARKS IN THE FIELD AFTER STEEL IS ERECTED USING A COMPATIBLE ZINC RICH PAINT.
  - CONSTRUCTION SHALL COMPLY WITH SPECIFICATIONS AND "GENERAL CONSTRUCTION SERVICES FOR CONSTRUCTION OF AT&T MOBILITY SITES."
  - SUBCONTRACTOR SHALL VERIFY ALL EXISTING DIMENSIONS AND CONDITIONS PRIOR TO COMMENCING ANY WORK. ALL DIMENSIONS OF EXISTING CONSTRUCTION SHOWN ON THE DRAWINGS MUST BE VERIFIED. SUBCONTRACTOR SHALL NOTIFY THE CONTRACTOR OF ANY DISCREPANCIES PRIOR TO ORDERING MATERIAL OR PROCEEDING WITH CONSTRUCTION.
  - THE EXISTING CELL SITE IS IN FULL COMMERCIAL OPERATION. ANY CONSTRUCTION WORK BY SUBCONTRACTOR SHALL NOT DISRUPT THE EXISTING NORMAL OPERATION. ANY WORK ON EXISTING EQUIPMENT MUST BE COORDINATED WITH CONTRACTOR. ALSO, WORK SHOULD BE SCHEDULED FOR AN APPROPRIATE MAINTENANCE WINDOW USUALLY IN LOW TRAFFIC PERIODS AFTER MIDNIGHT.
  - SINCE THE CELL SITE IS ACTIVE, ALL SAFETY PRECAUTIONS MUST BE TAKEN WHEN WORKING AROUND HIGH LEVELS OF ELECTROMAGNETIC RADIATION. EQUIPMENT SHOULD BE SHUTDOWN PRIOR TO PERFORMING ANY WORK THAT COULD EXPOSE THE WORKERS TO DANGER. PERSONAL RF EXPOSURE MONITORS ARE ADVISED TO BE WORN TO ALERT OF ANY DANGEROUS EXPOSURE LEVELS.
  - APPLICABLE BUILDING CODES:  
 SUBCONTRACTOR'S WORK SHALL COMPLY WITH ALL APPLICABLE NATIONAL, STATE, AND LOCAL CODES AS ADOPTED BY THE LOCAL AUTHORITY HAVING JURISDICTION (AHJ) FOR THE LOCATION. THE EDITION OF THE AHJ ADOPTED CODES AND STANDARDS IN EFFECT ON THE DATE OF CONTRACT AWARD SHALL GOVERN THE DESIGN.  
 BUILDING CODE: IBC 2015 (2018 CT STATE BUILDING CODE)  
 ELECTRICAL CODE: 2017 NATIONAL ELECTRICAL CODE  
 LIGHTNING CODE: NFPA 70-2017  
 SUBCONTRACTOR'S WORK SHALL COMPLY WITH THE LATEST EDITION OF THE FOLLOWING STANDARDS:  
 AMERICAN CONCRETE INSTITUTE (ACI) 318; BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE;  
 AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC)  
 MANUAL OF STEEL CONSTRUCTION, ASD, FOURTEENTH EDITION;  
 TELECOMMUNICATIONS INDUSTRY ASSOCIATION (TIA) 222-G,  
 STRUCTURAL STANDARDS FOR STEEL  
 ANTENNA TOWER AND ANTENNA SUPPORTING STRUCTURES; REFER TO ELECTRICAL DRAWINGS FOR SPECIFIC ELECTRICAL STANDARDS.
- FOR ANY CONFLICTS BETWEEN SECTIONS OF LISTED CODES AND STANDARDS REGARDING MATERIAL, METHODS OF CONSTRUCTION, OR OTHER REQUIREMENTS, THE MOST RESTRICTIVE REQUIREMENT SHALL GOVERN. WHERE THERE IS CONFLICT BETWEEN A GENERAL REQUIREMENT AND A SPECIFIC REQUIREMENT, THE SPECIFIC REQUIREMENT SHALL GOVERN.

## ABBREVIATIONS

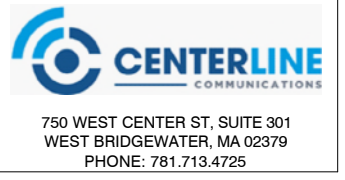
AGL	ABOVE GRADE LEVEL	G.C.	GENERAL CONTRACTOR	RF	RADIO FREQUENCY
AWG	AMERICAN WIRE GAUGE	MGB	MASTER GROUND BUS		
BCW	BARE COPPER WIRE	MIN	MINIMUM	TBD	TO BE DETERMINED
BTS	BASE TRANSCIVER STATION	PROPOSED	NEW	TBR	TO BE REMOVED
EXISTING	EXISTING	N.T.S.	NOT TO SCALE	TBRR	TO BE REMOVED AND REPLACED
EG	EQUIPMENT GROUND	REF	REFERENCE	TYP	TYPICAL
EGR	EQUIPMENT GROUND RING	REQ	REQUIRED		

# RF NOTES

- ACTUAL LENGTHS SHALL BE DETERMINED PER SITE CONDITION BY SUBCONTRACTOR
- THE DESIGN IS BASED ON RF DATA SHEETS, SIGNED AND APPROVED.
- RADIO SIGNAL CABLE AND RACEWAY SHALL COMPLY WITH THE REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE (NEC, NFPA 70), CHAPTER 8.
- ALL SPECIFIED MATERIAL FOR EACH LOCATION (E.G. OUT DOORS--OCCUPIED, INDOORS--UNOCCUPIED, PLENUMS, RISER SHAFTS, ETC.) SHALL BE APPROVED, LISTED, OR LABELED AS REQUIRED BY THE NEC.
- RADIO SIGNAL CABLE SHALL BE SUPPORTED AT MINIMUM OF EVERY THREE (3) FEET EXCEPT INSIDE MONOPOLES OR MONOPOLES WHERE CABLE AND CONNECTOR MANUFACTURERS SUPPORT RECOMMENDATIONS SHALL BE FOLLOWED. MANUFACTURER RECOMMENDATION CABLES SUPPORT ACCESSORIES SHALL BE USED.
- THE OUTDOOR CABLE SUPPORT SYSTEM SHALL BE PROVIDED WITH AN ICE SHIELD TO SUPPORT AND PROTECT ANTENNA CABLE RUNS.
- DRIP LOOPS SHALL BE REQUIRED ON ALL OUTSIDE CABLES. CABLES SHALL BE SLOPED AWAY FROM BUILDING OR OUTDOOR BTS CABINETS TO PREVENT WATER FROM ENTERING THROUGH THE COAXIAL CABLE PORT.
- ALL FEEDER LINE AND JUMPER CONNECTORS SHALL BE 7/16 DIN CABLE CONNECTORS THAT MEET IP68 STANDARDS.
- 7/16 DIN CONNECTORS REQUIRE NO ADDITIONAL WEATHER PROOFING IN INDOOR APPLICATIONS IF INSTALLED AND TORQUED PROPERLY. IN OUTDOOR APPLICATIONS WEATHER PROOFING IS REQUIRED AND THE FOLLOWING PROCEDURE SHOULD BE FOLLOWED.
- USING WEATHERPROOFING KIT APPROVED BY CABLE MANUFACTURER AND CONTRACTOR START TAPE APPROXIMATELY 5 INCHES FROM THE CONNECTOR, AND WRAP 2 INCHES TOWARD THE CONNECTOR, THEN REVERSE THE TAPE SO THAT THE STICKY SIDE IS UP. TAPE OVER THE CONNECTOR OR SURGE ARRESTOR UNTIL THREE (3) TO FOUR (4) INCHES BEYOND THE CONNECTOR AND REVERSE AGAIN WITH THE STICKY SIDE DOWN FOR ANOTHER INCH OR TWO. PASS THE BUTYL RUBBER AND FINISH WITH A FINAL LAYER OF TAPE.
- ANTENNAS SHALL BE PAINTED, WHEN REQUIRED, BY THE LANDLORD OR AUTHORITY OF HAVING JURISDICTION IN ACCORDANCE WITH ANTENNA MANUFACTURERS' SURFACES PREPARATION AND PAINTING REQUIREMENTS.
- CABLE SHIELDS AND TOWER CONDUITS SHALL BE GROUNDED AT THE TOP OF THE TOWER WITHIN 10 FEET OF THEIR CONNECTORS, AND AT THE BOTTOM OF THE TOWER ABOUT 6 INCHES BEFORE THEY TURN TOWARD THE FACILITY. THEY SHALL BE GROUNDED AT THE MIDPOINT OF THE TOWERS THAT ARE BETWEEN 60 FEET AND 200 FEET HIGH, AND AT INTERVALS OF 60 FEET OR LESS ON TOWERS THAT ARE HIGHER THAN 200 FEET.

## ANTENNA CABLE AND SCHEDULING NOTES

- SUBCONTRACTOR SHALL VERIFY THE ACTUAL LENGTH IN THE FIELD BEFORE INSTALLATION.
- TAG AND COLOR CODE ALL MAIN CABLES AT LOCATIONS PER AT&T ANTENNA CABLE MARKING STANDARD:
  - TOP OF TOWER END OF MAIN COAX
  - BOTTOM OF TOWER END OF MAIN COAX
  - DIRECTLY BEFORE AND AFTER RF EQUIPMENT
  - END OF JUMPERS AT BTS EQUIPMENT
- ANTENNAS SHALL BE PROCURED AND INSTALLED WITH DOWN TILT MOUNTING BRACKETS SUPPLIED BY ANTENNA MANUFACTURER.
- PRIOR APPROVAL IS REQUIRED BEFORE PERFORMING ANY WORK ON EXISTING CELL SITE EQUIPMENT.



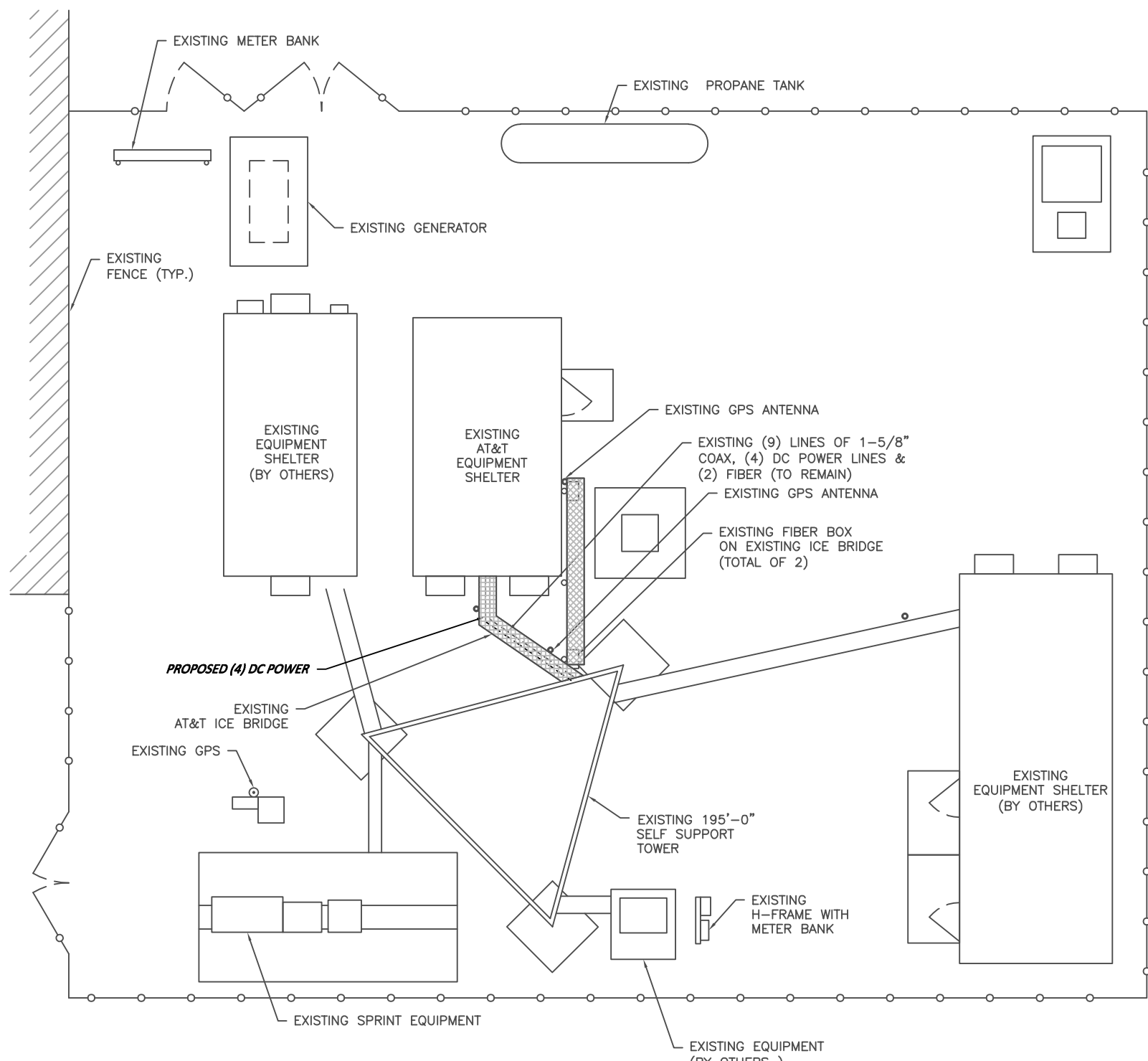
REVISIONS		
NO.	DATE	DESCRIPTION
4	5/21/20	CONSTRUCTION REVISED
3	5/11/20	CONSTRUCTION REVISED
2	3/30/20	ISSUED FOR CONSTRUCTION
1	3/25/20	ISSUED FOR PERMITTING
0	2/21/20	ISSUED FOR REVIEW

DESIGNED BY: BPC	APPROVED BY: DC
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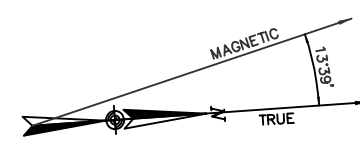
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SITE NAME:	WINDSOR LOCKS
SITE NUMBER:	CT5270
SITE ADDRESS:	2 VOLUNTEER DRIVE WINDSOR LOCKS, CT 06096
PROJECT TYPE:	LTE 5C, 6C, BWE, 5G NR, 4C & RETROFIT
SHEET TITLE:	GENERAL NOTES
DRAWING #:	GN-1
REVISION:	3

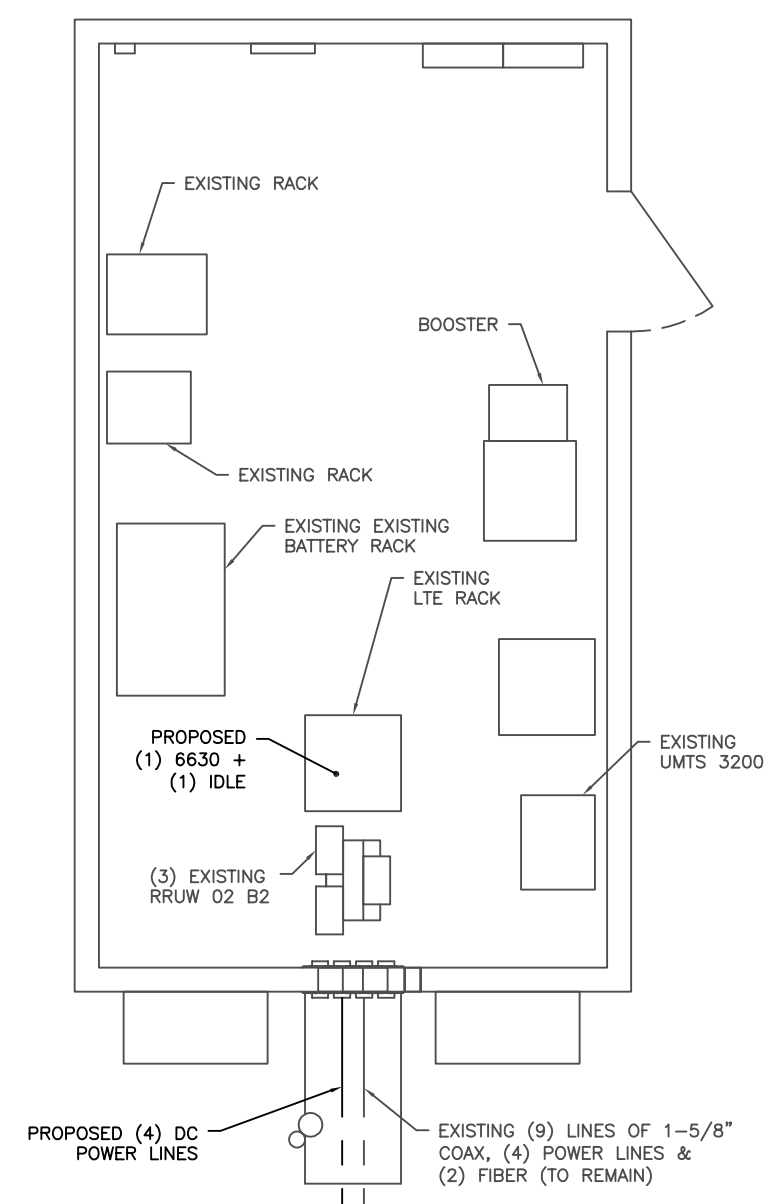


**COMPOUND PLAN**  
 SCALE: 3/16"=1'-0" (22"X34")  
 3/32" = 1'-0" (11"X17")

**GRAPHIC SCALE**  
 2'-0" 0 2'-8" 5'-4" 10'-8" 21'-4"  
 ( IN FEET )

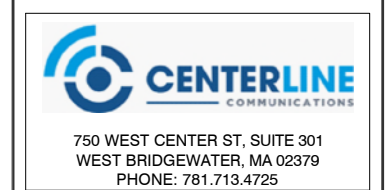


- NOTES:**
1. REFERENCE STRUCTURAL ANALYSIS BY OTHERS FOR FURTHER INFORMATION REGARDING THE CAPACITY OF THE EXISTING STRUCTURE TO SUPPORT THIS EQUIPMENT UPGRADE.
  2. REFERENCE LATEST MOUNT STRUCTURAL ANALYSIS BY CENTERLINE COMMUNICATIONS FOR REQUIRED MODIFICATIONS TO SUPPORT THIS EQUIPMENT UPGRADE.
  3. REFER TO THE FINAL RF DATA SHEET FOR FINAL ANTENNA SETTINGS.



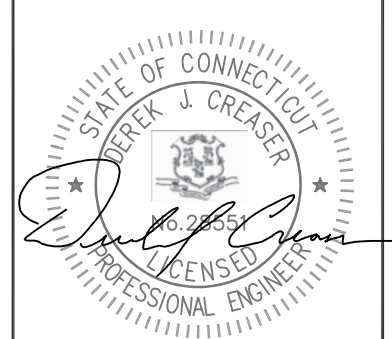
**EQUIPMENT PLAN**  
 SCALE: 1/4"=1'-0" (11"X17")  
 1/2" = 1'-0" (22"X34")

**GRAPHIC SCALE**  
 2 0 1 2 4 8  
 ( IN FEET )



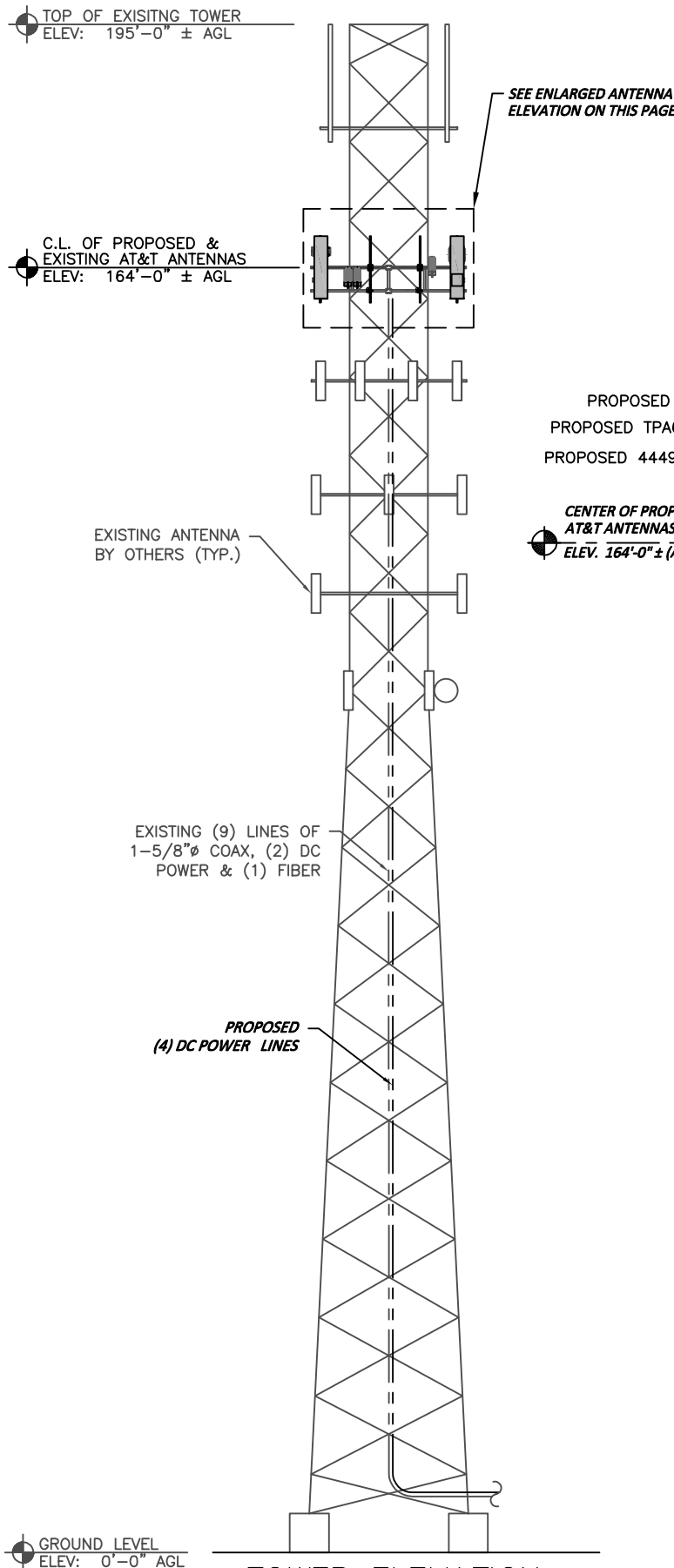
REVISIONS		
NO.	DATE	DESCRIPTION
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DESIGNED BY: BPC  
 APPROVED BY: DC



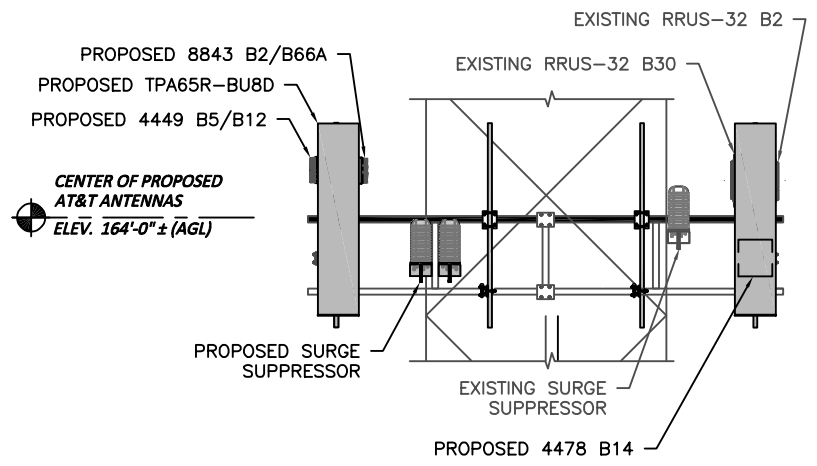
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SITE ADDRESS:	2 VOLUNTEER DRIVE WINDSOR LOCKS, CT 06096
PROJECT TYPE:	LTE 5C, 6C, BWE, 5G NR, 4C & RETROFIT
SHEET TITLE:	COMPOUND & EQUIPMENT PLANS
DRAWING #:	A-1
REVISION:	3

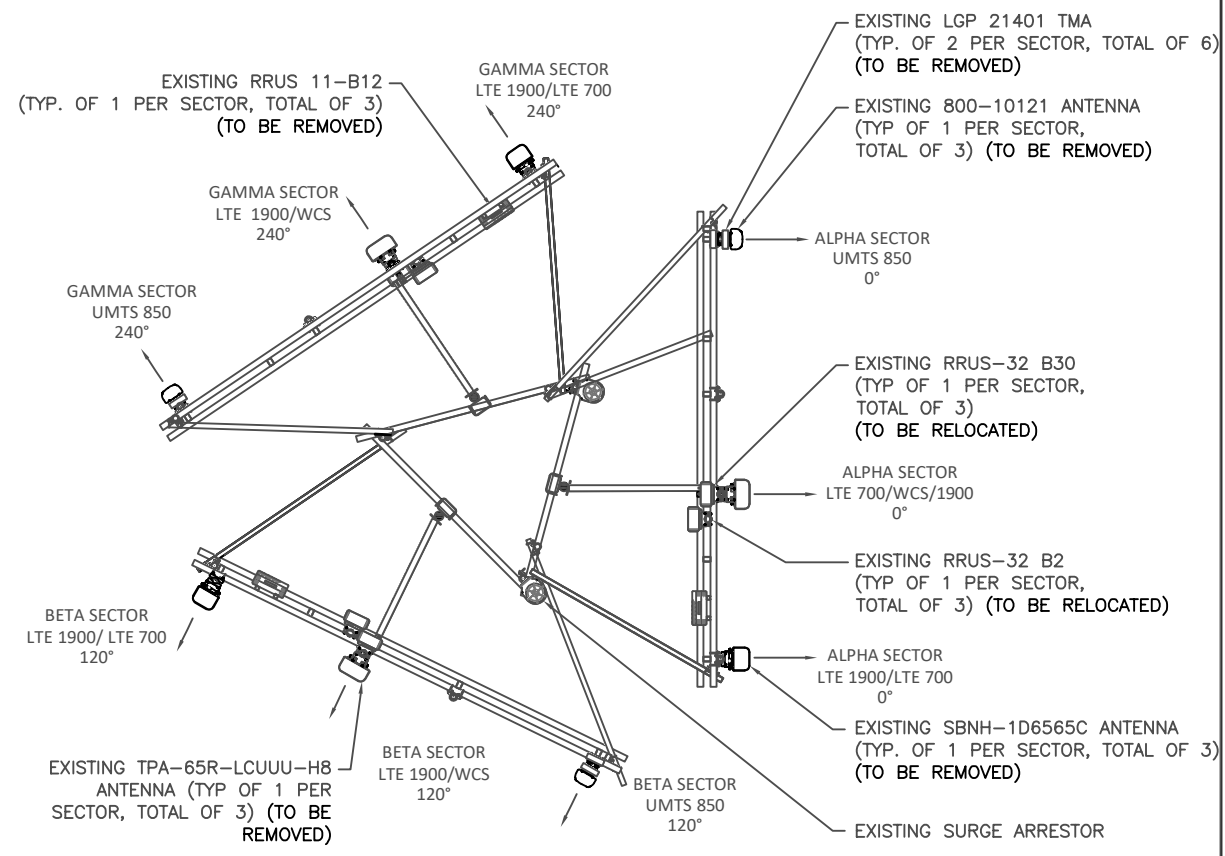
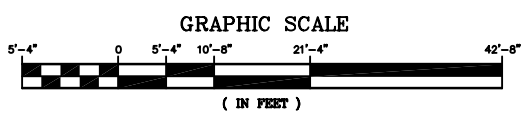


**TOWER ELEVATION**  
 SCALE: 3/16" = 1'-0" (22"X34")  
 3/32" = 1'-0" (11"X17")

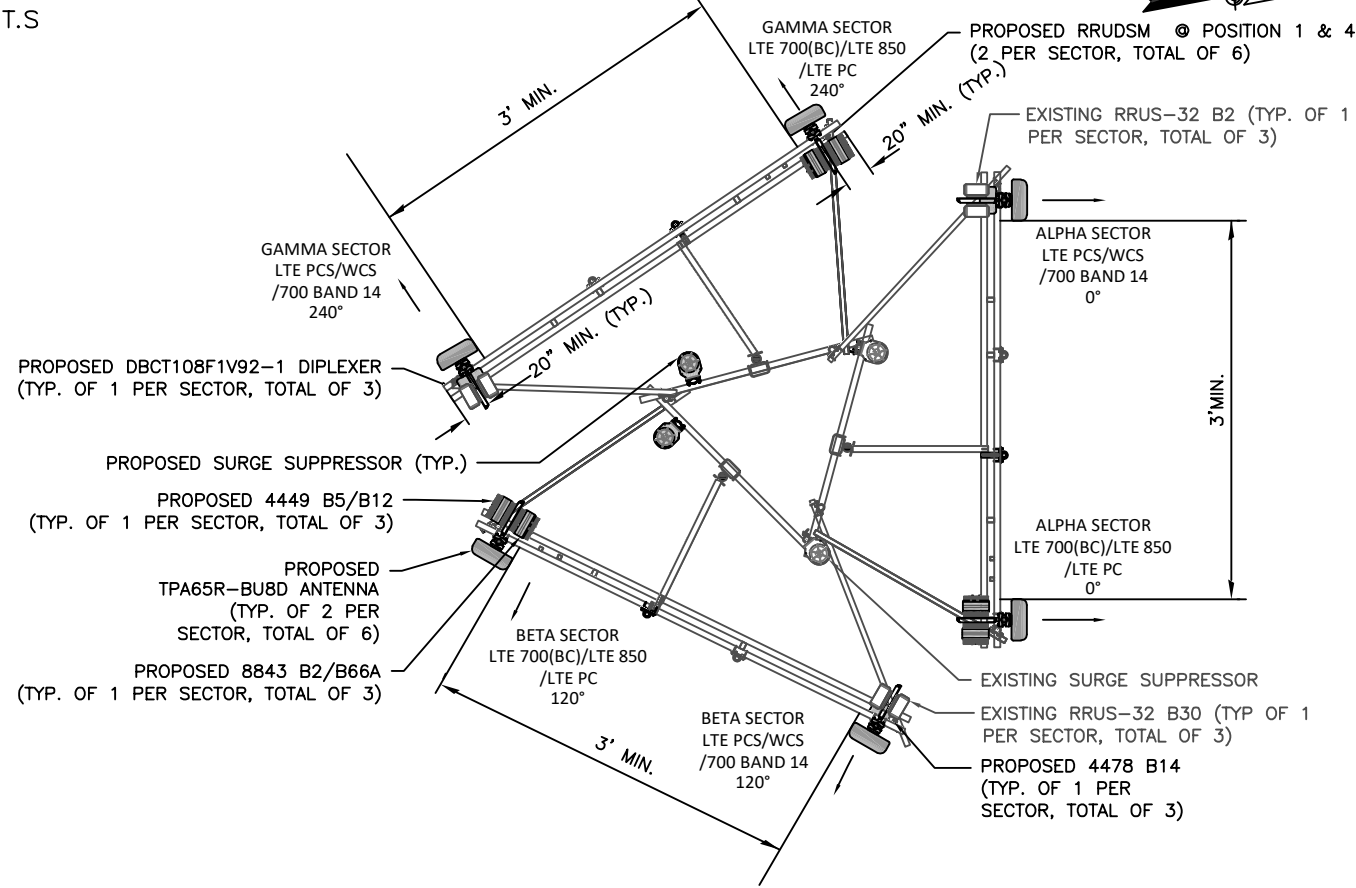
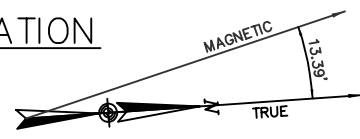
- NOTES:**
1. REFERENCE STRUCTURAL ANALYSIS BY OTHERS FOR FURTHER INFORMATION REGARDING THE CAPACITY OF THE EXISTING STRUCTURE TO SUPPORT THIS EQUIPMENT UPGRADE.
  2. REFERENCE LATEST MOUNT STRUCTURAL ANALYSIS BY CENTERLINE COMMUNICATIONS FOR REQUIRED MODIFICATIONS TO SUPPORT THIS EQUIPMENT UPGRADE.
  3. REFER TO THE FINAL RF DATA SHEET FOR FINAL ANTENNA SETTINGS.



**ENLARGED ANTENNA ELEVATION**  
 SCALE: N.T.S



**EXISTING ANTENNA CONFIGURATION**  
 SCALE: N.T.S



**PROPOSED ANTENNA CONFIGURATION**  
 SCALE: N.T.S



REVISIONS		
NO.	DATE	DESCRIPTION
4	5/21/20	CONSTRUCTION REVISED
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 APPROVED BY: DC



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SITE ADDRESS:	2 VOLUNTEER DRIVE WINDSOR LOCKS, CT 06096
PROJECT TYPE:	LTE 5C, 6C, BWE, 5G NR, 4C & RETROFIT
SHEET TITLE:	ANTENNA LAYOUT & ELEVATIONS
DRAWING #:	A-2
REVISION:	3



ANTENNA SCHEDULE											
SECTOR	EXISTING/ PROPOSED	BAND	ANTENNA	SIZE (INCHES) (L x W x D)	ANTENNA HEIGHT	AZIMUTH	TMA/ DIPLEXER	RRU	SIZE ( INCHES) (L x W x D)	FEEDER	RAYCAP
A1	PROPOSED	LTE PCS/WCS/700 BAND 14	TPA65R-B U8D	96.0x21.0x7.8	±164'	0°	(1) DBCT108F1V92 -1	(P) (1) 4478 B14 RRUS (E) (1) RRUS-32 B2 (E) (1) RRUS-32 B30	18.1x13.4x8.26 27.2x12.2x7.0 26.7x12.1x6.7	(3) 1-5/8"Ø COAX (220'± LENGTH)	--
A2	-	-	-	-	-	-	-	-	-	(E) (2) DC POWER & (1) FIBER	(E) (1) RAYCAP DC6-48-60-18-8F
A3	-	-	-	-	-	-	-	-	-	-	-
A4	PROPOSED	LTE 700(BC)/LTE 850/LTE PC	TPA65R-B U8D	96.0x21.0x7.8	±164'	0°	-	(P) (1) 4449 B5/B12 RRUS (P) (1) 8843 B2/B66A	15x13.2x10.4 14.9x13.2x10.9	-	-
B1	PROPOSED	LTE PCS/WCS/700 BAND 14	TPA65R-B U8D	96.0x21.0x7.8	±164'	120°	(1) DBCT108F1V92 -1	(P) (1) 4478 B14 RRUS (E) (1) RRUS-32 B2 (E) (1) RRUS-32 B30	18.1x13.4x8.26 27.2x12.2x7.0 26.7x12.1x6.7	(3) 1-5/8"Ø COAX (220'± LENGTH)	--
B2	-	-	-	-	-	-	-	-	-	(E) (2) DC POWER & (1) FIBER	(E) (1) RAYCAP DC6-48-60-18-8F
B3	-	-	-	-	-	-	-	-	-	-	-
B4	PROPOSED	LTE 700(BC)/LTE 850/LTE PC	TPA65R-B U8D	96.0x21.0x7.8	±164'	120°	-	(P) (1) 4449 B5/B12 RRUS (P) (1) 8843 B2/B66A	15x13.2x10.4 14.9x13.2x10.9	-	-
C1	PROPOSED	LTE PCS/WCS/700 BAND 14	TPA65R-B U8D	96.0x21.0x7.8	±164'	240°	(1) DBCT108F1V92 -1	(P) (1) 4478 B14 RRUS (E) (1) RRUS-32 B2 (E) (1) RRUS-32 B30	18.1x13.4x8.26 27.2x12.2x7.0 26.7x12.1x6.7	(3) 1-5/8"Ø COAX (220'± LENGTH)	--
C2	-	-	-	-	-	-	-	-	-	(P) (4) DC POWER	(P) (2) RAYCAP DC6-48-60-18-8C-EV
C3	-	-	-	-	-	-	-	-	-	-	-
C4	PROPOSED	LTE 700(BC)/LTE 850/LTE PC	TPA65R-B U8D	96.0x21.0x7.8	±164'	240°	-	(P) (1) 4449 B5/B12 RRUS (P) (1) 8843 B2/B66A	15x13.2x10.4 14.9x13.2x10.9	-	-

RRU CHART				
QUANTITY	MODEL	L	W	D
3(P)	4478 B14	18.1"	13.4"	8.3"
3(P)	4449 B5/B12	15.0"	13.2"	10.4"
3(P)	8843 B2/B66A	14.9"	13.2"	10.9"
3(E)	RRUS-32 B2	27.2"	12.2"	7.0"
3(E)	RRUS-32 B30	26.7"	12.1"	6.7"

NOTE:  
MOUNT PER MANUFACTURER'S SPECIFICATIONS.

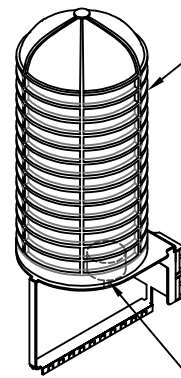


REFER TO THE FINAL RFDS AND TABLE  
FOR THE PROPOSED RRUS MODEL,  
QUANTITY, AND DIMENSIONS

RRUS DETAIL  
N.T.S.

NOTES:

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2. REFERENCE LATEST MOUNT STRUCTURAL ANALYSIS BY CENTERLINE COMMUNICATIONS FOR REQUIRED MODIFICATIONS TO SUPPORT THIS EQUIPMENT UPGRADE.
3. REFER TO THE FINAL RF DATA SHEET FOR FINAL ANTENNA SETTINGS.

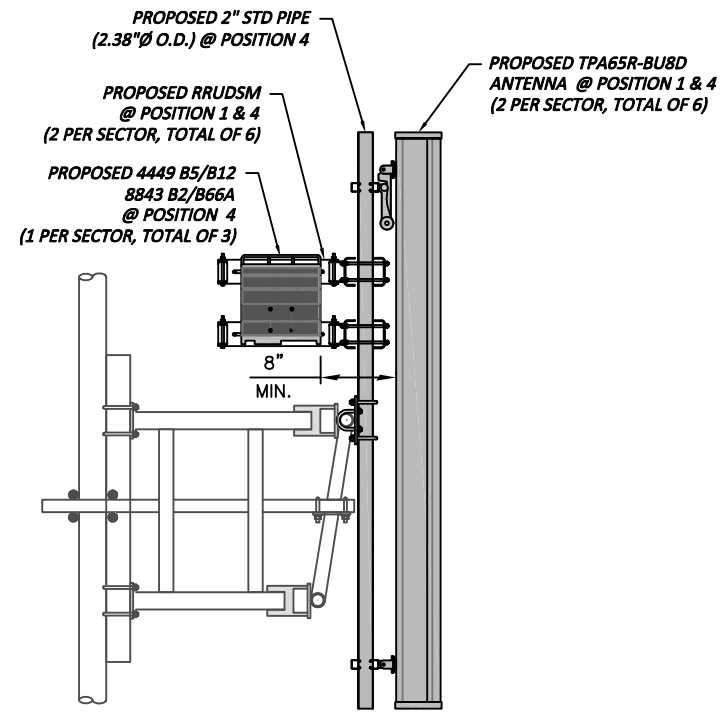


PROPOSED /EXISTING  
SURGE SUPPRESSOR  
MODEL NUMBERS:  
DC6-48-60-18-8F  
DC6-48-60-18-8C-EV  
DIMENSIONS:  
L24.0"x11"Ø

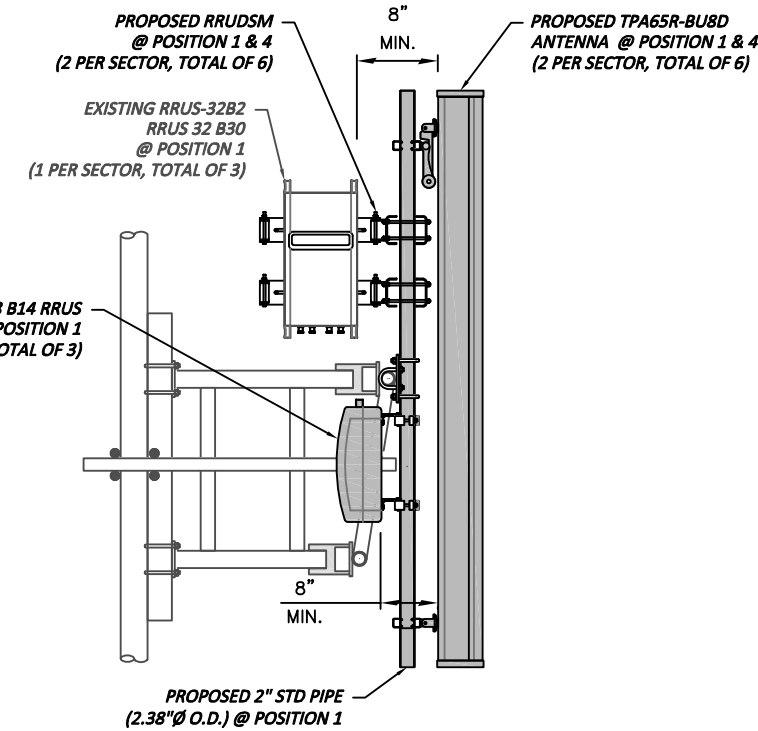
NOTE:  
MOUNT PER  
MANUFACTURER'S  
SPECIFICATIONS

STRIKESORB 30-V1  
SURGE PROTECTIVE DEVICE

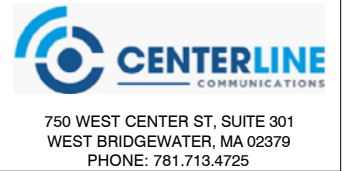
DC SURGE SUPPRESSOR DETAIL  
N.T.S.



ANTENNA & RRU MOUNTING DETAIL  
N.T.S.



ANTENNA & RRU MOUNTING DETAIL  
N.T.S.



REVISIONS		
NO.	DATE	DESCRIPTION
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SITE NUMBER:	CT5270
SITE ADDRESS:	2 VOLUNTEER DRIVE WINDSOR LOCKS, CT 06096
PROJECT TYPE:	LTE 5C, 6C, BWE, 5G NR, 4C & RETROFIT
SHEET TITLE:	DETAILS
DRAWING #:	A-3
REVISION:	3



**STRUCTURAL NOTES:**

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

**SPECIAL INSPECTIONS (REFERENCE IBC CHAPTER 17):**

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

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

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

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

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

**NOTES:**

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

**NOTES:**

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



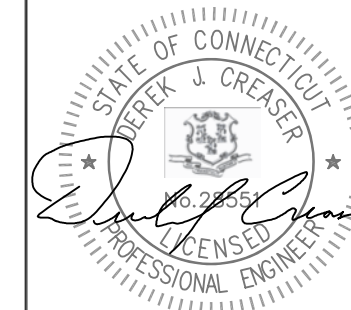
at&t MOBILITY CORP.  
500 ENTERPRISE DRIVE  
ROCKY HILL, CT 06067



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

REVISIONS		
NO.	DATE	DESCRIPTION
4	5/21/20	CONSTRUCTION REVISED
3	5/11/20	CONSTRUCTION REVISED
2	3/30/20	ISSUED FOR CONSTRUCTION
1	3/25/20	ISSUED FOR PERMITTING
0.	2/21/20	ISSUED FOR REVIEW

DESIGNED BY: BPC	APPROVED BY: DC
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SITE NAME:	WINDSOR LOCKS
SITE NUMBER:	CT5270
SITE ADDRESS:	2 VOLUNTEER DRIVE WINDSOR LOCKS, CT 06096
PROJECT TYPE:	LTE 5C, 6C, BWE, 5G NR, 4C & RETROFIT
SHEET TITLE:	STRUCTURAL NOTES
DRAWING #:	SN-1
REVISION:	3



at&t MOBILITY CORP.  
500 ENTERPRISE DRIVE  
ROCKY HILL, CT 06067

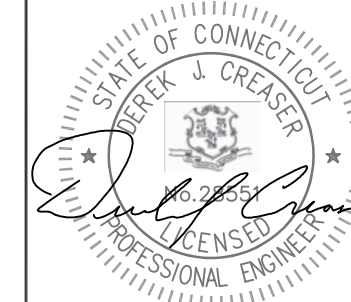


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REVISIONS

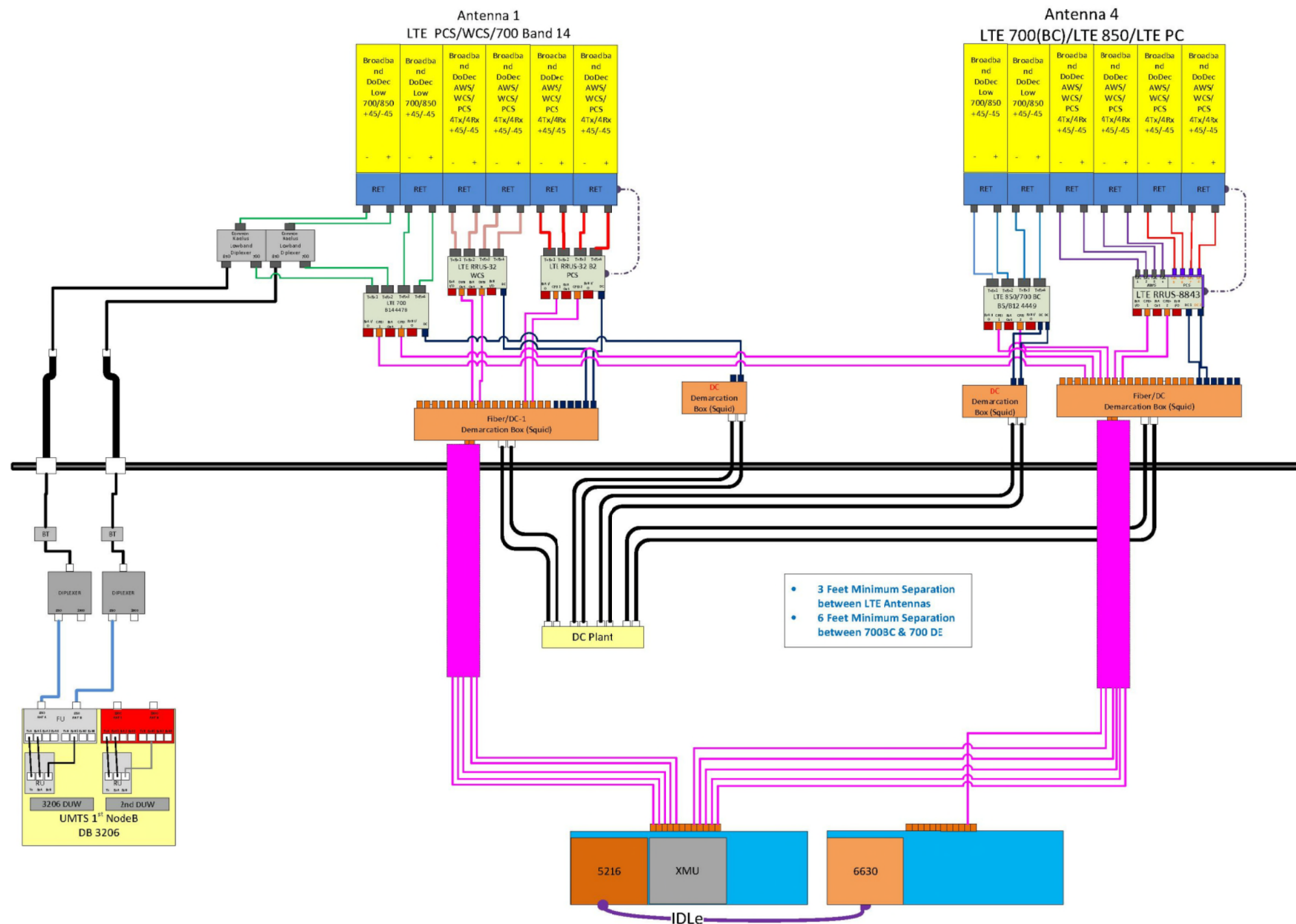
NO.	DATE	DESCRIPTION
4	5/21/20	CONSTRUCTION REVISED
3	5/11/20	CONSTRUCTION REVISED
2	3/30/20	ISSUED FOR CONSTRUCTION
1	3/25/20	ISSUED FOR PERMITTING
0	2/21/20	ISSUED FOR REVIEW

DESIGNED BY: BPC  
APPROVED BY: DC



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SITE NAME:	WINDSOR LOCKS
SITE NUMBER:	CT5270
SITE ADDRESS:	2 VOLUNTEER DRIVE WINDSOR LOCKS, CT 06096
PROJECT TYPE:	LTE 5C, 6C, BWE, 5G NR, 4C & RETROFIT
SHEET TITLE:	RF PLUMBING DIAGRAM
DRAWING #:	RF-1
REVISION #:	3



PLUMBING DIAGRAM  
N.T.S.



at&t MOBILITY CORP.  
500 ENTERPRISE DRIVE  
ROCKY HILL, CT 06067

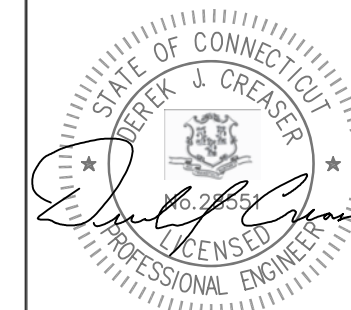


750 WEST CENTER ST, SUITE 301  
WEST BRIDGEWATER, MA 02379  
PHONE: 781.713.4725

REVISIONS

NO.	DATE	DESCRIPTION
4	5/21/20	CONSTRUCTION REVISED
3	5/11/20	CONSTRUCTION REVISED
2	3/30/20	ISSUED FOR CONSTRUCTION
1	3/25/20	ISSUED FOR PERMITTING
0.	2/21/20	ISSUED FOR REVIEW

DESIGNED BY: BPC  
APPROVED BY: DC



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SITE NAME: WINDSOR LOCKS

SITE NUMBER: CT5270

SITE ADDRESS: 2 VOLUNTEER DRIVE  
WINDSOR LOCKS, CT 06096

PROJECT TYPE: LTE 5C, 6C, BWE, 5G NR, 4C & RETROFIT

SHEET TITLE: GROUNDING DETAILS

DRAWING #: G-1 REVISION: 3

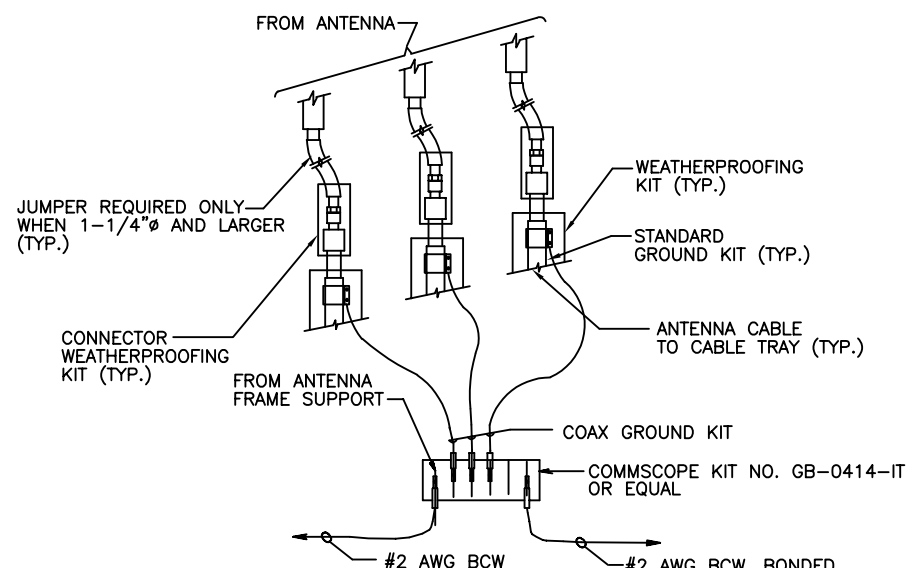
EACH GROUND CONDUCTOR TERMINATING ON ANY GROUND BAR SHALL HAVE AN IDENTIFICATION TAG ATTACHED AT EACH END THAT WILL IDENTIFY ITS ORIGIN AND DESTINATION.

SECTION "P" - SURGE PRODUCERS

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

SECTION "A" - SURGE ABSORBERS

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

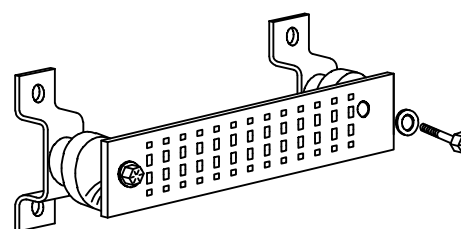


NOTE:

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

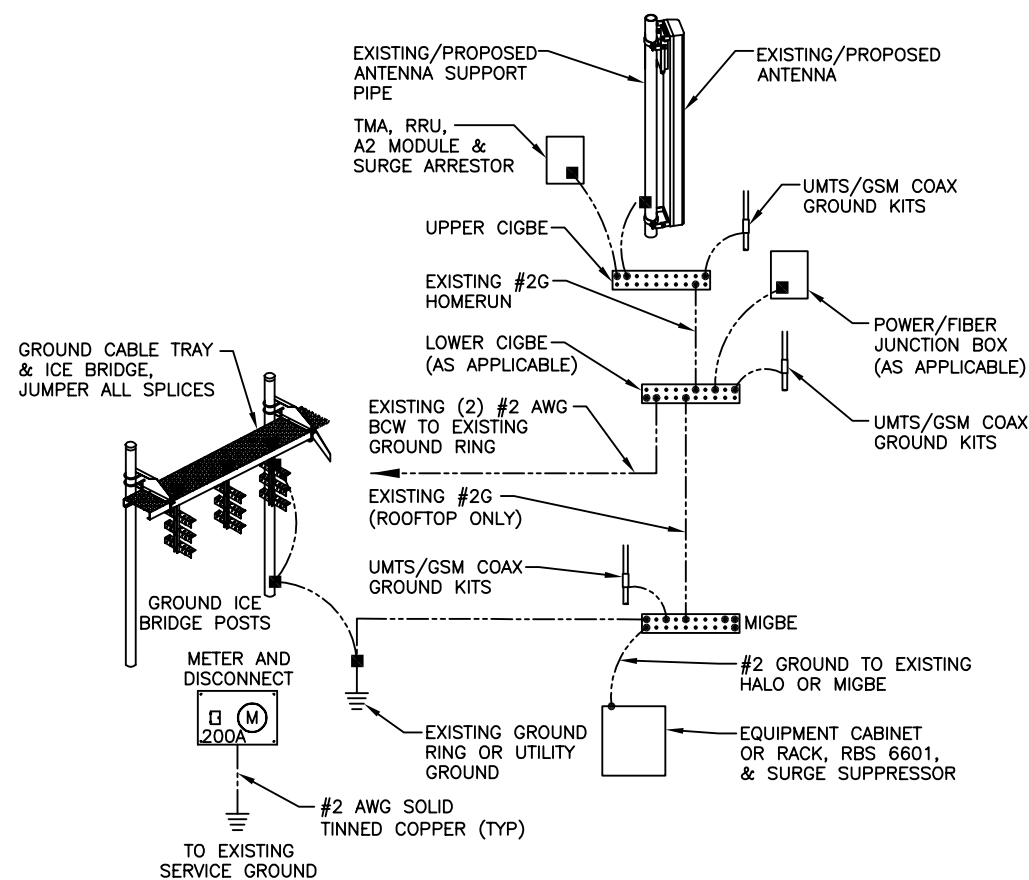
GROUNDING RISER DIAGRAM

N.T.S.



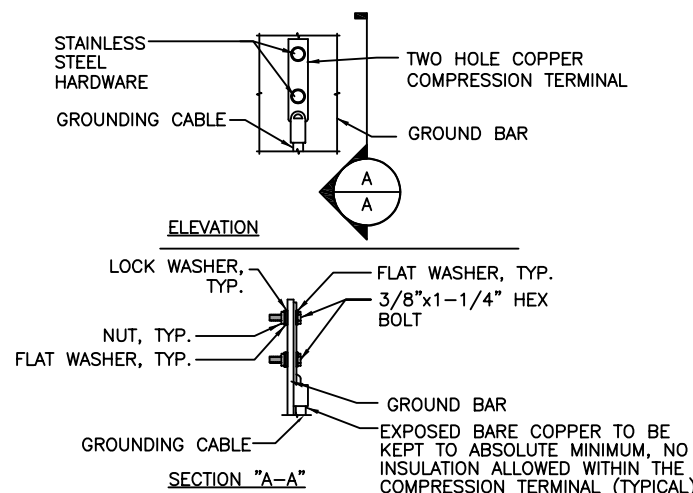
GROUND BAR DETAIL

N.T.S.



GROUNDING RISER DIAGRAM

N.T.S.



ELEVATION

SECTION "A-A"

NOTE:

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

GROUND BAR CONNECTION DETAIL

N.T.S.

## EXHIBIT 3



## Revised Mount Analysis Report

<b>Site Name</b>	Windsor Locks (CT5270)
<b>Site Number</b>	CT5270
<b>Project</b>	LTE BWE, 6C, 7C, 4TX4RX & 5G NR
<b>Pace ID</b>	5C-MRCTB045479, 6C-MRCTB045512, BWE-MRCTB045489, 5G NR-MRCTB045535, 4C-MRCTB045541 & 4TX4RX-MRCTB045525
<b>PTN</b>	2051A0T1NQ, 2051A0T1RH, 2051A0T1L2, 2051A0T1KH, 2051A0T1SG & 2051A0T1P2
<b>Site Location</b>	2 Volunteer Drive Windsor Locks, CT, 06096 41.9278 N, -72.6475 W
<b>Design Codes</b>	TIA-222-H Standards International Building Code 2018 Connecticut State Building Code 2018
<b>Mount Centerline</b>	164 ft.
<b>Mount Classification</b>	Sector Mounts

	<b>Stress Ratio</b>	<b>Overall Result</b>
<b>Existing Mount</b>	99%	PASS

**Client:**

at&t Mobility Corp.  
 500 Enterprise Drive  
 Rocky Hill, CT 06067



**Date: 5/15/2020 (Rev.1)**  
 2/21/2020



**Scope of Work:**

Centerline Communications was authorized by AT&T to perform a mount analysis of the existing sector mounts to determine their capacity to support the proposed and existing AT&T equipment listed in this report. This mount was analyzed using RAM Elements version 16.1.0.

**Proposed Appurtenances:**

**Alpha Sector:**

Elevation (ft)	Position #	Azimuth	Quantity	Appurtenance
164	1	0°	1	<b>CCI TPA65R-BU8D</b>
164	4	0°	1	<b>CCI TPA65R-BU8D</b>
164	-	0°	1	DC6-48-60-0-8CEV Squid (Tower)
164	4	0°	1	<b>Ericsson RRUS 4449 B5/12</b>
164	1	0°	1	<b>Ericsson RRUS 4478 B14</b>
164	4	0°	1	<b>Ericsson RRUS-8843 B2/B66A</b>
164	1	0°	1	Ericsson RRUS-32 B2
164	1	0°	1	Ericsson RRUS-32 B30
164	4	0°	1	<b>DBCT108F1V92-1 Diplexer</b>

**Beta Sector:**

Elevation (ft)	Position #	Azimuth	Quantity	Appurtenance
164	1	120°	1	<b>CCI TPA65R-BU8D</b>
164	4	120°	1	<b>CCI TPA65R-BU8D</b>
164	4	120°	1	<b>Ericsson RRUS 4449 B5/12</b>
164	1	120°	1	<b>Ericsson RRUS 4478 B14</b>
164	4	120°	1	<b>Ericsson RRUS-8843 B2/B66A</b>
164	1	120°	1	Ericsson RRUS-32 B2
164	1	120°	1	Ericsson RRUS-32 B30
164	4	120°	1	<b>DBCT108F1V92-1 Diplexer</b>
164	-	120°	1	DC6-48-60-0-8CEV Squid (Tower)

**Proposed Appurtenances (Cont.):**

**Gamma Sector:**

Elevation (ft)	Position #	Azimuth	Quantity	Appurtenance
164	1	240°	1	CCI TPA65R-BU8D
164	4	240°	1	CCI TPA65R-BU8D
164	4	240°	1	Ericsson RRUS 4449 B5/12
164	1	240°	1	Ericsson RRUS 4478 B14
164	4	240°	1	Ericsson RRUS-8843 B2/B66A
164	1	240°	1	Ericsson RRUS-32 B2
164	1	240°	1	Ericsson RRUS-32 B30
164	4	240°	1	DBCT108F1V92-1 Diplexer
164	-	240°	2	DC6-48-60-0-8CEV Squid (Tower)

**Design Criteria:**

**Design Codes:**

TIA-222-H Standards  
 International Building Code 2018  
 ASCE 7-16  
 Massachusetts State Building Code 9th Edition

Wind Speed	125 mph
Wind Speed with Ice	50 mph
Ice Thickness	1.5 in.
Exposure Category	B
Topographic Category	1
Structure Classification	II
Importance Factor	1
Site Soil Class (assumed)	D – Stiff Soil
Seismic Design Category	B
Spectral Response Acceleration Parameter at a Short Periods, $S_s$	0.175
Spectral Response Acceleration Parameter at a Period of 1 Second, $S_1$	0.055
Short Period Site Coefficient, $F_A$	1.6
Long Period Site Coefficient, $F_V$	2.4

**\*See calculations for additional design criteria.**

**Conclusion:**

The results of the analysis concluded that the existing AT&T mounts *is capable* of supporting the proposed and existing AT&T equipment loading with the following recommendation:

- **Install the new antennas 20" minimum from the end of the mount at each side.**

	<b>Stress Ratio</b>	<b>Overall Result</b>
<b>Existing Mount</b>	<b>99%</b>	<b>PASS</b>

**Reference Documents:**

- Structural Analysis Report by Hudson Design Group dated 05/18/2018.
- Construction Drawings by Hudson Design Group dated 05/23/2018.

**Assumptions and Limitations:**

- The calculations performed by Centerline Communications are limited to the structural members in these calculations only.
- Structural calculations in this report do not check the adequacy of the supporting tower, other mounts, or coax mounting attachments.



Design Calculations



## Location

Elevation 115 ft with respect to North American  
Vertical Datum of 1988 (NAVD 88)

Lat: 41.927792

Long: -72.647499

Standard: ASCE/SEI 7-16

Risk  
Category: II

Soil  
Class: D - Stiff Soil

## REPORT SUMMARY

### Wind

Wind Speed	116 Vmph
10-year MRI	75 Vmph
25-year MRI	83 Vmph
50-year MRI	90 Vmph
100-year MRI	96 Vmph

### Seismic

SS	0.175
S1	0.055
Fa	1.6
Fv	2.4
SMS	0.28
SM1	0.131
SDS	0.187
SD1	0.087
TL	6
PGA	0.092
PGAM	0.147
FPGA	1.6
Ie	1
Cv	0.7
Seismic Design Category	B

### Ice

Thickness	1.50 in.
Concurrent Temperature	5 F
Gust Speed	50 mph

SITE NUMBER: CT52570  
 SITE NAME: Windsor Locks  
 DATE: 5/15/2020  
 BY: LP CHECKED BY: DC



**ANSI/TIA-222-H WIND CALCULATIONS:**

**Design Criteria:**

Height above ground level at the base of the structure, z=	164	ft	
Mean elevation of base of structure above sea level, z <sub>s</sub> =	115	ft	(ASCE7 Hazard Tool)
Height of structure, h=	195	ft	
Basic Wind Speed, V (mph) =	125		(CSBC 2018)
30 mph Wind Speed, V <sub>30</sub> (mph) =	30		(Section 16)
Basic Wind Speed with ice, V <sub>i</sub> (mph) =	50		(Annex B, Figure B-9)
Max. Design Ice Thickness, t <sub>i</sub> (in.)=	1.5		(Annex B, Figure B-9)
Exposure Category =	B		(2.6.5.1)
Topographic Category =	1		(2.6.6.2.1)
Risk Category	II		(Table 2-1)
Wind Direction Prob. Factor, K <sub>d</sub> =	0.95		(Table 2-2)
Importance Factor, I =	1		(Table 2-3)
Velocity Pressure Coefficient, K <sub>z</sub> =	1.14		(2.6.5.2)
Topographic Factor, K <sub>zt</sub> =	1		(2.6.6.2.1)
Rooftop Wind Speed-Up Factor, K <sub>s</sub> =	1		(2.6.7)
Ground Elevation Factor, K <sub>e</sub> =	1.00		(2.6.8)
Gust Effect Factor G <sub>h</sub> =	1		(2.6.9)
Factored thickness of radial glazed ice at z, t <sub>iz</sub> =	1.76	in	(2.6.10)

**Calculate Velocity Pressure:**

$$q_z = 0.00256 K_z K_{zt} K_s K_e K_d V^2 \text{ (lb/ft}^2\text{)} \quad (2.6.11.6)$$

q<sub>z</sub> = **43.07**

q<sub>z(30)}</sub> = **2.48**

**Calculate Velocity Pressure with Ice:**

$$q_{zi} = 0.00256 K_z K_{zt} K_s K_e K_d V^2 \text{ (lb/ft}^2\text{)} \quad (2.6.11.6)$$

q<sub>zi</sub> = **6.89**

SITE NUMBER: CT52570  
 SITE NAME: Windsor Locks  
 DATE: 5/15/2020  
 BY: LP CHECKED BY: DC



**ANSI/TIA-222-H WIND CALCULATIONS (Cont.):**

**Appurtenance/Equipment Properties:**

Appurtenance/Equip.	Height (in)	Width (in)	Depth (in)	Normal Flat Area (ft <sup>2</sup> )	Aspect Ratio	Force Coef., C <sub>a</sub>	Side Flat Area (ft <sup>2</sup> )	Aspect Ratio	Force Coef., C <sub>a</sub>	EPA Normal Flat Area (ft <sup>2</sup> )	EPA Side Flat Area (ft <sup>2</sup> )
TPA-65R-BU8DA Antenna	96.00	21.00	7.80	14.00	4.57	1.29	5.20	12.31	1.58	18.06	8.22
DBCT108F1V92-1 Diplexer	10.71	6.77	7.14	0.50	1.58	1.20	0.53	1.50	1.20	0.60	0.64
4449 B5/B12 RRU	14.96	13.19	10.43	1.37	1.13	1.20	1.08	1.43	1.20	1.64	1.30
4478 B14 RRU	18.10	13.40	8.26	1.68	1.35	1.20	1.04	2.19	1.20	2.02	1.25
8843 RRU	14.90	13.20	10.90	1.37	1.13	1.20	1.13	1.37	1.20	1.64	1.35
RRUS 32 B2	27.20	12.10	7.00	2.29	2.25	1.20	1.32	3.89	1.26	2.74	1.67
RRUS 32 B30	26.70	12.10	6.70	2.24	2.21	1.20	1.24	3.99	1.27	2.69	1.58
DC6-48-60-18-8F Squid	24.00	9.70	9.70	1.62	2.47	0.70	1.62	2.47	0.70	1.13	1.13
DC6-48-60-18-8C-EV Squid	24.00	9.70	9.70	1.62	2.47	0.70	1.62	2.47	0.70	1.13	1.13

**Appurtenance/Equipment Properties with Ice:**

$t_{iz}$  (in) = 1.76

Appurtenance/Equip.	Height w/ice (in)	Width w/ice (in)	Depth w/ice (in)	Normal Flat Area (ft <sup>2</sup> )	Aspect Ratio	Force Coef., C <sub>a</sub>	Side Flat Area (ft <sup>2</sup> )	Aspect Ratio	Force Coef., C <sub>a</sub>	EPA Normal Flat Area (ft <sup>2</sup> )	EPA Side Flat Area (ft <sup>2</sup> )
TPA-65R-BU8DA Antenna	99.52	24.52	11.32	16.95	4.06	1.27	7.82	8.79	1.46	21.52	11.42
DBCT108F1V92-1 Diplexer	14.23	10.29	10.66	1.02	1.38	1.20	1.05	1.33	1.20	1.22	1.26
4449 B5/B12 RRU	18.48	16.71	13.95	2.14	1.11	1.20	1.79	1.32	1.20	2.57	2.15
4478 B14 RRU	21.62	16.92	11.78	2.54	1.28	1.20	1.77	1.84	1.20	3.05	2.12
8843 RRU	18.42	16.72	14.42	2.14	1.10	1.20	1.84	1.28	1.20	2.57	2.21
RRUS 32 B2	30.72	15.62	10.52	3.33	1.97	1.20	2.24	2.92	1.22	4.00	2.74
RRUS 32 B30	30.22	15.62	10.22	3.28	1.93	1.20	2.15	2.96	1.22	3.93	2.62
DC6-48-60-18-8F Squid	27.52	13.22	13.22	2.53	2.08	0.70	2.53	2.08	0.70	1.77	1.77
DC6-48-60-18-8C-EV Squid	27.52	13.22	13.22	2.53	2.08	0.70	2.53	2.08	0.70	1.77	1.77

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**ANSI/TIA-222-H WIND CALCULATIONS (Cont.):**

**Calculate Design Wind Force on Appurtenances:**

$$(EPA)_A = k_a ((EPA)_N * \cos^2(\omega) + (EPA)_T * \sin^2(\omega)) \quad (\text{Section 2.6.11.2})$$

$$k_a = 0.9$$

$$F = q_z G_n (EPA)_A \quad (2.6.9.2)$$

Appurtenance/Equip.	Wind Direction								
	0° & 180°			30° & 210°			60° & 240°		
	F (lbs.)	F <sub>ice</sub> (lbs.)	F <sub>30</sub> (lbs.)	F (lbs.)	F <sub>ice</sub> (lbs.)	F <sub>30</sub> (lbs.)	F (lbs.)	F <sub>ice</sub> (lbs.)	F <sub>30</sub> (lbs.)
TPA-65R-BU8DA Antenna	700	133	40	605	118	35	414	86	24
DBCT108F1V92-1 Diplexer	23	8	1	24	8	1	24	8	1
4449 B5/B12 RRU	64	16	4	60	15	3	54	14	3
4478 B14 RRU	78	19	5	71	17	4	56	15	3
8843 RRU	64	16	4	61	15	3	55	14	3
RRUS 32 B2	106	25	6	96	23	6	75	19	4
RRUS 32 B30	104	24	6	94	22	5	72	18	4
DC6-48-60-18-8F Squid	44	11	3	44	11	3	44	11	3
DC6-48-60-18-8C-EV Squid	44	11	3	44	11	3	44	11	3

Appurtenance/Equip.	Wind Direction								
	90° & 270°			120° & 300°			150° & 330°		
	F (lbs.)	F <sub>ice</sub> (lbs.)	F <sub>30</sub> (lbs.)	F (lbs.)	F <sub>ice</sub> (lbs.)	F <sub>30</sub> (lbs.)	F (lbs.)	F <sub>ice</sub> (lbs.)	F <sub>30</sub> (lbs.)
TPA-65R-BU8DA Antenna	318	71	18	414	86	24	605	118	35
DBCT108F1V92-1 Diplexer	25	8	1	24	8	1	24	8	1
4449 B5/B12 RRU	50	13	3	54	14	3	60	15	3
4478 B14 RRU	48	13	3	56	15	3	71	17	4
8843 RRU	52	14	3	55	14	3	61	15	3
RRUS 32 B2	65	17	4	75	19	4	96	23	6
RRUS 32 B30	61	16	4	72	18	4	94	22	5
DC6-48-60-18-8F Squid	44	11	3	44	11	3	44	11	3
DC6-48-60-18-8C-EV Squid	44	11	3	44	11	3	44	11	3

SITE NUMBER: CT52570  
 SITE NAME: Windsor Locks  
 DATE: 5/15/2020  
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**ANSI/TIA-222-H WIND CALCULATIONS (Cont.):**

**Calculate Design Wind Force on Mounting Members:**

Mount Member	Height (in)	Width (in)	Normal Flat Area (ft <sup>2</sup> )	Aspect Ratio	Force Coef., C <sub>a</sub>	EPA Normal Flat Area (ft <sup>2</sup> )
2 STD Pipe	2.38	12.00	0.20	0.20	1.20	0.24
4 STD Pipe	4.50	12.00	0.38	0.38	1.20	0.45

Mount Member	Height w/ice (in)	Width (in)	Normal Flat Area (ft <sup>2</sup> )	Aspect Ratio	Force Coef., C <sub>a</sub>	EPA Normal Flat Area (ft <sup>2</sup> )
2 STD Pipe	5.90	12.00	0.49	0.49	1.20	0.59
4 STD Pipe	8.02	12.00	0.67	0.67	1.20	0.80

Mount Member	F (lbs.)	F <sub>ice</sub> (lbs.)	F <sub>30</sub> (lbs.)
2 STD Pipe	10	4	1
4 STD Pipe	19	6	1

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**ICE LOAD CALCULATIONS:**

Unit Weight of Glaze Ice (lb/ft<sup>3</sup>) = 56

Factored thickness of radial glazed ice at z, t<sub>iz</sub> (in) = 1.76

Appurtenances/Equip.	Height w/ice (in)	Width w/ice (in)	Depth w/ice (in)	Weight (lbs.)	Weight of Ice (lbs.)	Total Weight (lbs.)
TPA-65R-BU8DA Antenna	99.52	24.52	11.32	82.50	385.82	468.32
DBCT108F1V92-1 Diplexer	14.23	10.29	10.66	28.70	33.83	62.53
4449 B5/B12 RRU	18.48	16.71	13.95	73.00	72.95	145.95
4478 B14 RRU	21.62	16.92	11.78	59.40	74.77	134.17
8843 RRU	18.42	16.72	14.42	72.00	74.49	146.49
RRUS 32 B2	30.72	15.62	10.52	53.00	88.98	141.98
RRUS 32 B30	30.22	15.62	10.22	60.00	86.24	146.24
DC6-48-60-18-8F Squid	27.52	13.22	13.22	33.00	82.74	115.74
DC6-48-60-18-8C-EV Squid	27.52	13.22	13.22	33.00	82.74	115.74

**Member Properties for:** **Pipe 2 STD**

Outside Diameter, OD = 2.375 in.  
 Inside Diameter, ID = 2.070 in.  
 Nominal Wall Thickness, t = 0.154 in.

**Design Parameters:**

Ice Height Factor, k <sub>iz</sub> =	1.17		K <sub>iz</sub> = (z/33) <sup>0.10</sup>
Design Ice Thickness, t <sub>iz</sub> =	1.76	in.	t <sub>iz</sub> = t <sub>i</sub> * I * K <sub>iz</sub> * (K <sub>zt</sub> ) <sup>0.35</sup>
Density of Ice, I <sub>d</sub> =	56	pcf	I <sub>d</sub> = (assumed = 56 pcf)
Weight of Ice (for t <sub>iz</sub> ) W <sub>i</sub> =	8.22	psf	W <sub>i</sub> = (t <sub>iz</sub> /12) I <sub>d</sub>

**Ice Load on Circumscribing Diameter of Member per Code:**

Circumscribing Dia., D <sub>c</sub> =	2.38	in.	D <sub>c</sub> = OD
Area of Ice (for t <sub>iz</sub> ), A <sub>i</sub> =	22.88	in <sup>2</sup>	A <sub>i</sub> = π * t <sub>iz</sub> * (D <sub>c</sub> + t <sub>iz</sub> )
Unif. Distributed Ice Load, w <sub>i</sub> =	8.90	plf	w <sub>i</sub> = (A <sub>i</sub> /144) * I <sub>d</sub>

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**ICE LOAD CALCULATIONS (Cont.):**

<b>Member Properties for:</b>		<b>Pipe 4 STD</b>	
Outside Diameter, OD =	4.500	in.	
Inside Diameter, ID =	4.030	in.	
Nominal Wall Thickness, t =	0.237	in.	
<b>Design Parameters:</b>			
Ice Height Factor, $k_{iz}$ =	1.17		$K_{iz} = (z/33)^{0.10}$
Design Ice Thickness, $t_{iz}$ =	1.76	in.	$t_{iz} = t_i * I * K_{iz} * (K_{st})^{0.35}$
Density of Ice, $I_d$ =	56	pcf	$I_d = (\text{assumed} = 56 \text{ pcf})$
Weight of Ice (for $t_{iz}$ ), $W_i$ =	8.22	psf	$W_i = (t_{iz}/12) I_d$
<b>Ice Load on Circumscribing Diameter of Member per Code:</b>			
Circumscribing Dia., $D_c$ =	4.50	in.	$D_c = OD$
Area of Ice (for $t_{iz}$ ), $A_i$ =	34.63	in <sup>2</sup>	$A_i = \pi * t_{iz} * (D_c + t_{iz})$
Unif. Distributed Ice Load, $w_i$ =	13.47	plf	$w_i = (A_i/144) * I_d$



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**ANSI/TIA-222-H SEISMIC CALCULATIONS:**

**Design Spectral Response Acceleration Parameters: (Reference ASCE 7 Hazards Report)**

Site Soil Class: **D-Stiff Soil** (Assumed)

Importance Factor, I = **1**

Spectral Response Acceleration Parameter at Short Periods,  $S_s$  = **0.175**

Spectral Response Acceleration Parameter at a Period of 1 Second,  $S_1$  = **0.055**

Short Period Site Coefficient,  $F_a$  = **1.6**

Long Period Site Coefficient,  $F_v$  = **2.4**

Design Spectral Response Acceleration Parameter at Short Periods,  $S_{DS}$  = **0.187**

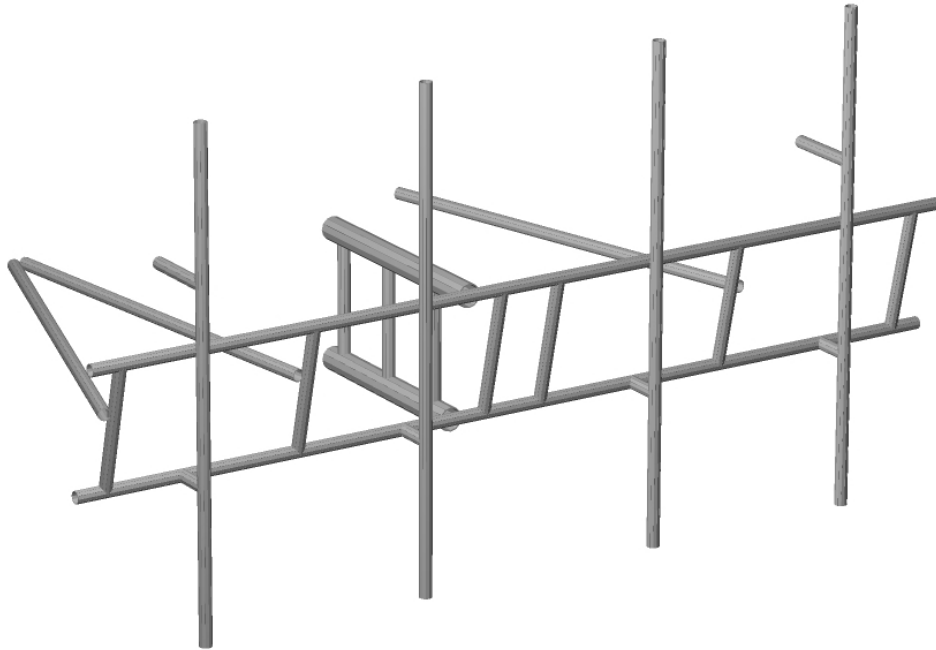
Design Spectral Response Acceleration Parameter at a Period of 1 Second,  $S_{D1}$  = **0.087**

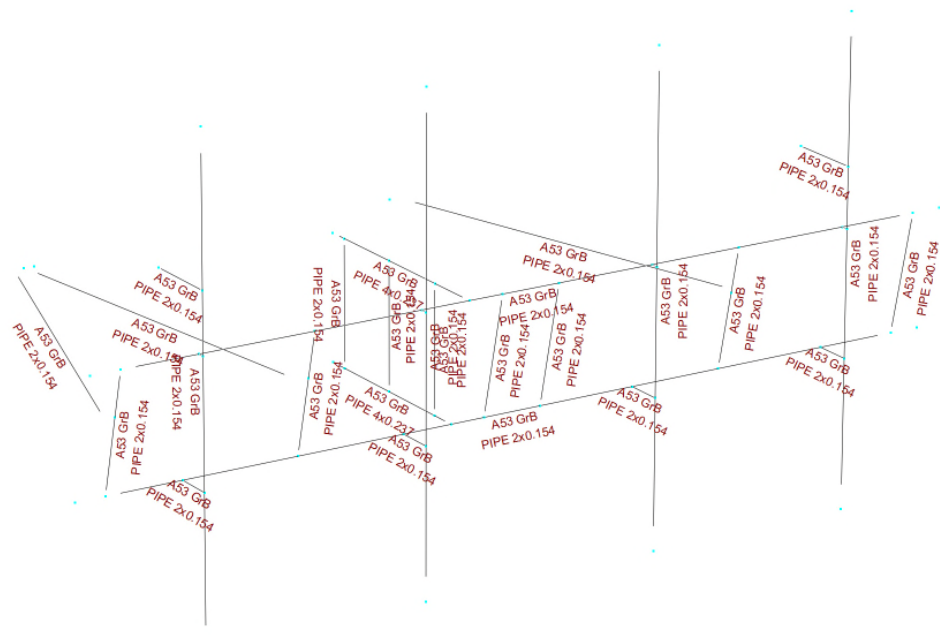
Appurtenances/Equip.	Weight (lbs.)	$E_v$ (lbs.)	$E_H$ (lbs.)
TPA-65R-BU8DA Antenna	82.50	3.09	7.71
DBCT108F1V92-1 Diplexer	28.70	1.07	2.68
4449 B5/B12 RRU	73.00	2.73	6.83
4478 B14 RRU	59.40	2.22	5.55
8843 RRU	72.00	2.69	6.73
RRUS 32 B2	53.00	1.98	4.96
RRUS 32 B30	60.00	2.24	5.61
DC6-48-60-18-8F Squid	33.00	1.23	3.09
DC6-48-60-18-8C-EV Squid	33.00	1.23	3.09

Mount Member	Weight (lbs./ft)	$E_v$ (lbs./ft)	$E_H$ (lbs./ft)
2 STD Pipe	3.66	0.14	0.34
4 STD Pipe	10.80	0.40	1.01

Existing Mount Results









Current Date: 5/15/2020 8:41 AM

Units system: English

File name: C:\Users\Lee Peringer\Centerline Communications\Derek Creaser - Centerline Engineering\Projects\AT&T\NEW ENGLAND\CT\CT5270 - WINDSOR LOCKS, 2 VOLUNTEER DRIVE - SST\LTE 5C\Structural\Working Files\RAM\Rev.1\CT5270 Tower-Rev1.ret

## Geometry data

### GLOSSARY

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

### Nodes

Node	X [in]	Y [in]	Z [in]	Rigid Floor
2	-13.00	-25.00	-6.00	0
4	-90.00	0.00	0.00	0
6	-90.00	-25.00	-6.00	0
7	84.00	0.00	0.00	0
8	84.00	-25.00	-6.00	0
9	45.00	0.00	0.00	0
10	45.00	-25.00	-6.00	0
11	6.00	0.00	0.00	0
12	6.00	-25.00	-6.00	0
13	-84.00	0.00	0.00	0
14	-84.00	-25.00	-6.00	0
15	-45.00	0.00	0.00	0
17	-6.00	0.00	0.00	0
18	-6.00	-25.00	-6.00	0
19	68.00	0.00	0.00	0
21	26.00	0.00	0.00	0
23	-68.50	0.00	0.00	0
25	68.00	0.00	1.50	0
26	26.00	0.00	1.50	0
27	-68.50	0.00	1.50	0
28	68.00	41.50	1.50	0

29	26.00	41.50	1.50	0
30	-68.50	41.50	1.50	0
31	68.00	-54.50	1.50	0
32	26.00	-54.50	1.50	0
33	-68.50	-54.50	1.50	0
34	-13.00	0.00	-46.50	0
35	-13.00	-25.00	-46.50	0
36	-13.00	0.00	-42.50	0
37	-13.00	-25.00	-42.50	0
38	-13.00	0.00	-27.00	0
39	-13.00	-25.00	-27.00	0
40	-13.00	0.00	-11.50	0
41	-13.00	-25.00	-11.50	0
42	90.00	0.00	0.00	0
43	90.00	-25.00	-6.00	0
47	-23.00	0.00	0.00	0
49	-23.00	0.00	1.50	0
50	-23.00	41.50	1.50	0
51	-23.00	-54.50	1.50	0
53	45.00	-9.375	-2.25	0
54	-45.00	-25.00	-6.00	0
60	-13.00	0.00	0.00	0
61	22.25	-9.375	-83.50	0
62	-55.00	-9.375	-83.50	0
77	-57.25	-9.375	-83.50	0
64	-45.00	-9.375	-2.25	0
65	68.00	12.00	1.50	0
66	68.00	12.00	-13.50	0
67	-68.50	12.00	1.50	0
68	-68.50	12.00	-13.50	0
69	-68.50	-25.00	-6.00	0
70	-68.50	-25.00	1.50	0
71	-23.00	-25.00	-6.00	0
72	-23.00	-25.00	1.50	0
73	26.00	-25.00	-6.00	0
74	26.00	-25.00	1.50	0
75	68.00	-25.00	-6.00	0
76	68.00	-25.00	1.50	0
78	-84.00	-9.375	-2.25	0

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## Restraints

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Node	TX	TY	TZ	RX	RY	RZ
34	1	1	1	1	1	1
35	1	1	1	1	1	1
61	1	1	1	0	0	0
62	1	1	1	0	0	0
77	1	1	1	0	0	0

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## Members

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Member	NJ	NK	Description	Section	Material	d0 [in]	dL [in]	Ig factor
3	4	42	Horz. Pipe	PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
4	6	43	Horz. Pipe	PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
5	30	33	Antenna Pipe	PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
6	50	51	Antenna Pipe	PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
7	29	32	Antenna Pipe	PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
8	28	31	Antenna Pipe	PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
9	27	23	link	PIPE 2x0.154	A36 (weightless)	0.00	0.00	0.00
10	49	47	link	PIPE 2x0.154	A36 (weightless)	0.00	0.00	0.00
11	26	21	link	PIPE 2x0.154	A36 (weightless)	0.00	0.00	0.00
12	25	19	link	PIPE 2x0.154	A36 (weightless)	0.00	0.00	0.00
17	13	14	Mount Brace	PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
19	17	18	Mount Brace	PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
20	11	12	Mount Brace	PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
21	9	10	Mount Brace	PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
22	7	8	Mount Brace	PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
23	60	34	standoff horz.	PIPE 4x0.237	A53 GrB	0.00	0.00	0.00
24	2	35	standoff horz.	PIPE 4x0.237	A53 GrB	0.00	0.00	0.00
25	40	41	Standoff Brace	PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
26	38	39	Standoff Brace	PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
27	36	37	Standoff Brace	PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
28	53	61	tie back	PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
31	54	15	Mount Brace	PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
32	62	64	tie back	PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
33	65	66	RRU Rack	PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
34	67	68	RRU Rack	PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
35	69	70	Link	PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
36	71	72	Link	PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
37	73	74	Link	PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
38	75	76	Link	PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
39	77	78	tie back	PIPE 2x0.154	A53 GrB	0.00	0.00	0.00

### Rigid end offsets

Member	DJX [in]	DJY [in]	DJZ [in]	DKX [in]	DKY [in]	DKZ [in]
28	2.00	0.00	0.00	2.00	0.00	0.00
32	-2.00	0.00	0.00	-2.00	0.00	0.00
39	-2.00	0.00	0.00	-2.00	0.00	0.00

### Hinges

Member	Node-J				Node-K				TOR	AXL	Axial rigidity
	M33	M22	V3	V2	M33	M22	V3	V2			
28	0	1	0	0	0	0	0	0	0	0	Full
32	0	0	0	0	0	1	0	0	0	0	Full
39	0	0	0	0	0	1	0	0	0	0	Full



Current Date: 5/15/2020 8:42 AM

Units system: English

File name: C:\Users\Lee Peringer\Centerline Communications\Derek Creaser - Centerline Engineering\Projects\AT&T\NEW ENGLAND\CT\CT5270 - WINDSOR LOCKS, 2 VOLUNTEER DRIVE - SST\LTE 5C\Structural\Working Files\RAM\Rev.1\CT5270 Tower-Rev1.ret

## Load data

### GLOSSARY

Comb : Indicates if load condition is a load combination

### Load Conditions

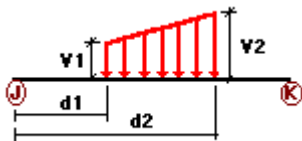
Condition	Description	Comb.	Category
DL	Dead Load	No	DL
W1	Wind Load (0, 180 degrees)	No	WIND
W2	Wind Load (30, 150, 210, 330 degrees)	No	WIND
W3	Wind Load (60, 120, 240, 300 degrees)	No	WIND
W4	Wind Load (90, 270 degrees)	No	WIND
Di	Ice Load	No	LL
Wi1	Ice Wind Load (0, 180 degrees)	No	WIND
Wi2	Ice Wind Load (30, 150, 210, 330 Degrees)	No	WIND
Wi3	Ice Wind Load (60, 120, 240, 300 Degrees)	No	WIND
Wi4	Ice Wind Load (90, 270 degrees)	No	WIND
w1	Wind Load 30 mph (0, 180 degrees)	No	WIND
w2	Wind Load 30 mph (30, 150, 210, 330 Degrees)	No	WIND
w3	Wind Load 30 mph (60, 120, 240, 300 Degrees)	No	WIND
w4	Wind Load 30 mph (90, 270 degrees)	No	WIND
Ev	Vertical Seismic Load	No	EQ
Ehx	Horizontal Seismic Load - X-Direction	No	EQ
Ehz	Horizontal Seismic Load - Z-Direction	No	EQ
SL1	Service Live Load at Position 1 (500lb)	No	LL
SL2	Service Live Load at Position 2 (500lb)	No	LL
SL3	Service Live Load at Position 3 (500lb)	No	LL
SL4	Service Live Load at Position 4 (500lb)	No	LL
SLC	Service Live Load at Center of Mount (250lb)	No	LL
SLE1	Service Live Load at End of Mount (250lb)	No	LL
SLE2	Service Live Load at End of Mount (250lb)	No	LL
LC1	1.2DL+W1	Yes	
LC2	1.2DL+W2	Yes	
LC3	1.2DL+W3	Yes	
LC4	1.2DL+W4	Yes	
LC5	1.2DL-W1	Yes	
LC6	1.2DL-W2	Yes	
LC7	1.2DL-W3	Yes	
LC8	1.2DL-W4	Yes	
LC9	0.9DL+W1	Yes	
LC10	0.9DL+W2	Yes	
LC11	0.9DL+W3	Yes	
LC12	0.9DL+W4	Yes	
LC13	0.9DL-W1	Yes	
LC14	0.9DL-W2	Yes	
LC15	0.9DL-W3	Yes	
LC16	0.9DL-W4	Yes	
LC17	1.2DL+Di+Wi1	Yes	
LC18	1.2DL+Di+Wi2	Yes	
LC19	1.2DL+Di+Wi3	Yes	
LC20	1.2DL+Di+Wi4	Yes	



LC21	1.2DL+Di-Wi1	Yes
LC22	1.2DL+Di-Wi2	Yes
LC23	1.2DL+Di-Wi3	Yes
LC24	1.2DL+Di-Wi4	Yes
LC25	1.4DL	Yes
LC26	1.2DL+1.5SLC	Yes
LC27	1.2DL+1.5SLE1	Yes
LC28	1.2DL+1.5SLE2	Yes
LC29	1.2DL+w1+1.5SL1	Yes
LC30	1.2DL+w2+1.5SL1	Yes
LC31	1.2DL+w3+1.5SL1	Yes
LC32	1.2DL+w4+1.5SL1	Yes
LC33	1.2DL-w1+1.5SL1	Yes
LC34	1.2DL-w2+1.5SL1	Yes
LC35	1.2DL-w3+1.5SL1	Yes
LC36	1.2DL-w4+1.5SL1	Yes
LC37	1.2DL+w1+1.5SL2	Yes
LC38	1.2DL+w2+1.5SL2	Yes
LC39	1.2DL+w3+1.5SL2	Yes
LC40	1.2DL+w4+1.5SL2	Yes
LC41	1.2DL-w1+1.5SL2	Yes
LC42	1.2DL-w2+1.5SL2	Yes
LC43	1.2DL-w3+1.5SL2	Yes
LC44	1.2DL-w4+1.5SL2	Yes
LC45	1.2DL+w1+1.5SL3	Yes
LC46	1.2DL+w2+1.5SL3	Yes
LC47	1.2DL+w3+1.5SL3	Yes
LC48	1.2DL+w4+1.5SL3	Yes
LC49	1.2DL-w1+1.5SL3	Yes
LC50	1.2DL-w2+1.5SL3	Yes
LC51	1.2DL-w3+1.5SL3	Yes
LC52	1.2DL-w4+1.5SL3	Yes
LC53	1.2DL+w1+1.5SL4	Yes
LC54	1.2DL+w2+1.5SL4	Yes
LC55	1.2DL+w3+1.5SL4	Yes
LC56	1.2DL+w4+1.5SL4	Yes
LC57	1.2DL-w1+1.5SL4	Yes
LC58	1.2DL-w2+1.5SL4	Yes
LC59	1.2DL-w3+1.5SL4	Yes
LC60	1.2DL-w4+1.5SL4	Yes
LC61	1.2DL+Ev+Ehx	Yes
LC62	0.9DL-Ev+Ehx	Yes
LC63	1.2DL+Ev+Ehz	Yes
LC64	0.9DL-Ev+Ehz	Yes

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### Distributed force on members



Condition	Member	Dir1	Val1 [Kip/ft]	Val2 [Kip/ft]	Dist1 [in]	%	Dist2 [in]	%
W1	3	Z	-0.01	-0.01	0.00	Yes	100.00	Yes
	4	Z	-0.01	-0.01	0.00	Yes	100.00	Yes
	6	Z	-0.01	-0.01	0.00	No	100.00	Yes
	7	Z	-0.01	-0.01	0.00	No	100.00	Yes
	19	Z	-0.01	-0.01	0.00	Yes	100.00	Yes
	20	Z	-0.01	-0.01	0.00	Yes	100.00	Yes
	21	Z	-0.01	-0.01	0.00	Yes	100.00	Yes
	25	Z	-0.01	-0.01	0.00	Yes	100.00	Yes
	28	Z	-0.01	-0.01	0.00	Yes	100.00	Yes
	31	Z	-0.01	-0.01	0.00	Yes	100.00	Yes
	32	Z	-0.01	-0.01	0.00	Yes	100.00	Yes
	39	Z	-0.01	-0.01	0.00	Yes	100.00	Yes
W2	3	X	-0.01	-0.01	0.00	Yes	100.00	Yes
	4	X	-0.01	-0.01	0.00	Yes	100.00	Yes
	5	X	-0.01	-0.01	0.00	Yes	100.00	Yes
	6	X	-0.01	-0.01	0.00	Yes	100.00	Yes
	7	X	-0.01	-0.01	0.00	Yes	100.00	Yes
	8	X	-0.01	-0.01	0.00	Yes	100.00	Yes
	17	X	-0.01	-0.01	0.00	Yes	100.00	Yes
	19	X	-0.01	-0.01	0.00	Yes	100.00	Yes
	20	X	-0.01	-0.01	0.00	Yes	100.00	Yes
	21	X	-0.01	-0.01	0.00	Yes	100.00	Yes
	22	X	-0.01	-0.01	0.00	Yes	100.00	Yes
	23	X	-0.019	-0.019	0.00	Yes	100.00	Yes
	24	X	-0.019	-0.019	0.00	Yes	100.00	Yes
	25	X	-0.01	-0.01	0.00	Yes	100.00	Yes
	26	X	-0.01	-0.01	0.00	Yes	100.00	Yes
	27	X	-0.01	-0.01	0.00	Yes	100.00	Yes
	28	X	-0.01	-0.01	0.00	Yes	100.00	Yes
	31	X	-0.01	-0.01	0.00	Yes	100.00	Yes
	32	X	-0.01	-0.01	0.00	Yes	100.00	Yes
	35	X	-0.01	-0.01	0.00	Yes	100.00	Yes
36	X	-0.01	-0.01	0.00	Yes	100.00	Yes	
37	X	-0.01	-0.01	0.00	Yes	100.00	Yes	
38	X	-0.01	-0.01	0.00	Yes	100.00	Yes	
39	X	-0.01	-0.01	0.00	Yes	100.00	Yes	
W3	3	Z	-0.01	-0.01	0.00	Yes	100.00	Yes
	4	Z	-0.01	-0.01	0.00	Yes	100.00	Yes
	5	Z	-0.01	-0.01	0.00	Yes	100.00	Yes
	6	Z	-0.01	-0.01	0.00	Yes	100.00	Yes
	7	Z	-0.01	-0.01	0.00	Yes	100.00	Yes
	8	Z	-0.01	-0.01	0.00	Yes	100.00	Yes
	17	Z	-0.01	-0.01	0.00	Yes	100.00	Yes
	19	Z	-0.01	-0.01	0.00	Yes	100.00	Yes
	20	Z	-0.01	-0.01	0.00	Yes	100.00	Yes
	21	Z	-0.01	-0.01	0.00	Yes	100.00	Yes
	22	Z	-0.01	-0.01	0.00	Yes	100.00	Yes
	23	Z	-0.019	-0.019	0.00	Yes	100.00	Yes
	24	Z	-0.019	-0.019	0.00	Yes	100.00	Yes
	25	Z	-0.01	-0.01	0.00	Yes	100.00	Yes
	26	Z	-0.01	-0.01	0.00	Yes	100.00	Yes
	27	Z	-0.01	-0.01	0.00	Yes	100.00	Yes
	28	Z	-0.01	-0.01	0.00	Yes	100.00	Yes
	31	Z	-0.01	-0.01	0.00	Yes	100.00	Yes
	32	Z	-0.01	-0.01	0.00	Yes	100.00	Yes
	35	Z	-0.01	-0.01	0.00	Yes	100.00	Yes
36	Z	-0.01	-0.01	0.00	Yes	100.00	Yes	
37	Z	-0.01	-0.01	0.00	Yes	100.00	Yes	
38	Z	-0.01	-0.01	0.00	Yes	100.00	Yes	
39	Z	-0.01	-0.01	0.00	Yes	100.00	Yes	

W4	5	X	-0.01	-0.01	0.00	Yes	100.00	Yes		
	6	X	-0.01	-0.01	0.00	Yes	100.00	Yes		
	7	X	-0.01	-0.01	0.00	Yes	100.00	Yes		
	8	X	-0.01	-0.01	0.00	Yes	100.00	Yes		
	17	X	-0.01	-0.01	0.00	Yes	100.00	Yes		
	19	X	-0.01	-0.01	0.00	Yes	100.00	Yes		
	20	X	-0.01	-0.01	0.00	Yes	100.00	Yes		
	21	X	-0.01	-0.01	0.00	Yes	100.00	Yes		
	22	X	-0.01	-0.01	0.00	Yes	100.00	Yes		
	23	X	-0.019	-0.019	0.00	Yes	100.00	Yes		
	24	X	-0.019	-0.019	0.00	Yes	100.00	Yes		
	25	X	-0.01	-0.01	0.00	Yes	100.00	Yes		
	26	X	-0.01	-0.01	0.00	Yes	100.00	Yes		
	27	X	-0.01	-0.01	0.00	Yes	100.00	Yes		
	28	X	-0.01	-0.01	0.00	Yes	100.00	Yes		
	31	X	-0.01	-0.01	0.00	Yes	100.00	Yes		
	32	X	-0.01	-0.01	0.00	Yes	100.00	Yes		
	35	X	-0.01	-0.01	0.00	Yes	100.00	Yes		
	36	X	-0.01	-0.01	0.00	Yes	100.00	Yes		
	37	X	-0.01	-0.01	0.00	Yes	100.00	Yes		
	38	X	-0.01	-0.01	0.00	Yes	100.00	Yes		
	39	X	-0.01	-0.01	0.00	Yes	100.00	Yes		
	Di	3	Y	-0.0089	-0.0089	0.00	Yes	100.00	Yes	
		4	Y	-0.0089	-0.0089	0.00	Yes	100.00	Yes	
		5	Y	-0.0089	-0.0089	0.00	Yes	100.00	Yes	
		6	Y	-0.0089	-0.0089	0.00	Yes	100.00	Yes	
		7	Y	-0.0089	-0.0089	0.00	Yes	100.00	Yes	
		8	Y	-0.0089	-0.0089	0.00	Yes	100.00	Yes	
		17	Y	-0.0089	-0.0089	0.00	Yes	100.00	Yes	
		19	Y	-0.0089	-0.0089	0.00	Yes	100.00	Yes	
		20	Y	-0.0089	-0.0089	0.00	Yes	100.00	Yes	
		21	Y	-0.0089	-0.0089	0.00	Yes	100.00	Yes	
		22	Y	-0.0089	-0.0089	0.00	Yes	100.00	Yes	
		23	Y	-0.0135	-0.0135	0.00	Yes	100.00	Yes	
		24	Y	-0.0135	-0.0135	0.00	Yes	100.00	Yes	
		25	Y	-0.0089	-0.0089	0.00	Yes	100.00	Yes	
		26	Y	-0.0089	-0.0089	0.00	Yes	100.00	Yes	
		27	Y	-0.0089	-0.0089	0.00	Yes	100.00	Yes	
		28	Y	-0.0089	-0.0089	0.00	Yes	100.00	Yes	
31		Y	-0.0089	-0.0089	0.00	Yes	100.00	Yes		
32		Y	-0.0089	-0.0089	0.00	Yes	100.00	Yes		
35		Y	-0.0089	-0.0089	0.00	Yes	100.00	Yes		
36		Y	-0.0089	-0.0089	0.00	Yes	100.00	Yes		
37		Y	-0.0089	-0.0089	0.00	Yes	100.00	Yes		
38		Y	-0.0089	-0.0089	0.00	Yes	100.00	Yes		
39		Y	-0.0089	-0.0089	0.00	Yes	100.00	Yes		
Wi1		3	Z	-0.004	-0.004	0.00	Yes	100.00	Yes	
		4	Z	-0.004	-0.004	0.00	Yes	100.00	Yes	
		6	Z	-0.004	-0.004	0.00	Yes	100.00	Yes	
		7	Z	-0.004	-0.004	0.00	Yes	100.00	Yes	
		19	Z	-0.004	-0.004	0.00	Yes	100.00	Yes	
		20	Z	-0.004	-0.004	0.00	Yes	100.00	Yes	
		21	Z	-0.004	-0.004	0.00	Yes	100.00	Yes	
		25	Z	-0.004	-0.004	0.00	Yes	100.00	Yes	
		28	Z	-0.004	-0.004	0.00	Yes	100.00	Yes	
		31	Z	-0.004	-0.004	0.00	Yes	100.00	Yes	
		32	Z	-0.004	-0.004	0.00	Yes	100.00	Yes	
		39	Z	-0.004	-0.004	0.00	Yes	100.00	Yes	
		Wi2	3	X	-0.004	-0.004	0.00	Yes	100.00	Yes
			4	X	-0.004	-0.004	0.00	Yes	100.00	Yes

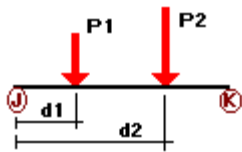


	28	X	-0.004	-0.004	0.00	Yes	100.00	Yes
	31	X	-0.004	-0.004	0.00	Yes	100.00	Yes
	32	X	-0.004	-0.004	0.00	Yes	100.00	Yes
	35	X	-0.004	-0.004	0.00	Yes	100.00	Yes
	36	X	-0.004	-0.004	0.00	Yes	100.00	Yes
	37	X	-0.004	-0.004	0.00	Yes	100.00	Yes
	38	X	-0.004	-0.004	0.00	Yes	100.00	Yes
	39	X	-0.004	-0.004	0.00	Yes	100.00	Yes
wl1	3	Z	-0.001	-0.001	0.00	Yes	100.00	Yes
	4	Z	-0.001	-0.001	0.00	Yes	100.00	Yes
	6	Z	-0.001	-0.001	0.00	No	100.00	Yes
	7	Z	-0.001	-0.001	0.00	No	100.00	Yes
	19	Z	-0.001	-0.001	0.00	Yes	100.00	Yes
	20	Z	-0.001	-0.001	0.00	Yes	100.00	Yes
	21	Z	-0.001	-0.001	0.00	Yes	100.00	Yes
	25	Z	-0.001	-0.001	0.00	Yes	100.00	Yes
	28	Z	-0.001	-0.001	0.00	Yes	100.00	Yes
	31	Z	-0.001	-0.001	0.00	Yes	100.00	Yes
	32	Z	-0.001	-0.001	0.00	Yes	100.00	Yes
	39	Z	-0.001	-0.001	0.00	Yes	100.00	Yes
wl2	3	X	-0.001	-0.001	0.00	Yes	100.00	Yes
	4	X	-0.001	-0.001	0.00	Yes	100.00	Yes
	5	X	-0.001	-0.001	0.00	Yes	100.00	Yes
	6	X	-0.001	-0.001	0.00	Yes	100.00	Yes
	7	X	-0.001	-0.001	0.00	Yes	100.00	Yes
	8	X	-0.001	-0.001	0.00	Yes	100.00	Yes
	17	X	-0.001	-0.001	0.00	Yes	100.00	Yes
	19	X	-0.001	-0.001	0.00	Yes	100.00	Yes
	20	X	-0.001	-0.001	0.00	Yes	100.00	Yes
	21	X	-0.001	-0.001	0.00	Yes	100.00	Yes
	22	X	-0.001	-0.001	0.00	Yes	100.00	Yes
	23	X	-0.001	-0.001	0.00	Yes	100.00	Yes
	24	X	-0.001	-0.001	0.00	Yes	100.00	Yes
	25	X	-0.001	-0.001	0.00	Yes	100.00	Yes
	26	X	-0.001	-0.001	0.00	Yes	100.00	Yes
	27	X	-0.001	-0.001	0.00	Yes	100.00	Yes
	28	X	-0.001	-0.001	0.00	Yes	100.00	Yes
	31	X	-0.001	-0.001	0.00	Yes	100.00	Yes
	32	X	-0.001	-0.001	0.00	Yes	100.00	Yes
	35	X	-0.001	-0.001	0.00	Yes	100.00	Yes
	36	X	-0.001	-0.001	0.00	Yes	100.00	Yes
	37	X	-0.001	-0.001	0.00	Yes	100.00	Yes
	38	X	-0.001	-0.001	0.00	Yes	100.00	Yes
	39	X	-0.001	-0.001	0.00	Yes	100.00	Yes
wl3	3	Z	-0.001	-0.001	0.00	Yes	100.00	Yes
	4	Z	-0.001	-0.001	0.00	Yes	100.00	Yes
	5	Z	-0.001	-0.001	0.00	Yes	100.00	Yes
	6	Z	-0.001	-0.001	0.00	Yes	100.00	Yes
	7	Z	-0.001	-0.001	0.00	Yes	100.00	Yes
	8	Z	-0.001	-0.001	0.00	Yes	100.00	Yes
	17	Z	-0.001	-0.001	0.00	Yes	100.00	Yes
	19	Z	-0.001	-0.001	0.00	Yes	100.00	Yes
	20	Z	-0.001	-0.001	0.00	Yes	100.00	Yes
	21	Z	-0.001	-0.001	0.00	Yes	100.00	Yes
	22	Z	-0.001	-0.001	0.00	Yes	100.00	Yes
	23	Z	-0.001	-0.001	0.00	Yes	100.00	Yes
	24	Z	-0.001	-0.001	0.00	Yes	100.00	Yes
	25	Z	-0.001	-0.001	0.00	Yes	100.00	Yes
	26	Z	-0.001	-0.001	0.00	Yes	100.00	Yes
	27	Z	-0.001	-0.001	0.00	Yes	100.00	Yes

	28	Z	-0.001	-0.001	0.00	Yes	100.00	Yes
	31	Z	-0.001	-0.001	0.00	Yes	100.00	Yes
	32	Z	-0.001	-0.001	0.00	Yes	100.00	Yes
	35	Z	-0.001	-0.001	0.00	Yes	100.00	Yes
	36	Z	-0.001	-0.001	0.00	Yes	100.00	Yes
	37	Z	-0.001	-0.001	0.00	Yes	100.00	Yes
	38	Z	-0.001	-0.001	0.00	Yes	100.00	Yes
	39	Z	-0.001	-0.001	0.00	Yes	100.00	Yes
wl4	5	X	-0.001	-0.001	0.00	Yes	100.00	Yes
	6	X	-0.001	-0.001	0.00	Yes	100.00	Yes
	7	X	-0.001	-0.001	0.00	Yes	100.00	Yes
	8	X	-0.001	-0.001	0.00	Yes	100.00	Yes
	17	X	-0.001	-0.001	0.00	Yes	100.00	Yes
	19	X	-0.001	-0.001	0.00	Yes	100.00	Yes
	20	X	-0.001	-0.001	0.00	Yes	100.00	Yes
	21	X	-0.001	-0.001	0.00	Yes	100.00	Yes
	22	X	-0.001	-0.001	0.00	Yes	100.00	Yes
	23	X	-0.001	-0.001	0.00	Yes	100.00	Yes
	24	X	-0.001	-0.001	0.00	Yes	100.00	Yes
	25	X	-0.001	-0.001	0.00	Yes	100.00	Yes
	26	X	-0.001	-0.001	0.00	Yes	100.00	Yes
	27	X	-0.001	-0.001	0.00	Yes	100.00	Yes
	28	X	-0.001	-0.001	0.00	Yes	100.00	Yes
	31	X	-0.001	-0.001	0.00	Yes	100.00	Yes
	32	X	-0.001	-0.001	0.00	Yes	100.00	Yes
	35	X	-0.001	-0.001	0.00	Yes	100.00	Yes
	36	X	-0.001	-0.001	0.00	Yes	100.00	Yes
	37	X	-0.001	-0.001	0.00	Yes	100.00	Yes
	38	X	-0.001	-0.001	0.00	Yes	100.00	Yes
	39	X	-0.001	-0.001	0.00	Yes	100.00	Yes
Ev	3	Y	-0.0001	-0.0001	0.00	Yes	100.00	Yes
	4	Y	-0.0001	-0.0001	0.00	Yes	100.00	Yes
	5	Y	-0.0001	-0.0001	0.00	Yes	100.00	Yes
	6	Y	-0.0001	-0.0001	0.00	Yes	100.00	Yes
	7	Y	-0.0001	-0.0001	0.00	Yes	100.00	Yes
	8	Y	-0.0001	-0.0001	0.00	Yes	100.00	Yes
	9	Y	-0.0001	-0.0001	0.00	Yes	100.00	Yes
	10	Y	-0.0001	-0.0001	0.00	Yes	100.00	Yes
	11	Y	-0.0001	-0.0001	0.00	Yes	100.00	Yes
	12	Y	-0.0001	-0.0001	0.00	Yes	100.00	Yes
	17	Y	-0.0001	-0.0001	0.00	Yes	100.00	Yes
	19	Y	-0.0001	-0.0001	0.00	Yes	100.00	Yes
	20	Y	-0.0001	-0.0001	0.00	Yes	100.00	Yes
	21	Y	-0.0001	-0.0001	0.00	Yes	100.00	Yes
	22	Y	-0.0001	-0.0001	0.00	Yes	100.00	Yes
	23	Y	-0.0004	-0.0004	0.00	Yes	100.00	Yes
	24	Y	-0.0004	-0.0004	0.00	Yes	100.00	Yes
	25	Y	-0.0001	-0.0001	0.00	Yes	100.00	Yes
	26	Y	-0.0001	-0.0001	0.00	Yes	100.00	Yes
	27	Y	-0.0001	-0.0001	0.00	Yes	100.00	Yes
	28	Y	-0.0001	-0.0001	0.00	Yes	100.00	Yes
	31	Y	-0.0001	-0.0001	0.00	Yes	100.00	Yes
	32	Y	-0.0001	-0.0001	0.00	Yes	100.00	Yes
	35	Y	-0.0001	-0.0001	0.00	Yes	100.00	Yes
	36	Y	-0.0001	-0.0001	0.00	Yes	100.00	Yes
	37	Y	-0.0001	-0.0001	0.00	Yes	100.00	Yes
	38	Y	-0.0001	-0.0001	0.00	Yes	100.00	Yes
	39	Y	-0.0001	-0.0001	0.00	Yes	100.00	Yes
Ehx	3	X	-0.0003	-0.0003	0.00	Yes	100.00	Yes
	4	X	-0.0003	-0.0003	0.00	Yes	100.00	Yes

	5	X	-0.0003	-0.0003	0.00	Yes	100.00	Yes
	6	X	-0.0003	-0.0003	0.00	Yes	100.00	Yes
	7	X	-0.0003	-0.0003	0.00	Yes	100.00	Yes
	8	X	-0.0003	-0.0003	0.00	Yes	100.00	Yes
	9	X	-0.0003	-0.0003	0.00	Yes	100.00	Yes
	10	X	-0.0003	-0.0003	0.00	Yes	100.00	Yes
	11	X	-0.0003	-0.0003	0.00	Yes	100.00	Yes
	12	X	-0.0003	-0.0003	0.00	Yes	100.00	Yes
	17	X	-0.0003	-0.0003	0.00	Yes	100.00	Yes
	19	X	-0.0003	-0.0003	0.00	Yes	100.00	Yes
	20	X	-0.0003	-0.0003	0.00	Yes	100.00	Yes
	21	X	-0.0003	-0.0003	0.00	Yes	100.00	Yes
	22	X	-0.0003	-0.0003	0.00	Yes	100.00	Yes
	23	X	-0.001	-0.001	0.00	Yes	100.00	Yes
	24	X	-0.001	-0.001	0.00	Yes	100.00	Yes
	25	X	-0.0003	-0.0003	0.00	Yes	100.00	Yes
	26	X	-0.0003	-0.0003	0.00	Yes	100.00	Yes
	27	X	-0.0003	-0.0003	0.00	Yes	100.00	Yes
	28	X	-0.0003	-0.0003	0.00	Yes	100.00	Yes
	31	X	-0.0003	-0.0003	0.00	Yes	100.00	Yes
	32	X	-0.0003	-0.0003	0.00	Yes	100.00	Yes
	35	X	-0.0003	-0.0003	0.00	Yes	100.00	Yes
	36	X	-0.0003	-0.0003	0.00	Yes	100.00	Yes
	37	X	-0.0003	-0.0003	0.00	Yes	100.00	Yes
	38	X	-0.0003	-0.0003	0.00	Yes	100.00	Yes
	39	X	-0.0003	-0.0003	0.00	Yes	100.00	Yes
Ehz	3	Z	-0.0003	-0.0003	0.00	Yes	100.00	Yes
	4	Z	-0.0003	-0.0003	0.00	Yes	100.00	Yes
	5	Z	-0.0003	-0.0003	0.00	Yes	100.00	Yes
	6	Z	-0.0003	-0.0003	0.00	Yes	100.00	Yes
	7	Z	-0.0003	-0.0003	0.00	Yes	100.00	Yes
	8	Z	-0.0003	-0.0003	0.00	Yes	100.00	Yes
	9	Z	-0.0003	-0.0003	0.00	Yes	100.00	Yes
	10	Z	-0.0003	-0.0003	0.00	Yes	100.00	Yes
	11	Z	-0.0003	-0.0003	0.00	Yes	100.00	Yes
	12	Z	-0.0003	-0.0003	0.00	Yes	100.00	Yes
	17	Z	-0.0003	-0.0003	0.00	Yes	100.00	Yes
	19	Z	-0.0003	-0.0003	0.00	Yes	100.00	Yes
	20	Z	-0.0003	-0.0003	0.00	Yes	100.00	Yes
	21	Z	-0.0003	-0.0003	0.00	Yes	100.00	Yes
	22	Z	-0.0003	-0.0003	0.00	Yes	100.00	Yes
	23	Z	-0.001	-0.001	0.00	Yes	100.00	Yes
	24	Z	-0.001	-0.001	0.00	Yes	100.00	Yes
	25	Z	-0.0003	-0.0003	0.00	Yes	100.00	Yes
	26	Z	-0.0003	-0.0003	0.00	Yes	100.00	Yes
	27	Z	-0.0003	-0.0003	0.00	Yes	100.00	Yes
	28	Z	-0.0003	-0.0003	0.00	Yes	100.00	Yes
	31	Z	-0.0003	-0.0003	0.00	Yes	100.00	Yes
	32	Z	-0.0003	-0.0003	0.00	Yes	100.00	Yes
	35	Z	-0.0003	-0.0003	0.00	Yes	100.00	Yes
	36	Z	-0.0003	-0.0003	0.00	Yes	100.00	Yes
	37	Z	-0.0003	-0.0003	0.00	Yes	100.00	Yes
	38	Z	-0.0003	-0.0003	0.00	Yes	100.00	Yes
	39	Z	-0.0003	-0.0003	0.00	Yes	100.00	Yes

### Concentrated forces on members



Condition	Member	Dir1	Value1 [Kip]	Dist1 [in]	%	
DL	5	Y	-0.0413	74.00	Yes	
		Y	-0.0413	24.00	Yes	
		Y	-0.0287	58.00	No	
	8	Y	-0.0413	74.00	Yes	
		Y	-0.0413	24.00	Yes	
		Y	-0.0594	58.00	No	
	33	Y	-0.06	15.00	No	
		Y	-0.053	15.00	No	
		Y	-0.072	15.00	No	
34	Y	-0.073	15.00	No		
	5	Z	-0.35	74.00	Yes	
		Z	-0.35	24.00	Yes	
Z		-0.35	74.00	Yes		
8	Z	-0.35	74.00	Yes		
	Z	-0.35	24.00	Yes		
	Z	-0.35	24.00	Yes		
W2	5	X	-0.3025	74.00	Yes	
		X	-0.3025	24.00	Yes	
		X	-0.3025	74.00	Yes	
	8	X	-0.3025	74.00	Yes	
		X	-0.3025	24.00	Yes	
		X	-0.3025	24.00	Yes	
33	x	-0.075	15.00	No		
	34	x	-0.055	15.00	No	
		5	Z	-0.207	74.00	Yes
Z			-0.207	24.00	Yes	
Z	-0.207		74.00	Yes		
W3	8	Z	-0.207	24.00	Yes	
		Z	-0.207	24.00	Yes	
		Z	-0.056	58.00	No	
	33	Z	-0.096	15.00	No	
		34	Z	-0.061	15.00	No
			5	X	-0.1595	74.00
X	-0.1595			24.00	Yes	
X	-0.1595	74.00		Yes		
W4	8	X	-0.1595	24.00	Yes	
		X	-0.048	58.00	No	
		X	-0.106	15.00	No	
	33	X	-0.106	15.00	No	
		34	X	-0.064	15.00	No
			5	Y	-0.1929	74.00
Y	-0.1929			24.00	Yes	
Y	-0.0338	58.00		No		
Di	8	Y	-0.1929	74.00	Yes	
		Y	-0.1929	24.00	Yes	
		Y	-0.0748	58.00	No	
	33	Y	-0.089	15.00	No	
		Y	-0.086	15.00	No	
		Y	-0.073	15.00	No	
	34	Y	-0.0745	15.00	No	
		5	Z	-0.067	74.00	Yes
			Z	-0.067	24.00	Yes
Z	-0.067		74.00	Yes		
W1	8	Z	-0.067	24.00	Yes	
		5	X	-0.059	74.00	Yes
			X	-0.059	24.00	Yes
8	X		-0.059	74.00	Yes	
	X	-0.059	24.00	Yes		
	X	-0.017	58.00	No		



	33	X	-0.019	15.00	No
	34	X	-0.014	15.00	No
Wi3	5	Z	-0.0435	74.00	Yes
		Z	-0.0435	24.00	Yes
	8	Z	-0.0435	74.00	Yes
		Z	-0.0435	24.00	Yes
		Z	-0.015	58.00	No
	33	Z	-0.023	15.00	No
	34	Z	-0.015	15.00	No
Wi4	5	X	-0.0355	74.00	Yes
		X	-0.0355	24.00	Yes
	8	X	-0.0355	74.00	Yes
		X	-0.0355	24.00	Yes
		X	-0.013	58.00	No
	33	X	-0.025	15.00	No
	34	X	-0.016	15.00	No
wl1	5	Z	-0.02	74.00	No
		Z	-0.02	24.00	No
	8	Z	-0.02	74.00	No
		Z	-0.02	24.00	No
wl2	5	X	-0.0175	74.00	No
		X	-0.0175	24.00	No
	8	X	-0.0175	74.00	No
		X	-0.0175	24.00	No
		X	-0.004	58.00	No
	33	X	-0.004	15.00	No
	34	X	-0.003	15.00	No
wl3	5	Z	-0.012	74.00	No
		Z	-0.012	24.00	No
	8	Z	-0.012	74.00	No
		Z	-0.012	24.00	No
		Z	-0.003	58.00	No
	33	Z	-0.006	15.00	No
	34	Z	-0.004	15.00	No
wl4	5	X	-0.009	74.00	No
		X	-0.009	24.00	No
	8	X	-0.009	74.00	No
		X	-0.009	24.00	No
		x	-0.003	58.00	No
	33	X	-0.006	15.00	No
	34	X	-0.004	15.00	No
Ev	5	Y	-0.0031	48.00	No
	8	Y	-0.0031	48.00	No
		Y	-0.0022	58.00	No
	33	Y	-0.002	15.00	No
		Y	-0.0022	15.00	No
	34	Y	-0.0027	15.00	No
		Y	-0.0027	15.00	No
Ehx	5	X	-0.0077	48.00	No
	8	X	-0.0077	48.00	No
		X	-0.0056	58.00	No
	33	X	-0.005	15.00	No
		X	-0.0057	15.00	No
	34	X	-0.0068	15.00	No
		X	-0.0067	15.00	No
Ehz	5	Z	-0.0077	48.00	No
	8	Z	-0.0077	48.00	No
		Z	-0.0056	58.00	No
	33	Z	-0.005	15.00	No
		Z	-0.0056	15.00	No

	34	Z	-0.0068	15.00	No
		Z	-0.0067	15.00	No
SL1	4	Y	-0.50	157.00	No
SL2	4	Y	-0.50	115.00	No
SL3	4	Y	-0.50	67.00	No
SL4	4	Y	-0.50	21.00	No
SLC	4	Y	-0.25	50.00	Yes
SLE1	4	Y	-0.25	0.00	No
SLE2	4	Y	-0.25	100.00	Yes

### Self weight multipliers for load conditions

Condition	Description	Self weight multiplier			
		Comb.	MultX	MultY	MultZ
DL	Dead Load	No	0.00	-1.00	0.00
W1	Wind Load (0, 180 degrees)	No	0.00	0.00	0.00
W2	Wind Load (30, 150, 210, 330 degrees)	No	0.00	0.00	0.00
W3	Wind Load (60, 120, 240, 300 degrees)	No	0.00	0.00	0.00
W4	Wind Load (90, 270 degrees)	No	0.00	0.00	0.00
Di	Ice Load	No	0.00	0.00	0.00
Wi1	Ice Wind Load (0, 180 degrees)	No	0.00	0.00	0.00
Wi2	Ice Wind Load (30, 150, 210, 330 Degrees)	No	0.00	0.00	0.00
Wi3	Ice Wind Load (60, 120, 240, 300 Degrees)	No	0.00	0.00	0.00
Wi4	Ice Wind Load (90, 270 degrees)	No	0.00	0.00	0.00
w1	Wind Load 30 mph (0, 180 degrees)	No	0.00	0.00	0.00
w2	Wind Load 30 mph (30, 150, 210, 330 Degrees)	No	0.00	0.00	0.00
w3	Wind Load 30 mph (60, 120, 240, 300 Degrees)	No	0.00	0.00	0.00
w4	Wind Load 30 mph (90, 270 degrees)	No	0.00	0.00	0.00
Ev	Vertical Seismic Load	No	0.00	0.00	0.00
Ehx	Horizontal Seismic Load - X-Direction	No	0.00	0.00	0.00
Ehz	Horizontal Seismic Load - Z-Direction	No	0.00	0.00	0.00
SL1	Service Live Load at Position 1 (500lb)	No	0.00	0.00	0.00
SL2	Service Live Load at Position 2 (500lb)	No	0.00	0.00	0.00
SL3	Service Live Load at Position 3 (500lb)	No	0.00	0.00	0.00
SL4	Service Live Load at Position 4 (500lb)	No	0.00	0.00	0.00
SLC	Service Live Load at Center of Mount (250lb)	No	0.00	0.00	0.00
SLE1	Service Live Load at End of Mount (250lb)	No	0.00	0.00	0.00
SLE2	Service Live Load at End of Mount (250lb)	No	0.00	0.00	0.00
LC1	1.2DL+W1	Yes	0.00	0.00	0.00
LC2	1.2DL+W2	Yes	0.00	0.00	0.00
LC3	1.2DL+W3	Yes	0.00	0.00	0.00
LC4	1.2DL+W4	Yes	0.00	0.00	0.00
LC5	1.2DL-W1	Yes	0.00	0.00	0.00
LC6	1.2DL-W2	Yes	0.00	0.00	0.00
LC7	1.2DL-W3	Yes	0.00	0.00	0.00
LC8	1.2DL-W4	Yes	0.00	0.00	0.00
LC9	0.9DL+W1	Yes	0.00	0.00	0.00
LC10	0.9DL+W2	Yes	0.00	0.00	0.00
LC11	0.9DL+W3	Yes	0.00	0.00	0.00
LC12	0.9DL+W4	Yes	0.00	0.00	0.00
LC13	0.9DL-W1	Yes	0.00	0.00	0.00
LC14	0.9DL-W2	Yes	0.00	0.00	0.00
LC15	0.9DL-W3	Yes	0.00	0.00	0.00
LC16	0.9DL-W4	Yes	0.00	0.00	0.00
LC17	1.2DL+Di+Wi1	Yes	0.00	0.00	0.00

LC18	1.2DL+Di+Wi2	Yes	0.00	0.00	0.00
LC19	1.2DL+Di+Wi3	Yes	0.00	0.00	0.00
LC20	1.2DL+Di+Wi4	Yes	0.00	0.00	0.00
LC21	1.2DL+Di-Wi1	Yes	0.00	0.00	0.00
LC22	1.2DL+Di-Wi2	Yes	0.00	0.00	0.00
LC23	1.2DL+Di-Wi3	Yes	0.00	0.00	0.00
LC24	1.2DL+Di-Wi4	Yes	0.00	0.00	0.00
LC25	1.4DL	Yes	0.00	0.00	0.00
LC26	1.2DL+1.5SLC	Yes	0.00	0.00	0.00
LC27	1.2DL+1.5SLE1	Yes	0.00	0.00	0.00
LC28	1.2DL+1.5SLE2	Yes	0.00	0.00	0.00
LC29	1.2DL+w1+1.5SL1	Yes	0.00	0.00	0.00
LC30	1.2DL+w2+1.5SL1	Yes	0.00	0.00	0.00
LC31	1.2DL+w3+1.5SL1	Yes	0.00	0.00	0.00
LC32	1.2DL+w4+1.5SL1	Yes	0.00	0.00	0.00
LC33	1.2DL-w1+1.5SL1	Yes	0.00	0.00	0.00
LC34	1.2DL-w2+1.5SL1	Yes	0.00	0.00	0.00
LC35	1.2DL-w3+1.5SL1	Yes	0.00	0.00	0.00
LC36	1.2DL-w4+1.5SL1	Yes	0.00	0.00	0.00
LC37	1.2DL+w1+1.5SL2	Yes	0.00	0.00	0.00
LC38	1.2DL+w2+1.5SL2	Yes	0.00	0.00	0.00
LC39	1.2DL+w3+1.5SL2	Yes	0.00	0.00	0.00
LC40	1.2DL+w4+1.5SL2	Yes	0.00	0.00	0.00
LC41	1.2DL-w1+1.5SL2	Yes	0.00	0.00	0.00
LC42	1.2DL-w2+1.5SL2	Yes	0.00	0.00	0.00
LC43	1.2DL-w3+1.5SL2	Yes	0.00	0.00	0.00
LC44	1.2DL-w4+1.5SL2	Yes	0.00	0.00	0.00
LC45	1.2DL+w1+1.5SL3	Yes	0.00	0.00	0.00
LC46	1.2DL+w2+1.5SL3	Yes	0.00	0.00	0.00
LC47	1.2DL+w3+1.5SL3	Yes	0.00	0.00	0.00
LC48	1.2DL+w4+1.5SL3	Yes	0.00	0.00	0.00
LC49	1.2DL-w1+1.5SL3	Yes	0.00	0.00	0.00
LC50	1.2DL-w2+1.5SL3	Yes	0.00	0.00	0.00
LC51	1.2DL-w3+1.5SL3	Yes	0.00	0.00	0.00
LC52	1.2DL-w4+1.5SL3	Yes	0.00	0.00	0.00
LC53	1.2DL+w1+1.5SL4	Yes	0.00	0.00	0.00
LC54	1.2DL+w2+1.5SL4	Yes	0.00	0.00	0.00
LC55	1.2DL+w3+1.5SL4	Yes	0.00	0.00	0.00
LC56	1.2DL+w4+1.5SL4	Yes	0.00	0.00	0.00
LC57	1.2DL-w1+1.5SL4	Yes	0.00	0.00	0.00
LC58	1.2DL-w2+1.5SL4	Yes	0.00	0.00	0.00
LC59	1.2DL-w3+1.5SL4	Yes	0.00	0.00	0.00
LC60	1.2DL-w4+1.5SL4	Yes	0.00	0.00	0.00
LC61	1.2DL+Ev+Ehx	Yes	0.00	0.00	0.00
LC62	0.9DL-Ev+Ehx	Yes	0.00	0.00	0.00
LC63	1.2DL+Ev+Ehz	Yes	0.00	0.00	0.00
LC64	0.9DL-Ev+Ehz	Yes	0.00	0.00	0.00

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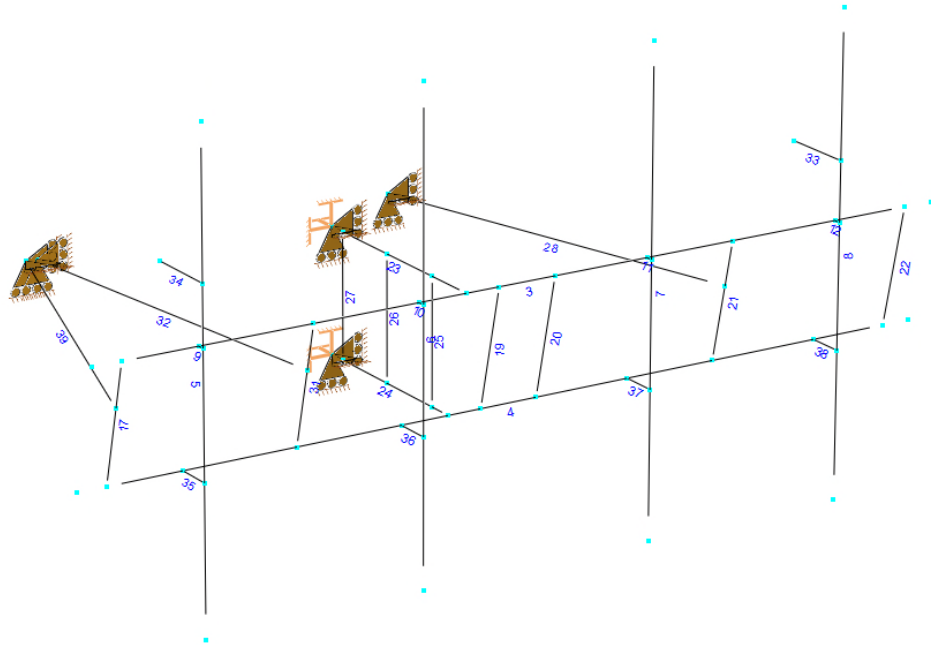
**Earthquake (Dynamic analysis only)**

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Condition	a/g	Ang. [Deg]	Damp. [%]
DL	0.00	0.00	0.00
W1	0.00	0.00	0.00
W2	0.00	0.00	0.00
W3	0.00	0.00	0.00
W4	0.00	0.00	0.00
Di	0.00	0.00	0.00
Wi1	0.00	0.00	0.00
Wi2	0.00	0.00	0.00
Wi3	0.00	0.00	0.00
Wi4	0.00	0.00	0.00
wl1	0.00	0.00	0.00
wl2	0.00	0.00	0.00
wl3	0.00	0.00	0.00
wl4	0.00	0.00	0.00
Ev	0.00	0.00	0.00
Ehx	0.00	0.00	0.00
Ehz	0.00	0.00	0.00
SL1	0.00	0.00	0.00
SL2	0.00	0.00	0.00
SL3	0.00	0.00	0.00
SL4	0.00	0.00	0.00
SLC	0.00	0.00	0.00
SLE1	0.00	0.00	0.00
SLE2	0.00	0.00	0.00
LC1	0.00	0.00	0.00
LC2	0.00	0.00	0.00
LC3	0.00	0.00	0.00
LC4	0.00	0.00	0.00
LC5	0.00	0.00	0.00
LC6	0.00	0.00	0.00
LC7	0.00	0.00	0.00
LC8	0.00	0.00	0.00
LC9	0.00	0.00	0.00
LC10	0.00	0.00	0.00
LC11	0.00	0.00	0.00
LC12	0.00	0.00	0.00
LC13	0.00	0.00	0.00
LC14	0.00	0.00	0.00
LC15	0.00	0.00	0.00
LC16	0.00	0.00	0.00
LC17	0.00	0.00	0.00
LC18	0.00	0.00	0.00
LC19	0.00	0.00	0.00
LC20	0.00	0.00	0.00
LC21	0.00	0.00	0.00
LC22	0.00	0.00	0.00
LC23	0.00	0.00	0.00
LC24	0.00	0.00	0.00
LC25	0.00	0.00	0.00
LC26	0.00	0.00	0.00
LC27	0.00	0.00	0.00
LC28	0.00	0.00	0.00
LC29	0.00	0.00	0.00
LC30	0.00	0.00	0.00
LC31	0.00	0.00	0.00
LC32	0.00	0.00	0.00
LC33	0.00	0.00	0.00
LC34	0.00	0.00	0.00
LC35	0.00	0.00	0.00
LC36	0.00	0.00	0.00

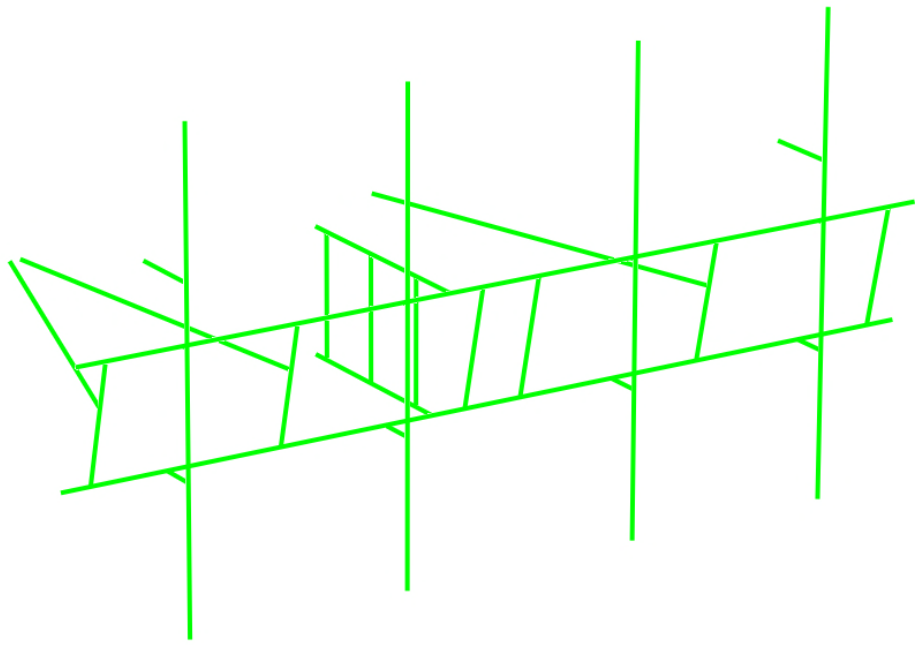
LC37	0.00	0.00	0.00
LC38	0.00	0.00	0.00
LC39	0.00	0.00	0.00
LC40	0.00	0.00	0.00
LC41	0.00	0.00	0.00
LC42	0.00	0.00	0.00
LC43	0.00	0.00	0.00
LC44	0.00	0.00	0.00
LC45	0.00	0.00	0.00
LC46	0.00	0.00	0.00
LC47	0.00	0.00	0.00
LC48	0.00	0.00	0.00
LC49	0.00	0.00	0.00
LC50	0.00	0.00	0.00
LC51	0.00	0.00	0.00
LC52	0.00	0.00	0.00
LC53	0.00	0.00	0.00
LC54	0.00	0.00	0.00
LC55	0.00	0.00	0.00
LC56	0.00	0.00	0.00
LC57	0.00	0.00	0.00
LC58	0.00	0.00	0.00
LC59	0.00	0.00	0.00
LC60	0.00	0.00	0.00
LC61	0.00	0.00	0.00
LC62	0.00	0.00	0.00
LC63	0.00	0.00	0.00
LC64	0.00	0.00	0.00

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Design status

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





Current Date: 5/15/2020 8:44 AM

Units system: English

File name: C:\Users\Lee Peringer\Centerline Communications\Derek Creaser - Centerline Engineering\Projects\AT&T\NEW ENGLAND\CT\CT5270 - WINDSOR LOCKS, 2 VOLUNTEER DRIVE - SST\LTE 5C\Structural\Working Files\RAM\Rev.1\CT5270 Tower-Rev1.retx

## Steel Code Check

Report: Summary - For all selected load conditions

### Load conditions to be included in design :

LC1=1.2DL+W1  
LC2=1.2DL+W2  
LC3=1.2DL+W3  
LC4=1.2DL+W4  
LC5=1.2DL-W1  
LC6=1.2DL-W2  
LC7=1.2DL-W3  
LC8=1.2DL-W4  
LC9=0.9DL+W1  
LC10=0.9DL+W2  
LC11=0.9DL+W3  
LC12=0.9DL+W4  
LC13=0.9DL-W1  
LC14=0.9DL-W2  
LC15=0.9DL-W3  
LC16=0.9DL-W4  
LC17=1.2DL+Di+Wi1  
LC18=1.2DL+Di+Wi2  
LC19=1.2DL+Di+Wi3  
LC20=1.2DL+Di+Wi4  
LC21=1.2DL+Di-Wi1  
LC22=1.2DL+Di-Wi2  
LC23=1.2DL+Di-Wi3  
LC24=1.2DL+Di-Wi4  
LC25=1.4DL  
LC26=1.2DL+1.5SLC  
LC27=1.2DL+1.5SLE1  
LC28=1.2DL+1.5SLE2  
LC29=1.2DL+w1+1.5SL1  
LC30=1.2DL+w2+1.5SL1  
LC31=1.2DL+w3+1.5SL1  
LC32=1.2DL+w4+1.5SL1  
LC33=1.2DL-w1+1.5SL1  
LC34=1.2DL-w2+1.5SL1  
LC35=1.2DL-w3+1.5SL1  
LC36=1.2DL-w4+1.5SL1  
LC37=1.2DL+w1+1.5SL2  
LC38=1.2DL+w2+1.5SL2  
LC39=1.2DL+w3+1.5SL2  
LC40=1.2DL+w4+1.5SL2  
LC41=1.2DL-w1+1.5SL2  
LC42=1.2DL-w2+1.5SL2  
LC43=1.2DL-w3+1.5SL2  
LC44=1.2DL-w4+1.5SL2  
LC45=1.2DL+w1+1.5SL3  
LC46=1.2DL+w2+1.5SL3  
LC47=1.2DL+w3+1.5SL3  
LC48=1.2DL+w4+1.5SL3  
LC49=1.2DL-w1+1.5SL3  
LC50=1.2DL-w2+1.5SL3  
LC51=1.2DL-w3+1.5SL3  
LC52=1.2DL-w4+1.5SL3



LC53=1.2DL+w1+1.5SL4  
 LC54=1.2DL+w2+1.5SL4  
 LC55=1.2DL+w3+1.5SL4  
 LC56=1.2DL+w4+1.5SL4  
 LC57=1.2DL-w1+1.5SL4  
 LC58=1.2DL-w2+1.5SL4  
 LC59=1.2DL-w3+1.5SL4  
 LC60=1.2DL-w4+1.5SL4  
 LC61=1.2DL+Ev+Ehx  
 LC62=0.9DL-Ev+Ehx  
 LC63=1.2DL+Ev+Ehz  
 LC64=0.9DL-Ev+Ehz

Description	Section	Member	Ctrl Eq.	Ratio	Status	Reference
<b>Antenna Pipe</b>	<b>PIPE 2x0.154</b>	<b>5</b>	LC1 at 42.19%	0.40	OK	
			LC10 at 42.19%	0.39	OK	
			LC11 at 42.19%	0.32	OK	
			LC12 at 42.19%	0.28	OK	
			LC13 at 43.75%	0.22	OK	
			LC14 at 42.19%	0.39	OK	
			LC15 at 43.75%	0.18	OK	
			LC16 at 42.19%	0.28	OK	
			LC17 at 43.75%	0.38	OK	
			LC18 at 43.75%	0.38	OK	
			LC19 at 43.75%	0.38	OK	
			LC2 at 42.19%	0.42	OK	
			LC20 at 43.75%	0.37	OK	
			LC21 at 43.75%	0.31	OK	
			LC22 at 43.75%	0.31	OK	
			LC23 at 43.75%	0.31	OK	
			LC24 at 43.75%	0.32	OK	
			LC25 at 43.75%	0.16	OK	
			LC26 at 43.75%	0.14	OK	
			LC27 at 43.75%	0.27	OK	
			LC28 at 43.75%	0.13	OK	
			LC29 at 43.75%	0.14	OK	
			LC3 at 42.19%	0.35	OK	
			LC30 at 42.19%	0.14	OK	
			LC31 at 43.75%	0.14	OK	
			LC32 at 43.75%	0.14	OK	
			LC33 at 43.75%	0.12	OK	
			LC34 at 42.19%	0.14	OK	
			LC35 at 43.75%	0.12	OK	
			LC36 at 42.19%	0.14	OK	
			LC37 at 43.75%	0.15	OK	
			LC38 at 43.75%	0.15	OK	
			LC39 at 43.75%	0.15	OK	
			LC4 at 42.19%	0.31	OK	
			LC40 at 43.75%	0.14	OK	
			LC41 at 43.75%	0.13	OK	
			LC42 at 42.19%	0.14	OK	
			LC43 at 43.75%	0.13	OK	
			LC44 at 42.19%	0.14	OK	
			LC45 at 43.75%	0.15	OK	
			LC46 at 43.75%	0.15	OK	
			LC47 at 43.75%	0.15	OK	
			LC48 at 43.75%	0.15	OK	
			LC49 at 43.75%	0.13	OK	
			LC5 at 43.75%	0.22	OK	
			LC50 at 42.19%	0.14	OK	
			LC51 at 43.75%	0.13	OK	
			LC52 at 42.19%	0.14	OK	
			LC53 at 43.75%	0.30	OK	
			LC54 at 43.75%	0.30	OK	

LC55 at 43.75%	0.30	OK
LC56 at 43.75%	0.30	OK
LC57 at 43.75%	0.28	OK
LC58 at 43.75%	0.28	OK
LC59 at 43.75%	0.28	OK
LC6 at 42.19%	<b>0.42</b>	<b>OK</b>
LC60 at 43.75%	0.28	OK
LC61 at 43.75%	0.15	OK
LC62 at 43.75%	0.11	OK
LC63 at 43.75%	0.15	OK
LC64 at 43.75%	0.10	OK
LC7 at 43.75%	0.18	OK
LC8 at 42.19%	0.31	OK
LC9 at 42.19%	0.37	OK

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LC1 at 43.75%	0.14	OK
LC10 at 43.75%	0.08	OK
LC11 at 43.75%	0.11	OK
LC12 at 43.75%	0.09	OK
LC13 at 43.75%	0.15	OK
LC14 at 43.75%	0.12	OK
LC15 at 43.75%	0.15	OK
LC16 at 43.75%	0.11	OK
LC17 at 43.75%	0.41	OK
LC18 at 43.75%	0.42	OK
LC19 at 43.75%	0.41	OK
LC2 at 43.75%	0.12	OK
LC20 at 43.75%	0.42	OK
LC21 at 43.75%	0.44	OK
LC22 at 43.75%	0.43	OK
LC23 at 43.75%	<b>0.44</b>	<b>OK</b>
LC24 at 43.75%	0.43	OK
LC25 at 43.75%	0.16	OK
LC26 at 43.75%	0.15	OK
LC27 at 43.75%	0.19	OK
LC28 at 43.75%	0.21	OK
LC29 at 43.75%	0.26	OK
LC3 at 43.75%	0.14	OK
LC30 at 43.75%	0.26	OK
LC31 at 43.75%	0.26	OK
LC32 at 43.75%	0.26	OK
LC33 at 43.75%	0.26	OK
LC34 at 43.75%	0.26	OK
LC35 at 43.75%	0.26	OK
LC36 at 43.75%	0.26	OK
LC37 at 43.75%	0.18	OK
LC38 at 43.75%	0.18	OK
LC39 at 43.75%	0.18	OK
LC4 at 43.75%	0.12	OK
LC40 at 43.75%	0.18	OK
LC41 at 43.75%	0.18	OK
LC42 at 43.75%	0.18	OK
LC43 at 43.75%	0.18	OK
LC44 at 43.75%	0.18	OK
LC45 at 43.75%	0.19	OK
LC46 at 43.75%	0.19	OK
LC47 at 43.75%	0.19	OK
LC48 at 43.75%	0.19	OK
LC49 at 43.75%	0.19	OK
LC5 at 43.75%	0.18	OK
LC50 at 43.75%	0.19	OK
LC51 at 43.75%	0.19	OK
LC52 at 43.75%	0.19	OK
LC53 at 43.75%	0.27	OK

LC54 at 43.75%	0.27	OK
LC55 at 43.75%	0.27	OK
LC56 at 43.75%	0.27	OK
LC57 at 43.75%	0.27	OK
LC58 at 43.75%	0.27	OK
LC59 at 43.75%	0.27	OK
LC6 at 43.75%	0.16	OK
LC60 at 43.75%	0.27	OK
LC61 at 43.75%	0.14	OK
LC62 at 43.75%	0.10	OK
LC63 at 43.75%	0.14	OK
LC64 at 43.75%	0.09	OK
LC7 at 43.75%	0.18	OK
LC8 at 43.75%	0.15	OK
LC9 at 43.75%	0.11	OK

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LC1 at 43.75%	0.18	OK
LC10 at 43.75%	0.10	OK
LC11 at 43.75%	0.14	OK
LC12 at 43.75%	0.10	OK
LC13 at 43.75%	0.20	OK
LC14 at 43.75%	0.12	OK
LC15 at 43.75%	0.21	OK
LC16 at 43.75%	0.13	OK
LC17 at 43.75%	0.48	OK
LC18 at 43.75%	0.47	OK
LC19 at 43.75%	0.48	OK
LC2 at 43.75%	0.14	OK
LC20 at 43.75%	0.47	OK
LC21 at 43.75%	0.50	OK
LC22 at 43.75%	0.48	OK
LC23 at 43.75%	<b>0.50</b>	<b>OK</b>
LC24 at 43.75%	0.48	OK
LC25 at 43.75%	0.18	OK
LC26 at 43.75%	0.15	OK
LC27 at 43.75%	0.15	OK
LC28 at 43.75%	0.28	OK
LC29 at 43.75%	0.40	OK
LC3 at 43.75%	0.18	OK
LC30 at 43.75%	0.41	OK
LC31 at 43.75%	0.40	OK
LC32 at 43.75%	0.41	OK
LC33 at 43.75%	0.41	OK
LC34 at 43.75%	0.41	OK
LC35 at 43.75%	0.41	OK
LC36 at 43.75%	0.41	OK
LC37 at 43.75%	0.28	OK
LC38 at 43.75%	0.28	OK
LC39 at 43.75%	0.28	OK
LC4 at 43.75%	0.14	OK
LC40 at 43.75%	0.28	OK
LC41 at 43.75%	0.29	OK
LC42 at 43.75%	0.28	OK
LC43 at 43.75%	0.29	OK
LC44 at 43.75%	0.28	OK
LC45 at 43.75%	0.15	OK
LC46 at 43.75%	0.15	OK
LC47 at 43.75%	0.15	OK
LC48 at 43.75%	0.15	OK
LC49 at 43.75%	0.16	OK
LC5 at 43.75%	0.24	OK
LC50 at 43.75%	0.15	OK
LC51 at 43.75%	0.16	OK
LC52 at 43.75%	0.15	OK

LC53 at 43.75%	0.16	OK
LC54 at 43.75%	0.15	OK
LC55 at 43.75%	0.16	OK
LC56 at 43.75%	0.15	OK
LC57 at 43.75%	0.15	OK
LC58 at 43.75%	0.16	OK
LC59 at 43.75%	0.16	OK
LC6 at 43.75%	0.16	OK
LC60 at 43.75%	0.16	OK
LC61 at 43.75%	0.15	OK
LC62 at 43.75%	0.11	OK
LC63 at 43.75%	0.15	OK
LC64 at 43.75%	0.11	OK
LC7 at 43.75%	0.24	OK
LC8 at 43.75%	0.17	OK
LC9 at 43.75%	0.14	OK

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LC1 at 42.19%	0.37	OK
LC10 at 42.19%	0.38	OK
LC11 at 42.19%	0.31	OK
LC12 at 42.19%	0.28	OK
LC13 at 43.75%	0.21	OK
LC14 at 42.19%	0.38	OK
LC15 at 43.75%	0.19	OK
LC16 at 42.19%	0.28	OK
LC17 at 43.75%	0.37	OK
LC18 at 42.19%	0.30	OK
LC19 at 43.75%	0.38	OK
LC2 at 42.19%	0.40	OK
LC20 at 43.75%	0.30	OK
LC21 at 43.75%	0.29	OK
LC22 at 43.75%	0.37	OK
LC23 at 43.75%	0.28	OK
LC24 at 43.75%	0.36	OK
LC25 at 43.75%	0.14	OK
LC26 at 43.75%	0.12	OK
LC27 at 43.75%	0.12	OK
LC28 at 43.75%	0.24	OK
LC29 at 43.75%	0.25	OK
LC3 at 42.19%	0.34	OK
LC30 at 43.75%	0.23	OK
LC31 at 43.75%	0.25	OK
LC32 at 43.75%	0.23	OK
LC33 at 43.75%	0.23	OK
LC34 at 43.75%	0.25	OK
LC35 at 43.75%	0.23	OK
LC36 at 43.75%	0.25	OK
LC37 at 43.75%	0.13	OK
LC38 at 42.19%	0.12	OK
LC39 at 43.75%	0.13	OK
LC4 at 42.19%	0.31	OK
LC40 at 43.75%	0.11	OK
LC41 at 43.75%	0.11	OK
LC42 at 43.75%	0.13	OK
LC43 at 43.75%	0.11	OK
LC44 at 43.75%	0.13	OK
LC45 at 43.75%	0.13	OK
LC46 at 42.19%	0.12	OK
LC47 at 43.75%	0.13	OK
LC48 at 43.75%	0.11	OK
LC49 at 43.75%	0.11	OK
LC5 at 43.75%	0.22	OK
LC50 at 43.75%	0.13	OK
LC51 at 43.75%	0.11	OK

LC52 at 43.75%	0.13	OK
LC53 at 43.75%	0.13	OK
LC54 at 42.19%	0.12	OK
LC55 at 43.75%	0.13	OK
LC56 at 42.19%	0.11	OK
LC57 at 43.75%	0.11	OK
LC58 at 43.75%	0.13	OK
LC59 at 43.75%	0.11	OK
LC6 at 42.19%	<b>0.40</b>	<b>OK</b>
LC60 at 43.75%	0.12	OK
LC61 at 43.75%	0.12	OK
LC62 at 43.75%	0.08	OK
LC63 at 43.75%	0.13	OK
LC64 at 43.75%	0.09	OK
LC7 at 43.75%	0.20	OK
LC8 at 42.19%	0.31	OK
LC9 at 42.19%	0.35	OK

Horz. Pipe

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LC1 at 75.00%	0.56	OK
LC10 at 42.71%	0.48	OK
LC11 at 75.00%	0.53	OK
LC12 at 42.71%	0.33	OK
LC13 at 75.00%	0.55	OK
LC14 at 42.71%	0.44	OK
LC15 at 75.00%	0.55	OK
LC16 at 42.71%	0.30	OK
LC17 at 43.23%	0.55	OK
LC18 at 53.65%	0.50	OK
LC19 at 43.23%	0.56	OK
LC2 at 42.71%	0.48	OK
LC20 at 53.65%	0.50	OK
LC21 at 74.48%	0.53	OK
LC22 at 43.23%	0.60	OK
LC23 at 74.48%	0.55	OK
LC24 at 43.23%	0.58	OK
LC25 at 53.65%	0.19	OK
LC26 at 43.23%	0.21	OK
LC27 at 42.71%	0.30	OK
LC28 at 43.23%	0.42	OK
LC29 at 43.23%	0.61	OK
LC3 at 75.00%	0.56	OK
LC30 at 43.23%	0.59	OK
LC31 at 43.23%	0.61	OK
LC32 at 43.23%	0.59	OK
LC33 at 43.23%	0.60	OK
LC34 at 43.23%	<b>0.62</b>	<b>OK</b>
LC35 at 43.23%	0.60	OK
LC36 at 43.23%	0.61	OK
LC37 at 43.23%	0.44	OK
LC38 at 43.23%	0.41	OK
LC39 at 43.23%	0.44	OK
LC4 at 42.71%	0.33	OK
LC40 at 43.23%	0.42	OK
LC41 at 43.23%	0.42	OK
LC42 at 43.23%	0.45	OK
LC43 at 43.23%	0.42	OK
LC44 at 43.23%	0.44	OK
LC45 at 42.71%	0.19	OK
LC46 at 46.88%	0.19	OK
LC47 at 42.71%	0.19	OK
LC48 at 46.88%	0.18	OK
LC49 at 42.71%	0.18	OK
LC5 at 75.00%	0.58	OK
LC50 at 42.71%	0.21	OK

LC51 at 42.71%	0.18	OK
LC52 at 42.71%	0.20	OK
LC53 at 42.71%	0.45	OK
LC54 at 42.71%	0.48	OK
LC55 at 42.71%	0.45	OK
LC56 at 42.71%	0.47	OK
LC57 at 42.71%	0.46	OK
LC58 at 42.71%	0.42	OK
LC59 at 42.71%	0.46	OK
LC6 at 42.71%	0.44	OK
LC60 at 42.71%	0.43	OK
LC61 at 53.65%	0.17	OK
LC62 at 53.65%	0.12	OK
LC63 at 43.23%	0.17	OK
LC64 at 43.23%	0.12	OK
LC7 at 75.00%	0.58	OK
LC8 at 42.71%	0.34	OK
LC9 at 75.00%	0.54	OK

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LC1 at 74.48%	0.37	OK
LC10 at 42.71%	0.37	OK
LC11 at 74.48%	0.36	OK
LC12 at 42.71%	0.28	OK
LC13 at 75.00%	0.48	OK
LC14 at 43.23%	0.24	OK
LC15 at 75.00%	0.46	OK
LC16 at 43.23%	0.26	OK
LC17 at 43.23%	0.94	OK
LC18 at 43.23%	0.96	OK
LC19 at 43.23%	0.93	OK
LC2 at 42.71%	0.41	OK
LC20 at 43.23%	0.95	OK
LC21 at 43.23%	0.97	OK
LC22 at 43.23%	0.96	OK
LC23 at 43.23%	0.98	OK
LC24 at 43.23%	0.96	OK
LC25 at 43.23%	0.35	OK
LC26 at 43.23%	0.38	OK
LC27 at 42.71%	0.42	OK
LC28 at 43.23%	0.73	OK
LC29 at 43.23%	0.98	OK
LC3 at 74.48%	0.37	OK
LC30 at 43.23%	0.98	OK
LC31 at 43.23%	0.98	OK
LC32 at 43.23%	0.98	OK
LC33 at 43.23%	0.99	OK
LC34 at 43.23%	0.98	OK
LC35 at 43.23%	<b>0.99</b>	<b>OK</b>
LC36 at 43.23%	0.98	OK
LC37 at 43.23%	0.64	OK
LC38 at 43.23%	0.64	OK
LC39 at 43.23%	0.64	OK
LC4 at 42.71%	0.32	OK
LC40 at 43.23%	0.64	OK
LC41 at 43.23%	0.65	OK
LC42 at 43.23%	0.64	OK
LC43 at 43.23%	0.65	OK
LC44 at 43.23%	0.64	OK
LC45 at 43.23%	0.32	OK
LC46 at 43.23%	0.33	OK
LC47 at 43.23%	0.32	OK
LC48 at 43.23%	0.33	OK
LC49 at 43.23%	0.33	OK
LC5 at 75.00%	0.51	OK

LC50 at 43.23%	0.33	OK
LC51 at 43.23%	0.33	OK
LC52 at 43.23%	0.33	OK
LC53 at 42.71%	0.59	OK
LC54 at 42.71%	0.58	OK
LC55 at 42.71%	0.59	OK
LC56 at 42.71%	0.58	OK
LC57 at 42.71%	0.59	OK
LC58 at 42.71%	0.60	OK
LC59 at 42.71%	0.59	OK
LC6 at 43.23%	0.31	OK
LC60 at 42.71%	0.60	OK
LC61 at 43.23%	0.30	OK
LC62 at 43.23%	0.21	OK
LC63 at 43.23%	0.30	OK
LC64 at 43.23%	0.21	OK
LC7 at 75.00%	0.50	OK
LC8 at 43.23%	0.33	OK
LC9 at 74.48%	0.36	OK

[link](#)

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LC1 at 0.00%	<b>0.17</b>	<b>OK</b>
LC10 at 0.00%	0.07	OK
LC11 at 0.00%	0.14	OK
LC12 at 0.00%	0.07	OK
LC13 at 100.00%	0.06	OK
LC14 at 0.00%	0.07	OK
LC15 at 100.00%	0.05	OK
LC16 at 0.00%	0.07	OK
LC17 at 0.00%	0.16	OK
LC18 at 0.00%	0.15	OK
LC19 at 0.00%	0.17	OK
LC2 at 0.00%	0.08	OK
LC20 at 0.00%	0.15	OK
LC21 at 0.00%	0.13	OK
LC22 at 0.00%	0.14	OK
LC23 at 0.00%	0.13	OK
LC24 at 0.00%	0.14	OK
LC25 at 0.00%	0.08	OK
LC26 at 0.00%	0.07	OK
LC27 at 0.00%	0.08	OK
LC28 at 0.00%	0.08	OK
LC29 at 0.00%	0.09	OK
LC3 at 0.00%	0.16	OK
LC30 at 0.00%	0.09	OK
LC31 at 0.00%	0.09	OK
LC32 at 0.00%	0.09	OK
LC33 at 0.00%	0.08	OK
LC34 at 0.00%	0.09	OK
LC35 at 0.00%	0.08	OK
LC36 at 0.00%	0.09	OK
LC37 at 0.00%	0.08	OK
LC38 at 0.00%	0.08	OK
LC39 at 0.00%	0.08	OK
LC4 at 0.00%	0.09	OK
LC40 at 0.00%	0.08	OK
LC41 at 0.00%	0.07	OK
LC42 at 0.00%	0.08	OK
LC43 at 0.00%	0.07	OK
LC44 at 0.00%	0.08	OK
LC45 at 0.00%	0.07	OK
LC46 at 0.00%	0.07	OK
LC47 at 0.00%	0.07	OK
LC48 at 0.00%	0.07	OK
LC49 at 0.00%	0.06	OK

LC5 at 100.00%	0.05	OK
LC50 at 0.00%	0.07	OK
LC51 at 0.00%	0.06	OK
LC52 at 0.00%	0.07	OK
LC53 at 0.00%	0.09	OK
LC54 at 0.00%	0.09	OK
LC55 at 0.00%	0.09	OK
LC56 at 0.00%	0.09	OK
LC57 at 0.00%	0.08	OK
LC58 at 0.00%	0.09	OK
LC59 at 0.00%	0.08	OK
LC6 at 100.00%	0.08	OK
LC60 at 0.00%	0.09	OK
LC61 at 0.00%	0.08	OK
LC62 at 0.00%	0.06	OK
LC63 at 0.00%	0.08	OK
LC64 at 0.00%	0.05	OK
LC7 at 100.00%	0.04	OK
LC8 at 0.00%	0.08	OK
LC9 at 0.00%	0.16	OK

10

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LC1 at 0.00%	0.02	OK
LC10 at 100.00%	0.04	OK
LC11 at 0.00%	0.02	OK
LC12 at 100.00%	0.03	OK
LC13 at 100.00%	0.03	OK
LC14 at 0.00%	0.02	OK
LC15 at 100.00%	0.03	OK
LC16 at 0.00%	0.02	OK
LC17 at 100.00%	0.08	OK
LC18 at 100.00%	0.09	OK
LC19 at 100.00%	0.08	OK
LC2 at 100.00%	0.04	OK
LC20 at 100.00%	0.09	OK
LC21 at 100.00%	0.08	OK
LC22 at 100.00%	0.08	OK
LC23 at 100.00%	0.08	OK
LC24 at 100.00%	0.08	OK
LC25 at 0.00%	0.03	OK
LC26 at 100.00%	0.03	OK
LC27 at 0.00%	0.06	OK
LC28 at 0.00%	0.03	OK
LC29 at 100.00%	0.04	OK
LC3 at 0.00%	0.02	OK
LC30 at 100.00%	0.04	OK
LC31 at 100.00%	0.04	OK
LC32 at 100.00%	0.04	OK
LC33 at 100.00%	0.04	OK
LC34 at 100.00%	0.04	OK
LC35 at 100.00%	0.04	OK
LC36 at 100.00%	0.04	OK
LC37 at 100.00%	0.03	OK
LC38 at 100.00%	0.03	OK
LC39 at 100.00%	0.03	OK
LC4 at 100.00%	0.04	OK
LC40 at 100.00%	0.03	OK
LC41 at 100.00%	0.03	OK
LC42 at 0.00%	0.03	OK
LC43 at 100.00%	0.03	OK
LC44 at 100.00%	0.03	OK
LC45 at 0.00%	0.05	OK
LC46 at 0.00%	0.05	OK
LC47 at 0.00%	0.05	OK
LC48 at 0.00%	0.05	OK



LC49 at 0.00%	0.05	OK
LC5 at 100.00%	0.04	OK
LC50 at 0.00%	0.05	OK
LC51 at 0.00%	0.05	OK
LC52 at 0.00%	0.05	OK
LC53 at 0.00%	<b>0.09</b>	<b>OK</b>
LC54 at 0.00%	0.09	OK
LC55 at 0.00%	0.09	OK
LC56 at 0.00%	0.09	OK
LC57 at 0.00%	0.09	OK
LC58 at 0.00%	0.09	OK
LC59 at 0.00%	0.09	OK
LC6 at 0.00%	0.02	OK
LC60 at 0.00%	0.09	OK
LC61 at 0.00%	0.02	OK
LC62 at 0.00%	0.02	OK
LC63 at 0.00%	0.02	OK
LC64 at 0.00%	0.02	OK
LC7 at 100.00%	0.04	OK
LC8 at 0.00%	0.02	OK
LC9 at 0.00%	0.02	OK

11

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LC1 at 0.00%	0.05	OK
LC10 at 0.00%	0.02	OK
LC11 at 0.00%	0.05	OK
LC12 at 0.00%	0.02	OK
LC13 at 0.00%	0.04	OK
LC14 at 0.00%	0.02	OK
LC15 at 100.00%	0.04	OK
LC16 at 0.00%	0.02	OK
LC17 at 0.00%	0.08	OK
LC18 at 0.00%	0.07	OK
LC19 at 0.00%	0.08	OK
LC2 at 0.00%	0.03	OK
LC20 at 0.00%	0.07	OK
LC21 at 0.00%	0.08	OK
LC22 at 0.00%	0.08	OK
LC23 at 0.00%	0.08	OK
LC24 at 0.00%	<b>0.08</b>	<b>OK</b>
LC25 at 0.00%	0.03	OK
LC26 at 0.00%	0.02	OK
LC27 at 0.00%	0.03	OK
LC28 at 0.00%	0.05	OK
LC29 at 0.00%	0.06	OK
LC3 at 0.00%	0.05	OK
LC30 at 0.00%	0.06	OK
LC31 at 0.00%	0.06	OK
LC32 at 0.00%	0.06	OK
LC33 at 0.00%	0.07	OK
LC34 at 0.00%	0.07	OK
LC35 at 0.00%	0.07	OK
LC36 at 0.00%	0.07	OK
LC37 at 0.00%	0.04	OK
LC38 at 0.00%	0.04	OK
LC39 at 0.00%	0.04	OK
LC4 at 0.00%	0.02	OK
LC40 at 0.00%	0.04	OK
LC41 at 0.00%	0.04	OK
LC42 at 0.00%	0.04	OK
LC43 at 0.00%	0.04	OK
LC44 at 0.00%	0.04	OK
LC45 at 0.00%	0.02	OK
LC46 at 0.00%	0.02	OK
LC47 at 0.00%	0.02	OK

LC48 at 0.00%	0.02	OK
LC49 at 0.00%	0.02	OK
LC5 at 0.00%	0.05	OK
LC50 at 0.00%	0.02	OK
LC51 at 0.00%	0.02	OK
LC52 at 0.00%	0.03	OK
LC53 at 0.00%	0.03	OK
LC54 at 0.00%	0.03	OK
LC55 at 0.00%	0.03	OK
LC56 at 0.00%	0.03	OK
LC57 at 0.00%	0.03	OK
LC58 at 0.00%	0.03	OK
LC59 at 0.00%	0.03	OK
LC6 at 0.00%	0.03	OK
LC60 at 0.00%	0.03	OK
LC61 at 0.00%	0.03	OK
LC62 at 0.00%	0.02	OK
LC63 at 0.00%	0.03	OK
LC64 at 0.00%	0.02	OK
LC7 at 0.00%	0.04	OK
LC8 at 0.00%	0.03	OK
LC9 at 0.00%	0.04	OK

12

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LC1 at 0.00%	<b>0.18</b>	<b>OK</b>
LC10 at 0.00%	0.05	OK
LC11 at 0.00%	0.16	OK
LC12 at 0.00%	0.08	OK
LC13 at 100.00%	0.08	OK
LC14 at 0.00%	0.07	OK
LC15 at 100.00%	0.07	OK
LC16 at 0.00%	0.09	OK
LC17 at 0.00%	0.16	OK
LC18 at 0.00%	0.13	OK
LC19 at 0.00%	0.17	OK
LC2 at 0.00%	0.06	OK
LC20 at 0.00%	0.13	OK
LC21 at 0.00%	0.12	OK
LC22 at 0.00%	0.15	OK
LC23 at 0.00%	0.12	OK
LC24 at 0.00%	0.15	OK
LC25 at 0.00%	0.07	OK
LC26 at 0.00%	0.06	OK
LC27 at 0.00%	0.06	OK
LC28 at 0.00%	0.09	OK
LC29 at 0.00%	0.11	OK
LC3 at 0.00%	0.17	OK
LC30 at 0.00%	0.10	OK
LC31 at 0.00%	0.11	OK
LC32 at 0.00%	0.10	OK
LC33 at 0.00%	0.10	OK
LC34 at 0.00%	0.10	OK
LC35 at 0.00%	0.10	OK
LC36 at 0.00%	0.10	OK
LC37 at 0.00%	0.07	OK
LC38 at 0.00%	0.06	OK
LC39 at 0.00%	0.07	OK
LC4 at 0.00%	0.09	OK
LC40 at 0.00%	0.06	OK
LC41 at 0.00%	0.05	OK
LC42 at 0.00%	0.06	OK
LC43 at 0.00%	0.05	OK
LC44 at 0.00%	0.06	OK
LC45 at 0.00%	0.06	OK
LC46 at 0.00%	0.06	OK

LC47 at 0.00%	0.07	OK
LC48 at 0.00%	0.06	OK
LC49 at 0.00%	0.05	OK
LC5 at 100.00%	0.07	OK
LC50 at 0.00%	0.06	OK
LC51 at 0.00%	0.05	OK
LC52 at 0.00%	0.06	OK
LC53 at 0.00%	0.07	OK
LC54 at 0.00%	0.06	OK
LC55 at 0.00%	0.07	OK
LC56 at 0.00%	0.06	OK
LC57 at 0.00%	0.06	OK
LC58 at 0.00%	0.06	OK
LC59 at 0.00%	0.06	OK
LC6 at 0.00%	0.08	OK
LC60 at 0.00%	0.06	OK
LC61 at 0.00%	0.05	OK
LC62 at 0.00%	0.04	OK
LC63 at 0.00%	0.06	OK
LC64 at 0.00%	0.05	OK
LC7 at 100.00%	0.07	OK
LC8 at 0.00%	0.11	OK
LC9 at 0.00%	0.17	OK

35

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LC1 at 100.00%	0.04	OK
LC10 at 0.00%	0.03	OK
LC11 at 100.00%	0.03	OK
LC12 at 100.00%	0.01	OK
LC13 at 100.00%	0.06	OK
LC14 at 0.00%	0.09	OK
LC15 at 0.00%	0.05	OK
LC16 at 0.00%	0.06	OK
LC17 at 0.00%	0.15	OK
LC18 at 0.00%	0.14	OK
LC19 at 0.00%	0.15	OK
LC2 at 0.00%	0.03	OK
LC20 at 0.00%	0.14	OK
LC21 at 0.00%	0.15	OK
LC22 at 0.00%	<b>0.16</b>	<b>OK</b>
LC23 at 0.00%	0.15	OK
LC24 at 0.00%	0.16	OK
LC25 at 0.00%	0.06	OK
LC26 at 0.00%	0.05	OK
LC27 at 0.00%	0.12	OK
LC28 at 100.00%	0.04	OK
LC29 at 100.00%	0.05	OK
LC3 at 0.00%	0.03	OK
LC30 at 100.00%	0.05	OK
LC31 at 100.00%	0.05	OK
LC32 at 100.00%	0.05	OK
LC33 at 100.00%	0.05	OK
LC34 at 100.00%	0.05	OK
LC35 at 100.00%	0.05	OK
LC36 at 100.00%	0.05	OK
LC37 at 0.00%	0.04	OK
LC38 at 100.00%	0.04	OK
LC39 at 0.00%	0.04	OK
LC4 at 0.00%	0.02	OK
LC40 at 0.00%	0.04	OK
LC41 at 100.00%	0.04	OK
LC42 at 0.00%	0.04	OK
LC43 at 100.00%	0.04	OK
LC44 at 0.00%	0.04	OK
LC45 at 0.00%	0.06	OK

LC46 at 0.00%	0.05	OK
LC47 at 0.00%	0.05	OK
LC48 at 0.00%	0.05	OK
LC49 at 0.00%	0.06	OK
LC5 at 100.00%	0.06	OK
LC50 at 0.00%	0.06	OK
LC51 at 0.00%	0.06	OK
LC52 at 0.00%	0.06	OK
LC53 at 0.00%	0.11	OK
LC54 at 0.00%	0.11	OK
LC55 at 0.00%	0.11	OK
LC56 at 0.00%	0.11	OK
LC57 at 0.00%	0.11	OK
LC58 at 0.00%	0.11	OK
LC59 at 0.00%	0.11	OK
LC6 at 0.00%	0.10	OK
LC60 at 0.00%	0.11	OK
LC61 at 0.00%	0.05	OK
LC62 at 0.00%	0.04	OK
LC63 at 0.00%	0.05	OK
LC64 at 0.00%	0.03	OK
LC7 at 0.00%	0.07	OK
LC8 at 0.00%	0.08	OK
LC9 at 100.00%	0.04	OK

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LC1 at 0.00%	0.07	OK
LC10 at 100.00%	0.05	OK
LC11 at 0.00%	0.04	OK
LC12 at 0.00%	0.04	OK
LC13 at 0.00%	0.05	OK
LC14 at 0.00%	0.07	OK
LC15 at 0.00%	0.06	OK
LC16 at 0.00%	0.07	OK
LC17 at 0.00%	0.22	OK
LC18 at 0.00%	0.22	OK
LC19 at 0.00%	0.22	OK
LC2 at 0.00%	0.06	OK
LC20 at 0.00%	0.22	OK
LC21 at 0.00%	0.22	OK
LC22 at 0.00%	0.23	OK
LC23 at 0.00%	0.22	OK
LC24 at 0.00%	<b>0.23</b>	<b>OK</b>
LC25 at 0.00%	0.08	OK
LC26 at 0.00%	0.08	OK
LC27 at 0.00%	0.09	OK
LC28 at 0.00%	0.10	OK
LC29 at 0.00%	0.13	OK
LC3 at 0.00%	0.06	OK
LC30 at 0.00%	0.13	OK
LC31 at 0.00%	0.13	OK
LC32 at 0.00%	0.13	OK
LC33 at 0.00%	0.13	OK
LC34 at 0.00%	0.13	OK
LC35 at 0.00%	0.13	OK
LC36 at 0.00%	0.13	OK
LC37 at 0.00%	0.10	OK
LC38 at 0.00%	0.10	OK
LC39 at 0.00%	0.10	OK
LC4 at 0.00%	0.06	OK
LC40 at 0.00%	0.10	OK
LC41 at 0.00%	0.10	OK
LC42 at 0.00%	0.10	OK
LC43 at 0.00%	0.10	OK
LC44 at 0.00%	0.10	OK

LC45 at 0.00%	0.13	OK
LC46 at 0.00%	0.13	OK
LC47 at 0.00%	0.13	OK
LC48 at 0.00%	0.13	OK
LC49 at 0.00%	0.13	OK
LC5 at 0.00%	0.07	OK
LC50 at 0.00%	0.13	OK
LC51 at 0.00%	0.13	OK
LC52 at 0.00%	0.13	OK
LC53 at 0.00%	0.12	OK
LC54 at 0.00%	0.12	OK
LC55 at 0.00%	0.12	OK
LC56 at 0.00%	0.12	OK
LC57 at 0.00%	0.12	OK
LC58 at 0.00%	0.12	OK
LC59 at 0.00%	0.12	OK
LC6 at 0.00%	0.09	OK
LC60 at 0.00%	0.12	OK
LC61 at 0.00%	0.07	OK
LC62 at 0.00%	0.05	OK
LC63 at 0.00%	0.07	OK
LC64 at 0.00%	0.05	OK
LC7 at 0.00%	0.08	OK
LC8 at 0.00%	0.08	OK
LC9 at 0.00%	0.05	OK

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LC1 at 0.00%	0.06	OK
LC10 at 0.00%	0.06	OK
LC11 at 0.00%	0.04	OK
LC12 at 0.00%	0.06	OK
LC13 at 0.00%	0.08	OK
LC14 at 0.00%	0.04	OK
LC15 at 0.00%	0.08	OK
LC16 at 0.00%	0.04	OK
LC17 at 0.00%	0.21	OK
LC18 at 0.00%	0.22	OK
LC19 at 0.00%	0.21	OK
LC2 at 0.00%	0.07	OK
LC20 at 0.00%	0.22	OK
LC21 at 0.00%	0.22	OK
LC22 at 0.00%	0.21	OK
LC23 at 0.00%	<b>0.22</b>	<b>OK</b>
LC24 at 0.00%	0.21	OK
LC25 at 0.00%	0.08	OK
LC26 at 0.00%	0.07	OK
LC27 at 0.00%	0.06	OK
LC28 at 0.00%	0.13	OK
LC29 at 0.00%	0.18	OK
LC3 at 0.00%	0.05	OK
LC30 at 0.00%	0.18	OK
LC31 at 0.00%	0.18	OK
LC32 at 0.00%	0.18	OK
LC33 at 0.00%	0.18	OK
LC34 at 0.00%	0.18	OK
LC35 at 0.00%	0.18	OK
LC36 at 0.00%	0.18	OK
LC37 at 0.00%	0.15	OK
LC38 at 0.00%	0.15	OK
LC39 at 0.00%	0.15	OK
LC4 at 0.00%	0.07	OK
LC40 at 0.00%	0.15	OK
LC41 at 0.00%	0.14	OK
LC42 at 0.00%	0.14	OK
LC43 at 0.00%	0.14	OK

LC44 at 0.00%	0.14	OK
LC45 at 0.00%	0.06	OK
LC46 at 0.00%	0.07	OK
LC47 at 0.00%	0.06	OK
LC48 at 0.00%	0.07	OK
LC49 at 0.00%	0.07	OK
LC5 at 0.00%	0.10	OK
LC50 at 0.00%	0.06	OK
LC51 at 0.00%	0.07	OK
LC52 at 0.00%	0.06	OK
LC53 at 0.00%	0.06	OK
LC54 at 0.00%	0.06	OK
LC55 at 0.00%	0.06	OK
LC56 at 0.00%	0.06	OK
LC57 at 0.00%	0.06	OK
LC58 at 0.00%	0.06	OK
LC59 at 0.00%	0.06	OK
LC6 at 0.00%	0.06	OK
LC60 at 0.00%	0.06	OK
LC61 at 0.00%	0.07	OK
LC62 at 0.00%	0.05	OK
LC63 at 0.00%	0.07	OK
LC64 at 0.00%	0.05	OK
LC7 at 0.00%	0.10	OK
LC8 at 0.00%	0.06	OK
LC9 at 0.00%	0.04	OK

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LC1 at 100.00%	0.07	OK
LC10 at 0.00%	0.10	OK
LC11 at 100.00%	0.06	OK
LC12 at 0.00%	0.06	OK
LC13 at 100.00%	0.09	OK
LC14 at 0.00%	0.04	OK
LC15 at 0.00%	0.08	OK
LC16 at 100.00%	0.02	OK
LC17 at 0.00%	0.15	OK
LC18 at 0.00%	<b>0.17</b>	<b>OK</b>
LC19 at 0.00%	0.15	OK
LC2 at 0.00%	0.11	OK
LC20 at 0.00%	0.17	OK
LC21 at 0.00%	0.17	OK
LC22 at 0.00%	0.15	OK
LC23 at 0.00%	0.17	OK
LC24 at 0.00%	0.15	OK
LC25 at 0.00%	0.06	OK
LC26 at 0.00%	0.05	OK
LC27 at 0.00%	0.05	OK
LC28 at 0.00%	0.10	OK
LC29 at 100.00%	0.08	OK
LC3 at 100.00%	0.06	OK
LC30 at 0.00%	0.08	OK
LC31 at 100.00%	0.08	OK
LC32 at 0.00%	0.08	OK
LC33 at 0.00%	0.08	OK
LC34 at 100.00%	0.07	OK
LC35 at 0.00%	0.08	OK
LC36 at 0.00%	0.08	OK
LC37 at 0.00%	0.06	OK
LC38 at 0.00%	0.06	OK
LC39 at 0.00%	0.06	OK
LC4 at 0.00%	0.07	OK
LC40 at 0.00%	0.06	OK
LC41 at 0.00%	0.06	OK
LC42 at 0.00%	0.05	OK

LC43 at 0.00%	0.06	OK
LC44 at 0.00%	0.06	OK
LC45 at 0.00%	0.05	OK
LC46 at 0.00%	0.05	OK
LC47 at 0.00%	0.05	OK
LC48 at 0.00%	0.05	OK
LC49 at 0.00%	0.05	OK
LC5 at 100.00%	0.09	OK
LC50 at 0.00%	0.04	OK
LC51 at 0.00%	0.05	OK
LC52 at 0.00%	0.05	OK
LC53 at 0.00%	0.04	OK
LC54 at 0.00%	0.05	OK
LC55 at 0.00%	0.04	OK
LC56 at 0.00%	0.05	OK
LC57 at 0.00%	0.05	OK
LC58 at 0.00%	0.04	OK
LC59 at 0.00%	0.05	OK
LC6 at 0.00%	0.04	OK
LC60 at 0.00%	0.04	OK
LC61 at 0.00%	0.05	OK
LC62 at 0.00%	0.03	OK
LC63 at 0.00%	0.05	OK
LC64 at 0.00%	0.03	OK
LC7 at 0.00%	0.09	OK
LC8 at 0.00%	0.02	OK
LC9 at 100.00%	0.07	OK

**Mount Brace**

17

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LC1 at 34.38%	0.19	OK
LC10 at 100.00%	0.09	OK
LC11 at 34.38%	0.16	OK
LC12 at 100.00%	0.07	OK
LC13 at 34.38%	0.17	OK
LC14 at 100.00%	0.03	OK
LC15 at 34.38%	0.15	OK
LC16 at 100.00%	0.04	OK
LC17 at 100.00%	0.20	OK
LC18 at 100.00%	0.21	OK
LC19 at 100.00%	0.20	OK
LC2 at 100.00%	0.11	OK
LC20 at 100.00%	0.21	OK
LC21 at 100.00%	0.20	OK
LC22 at 100.00%	0.20	OK
LC23 at 100.00%	0.20	OK
LC24 at 100.00%	0.20	OK
LC25 at 100.00%	0.09	OK
LC26 at 100.00%	0.08	OK
LC27 at 100.00%	<b>0.26</b>	<b>OK</b>
LC28 at 100.00%	0.08	OK
LC29 at 100.00%	0.09	OK
LC3 at 34.38%	0.17	OK
LC30 at 100.00%	0.09	OK
LC31 at 100.00%	0.09	OK
LC32 at 100.00%	0.09	OK
LC33 at 100.00%	0.09	OK
LC34 at 100.00%	0.09	OK
LC35 at 100.00%	0.09	OK
LC36 at 100.00%	0.09	OK
LC37 at 100.00%	0.08	OK
LC38 at 100.00%	0.08	OK
LC39 at 100.00%	0.08	OK
LC4 at 100.00%	0.09	OK
LC40 at 100.00%	0.08	OK
LC41 at 100.00%	0.08	OK

LC42 at 100.00%	0.08	OK
LC43 at 100.00%	0.08	OK
LC44 at 100.00%	0.08	OK
LC45 at 100.00%	0.07	OK
LC46 at 100.00%	0.07	OK
LC47 at 100.00%	0.07	OK
LC48 at 100.00%	0.07	OK
LC49 at 100.00%	0.07	OK
LC5 at 37.50%	0.17	OK
LC50 at 100.00%	0.07	OK
LC51 at 100.00%	0.07	OK
LC52 at 100.00%	0.07	OK
LC53 at 37.50%	0.16	OK
LC54 at 37.50%	0.18	OK
LC55 at 37.50%	0.17	OK
LC56 at 37.50%	0.18	OK
LC57 at 37.50%	0.19	OK
LC58 at 37.50%	0.17	OK
LC59 at 37.50%	0.18	OK
LC6 at 100.00%	0.05	OK
LC60 at 37.50%	0.17	OK
LC61 at 100.00%	0.08	OK
LC62 at 100.00%	0.05	OK
LC63 at 100.00%	0.08	OK
LC64 at 100.00%	0.05	OK
LC7 at 34.38%	0.14	OK
LC8 at 100.00%	0.06	OK
LC9 at 34.38%	0.19	OK

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LC1 at 100.00%	0.09	OK
LC10 at 100.00%	0.11	OK
LC11 at 100.00%	0.06	OK
LC12 at 100.00%	0.10	OK
LC13 at 100.00%	0.09	OK
LC14 at 0.00%	0.07	OK
LC15 at 100.00%	0.10	OK
LC16 at 0.00%	0.05	OK
LC17 at 100.00%	0.32	OK
LC18 at 100.00%	<b>0.33</b>	<b>OK</b>
LC19 at 100.00%	0.32	OK
LC2 at 100.00%	0.14	OK
LC20 at 100.00%	0.33	OK
LC21 at 100.00%	0.32	OK
LC22 at 100.00%	0.31	OK
LC23 at 100.00%	0.32	OK
LC24 at 100.00%	0.31	OK
LC25 at 100.00%	0.12	OK
LC26 at 100.00%	0.16	OK
LC27 at 100.00%	0.17	OK
LC28 at 100.00%	0.11	OK
LC29 at 100.00%	0.15	OK
LC3 at 100.00%	0.09	OK
LC30 at 100.00%	0.15	OK
LC31 at 100.00%	0.15	OK
LC32 at 100.00%	0.15	OK
LC33 at 100.00%	0.15	OK
LC34 at 100.00%	0.15	OK
LC35 at 100.00%	0.15	OK
LC36 at 100.00%	0.15	OK
LC37 at 100.00%	0.21	OK
LC38 at 100.00%	0.22	OK
LC39 at 100.00%	0.21	OK
LC4 at 100.00%	0.13	OK
LC40 at 100.00%	0.22	OK



LC41 at 100.00%	0.21	OK
LC42 at 100.00%	0.21	OK
LC43 at 100.00%	0.21	OK
LC44 at 100.00%	0.21	OK
LC45 at 100.00%	0.14	OK
LC46 at 100.00%	0.14	OK
LC47 at 100.00%	0.14	OK
LC48 at 100.00%	0.14	OK
LC49 at 100.00%	0.14	OK
LC5 at 100.00%	0.12	OK
LC50 at 100.00%	0.14	OK
LC51 at 100.00%	0.14	OK
LC52 at 100.00%	0.14	OK
LC53 at 100.00%	0.21	OK
LC54 at 100.00%	0.21	OK
LC55 at 100.00%	0.21	OK
LC56 at 100.00%	0.21	OK
LC57 at 100.00%	0.21	OK
LC58 at 100.00%	0.20	OK
LC59 at 100.00%	0.21	OK
LC6 at 0.00%	0.07	OK
LC60 at 100.00%	0.20	OK
LC61 at 100.00%	0.11	OK
LC62 at 100.00%	0.08	OK
LC63 at 100.00%	0.11	OK
LC64 at 100.00%	0.07	OK
LC7 at 100.00%	0.12	OK
LC8 at 100.00%	0.08	OK
LC9 at 100.00%	0.06	OK

20

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LC1 at 0.00%	0.14	OK
LC10 at 100.00%	0.14	OK
LC11 at 0.00%	0.10	OK
LC12 at 100.00%	0.13	OK
LC13 at 0.00%	0.17	OK
LC14 at 0.00%	0.12	OK
LC15 at 0.00%	0.17	OK
LC16 at 0.00%	0.12	OK
LC17 at 0.00%	0.51	OK
LC18 at 0.00%	0.52	OK
LC19 at 0.00%	0.51	OK
LC2 at 100.00%	0.18	OK
LC20 at 0.00%	0.52	OK
LC21 at 0.00%	0.53	OK
LC22 at 0.00%	0.52	OK
LC23 at 0.00%	<b>0.53</b>	<b>OK</b>
LC24 at 0.00%	0.52	OK
LC25 at 0.00%	0.19	OK
LC26 at 0.00%	0.19	OK
LC27 at 0.00%	0.19	OK
LC28 at 0.00%	0.29	OK
LC29 at 0.00%	0.41	OK
LC3 at 0.00%	0.14	OK
LC30 at 0.00%	0.42	OK
LC31 at 0.00%	0.41	OK
LC32 at 0.00%	0.42	OK
LC33 at 0.00%	0.42	OK
LC34 at 0.00%	0.42	OK
LC35 at 0.00%	0.42	OK
LC36 at 0.00%	0.42	OK
LC37 at 0.00%	0.38	OK
LC38 at 0.00%	0.39	OK
LC39 at 0.00%	0.38	OK
LC4 at 0.00%	0.17	OK

LC40 at 0.00%	0.39	OK
LC41 at 0.00%	0.39	OK
LC42 at 0.00%	0.39	OK
LC43 at 0.00%	0.39	OK
LC44 at 0.00%	0.39	OK
LC45 at 0.00%	0.17	OK
LC46 at 0.00%	0.17	OK
LC47 at 0.00%	0.17	OK
LC48 at 0.00%	0.17	OK
LC49 at 0.00%	0.17	OK
LC5 at 0.00%	0.21	OK
LC50 at 0.00%	0.17	OK
LC51 at 0.00%	0.17	OK
LC52 at 0.00%	0.17	OK
LC53 at 0.00%	0.20	OK
LC54 at 0.00%	0.20	OK
LC55 at 0.00%	0.20	OK
LC56 at 0.00%	0.20	OK
LC57 at 0.00%	0.20	OK
LC58 at 0.00%	0.20	OK
LC59 at 0.00%	0.20	OK
LC6 at 0.00%	0.16	OK
LC60 at 0.00%	0.20	OK
LC61 at 0.00%	0.17	OK
LC62 at 0.00%	0.12	OK
LC63 at 0.00%	0.17	OK
LC64 at 0.00%	0.12	OK
LC7 at 0.00%	0.21	OK
LC8 at 0.00%	0.16	OK
LC9 at 0.00%	0.10	OK

21

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LC1 at 34.38%	0.31	OK
LC10 at 0.00%	0.16	OK
LC11 at 34.38%	0.29	OK
LC12 at 0.00%	0.16	OK
LC13 at 37.50%	0.42	OK
LC14 at 0.00%	0.16	OK
LC15 at 37.50%	0.40	OK
LC16 at 100.00%	0.17	OK
LC17 at 0.00%	0.67	OK
LC18 at 100.00%	0.66	OK
LC19 at 0.00%	0.67	OK
LC2 at 0.00%	0.22	OK
LC20 at 100.00%	0.66	OK
LC21 at 100.00%	0.69	OK
LC22 at 100.00%	0.66	OK
LC23 at 100.00%	<b>0.69</b>	<b>OK</b>
LC24 at 100.00%	0.66	OK
LC25 at 0.00%	0.25	OK
LC26 at 0.00%	0.22	OK
LC27 at 100.00%	0.22	OK
LC28 at 0.00%	0.43	OK
LC29 at 100.00%	0.59	OK
LC3 at 34.38%	0.30	OK
LC30 at 100.00%	0.60	OK
LC31 at 100.00%	0.59	OK
LC32 at 100.00%	0.60	OK
LC33 at 100.00%	0.60	OK
LC34 at 100.00%	0.60	OK
LC35 at 100.00%	0.60	OK
LC36 at 100.00%	0.60	OK
LC37 at 0.00%	0.26	OK
LC38 at 0.00%	0.26	OK
LC39 at 0.00%	0.26	OK

LC4 at 0.00%	0.22	OK
LC40 at 0.00%	0.26	OK
LC41 at 100.00%	0.26	OK
LC42 at 0.00%	0.26	OK
LC43 at 100.00%	0.26	OK
LC44 at 0.00%	0.26	OK
LC45 at 0.00%	0.22	OK
LC46 at 100.00%	0.22	OK
LC47 at 0.00%	0.22	OK
LC48 at 0.00%	0.22	OK
LC49 at 100.00%	0.22	OK
LC5 at 37.50%	0.45	OK
LC50 at 0.00%	0.22	OK
LC51 at 100.00%	0.22	OK
LC52 at 0.00%	0.22	OK
LC53 at 0.00%	0.22	OK
LC54 at 100.00%	0.23	OK
LC55 at 0.00%	0.22	OK
LC56 at 100.00%	0.22	OK
LC57 at 100.00%	0.23	OK
LC58 at 100.00%	0.22	OK
LC59 at 100.00%	0.23	OK
LC6 at 0.00%	0.22	OK
LC60 at 100.00%	0.22	OK
LC61 at 0.00%	0.22	OK
LC62 at 0.00%	0.16	OK
LC63 at 0.00%	0.23	OK
LC64 at 0.00%	0.16	OK
LC7 at 37.50%	0.43	OK
LC8 at 100.00%	0.22	OK
LC9 at 34.38%	0.29	OK

22

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LC1 at 100.00%	0.14	OK
LC10 at 100.00%	0.03	OK
LC11 at 100.00%	0.13	OK
LC12 at 100.00%	0.04	OK
LC13 at 0.00%	0.06	OK
LC14 at 100.00%	0.07	OK
LC15 at 0.00%	0.04	OK
LC16 at 100.00%	0.05	OK
LC17 at 100.00%	0.19	OK
LC18 at 100.00%	0.17	OK
LC19 at 100.00%	0.19	OK
LC2 at 100.00%	0.05	OK
LC20 at 100.00%	0.17	OK
LC21 at 100.00%	0.16	OK
LC22 at 100.00%	0.18	OK
LC23 at 100.00%	0.15	OK
LC24 at 100.00%	0.17	OK
LC25 at 100.00%	0.07	OK
LC26 at 100.00%	0.06	OK
LC27 at 100.00%	0.06	OK
LC28 at 100.00%	<b>0.25</b>	<b>OK</b>
LC29 at 0.00%	0.12	OK
LC3 at 100.00%	0.14	OK
LC30 at 0.00%	0.13	OK
LC31 at 0.00%	0.12	OK
LC32 at 0.00%	0.13	OK
LC33 at 0.00%	0.13	OK
LC34 at 0.00%	0.13	OK
LC35 at 0.00%	0.13	OK
LC36 at 0.00%	0.13	OK
LC37 at 100.00%	0.07	OK
LC38 at 100.00%	0.06	OK

LC39 at 100.00%	0.07	OK
LC4 at 100.00%	0.05	OK
LC40 at 100.00%	0.06	OK
LC41 at 100.00%	0.06	OK
LC42 at 100.00%	0.06	OK
LC43 at 100.00%	0.06	OK
LC44 at 100.00%	0.06	OK
LC45 at 100.00%	0.07	OK
LC46 at 100.00%	0.06	OK
LC47 at 100.00%	0.07	OK
LC48 at 100.00%	0.06	OK
LC49 at 100.00%	0.06	OK
LC5 at 0.00%	0.06	OK
LC50 at 100.00%	0.06	OK
LC51 at 100.00%	0.06	OK
LC52 at 100.00%	0.06	OK
LC53 at 100.00%	0.07	OK
LC54 at 100.00%	0.06	OK
LC55 at 100.00%	0.07	OK
LC56 at 100.00%	0.06	OK
LC57 at 100.00%	0.06	OK
LC58 at 100.00%	0.06	OK
LC59 at 100.00%	0.06	OK
LC6 at 100.00%	0.08	OK
LC60 at 100.00%	0.06	OK
LC61 at 100.00%	0.06	OK
LC62 at 100.00%	0.04	OK
LC63 at 100.00%	0.07	OK
LC64 at 100.00%	0.05	OK
LC7 at 0.00%	0.05	OK
LC8 at 100.00%	0.07	OK
LC9 at 100.00%	0.13	OK

31

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LC1 at 100.00%	0.26	OK
LC10 at 62.50%	0.17	OK
LC11 at 100.00%	0.20	OK
LC12 at 100.00%	0.16	OK
LC13 at 0.00%	0.17	OK
LC14 at 100.00%	0.23	OK
LC15 at 0.00%	0.17	OK
LC16 at 100.00%	0.21	OK
LC17 at 100.00%	0.66	OK
LC18 at 100.00%	0.64	OK
LC19 at 100.00%	0.66	OK
LC2 at 0.00%	0.21	OK
LC20 at 100.00%	0.65	OK
LC21 at 100.00%	0.65	OK
LC22 at 100.00%	<b>0.67</b>	<b>OK</b>
LC23 at 100.00%	0.65	OK
LC24 at 100.00%	0.67	OK
LC25 at 100.00%	0.27	OK
LC26 at 100.00%	0.23	OK
LC27 at 100.00%	0.39	OK
LC28 at 100.00%	0.27	OK
LC29 at 100.00%	0.30	OK
LC3 at 100.00%	0.25	OK
LC30 at 100.00%	0.29	OK
LC31 at 100.00%	0.30	OK
LC32 at 100.00%	0.29	OK
LC33 at 100.00%	0.29	OK
LC34 at 100.00%	0.30	OK
LC35 at 100.00%	0.29	OK
LC36 at 100.00%	0.30	OK
LC37 at 100.00%	0.26	OK

LC38 at 100.00%	0.25	OK
LC39 at 100.00%	0.26	OK
LC4 at 100.00%	0.21	OK
LC40 at 100.00%	0.25	OK
LC41 at 100.00%	0.25	OK
LC42 at 100.00%	0.26	OK
LC43 at 100.00%	0.25	OK
LC44 at 100.00%	0.26	OK
LC45 at 100.00%	0.24	OK
LC46 at 100.00%	0.23	OK
LC47 at 100.00%	0.24	OK
LC48 at 100.00%	0.23	OK
LC49 at 100.00%	0.23	OK
LC5 at 0.00%	0.23	OK
LC50 at 100.00%	0.24	OK
LC51 at 100.00%	0.23	OK
LC52 at 100.00%	0.24	OK
LC53 at 0.00%	0.55	OK
LC54 at 0.00%	0.54	OK
LC55 at 0.00%	0.55	OK
LC56 at 0.00%	0.54	OK
LC57 at 0.00%	0.55	OK
LC58 at 0.00%	0.55	OK
LC59 at 0.00%	0.55	OK
LC6 at 100.00%	0.29	OK
LC60 at 0.00%	0.55	OK
LC61 at 100.00%	0.23	OK
LC62 at 100.00%	0.16	OK
LC63 at 100.00%	0.23	OK
LC64 at 100.00%	0.16	OK
LC7 at 0.00%	0.23	OK
LC8 at 100.00%	0.27	OK
LC9 at 100.00%	0.20	OK

**RRU Rack**

**33**

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LC1 at 0.00%	0.09	OK
LC10 at 0.00%	0.12	OK
LC11 at 0.00%	0.07	OK
LC12 at 0.00%	0.14	OK
LC13 at 0.00%	0.07	OK
LC14 at 0.00%	0.12	OK
LC15 at 0.00%	0.07	OK
LC16 at 0.00%	0.14	OK
LC17 at 0.00%	0.21	OK
LC18 at 0.00%	0.22	OK
LC19 at 0.00%	0.21	OK
LC2 at 0.00%	0.14	OK
LC20 at 0.00%	0.23	OK
LC21 at 0.00%	0.21	OK
LC22 at 0.00%	0.22	OK
LC23 at 0.00%	0.21	OK
LC24 at 0.00%	<b>0.23</b>	<b>OK</b>
LC25 at 0.00%	0.11	OK
LC26 at 0.00%	0.09	OK
LC27 at 0.00%	0.09	OK
LC28 at 0.00%	0.09	OK
LC29 at 0.00%	0.09	OK
LC3 at 0.00%	0.09	OK
LC30 at 0.00%	0.09	OK
LC31 at 0.00%	0.09	OK
LC32 at 0.00%	0.10	OK
LC33 at 0.00%	0.09	OK
LC34 at 0.00%	0.09	OK
LC35 at 0.00%	0.09	OK
LC36 at 0.00%	0.10	OK

LC37 at 0.00%	0.09	OK
LC38 at 0.00%	0.09	OK
LC39 at 0.00%	0.09	OK
LC4 at 0.00%	0.16	OK
LC40 at 0.00%	0.10	OK
LC41 at 0.00%	0.09	OK
LC42 at 0.00%	0.09	OK
LC43 at 0.00%	0.09	OK
LC44 at 0.00%	0.10	OK
LC45 at 0.00%	0.09	OK
LC46 at 0.00%	0.09	OK
LC47 at 0.00%	0.09	OK
LC48 at 0.00%	0.10	OK
LC49 at 0.00%	0.09	OK
LC5 at 0.00%	0.09	OK
LC50 at 0.00%	0.09	OK
LC51 at 0.00%	0.09	OK
LC52 at 0.00%	0.10	OK
LC53 at 0.00%	0.09	OK
LC54 at 0.00%	0.09	OK
LC55 at 0.00%	0.09	OK
LC56 at 0.00%	0.10	OK
LC57 at 0.00%	0.09	OK
LC58 at 0.00%	0.09	OK
LC59 at 0.00%	0.09	OK
LC6 at 0.00%	0.14	OK
LC60 at 0.00%	0.10	OK
LC61 at 0.00%	0.10	OK
LC62 at 0.00%	0.07	OK
LC63 at 0.00%	0.10	OK
LC64 at 0.00%	0.07	OK
LC7 at 0.00%	0.09	OK
LC8 at 0.00%	0.16	OK
LC9 at 0.00%	0.07	OK

34

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LC1 at 0.00%	0.12	OK
LC10 at 0.00%	0.13	OK
LC11 at 0.00%	0.09	OK
LC12 at 0.00%	0.13	OK
LC13 at 0.00%	0.09	OK
LC14 at 0.00%	0.13	OK
LC15 at 0.00%	0.09	OK
LC16 at 0.00%	0.13	OK
LC17 at 0.00%	0.22	OK
LC18 at 0.00%	0.23	OK
LC19 at 0.00%	0.22	OK
LC2 at 0.00%	0.15	OK
LC20 at 0.00%	0.23	OK
LC21 at 0.00%	0.22	OK
LC22 at 0.00%	0.23	OK
LC23 at 0.00%	0.22	OK
LC24 at 0.00%	<b>0.23</b>	<b>OK</b>
LC25 at 0.00%	0.14	OK
LC26 at 0.00%	0.12	OK
LC27 at 0.00%	0.12	OK
LC28 at 0.00%	0.12	OK
LC29 at 0.00%	0.12	OK
LC3 at 0.00%	0.12	OK
LC30 at 0.00%	0.12	OK
LC31 at 0.00%	0.12	OK
LC32 at 0.00%	0.12	OK
LC33 at 0.00%	0.12	OK
LC34 at 0.00%	0.12	OK
LC35 at 0.00%	0.12	OK

LC36 at 0.00%	0.12	OK
LC37 at 0.00%	0.12	OK
LC38 at 0.00%	0.12	OK
LC39 at 0.00%	0.12	OK
LC4 at 0.00%	0.16	OK
LC40 at 0.00%	0.12	OK
LC41 at 0.00%	0.12	OK
LC42 at 0.00%	0.12	OK
LC43 at 0.00%	0.12	OK
LC44 at 0.00%	0.12	OK
LC45 at 0.00%	0.12	OK
LC46 at 0.00%	0.12	OK
LC47 at 0.00%	0.12	OK
LC48 at 0.00%	0.12	OK
LC49 at 0.00%	0.12	OK
LC5 at 0.00%	0.12	OK
LC50 at 0.00%	0.12	OK
LC51 at 0.00%	0.12	OK
LC52 at 0.00%	0.12	OK
LC53 at 0.00%	0.12	OK
LC54 at 0.00%	0.12	OK
LC55 at 0.00%	0.12	OK
LC56 at 0.00%	0.12	OK
LC57 at 0.00%	0.12	OK
LC58 at 0.00%	0.12	OK
LC59 at 0.00%	0.12	OK
LC6 at 0.00%	0.15	OK
LC60 at 0.00%	0.12	OK
LC61 at 0.00%	0.13	OK
LC62 at 0.00%	0.09	OK
LC63 at 0.00%	0.12	OK
LC64 at 0.00%	0.09	OK
LC7 at 0.00%	0.12	OK
LC8 at 0.00%	0.16	OK
LC9 at 0.00%	0.09	OK

Standoff Brace

25

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LC1 at 0.00%	0.23	OK
LC10 at 0.00%	0.13	OK
LC11 at 0.00%	0.17	OK
LC12 at 0.00%	0.14	OK
LC13 at 0.00%	0.19	OK
LC14 at 0.00%	0.23	OK
LC15 at 0.00%	0.19	OK
LC16 at 0.00%	0.22	OK
LC17 at 0.00%	0.74	OK
LC18 at 0.00%	0.73	OK
LC19 at 0.00%	0.74	OK
LC2 at 0.00%	0.19	OK
LC20 at 0.00%	0.73	OK
LC21 at 0.00%	0.75	OK
LC22 at 0.00%	<b>0.75</b>	<b>OK</b>
LC23 at 0.00%	0.75	OK
LC24 at 0.00%	0.75	OK
LC25 at 0.00%	0.28	OK
LC26 at 0.00%	0.31	OK
LC27 at 100.00%	0.26	OK
LC28 at 0.00%	0.48	OK
LC29 at 0.00%	0.62	OK
LC3 at 0.00%	0.23	OK
LC30 at 0.00%	0.62	OK
LC31 at 0.00%	0.62	OK
LC32 at 0.00%	0.62	OK
LC33 at 0.00%	0.62	OK
LC34 at 0.00%	0.62	OK

LC35 at 0.00%	0.62	OK
LC36 at 0.00%	0.62	OK
LC37 at 0.00%	0.46	OK
LC38 at 0.00%	0.45	OK
LC39 at 0.00%	0.46	OK
LC4 at 0.00%	0.20	OK
LC40 at 0.00%	0.45	OK
LC41 at 0.00%	0.46	OK
LC42 at 0.00%	0.46	OK
LC43 at 0.00%	0.46	OK
LC44 at 0.00%	0.46	OK
LC45 at 100.00%	0.36	OK
LC46 at 100.00%	0.36	OK
LC47 at 100.00%	0.36	OK
LC48 at 100.00%	0.36	OK
LC49 at 100.00%	0.36	OK
LC5 at 0.00%	0.25	OK
LC50 at 100.00%	0.37	OK
LC51 at 100.00%	0.36	OK
LC52 at 100.00%	0.37	OK
LC53 at 100.00%	0.34	OK
LC54 at 100.00%	0.34	OK
LC55 at 100.00%	0.34	OK
LC56 at 100.00%	0.34	OK
LC57 at 100.00%	0.34	OK
LC58 at 100.00%	0.34	OK
LC59 at 100.00%	0.34	OK
LC6 at 0.00%	0.29	OK
LC60 at 100.00%	0.34	OK
LC61 at 0.00%	0.24	OK
LC62 at 0.00%	0.17	OK
LC63 at 0.00%	0.25	OK
LC64 at 0.00%	0.17	OK
LC7 at 0.00%	0.25	OK
LC8 at 0.00%	0.28	OK
LC9 at 0.00%	0.17	OK

26

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LC1 at 0.00%	0.14	OK
LC10 at 0.00%	0.12	OK
LC11 at 0.00%	0.10	OK
LC12 at 0.00%	0.12	OK
LC13 at 0.00%	0.11	OK
LC14 at 100.00%	0.11	OK
LC15 at 0.00%	0.12	OK
LC16 at 100.00%	0.10	OK
LC17 at 0.00%	0.43	OK
LC18 at 0.00%	<b>0.44</b>	<b>OK</b>
LC19 at 0.00%	0.43	OK
LC2 at 0.00%	0.16	OK
LC20 at 0.00%	0.44	OK
LC21 at 0.00%	0.44	OK
LC22 at 0.00%	0.43	OK
LC23 at 0.00%	0.44	OK
LC24 at 0.00%	0.43	OK
LC25 at 0.00%	0.17	OK
LC26 at 0.00%	0.19	OK
LC27 at 0.00%	0.20	OK
LC28 at 0.00%	0.19	OK
LC29 at 100.00%	0.24	OK
LC3 at 0.00%	0.13	OK
LC30 at 100.00%	0.24	OK
LC31 at 100.00%	0.24	OK
LC32 at 100.00%	0.24	OK
LC33 at 100.00%	0.24	OK



LC34 at 100.00%	0.24	OK
LC35 at 100.00%	0.24	OK
LC36 at 100.00%	0.24	OK
LC37 at 100.00%	0.25	OK
LC38 at 100.00%	0.24	OK
LC39 at 100.00%	0.25	OK
LC4 at 0.00%	0.15	OK
LC40 at 100.00%	0.25	OK
LC41 at 100.00%	0.25	OK
LC42 at 100.00%	0.25	OK
LC43 at 100.00%	0.25	OK
LC44 at 100.00%	0.25	OK
LC45 at 0.00%	0.25	OK
LC46 at 0.00%	0.25	OK
LC47 at 0.00%	0.25	OK
LC48 at 0.00%	0.25	OK
LC49 at 0.00%	0.25	OK
LC5 at 0.00%	0.15	OK
LC50 at 0.00%	0.25	OK
LC51 at 0.00%	0.25	OK
LC52 at 0.00%	0.25	OK
LC53 at 100.00%	0.26	OK
LC54 at 100.00%	0.26	OK
LC55 at 100.00%	0.26	OK
LC56 at 100.00%	0.26	OK
LC57 at 100.00%	0.26	OK
LC58 at 100.00%	0.26	OK
LC59 at 100.00%	0.26	OK
LC6 at 100.00%	0.14	OK
LC60 at 100.00%	0.26	OK
LC61 at 0.00%	0.15	OK
LC62 at 0.00%	0.10	OK
LC63 at 0.00%	0.15	OK
LC64 at 0.00%	0.10	OK
LC7 at 0.00%	0.15	OK
LC8 at 0.00%	0.13	OK
LC9 at 0.00%	0.10	OK

27

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LC1 at 100.00%	0.05	OK
LC10 at 0.00%	0.04	OK
LC11 at 100.00%	0.04	OK
LC12 at 0.00%	0.04	OK
LC13 at 100.00%	0.04	OK
LC14 at 0.00%	0.05	OK
LC15 at 0.00%	0.04	OK
LC16 at 0.00%	0.05	OK
LC17 at 100.00%	0.15	OK
LC18 at 100.00%	0.15	OK
LC19 at 100.00%	0.15	OK
LC2 at 0.00%	0.05	OK
LC20 at 100.00%	0.15	OK
LC21 at 100.00%	0.15	OK
LC22 at 100.00%	<b>0.15</b>	<b>OK</b>
LC23 at 100.00%	0.15	OK
LC24 at 100.00%	0.15	OK
LC25 at 100.00%	0.06	OK
LC26 at 100.00%	0.07	OK
LC27 at 0.00%	0.07	OK
LC28 at 100.00%	0.10	OK
LC29 at 100.00%	0.13	OK
LC3 at 100.00%	0.05	OK
LC30 at 100.00%	0.13	OK
LC31 at 100.00%	0.13	OK
LC32 at 100.00%	0.13	OK

LC33 at 100.00%	0.13	OK
LC34 at 100.00%	0.13	OK
LC35 at 100.00%	0.13	OK
LC36 at 100.00%	0.13	OK
LC37 at 100.00%	0.10	OK
LC38 at 100.00%	0.10	OK
LC39 at 100.00%	0.10	OK
LC4 at 0.00%	0.04	OK
LC40 at 100.00%	0.10	OK
LC41 at 100.00%	0.10	OK
LC42 at 100.00%	0.10	OK
LC43 at 100.00%	0.10	OK
LC44 at 100.00%	0.10	OK
LC45 at 100.00%	0.07	OK
LC46 at 100.00%	0.07	OK
LC47 at 100.00%	0.07	OK
LC48 at 100.00%	0.07	OK
LC49 at 100.00%	0.07	OK
LC5 at 100.00%	0.05	OK
LC50 at 100.00%	0.07	OK
LC51 at 100.00%	0.07	OK
LC52 at 100.00%	0.07	OK
LC53 at 100.00%	0.10	OK
LC54 at 100.00%	0.10	OK
LC55 at 100.00%	0.10	OK
LC56 at 100.00%	0.10	OK
LC57 at 100.00%	0.10	OK
LC58 at 100.00%	0.09	OK
LC59 at 100.00%	0.10	OK
LC6 at 0.00%	0.06	OK
LC60 at 100.00%	0.09	OK
LC61 at 100.00%	0.05	OK
LC62 at 100.00%	0.03	OK
LC63 at 100.00%	0.05	OK
LC64 at 100.00%	0.04	OK
LC7 at 0.00%	0.05	OK
LC8 at 0.00%	0.06	OK
LC9 at 100.00%	0.04	OK

standoff horz.

*PIPE 4x0.237*

23

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LC1 at 100.00%	0.18	OK
LC10 at 100.00%	0.42	OK
LC11 at 100.00%	0.14	OK
LC12 at 100.00%	0.29	OK
LC13 at 100.00%	0.08	OK
LC14 at 100.00%	0.50	OK
LC15 at 100.00%	0.08	OK
LC16 at 100.00%	0.37	OK
LC17 at 100.00%	0.48	OK
LC18 at 100.00%	0.37	OK
LC19 at 100.00%	0.48	OK
LC2 at 100.00%	0.43	OK
LC20 at 100.00%	0.40	OK
LC21 at 100.00%	0.46	OK
LC22 at 100.00%	<b>0.58</b>	<b>OK</b>
LC23 at 100.00%	0.46	OK
LC24 at 100.00%	0.55	OK
LC25 at 100.00%	0.18	OK
LC26 at 100.00%	0.20	OK
LC27 at 100.00%	0.20	OK
LC28 at 100.00%	0.35	OK
LC29 at 100.00%	0.48	OK
LC3 at 100.00%	0.18	OK
LC30 at 100.00%	0.45	OK
LC31 at 100.00%	0.48	OK

LC32 at 100.00%	0.46	OK
LC33 at 100.00%	0.47	OK
LC34 at 100.00%	0.50	OK
LC35 at 100.00%	0.47	OK
LC36 at 100.00%	0.49	OK
LC37 at 100.00%	0.34	OK
LC38 at 100.00%	0.31	OK
LC39 at 100.00%	0.34	OK
LC4 at 100.00%	0.30	OK
LC40 at 100.00%	0.32	OK
LC41 at 100.00%	0.33	OK
LC42 at 100.00%	0.36	OK
LC43 at 100.00%	0.33	OK
LC44 at 100.00%	0.35	OK
LC45 at 100.00%	0.20	OK
LC46 at 100.00%	0.17	OK
LC47 at 100.00%	0.20	OK
LC48 at 100.00%	0.18	OK
LC49 at 100.00%	0.19	OK
LC5 at 100.00%	0.12	OK
LC50 at 100.00%	0.22	OK
LC51 at 100.00%	0.19	OK
LC52 at 100.00%	0.21	OK
LC53 at 100.00%	0.28	OK
LC54 at 100.00%	0.31	OK
LC55 at 100.00%	0.28	OK
LC56 at 100.00%	0.30	OK
LC57 at 100.00%	0.29	OK
LC58 at 100.00%	0.26	OK
LC59 at 100.00%	0.29	OK
LC6 at 100.00%	0.53	OK
LC60 at 100.00%	0.26	OK
LC61 at 100.00%	0.14	OK
LC62 at 100.00%	0.09	OK
LC63 at 100.00%	0.16	OK
LC64 at 100.00%	0.11	OK
LC7 at 100.00%	0.12	OK
LC8 at 100.00%	0.40	OK
LC9 at 100.00%	0.14	OK

24

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LC1 at 100.00%	0.12	OK
LC10 at 100.00%	0.39	OK
LC11 at 100.00%	0.08	OK
LC12 at 100.00%	0.28	OK
LC13 at 100.00%	0.14	OK
LC14 at 100.00%	0.31	OK
LC15 at 100.00%	0.14	OK
LC16 at 100.00%	0.21	OK
LC17 at 100.00%	0.45	OK
LC18 at 100.00%	<b>0.53</b>	<b>OK</b>
LC19 at 100.00%	0.45	OK
LC2 at 100.00%	0.42	OK
LC20 at 100.00%	0.51	OK
LC21 at 100.00%	0.46	OK
LC22 at 100.00%	0.37	OK
LC23 at 100.00%	0.46	OK
LC24 at 100.00%	0.40	OK
LC25 at 100.00%	0.17	OK
LC26 at 100.00%	0.20	OK
LC27 at 100.00%	0.19	OK
LC28 at 100.00%	0.32	OK
LC29 at 100.00%	0.43	OK
LC3 at 100.00%	0.12	OK
LC30 at 100.00%	0.46	OK

LC31 at 100.00%	0.43	OK
LC32 at 100.00%	0.45	OK
LC33 at 100.00%	0.44	OK
LC34 at 100.00%	0.42	OK
LC35 at 100.00%	0.44	OK
LC36 at 100.00%	0.42	OK
LC37 at 100.00%	0.32	OK
LC38 at 100.00%	0.34	OK
LC39 at 100.00%	0.32	OK
LC4 at 100.00%	0.32	OK
LC40 at 100.00%	0.33	OK
LC41 at 100.00%	0.32	OK
LC42 at 100.00%	0.30	OK
LC43 at 100.00%	0.32	OK
LC44 at 100.00%	0.31	OK
LC45 at 100.00%	0.19	OK
LC46 at 100.00%	0.21	OK
LC47 at 100.00%	0.19	OK
LC48 at 100.00%	0.20	OK
LC49 at 100.00%	0.19	OK
LC5 at 100.00%	0.17	OK
LC50 at 100.00%	0.17	OK
LC51 at 100.00%	0.19	OK
LC52 at 100.00%	0.18	OK
LC53 at 100.00%	0.27	OK
LC54 at 100.00%	0.25	OK
LC55 at 100.00%	0.27	OK
LC56 at 100.00%	0.26	OK
LC57 at 100.00%	0.27	OK
LC58 at 100.00%	0.29	OK
LC59 at 100.00%	0.27	OK
LC6 at 100.00%	0.33	OK
LC60 at 100.00%	0.28	OK
LC61 at 100.00%	0.16	OK
LC62 at 100.00%	0.11	OK
LC63 at 100.00%	0.15	OK
LC64 at 100.00%	0.10	OK
LC7 at 100.00%	0.17	OK
LC8 at 100.00%	0.22	OK
LC9 at 100.00%	0.08	OK

tie back

PIPE 2x0.154

28

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LC1 at 62.50%	0.16	OK
LC10 at 50.00%	0.07	OK
LC11 at 68.75%	0.15	OK
LC12 at 43.75%	0.06	OK
LC13 at 100.00%	0.15	OK
LC14 at 37.50%	0.07	OK
LC15 at 100.00%	0.15	OK
LC16 at 31.25%	0.07	OK
LC17 at 12.50%	0.14	OK
LC18 at 31.25%	0.15	OK
LC19 at 12.50%	0.14	OK
LC2 at 43.75%	0.08	OK
LC20 at 31.25%	0.15	OK
LC21 at 37.50%	0.16	OK
LC22 at 12.50%	0.14	OK
LC23 at 37.50%	0.16	OK
LC24 at 12.50%	0.14	OK
LC25 at 12.50%	0.06	OK
LC26 at 6.25%	0.06	OK
LC27 at 43.75%	0.03	OK
LC28 at 0.00%	0.15	OK
LC29 at 0.00%	0.22	OK
LC3 at 56.25%	0.16	OK

LC30 at 0.00%	0.22	OK
LC31 at 0.00%	0.23	OK
LC32 at 0.00%	0.22	OK
LC33 at 0.00%	<b>0.23</b>	<b>OK</b>
LC34 at 0.00%	0.23	OK
LC35 at 0.00%	0.23	OK
LC36 at 0.00%	0.23	OK
LC37 at 0.00%	0.13	OK
LC38 at 0.00%	0.13	OK
LC39 at 0.00%	0.14	OK
LC4 at 43.75%	0.08	OK
LC40 at 0.00%	0.13	OK
LC41 at 0.00%	0.14	OK
LC42 at 0.00%	0.14	OK
LC43 at 0.00%	0.14	OK
LC44 at 0.00%	0.14	OK
LC45 at 12.50%	0.05	OK
LC46 at 25.00%	0.05	OK
LC47 at 6.25%	0.05	OK
LC48 at 25.00%	0.05	OK
LC49 at 31.25%	0.05	OK
LC5 at 100.00%	0.16	OK
LC50 at 6.25%	0.05	OK
LC51 at 31.25%	0.05	OK
LC52 at 6.25%	0.05	OK
LC53 at 50.00%	0.02	OK
LC54 at 56.25%	0.03	OK
LC55 at 50.00%	0.02	OK
LC56 at 56.25%	0.03	OK
LC57 at 68.75%	0.03	OK
LC58 at 62.50%	0.02	OK
LC59 at 68.75%	0.03	OK
LC6 at 31.25%	0.08	OK
LC60 at 62.50%	0.02	OK
LC61 at 18.75%	0.06	OK
LC62 at 18.75%	0.04	OK
LC63 at 6.25%	0.06	OK
LC64 at 0.00%	0.04	OK
LC7 at 100.00%	0.15	OK
LC8 at 31.25%	0.08	OK
LC9 at 75.00%	0.15	OK

32

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LC1 at 0.00%	0.06	OK
LC10 at 37.50%	0.09	OK
LC11 at 0.00%	0.05	OK
LC12 at 43.75%	0.07	OK
LC13 at 0.00%	0.07	OK
LC14 at 25.00%	0.08	OK
LC15 at 0.00%	0.06	OK
LC16 at 31.25%	0.06	OK
LC17 at 100.00%	0.04	OK
LC18 at 100.00%	0.04	OK
LC19 at 100.00%	0.04	OK
LC2 at 43.75%	0.09	OK
LC20 at 100.00%	0.04	OK
LC21 at 100.00%	0.05	OK
LC22 at 31.25%	0.06	OK
LC23 at 100.00%	0.05	OK
LC24 at 31.25%	0.06	OK
LC25 at 37.50%	0.02	OK
LC26 at 31.25%	0.01	OK
LC27 at 100.00%	0.06	OK
LC28 at 100.00%	0.07	OK
LC29 at 100.00%	0.10	OK

LC3 at 18.75%	0.05	OK
LC30 at 100.00%	0.10	OK
LC31 at 100.00%	0.10	OK
LC32 at 100.00%	0.10	OK
LC33 at 100.00%	0.10	OK
LC34 at 100.00%	<b>0.10</b>	<b>OK</b>
LC35 at 100.00%	0.10	OK
LC36 at 100.00%	0.10	OK
LC37 at 100.00%	0.05	OK
LC38 at 100.00%	0.05	OK
LC39 at 100.00%	0.05	OK
LC4 at 43.75%	0.08	OK
LC40 at 100.00%	0.05	OK
LC41 at 100.00%	0.05	OK
LC42 at 100.00%	0.05	OK
LC43 at 100.00%	0.05	OK
LC44 at 100.00%	0.05	OK
LC45 at 62.50%	0.02	OK
LC46 at 62.50%	0.02	OK
LC47 at 62.50%	0.02	OK
LC48 at 68.75%	0.02	OK
LC49 at 56.25%	0.03	OK
LC5 at 0.00%	0.07	OK
LC50 at 50.00%	0.03	OK
LC51 at 56.25%	0.03	OK
LC52 at 56.25%	0.03	OK
LC53 at 100.00%	0.10	OK
LC54 at 100.00%	0.10	OK
LC55 at 100.00%	0.10	OK
LC56 at 100.00%	0.10	OK
LC57 at 100.00%	0.09	OK
LC58 at 100.00%	0.09	OK
LC59 at 100.00%	0.09	OK
LC6 at 25.00%	0.08	OK
LC60 at 100.00%	0.09	OK
LC61 at 43.75%	0.01	OK
LC62 at 43.75%	0.01	OK
LC63 at 43.75%	0.02	OK
LC64 at 43.75%	0.01	OK
LC7 at 0.00%	0.06	OK
LC8 at 31.25%	0.07	OK
LC9 at 0.00%	0.06	OK

39

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LC1 at 62.50%	0.08	OK
LC10 at 56.25%	0.05	OK
LC11 at 62.50%	0.08	OK
LC12 at 56.25%	0.05	OK
LC13 at 12.50%	0.05	OK
LC14 at 56.25%	0.05	OK
LC15 at 12.50%	0.05	OK
LC16 at 56.25%	0.05	OK
LC17 at 56.25%	0.07	OK
LC18 at 56.25%	0.07	OK
LC19 at 56.25%	0.07	OK
LC2 at 62.50%	0.06	OK
LC20 at 56.25%	0.07	OK
LC21 at 50.00%	0.07	OK
LC22 at 50.00%	0.08	OK
LC23 at 50.00%	0.07	OK
LC24 at 50.00%	0.08	OK
LC25 at 68.75%	0.04	OK
LC26 at 62.50%	0.03	OK
LC27 at 100.00%	0.11	OK
LC28 at 100.00%	0.01	OK

LC29 at 100.00%	0.03	OK
LC3 at 62.50%	0.08	OK
LC30 at 100.00%	0.03	OK
LC31 at 100.00%	0.03	OK
LC32 at 100.00%	0.03	OK
LC33 at 100.00%	0.03	OK
LC34 at 100.00%	0.03	OK
LC35 at 100.00%	0.03	OK
LC36 at 100.00%	0.03	OK
LC37 at 50.00%	0.01	OK
LC38 at 50.00%	0.02	OK
LC39 at 50.00%	0.02	OK
LC4 at 62.50%	0.06	OK
LC40 at 50.00%	0.02	OK
LC41 at 43.75%	0.02	OK
LC42 at 50.00%	0.02	OK
LC43 at 43.75%	0.02	OK
LC44 at 50.00%	0.02	OK
LC45 at 81.25%	0.04	OK
LC46 at 81.25%	0.04	OK
LC47 at 81.25%	0.04	OK
LC48 at 81.25%	0.04	OK
LC49 at 75.00%	0.04	OK
LC5 at 18.75%	0.06	OK
LC50 at 75.00%	0.04	OK
LC51 at 68.75%	0.04	OK
LC52 at 75.00%	0.04	OK
LC53 at 100.00%	0.14	OK
LC54 at 100.00%	0.14	OK
LC55 at 100.00%	<b>0.14</b>	<b>OK</b>
LC56 at 100.00%	0.14	OK
LC57 at 100.00%	0.14	OK
LC58 at 100.00%	0.14	OK
LC59 at 100.00%	0.14	OK
LC6 at 56.25%	0.06	OK
LC60 at 100.00%	0.14	OK
LC61 at 68.75%	0.03	OK
LC62 at 68.75%	0.02	OK
LC63 at 75.00%	0.03	OK
LC64 at 75.00%	0.02	OK
LC7 at 18.75%	0.05	OK
LC8 at 56.25%	0.06	OK
LC9 at 56.25%	0.08	OK

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## EXHIBIT 4



## 4 VOLUNTEER DRIVE

**Location** 4 VOLUNTEER DRIVE

**Mblu** 34/ 62/ 80/ 4/

**UID** 00023300

**Owner** WINDSOR LOCKS TOWN OF

**Assessment** \$1,292,200

**Appraisal** \$1,845,800

**PID** 1943

**Building Count** 1

### Current Value

Appraisal			
Valuation Year	Improvements	Land	Total
2013	\$1,328,100	\$517,700	\$1,845,800
Assessment			
Valuation Year	Improvements	Land	Total
2013	\$929,800	\$362,400	\$1,292,200

### Owner of Record

**Owner** WINDSOR LOCKS TOWN OF  
**Co-Owner**  
**Address** 50 CHURCH ST  
 WINDSOR LOCKS, CT 06096

**Sale Price** \$0  
**Certificate**  
**Book & Page** 113/299  
**Sale Date** 11/16/1972

### Ownership History

Ownership History				
Owner	Sale Price	Certificate	Book & Page	Sale Date
WINDSOR LOCKS TOWN OF	\$0		113/299	11/16/1972

### Building Information

#### Building 1 : Section 1

**Year Built:** 1975  
**Living Area:** 16,268  
**Replacement Cost:** \$1,619,556  
**Building Percent Good:** 75  
**Replacement Cost**  
**Less Depreciation:** \$1,214,700

**Building Attributes**

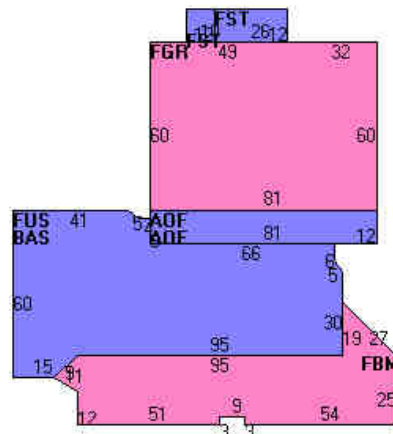
Field	Description
STYLE	Other Municip
MODEL	Ind/Comm
Stories:	1
Occupancy	
Exterior Wall A	Brick
Exterior Wall B	
Roof Structure	Flat
Roof Cover	Tar & Gravel
Interior Wall A	Drywall/Sheet
Interior Wall B	Minim/Masonry
Interior Floor A	Ceram Clay Til
Interior Floor B	Carpet
Heating Fuel	Oil
Heating Type	Forced Air-Duc
AC Type	Central
Bldg Use	Municipal
Total Rooms	
Total Bedrooms	00
Total Baths	0
Fireplace Types	
Fireplaces	
Heat/AC	Heat/AC Pkg
Frame Type	Masonry
Baths/Plumbing	Average
Ceiling/Wall	Ceil and Walls
Rooms/Prtns	Average
Wall Height	11.00
% Comn Wall	0.00

### Building Photo



(<http://images.vgsi.com/photos/WindsorlocksCTPhotos/\A00\00\32\13.jpg>)

### Building Layout



([http://images.vgsi.com/photos/WindsorlocksCTPhotos//Sketches/1943\\_19](http://images.vgsi.com/photos/WindsorlocksCTPhotos//Sketches/1943_19))

Building Sub-Areas (sq ft)			Legend	
Code	Description	Gross Area	Living Area	
BAS	First Floor	5,418	5,418	
FUS	Upper Sty	5,418	5,418	
FBM	Fin Bsmt	3,056	3,056	
AOF	Office	1,944	1,944	
FST	Utility	432	432	
FGR	Fin Garage	4,860	0	
		21,128	16,268	

### Extra Features

Extra Features				Legend
Code	Description	Size	Value	Bldg #
SPRK	Sprinklers	15836.00 S.F.	\$9,500	1

### Parcel Information

**Use Code** 9011  
**Description** Municipal  
**Deeded Acres** 11.20

**Land**

**Land Use**

**Use Code** 9011  
**Description** Municipal  
**Zone** RESA  
**Neighborhood**  
**Alt Land Appr** No  
**Category**

**Land Line Valuation**

**Size (Acres)** 11.20  
**Frontage** 947  
**Depth** 0  
**Assessed Value** \$362,400  
**Appraised Value** \$517,700

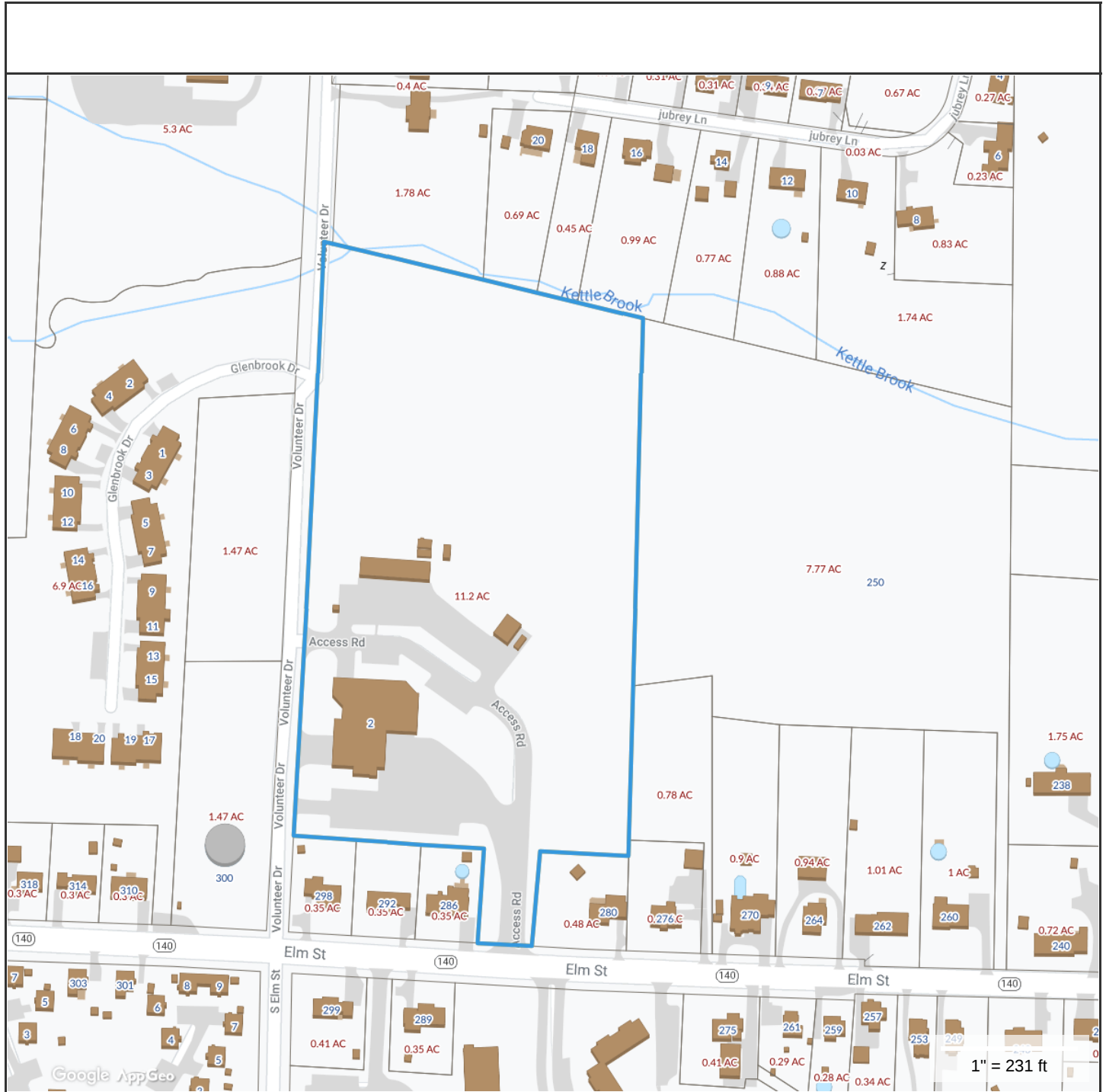
**Outbuildings**

Outbuildings						<u>Legend</u>
Code	Description	Sub Code	Sub Description	Size	Value	Bldg #
GAR1	Garage	G	Good	2592.00 S.F.	\$50,500	1
PAV	Paving	A	Asphalt	46600.00 S.F.	\$38,400	1
GAR1	Garage	A	Average	800.00 S.F.	\$15,000	1

**Valuation History**

Appraisal			
Valuation Year	Improvements	Land	Total
2013	\$1,324,100	\$517,700	\$1,841,800
2012	\$1,324,100	\$337,500	\$1,661,600
2007	\$1,585,800	\$294,000	\$1,879,800

Assessment			
Valuation Year	Improvements	Land	Total
2013	\$927,000	\$362,400	\$1,289,400
2012	\$927,000	\$236,300	\$1,163,300
2007	\$1,110,200	\$205,900	\$1,316,100



**Property Information**

**Property ID** 23300  
**Location** 2 VOLUNTEER DRIVE  
**Owner** WINDSOR LOCKS TOWN OF



**MAP FOR REFERENCE ONLY**  
**NOT A LEGAL DOCUMENT**

Town of Windsor Locks, CT makes no claims and no warranties, expressed or implied, concerning the validity or accuracy of the GIS data presented on this map.

Geometry updated 11/15/2017  
 Data updated 11/15/2017

## EXHIBIT 5



# Radio Frequency Emissions Analysis Report

AT&T

Site Name: **Windsor Locks**

2 Volunteer Drive  
Windsor Locks, CT 6096

**June 4, 2020**

Site Compliance Summary	
Compliance Status:	<b>Compliant</b>
AT&T total MPE% of FCC general population allowable limit:	<b>2.764%</b>
Other Carrier total MPE% of FCC general population	<b>4.39%</b>
Site total MPE% of FCC general population allowable limit:	<b>7.149%</b>



June 4, 2020

AT&T Mobility – New England  
Attn: John Benedetto, RF Manager

### Emissions Analysis for Site: **Windsor Locks**

Centerline Communications, LLC (“Centerline”) was directed to analyze the proposed AT&T facility to be located on a **tower near 2 Volunteer Drive, Windsor Locks CT 6096** for the purpose of determining whether the emissions from the proposed facility are within specified federal limits.

All information used in this report was analyzed as a percentage of current Maximum Permissible Exposure (% MPE) as listed in the FCC OET Bulletin 65 Edition 97-01 and ANSI/IEEE Std C95.1. The FCC regulates Maximum Permissible Exposure in units of microwatts per square centimeter ( $\mu\text{W}/\text{cm}^2$ ). The number of  $\mu\text{W}/\text{cm}^2$  calculated at each sample point is called the power density. The exposure limit for power density varies depending upon the frequencies being utilized. Wireless Carriers and Paging Services use different frequency bands each with different exposure limits, therefore it is necessary to report results and limits in terms of percent MPE rather than power density.

All results were compared to the FCC (Federal Communications Commission) radio frequency exposure rules, 47 CFR 1.1307(b)(1) – (b)(3), to determine compliance with the Maximum Permissible Exposure (MPE) limits for General Population/Uncontrolled environments as defined below.

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

Population exposure to radio frequencies is regulated and enforced in units of microwatts per square centimeter ( $\mu\text{W}/\text{cm}^2$ ). The general population exposure limits for the 700 MHz (LTE) bands is 467  $\mu\text{W}/\text{cm}^2$ ; 850 MHz (5G) bands is 567  $\mu\text{W}/\text{cm}^2$ ; and for the 1900 MHz (LTE).



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

Additional details can be found in FCC OET 65.





## CALCULATIONS

Centerline Communications, LLC has performed theoretical modeling using Waterford Consultants' RoofMaster™ 2015 Version 19.12.13.19 which uses a cylindrical model for conservative power density predictions within the near field of the antenna where the antenna pattern has not truly formed yet. Within this area power density values tend to decrease based upon an inverse distance function. At the point where it is appropriate for modeling to change from near-field calculations to far-field calculations the power decreases inversely with the square of the distance. This modeling technique is accurate with low antenna centerlines, such as rooftops, where persons can get close to the antennas and pass through fields in close proximity.

The modeling is based on worst-case assumptions for the number of antennas and transmitter power. No losses were included in the power calculations unless they were specifically provided for the project.

For each sector the following channel counts, frequency bands and power levels were utilized as shown in *Table 1*:

Antenna #	Technology	Frequency Band	Channel Count	Transmit Power per Channel (W)
1	PCS	1900	4	40
1	WCS	2300	4	25
1	LTE	700	4	40
2	LTE	700	4	40
2	5G	850	4	40
2	PCS	1900	4	40
3	PCS	1900	4	40
3	WCS	2300	4	25
3	LTE	700	4	40
4	LTE	700	4	40
4	5G	850	4	40
4	PCS	1900	4	40
5	PCS	1900	4	40
5	WCS	2300	4	25
5	LTE	700	4	40
6	LTE	700	4	40
6	5G	850	4	40
6	PCS	1900	4	40

*Table 1: Channel Data Table*



The following antennas listed in *Table 2* were used in the modeling for transmission in the 700 MHz (LTE), 850 MHz (UMTS), 850 MHz (LTE), 850 MHz (5G), 1900 MHz (LTE), and 2100 MHz (LTE) frequency bands. This is based on information from the carrier with regard to anticipated antenna selection.

Sector	Antenna Number	Antenna Make / Model	Antenna Centerline (ft)
A	1	CCI TPA65R-BU6D	164
A	2	CCI TPA65R-BU6D	164
B	3	CCI TPA65R-BU6D	164
B	4	CCI TPA65R-BU6D	164
C	5	CCI TPA65R-BU6D	164
C	6	CCI TPA65R-BU6D	164

*Table 2: Antenna Data*

All calculations were done with respect to uncontrolled / general population threshold limits.



## RESULTS

Per the calculations completed for the proposed AT&T configurations *Table 3* shows resulting emissions power levels and percentages of the FCC’s allowable general population limit.

Antenna ID	Antenna Make / Model	Frequency Bands	Antenna Gain (dBd)	Antenna Height (ft)	Channel Count	Total TX Power (W)	ERP (W)	MPE %
Antenna A1	CCI TPA65R-BU6D	1900	14.55	164	4	40	4561.63	0.00000243%
Antenna A1	CCI TPA65R-BU6D	2300	14.15	164	4	25	2600.16	0.00000733%
Antenna A1	CCI TPA65R-BU6D	700	11.75	164	4	40	2393.98	0.00001643%
Antenna A2	CCI TPA65R-BU6D	700	11.75	164	4	40	2393.98	0.00005405%
Antenna A2	CCI TPA65R-BU6D	850	12.45	164	4	40	2812.68	0.00001084%
Antenna A2	CCI TPA65R-BU6D	1900	14.55	164	4	40	4561.63	0.00000718%
Antenna B1	CCI TPA65R-BU6D	1900	14.55	164	4	40	4561.63	0.00310745%
Antenna B1	CCI TPA65R-BU6D	2300	14.15	164	4	25	2600.16	0.00201135%
Antenna B1	CCI TPA65R-BU6D	700	11.75	164	4	40	2393.98	0.02483960%
Antenna B2	CCI TPA65R-BU6D	700	11.75	164	4	40	2393.98	1.16067006%
Antenna B2	CCI TPA65R-BU6D	850	12.45	164	4	40	2812.68	1.03759779%
Antenna B2	CCI TPA65R-BU6D	1900	14.55	164	4	40	4561.63	0.53522903%
Antenna C1	CCI TPA65R-BU6D	1900	14.55	164	4	40	4561.63	0.00001747%
Antenna C1	CCI TPA65R-BU6D	2300	14.15	164	4	25	2600.16	0.00002164%
Antenna C1	CCI TPA65R-BU6D	700	11.75	164	4	40	2393.98	0.00004663%
Antenna C2	CCI TPA65R-BU6D	700	11.75	164	4	40	2393.98	0.00018877%
Antenna C2	CCI TPA65R-BU6D	850	12.45	164	4	40	2812.68	0.00001568%
Antenna C2	CCI TPA65R-BU6D	1900	14.55	164	4	40	4561.63	0.00015722%
AT&T Contribution MPE%								<b>2.764 %</b>

*Table 3: AT&T Antenna Inventory & Power Levels*



FCC OET 65 specifies that for carriers utilizing directional antennas that the highest recorded sector value be used for composite site MPE values due to their greatly reduced emissions contributions in the directions of the adjacent sectors. *Table 6* below details a breakdown by frequency band and technology for the MPE power values for the maximum calculated AT&T sector(s). Since this proposed facility is utilizing an omnidirectional antenna there is only one sector for this site (Sector A).

Frequency Band	# Channels	Watts ERP (Per Channel)	Height (feet)	Total Power Density (PW/cm <sup>2</sup> )	Technology	Allowable MPE (PW/cm <sup>2</sup> )	Calculated % MPE
1900	4	40	164	0.000000243	PCS	1000	0.00000243%
2300	4	25	164	0.000000733	WCS	1000	0.00000733%
700	4	40	164	0.000000767	LTE	466.6666667	0.00001643%
700	4	40	164	0.000002522	LTE	466.6666667	0.00005405%
850	4	40	164	0.000000614	5G	566.6666667	0.00001084%
1900	4	40	164	0.000000718	PCS	1000	0.00000718%
1900	4	40	164	0.000310745	PCS	1000	0.00310745%
2300	4	25	164	0.000201135	WCS	1000	0.00201135%
700	4	40	164	0.001159181	LTE	466.6666667	0.02483960%
700	4	40	164	0.054164603	LTE	466.6666667	1.16067006%
850	4	40	164	0.058797208	5G	566.6666667	1.03759779%
1900	4	40	164	0.053522903	PCS	1000	0.53522903%
1900	4	40	164	0.000001747	PCS	1000	0.00001747%
2300	4	25	164	0.000002164	WCS	1000	0.00002164%
700	4	40	164	0.000002176	LTE	466.6666667	0.00004663%
700	4	40	164	0.000008809	LTE	466.6666667	0.00018877%
850	4	40	164	0.000000888	5G	566.6666667	0.00001568%
1900	4	40	164	0.000015722	PCS	1000	0.00015722%
<b>AT&amp;T All Sectors</b>						<b>AT&amp;T Total:</b>	<b>2.764%</b>

*Table 6: AT&T Maximum Sector MPE Power Values*



## Summary

All calculations performed for this analysis yielded results that were **within** the allowable limits for general population exposure to RF Emissions.

The anticipated maximum composite contributions from the AT&T facility as well as the site composite emissions value with regards to compliance with FCC's allowable limits for general population exposure to RF Emissions are shown here:

Site Total	Power Density Value (%)
AT&T Contribution:	2.764%
Other Carrier Contribution:	4.39%
<b>Site Total:</b>	<b>7.149%</b>
Site Compliance Status:	<b>Compliant</b>

The anticipated composite MPE value for this site assuming all carriers present is **7.149%** of the allowable FCC established general population limit sampled at the ground level.

FCC guidelines state that if a site is found to be out of compliance (over allowable thresholds), that carriers over a 5% contribution to the composite value will require measures to bring the site into compliance. For this facility, the composite values calculated were well within the allowable 100% threshold standard per the federal government.

A handwritten signature in black ink that reads 'Michelle Stone'.

Michelle Stone  
RF EME Technical Writer  
**Centerline Communications, LLC**

750 West Center St. Suite 301  
West Bridgewater, MA 02379

## EXHIBIT 6



**Tower Engineering Solutions**

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

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## Structural Analysis Report

**Existing 195 ft PIROD Self Supporting Tower**

**Customer Name: SBA Communications Corp**

**Customer Site Number: CT22108-A**

**Customer Site Name: Windsor Locks @ Volunteer Drive**

**Carrier Name: AT&T (App#: 129928-3)**

**Carrier Site ID / Name: CT5270 / Windsor Locks**

**Site Location: 2-4 Volunteer Drive**

**Windsor Locks, Connecticut**

**HARTFORD County**

**Latitude: 41.928100**

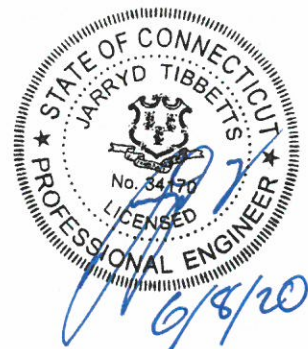
**Longitude: -72.646800**

**Analysis Result:**

**Max Structural Usage: 90.6% [Pass]**

**Max Foundation Usage: 50.0% [Pass]**

**Additional Usage Caused by Mount Modification: +1.5%**



**Report Prepared By: Tawfeeq Alajaj**



**Tower Engineering Solutions**

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

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## **Structural Analysis Report**

**Existing 195 ft PIROD Self Supporting Tower**

**Customer Name: SBA Communications Corp**

**Customer Site Number: CT22108-A**

**Customer Site Name: Windsor Locks @ Volunteer Drive**

**Carrier Name: AT&T (App#: 129928-3)**

**Carrier Site ID / Name: CT5270 / Windsor Locks**

**Site Location: 2-4 Volunteer Drive**

**Windsor Locks, Connecticut**

**HARTFORD County**

**Latitude: 41.928100**

**Longitude: -72.646800**

### **Analysis Result:**

**Max Structural Usage: 90.6% [Pass]**

**Max Foundation Usage: 50.0% [Pass]**

**Additional Usage Caused by Mount Modification: +1.5%**

**Report Prepared By: Tawfeeq Alajaj**



## Introduction

The purpose of this report is to summarize the analysis results on the 195 ft PIROD Self Supporting Tower to support the proposed antennas and transmission lines in addition to those currently installed. Any modification listed under Sources of Information was assumed completed and was included in this analysis.

## Sources of Information

<b>Tower Drawings</b>	PiROD Eng. File #A-115761-1, Archive #F-0078802, dated 10/06/00
<b>Foundation Drawing</b>	PiROD Eng. File #A-115761-1, Archive #F-0078802, dated 10/06/00
<b>Geotechnical Report</b>	Tectonic Engineering Consultants W.O. #2295 01, dated 05/18/99
<b>Modification Drawings</b>	N/A

## Analysis Criteria

The rigorous analysis was performed in accordance with the requirements and stipulations of the TIA-222-G-2. In accordance with this standard, the structure was analyzed using **TESTowers**, a proprietary analysis software. The program considers the structure as an elastic 3-D model with second-order effects and temperature effects incorporated in the analysis. The analysis was performed using multiple wind directions.

<b>Wind Speed Used in the Analysis:</b>	Ultimate Design Wind Speed $V_{ult} = 125.0$ mph (3-Sec. Gust)/ Nominal Design Wind Speed $V_{asd} = 97.0$ mph (3-Sec. Gust)
<b>Wind Speed with Ice:</b>	50 mph (3-Sec. Gust) with 1" radial ice concurrent
<b>Operational Wind Speed:</b>	60 mph + 0" Radial ice
<b>Standard/Codes:</b>	TIA-222-G-2 / 2015 IBC / 2018 Connecticut State Building Code
<b>Exposure Category:</b>	C
<b>Structure Class:</b>	II
<b>Topographic Category:</b>	1
<b>Crest Height:</b>	0 ft

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

## Existing Antennas, Mounts and Transmission Lines

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

Items	Elevation (ft)	Qty.	Antenna Descriptions	Mount Type & Qty.	Transmission Lines	Owner
1	203.4	1	Andrew - DB224-A	Direct	(1) 7/8"	WLPD
2	183.7	5	Andrew - 20' Dipoles w/ (4) Element	(3) T-Frame	(8) 7/8"	
3	182.8	1	2.5" Ø x 20.0' Omni			
4	180.6	1	1.3" Ø x 13.0' Omni			
5	179.1	1	1.3" Ø x 10.0' Omni			
6	161.5	3	Kathrein - 800 10121 – Panel	(3) Sector Frame w/ Mods	(9) 1 5/8" *(2) 0.78" DC Power *(1) 0.39" Fiber	AT&T
7		3	Andrew - SBNH-1D6565C - Panel			
8		3	Cci - TPA-65R-LCUUUU-H8 - Panel			
9		6	Powerwave - LGP21401 - TMA			
10		6	Kathrein - 860 10025 - RET			
11		3	Ericsson - RRUS 11 (Band 12) (55 lb) - RRU			
12		3	Ericsson - RRUS 32 B2 - RRU			
13		3	Ericsson - RRUS 32 B30 - RRU			
14	2	Raycap - DC6-48-60-18-8F - SP				
15	146.8	1	Raycap - RRFDC-3315-PF-48 – SP	Direct		Verizon
16	145.7	1	6.0' x 1.0' x 6.5" Panel	(3) T-Frame	(12) 1 5/8" (1) 1 1/4"	
17		2	Amphenol - BXA-70063/6CF-EDIN - Panel			
18		3	Antel - BXA-171063-12CF-EDIN-5 - Panel			
19	145.5	3	Alcatel-Lucent - 9442 RRH2x40 AWS - RRH			
20	135.0	3	Ericsson - AIR32 KRD901146-1_B66A (Octa) - Panel	(3) T-Frame w/ Mods (Replace Existing Pipe mast w/ new 2-1/2" std. (2.88" OD) steel pipe mast secured to the existing mount (typ. Of 1 per sector, total of 3); Secure the existing and proposed pipe masts to the existing mount with a minimum of two points of connection (typ. Of 3 per sector, total of 9))	(15) 1 5/8" (3) 1 1/4" Hybrid	T-Mobile
21		3	RFS - APX16DWV-16DWVS-E-A20 - Panel			
22		3	RFS - APXVAARR24_43-U-NA20 (Octa) - Panel			
23		6	Ericsson - KRY 112 144/2 - TMA			
24		3	Ericsson - Radio 4449 B71 + B12 - RRU			
25	116.8	3	RFS - APXVSP18-C-A20 - Panel	(3) T-Frame	(4) 1-1/4" Fiber	Sprint Nextel
26	115.0	3	RFS - APXVTM14-C-I20 - Panel			
27		3	Alcatel-Lucent - TD-RRH8x20-25 - RRH			
28	110.3	3	Alcatel-Lucent - 800 MHz RRH	Direct		
29	107.6	3	Alcatel-Lucent - 1900 MHz RRH	Direct		

30	104.6	1	Andrew - 3.3' Dish	(3) Standoffs	(2) 1/2" (1) 1-5/16" Conduit	Clearwire
31	104.0	1	Andrew - VHL P1-23-DW1			
32		3	Argus - LLPX310R-V1 - Panel			
33	103.8	3	Alcatel-Lucent - SPI-22132825WB -			
34	102.4	1	12" x 12" x 6.38" Junction Box	Direct		
35	75.9	1	3.5" Ø x 8" GPS	(1) Standoff	(1) 1/2"	Unknown
36	60.0	1	PCTEL - GPS-TMG-HR-26N - GPS	Direct	(1) 1/2"	Sprint Nextel

\*Inside (1) 3" Conduit

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

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

Items	Elevation (ft)	Qty.	Antenna Descriptions	Mount Type & Qty.	Transmission Lines	Owner
6	164.0	3	CCI - TPA-65R-LCUUUU-H8 - Panel	(3) Modified Sector Frame with new standoff 2" and 3" SCH.40 pipes at each sector and 3" SCH. 40 vertical pipe per sector	(1) 0.39" Fiber (4) 0.78" DC Power (9) 1 5/8" (1) 2.5" Conduit (1) 3" Conduit	AT&T
7		6	CCI - TPA65R-BU8D - Panel			
8		3	Powerwave LGP21401 TMA			
9		3	Kaelus DBCT108F1V92-1 Diplexer			
10		6	Kathrein 860 10025 RET			
11		3	Ericsson RRUS 32 B30			
12		3	Ericsson RRUS 32 B2			
13		3	Ericsson 4449 B5/B12			
14		3	Ericsson RRUS 8843 B2 B66A			
15		3	Ericsson RRUS 4478 B14			
16		2	Raycap DC6-48-60-18-8F - OVP			
17		2	Raycap DC6-48-60-18-8C-EV - OVP			

3" (housing (2) 0.78" DC Power & (1)0.39" Fiber)

2.5" (Housing (2) 0.78" DC Power &(1) .39" Fiber)

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

## **Analysis Results**

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

Tower Component	Legs	Diagonals	Horizontals
Max. Usage:	<b>69.2%</b>	<b>90.6%</b>	<b>52.8%</b>
Pass/Fail	<b>Pass</b>	<b>Pass</b>	<b>Pass</b>

## **Foundations**

	Compression (Kips)	Uplift (Kips)	Shear (Kips)
Analysis Reactions	360.7	311.7	37.6

The foundation has been investigated using the supplied documents and soils report and was found adequate. Therefore, no modification to the foundation will be required.

### **Operational Condition (Rigidity):**

Operational characteristics of the tower are found to be within the limits prescribed by ANSI/TIA/EIA 222-G for the installed antennas. The maximum twist/sway at the elevation of the proposed equipment is 0.2881 degrees under the operational wind speed as specified in the Analysis Criteria.

### **Conclusions**

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

## Standard Conditions

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

## Structure: CT22108-A-SBA

**Site Name:** Windsor Locks @ Volunteer Drive  
**Type:** Self Support    **Base Shape:** Triangle  
**Height:** 195.00 (ft)    **Base Width:** 20.00  
**Base Elev:** 5.00 (ft)    **Top Width:** 4.50

**Code:** EIA/TIA-222-G    **Basic WS:** 97.00  
**Basic Ice WS:** 50.00  
**Operational WS:** 60.00

6/8/2020

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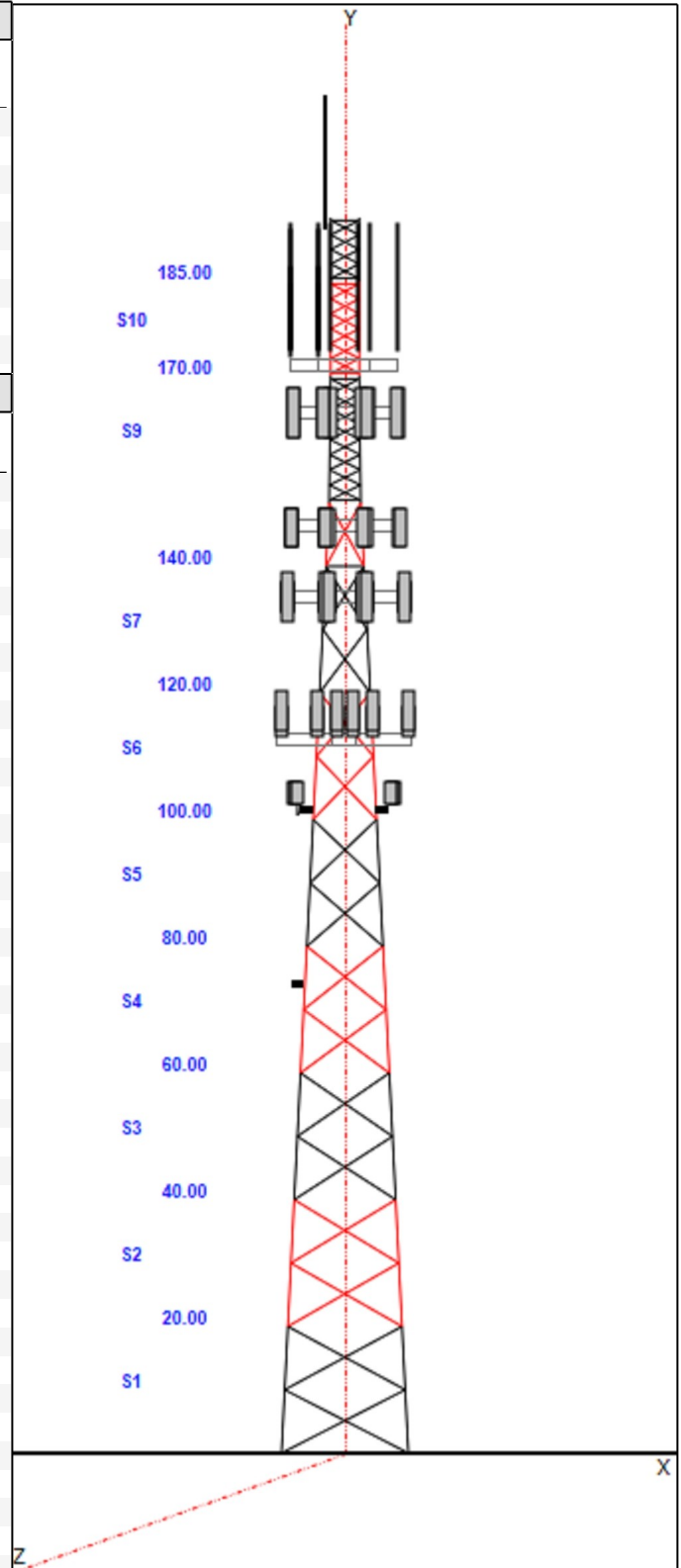


### Section Properties

Sect	Leg Members	Diagonal Members	Horizontal Members
1	12B 12"BD 2.25"	DAE 3.5X3.5X0.3125	
2	12B 12"BD 2.25"	SAE 3.5X3.5X0.3125	
3-4	12B 12"BD 2"	SAE 3X3X0.3125	
5	12B 12"BD 1.75"	SAE 3X3X0.3125	
6	12B 12"BD 1.75"	SAE 3X3X0.1875	
7	12B 12"BD 1.5"	SAE 2.5X2.5X0.1875	SAE 2.5X2.5X0.1875
8	12B 12"BD 1.25"	SAE 2.5X2.5X0.1875	
9	SOL 2" SOLID	SOL 7/8" SOLID	SOL 1" SOLID
10-11	SOL 1 3/4" SOLID	SOL 3/4" SOLID	SOL 7/8" SOLID

### Discrete Appurtenances

Attach Elev (ft)	Force Elev (ft)	Qty	Description
195.00	195.00	1	Lightning Rod
195.00	195.00	1	Beacon
195.00	203.40	1	Andrew - DB224-A
171.50	171.50	3	15' T-Frame
171.50	183.70	5	Andrew - 20' Dipoles w/ (4) Element
171.50	182.80	1	2.5" Ø x 20.0' Omni
171.50	180.60	1	1.3" Ø x 13.0' Omni
171.50	179.10	1	1.3" Ø x 10.0' Omni
164.00	164.00	3	T-Frame
164.00	164.00	1	Mount Mods
164.00	164.00	3	TPA-65R-LCUUUU-H8
164.00	164.00	6	TPA65R-BU8D
164.00	164.00	3	LGP21401 TMA
164.00	164.00	3	Kaelus DBCT108F1V92-1 Diplexer
164.00	164.00	6	Kathrein 860 10025 RET
164.00	164.00	3	Ericsson RRUS 32 B30
164.00	164.00	3	Ericsson RRUS 32 B2
164.00	164.00	3	Ericsson 4449 B5/B12
164.00	164.00	3	Ericsson RRUS 8843 B2 B66A
164.00	164.00	3	Ericsson RRUS 4478 B14
164.00	164.00	2	Raycap DC6-48-60-18-8F
164.00	164.00	2	Raycap DC6-48-60-18-8C-EV
146.80	146.80	1	Raycap - RRFDC-3315-PF-48 - SP
146.00	146.00	3	Sector Frame
146.00	145.70	1	6.0' x 1.0' x 6.5" Panel
146.00	145.70	2	Amphenol - BXA-70063/6CF-EDIN
146.00	145.70	3	Antel - BXA-171063-12CF-EDIN-5
146.00	145.50	3	Alcatel-Lucent - 9442 RRH2x40 AWS - RRH
135.00	135.00	3	Sector Frame
135.00	135.00	3	Ericsson - AIR32 KRD901146-1_B66A (Octa)
135.00	135.00	3	RFS - APX16DWV-16DWVS-E-A20
135.00	135.00	3	RFS - APXVAARR24_43-U-NA20 (Octa)
135.00	135.00	6	Ericsson - KRY 112 144/2 - TMA
135.00	135.00	3	Ericsson - Radio 4449 B71 + B12 - RRU
112.30	112.30	3	Sector Frame-Pipe/Rod
112.30	116.80	3	RFS - APXVSP18-C-A20
112.30	115.00	3	RFS - APXVTM14-C-I20
112.30	115.00	3	Alcatel-Lucent - TD-RRH8x20-25 - RRH
110.30	110.30	3	Alcatel-Lucent - 800 MHz RRH
107.60	107.60	3	Alcatel-Lucent - 1900 MHz RRH



## Structure: CT22108-A-SBA

<b>Site Name:</b> Windsor Locks @ Volunteer Drive	<b>Code:</b> EIA/TIA-222-G	6/8/2020
<b>Type:</b> Self Support	<b>Base Shape:</b> Triangle	<b>Basic WS:</b> 97.00
<b>Height:</b> 195.00 (ft)	<b>Base Width:</b> 20.00	<b>Basic Ice WS:</b> 50.00
<b>Base Elev:</b> 5.00 (ft)	<b>Top Width:</b> 4.50	<b>Operational WS:</b> 60.00



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102.40	102.40	1	12" x 12" x 6.38" Junction Box
101.40	101.40	3	Standoffs
101.40	104.60	1	Andrew - 3.3' Dish
101.40	104.00	1	Andrew - VHLP1-23-DW1
101.40	104.00	3	Argus - LLPX310R-V4
101.40	103.80	3	Alcatel-Lucent - SPI-22132825WB
74.00	75.90	1	3.5" Ø x 8" GPS
74.00	74.00	1	Standoff
60.00	60.00	1	PCTEL - GPS-TMG-HR-26N - GPS

### Linear Appurtenances

Elev From (ft)	Elev To (ft)	Qty	Description
0.00	195.00	1	7/8" Coax
0.00	171.50	8	7/8" Coax
0.00	164.00	4	0.78" DC Power
0.00	164.00	9	1 5/8" Coax
0.00	164.00	1	2.5" Conduit
0.00	164.00	1	3" Conduit
0.00	146.00	1	1 1/4" Coax
0.00	146.00	6	1 5/8" Coax
0.00	146.00	6	1 5/8" Coax
0.00	135.00	15	1 5/8" Coax
0.00	135.00	3	1-1/4" Hybrid
0.00	112.30	4	1-1/4" Fiber
0.00	101.40	1	1-5/16" Conduit
0.00	101.40	2	1/2" Coax
0.00	74.00	1	1/2" Coax
0.00	60.00	1	1/2" Coax

### Base Reactions

Leg	Overturning
Max Uplift: -311.70 (kips)	Moment: 5883.42 (ft-kips)
Max Down: 360.70 (kips)	Total Down: 63.07 (kips)
Max Shear: 37.63 (kips)	Total Shear: 55.77 (kips)



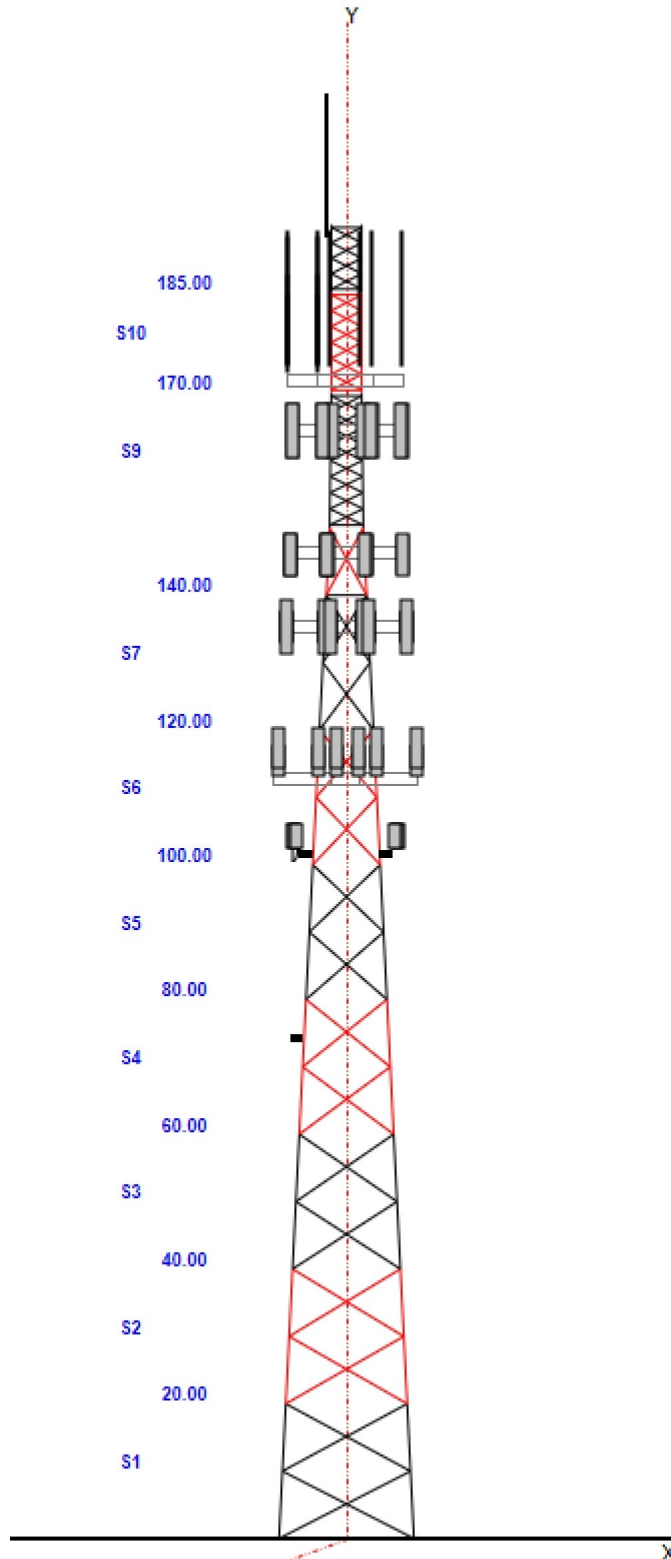
# Structure: CT22108-A-SBA

**Site Name:** Windsor Locks @ Volunteer Drive  
**Type:** Self Support  
**Height:** 195.00 (ft)  
**Base Elev:** 5.00 (ft)

**Code:** EIA/TIA-222-G  
**Base Shape:** Triangle  
**Basic WS:** 97.00  
**Base Width:** 20.00  
**Basic Ice WS:** 50.00  
**Operational WS:** 60.00

6/8/2020

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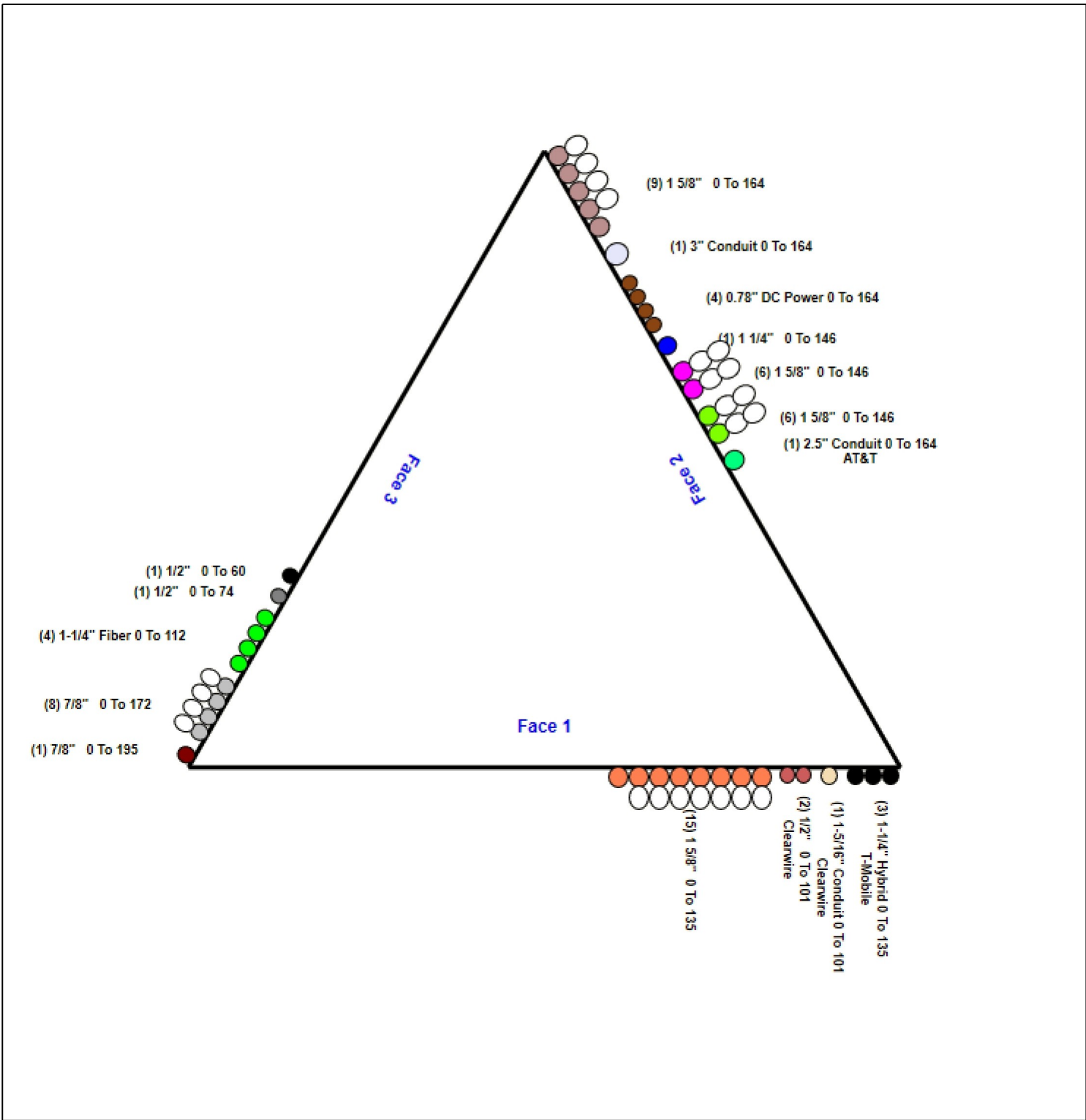
## Structure: CT22108-A-SBA - Coax Line Placement

**Type:** Self Support  
**Site Name:** Windsor Locks @ Volunteer Drive  
**Height:** 195.00 (ft)

6/8/2020



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## Loading Summary

<b>Structure:</b> CT22108-A-SBA	<b>Code:</b> EIA/TIA-222-G	6/8/2020
<b>Site Name:</b> Windsor Locks @ Volunteer Drive	<b>Exposure:</b> C	
<b>Height:</b> 195.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 5.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 0.85	<b>Topography:</b> 1	<b>Struct Class:</b> II



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### Discrete Appurtenances Properties

Attach Elev (ft)	Description	Qty	No Ice		Ice		Len (in)	Width (in)	Depth (in)	Ka	Orientation Factor	Vert Ecc (ft)
			Weight (lb)	CaAa (sf)	Weight (lb)	CaAa (sf)						
195.00	Lightning Rod	1	5.00	0.500	33.67	2.889	72.000	1.000	1.000	1.00	1.00	0.000
195.00	Beacon	1	36.00	2.720	218.31	4.019	28.000	17.500	17.500	1.00	1.00	0.000
195.00	Andrew - DB224-A	1	35.00	5.650	275.06	29.777	255.000	0.000	0.000	1.00	1.00	8.400
171.50	15' T-Frame	3	400.00	10.000	779.69	21.865	0.000	0.000	0.000	0.75	0.75	0.000
171.50	Andrew - 20' Dipoles w/ (4) Element	5	60.00	7.520	361.51	23.681	240.000	3.000	3.000	1.00	1.00	12.20
171.50	2.5" Ø x 20.0' Omni	1	55.00	6.000	259.86	15.648	240.000	3.000	3.000	1.00	1.00	11.30
171.50	1.3" Ø x 13.0' Omni	1	40.00	3.900	173.84	10.227	156.000	3.000	3.000	1.00	1.00	9.100
171.50	1.3" Ø x 10.0' Omni	1	25.00	3.000	128.42	7.904	120.000	3.000	3.000	1.00	1.00	7.600
164.00	T-Frame	3	400.00	10.000	775.88	21.746	0.000	0.000	0.000	0.75	0.75	0.000
164.00	Mount Mods	1	512.00	15.000	1474.25	36.143	0.000	0.000	0.000	0.75	1.00	0.000
164.00	TPA-65R-LCUUUU-H8	3	75.00	13.300	518.55	15.563	96.000	14.400	8.600	0.80	0.83	0.000
164.00	TPA65R-BU8D	6	82.50	17.870	616.34	20.288	96.000	20.700	7.700	0.80	0.72	0.000
164.00	LGP21401 TMA	3	17.50	0.000	61.37	1.404	14.000	7.000	2.700	0.80	1.00	0.000
164.00	Kaelus DBCT108F1V92-1 Diplexer	3	7.00	0.720	26.31	1.571	10.500	7.000	0.000	0.80	1.00	0.000
164.00	Kathrein 860 10025 RET	6	1.10	0.160	8.33	0.628	6.900	2.400	2.000	0.80	0.92	0.000
164.00	Ericsson RRUS 32 B30	3	60.00	2.740	188.49	3.748	27.200	12.100	7.000	0.80	0.67	0.000
164.00	Ericsson RRUS 32 B2	3	53.00	2.740	181.49	3.748	27.200	12.100	7.000	0.80	0.67	0.000
164.00	Ericsson 4449 B5/B12	3	71.00	1.970	142.86	2.707	17.900	13.200	9.400	0.80	0.67	0.000
164.00	Ericsson RRUS 8843 B2 B66A	3	72.00	1.640	135.06	2.309	14.900	13.200	10.900	0.80	0.67	0.000
164.00	Ericsson RRUS 4478 B14	3	59.40	1.650	115.22	2.348	15.000	13.200	7.300	0.80	0.67	0.000
164.00	Raycap DC6-48-60-18-8F	2	31.80	0.920	115.02	1.510	24.000	11.000	11.000	0.80	1.00	0.000
164.00	Raycap DC6-48-60-18-8C-EV	2	16.00	4.780	182.56	5.970	31.400	18.300	10.200	0.80	1.00	0.000
146.80	Raycap - RRFDC-3315-PF-48 - SP	1	26.90	2.500	155.47	3.340	19.100	15.700	10.200	1.00	1.00	0.000
146.00	Sector Frame	3	500.00	17.500	1430.78	36.069	0.000	0.000	0.000	0.75	0.75	0.000
146.00	6.0' x 1.0' x 6.5" Panel	1	45.00	8.160	265.06	11.897	72.000	12.000	6.000	0.80	0.81	-0.300
146.00	Amphenol - BXA-70063/6CF-EDIN	2	17.00	7.570	214.73	11.255	71.000	11.200	5.200	0.80	0.78	-0.300
146.00	Antel - BXA-171063-12CF-EDIN-5	3	15.00	4.780	142.76	7.926	72.400	6.100	4.100	0.80	0.88	-0.300
146.00	Alcatel-Lucent - 9442 RRH2x40	3	50.70	2.250	129.08	3.674	15.400	8.200	15.000	0.80	0.67	-0.500
135.00	Sector Frame	3	450.00	14.000	914.20	23.284	0.000	0.000	0.000	0.75	0.75	0.000
135.00	Ericsson - AIR32	3	132.20	6.510	370.85	8.015	57.000	12.900	8.700	0.80	0.86	0.000
135.00	RFS - APX16DWV-16DWVS-E-A20	3	40.70	6.610	195.14	9.483	55.900	13.300	3.100	0.80	0.66	0.000
135.00	RFS - APXVAARR24_43-U-NA20	3	128.00	20.240	747.05	22.775	95.900	24.000	7.800	0.80	0.70	0.000
135.00	Ericsson - KRY 112 144/2 - TMA	6	11.00	0.410	25.22	1.037	6.900	6.100	2.700	0.80	0.50	0.000
135.00	Ericsson - Radio 4449 B71 + B12 -	3	70.00	1.650	167.63	2.384	15.000	13.200	9.300	0.80	0.67	0.000
112.30	Sector Frame-Pipe/Rod	3	450.00	14.000	906.81	23.136	0.000	0.000	0.000	0.75	0.75	0.000
112.30	RFS - APXVSP18-C-A20	3	57.00	8.020	281.43	11.647	72.000	11.800	7.000	0.80	0.83	4.500
112.30	RFS - APXVTM14-C-I20	3	56.20	6.340	269.07	7.811	56.300	12.600	6.300	0.80	0.78	2.700
112.30	Alcatel-Lucent - TD-RRH8x20-25 -	3	70.00	4.050	196.89	5.885	26.100	18.600	6.700	0.80	0.67	2.700
110.30	Alcatel-Lucent - 800 MHz RRH	3	53.00	2.490	149.03	3.975	19.700	13.000	10.800	0.80	0.67	0.000
107.60	Alcatel-Lucent - 1900 MHz RRH	3	44.00	3.800	185.74	5.605	23.000	13.000	17.000	0.80	0.67	0.000
102.40	12" x 12" x 6.38" Junction Box	1	10.00	1.400	63.17	2.481	12.000	12.000	8.000	1.00	1.00	0.000
101.40	Standoffs	3	120.00	4.500	253.38	11.182	0.000	0.000	0.000	0.75	0.75	0.000
101.40	Andrew - 3.3' Dish	1	140.00	8.920	372.43	11.157	36.000	36.000	0.000	1.00	1.00	3.200
101.40	Andrew - VHLP1-23-DW1	1	14.00	1.610	59.10	2.576	15.300	15.300	8.700	1.00	1.00	2.600
101.40	Argus - LLPX310R-V4	3	28.70	4.310	144.33	6.426	42.100	11.800	4.500	0.80	0.73	2.600
101.40	Alcatel-Lucent - SPI-22132825WB	3	33.10	1.820	89.05	3.063	16.100	11.600	6.000	0.80	0.67	2.400
74.00	3.5" Ø x 8" GPS	1	10.00	0.160	16.90	0.638	8.000	2.000	2.000	1.00	1.00	1.900
74.00	Standoff	1	120.00	4.500	250.27	11.026	0.000	0.000	0.000	1.00	1.00	0.000

## Loading Summary

<b>Structure:</b> CT22108-A-SBA	<b>Code:</b> EIA/TIA-222-G	6/8/2020
<b>Site Name:</b> Windsor Locks @ Volunteer Drive	<b>Exposure:</b> C	
<b>Height:</b> 195.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 5.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 0.85	<b>Topography:</b> 1	<b>Page:</b> 6
<b>Struct Class:</b> II		



60.00	PCTEL - GPS-TMG-HR-26N - GPS	1	0.60	0.090	6.45	0.308	5.000	3.200	3.200	1.00	1.00	0.000
<b>Totals:</b>		<b>125</b>	<b>12,612.20</b>		<b>38,978.14</b>					<b>Number of Appurtenances : 49</b>		

## Loading Summary

<b>Structure:</b> CT22108-A-SBA	<b>Code:</b> EIA/TIA-222-G	6/8/2020
<b>Site Name:</b> Windsor Locks @ Volunteer Drive	<b>Exposure:</b> C	
<b>Height:</b> 195.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 5.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 0.85	<b>Topography:</b> 1	<b>Struct Class:</b> II
		<b>Page:</b> 7



### Linear Appurtenances Properties

Elev. From (ft)	Elev. To (ft)	Description	Qty	Width (in)	Weight (lb/ft)	Pct In Block	Spread On Faces	Bundling Arrangement	Cluster Dia (in)	Out of Zone	Spacing (in)	Orientation Factor	Ka Override
0.00	195.00	7/8" Coax	1	1.11	0.52	100.00	3	Individual NR		N	1.00	1.00	
0.00	171.50	7/8" Coax	8	1.11	0.52	50.00	3	Block		N	1.00	0.67	
0.00	164.00	0.78" DC Power	4	0.78	0.65	100.00	2	Individual NR		N	1.00	1.00	0
0.00	164.00	1 5/8" Coax	9	1.98	1.04	50.00	2	Block		N	1.00	0.59	
0.00	164.00	2.5" Conduit	1	2.00	1.78	100.00	2	Individual NR		N	1.00	1.00	
0.00	164.00	3" Conduit	1	3.02	1.78	100.00	2	Individual NR		N	1.00	1.00	
0.00	146.00	1 1/4" Coax	1	1.55	0.66	100.00	2	Individual NR		N	1.00	1.00	0
0.00	146.00	1 5/8" Coax	6	1.98	1.04	33.30	2	Block		N	1.00	0.47	
0.00	146.00	1 5/8" Coax	6	1.98	1.04	33.30	2	Block		N	1.00	1.00	0
0.00	135.00	1 5/8" Coax	15	1.98	1.04	50.00	1	Block		N	1.00	1.00	
0.00	135.00	1-1/4" Hybrid	3	1.25	0.95	50.00	1	Individual IR		N	1.00	1.00	
0.00	112.30	1-1/4" Fiber	4	1.25	0.95	100.00	3	Individual IR		N	1.00	0.59	
0.00	101.40	1-5/16" Conduit	1	1.38	1.13	100.00	1	Individual NR		N	1.00	1.00	0
0.00	101.40	1/2" Coax	2	0.65	0.16	100.00	1	Individual NR		N	1.00	1.00	0
0.00	74.00	1/2" Coax	1	0.65	0.16	100.00	3	Individual NR		N	1.00	1.00	0
0.00	60.00	1/2" Coax	1	0.65	0.16	100.00	3	Individual NR		N	1.00	1.00	

## Section Forces

**Structure:** CT22108-A-SBA  
**Site Name:** Windsor Locks @ Volunteer Drive  
**Height:** 195.00 (ft)  
**Base Elev:** 5.000 (ft)  
**Gh:** 0.85                      **Topography:** 1

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

6/8/2020  
  
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<b>Load Case:</b> 1.2D + 1.6W Normal Wind	1.2D + 1.6W 97 mph Wind at Normal To Face
<b>Wind Load Factor:</b> 1.60	<b>Wind Importance Factor:</b> 1.00
<b>Dead Load Factor:</b> 1.20	
<b>Ice Dead Load Factor:</b> 0.00	<b>Ice Importance Factor:</b> 1.00

Sect Seq	Wind Height (ft)	Wind qz (psf)	Total Flat Area (sqft)	Total Round Area (sqft)	Ice Round Area (sqft)	Sol Ratio	Cf	Df	Dr	Ice Thick (in)	Eff Area (sqft)	Linear Area (sqft)	Ice Linear Area (sqft)	Total Weight (lb)	Weight Ice (lb)	Struct Force (lb)	Linear Force (lb)	Total Force (lb)
1	10.0	17.40	24.365	23.64	0.00	0.12	2.88	1.00	1.00	0.00	35.27	131.78	0.00	9,796.8	0.0	2400.35	1884.78	4,285.12
2	30.0	20.77	22.326	23.64	0.00	0.13	2.84	1.00	1.00	0.00	32.73	131.78	0.00	7,389.2	0.0	2630.08	2249.88	4,879.96
3	50.0	22.85	17.472	22.04	0.00	0.13	2.86	1.00	1.00	0.00	27.28	131.78	0.00	6,278.8	0.0	2422.68	2474.48	4,897.16
4	70.0	24.39	15.857	22.04	0.00	0.14	2.81	1.00	1.00	0.00	25.58	130.38	0.00	6,131.0	0.0	2383.53	2615.44	4,998.97
5	90.0	25.63	14.383	18.83	0.00	0.14	2.79	1.00	1.00	0.00	23.37	129.62	0.00	5,221.9	0.0	2273.88	2748.58	5,022.46
6	110.0	26.69	12.992	18.83	0.00	0.17	2.71	1.00	1.00	0.00	22.05	122.25	0.00	4,567.0	0.0	2165.60	2775.74	4,941.34
7	130.0	27.60	10.974	17.23	0.00	0.19	2.63	1.00	1.00	0.00	19.67	105.74	0.00	3,830.3	0.0	1942.09	2368.63	4,310.72
8	145.0	28.22	4.586	7.81	0.00	0.21	2.56	1.00	1.00	0.00	8.71	32.43	0.00	1,418.7	0.0	856.41	624.98	1,481.39
9	160.0	28.79	0.000	13.44	0.00	0.14	2.82	1.00	1.00	0.00	7.74	42.36	0.00	1,861.2	0.0	854.95	973.47	1,828.42
10	177.5	29.41	0.000	8.71	0.00	0.13	2.87	1.00	1.00	0.00	5.00	2.50	0.00	855.1	0.0	573.12	71.93	645.05
11	190.0	29.82	0.000	6.00	0.00	0.13	2.85	1.00	1.00	0.00	3.45	0.93	0.00	585.8	0.0	398.71	27.01	425.73
														<b>47,935.8</b>	<b>0.0</b>	<b>37,716.30</b>		

<b>Load Case:</b> 1.2D + 1.6W 60° Wind	1.2D + 1.6W 97 mph Wind at 60° From Face
<b>Wind Load Factor:</b> 1.60	<b>Wind Importance Factor:</b> 1.00
<b>Dead Load Factor:</b> 1.20	
<b>Ice Dead Load Factor:</b> 0.00	<b>Ice Importance Factor:</b> 1.00

Sect Seq	Wind Height (ft)	Wind qz (psf)	Total Flat Area (sqft)	Total Round Area (sqft)	Ice Round Area (sqft)	Sol Ratio	Cf	Df	Dr	Ice Thick (in)	Eff Area (sqft)	Linear Area (sqft)	Ice Linear Area (sqft)	Total Weight (lb)	Weight Ice (lb)	Struct Force (lb)	Linear Force (lb)	Total Force (lb)
1	10.0	17.40	24.365	23.64	0.00	0.12	2.88	0.80	1.00	0.00	30.40	131.78	0.00	9,796.8	0.0	2068.74	1884.78	3,953.52
2	30.0	20.77	22.326	23.64	0.00	0.13	2.84	0.80	1.00	0.00	28.27	131.78	0.00	7,389.2	0.0	2271.30	2249.88	4,521.18
3	50.0	22.85	17.472	22.04	0.00	0.13	2.86	0.80	1.00	0.00	23.79	131.78	0.00	6,278.8	0.0	2112.37	2474.48	4,586.85
4	70.0	24.39	15.857	22.04	0.00	0.14	2.81	0.80	1.00	0.00	22.41	130.38	0.00	6,131.0	0.0	2088.01	2615.44	4,703.46
5	90.0	25.63	14.383	18.83	0.00	0.14	2.79	0.80	1.00	0.00	20.50	129.62	0.00	5,221.9	0.0	1994.01	2748.58	4,742.59
6	110.0	26.69	12.992	18.83	0.00	0.17	2.71	0.80	1.00	0.00	19.45	122.25	0.00	4,567.0	0.0	1910.39	2775.74	4,686.13
7	130.0	27.60	10.974	17.23	0.00	0.19	2.63	0.80	1.00	0.00	17.47	105.74	0.00	3,830.3	0.0	1725.36	2368.63	4,093.98
8	145.0	28.22	4.586	7.81	0.00	0.21	2.56	0.80	1.00	0.00	7.79	32.43	0.00	1,418.7	0.0	766.25	624.98	1,391.22
9	160.0	28.79	0.000	13.44	0.00	0.14	2.82	0.80	1.00	0.00	7.74	42.36	0.00	1,861.2	0.0	854.95	973.47	1,828.42
10	177.5	29.41	0.000	8.71	0.00	0.13	2.87	0.80	1.00	0.00	5.00	2.50	0.00	855.1	0.0	573.12	71.93	645.05
11	190.0	29.82	0.000	6.00	0.00	0.13	2.85	0.80	1.00	0.00	3.45	0.93	0.00	585.8	0.0	398.71	27.01	425.73
														<b>47,935.8</b>	<b>0.0</b>	<b>35,578.13</b>		

## Section Forces

**Structure:** CT22108-A-SBA  
**Site Name:** Windsor Locks @ Volunteer Drive  
**Height:** 195.00 (ft)  
**Base Elev:** 5.000 (ft)  
**Gh:** 0.85      **Topography:** 1

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

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<b>Load Case:</b> 1.2D + 1.6W 90° Wind	1.2D + 1.6W 97 mph Wind at 90° From Face
<b>Wind Load Factor:</b> 1.60	<b>Wind Importance Factor:</b> 1.00
<b>Dead Load Factor:</b> 1.20	
<b>Ice Dead Load Factor:</b> 0.00	<b>Ice Importance Factor:</b> 1.00

Sect Seq	Wind Height (ft)	Wind qz (psf)	Total Flat Area (sqft)	Total Round Area (sqft)	Ice Round Area (sqft)	Sol Ratio	Cf	Df	Dr	Ice Thick (in)	Eff Area (sqft)	Linear Area (sqft)	Ice Linear Area (sqft)	Total Weight (lb)	Weight Ice (lb)	Struct Force (lb)	Linear Force (lb)	Total Force (lb)
1	10.0	17.40	24.365	23.64	0.00	0.12	2.88	0.85	1.00	0.00	31.62	131.78	0.00	9,796.8	0.0	2151.64	1884.78	4,036.42
2	30.0	20.77	22.326	23.64	0.00	0.13	2.84	0.85	1.00	0.00	29.38	131.78	0.00	7,389.2	0.0	2360.99	2249.88	4,610.87
3	50.0	22.85	17.472	22.04	0.00	0.13	2.86	0.85	1.00	0.00	24.66	131.78	0.00	6,278.8	0.0	2189.95	2474.48	4,664.43
4	70.0	24.39	15.857	22.04	0.00	0.14	2.81	0.85	1.00	0.00	23.20	130.38	0.00	6,131.0	0.0	2161.89	2615.44	4,777.34
5	90.0	25.63	14.383	18.83	0.00	0.14	2.79	0.85	1.00	0.00	21.21	129.62	0.00	5,221.9	0.0	2063.98	2748.58	4,812.56
6	110.0	26.69	12.992	18.83	0.00	0.17	2.71	0.85	1.00	0.00	20.10	122.25	0.00	4,567.0	0.0	1974.19	2775.74	4,749.93
7	130.0	27.60	10.974	17.23	0.00	0.19	2.63	0.85	1.00	0.00	18.02	105.74	0.00	3,830.3	0.0	1779.54	2368.63	4,148.17
8	145.0	28.22	4.586	7.81	0.00	0.21	2.56	0.85	1.00	0.00	8.02	32.43	0.00	1,418.7	0.0	788.79	624.98	1,413.76
9	160.0	28.79	0.000	13.44	0.00	0.14	2.82	0.85	1.00	0.00	7.74	42.36	0.00	1,861.2	0.0	854.95	973.47	1,828.42
10	177.5	29.41	0.000	8.71	0.00	0.13	2.87	0.85	1.00	0.00	5.00	2.50	0.00	855.1	0.0	573.12	71.93	645.05
11	190.0	29.82	0.000	6.00	0.00	0.13	2.85	0.85	1.00	0.00	3.45	0.93	0.00	585.8	0.0	398.71	27.01	425.73
														<b>47,935.8</b>	<b>0.0</b>	<b>36,112.67</b>		

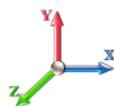
<b>Load Case:</b> 0.9D + 1.6W Normal Wind	0.9D + 1.6W 97 mph Wind at Normal To Face
<b>Wind Load Factor:</b> 1.60	<b>Wind Importance Factor:</b> 1.00
<b>Dead Load Factor:</b> 0.90	
<b>Ice Dead Load Factor:</b> 0.00	<b>Ice Importance Factor:</b> 1.00

Sect Seq	Wind Height (ft)	Wind qz (psf)	Total Flat Area (sqft)	Total Round Area (sqft)	Ice Round Area (sqft)	Sol Ratio	Cf	Df	Dr	Ice Thick (in)	Eff Area (sqft)	Linear Area (sqft)	Ice Linear Area (sqft)	Total Weight (lb)	Weight Ice (lb)	Struct Force (lb)	Linear Force (lb)	Total Force (lb)
1	10.0	17.40	24.365	23.64	0.00	0.12	2.88	1.00	1.00	0.00	35.27	131.78	0.00	7,347.6	0.0	2400.35	1884.78	4,285.12
2	30.0	20.77	22.326	23.64	0.00	0.13	2.84	1.00	1.00	0.00	32.73	131.78	0.00	5,541.9	0.0	2630.08	2249.88	4,879.96
3	50.0	22.85	17.472	22.04	0.00	0.13	2.86	1.00	1.00	0.00	27.28	131.78	0.00	4,709.1	0.0	2422.68	2474.48	4,897.16
4	70.0	24.39	15.857	22.04	0.00	0.14	2.81	1.00	1.00	0.00	25.58	130.38	0.00	4,598.2	0.0	2383.53	2615.44	4,998.97
5	90.0	25.63	14.383	18.83	0.00	0.14	2.79	1.00	1.00	0.00	23.37	129.62	0.00	3,916.4	0.0	2273.88	2748.58	5,022.46
6	110.0	26.69	12.992	18.83	0.00	0.17	2.71	1.00	1.00	0.00	22.05	122.25	0.00	3,425.3	0.0	2165.60	2775.74	4,941.34
7	130.0	27.60	10.974	17.23	0.00	0.19	2.63	1.00	1.00	0.00	19.67	105.74	0.00	2,872.8	0.0	1942.09	2368.63	4,310.72
8	145.0	28.22	4.586	7.81	0.00	0.21	2.56	1.00	1.00	0.00	8.71	32.43	0.00	1,064.1	0.0	856.41	624.98	1,481.39
9	160.0	28.79	0.000	13.44	0.00	0.14	2.82	1.00	1.00	0.00	7.74	42.36	0.00	1,395.9	0.0	854.95	973.47	1,828.42
10	177.5	29.41	0.000	8.71	0.00	0.13	2.87	1.00	1.00	0.00	5.00	2.50	0.00	641.3	0.0	573.12	71.93	645.05
11	190.0	29.82	0.000	6.00	0.00	0.13	2.85	1.00	1.00	0.00	3.45	0.93	0.00	439.3	0.0	398.71	27.01	425.73
														<b>35,951.9</b>	<b>0.0</b>	<b>37,716.30</b>		

## Section Forces

**Structure:** CT22108-A-SBA  
**Site Name:** Windsor Locks @ Volunteer Drive  
**Height:** 195.00 (ft)  
**Base Elev:** 5.000 (ft)  
**Gh:** 0.85      **Topography:** 1

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

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<b>Load Case:</b> 0.9D + 1.6W 60° Wind	0.9D + 1.6W 97 mph Wind at 60° From Face
<b>Wind Load Factor:</b> 1.60	<b>Wind Importance Factor:</b> 1.00
<b>Dead Load Factor:</b> 0.90	
<b>Ice Dead Load Factor:</b> 0.00	<b>Ice Importance Factor:</b> 1.00

Sect Seq	Wind Height (ft)	Wind qz (psf)	Total		Ice Round Area (sqft)	Sol Ratio	Cf	Df	Dr	Ice Thick (in)	Eff Area (sqft)	Ice		Total Weight (lb)	Weight Ice (lb)	Struct Force (lb)	Linear Force (lb)	Total Force (lb)
			Flat Area (sqft)	Round Area (sqft)								Linear Area (sqft)	Linear Area (sqft)					
1	10.0	17.40	24.365	23.64	0.00	0.12	2.88	0.80	1.00	0.00	30.40	131.78	0.00	7,347.6	0.0	2068.74	1884.78	3,953.52
2	30.0	20.77	22.326	23.64	0.00	0.13	2.84	0.80	1.00	0.00	28.27	131.78	0.00	5,541.9	0.0	2271.30	2249.88	4,521.18
3	50.0	22.85	17.472	22.04	0.00	0.13	2.86	0.80	1.00	0.00	23.79	131.78	0.00	4,709.1	0.0	2112.37	2474.48	4,586.85
4	70.0	24.39	15.857	22.04	0.00	0.14	2.81	0.80	1.00	0.00	22.41	130.38	0.00	4,598.2	0.0	2088.01	2615.44	4,703.46
5	90.0	25.63	14.383	18.83	0.00	0.14	2.79	0.80	1.00	0.00	20.50	129.62	0.00	3,916.4	0.0	1994.01	2748.58	4,742.59
6	110.0	26.69	12.992	18.83	0.00	0.17	2.71	0.80	1.00	0.00	19.45	122.25	0.00	3,425.3	0.0	1910.39	2775.74	4,686.13
7	130.0	27.60	10.974	17.23	0.00	0.19	2.63	0.80	1.00	0.00	17.47	105.74	0.00	2,872.8	0.0	1725.36	2368.63	4,093.98
8	145.0	28.22	4.586	7.81	0.00	0.21	2.56	0.80	1.00	0.00	7.79	32.43	0.00	1,064.1	0.0	766.25	624.98	1,391.22
9	160.0	28.79	0.000	13.44	0.00	0.14	2.82	0.80	1.00	0.00	7.74	42.36	0.00	1,395.9	0.0	854.95	973.47	1,828.42
10	177.5	29.41	0.000	8.71	0.00	0.13	2.87	0.80	1.00	0.00	5.00	2.50	0.00	641.3	0.0	573.12	71.93	645.05
11	190.0	29.82	0.000	6.00	0.00	0.13	2.85	0.80	1.00	0.00	3.45	0.93	0.00	439.3	0.0	398.71	27.01	425.73
														<b>35,951.9</b>	<b>0.0</b>	<b>35,578.13</b>		

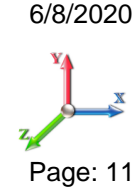
<b>Load Case:</b> 0.9D + 1.6W 90° Wind	0.9D + 1.6W 97 mph Wind at 90° From Face
<b>Wind Load Factor:</b> 1.60	<b>Wind Importance Factor:</b> 1.00
<b>Dead Load Factor:</b> 0.90	
<b>Ice Dead Load Factor:</b> 0.00	<b>Ice Importance Factor:</b> 1.00

Sect Seq	Wind Height (ft)	Wind qz (psf)	Total		Ice Round Area (sqft)	Sol Ratio	Cf	Df	Dr	Ice Thick (in)	Eff Area (sqft)	Ice		Total Weight (lb)	Weight Ice (lb)	Struct Force (lb)	Linear Force (lb)	Total Force (lb)
			Flat Area (sqft)	Round Area (sqft)								Linear Area (sqft)	Linear Area (sqft)					
1	10.0	17.40	24.365	23.64	0.00	0.12	2.88	0.85	1.00	0.00	31.62	131.78	0.00	7,347.6	0.0	2151.64	1884.78	4,036.42
2	30.0	20.77	22.326	23.64	0.00	0.13	2.84	0.85	1.00	0.00	29.38	131.78	0.00	5,541.9	0.0	2360.99	2249.88	4,610.87
3	50.0	22.85	17.472	22.04	0.00	0.13	2.86	0.85	1.00	0.00	24.66	131.78	0.00	4,709.1	0.0	2189.95	2474.48	4,664.43
4	70.0	24.39	15.857	22.04	0.00	0.14	2.81	0.85	1.00	0.00	23.20	130.38	0.00	4,598.2	0.0	2161.89	2615.44	4,777.34
5	90.0	25.63	14.383	18.83	0.00	0.14	2.79	0.85	1.00	0.00	21.21	129.62	0.00	3,916.4	0.0	2063.98	2748.58	4,812.56
6	110.0	26.69	12.992	18.83	0.00	0.17	2.71	0.85	1.00	0.00	20.10	122.25	0.00	3,425.3	0.0	1974.19	2775.74	4,749.93
7	130.0	27.60	10.974	17.23	0.00	0.19	2.63	0.85	1.00	0.00	18.02	105.74	0.00	2,872.8	0.0	1779.54	2368.63	4,148.17
8	145.0	28.22	4.586	7.81	0.00	0.21	2.56	0.85	1.00	0.00	8.02	32.43	0.00	1,064.1	0.0	788.79	624.98	1,413.76
9	160.0	28.79	0.000	13.44	0.00	0.14	2.82	0.85	1.00	0.00	7.74	42.36	0.00	1,395.9	0.0	854.95	973.47	1,828.42
10	177.5	29.41	0.000	8.71	0.00	0.13	2.87	0.85	1.00	0.00	5.00	2.50	0.00	641.3	0.0	573.12	71.93	645.05
11	190.0	29.82	0.000	6.00	0.00	0.13	2.85	0.85	1.00	0.00	3.45	0.93	0.00	439.3	0.0	398.71	27.01	425.73
														<b>35,951.9</b>	<b>0.0</b>	<b>36,112.67</b>		



## Section Forces

<b>Structure:</b> CT22108-A-SBA	<b>Code:</b> EIA/TIA-222-G	6/8/2020
<b>Site Name:</b> Windsor Locks @ Volunteer Drive	<b>Exposure:</b> C	
<b>Height:</b> 195.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 5.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 0.85	<b>Topography:</b> 1	<b>Struct Class:</b> II



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<b>Load Case:</b> 1.2D + 1.0Di + 1.0Wi Normal Wind	1.2D + 1.0Di + 1.0Wi 50 mph Wind at Normal From Face
<b>Wind Load Factor:</b> 1.00	<b>Wind Importance Factor:</b> 1.00
<b>Dead Load Factor:</b> 1.20	
<b>Ice Dead Load Factor:</b> 1.00	<b>Ice Importance Factor:</b> 1.00

Sect Seq	Wind Height (ft)	qz (psf)	Total		Ice Round Area (sqft)	Sol Ratio	Cf	Df	Dr	Ice Thick (in)	Eff Area (sqft)	Ice		Total Weight (lb)	Weight Ice (lb)	Struct Force (lb)	Linear Force (lb)	Total Force (lb)
			Flat Area (sqft)	Round Area (sqft)								Linear Area (sqft)	Linear Area (sqft)					
1	10.0	4.62	24.365	62.44	38.80	0.22	2.54	1.00	1.00	1.85	60.45	177.10	80.10	21,517.	11720.3	602.67	505.40	1,108.07
2	30.0	5.52	22.326	63.53	39.89	0.24	2.47	1.00	1.00	2.01	59.33	180.91	87.18	17,935.	10546.2	687.43	618.56	1,305.99
3	50.0	6.07	17.472	61.40	39.36	0.25	2.44	1.00	1.00	2.10	53.36	183.08	91.21	16,723.	10444.8	672.79	690.49	1,363.28
4	70.0	6.48	15.857	60.28	38.25	0.27	2.37	1.00	1.00	2.17	51.49	183.22	84.67	16,544.	10413.3	671.80	699.43	1,371.22
5	90.0	6.81	14.383	55.72	36.89	0.30	2.31	1.00	1.00	2.22	47.69	183.67	81.51	15,434.	10212.5	636.78	736.29	1,373.08
6	110.0	7.09	12.992	54.30	35.47	0.34	2.19	1.00	1.00	2.27	46.28	172.48	62.01	14,102.	9535.2	611.10	733.73	1,344.84
7	130.0	7.33	10.974	53.66	36.43	0.41	2.04	1.00	1.00	2.30	45.44	145.24	61.40	12,522.	8691.7	577.18	609.05	1,186.23
8	145.0	7.50	4.586	24.44	16.62	0.46	1.95	1.00	1.00	2.33	20.85	43.64	29.47	4,771.0	3352.3	259.60	164.16	423.75
9	160.0	7.65	0.000	66.16	52.71	0.62	1.79	1.00	1.00	2.35	50.36	53.28	40.72	7,457.9	5596.7	586.66	176.81	763.46
10	177.5	7.81	0.000	48.26	39.54	0.64	1.79	1.00	1.00	2.37	37.18	2.91	5.93	3,500.2	2645.1	440.96	24.79	465.75
11	190.0	7.92	0.000	33.63	27.63	0.67	1.78	1.00	1.00	2.39	26.57	0.93	3.98	2,417.7	1831.9	318.20	13.21	331.41
														<b>132,925.8</b>	<b>84990.0</b>			<b>11,037.09</b>

<b>Load Case:</b> 1.2D + 1.0Di + 1.0Wi 60° Wind	1.2D + 1.0Di + 1.0Wi 50 mph Wind at 60° From Face
<b>Wind Load Factor:</b> 1.00	<b>Wind Importance Factor:</b> 1.00
<b>Dead Load Factor:</b> 1.20	
<b>Ice Dead Load Factor:</b> 1.00	<b>Ice Importance Factor:</b> 1.00

Sect Seq	Wind Height (ft)	qz (psf)	Total		Ice Round Area (sqft)	Sol Ratio	Cf	Df	Dr	Ice Thick (in)	Eff Area (sqft)	Ice		Total Weight (lb)	Weight Ice (lb)	Struct Force (lb)	Linear Force (lb)	Total Force (lb)
			Flat Area (sqft)	Round Area (sqft)								Linear Area (sqft)	Linear Area (sqft)					
1	10.0	4.62	24.365	62.44	38.80	0.22	2.54	0.80	1.00	1.85	55.58	177.10	80.10	21,517.	11720.3	554.09	505.40	1,059.49
2	30.0	5.52	22.326	63.53	39.89	0.24	2.47	0.80	1.00	2.01	54.87	180.91	87.18	17,935.	10546.2	635.69	618.56	1,254.25
3	50.0	6.07	17.472	61.40	39.36	0.25	2.44	0.80	1.00	2.10	49.86	183.08	91.21	16,723.	10444.8	628.73	690.49	1,319.22
4	70.0	6.48	15.857	60.28	38.25	0.27	2.37	0.80	1.00	2.17	48.32	183.22	84.67	16,544.	10413.3	630.42	699.43	1,329.85
5	90.0	6.81	14.383	55.72	36.89	0.30	2.31	0.80	1.00	2.22	44.81	183.67	81.51	15,434.	10212.5	598.37	736.29	1,334.67
6	110.0	7.09	12.992	54.30	35.47	0.34	2.19	0.80	1.00	2.27	43.68	172.48	62.01	14,102.	9535.2	576.79	733.73	1,310.52
7	130.0	7.33	10.974	53.66	36.43	0.41	2.04	0.80	1.00	2.30	43.24	145.24	61.40	12,522.	8691.7	549.30	609.05	1,158.35
8	145.0	7.50	4.586	24.44	16.62	0.46	1.95	0.80	1.00	2.33	19.93	43.64	29.47	4,771.0	3352.3	248.18	164.16	412.33
9	160.0	7.65	0.000	66.16	52.71	0.62	1.79	0.80	1.00	2.35	50.36	53.28	40.72	7,457.9	5596.7	586.66	176.81	763.46
10	177.5	7.81	0.000	48.26	39.54	0.64	1.79	0.80	1.00	2.37	37.18	2.91	5.93	3,500.2	2645.1	440.96	24.79	465.75
11	190.0	7.92	0.000	33.63	27.63	0.67	1.78	0.80	1.00	2.39	26.57	0.93	3.98	2,417.7	1831.9	318.20	13.21	331.41
														<b>132,925.8</b>	<b>84990.0</b>			<b>10,739.31</b>

## Section Forces

**Structure:** CT22108-A-SBA  
**Site Name:** Windsor Locks @ Volunteer Drive  
**Height:** 195.00 (ft)  
**Base Elev:** 5.000 (ft)  
**Gh:** 0.85      **Topography:** 1

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

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<b>Load Case:</b> 1.2D + 1.0Di + 1.0Wi 90° Wind	1.2D + 1.0Di + 1.0Wi 50 mph Wind at 90° From Face
<b>Wind Load Factor:</b> 1.00	<b>Wind Importance Factor:</b> 1.00
<b>Dead Load Factor:</b> 1.20	
<b>Ice Dead Load Factor:</b> 1.00	<b>Ice Importance Factor:</b> 1.00

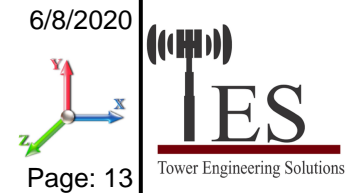
Sect Seq	Wind Height (ft)	qz (psf)	Total		Ice Round Area (sqft)	Sol Ratio	Cf	Df	Dr	Ice Thick (in)	Eff Area (sqft)	Ice		Total Weight (lb)	Weight Ice (lb)	Struct Force (lb)	Linear Force (lb)	Total Force (lb)
			Flat Area (sqft)	Round Area (sqft)								Area (sqft)	Area (sqft)					
1	10.0	4.62	24.365	62.44	38.80	0.22	2.54	0.85	1.00	1.85	56.80	177.10	80.10	21,517.	11720.3	566.23	505.40	1,071.63
2	30.0	5.52	22.326	63.53	39.89	0.24	2.47	0.85	1.00	2.01	55.98	180.91	87.18	17,935.	10546.2	648.63	618.56	1,267.19
3	50.0	6.07	17.472	61.40	39.36	0.25	2.44	0.85	1.00	2.10	50.74	183.08	91.21	16,723.	10444.8	639.74	690.49	1,330.24
4	70.0	6.48	15.857	60.28	38.25	0.27	2.37	0.85	1.00	2.17	49.12	183.22	84.67	16,544.	10413.3	640.77	699.43	1,340.19
5	90.0	6.81	14.383	55.72	36.89	0.30	2.31	0.85	1.00	2.22	45.53	183.67	81.51	15,434.	10212.5	607.97	736.29	1,344.27
6	110.0	7.09	12.992	54.30	35.47	0.34	2.19	0.85	1.00	2.27	44.33	172.48	62.01	14,102.	9535.2	585.37	733.73	1,319.10
7	130.0	7.33	10.974	53.66	36.43	0.41	2.04	0.85	1.00	2.30	43.79	145.24	61.40	12,522.	8691.7	556.27	609.05	1,165.32
8	145.0	7.50	4.586	24.44	16.62	0.46	1.95	0.85	1.00	2.33	20.16	43.64	29.47	4,771.0	3352.3	251.03	164.16	415.19
9	160.0	7.65	0.000	66.16	52.71	0.62	1.79	0.85	1.00	2.35	50.36	53.28	40.72	7,457.9	5596.7	586.66	176.81	763.46
10	177.5	7.81	0.000	48.26	39.54	0.64	1.79	0.85	1.00	2.37	37.18	2.91	5.93	3,500.2	2645.1	440.96	24.79	465.75
11	190.0	7.92	0.000	33.63	27.63	0.67	1.78	0.85	1.00	2.39	26.57	0.93	3.98	2,417.7	1831.9	318.20	13.21	331.41
														<b>132,925.8</b>	<b>84990.0</b>			<b>10,813.75</b>

<b>Load Case:</b> 1.0D + 1.0W Normal Wind	1.0D + 1.0W 60 mph Wind at Normal To Face
<b>Wind Load Factor:</b> 1.00	<b>Wind Importance Factor:</b> 1.00
<b>Dead Load Factor:</b> 1.00	
<b>Ice Dead Load Factor:</b> 0.00	<b>Ice Importance Factor:</b> 1.00

Sect Seq	Wind Height (ft)	qz (psf)	Total		Ice Round Area (sqft)	Sol Ratio	Cf	Df	Dr	Ice Thick (in)	Eff Area (sqft)	Ice		Total Weight (lb)	Weight Ice (lb)	Struct Force (lb)	Linear Force (lb)	Total Force (lb)
			Flat Area (sqft)	Round Area (sqft)								Area (sqft)	Area (sqft)					
1	10.0	6.66	24.365	23.64	0.00	0.12	2.88	1.00	1.00	0.00	37.65	131.78	0.00	8,164.0	0.0	612.73	450.71	1,063.44
2	30.0	7.95	22.326	23.64	0.00	0.13	2.84	1.00	1.00	0.00	35.28	131.78	0.00	6,157.7	0.0	677.86	538.02	1,215.87
3	50.0	8.74	17.472	22.04	0.00	0.13	2.86	1.00	1.00	0.00	29.62	131.78	0.00	5,232.3	0.0	629.08	591.73	1,220.81
4	70.0	9.33	15.857	22.04	0.00	0.14	2.81	1.00	1.00	0.00	27.92	130.38	0.00	5,109.2	0.0	622.12	625.44	1,247.56
5	90.0	9.81	14.383	18.83	0.00	0.14	2.79	1.00	1.00	0.00	25.06	129.62	0.00	4,351.6	0.0	583.06	657.28	1,240.33
6	110.0	10.21	12.992	18.83	0.00	0.17	2.71	1.00	1.00	0.00	23.70	122.25	0.00	3,805.9	0.0	556.70	663.77	1,220.48
7	130.0	10.56	10.974	17.23	0.00	0.19	2.63	1.00	1.00	0.00	20.84	105.74	0.00	3,192.0	0.0	492.15	566.42	1,058.57
8	145.0	10.80	4.586	7.81	0.00	0.21	2.56	1.00	1.00	0.00	9.09	32.43	0.00	1,182.3	0.0	213.67	149.45	363.12
9	160.0	11.02	0.000	13.44	0.00	0.14	2.82	1.00	1.00	0.00	7.74	42.36	0.00	1,551.0	0.0	204.45	232.79	437.23
10	177.5	11.25	0.000	8.71	0.00	0.13	2.87	1.00	1.00	0.00	5.00	2.50	0.00	712.6	0.0	137.05	17.20	154.25
11	190.0	11.41	0.000	6.00	0.00	0.13	2.85	1.00	1.00	0.00	3.45	0.93	0.00	488.2	0.0	95.35	6.46	101.81
														<b>39,946.5</b>	<b>0.0</b>			<b>9,323.47</b>

## Section Forces

<b>Structure:</b> CT22108-A-SBA	<b>Code:</b> EIA/TIA-222-G	6/8/2020
<b>Site Name:</b> Windsor Locks @ Volunteer Drive	<b>Exposure:</b> C	
<b>Height:</b> 195.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 5.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 0.85	<b>Topography:</b> 1	<b>Struct Class:</b> II



<b>Load Case:</b> 1.0D + 1.0W 60° Wind	1.0D + 1.0W 60 mph Wind at 60° From Face
<b>Wind Load Factor:</b> 1.00	<b>Wind Importance Factor:</b> 1.00
<b>Dead Load Factor:</b> 1.00	
<b>Ice Dead Load Factor:</b> 0.00	<b>Ice Importance Factor:</b> 1.00

Sect Seq	Wind Height (ft)	qz (psf)	Total Area		Ice Round Area (sqft)	Sol Ratio	Cf	Df	Dr	Ice Thick (in)	Eff Area (sqft)	Ice Area		Total Weight (lb)	Weight Ice (lb)	Struct Force (lb)	Linear Force (lb)	Total Force (lb)
			Flat Area (sqft)	Round Area (sqft)								Linear Area (sqft)	Linear Area (sqft)					
1	10.0	6.66	24.365	23.64	0.00	0.12	2.88	0.80	1.00	0.00	32.78	131.78	0.00	8,164.0	0.0	533.43	450.71	984.14
2	30.0	7.95	22.326	23.64	0.00	0.13	2.84	0.80	1.00	0.00	30.81	131.78	0.00	6,157.7	0.0	592.06	538.02	1,130.08
3	50.0	8.74	17.472	22.04	0.00	0.13	2.86	0.80	1.00	0.00	26.13	131.78	0.00	5,232.3	0.0	554.87	591.73	1,146.60
4	70.0	9.33	15.857	22.04	0.00	0.14	2.81	0.80	1.00	0.00	24.75	130.38	0.00	5,109.2	0.0	551.45	625.44	1,176.89
5	90.0	9.81	14.383	18.83	0.00	0.14	2.79	0.80	1.00	0.00	22.18	129.62	0.00	4,351.6	0.0	516.13	657.28	1,173.41
6	110.0	10.21	12.992	18.83	0.00	0.17	2.71	0.80	1.00	0.00	21.10	122.25	0.00	3,805.9	0.0	495.68	663.77	1,159.45
7	130.0	10.56	10.974	17.23	0.00	0.19	2.63	0.80	1.00	0.00	18.65	105.74	0.00	3,192.0	0.0	440.33	566.42	1,006.74
8	145.0	10.80	4.586	7.81	0.00	0.21	2.56	0.80	1.00	0.00	8.17	32.43	0.00	1,182.3	0.0	192.11	149.45	341.56
9	160.0	11.02	0.000	13.44	0.00	0.14	2.82	0.80	1.00	0.00	7.74	42.36	0.00	1,551.0	0.0	204.45	232.79	437.23
10	177.5	11.25	0.000	8.71	0.00	0.13	2.87	0.80	1.00	0.00	5.00	2.50	0.00	712.6	0.0	137.05	17.20	154.25
11	190.0	11.41	0.000	6.00	0.00	0.13	2.85	0.80	1.00	0.00	3.45	0.93	0.00	488.2	0.0	95.35	6.46	101.81
														<b>39,946.5</b>	<b>0.0</b>			<b>8,812.16</b>

<b>Load Case:</b> 1.0D + 1.0W 90° Wind	1.0D + 1.0W 60 mph Wind at 90° From Face
<b>Wind Load Factor:</b> 1.00	<b>Wind Importance Factor:</b> 1.00
<b>Dead Load Factor:</b> 1.00	
<b>Ice Dead Load Factor:</b> 0.00	<b>Ice Importance Factor:</b> 1.00

Sect Seq	Wind Height (ft)	qz (psf)	Total Area		Ice Round Area (sqft)	Sol Ratio	Cf	Df	Dr	Ice Thick (in)	Eff Area (sqft)	Ice Area		Total Weight (lb)	Weight Ice (lb)	Struct Force (lb)	Linear Force (lb)	Total Force (lb)
			Flat Area (sqft)	Round Area (sqft)								Linear Area (sqft)	Linear Area (sqft)					
1	10.0	6.66	24.365	23.64	0.00	0.12	2.88	0.85	1.00	0.00	34.00	131.78	0.00	8,164.0	0.0	553.25	450.71	1,003.97
2	30.0	7.95	22.326	23.64	0.00	0.13	2.84	0.85	1.00	0.00	31.93	131.78	0.00	6,157.7	0.0	613.51	538.02	1,151.53
3	50.0	8.74	17.472	22.04	0.00	0.13	2.86	0.85	1.00	0.00	27.00	131.78	0.00	5,232.3	0.0	573.42	591.73	1,165.15
4	70.0	9.33	15.857	22.04	0.00	0.14	2.81	0.85	1.00	0.00	25.54	130.38	0.00	5,109.2	0.0	569.12	625.44	1,194.56
5	90.0	9.81	14.383	18.83	0.00	0.14	2.79	0.85	1.00	0.00	22.90	129.62	0.00	4,351.6	0.0	532.86	657.28	1,190.14
6	110.0	10.21	12.992	18.83	0.00	0.17	2.71	0.85	1.00	0.00	21.75	122.25	0.00	3,805.9	0.0	510.93	663.77	1,174.70
7	130.0	10.56	10.974	17.23	0.00	0.19	2.63	0.85	1.00	0.00	19.20	105.74	0.00	3,192.0	0.0	453.28	566.42	1,019.70
8	145.0	10.80	4.586	7.81	0.00	0.21	2.56	0.85	1.00	0.00	8.40	32.43	0.00	1,182.3	0.0	197.50	149.45	346.95
9	160.0	11.02	0.000	13.44	0.00	0.14	2.82	0.85	1.00	0.00	7.74	42.36	0.00	1,551.0	0.0	204.45	232.79	437.23
10	177.5	11.25	0.000	8.71	0.00	0.13	2.87	0.85	1.00	0.00	5.00	2.50	0.00	712.6	0.0	137.05	17.20	154.25
11	190.0	11.41	0.000	6.00	0.00	0.13	2.85	0.85	1.00	0.00	3.45	0.93	0.00	488.2	0.0	95.35	6.46	101.81
														<b>39,946.5</b>	<b>0.0</b>			<b>8,939.99</b>

## Force/Stress Compression Summary

<b>Structure:</b> CT22108-A-SBA	<b>Code:</b> EIA/TIA-222-G	6/8/2020
<b>Site Name:</b> Windsor Locks @ Volunteer Drive	<b>Exposure:</b> C	
<b>Height:</b> 195.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 5.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 0.85	<b>Topography:</b> 1	<b>Struct Class:</b> II



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### LEG MEMBERS

Sect	Top Elev	Member	Force		Load Case	Len (ft)	Bracing %			Fy (ksi)	Mem Cap (kips)	Leg Use %	Controls	
			(kips)				X	Y	Z					KL/R
1	20	12B - 12"BD 2.25"	-350.73	1.2D + 1.6W	Normal Wind	10.02	100	100	100	24.38	50.00	514.03	68.2	Member X
2	40	12B - 12"BD 2.25"	-317.84	1.2D + 1.6W	Normal Wind	10.02	100	100	100	24.38	50.00	514.03	61.8	Member X
3	60	12B - 12"BD 2"	-280.83	1.2D + 1.6W	Normal Wind	10.02	100	100	100	24.41	50.00	405.83	69.2	Member X
4	80	12B - 12"BD 2"	-242.14	1.2D + 1.6W	Normal Wind	10.02	100	100	100	24.41	50.00	405.83	59.7	Member X
5	100	12B - 12"BD 1.75"	-200.68	1.2D + 1.6W	Normal Wind	10.02	100	100	100	25.99	50.00	308.82	65.0	Member X
6	120	12B - 12"BD 1.75"	-155.17	1.2D + 1.6W	Normal Wind	10.02	100	100	100	25.99	50.00	308.82	50.2	Member X
7	140	12B - 12"BD 1.5"	-110.81	1.2D + 1.6W	Normal Wind	10.02	100	100	100	30.32	50.00	222.99	49.7	Member X
8	150	12B - 12"BD 1.25"	-64.02	1.2D + 1.6W	Normal Wind	10.02	100	100	100	36.38	50.00	150.33	42.6	Member X
9	170	SOL - 2" SOLID	-54.76	1.2D + 1.6W	Normal Wind	2.40	100	100	100	57.51	50.00	111.01	49.3	Member X
10	185	SOL - 1 3/4" SOLID	-11.57	1.2D + 1.6W	Normal Wind	0.42	100	100	100	11.44	50.00	107.21	10.8	Member X
11	195	SOL - 1 3/4" SOLID	-2.19	1.2D + 1.0Di + 1.0Wi	Normal	2.29	100	100	100	62.85	50.00	81.08	2.7	Member X

### Splices

Sect	Top Elev	Load Case	Top Splice				Load Case	Bottom Splice			
			Force (kips)	Cap (kips)	Use %	Bolt Type		Num Bolts	Force (kips)	Cap (kips)	Use %
1	20	1.2D + 1.6W Normal Wind	326.99	0.00	0.0		1.2D + 1.6W Normal Wind	361.15	0.00		
2	40	1.2D + 1.6W Normal Wind	290.67	0.00	0.0		1.2D + 1.6W Normal Wind	326.99	0.00	1/4 A325	6
3	60	1.2D + 1.6W Normal Wind	252.47	0.00	0.0		1.2D + 1.6W Normal Wind	290.67	0.00	1/4 A325	6
4	80	1.2D + 1.6W Normal Wind	211.91	0.00	0.0		1.2D + 1.6W Normal Wind	252.47	0.00	1/4 A325	6
5	100	1.2D + 1.6W Normal Wind	167.54	0.00	0.0		1.2D + 1.6W Normal Wind	211.91	0.00	1 A325	6
6	120	1.2D + 1.6W Normal Wind	122.42	0.00	0.0		1.2D + 1.6W Normal Wind	167.54	0.00	1 A325	6
7	140	1.2D + 1.6W Normal Wind	80.22	0.00	0.0		1.2D + 1.6W Normal Wind	122.42	0.00	1 A325	6
8	150	1.2D + 1.6W Normal Wind	59.08	0.00	0.0		1.2D + 1.6W Normal Wind	80.22	0.00	1 A325	6
9	170	1.2D + 1.6W Normal Wind	11.68	0.00	0.0		1.2D + 1.6W Normal Wind	59.08	0.00	1 A325	6
10	185	1.2D + 1.0Di + 1.0Wi Normal Wi	2.82	0.00	0.0		1.2D + 1.6W Normal Wind	11.68	0.00		
11	195	1.2D + 1.0Di + 1.0Wi 90° Wind	0.40	0.00	0.0		1.2D + 1.0Di + 1.0Wi Normal Wi	2.82	0.00		

### HORIZONTAL MEMBERS

Sect	Top Elev	Member	Force		Load Case	Len (ft)	Bracing %			Fy (ksi)	Mem Cap (kips)	Num Bolts	Num Holes	Shear Cap (kips)	Bear Cap (kips)	Use %	Controls	
			(kips)				X	Y	Z									KL/R
1	20									0.00	0	0						
2	40									0.00	0	0						
3	60									0.00	0	0						
4	80									0.00	0	0						
5	100									0.00	0	0						
6	120									0.00	0	0						
7	140	SAE - 2.5X2.5X0.1875	-3.00	0.9D + 1.6W	Normal Wind	6.00	100	100	100	145.45	36.00	9.63	1	1	31.81	17.94	31	Member Z
8	150									0.00	0	0						
9	170	SOL - 1" SOLID	-1.29	0.9D + 1.6W	Normal Wind	4.99	100	100	100	167.65	50.00	6.31	0	0			20	Member X
10	185	SOL - 7/8" SOLID	-2.40	1.2D + 1.6W	Normal Wind	4.50	100	100	100	172.76	50.00	4.55	0	0			53	Member X
11	195	SOL - 7/8" SOLID	-0.76	0.9D + 1.6W	90° Wind	4.50	100	100	100	172.76	50.00	4.55	0	0			17	Member X

### DIAGONAL MEMBERS

Sect	Top Elev	Member	Force		Load Case	Len (ft)	Bracing %			Fy (ksi)	Mem Cap (kips)	Num Bolts	Num Holes	Shear Cap (kips)	Bear Cap (kips)	Use %	Controls	
			(kips)				X	Y	Z									KL/R
1	20	DAE - 3.5X3.5X0.3125	-10.4	1.2D + 1.6W	Normal Wind	21.92	50	50	50	204.79	36.00	22.52	1	1	43.49	75.0	46	Member Y
2	40	SAE - 3.5X3.5X0.3125	-9.58	1.2D + 1.6W	90° Wind	20.16	50	50	50	175.28	36.00	15.37	1	1	43.49	37.5	62	Member Z
3	60	SAE - 3X3X0.3125	-9.36	1.2D + 1.6W	90° Wind	18.45	50	50	50	187.93	36.00	11.39	1	1	43.49	37.5	82	Member Z

## Force/Stress Compression Summary

<b>Structure:</b> CT22108-A-SBA	<b>Code:</b> EIA/TIA-222-G	6/8/2020
<b>Site Name:</b> Windsor Locks @ Volunteer Drive	<b>Exposure:</b> C	
<b>Height:</b> 195.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 5.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 0.85	<b>Topography:</b> 1	<b>Struct Class:</b> II



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### DIAGONAL MEMBERS

Sect	Top Elev	Member	Force (kips)	Load Case	Len (ft)	Bracing %			KL/R	Fy (ksi)	Mem Cap (kips)	Num Bolts	Num Holes	Shear Cap		Bear Cap (kips)	Use %	Controls
						X	Y	Z						(kips)	(kips)			
4	80	SAE - 3X3X0.3125	-9.14	1.2D + 1.6W 90° Wind	16.80	50	50	50	171.17	36.00	13.73	1	1	43.49	37.5	67	Member Z	
5	100	SAE - 3X3X0.3125	-9.13	1.2D + 1.6W 90° Wind	15.24	50	50	50	155.27	36.00	16.68	1	1	31.81	29.9	55	Member Z	
6	120	SAE - 3X3X0.1875	-8.52	1.2D + 1.6W 90° Wind	13.80	50	50	50	138.89	36.00	12.77	1	1	31.81	17.9	67	Member Z	
7	140	SAE - 2.5X2.5X0.1875	-8.04	1.2D + 1.6W 90° Wind	12.50	50	50	50	151.56	36.00	8.87	1	1	31.81	17.9	91	Member Z	
8	150	SAE - 2.5X2.5X0.1875	-9.15	1.2D + 1.6W Normal Wind	11.42	50	50	50	138.38	36.00	10.64	1	1	31.81	17.9	86	Member Z	
9	170	SOL - 7/8" SOLID	-4.12	1.2D + 1.6W 90° Wind	5.51	50	50	50	135.94	50.00	7.35	0	0			56	Member X	
10	185	SOL - 3/4" SOLID	-3.91	1.2D + 1.6W Normal Wind	5.08	50	50	50	146.35	50.00	4.66	0	0			84	Member X	
11	195	SOL - 3/4" SOLID	-1.17	1.2D + 1.6W 60° Wind	5.05	50	50	50	145.44	50.00	4.72	0	0			25	Member X	

## Force/Stress Tension Summary

<b>Structure:</b> CT22108-A-SBA	<b>Code:</b> EIA/TIA-222-G	6/8/2020
<b>Site Name:</b> Windsor Locks @ Volunteer Drive	<b>Exposure:</b> C	
<b>Height:</b> 195.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 5.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 0.85	<b>Topography:</b> 1	<b>Struct Class:</b> II



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### LEG MEMBERS

Sect	Top Elev	Member	Force (kips)	Load Case	Fy (ksi)	Mem Cap (kips)	Leg Use %	Controls
1	20	12B - 12"BD 2.25"	304.56	0.9D + 1.6W 60° Wind	50	536.85	56.7	Member
2	40	12B - 12"BD 2.25"	276.45	0.9D + 1.6W 60° Wind	50	536.85	51.5	Member
3	60	12B - 12"BD 2"	244.89	0.9D + 1.6W 60° Wind	50	423.90	57.8	Member
4	80	12B - 12"BD 2"	210.74	0.9D + 1.6W 60° Wind	50	423.90	49.7	Member
5	100	12B - 12"BD 1.75"	173.83	0.9D + 1.6W 60° Wind	50	324.45	53.6	Member
6	120	12B - 12"BD 1.75"	132.57	0.9D + 1.6W 60° Wind	50	324.45	40.9	Member
7	140	12B - 12"BD 1.5"	92.80	0.9D + 1.6W 60° Wind	50	238.50	38.9	Member
8	150	12B - 12"BD 1.25"	50.32	0.9D + 1.6W 60° Wind	50	165.60	30.4	Member
9	170	SOL - 2" SOLID	43.41	0.9D + 1.6W 60° Wind	50	141.37	30.7	Member
10	185	SOL - 1 3/4" SOLID	4.60	0.9D + 1.6W 60° Wind	50	108.24	4.2	Member
11	195	SOL - 1 3/4" SOLID	1.16	0.9D + 1.6W 60° Wind	50	108.24	1.2	Bolt Shear

### Splices

Sect	Top Elev	Top Splice					Bottom Splice						
		Load Case	Force (kips)	Cap (kips)	Use %	Bolt Type	Num Bolts	Load Case	Force (kips)	Cap (kips)	Use %	Bolt Type	Num Bolts
1	20	0.9D + 1.6W 60° Wind	283.04	0.00	0.0			0.9D + 1.6W 60° Wind	313.9	0.00			
2	40	0.9D + 1.6W 60° Wind	251.99	0.00	0.0			0.9D + 1.6W 60° Wind	283.0	457.92	61.8	1 1/4 A325	6
3	60	0.9D + 1.6W 60° Wind	218.77	0.00	0.0			0.9D + 1.6W 60° Wind	251.9	457.92	55.0	1 1/4 A325	6
4	80	0.9D + 1.6W 60° Wind	182.74	0.00	0.0			0.9D + 1.6W 60° Wind	218.7	457.92	47.8	1 1/4 A325	6
5	100	0.9D + 1.6W 60° Wind	142.16	0.00	0.0			0.9D + 1.6W 60° Wind	182.7	318.06	57.5	1 A325	6
6	120	0.9D + 1.6W 60° Wind	103.00	0.00	0.0			0.9D + 1.6W 60° Wind	142.1	318.06	44.7	1 A325	6
7	140	0.9D + 1.6W 60° Wind	63.97	0.00	0.0			0.9D + 1.6W 60° Wind	103.0	318.06	32.4	1 A325	6
8	150	0.9D + 1.6W 60° Wind	42.34	0.00	0.0			0.9D + 1.6W 60° Wind	63.97	318.06	20.1	1 A325	6
9	170	0.9D + 1.6W Normal Wind	4.41	0.00	0.0			0.9D + 1.6W 60° Wind	42.34	318.06	13.3	1 A325	6
10	185	0.9D + 1.6W 60° Wind	1.14	0.00	0.0			0.9D + 1.6W Normal Wind	4.41	0.00			
11	195		0.00	0.00	0.0			0.9D + 1.6W 60° Wind	1.14	0.00			

### HORIZONTAL MEMBERS

Sect	Top Elev	Member	Force (kips)	Load Case	Fy (ksi)	Mem Cap (kips)	Num Bolts	Num Holes	Shear Cap (kips)	Bear Cap (kips)	B.S. Cap (kips)	Use %	Controls
1	20	-			36	0.00	0	0					
2	40	-			36	0.00	0	0					
3	60	-			36	0.00	0	0					
4	80	-			36	0.00	0	0					
5	100	-			36	0.00	0	0					
6	120	-			36	0.00	0	0					
7	140	SAE - 2.5X2.5X0.1875	3.23	1.2D + 1.6W 60° Wind	36	22.55	1	1	31.81	17.94	10.66	30.3	Blck Shear
8	150	-			36	0.00	0	0					
9	170	SOL - 1" SOLID	2.21	1.2D + 1.6W Normal W	50	35.34	0	0				6.3	Member
10	185	SOL - 7/8" SOLID	1.87	1.2D + 1.6W 60° Wind	50	27.06	0	0				6.9	Member
11	195	SOL - 7/8" SOLID	0.99	0.9D + 1.6W 60° Wind	50	27.06	0	0				3.7	Member

### DIAGONAL MEMBERS

Sect	Top Elev	Member	Force (kips)	Load Case	Fy (ksi)	Mem Cap (kips)	Num Bolts	Num Holes	Shear Cap (kips)	Bear Cap (kips)	B.S. Cap (kips)	Use %	Controls
1	20	DAE - 3.5X3.5X0.3125	9.38	1.2D + 1.6W 90° Wind	36	122.35	1	1	43.49	75.04	47.40	21.6	Bolt Shear
2	40	SAE - 3.5X3.5X0.3125	9.34	1.2D + 1.6W 90° Wind	36	54.17	1	1	43.49	37.52	23.70	39.4	Blck Shear
3	60	SAE - 3X3X0.3125	9.00	0.9D + 1.6W 90° Wind	36	44.05	1	1	43.49	37.52	20.30	44.3	Blck Shear
4	80	SAE - 3X3X0.3125	8.84	0.9D + 1.6W 90° Wind	36	44.05	1	1	43.49	37.52	20.30	43.5	Blck Shear

## Force/Stress Tension Summary

<b>Structure:</b> CT22108-A-SBA	<b>Code:</b> EIA/TIA-222-G	6/8/2020
<b>Site Name:</b> Windsor Locks @ Volunteer Drive	<b>Exposure:</b> C	
<b>Height:</b> 195.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 5.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 0.85	<b>Topography:</b> 1	<b>Struct Class:</b> II



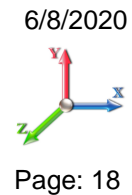
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### DIAGONAL MEMBERS

Sect	Top Elev	Member	Force (kips)	Load Case	Fy (ksi)	Mem Cap (kips)	Num Bolts	Num Holes	Shear Cap (kips)	Bear Cap (kips)	B.S. Cap (kips)	Use %	Controls
5	100	SAE - 3X3X0.3125	9.02	1.2D + 1.6W 90° Wind	36	46.60	1	1	31.81	29.91	19.47	46.3	Blck Shear
6	120	SAE - 3X3X0.1875	8.21	0.9D + 1.6W 90° Wind	36	28.68	1	1	31.81	17.94	11.68	70.3	Blck Shear
7	140	SAE - 2.5X2.5X0.1875	7.81	1.2D + 1.6W 90° Wind	36	22.55	1	1	31.81	17.94	10.66	73.3	Blck Shear
8	150	SAE - 2.5X2.5X0.1875	8.54	0.9D + 1.6W 60° Wind	36	22.55	1	1	31.81	17.94	10.66	80.1	Blck Shear
9	170	SOL - 7/8" SOLID	4.08	1.2D + 1.6W 90° Wind	50	27.06	0	0				15.1	Member
10	185	SOL - 3/4" SOLID	2.95	1.2D + 1.6W 60° Wind	50	19.88	0	0				14.8	Member
11	195	SOL - 3/4" SOLID	0.87	0.9D + 1.6W 90° Wind	50	19.88	0	0				4.4	Member

## Support Forces Summary

<b>Structure:</b> CT22108-A-SBA	<b>Code:</b> EIA/TIA-222-G	6/8/2020
<b>Site Name:</b> Windsor Locks @ Volunteer Drive	<b>Exposure:</b> C	
<b>Height:</b> 195.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 5.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 0.85	<b>Topography:</b> 1	<b>Struct Class:</b> II



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Load Case	Node	FX (kips)	FY (kips)	FZ (kips)	(-) = Uplift (+) = Down
<hr style="border-top: 1px dashed black;"/>					
1.2D + 1.6W Normal Wind	1	-0.01	360.70	-37.63	
	1a	13.63	-148.82	-9.06	
	1b	-13.62	-148.81	-9.07	
<hr style="border-top: 1px dashed black;"/>					
1.2D + 1.6W 60° Wind	1	-1.01	186.47	-19.04	
	1a	-16.85	183.55	8.75	
	1b	-28.58	-306.95	-16.52	
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1.2D + 1.6W 90° Wind	1	-1.23	21.11	-1.68	
	1a	-27.89	306.08	15.53	
	1b	-25.05	-264.13	-13.85	
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0.9D + 1.6W Normal Wind	1	-0.01	354.90	-37.19	
	1a	13.99	-153.80	-9.28	
	1b	-13.99	-153.80	-9.30	
<hr style="border-top: 1px dashed black;"/>					
0.9D + 1.6W 60° Wind	1	-1.02	180.94	-18.60	
	1a	-16.47	178.06	8.52	
	1b	-28.95	-311.70	-16.73	
<hr style="border-top: 1px dashed black;"/>					
0.9D + 1.6W 90° Wind	1	-1.24	15.84	-1.25	
	1a	-27.51	300.41	15.30	
	1b	-25.42	-268.94	-14.05	
<hr style="border-top: 1px dashed black;"/>					
1.2D + 1.0Di + 1.0Wi Normal Wind	1	0.00	163.53	-8.36	
	1a	6.69	3.03	-3.99	
	1b	-6.68	3.07	-3.99	
<hr style="border-top: 1px dashed black;"/>					
1.2D + 1.0Di + 1.0Wi 60° Wind	1	-0.17	109.52	-2.89	
	1a	-2.51	107.84	1.36	
	1b	-11.21	-47.74	-6.48	
<hr style="border-top: 1px dashed black;"/>					
1.2D + 1.0Di + 1.0Wi 90° Wind	1	-0.20	56.73	2.40	
	1a	-5.87	146.54	3.34	
	1b	-10.04	-33.64	-5.74	
<hr style="border-top: 1px dashed black;"/>					
1.0D + 1.0W Normal Wind	1	0.00	99.99	-10.23	
	1a	2.42	-23.72	-1.70	
	1b	-2.42	-23.71	-1.70	
<hr style="border-top: 1px dashed black;"/>					
1.0D + 1.0W 60° Wind	1	-0.27	57.73	-5.69	
	1a	-5.02	56.95	2.64	
	1b	-6.08	-62.12	-3.51	
<hr style="border-top: 1px dashed black;"/>					
1.0D + 1.0W 90° Wind	1	-0.32	17.59	-1.45	
	1a	-7.72	86.69	4.30	
	1b	-5.22	-51.72	-2.85	

### Max Reactions

	Leg	Overturning
Max Uplift:	-311.70 (kips)	Moment: 5883.42 (ft-kips)
Max Down:	360.70 (kips)	Total Down: 63.07 (kips)
Max Shear:	37.63 (kips)	Total Shear: 55.77 (kips)



## Analysis Summary

<b>Structure:</b> CT22108-A-SBA	<b>Code:</b> EIA/TIA-222-G	6/8/2020
<b>Site Name:</b> Windsor Locks @ Volunteer Drive	<b>Exposure:</b> C	
<b>Height:</b> 195.00 (ft)	<b>Crest Height:</b> 0.00	
<b>Base Elev:</b> 5.000 (ft)	<b>Site Class:</b> D - Stiff Soil	
<b>Gh:</b> 0.85	<b>Topography:</b> 1	<b>Struct Class:</b> II
		<b>Page:</b> 19



### Max Reactions

	Leg	Overturning
Max Uplift:	-311.70 (kips)	Moment: 5883.42 (ft-kips)
Max Down:	360.70 (kips)	Total Down: 63.07 (kips)
Max Shear:	37.63 (kips)	Total Shear: 55.77 (kips)

### Anchor Bolts

Bolt Size (in.): 1.25	Number Bolts: 6
Yield Strength (Ksi): 105.00	Tensile Strength (Ksi): 150.00
Detail Type: A	

**Interaction Ratio: 0.51**

### Max Usages


Max Leg: 69.2% (1.2D + 1.6W Normal Wind - Sect 3)  
 Max Diag: 90.6% (1.2D + 1.6W 90° Wind - Sect 7)  
 Max Horiz: 52.8% (1.2D + 1.6W Normal Wind - Sect 10)

### Max Deflection, Twist and Sway

Load Case	Elevation (ft)	Deflection (ft)	Twist (deg)	Sway (deg)
0.9D + 1.6W 97 mph Wind at 60° From Face	60.00	0.1695	0.0266	0.3247
	70.00	0.2291	-0.0097	0.3809
	100.00	0.4814	0.0519	0.5898
	110.00	0.5908	0.0583	0.6575
	130.00	0.8456	0.0711	0.8134
	150.00	1.1524	0.0959	0.9777
	164.79	1.4158	1.3858	1.0638
	170.42	1.5124	1.8423	1.9577
	195.00	1.9608	2.0816	1.3660
0.9D + 1.6W 97 mph Wind at 90° From Face	60.00	0.1690	-0.0289	0.3255
	70.00	0.2290	-0.0340	0.3804
	100.00	0.4807	-0.0537	0.5881
	110.00	0.5899	-0.0593	0.6526
	130.00	0.8433	-0.0680	0.8090
	150.00	1.1495	-0.0754	0.9646
	164.79	1.4088	-0.3706	0.9843
	170.42	1.4919	-0.4611	0.8652
	195.00	1.9265	-0.4605	1.0519
0.9D + 1.6W 97 mph Wind at Normal To Face	60.00	0.1753	0.0014	0.3356
	70.00	0.2389	0.0001	0.3924
	100.00	0.4977	0.0004	0.6135
	110.00	0.6110	0.0004	0.6885
	130.00	0.8757	0.0033	0.8458
	150.00	1.1960	-0.0008	1.0180
	164.79	1.4774	-0.2860	1.1955
	170.42	1.6112	-0.3731	3.4458
	195.00	2.1102	0.3587	2.5342

1.0D + 1.0W 60 mph Wind at 60° From Face	60.00	0.0410	-0.0051	0.0785
	70.00	0.0557	-0.0059	0.0921
	100.00	0.1165	-0.0093	0.1423
	110.00	0.1430	-0.0102	0.1591
	130.00	0.2045	-0.0113	0.1956
	150.00	0.2789	0.0116	0.2363
	164.79	0.3423	0.1348	0.2504
	170.42	0.3655	0.1755	0.4479
	195.00	0.4734	0.1765	0.3088
1.0D + 1.0W 60 mph Wind at 90° From Face	60.00	0.0412	-0.0070	0.0790
	70.00	0.0556	-0.0082	0.0922
	100.00	0.1167	-0.0130	0.1423
	110.00	0.1431	-0.0143	0.1580
	130.00	0.2045	-0.0164	0.1954
	150.00	0.2781	-0.0182	0.2331
	164.79	0.3406	-0.0896	0.2371
	170.42	0.3607	-0.1114	0.2053
	195.00	0.4653	-0.1100	0.2533
1.0D + 1.0W 60 mph Wind at Normal To Face	60.00	0.0428	0.0004	0.0816
	70.00	0.0582	0.0000	0.0952
	100.00	0.1210	0.0003	0.1487
	110.00	0.1484	0.0003	0.1667
	130.00	0.2126	0.0010	0.2048
	150.00	0.2896	0.0005	0.2451
	164.79	0.3575	-0.0649	0.2881
	170.42	0.3898	-0.0840	0.8259
	195.00	0.5103	0.0820	0.6085
1.2D + 1.0Di + 1.0Wi 50 mph Wind at 60° From Face	60.00	0.0550	0.0066	0.1048
	70.00	0.0731	-0.0044	0.1239
	100.00	0.1569	0.0126	0.1958
	110.00	0.1935	0.0142	0.2218
	130.00	0.2795	0.0180	0.2802
	150.00	0.3880	0.0243	0.3514
	164.79	0.4843	0.3754	0.3896
	170.42	0.5199	0.4945	0.9502
	195.00	0.6904	0.5014	1.0676
1.2D + 1.0Di + 1.0Wi 50 mph Wind at 90° From Face	60.00	0.0544	-0.0087	0.1048
	70.00	0.0730	-0.0102	0.1232
	100.00	0.1556	-0.0163	0.1947
	110.00	0.1918	-0.0182	0.2189
	130.00	0.2775	-0.0217	0.2778
	150.00	0.3844	-0.0253	0.3428
	164.79	0.4780	-0.1739	0.3559
	170.42	0.5068	-0.2193	0.5685
	195.00	0.6678	-0.2174	0.7517
1.2D + 1.0Di + 1.0Wi 50 mph Wind at Normal From Face	60.00	0.0551	0.0002	0.1083
	70.00	0.0752	0.0000	0.1270
	100.00	0.1608	0.0001	0.2044
	110.00	0.1987	-0.0001	0.2314
	130.00	0.2898	-0.0008	0.2948
	150.00	0.4030	-0.0008	0.3664
	164.79	0.5080	-0.1439	0.4645
	170.42	0.5625	-0.1859	1.6221
	195.00	0.7617	0.1812	1.6667
1.2D + 1.6W 97 mph Wind at 60° From Face	60.00	0.1697	0.0266	0.3253
	70.00	0.2295	-0.0097	0.3817
	100.00	0.4823	0.0520	0.5911
	110.00	0.5919	0.0583	0.6592
	130.00	0.8474	0.0712	0.8155
	150.00	1.1551	0.0961	0.9806
	164.79	1.4193	1.3892	1.0670
	170.42	1.5161	1.8470	1.9599
	195.00	1.9659	2.0892	1.3678

1.2D + 1.6W 97 mph Wind at 90° From Face	60.00	0.1693	-0.0289	0.3261
	70.00	0.2294	-0.0341	0.3811
	100.00	0.4816	-0.0538	0.5895
	110.00	0.5910	-0.0593	0.6543
	130.00	0.8450	-0.0680	0.8111
	150.00	1.1522	-0.0754	0.9675
	164.79	1.4121	-0.3705	0.9873
	170.42	1.4955	-0.4610	0.8624
	195.00	1.9314	-0.4603	1.0550
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1.2D + 1.6W 97 mph Wind at Normal To Face	60.00	0.1756	0.0014	0.3363
	70.00	0.2394	0.0001	0.3932
	100.00	0.4988	0.0005	0.6150
	110.00	0.6123	0.0005	0.6903
	130.00	0.8777	0.0034	0.8482
	150.00	1.1988	-0.0009	1.0207
	164.79	1.4811	-0.2861	1.1989
	170.42	1.6153	-0.3732	3.4515
	195.00	2.1158	0.3586	2.5378
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	<b>Mat Foundation Design for Self Supporting Tower</b>			Date 6/8/2020
	Customer Name:	SBA Communications Corp	EIA/TIA Standard:	EIA-222-G
	Site Name:		Structure Height (Ft.):	195
	Site Number:	CT22108-A-SBA	Engineer Name:	T. Alajaj
	Engr. Number:	94287	Engineer Login ID:	

**Foundation Info Obtained from:**

**Analysis or Design?**

**Number of Tower Legs:**

**Base Reactions (Factored):**

(1). Individual Leg:

Axial Load (Kips):	360.7	Uplift Force (Kips):	311.7
Shear Force (Kips):	37.6		

(2). Tower Base:

Total Vertical Load (Kips):	63.1	Total Shear Force (Kips):	55.8
Moment (Kips-ft):	5883.4		

**Foundation Geometries:**

Leg distance (Center-to-Center ft.):	20.0	Mods required -Yes/No ?:	No
Diameter of Pier (ft.):	Square 2.9	Pier Height A. G. (ft.):	5.00
Tower center to mat center (ft):	0.00	Depth of Base BG (ft.):	10.0
Length of Pad (ft.):	29.5	Width of Pad (ft.):	29.5
Thickness of Pad (ft):	3.50		

**Material Properties and Rebar Info:**

Concrete Strength (psi):	4500	Steel Elastic Modulus:	29000	ksi
Vertical bar yield (ksi):	60	Tie steel yield (ksi):	60	
Vertical Rebar Size #:	8	Tie / Stirrup Size #:	4	
Qty. of Vertical Rebars:	27	Tie Spacing (in):	12.0	
Pad Rebar Yield (Ksi):	60	Pad Steel Rebar Size (#):	9	
Concrete Cover (in.):	3	Unit Weight of Concrete:	150.0	pcf

Rebar at the bottom of the concrete pad:

Qty. of Rebar in Pad (L):	39	Qty. of Rebar in Pad (W):	39
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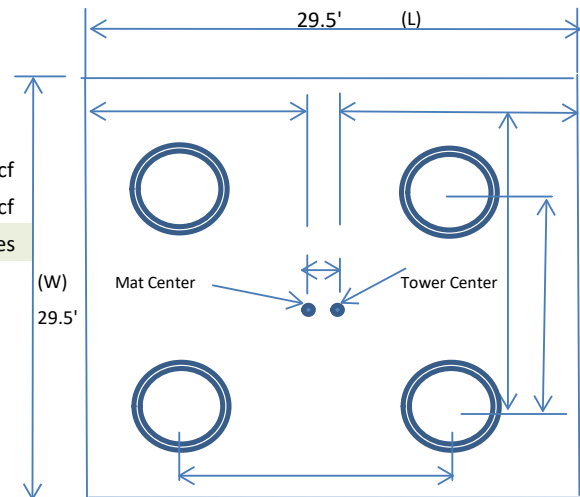
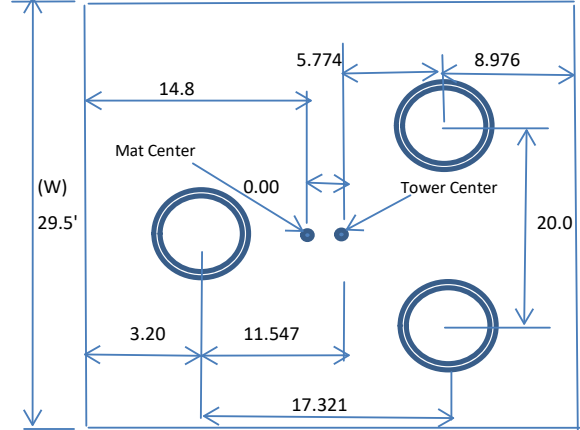
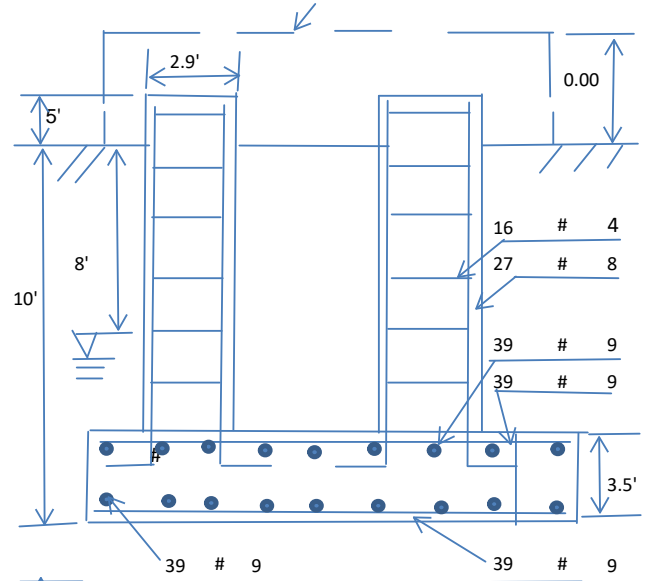
Rebar at the top of the concrete pad:

Qty. of Rebar in Pad (L):	39	Qty. of Rebar in Pad (W):	39
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**Soil Design Parameters:**

Soil Unit Weight (pcf):	100.0	Soil Buoyant Weight:	50.0	Pcf
Water Table B.G.S. (ft):	8.0	Unit Weight of Water:	62.4	pcf
Ultimate Bearing Pressure (psf):	7000	Consider ties in concrete shear strength:	Yes	

Drawings/Calculations
Analysis
3 Legs



Allowable overstress %: 5.00%  
 Apply 1.35 for e/w per G/H: 1

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<b>Foundation Analysis and Design:</b>	Uplift Strength Reduction Factor:	0.75	Compression Strength Reduction Factor:	0.75
Total Dry Soil Volume (cu. Ft.):	5494.28	Total Dry Soil Weight (Kips):	549.43	
Total Buoyant Soil Volume (cu. Ft.):	0.00	Total Buoyant Soil Weight (Kips):	0.00	
Total Effective Soil Weight (Kips):	549.43	Weight from the Concrete Block at Top (K):	0.00	
Total Dry Concrete Volume (cu. Ft.):	1592.61	Total Dry Concrete Weight (Kips):	238.89	
Total Buoyant Concrete Volume (cu. Ft.):	1740.50	Total Buoyant Concrete Weight (Kips):	152.47	
Total Effective Concrete Weight (Kips):	391.36	Total Vertical Load on Base (Kips):	1003.86	

**Check Soil Capacities:**

Calculated Maxium Net Soil Pressure under the base (psf):	2635.56	<	Allowable Factored Soil Bearing (psf):	5250	0.50	OK!
Allowable Foundation Overturning Resistance (kips-ft.):	13419.2	>	Design Factored Momont (kips-ft):	6595	0.49	OK!
Factor of Safety Against Overturning (O. R. Moment/Design Moment):	2.03					OK!

**Check the capacities of Reinforcing Concrete:**

Strength reduction factor (Flexure and axial tension):	0.90	Strength reduction factor (Shear):	0.75			
Strength reduction factor (Axial compression):	0.65	Wind Load Factor on Concrete Design:	1.00			
				Load/ Capacity Ratio		
<b>(1) Concrete Pier:</b>						
Vertical Steel Rebar Area (sq. in./each):	0.79	Tie / Stirrup Area (sq. in./each):	0.20			
Calculated Moment Capacity (Mn,Kips-Ft):	1052.0	>	Design Factored Moment (Mu, Kips-Ft)	432.8	0.41	OK!
Calculated Shear Capacity (Kips):	98.7	>	Design Factored Shear (Kips):	37.6	0.38	OK!
Calculated Tension Capacity (Tn, Kips):	1151.8	>	Design Factored Tension (Tu Kips):	311.7	0.27	OK!
Calculated Compression Capacity (Pn, Kips):	2342.2	>	Design Factored Axial Load (Pu Kips):	360.7	0.15	OK!
Moment & Tension Strength Combination:	0.41	OK!	Check Tie Spacing (Design/Req'd):	1		OK!
Pier Reinforcement Ratio:	0.018		Reinforcement Ratio is satisfied per ACI			

**(2).Concrete Pad:**

One-Way Design Shear Capacity (L or W Direction, Kips):	1369.2	>	One-Way Factored Shear (L/W-Dir Kips	312.5	0.23	OK!
One-Way Design Shear Capacity (Diagonal Dir., Kips):	1063.2	>	One-Way Factored Shear (Dia. Dir, Kips	236.1	0.22	OK!
Lower Steel Pad Reinforcement Ratio (L or W-Direct. ):	0.0029		Lower Steel Reinf. Ratio (Dia. Dir.):	0.0026		
Lower Steel Pad Moment Capacity (L or W-Dir. Kips-ft):	6589.5	>	Moment at Bottom ( L-Direct. K-Ft):	1863.8	0.28	OK!
Lower Steel Pad Moment Capacity (Dia. Direction,K-ft):	6237.8	>	Moment at Bottom ( Dia. Dir. K-Ft):	1594.1	0.26	OK!
Upper Steel Pad Reinforcement Ratio (L or W -Direction):	0.0029		Upper Steel Reinf. Ratio (Dia. Dir.):	0.0026		
Upper Steel Pad Moment Capacity (L or W-Dir., Kips-ft):	6589.5	>	Moment at the top (L-Dir Kips-Ft):	696.9	0.11	OK!
Upper Steel Pad Moment Capacity (Dia. Direction, K-ft):	6237.8	>	Moment at the top (Dia. Dir., K-Ft):	434.7	0.07	OK!
Punching Failure Capacity (Kips):	1536.4	>	Punch. Failure Factored Shear (K):	360.7	0.23	OK!