Robinson+Cole

KENNETH C. BALDWIN

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

Also admitted in Massachusetts
and New York

August 11, 2020

Via Electronic Mail

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

Re: **Request of Cellco Partnership d/b/a Verizon Wireless for an Order to Approve the Shared Use of an Existing Tower at 487 Monce Road, Burlington, Connecticut**

Dear Ms. Bachman:

Pursuant to Connecticut General Statutes ("C.G.S.") §16-50aa, as amended, Cellco Partnership d/b/a Verizon Wireless ("Cellco") hereby requests an order from the Siting Council ("Council") to approve the shared use of an existing telecommunications tower on an .95-acre parcel at 87 Monce Road in Burlington, Connecticut (the "Property"). The Property is owned by Town of Burlington (the "Property Owner") and is the location of the Burlington Volunteer Fire Department, Lake Garda Station No. 4. The tower is owned by InSite Towers DEVT LLC ("InSite"). Cellco identifies this site as its "Burlington SW Facility".

The existing 120-foot tower was approved by the Town of Burlington Planning & Zoning Commission of August 14, 2014. A copy of the Town's Approval is included in Attachment 1. AT&T maintains antennas at the 111.5-foot level and T-Mobile maintains antennas at the 99.5-foot level on the tower. AT&T and T-Mobile maintain radio equipment inside a fenced facility compound behind the Fire Department building. The tower is also shared by the Town of Burlington.

Cellco requests that the Council find that the proposed shared use of the InSite tower satisfies the criteria of C.G.S § 16-50aa and issue an order approving the proposed shared use. A copy of this filing is being sent to Burlington First Selectman, Theodore Shafer; Jerry Burns, Burlington's Zoning Enforcement Officer; and InSite, the tower owner.

Background

Cellco is licensed by the Federal Communications Commission ("FCC") to provide wireless services throughout the State of Connecticut. Cellco and InSite have agreed to the proposed shared use of the 87 Monce Road tower pursuant to mutually acceptable terms and conditions. Likewise, InSite and Cellco have agreed to the proposed installation of equipment on the ground within an existing fenced compound area. InSite has authorized Cellco to apply for all necessary permits and approvals that may be required to share the existing tower. (*See* Owner's authorization letter included in Attachment 2).

Cellco proposes to install six (6) antennas and six (6) remote radio heads ("RRHs") on the tower at a height of 91.2 feet above ground level ("AGL"). Cellco will install equipment cabinets and a backup generator on the ground in the northeasterly portion of the fenced compound. Included in Attachment 3 are Cellco's project plans showing the location of all of its proposed site improvements. Attachment 4 contains specifications for Cellco's proposed antennas, RRHs and back-up generator.

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

A. Technical Feasibility. The existing InSite tower is structurally capable of supporting Cellco's antennas, RRHs, antenna mounting frame and related equipment. The proposed shared use of this tower is, therefore, technically feasible. A Structural Analysis Report dated May 5, 2020, prepared for this project confirms that the tower can support all of Cellco's proposed tower loading. A copy of the Structural Analysis Report is included in Attachment 5. A Mount Analysis Report dated July 30, 2020, was also prepared and confirms that the antenna mounts have sufficient capacity to support Cellco's proposed equipment. The Mount Analysis Report is included in Attachment 6.

B. Legal Feasibility. Under C.G.S. § 16-50aa, the Council has been authorized to issue orders approving the shared use of an existing tower such as the InSite tower. This authority complements the Council's prior-existing authority under C.G.S. § 16-50p to issue orders approving the construction of new towers that are subject to the Council's jurisdiction. In

addition, § 16-50x(a) directs the Council to "give such consideration to other state laws and municipal regulations as it shall deem appropriate" in ruling on requests for the shared use of existing tower facilities. Under the statutory authority vested in the Council, an order by the Council approving the requested shared use would permit the Applicant to obtain a building permit for the proposed installations.

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

1. The proposed installation of six (6) antennas and six (6) remote radio heads on an antenna mounting frame at a height of 91.2 feet AGL on the existing 120-foot tower would have an insignificant incremental visual impact on the area around the existing tower. As mentioned above, Cellco's equipment will be located on a concrete pad within the existing fenced compound area. Cellco's shared use of this tower facility would therefore, not cause any significant change or alteration in the physical or environmental characteristics of the existing site.

2. Noise associated with Cellco's proposed facility will comply with State and local noise standards. Noise associated with the existing shared backup generator is exempt from these same standards.

3. Operation of Cellco's antennas at this site would not exceed the RF emissions standards adopted by the Federal Communications Commission ("FCC"). Included in Attachment 7 of this filing are Far Field Approximation tables for each of Cellco's operating frequencies that demonstrates that the Cellco facility will operate well within the FCC's safety standards.

4. Under ordinary operating conditions, the proposed installation would not require the use of any water or sanitary facilities and would not generate air emissions or discharges to water bodies or sanitary facilities. After construction is complete the proposed installations would not generate any increased traffic to the InSite facility other than periodic maintenance visits to the cell site.

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

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

E. Public Safety Concerns. As discussed above, the tower is structurally capable of supporting Cellco's antennas, antenna mounting frame, RRHs and all related equipment. Cellco is not aware of any public safety concerns relative to the proposed sharing of the existing InSite tower. In fact, the provision of new and improved wireless service through shared use of the existing tower is expected to enhance the safety and welfare of area residents and members of the general public traveling through the Town of Burlington.

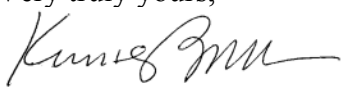
Conclusion

A Certificate of Mailing verifying that this filing was sent to the municipal officials and the Property owner is included in Attachment 8.

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

Thank you for your consideration of this matter.

Very truly yours,



Kenneth C. Baldwin

Enclosures
Copy to:
Theodore Shafer, First Selectman
Jerry Burns, Zoning Enforcement Officer
InSite Towers DEVT LLC

ATTACHMENT 1

Town of Burlington

August 15, 2014

Hartford Courant
Classified Department – Legal
Via email: Publicnotices@courant.com

To Whom It May Concern:

Please publish the following legal notice **ONCE** upon receipt in Zone 5 section of your newspaper**.** Thank you.

NOTICE OF DECISION
TOWN OF BURLINGTON
PLANNING & ZONING COMMISSION

The Planning and Zoning Commission at its August 14, 2014 regular meeting took the following action:

Approved: Application 2062-Tharau-Special Use Permit-Dog Grooming-281 Spielman Highway.
IN FAVOR: Miller, Lostocco, Franciamore, Dahle, DiPaola, DiChiara, Parente. OPPOSED, none. ABSTAINED, none.

Approved: Application 2063-Burlington Volunteer Fire Department-Site plan approval & Special Use Permit for new firehouse building to replace existing building and telecommunications tower-87 Monce Road.
IN FAVOR**:** Miller, Lostocco, Franciamore, Dahle, DiPaola, DiChiara, Parente. OPPOSED, none. ABSTAINED, none.

Approved: Application 2061-Lamothe-Special Use Permit-Indoor shooting range-713 George Washington Tpke.
IN FAVOR**:** Miller, Lostocco, Franciamore, Dahle, DiPaola, DiChiara, Parente. OPPOSED, none. ABSTAINED, none.

Richard Miller, Chairman
Planning & Zoning Commission
Dated this 14th Day of August 2014

Please forward an affidavit of publication with tearsheet to the Planning and Zoning Commission, ATTN:Allison Yudelson, 200 Spielman Highway, Burlington, CT, 06013.

Cc: Town Clerk
File 2062
File 2063
File 2061

Town of Burlington

200 Spielman Highway • Burlington, CT 06013-1735 • 860-673-6789

ATTACHMENT 2

July 21, 2020

Mr. Andrew Candiello
Verizon Wireless
118 Flanders Road, Third Floor
Westborough, MA 01581

RE: InSite Towers Development, LLC Site ID: CT011 Burlington
Cellco Partnership d/b/a Verizon Wireless Site ID: Burlington SW CT/479435
Telecommunication Facility at 87 Monce Road, Burlington, CT 06013

Dear Mr. Candiello:

InSite Towers Development, LLC, as owner of the tower at above-referenced property, hereby authorizes Verizon Wireless and/or its agent(s) to apply for and obtain all necessary permits and approvals from all applicable Town of Burlington or State of Connecticut boards, agencies and commissions for the proposed installation of Verizon Wireless equipment at the above-referenced site.

Please contact us should you have any questions.

Sincerely,

INSITE TOWERS DEVELOPMENT, LLC

By: DocuSigned by: Robert L. Johnson Jr. E4DECCE1E6C9415...

Printed Name: Robert L. Johnson Jr.

Title: COO

Date: 7/21/2020

ATTACHMENT 3

SUPPORTING DOCUMENTS

RADIO FREQUENCY (RF) DESIGN DATE: 2/24/20

ANTENNA MOUNT STRUCTURAL ANALYSIS DATE: 7/30/20

ANTENNA SUPPORT STRUCTURE (120'± MONOPOLE) STRUCTURAL ANALYSIS DATE: 5/5/20 (BY OTHERS)

verizon

20 ALEXANDER DRIVE, WALLINGFORD, CT 06492

BURLINGTON SOUTHWEST CT

87 MONCE ROAD
BURLINGTON, CT 06013

PROJECT TYPE: WIRELESS TELECOMMUNICATIONS COLLOCATION ON EXISTING 120'± MONOPOLE

SITE INFORMATION:

LAND OWNER:	TOWN OF BURLINGTON 200 SPIELMANY HIGHWAY BURLINGTON, CT 06013
TOWER OWNER:	INSITE TOWERS, LLC 1199 NORTH FAIRFAX STREET, SUITE 700 ALEXANDRIA, VA 22314
APPLICANT:	CELLCO PARTNERSHIP (dba VERIZON WIRELESS) 20 ALEXANDER DRIVE WALLINGFORD, CT 06492
SITE ADDRESS:	87 MONCE ROAD BURLINGTON, CT 06013
COUNTY:	HARTFORD COUNTY, CT
SITE CONTROL POINT:	CENTER OF EXISTING MONOPOLE N 41°-44'-20.89" (41.739136°) (NAD '83) W 72°-54'-28.09" (72.907803°) (NAD '83)
ZONING CLASSIFICATION:	R-44 (R-44 RESIDENTIAL ZONE)
ZONING JURISDICTION:	TOWN OF BURLINGTON, CT
TAX ID PARCEL NUMBER:	MAP 11 BLOCK 06 LOT 33
ARCHITECT / ENGINEER:	CHAPPELL ENGINEERING ASSOCIATES, LLC 201 BOSTON POST ROAD WEST, SUITE 101 MARLBOROUGH, MA 01752
POWER COMPANY:	EVERSOURCE ENERGY 247 STATION DRIVE, SE 210 WESTWOOD, MA 02090 (781) 441-3610
TELEPHONE COMPANY:	VERIZON 185 FRANKLIN STREET BOSTON, MA 02107 (800) 941-9900

GENERAL NOTES

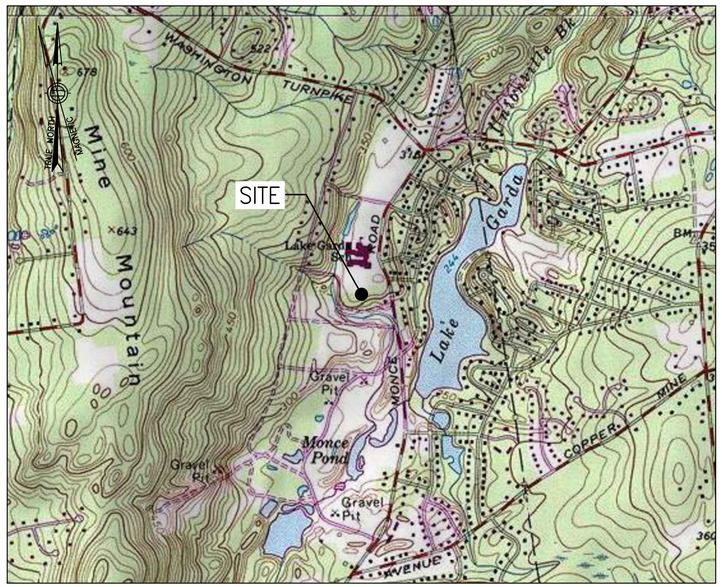
1. CONTRACTOR SHALL VERIFY ALL PLANS, EXISTING DIMENSIONS, AND CONDITIONS ON JOB SITE. CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ARCHITECT/ENGINEER IN WRITING OF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK. FAILURE TO NOTIFY THE ARCHITECT/ENGINEER PLACES THE RESPONSIBILITY ON THE CONTRACTOR TO CORRECT THE DISCREPANCIES AT THE CONTRACTOR'S EXPENSE.

2. NEW CONSTRUCTION SHALL CONFORM TO ALL APPLICABLE CODES AND ORDINANCES.
   - BUILDING CODE: 2018 CONNECTICUT STATE BUILDING CODE
   - ELECTRICAL CODE: 2017 NATIONAL ELECTRICAL CODE
   - STRUCTURAL CODE: TIA/EIA-222-G STRUCTURAL STANDARDS FOR ANTENNA SUPPORTING STRUCTURES AND ANTENNAS.

AT LEAST 72 HOURS PRIOR TO DIGGING, THE CONTRACTOR IS REQUIRED TO CALL BEFORE YOU DIG AT 811

VICINITY MAP

SCALE: 1"=1000'



DRIVING DIRECTIONS

FROM WALLINGFORD, TAKE CT-15 N. TAKE EXIT 68W FOR I-691 W TOWARD MERIDEN WATERBURY. TAKE EXIT 2 FOR I-84 E TOWARD HARTFORD. USE THE LEFT LANE TO TAKE EXIT 33 TO MERGE ONTO CT-72 W TOWARD BRISTOL. TAKE EXIT 1 FOR CT-177/NORTH WASHINGTON STREET. USE THE RIGHT 2 LANES TO TURN RIGHT ONTO CT-177 N. TURN LEFT ONTO COPPERMINE ROAD. CONTINUE ONTO STAFFORD ROAD. TURN RIGHT ONTO MONCE ROAD. THE SITE WILL BE ON THE LEFT SIDE.

SHEET INDEX

DWG.	DESCRIPTION	REV.
T01	TITLE SHEET	3
GN01	GENERAL NOTES	3
C01	PROPERTY PLAN	3
A01	EQUIPMENT COMPOUND PLAN	3
A02	EQUIPMENT PAD PLAN & DETAILS	3
A03	WEST SITE ELEVATION	3
S01	ICE SHIELD FRAMING PLAN & STRUCTURAL DETAILS	3
RF01	ANTENNA MOUNTING PLAN AND DETAILS	3
RF02	ANTENNA DETAILS AND ANCILLARY EQUIPMENT SPECIFICATIONS	3
RF03	RF COLOR CODE SPECIFICATIONS AND PLUMBING DIAGRAM	3
E01	ELECTRICAL SPECIFICATIONS AND NOTES	3
E02	EQUIPMENT COMPOUND UTILITY PLAN & DETAILS	3
E03	ELECTRICAL DIAGRAMS & DETAILS	3
E04	SCHEMATIC GROUNDING PLAN & DETAILS	3
E05	GROUNDING DETAILS	3

DO NOT SCALE DRAWINGS

ALL PLANS, EXISTING DIMENSIONS AND CONDITIONS AT THE PROPOSED PROJECT SITE SHALL BE VERIFIED IN THE FIELD DURING THE CONSTRUCTION PHASE. THE PROJECT OWNER'S REPRESENTATIVE SHALL BE NOTIFIED IN WRITING OF ANY DISCREPANCIES IMMEDIATELY PRIOR TO PROCEEDING WITH THE PROPOSED WORK AFFECTED BY SUCH DISCREPANCIES. IN THE EVENT OF LACK OF SUCH NOTIFICATION, SUCH DISCREPANCIES SHALL BECOME THE RESPONSIBILITY OF THE PREVAILING CONTRACTOR RESPONSIBLE FOR CONSTRUCTION.

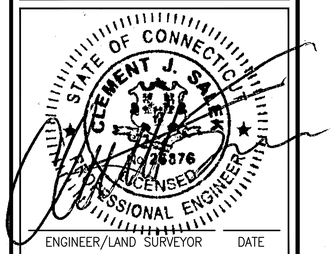
PROJECT DESCRIPTION

1. THIS IS AN UNMANNED AND RESTRICTED ACCESS INSTALLATION AND WILL BE USED FOR THE TRANSMISSION OF RADIO SIGNAL FOR THE PURPOSE OF PROVIDING PUBLIC WIRELESS TELECOMMUNICATIONS SERVICE.
2. THIS FACILITY WILL CONSUME NO UNRECOVERABLE ENERGY.
3. NO POTABLE WATER SUPPLY IS TO BE PROVIDED AT THIS LOCATION.
4. NO WASTE WATER WILL BE GENERATED AT THIS LOCATION.
5. NO SOLID WASTE WILL BE GENERATED AT THIS LOCATION.

verizon

" Because Better Matters "

CHAPPELL ENGINEERING ASSOCIATES, LLC
Civil · Structural · Land Surveying
R.K. EXECUTIVE CENTRE
201 BOSTON POST ROAD WEST, SUITE 101
MARLBOROUGH, MA 01752
(508) 481-7400
www.chappellengineering.com



ENGINEER/LAND SURVEYOR DATE

REVISIONS

NO.	DESCRIPTION	DATE
0	ISSUED FOR REVIEW	5/26/20
1	GENERAL REVISIONS	7/20/20
2	GENERAL REVISIONS	7/30/20
3	ISSUED FOR CONSTRUCTION (FINAL)	8/6/20

PROJECT NAME:

BURLINGTON SOUTHWEST CT
87 MONCE ROAD
BURLINGTON, CT 06013

DRAWING TITLE:

TITLE SHEET

DRAWING NO:

T01

SCALE:	DESIGNED BY: GRS	VZW LOCATION CODE:
AS SHOWN	DRAWN BY: NWC	479435
	CHECKED BY: GRS	
CEA PROJECT NO.:	ORIGINAL ISSUE DATE:	
96210.398	5/26/20	

GENERAL NOTES:

1. FOR THE PURPOSE OF CONSTRUCTION DRAWINGS, THE FOLLOWING DEFINITIONS SHALL APPLY:
CONTRACTOR – VERIZON WIRELESS
SUBCONTRACTOR – GENERAL CONTRACTOR (CONSTRUCTION)
OWNER – VERIZON WIRELESS
OEM – ORIGINAL EQUIPMENT MANUFACTURER

2. PRIOR TO THE SUBMISSION OF BIDS, THE BIDDING SUBCONTRACTOR SHALL VISIT THE CELL SITE TO FAMILIARIZE WITH THE EXISTING CONDITIONS AND TO CONFIRM THAT THE WORK CAN BE ACCOMPLISHED AS SHOWN ON THE CONSTRUCTION DRAWINGS. ANY DISCREPANCY FOUND SHALL BE BROUGHT TO THE ATTENTION OF CONTRACTOR.

3. ALL MATERIALS FURNISHED AND INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS, AND ORDINANCES. SUBCONTRACTOR SHALL ISSUE ALL APPROPRIATE NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS, AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY REGARDING THE PERFORMANCE OF THE WORK.

4. ALL WORK CARRIED OUT SHALL COMPLY WITH ALL APPLICABLE MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS AND LOCAL JURISDICTIONAL CODES, ORDINANCES AND APPLICABLE REGULATIONS.

5. DRAWINGS PROVIDED HERE ARE NOT TO BE SCALED AND ARE INTENDED TO SHOW OUTLINE ONLY.

6. UNLESS NOTED OTHERWISE, THE WORK SHALL INCLUDE FURNISHING MATERIALS, EQUIPMENT, APPURTENANCES, AND LABOR NECESSARY TO COMPLETE ALL INSTALLATIONS AS INDICATED ON THE DRAWINGS.

7. THE SUBCONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.

8. IF THE SPECIFIED EQUIPMENT CANNOT BE INSTALLED AS SHOWN ON THESE DRAWINGS, THE SUBCONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION FOR APPROVAL BY THE CONTRACTOR.

9. SUBCONTRACTOR SHALL DETERMINE ACTUAL ROUTING OF CONDUIT, POWER AND T1 CABLES, GROUNDING CABLES AS SHOWN ON THE POWER, GROUNDING AND TELCO PLAN DRAWING. SUBCONTRACTOR SHALL UTILIZE EXISTING TRAYS AND/OR SHALL ADD NEW TRAYS AS NECESSARY. SUBCONTRACTOR SHALL CONFIRM THE ACTUAL ROUTING WITH THE CONTRACTOR.

10. THE SUBCONTRACTOR SHALL PROTECT EXISTING IMPROVEMENTS, PAVEMENTS, CURBS, LANDSCAPING AND STRUCTURES. ANY DAMAGED PART SHALL BE REPAIRED AT SUBCONTRACTOR'S EXPENSE TO THE SATISFACTION OF THE OWNER.

11. SUBCONTRACTOR SHALL LEGALLY AND PROPERLY DISPOSE OF ALL SCRAP MATERIALS SUCH AS COAXIAL CABLES AND OTHER ITEMS REMOVED FROM THE EXISTING FACILITY. ANTENNAS REMOVED SHALL BE RETURNED TO THE OWNER'S DESIGNATED LOCATION.

12. SUBCONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION.

13. THE SUBCONTRACTOR SHALL SUPERVISE AND DIRECT THE PROJECT DESCRIBED HEREIN. THE SUBCONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, AND PROCEDURES FOR COORDINATING ALL PORTIONS OF THE WORK UNDER THE CONTRACT.

14. SUBCONTRACTOR SHALL NOTIFY CHAPPELL ENGINEERING ASSOCIATES, LLC. 48 HOURS IN ADVANCE OF POURING CONCRETE OR BACK FILLING TRENCHES, SEALING ROOF AND WALL PENETRATIONS & POST DOWNS, FINISHING NEW WALLS OR FINAL ELECTRICAL CONNECTIONS FOR ENGINEERING REVIEW.

15. CONSTRUCTION SHALL COMPLY WITH VERIZON WIRELESS NETWORK STANDARD #NSTD123 TO THE MAXIMUM EXTENT FEASIBLE UNLESS PRECLUDED OR LIMITED BY DESIGN SHOWN ON THESE DRAWINGS.

16. 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.

17. 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.

18. 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 TO BE WORN TO ALERT OF ANY DANGEROUS EXPOSURE LEVELS.

SITE WORK GENERAL NOTES:

1. THE SUBCONTRACTOR SHALL CONTACT UTILITY LOCATING SERVICES PRIOR TO THE START OF CONSTRUCTION.

2. ALL EXISTING ACTIVE SEWER, WATER, GAS, ELECTRIC, AND OTHER UTILITIES WHERE ENCOUNTERED IN THE WORK, SHALL BE PROTECTED AT ALL TIMES, AND WHERE REQUIRED FOR THE PROPER EXECUTION OF THE WORK, SHALL BE RELOCATED AS DIRECTED BY ENGINEERS. EXTREME CAUTION SHOULD BE USED BY THE SUBCONTRACTOR WHEN EXCAVATING OR DRILLING PIERS AROUND OR NEAR UTILITIES. SUBCONTRACTOR SHALL PROVIDE SAFETY TRAINING FOR THE WORKING CREW. THIS WILL INCLUDE BUT NOT BE LIMITED TO A) FALL PROTECTION B) CONFINED SPACE C) ELECTRICAL SAFETY D) TRENCHING & EXCAVATION.

3. ALL SITE WORK SHALL BE AS INDICATED ON THE DRAWINGS AND PROJECT SPECIFICATIONS.

4. IF NECESSARY, RUBBISH, STUMPS, DEBRIS, STICKS, STONES AND OTHER REFUSE SHALL BE REMOVED FROM THE SITE AND DISPOSED OF LEGALLY.

5. THE SITE SHALL BE GRADED TO CAUSE SURFACE WATER TO FLOW AWAY FROM THE BTS EQUIPMENT AND TOWER AREAS.

6. NO FILL OR EMBANKMENT MATERIAL SHALL BE PLACED ON FROZEN GROUND. FROZEN MATERIALS, SNOW OR ICE SHALL NOT BE PLACED IN ANY FILL OR EMBANKMENT.

7. THE SUB GRADE SHALL BE COMPACTED AND BROUGHT TO A SMOOTH UNIFORM GRADE PRIOR TO FINISHED SURFACE APPLICATION.

8. ALL EXISTING INACTIVE SEWER, WATER, GAS, ELECTRIC AND OTHER UTILITIES, WHICH INTERFERE WITH THE EXECUTION OF THE WORK, SHALL BE REMOVED AND/OR CAPPED, PLUGGED OR OTHERWISE DISCONTINUED AT POINTS WHICH WILL NOT INTERFERE WITH THE EXECUTION OF THE WORK, SUBJECT TO THE APPROVAL OF ENGINEERING, OWNER AND/OR LOCAL UTILITIES.

9. THE AREAS OF THE OWNERS PROPERTY DISTURBED BY THE WORK AND NOT COVERED BY THE TOWER, EQUIPMENT OR DRIVEWAY, SHALL BE GRADED TO A UNIFORM SLOPE AND STABILIZED TO PREVENT EROSION AS SPECIFIED IN THE PROJECT SPECIFICATIONS.

10. SUBCONTRACTOR SHALL MINIMIZE DISTURBANCE TO EXISTING SITE DURING CONSTRUCTION. EROSION CONTROL MEASURES, IF REQUIRED DURING CONSTRUCTION, SHALL BE IN CONFORMANCE WITH THE LOCAL GUIDELINES FOR EROSION AND SEDIMENT CONTROL.

11. THE SUBCONTRACTOR SHALL PROVIDE SITE SIGNAGE IN ACCORDANCE WITH THE VERIZON WIRELESS SPECIFICATION FOR SITE SIGNAGE.

CONCRETE AND REINFORCING STEEL NOTES:

1. ALL CONCRETE WORK SHALL BE IN ACCORDANCE WITH THE ACI 301, ACI 318, ACI 336, ASTM A184, ASTM A185 AND THE DESIGN AND CONSTRUCTION SPECIFICATION FOR CAST-IN-PLACE CONCRETE.

2. ALL CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 3000 PSI AT 28 DAYS, UNLESS NOTED OTHERWISE. A HIGHER STRENGTH (4000PSI) MAY BE USED. ALL CONCRETE WORK SHALL BE IN ACCORDANCE WITH THE ACI 381 CODE REQUIREMENTS

3. REINFORCING STEEL SHALL CONFORM TO ASTM A 615, GRADE 60, DEFORMED UNLESS NOTED OTHERWISE, WELDED WIRE FABRIC SHALL CONFORM TO ASTM A 185 WELDED STEEL WIRE FABRIC UNLESS NOTED OTHERWISE. SPLICES SHALL BE CLASS "B" AND ALL HOOKS SHALL BE STANDARD, UNO.

4. THE FOLLOWING MINIMUM CONCRETE COVER SHALL BE PROVIDED FOR REINFORCING STEEL UNLESS SHOWN OTHERWISE ON DRAWINGS:
CONCRETE CAST AGAINST EARTH.....3 IN.
CONCRETE EXPOSED TO EARTH OR WEATHER:
#6 AND LARGER .....2 IN.
#5 AND SMALLER & WWF .....1½ IN.
CONCRETE NOT EXPOSED TO EARTH OR WEATHER OR NOT CAST AGAINST THE GROUND:
SLAB AND WALL .....¾ IN.
BEAMS AND COLUMNS .....1½ IN.

5. A CHAMFER ¾" SHALL BE PROVIDED AT ALL EXPOSED EDGES OF CONCRETE, UNO, IN ACCORDANCE WITH ACI 301 SECTION 4.2.4.

6. INSTALLATION OF CONCRETE EXPANSION/WEDGE ANCHOR, SHALL BE PER MANUFACTURER'S WRITTEN RECOMMENDED PROCEDURE. THE ANCHOR BOLT, DOWEL OR ROD SHALL CONFORM TO MANUFACTURER'S RECOMMENDATION FOR EMBEDMENT DEPTH OR AS SHOWN ON THE DRAWINGS. NO REBAR SHALL BE CUT WITHOUT PRIOR ENGINEERING APPROVAL WHEN DRILLING HOLES IN CONCRETE. SPECIAL INSPECTIONS, REQUIRED BY GOVERNING CODES, SHALL BE STAINLESS STEEL OR HOT DIPPED GALVANIZED. EXPANSION BOLTS SHALL BE PROVIDED BY RAMSET/REDHEAD OR APPROVED EQUAL.

7. CONCRETE CYLINDER TEST IS NOT REQUIRED FOR SLAB ON GRADE WHEN CONCRETE IS LESS THAN 50 CUBIC YARDS (IBC1905.6.2.3) IN THAT EVENT THE FOLLOWING RECORDS SHALL BE PROVIDED BY THE CONCRETE SUPPLIER;
(A) RESULTS OF CONCRETE CYLINDER TEST PERFORMED AT THE SUPPLIERS PLANT.
(B) CERTIFICATION OF MINIMUM COMPRESSIVE STRENGTH FOR THE CONCRETE GRADE SUPPLIED.
FOR GREATER THAN 50 CUBIC YARDS THE GC SHALL PERFORM THE CONCRETE CYLINDER TEST.

8. AS AN ALTERNATIVE TO ITEM 7. TEST CYLINDERS SHALL BE TAKEN INITIALLY AND THEREAFTER FOR EVERY 50 YARDS OF CONCRETE FROM EACH DIFFERENT BATCH PLANT.

9. EQUIPMENT SHALL NOT BE PLACED ON NEW PADS FOR SEVEN DAYS AFTER PAD IS POURED, UNLESS IT IS VERIFIED BY CYLINDER TESTS THAT COMPRESSIVE STRENGTH HAS BEEN ATTAINED.

STRUCTURAL STEEL NOTES:

1. ALL STEEL WORK SHALL BE PAINTED OR GALVANIZED IN ACCORDANCE WITH THE DRAWINGS AND VERIZON WIRELESS SPECIFICATION 25252-000-3PS-GET-00001 UNLESS OTHERWISE NOTED. STRUCTURAL STEEL SHALL BE ASTM-A-36 UNLESS OTHERWISE NOTED ON THE SITE SPECIFIC DRAWINGS. STEEL DESIGN, INSTALLATION AND BOLTING SHALL BE IN ACCORDANCE WITH THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC) "MANUAL OF STEEL CONSTRUCTION".

2. ALL WELDING SHALL BE PERFORMED USING E70XX ELECTRODES AND WELDING SHALL CONFORM TO AISC AND AWS D1.1. WHERE FILLET WELD SIZES ARE NOT SHOWN, PROVIDE THE MINIMUM SIZE PER TABLE J2.4 IN THE AISC "MANUAL OF STEEL CONSTRUCTION", 9TH EDITION. PAINTED SURFACES SHALL BE TOUCHED UP.

3. BOLTED CONNECTIONS SHALL USE BEARING TYPE ASTM A325 BOLTS (¾"ø) AND SHALL HAVE MINIMUM OF TWO BOLTS UNLESS NOTED OTHERWISE.

4. NON-STRUCTURAL CONNECTIONS FOR STEEL GRATING MAY USE ⅝" DIA. ASTM A 307 BOLTS UNLESS NOTED OTHERWISE.

5. INSTALLATION OF CONCRETE EXPANSION/WEDGE ANCHORS SHALL BE PER MANUFACTURER'S WRITTEN RECOMMENDED PROCEDURE. THE ANCHOR BOLT, DOWEL OR ROD SHALL CONFORM TO THE MANUFACTURERS RECOMMENDATION FOR EMBEDMENT DEPTH OR AS SHOWN ON THE DRAWINGS. NO REBAR SHALL BE CUT WITHOUT PRIOR CONTRACTOR APPROVAL WHEN DRILLING HOLES IN CONCRETE. SPECIAL INSPECTIONS, REQUIRED BY GOVERNING CODES, SHALL BE PERFORMED IN ORDER TO MAINTAIN MANUFACTURER'S MAXIMUM ALLOWABLE LOADS. ALL EXPANSION/WEDGE ANCHORS SHALL BE STAINLESS STEEL OR HOT DIPPED GALVANIZED. EXPANSION BOLTS SHALL BE PROVIDED BY RAMSET/REDHEAD OR APPROVED EQUAL.

6. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR ENGINEER REVIEW & APPROVAL ON PROJECTS REQUIRING STRUCTURAL STEEL

7. ALL STRUCTURAL STEEL WORK SHALL BE DONE IN ACCORDANCE WITH AISC SPECIFICATIONS.

SOIL COMPACTION NOTES FOR SLAB ON GRADE:

1. EXCAVATE AS REQUIRED TO REMOVE VEGETATION AND TOPSOIL TO EXPOSE NATURAL SUBGRADE AND PLACE CRUSHED STONE AS REQUIRED.

2. COMPACTION CERTIFICATION: AN INSPECTION AND WRITTEN CERTIFICATION BY A QUALIFIED GEOTECHNICAL TECHNICIAN OR ENGINEER IS ACCEPTABLE.

3. AS AN ALTERNATE TO INSPECTION AND WRITTEN CERTIFICATION, THE "UNDISTURBED SOIL" BASE SHALL BE COMPACTED WITH "COMPACTION EQUIPMENT", LISTED BELOW, TO AT LEAST 90% MODIFIED PROCTOR MAXIMUM DENSITY PER ASTM D 1557 METHOD C.

4. COMPACTED SUBBASE SHALL BE UNIFORM AND LEVELED. PROVIDE 6" MINIMUM CRUSHED STONE OR GRAVEL COMPACTED IN 3" LIFTS ABOVE COMPACTED SOIL. GRAVEL SHALL BE NATURAL OR CRUSHED WITH 100% PASSING #1 SIEVE.

5. AS AN ALTERNATE TO ITEMS 2 AND 3, THE SUBGRADE SOILS WITH 5 PASSES OR A MEDIUM SIZED VIBRATORY PLATE COMPACTOR (SUCH AS BOMAG BPR 30/38) OR HAND-OPERATED SINGLE DRUM VIBRATORY ROLLER (SUCH AS BOMAG BW 55E). AND SOFT AREAS THAT ARE ENCOUNTERED SHOULD BE REMOVED AND REPLACED WITH A WELL-GRADED GRANULAR FILL AND COMPACTED AS STATED ABOVE.

COMPACTION EQUIPMENT:

1. HAND OPERATED DOUBLE DRUM, VIBRATORY ROLLER, VIBRATORY PLATE COMPACTOR OR JUMPING JACK COMPACTOR.

CONSTRUCTION NOTES:

1. FIELD VERIFICATION:
SUBCONTRACTOR SHALL FIELD VERIFY SCOPE OF WORK, VERIZON WIRELESS ANTENNA PLATFORM LOCATION AND ANTENNAS TO BE REPLACED.

2. COORDINATION OF WORK:
SUBCONTRACTOR SHALL COORDINATE RF WORK AND PROCEDURES WITH CONTRACTOR.

3. CABLE LADDER RACK:
SUBCONTRACTOR SHALL FURNISH AND INSTALL CABLE LADDER RACK, CABLE TRAY, AND CONDUIT AS REQUIRED TO SUPPORT CABLES TO THE NEW BTS LOCATION.

ELECTRICAL INSTALLATION NOTES:

1. WIRING, RACEWAY, AND SUPPORT METHODS AND MATERIALS SHALL COMPLY WITH THE REQUIREMENTS OF THE NEC AND TELCORDIA.

2. SUBCONTRACTOR SHALL MODIFY EXISTING CABLE TRAY SYSTEM AS REQUIRED TO SUPPORT RF AND TRANSPORT CABLING TO THE NEW BTS EQUIPMENT. SUBCONTRACTOR SHALL SUBMIT MODIFICATIONS TO CONTRACTOR FOR APPROVAL.

3. ALL CIRCUITS SHALL BE SEGREGATED AND MAINTAIN MINIMUM CABLE SEPARATION AS REQUIRED BY THE NEC AND TELCORDIA.

4. CABLES SHALL NOT BE ROUTED THROUGH LADDER-STYLE CABLE TRAY RUNGS.

5. EACH END OF EVERY POWER, GROUNDING, AND T1 CONDUCTOR AND CABLE SHALL BE LABELED WITH COLOR-CODED INSULATION OR ELECTRICAL TAPE (3M BRAND, 1/2 INCH PLASTIC ELECTRICAL TAPE WITH UV PROTECTION, OR EQUAL). THE IDENTIFICATION METHOD SHALL CONFORM WITH NEC & OSHA, AND MATCH EXISTING INSTALLATION REQUIREMENTS.

6. POWER PHASE CONDUCTORS (I.E., HOTS) SHALL BE LABELED WITH COLOR-CODED INSULATION OR ELECTRICAL TAPE (3M BRAND, ½ INCH PLASTIC ELECTRICAL TAPE WITH UV PROTECTION, OR EQUAL). PHASE CONDUCTOR COLOR CODES SHALL CONFORM WITH THE NEC & OSHA AND MATCH EXISTING INSTALLATION REQUIREMENTS

7. ALL ELECTRICAL COMPONENTS SHALL BE CLEARLY LABELED WITH ENGRAVED LAMACOID PLASTIC LABELS. ALL EQUIPMENT SHALL BE LABELED WITH THEIR VOLTAGE RATING, PHASE CONFIGURATION, WIRE CONFIGURATION, POWER OR AMPACITY RATING, AND BRANCH CIRCUIT ID NUMBERS (I.E., PANEL BOARD AND CIRCUIT ID'S).

8. PANEL BOARDS (ID NUMBERS) AND INTERNAL CIRCUIT BREAKERS (CIRCUIT ID NUMBERS) SHALL BE CLEARLY LABELED WITH ENGRAVED LAMACOID PLASTIC LABELS.

9. ALL TIE WRAPS SHALL BE CUT FLUSH WITH APPROVED CUTTING TOOL TO REMOVE SHARP EDGES.

10. POWER, CONTROL, AND EQUIPMENT GROUND WIRING IN TUBING OR CONDUIT SHALL BE SINGLE CONDUCTOR (#34 AWG OR LARGER), 600 V, OIL RESISTANT THHN OR THWN-2, CLASS B STRANDED COPPER CABLE RATED FOR 90 °C (WET AND DRY) OPERATION; LISTED OR LABELED FOR THE LOCATION AND RACEWAY SYSTEM USED, UNLESS OTHERWISE SPECIFIED.

11. SUPPLEMENTAL EQUIPMENT GROUND WIRING LOCATED INDOORS SHALL BE SINGLE CONDUCTOR (#6 AWG OR LARGER), 600 V, OIL RESISTANT THHN OR THWN-2 GREEN INSULATION, CLASS B STRANDED COPPER CABLE RATED FOR 90 °C (WET AND DRY) OPERATION; LISTED OR LABELED FOR THE LOCATION AND RACEWAY SYSTEM USED, UNLESS OTHERWISE SPECIFIED.

12. SUPPLEMENTAL EQUIPMENT GROUND WIRING LOCATED OUTDOORS, OR BELOW GRADE, SHALL BE SINGLE CONDUCTOR #3 AWG SOLID TINNED COPPER CABLE, UNLESS OTHERWISE SPECIFIED.

13. POWER AND CONTROL WIRING, NOT IN TUBING OR CONDUIT, SHALL BE MULTI-CONDUCTOR, TYPE TC CABLE (#34 AWG OR LARGER), 600 V, OIL RESISTANT THHN OR THWN-2, CLASS B STRANDED COPPER CABLE RATED FOR 90 °C (WET AND DRY) OPERATION; WITH OUTER JACKET; LISTED OR LABELED FOR THE LOCATION USED, UNLESS OTHERWISE SPECIFIED.

14. ALL POWER AND GROUNDING CONNECTIONS SHALL BE CRIMP STYLE, COMPRESSION WIRE LUGS AND WIRE NUTS BY THOMAS AND BETTS (OR EQUAL). LUGS AND WIRE NUTS SHALL BE RATED FOR OPERATION AT NO LESS THAN 75°C (90°C IF AVAILABLE).

15. RACEWAY AND CABLE TRAY SHALL BE LISTED OR LABELED FOR ELECTRICAL USE IN ACCORDANCE WITH NEMA, UL, ANSI/IEEE, AND NEC.

16. NEW RACEWAY OR CABLE TRAY WILL MATCH THE EXISTING INSTALLATION WHERE POSSIBLE.

17. ELECTRICAL METALLIC TUBING (EMT) OR RIGID NONMETALLIC CONDUIT (I.E., RIGID PVC SCHEDULE 40, OR RIGID PVC SCHEDULE 80 FOR LOCATIONS SUBJECT TO PHYSICAL DAMAGE) SHALL BE USED FOR EXPOSED INDOOR LOCATIONS.

18. ELECTRICAL METALLIC TUBING (EMT), ELECTRICAL NONMETALLIC TUBING (ENT), OR RIGID NONMETALLIC CONDUIT (RIGID PVC, SCHEDULE 40) SHALL BE USED FOR CONCEALED INDOOR LOCATIONS.

19. GALVANIZED STEEL INTERMEDIATE METALLIC CONDUIT (IMC) SHALL BE USED FOR OUTDOOR LOCATIONS ABOVE GRADE

20. RIGID NONMETALLIC CONDUIT (I.E., RIGID PVC SCHEDULE 40 OR RIGID PVC SCHEDULE 80) SHALL BE USED UNDERGROUND; DIRECT BURIED, IN AREAS OF OCCASIONAL LIGHT VEHICLE TRAFFIC OR ENCASED IN REINFORCED CONCRETE IN AREAS OF HEAVY VEHICLE TRAFFIC.

21. LIQUID-TIGHT FLEXIBLE METALLIC CONDUIT (LIQUID-TITE FLEX) SHALL BE USED INDOORS AND OUTDOORS, WHERE VIBRATION OCCURS OR FLEXIBILITY IS NEEDED.

22. CONDUIT AND TUBING FITTINGS SHALL BE THREADED OR COMPRESSION-TYPE AND APPROVED FOR THE LOCATION USED. SET SCREW FITTINGS ARE NOT ACCEPTABLE.

23. CABINETS, BOXES, AND WIREWAYS SHALL BE LISTED OR LABELED FOR ELECTRICAL USE IN ACCORDANCE WITH NEMA, UL, ANSI/IEEE, AND NEC.

24. CABINETS, BOXES, AND WIREWAYS TO MATCH THE EXISTING INSTALLATION WHERE POSSIBLE.

25. WIREWAYS SHALL BE EPOXY-COATED (GRAY) AND INCLUDE A HINGED COVER, DESIGNED TO SWING OPEN DOWNWARD; SHALL BE PANDUIT TYPE E (OR EQUAL); AND RATED NEMA 1 (OR BETTER) INDOORS, OR NEMA 3R (OR BETTER) OUTDOORS.

26. EQUIPMENT CABINETS, TERMINAL BOXES, JUNCTION BOXES, AND PULL BOXES SHALL BE GALVANIZED OR EPOXY-COATED SHEET STEEL, SHALL MEET OR EXCEED UL 50, AND RATED NEMA 1 (OR BETTER) INDOORS, OR NEMA 3R (OR BETTER) OUTDOORS

27. METAL RECEPTACLE, SWITCH, AND DEVICE BOXES SHALL BE GALVANIZED, EPOXY-COATED, OR NON- CORRODING; SHALL MEET OR EXCEED UL 514A AND NEMA OS 1; AND RATED NEMA 1 (OR BETTER) INDOORS, OR WEATHER PROTECTED (WP OR BETTER) OUTDOORS.

28. NONMETALLIC RECEPTACLE, SWITCH, AND DEVICE BOXES SHALL MEET OR EXCEED NEMA OS 2; AND RATED NEMA 1 (OR BETTER) INDOORS, OR WEATHER PROTECTED (WP OR BETTER) OUTDOORS.

29. THE SUBCONTRACTOR SHALL NOTIFY AND OBTAIN NECESSARY AUTHORIZATION FROM THE CONTRACTOR BEFORE COMMENCING WORK ON THE AC POWER DISTRIBUTION PANELS.

30. THE SUBCONTRACTOR SHALL PROVIDE NECESSARY TAGGING ON THE BREAKERS, CABLES AND DISTRIBUTION PANELS IN ACCORDANCE WITH THE APPLICABLE CODES AND STANDARDS TO SAFEGUARD AGAINST LIFE AND PROPERTY.

31. ALL ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS, NEC AND ALL APPLICABLE LOCAL CODES.

32. CONDUIT ROUTINGS ARE SCHEMATIC. SUBCONTRACTOR SHALL INSTALL CONDUITS SO THAT ACCESS TO EQUIPMENT IS NOT BLOCKED.

verizon
" Because Better Matters "

CHAPPELL ENGINEERING ASSOCIATES, LLC
Civil · Structural · Land Surveying
R.K. EXECUTIVE CENTRE
201 BOSTON POST ROAD WEST, SUITE 101
MARLBOROUGH, MA 01752
(508) 481-7400
www.chappellengineering.com

STATE OF CONNECTICUT
CLEMENT J. SAAB
No. 25876
LICENSED
PROFESSIONAL ENGINEER
ENGINEER/LAND SURVEYOR DATE

REVISIONS

NO.	DESCRIPTION	DATE
0	ISSUED FOR REVIEW	5/26/20
1	GENERAL REVISIONS	7/20/20
2	GENERAL REVISIONS	7/30/20
3	ISSUED FOR CONSTRUCTION (FINAL)	8/6/20

PROJECT NAME:

BURLINGTON
SOUTHWEST CT
87 MONCE ROAD
BURLINGTON, CT 06013

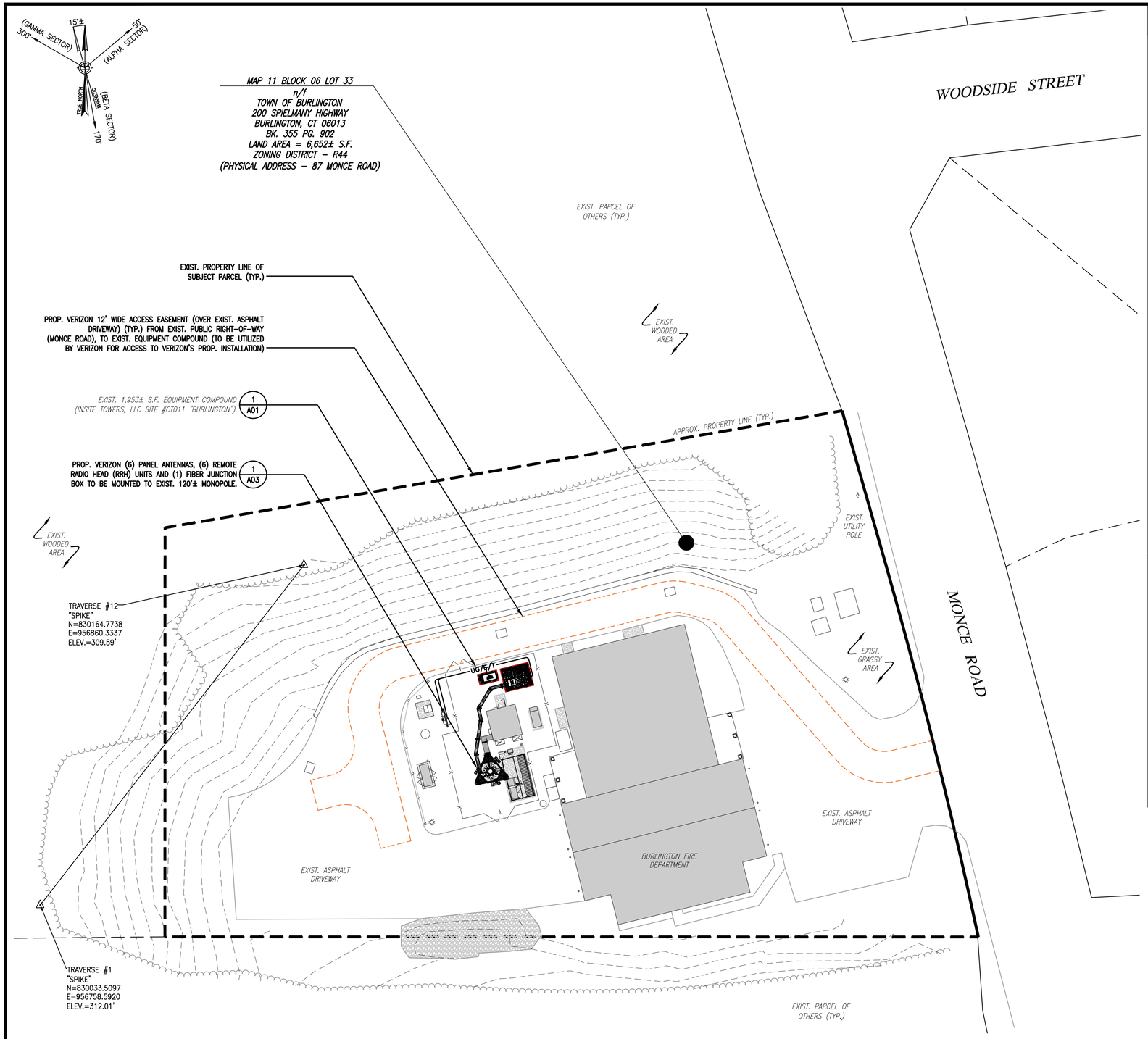
DRAWING TITLE:

GENERAL NOTES

DRAWING NO:

GN01

SCALE: AS SHOWN	DESIGNED BY: GRS DRAWN BY: NWC CHECKED BY: GRS	VZW LOCATION CODE: 479435
CEA PROJECT NO.: 96210.398	ORIGINAL ISSUE DATE: 5/26/20	



PROPERTY PLAN
1
C01
SCALE: 1" = 20'
0 10' 20' 40' 60'

GENERAL NOTES:

1A. LIMITED DESIGN VISIT DATE: 2/13/20

1B. LIMITED FIELD SURVEY DATE: 5/6/20

2. VERTICAL DATUM: NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD '88)

3. HORIZONTAL DATUM: NORTH AMERICAN DATUM OF 1983 (NAD '83)

4. SITE CONTROL POINT: CENTER OF EXISTING MONOPOLE
LATITUDE: N. 41°-44'-20.89" (41.739136°) (NAD '83)
LONGITUDE: W. 72°-54'-28.09" (72.907803°) (NAD '83)

5. LAND OWNER: TOWN OF BURLINGTON
200 SPIELMANY HIGHWAY
BURLINGTON, CT 06013

6. TOWER OWNER: INSITE TOWERS, LLC
1199 NORTH FAIRFAX STREET, SUITE 700
ALEXANDRIA, VA 22314

7. TOWER OWNER SITE ID: "BURLINGTON" SITE

8. SITE ADDRESS: 87 MONCE ROAD
BURLINGTON, CT 06013

9. APPLICANT: CELLCO PARTNERSHIP
(dba VERIZON WIRELESS)
20 ALEXANDER DRIVE
WALLINGFORD, CT 06492

10. JURISDICTION: TOWN OF BURLINGTON, CT

11. TAX ID: MAP 11 BLOCK 06 LOT 33

12. DEED REFERENCE: BK. 355 PG. 902

13. PLAN REFERENCES: TOWN OF BURLINGTON ASSESSOR/GIS MAPS

14. ZONING DISTRICT: R-44 (R-44 RESIDENTIAL ZONE)

15. ALL UNDERGROUND UTILITY INFORMATION PRESENTED HEREON WAS DETERMINED FROM SURFACE EVIDENCE AND PLANS OF RECORD. ALL UNDERGROUND UTILITIES SHOULD BE LOCATED IN THE FIELD PRIOR TO THE COMMENCEMENT OF ANY SITE WORK. CALL DIGSAFE 1-888-344-7233 A MINIMUM OF 72 HOURS PRIOR TO PLANNED ACTIVITY.

16. THE PROPERTY LINES SHOWN WERE COMPILED UTILIZING TOWN OF BURLINGTON ASSESSOR'S PLANS, GIS, RECORDED DEEDS, PLANS OF REFERENCE AND A LIMITED GROUND SURVEYS OF THE PROPERTY PERFORMED BY CHAPPELL ENGINEERING ASSOCIATES ON 2/13/2020 & 5/6/2020.

17. THE SITE IS LOCATED IN FLOOD HAZARD ZONE X (AREA OF MINIMAL FLOOD HAZARD) AS SHOWN ON FLOOD INSURANCE RATE MAP FOR THE TOWN OF BURLINGTON, (MAP NUMBER 09003C0456F) EFFECTIVE 09/26/2008.

18. BEARING SYSTEM OF THIS PLAN IS BASED ON TRUE NORTH. TRUE NORTH WAS ESTABLISHED FROM EXIST. PLAN REFERENCE. IT IS NOT INTENDED TO BE AN EXACT REPRESENTATION OF TRUE NORTH.

LEGEND

- PROPERTY LINE (OR STREET)
- ABUTTING PROPERTY LINE
- PROPERTY OFFSET/RADIUS
- EXIST. EASEMENT
- EXIST. CHAIN LINK FENCE
- EXIST. STOCKADE FENCE
- EXIST. EDGE OF PAVEMENT
- EXIST. OVERHEAD UTILITIES
- EXIST. TREELINE
- PROP. TREELINE
- PROP. OVERHEAD UTILITIES
- PROP. UTILITIES
- EXIST. UTILITY POLE
- EXIST. STONE WALL
- ZONING BOUNDARY

verizon
" Because Better Matters "

CHAPPELL ENGINEERING ASSOCIATES, LLC
Civil · Structural · Land Surveying
R.K. EXECUTIVE CENTRE
201 BOSTON POST ROAD WEST, SUITE 101
MARLBOROUGH, MA 01752
(508) 481-7400
www.chappellengineering.com

STATE OF CONNECTICUT
CLEMENT J. SAAB
No. 25876
LICENSED PROFESSIONAL ENGINEER
ENGINEER/LAND SURVEYOR DATE

REVISIONS

NO.	DESCRIPTION	DATE
0	ISSUED FOR REVIEW	5/26/20
1	GENERAL REVISIONS	7/20/20
2	GENERAL REVISIONS	7/30/20
3	ISSUED FOR CONSTRUCTION (FINAL)	8/6/20

PROJECT NAME:

BURLINGTON SOUTHWEST CT

87 MONCE ROAD
BURLINGTON, CT 06013

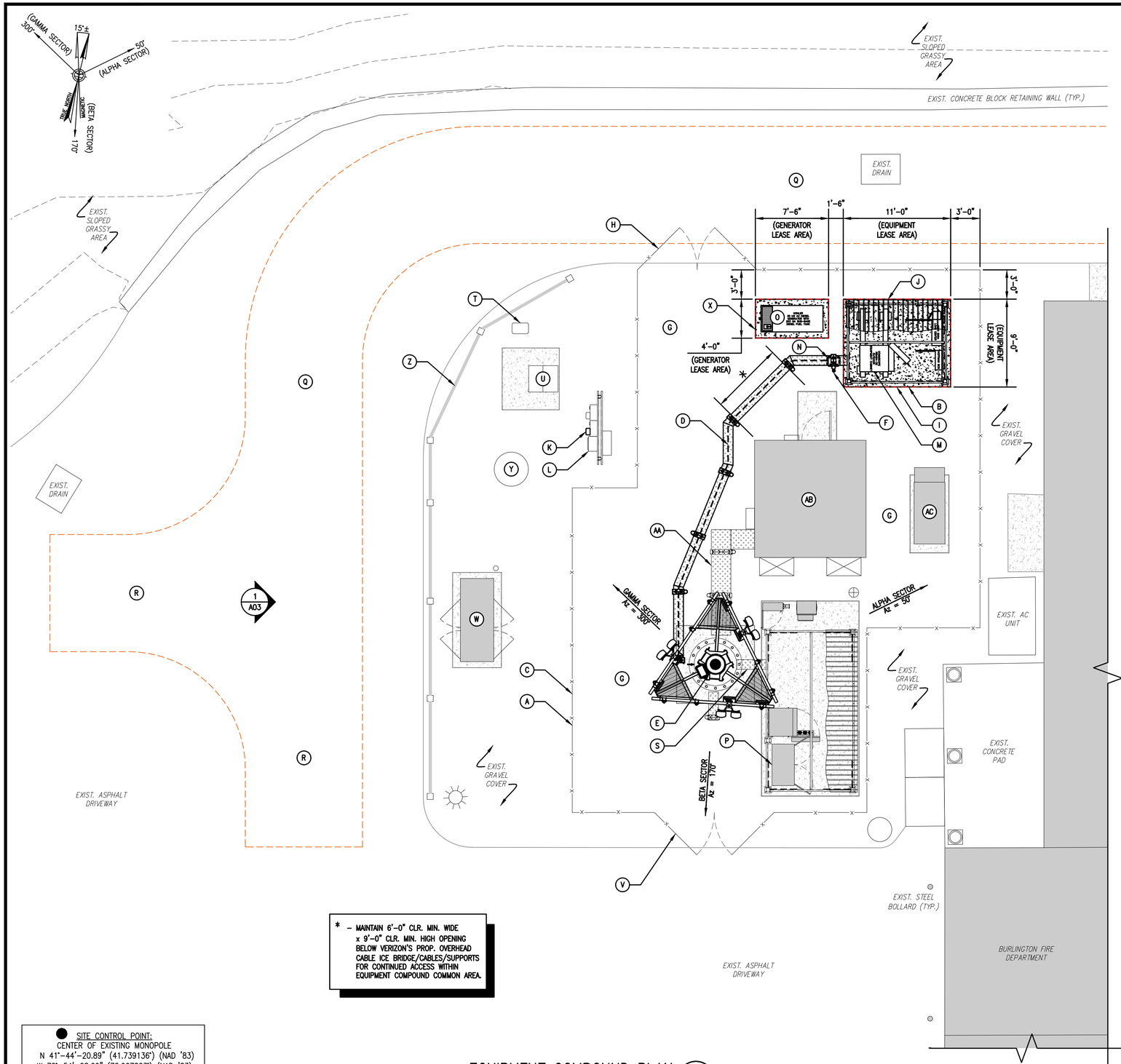
DRAWING TITLE:

PROPERTY PLAN

DRAWING NO:

C01

SCALE: 1" = 20'	DESIGNED BY: GRS	VZW LOCATION CODE: 479435
	DRAWN BY: NWC	
	CHECKED BY: GRS	
CEA PROJECT NO.: 96210.398	ORIGINAL ISSUE DATE: 5/26/20	



* – MAINTAIN 6'-0" CLR. MIN. WIDE x 9'-0" CLR. MIN. HIGH OPENING BELOW VERIZON'S PROP. OVERHEAD CABLE ICE BRIDGE/CABLES/SUPPORTS FOR CONTINUED ACCESS WITHIN EQUIPMENT COMPOUND COMMON AREA.

SITE CONTROL POINT:
CENTER OF EXISTING MONOPOLE
N 41°-44'-20.89" (41.739136°) (NAD '83)
W 72°-54'-28.09" (72.907803°) (NAD '83)
GROUND ELEVATION – 288.5' AMSL (NAVD '88)
PER CEA 1A SURVEY

EQUIPMENT COMPOUND PLAN 1 A01
SCALE: 3/16" = 1'-0"
0 5'-4" 10'-8" 16'-0"

LEGEND

	ITEM	DESCRIPTION
	A	EXIST. 1,953± S.F. EQUIPMENT COMPOUND (INSITE TOWERS, LLC SITE #CT011 "BURLINGTON") (TYP.)
	B	LIMITS OF VERIZON'S PROP. 11'-0"x9'-0" (99 S.F.) EQUIPMENT LEASE AREA (TYP.)
	C	EXIST. 8'± CHAIN-LINK FENCE SURROUNDING EXIST. 1,953± S.F. EQUIPMENT COMPOUND (TYP.)
4 A02	D	PROP. VERIZON (1)–12x24 HYBRID SIGNAL CABLE ROUTED ALONG PROP. OVERHEAD CABLE ICE BRIDGE (TYP.) FROM VERIZON'S PROP. EQUIPMENT TO EXIST. MONOPOLE AS SHOWN.
	E	EXIST. 120'± MONOPOLE
3 RF01	F	PROP. VERIZON GPS ANTENNA MOUNTED TO PROP. ICE BRIDGE POST. TOP OF GPS ANTENNA SHALL BE MOUNTED 2'-0" ABOVE TOP OF BRIDGE.
	G	EXIST. GRAVEL COVER WITHIN EXIST. COMPOUND
	H	EXIST. 12'-3"± DOUBLE SWING GATE
6 S01	I	PROP. VERIZON 11'-0"x9'-0" (99 S.F.) REINFORCED CONCRETE PAD
1–4 S01	J	PROP. VERIZON 10'-4"x8'-10" (91± S.F.) METAL DECK ICE SHIELD (SHOWN TRANSPARENT FOR CLARITY) ABOVE PROP. EQUIPMENT
	K	EXIST. VACANT METER SOCKET AND DISCONNECT BREAKER KNOCKOUT TO BE UTILIZED FOR VERIZON'S PROP. 200A ELECTRIC SERVICE TO PROP. EQUIPMENT INSTALLATION.
	L	EXIST. ELECTRIC METER BANK
1,2 A02	M	PROP. VERIZON EQUIPMENT CABINET MOUNTED TO PROP. STEEL SLEEPER BEAMS ON PROP. 11'-0"x9'-0" (99 S.F.) REINFORCED CONCRETE PAD
4 RF02	N	PROP. VERIZON FIBER JUNCTION BOX (TOTAL OF 1) MOUNTED TO PROP. ICE BRIDGE POST (IF REQUIRED)
1 E01	O	PROP. VERIZON 30 kW BACK-UP DIESEL GENERATOR MOUNTED TO PROP. 7'-6"x4'-0" (30 S.F.) CONCRETE PAD
	P	EXIST. T-MOBILE EQUIPMENT CABINET (TYP.) ON EXIST. 10'-0"±x20'-0"± (200± S.F.) CONCRETE PAD
	Q	PROP. VERIZON 12' WIDE ACCESS EASEMENT (OVER EXIST. ASPHALT DRIVEWAY) (TYP.) FROM EXIST. PUBLIC RIGHT-OF-WAY (MONCE ROAD), TO EXIST. EQUIPMENT COMPOUND (TO BE UTILIZED BY VERIZON FOR ACCESS TO VERIZON'S PROP. INSTALLATION). SEE SHEET C01 FOR CONTINUATION TO MONCE ROAD.
	R	PROP. VERIZON 12'x20' PARKING SPACE OR TURN-AROUND AREA (TYP.)
	S	EXIST. T-MOBILE OVERHEAD CABLE ICE BRIDGE (TYP.)
	T	EXIST. TELCO HANDHOLE
	U	EXIST. ELECTRIC TRANSFORMER ON EXIST. CONCRETE PAD
	V	EXIST. 12'-3"± DOUBLE SWING GATE
	W	EXIST. BACK-UP GENERATOR ON EXIST. CONCRETE PAD
	X	LIMITS OF VERIZON'S PROP. 7'-6"x4'-0" (30 S.F.) GENERATOR LEASE AREA (TYP.)
	Y	EXIST. ELECTRIC MANHOLE
	Z	EXIST. WOOD GUARDRAIL (TYP.)
	AA	EXIST. AT&T OVERHEAD CABLE ICE BRIDGE (TYP.)
	AB	EXIST. AT&T 11'-6"±x12'-0"± EQUIPMENT SHELTER
	AC	EXIST. AT&T BACK-UP DIESEL GENERATOR ON EXIST. CONCRETE PAD

verizon
" Because Better Matters "

CHAPPELL ENGINEERING ASSOCIATES, LLC
Civil · Structural · Land Surveying
R.K. EXECUTIVE CENTRE
201 BOSTON POST ROAD WEST, SUITE 101
MARLBOROUGH, MA 01752
(508) 481–7400
www.chappellengineering.com

STATE OF CONNECTICUT
CLEMENT J. SAFE
No. 25876
LICENSED PROFESSIONAL ENGINEER
ENGINEER/LAND SURVEYOR DATE

REVISIONS

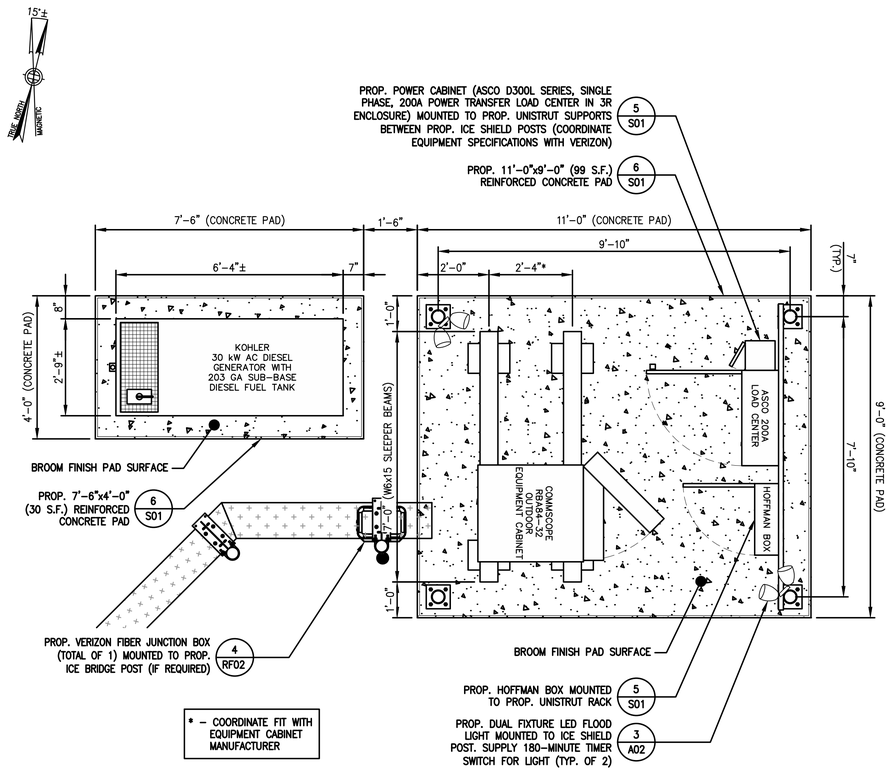
NO.	DESCRIPTION	DATE
0	ISSUED FOR REVIEW	5/26/20
1	GENERAL REVISIONS	7/20/20
2	GENERAL REVISIONS	7/30/20
3	ISSUED FOR CONSTRUCTION (FINAL)	8/6/20

PROJECT NAME:
BURLINGTON SOUTHWEST CT
87 MONCE ROAD
BURLINGTON, CT 06013

DRAWING TITLE:
EQUIPMENT COMPOUND PLAN

DRAWING NO:
A01

SCALE: 3/16" = 1'-0"	DESIGNED BY: GRS	VZW LOCATION CODE: 479435
	DRAWN BY: NWC	
	CHECKED BY: GRS	
CEA PROJECT NO.: 96210.398	ORIGINAL ISSUE DATE: 5/26/20	

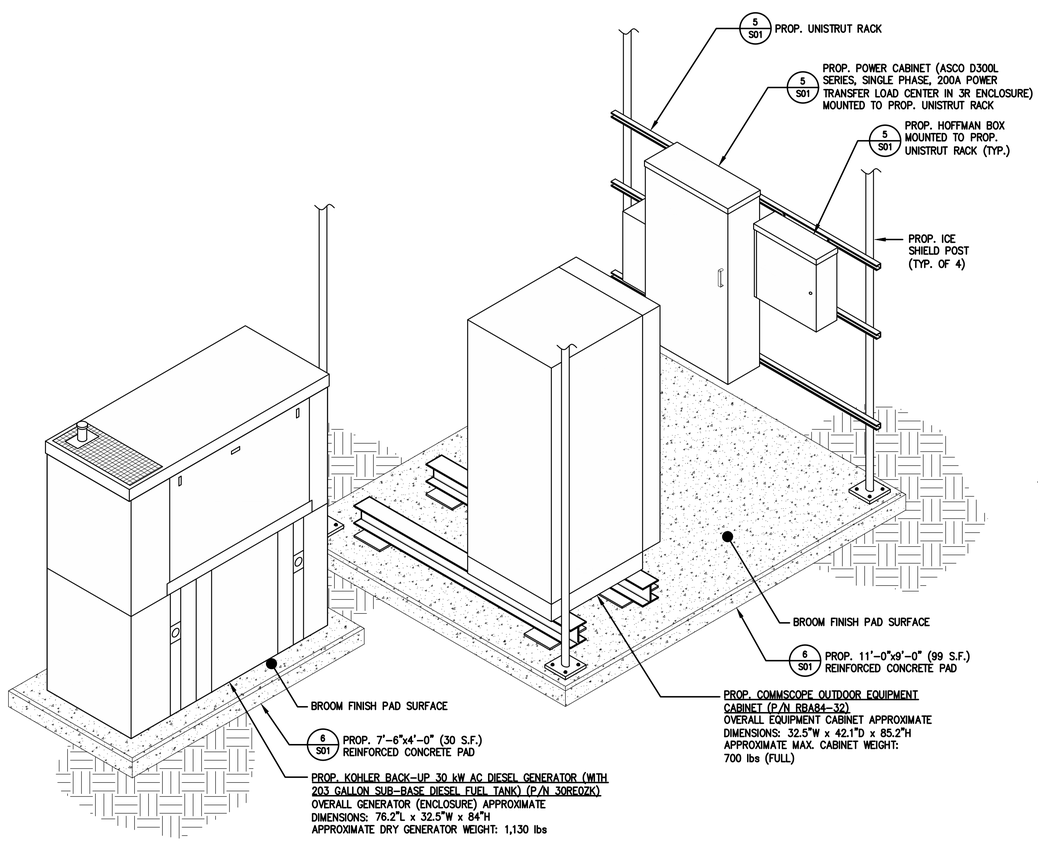


EQUIPMENT PAD PLAN

1 A02

SCALE: ½" = 1'-0"

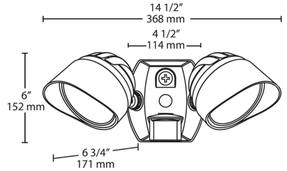
0 2'-0" 4'-0" 6'-0"



EQUIPMENT PAD ISOMETRIC VIEW

2 A02

SCALE: NOT APPLICABLE



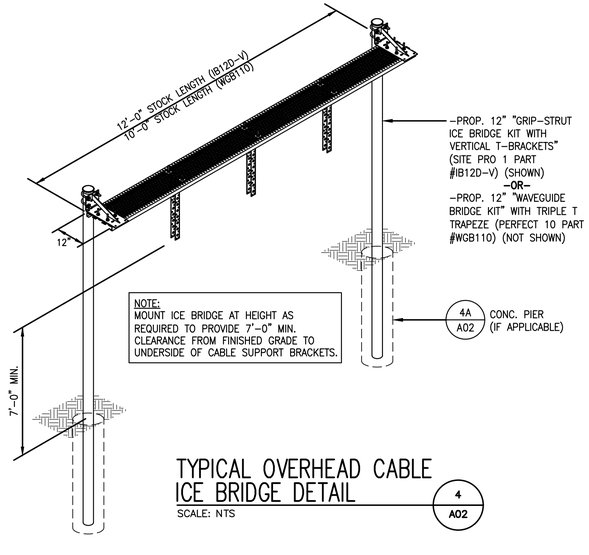
RAB LIGHTING - BULLET2X12B
24W
BLACK

MOUNT PER MANUFACTURER'S SPECIFICATIONS

TYPICAL LED FLOOD LIGHT DETAIL

3 A02

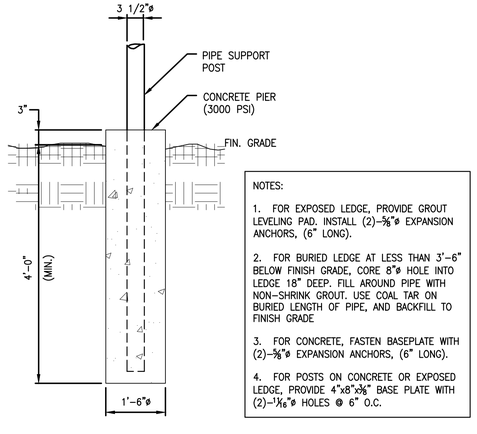
SCALE: N.T.S.



TYPICAL OVERHEAD CABLE ICE BRIDGE DETAIL

4 A02

SCALE: NTS



NOTES:

1. FOR EXPOSED LEDGE, PROVIDE GROUT LEVELING PAD. INSTALL (2)-⅝"ø EXPANSION ANCHORS, (6" LONG).
2. FOR BURIED LEDGE AT LESS THAN 3'-6" BELOW FINISH GRADE, CORE 8"ø HOLE INTO LEDGE 18" DEEP. FILL AROUND PIPE WITH NON-SHRINK GROUT. USE COAL TAR ON BURIED LENGTH OF PIPE, AND BACKFILL TO FINISH GRADE
3. FOR CONCRETE, FASTEN BASEPLATE WITH (2)-⅝"ø EXPANSION ANCHORS, (6" LONG).
4. FOR POSTS ON CONCRETE OR EXPOSED LEDGE, PROVIDE 4"x8"x⅜" BASE PLATE WITH (2)-1⅛"ø HOLES @ 6" O.C.

CABLE BRIDGE PIER

4A A02

SCALE: NTS

verizon

" Because Better Matters "

CHAPPELL ENGINEERING ASSOCIATES, LLC
Civil · Structural · Land Surveying
R.K. EXECUTIVE CENTRE
201 BOSTON POST ROAD WEST, SUITE 101
MARLBOROUGH, MA 01752
(508) 481-7400
www.chappellengineering.com

STATE OF CONNECTICUT
CLEMENT J. SAMPIETRO
No. 25876
LICENSED PROFESSIONAL ENGINEER

ENGINEER/LAND SURVEYOR DATE

REVISIONS

NO.	DESCRIPTION	DATE
0	ISSUED FOR REVIEW	5/26/20
1	GENERAL REVISIONS	7/20/20
2	GENERAL REVISIONS	7/30/20
3	ISSUED FOR CONSTRUCTION (FINAL)	8/6/20

PROJECT NAME:

BURLINGTON SOUTHWEST CT

87 MONCE ROAD
BURLINGTON, CT 06013

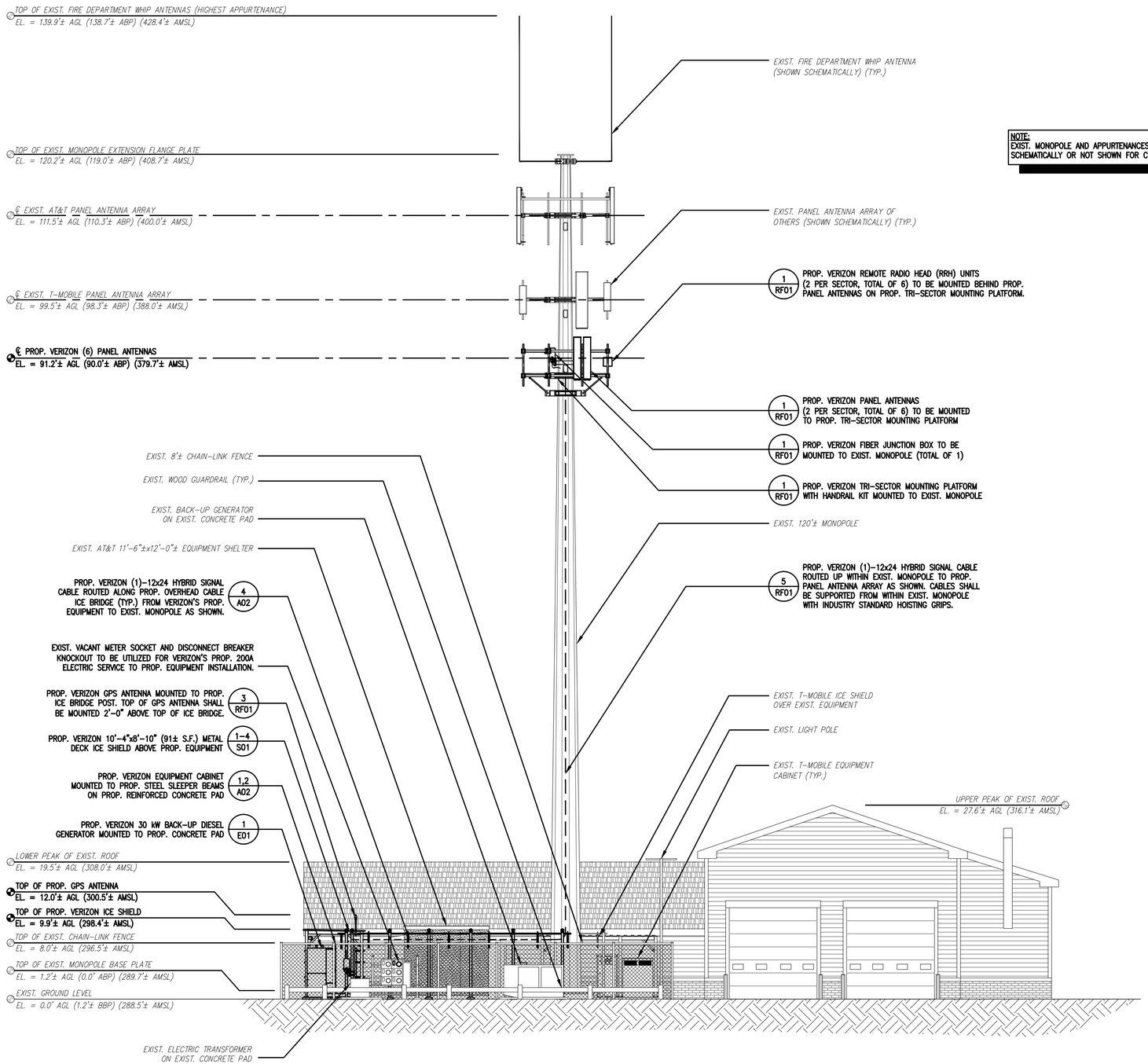
DRAWING TITLE:

EQUIPMENT PAD PLAN & DETAILS

DRAWING NO:

A02

SCALE:	DESIGNED BY: GRS	VZW LOCATION CODE:
AS NOTED	DRAWN BY: NWC	479435
	CHECKED BY: GRS	
CEA PROJECT NO.:	ORIGINAL ISSUE DATE:	
96210.398	5/26/20	



NOTE:
EXIST. MONOPOLE AND APPURTENANCES SHOWN SCHEMATICALLY OR NOT SHOWN FOR CLARITY.

WEST SITE ELEVATION 1/A03

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

0 8'-0" 16'-0" 24'-0"

LEGEND

AGL	ABOVE GROUND LEVEL
ABP	ABOVE MONOPOLE BASE PLATE
BBP	BELOW MONOPOLE BASE PLATE
AMSL	ABOVE MEAN SEA LEVEL

verizon
" Because Better Matters "

CHAPPELL ENGINEERING ASSOCIATES, LLC
Civil · Structural · Land Surveying
R.K. EXECUTIVE CENTRE
201 BOSTON POST ROAD WEST, SUITE 101
MARLBOROUGH, MA 01752
(508) 481-7400
www.chappellengineering.com

STATE OF CONNECTICUT
CLEMENT J. SAIA
No. 25376
LICENSED PROFESSIONAL ENGINEER

ENGINEER/LAND SURVEYOR DATE

REVISIONS

NO.	DESCRIPTION	DATE
0	ISSUED FOR REVIEW	5/26/20
1	GENERAL REVISIONS	7/20/20
2	GENERAL REVISIONS	7/30/20
3	ISSUED FOR CONSTRUCTION (FINAL)	8/6/20

PROJECT NAME:

BURLINGTON SOUTHWEST CT

87 MONCE ROAD
BURLINGTON, CT 06013

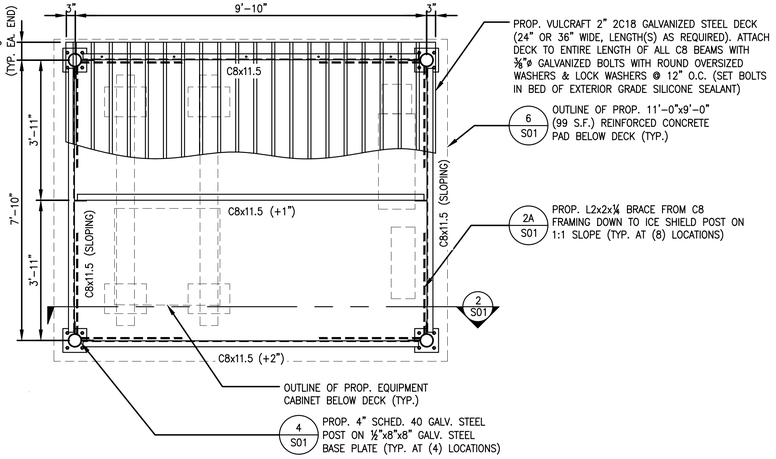
DRAWING TITLE:

WEST SITE ELEVATION

DRAWING NO:

A03

SCALE: 1/8" = 1'-0"	DESIGNED BY: GRS	VZW LOCATION CODE: 479435
	DRAWN BY: NWC	
	CHECKED BY: GRS	
CEA PROJECT NO.: 96210.398	ORIGINAL ISSUE DATE: 5/26/20	



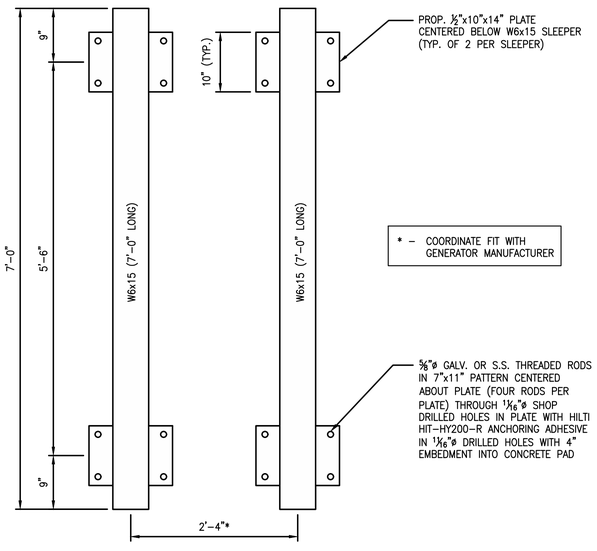
FRAMING PLAN NOTES:
1.) ALL STEEL SHALL BE INSTALLED LEVEL UNLESS OTHERWISE NOTED.
2.) TOP OF NEW STEEL ELEVATION SHALL BE HELD 9'-6" ABOVE EQUIPMENT PAD SURFACE UNLESS OTHERWISE NOTED THUS (±X") INDICATING DISTANCE ABOVE OR BELOW TOP OF STEEL REFERENCE ELEVATION.

ICE SHIELD FRAMING PLAN 1 S01

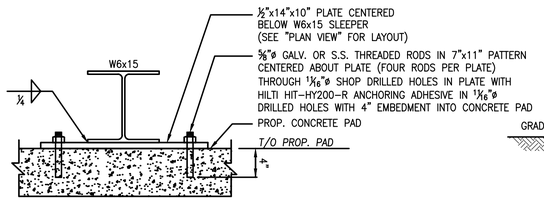
SCALE: 1/2" = 1'-0"

0 2'-0" 4'-0" 6'-0"

NORTH

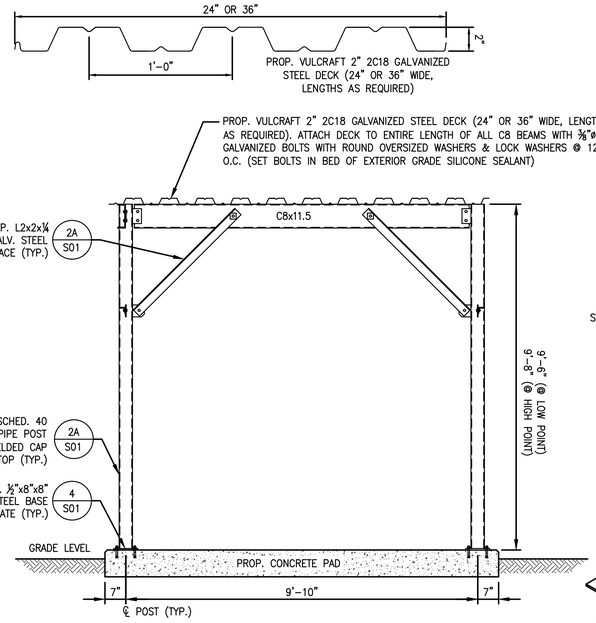


PLAN VIEW



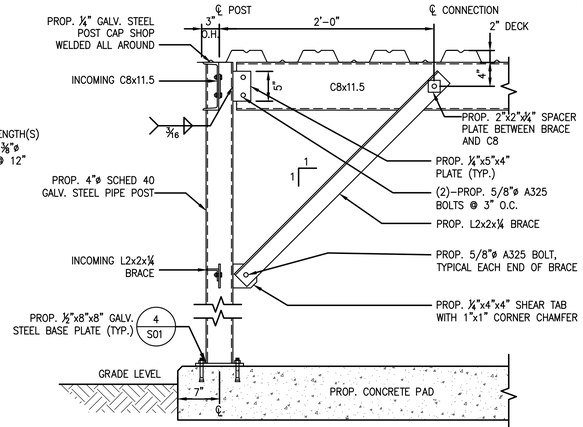
TYPICAL W6 SLEEPER BEAM ANCHORING DETAIL 7 S01

SCALE: N.T.S.



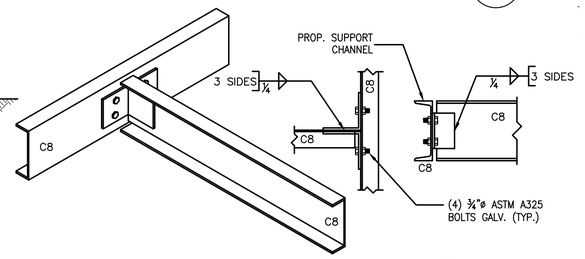
ICE SHIELD SECTION 2 S01

SCALE: 1/2" = 1'-0"



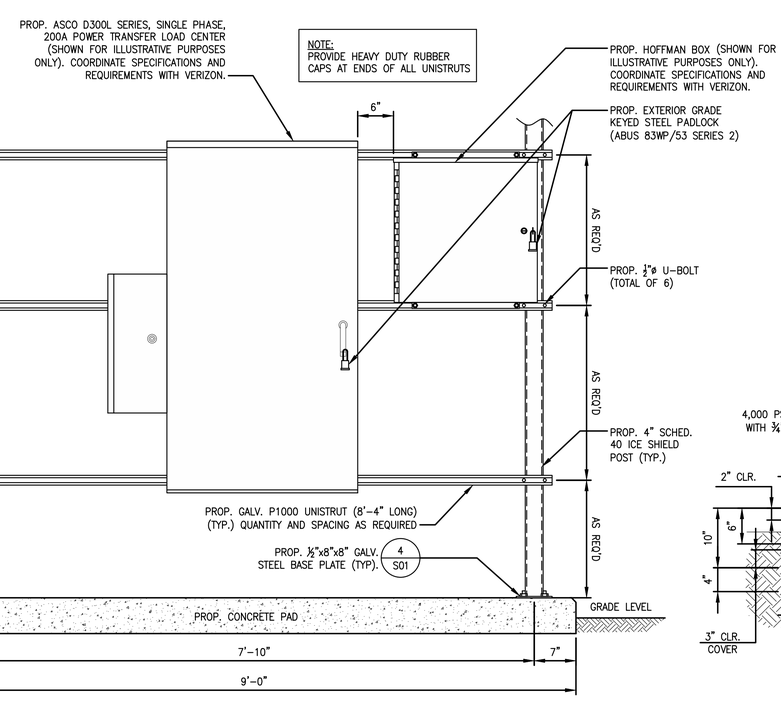
TYPICAL ICE SHIELD POST DETAIL 2A S01

SCALE: 1" = 1'-0"



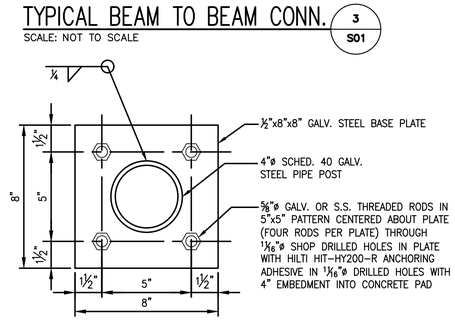
TYPICAL BEAM TO BEAM CONN. 3 S01

SCALE: NOT TO SCALE



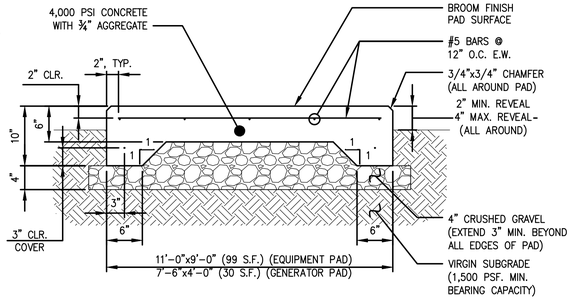
UNISTRUT RACK DETAIL 5 S01

SCALE: N.T.S.



TYPICAL ICE SHIELD BASE PLATE 4 S01

SCALE: NONE



REINFORCED CONCRETE EQUIPMENT PAD DETAIL 6 S01

SCALE: NONE

verizon
" Because Better Matters "

CHAPPELL ENGINEERING ASSOCIATES, LLC
Civil · Structural · Land Surveying
R.K. EXECUTIVE CENTRE
201 BOSTON POST ROAD WEST, SUITE 101
MARLBOROUGH, MA 01752
(508) 481-7400
www.chappellengineering.com

STATE OF CONNECTICUT
CLEMENT J. SAFFER
No. 25876
LICENSED
PROFESSIONAL ENGINEER

ENGINEER/LAND SURVEYOR DATE

REVISIONS

NO.	DESCRIPTION	DATE
0	ISSUED FOR REVIEW	5/26/20
1	GENERAL REVISIONS	7/20/20
2	GENERAL REVISIONS	7/30/20
3	ISSUED FOR CONSTRUCTION (FINAL)	8/6/20

PROJECT NAME:

BURLINGTON SOUTHWEST CT

87 MONCE ROAD
BURLINGTON, CT 06013

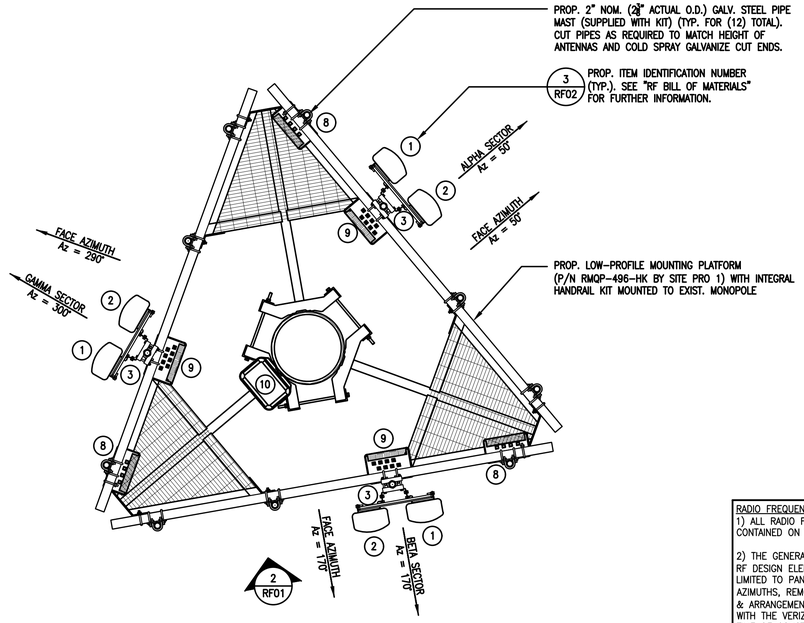
DRAWING TITLE:

ICE SHIELD FRAMING PLAN & STRUCTURAL DETAILS

DRAWING NO:

S01

SCALE:	DESIGNED BY: GRS	VZW LOCATION CODE:
AS SHOWN	DRAWN BY: NWC	479435
	CHECKED BY: GRS	
CEA PROJECT NO.:	ORIGINAL ISSUE DATE:	
96210.398	5/26/20	



(MONOPOLE PLAN VIEW AT ELEVATION 91.2'± AGL)

ANTENNA MOUNTING PLAN

1 RF01

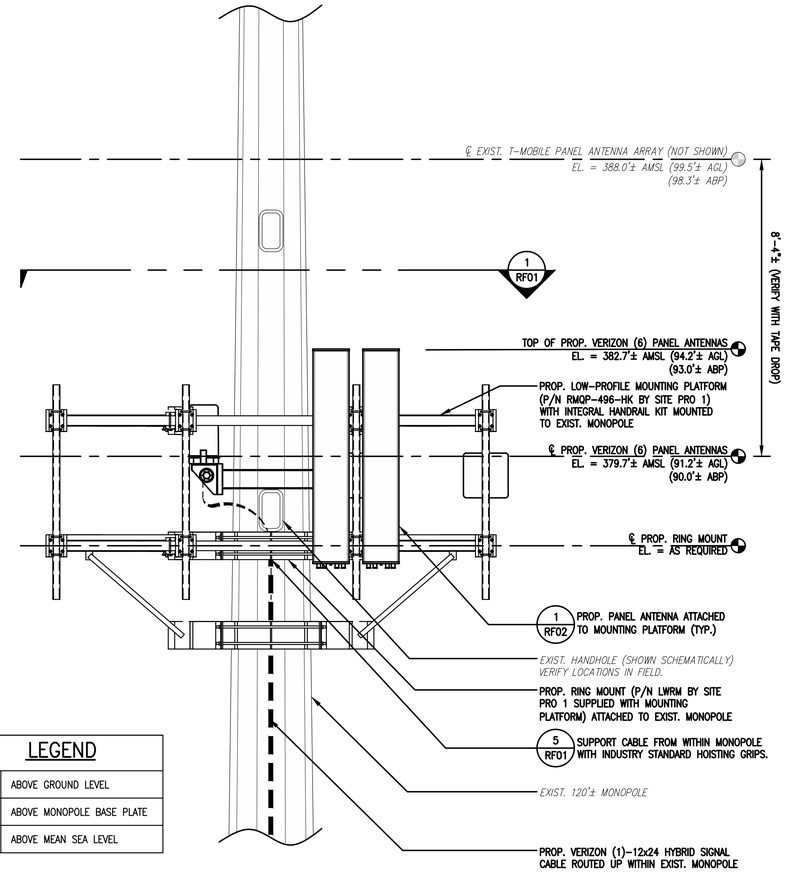
NORTH

SCALE: 1/2" = 1'-0"

0 2'-0" 4'-0" 6'-0"

RADIO FREQUENCY (RF) DESIGN NOTES:
1) ALL RADIO FREQUENCY (RF) DESIGN INFORMATION CONTAINED ON THIS SHEET IS SHOWN SCHEMATICALLY.

2) THE GENERAL CONTRACTOR SHALL CONFIRM ALL RF DESIGN ELEMENTS SHOWN (INCLUDING BUT NOT LIMITED TO PANEL ANTENNA MODELS & ARRANGEMENT, AZIMUTHS, REMOTE RADIO HEAD (RRH) UNIT MODELS & ARRANGEMENT AND CABLING DIAGRAMS/SCHEMATICS) WITH THE VERIZON WIRELESS RF ENGINEER AT THE TIME OF CONSTRUCTION.



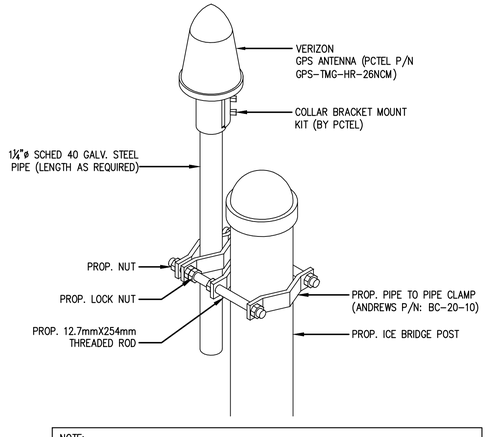
LEGEND

AGL	ABOVE GROUND LEVEL
ABP	ABOVE MONOPOLE BASE PLATE
AMSL	ABOVE MEAN SEA LEVEL

ANTENNA MOUNTING PLATFORM MOUNTING DETAIL

2 RF01

SCALE: 1/2" = 1'-0"

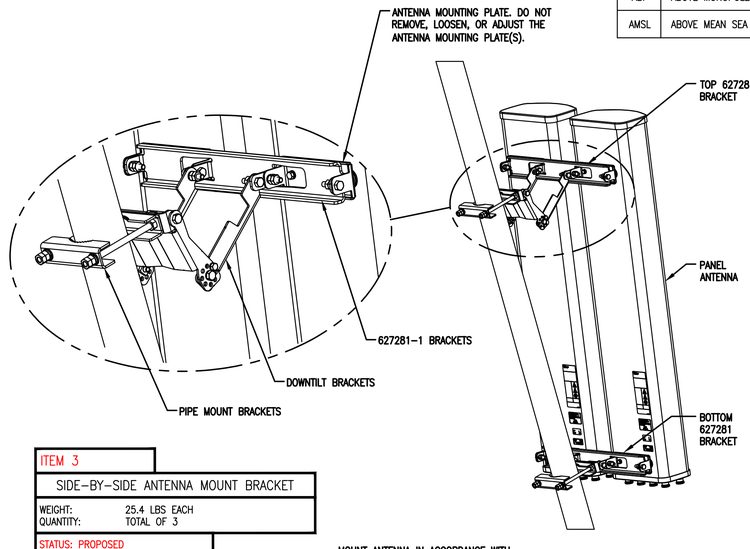


NOTE:
THE GPS ANTENNA MOUNT IS DESIGNED TO FASTEN TO A STANDARD 1"-1¼" DIAMETER GALVANIZED STEEL OR STAINLESS STEEL PIPE. THE PIPE MUST NOT BE THREADED AT THE ANTENNA MOUNT END. THE PIPE SHALL BE CUT TO THE REQUIRED LENGTH USING A HAND OR ROTARY PIPE CUTTER TO ASSURE A SMOOTH AND PERPENDICULAR CUT. THE CUT PIPE END SHALL BE DEBURRED AND SMOOTH IN ORDER TO SEAL AGAINST THE NEOPRENE GASKET ATTACHED TO THE ANTENNA MOUNT.

GPS ANTENNA MOUNTING DETAIL

3 RF01

SCALE: N.T.S.



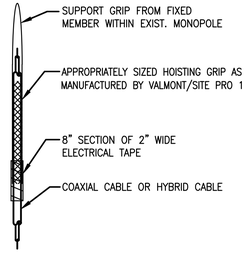
ITEM 3
SIDE-BY-SIDE ANTENNA MOUNT BRACKET
WEIGHT: 25.4 LBS EACH QUANTITY: TOTAL OF 3
STATUS: PROPOSED

MOUNT ANTENNA IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDED PROCEDURE

TYPICAL SIDE-BY-SIDE ANTENNA MOUNT KIT (COMMSCOPE PART #BSAMNT-SBS-1-2)

4 RF01

SCALE: NOT TO SCALE



TYPICAL HOISTING GRIP DETAIL

5 RF01

SCALE: NONE

verizon

" Because Better Matters "

CHAPPELL ENGINEERING ASSOCIATES, LLC
Civil · Structural · Land Surveying
R.K. EXECUTIVE CENTRE
201 BOSTON POST ROAD WEST, SUITE 101
MARLBOROUGH, MA 01752
(508) 481-7400
www.chappellengineering.com

STATE OF CONNECTICUT
CLEMENT J. SAFE
No. 25876
LICENSED PROFESSIONAL ENGINEER

ENGINEER/LAND SURVEYOR DATE

REVISIONS

NO.	DESCRIPTION	DATE
0	ISSUED FOR REVIEW	5/26/20
1	GENERAL REVISIONS	7/20/20
2	GENERAL REVISIONS	7/30/20
3	ISSUED FOR CONSTRUCTION (FINAL)	8/6/20

PROJECT NAME:

BURLINGTON SOUTHWEST CT

87 MONCE ROAD
BURLINGTON, CT 06013

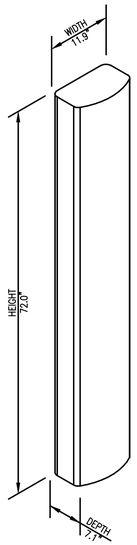
DRAWING TITLE:

ANTENNA MOUNTING PLAN AND DETAILS

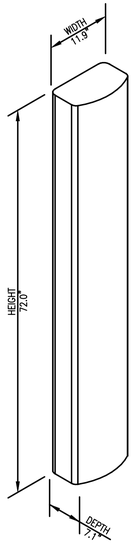
DRAWING NO:

RF01

SCALE: AS SHOWN	DESIGNED BY: GRS DRAWN BY: NWC CHECKED BY: GRS	VZW LOCATION CODE: 479435
CEA PROJECT NO.: 96210.398	ORIGINAL ISSUE DATE: 5/26/20	



ITEM 1	
LTE (700/850/1900 MHz) PANEL ANTENNA	
DIMENSIONS:	72.0"H x 11.9"W x 7.1"D
WEIGHT:	43.7 LBS EACH
QUANTITY:	1 PER SECTOR, TOTAL OF 3
STATUS: PROPOSED	



ITEM 2	
LTE (700/850/2100 MHz) PANEL ANTENNA	
DIMENSIONS:	72.0"H x 11.9"W x 7.1"D
WEIGHT:	48.1 LBS EACH
QUANTITY:	1 PER SECTOR, TOTAL OF 3
STATUS: PROPOSED	

TYPICAL PROP. PANEL ANTENNA SPECIFICATIONS

SCALE: N.T.S.

1 RF02

RF BILL OF MATERIALS (PROP. (FINAL) CONFIGURATION)

SITE NAME: BURLINGTON SOUTHWEST CT — **A = ALPHA SECTOR B = BETA SECTOR G = GAMMA SECTOR**

	ITEM (SEE PLAN)	DESCRIPTION	BAND	QTY	STATUS	CABLE LENGTH/UNIT SIZE	COMMENTS
1 RF02	1	PANEL ANTENNA	700/850/1900	3 TOTAL (A,B,G)	PROP.	72.0"H x 11.9"W x7.1"D (43.7 lbs, each)	MOUNTED TO PROP. SIDE-BY-SIDE MOUNT
	2	PANEL ANTENNA	700/850/2100	3 TOTAL (A,B,G)	PROP.	72.0"H x 11.9"W x7.1"D (48.1 lbs, each)	MOUNTED TO PROP. SIDE-BY-SIDE MOUNT
4 RF01	3	SIDE-BY-SIDE ANTENNA MOUNT KIT	–	3 TOTAL (A,B,G)	PROP.	25.4 lbs, each	MOUNTED TO PROP. PIPE MAST
	4	12x24 HYBRID SIGNAL CABLE (MAIN LINE)	–	1 TOTAL	PROP.	140 FT.±	ROUTED UP WITHIN EXIST. MONOPOLE TO PROP. ANTENNA ARRAY
	5	1x1 HYBRID SIGNAL CABLE (JUMPER)	–	6 TOTAL (2 PER SECTOR)	PROP.	5 FT. EACH	ROUTED FROM PROP. UPPER OVP BOX TO PROP. REMOTE RADIO HEAD (RRH) UNITS
	6	½"ø COAXIAL CABLE (JUMPER)	–	36 TOTAL (12 PER SECTOR)	PROP.	5 FT. EACH	ROUTE FROM PROP. REMOTE RADIO HEAD (RRH) UNITS TO PROP. ANTENNAS
	7	RET CONTROL CABLE(S) (JUMPER)	–	PER RF REQ.	PROP.	5 FT. EACH	ROUTE FROM PROP. REMOTE RADIO HEAD (RRH) UNITS TO PROP. ANTENNAS
2 RF02	8	REMOTE RADIO HEAD (RRH) UNIT	700/850	3 TOTAL (A,B,G)	PROP.	15.0"H x 15.0"W x 8.1"D (70.3 lbs, each)	MOUNTED TO PROP. PIPE MAST
	9	REMOTE RADIO HEAD (RRH) UNIT	1900/2100	3 TOTAL (A,B,G)	PROP.	15.0"H x 15.0"W x 10.0"D (84.4 lbs, each)	MOUNTED TO PROP. PIPE MAST
4 RF02	10	UPPER OVP BOX WITH SURGE	–	1 TOTAL	PROP.	19.18"H x 15.73"W x 10.25"D (26.9 lbs, each)	MOUNTED TO EXIST. MONOPOLE
	11	LOWER OVP RACK	–	1 TOTAL	PROP.	–	INTEGRAL WITHIN EQUIPMENT CABINET

THIS RF BILL OF MATERIALS (BOM) HAS BEEN COMPILED FROM ANTENNA RECOMMENDATION DATA SHEET DATED 2/24/2020. CONTRACTOR SHALL CONFIRM ALL FINAL RF MATERIALS/EQUIPMENT TO BE USED WITH VERIZON WIRELESS RF ENGINEER DURING CONSTRUCTION.

RF BILL OF MATERIALS (FINAL CONFIGURATION)

SCALE: NONE

3 RF02

ITEM 8	
LTE/CDMA (700/850 MHz) REMOTE RADIO HEAD UNIT	
DIMENSIONS:	15.0"H x 15.0"W x 8.1"D
WEIGHT:	70.3 LBS
QUANTITY:	1 PER SECTOR, TOTAL OF 3
STATUS: PROPOSED	

ITEM 9	
PCS-AWS (1900/2100 MHz) REMOTE RADIO HEAD UNIT	
DIMENSIONS:	15.0"H x 15.0"W x 10.0"D
WEIGHT:	84.4 LBS
QUANTITY:	1 PER SECTOR, TOTAL OF 3
STATUS: PROPOSED	

TYPICAL REMOTE RADIO HEAD (RRH) UNIT DIMENSIONS

SCALE: N.T.S.

2 RF02

Procedure

Mounting Procedures

4.1 A mounting base is delivered with the unit. The base allows either wall/ladder or pole mounted installation. See picture to identify the holes for each installation method.

4.2 ***Option 1: Pole Mount***
Using supplied hardware, mount Bracket to 2" to 4" diameter pole.

4.3 ***Option 2: Unistrut***

4.4 ***Option 3: Monopole***
Use 1" stainless steel bands (not supplied) through slots on bracket to mount to Monopole.

Gland/Insert Definitions

5.1 See picture to identify Base Gland Assembly Definitions.

Assembled in unit as shipped:

Qty	Connector Size	Pos	Insert P/N	Insert Hole	Cable Type
2	M75	A	190-0760	42mm	6x12 RL
4	M75	B	190-0738	3x 16.5mm	1x2

Included in kit shipped with unit:

Qty	Connector Size	Insert P/N	Insert Hole	Cable Type	Purpose	Pos
2	M75	190-0760	42mm	6x12 RL	2 glands fit 1 each 6/12 Hyb	B
2	M75	190-0747	2x 24.5mm	2x12 DC	2 glands fit 2 each #6 12 cond DC	B
1	M75	190-0905	2x 10.5mm	2x12 Fiber	1 gland fit 2 x 12 fiber trunk	B
1	M75	190-0912	2x 9.5mm	2 ETH	1 gland fits 2 ethernet cable	B

ITEM 10	
FIBER JUNCTION BOX	
DIMENSIONS:	19.18"H x 15.73"W x 10.25"D
WEIGHT:	26.9 LBS
QUANTITY:	TOTAL OF 1
STATUS: PROPOSED	

TYPICAL FIBER JUNCTION BOX DIMENSIONS, SCHEMATIC AND MOUNTING PROCEDURE

SCALE: N.T.S.

4 RF02

verizon

" Because Better Matters "

CHAPPELL ENGINEERING ASSOCIATES, LLC
Civil · Structural · Land Surveying
R.K. EXECUTIVE CENTRE
201 BOSTON POST ROAD WEST, SUITE 101
MARLBOROUGH, MA 01752
(508) 481-7400
www.chappellengineering.com

STATE OF CONNECTICUT
CLEMENT J. SAINE
No. 26376
LICENSED PROFESSIONAL ENGINEER

ENGINEER/LAND SURVEYOR DATE

REVISIONS

NO.	DESCRIPTION	DATE
0	ISSUED FOR REVIEW	5/26/20
1	GENERAL REVISIONS	7/20/20
2	GENERAL REVISIONS	7/30/20
3	ISSUED FOR CONSTRUCTION (FINAL)	8/6/20

PROJECT NAME:

BURLINGTON SOUTHWEST CT

87 MONCE ROAD
BURLINGTON, CT 06013

DRAWING TITLE:

ANTENNA DETAILS AND ANCILLARY EQUIPMENT SPECIFICATIONS

DRAWING NO:

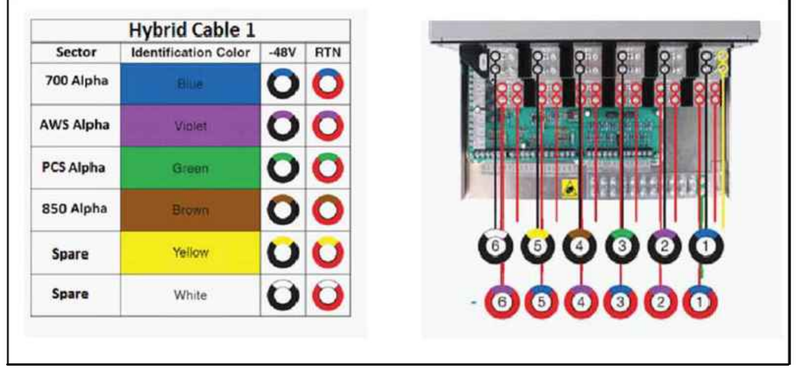
RF02

SCALE:	DESIGNED BY: GRS	VZW LOCATION CODE:
AS SHOWN	DRAWN BY: NWC	479435
	CHECKED BY: GRS	
CEA PROJECT NO.:	ORIGINAL ISSUE DATE:	
96210.398	5/26/20	

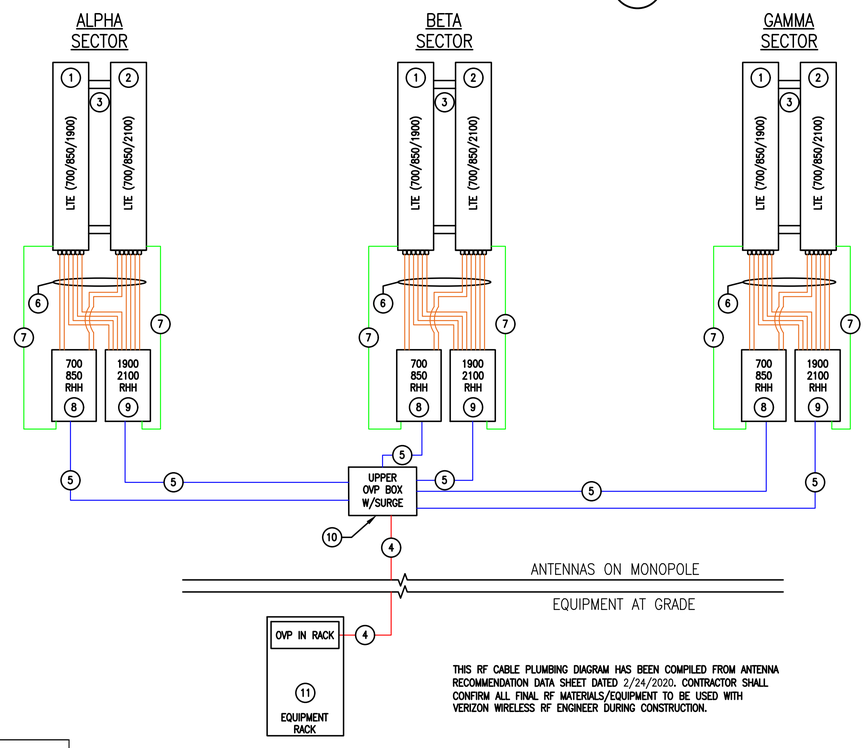
Line Color Code	Band	Tx/Rx	Color Pairs	Sector	Cable Length (FT)
BR	850	Tx0/Rx0	Blue + Red	ALPHA	CABLE LENGTH PROVIDED BELOW IS APPROXIMATE IN NATURE AND REFLECTED AS AN ADJUSTED VALUE TO PROVIDE ADEQUATE LENGTH. ANY FIELD MEASUREMENTS OF ANTICIPATED CABLE LENGTH IS ENCOURAGED IN AN EFFORT TO REDUCE SLACK AND TO OPTIMIZE DESIGN. SUCH FIELD MEASUREMENTS MAY SUPERCEDE THE LENGTH PROVIDED BELOW AT THE DISCRETION OF THE GENERAL CONTRACTOR 140'±
BY	850	Tx1/Rx1	Blue + Yellow		
BG	1900 CDMA	Tx0/Rx0	Blue + Green		
BBG	1900 CDMA	Tx1/Rx1			
BP	700	Tx0/Rx0	Blue + Purple		
BBP	700	Tx1/Rx1			
BBBP	700	Tx2/Rx2			
BBBBP	700	Tx3/Rx3			
BBr	AWS	Tx0/Rx0	Blue + Brown		
BBBr	AWS	Tx1/Rx1			
BBBBr	AWS	Tx2/Rx2			
BBBBBr	AWS	Tx3/Rx3			
BGG	1900 LTE	Tx0/Rx0	Blue + Green		
BBGG	1900 LTE	Tx1/Rx1			
BBBGG	1900 LTE	Tx2/Rx2			
BBBBGG	1900 LTE	Tx3/Rx3			
WR	850	Tx0/Rx0	White + Red	BETA	
WY	850	Tx1/Rx1	White + Yellow		
WG	1900 CDMA	Tx0/Rx0	White + Green		
WWG	1900 CDMA	Tx1/Rx1			
WP	700	Tx0/Rx0	White + Purple		
WWP	700	Tx1/Rx1			
WWWP	700	Tx2/Rx2			
WWWWP	700	Tx3/Rx3			
WBr	AWS	Tx0/Rx0	White + Brown		
WWBr	AWS	Tx1/Rx1			
WWWBr	AWS	Tx2/Rx2			
WWWWBr	AWS	Tx3/Rx3			
WGG	1900 LTE	Tx0/Rx0	White + Green		
WWGG	1900 LTE	Tx1/Rx1			
WWWGG	1900 LTE	Tx2/Rx2			
WWWWGG	1900 LTE	Tx3/Rx3			
OR	850	Tx0/Rx0	Orange + Red	GAMMA	
OY	850	Tx1/Rx1	Orange + Yellow		
OG	1900 CDMA	Tx0/Rx0	Orange + Green		
OOG	1900 CDMA	Tx1/Rx1			
OP	700	Tx0/Rx0	Orange + Purple		
OOP	700	Tx1/Rx1			
OOOP	700	Tx2/Rx2			
OOOOP	700	Tx3/Rx3			
OBr	AWS	Tx0/Rx0	Orange + Brown		
OOBr	AWS	Tx1/Rx1			
OOOBr	AWS	Tx2/Rx2			
OOOOBr	AWS	Tx3/Rx3			
OGG	1900 LTE	Tx0/Rx0	Orange + Green		
OOGG	1900 LTE	Tx1/Rx1			
OOOGG	1900 LTE	Tx2/Rx2			
OOOOGG	1900 LTE	Tx3/Rx3			

LINE COLOR CODE SPECIFICATIONS (1 / RF03)

Hybrid Cable on Towers



HYBRID CABLE COLOR CODE SPECIFICATIONS (2 / RF03)



LEGEND

RED	##	= HYBRID CABLE (MAIN LINE)
PURPLE	##	= COAXIAL CABLE (MAIN LINE)
BLUE	##	= 1x1 HYBRID CABLE (JUMPER)
ORANGE	##	= 1/2"ø COAXIAL CABLE (JUMPER)
GREEN	##	= RET CONTROL CABLE(S) (JUMPER)

RF CABLE PLUMBING DIAGRAM (FINAL CONFIGURATION) (3 / RF03)

verizon

" Because Better Matters "

CHAPPELL ENGINEERING ASSOCIATES, LLC
Civil · Structural · Land Surveying
R.K. EXECUTIVE CENTRE
201 BOSTON POST ROAD WEST, SUITE 101
MARLBOROUGH, MA 01752
(508) 481-7400
www.chappellengineering.com

STATE OF CONNECTICUT · CLEMENT J. SAFFER · No. 25876 · LICENSED PROFESSIONAL ENGINEER

ENGINEER/LAND SURVEYOR DATE

REVISIONS

NO.	DESCRIPTION	DATE
0	ISSUED FOR REVIEW	5/26/20
1	GENERAL REVISIONS	7/20/20
2	GENERAL REVISIONS	7/30/20
3	ISSUED FOR CONSTRUCTION (FINAL)	8/6/20

PROJECT NAME:

BURLINGTON SOUTHWEST CT

87 MONCE ROAD
BURLINGTON, CT 06013

DRAWING TITLE:

RF COLOR CODE SPECIFICATIONS AND PLUMBING DIAGRAM

DRAWING NO:

RF03

SCALE: N/A	DESIGNED BY: GRS DRAWN BY: NWC CHECKED BY: GRS	VZW LOCATION CODE: 479435
CEA PROJECT NO.: 96210.398	ORIGINAL ISSUE DATE: 5/26/20	

ELECTRICAL SPECIFICATIONS

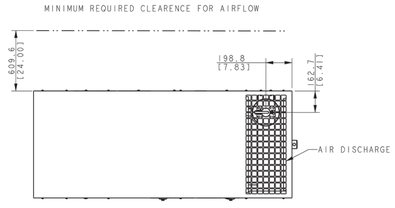
1. FURNISH ALL LABOR, MATERIALS, EQUIPMENT, TOOLS AND INCIDENTALS REQUIRED TO MAKE READY FOR USE THE COMPLETE ELECTRICAL SYSTEMS AS SHOWN ON THE DRAWINGS. MAKE ALL NECESSARY CONNECTIONS AT "PACKAGED" EQUIPMENT.
2. THE ELECTRICAL SYSTEMS SHALL BE SUITABLE IN EVERY WAY FOR THE SERVICE REQUIRED. ALL MATERIAL AND ALL WORK WHICH MAY BE REASONABLY IMPLIED AS BEING INCIDENTAL TO THE WORK SHALL BE FURNISHED AT NO EXTRA COST.
3. FURNISH AND INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH THE REQUIREMENTS OF LOCAL, STATE AND NATIONAL CODES AND STANDARDS, INCLUDING BUT NOT LIMITED TO:
   THE 2018 CONNECTICUT STATE BUILDING CODE
   THE NATIONAL ELECTRICAL CODE (NFPA-70)
   THE CONNECTICUT ELECTRIC CODE
   THE NATIONAL ELECTRICAL SAFETY CODE (ANSI C-2)
   THE LIFE SAFETY CODE (NFPA 101)
   THE STRUCTURAL STANDARDS FOR ANTENNA SUPPORTING STRUCTURE AND ANTENNAS (TIA/EIA-222-G)
4. MATERIALS AND EQUIPMENT SHALL BE NEW, UNUSED AND UNDERWRITERS' LABORATORIES, INC. LISTED. CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ALL MATERIALS IN A TIMELY FASHION, INCLUDING RESPONSIBILITY FOR DETERMINING AVAILABILITY/LEAD TIME FOR ALL NECESSARY EQUIPMENT.
5. CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS AND PAY ALL FEES FOR PERMITS AND INSPECTIONS. WHERE NEW COMMERCIAL POWER SERVICE IS PROVIDED TO THE SITE, OR EXISTING SERVICE MUST BE MODIFIED, CONTRACTOR SHALL MAKE ALL ARRANGEMENTS WITH THE ELECTRIC UTILITY, SHALL PERFORM ALL OF HIS WORK IN ACCORDANCE WITH THE REQUIREMENTS OF THE UTILITY, AND SHALL PAY ALL UTILITY SERVICE BACK CHARGES.
6. ALL WIRING OUTSIDE SHALL BE INSTALLED IN HEAVY-GAUGE, (SCHEDULE 40) RIGID STEEL CONDUIT, HOT-DIPPED GALVANIZED INSIDE AND OUTSIDE WITH AN ADDITIONAL FACTORY-APPLIED FINISH INSIDE AND OUTSIDE. CUT ENDS SHALL BE REAMED, THREADED AND COLD GALVANIZED. NO COMPRESSION FITTING WILL BE ACCEPTED.
7. UNDERGROUND CONDUITS SHALL BE PVC SCHEDULE 40 AND INSTALLED NOT LESS THAN 30 INCHES BELOW FINISHED GRADE.
8. WIRING INSTALLED IN THE BUILDING THAT IS SHOWN TO BE IN CONDUIT SHALL BE INSTALLED IN EMT. EMT FITTINGS SHALL BE STEEL COMPRESSION TYPE.
9. LIQUID TIGHT, FLEXIBLE METAL CONDUIT SHALL BE USED FOR ALL MOTOR TERMINATIONS AND FOR CONNECTIONS TO EQUIPMENT SUBJECT TO VIBRATION. FLEXIBLE METAL CONDUIT SHALL CONSIST OF A FLEXIBLE, CORROSION RESISTANT METAL CORE WITH AN EXTRUDED, WATERTIGHT, SYNTHETIC JACKET. CONDUITS SMALLER THAN 1-1/2" SHALL HAVE A CONTINUOUS GROUND CONDUCTOR UNDER THE JACKET.
10. NO CONDUIT SMALLER THAN 3/4" ELECTRICAL TRADE SIZE SHALL BE USED, EXCEPT AS OTHERWISE SHOWN ON THE DRAWINGS. BOX SIZES SHALL BE 4" SQUARE MINIMUM, BUT NOT LESS THAN THAT REQUIRED BY THE CONNECTICUT ELECTRICAL CODE.
11. FITTINGS AND EXPOSED SWITCH, OUTLET AND CONTROL STATION BOXES AND OTHER EXPOSED BOXES 4" SQUARE SHALL BE CAST OR MALLEABLE IRON WITH CADMIUM-ZINC FINISH AND CAST COVERS WITH STAINLESS STEEL SCREWS.
12. FLUSH SWITCH AND OUTLET BOXES SHALL BE HOT-DIPPED GALVANIZED, PRESSED STEEL WITH NYLON COVER PLATES, COLOR AS DETERMINED BY THE ENGINEER.
13. EXCEPT AS OTHERWISE SHOWN, TERMINAL, JUNCTION AND PULL BOXES LARGER THAT 4" SQUARE SHALL BE SHEET STEEL. STEEL BOXES SHALL BE HOT-DIPPED GALVANIZED. BOXES AND COVERS SHALL BE NOT LESS THAN 14 GAUGE METAL. COVERS SHALL BE GASKETED AND FASTENED WITH STAINLESS STEEL HARDWARE.
14. FITTINGS USED WITH LIQUID TIGHT, FLEXIBLE CONDUIT SHALL BE OF THE SCREW-IN, COMPRESSION TYPE WITH SEALING RING. FITTINGS LARGER THAN 1-1/4" SHALL BE FURNISHED WITH INTEGRAL GROUND LUGS.
15. HANGERS, RODS, BACK PLATES, BEAM CLAMPS, ETC. SHALL BE GALVANIZED IRON OR STEEL. CONDUITS SHALL BE SUPPORTED AT LEAST EVERY 5 FEET.
16. EXPOSED CONDUITS SHALL BE RUN PARALLEL TO OR AT RIGHT ANGLES TO WALLS. CONDUIT RUNS SHALL BE STRAIGHT AND TRUE. CONDUIT SHALL BE SUPPORTED BY MEANS OF TWO-HOLE PIPE CLAMPS. BACK PLATES SHALL BE INSTALLED WHERE REQUIRED TO RAISE CONDUITS FROM THE SURFACE. MULTIPLE, HORIZONTAL RUNS SHALL BE SUPPORTED ON TRAPEZE HANGERS WITH STEEL HORIZONTAL MEMBERS AND THREADED RODS NOT LESS THAN 3/8 INCHES IN DIAMETER. HANGERS SHALL BE ATTACHED TO STRUCTURAL STEEL BY MEANS OF BEAM CLAMPS. SPOT TYPE INSERTS SHALL BE USED IN CONCRETE.
17. CONDUIT BENDS SHALL BE CAREFULLY MADE TO PREVENT DISTORTION OF THE CIRCULAR CROSS-SECTION. NO CONDUIT RUN SHALL HAVE MORE THAN THE EQUIVALENT OF THREE 90 DEGREE BENDS BETWEEN PULLING POINTS. CHANGES IN DIRECTION SHALL BE MADE WITH BENDS, STANDARD ELBOWS AND PULLBOXES. BENDS IN PARALLEL RUNS SHALL BE CONCENTRIC.
18. CONDUIT SHALL NOT BE SUPPORTED FROM PIPING, PIPING SUPPORTS, DUCTWORK, SUSPENDED CEILING SUPPORTS OR MECHANICAL EQUIPMENT SUBJECT TO VIBRATION OR REMOVAL.
19. THE ENDS OF ALL CONDUITS SHALL BE TIGHTLY PLUGGED DURING BUILDING CONSTRUCTION UNTIL WIRES ARE TO BE PULLED. SPARE CONDUITS SHALL BE FURNISHED WITH THREADED CAPS.
20. CONDUITS SHALL BE TERMINATED AT UNGASKETED SHEET STEEL BOXES AND ENCLOSURES WITH DOUBLE LOCK NUTS AND SUITABLE BUSHINGS. BUSHINGS INSTALLED ON CONDUITS CONTAINING GROUND WIRES SHALL BE GROUNDING TYPE. CONDUITS SHALL BE TERMINATED AT GASKETED SHEET METAL BOXES AND ENCLOSURES WITH CONDUIT HUBS.
21. ELECTRIC METERS SHALL BE EMON DMON KW DEMAND REGISTER.
22. CONDUCTORS SHALL BE ANNEALED, 98 PERCENT CONDUCTIVITY, SOFT-DRAWN COPPER. NO CONDUCTOR SMALLER THAT NO. 12 AWG SHALL BE USED, EXCEPT AS OTHERWISE NOTED.
23. WIRE FOR POWER AND LIGHTING BRANCH CIRCUITS SHALL BE 600 VOLT, TYPE THWN. WIRE FOR CONTROL CIRCUITS SHALL BE 600 VOLT, TYPE THWN, NO. 14 AWG, STRANDED. SERVICE CONDUCTORS AND FEEDERS SHALL BE TYPE XHHW. CONDUCTORS NO. 10 AWG AND SMALLER SHALL BE SOLID. NO. 8 AWG AND LARGER SHALL BE STRANDED..
24. ALL CONDUCTORS SHALL BE CAREFULLY HANDLED TO AVOID KINKS OR DAMAGE TO INSULATION. LUBRICATIONS SHALL BE USED TO FACILITATE WIRE PULLING. LUBRICANTS SHALL BE UL LISTED FOR USE WITH THE INSULATION SPECIFIED.
25. ALL EQUIPMENT AND MATERIALS SHALL BE GROUNDED IN STRICT ACCORDANCE WITH THE CONNECTICUT ELECTRICAL CODE, AND THE STANDARD REQUIREMENTS OF VERIZON WIRELESS AND LUCENT.
26. DISCONNECT SWITCHES SHALL BE 480 OR 240 VOLT, HEAVY-DUTY, QUICK-MAKE, QUICK BREAK, VISIBLE BLADE, 2 POLE WITH EXTERNAL OPERATING HANDLE AND FULL COVER INTERLOCK. SWITCHES INSTALLED OUTSIDE SHALL BE NEMA TYPE 3R ENCLOSED.
27. WALL SWITCHES SHALL BE SINGLE POLE 3-WAY OR 4-WAY, INDICATING, TOGGLE-ACTION, FLUSH, QUIET TYPE, SPECIFICATION GRADE, RATED 20 AMPERE, 120-277 VOLT. COLOR AS DETERMINED BY ENGINEER.
28. GENERAL PURPOSE RECEPTACLES SHALL BE DUPLEX, 2 POLE, 3 WIRE, STRAIGHT BLADE, NYLON FACE, GROUNDING TYPE, 20 AMPERE, 125 VOLT, SPECIFICATION GRADE. COLOR AS DETERMINED BY ENGINEER.
29. PANELS SHALL BE PER DIRECTED BY THESE DRAWINGS WITH TYPED DIRECTORIES.
30. CIRCUIT BREAKERS SHALL BE MOLDED CASE, THERMAL-MAGNETIC TYPE WITH RMS SYMMETRICAL INTERRUPTING RATING OF NOT LESS THAN 22,000 AMPERE FOR 240 VOLT BREAKERS. ENCLOSED BREAKERS SHALL HAVE PADLOCKING PROVISIONS AND EXTERNAL OPERATING HANDLE WITH FULL COVER INTERLOCK. BREAKERS SHALL BE 1" MODULES MINIMUM.
31. NAMEPLATES SHALL BE PROVIDED FOR ALL EQUIPMENT INDICATING VOLTAGE, PHASE, USE AND SOURCE OF ORIGIN. DEVICES SHALL BE LABELED INDICATING VOLTAGE AND BRANCH CIRCUIT. BRANCH CONDUCTORS SHALL BE LABELED INDICATING BRANCH CIRCUIT. FEEDER CONDUCTORS SHALL INDICATE PHASE.
32. ALL EXTERIOR CONDUCTOR/LUG TERMINALS SHALL HAVE AN ANTIOXIDANT APPLIED.
33. ALL SPRING TYPE WIRE CONDUCTORS USED IN EXTERIOR BOXES SHALL BE SILICON FILLED.
34. ELECTRICAL CONTRACTOR SHALL AS PART OF HIS WORK INCLUDE ALL FITTINGS, SLEEVES AND MINOR CUTTING REQUIRED FOR HIS WORK, INCLUDING FIRES-STOPPING.
35. THE ELECTRICAL CONTRACTOR, AT HIS OWN EXPENSE, SHALL PROVIDE HIS OWN, WHERE DIRECTED, STORAGE AND OFFICE SPACE.
36. FIVE COPIES OF SHOP DRAWINGS OF ALL EQUIPMENT SHALL BE PROVIDED TO THE ENGINEER.
37. ELECTRICAL CONTRACTOR'S WORK SHALL INCLUDE ALL LABOR AND MATERIALS, SCAFFOLDING TOOL AND TRANSPORTATION NECESSARY FOR COMPLETE INSTALLATION.
38. ELECTRICAL CONTRACTOR TO FURNISH ENGINEER ONE SET OF MYLARS OF "AS BUILT" DRAWINGS.
39. ELECTRICAL CONTRACTOR SHALL PROVIDE TEMPORARY POWER & LIGHTING AS REQ'D.

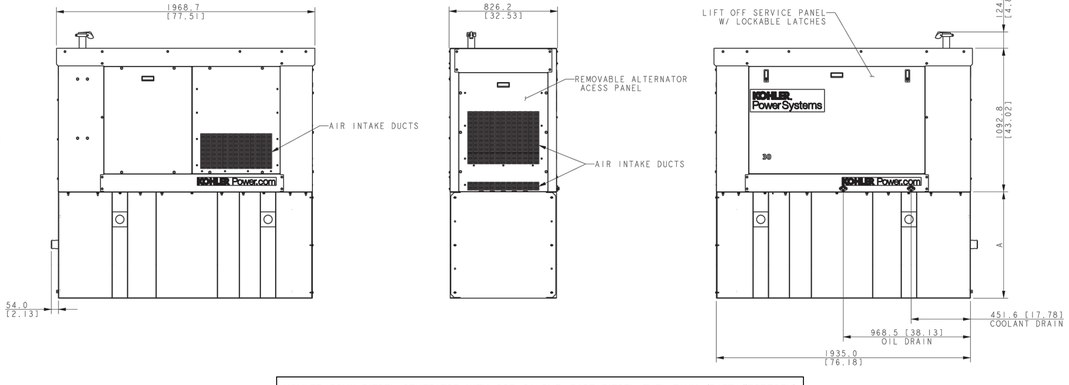
GENERAL NOTES

1. CONTRACTOR SHALL VISIT THE SITE TO MAKE HIMSELF AWARE OF THE EXISTING CONDITIONS.
2. BRANCH CIRCUIT RUNS 100 FT AND OVER SHALL BE #10 AWG CONDUCTORS.
3. THESE DRAWINGS ARE DIAGRAMMATIC ONLY. THE EXACT LOCATION, MOUNTING HEIGHT, SIZE OF EQUIPMENT AND ROUTING OF RACEWAYS SHALL BE COORDINATED AND DETERMINED IN THE FIELD.
4. THE ELECTRICAL CONTRACTOR SHALL COORDINATE WITH THE HVAC AND PLUMBING CONTRACTORS AS TO THE EXACT LOCATION OF THEIR RESPECTIVE EQUIPMENT, THE POWER WIRING, THE CONTROL WIRING AND ALL ELECTRICAL CONNECTIONS REQUIRED BY THIS CONTRACTOR FOR COMPLETELY OPERATIVE HVAC AND PLUMBING SYSTEMS IN CONFORMANCE WITH THE CONTRACT DOCUMENTS.
5. INTERRUPTIONS TO THE EXISTING ELECTRICAL SERVICE FOR SPLICING CONNECTIONS, RENOVATION OF EXISTING DISTRIBUTION, BRANCH CIRCUITS, INSTALLATION OF NEW ELECTRIC SERVICE, AND SHALL BE AS SHORT AS POSSIBLE, AND TO THE CONVENIENCE OF THE OWNER.
6. ALL CONDUIT SHALL BE SURFACE MOUNTED UNLESS OTHERWISE NOTED. NO INTERIOR HORIZONTAL CONDUIT BELOW 7'-8" AFF IN FINISHED SPACES.
7. ALL WIRING TO BE 3/4"C, 2#12 & 1#12 GROUND, UNLESS OTHERWISE NOTED.
8. NO BX OR ROMEX CABLE IS PERMITTED.
9. ALL WIRING DEVICES AND EQUIPMENT SHALL BE 20A SPECIFICATION GRADE AND UL LISTED.
10. ALL OUTLET AND JUNCTION BOXES SHALL BE SECURELY SURFACE MOUNTED.
11. ALL RECEPTACLE AND EQUIPMENT CIRCUITS SHALL BE GROUNDED USING A FULL SIZE EQUIPMENT GROUNDING CONDUCTOR RUN WITH THE CURRENT CONDUCTORS.
12. ALL WALL PENETRATIONS FOR TELCO, POWER. AND GROUNDING SHALL REQUIRE PVC SLEEVES.
13. ALL SWITCHES SHALL BE FORTY-EIGHT (48) INCHES AFF, UNLESS OTHERWISE NOTED.
14. ALL RECEPTACLES SHALL BE EIGHTEEN (18) INCHES AFF, UNLESS OTEHRWISE NOTED.
15. ALL WIRING SHALL BE IN METAL RACEWAY & NO. 12 AWG COPPER MIN. UNLESS OTHERWISE NOTED.
16. WIRE COLOR SHALL BE PER STANDARD CODING BY PHASE.
17. FOR UTILITY BILLING, PLEASE SEND TO:
    VERIZON WIRELESS
    20 ALEXANDER DRIVE
    WALLINGFORD, CT 06492

GROUNDING GENERAL NOTES

1. ALL EXTERIOR CONDUCTORS SHALL BE #2 AWG, SOLID, BARE, TINNED COPPER, UNLESS OTHERWISE NOTED. MINIMUM BEND RADIUS SHALL BE EIGHT (8) INCHES.
2. ALL CONNECTIONS TO HALO GROUND RING AND ALL CABLE TRAY JUMPERS SHALL BE #6 AWG, INSULATED, STRANDED, COPPER WIRE.
3. ALL WIRE-TO-WIRE CONNECTIONS SHALL BE THREE-CLAMP, C TAP COMPRESSION (T&B #54740 ORANGE OR EQUIVALENT). ALL GROUND BAR CONNECTIONS SHALL BE TWO-HOLE, LONG-BARREL TYPE COMPRESSION LUGS (T&B OR EQUIVALENT). ALL OTHER CONNECTIONS TO STEEL SURFACES SHALL USE LUG-TYPE CONNECTORS.
4. MECHANICALLY BOND ANTENNA MOUNTS WITH #2 AWG, BARE, STRANDED CONDUCTORS.
5. ALL GROUNDING WORK SHALL COMPLY WITH VERIZON WIRELESS STANDARDS.
6. CONNECT GROUND CONDUCTOR TO EXISTING GROUNDING SYSTEM. ATTACH TO WALLS, PARAPET, CABLE TRAY, ETC. WITH A CLAMPS AS NECESSARY. REMOVE PAINT, FIREPROOFING, MILL SCALE, ETC. TO ACHIEVE GOOD CAD WELD GROUND CONNECTION.
7. CONNECT TO HALO GROUND USING C-TAP (#54730).
8. CONNECT TO ENCLOSURES USING BLUE GROUND LUGS.





KOHLER 30kW DIESEL GENERATOR WITH 203 GA SUB-BASE DIESEL FUEL TANK (PART #30REOZK)
OVERALL GENERATOR (ENCLOSURE) APPROXIMATE
DIMENSIONS: 76.5"L x 32.0"W x 84"H (INCLUDES SUB-BASE DIESEL TANK)
APPROXIMATE MAX. IN-SERVICE WEIGHT: 2,114 lbs

GENERATOR DETAIL

SCALE: NONE

1 / E01

LEGEND

ELECTRICAL SYMBOLS

(M)	METER
	GROUND ROD/TEST (OBSERVATION) WELL
	GROUND ROD
	CADWELD TYPE CONNECTION
	COMPRESSION TYPE CONNECTION
	GROUNDING WIRE
1 / E02	REPRESENTS DETAIL NUMBER
	1'X4' SURFACE MTD. FLOURESCENT LIGHTING FIXTURE
	SELF CONTAINED EMERG. LIGHTING UNIT
S	20A-120V-1P TOGGLE SWITCH
	MAGNETIC DOOR SWITCH (DOOR JAMB TYPE)
	20A-120V QUADRAPLEX RECEPTACLE, GROUNDING TYPE, 2-CKT. NO.
WP/GFI	20A-120V DUPLEX RECEPTACLE, GROUNDING TYPE. WP = WEATHERPROOF GFI = GROUND FAULT
TL	SIMPLEX RECEPTACLE, GROUNDING TYPE. TL = TWIST LOCK
J	JUNCTION BOX
P1	PANELBOARD 'P1'
*2	MOTOR - NUMERAL DENOTES HORSEPOWER
WP	WEATHER PROOF DISCONNECT SWITCH
	FUSED DISCONNECT SWITCH - '3R' & '1' - NEMA ENCLOSURE
*T	THERMOSTAT *T_{HI} - HI TEMPERATURE ALARM THERMOSTAT
*H	HUMIDISTAT *$H_{HI/LO}$ - HI/LO HUMIDITY ALARM HUMIDISTAT
	COMBINATION SMOKE/HEAT DETECTOR WITH MINI HORN SIMPLEX CAT.#2098-9696 WITH FORM A & C CONTACTS
P1-2	HOMERUN TO PANEL (FURNISH & INSTALLED BY MECHANICAL)
	SURGE ARRESTOR - JOSLYN CAT. NO. 1455-85
AFF	ABOVE FINISHED FLOOR
*M	MOTORIZED DAMPER
2#12-3/4"C	EXPOSED CONDUIT 2#12-3/4"C.
TC	ALARM TERMINAL CABINET

* EQUIPMENT FURNISHED AND INSTALLED BY OTHERS AND WIRED BY THIS CONTRACTOR

ABBREVIATIONS

AWG	AMERICAN WIRE GAUGE
BCW	BARE COPPER WIRE
GPS	GLOBAL POSITIONING SYSTEM
PCS	PERSONAL COMMUNICATION SYSTEM
RWY	RACEWAY
TYP.	TYPICAL
RGS	RIGID GALVANIZED STEEL
EMT	ELECTRICAL METALLIC TUBING
DWG	DRAWING
EMT	INTERIOR GROUND RING (HALO)
GEN	GENERATOR
GR	GROWTH
CGBE	COAX GROUND BAR EXTERNAL
CIGBE	COAX ISOLATED GROUND BAR EXTERNAL
MGB	MASTER GROUND BAR
PVC	RIGID (SCH. 40) POLYVINYL CHLORIDE CONDUIT
EBH	ETHERNET BACK HAUL

verizon
" Because Better Matters "

CHAPPELL ENGINEERING ASSOCIATES, LLC
Civil · Structural · Land Surveying
R.K. EXECUTIVE CENTRE
201 BOSTON POST ROAD WEST, SUITE 101
MARLBOROUGH, MA 01752
(508) 481-7400
www.chappellengineering.com

STATE OF CONNECTICUT
CLEMENT J. SAINE
No. 26376
LICENSED PROFESSIONAL ENGINEER
ENGINEER/LAND SURVEYOR DATE

REVISIONS

NO.	DESCRIPTION	DATE
0	ISSUED FOR REVIEW	5/26/20
1	GENERAL REVISIONS	7/20/20
2	GENERAL REVISIONS	7/30/20
3	ISSUED FOR CONSTRUCTION (FINAL)	8/6/20

PROJECT NAME:

BURLINGTON SOUTHWEST CT
87 MONCE ROAD
BURLINGTON, CT 06013

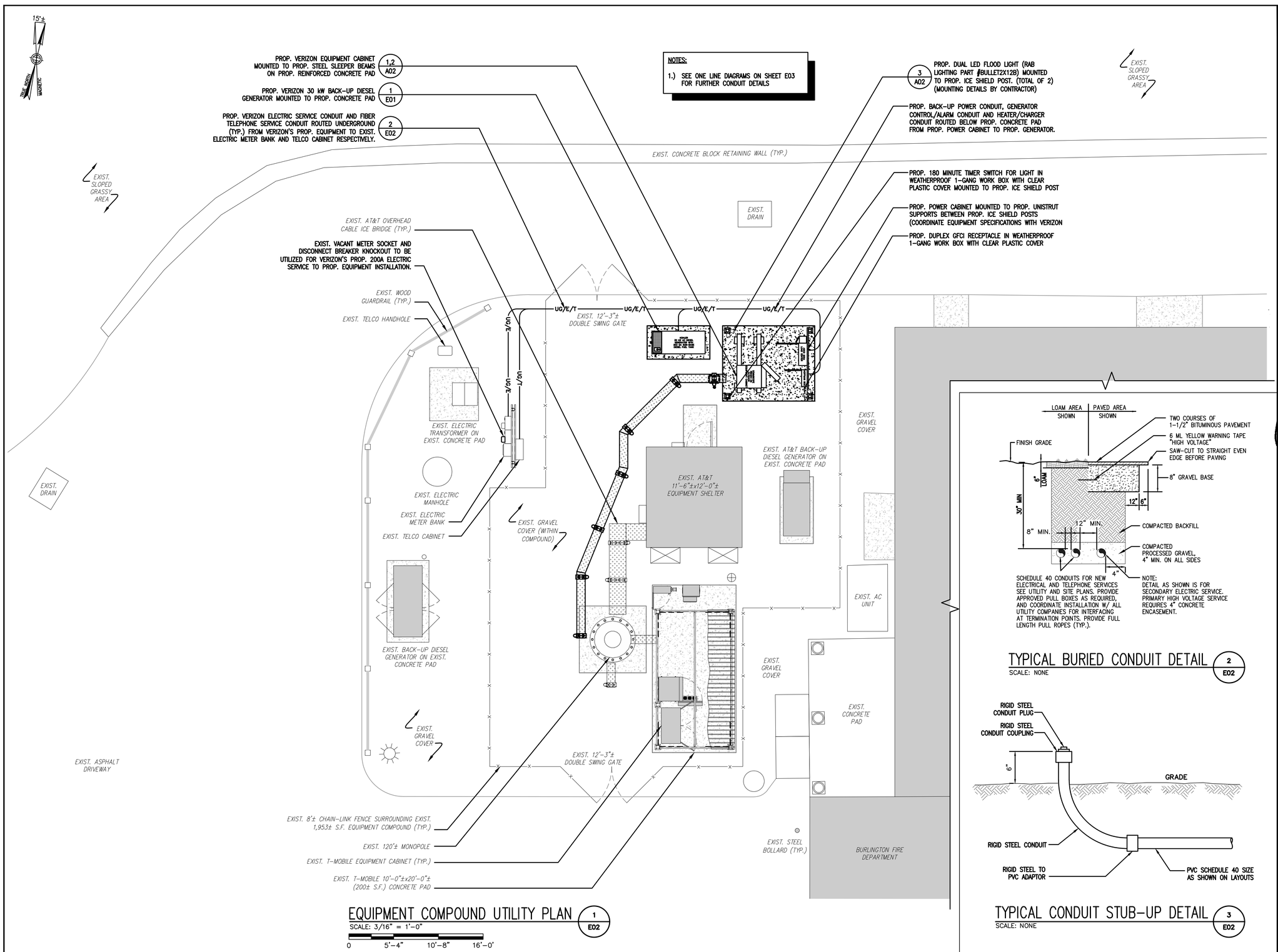
DRAWING TITLE:

ELECTRICAL SPECIFICATIONS AND NOTES

DRAWING NO:

E01

SCALE: AS SHOWN	DESIGNED BY: GRS	VZW LOCATION CODE: 479435
	DRAWN BY: NWC	
	CHECKED BY: GRS	
CEA PROJECT NO.: 96210.398	ORIGINAL ISSUE DATE: 5/26/20	



EQUIPMENT COMPOUND UTILITY PLAN (1 / E02)

SCALE: 3/16" = 1'-0"

0 5'-4" 10'-8" 16'-0'

SCHEDULE 40 CONDUITS FOR NEW ELECTRICAL AND TELEPHONE SERVICES SEE UTILITY AND SITE PLANS. PROVIDE APPROVED PULL BOXES AS REQUIRED, AND COORDINATE INSTALLATION W/ ALL UTILITY COMPANIES FOR INTERFACING AT TERMINATION POINTS. PROVIDE FULL LENGTH PULL ROPES (TYP.).

NOTE: DETAIL AS SHOWN IS FOR SECONDARY ELECTRIC SERVICE. PRIMARY HIGH VOLTAGE SERVICE REQUIRES 4" CONCRETE ENCASEMENT.

TYPICAL BURIED CONDUIT DETAIL (2 / E02)

SCALE: NONE

TYPICAL CONDUIT STUB-UP DETAIL (3 / E02)

SCALE: NONE

verizon
" Because Better Matters "

CHAPPELL ENGINEERING ASSOCIATES, LLC
Civil · Structural · Land Surveying
R.K. EXECUTIVE CENTRE
201 BOSTON POST ROAD WEST, SUITE 101
MARLBOROUGH, MA 01752
(508) 481-7400
www.chappellengineering.com

STATE OF CONNECTICUT
CLEMENT J. SAFE
No. 26376
LICENSED PROFESSIONAL ENGINEER

ENGINEER/LAND SURVEYOR DATE

REVISIONS

NO.	DESCRIPTION	DATE
0	ISSUED FOR REVIEW	5/26/20
1	GENERAL REVISIONS	7/20/20
2	GENERAL REVISIONS	7/30/20
3	ISSUED FOR CONSTRUCTION (FINAL)	8/6/20

PROJECT NAME:

BURLINGTON SOUTHWEST CT

87 MONCE ROAD
BURLINGTON, CT 06013

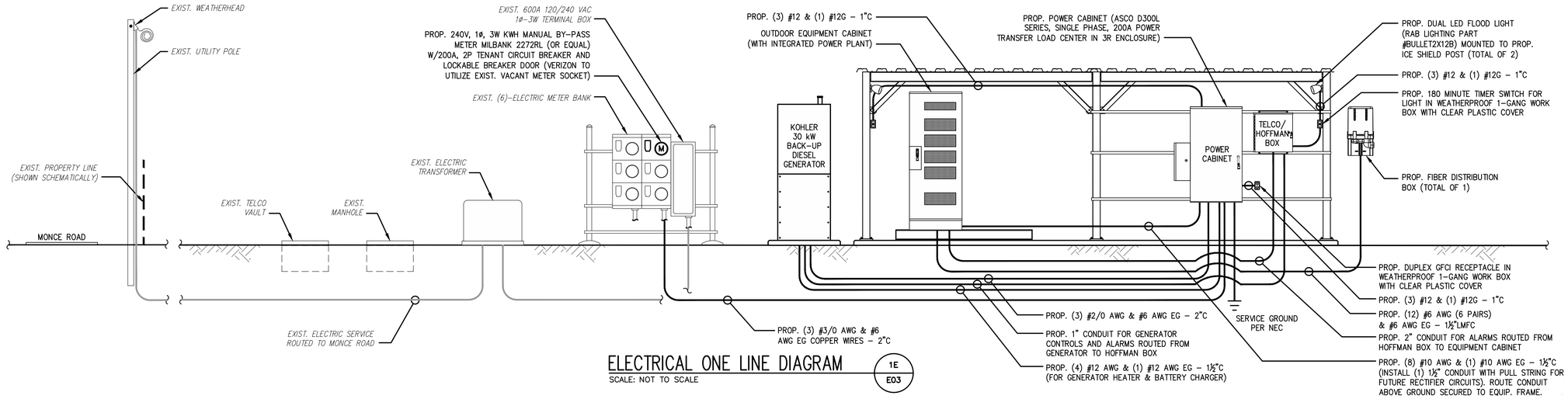
DRAWING TITLE:

EQUIPMENT COMPOUND UTILITY PLAN & DETAILS

DRAWING NO:

E02

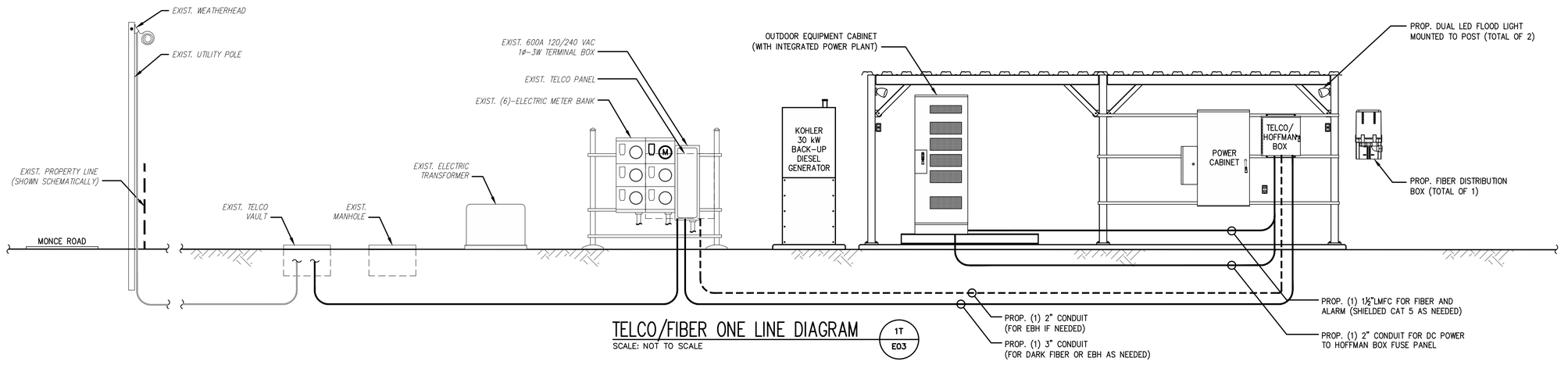
SCALE: 3/16" = 1'-0"	DESIGNED BY: GRS	VZW LOCATION CODE: 479435
	DRAWN BY: NWC	
	CHECKED BY: GRS	
CEA PROJECT NO.: 96210.398	ORIGINAL ISSUE DATE: 5/26/20	



ELECTRICAL ONE LINE DIAGRAM

SCALE: NOT TO SCALE

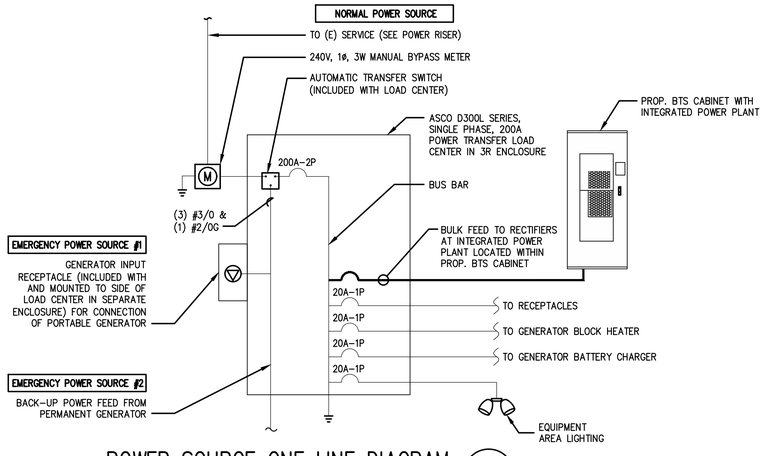
1E / E03



TELCO/FIBER ONE LINE DIAGRAM

SCALE: NOT TO SCALE

1T / E03



POWER SOURCE ONE LINE DIAGRAM

SCALE: NOT TO SCALE

2 / E03

ASCO D300L SERIES, SINGLE PHASE, 200A POWER TRANSFER LOAD CENTER IN 3R ENCLOSURE

ELECTRICAL PANEL SCHEDULE

65,000 A.I.C. NEMA 3R

CKT #	DESCRIPTION	AMP	AMP	DESCRIPTION	CKT #
1	RECTIFIER #1	30	30	FUTURE RECTIFIER	2
3					4
5	RECTIFIER #2	30	30	FUTURE RECTIFIER	6
7					8
9	RECTIFIER #3	30	20	PAD LIGHTING	10
11			–	BLANK	12
13	RECTIFIER #4	30	–	BLANK	14
15			–	BLANK	16
17	GFCI RECEPTACLE/LIGHT	20	–	BLANK	18
19	GENERATOR BLOCK HEATER	20	–	BLANK	20
21	GENERATOR BATTERY CHARGER	20	–	BLANK	22
23	BLANK	–	–	BLANK	24
25	BLANK	–	–	BLANK	26
27	BLANK	–	–	BLANK	28
29	BLANK	–	–	BLANK	30

ELECTRICAL PANEL SCHEDULE

SCALE: NTS

3 / E03

ONE-LINE DIAGRAM NOTES:

1) PROVIDE WEATHER TIGHT SEAL CONNECTORS ON ALL CONNECTIONS INSIDE AND OUT.

2) COORDINATE ANY FURTHER MISCELLANEOUS WIRING AND CONDUIT REQUIREMENTS WITH VERIZON WIRELESS AND ELECTRIC COMPANY.

3) ALL CONDUIT ROUTING SHOWN ON THESE DIAGRAMS IS SCHEMATIC IN NATURE AND INTENDED TO CONVEY GENERAL INTENT ONLY.

4) ALL PROPOSED UTILITY DESIGN ELEMENTS SHOWN ARE SUBJECT TO CHANGE BASED ON FINAL DESIGN TO BE PROVIDED BY UTILITY PROVIDERS AND VERIZON WIRELESS. CONTRACTOR SHALL OBTAIN A COPY OF THE FINAL UTILITY DESIGN BY UTILITY COMPANY PRIOR TO COMMENCEMENT OF WORK.

UTILITY CONTACTS

ELECTRICAL: EVERSOURCE ENERGY
247 STATION DRIVE, SE 210
WESTWOOD, MA 02090
(781) 441-3610

TELEPHONE: VERIZON
185 FRANKLIN STREET
BOSTON, MA 02107
(800) 941-9900

MAKE ALL CONNECTIONS AS PER UTILITY COMPANY'S REQUIREMENTS.

verizon

" Because Better Matters "

CHAPPELL ENGINEERING ASSOCIATES, LLC
Civil · Structural · Land Surveying
R.K. EXECUTIVE CENTRE
201 BOSTON POST ROAD WEST, SUITE 101
MARLBOROUGH, MA 01752
(508) 481-7400
www.chappellengineering.com

STATE OF CONNECTICUT
CLEMENT J. SAUER
No. 26376
LICENSED PROFESSIONAL ENGINEER

ENGINEER/LAND SURVEYOR DATE

REVISIONS

NO.	DESCRIPTION	DATE
0	ISSUED FOR REVIEW	5/26/20
1	GENERAL REVISIONS	7/20/20
2	GENERAL REVISIONS	7/30/20
3	ISSUED FOR CONSTRUCTION (FINAL)	8/6/20

PROJECT NAME:

BURLINGTON SOUTHWEST CT

87 MONCE ROAD
BURLINGTON, CT 06013

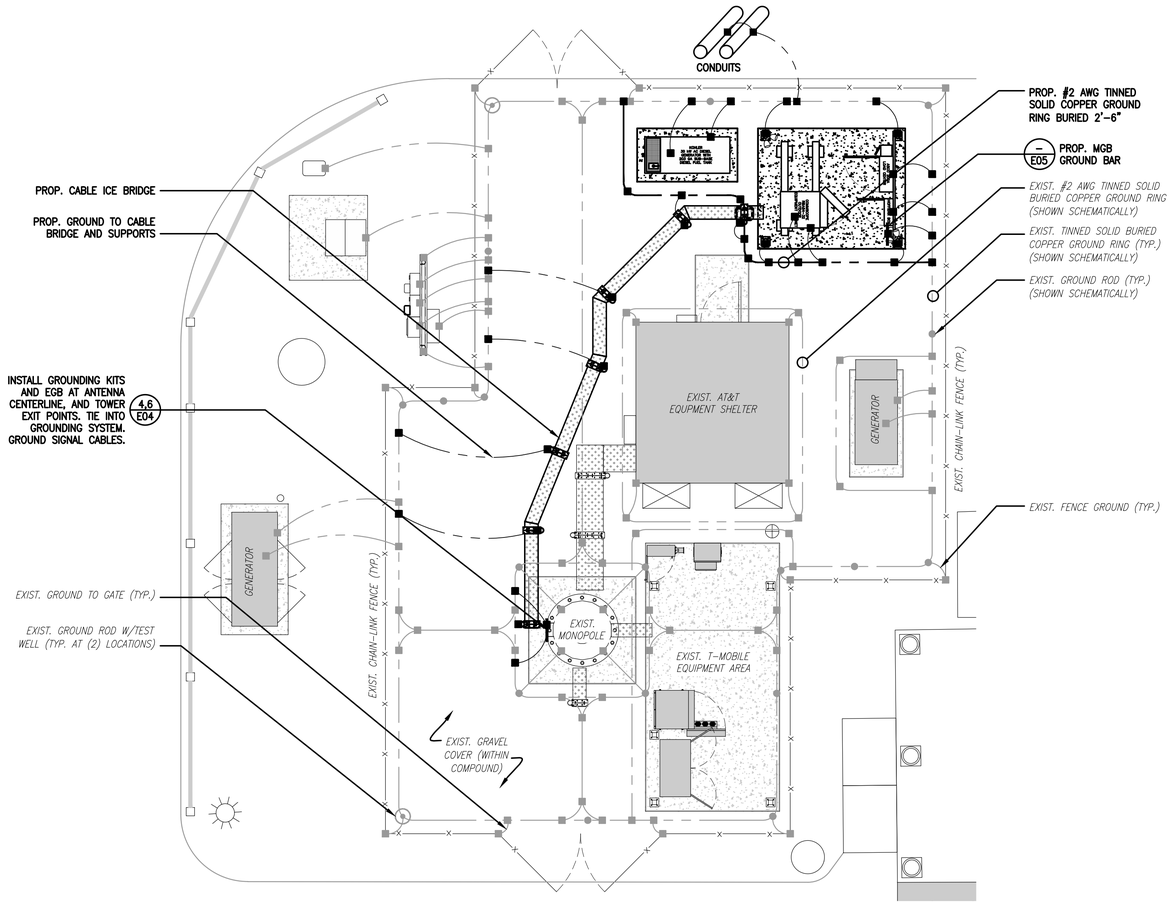
DRAWING TITLE:

ELECTRICAL DIAGRAMS & DETAILS

DRAWING NO:

E03

SCALE:	DESIGNED BY: GRS	VZW LOCATION CODE:
AS SHOWN	DRAWN BY: NWC	479435
	CHECKED BY: GRS	
CEA PROJECT NO.:	ORIGINAL ISSUE DATE:	
96210.398	5/26/20	



SCHEMATIC GROUNDING PLAN

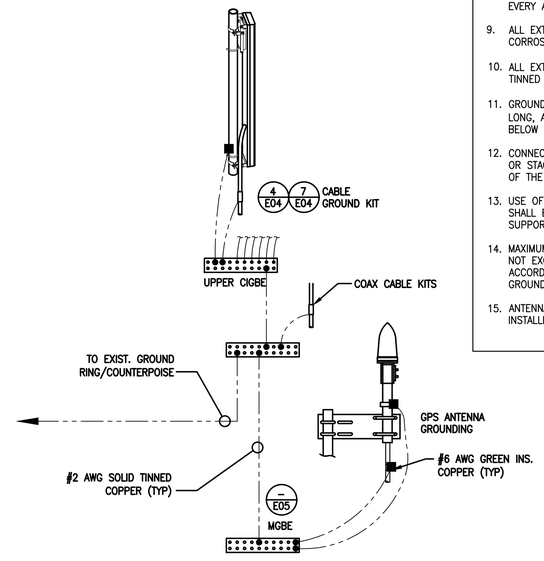
1 E04

SCALE: 3/16" = 1'-0"

0 5'-4" 10'-8" 16'-0"

GROUNDING LEGEND

- EXOTHERMIC GROUND
- GROUND ROD
- TEST WELL
- PROP. #2 AWG EQUIPMENT GROUNDING
- PROP. GROUND HALO
- EXIST. SITE GROUNDING (SHOWN SCHEMATICALLY)



ANTENNA GROUNDING RISER DIAGRAM

2 E04

SCALE: NOT TO SCALE

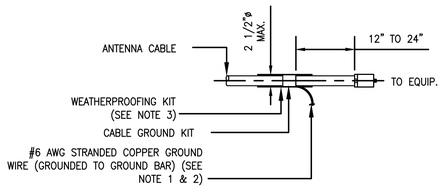
ELECTRICAL AND GROUNDING NOTES:

ELECTRICAL

1. ALL ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS AND ALL APPLICABLE LOCAL CODES.
2. CONDUIT ROUTINGS ARE SCHEMATIC. SUBCONTRACTOR SHALL INSTALL CONDUITS SO THAT ACCESS TO EQUIPMENT IS NOT BLOCKED.
3. SERVICE TO EQUIP. SHALL BE 120/240 VAC, 200 AMP, 1ø, 60 Hz.
4. THE SUBCONTRACTOR IS RESPONSIBLE FOR PROPERLY SEQUENCING GROUNDING AND UNDERGROUND CONDUIT INSTALLATION AS TO PREVENT ANY LOSS OF CONTINUITY IN THE GROUNDING SYSTEM OR DAMAGE TO THE CONDUIT.

GROUNDING

5. COMPRESSION GROUND CONNECTIONS MAY BE REPLACED BY EXOTHERMIC (CADWELD) CONNECTIONS.
6. ALL GROUND CONNECTIONS BELOW GRADE SHALL BE EXOTHERMIC (CADWELD).
7. ALL GROUND CONNECTIONS ABOVE GRADE (INTERIOR & EXTERIOR) SHALL BE FORMED USING HIGH PRESS CRIMPS.
8. ALL EXOTHERMIC CONNECTIONS TO THE GROUND RODS SHALL START AT THE TOP & HAVE A VERTICAL SEPARATION OF 6" FOR EVERY ADDITIONAL CONNECTION.
9. ALL EXTERIOR GROUND CONNECTIONS SHALL BE COATED WITH A CORROSION RESISTANT MATERIAL.
10. ALL EXTERIOR GROUND CONDUCTORS SHALL BE #2 AWG SOLID TINNED COPPER UNLESS OTHERWISE INDICATED.
11. GROUND RODS SHALL BE COPPER CLAD STEEL, 5/8"ø 10-FT. LONG, AND SHALL BE DRIVEN VERTICALLY WITH THEIR TOPS 48" BELOW FINAL GRADE.
12. CONNECTIONS TO THE GROUND BUS SHALL NOT BE DOUBLED UP OR STACKED. BACK TO BACK CONNECTIONS ON OPPOSITE SIDES OF THE GROUND BUS ARE PERMITTED.
13. USE OF 90° BENDS IN THE PROTECTION GROUNDING CONDUCTORS SHALL BE AVOIDED WHEN 45° BENDS CAN BE ADEQUATELY SUPPORTED.
14. MAXIMUM RESISTANCE OF THE COMPLETED GROUND SYSTEM SHALL NOT EXCEED 5 OHMS. TESTING SHALL BE PERFORMED IN ACCORDANCE WITH PROJECT SPECIFICATION FOR FACILITY GROUNDING, USING FALL OF POTENTIAL METHOD.
15. ANTENNA GROUND KITS SHALL BE FURNISHED BY VERIZON AND INSTALLED BY CONTRACTOR.



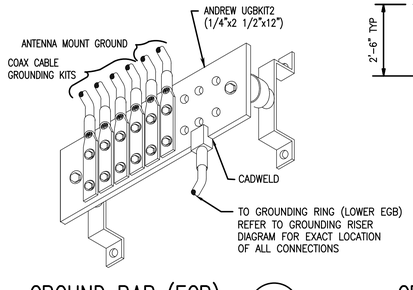
CONNECTION OF CABLE GROUND KIT TO ANTENNA CABLE

NOTES:

1. DO NOT INSTALL CABLE GROUND KIT AT A BEND AND ALWAYS DIRECT GROUND WIRE DOWN TO GROUND BAR.
2. GROUNDING KIT SHALL BE TYPE AND PART NUMBER AS SUPPLIED OR RECOMMENDED BY CABLE MANUFACTURER.
3. WEATHER PROOFING SHALL BE TWO-PART TAPE SUPPLIED WITH KIT. COLD SHRINK SHALL NOT BE USED.

DETAIL 3 E04

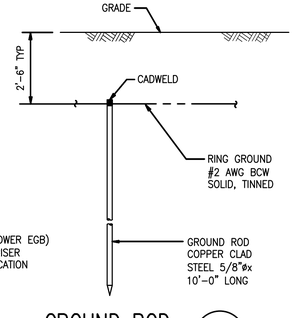
SCALE: NOT TO SCALE



GROUND BAR (EGB)

4 E04

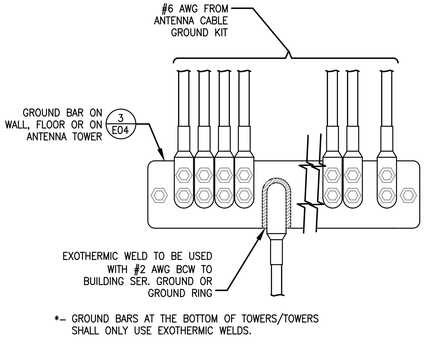
SCALE: NOT TO SCALE



GROUND ROD

5 E04

SCALE: NOT TO SCALE

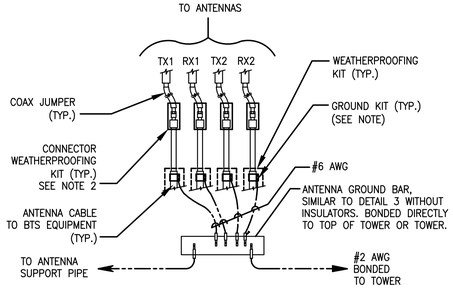


*- GROUND BARS AT THE BOTTOM OF TOWERS/TOWERS SHALL ONLY USE EXOTHERMIC WELDS.

INSTALLATION OF GROUND WIRE TO GROUND BAR

DETAIL 6 E04

SCALE: NOT TO SCALE



CONNECTION OF GROUND WIRE TO GROUNDING BAR, TOWER

DETAIL 7 E04

SCALE: NOT TO SCALE

verizon
" Because Better Matters "

CHAPPELL ENGINEERING ASSOCIATES, LLC
Civil · Structural · Land Surveying
R.K. EXECUTIVE CENTRE
201 BOSTON POST ROAD WEST, SUITE 101
MARLBOROUGH, MA 01752
(508) 481-7400
www.chappellengineering.com

STATE OF CONNECTICUT
CLEMENT J. SAJE
No. 26376
LICENSED PROFESSIONAL ENGINEER

ENGINEER/LAND SURVEYOR DATE

REVISIONS

NO.	DESCRIPTION	DATE
0	ISSUED FOR REVIEW	5/26/20
1	GENERAL REVISIONS	7/20/20
2	GENERAL REVISIONS	7/30/20
3	ISSUED FOR CONSTRUCTION (FINAL)	8/6/20

PROJECT NAME:

BURLINGTON SOUTHWEST CT

87 MONCE ROAD
BURLINGTON, CT 06013

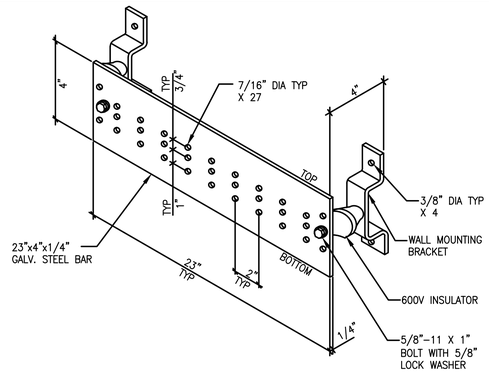
DRAWING TITLE:

SCHEMATIC GROUNDING PLAN & DETAILS

DRAWING NO:

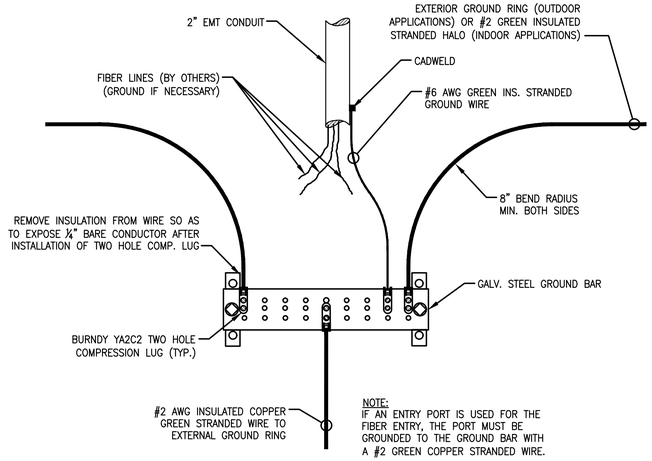
E04

SCALE:	DESIGNED BY: GRS	VZW LOCATION CODE:
AS SHOWN	DRAWN BY: NWC	479435
	CHECKED BY: GRS	
CEA PROJECT NO.:	ORIGINAL ISSUE DATE:	
96210.398	5/26/20	

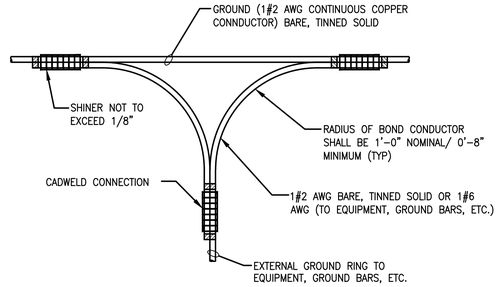


1. SURFACE PREPERATION: ALL CONNECTIONS MADE TO BARE METAL. ALL PAINTED SURFACES SHALL BE MADE BARE TO ENSURE PROPER CONTACT. NO WASHERS SHALL BE ALLOWED BETWEEN THE ITEMS BEING GROUNDED. ALL CONNECTIONS SHALL HAVE AN ANTI-OXIDANT AGENT APPLIED PRIOR TO INSTALLATION.
2. BUSS PREPERATION: ALL GALV. STEEL BUSSES SHALL BE CLEANED, POLISHED AND AN ANTI-OXIDANT APPLIED. NO FINGERPRINTS OR DISCOLORED STEEL WILL BE PERMITTED.
3. TERMINATIONS: ALL EQUIPMENT TERMINATIONS SHALL BE MADE WITH A BURNDY TWO HOLE COMPRESSION LUG WITH 10-24x3/4" LONG S.S. SCREWS, NUTS AND LOCK WASHERS. ALL BUSS TERMINATIONS SHALL BE MADE WITH A CAD-WELD OR BURNDY YC2C2 2 HOLE COMPRESSION LUG OR EQUAL. ALL INTERIOR HALO ATTACHMENTS SHALL BE MADE USING A BURNDY YC2C2 COMPRESSION LUG.

TYP. INTERIOR & EXTERIOR GROUND BAR
SCALE: N.T.S.

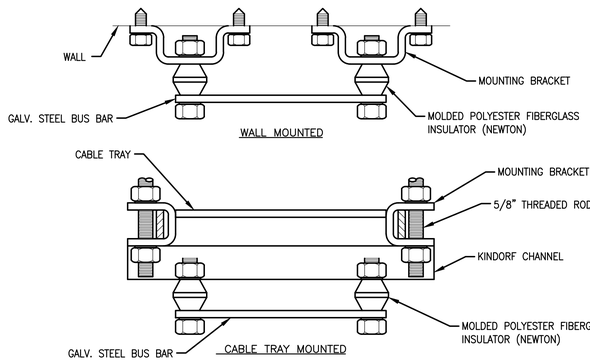


INTERIOR GROUNDING AT TELCO ENTRY
SCALE: N.T.S.

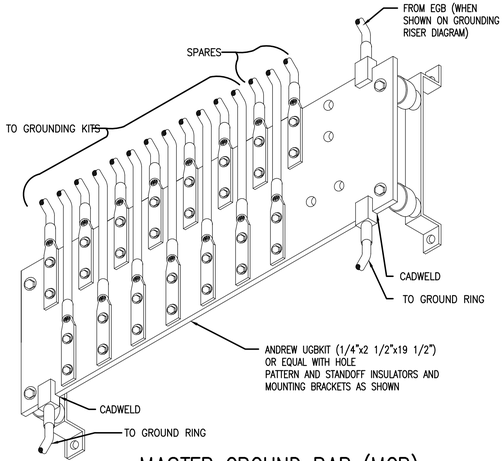


NOTE: ALL CONNECTION TO GROUND SHALL BE NON-DIRECTIONAL

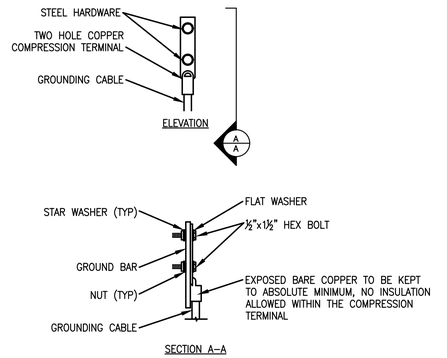
NON-DIRECTIONAL SPLICE
SCALE: N.T.S.



BUS BAR MOUNTING
SCALE: N.T.S.

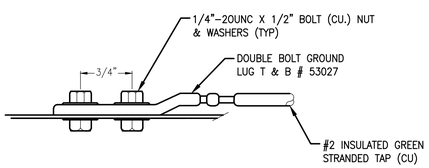


MASTER GROUND BAR (MGB)
SCALE: NOT TO SCALE

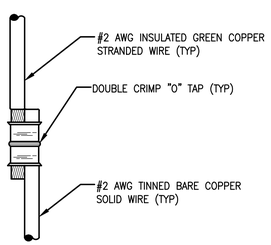


NOTE:
1. "DOUBLING UP" OR "STACKING " OF CONNECTION IS NOT PERMITTED.
2. OXIDE INHIBITING COMPOUND TO BE USED AT ALL LOCATIONS.

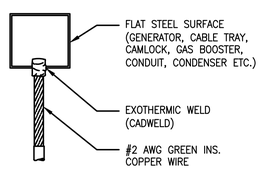
TYPICAL GROUND BAR CONNECTION DETAIL
SCALE: N.T.S.



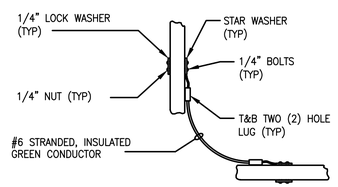
TYPICAL EQUIPMENT GROUND CONNECTION
SCALE: N.T.S.



TYPICAL GROUND CONNECTION SPLICE DETAIL
SCALE: N.T.S.



TYP. CADWELD #2 GREEN TO FLAT STEEL SURFACE
SCALE: NOT TO SCALE



CABLE TRAY GROUNDING
SCALE: N.T.S.

verizon
" Because Better Matters "

CHAPPELL ENGINEERING ASSOCIATES, LLC
Civil · Structural · Land Surveying
R.K. EXECUTIVE CENTRE
201 BOSTON POST ROAD WEST, SUITE 101
MARLBOROUGH, MA 01752
(508) 481-7400
www.chappellengineering.com

STATE OF CONNECTICUT
CLEMENT J. SAIA
No. 26376
LICENSED PROFESSIONAL ENGINEER
ENGINEER/LAND SURVEYOR DATE

REVISIONS

NO.	DESCRIPTION	DATE
0	ISSUED FOR REVIEW	5/26/20
1	GENERAL REVISIONS	7/20/20
2	GENERAL REVISIONS	7/30/20
3	ISSUED FOR CONSTRUCTION (FINAL)	8/6/20

PROJECT NAME:
BURLINGTON SOUTHWEST CT
87 MONCE ROAD
BURLINGTON, CT 06013

DRAWING TITLE:
GROUNDING DETAILS

DRAWING NO:
E05

SCALE:	DESIGNED BY: GRS	VZW LOCATION CODE:
AS SHOWN	DRAWN BY: NWC	479435
	CHECKED BY: GRS	
CEA PROJECT NO.:	ORIGINAL ISSUE DATE:	
96210.398	5/26/20	

ATTACHMENT 4

Model: 30REOZK

KOHLER. Power Systems

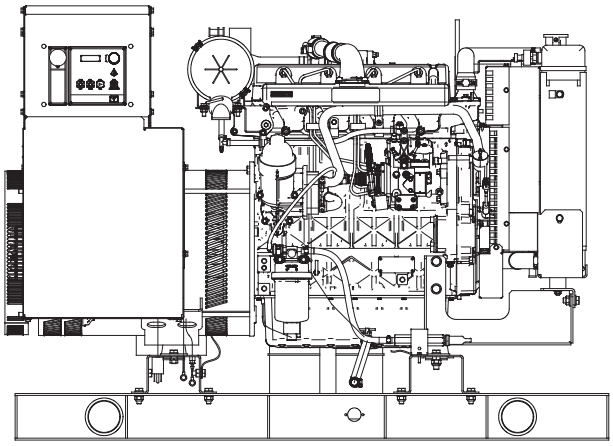
208–600 V Diesel

ISO 9001 KOHLER POWER SYSTEMS NATIONALLY REGISTERED

Tier 4i EPA-Certified for Stationary Emergency Applications

Ratings Range

		60 Hz
Standby:	**kW**	23–31
	kVA	23–39
Prime:	**kW**	21–28
	kVA	21–35



Generator Set Ratings

				130°C Rise Standby Rating		105°C Rise Prime Rating	
Alternator	**Voltage**	**Ph**	**Hz**	**kW/kVA**	**Amps**	**kW/kVA**	**Amps**
4D5.6	120/208	3	60	29/36	101	26/33	90
	127/220	3	60	29/36	95	26/33	85
	120/240	3	60	29/36	87	26/33	78
	120/240	1	60	23/23	96	21/21	88
	139/240	3	60	29/36	87	26/33	78
	220/380	3	60	27/34	51	25/31	47
	277/480	3	60	29/36	44	26/33	39
	347/600	3	60	29/36	35	26/33	31
4D8.3	120/208	3	60	31/39	108	28/35	97
	127/220	3	60	31/39	102	28/35	92
	120/240	3	60	31/39	93	28/35	84
	120/240	1	60	29/29	121	26/26	108
	139/240	3	60	31/39	93	28/35	84
	220/380	3	60	31/39	59	28/35	53
	277/480	3	60	31/39	47	28/35	42
	347/600	3	60	31/39	37	28/35	34
4E5.6	120/240	1	60	29/29	121	26/26	108
4E8.3	120/240	1	60	31/31	129	27/27	113

Standard Features

- Kohler Co. provides one-source responsibility for the generating system and accessories.
- The generator set and its components are prototype-tested, factory-built, and production-tested.
- The 60 Hz generator set offers a UL 2200 listing.
- The generator set accepts rated load in one step.
- The 60 Hz generator set meets NFPA 110, Level 1, when equipped with the necessary accessories and installed per NFPA standards.
- The generator set engine is certified to meet the Environmental Protection Agency (EPA) emergency stationary emissions requirements.
- A one-year limited warranty covers all generator set systems and components. Two- and five-year extended limited warranties are also available.
- Alternator features:
  - Kohler's wound field excitation system with its unique PowerBoost™ design delivers great voltage response and short-circuit capability.
  - The brushless, rotating-field alternator has broadrange reconnectability.
- Other features:
  - Kohler designed controllers for guaranteed system integration and remote communication. See Controllers on page 3.
  - The low coolant level shutdown prevents overheating (standard on radiator models only).
  - Integral vibration isolation eliminates the need for under-unit vibration spring isolators.

RATINGS: All three-phase units are rated at 0.8 power factor. All single-phase units are rated at 1.0 power factor. *Standby Ratings:* Standby rating is applicable to varying loads for the duration of a power outage. There is no overload capability for this rating. *Prime Power Ratings:* At varying load, the number of generator set operating hours is unlimited. A 10% overload capacity is available for one hour in twelve. Ratings are in accordance with ISO-8528-1 and ISO-3046-1. For limited running time and continuous ratings, consult the factory. Obtain the technical information bulletin (TIB-101) for ratings guidelines, complete ratings definitions, and site condition derates. The generator set manufacturer reserves the right to change the design or specifications without notice and without any obligation or liability whatsoever.

Alternator Specifications

Specifications	Alternator
Manufacturer	Kohler
Type	4-Pole, Rotating-Field
Exciter type	Brushless, Wound Field
Leads: quantity, type	12, Reconnectable 4, 110–120/220–240
Voltage regulator	Solid State, Volts/Hz
Insulation:	NEMA MG1
Material	Class H
Temperature rise	130°C, Standby
Bearing: quantity, type	1, Sealed
Coupling	Flexible Disc
Amortisseur windings	Full
Voltage regulation, no-load to full-load	Controller Dependent
One-step load acceptance	100% of Rating
Unbalanced load capability	100% of Rated Standby Current

- NEMA MG1, IEEE, and ANSI standards compliance for temperature rise and motor starting.
- Sustained short-circuit current of up to 300% of the rated current for up to 10 seconds.
- Sustained short-circuit current enabling downstream circuit breakers to trip without collapsing the alternator field.
- Self-ventilated and dripproof construction.
- Windings are vacuum-impregnated with epoxy varnish for dependability and long life.
- Superior voltage waveform from a two-thirds pitch stator and skewed rotor.

Specifications		Alternator
Peak motor starting kVA:		(35% dip for voltages below)
480 V	4D5.6 (12 lead)	75
480 V	4D8.3 (12 lead)	120
240 V	4E5.6 (4 lead)	44
240 V	4E8.3 (4 lead)	74

Application Data

Engine

Engine Specifications	
Manufacturer	Kohler Diesel
Engine model	KDI2504TM
Engine type	4-Cycle, Turbocharged
Cylinder arrangement	4 Inline
Displacement, L (cu. in.)	2.5 (158)
Bore and stroke, mm (in.)	88 x 102 (3.46 x 4.02)
Compression ratio	18:1
Piston speed, m/min. (ft./min.)	367 (1206)
Main bearings: quantity, type	5, Sleeve
Rated rpm	1800
Max. power at rated rpm, kWm (BHP)	36.4 (48.8)
Cylinder head material	Cast Iron
Crankshaft material	Cast Iron
Valve material:	
Intake	Stainless Steel
Exhaust	Stainless Steel
Governor: type, make/model	Stanadyne/Mechanical (or Electronic *)
Frequency regulation, no-load to full-load	Droop, 5% (or Isochronous *)
Frequency regulation, steady state	±0.5%
Frequency	Fixed
Air cleaner type, all models	Dry

* Requires available electronic governor option

Exhaust

Exhaust System	
Exhaust manifold type	Dry
Exhaust flow at rated kW, m^3/min. (cfm)	7.8 (275)
Exhaust temperature at rated kW, dry exhaust, °C (°F)	543 (1009)
Maximum allowable back pressure, kPa (in. Hg)	8 (2.4)
Exhaust outlet size at engine hookup, mm (in.)	76.5 (3.0)

Engine Electrical

Engine Electrical System	
Battery charging alternator:	
Ground (negative/positive)	Negative
Volts (DC)	12
Ampere rating	50
Starter motor rated voltage (DC)	12
Battery, recommended cold cranking amps (CCA):	
Quantity, CCA rating	One, 650
Battery voltage (DC)	12

Fuel

Fuel System	
Fuel supply line, min. ID, mm (in.)	8.0 (0.31)
Fuel return line, min. ID, mm (in.)	6.0 (0.25)
Max. lift, engine-driven fuel pump, m (ft.)	3.0 (10.0)
Max. fuel flow, Lph (gph)	46 (12.2)
Max. return line restriction, kPa (in. Hg)	20 (5.9)
Fuel filter	
Prefilter	74 Microns
Primary/Water Separator	5 Microns @ 98% Efficiency
Recommended fuel	#2 Ultra Low Sulfur Diesel

Lubrication

Lubricating System	
Type	Full Pressure
Oil pan capacity, L (qt.)	10.7 (11.3)
Oil pan capacity with filter, L (qt.)	11 (11.6)
Oil filter: quantity, type	1, Cartridge
Oil cooler	—

Application Data

Cooling

Radiator System	
Ambient temperature, °C (°F) *	50 (122)
Engine jacket water capacity, L (gal.)	4.4 (1.6)
Radiator system capacity, including engine, L (gal.)	11.4 (3)
Engine jacket water flow, Lpm (gpm)	59.0 (15.6)
Heat rejected to cooling water at rated kW, dry exhaust, kW (Btu/min.)	27.0 (1536)
Water pump type	Centrifugal
Fan diameter, including blades, mm (in.)	406 (16.0)
Fan, kWm (HP)	0.6 (0.8)
Max. restriction of cooling air, intake and discharge side of radiator, kPa (in. H_2O)	0.125 (0.5)

* Enclosure reduces ambient temperature capability by 5°C (9°F).

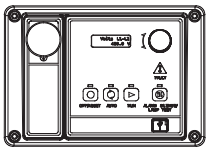
Operation Requirements

Air Requirements	
Radiator-cooled cooling air, m^3/min. (scfm) †	53.8 (1900)
Combustion air, m^3/min. (cfm)	2.7 (96.9)
Heat rejected to ambient air:	
Engine, kW (Btu/min.)	10.3 (587)
Alternator, kW (Btu/min.)	6.7 (381)
Max. air intake restriction, kPa (in. Hg)	3.0 (0.89)

† Air density = 1.20 kg/m^3 (0.075 lbm/ft^3)

Fuel Consumption		
Diesel, Lph (gph) at % load	**Standby Rating**	
100%	9.8	(2.6)
75%	7.9	(2.1)
50%	5.7	(1.5)
25%	3.4	(0.9)
Diesel, Lph (gph) at % load	**Prime Rating**	
100%	9.1	(2.4)
75%	7.2	(1.9)
50%	5.3	(1.4)
25%	3.0	(0.8)

Controller



Decision-Maker® 3000 Controller
Provides advanced control, system monitoring, and system diagnostics for optimum performance and compatibility.

- Digital display and menu control provide easy local data access
- Measurements are selectable in metric or English units
- Remote communication thru a PC via network or serial configuration
- Controller supports Modbus® protocol
- Integrated hybrid voltage regulator with ±0.5% regulation
- Built-in alternator thermal overload protection
- NFPA 110 Level 1 capability

Refer to G6-100 for additional controller features and accessories.

Modbus® is a registered trademark of Schneider Electric.

KOHLER CO., Kohler, Wisconsin 53044 USA
Phone 920-457-4441, Fax 920-459-1646
For the nearest sales and service outlet in the
US and Canada, phone 1-800-544-2444
KOHLERPower.com

Kohler Power Systems
Asia Pacific Headquarters
7 Jurong Pier Road
Singapore 619159
Phone (65) 6264-6422, Fax (65) 6264-6455

Additional Standard Features

- Air Cleaner, Heavy Duty
- Alternator Protection
- Battery Rack and Cables
- Closed Crankcase Ventilation
- Oil Drain and Coolant Drain with Hose Barb
- Oil Drain Extension (with enclosure models only)
- Operation and Installation Literature
- Stainless Steel Fasteners on Enclosure (with enclosure models only)
- Rodent Guards
- Stainless Steel Fasteners on Enclosures

Available Options

Approvals and Listings

❑ CSA Approval
❑ UL2200 Listing

Enclosed Unit

❑ Sound Enclosure (with enclosed critical silencer)
❑ Weather Enclosure (with enclosed critical silencer)
❑ Stainless Steel Latches and Hinges

Open Unit

❑ Exhaust Silencer, Critical (kit: PA-352663)
❑ Flexible Exhaust Connector, Stainless Steel

Fuel System

❑ Flexible Fuel Lines
❑ Fuel Pressure Gauge
❑ Subbase Fuel Tanks

Controller

❑ Common Failure Relay
❑ Input/Output Module
❑ Manual Speed Adjust (requires Electronic Governor)
❑ Remote Annunciator Panel
❑ Remote Emergency Stop
❑ Run Relay

Cooling System

❑ Block Heater (700 W, 110–120 V)
Recommended for ambient temperatures below 0°C (32°F).
❑ Radiator Duct Flange

Electrical System

❑ Alternator Strip Heater
❑ Battery
❑ Battery Charger, Equalize/Float Type
❑ Battery Heater
❑ Electronic Governor
❑ Line Circuit Breaker (NEMA type 1 enclosure)
❑ Line Circuit Breaker with Shunt Trip (NEMA type 1 enclosure)

Miscellaneous

❑ Air Cleaner Restriction Indicator
❑ Engine Fluids Added
❑ Rated Power Factor Testing

Literature

❑ General Maintenance
❑ NFPA 110
❑ Overhaul
❑ Production

Warranty

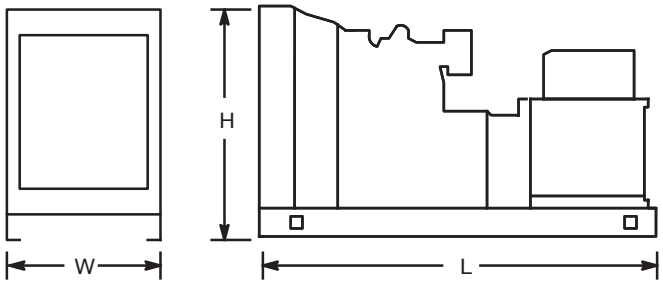
❑ 2-Year Basic Limited
❑ 5-Year Basic Limited
❑ 5-Year Comprehensive Limited

Other Options

❑ _____
❑ _____
❑ _____
❑ _____
❑ _____

Dimensions and Weights

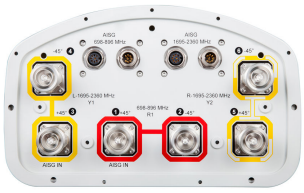
Overall Size, L x W x H, mm (in.):
Open Unit Skid: 1400 x 813 x 1024 (55.1 x 32.0 x 40.3)
Enclosure Skid: 1938 x 813 x 1174 (76.5 x 32.0 x 47.0)
Weight (radiator model), wet, kg (lb.): 512 (1130)



NOTE: This drawing is provided for reference only and should not be used for planning installation. Contact your local distributor for more detailed information.

DISTRIBUTED BY:

NHH-65B-R2B



6-port sector antenna, 2x 698–896 and 4x 1695–2360 MHz, 65° HPBW, 2x RET. Both high bands share the same electrical tilt.

- Interleaved dipole technology providing for attractive, low wind load mechanical package
- Internal SBT on low and high band allow remote RET control from the radio over the RF jumper cable
- Separate RS-485 RET input/output for low and high band
- One RET for low band and one RET for both high bands to ensure same tilt level for 4x Rx or 4x MIMO

General Specifications

Antenna Type	Sector
Band	Multiband
Color	Light gray
Effective Projective Area (EPA), frontal	0.26 m^2 | 2.799 ft^2
Effective Projective Area (EPA), lateral	0.22 m^2 | 2.368 ft^2
Grounding Type	RF connector body grounded to reflector and mounting bracket
Performance Note	Outdoor usage | Wind loading figures are validated by wind tunnel measurements described in white paper WP-112534-EN
Radome Material	Fiberglass, UV resistant
Radiator Material	Low loss circuit board
Reflector Material	Aluminum
RF Connector Interface	7-16 DIN Female
RF Connector Location	Bottom
RF Connector Quantity, high band	4
RF Connector Quantity, low band	2
RF Connector Quantity, total	6

Remote Electrical Tilt (RET) Information, General

RET Interface	8-pin DIN Female | 8-pin DIN Male
RET Interface, quantity	2 female | 2 male

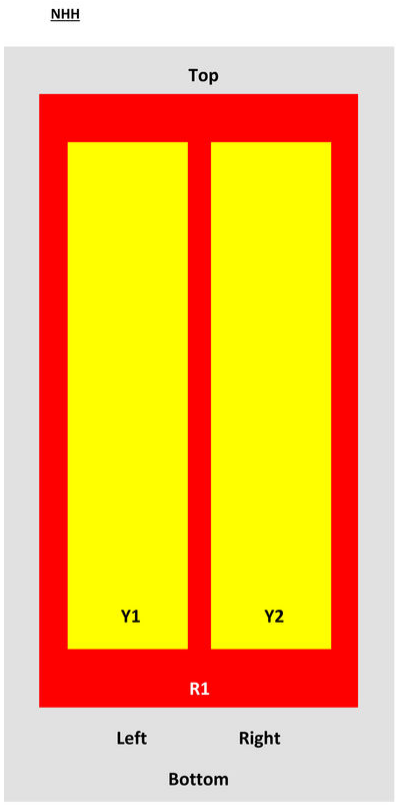
Dimensions

Width	301 mm | 11.85 in
Length	1828 mm | 71.969 in

NHH-65B-R2B

Depth	180 mm | 7.087 in

Array Layout



Array	Freq (MHz)	Conns	RET (SRET)	AISG RET UID
R1	698-896	1-2	1	ANxxxxxxxxxxxxxxx1
Y1	1695-2360	3-4	2	ANxxxxxxxxxxxxxxx2
Y2	1695-2360	5-6		

View from the front of the antenna

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

Electrical Specifications

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

Remote Electrical Tilt (RET) Information, Electrical

Protocol	3GPP/AISG 2.0 (Single RET)
Power Consumption, idle state, maximum	2 W

NHH-65B-R2B

Power Consumption, normal conditions, maximum	13 W
Input Voltage	10–30 Vdc
Internal Bias Tee	Port 1 | Port 3
Internal RET	High band (1) | Low band (1)

Electrical Specifications

Frequency Band, MHz	**698–806**	**806–896**	**1695–1880**	**1850–1990**	**1920–2200**	**2300–2360**
Gain, dBi	14.9	15	17.7	17.9	18.4	18.7
Beamwidth, Horizontal, degrees	65	60	71	69	64	57
Beamwidth, Vertical, degrees	12.4	11.2	5.7	5.2	4.9	4.6
Beam Tilt, degrees	0–14	0–14	0–7	0–7	0–7	0–7
USLS (First Lobe), dB	13	14	18	18	19	18
Front-to-Back Ratio at 180°, dB	30	29	31	30	29	31
Isolation, Cross Polarization, dB	25	25	25	25	25	25
Isolation, Inter-band, dB	30	30	30	30	30	30
VSWR | Return loss, dB	1.5 | 14.0	1.5 | 14.0	1.5 | 14.0	1.5 | 14.0	1.5 | 14.0	1.5 | 14.0
PIM, 3rd Order, 2 x 20 W, dBc	-153	-153	-153	-153	-153	-153
Input Power per Port at 50° C, maximum, watts	300	300	300	300	300	300

Electrical Specifications, BASTA

Frequency Band, MHz	**698–806**	**806–896**	**1695–1880**	**1850–1990**	**1920–2200**	**2300–2360**
Gain by all Beam Tilts, average, dBi	14.5	14.5	17.3	17.7	18.1	18.5
Gain by all Beam Tilts Tolerance, dB	±0.6	±1.1	±0.4	±0.4	±0.5	±0.3
Gain by Beam Tilt, average, dBi	0 ° | 14.4 7 ° | 14.6 14 ° | 14.3	0 ° | 14.7 7 ° | 14.7 14 ° | 14.1	0 ° | 17.2 4 ° | 17.3 7 ° | 17.3	0 ° | 17.6 4 ° | 17.7 7 ° | 17.7	0 ° | 18.0 4 ° | 18.2 7 ° | 18.1	0 ° | 18.3 4 ° | 18.5 7 ° | 18.6
Beamwidth, Horizontal Tolerance, degrees	±2	±2.1	±3	±4.1	±6.5	±2.9
Beamwidth, Vertical Tolerance, degrees	±0.7	±0.7	±0.3	±0.2	±0.3	±0.2
USLS, beampeak to 20° above beampeak, dB	13	14	16	16	17	15
Front-to-Back Total Power at 180° ± 30°, dB	23	22	27	27	25	25
CPR at Boresight, dB	22	21	23	23	22	19

NHH-65B-R2B

CPR at Sector, dB	10	7	16	13	11	4

Mechanical Specifications

Wind Loading at Velocity, frontal	278.0 N @ 150 km/h | 63.6 lbf @ 150 km/h
Wind Loading at Velocity, lateral	230.0 N @ 150 km/h | 51.7 lbf @ 150 km/h
Wind Loading at Velocity, maximum	120.7 lbf @ 150 km/h | 537.0 N @ 150 km/h
Wind Speed, maximum	241 km/h | 149.75 mph

Packaging and Weights

Width, packed	409 mm | 16.102 in
Depth, packed	299 mm | 11.772 in
Length, packed	1952 mm | 76.85 in
Net Weight, without mounting kit	19.8 kg | 43.651 lb
Weight, gross	32.3 kg | 71.209 lb

Regulatory Compliance/Certifications

Agency	Classification
CHINA-ROHS	Below maximum concentration value
ISO 9001:2015	Designed, manufactured and/or distributed under this quality management system
REACH-SVHC	Compliant as per SVHC revision on www.commscope.com/ProductCompliance
ROHS	Compliant

Included Products

BSAMNT-3	—	Wide Profile Antenna Downtilt Mounting Kit for 2.4 - 4.5 in (60 - 115 mm) OD round members. Kit contains one scissor top bracket set and one bottom bracket set.

* Footnotes

Performance Note	Severe environmental conditions may degrade optimum performance

NHHSS-65B-R2B

CommScope—Proprietary and Confidential. Preliminary specifications are for illustrative purposes only and will be updated prior to publication.

10-port sector antenna, 2x 698–896, 4x 1695–2200 and 4x 3100-4200 MHz, 65° HPBW, 2x RETs and 2x SBTs. Both high bands share the same electrical tilt.

- Perfect antenna to add 3.5GHz CBRS to macro sites
- 15dBi max CBRS gain to align with FCC max EIRP limitations
- Low band and mid band performance mirrors the performance of existing NHH hex port antennas
- Narrow beamwidth capacity antenna for higher level of densification and enhanced data throughput
- Internal SBT on low and high band allow remote RET control from the radio over the RF jumper cable
- Separate RS-485 RET input/output for low and high band
- One LB RET and one HB RET. Both high bands are controlled by one RET to ensure same tilt level for 4x Rx or 4x MIMO
- Interleaved dipole technology providing for attractive, low wind load mechanical package

Electrical Specifications

Frequency Band, MHz	**698–806**	**806–896**	**1695–1880**	**1850–1990**	**1920–2200**	**3100–3300**	**3300–3800**	**3800–4200**
Gain, dBi	14.7	14.7	17.1	17.6	18.4	14.4	14.4	14.5
Beamwidth, Horizontal, degrees	66	61	72	67	64	58	65	60
Beamwidth, Vertical, degrees	12.4	11.1	5.6	5.2	5.0	11.3	10.0	9.0
Beam Tilt, degrees	0–14	0–14	0–7	0–7	0–7	5	5	5
USLS (First Lobe), dB	14	13	15	15	15	15	15	15
Front-to-Back Ratio at 180°, dB	27	29	28	28	28	25	25	25
Isolation, Cross Polarization, dB	25	25	25	25	25	25	25	25
Isolation, Inter-band, dB	25	25	25	25	25	30	30	30
VSWR | Return Loss, dB	1.5 | 14.0	1.5 | 14.0	1.5 | 14.0	1.5 | 14.0	1.5 | 14.0	1.5 | 14.0	1.5 | 14.0	1.5 | 14.0
PIM, 3rd Order, 2 x 20 W, dBc	-153	-153	-153	-153	-153	-140	-140	-140
Input Power per Port at 50°C, maximum, watts	300	300	300	300	300	100	100	100
Polarization	±45°	±45°	±45°	±45°	±45°	±45°	±45°	±45°
Impedance	50 ohm	50 ohm	50 ohm	50 ohm	50 ohm	50 ohm	50 ohm	50 ohm

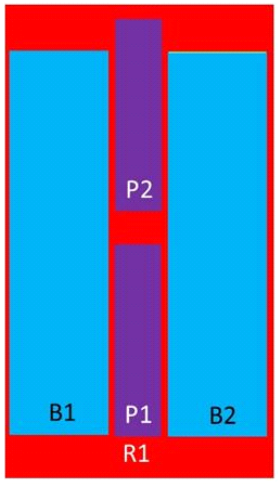
Electrical Specifications, BASTA*

Frequency Band, MHz	**698–806**	**806–896**	**1695–1880**	**1850–1990**	**1920–2200**	**3100–3300**	**3300–3800**	**3800–4200**
Gain by all Beam Tilts, average, dBi	14.3	14.3	16.6	17.4	17.9	14.2	14.2	14.3
Gain by all Beam Tilts Tolerance, dB	±0.6	±1.1	±0.4	±0.4	±0.5	±0.4	±0.4	±0.4
Gain by Beam Tilt, average, dBi	0 ° | 14.4 7 ° | 14.4 14 ° | 14.0	0 ° | 14.4 7 ° | 14.4 14 ° | 13.9	0 ° | 16.6 3 ° | 16.6 7 ° | 16.6	0 ° | 17.4 3 ° | 17.5 7 ° | 17.4	0 ° | 17.9 3 ° | 18.0 7 ° | 17.9			
Beamwidth, Horizontal Tolerance, degrees	±2.2	±3.4	±7.2	±4.6	±6.5	±6.6	±6.6	±6.6
Beamwidth, Vertical Tolerance, degrees	±0.8	±0.7	±0.3	±0.2	±0.3	±0.4	±0.4	±0.4

USLS, beampeak to 20° above beampeak, dB	13	14	14	14	14	14	14	14
Front-to-Back Total Power at 180° ± 30°, dB	23	22	24	26	25	25	25	25
CPR at Boresight, dB	22	21	18	20	20	20	20	20
CPR at Sector, dB	10	6	6	6	5	5	5	5

* CommScope® supports NGMN recommendations on Base Station Antenna Standards (BASTA). To learn more about the benefits of BASTA, download the whitepaper Time to Raise the Bar on BSAs.

Array Layout



Array	Freq (MHz)	Conns	RET (SRET)	AISG RET UID
R1	698-896	1-2	1	ANxxxxxxxxxxxxxxx1
B1	1695-2200	3-4	2	ANxxxxxxxxxxxxxxx2
B2	1695-2200	5-6		
P1	3100-4200	7-8	n/a	n/a
P2	3100-4200	9-10	n/a	n/a

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

General Specifications

Operating Frequency Band	1695 – 2200 MHz | 3100 – 4200 MHz | 698 – 896 MHz
Antenna Type	Sector
Band	Multiband
Performance Note	Outdoor usage | Wind loading figures are validated by wind tunnel measurements described in white paper WP-112534-EN

Mechanical Specifications

RF Connector Quantity, total	10
RF Connector Quantity, low band	2
RF Connector Quantity, high band	8
RF Connector Interface	4.3-10 Female
Color	Light gray
Grounding Type	RF connector inner conductor and body grounded to reflector and mounting bracket

Radiator Material	Aluminum | Low loss circuit board
Radome Material	Fiberglass, UV resistant
Reflector Material	Aluminum
RF Connector Location	Bottom
Wind Loading, frontal	278.0 N @ 150 km/h | 63.6 lbf @ 150 km/h
Wind Loading, lateral	230.0 N @ 150 km/h | 51.7 lbf @ 150 km/h
Wind Loading, maximum	120.7 lbf @ 150 km/h
Effective Projected Area (EPA), frontal	0.26 m^2 | 2.80 ft^2
Effective Projected Area (EPA), lateral	0.22 m^2 | 2.37 ft^2
Wind Speed, maximum	241 km/h | 150 mph

Dimensions

Length	1828.0 mm | 72.0 in
Width	301.0 mm | 11.9 in
Depth	181.0 mm | 7.1 in
Net Weight, without mounting kit	21.8 kg | 48.1 lb

Remote Electrical Tilt (RET) Information

Input Voltage	10–30 Vdc
Internal Bias Tee	Port 1 | Port 3
Internal RET	High band (1) | Low band (1)
Power Consumption, idle state, maximum	1 W
Power Consumption, normal conditions, maximum	10 W
Protocol	3GPP/AISG 2.0 (Single RET)
RET Interface	8-pin DIN Female | 8-pin DIN Male
RET Interface, quantity	2 female | 2 male

Packed Dimensions

Length	1952.0 mm | 76.9 in
Width	409.0 mm | 16.1 in
Depth	299.0 mm | 11.8 in
Shipping Weight	34.3 kg | 75.6 lb

Regulatory Compliance/Certifications

Agency	**Classification**
RoHS 2011/65/EU	Compliant by Exemption
ISO 9001:2015	Designed, manufactured and/or distributed under this quality management system
China RoHS SJ/T 11364-2014	Above Maximum Concentration Value (MCV)

Included Products

BSAMNT-3 — Wide Profile Antenna Downtilt Mounting Kit for 2.4 - 4.5 in (60 - 115 mm) OD round members. Kit contains one scissor top bracket set and one bottom bracket set.

* Footnotes

Performance Note	Severe environmental conditions may degrade optimum performance

SAMSUNG

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

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

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

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

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

Features and Benefits

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

Key Technical Specifications

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

SAMSUNG

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

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

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

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

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

Features and Benefits

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

Key Technical Specifications

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

ATTACHMENT 5

Structural Analysis Report

Structure	**:** 120ft Monopole
InSite Site Name	**:** Burlington
InSite Site Number	**:** CT011
Proposed Carrier	**:** Verizon
Carrier Site Name	**:** Burlington SW CT
Carrier Site Number	**:** N/A
Site Location	**:** 87 Monce Road Burlington, CT 06013 41.739138, -72.907801
Date	**:** May 5, 2020
Max Member Stress Level	**:** 70.4% (Tower) 62.0% (Tower Base Plate) 65.0% (Tower Foundation)
Result	**: Pass**

5/5/2020

Prepared by:
Bennett & Pless, Inc.
B&P Job No.: 20.03.013.014

Table of Contents

Introduction

We have completed our structural analysis of the proposed equipment installation on the foregoing tower to determine its ability to support the new loads proposed by Verizon. The objective of the analysis was to determine if the tower meets the current structural codes and standards with the proposed equipment installation.

Existing Structural Information

The following documents for the existing structure were made available for our structural analysis.

Tower Information	Original Tower Design by Sabre Industries Job No. 160579 dated April 5, 2017.
Foundation Information	Original Tower Design by Sabre Industries Job No. 160579 dated April 5, 2017.
Geotechnical Information	Foundation design by WMC Consulting Engineers project 87 Monce Road Burlington dated March 17, 2014.
Existing Equipment Information	Verizon Wireless collocation application dated March 27, 2020 Tower of Burlington Fire Dept. collocation application dated November 29, 2018 Infinigy PE letter for T-Mobile dated September 19, 2017. Structural Analysis by Infinigy Project No. 337-080 dated April 28, 2017.
Tower Reinforcement Information	Tower has not been previously reinforced.

Final Proposed Equipment Loading for Verizon

The following proposed loading was obtained from the InSite Collocation Application:

Antenna/Equipment					Coax	
Mount (ft)	RAD (ft)	Qty.	Antenna Model	Type	Qty.	Size/Type
91.2	-	1	SitePro1 RMQP-496-HK	Mount	1	2” Hybrid
	91.2	6	Commscope NHH-65B-R2B	Panel		
		3	Samsung B2/B66A RRH-BR049	RRU		
		3	Samsung B5/B13 RRH-BR04C	RRU		
		1	Raycap RVZDC-6627-OF-48	Raycap		

Note: All equipment shown above is proposed
Note: All feedlines considered inside the pole.
Note: Other existing loading can be found on the tower profile attached.

Design Criteria

The tower was analyzed using tnxTower (Version 8.0.5.0) tower analysis software using the following design criteria.

State/County	Connecticut / Hartford
State Building Code	2018 Connecticut State Building Code (2015 International Building Code)
TIA/EIA Standard Code	TIA-222-G
Basic Wind Speed	129 MPH (V_{ult}) / 100 MPH (V_{asd})
Basic Wind Speed w/ Ice	50 MPH w/ 1.0" Ice
Steel Grade	A572-65 pole A615-75 anchor bolt A572-50 base plate
Risk Category	III
Exposure Category	C
Topographic Category (height)	1 (0.0 ft)
Importance Factor	1.0

Analysis Results

Based on the foregoing information, our structural analysis determined that **the existing tower is structurally capable of supporting the proposed equipment loads without modification.** The existing tower foundation has also been evaluated. **The tower foundation is found to be structurally capable of supporting the proposed equipment loads.**

Assumptions

The below assumptions are true, complete and accurate.

1. The existing tower has been maintained to manufacturer's specifications and is in good condition.
2. Foundations are considered to have been properly designed for the original design loads.
3. All member connections are considered to have been designed to meet the load carrying capacity of the connected member.
4. Antenna mount loads have been estimated based on generally accepted industry standards.
5. The mounts for the proposed antennas have been analyzed and designed by others.
6. See additional assumptions contained in the report attached.
7. Tower is within acceptable engineering tolerance at 105%.
8. Foundations are within acceptable engineering tolerance at 110%.

Conclusions

The existing tower described above **does have sufficient capacity** to support the proposed loading based on the governing Building Code. The existing tower foundation is also found to be acceptable.

We appreciate the opportunity of providing our continuing professional services to you. If you have any questions or need further assistance, please call us anytime at 561-288-1187.

Sincerely,

Analysis by:

Michael Hlinka, E.I.
Design Engineer

Reviewed by:

5/5/2020

Thomas F. Ireland, P.E.
Principal

Standard Conditions

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

- Information supplied by the client regarding the structure itself, the antenna and transmission line loading on the structure and it components, or relevant information.

- Information from drawings in possession of Bennett & Pless Inc., or generated by field inspections or measurements of the structure.

It is the responsibility of the client to ensure that the information provided to Bennett & Pless Inc. and used in the performance of our engineering services is correct and complete. In the absence of information contrary, we consider that all structures were constructed in accordance with the drawings and specifications and are in a un-corroded condition and have not deteriorated; and we, therefore consider that their capacity has not significantly changed from the original design condition.

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

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

Disclaimer of Warranties

Bennett & Pless Inc. makes no warranties, expressed or implied, in connection with this report, and disclaims any liability arising from the ability of the existing structure to support the design loads for which it was originally designed. Bennett & Pless Inc. will not be responsible whatsoever for or on account of, consequential or incidental damages sustained by any person, firm, or organization as a result of any data or conclusions contained in this report. The maximum liability of Bennett & Pless Inc. pursuant to this report will be limited to the total fee received for preparation of this report.

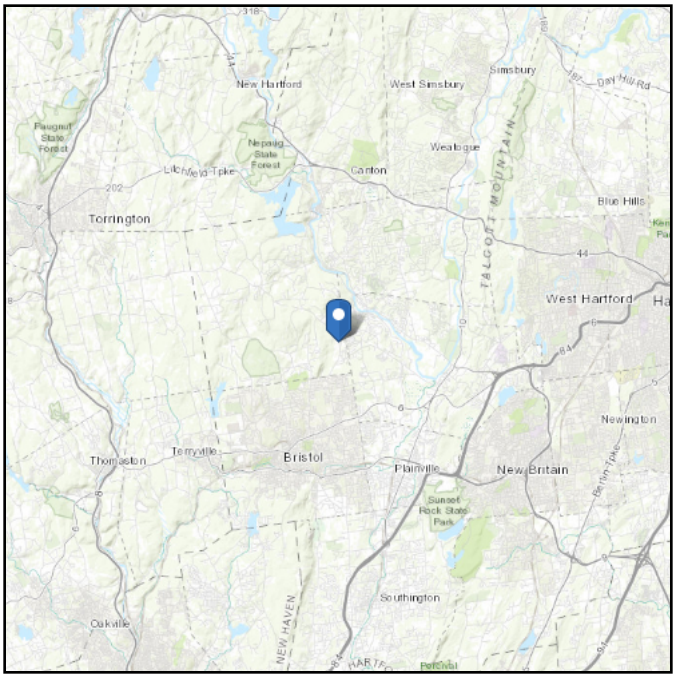
Attachment 1:
Calculations

ASCE 7 Hazards Report

Address:
No Address at This Location

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

Elevation: 287.12 ft (NAVD 88)
Latitude: 41.73914
Longitude: -72.90781



Wind

Results:

Wind Speed:	129 Vmph
10-year MRI	76 Vmph
25-year MRI	86 Vmph
50-year MRI	91 Vmph
100-year MRI	98 Vmph

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

Date Accessed: Fri May 01 2020

Value provided is 3-second gust wind speeds at 33 ft above ground for Exposure C Category, based on linear interpolation between contours. Wind speeds are interpolated in accordance with the 7-10 Standard. Wind speeds correspond to approximately a 3% probability of exceedance in 50 years (annual exceedance probability = 0.000588, MRI = 1,700 years).

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

Mountainous terrain, gorges, ocean promontories, and special wind regions should be examined for unusual wind conditions.

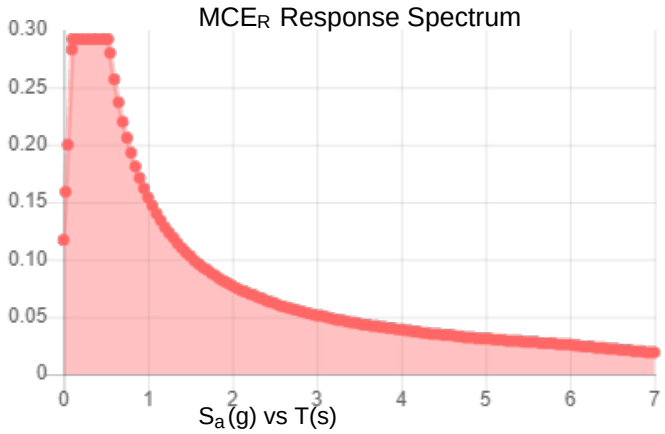
Seismic

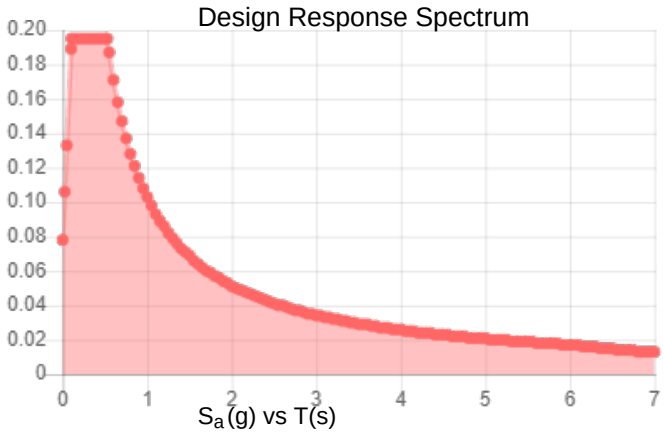
Site Soil Class: D - Stiff Soil

Results:

S_S :	0.183	S_{DS} :	0.195
S_1 :	0.064	S_{D1} :	0.103
F_a :	1.6	T_L :	6
F_v :	2.4	PGA :	0.092
S_{MS} :	0.292	PGA_M :	0.148
S_{M1} :	0.154	F_{PGA} :	1.6
		I_e :	1.25

Seismic Design Category B





Data Accessed: Fri May 01 2020

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

Ice

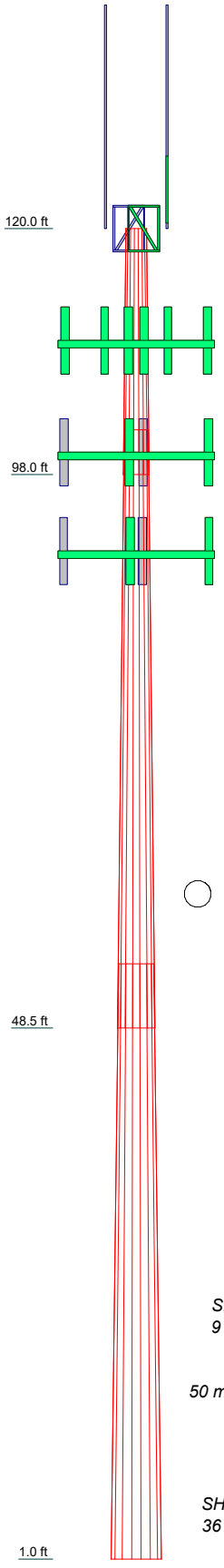
Results:

Ice Thickness:	1.00 in.
Concurrent Temperature:	5 F
Gust Speed:	50 mph
Data Source:	Standard ASCE/SEI 7-10, Figs. 10-2 through 10-8
Date Accessed:	Fri May 01 2020

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

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

Section	Length (ft)	Number of Sides	Thickness (in)	Socket Length (ft)	Top Dia (in)	Bot Dia (in)	Grade	Weight (K)
1	22.000	18	0.2500	4.000	21.5500	27.6600		1.4
2	53.500	18	0.3750	5.750	26.0491	40.9000	A572-65	7.2
3	53.250	18	0.3750		38.5539	53.3400		9.8
								18.4



DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION	TYPE	ELEVATION
3' Stand-off (Burlington)	120	Ericsson RRUS 11 B4 (T-Mobile)	100
3' Stand-off (Burlington)	120	Ericsson RRUS 11 B4 (T-Mobile)	100
3' Stand-off (Burlington)	120	(2) Ericsson RRUS 11 B12 (T-Mobile)	100
DB Spectra DS1F06F36U-D (Burlington)	120	(2) Ericsson RRUS 11 B12 (T-Mobile)	100
		(2) Ericsson RRUS 11 B12 (T-Mobile)	100
DB Spectra DS1F03F36D-D (Burlington)	120	GPS (T-Mobile)	100
DB Spectra DS8A06F36U-D (Burlington)	120	Fastback Networks IBR1300 (T-Mobile)	100
Ericsson RRUS 11 (ATI)	110	3 Sided Platform (T-Mobile)	100
Ericsson RRUS 11 (ATI)	110	RFS APX16DWV-16DWVS-E-A20 (T-Mobile)	100
Ericsson RRUS 12 (ATI)	110	RFS APX16DWV-16DWVS-E-A20 (T-Mobile)	100
Ericsson RRUS 12 (ATI)	110	RFS APX16DWV-16DWVS-E-A20 (T-Mobile)	100
(2) Ericsson RRUS 12 (ATI)	110	Commscope LNX-6515DS-A1M (T-Mobile)	100
(2) Ericsson RRUS 12 (ATI)	110	Commscope LNX-6515DS-A1M (T-Mobile)	100
Ericsson RRUS-32 (ATI)	110	Commscope LNX-6515DS-A1M (T-Mobile)	100
Ericsson RRUS-32 (ATI)	110	(2) Commscope NHH-65B-R2B (Verizon)	91.2
Ericsson RRUS-32 (ATI)	110	(2) Commscope NHH-65B-R2B (Verizon)	91.2
Ericsson RRUS-32 B66A (ATI)	110	(2) Commscope NHH-65B-R2B (Verizon)	91.2
Ericsson RRUS-32 B66A (ATI)	110	Samsung B2/B66A RRH-BR049 (Verizon)	91.2
Ericsson RRUS-32 B66A (ATI)	110	Samsung B2/B66A RRH-BR049 (Verizon)	91.2
Ericsson LTE RRUS E2 (ATI)	110	Samsung B2/B66A RRH-BR049 (Verizon)	91.2
Ericsson LTE RRUS E2 (ATI)	110	Samsung B5/B13 RRH-BR04C (Verizon)	91.2
Ericsson LTE RRUS E2 (ATI)	110	Samsung B5/B13 RRH-BR04C (Verizon)	91.2
(2) RayCap DC6-48-60-18-8F (ATI)	110	Samsung B5/B13 RRH-BR04C (Verizon)	91.2
RayCap DC6-48-60-18-8F (ATI)	110	Raycap RVZDC-6627-PF-48 (Verizon)	91.2
RayCap DC6-48-60-18-8F (ATI)	110	Site Pro 1 RMVP-XXX-HK (Verizon)	91.2
4 Sided Platform (ATI)	110		
(3) CCI HPA-65R-BUU-H8 (ATI)	110		
(3) CCI HPA-65R-BUU-H8 (ATI)	110		
(3) CCI HPA-65R-BUU-H8 (ATI)	110		
(3) CCI HPA-65R-BUU-H8 (ATI)	110		
(2) Ericsson RRUS 11 (ATI)	110		
(2) Ericsson RRUS 11 (ATI)	110		
Ericsson AIR32 KRD901146-1 (T-Mobile)	100		
Ericsson AIR32 KRD901146-1 (T-Mobile)	100		
Ericsson AIR32 KRD901146-1 (T-Mobile)	100		
Ericsson RRUS 11 B4 (T-Mobile)	100		

MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A572-65	65 ksi	80 ksi			

TOWER DESIGN NOTES

1. Tower is located in Hartford County, Connecticut.
2. Tower designed for Exposure C to the TIA-222-G Standard.
3. Tower designed for a 100 mph basic wind in accordance with the TIA-222-G Standard.
4. Tower is also designed for a 50 mph basic wind with 1.00 in ice. Ice is considered to increase in thickness with height.
5. Deflections are based upon a 60 mph wind.
6. Tower Structure Class III.
7. Topographic Category 1 with Crest Height of 0.000 ft
8. TOWER RATING: 70.4%

ALL REACTIONS ARE FACTORED

AXIAL 82 K

SHEAR 9 K *MOMENT 843 kip-ft*

TORQUE 4 kip-ft
50 mph WIND - 1.0000 in ICE

AXIAL 37 K

SHEAR 36 K *MOMENT 3182 kip-ft*

TORQUE 14 kip-ft
REACTIONS - 100 mph WIND

bennett&pless
Experience Structural Expertise

Bennett & Pless
750 Park Commerce Dr #200
Boca Raton, FL 33487
Phone: 561-282-2676
FAX:

Job:	***US-SC-5041_Exit 35_SA***		
Project:	***Monopole Structural Analysis***		
Client: Vertical Bridge	Drawn by: mhlinka		App'd:
Code: TIA-222-G	Date: 05/01/20		Scale: NTS
Path:			Dwg No. E-1

Tower Input Data

The tower is a monopole.
This tower is designed using the TIA-222-G standard.
The following design criteria apply:

Tower is located in Hartford County, Connecticut.
Basic wind speed of 100 mph.
Structure Class III.
Exposure Category C.
Topographic Category 1.
Crest Height 0.000 ft.
Nominal ice thickness of 1.0000 in.
Ice thickness is considered to increase with height.
Ice density of 56.000 pcf.
A wind speed of 50 mph is used in combination with ice.
Temperature drop of 50.000 °F.
Deflections calculated using a wind speed of 60 mph.
A non-linear (P-delta) analysis was used.
Pressures are calculated at each section.
Stress ratio used in pole design is 1.
Local bending stresses due to climbing loads, feed line supports, and appurtenance mounts are not considered.

Options

	Consider Moments - Legs		Distribute Leg Loads As Uniform		Use ASCE 10 X-Brace Ly Rules
	Consider Moments - Horizontals		Assume Legs Pinned	√	Calculate Redundant Bracing Forces
	Consider Moments - Diagonals	√	Assume Rigid Index Plate		Ignore Redundant Members in FEA
	Use Moment Magnification	√	Use Clear Spans For Wind Area		SR Leg Bolts Resist Compression
√	Use Code Stress Ratios	√	Use Clear Spans For KL/r		All Leg Panels Have Same Allowable
√	Use Code Safety Factors - Guys	√	Retension Guys To Initial Tension		Offset Girt At Foundation
	Escalate Ice	√	Bypass Mast Stability Checks		Consider Feed Line Torque
	Always Use Max Kz	√	Use Azimuth Dish Coefficients		Include Angle Block Shear Check
	Use Special Wind Profile	√	Project Wind Area of Appurt.		Use TIA-222-G Bracing Resist. Exemption
	Include Bolts In Member Capacity	√	Autocalc Torque Arm Areas		Use TIA-222-G Tension Splice Exemption
	Leg Bolts Are At Top Of Section		Add IBC .6D+W Combination		Poles
	Secondary Horizontal Braces Leg	√	Sort Capacity Reports By Component	√	Include Shear-Torsion Interaction
	Use Diamond Inner Bracing (4 Sided)		Triangulate Diamond Inner Bracing		Always Use Sub-Critical Flow
	SR Members Have Cut Ends		Treat Feed Line Bundles As Cylinder		Use Top Mounted Sockets
	SR Members Are Concentric		Ignore KL/ry For 60 Deg. Angle Legs		Pole Without Linear Attachments
					Pole With Shroud Or No Appurtenances
					Outside and Inside Corner Radii Are Known

Tapered Pole Section Geometry

Section	*Elevation* *ft*	*Section Length* *ft*	*Splice Length* *ft*	*Number of Sides*	*Top Diameter* *in*	*Bottom Diameter* *in*	*Wall Thickness* *in*	*Bend Radius* *in*	*Pole Grade*
L1	120.000-98.000	22.000	4.000	18	21.5500	27.6600	0.2500	1.0000	A572-65

Section	Elevation ft	Section Length ft	Splice Length ft	Number of Sides	Top Diameter in	Bottom Diameter in	Wall Thickness in	Bend Radius in	Pole Grade
L2	98.000-48.500	53.500	5.750	18	26.0491	40.9000	0.3750	1.5000	(65 ksi) A572-65 (65 ksi)
L3	48.500-1.000	53.250		18	38.5539	53.3400	0.3750	1.5000	A572-65 (65 ksi)

Tapered Pole Properties

Section	Tip Dia. in	Area in^2	I in^4	r in	C in	I/C in^3	J in^4	It/Q in^2	w in	w/t
L1	21.8439	16.9016	968.7756	7.5615	10.9474	88.4937	1938.8259	8.4524	3.3528	13.411
	28.0481	21.7498	2064.4838	9.7305	14.0513	146.9250	4131.6842	10.8770	4.4282	17.713
L2	27.5206	30.5586	2544.8423	9.1143	13.2329	192.3112	5093.0331	15.2822	3.9246	10.466
	41.4731	48.2349	10007.9404	14.3864	20.7772	481.6790	20029.0495	24.1220	6.5384	17.436
L3	40.7120	45.4424	8368.4493	13.5535	19.5854	427.2807	16747.9100	22.7255	6.1255	16.335
	54.1050	63.0416	22343.0558	18.8026	27.0967	824.5668	44715.5112	31.5268	8.7278	23.274

Tower Elevation ft	Gusset Area (per face) ft^2	Gusset Thickness in	Gusset Grade	Adjust. Factor A_f	Adjust. Factor A_r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals in	Double Angle Stitch Bolt Spacing Horizontals in	Double Angle Stitch Bolt Spacing Redundants in
L1 120.000-98.000				1	1	1			
L2 98.000-48.500				1	1	1			
L3 48.500-1.000				1	1	1			

Feed Line/Linear Appurtenances - Entered As Area

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Total Number		C_AA_A ft^2/ft	Weight klf
3/4" Coax (AT&T)	D	No	Yes	Inside Pole	110.000 - 5.000	8	No Ice	0.000	0.001
							1/2" Ice	0.000	0.001
							1" Ice	0.000	0.001
3/8" Fiber (AT&T)	D	No	Yes	Inside Pole	110.000 - 5.000	2	No Ice	0.000	0.000
							1/2" Ice	0.000	0.000
							1" Ice	0.000	0.000
1.43" (36.4 mm) Hybrid (T-Mobile)	D	No	Yes	Inside Pole	100.000 - 5.000	3	No Ice	0.000	0.002
							1/2" Ice	0.000	0.002
							1" Ice	0.000	0.002
1/2" Coax (T-Mobile)	D	No	Yes	Inside Pole	100.000 - 5.000	1	No Ice	0.000	0.000
							1/2" Ice	0.000	0.000
							1" Ice	0.000	0.000
7/8" Coax (Burlington)	D	No	Yes	Inside Pole	120.000 - 5.000	3	No Ice	0.000	0.000
							1/2" Ice	0.000	0.000
							1" Ice	0.000	0.000
2" Hybrid	D	No	Yes	Inside Pole	91.200 - 5.000	1	No Ice	0.000	0.001

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Total Number		C_AA_A ft^2/ft	Weight klf
							1/2" Ice	0.000	0.001
							1" Ice	0.000	0.001

Feed Line/Linear Appurtenances Section Areas

Tower Section	Tower Elevation ft	Face	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
L1	120.000-98.000	A	0.000	0.000	0.000	0.000	0.000
		B	0.000	0.000	0.000	0.000	0.000
		C	0.000	0.000	0.000	0.000	0.000
		D	0.000	0.000	0.000	0.000	0.115
L2	98.000-48.500	A	0.000	0.000	0.000	0.000	0.000
		B	0.000	0.000	0.000	0.000	0.000
		C	0.000	0.000	0.000	0.000	0.000
		D	0.000	0.000	0.000	0.000	0.702
L3	48.500-1.000	A	0.000	0.000	0.000	0.000	0.000
		B	0.000	0.000	0.000	0.000	0.000
		C	0.000	0.000	0.000	0.000	0.000
		D	0.000	0.000	0.000	0.000	0.621

Feed Line/Linear Appurtenances Section Areas - With Ice

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
L1	120.000-98.000	A	2.816	0.000	0.000	0.000	0.000	0.000
		B		0.000	0.000	0.000	0.000	0.000
		C		0.000	0.000	0.000	0.000	0.000
		D		0.000	0.000	0.000	0.000	0.115
L2	98.000-48.500	A	2.703	0.000	0.000	0.000	0.000	0.000
		B		0.000	0.000	0.000	0.000	0.000
		C		0.000	0.000	0.000	0.000	0.000
		D		0.000	0.000	0.000	0.000	0.702
L3	48.500-1.000	A	2.429	0.000	0.000	0.000	0.000	0.000
		B		0.000	0.000	0.000	0.000	0.000
		C		0.000	0.000	0.000	0.000	0.000
		D		0.000	0.000	0.000	0.000	0.621

Shielding Factor Ka

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
(3) CCI HPA-65R-BUU-H8	A	From Leg	3.000	0.0000	110.000	No Ice	12.976	7.516	0.068
(AT&T)			0.000			1/2" Ice	13.558	8.087	0.142
			0.000			1" Ice	14.147	8.666	0.223
(3) CCI HPA-65R-BUU-H8	B	From Leg	3.000	0.0000	110.000	No Ice	12.976	7.516	0.068
(AT&T)			0.000			1/2" Ice	13.558	8.087	0.142
			0.000			1" Ice	14.147	8.666	0.223
(3) CCI HPA-65R-BUU-H8	C	From Leg	3.000	0.0000	110.000	No Ice	12.976	7.516	0.068
(AT&T)			0.000			1/2" Ice	13.558	8.087	0.142
			0.000			1" Ice	14.147	8.666	0.223
(3) CCI HPA-65R-BUU-H8	D	From Leg	3.000	0.0000	110.000	No Ice	12.976	7.516	0.068
(AT&T)			0.000			1/2" Ice	13.558	8.087	0.142
			0.000			1" Ice	14.147	8.666	0.223
(2) Ericsson RRUS 11	A	From Leg	3.000	0.0000	110.000	No Ice	1.639	1.262	0.044
(AT&T)			0.000			1/2" Ice	1.802	1.410	0.060
			0.000			1" Ice	1.972	1.566	0.078
(2) Ericsson RRUS 11	B	From Leg	3.000	0.0000	110.000	No Ice	1.639	1.262	0.044
(AT&T)			0.000			1/2" Ice	1.802	1.410	0.060
			0.000			1" Ice	1.972	1.566	0.078
Ericsson RRUS 11	C	From Leg	3.000	0.0000	110.000	No Ice	1.639	1.262	0.044
(AT&T)			0.000			1/2" Ice	1.802	1.410	0.060
			0.000			1" Ice	1.972	1.566	0.078
Ericsson RRUS 11	D	From Leg	3.000	0.0000	110.000	No Ice	1.639	1.262	0.044
(AT&T)			0.000			1/2" Ice	1.802	1.410	0.060
			0.000			1" Ice	1.972	1.566	0.078
Ericsson RRUS 12	A	From Leg	3.000	0.0000	110.000	No Ice	3.083	1.182	0.057
(AT&T)			0.000			1/2" Ice	3.301	1.330	0.079
			0.000			1" Ice	3.526	1.485	0.105
Ericsson RRUS 12	B	From Leg	3.000	0.0000	110.000	No Ice	3.083	1.182	0.057
(AT&T)			0.000			1/2" Ice	3.301	1.330	0.079
			0.000			1" Ice	3.526	1.485	0.105
(2) Ericsson RRUS 12	C	From Leg	3.000	0.0000	110.000	No Ice	3.083	1.182	0.057
(AT&T)			0.000			1/2" Ice	3.301	1.330	0.079
			0.000			1" Ice	3.526	1.485	0.105
(2) Ericsson RRUS 12	D	From Leg	3.000	0.0000	110.000	No Ice	3.083	1.182	0.057
(AT&T)			0.000			1/2" Ice	3.301	1.330	0.079
			0.000			1" Ice	3.526	1.485	0.105
Ericsson RRUS-32	A	From Leg	3.000	0.0000	110.000	No Ice	2.743	1.668	0.053
(AT&T)			0.000			1/2" Ice	2.965	1.855	0.074
			0.000			1" Ice	3.194	2.049	0.098
Ericsson RRUS-32	B	From Leg	3.000	0.0000	110.000	No Ice	2.743	1.668	0.053
(AT&T)			0.000			1/2" Ice	2.965	1.855	0.074
			0.000			1" Ice	3.194	2.049	0.098
Ericsson RRUS-32	C	From Leg	3.000	0.0000	110.000	No Ice	2.743	1.668	0.053
(AT&T)			0.000			1/2" Ice	2.965	1.855	0.074
			0.000			1" Ice	3.194	2.049	0.098
Ericsson RRUS-32 B66A	B	From Leg	3.000	0.0000	110.000	No Ice	2.743	1.668	0.053
(AT&T)			0.000			1/2" Ice	2.965	1.855	0.074
			0.000			1" Ice	3.194	2.049	0.098
Ericsson RRUS-32 B66A	C	From Leg	3.000	0.0000	110.000	No Ice	2.743	1.668	0.053
(AT&T)			0.000			1/2" Ice	2.965	1.855	0.074
			0.000			1" Ice	3.194	2.049	0.098
Ericsson RRUS-32 B66A	D	From Leg	3.000	0.0000	110.000	No Ice	2.743	1.668	0.053
(AT&T)			0.000			1/2" Ice	2.965	1.855	0.074
			0.000			1" Ice	3.194	2.049	0.098
Ericsson LTE RRUS E2	C	From Leg	3.000	0.0000	110.000	No Ice	2.036	1.177	0.060
(AT&T)			0.000			1/2" Ice	2.216	1.324	0.077

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
			0.000			1" Ice	2.402	1.479	0.097
Ericsson LTE RRUS E2	D	From Leg	3.000	0.0000	110.000	No Ice	2.036	1.177	0.060
(AT&T)			0.000			1/2" Ice	2.216	1.324	0.077
			0.000			1" Ice	2.402	1.479	0.097
Ericsson LTE RRUS E2	A	From Leg	3.000	0.0000	110.000	No Ice	2.036	1.177	0.060
(AT&T)			0.000			1/2" Ice	2.216	1.324	0.077
			0.000			1" Ice	2.402	1.479	0.097
(2) RayCap	D	From Leg	3.000	0.0000	110.000	No Ice	0.791	0.791	0.020
DC6-48-60-18-8F			0.000			1/2" Ice	1.274	1.274	0.035
(AT&T)			0.000			1" Ice	1.450	1.450	0.053
RayCap DC6-48-60-18-8F	A	From Leg	3.000	0.0000	110.000	No Ice	0.791	0.791	0.020
(AT&T)			0.000			1/2" Ice	1.274	1.274	0.035
			0.000			1" Ice	1.450	1.450	0.053
RayCap DC6-48-60-18-8F	B	From Leg	3.000	0.0000	110.000	No Ice	0.791	0.791	0.020
(AT&T)			0.000			1/2" Ice	1.274	1.274	0.035
			0.000			1" Ice	1.450	1.450	0.053
4 Sided Platform	C	From Leg	0.000	0.0000	110.000	No Ice	37.000	36.000	2.250
(AT&T)			0.000			1/2" Ice	47.000	44.000	2.650
			0.000			1" Ice	57.000	52.000	3.050
RFS	A	From Leg	3.000	0.0000	100.000	No Ice	12.976	7.516	0.068
APX16DWV-16DWVS-E-A			0.000			1/2" Ice	13.558	8.087	0.142
20			0.000			1" Ice	14.147	8.666	0.223
(T-Mobile)									
RFS	B	From Leg	3.000	0.0000	100.000	No Ice	12.976	7.516	0.068
APX16DWV-16DWVS-E-A			0.000			1/2" Ice	13.558	8.087	0.142
20			0.000			1" Ice	14.147	8.666	0.223
(T-Mobile)									
RFS	C	From Leg	3.000	0.0000	100.000	No Ice	12.976	7.516	0.068
APX16DWV-16DWVS-E-A			0.000			1/2" Ice	13.558	8.087	0.142
20			0.000			1" Ice	14.147	8.666	0.223
(T-Mobile)									
Commscope	A	From Leg	3.000	0.0000	100.000	No Ice	11.445	7.696	0.050
LNX-6515DS-A1M			0.000			1/2" Ice	12.064	8.289	0.116
(T-Mobile)			0.000			1" Ice	12.689	8.889	0.190
Commscope	B	From Leg	3.000	0.0000	100.000	No Ice	11.445	7.696	0.050
LNX-6515DS-A1M			0.000			1/2" Ice	12.064	8.289	0.116
(T-Mobile)			0.000			1" Ice	12.689	8.889	0.190
Commscope	C	From Leg	3.000	0.0000	100.000	No Ice	11.445	7.696	0.050
LNX-6515DS-A1M			0.000			1/2" Ice	12.064	8.289	0.116
(T-Mobile)			0.000			1" Ice	12.689	8.889	0.190
Ericsson AIR32	A	From Leg	3.000	0.0000	100.000	No Ice	6.430	4.652	0.132
KRD901146-1			0.000			1/2" Ice	6.804	5.005	0.178
(T-Mobile)			0.000			1" Ice	7.185	5.364	0.228
Ericsson AIR32	B	From Leg	3.000	0.0000	100.000	No Ice	6.430	4.652	0.132
KRD901146-1			0.000			1/2" Ice	6.804	5.005	0.178
(T-Mobile)			0.000			1" Ice	7.185	5.364	0.228
Ericsson AIR32	C	From Leg	3.000	0.0000	100.000	No Ice	6.430	4.652	0.132
KRD901146-1			0.000			1/2" Ice	6.804	5.005	0.178
(T-Mobile)			0.000			1" Ice	7.185	5.364	0.228
Ericsson RRUS 11 B4	A	From Leg	3.000	0.0000	100.000	No Ice	2.772	1.176	0.051
(T-Mobile)			0.000			1/2" Ice	2.979	1.323	0.072
			0.000			1" Ice	3.193	1.477	0.095
Ericsson RRUS 11 B4	B	From Leg	3.000	0.0000	100.000	No Ice	2.772	1.176	0.051
(T-Mobile)			0.000			1/2" Ice	2.979	1.323	0.072
			0.000			1" Ice	3.193	1.477	0.095
Ericsson RRUS 11 B4	C	From Leg	3.000	0.0000	100.000	No Ice	2.772	1.176	0.051
(T-Mobile)			0.000			1/2" Ice	2.979	1.323	0.072

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
			0.000			1" Ice	3.193	1.477	0.095
(2) Ericsson RRUS 11 B12	A	From Leg	3.000	0.0000	100.000	No Ice	2.772	1.176	0.051
(T-Mobile)			0.000			1/2" Ice	2.979	1.323	0.072
			0.000			1" Ice	3.193	1.477	0.095
(2) Ericsson RRUS 11 B12	B	From Leg	3.000	0.0000	100.000	No Ice	2.772	1.176	0.051
(T-Mobile)			0.000			1/2" Ice	2.979	1.323	0.072
			0.000			1" Ice	3.193	1.477	0.095
(2) Ericsson RRUS 11 B12	C	From Leg	3.000	0.0000	100.000	No Ice	2.772	1.176	0.051
(T-Mobile)			0.000			1/2" Ice	2.979	1.323	0.072
			0.000			1" Ice	3.193	1.477	0.095
GPS	C	From Leg	3.000	0.0000	100.000	No Ice	0.700	0.700	0.016
(T-Mobile)			0.000			1/2" Ice	0.800	0.800	0.019
			0.000			1" Ice	0.900	0.900	0.022
Fastback Networks IBR1300	C	From Leg	3.000	0.0000	100.000	No Ice	0.672	0.232	0.008
(T-Mobile)			0.000			1/2" Ice	0.776	0.299	0.014
			0.000			1" Ice	0.888	0.374	0.021
3 Sided Platform	C	From Leg	0.000	0.0000	100.000	No Ice	28.000	28.000	2.000
(T-Mobile)			0.000			1/2" Ice	35.000	35.000	2.500
			0.000			1" Ice	42.000	42.000	3.000
3' Stand-off	A	From Leg	0.000	0.0000	120.000	No Ice	0.500	0.500	0.010
(Burlington)			0.000			1/2" Ice	0.700	0.700	0.015
			0.000			1" Ice	0.900	0.900	0.020
3' Stand-off	B	From Leg	0.000	0.0000	120.000	No Ice	0.500	0.500	0.010
(Burlington)			0.000			1/2" Ice	0.700	0.700	0.015
			0.000			1" Ice	0.900	0.900	0.020
3' Stand-off	C	From Leg	0.000	0.0000	120.000	No Ice	0.500	0.500	0.010
(Burlington)			0.000			1/2" Ice	0.700	0.700	0.015
			0.000			1" Ice	0.900	0.900	0.020
DB Spectra DS1F06F36U-D	A	From Leg	3.000	0.0000	120.000	No Ice	6.570	6.570	0.060
(Burlington)			0.000			1/2" Ice	8.793	8.793	0.107
			10.000			1" Ice	11.033	11.033	0.168
DB Spectra DS1F03F36D-D	B	From Leg	3.000	0.0000	120.000	No Ice	6.690	6.690	0.063
(Burlington)			0.000			1/2" Ice	8.953	8.953	0.111
			10.000			1" Ice	11.233	11.233	0.173
DB Spectra DS8A06F36U-D	C	From Leg	3.000	0.0000	120.000	No Ice	0.111	0.111	0.025
(Burlington)			0.000			1/2" Ice	0.167	0.167	0.027
			3.500			1" Ice	0.233	0.233	0.029
VZW									
(2) Commscope	A	From Leg	3.000	0.0000	91.200	No Ice	11.187	8.687	0.071
NHH-65B-R2B			0.000			1/2" Ice	11.691	9.169	0.150
(Verizon)			0.000			1" Ice	12.202	9.658	0.236
(2) Commscope	B	From Leg	3.000	0.0000	91.200	No Ice	11.187	8.687	0.071
NHH-65B-R2B			0.000			1/2" Ice	11.691	9.169	0.150
(Verizon)			0.000			1" Ice	12.202	9.658	0.236
(2) Commscope	C	From Leg	3.000	0.0000	91.200	No Ice	11.187	8.687	0.071
NHH-65B-R2B			0.000			1/2" Ice	11.691	9.169	0.150
(Verizon)			0.000			1" Ice	12.202	9.658	0.236
Samsung B2/B66A	A	From Leg	3.000	0.0000	91.200	No Ice	1.850	1.242	0.084
RRH-BR049			0.000			1/2" Ice	2.019	1.384	0.102
(Verizon)			0.000			1" Ice	2.196	1.533	0.123
Samsung B2/B66A	B	From Leg	3.000	0.0000	91.200	No Ice	1.850	1.242	0.084
RRH-BR049			0.000			1/2" Ice	2.019	1.384	0.102
(Verizon)			0.000			1" Ice	2.196	1.533	0.123
Samsung B2/B66A	C	From Leg	3.000	0.0000	91.200	No Ice	1.850	1.242	0.084
RRH-BR049			0.000			1/2" Ice	2.019	1.384	0.102
(Verizon)			0.000			1" Ice	2.196	1.533	0.123
Samsung B5/B13	A	From Leg	3.000	0.0000	91.200	No Ice	1.850	1.006	0.070

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
RRH-BR04C			0.000			1/2" Ice	2.019	1.137	0.086
(Verizon)			0.000			1" Ice	2.196	1.276	0.105
Samsung B5/B13	B	From Leg	3.000	0.0000	91.200	No Ice	1.850	1.006	0.070
RRH-BR04C			0.000			1/2" Ice	2.019	1.137	0.086
(Verizon)			0.000			1" Ice	2.196	1.276	0.105
Samsung B5/B13	C	From Leg	3.000	0.0000	91.200	No Ice	1.850	1.006	0.070
RRH-BR04C			0.000			1/2" Ice	2.019	1.137	0.086
(Verizon)			0.000			1" Ice	2.196	1.276	0.105
Raycap RVZDC-6627-PF-48	C	From Leg	3.000	0.0000	91.200	No Ice	4.056	3.098	0.032
(Verizon)			0.000			1/2" Ice	4.316	3.335	0.068
			0.000			1" Ice	4.582	3.580	0.109
Site Pro 1 RMVP-XXX-HK	C	From Leg	3.000	0.0000	91.200	No Ice	37.160	35.600	2.150
(Verizon)			0.000			1/2" Ice	45.620	43.740	2.565
			0.000			1" Ice	54.080	51.880	2.980

Load Combinations

Comb. No.	Description
1	Dead Only
2	1.2 Dead+1.6 Wind 0 deg - No Ice
3	0.9 Dead+1.6 Wind 0 deg - No Ice
4	1.2 Dead+1.6 Wind 45 deg - No Ice
5	0.9 Dead+1.6 Wind 45 deg - No Ice
6	1.2 Dead+1.6 Wind 90 deg - No Ice
7	0.9 Dead+1.6 Wind 90 deg - No Ice
8	1.2 Dead+1.6 Wind 135 deg - No Ice
9	0.9 Dead+1.6 Wind 135 deg - No Ice
10	1.2 Dead+1.6 Wind 180 deg - No Ice
11	0.9 Dead+1.6 Wind 180 deg - No Ice
12	1.2 Dead+1.6 Wind 225 deg - No Ice
13	0.9 Dead+1.6 Wind 225 deg - No Ice
14	1.2 Dead+1.6 Wind 270 deg - No Ice
15	0.9 Dead+1.6 Wind 270 deg - No Ice
16	1.2 Dead+1.6 Wind 315 deg - No Ice
17	0.9 Dead+1.6 Wind 315 deg - No Ice
18	1.2 Dead+1.0 Ice+1.0 Temp
19	1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp
20	1.2 Dead+1.0 Wind 45 deg+1.0 Ice+1.0 Temp
21	1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp
22	1.2 Dead+1.0 Wind 135 deg+1.0 Ice+1.0 Temp
23	1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp
24	1.2 Dead+1.0 Wind 225 deg+1.0 Ice+1.0 Temp
25	1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp
26	1.2 Dead+1.0 Wind 315 deg+1.0 Ice+1.0 Temp
27	Dead+Wind 0 deg - Service
28	Dead+Wind 45 deg - Service
29	Dead+Wind 90 deg - Service
30	Dead+Wind 135 deg - Service
31	Dead+Wind 180 deg - Service
32	Dead+Wind 225 deg - Service

Comb. No.	Description
33	Dead+Wind 270 deg - Service
34	Dead+Wind 315 deg - Service

Maximum Member Forces

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L1	120 - 98	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	18	-22.133	-4.081	-1.608
			Max. Mx	6	-5.948	-126.467	-2.419
			Max. My	10	-5.952	-2.571	-126.310
			Max. Vy	6	13.077	-126.467	-2.419
			Max. Vx	10	13.076	-2.571	-126.310
			Max. Torque	17			-4.078
L2	98 - 48.5	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	18	-59.604	-39.054	-10.392
			Max. Mx	6	-21.835	-1372.171	-39.556
			Max. My	10	-21.838	-44.673	-1367.053
			Max. Vy	6	29.879	-1372.171	-39.556
			Max. Vx	10	29.879	-44.673	-1367.053
			Max. Torque	2			-14.208
L3	48.5 - 1	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	18	-81.907	-40.134	-10.680
			Max. Mx	6	-36.708	-3113.054	-75.780
			Max. My	10	-36.708	-81.051	-3108.006
			Max. Vy	14	-35.322	3083.448	56.529
			Max. Vx	10	35.322	-81.051	-3108.006
			Max. Torque	2			-14.175

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
Pole	Max. Vert	18	81.907	0.001	0.000
	Max. H_x	15	27.554	35.290	0.667
	Max. H_z	2	36.739	0.667	35.290
	Max. M_x	2	3088.816	0.667	35.290
	Max. M_z	6	3113.054	-35.288	-0.667
	Max. Torsion	10	14.131	-0.667	-35.290
	Min. Vert	7	27.554	-35.289	-0.667
	Min. H_x	7	27.554	-35.289	-0.667
	Min. H_z	11	27.554	-0.667	-35.290
	Min. M_x	10	-3108.006	-0.667	-35.290
	Min. M_z	14	-3083.448	35.290	0.667
	Min. Torsion	2	-14.157	0.667	35.290

Tower Mast Reaction Summary

Load Combination	Vertical	$Shear_x$	$Shear_z$	Overturning Moment, M_x	Overturning Moment, M_z	Torque
	K	K	K	kip-ft	kip-ft	kip-ft
Dead Only	30.616	-0.001	-0.001	7.891	-12.254	0.001
1.2 Dead+1.6 Wind 0 deg - No Ice	36.739	-0.667	-35.290	-3088.816	51.269	14.157
0.9 Dead+1.6 Wind 0 deg - No Ice	27.554	-0.667	-35.290	-3071.608	54.690	14.149
1.2 Dead+1.6 Wind 45 deg - No Ice	36.739	24.483	-24.483	-2134.591	-2159.114	9.572
0.9 Dead+1.6 Wind 45 deg - No Ice	27.554	24.483	-24.483	-2123.459	-2141.646	9.546
1.2 Dead+1.6 Wind 90 deg - No Ice	36.739	35.288	0.667	75.780	-3113.054	-0.621
0.9 Dead+1.6 Wind 90 deg - No Ice	27.554	35.289	0.667	72.870	-3089.608	-0.651
1.2 Dead+1.6 Wind 135 deg - No Ice	36.739	25.425	25.425	2247.224	-2252.482	-10.428
0.9 Dead+1.6 Wind 135 deg - No Ice	27.554	25.425	25.425	2230.528	-2234.428	-10.445
1.2 Dead+1.6 Wind 180 deg - No Ice	36.739	0.667	35.290	3108.006	-81.048	-14.131
0.9 Dead+1.6 Wind 180 deg - No Ice	27.554	0.667	35.290	3085.851	-76.775	-14.125
1.2 Dead+1.6 Wind 225 deg - No Ice	36.739	-24.483	24.483	2153.812	2129.289	-9.570
0.9 Dead+1.6 Wind 225 deg - No Ice	27.554	-24.483	24.483	2137.714	2119.526	-9.545
1.2 Dead+1.6 Wind 270 deg - No Ice	36.739	-35.290	-0.667	-56.529	3083.448	0.602
0.9 Dead+1.6 Wind 270 deg - No Ice	27.554	-35.290	-0.667	-58.591	3067.641	0.631
1.2 Dead+1.6 Wind 315 deg - No Ice	36.739	-25.425	-25.425	-2227.997	2222.738	10.434
0.9 Dead+1.6 Wind 315 deg - No Ice	27.554	-25.425	-25.425	-2216.268	2212.367	10.449
1.2 Dead+1.0 Ice+1.0 Temp	81.907	-0.001	-0.000	10.680	-40.134	0.007
1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp	81.907	-0.140	-8.800	-781.358	-25.175	3.579
1.2 Dead+1.0 Wind 45 deg+1.0 Ice+1.0 Temp	81.907	6.123	-6.123	-538.715	-589.665	2.716
1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp	81.907	8.799	0.140	25.773	-832.228	0.266
1.2 Dead+1.0 Wind 135 deg+1.0 Ice+1.0 Temp	81.907	6.322	6.322	581.438	-610.966	-2.334
1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp	81.907	0.140	8.800	802.775	-55.307	-3.563
1.2 Dead+1.0 Wind 225 deg+1.0 Ice+1.0 Temp	81.907	-6.123	6.123	560.132	509.179	-2.702
1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp	81.907	-8.799	-0.140	-4.356	751.757	-0.254
1.2 Dead+1.0 Wind 315 deg+1.0 Ice+1.0 Temp	81.907	-6.322	-6.322	-560.018	530.486	2.349
Dead+Wind 0 deg - Service	30.616	-0.117	-6.178	-532.509	-0.842	2.490
Dead+Wind 45 deg - Service	30.616	4.285	-4.285	-365.989	-386.339	1.682
Dead+Wind 90 deg - Service	30.616	6.177	0.117	19.510	-552.775	-0.111
Dead+Wind 135 deg - Service	30.616	4.451	4.451	398.311	-402.719	-1.838
Dead+Wind 180 deg - Service	30.616	0.117	6.177	548.455	-23.922	-2.488
Dead+Wind 225 deg - Service	30.616	-4.285	4.285	381.932	361.582	-1.680
Dead+Wind 270 deg - Service	30.616	-6.177	-0.117	-3.567	528.019	0.112
Dead+Wind 315 deg - Service	30.616	-4.451	-4.451	-382.365	377.956	1.839

Solution Summary

Load Comb.	Sum of Applied Forces PX K	PY K	PZ K	Sum of Reactions PX K	PY K	PZ K	% Error
1	0.000	-30.616	0.000	0.001	30.616	0.001	0.004%
2	-0.667	-36.739	-35.290	0.667	36.739	35.290	0.000%
3	-0.667	-27.554	-35.290	0.667	27.554	35.290	0.000%
4	24.483	-36.739	-24.483	-24.483	36.739	24.483	0.000%
5	24.483	-27.554	-24.483	-24.483	27.554	24.483	0.000%
6	35.290	-36.739	0.667	-35.288	36.739	-0.667	0.005%
7	35.290	-27.554	0.667	-35.289	27.554	-0.667	0.004%
8	25.426	-36.739	25.426	-25.425	36.739	-25.425	0.000%
9	25.426	-27.554	25.426	-25.425	27.554	-25.425	0.000%
10	0.667	-36.739	35.290	-0.667	36.739	-35.290	0.000%
11	0.667	-27.554	35.290	-0.667	27.554	-35.290	0.000%
12	-24.483	-36.739	24.483	24.483	36.739	-24.483	0.000%
13	-24.483	-27.554	24.483	24.483	27.554	-24.483	0.000%
14	-35.290	-36.739	-0.667	35.290	36.739	0.667	0.001%
15	-35.290	-27.554	-0.667	35.290	27.554	0.667	0.001%
16	-25.426	-36.739	-25.426	25.425	36.739	25.425	0.000%
17	-25.426	-27.554	-25.426	25.425	27.554	25.425	0.000%
18	0.000	-81.907	0.000	0.001	81.907	0.000	0.001%
19	-0.140	-81.907	-8.800	0.140	81.907	8.800	0.000%
20	6.123	-81.907	-6.123	-6.123	81.907	6.123	0.000%
21	8.800	-81.907	0.140	-8.799	81.907	-0.140	0.001%
22	6.322	-81.907	6.322	-6.322	81.907	-6.322	0.000%
23	0.140	-81.907	8.800	-0.140	81.907	-8.800	0.000%
24	-6.123	-81.907	6.123	6.123	81.907	-6.123	0.000%
25	-8.800	-81.907	-0.140	8.799	81.907	0.140	0.001%
26	-6.322	-81.907	-6.322	6.322	81.907	6.322	0.000%
27	-0.117	-30.616	-6.178	0.117	30.616	6.178	0.001%
28	4.286	-30.616	-4.286	-4.285	30.616	4.285	0.004%
29	6.178	-30.616	0.117	-6.177	30.616	-0.117	0.004%
30	4.451	-30.616	4.451	-4.451	30.616	-4.451	0.001%
31	0.117	-30.616	6.178	-0.117	30.616	-6.177	0.001%
32	-4.286	-30.616	4.286	4.285	30.616	-4.285	0.004%
33	-6.178	-30.616	-0.117	6.177	30.616	0.117	0.004%
34	-4.451	-30.616	-4.451	4.451	30.616	4.451	0.001%

Non-Linear Convergence Results

Load Combination	Converged?	Number of Cycles	Displacement Tolerance	Force Tolerance
1	Yes	7	0.00000001	0.00005610
2	Yes	14	0.00000001	0.00005697
3	Yes	13	0.00000001	0.00014607
4	Yes	14	0.00000001	0.00012593
5	Yes	14	0.00000001	0.00009362
6	Yes	11	0.00006216	0.00014451
7	Yes	11	0.00004323	0.00011869
8	Yes	14	0.00000001	0.00014574
9	Yes	14	0.00000001	0.00010697
10	Yes	14	0.00000001	0.00006883
11	Yes	14	0.00000001	0.00005132
12	Yes	14	0.00000001	0.00012396
13	Yes	14	0.00000001	0.00009253
14	Yes	12	0.00000001	0.00012654

15	Yes	12	0.00000001	0.00010319
16	Yes	14	0.00000001	0.00013633
17	Yes	14	0.00000001	0.00010181
18	Yes	10	0.00000001	0.00006303
19	Yes	13	0.00000001	0.00006006
20	Yes	13	0.00000001	0.00007387
21	Yes	12	0.00000001	0.00013758
22	Yes	13	0.00000001	0.00008470
23	Yes	13	0.00000001	0.00006503
24	Yes	13	0.00000001	0.00006191
25	Yes	12	0.00000001	0.00011272
26	Yes	13	0.00000001	0.00006367
27	Yes	11	0.00000001	0.00008503
28	Yes	10	0.00000001	0.00014223
29	Yes	10	0.00000001	0.00010486
30	Yes	11	0.00000001	0.00007805
31	Yes	11	0.00000001	0.00009271
32	Yes	10	0.00000001	0.00013822
33	Yes	10	0.00000001	0.00009738
34	Yes	11	0.00000001	0.00006852

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	120 - 98	10.947	30	0.7485	0.0108
L2	102 - 48.5	8.155	30	0.7215	0.0103
L3	54.25 - 1	2.299	30	0.4031	0.0033

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
120.000	3' Stand-off	30	10.947	0.7485	0.0108	63462
110.000	(3) CCI HPA-65R-BUU-H8	30	9.382	0.7387	0.0107	31731
100.000	RFS APX16DWV-16DWVS-E-A20	30	7.855	0.7151	0.0101	16145
91.200	(2) Commscope NHH-65B-R2B	30	6.571	0.6761	0.0092	11717

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	120 - 98	60.210	8	4.0746	0.0612
L2	102 - 48.5	45.039	8	3.9337	0.0585
L3	54.25 - 1	12.844	8	2.2455	0.0188

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
120.000	3' Stand-off	8	60.210	4.0746	0.0618	13168
110.000	(3) CCI HPA-65R-BUU-H8	8	51.713	4.0231	0.0610	6583
100.000	RFS APX16DWV-16DWVS-E-A20	8	43.400	3.8999	0.0580	3290
91.200	(2) Commscope NHH-65B-R2B	8	36.382	3.6960	0.0525	2283

Compression Checks

Pole Design Data

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
L1	120 - 98 (1)	TP27.66x21.55x0.25	22.000	0.000	0.0	20.8683	-5.925	1530.450	0.004
L2	98 - 48.5 (2)	TP40.9x26.0491x0.375	53.500	0.000	0.0	46.3351	-21.782	3410.110	0.006
L3	48.5 - 1 (3)	TP53.34x38.5539x0.375	53.250	0.000	0.0	63.0416	-36.707	4200.050	0.009

Pole Bending Design Data

Section No.	Elevation ft	Size	M_{ux} kip-ft	ϕM_{nx} kip-ft	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	M_{uy} kip-ft	ϕM_{ny} kip-ft	Ratio $\frac{M_{uy}}{\phi M_{ny}}$
L1	120 - 98 (1)	TP27.66x21.55x0.25	127.665	826.312	0.154	0.000	826.312	0.000
L2	98 - 48.5 (2)	TP40.9x26.0491x0.375	1404.633	2725.017	0.515	0.000	2725.017	0.000
L3	48.5 - 1 (3)	TP53.34x38.5539x0.375	3181.775	4577.958	0.695	0.000	4577.958	0.000

Pole Shear Design Data

Section No.	Elevation ft	Size	Actual V_u K	ϕV_n K	Ratio $\frac{V_u}{\phi V_n}$	Actual T_u kip-ft	ϕT_n kip-ft	Ratio $\frac{T_u}{\phi T_n}$
L1	120 - 98 (1)	TP27.66x21.55x0.25	13.136	765.225	0.017	1.703	1657.017	0.001
L2	98 - 48.5 (2)	TP40.9x26.0491x0.375	30.567	1705.050	0.018	10.446	5464.617	0.002
L3	48.5 - 1 (3)	TP53.34x38.5539x0.375	35.990	2100.020	0.017	10.428	9176.917	0.001

Pole Interaction Design Data

Section No.	Elevation ft	Ratio $\frac{P_u}{\phi P_n}$	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	Ratio $\frac{M_{uy}}{\phi M_{ny}}$	Ratio $\frac{V_u}{\phi V_n}$	Ratio $\frac{T_u}{\phi T_n}$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
L1	120 - 98 (1)	0.004	0.154	0.000	0.017	0.001	0.159 ✔	1.000	4.8.2 ✔
L2	98 - 48.5 (2)	0.006	0.515	0.000	0.018	0.002	0.522 ✔	1.000	4.8.2 ✔
L3	48.5 - 1 (3)	0.009	0.695	0.000	0.017	0.001	0.704 ✔	1.000	4.8.2 ✔

Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
L1	120 - 98	Pole	TP27.66x21.55x0.25	1	-5.925	1530.450	15.9	Pass
L2	98 - 48.5	Pole	TP40.9x26.0491x0.375	2	-21.782	3410.110	52.2	Pass
L3	48.5 - 1	Pole	TP53.34x38.5539x0.375	3	-36.707	4200.050	70.4	Pass
							Summary	
							Pole (L3)	70.4	Pass
							RATING =	**70.4**	**Pass**

Base/Flange Plate	Plate Type	***Baseplate***	
	Pole Diameter	53.34	in
	Pole Thickness	0.375	in
	Plate Diameter	65.75	in
	Plate Thickness	2	in
	Plate Fy	50	ksi
	Weld Length	0.4244	in
	ϕ_s Resistance	452.94	k-in
	Applied	257.00	k-in
Stiffeners	#	***0***	

Bolts	#	***16***	
	Bolt Circle	60	in
	(R)adial / (S)quare	R	
●	Diameter	2.25	in
	Hole Diameter	2.625	in
	Type	A615-75	
	Fy	75	ksi
	Fu	100	ksi
	ϕ_s Resistance	259.82	k
	Applied	161.32	k
Reinforcement ●	#	***0***	
Extra Bolts O	#	***0***	

Code Rev.	***G***	**Date**	5/1/2020
		Engineer	MH
		Site #	CT011 Burlington
Moment	3182.0 k-ft	**Carrier**	VZW
Axial	37.0 k		

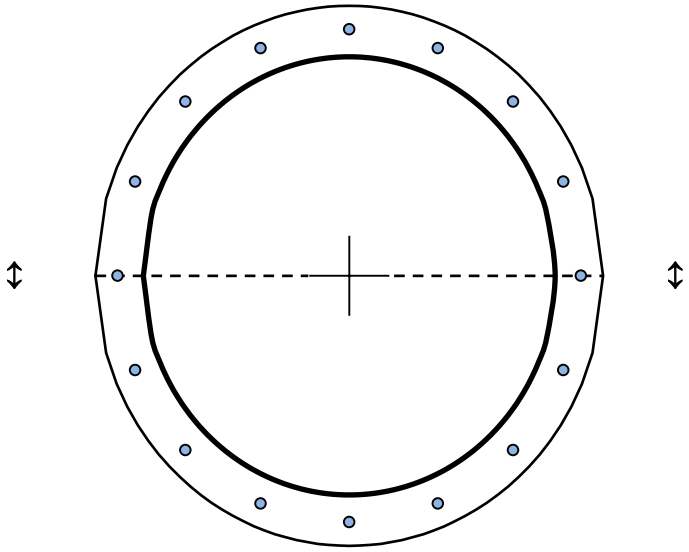


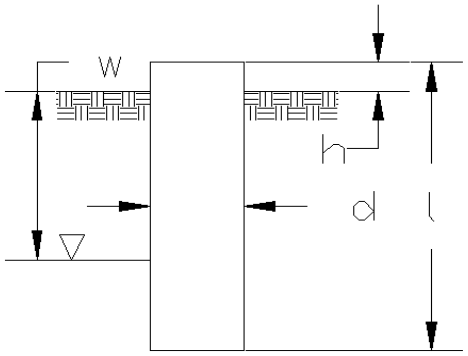
Plate Stress Ratio:

0.57 (Pass)

Bolt Stress Ratio:

0.62 (Pass)

Site Name:	Manati Marquez	*Program Last Updated:*	*6/2/2017*
Site Number:		*Bennett & Pless Inc.*	
Engineer:	CS		
Engineering Number:	0		
Date:	05/01/20		



Design Base Loads (Factored) - Analysis per TIA-222-G Standards

Analyze or Design a Foundation?	Design	
Foundation Mapped:	N	
Moment (M):	3182.0	k-ft
Shear/Leg (V):	36.0	k
Axial Load (P):	37.0	k
Uplift/Leg (U):	0.0	k
Tower Type (GT / SST / MP):	MP	
Diameter of Caisson (d):	7.0	ft
Caisson Embedment (L-h):	24.0	ft
Caisson Height Above Ground (h):	0.5	ft
Depth Below Ground Surface to Water Table (w):	24.0	ft
Unit Weight of Concrete:	150.0	pcf
Unit Weight of Water:	62.4	pcf
Tension Skin Friction/Compression Skin Friction:	1.00	
Pullout Angle:	30.0	degrees

Engineer Notes
#5ties @ 2.5" c-c for top 10", @6" c-c for reminder.

Soil Mechanical Properties

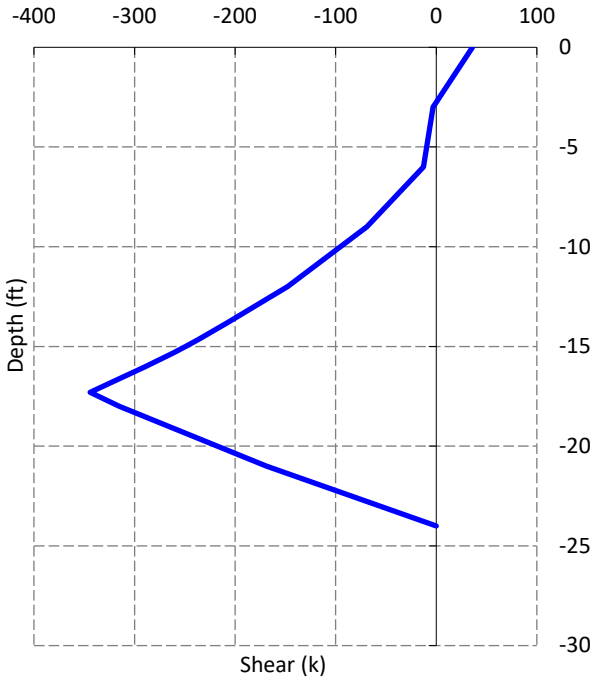
Depth (ft) Top	Depth (ft) Bottom	γ_{Soil} (pcf)	Cohesion (psf)	ϕ (degree)	Ultimate Skin Friction (psf)	Ultimate Bearing Pressure (psf)
0.0	3.5	120	0	0	0	0
3.5	24.0	120	0	34	1500	8000

Required Embedment:	20.4	ft - OK, Caisson Embedment Satisfactory
Volume of Concrete:	942.9	ft^3 = 34.9 yd^3
Weight of Concrete (Buoyancy Effect Considered):	141.4	k
Average Soil Unit Weight:	120.0	pcf
Skin Friction Resistance:	676.2	k
Compressive Bearing Resistance:	307.9	k
Pullout Weight (Minus Concrete Weight):	1017.9	k
Nominal Uplift Capacity per Leg ($\phi_s T_n$):	613.2	k
Nominal Compressive Capacity per Leg ($\phi_s P_n$):	738.1	k
P_u:	70.3	k
$T_u/\phi_s T_n$:	0.00	Result: OK
$P_u/\phi_s P_n$:	0.10	Result: OK
Total Lateral Resistance:	2092.3	k
Inflection Point (Below Ground Surface):	17.3	ft
Design Overturning Moment At Inflection Point (M_D):	3822.8	k-ft
Nominal Moment Capacity ($\phi_s M_n$):	6759.7	k-ft
$M_D/\phi_s M_n$:	0.57	Result: OK
ϕ_s:	0.75	

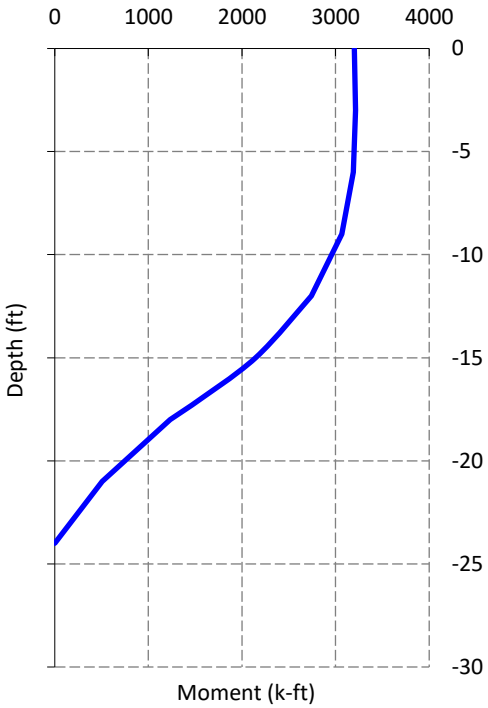
Caisson Strength Capacity

Concrete Compressive Strength (f'_c):	4000	psi
Vertical Steel Rebar Size #:	9	
Vertical Steel Rebar Area:	1.00	in^2
Required # of Vertical Rebar to Satisfy Reinforcement Ratio:	28	
# of Vertical Steel Rebars:	34	Minimum # of vertical rebar met for RR
Vertical Steel Rebar Yield Strength (F_y):	60	ksi
Horizontal Tie / Stirrup Size #:	5	
Horizontal Tie / Stirrup Area:	0.31	in^2
Required Horizontal Tie / Stirrup Spacing:	12.0	in
Design Horizontal Tie / Stirrup Spacing:	8.0	in - Tie Spacing is Satisfactory
Horizontal Tie / Stirrup Steel Yield Strength (F_y):	60	ksi
Rebar Cage Diameter:	76.0	in
Strength Bending/Tension Reduction Factor (ϕ_B):	0.90	ACI318-14 - 21.2.2
Strength Shear Reduction Factor (ϕ_V):	0.75	ACI318-14 - 21.2.1
Strength Compression Reduction Factor (ϕ_V):	0.65	ACI318-14 - 21.2.2
Steel Elastic Modulus:	29000	ksi
Maximum Allowable Strain in Rebar:	0.0075	ACI318-14 21.2.2
Design Moment (M_u):	3213.0	k-ft
Nominal Moment Capacity ($\phi_B M_n$):	5669.0	k-ft - ACI318-14 - 22.2
$M_u/\phi_B M_n$:	0.57	Result: OK
Design Shear (V_u):	344.1	k
Nominal Shear Capacity ($\phi_V V_n$):	527.5	k - ACI318-14 - 22.5.5 or 22.5.10.5.3
$V_u/\phi_V V_n$:	0.65	Result: OK
Design Tension (T_u):	0.0	k
Nominal Tension Capacity ($\phi_T T_n$):	1836.0	k - ACI318-14 - 22.2
$T_u/\phi_T T_n$:	0.00	Result: OK
Design Compression (P_u):	70.3	k
Nominal Compression Capacity ($\phi_P P_n$):	9737.7	k - ACI318-14 - 22.4.2
$P_u/\phi_P P_n$:	0.01	Result: OK
Bending Reinforcement Ratio:	0.006	Reinforcement Ratio is Satisfactory - ACI318-14 - 10.3.1.2
$M_u/\phi_B M_n + T_u/\phi_T T_n$:	0.57	Result: OK

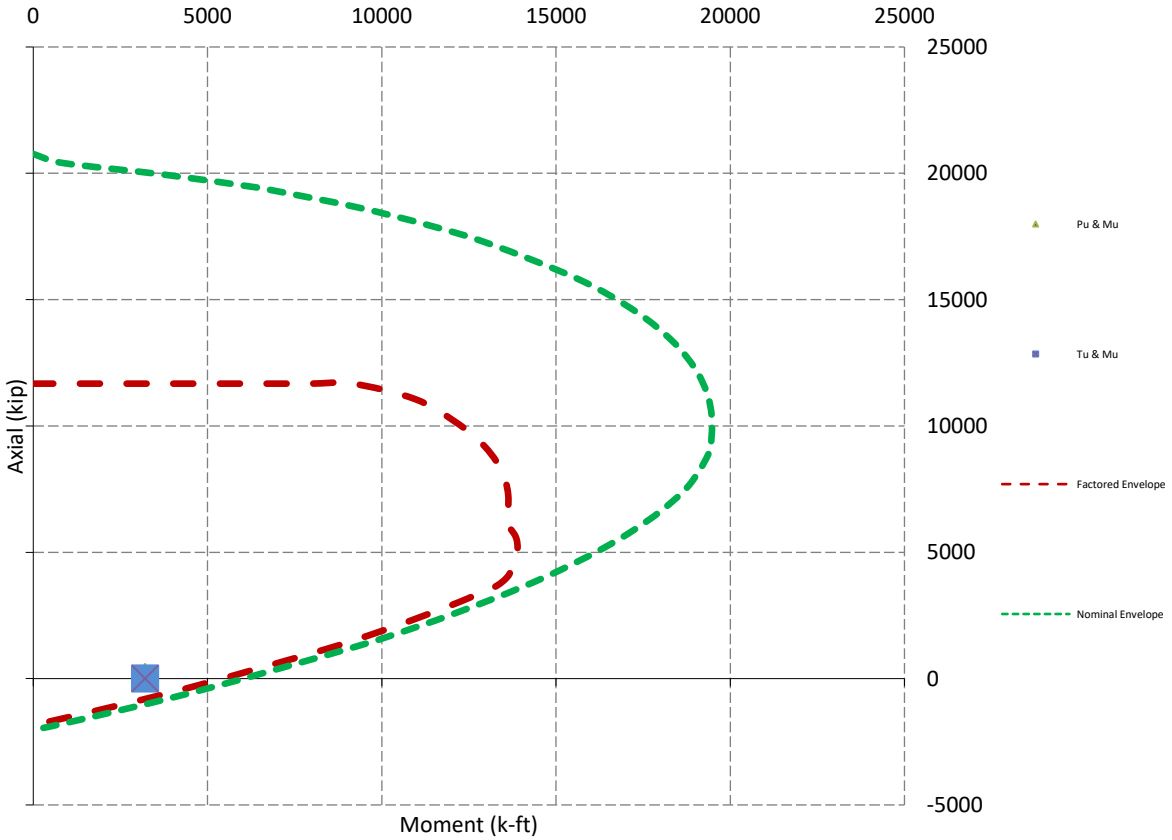
Design Factored Shear / Depth



Design Factored Moment / Depth



Nominal and Factored Moment Capacity and Factored Design Loads



PROJECT No:	20.03.013.014	**ENG:**	MH
PROJECT NAME:	CT011 - Burlington	**CHK:**	JB
	Insite		
DATE:	5/1/2020 19:33	**PAGE:**	of

TIA-222-G

SINGLE GLOBAL FOUNDATION WITH PIER(s) CHECKS - MONOPOLE

Global Tower Reactions	*Factored Loads*			*Calculated Reactions*	**Factored Resistance**				SF=3.19
Code Rev TIA-G	Maximum Moment	3,182.00	k-ft	Disturbing Moment	3,416.0	5,443.8	k-ft	PASS	62.8% [GOVERNS]
	Axial Load	37.00	kips	Maximum Bearing	2.03	6.00	kips	PASS	33.8%
	Shear Load	36.00	kips	Lateral (Sliding)	36.00	221.84	kips	PASS	16.2%
				Pad Shear	231.8	391.2	kips	PASS	59.2%
				Punching Shear	82.2	934.6	kips	PASS	8.8%
	Pier Rebar Check	3,362.0	k-ft	Flexural Capacity		7,203.8	k-ft	PASS	46.7%
	Pad Rebar Required	(26) # 8 @ 11.28 in		Actual Pad Rebar		(52) # 8 bars @ 5.5 in		PASS	53.2%

Soil Parameters	**Soils Report**		**Pier Geometry**			**Pad Geometry**	
Cohesion	0.0	psf (0.0 kPa)	Qty of Piers	1		Width (Bm)	24.00 ft
ϕ	34.0	°	Width (Bp)	8.00	ft	Width (Wm)	24.00 ft
Frost/Ignored Depth	3.50	ft (1.07 m)	Height (Hp)	4.50	ft	Height (Hm)	1.50 ft
Water Level	24.00	ft (7.32 m)	Pier above grade	0.50	ft	Depth (D)	6.00 ft
Soil Dry Density (γ_{dry})	0.120	kcf (18.8 kN/m^3)	Pier Type	R	(Rnd or Sq)	CofG Diff.	- ft
Soil Sub Density (γ_{sub})	0.058	kcf (9.04 kN/m^3)	☐ (use equivalent square for pad flexure)				
All. Bearing Pressure	4.000	ksf (191.5 kPa)	**Rebar**	**Pier**			**Pad**
Bearing Safety Factor	2		Rebar Type	ASTM			ASTM
Concrete Parameters			Cover to Tie	3.00	inches	Bar Size	8
f'c	4.500	ksi (31.0 MPa)	Pier Tie Size	5		Bar Qty	52
fy	60.00	ksi (413.7 MPa)	Pier Vertical Size	8		Pad bar qty is one layer in one direction	
Dry Density (γ_{dry})	0.150	kcf (23.6 kN/m^3)	Pier Vertical Qty	48	0.52%		
Sub Density (γ_{sub})	0.088	kcf (13.8 kN/m^3)					

Volume of Concrete/Soil

	Concrete (41.3cuyd) 1 Pier	Mat	Soil	
Depth (above)	0.50	--	--	ft
Depth (dry)	4.50	1.50	4.50	ft
Depth (submerged)	0.00	0.00	0.00	ft
Volume (above)	25.13	--	--	ft^3
Volume (dry)	226.19	864.00	3076.71	ft^3
Volume (submerged)	0.00	0	0.00	ft^3
Total	251	864	3077	ft^3

Pad Flexure

Distance *(edge to pier)*	8.000	ft		
B' = 3/2(B-2e)	12.378	ft		
Force	196.9	kips		
Disturbing Moment	1218.44	kip-ft		
Ku	278.57		Wgt of Rebar	
ρ	0.00538		13,914	lbs
4/3•ρ if ρ < ρ min	0.00717			
ρ min ≥ 0.0018	0.00180		26	Qty
As Required (based on ρ)	20.913	in²	11.28	in c/c
As Actual	41.080	in² ϕMn=	2,289	kip-ft
			53.2%	

Note: The moment is derived from a moment diagram that considers the ortho qmax trapezoidal distribution underneath the pad to edge of square pier.

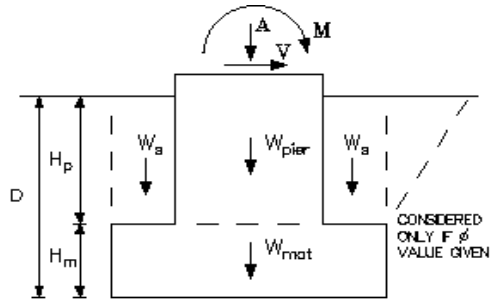
Calculations		*TIA-G Method*	*EIA-F Method*	
Axial Download	(factored)	37.0	--	kips
Wgt of Concrete	(not factored)	167.3	--	kips
Wgt of Soil	(not factored)	283.9	--	kips
Total Download (P_1)	(1.2D No wdg)	578.4	--	kips
Total Download (P_2)	(0.9D No wdg)	433.8	--	kips
Passive Force Moment		120.3	--	k-ft
Bearing Capacity Check				
Calculate ecc e = M/P_1	(1.2D+1.6W)	4.50	--	ft
1) q_{max} = Ortho Direction		1.89	--	ksf
2) q_{max} = Diagonal Direction		2.00	--	ksf
Calculate ecc e = M/P_1	(0.9D+1.6W)	6.18	--	ft
1) q_{max} = Ortho Direction		1.69	--	ksf
2) q_{max} = Diagonal Direction		2.03	--	ksf
q factored		6.00	--	ksf
		(2 • 0.75)		
Overturning Stability Check				
a) Resisting Moment Arm (d)		12.0	--	ft
a) Moment Resistance = P_2 x d		6268.9	--	k-ft
a) Disturbing Moment	(about edge)	3416.0	--	k-ft
b) Moment Resistance	(ortho)	5443.8	--	k-ft
b) Moment Resistance	(diagonal)	5588.8	--	k-ft
b) Disturbing Moment	(about center)	3416.0	--	k-ft

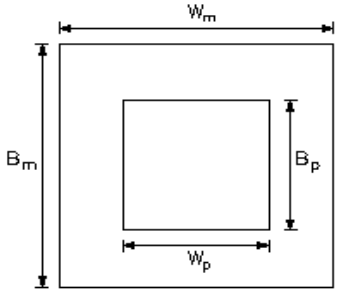
Check for 1-Way Shear

Shear Area (b x d) =	27.00	--	ft²
Factored shear force =	231.76	--	kips
Factored shear resistance	391.2	--	kips

Check for 2-Way Shear (Punching)

Shear Area (b_o x d)	32.25	--	ft²
Factored Shear Force	82.24	--	kips
Factored Shear Resistance	934.6	--	kips





M =	3182.0	k-ft
A =	37.0	kips
V =	36.0	kips
Bp =	8.00	ft
Wp =	8.00	ft
Hp =	4.50	ft
Bm =	24.00	ft
Wm =	24.00	ft
Hm =	1.50	ft
D =	6.00	ft

Attachment 2:
Collocation Application

WORKSHEET 1 OF 2 (COMPLETE BOTH WORKSHEET TABS)

InSite Towers, LLC

CUSTOMER APPLICATION

DATE SUBMITTED:

A Site Application Fee to be paid upon submission of this Customer Application.

CUSTOMER INFORMATION

COMPANY NAME:	Verizon Wireless	PHONE:	508-821-0159
ENTITY Type: i.e. Inc., LLP	d/b/a Cellco Partnership	FAX:	508-819-3017
STATE of Inc.		SERVICE (PCS, SMR):	

CUSTOMER ADDRESSES

COMPANY Address:	c/o Centerline Communications, LLC	CITY/STATE:	W. Bridgewater, MA	ZIP :	02379
BILLING Address:	750 W. Center St, Suite 301	CITY/STATE:		ZIP :	
NOTICE Address 1:	One Verizon Way, Mail Stop 4AW100	CITY/STATE:	Basking Ridge, NJ	ZIP :	07920
NOTICE Address 2:		CITY/STATE:		ZIP :	

CUSTOMER CONTACTS

PRIMARY CONTACT:	Alex Murshteyn	PHONE:	508-821-0159
TITLE:		E-MAIL Address:	AMurshteyn@CenterlineCommunications.co
SIGNATORY NAME:	Keith Murray	PHONE:	
TITLE:	Director, New England - Network	E-MAIL Address:	
EMERGENCY CONTACT:		PHONE:	
TITLE:		E-MAIL Address:	
TECHNICAL/OPS:		PHONE:	
TITLE:		E-MAIL Address:	
RF ENGINEER:	Mark Brauer	PHONE:	
TITLE:	RF Design Engineer	E-MAIL Address:	
BILLING CONTACT:		PHONE:	
TITLE:		E-MAIL Address:	
LEGAL CONTACT:		PHONE:	
TITLE:		E-MAIL Address:	

SITE INFORMATION

CUSTOMER Site # / Name:	Burlington SW CT	INSITE Site # and Name:	CT011 Burlington
SITE LATITUDE:	41.739138	SITE LONGITUDE:	-72.907801
SITE ADDRESS:	87 Monce Road	CITY:	Burlington
STATE:	CT ZIP: 06013	STRUCTURE TYPE:	Monopole

USE THIS SECTION TO PROVIDE A DESCRIPTION OF COLOCATION OR MODIFICATION REQUEST

Add (6) Commscope NHH-65B-R2B panel antennas, (6) Samsung RRH (3 - B2/B66A RRH-BR049 and 3 - B5/B13 RRH-BR04C), (1) Raycap OVP box RVZDC-6627-OF-48 on dual BSAMNT-SBS-1-2 mounts and tri-sector plaform, with (1) 2" hybrid fiber line to the tower plus 11'-0"x9'-0" (99 sq.ft.) proposed pad for cabinet and 7'-6"x4'-0" (30 sq. ft.) pad for 30 KW generator.

USE THIS SECTION TO LIST EQUIPMENT TO BE REMOVED

N/A - new collocation

APPLICATION PREPARED BY

NAME:	Alex Murshteyn	PHONE:	508-821-0159
COMPANY:	Centerline Communications, LLC	ADDRESS:	750 W. Center St, Ste. 301, W. Bridgewater, MA 02379
TITLE:	Site Acquisition Consultant	E-MAIL Address:	AMurshteyn@CenterlineCommunications.co

EXHIBIT
Equipment

Site Name and #: **CT011 Burlington** **Licensee Name:** **Verizon Wireless**

The mounting method and exact location of the space and equipment listed herein shall be subject to InSite's approval

SYSTEM REQUIREMENTS										
POWER provided by:	Utility Company direct					TELCO provided by:	Fiber			
Power Requirements:	Amps:	200	Volts:	120/240		No. of Outlets:	None			
Generator Provided by:	Licensee	Make:	TBD	Model:	TBD		Fuel Type:	Diesel	Capacity:	30 kW
Batteries:	Quantity:	None	Make:	N/A		Model:	N/A			
Note: audible alarms related to generator and other equipment shall be permanently disabled at unmanned sites										
SPACE REQUIREMENTS & RADIO INVENTORY										
Type of Space Required:	Ground:	Yes	Floor:	No		Total Square Feet:	129 sq. ft.			
Dimensions of Equipment Floor/Ground Space:	11' x 9'					Equipment Height:	N/A			
Dimensions of Generator Ground Space:	7'-6" x 4'					Dimensions of Fuel Tank Ground Space:	N/A			
No. of Transmitters (Tx):	Six (6)	Transmitter Make/Model:	Commscope			Transmitter Power Output	91.2			
No. of Receivers (Rx):	Six (6)	Receiver Make/Model:	Commscope			Transmitter ERP:	91.2			
Cabinet also contains:	N/A									

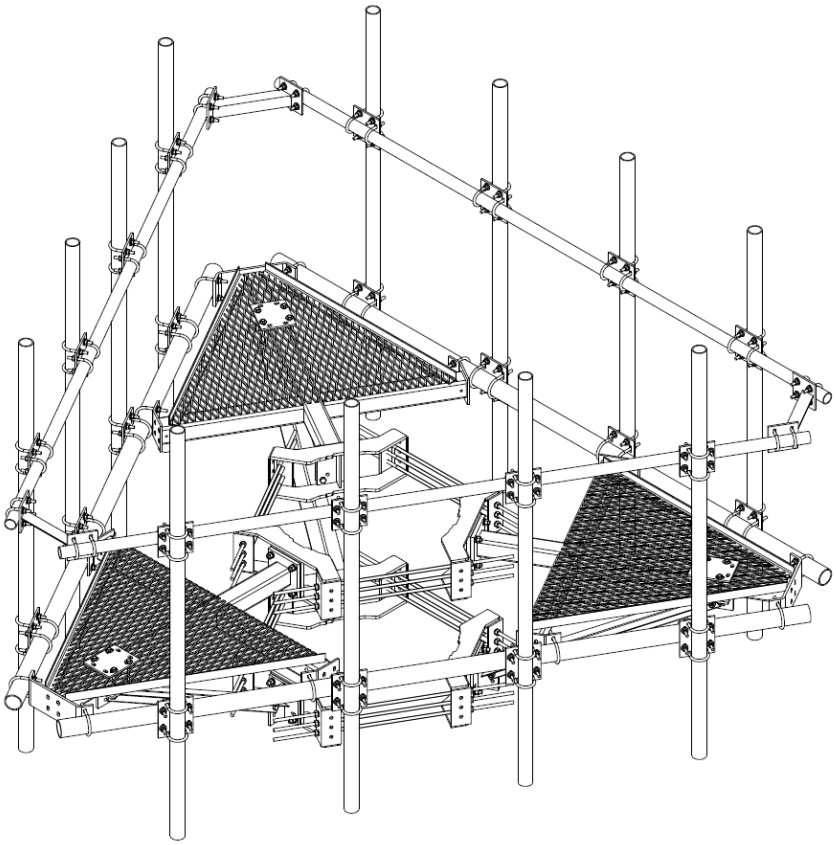
EQUIPMENT LOADING DESCRIPTION (FINAL CONFIGURATION)					
	Sector 1	**Sector 2**	**Sector 3**	**DISH(ES)**	**OTHER**
Antenna Type (1):	Panel	Panel	Panel	N/A	N/A
# of Antennas (1)/ Sector:	Two (2)	Two (2)	Two (2)	None	None
Tx, Rx or Both:	Both	Both	Both	N/A	N/A
Antenna Manufacturer (1):	Commscope	Commscope	Commscope	N/A	N/A
Antenna Model (1):	NHH-65B-R2B	NHH-65B-R2B	NHH-65B-R2B	N/A	N/A
Antenna Dimensions (1):	72" x 11.9" x 7.1"	72" x 11.9" x 7.1"	72" x 11.9" x 7.1"	N/A	N/A
Antenna Weight (1):	44 lbs	44 lbs	44 lbs	N/A	N/A
Antenna RAD Ctr (1):	91.2' AGL	91.2' AGL	91.2' AGL	N/A	N/A
# of RRU/RRHs/ Sector (1):	One (1)	One (1)	One (1)		
RRU/RRH Manufacturer (1):	Samsung	Samsung	Samsung		
RRU/RRH Model (1):	B2/B66A RRH-BR049	B2/B66A RRH-BR049	B2/B66A RRH-BR049		
RRU/RRH Dimensions (1):	15" x 15" x 10"	15" x 15" x 10"	15" x 15" x 10"		
RRU/RRH Weight (1):	37 lbs	37 lbs	37 lbs		
RRU/RRH RAD Ctr (1):	91.2' AGL	91.2' AGL	91.2' AGL		
# of RRU/RRHs/ Sector (2):	One (1)	One (1)	One (1)		
RRU/RRH Manufacturer (2):	Samsung	Samsung	Samsung		
RRU/RRH Model (2):	B5/B13 RRH-BR04C	B5/B13 RRH-BR04C	B5/B13 RRH-BR04C		
RRU/RRH Dimension (2):	15" x 15" x 8.1"	15" x 15" x 8.1"	15" x 15" x 8.1"		
RRU/RRH Weight (2):	70 lbs	70 lbs	70 lbs		
RRU/RRH RAD Ctr (2):	91.2' AGL	91.2' AGL	91.2' AGL		
# of TMAs/ Sector (1):	None	None	None		
# of Diplexers/ Sector:	None	None	None		
# of Surge Suppressors/Sctr:	One (1)	None	None		
Surge Suppressor Make:	Raycap	N/A	N/A		
Surge Suppressor Model:	RVZDC-6627-OF-48	N/A	N/A		
Surge Supressor Dimensions:	28.9" x 15.7" x 10.3"	N/A	N/A		
Surge Supressor Weight:	32 lbs	N/A	N/A		
Surge Supressors RAD Ctr:	91.2' AGL	N/A	N/A	**Please include microwave dish frequencies below:**	**Please include microwave dish frequencies below:**
OTHER:	None	None	None		
Transmit Frequencies:	869-880 MHz, 890-891.5 MHz, 1970-1982.5 MHz, 2120-2130 MHz, 776-787 MHz			N/A	N/A
Receive Frequencies:	824-835 MHz, 845-846.5 MHz, 1890-1902.5 MHz, 1720-1730 MHz, 746-757 MHz			N/A	N/A
# of Lines:	One (1)	None	None	None	None
Line Size:	2" Hybrid	N/A	N/A	N/A	N/A
Mount Type:	LP Platform	LP Platform	LP Platform	N/A	N/A
Mount Size:	Twelve Feet (12.5')	Twelve Feet (12.5')	Twelve Feet (12.5')	N/A	N/A

ATTACHMENT 6

verizon

20 Alexander Drive
Wallingford, CT 06492

MOUNT ANALYSIS
BURLINGTON SOUTHWEST CT



Address:
87 MONCE ROAD
BURLINGTON, CT 06013
LOCATION CODE: 479435

Date:
JULY 30, 2020 (REVISION 2)

CHAPPELL ENGINEERING ASSOCIATES, LLC
Civil • Structural • Land Surveying

R.K. Executive Centre ■ 201 Boston Post Road West ■ Suite 101 ■ Marlborough, MA 01752
t. 508.481.7400 ■ www.chappellengineering.com ■ f. 508.481.7406

CHAPPELL ENGINEERING ASSOCIATES, LLC
Civil • Structural • Land Surveying

July 30, 2020

verizon

20 Alexander Drive
Wallingford, CT 06492

RE:

Applicant Site Name:	Burlington Southwest CT
Applicant Location Code:	479435
Site Address:	87 Monce Road, Burlington, CT 06013

To whom it may concern:

Chappell Engineering Associates, LLC has performed a structural analysis of the proposed Verizon braced low-profile antenna mounting platform being proposed at the existing 120'+/- monopole located at the above-referenced address at approximately 91.2 ft AGL to analyze the effect of the proposed Verizon antenna installation on the subject platform.

The proposed antenna support structure will consist of one (1) low-profile antenna frame supporting twelve (12) individual antenna pipe mounts. Our analysis has considered the following total major equipment loads indicated on the antenna design summary (included in this report) to be installed on the proposed low-profile antenna frame:

Appurtenance	Size (HxWxD) (in)	Weight	Location	Status
(3) NHH-65B-R2B Panel Antennas	72.0x11.9x7.1	43.7lbs	Face of Mount	Proposed
(3) NHHSS-65B-R2B Panel Antennas	72.0x11.9x7.1	48.1lbs	Face of Mount	Proposed
(3) LTE/CDMA 700/850 RRH	15.0x15.0x8.1	70.3lbs	Face of Mount	Proposed
(3) PCS/AWS 1900/2100 RRH	15.0x15.0x10.0	84.4lbs	Face of Mount	Proposed
(1) Fiber Junction Box	19.18x15.73x10.25	26.9lbs	Face of Mount	Proposed

The proposed antennas and ancillary hardware are shown on the construction drawings

We have modeled the entire low-profile antenna frame under both wind and wind/ice loads. Our analysis and results are included in this report.

Based upon our analysis of the antenna mounts being proposed, **we consider the proposed RMQP-496-HK low-profile mounting frame assembly has adequate capacity** to support the proposed antenna configuration as shown on the construction drawings. Our analysis assumes the mount will be installed and maintained according to the manufacturers' recommendations.

If you have any questions regarding this matter, please do not hesitate to call.

Very truly yours,
CHAPPELL ENGINEERING ASSOCIATES, LLC

STATE OF CONNECTICUT
CLEMENT J. SALEK
No. 26376
LICENSED
PROFESSIONAL ENGINEER

Clement J Salek, P.E.
CJS/cjs

Appendix A – RF Antenna Data Sheets

verizon fuze | RFDS

EAST > North East > New England > New England West > BURLINGTON SW CT - A

Brauer, Mark - mark.brauer2@verizonwireless.com - 2/24/2020 11:14:58

Project Details

Carrier Aggregation:	false
MPT Id:	1177321
eCIP-0:	false
Project Name:	Capacity MACRO
FUZE Project ID:	15078037
Designed Sector Carrier 4G:	12
Designed Sector Carrier 5G:	N/A
Additional Sector Carrier 4G:	N/A
Additional Sector Carrier 5G:	N/A
SiteTraker Project Id:	
RFDS Project Scope:	Samsung dual bands 700/850/AWS/PCS Side by Side brackets updated per Gregory Sykier for 91.2 antenna centerline 02/24/2020
Suffix:	

Location Information

Site ID:	616512833
E-NodeB ID:	068998
PSLC:	
Switch Name:	
Tower Owner:	
Tower Type:	Monopole
Site Type:	MACRO
Street Address:	87 Monce Road
City:	Burlington
State:	CT
Zip Code:	06013
County:	Hartford
Latitude:	41.739138 / 41° 44' 20.8968" N
Longitude:	-72.907801 / 72° 54' 28.0836" W

Antenna Summary

Added

700	850	1900	AWS	AWS3	28 GHz	31 GHz	39 GHz	CBRS	LAA	Make	Model	Centerline	Tip Height	Azimuth	RET	4xRx	Inst. Type	Quantity
LTE	LTE	LTE								COMMSCOPE	NHH-65B-R2B PORT 3 +45 00DT 1950 (427849)	91.2	94.2	50(D1) 170(D2) 300(D3)	true	true	PHYSICAL	3
LTE	LTE		LTE							COMMSCOPE	NHHSS-65B-R2B-PRELIM Port 3 +45 00DT 2110	91.2	94.2	50(D1) 170(D2) 300(D3)	true	true	PHYSICAL	3

Removed

700	850	1900	AWS	AWS3	28 GHz	31 GHz	39 GHz	CBRS	LAA	Make	Model	Centerline	Tip Height	Azimuth	RET	4xRx	Inst. Type	Quantity

No data available.

Retained

700	850	1900	AWS	AWS3	28 GHz	31 GHz	39 GHz	CBRS	LAA	Make	Model	Centerline	Tip Height	Azimuth	RET	4xRx	Inst. Type	Quantity

No data available.

Added: 6 **Removed:** 0 **Retained:** 0

Equipment Summary

Added

Equipment Type	Location	700	850	1900	AWS	AWS3	28 GHz	31 GHz	39 GHz	CBRS	LAA	Make	Model	Cable Length	Cable Size	Install Type	Quantity
OVP Box	Tower											Raycap	RVZDC-6627-PF-48			PHYSICAL	1
RRU	Tower			LTE	LTE							Samsung	B2/B66A RRH-BR049 (RFV01U-D1A)			PHYSICAL	3
Mount	Tower											Comscope	BSAMNT-SBS-1-2			PHYSICAL	3
RRU	Tower	LTE	LTE									Samsung	B5/B13 RRH-BR04C (RFV01U-D2A)			PHYSICAL	3
Hybrid Cable	Tower											Huber	HD -12x6GA-24SM			PHYSICAL	1

Removed

Equipment Type	Location	700	850	1900	AWS	AWS3	28 GHz	31 GHz	39 GHz	CBRS	LAA	Make	Model	Cable Length	Cable Size	Install Type	Quantity

No data available.

Retained

Equipment Type	Location	700	850	1900	AWS	AWS3	28 GHz	31 GHz	39 GHz	CBRS	LAA	Make	Model	Cable Length	Cable Size	Install Type	Quantity

No data available.

Service Info

700 MHZ LTE

	0002		
Sector	**D1**	**D2**	**D3**
Azimuth	50	170	300
Cell / ENode B ID	068998	068998	068998
Antenna Model	NHH-65B-R2B_PORT 1 +45_02DT_0752 (427823)	NHH-65B-R2B_PORT 1 +45_02DT_0752 (427823)	NHH-65B-R2B_PORT 1 +45_02DT_0752 (427823)
Antenna Make	COMMSCOPE	COMMSCOPE	COMMSCOPE
Antenna Centerline(Ft)	91.2	91.2	91.2
Mechanical Down-Tilt(Deg.)	0	0	0
Electrical Down-Tilt	2	2	2
Tip Height	94.2	94.2	94.2
Regulatory Power	71.26	71.26	71.26
TMA Make			
TMA Model			
RRU Make	Samsung	Samsung	Samsung
RRU Model	B5/B13 RRH-BR04C (RFV01U-D2A)	B5/B13 RRH-BR04C (RFV01U-D2A)	B5/B13 RRH-BR04C (RFV01U-D2A)
Number of Tx, Rx Lines	4,4	4,4	4,4
Position			
Source	ATOLL_API	ATOLL_API	ATOLL_API

2100 MHZ LTE

	0002		
Sector	**D1**	**D2**	**D3**
Azimuth	50	170	300
Cell / ENode B ID	068998	068998	068998
Antenna Model	NHHSS-65B-R2B-PRELIM_Port 3 +45_00DT_2110	NHHSS-65B-R2B-PRELIM_Port 3 +45_00DT_2110	NHHSS-65B-R2B-PRELIM_Port 3 +45_00DT_2110
Antenna Make	COMMSCOPE	COMMSCOPE	COMMSCOPE
Antenna Centerline(Ft)	91.2	91.2	91.2
Mechanical Down-Tilt(Deg.)	0	0	0
Electrical Down-Tilt	0	0	0
Tip Height	94.2	94.2	94.2
Regulatory Power	143.06	143.06	143.06
TMA Make			
TMA Model			
RRU Make	Samsung	Samsung	Samsung
RRU Model	B2/B66A RRH-BR049 (RFV01U-D1A)	B2/B66A RRH-BR049 (RFV01U-D1A)	B2/B66A RRH-BR049 (RFV01U-D1A)
Number of Tx, Rx Lines	4,4	4,4	4,4
Position			
Source	ATOLL_API	ATOLL_API	ATOLL_API

1900 MHZ LTE

	0002		
Sector	**D1**	**D2**	**D3**
Azimuth	50	170	300
Cell / ENode B ID	068998	068998	068998
Antenna Model	NHH-65B-R2B_PORT 3 +45_00DT_1950 (427849)	NHH-65B-R2B_PORT 3 +45_00DT_1950 (427849)	NHH-65B-R2B_PORT 3 +45_00DT_1950 (427849)
Antenna Make	COMMSCOPE	COMMSCOPE	COMMSCOPE
Antenna Centerline(Ft)	91.2	91.2	91.2
Mechanical Down-Tilt(Deg.)	0	0	0
Electrical Down-Tilt	0	0	0
Tip Height	94.2	94.2	94.2
Regulatory Power	253.37	253.37	253.37
TMA Make			
TMA Model			
RRU Make	Samsung	Samsung	Samsung
RRU Model	B2/B66A RRH-BR049 (RFV01U-D1A)	B2/B66A RRH-BR049 (RFV01U-D1A)	B2/B66A RRH-BR049 (RFV01U-D1A)
Number of Tx, Rx Lines	4,4	4,4	4,4
Position			
Source	ATOLL_API	ATOLL_API	ATOLL_API

850 MHZ LTE

	0002		
Sector	**D1**	**D2**	**D3**
Azimuth	50	170	300
Cell / ENode B ID	068998	068998	068998
Antenna Model	NHH-65B-R2B_PORT 1 +45_02DT_0847 (427824)	NHH-65B-R2B_PORT 1 +45_02DT_0847 (427824)	NHH-65B-R2B_PORT 1 +45_02DT_0847 (427824)
Antenna Make	COMMSCOPE	COMMSCOPE	COMMSCOPE
Antenna Centerline(Ft)	91.2	91.2	91.2
Mechanical Down-Tilt(Deg.)	0	0	0
Electrical Down-Tilt	2	2	2
Tip Height	94.2	94.2	94.2
Regulatory Power	276.75	276.75	276.75
TMA Make			
TMA Model			
RRU Make	Samsung	Samsung	Samsung
RRU Model	B5/B13 RRH-BR04C (RFV01U-D2A)	B5/B13 RRH-BR04C (RFV01U-D2A)	B5/B13 RRH-BR04C (RFV01U-D2A)
Number of Tx, Rx Lines	4,4	4,4	4,4
Position			
Source	ATOLL_API	ATOLL_API	ATOLL_API

Service Comments

Appendix B – Construction Drawings

SUPPORTING DOCUMENTS

RADIO FREQUENCY (RF) DESIGN DATE: 2/24/20

ANTENNA MOUNT STRUCTURAL ANALYSIS DATE: 7/30/20

ANTENNA SUPPORT STRUCTURE (120'± MONOPOLE) STRUCTURAL ANALYSIS DATE: 5/5/20 (BY OTHERS)

verizon

20 ALEXANDER DRIVE, WALLINGFORD, CT 06492

BURLINGTON SOUTHWEST CT

87 MONCE ROAD
BURLINGTON, CT 06013

PROJECT TYPE: WIRELESS TELECOMMUNICATIONS COLLOCATION ON EXISTING 120'± MONOPOLE

SITE INFORMATION:

LAND OWNER:	TOWN OF BURLINGTON 200 SPIELMANY HIGHWAY BURLINGTON, CT 06013
TOWER OWNER:	INSITE TOWERS, LLC 1199 NORTH FAIRFAX STREET, SUITE 700 ALEXANDRIA, VA 22314
APPLICANT:	CELLCO PARTNERSHIP (dba VERIZON WIRELESS) 20 ALEXANDER DRIVE WALLINGFORD, CT 06492
SITE ADDRESS:	87 MONCE ROAD BURLINGTON, CT 06013
COUNTY:	HARTFORD COUNTY, CT
SITE CONTROL POINT:	CENTER OF EXISTING MONOPOLE N 41°-44'-20.89" (41.739136") (NAD '83) W 72°-54'-28.09" (72.907803") (NAD '83)
ZONING CLASSIFICATION:	R-44 (R-44 RESIDENTIAL ZONE)
ZONING JURISDICTION:	TOWN OF BURLINGTON, CT
TAX ID PARCEL NUMBER:	MAP 11 BLOCK 06 LOT 33
ARCHITECT / ENGINEER:	CHAPPELL ENGINEERING ASSOCIATES, LLC 201 BOSTON POST ROAD WEST, SUITE 101 MARLBOROUGH, MA 01752
POWER COMPANY:	EVERSOURCE ENERGY 247 STATION DRIVE, SE 210 WESTWOOD, MA 02090 (781) 441-3610
TELEPHONE COMPANY:	VERIZON 185 FRANKLIN STREET BOSTON, MA 02107 (800) 941-9900

GENERAL NOTES

1. CONTRACTOR SHALL VERIFY ALL PLANS, EXISTING DIMENSIONS, AND CONDITIONS ON JOB SITE. CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ARCHITECT/ENGINEER IN WRITING OF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK. FAILURE TO NOTIFY THE ARCHITECT/ENGINEER PLACES THE RESPONSIBILITY ON THE CONTRACTOR TO CORRECT THE DISCREPANCIES AT THE CONTRACTOR'S EXPENSE.

2. NEW CONSTRUCTION SHALL CONFORM TO ALL APPLICABLE CODES AND ORDINANCES.
   - BUILDING CODE: 2018 CONNECTICUT STATE BUILDING CODE
   - ELECTRICAL CODE: 2017 NATIONAL ELECTRICAL CODE
   - STRUCTURAL CODE: TIA/EIA-222-G STRUCTURAL STANDARDS FOR ANTENNA SUPPORTING STRUCTURES AND ANTENNAS.

AT LEAST 72 HOURS PRIOR TO DIGGING, THE CONTRACTOR IS REQUIRED TO CALL BEFORE YOU DIG AT 811

VICINITY MAP

SCALE: 1"=1000'

DRIVING DIRECTIONS

FROM WALLINGFORD, TAKE CT-15 N. TAKE EXIT 68W FOR I-691 W TOWARD MERIDEN WATERBURY. TAKE EXIT 2 FOR I-84 E TOWARD HARTFORD. USE THE LEFT LANE TO TAKE EXIT 33 TO MERGE ONTO CT-72 W TOWARD BRISTOL. TAKE EXIT 1 FOR CT-177/NORTH WASHINGTON STREET. USE THE RIGHT 2 LANES TO TURN RIGHT ONTO CT-177 N. TURN LEFT ONTO COPPERMINE ROAD. CONTINUE ONTO STAFFORD ROAD. TURN RIGHT ONTO MONCE ROAD. THE SITE WILL BE ON THE LEFT SIDE.

SHEET INDEX

DWG.	DESCRIPTION	REV.
T01	TITLE SHEET	2
GN01	GENERAL NOTES	2
C01	PROPERTY PLAN	2
A01	EQUIPMENT COMPOUND PLAN	2
A02	EQUIPMENT PAD PLAN & DETAILS	2
A03	WEST SITE ELEVATION	2
S01	ICE SHIELD FRAMING PLAN & STRUCTURAL DETAILS	2
RF01	ANTENNA MOUNTING PLAN AND DETAILS	2
RF02	ANTENNA DETAILS AND ANCILLARY EQUIPMENT SPECIFICATIONS	2
RF03	RF COLOR CODE SPECIFICATIONS AND PLUMBING DIAGRAM	2
E01	ELECTRICAL SPECIFICATIONS AND NOTES	2
E02	EQUIPMENT COMPOUND UTILITY PLAN & DETAILS	2
E03	ELECTRICAL DIAGRAMS & DETAILS	2
E04	SCHEMATIC GROUNDING PLAN & DETAILS	2
E05	GROUNDING DETAILS	2

DO NOT SCALE DRAWINGS

ALL PLANS, EXISTING DIMENSIONS AND CONDITIONS AT THE PROPOSED PROJECT SITE SHALL BE VERIFIED IN THE FIELD DURING THE CONSTRUCTION PHASE. THE PROJECT OWNER'S REPRESENTATIVE SHALL BE NOTIFIED IN WRITING OF ANY DISCREPANCIES IMMEDIATELY PRIOR TO PROCEEDING WITH THE PROPOSED WORK AFFECTED BY SUCH DISCREPANCIES. IN THE EVENT OF LACK OF SUCH NOTIFICATION, SUCH DISCREPANCIES SHALL BECOME THE RESPONSIBILITY OF THE PREVAILING CONTRACTOR RESPONSIBLE FOR CONSTRUCTION.

PROJECT DESCRIPTION

1. THIS IS AN UNMANNED AND RESTRICTED ACCESS INSTALLATION AND WILL BE USED FOR THE TRANSMISSION OF RADIO SIGNAL FOR THE PURPOSE OF PROVIDING PUBLIC WIRELESS TELECOMMUNICATIONS SERVICE.
2. THIS FACILITY WILL CONSUME NO UNRECOVERABLE ENERGY.
3. NO POTABLE WATER SUPPLY IS TO BE PROVIDED AT THIS LOCATION.
4. NO WASTE WATER WILL BE GENERATED AT THIS LOCATION.
5. NO SOLID WASTE WILL BE GENERATED AT THIS LOCATION.

verizon

" Because Better Matters "

CHAPPELL ENGINEERING ASSOCIATES, LLC
Civil • Structural • Land Surveying
R.K. EXECUTIVE CENTRE
201 BOSTON POST ROAD WEST, SUITE 101
MARLBOROUGH, MA 01752
(508) 481-7400
www.chappellengineering.com

ENGINEER/LAND SURVEYOR DATE

REVISIONS

NO.	DESCRIPTION	DATE
0	ISSUED FOR REVIEW	5/26/20
1	GENERAL REVISIONS	7/20/20
2	GENERAL REVISIONS	7/30/20

PROJECT NAME:

BURLINGTON SOUTHWEST CT
87 MONCE ROAD
BURLINGTON, CT 06013

DRAWING TITLE:

TITLE SHEET

DRAWING NO:

T01

SCALE:	DESIGNED BY: GRS	VZW LOCATION CODE:
AS SHOWN	DRAWN BY: NWC	
CEA PROJECT NO.:	CHECKED BY: GRS	479435
96210.398	ORIGINAL ISSUE DATE: 5/26/20	

GENERAL NOTES:

1. FOR THE PURPOSE OF CONSTRUCTION DRAWINGS, THE FOLLOWING DEFINITIONS SHALL APPLY:
CONTRACTOR – VERIZON WIRELESS
SUBCONTRACTOR – GENERAL CONTRACTOR (CONSTRUCTION)
OWNER – VERIZON WIRELESS
OEM – ORIGINAL EQUIPMENT MANUFACTURER

2. PRIOR TO THE SUBMISSION OF BIDS, THE BIDDING SUBCONTRACTOR SHALL VISIT THE CELL SITE TO FAMILIARIZE WITH THE EXISTING CONDITIONS AND TO CONFIRM THAT THE WORK CAN BE ACCOMPLISHED AS SHOWN ON THE CONSTRUCTION DRAWINGS. ANY DISCREPANCY FOUND SHALL BE BROUGHT TO THE ATTENTION OF CONTRACTOR.

3. ALL MATERIALS FURNISHED AND INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS, AND ORDINANCES. SUBCONTRACTOR SHALL ISSUE ALL APPROPRIATE NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS, AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY REGARDING THE PERFORMANCE OF THE WORK.

4. ALL WORK CARRIED OUT SHALL COMPLY WITH ALL APPLICABLE MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS AND LOCAL JURISDICTIONAL CODES, ORDINANCES AND APPLICABLE REGULATIONS.

5. DRAWINGS PROVIDED HERE ARE NOT TO BE SCALED AND ARE INTENDED TO SHOW OUTLINE ONLY.

6. UNLESS NOTED OTHERWISE, THE WORK SHALL INCLUDE FURNISHING MATERIALS, EQUIPMENT, APPURTENANCES, AND LABOR NECESSARY TO COMPLETE ALL INSTALLATIONS AS INDICATED ON THE DRAWINGS.

7. THE SUBCONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.

8. IF THE SPECIFIED EQUIPMENT CANNOT BE INSTALLED AS SHOWN ON THESE DRAWINGS, THE SUBCONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION FOR APPROVAL BY THE CONTRACTOR.

9. SUBCONTRACTOR SHALL DETERMINE ACTUAL ROUTING OF CONDUIT, POWER AND T1 CABLES, GROUNDING CABLES AS SHOWN ON THE POWER, GROUNDING AND TELCO PLAN DRAWING. SUBCONTRACTOR SHALL UTILIZE EXISTING TRAYS AND/OR SHALL ADD NEW TRAYS AS NECESSARY. SUBCONTRACTOR SHALL CONFIRM THE ACTUAL ROUTING WITH THE CONTRACTOR.

10. THE SUBCONTRACTOR SHALL PROTECT EXISTING IMPROVEMENTS, PAVEMENTS, CURBS, LANDSCAPING AND STRUCTURES. ANY DAMAGED PART SHALL BE REPAIRED AT SUBCONTRACTOR'S EXPENSE TO THE SATISFACTION OF THE OWNER.

11. SUBCONTRACTOR SHALL LEGALLY AND PROPERLY DISPOSE OF ALL SCRAP MATERIALS SUCH AS COAXIAL CABLES AND OTHER ITEMS REMOVED FROM THE EXISTING FACILITY. ANTENNAS REMOVED SHALL BE RETURNED TO THE OWNER'S DESIGNATED LOCATION.

12. SUBCONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION.

13. THE SUBCONTRACTOR SHALL SUPERVISE AND DIRECT THE PROJECT DESCRIBED HEREIN. THE SUBCONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, AND PROCEDURES FOR COORDINATING ALL PORTIONS OF THE WORK UNDER THE CONTRACT.

14. SUBCONTRACTOR SHALL NOTIFY CHAPPELL ENGINEERING ASSOCIATES, LLC. 48 HOURS IN ADVANCE OF POURING CONCRETE OR BACK FILLING TRENCHES, SEALING ROOF AND WALL PENETRATIONS & POST DOWNS, FINISHING NEW WALLS OR FINAL ELECTRICAL CONNECTIONS FOR ENGINEERING REVIEW.

15. CONSTRUCTION SHALL COMPLY WITH VERIZON WIRELESS NETWORK STANDARD #NSTD123 TO THE MAXIMUM EXTENT FEASIBLE UNLESS PRECLUDED OR LIMITED BY DESIGN SHOWN ON THESE DRAWINGS.

16. 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.

17. 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.

18. 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 TO BE WORN TO ALERT OF ANY DANGEROUS EXPOSURE LEVELS.

SITE WORK GENERAL NOTES:

1. THE SUBCONTRACTOR SHALL CONTACT UTILITY LOCATING SERVICES PRIOR TO THE START OF CONSTRUCTION.

2. ALL EXISTING ACTIVE SEWER, WATER, GAS, ELECTRIC, AND OTHER UTILITIES WHERE ENCOUNTERED IN THE WORK, SHALL BE PROTECTED AT ALL TIMES, AND WHERE REQUIRED FOR THE PROPER EXECUTION OF THE WORK, SHALL BE RELOCATED AS DIRECTED BY ENGINEERS. EXTREME CAUTION SHOULD BE USED BY THE SUBCONTRACTOR WHEN EXCAVATING OR DRILLING PIERS AROUND OR NEAR UTILITIES. SUBCONTRACTOR SHALL PROVIDE SAFETY TRAINING FOR THE WORKING CREW. THIS WILL INCLUDE BUT NOT BE LIMITED TO A) FALL PROTECTION B) CONFINED SPACE C) ELECTRICAL SAFETY D) TRENCHING & EXCAVATION.

3. ALL SITE WORK SHALL BE AS INDICATED ON THE DRAWINGS AND PROJECT SPECIFICATIONS.

4. IF NECESSARY, RUBBISH, STUMPS, DEBRIS, STICKS, STONES AND OTHER REFUSE SHALL BE REMOVED FROM THE SITE AND DISPOSED OF LEGALLY.

5. THE SITE SHALL BE GRADED TO CAUSE SURFACE WATER TO FLOW AWAY FROM THE BTS EQUIPMENT AND TOWER AREAS.

6. NO FILL OR EMBANKMENT MATERIAL SHALL BE PLACED ON FROZEN GROUND. FROZEN MATERIALS, SNOW OR ICE SHALL NOT BE PLACED IN ANY FILL OR EMBANKMENT.

7. THE SUB GRADE SHALL BE COMPACTED AND BROUGHT TO A SMOOTH UNIFORM GRADE PRIOR TO FINISHED SURFACE APPLICATION.

8. ALL EXISTING INACTIVE SEWER, WATER, GAS, ELECTRIC AND OTHER UTILITIES, WHICH INTERFERE WITH THE EXECUTION OF THE WORK, SHALL BE REMOVED AND/OR CAPPED, PLUGGED OR OTHERWISE DISCONTINUED AT POINTS WHICH WILL NOT INTERFERE WITH THE EXECUTION OF THE WORK, SUBJECT TO THE APPROVAL OF ENGINEERING, OWNER AND/OR LOCAL UTILITIES.

9. THE AREAS OF THE OWNERS PROPERTY DISTURBED BY THE WORK AND NOT COVERED BY THE TOWER, EQUIPMENT OR DRIVEWAY, SHALL BE GRADED TO A UNIFORM SLOPE AND STABILIZED TO PREVENT EROSION AS SPECIFIED IN THE PROJECT SPECIFICATIONS.

10. SUBCONTRACTOR SHALL MINIMIZE DISTURBANCE TO EXISTING SITE DURING CONSTRUCTION. EROSION CONTROL MEASURES, IF REQUIRED DURING CONSTRUCTION, SHALL BE IN CONFORMANCE WITH THE LOCAL GUIDELINES FOR EROSION AND SEDIMENT CONTROL.

11. THE SUBCONTRACTOR SHALL PROVIDE SITE SIGNAGE IN ACCORDANCE WITH THE VERIZON WIRELESS SPECIFICATION FOR SITE SIGNAGE.

CONCRETE AND REINFORCING STEEL NOTES:

1. ALL CONCRETE WORK SHALL BE IN ACCORDANCE WITH THE ACI 301, ACI 318, ACI 336, ASTM A184, ASTM A185 AND THE DESIGN AND CONSTRUCTION SPECIFICATION FOR CAST-IN-PLACE CONCRETE.

2. ALL CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 3000 PSI AT 28 DAYS, UNLESS NOTED OTHERWISE. A HIGHER STRENGTH (4000PSI) MAY BE USED. ALL CONCRETE WORK SHALL BE IN ACCORDANCE WITH THE ACI 381 CODE REQUIREMENTS

3. REINFORCING STEEL SHALL CONFORM TO ASTM A 615, GRADE 60, DEFORMED UNLESS NOTED OTHERWISE, WELDED WIRE FABRIC SHALL CONFORM TO ASTM A 185 WELDED STEEL WIRE FABRIC UNLESS NOTED OTHERWISE. SPLICES SHALL BE CLASS "B" AND ALL HOOKS SHALL BE STANDARD, UNO.

4. THE FOLLOWING MINIMUM CONCRETE COVER SHALL BE PROVIDED FOR REINFORCING STEEL UNLESS SHOWN OTHERWISE ON DRAWINGS:
CONCRETE CAST AGAINST EARTH.....3 IN.
CONCRETE EXPOSED TO EARTH OR WEATHER:
#6 AND LARGER .....2 IN.
#5 AND SMALLER & WWF .....1½ IN.
CONCRETE NOT EXPOSED TO EARTH OR WEATHER
OR NOT CAST AGAINST THE GROUND:
SLAB AND WALL .....¾ IN.
BEAMS AND COLUMNS .....1½ IN.

5. A CHAMFER ¾" SHALL BE PROVIDED AT ALL EXPOSED EDGES OF CONCRETE, UNO, IN ACCORDANCE WITH ACI 301 SECTION 4.2.4.

6. INSTALLATION OF CONCRETE EXPANSION/WEDGE ANCHOR, SHALL BE PER MANUFACTURER'S WRITTEN RECOMMENDED PROCEDURE. THE ANCHOR BOLT, DOWEL OR ROD SHALL CONFORM TO MANUFACTURER'S RECOMMENDATION FOR EMBEDMENT DEPTH OR AS SHOWN ON THE DRAWINGS. NO REBAR SHALL BE CUT WITHOUT PRIOR ENGINEERING APPROVAL WHEN DRILLING HOLES IN CONCRETE. SPECIAL INSPECTIONS, REQUIRED BY GOVERNING CODES, SHALL BE STAINLESS STEEL OR HOT DIPPED GALVANIZED. EXPANSION BOLTS SHALL BE PROVIDED BY RAMSET/REDHEAD OR APPROVED EQUAL.

7. CONCRETE CYLINDER TEST IS NOT REQUIRED FOR SLAB ON GRADE WHEN CONCRETE IS LESS THAN 50 CUBIC YARDS (IBC1905.6.2.3) IN THAT EVENT THE FOLLOWING RECORDS SHALL BE PROVIDED BY THE CONCRETE SUPPLIER;
(A) RESULTS OF CONCRETE CYLINDER TEST PERFORMED AT THE SUPPLIERS PLANT.
(B) CERTIFICATION OF MINIMUM COMPRESSIVE STRENGTH FOR THE CONCRETE GRADE SUPPLIED.
FOR GREATER THAN 50 CUBIC YARDS THE GC SHALL PERFORM THE CONCRETE CYLINDER TEST.

8. AS AN ALTERNATIVE TO ITEM 7, TEST CYLINDERS SHALL BE TAKEN INITIALLY AND THEREAFTER FOR EVERY 50 YARDS OF CONCRETE FROM EACH DIFFERENT BATCH PLANT.

9. EQUIPMENT SHALL NOT BE PLACED ON NEW PADS FOR SEVEN DAYS AFTER PAD IS POURED, UNLESS IT IS VERIFIED BY CYLINDER TESTS THAT COMPRESSIVE STRENGTH HAS BEEN ATTAINED.

STRUCTURAL STEEL NOTES:

1. ALL STEEL WORK SHALL BE PAINTED OR GALVANIZED IN ACCORDANCE WITH THE DRAWINGS AND VERIZON WIRELESS SPECIFICATION 25252-000-3PS-GET-00001 UNLESS OTHERWISE NOTED. STRUCTURAL STEEL SHALL BE ASTM-A-36 UNLESS OTHERWISE NOTED ON THE SITE SPECIFIC DRAWINGS. STEEL DESIGN, INSTALLATION AND BOLTING SHALL BE IN ACCORDANCE WITH THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC) "MANUAL OF STEEL CONSTRUCTION".

2. ALL WELDING SHALL BE PERFORMED USING E70XX ELECTRODES AND WELDING SHALL CONFORM TO AISC AND AWS D1.1. WHERE FILLET WELD SIZES ARE NOT SHOWN, PROVIDE THE MINIMUM SIZE PER TABLE J2.4 IN THE AISC "MANUAL OF STEEL CONSTRUCTION", 9TH EDITION. PAINTED SURFACES SHALL BE TOUCHED UP.

3. BOLTED CONNECTIONS SHALL USE BEARING TYPE ASTM A325 BOLTS (¾"ø) AND SHALL HAVE MINIMUM OF TWO BOLTS UNLESS NOTED OTHERWISE.

4. NON-STRUCTURAL CONNECTIONS FOR STEEL GRATING MAY USE ⅝" DIA. ASTM A 307 BOLTS UNLESS NOTED OTHERWISE.

5. INSTALLATION OF CONCRETE EXPANSION/WEDGE ANCHORS SHALL BE PER MANUFACTURER'S WRITTEN RECOMMENDED PROCEDURE. THE ANCHOR BOLT, DOWEL OR ROD SHALL CONFORM TO THE MANUFACTURERS RECOMMENDATION FOR EMBEDMENT DEPTH OR AS SHOWN ON THE DRAWINGS. NO REBAR SHALL BE CUT WITHOUT PRIOR CONTRACTOR APPROVAL WHEN DRILLING HOLES IN CONCRETE. SPECIAL INSPECTIONS, REQUIRED BY GOVERNING CODES, SHALL BE PERFORMED IN ORDER TO MAINTAIN MANUFACTURER'S MAXIMUM ALLOWABLE LOADS. ALL EXPANSION/WEDGE ANCHORS SHALL BE STAINLESS STEEL OR HOT DIPPED GALVANIZED. EXPANSION BOLTS SHALL BE PROVIDED BY RAMSET/REDHEAD OR APPROVED EQUAL.

6. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR ENGINEER REVIEW & APPROVAL ON PROJECTS REQUIRING STRUCTURAL STEEL

7. ALL STRUCTURAL STEEL WORK SHALL BE DONE IN ACCORDANCE WITH AISC SPECIFICATIONS.

SOIL COMPACTION NOTES FOR SLAB ON GRADE:

1. EXCAVATE AS REQUIRED TO REMOVE VEGETATION AND TOPSOIL TO EXPOSE NATURAL SUBGRADE AND PLACE CRUSHED STONE AS REQUIRED.

2. COMPACTION CERTIFICATION: AN INSPECTION AND WRITTEN CERTIFICATION BY A QUALIFIED GEOTECHNICAL TECHNICIAN OR ENGINEER IS ACCEPTABLE.

3. AS AN ALTERNATE TO INSPECTION AND WRITTEN CERTIFICATION, THE "UNDISTURBED SOIL" BASE SHALL BE COMPACTED WITH "COMPACTION EQUIPMENT", LISTED BELOW, TO AT LEAST 90% MODIFIED PROCTOR MAXIMUM DENSITY PER ASTM D 1557 METHOD C.

4. COMPACTED SUBBASE SHALL BE UNIFORM AND LEVELED. PROVIDE 6" MINIMUM CRUSHED STONE OR GRAVEL COMPACTED IN 3" LIFTS ABOVE COMPACTED SOIL. GRAVEL SHALL BE NATURAL OR CRUSHED WITH 100% PASSING #1 SIEVE.

5. AS AN ALTERNATE TO ITEMS 2 AND 3, THE SUBGRADE SOILS WITH 5 PASSES OR A MEDIUM SIZED VIBRATORY PLATE COMPACTOR (SUCH AS BOMAG BPR 30/38) OR HAND-OPERATED SINGLE DRUM VIBRATORY ROLLER (SUCH AS BOMAG BW 55E). AND SOFT AREAS THAT ARE ENCOUNTERED SHOULD BE REMOVED AND REPLACED WITH A WELL-GRADED GRANULAR FILL AND COMPACTED AS STATED ABOVE.

COMPACTION EQUIPMENT:

1. HAND OPERATED DOUBLE DRUM, VIBRATORY ROLLER, VIBRATORY PLATE COMPACTOR OR JUMPING JACK COMPACTOR.

CONSTRUCTION NOTES:

1. FIELD VERIFICATION:
SUBCONTRACTOR SHALL FIELD VERIFY SCOPE OF WORK, VERIZON WIRELESS ANTENNA PLATFORM LOCATION AND ANTENNAS TO BE REPLACED.

2. COORDINATION OF WORK:
SUBCONTRACTOR SHALL COORDINATE RF WORK AND PROCEDURES WITH CONTRACTOR.

3. CABLE LADDER RACK:
SUBCONTRACTOR SHALL FURNISH AND INSTALL CABLE LADDER RACK, CABLE TRAY, AND CONDUIT AS REQUIRED TO SUPPORT CABLES TO THE NEW BTS LOCATION.

ELECTRICAL INSTALLATION NOTES:

1. WIRING, RACEWAY, AND SUPPORT METHODS AND MATERIALS SHALL COMPLY WITH THE REQUIREMENTS OF THE NEC AND TELCORDIA.

2. SUBCONTRACTOR SHALL MODIFY EXISTING CABLE TRAY SYSTEM AS REQUIRED TO SUPPORT RF AND TRANSPORT CABLING TO THE NEW BTS EQUIPMENT. SUBCONTRACTOR SHALL SUBMIT MODIFICATIONS TO CONTRACTOR FOR APPROVAL.

3. ALL CIRCUITS SHALL BE SEGREGATED AND MAINTAIN MINIMUM CABLE SEPARATION AS REQUIRED BY THE NEC AND TELCORDIA.

4. CABLES SHALL NOT BE ROUTED THROUGH LADDER-STYLE CABLE TRAY RUNGS.

5. EACH END OF EVERY POWER, GROUNDING, AND T1 CONDUCTOR AND CABLE SHALL BE LABELED WITH COLOR-CODED INSULATION OR ELECTRICAL TAPE (3M BRAND, 1/2 INCH PLASTIC ELECTRICAL TAPE WITH UV PROTECTION, OR EQUAL). THE IDENTIFICATION METHOD SHALL CONFORM WITH NEC & OSHA, AND MATCH EXISTING INSTALLATION REQUIREMENTS.

6. POWER PHASE CONDUCTORS (I.E., HOTS) SHALL BE LABELED WITH COLOR-CODED INSULATION OR ELECTRICAL TAPE (3M BRAND, ½ INCH PLASTIC ELECTRICAL TAPE WITH UV PROTECTION, OR EQUAL). PHASE CONDUCTOR COLOR CODES SHALL CONFORM WITH THE NEC & OSHA AND MATCH EXISTING INSTALLATION REQUIREMENTS

7. ALL ELECTRICAL COMPONENTS SHALL BE CLEARLY LABELED WITH ENGRAVED LAMACOID PLASTIC LABELS. ALL EQUIPMENT SHALL BE LABELED WITH THEIR VOLTAGE RATING, PHASE CONFIGURATION, WIRE CONFIGURATION, POWER OR AMPACITY RATING, AND BRANCH CIRCUIT ID NUMBERS (I.E., PANEL BOARD AND CIRCUIT ID'S).

8. PANEL BOARDS (ID NUMBERS) AND INTERNAL CIRCUIT BREAKERS (CIRCUIT ID NUMBERS) SHALL BE CLEARLY LABELED WITH ENGRAVED LAMACOID PLASTIC LABELS.

9. ALL TIE WRAPS SHALL BE CUT FLUSH WITH APPROVED CUTTING TOOL TO REMOVE SHARP EDGES.

10. POWER, CONTROL, AND EQUIPMENT GROUND WIRING IN TUBING OR CONDUIT SHALL BE SINGLE CONDUCTOR (#6 AWG OR LARGER), 600 V, OIL RESISTANT THHN OR THWN-2, CLASS B STRANDED COPPER CABLE RATED FOR 90 °C (WET AND DRY) OPERATION; LISTED OR LABELED FOR THE LOCATION AND RACEWAY SYSTEM USED, UNLESS OTHERWISE SPECIFIED.

11. SUPPLEMENTAL EQUIPMENT GROUND WIRING LOCATED INDOORS SHALL BE SINGLE CONDUCTOR (#6 AWG OR LARGER), 600 V, OIL RESISTANT THHN OR THWN-2 GREEN INSULATION, CLASS B STRANDED COPPER CABLE RATED FOR 90 °C (WET AND DRY) OPERATION; LISTED OR LABELED FOR THE LOCATION AND RACEWAY SYSTEM USED, UNLESS OTHERWISE SPECIFIED.

12. SUPPLEMENTAL EQUIPMENT GROUND WIRING LOCATED OUTDOORS, OR BELOW GRADE, SHALL BE SINGLE CONDUCTOR #3 AWG SOLID TINNED COPPER CABLE, UNLESS OTHERWISE SPECIFIED.

13. POWER AND CONTROL WIRING, NOT IN TUBING OR CONDUIT, SHALL BE MULTI-CONDUCTOR, TYPE TC CABLE (#6 AWG OR LARGER), 600 V, OIL RESISTANT THHN OR THWN-2, CLASS B STRANDED COPPER CABLE RATED FOR 90 °C (WET AND DRY) OPERATION; WITH OUTER JACKET; LISTED OR LABELED FOR THE LOCATION USED, UNLESS OTHERWISE SPECIFIED.

14. ALL POWER AND GROUNDING CONNECTIONS SHALL BE CRIMP STYLE, COMPRESSION WIRE LUGS AND WIRE NUTS BY THOMAS AND BETTS (OR EQUAL). LUGS AND WIRE NUTS SHALL BE RATED FOR OPERATION AT NO LESS THAN 75°C (90°C IF AVAILABLE).

15. RACEWAY AND CABLE TRAY SHALL BE LISTED OR LABELED FOR ELECTRICAL USE IN ACCORDANCE WITH NEMA, UL, ANSI/IEEE, AND NEC.

16. NEW RACEWAY OR CABLE TRAY WILL MATCH THE EXISTING INSTALLATION WHERE POSSIBLE.

17. ELECTRICAL METALLIC TUBING (EMT) OR RIGID NONMETALLIC CONDUIT (I.E., RIGID PVC SCHEDULE 40, OR RIGID PVC SCHEDULE 80 FOR LOCATIONS SUBJECT TO PHYSICAL DAMAGE) SHALL BE USED FOR EXPOSED INDOOR LOCATIONS.

18. ELECTRICAL METALLIC TUBING (EMT), ELECTRICAL NONMETALLIC TUBING (ENT), OR RIGID NONMETALLIC CONDUIT (RIGID PVC, SCHEDULE 40) SHALL BE USED FOR CONCEALED INDOOR LOCATIONS.

19. GALVANIZED STEEL INTERMEDIATE METALLIC CONDUIT (IMC) SHALL BE USED FOR OUTDOOR LOCATIONS ABOVE GRADE

20. RIGID NONMETALLIC CONDUIT (I.E., RIGID PVC SCHEDULE 40 OR RIGID PVC SCHEDULE 80) SHALL BE USED UNDERGROUND; DIRECT BURIED, IN AREAS OF OCCASIONAL LIGHT VEHICLE TRAFFIC OR ENCASED IN REINFORCED CONCRETE IN AREAS OF HEAVY VEHICLE TRAFFIC.

21. LIQUID-TIGHT FLEXIBLE METALLIC CONDUIT (LIQUID-TITE FLEX) SHALL BE USED INDOORS AND OUTDOORS, WHERE VIBRATION OCCURS OR FLEXIBILITY IS NEEDED.

22. CONDUIT AND TUBING FITTINGS SHALL BE THREADED OR COMPRESSION-TYPE AND APPROVED FOR THE LOCATION USED. SET SCREW FITTINGS ARE NOT ACCEPTABLE.

23. CABINETS, BOXES, AND WIREWAYS SHALL BE LISTED OR LABELED FOR ELECTRICAL USE IN ACCORDANCE WITH NEMA, UL, ANSI/IEEE, AND NEC.

24. CABINETS, BOXES, AND WIREWAYS TO MATCH THE EXISTING INSTALLATION WHERE POSSIBLE.

25. WIREWAYS SHALL BE EPOXY-COATED (GRAY) AND INCLUDE A HINGED COVER, DESIGNED TO SWING OPEN DOWNWARD; SHALL BE PANDUIT TYPE E (OR EQUAL); AND RATED NEMA 1 (OR BETTER) INDOORS, OR NEMA 3R (OR BETTER) OUTDOORS.

26. EQUIPMENT CABINETS, TERMINAL BOXES, JUNCTION BOXES, AND PULL BOXES SHALL BE GALVANIZED OR EPOXY-COATED SHEET STEEL, SHALL MEET OR EXCEED UL 50, AND RATED NEMA 1 (OR BETTER) INDOORS, OR NEMA 3R (OR BETTER) OUTDOORS

27. METAL RECEPTACLE, SWITCH, AND DEVICE BOXES SHALL BE GALVANIZED, EPOXY-COATED, OR NON- CORRODING; SHALL MEET OR EXCEED UL 514A AND NEMA OS 1; AND RATED NEMA 1 (OR BETTER) INDOORS, OR WEATHER PROTECTED (WP OR BETTER) OUTDOORS.

28. NONMETALLIC RECEPTACLE, SWITCH, AND DEVICE BOXES SHALL MEET OR EXCEED NEMA OS 2; AND RATED NEMA 1 (OR BETTER) INDOORS, OR WEATHER PROTECTED (WP OR BETTER) OUTDOORS.

29. THE SUBCONTRACTOR SHALL NOTIFY AND OBTAIN NECESSARY AUTHORIZATION FROM THE CONTRACTOR BEFORE COMMENCING WORK ON THE AC POWER DISTRIBUTION PANELS.

30. THE SUBCONTRACTOR SHALL PROVIDE NECESSARY TAGGING ON THE BREAKERS, CABLES AND DISTRIBUTION PANELS IN ACCORDANCE WITH THE APPLICABLE CODES AND STANDARDS TO SAFEGUARD AGAINST LIFE AND PROPERTY.

31. ALL ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS, NEC AND ALL APPLICABLE LOCAL CODES.

32. CONDUIT ROUTINGS ARE SCHEMATIC. SUBCONTRACTOR SHALL INSTALL CONDUITS SO THAT ACCESS TO EQUIPMENT IS NOT BLOCKED.

verizon
" Because Better Matters "

CHAPPELL ENGINEERING ASSOCIATES, LLC
Civil • Structural • Land Surveying
R.K. EXECUTIVE CENTRE
201 BOSTON POST ROAD WEST, SUITE 101
MARLBOROUGH, MA 01752
(508) 481-7400
www.chappellengineering.com

ENGINEER/LAND SURVEYOR DATE

REVISIONS

NO.	DESCRIPTION	DATE
0	ISSUED FOR REVIEW	5/26/20
1	GENERAL REVISIONS	7/20/20
2	GENERAL REVISIONS	7/30/20

PROJECT NAME:

BURLINGTON
SOUTHWEST CT
87 MONCE ROAD
BURLINGTON, CT 06013

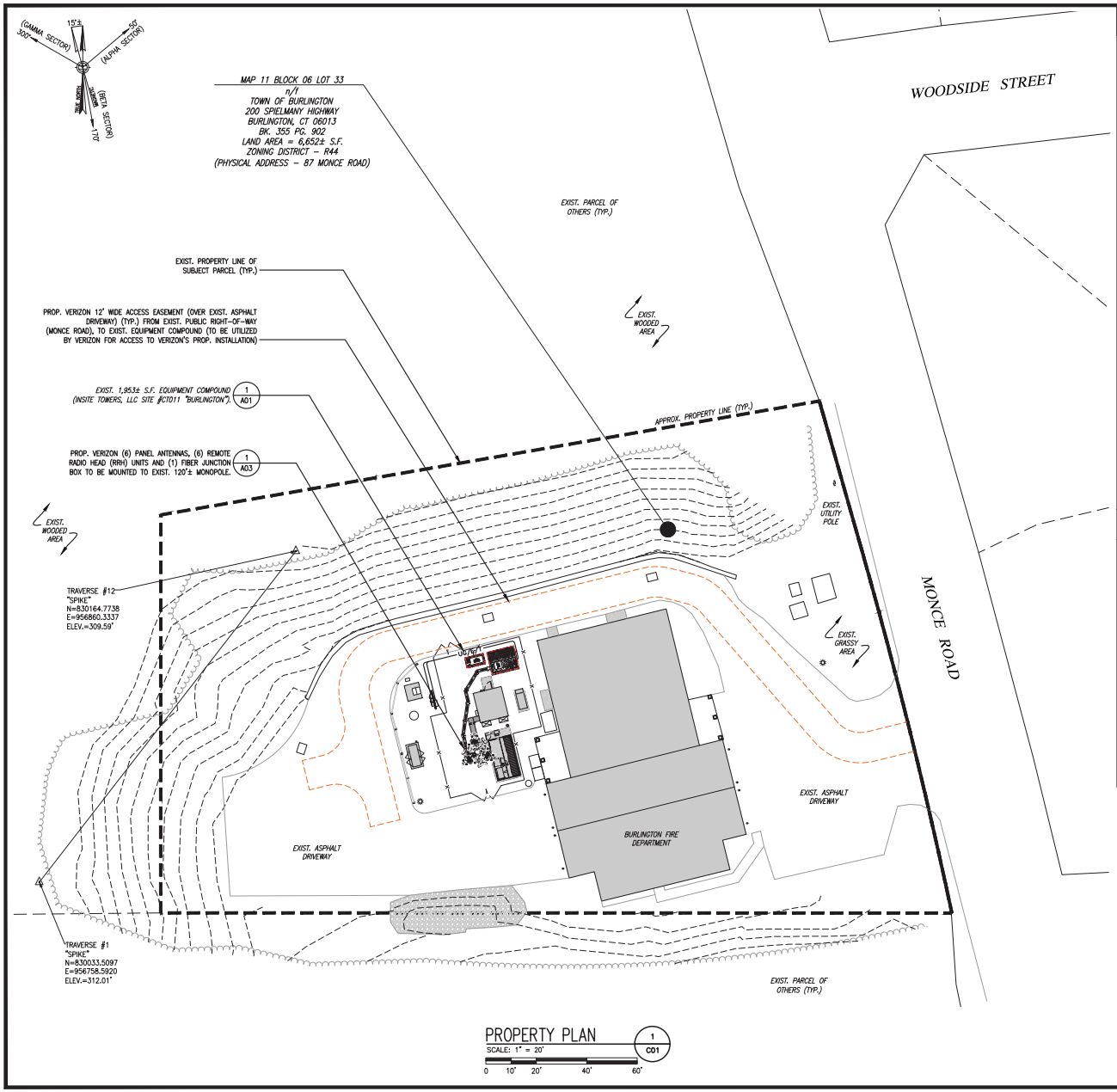
DRAWING TITLE:

GENERAL NOTES

DRAWING NO:

GN01

SCALE:	DESIGNED BY: GRS	VZW LOCATION CODE:
AS SHOWN	DRAWN BY: NWC	479435
	CHECKED BY: GRS	
CEA PROJECT NO.:	ORIGINAL ISSUE DATE:	
96210.398	5/26/20	



PROPERTY PLAN
SCALE: 1" = 20'
1 C01
0 10' 20' 40' 60'

GENERAL NOTES:

1A.	LIMITED DESIGN VISIT DATE:	2/13/20
1B.	LIMITED FIELD SURVEY DATE:	5/6/20
2.	VERTICAL DATUM:	NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD '88)
3.	HORIZONTAL DATUM:	NORTH AMERICAN DATUM OF 1983 (NAD '83)
4.	SITE CONTROL POINT:	CENTER OF EXISTING MONOPOLE LATITUDE: N. 41°-44'-20.89" (41.739136°) (NAD '83) LONGITUDE: W. 72°-54'-28.09" (72.907803°) (NAD '83)
5.	LAND OWNER:	TOWN OF BURLINGTON 200 SPIELMANY HIGHWAY BURLINGTON, CT 06013
6.	TOWER OWNER:	INSITE TOWERS, LLC 1199 NORTH FAIRFAX STREET, SUITE 700 ALEXANDRIA, VA 22314
7.	TOWER OWNER SITE ID:	"BURLINGTON" SITE
8.	SITE ADDRESS:	87 MONCE ROAD BURLINGTON, CT 06013
9.	APPLICANT:	CELLCO PARTNERSHIP (dba VERIZON WIRELESS) 20 ALEXANDER DRIVE WALLINGFORD, CT 06492
10.	JURISDICTION:	TOWN OF BURLINGTON, CT
11.	TAX ID:	MAP 11 BLOCK 06 LOT 33
12.	DEED REFERENCE:	BK. 355 PG. 902
13.	PLAN REFERENCES:	TOWN OF BURLINGTON ASSESSOR/GIS MAPS
14.	ZONING DISTRICT:	R-44 (R-44 RESIDENTIAL ZONE)

15. ALL UNDERGROUND UTILITY INFORMATION PRESENTED HEREON WAS DETERMINED FROM SURFACE EVIDENCE AND PLANS OF RECORD. ALL UNDERGROUND UTILITIES SHOULD BE LOCATED IN THE FIELD PRIOR TO THE COMMENCEMENT OF ANY SITE WORK. CALL DIGSAFE 1-888-344-7233 A MINIMUM OF 72 HOURS PRIOR TO PLANNED ACTIVITY.
16. THE PROPERTY LINES SHOWN WERE COMPILED UTILIZING TOWN OF BURLINGTON ASSESSOR'S PLANS, GIS, RECORDED DEEDS, PLANS OF REFERENCE AND A LIMITED GROUND SURVEYS OF THE PROPERTY PERFORMED BY CHAPPELL ENGINEERING ASSOCIATES ON 2/13/2020 & 5/6/2020.
17. THE SITE IS LOCATED IN FLOOD HAZARD ZONE X (AREA OF MINIMAL FLOOD HAZARD) AS SHOWN ON FLOOD INSURANCE RATE MAP FOR THE TOWN OF BURLINGTON, (MAP NUMBER 09003C0456F) EFFECTIVE 09/26/2008.
18. BEARING SYSTEM OF THIS PLAN IS BASED ON TRUE NORTH. TRUE NORTH WAS ESTABLISHED FROM EXIST. PLAN REFERENCE. IT IS NOT INTENDED TO BE AN EXACT REPRESENTATION OF TRUE NORTH.

LEGEND

- PROPERTY LINE (OR STREET)
- ABUTTING PROPERTY LINE
- PROPERTY OFFSET/RADIUS
- EXIST. EASEMENT
- EXIST. CHAIN LINK FENCE
- EXIST. STOCKADE FENCE
- EXIST. EDGE OF PAVEMENT
- EXIST. OVERHEAD UTILITIES
- EXIST. TREELINE
- PROP. TREELINE
- PROP. OVERHEAD UTILITIES
- PROP. UTILITIES
- EXIST. UTILITY POLE
- EXIST. STONE WALL
- ZONING BOUNDARY

verizon
"Because Better Matters"

CHAPPELL ENGINEERING ASSOCIATES, LLC
Civil•Structural•Land Surveying
R.K. EXECUTIVE CENTRE
201 BOSTON POST ROAD WEST, SUITE 101
MARLBOROUGH, MA 01752
(508) 481-7400
www.chappellengineering.com

ENGINEER/LAND SURVEYOR DATE

REVISIONS

NO.	DESCRIPTION	DATE
0	ISSUED FOR REVIEW	5/26/20
1	GENERAL REVISIONS	7/20/20
2	GENERAL REVISIONS	7/30/20

PROJECT NAME:

BURLINGTON SOUTHWEST CT
87 MONCE ROAD
BURLINGTON, CT 06013

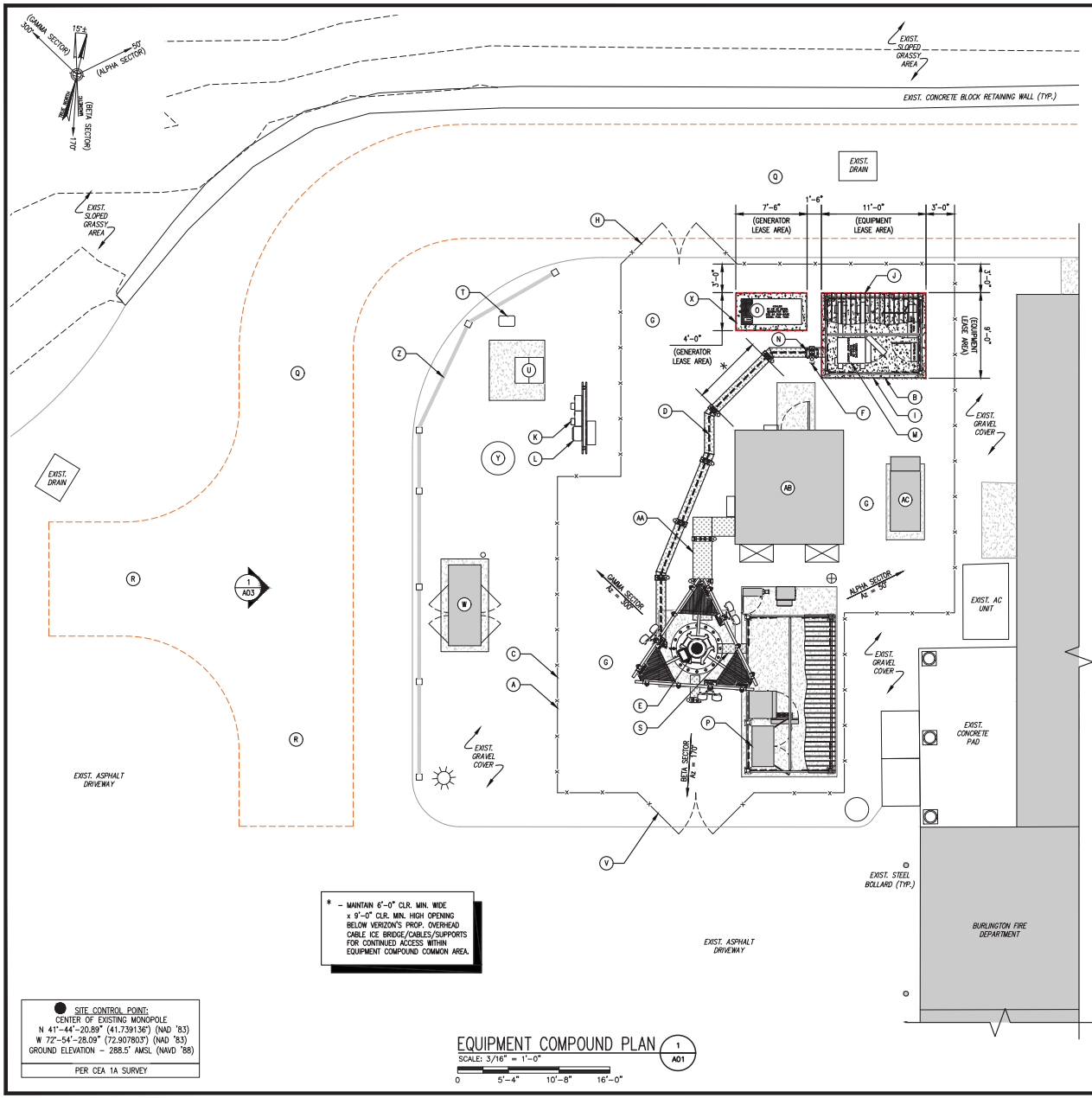
DRAWING TITLE:

PROPERTY PLAN

DRAWING NO:

C01

SCALE: 1" = 20'	DESIGNED BY: GRS	VZW LOCATION CODE: 479435
	DRAWN BY: NWC	
	CHECKED BY: GRS	
CEA PROJECT NO.: 96210.398	ORIGINAL ISSUE DATE: 5/26/20	



* – MAINTAIN 6'-0" CLR. MIN. WIDE x 9'-0" CLR. MIN. HIGH OPENING BELOW VERIZON'S PROP. OVERHEAD CABLE ICE BRIDGE/CABLES/SUPPORTS FOR CONTINUED ACCESS WITHIN EQUIPMENT COMPOUND COMMON AREA.

SITE CONTROL POINT:
CENTER OF EXISTING MONOPOLE
N 41°-44'-20.89" (41.739136') (NAD '83)
W 72°-54'-28.09" (72.907803') (NAD '83)
GROUND ELEVATION – 288.5' AMSL (NAVD '88)

PER CEA 1A SURVEY

EQUIPMENT COMPOUND PLAN (1 / A01)

SCALE: 3/16" = 1'-0"

0 5'-4" 10'-8" 16'-0"

LEGEND

ITEM	DESCRIPTION
A	*EXIST. 1,953± S.F. EQUIPMENT COMPOUND (INSITE TOWERS, LLC SITE #CT011 "BURLINGTON") (TYP.)*
B	LIMITS OF VERIZON'S PROP. 11'-0"x9'-0" (99 S.F.) EQUIPMENT LEASE AREA (TYP.)
C	*EXIST. 8'± CHAIN-LINK FENCE SURROUNDING EXIST. 1,953± S.F. EQUIPMENT COMPOUND (TYP.)*
4 / A02 D	PROP. VERIZON (1)-12x24 HYBRID SIGNAL CABLE ROUTED ALONG PROP. OVERHEAD CABLE ICE BRIDGE (TYP.) FROM VERIZON'S PROP. EQUIPMENT TO EXIST. MONOPOLE AS SHOWN.
E	*EXIST. 120'± MONOPOLE*
3 / RF01 F	PROP. VERIZON GPS ANTENNA MOUNTED TO PROP. ICE BRIDGE POST. TOP OF GPS ANTENNA SHALL BE MOUNTED 2'-0" ABOVE TOP OF BRIDGE.
G	*EXIST. GRAVEL COVER WITHIN EXIST. COMPOUND*
H	*EXIST. 12'-3"± DOUBLE SWING GATE*
6 / S01 I	PROP. VERIZON 11'-0"x9'-0" (99 S.F.) REINFORCED CONCRETE PAD
1-4 / S01 J	PROP. VERIZON 10'-4"x8'-10" (91± S.F.) METAL DECK ICE SHIELD (SHOWN TRANSPARENT FOR CLARITY) ABOVE PROP. EQUIPMENT
K	EXIST. VACANT METER SOCKET AND DISCONNECT BREAKER KNOCKOUT TO BE UTILIZED FOR VERIZON'S PROP. 200A ELECTRIC SERVICE TO PROP. EQUIPMENT INSTALLATION.
L	*EXIST. ELECTRIC METER BANK*
1,2 / A02 M	PROP. VERIZON EQUIPMENT CABINET MOUNTED TO PROP. STEEL SLEEPER BEAMS ON PROP. 11'-0"x9'-0" (99 S.F.) REINFORCED CONCRETE PAD
4 / RF02 N	PROP. VERIZON FIBER JUNCTION BOX (TOTAL OF 1) MOUNTED TO PROP. ICE BRIDGE POST (IF REQUIRED)
1 / E01 O	PROP. VERIZON 30 kW BACK-UP DIESEL GENERATOR MOUNTED TO PROP. 7'-6"x4'-0" (30 S.F.) CONCRETE PAD
P	*EXIST. T-MOBILE EQUIPMENT CABINET (TYP.) ON EXIST. 10'-0"±x20'-0"± (200± S.F.) CONCRETE PAD*
Q	PROP. VERIZON 12' WIDE ACCESS EASEMENT (OVER EXIST. ASPHALT DRIVEWAY) (TYP.) FROM EXIST. PUBLIC RIGHT-OF-WAY (MONCE ROAD), TO EXIST. EQUIPMENT COMPOUND (TO BE UTILIZED BY VERIZON FOR ACCESS TO VERIZON'S PROP. INSTALLATION). SEE SHEET C01 FOR CONTINUATION TO MONCE ROAD.
R	PROP. VERIZON 12'x20' PARKING SPACE OR TURN-AROUND AREA (TYP.)
S	*EXIST. T-MOBILE OVERHEAD CABLE ICE BRIDGE (TYP.)*
T	*EXIST. TELCO HANDHOLE*
U	*EXIST. ELECTRIC TRANSFORMER ON EXIST. CONCRETE PAD*
V	*EXIST. 12'-3"± DOUBLE SWING GATE*
W	*EXIST. BACK-UP GENERATOR ON EXIST. CONCRETE PAD*
X	LIMITS OF VERIZON'S PROP. 7'-6"x4'-0" (30 S.F.) GENERATOR LEASE AREA (TYP.)
Y	*EXIST. ELECTRIC MANHOLE*
Z	*EXIST. WOOD GUARDRAIL (TYP.)*
AA	*EXIST. AT&T OVERHEAD CABLE ICE BRIDGE (TYP.)*
AB	*EXIST. AT&T 11'-6"±x12'-0"± EQUIPMENT SHELTER*
AC	*EXIST. AT&T BACK-UP DIESEL GENERATOR ON EXIST. CONCRETE PAD*

verizon
" Because Better Matters "

CHAPPELL ENGINEERING ASSOCIATES, LLC
Civil • Structural • Land Surveying
R.K. EXECUTIVE CENTRE
201 BOSTON POST ROAD WEST, SUITE 101
MARLBOROUGH, MA 01752
(508) 481-7400
www.chappellengineering.com

ENGINEER/LAND SURVEYOR DATE

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, TO ALTER THIS DOCUMENT.

REVISIONS

NO.	DESCRIPTION	DATE
0	ISSUED FOR REVIEW	5/26/20
1	GENERAL REVISIONS	7/20/20
2	GENERAL REVISIONS	7/30/20

PROJECT NAME:

BURLINGTON SOUTHWEST CT
87 MONCE ROAD
BURLINGTON, CT 06013

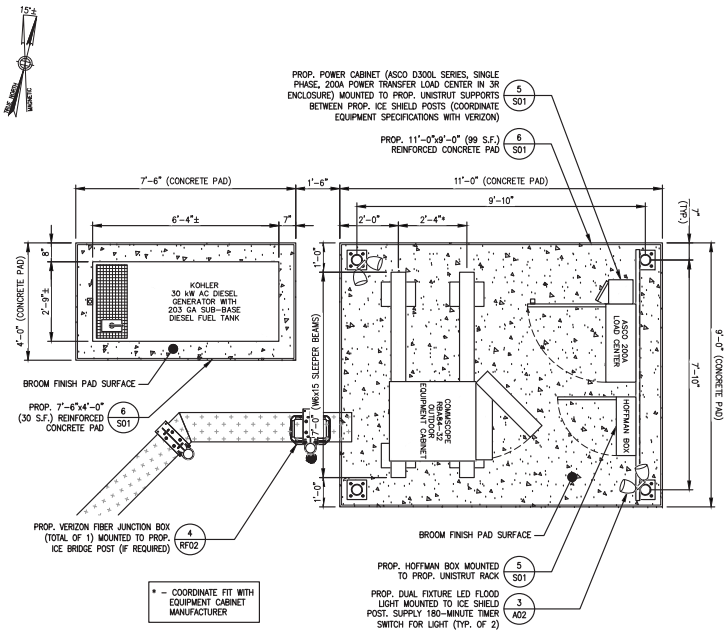
DRAWING TITLE:

EQUIPMENT COMPOUND PLAN

DRAWING NO:

A01

SCALE:	DESIGNED BY: GRS	VZW LOCATION CODE:
3/16" = 1'-0"	DRAWN BY: NWC	
	CHECKED BY: GRS	479435
CEA PROJECT NO.:	ORIGINAL ISSUE DATE:	
96210.398	5/26/20	

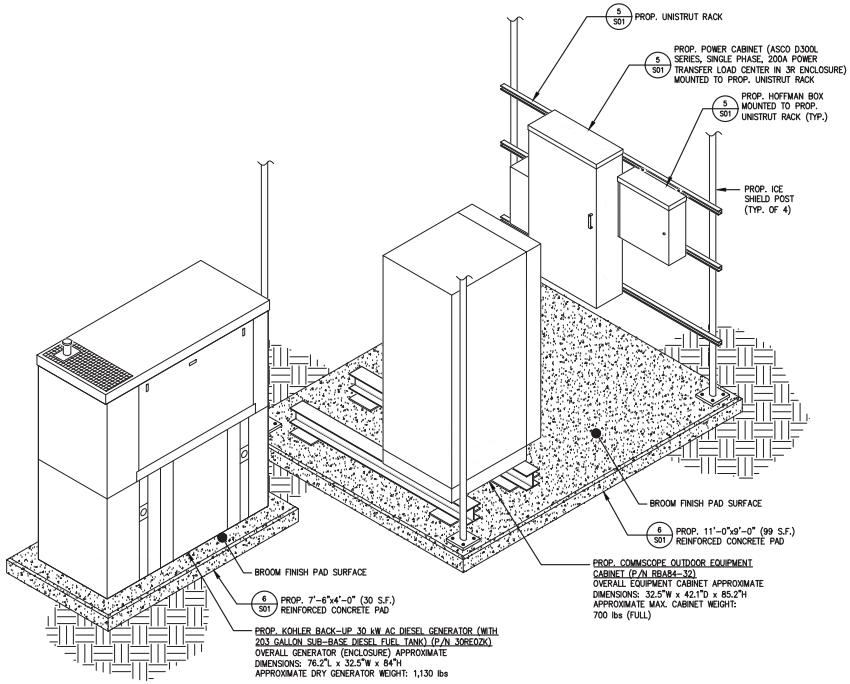


EQUIPMENT PAD PLAN

1 A02

SCALE: ½" = 1'-0"

0 2'-0" 4'-0" 6'-0"



EQUIPMENT PAD ISOMETRIC VIEW

2 A02

SCALE: NOT APPLICABLE

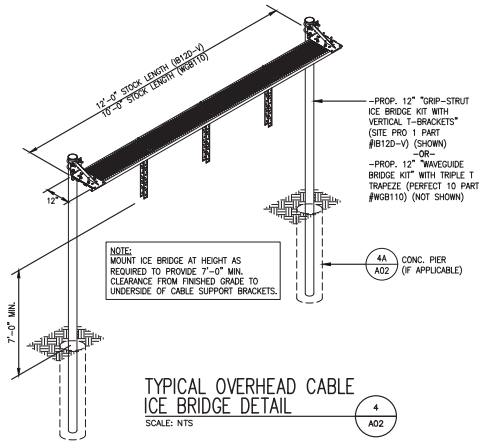
RAB LIGHTING - BULLET2X12B
24W
BLACK

MOUNT PER MANUFACTURER'S SPECIFICATIONS

TYPICAL LED FLOOD LIGHT DETAIL

3 A02

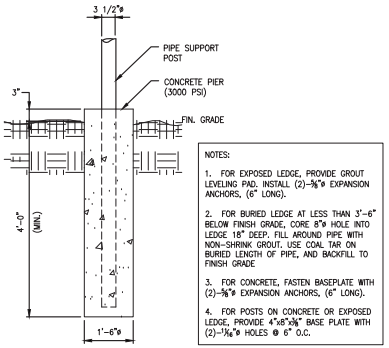
SCALE: N.T.S.



TYPICAL OVERHEAD CABLE ICE BRIDGE DETAIL

4 A02

SCALE: NTS



NOTES:

1. FOR EXPOSED LEDGE, PROVIDE GROUT LEVELING PAD. INSTALL (2)-⅜"ø EXPANSION ANCHORS, (6" LONG).
2. FOR BURIED LEDGE AT LESS THAN 3'-6" BELOW FINISH GRADE, CORE 8"ø HOLE INTO LEDGE 18" DEEP, FILL AROUND PIPE WITH NON-SHRINK GROUT. USE COAL TAR ON BURIED LENGTH OF PIPE, AND BACKFILL TO FINISH GRADE
3. FOR CONCRETE, FASTEN BASEPLATE WITH (2)-⅜"ø EXPANSION ANCHORS, (6" LONG).
4. FOR POSTS ON CONCRETE OR EXPOSED LEDGE, PROVIDE 4"x8"x⅜" BASE PLATE WITH (2)-$^{11}/_{16}$"ø HOLES @ 6" O.C.

CABLE BRIDGE PIER

4A A02

SCALE: NTS

verizon

" Because Better Matters "

CHAPPELL ENGINEERING ASSOCIATES, LLC
Civil • Structural • Land Surveying
R.K. EXECUTIVE CENTRE
201 BOSTON POST ROAD WEST, SUITE 101
MARLBOROUGH, MA 01752
(508) 481-7400
www.chappellengineering.com

ENGINEER/LAND SURVEYOR DATE

REVISIONS

NO.	DESCRIPTION	DATE
0	ISSUED FOR REVIEW	5/26/20
1	GENERAL REVISIONS	7/20/20
2	GENERAL REVISIONS	7/30/20

PROJECT NAME:

BURLINGTON SOUTHWEST CT
87 MONCE ROAD
BURLINGTON, CT 06013

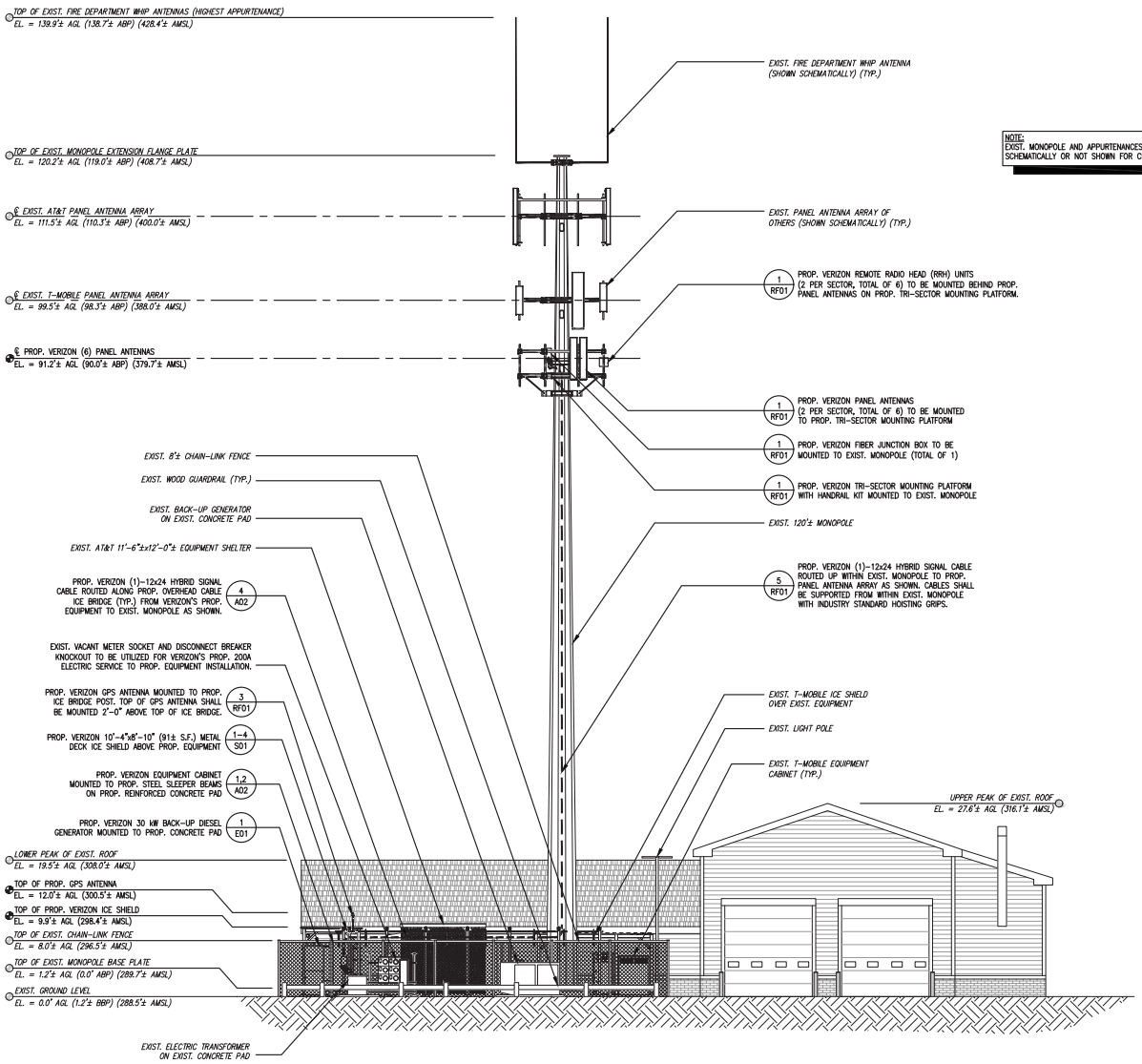
DRAWING TITLE:

EQUIPMENT PAD PLAN & DETAILS

DRAWING NO:

A02

SCALE:	DESIGNED BY: GRS	VZW LOCATION CODE:
AS NOTED	DRAWN BY: NWC	
	CHECKED BY: GRS	
CEA PROJECT NO.:	ORIGINAL ISSUE DATE:	479435
96210.398	5/26/20	



WEST SITE ELEVATION (1 A03)

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

0 8'-0" 16'-0" 24'-0"

LEGEND	
AGL	ABOVE GROUND LEVEL
ABP	ABOVE MONOPOLE BASE PLATE
BBP	BELOW MONOPOLE BASE PLATE
AMSL	ABOVE MEAN SEA LEVEL

verizon
" Because Better Matters "

CHAPPELL ENGINEERING ASSOCIATES, LLC
Civil • Structural • Land Surveying
R.K. EXECUTIVE CENTRE
201 BOSTON POST ROAD WEST, SUITE 101
MARLBOROUGH, MA 01752
(508) 481-7400
www.chappellengineering.com

ENGINEER/LAND SURVEYOR DATE

REVISIONS

NO.	DESCRIPTION	DATE
0	ISSUED FOR REVIEW	5/26/20
1	GENERAL REVISIONS	7/20/20
2	GENERAL REVISIONS	7/30/20

PROJECT NAME:

BURLINGTON
SOUTHWEST CT
87 MONCE ROAD
BURLINGTON, CT 06013

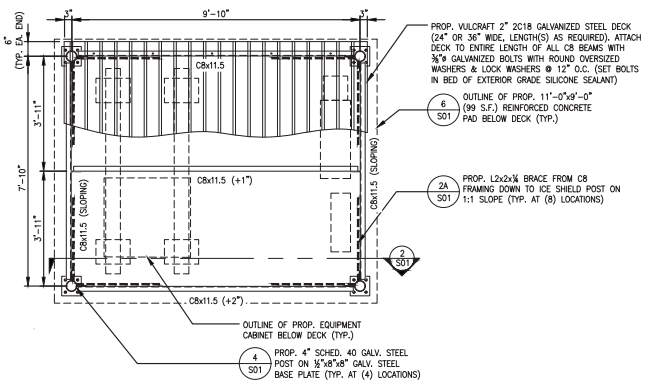
DRAWING TITLE:

WEST SITE ELEVATION

DRAWING NO:

A03

SCALE:	DESIGNED BY: GRS	VZW LOCATION CODE:
1/8" = 1'-0"	DRAWN BY: NWC	
	CHECKED BY: GRS	
CEA PROJECT NO.:	ORIGINAL ISSUE DATE:	479435
96210.398	5/26/20	



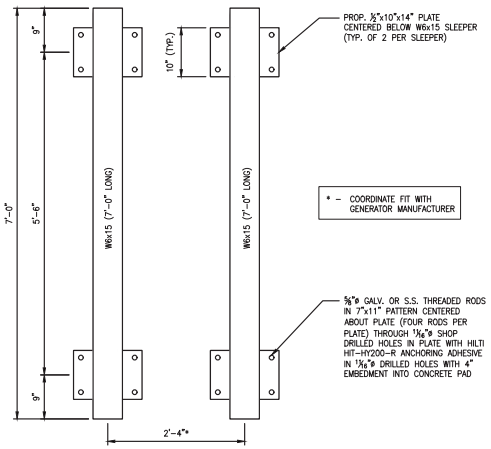
FRAMING PLAN NOTES:
1.) ALL STEEL SHALL BE INSTALLED LEVEL UNLESS OTHERWISE NOTED.
2.) TOP OF NEW STEEL ELEVATION SHALL BE HELD 9'-6" ABOVE EQUIPMENT PAD SURFACE UNLESS OTHERWISE NOTED THUS (±X") INDICATING DISTANCE ABOVE OR BELOW TOP OF STEEL REFERENCE ELEVATION.

ICE SHIELD FRAMING PLAN 1 S01

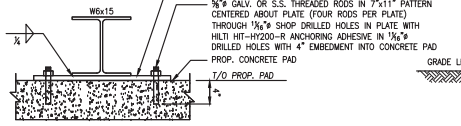
SCALE: 1/2" = 1'-0"

NORTH

0 2'-0" 4'-0" 6'-0"

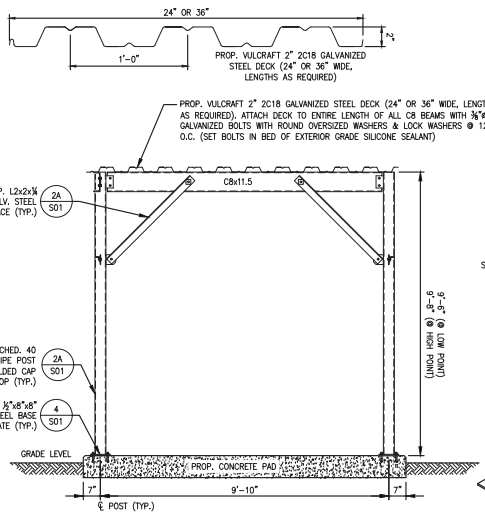


PLAN VIEW



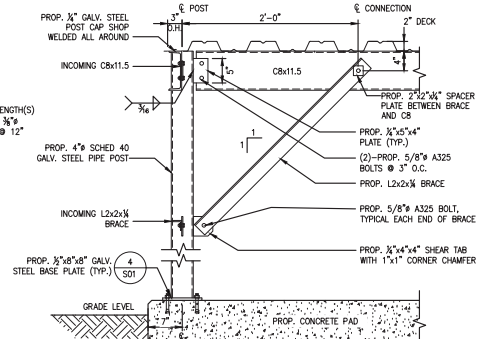
TYPICAL W6 SLEEPER BEAM ANCHORING DETAIL 7 S01

SCALE: N.T.S.



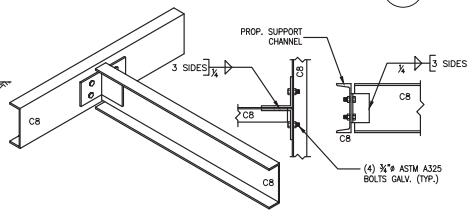
ICE SHIELD SECTION 2 S01

SCALE: 1/2" = 1'-0"



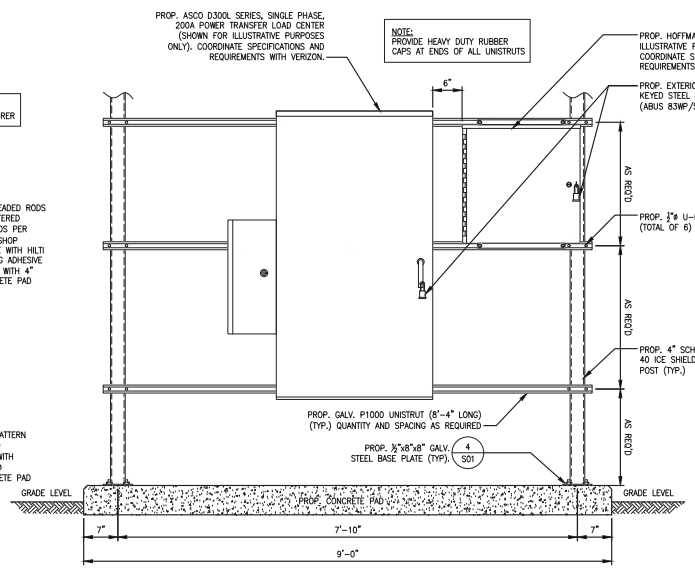
TYPICAL ICE SHIELD POST DETAIL 2A S01

SCALE: 1" = 1'-0"



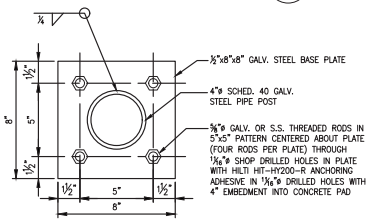
TYPICAL BEAM TO BEAM CONN. 3 S01

SCALE: NOT TO SCALE



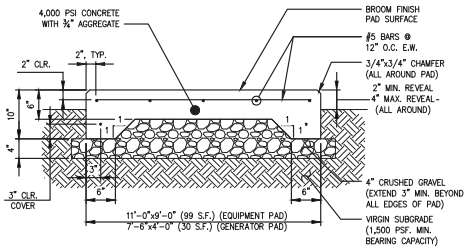
UNISTRUT RACK DETAIL 5 S01

SCALE: N.T.S.



TYPICAL ICE SHIELD BASE PLATE 4 S01

SCALE: NONE



REINFORCED CONCRETE EQUIPMENT PAD DETAIL 6 S01

SCALE: NONE

verizon
" Because Better Matters "

CHAPPELL ENGINEERING ASSOCIATES, LLC
Civil • Structural • Land Surveying
R.K. EXECUTIVE CENTRE
201 BOSTON POST ROAD WEST, SUITE 101
MARLBOROUGH, MA 01752
(508) 481-7400
www.chappellengineering.com

ENGINEER/LAND SURVEYOR DATE

REVISIONS

NO.	DESCRIPTION	DATE
0	ISSUED FOR REVIEW	5/26/20
1	GENERAL REVISIONS	7/20/20
2	GENERAL REVISIONS	7/30/20

PROJECT NAME:

BURLINGTON SOUTHWEST CT
87 MONCE ROAD
BURLINGTON, CT 06013

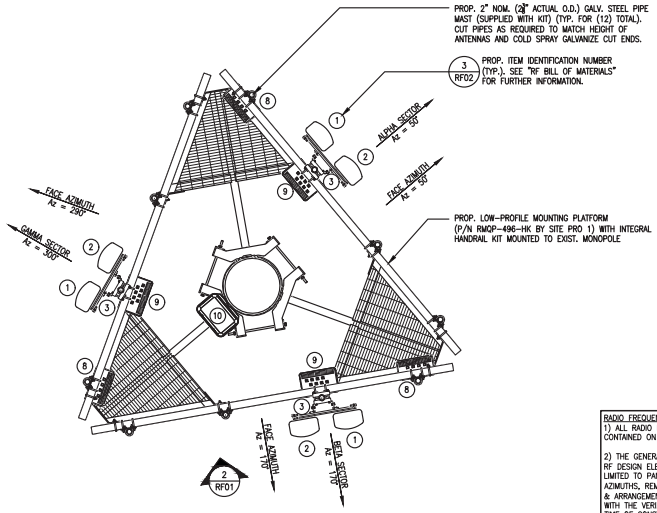
DRAWING TITLE:

ICE SHIELD FRAMING PLAN & STRUCTURAL DETAILS

DRAWING NO:

S01

SCALE:	DESIGNED BY: GRS	VZW LOCATION CODE:
AS SHOWN	DRAWN BY: NWC	
	CHECKED BY: GRS	
CEA PROJECT NO.:	ORIGINAL ISSUE DATE:	479435
96210.398	5/26/20	



(MONOPOLE PLAN VIEW AT ELEVATION 91.2'± AGL)

ANTENNA MOUNTING PLAN

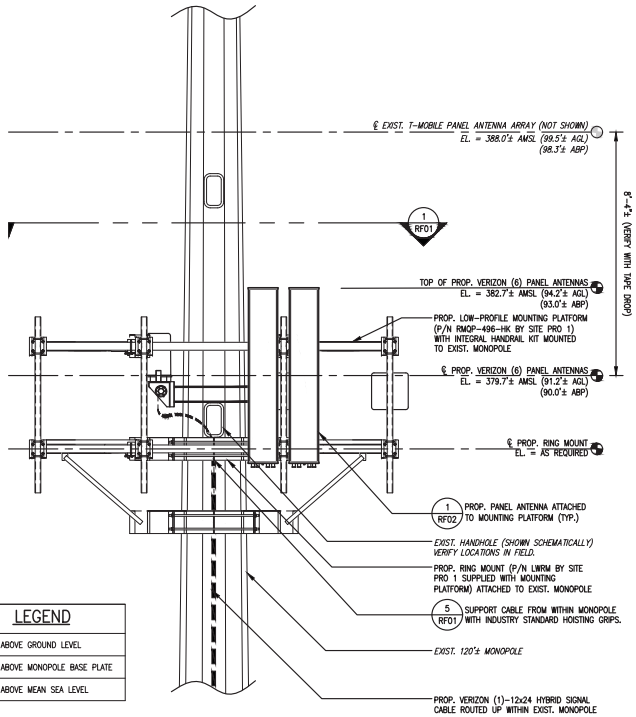
SCALE: 1/2" = 1'-0" — 1 RF01

NORTH

0 2'-0" 4'-0" 6'-0"

RADIO FREQUENCY (RF) DESIGN NOTES:
1) ALL RADIO FREQUENCY (RF) DESIGN INFORMATION CONTAINED ON THIS SHEET IS SHOWN SCHEMATICALLY.

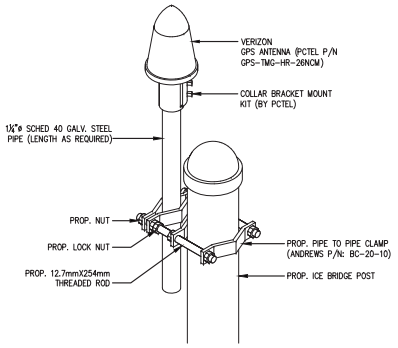
2) THE GENERAL CONTRACTOR SHALL CONFIRM ALL RF DESIGN ELEMENTS SHOWN (INCLUDING BUT NOT LIMITED TO PANEL ANTENNA MODELS & ARRANGEMENT, AZIMUTHS, REMOTE RADIO HEAD (RRH) UNIT MODELS & ARRANGEMENT AND CABLING DIAGRAMS/SCHEMATICS) WITH THE VERIZON WIRELESS RF ENGINEER AT THE TIME OF CONSTRUCTION.



ANTENNA MOUNTING PLATFORM MOUNTING DETAIL

SCALE: 1/2" = 1'-0" — 2 RF01

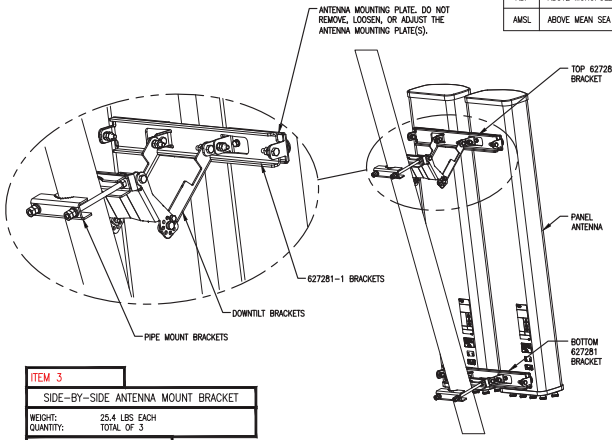
LEGEND	
AGL	ABOVE GROUND LEVEL
ABP	ABOVE MONOPOLE BASE PLATE
AMSL	ABOVE MEAN SEA LEVEL



NOTE:
THE GPS ANTENNA MOUNT IS DESIGNED TO FASTEN TO A STANDARD 1"-1¼" DIAMETER GALVANIZED STEEL OR STAINLESS STEEL PIPE. THE PIPE MUST NOT BE THREADED AT THE ANTENNA MOUNT END. THE PIPE SHALL BE CUT TO THE REQUIRED LENGTH USING A HAND OR ROTARY PIPE CUTTER TO ASSURE A SMOOTH AND PERPENDICULAR CUT. THE CUT PIPE END SHALL BE DEBURRED AND SMOOTH IN ORDER TO SEAL AGAINST THE NEOPRENE GASKET ATTACHED TO THE ANTENNA MOUNT.

GPS ANTENNA MOUNTING DETAIL

SCALE: N.T.S. — 3 RF01

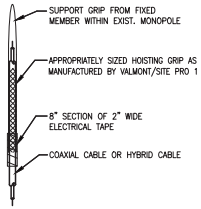


ITEM 3	
SIDE-BY-SIDE ANTENNA MOUNT BRACKET	
WEIGHT:	25.4 LBS EACH
QUANTITY:	TOTAL OF 3
STATUS: PROPOSED	

MOUNT ANTENNA IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDED PROCEDURE

TYPICAL SIDE-BY-SIDE ANTENNA MOUNT KIT (COMMSCOPE PART #BSAMNT-SBS-1-2)

SCALE: NOT TO SCALE — 4 RF01



TYPICAL HOISTING GRIP DETAIL

SCALE: NONE — 5 RF01

verizon
" Because Better Matters "

CHAPPELL ENGINEERING ASSOCIATES, LLC
Civil • Structural • Land Surveying
R.K. EXECUTIVE CENTRE
201 BOSTON POST ROAD WEST, SUITE 101
MARLBOROUGH, MA 01752
(508) 481-7400
www.chappellengineering.com

ENGINEER/LAND SURVEYOR DATE

REVISIONS

NO.	DESCRIPTION	DATE
0	ISSUED FOR REVIEW	5/26/20
1	GENERAL REVISIONS	7/20/20
2	GENERAL REVISIONS	7/30/20

PROJECT NAME:

BURLINGTON SOUTHWEST CT
87 MONCE ROAD
BURLINGTON, CT 06013

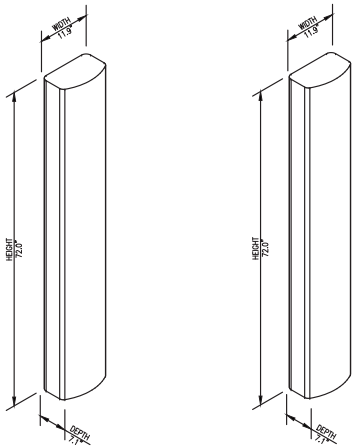
DRAWING TITLE:

ANTENNA MOUNTING PLAN AND DETAILS

DRAWING NO:

RF01

SCALE:	DESIGNED BY: GRS	VZW LOCATION CODE:
AS SHOWN	DRAWN BY: NWC	
	CHECKED BY: GRS	479435
CEA PROJECT NO.:	ORIGINAL ISSUE DATE:	
96210.398	5/26/20	



ITEM 1	
LTE (700/850/1900 MHz) PANEL ANTENNA	
DIMENSIONS:	72.0"H x 11.9"W x 7.1"D
WEIGHT:	43.7 LBS EACH
QUANTITY:	1 PER SECTOR, TOTAL OF 3
STATUS: PROPOSED	

ITEM 2	
LTE (700/850/2100 MHz) PANEL ANTENNA	
DIMENSIONS:	72.0"H x 11.9"W x 7.1"D
WEIGHT:	48.1 LBS EACH
QUANTITY:	1 PER SECTOR, TOTAL OF 3
STATUS: PROPOSED	

TYPICAL PROP. PANEL ANTENNA SPECIFICATIONS

1 RF02

SCALE: N.T.S.

RF BILL OF MATERIALS (PROP. (FINAL) CONFIGURATION)

SITE NAME: BURLINGTON SOUTHWEST CT — **A = ALPHA SECTOR B = BETA SECTOR G = GAMMA SECTOR**

	ITEM (SEE PLAN)	DESCRIPTION	BAND	QTY	STATUS	CABLE LENGTH/UNIT SIZE	COMMENTS
1 RF02	1	PANEL ANTENNA	700/850/1900	3 TOTAL (A,B,G)	PROP.	72.0"H x 11.9"W x7.1"D (43.7 lbs, each)	MOUNTED TO PROP. SIDE-BY-SIDE MOUNT
	2	PANEL ANTENNA	700/850/2100	3 TOTAL (A,B,G)	PROP.	72.0"H x 11.9"W x7.1"D (48.1 lbs, each)	MOUNTED TO PROP. SIDE-BY-SIDE MOUNT
4 RF01	3	SIDE-BY-SIDE ANTENNA MOUNT KIT	–	3 TOTAL (A,B,G)	PROP.	25.4 lbs, each	MOUNTED TO PROP. PIPE MAST
	4	12x24 HYBRID SIGNAL CABLE (MAIN LINE)	–	1 TOTAL	PROP.	140 FT.±	ROUTED UP WITHIN EXIST. MONOPOLE TO PROP. ANTENNA ARRAY
	5	1x1 HYBRID SIGNAL CABLE (JUMPER)	–	6 TOTAL (2 PER SECTOR)	PROP.	5 FT. EACH	ROUTED FROM PROP. UPPER OVP BOX TO PROP. REMOTE RADIO HEAD (RRH) UNITS
	6	½"ø COAXIAL CABLE (JUMPER)	–	36 TOTAL (12 PER SECTOR)	PROP.	5 FT. EACH	ROUTE FROM PROP. REMOTE RADIO HEAD (RRH) UNITS TO PROP. ANTENNAS
	7	RET CONTROL CABLE(S) (JUMPER)	–	PER RF REQ.	PROP.	5 FT. EACH	ROUTE FROM PROP. REMOTE RADIO HEAD (RRH) UNITS TO PROP. ANTENNAS
2 RF02	8	REMOTE RADIO HEAD (RRH) UNIT	700/850	3 TOTAL (A,B,G)	PROP.	15.0"H x 15.0"W x 8.1"D (70.3 lbs, each)	MOUNTED TO PROP. PIPE MAST
	9	REMOTE RADIO HEAD (RRH) UNIT	1900/2100	3 TOTAL (A,B,G)	PROP.	15.0"H x 15.0"W x 10.0"D (84.4 lbs, each)	MOUNTED TO PROP. PIPE MAST
4 RF02	10	UPPER OVP BOX WITH SURGE	–	1 TOTAL	PROP.	19.18"H x 15.73"W x 10.25"D (26.9 lbs, each)	MOUNTED TO EXIST. MONOPOLE
	11	LOWER OVP RACK	–	1 TOTAL	PROP.	–	INTEGRAL WITHIN EQUIPMENT CABINET

THIS RF BILL OF MATERIALS (BOM) HAS BEEN COMPILED FROM ANTENNA RECOMMENDATION DATA SHEET DATED 2/24/2020. CONTRACTOR SHALL CONFIRM ALL FINAL RF MATERIALS/EQUIPMENT TO BE USED WITH VERIZON WIRELESS RF ENGINEER DURING CONSTRUCTION.

RF BILL OF MATERIALS (FINAL CONFIGURATION)

3 RF02

SCALE: NONE

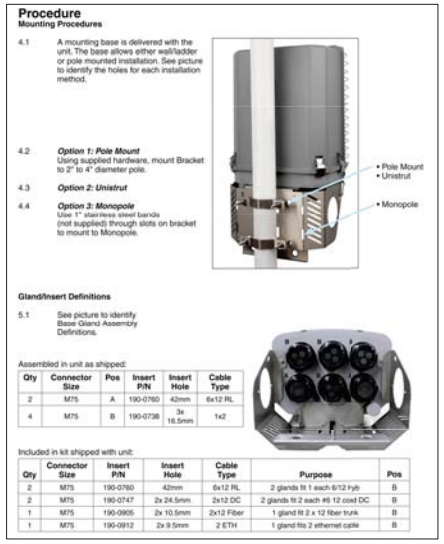
ITEM 8	
LTE/CDMA (700/850 MHz) REMOTE RADIO HEAD UNIT	
DIMENSIONS:	15.0"H x 15.0"W x 8.1"D
WEIGHT:	70.3 LBS
QUANTITY:	1 PER SECTOR, TOTAL OF 3
STATUS: PROPOSED	

ITEM 9	
PCS–AWS (1900/2100 MHz) REMOTE RADIO HEAD UNIT	
DIMENSIONS:	15.0"H x 15.0"W x 10.0"D
WEIGHT:	84.4 LBS
QUANTITY:	1 PER SECTOR, TOTAL OF 3
STATUS: PROPOSED	

TYPICAL REMOTE RADIO HEAD (RRH) UNIT DIMENSIONS

2 RF02

SCALE: N.T.S.



ITEM 10	
FIBER JUNCTION BOX	
DIMENSIONS:	19.18"H x 15.73"W x 10.25"D
WEIGHT:	26.9 LBS
QUANTITY:	TOTAL OF 1
STATUS: PROPOSED	

TYPICAL FIBER JUNCTION BOX DIMENSIONS, SCHEMATIC AND MOUNTING PROCEDURE

4 RF02

SCALE: N.T.S.

verizon

" Because Better Matters "

CHAPPELL ENGINEERING ASSOCIATES, LLC
Civil•Structural•Land Surveying
R.K. EXECUTIVE CENTRE
201 BOSTON POST ROAD WEST, SUITE 101
MARLBOROUGH, MA 01752
(508) 481–7400
www.chappellengineering.com

ENGINEER/LAND SURVEYOR DATE

REVISIONS

NO.	DESCRIPTION	DATE
0	ISSUED FOR REVIEW	5/26/20
1	GENERAL REVISIONS	7/20/20
2	GENERAL REVISIONS	7/30/20

PROJECT NAME:

BURLINGTON SOUTHWEST CT

87 MONCE ROAD
BURLINGTON, CT 06013

DRAWING TITLE:

ANTENNA DETAILS AND ANCILLARY EQUIPMENT SPECIFICATIONS

DRAWING NO:

RF02

SCALE:	DESIGNED BY: GRS	VZW LOCATION CODE:
AS SHOWN	DRAWN BY: NWC	
	CHECKED BY: GRS	
CEA PROJECT NO.:	ORIGINAL ISSUE DATE:	479435
96210.398	5/26/20	

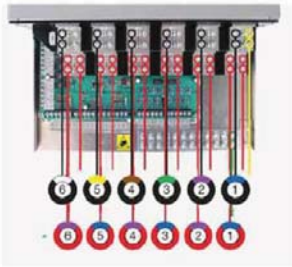
Line Color Code	Band	Tx/Rx	Color Pairs	Sector	Cable Length (FT)
BR	850	Tx0/Rx0	Blue + Red	ALPHA	CABLE LENGTH PROVIDED BELOW IS APPROXIMATE IN NATURE AND REFLECTED AS AN ADJUSTED VALUE TO PROVIDE ADEQUATE LENGTH. ANY FIELD MEASUREMENTS OF ANTICIPATED CABLE LENGTH IS ENCOURAGED IN AN EFFORT TO REDUCE SLACK AND TO OPTIMIZE DESIGN. SUCH FIELD MEASUREMENTS MAY SUPERCEDE THE LENGTH PROVIDED BELOW AT THE DISCRETION OF THE GENERAL CONTRACTOR 140'±
BY	850	Tx1/Rx1	Blue + Yellow		
BG	1900 CDMA	Tx0/Rx0	Blue + Green		
BBG	1900 CDMA	Tx1/Rx1			
BP	700	Tx0/Rx0	Blue + Purple		
BBP	700	Tx1/Rx1			
BBBP	700	Tx2/Rx2			
BBBBP	700	Tx3/Rx3			
BBr	AWS	Tx0/Rx0	Blue + Brown		
BBBr	AWS	Tx1/Rx1			
BBBBr	AWS	Tx2/Rx2			
BBBBBr	AWS	Tx3/Rx3			
BGG	1900 LTE	Tx0/Rx0	Blue + Green		
BBGG	1900 LTE	Tx1/Rx1			
BBBGG	1900 LTE	Tx2/Rx2			
BBBBGG	1900 LTE	Tx3/Rx3			
WR	850	Tx0/Rx0	White + Red	BETA	
WY	850	Tx1/Rx1	White + Yellow		
WG	1900 CDMA	Tx0/Rx0	White + Green		
WWG	1900 CDMA	Tx1/Rx1			
WP	700	Tx0/Rx0	White + Purple		
WWP	700	Tx1/Rx1			
WWWP	700	Tx2/Rx2			
WWWWP	700	Tx3/Rx3			
WBr	AWS	Tx0/Rx0	White + Brown		
WWBr	AWS	Tx1/Rx1			
WWWBr	AWS	Tx2/Rx2			
WWWWBr	AWS	Tx3/Rx3			
WGG	1900 LTE	Tx0/Rx0	White + Green		
WWGG	1900 LTE	Tx1/Rx1			
WWWGG	1900 LTE	Tx2/Rx2			
WWWWGG	1900 LTE	Tx3/Rx3			
OR	850	Tx0/Rx0	Orange + Red	GAMMA	
OY	850	Tx1/Rx1	Orange + Yellow		
OG	1900 CDMA	Tx0/Rx0	Orange + Green		
OOG	1900 CDMA	Tx1/Rx1			
OP	700	Tx0/Rx0	Orange + Purple		
OOP	700	Tx1/Rx1			
OOOP	700	Tx2/Rx2			
OOOOP	700	Tx3/Rx3			
OBr	AWS	Tx0/Rx0	Orange + Brown		
OOBr	AWS	Tx1/Rx1			
OOOBr	AWS	Tx2/Rx2			
OOOOBr	AWS	Tx3/Rx3			
OGG	1900 LTE	Tx0/Rx0	Orange + Green		
OOGG	1900 LTE	Tx1/Rx1			
OOOGG	1900 LTE	Tx2/Rx2			
OOOOGG	1900 LTE	Tx3/Rx3			

LINE COLOR CODE SPECIFICATIONS (1 / RF03)

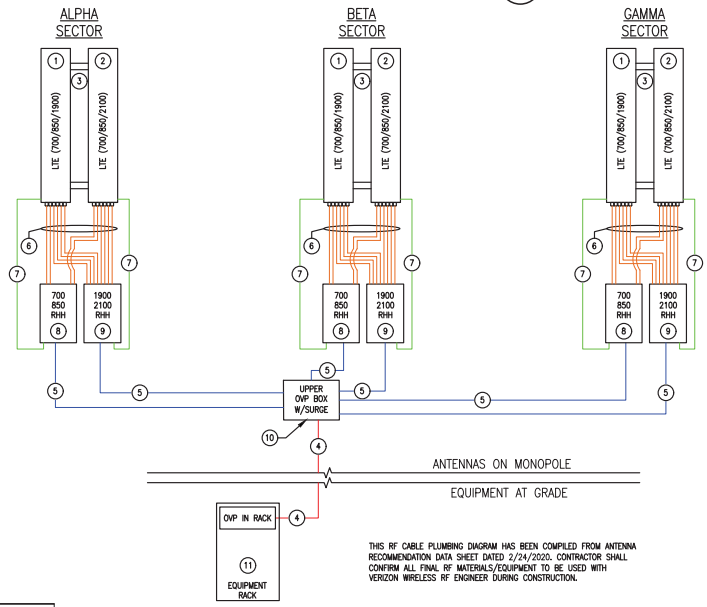
Hybrid Cable on Towers

Hybrid Cable 1

Sector	Identification Color	-48V	RTN
700 Alpha	Blue		
AWS Alpha	Violet		
PCS Alpha	Green		
850 Alpha	Brown		
Spare	Yellow		
Spare	White		



HYBRID CABLE COLOR CODE SPECIFICATIONS (2 / RF03)



THIS RF CABLE PLUMBING DIAGRAM HAS BEEN COMPILED FROM ANTENNA RECOMMENDATION DATA SHEET DATED 2/24/2020. CONTRACTOR SHALL CONFIRM ALL FINAL RF MATERIALS/EQUIPMENT TO BE USED WITH VERIZON WIRELESS RF ENGINEER DURING CONSTRUCTION.

LEGEND

- RED — (##) — = HYBRID CABLE (MAIN LINE)
- PURPLE — (##) — = COAXIAL CABLE (MAIN LINE)
- BLUE — (##) — = 1x1 HYBRID CABLE (JUMPER)
- ORANGE — (##) — = 1/2"ø COAXIAL CABLE (JUMPER)
- GREEN — (##) — = RET CONTROL CABLE(S) (JUMPER)

RF CABLE PLUMBING DIAGRAM (FINAL CONFIGURATION) (3 / RF03)

verizon
" Because Better Matters "

CHAPPELL ENGINEERING ASSOCIATES, LLC
Civil • Structural • Land Surveying
R.K. EXECUTIVE CENTRE
201 BOSTON POST ROAD WEST, SUITE 101
MARLBOROUGH, MA 01752
(508) 481-7400
www.chappellengineering.com

ENGINEER/LAND SURVEYOR DATE

REVISIONS

NO.	DESCRIPTION	DATE
0	ISSUED FOR REVIEW	5/26/20
1	GENERAL REVISIONS	7/20/20
2	GENERAL REVISIONS	7/30/20

PROJECT NAME:

BURLINGTON SOUTHWEST CT
87 MONCE ROAD
BURLINGTON, CT 06013

DRAWING TITLE:

RF COLOR CODE SPECIFICATIONS AND PLUMBING DIAGRAM

DRAWING NO:

RF03

SCALE:	DESIGNED BY: GRS	VZW LOCATION CODE:
N/A	DRAWN BY: NWC	
CEA PROJECT NO.:	CHECKED BY: GRS	479435
96210.398	ORIGINAL ISSUE DATE: 5/26/20	

ELECTRICAL SPECIFICATIONS

1. FURNISH ALL LABOR, MATERIALS, EQUIPMENT, TOOLS AND INCIDENTALS REQUIRED TO MAKE READY FOR USE THE COMPLETE ELECTRICAL SYSTEMS AS SHOWN ON THE DRAWINGS. MAKE ALL NECESSARY CONNECTIONS AT "PACKAGED" EQUIPMENT.
2. THE ELECTRICAL SYSTEMS SHALL BE SUITABLE IN EVERY WAY FOR THE SERVICE REQUIRED. ALL MATERIAL AND ALL WORK WHICH MAY BE REASONABLY IMPLIED AS BEING INCIDENTAL TO THE WORK SHALL BE FURNISHED AT NO EXTRA COST.
3. FURNISH AND INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH THE REQUIREMENTS OF LOCAL, STATE AND NATIONAL CODES AND STANDARDS, INCLUDING BUT NOT LIMITED TO:
   THE 2018 CONNECTICUT STATE BUILDING CODE
   THE NATIONAL ELECTRICAL CODE (NFPA-70)
   THE CONNECTICUT ELECTRIC CODE
   THE NATIONAL ELECTRICAL SAFETY CODE (ANSI C-2)
   THE LIFE SAFETY CODE (NFPA 101)
   THE STRUCTURAL STANDARDS FOR ANTENNA SUPPORTING STRUCTURE AND ANTENNAS (TIA/EIA-222-G)
4. MATERIALS AND EQUIPMENT SHALL BE NEW, UNUSED AND UNDERWRITERS' LABORATORIES, INC. LISTED. CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ALL MATERIALS IN A TIMELY FASHION, INCLUDING RESPONSIBILITY FOR DETERMINING AVAILABILITY/LEAD TIME FOR ALL NECESSARY EQUIPMENT.
5. CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS AND PAY ALL FEES FOR PERMITS AND INSPECTIONS. WHERE NEW COMMERCIAL POWER SERVICE IS PROVIDED TO THE SITE, OR EXISTING SERVICE MUST BE MODIFIED, CONTRACTOR SHALL MAKE ALL ARRANGEMENTS WITH THE ELECTRIC UTILITY, SHALL PERFORM ALL OF HIS WORK IN ACCORDANCE WITH THE REQUIREMENTS OF THE UTILITY, AND SHALL PAY ALL UTILITY SERVICE BACK CHARGES.
6. ALL WIRING OUTSIDE SHALL BE INSTALLED IN HEAVY-GAUGE, (SCHEDULE 40) RIGID STEEL CONDUIT, HOT-DIPPED GALVANIZED INSIDE AND OUTSIDE WITH AN ADDITIONAL FACTORY-APPLIED FINISH INSIDE AND OUTSIDE. CUT ENDS SHALL BE REAMED, THREADED AND COLD GALVANIZED. NO COMPRESSION FITTING WILL BE ACCEPTED.
7. UNDERGROUND CONDUITS SHALL BE PVC SCHEDULE 40 AND INSTALLED NOT LESS THAN 30 INCHES BELOW FINISHED GRADE.
8. WIRING INSTALLED IN THE BUILDING THAT IS SHOWN TO BE IN CONDUIT SHALL BE INSTALLED IN EMT. EMT FITTINGS SHALL BE STEEL COMPRESSION TYPE.
9. LIQUID TIGHT, FLEXIBLE METAL CONDUIT SHALL BE USED FOR ALL MOTOR TERMINATIONS AND FOR CONNECTIONS TO EQUIPMENT SUBJECT TO VIBRATION. FLEXIBLE METAL CONDUIT SHALL CONSIST OF A FLEXIBLE, CORROSION RESISTANT METAL CORE WITH AN EXTRUDED, WATERTIGHT, SYNTHETIC JACKET. CONDUITS SMALLER THAN 1-1/2" SHALL HAVE A CONTINUOUS GROUND CONDUCTOR UNDER THE JACKET.
10. NO CONDUIT SMALLER THAN 3/4" ELECTRICAL TRADE SIZE SHALL BE USED, EXCEPT AS OTHERWISE SHOWN ON THE DRAWINGS. BOX SIZES SHALL BE 4" SQUARE MINIMUM, BUT NOT LESS THAN THAT REQUIRED BY THE CONNECTICUT ELECTRICAL CODE.
11. FITTINGS AND EXPOSED SWITCH, OUTLET AND CONTROL STATION BOXES AND OTHER EXPOSED BOXES 4" SQUARE SHALL BE CAST OR MALLEABLE IRON WITH CADMIUM-ZINC FINISH AND CAST COVERS WITH STAINLESS STEEL SCREWS.
12. FLUSH SWITCH AND OUTLET BOXES SHALL BE HOT-DIPPED GALVANIZED, PRESSED STEEL WITH NYLON COVER PLATES, COLOR AS DETERMINED BY THE ENGINEER.
13. EXCEPT AS OTHERWISE SHOWN, TERMINAL, JUNCTION AND PULL BOXES LARGER THAT 4" SQUARE SHALL BE SHEET STEEL. STEEL BOXES SHALL BE HOT-DIPPED GALVANIZED. BOXES AND COVERS SHALL BE NOT LESS THAN 14 GAUGE METAL. COVERS SHALL BE GASKETED AND FASTENED WITH STAINLESS STEEL HARDWARE.
14. FITTINGS USED WITH LIQUID TIGHT, FLEXIBLE CONDUIT SHALL BE OF THE SCREW-IN, COMPRESSION TYPE WITH SEALING RING. FITTINGS LARGER THAN 1-1/4" SHALL BE FURNISHED WITH INTEGRAL GROUND LUGS.
15. HANGERS, RODS, BACK PLATES, BEAM CLAMPS, ETC. SHALL BE GALVANIZED IRON OR STEEL. CONDUITS SHALL BE SUPPORTED AT LEAST EVERY 5 FEET.
16. EXPOSED CONDUITS SHALL BE RUN PARALLEL TO OR AT RIGHT ANGLES TO WALLS. CONDUIT RUNS SHALL BE STRAIGHT AND TRUE. CONDUIT SHALL BE SUPPORTED BY MEANS OF TWO-HOLE PIPE CLAMPS. BACK PLATES SHALL BE INSTALLED WHERE REQUIRED TO RAISE CONDUITS FROM THE SURFACE. MULTIPLE, HORIZONTAL RUNS SHALL BE SUPPORTED ON TRAPEZE HANGERS WITH STEEL HORIZONTAL MEMBERS AND THREADED RODS NOT LESS THAN 3/8 INCHES IN DIAMETER. HANGERS SHALL BE ATTACHED TO STRUCTURAL STEEL BY MEANS OF BEAM CLAMPS. SPOT TYPE INSERTS SHALL BE USED IN CONCRETE.
17. CONDUIT BENDS SHALL BE CAREFULLY MADE TO PREVENT DISTORTION OF THE CIRCULAR CROSS-SECTION. NO CONDUIT RUN SHALL HAVE MORE THAN THE EQUIVALENT OF THREE 90 DEGREE BENDS BETWEEN PULLING POINTS. CHANGES IN DIRECTION SHALL BE MADE WITH BENDS, STANDARD ELBOWS AND PULLBOXES. BENDS IN PARALLEL RUNS SHALL BE CONCENTRIC.
18. CONDUIT SHALL NOT BE SUPPORTED FROM PIPING, PIPING SUPPORTS, DUCTWORK, SUSPENDED CEILING SUPPORTS OR MECHANICAL EQUIPMENT SUBJECT TO VIBRATION OR REMOVAL.
19. THE ENDS OF ALL CONDUITS SHALL BE TIGHTLY PLUGGED DURING BUILDING CONSTRUCTION UNTIL WIRES ARE TO BE PULLED. SPARE CONDUITS SHALL BE FURNISHED WITH THREADED CAPS.
20. CONDUITS SHALL BE TERMINATED AT UNGASKETED SHEET STEEL BOXES AND ENCLOSURES WITH DOUBLE LOCK NUTS AND SUITABLE BUSHINGS. BUSHINGS INSTALLED ON CONDUITS CONTAINING GROUND WIRES SHALL BE GROUNDING TYPE. CONDUITS SHALL BE TERMINATED AT GASKETED SHEET METAL BOXES AND ENCLOSURES WITH CONDUIT HUBS.
21. ELECTRIC METERS SHALL BE EMON DMON KW DEMAND REGISTER.
22. CONDUCTORS SHALL BE ANNEALED, 98 PERCENT CONDUCTIVITY, SOFT-DRAWN COPPER. NO CONDUCTOR SMALLER THAT NO. 12 AWG SHALL BE USED, EXCEPT AS OTHERWISE NOTED.
23. WIRE FOR POWER AND LIGHTING BRANCH CIRCUITS SHALL BE 600 VOLT, TYPE THWN. WIRE FOR CONTROL CIRCUITS SHALL BE 600 VOLT, TYPE THWN, NO. 14 AWG, STRANDED. SERVICE CONDUCTORS AND FEEDERS SHALL BE TYPE XHHW. CONDUCTORS NO. 10 AWG AND SMALLER SHALL BE SOLID. NO. 8 AWG AND LARGER SHALL BE STRANDED..
24. ALL CONDUCTORS SHALL BE CAREFULLY HANDLED TO AVOID KINKS OR DAMAGE TO INSULATION. LUBRICATIONS SHALL BE USED TO FACILITATE WIRE PULLING. LUBRICANTS SHALL BE UL LISTED FOR USE WITH THE INSULATION SPECIFIED.
25. ALL EQUIPMENT AND MATERIALS SHALL BE GROUNDED IN STRICT ACCORDANCE WITH THE CONNECTICUT ELECTRICAL CODE, AND THE STANDARD REQUIREMENTS OF VERIZON WIRELESS AND LUCENT.
26. DISCONNECT SWITCHES SHALL BE 480 OR 240 VOLT, HEAVY-DUTY, QUICK-MAKE, QUICK BREAK, VISIBLE BLADE, 2 POLE WITH EXTERNAL OPERATING HANDLE AND FULL COVER INTERLOCK. SWITCHES INSTALLED OUTSIDE SHALL BE NEMA TYPE 3R ENCLOSED.
27. WALL SWITCHES SHALL BE SINGLE POLE 3-WAY OR 4-WAY, INDICATING, TOGGLE-ACTION, FLUSH, QUIET TYPE, SPECIFICATION GRADE, RATED 20 AMPERE, 120-277 VOLT. COLOR AS DETERMINED BY ENGINEER.
28. GENERAL PURPOSE RECEPTACLES SHALL BE DUPLEX, 2 POLE, 3 WIRE, STRAIGHT BLADE, NYLON FACE, GROUNDING TYPE, 20 AMPERE, 125 VOLT, SPECIFICATION GRADE. COLOR AS DETERMINED BY ENGINEER.
29. PANELS SHALL BE PER DIRECTED BY THESE DRAWINGS WITH TYPED DIRECTORIES.
30. CIRCUIT BREAKERS SHALL BE MOLDED CASE, THERMAL-MAGNETIC TYPE WITH RMS SYMMETRICAL INTERRUPTING RATING OF NOT LESS THAN 22,000 AMPERE FOR 240 VOLT BREAKERS. ENCLOSED BREAKERS SHALL HAVE PADLOCKING PROVISIONS AND EXTERNAL OPERATING HANDLE WITH FULL COVER INTERLOCK. BREAKERS SHALL BE 1" MODULES MINIMUM.
31. NAMEPLATES SHALL BE PROVIDED FOR ALL EQUIPMENT INDICATING VOLTAGE, PHASE, USE AND SOURCE OF ORIGIN. DEVICES SHALL BE LABELED INDICATING VOLTAGE AND BRANCH CIRCUIT. BRANCH CONDUCTORS SHALL BE LABELED INDICATING BRANCH CIRCUIT. FEEDER CONDUCTORS SHALL INDICATE PHASE.
32. ALL EXTERIOR CONDUCTOR/LUG TERMINALS SHALL HAVE AN ANTIOXIDANT APPLIED.
33. ALL SPRING TYPE WIRE CONDUCTORS USED IN EXTERIOR BOXES SHALL BE SILICON FILLED.
34. ELECTRICAL CONTRACTOR SHALL AS PART OF HIS WORK INCLUDE ALL FITTINGS, SLEEVES AND MINOR CUTTING REQUIRED FOR HIS WORK, INCLUDING FIRES-STOPPING.
35. THE ELECTRICAL CONTRACTOR, AT HIS OWN EXPENSE, SHALL PROVIDE HIS OWN, WHERE DIRECTED, STORAGE AND OFFICE SPACE.
36. FIVE COPIES OF SHOP DRAWINGS OF ALL EQUIPMENT SHALL BE PROVIDED TO THE ENGINEER.
37. ELECTRICAL CONTRACTOR'S WORK SHALL INCLUDE ALL LABOR AND MATERIALS, SCAFFOLDING TOOL AND TRANSPORTATION NECESSARY FOR COMPLETE INSTALLATION.
38. ELECTRICAL CONTRACTOR TO FURNISH ENGINEER ONE SET OF MYLARS OF "AS BUILT" DRAWINGS.
39. ELECTRICAL CONTRACTOR SHALL PROVIDE TEMPORARY POWER & LIGHTING AS REQ'D.

GENERAL NOTES

1. CONTRACTOR SHALL VISIT THE SITE TO MAKE HIMSELF AWARE OF THE EXISTING CONDITIONS.
2. BRANCH CIRCUIT RUNS 100 FT AND OVER SHALL BE #10 AWG CONDUCTORS.
3. THESE DRAWINGS ARE DIAGRAMMATIC ONLY. THE EXACT LOCATION, MOUNTING HEIGHT, SIZE OF EQUIPMENT AND ROUTING OF RACEWAYS SHALL BE COORDINATED AND DETERMINED IN THE FIELD.
4. THE ELECTRICAL CONTRACTOR SHALL COORDINATE WITH THE HVAC AND PLUMBING CONTRACTORS AS TO THE EXACT LOCATION OF THEIR RESPECTIVE EQUIPMENT, THE POWER WIRING, THE CONTROL WIRING AND ALL ELECTRICAL CONNECTIONS REQUIRED BY THIS CONTRACTOR FOR COMPLETELY OPERATIVE HVAC AND PLUMBING SYSTEMS IN CONFORMANCE WITH THE CONTRACT DOCUMENTS.
5. INTERRUPTIONS TO THE EXISTING ELECTRICAL SERVICE FOR SPLICING CONNECTIONS, RENOVATION OF EXISTING DISTRIBUTION, BRANCH CIRCUITS, INSTALLATION OF NEW ELECTRIC SERVICE, AND SHALL BE AS SHORT AS POSSIBLE, AND TO THE CONVENIENCE OF THE OWNER.
6. ALL CONDUIT SHALL BE SURFACE MOUNTED UNLESS OTHERWISE NOTED. NO INTERIOR HORIZONTAL CONDUIT BELOW 7'-8" AFF IN FINISHED SPACES.
7. ALL WIRING TO BE 3/4"C, 2#12 & 1#12 GROUND, UNLESS OTHERWISE NOTED.
8. NO BX OR ROMEX CABLE IS PERMITTED.
9. ALL WIRING DEVICES AND EQUIPMENT SHALL BE 20A SPECIFICATION GRADE AND UL LISTED.
10. ALL OUTLET AND JUNCTION BOXES SHALL BE SECURELY SURFACE MOUNTED.
11. ALL RECEPTACLE AND EQUIPMENT CIRCUITS SHALL BE GROUNDED USING A FULL SIZE EQUIPMENT GROUNDING CONDUCTOR RUN WITH THE CURRENT CONDUCTORS.
12. ALL WALL PENETRATIONS FOR TELCO, POWER, AND GROUNDING SHALL REQUIRE PVC SLEEVES.
13. ALL SWITCHES SHALL BE FORTY-EIGHT (48) INCHES AFF, UNLESS OTHERWISE NOTED.
14. ALL RECEPTACLES SHALL BE EIGHTEEN (18) INCHES AFF, UNLESS OTEHRWISE NOTED.
15. ALL WIRING SHALL BE IN METAL RACEWAY & NO. 12 AWG COPPER MIN. UNLESS OTHERWISE NOTED.
16. WIRE COLOR SHALL BE PER STANDARD CODING BY PHASE.
17. FOR UTILITY BILLING, PLEASE SEND TO:
    VERIZON WIRELESS
    20 ALEXANDER DRIVE
    WALLINGFORD, CT 06492

GROUNDING GENERAL NOTES

1. ALL EXTERIOR CONDUCTORS SHALL BE #2 AWG, SOLID, BARE, TINNED COPPER, UNLESS OTHERWISE NOTED. MINIMUM BEND RADIUS SHALL BE EIGHT (8) INCHES.
2. ALL CONNECTIONS TO HALO GROUND RING AND ALL CABLE TRAY JUMPERS SHALL BE #6 AWG, INSULATED, STRANDED, COPPER WIRE.
3. ALL WIRE-TO-WIRE CONNECTIONS SHALL BE THREE-CLAMP, C TAP COMPRESSION (T&B #54740 ORANGE OR EQUIVALENT). ALL GROUND BAR CONNECTIONS SHALL BE TWO-HOLE, LONG-BARREL TYPE COMPRESSION LUGS (T&B OR EQUIVALENT). ALL OTHER CONNECTIONS TO STEEL SURFACES SHALL USE LUG-TYPE CONNECTORS.
4. MECHANICALLY BOND ANTENNA MOUNTS WITH #2 AWG, BARE, STRANDED CONDUCTORS.
5. ALL GROUNDING WORK SHALL COMPLY WITH VERIZON WIRELESS STANDARDS.
6. CONNECT GROUND CONDUCTOR TO EXISTING GROUNDING SYSTEM. ATTACH TO WALLS, PARAPET, CABLE TRAY, ETC. WITH A CLAMPS AS NECESSARY. REMOVE PAINT, FIREPROOFING, MILL SCALE, ETC. TO ACHIEVE GOOD CAD WELD GROUND CONNECTION.
7. CONNECT TO HALO GROUND USING C-TAP (#54730).
8. CONNECT TO ENCLOSURES USING BLUE GROUND LUGS.

LEGEND

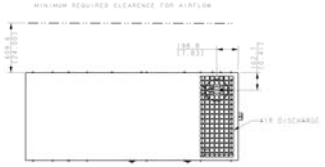
ELECTRICAL SYMBOLS

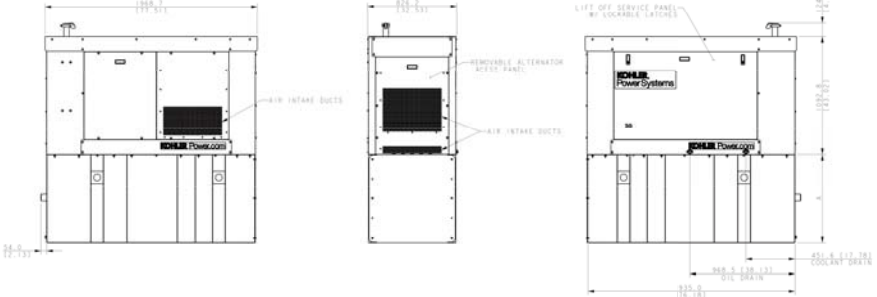
- METER
- GROUND ROD/TEST (OBSERVATION) WELL
- GROUND ROD
- CADWELD TYPE CONNECTION
- COMPRESSION TYPE CONNECTION
- GROUNDING WIRE
- (1/E02) REPRESENTS DETAIL NUMBER
- 1'X4' SURFACE MTD. FLOURESCENT LIGHTING FIXTURE
- SELF CONTAINED EMERG. LIGHTING UNIT
- S 20A-120V-1P TOGGLE SWITCH
- MS MAGNETIC DOOR SWITCH (DOOR JAMB TYPE)
- 20A-120V QUADRAPLEX RECEPTACLE, GROUNDING TYPE, 2-CKT. NO.
- WP/GFI 20A-120V DUPLEX RECEPTACLE, GROUNDING TYPE. WP = WEATHERPROOF GFI = GROUND FAULT
- TL SIMPLEX RECEPTACLE, GROUNDING TYPE. TL = TWIST LOCK
- J JUNCTION BOX
- P1 PANELBOARD 'P1'
- *(2) MOTOR - NUMERAL DENOTES HORSEPOWER
- WP WEATHER PROOF DISCONNECT SWITCH
- FUSED DISCONNECT SWITCH - '3R' & '1' - NEMA ENCLOSURE
- *(T) THERMOSTAT *(T)HI - HI TEMPERATURE ALARM THERMOSTAT
- *(H) HUMIDISTAT *(H)HI/LO - HI/LO HUMIDITY ALARM HUMIDISTAT
- COMBINATION SMOKE/HEAT DETECTOR WITH MINI HORN SIMPLEX CAT.#2098-9696 WITH FORM A & C CONTACTS
- P1-2 HOMERUN TO PANEL (FURNISH & INSTALLED BY MECHANICAL)
- SURGE ARRESTOR - JOSLYN CAT. NO. 1455-85
- AFF ABOVE FINISHED FLOOR
- * MOTORIZED DAMPER
- 2#12-3/4"C EXPOSED CONDUIT 2#12-3/4"C.
- TC ALARM TERMINAL CABINET

*EQUIPMENT FURNISHED AND INSTALLED BY OTHERS AND WIRED BY THIS CONTRACTOR

ABBREVIATIONS

AWG	AMERICAN WIRE GAUGE
BCW	BARE COPPER WIRE
GPS	GLOBAL POSITIONING SYSTEM
PCS	PERSONAL COMMUNICATION SYSTEM
RWY	RACEWAY
TYP.	TYPICAL
RGS	RIGID GALVANIZED STEEL
EMT	ELECTRICAL METALLIC TUBING
DWG	DRAWING
EMT	INTERIOR GROUND RING (HALO)
GEN	GENERATOR
GR	GROWTH
CGBE	COAX GROUND BAR EXTERNAL
CIGBE	COAX ISOLATED GROUND BAR EXTERNAL
MGB	MASTER GROUND BAR
PVC	RIGID (SCH. 40) POLYVINYL CHLORIDE CONDUIT
EBH	ETHERNET BACK HAUL





KOHLER 30kW DIESEL GENERATOR WITH 203 GA SUB-BASE DIESEL FUEL TANK (PART #30REOZK)
OVERALL GENERATOR (ENCLOSURE) APPROXIMATE
DIMENSIONS: 76.5"L x 32.0"W x 84"H (INCLUDES SUB-BASE DIESEL TANK)
APPROXIMATE MAX. IN-SERVICE WEIGHT: 2,114 lbs

GENERATOR DETAIL (1/E01)
SCALE: NONE

verizon
" Because Better Matters "

CHAPPELL ENGINEERING ASSOCIATES, LLC
Civil • Structural • Land Surveying
R.K. EXECUTIVE CENTRE
201 BOSTON POST ROAD WEST, SUITE 101
MARLBOROUGH, MA 01752
(508) 481-7400
www.chappellengineering.com

ENGINEER/LAND SURVEYOR DATE

REVISIONS

NO.	DESCRIPTION	DATE
0	ISSUED FOR REVIEW	5/26/20
1	GENERAL REVISIONS	7/20/20
2	GENERAL REVISIONS	7/30/20

PROJECT NAME:

BURLINGTON SOUTHWEST CT
87 MONCE ROAD
BURLINGTON, CT 06013

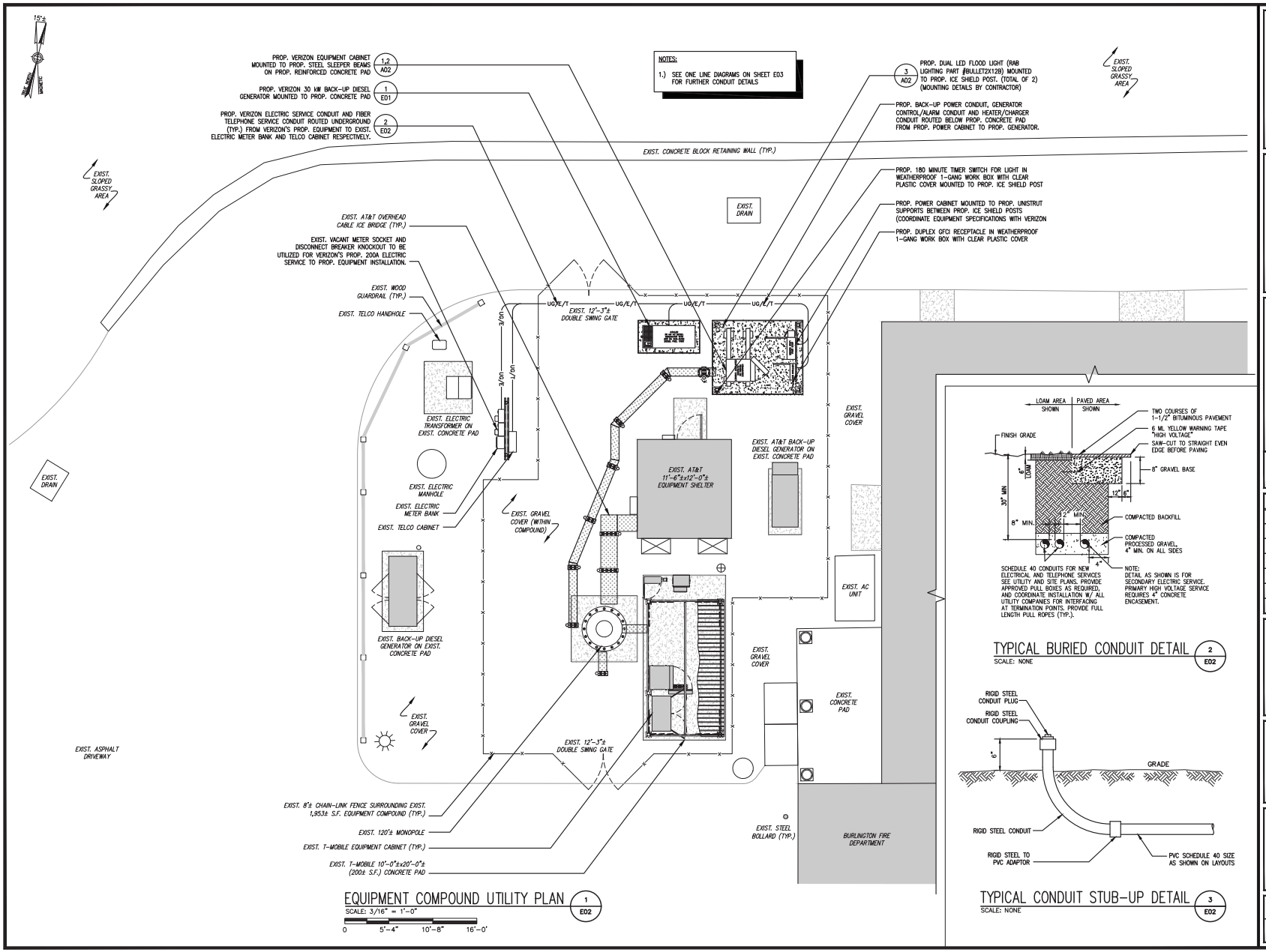
DRAWING TITLE:

ELECTRICAL SPECIFICATIONS AND NOTES

DRAWING NO:

E01

SCALE:	DESIGNED BY: GRS	VZW LOCATION CODE:
AS SHOWN	DRAWN BY: NWC	
	CHECKED BY: GRS	479435
CEA PROJECT NO.:	ORIGINAL ISSUE DATE:	
96210.398	5/26/20	



verizon
" Because Better Matters "

CHAPPELL ENGINEERING ASSOCIATES, LLC
Civil • Structural • Land Surveying
R.K. EXECUTIVE CENTRE
201 BOSTON POST ROAD WEST, SUITE 101
MARLBOROUGH, MA 01752
(508) 481-7400
www.chappellengineering.com

ENGINEER/LAND SURVEYOR DATE

REVISIONS

NO.	DESCRIPTION	DATE
0	ISSUED FOR REVIEW	5/26/20
1	GENERAL REVISIONS	7/20/20
2	GENERAL REVISIONS	7/30/20

PROJECT NAME:

BURLINGTON SOUTHWEST CT

87 MONCE ROAD
BURLINGTON, CT 06013

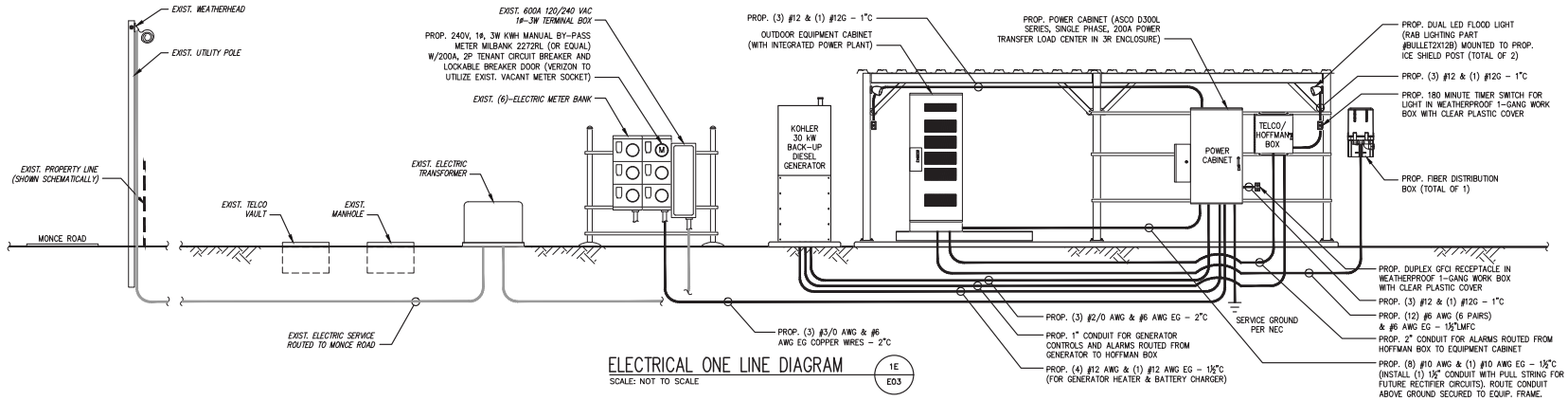
DRAWING TITLE:

EQUIPMENT COMPOUND UTILITY PLAN & DETAILS

DRAWING NO:

E02

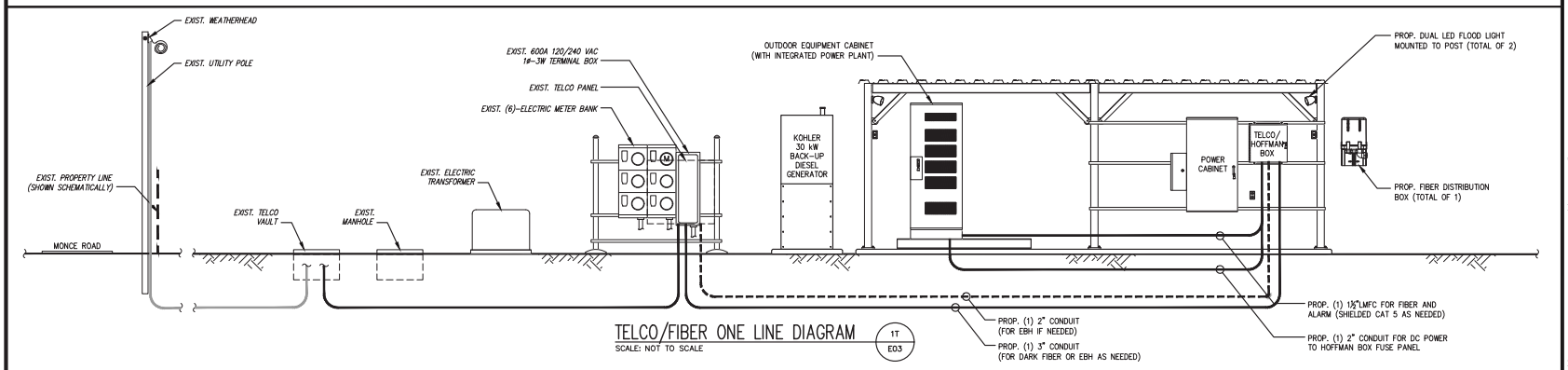
SCALE:	DESIGNED BY: GRS	VZW LOCATION CODE:
3/16" = 1'-0"	DRAWN BY: NWC	
	CHECKED BY: GRS	
CEA PROJECT NO.:	ORIGINAL ISSUE DATE:	479435
96210.398	5/26/20	



ELECTRICAL ONE LINE DIAGRAM

SCALE: NOT TO SCALE

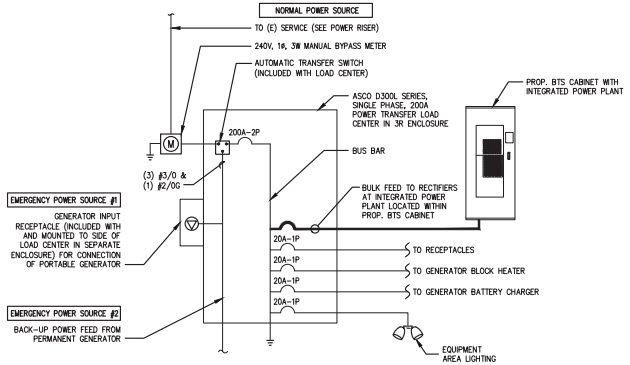
1E / E03



TELCO/FIBER ONE LINE DIAGRAM

SCALE: NOT TO SCALE

1T / E03



POWER SOURCE ONE LINE DIAGRAM

SCALE: NOT TO SCALE

2 / E03

ASCO D300L SERIES, SINGLE PHASE, 200A POWER TRANSFER LOAD CENTER IN 3R ENCLOSURE

ELECTRICAL PANEL SCHEDULE

65,000 A.I.C. NEMA 3R

CKT #	DESCRIPTION	AMP	AMP	DESCRIPTION	CKT #
1	RECTIFIER #1	30	30	FUTURE RECTIFIER	2
3					4
5	RECTIFIER #2	30	30	FUTURE RECTIFIER	6
7					8
9	RECTIFIER #3	30	20	PAD LIGHTING	10
11			–	BLANK	12
13	RECTIFIER #4	30	–	BLANK	14
15			–	BLANK	16
17	GFCI RECEPTACLE/LIGHT	20	–	BLANK	18
19	GENERATOR BLOCK HEATER	20	–	BLANK	20
21	GENERATOR BATTERY CHARGER	20	–	BLANK	22
23	BLANK	–	–	BLANK	24
25	BLANK	–	–	BLANK	26
27	BLANK	–	–	BLANK	28
29	BLANK	–	–	BLANK	30

ELECTRICAL PANEL SCHEDULE

SCALE: NTS

3 / E03

ONE-LINE DIAGRAM NOTES:
1) PROVIDE WEATHER TIGHT SEAL CONNECTORS ON ALL CONNECTIONS INSIDE AND OUT.

2) COORDINATE ANY FURTHER MISCELLANEOUS WIRING AND CONDUIT REQUIREMENTS WITH VERIZON WIRELESS AND ELECTRIC COMPANY.

3) ALL CONDUIT ROUTING SHOWN ON THESE DIAGRAMS IS SCHEMATIC IN NATURE AND INTENDED TO CONVEY GENERAL INTENT ONLY.

4) ALL PROPOSED UTILITY DESIGN ELEMENTS SHOWN ARE SUBJECT TO CHANGE BASED ON FINAL DESIGN TO BE PROVIDED BY UTILITY PROVIDERS AND VERIZON WIRELESS. CONTRACTOR SHALL OBTAIN A COPY OF THE FINAL UTILITY DESIGN BY UTILITY COMPANY PRIOR TO COMMENCEMENT OF WORK.

UTILITY CONTACTS

ELECTRICAL: EVERSOURCE ENERGY
247 STATION DRIVE, SE 210
WESTWOOD, MA 02090
(781) 441-3610

TELEPHONE: VERIZON
185 FRANKLIN STREET
BOSTON, MA 02107
(800) 941-9900

MAKE ALL CONNECTIONS AS PER UTILITY COMPANY'S REQUIREMENTS.

verizon
" Because Better Matters "

CHAPPELL ENGINEERING ASSOCIATES, LLC
Civil • Structural • Land Surveying
R.K. EXECUTIVE CENTRE
201 BOSTON POST ROAD WEST, SUITE 101
MARLBOROUGH, MA 01752
(508) 481-7400
www.chappellengineering.com

ENGINEER/LAND SURVEYOR DATE

REVISIONS

NO.	DESCRIPTION	DATE
0	ISSUED FOR REVIEW	5/26/20
1	GENERAL REVISIONS	7/20/20
2	GENERAL REVISIONS	7/30/20

PROJECT NAME:

BURLINGTON SOUTHWEST CT
87 MONCE ROAD
BURLINGTON, CT 06013

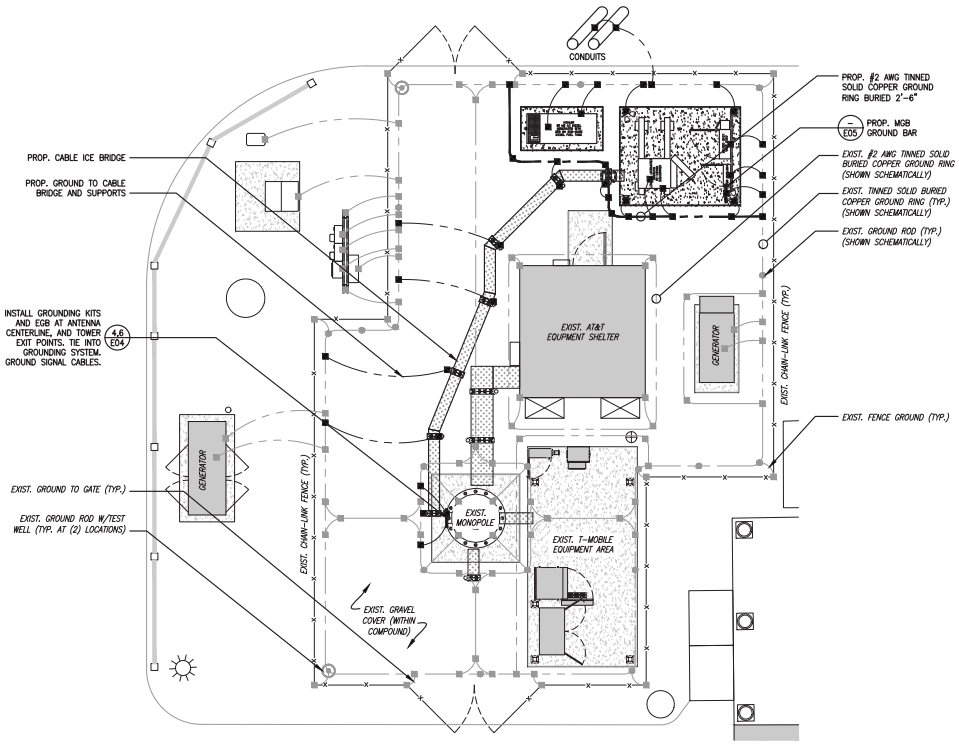
DRAWING TITLE:

ELECTRICAL DIAGRAMS & DETAILS

DRAWING NO:

E03

SCALE:	DESIGNED BY: GRS	VZW LOCATION CODE:
AS SHOWN	DRAWN BY: NWC	
	CHECKED BY: GRS	479435
CEA PROJECT NO.:	ORIGINAL ISSUE DATE:	
96210.398	5/26/20	



SCHEMATIC GROUNDING PLAN

1 E04

SCALE: 3/16" = 1'-0"

NORTH

0 5'-4" 10'-8" 16'-0"

GROUNDING LEGEND

- EXOTHERMIC GROUND
- GROUND ROD
- TEST WELL
- PROP. #2 AWG EQUIPMENT GROUNDING
- PROP. GROUND HALO
- EXIST. SITE GROUNDING (SHOWN SCHEMATICALLY)

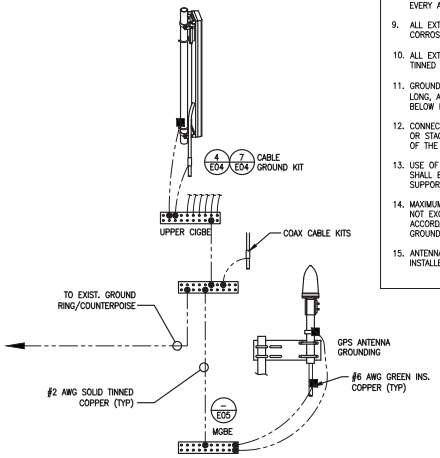
ELECTRICAL AND GROUNDING NOTES:

ELECTRICAL

1. ALL ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS AND ALL APPLICABLE LOCAL CODES.
2. CONDUIT ROUTINGS ARE SCHEMATIC. SUBCONTRACTOR SHALL INSTALL CONDUITS SO THAT ACCESS TO EQUIPMENT IS NOT BLOCKED.
3. SERVICE TO EQUIP. SHALL BE 120/240 VAC, 200 AMP, 1ø, 60 Hz.
4. THE SUBCONTRACTOR IS RESPONSIBLE FOR PROPERLY SEQUENCING GROUNDING AND UNDERGROUND CONDUIT INSTALLATION AS TO PREVENT ANY LOSS OF CONTINUITY IN THE GROUNDING SYSTEM OR DAMAGE TO THE CONDUIT.

GROUNDING

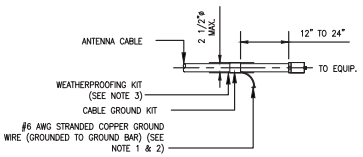
5. COMPRESSION GROUND CONNECTIONS MAY BE REPLACED BY EXOTHERMIC (CADWELD) CONNECTIONS.
6. ALL GROUND CONNECTIONS BELOW GRADE SHALL BE EXOTHERMIC (CADWELD).
7. ALL GROUND CONNECTIONS ABOVE GRADE (INTERIOR & EXTERIOR) SHALL BE FORMED USING HIGH PRESS CRIMPS.
8. ALL EXOTHERMIC CONNECTIONS TO THE GROUND RODS SHALL START AT THE TOP & HAVE A VERTICAL SEPARATION OF 6" FOR EVERY ADDITIONAL CONNECTION.
9. ALL EXTERIOR GROUND CONNECTIONS SHALL BE COATED WITH A CORROSION RESISTANT MATERIAL.
10. ALL EXTERIOR GROUND CONDUCTORS SHALL BE #2 AWG SOLID TINNED COPPER UNLESS OTHERWISE INDICATED.
11. GROUND RODS SHALL BE COPPER CLAD STEEL, 5/8"ø 10-FT. LONG, AND SHALL BE DRIVEN VERTICALLY WITH THEIR TOPS 48" BELOW FINAL GRADE.
12. CONNECTIONS TO THE GROUND BUS SHALL NOT BE DOUBLED UP OR STACKED. BACK TO BACK CONNECTIONS ON OPPOSITE SIDES OF THE GROUND BUS ARE PERMITTED.
13. USE OF 90° BENDS IN THE PROTECTION GROUNDING CONDUCTORS SHALL BE AVOIDED WHEN 45° BENDS CAN BE ADEQUATELY SUPPORTED.
14. MAXIMUM RESISTANCE OF THE COMPLETED GROUND SYSTEM SHALL NOT EXCEED 5 OHMS. TESTING SHALL BE PERFORMED IN ACCORDANCE WITH PROJECT SPECIFICATION FOR FACILITY GROUNDING, USING FALL OF POTENTIAL METHOD.
15. ANTENNA GROUND KITS SHALL BE FURNISHED BY VERIZON AND INSTALLED BY CONTRACTOR.



ANTENNA GROUNDING RISER DIAGRAM

2 E04

SCALE: NOT TO SCALE



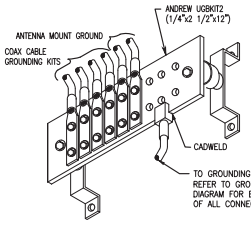
CONNECTION OF CABLE GROUND KIT TO ANTENNA CABLE

NOTES:

1. DO NOT INSTALL CABLE GROUND KIT AT A BEND AND ALWAYS DIRECT GROUND WIRE DOWN TO GROUND BAR.
2. GROUNDING KIT SHALL BE TYPE AND PART NUMBER AS SUPPLIED OR RECOMMENDED BY CABLE MANUFACTURER.
3. WEATHER PROOFING SHALL BE TWO-PART TAPE SUPPLIED WITH KIT. COLD SHRINK SHALL NOT BE USED.

DETAIL 3 E04

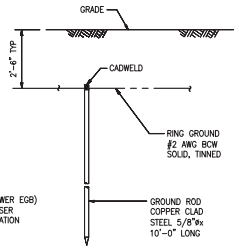
SCALE: NOT TO SCALE



GROUND BAR (EGB)

4 E04

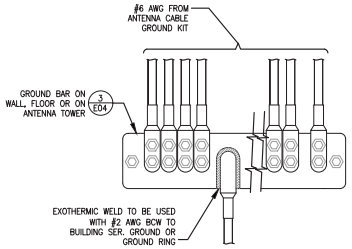
SCALE: NOT TO SCALE



GROUND ROD

5 E04

SCALE: NOT TO SCALE

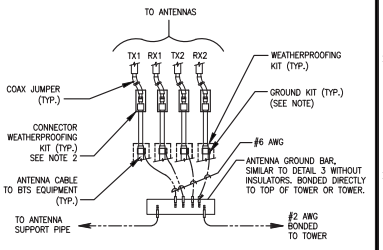


*- GROUND BARS AT THE BOTTOM OF TOWERS/TOWERS SHALL ONLY USE EXOTHERMIC WELDS.

INSTALLATION OF GROUND WIRE TO GROUND BAR

DETAIL 6 E04

SCALE: NOT TO SCALE



CONNECTION OF GROUND WIRE TO GROUNDING BAR, TOWER

DETAIL 7 E04

SCALE: NOT TO SCALE

verizon

" Because Better Matters "

CHAPPELL ENGINEERING ASSOCIATES, LLC
Civil • Structural • Land Surveying
R.K. EXECUTIVE CENTRE
201 BOSTON POST ROAD WEST, SUITE 101
MARLBOROUGH, MA 01752
(508) 481-7400
www.chappellengineering.com

ENGINEER/LAND SURVEYOR DATE

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, TO ALTER THIS DOCUMENT.

REVISIONS

NO.	DESCRIPTION	DATE
0	ISSUED FOR REVIEW	5/26/20
1	GENERAL REVISIONS	7/20/20
2	GENERAL REVISIONS	7/30/20

PROJECT NAME:

BURLINGTON SOUTHWEST CT

87 MONCE ROAD
BURLINGTON, CT 06013

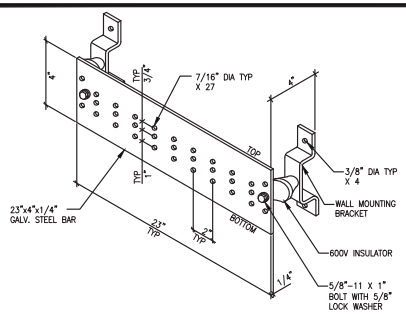
DRAWING TITLE:

SCHEMATIC GROUNDING PLAN & DETAILS

DRAWING NO:

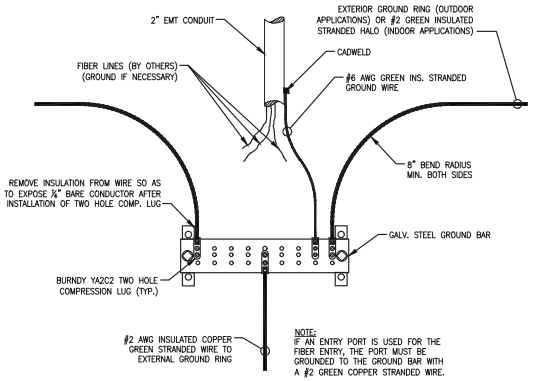
E04

SCALE:	DESIGNED BY: GRS	VZW LOCATION CODE:
AS SHOWN	DRAWN BY: NWC	
CEA PROJECT NO.:	CHECKED BY: GRS	479435
96210.398	ORIGINAL ISSUE DATE: 5/26/20	

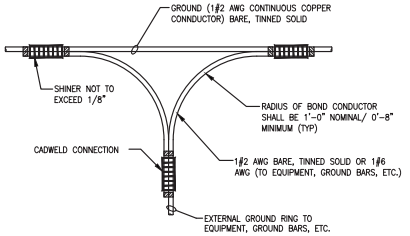


1. SURFACE PREPERATION: ALL CONNECTIONS MADE TO BARE METAL. ALL PAINTED SURFACES SHALL BE MADE BARE TO ENSURE PROPER CONTACT. NO WASHERS SHALL BE ALLOWED BETWEEN THE ITEMS BEING GROUNDED. ALL CONNECTIONS SHALL HAVE AN ANTI-OXIDANT AGENT APPLIED PRIOR TO INSTALLATION.
2. BUSS PREPERATION: ALL GALV. STEEL BUSSES SHALL BE CLEANED, POLISHED AND AN ANTI-OXIDANT APPLIED. NO FINGERPRINTS OR DISCOLORED STEEL WILL BE PERMITTED.
3. TERMINATIONS: ALL EQUIPMENT TERMINATIONS SHALL BE MADE WITH A BURNDY TWO HOLE COMPRESSION LUG WITH 10-24x3/4" LONG S.S. SCREWS, NUTS AND LOCK WASHERS. ALL BUSS TERMINATIONS SHALL BE MADE WITH A CAD-WELD OR BURNDY YC2C2 2 HOLE COMPRESSION LUG OR EQUAL. ALL INTERIOR HALO ATTACHMENTS SHALL BE MADE USING A BURNDY YC2C2 COMPRESSION LUG.

TYP. INTERIOR & EXTERIOR GROUND BAR
SCALE: N.T.S.

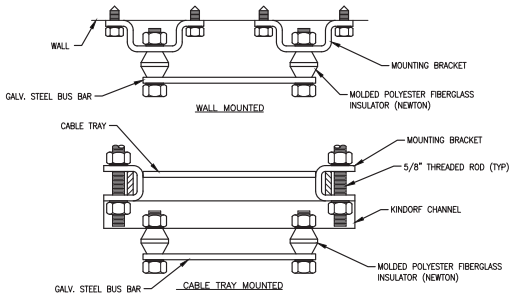


INTERIOR GROUNDING AT TELCO ENTRY
SCALE: N.T.S.

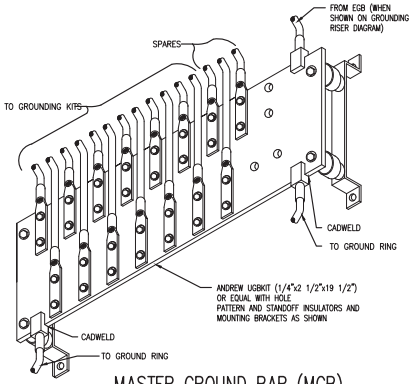


NOTE: ALL CONNECTION TO GROUND SHALL BE NON-DIRECTIONAL

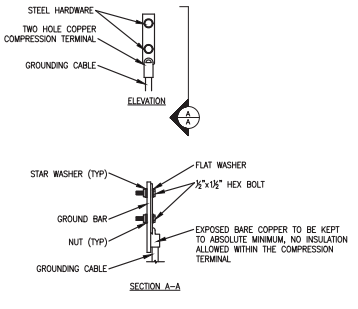
NON-DIRECTIONAL SPLICE
SCALE: N.T.S.



BUS BAR MOUNTING
SCALE: N.T.S.

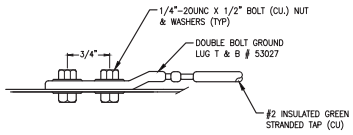


MASTER GROUND BAR (MGB)
SCALE: NOT TO SCALE

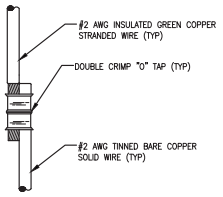


NOTE:
1. "DOUBLING UP" OR "STACKING " OF CONNECTION IS NOT PERMITTED.
2. OXIDE INHIBITING COMPOUND TO BE USED AT ALL LOCATIONS.

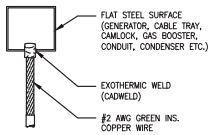
TYPICAL GROUND BAR CONNECTION DETAIL
SCALE: N.T.S.



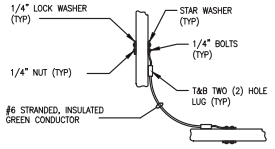
TYPICAL EQUIPMENT GROUND CONNECTION
SCALE: N.T.S.



TYPICAL GROUND CONNECTION SPLICE DETAIL
SCALE: N.T.S.



TYP. CADWELD #2 GREEN TO FLAT STEEL SURFACE
SCALE: NOT TO SCALE



CABLE TRAY GROUNDING
SCALE: N.T.S.

verizon
" Because Better Matters "

CHAPPELL ENGINEERING ASSOCIATES, LLC
Civil • Structural • Land Surveying
R.K. EXECUTIVE CENTRE
201 BOSTON POST ROAD WEST, SUITE 101
MARLBOROUGH, MA 01752
(508) 481-7400
www.chappellengineering.com

ENGINEER/LAND SURVEYOR DATE

REVISIONS

NO.	DESCRIPTION	DATE
0	ISSUED FOR REVIEW	5/26/20
1	GENERAL REVISIONS	7/20/20
2	GENERAL REVISIONS	7/30/20

PROJECT NAME:

BURLINGTON SOUTHWEST CT
87 MONCE ROAD
BURLINGTON, CT 06013

DRAWING TITLE:

GROUNDING DETAILS

DRAWING NO:

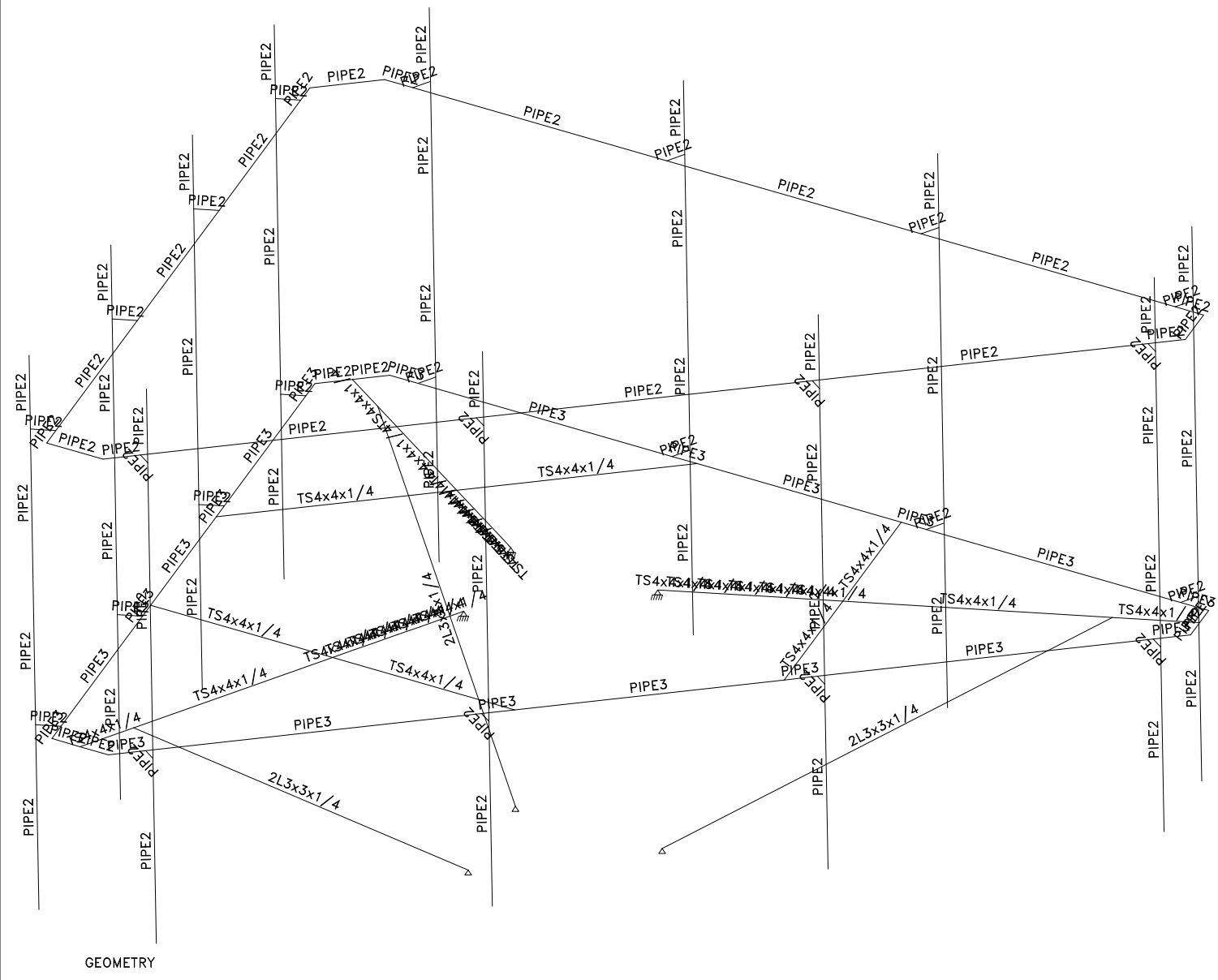
E05

SCALE:	DESIGNED BY: GRS	VZW LOCATION CODE:
AS SHOWN	DRAWN BY: NWC	
	CHECKED BY: GRS	479435
CEA PROJECT NO.:	ORIGINAL ISSUE DATE:	
96210.398	5/26/20	

Appendix C– Mount Analysis

Burlington Southwest CT Mount Analysis

SCALE = 1:24	UNITS: kip ft	DATE: 7/ 8/20



GEOMETRY

Burlington Southwest CT Mount Analysis

Prepared by:

Load no. 1: Front No Ice (units - kips ft.)

/ JOINT LOADS
/ BEAM LOADS
/ JOINT LOADS
/ BEAM LOADS
/ JOINT LOADS

/ BEAM LOADS
/ JOINT LOADS
/ JOINT LOADS
FX2 -0.3 FX3 -0.06 N 64 66 48 50
FX2 -0.35 FX3 -0.06 N 28 30

FX2 -0.11 FX3 -0.07 N 126 130 125 129 127 128
/ END

F O R C E S U M M A T I O N

FX1=0. kip
FX2=-2.56 kip
FX3=-0.78 kip

Load no. 2: Side No Ice (units - kips ft.)

/ JOINT LOADS
/ BEAM LOADS
/ JOINT LOADS
/ BEAM LOADS
/ JOINT LOADS

/ BEAM LOADS
/ JOINT LOADS
/ BEAM LOADS
/ JOINT LOADS
FX1 -0.3 FX3 -0.06 N 64 66 28 30 48 50

FX1 -0.11 FX3 -0.07 N 126 130 125 129 127 128
/ END

F O R C E S U M M A T I O N

FX1=-2.46 kip
FX2=0. kip
FX3=-0.78 kip

Load no. 3: Front Ice (units - kips ft.)

/ JOINT LOADS
/ BEAM LOADS
/ JOINT LOADS
/ BEAM LOADS
/ JOINT LOADS

/ JOINT LOADS
/ BEAM LOADS
/ JOINT LOADS
FX2 -0.09 FX3 -0.2 N 28 30
FX2 -0.08 FX3 -0.2 N 64 66 48 50

FX2 -0.03 FX3 -0.12 N 126 130 125 129 127 128
/ END

Load no. 3: Front Ice (units - kips ft.)

F O R C E S U M M A T I O N

FX1=0. kip
FX2=-0.68 kip
FX3=-1.92 kip

Load no. 4: Side Ice (units - kips ft.)

/ JOINT LOADS
/ BEAM LOADS
/ JOINT LOADS
/ BEAM LOADS
/ JOINT LOADS

/ BEAM LOADS
/ JOINT LOADS
FX1 -0.08 FX3 -0.2 N 64 66 28 30 48 50
FX1 -0.02 FX3 -0.12 N 126 130 125 129 127 128
/ END

F O R C E S U M M A T I O N

FX1=-0.6 kip
FX2=0. kip
FX3=-1.92 kip

Load no. 5: Selfweight (units - kips ft.)

/ BEAM LOADS
SELF X3 -1. B 1 TO 138 142 TO 144
/ GLOBAL LOADS
/ GLOBAL LOADS
/ GLOBAL LOADS

DIST FX3 -0.003 PLANE -7.25 4.763 0. -1.805 4.763 0. -5.028 -0.818
0. PT -0.5 0.866 BEAMS
DIST FX3 -0.003 PLANE 1.805 4.763 0. 7.25 4.763 0. 7.75 3.897 0. PT
3.223 5.581 BEAMS
DIST FX3 -0.003 PLANE -3.222 -3.945 0. 3.222 -3.945 0. 0.5 -8.66

0. PT 2.722 4.715 BEAMS
/ END

F O R C E S U M M A T I O N

FX1=0. kip
FX2=0. kip
FX3=-1.5255 kip

Load no. 6: Front Frame Ice (units - kips ft.)

/ BEAM LOADS
DIST GL FX2 -0.002 B 1 4 5 13 TO 35 BY 2 49 TO 51 55 56 63 64 66 71 TO 74
76 TO 81 83 TO 88 90 TO 115 117 133 TO 135 142 TO 144
/ END

F O R C E S U M M A T I O N

FX1=0. kip
FX2=-0.3487 kip
FX3=0. kip

Load no. 7: Side Frame Ice (units - kips ft.)

/ BEAM LOADS
/ BEAM LOADS
DIST GL FX1 -0.002 B 4 5 13 TO 35 BY 2 50 51 63 64 66 71 72 TO 78 BY 2
79 TO 81 83 TO 88 90 91 93 94 TO 100 BY 2 101 TO 115 117 133 TO 135
142 TO 144
/ END

F O R C E S U M M A T I O N

FX1=-0.2924 kip
FX2=0. kip
FX3=0. kip

Load no. 8: Front Frame No Ice (units - kips ft.)

/ BEAM LOADS
/ BEAM LOADS
DIST GL FX2 -0.005 B 1 4 5 13 TO 35 BY 2 49 TO 51 55 56 63 64 66 71 TO 74
76 TO 81 83 TO 88 90 TO 115 117 133 TO 135 142 TO 144
/ END

F O R C E S U M M A T I O N

FX1=0. kip
FX2=-0.8717 kip
FX3=0. kip

Load no. 9: Side Frame No Ice (units - kips ft.)

/ BEAM LOADS
/ BEAM LOADS
/ BEAM LOADS
DIST GL FX1 -0.005 B 4 5 13 TO 35 BY 2 50 51 63 64 66 71 72 TO 78 BY 2
79 TO 81 83 TO 88 90 91 93 94 TO 100 BY 2 101 TO 115 117 133 TO 135
142 TO 144
/ END STATIC

Load no. 9: Side Frame No Ice (units - kips ft.)

F O R C E S U M M A T I O N

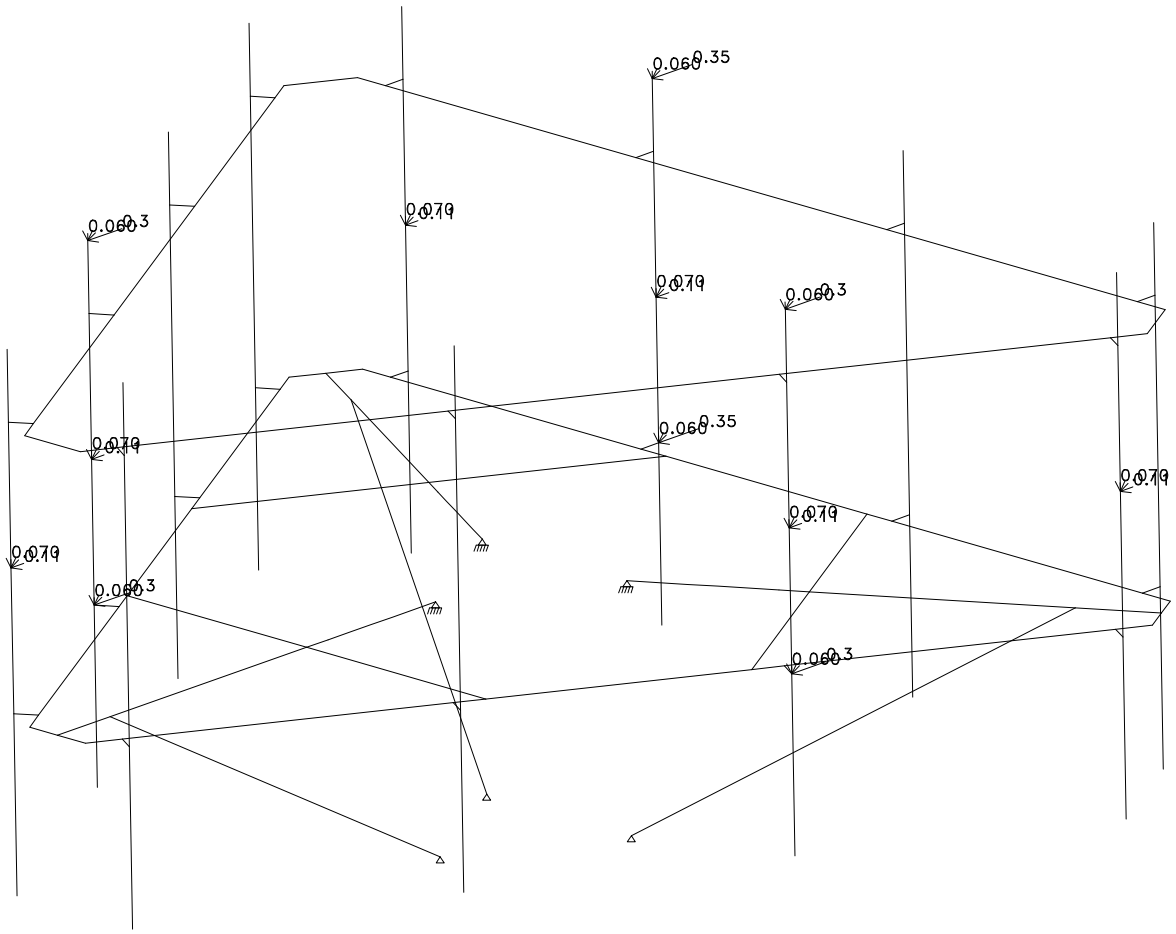
FX1=-0.7311 kip
FX2=0. kip
FX3=0. kip

Burlington Southwest CT Mount Analysis

Load 1: Front No Ice

X3
X2
X1

SCALE = 1:30	UNITS: kip ft	DATE: 7/ 8/20

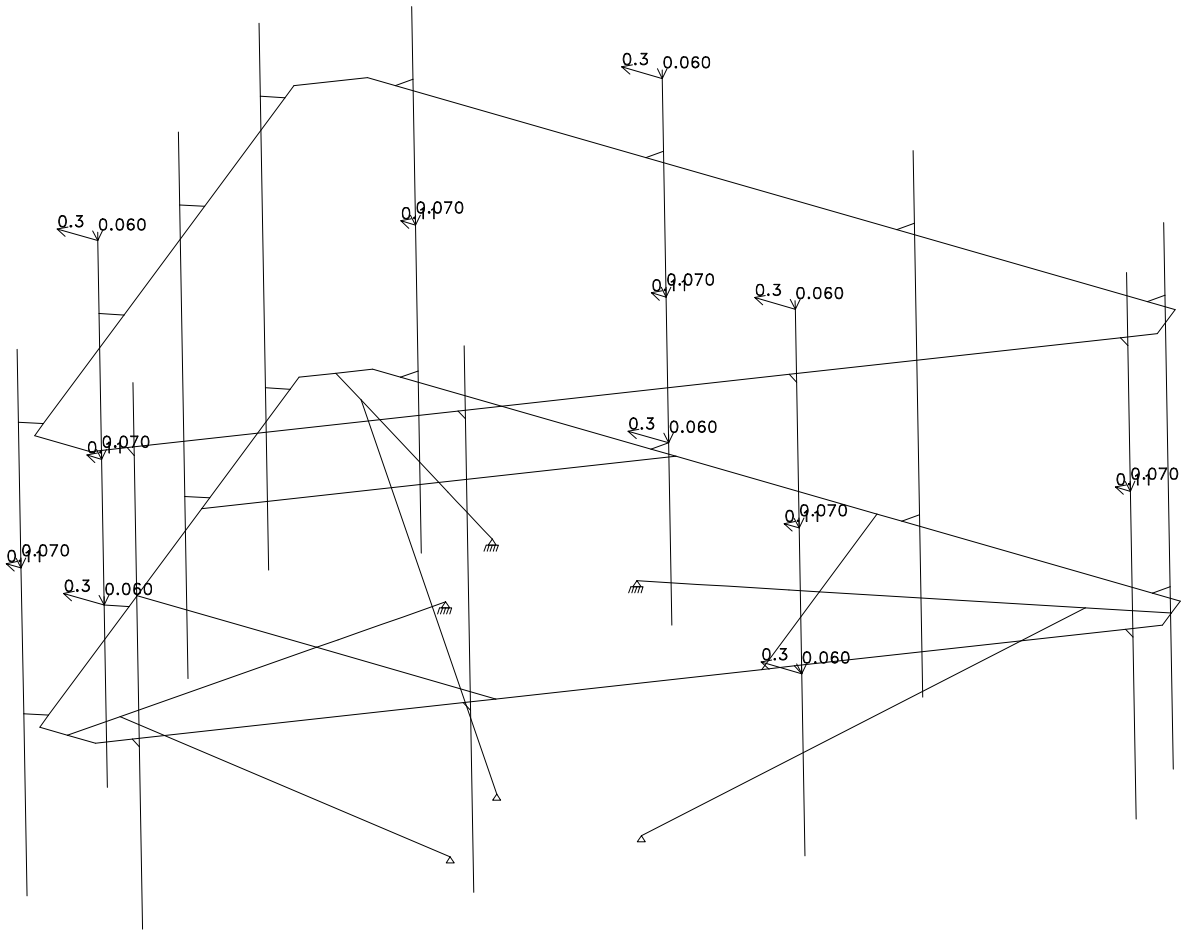


Burlington Southwest CT Mount Analysis

Load 2: Side No Ice

X3
X2
X1

SCALE = 1:30	UNITS: kip ft	DATE: 7/ 8/20

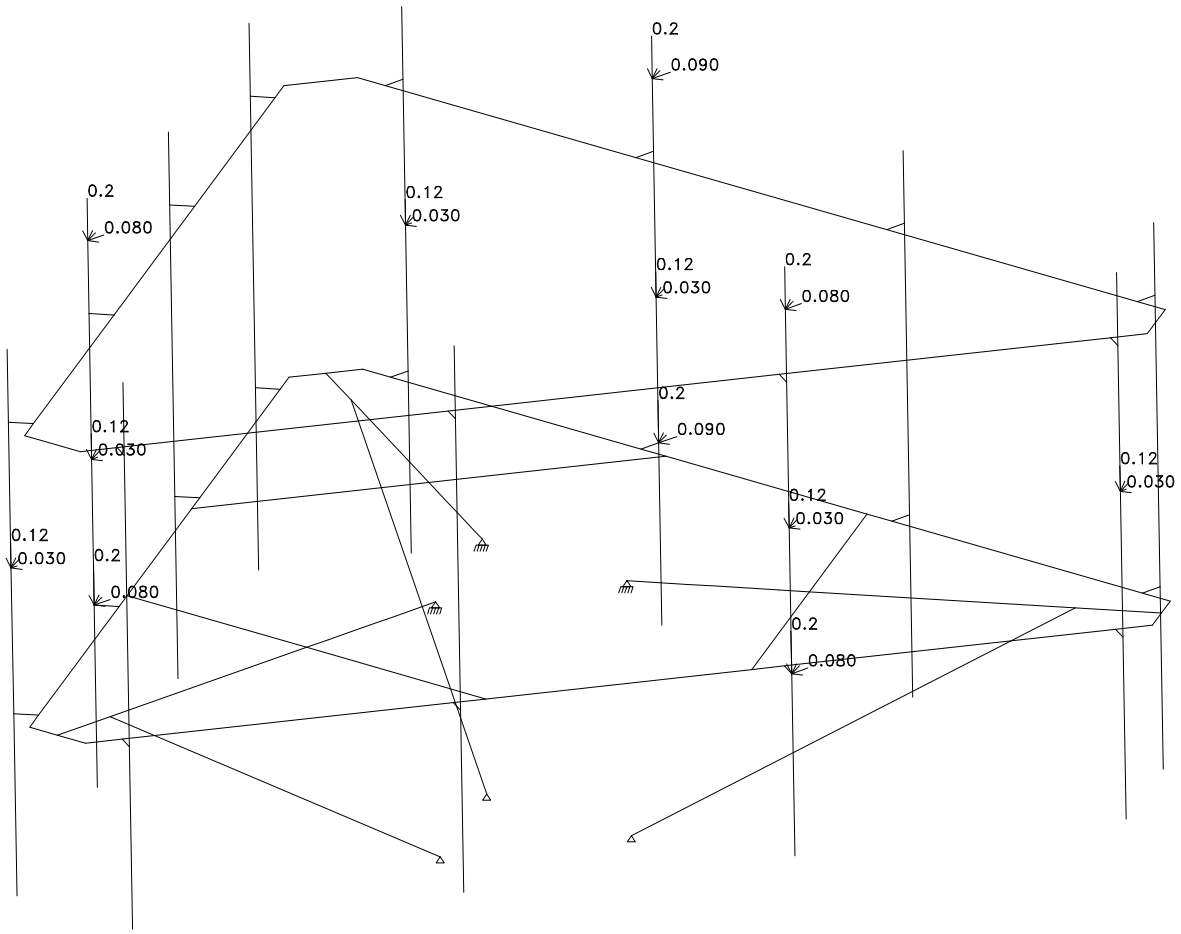


Burlington Southwest CT Mount Analysis

Load 3: Front Ice

X3
X2
X1

SCALE = 1:30	UNITS: kip ft	DATE: 7/ 8/20

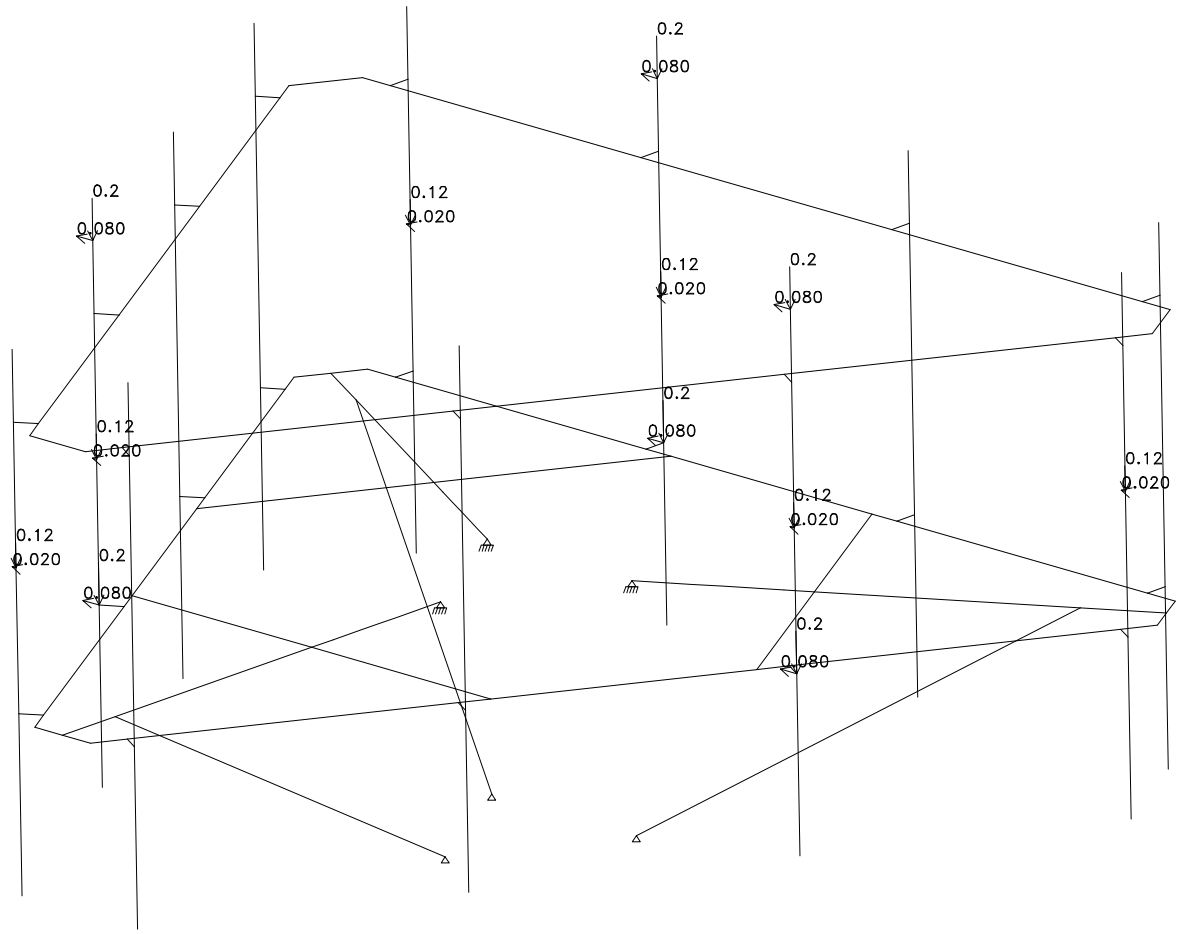


Burlington Southwest CT Mount Analysis

Load 4: Side Ice

X3
X2
X1

SCALE = 1:30	UNITS: kip ft	DATE: 7/ 8/20

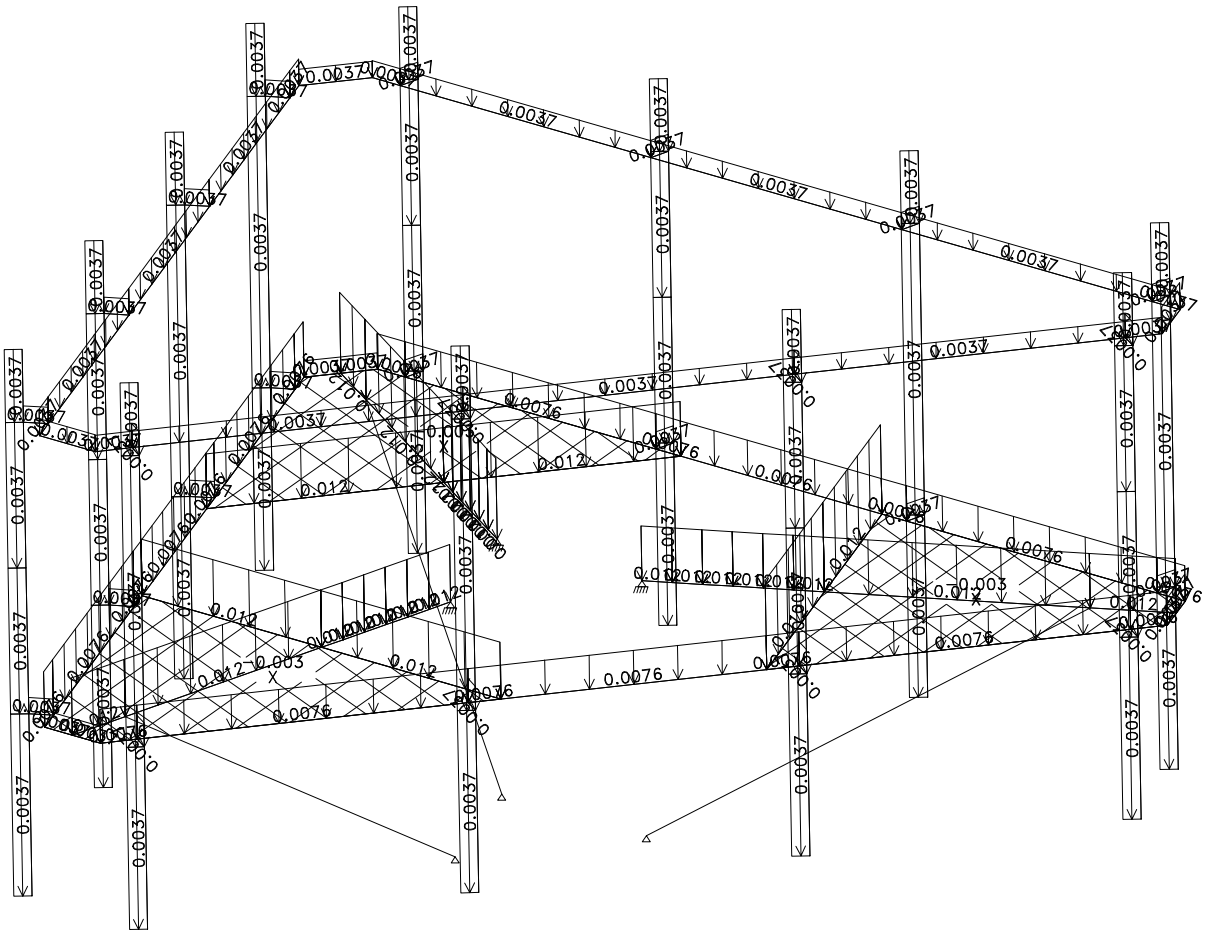


Burlington Southwest CT Mount Analysis

Load 5: Selfweight

X3
X2
X1

SCALE = 1:30	UNITS: kip ft	DATE: 7/ 8/20

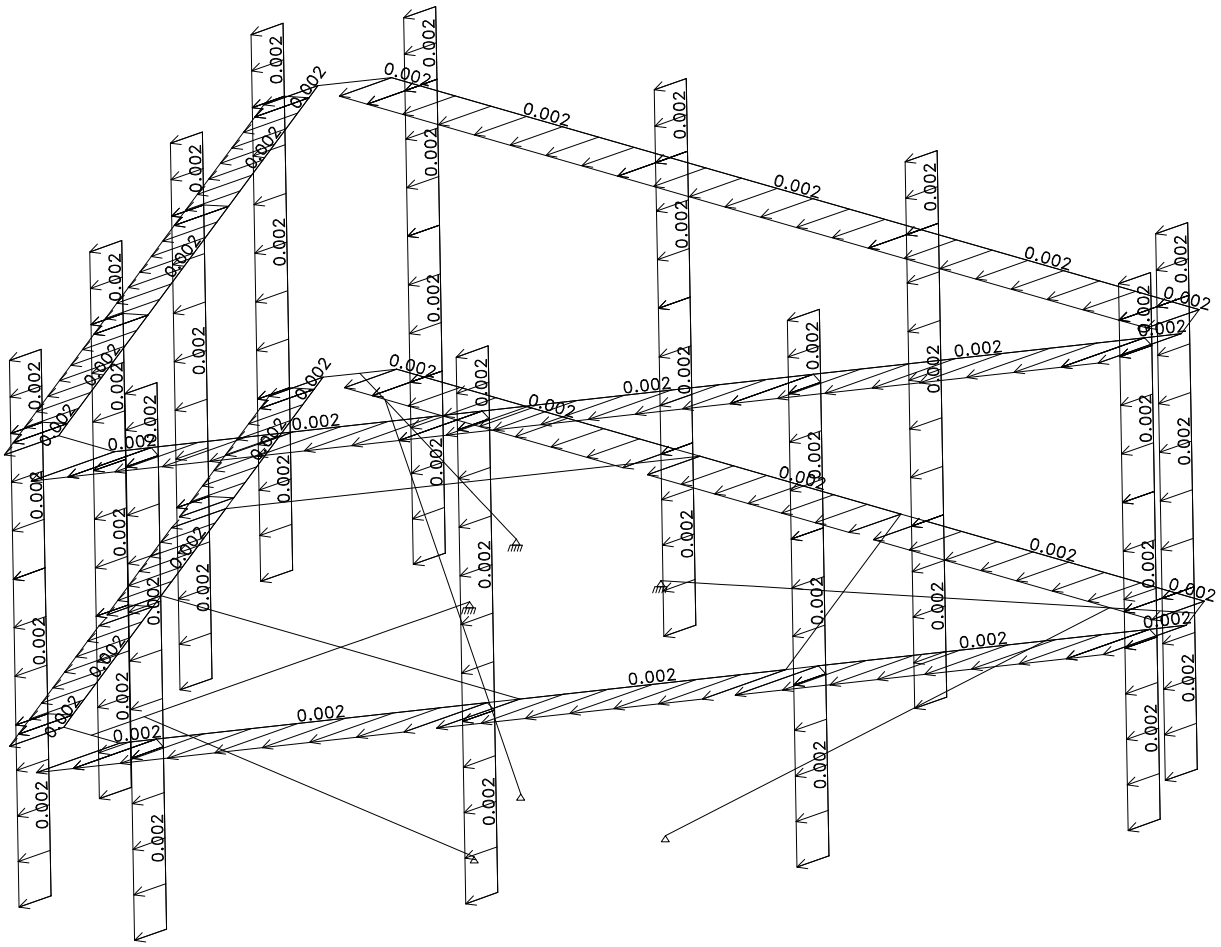


Burlington Southwest CT Mount Analysis

Load 6: Front Frame Ice

X3
X2
X1

SCALE = 1:30	UNITS: kip ft	DATE: 7/ 8/20

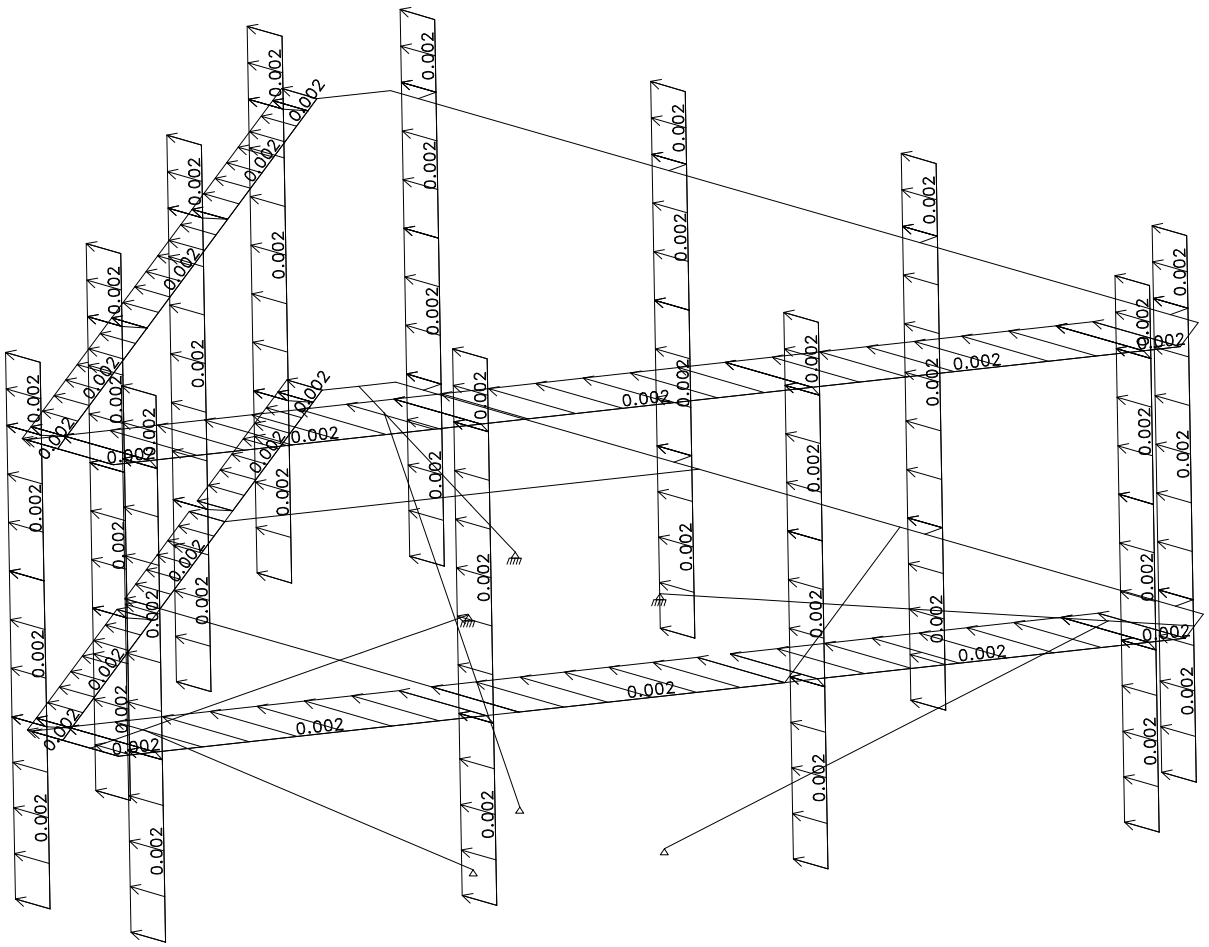


Burlington Southwest CT Mount Analysis

Load 7: Side Frame Ice

X3
X2
X1

SCALE = 1:30	UNITS: kip ft	DATE: 7/ 8/20

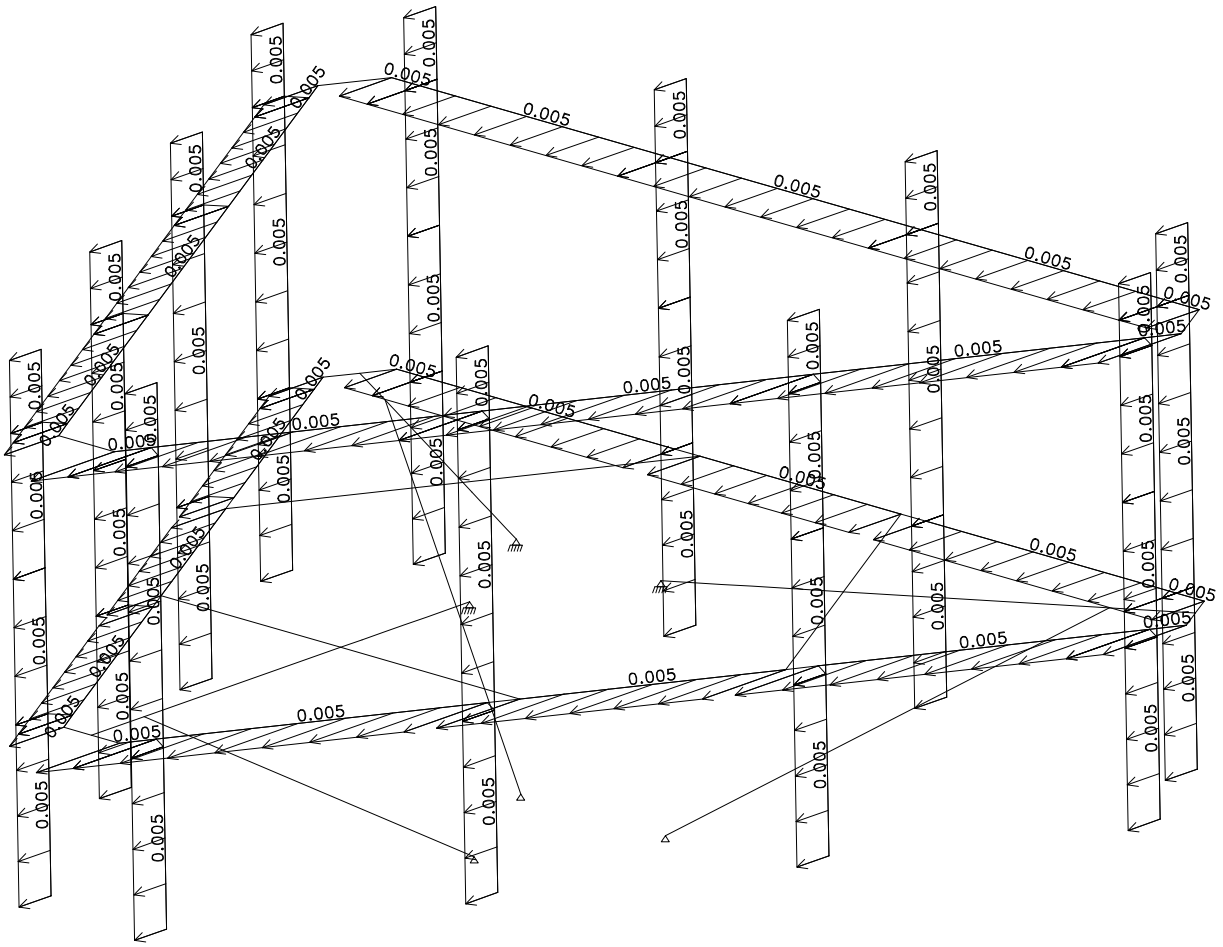


Burlington Southwest CT Mount Analysis

Load 8: Front Frame No Ice

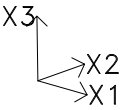
X3
X2
X1

SCALE = 1:30	UNITS: kip ft	DATE: 7/ 8/20

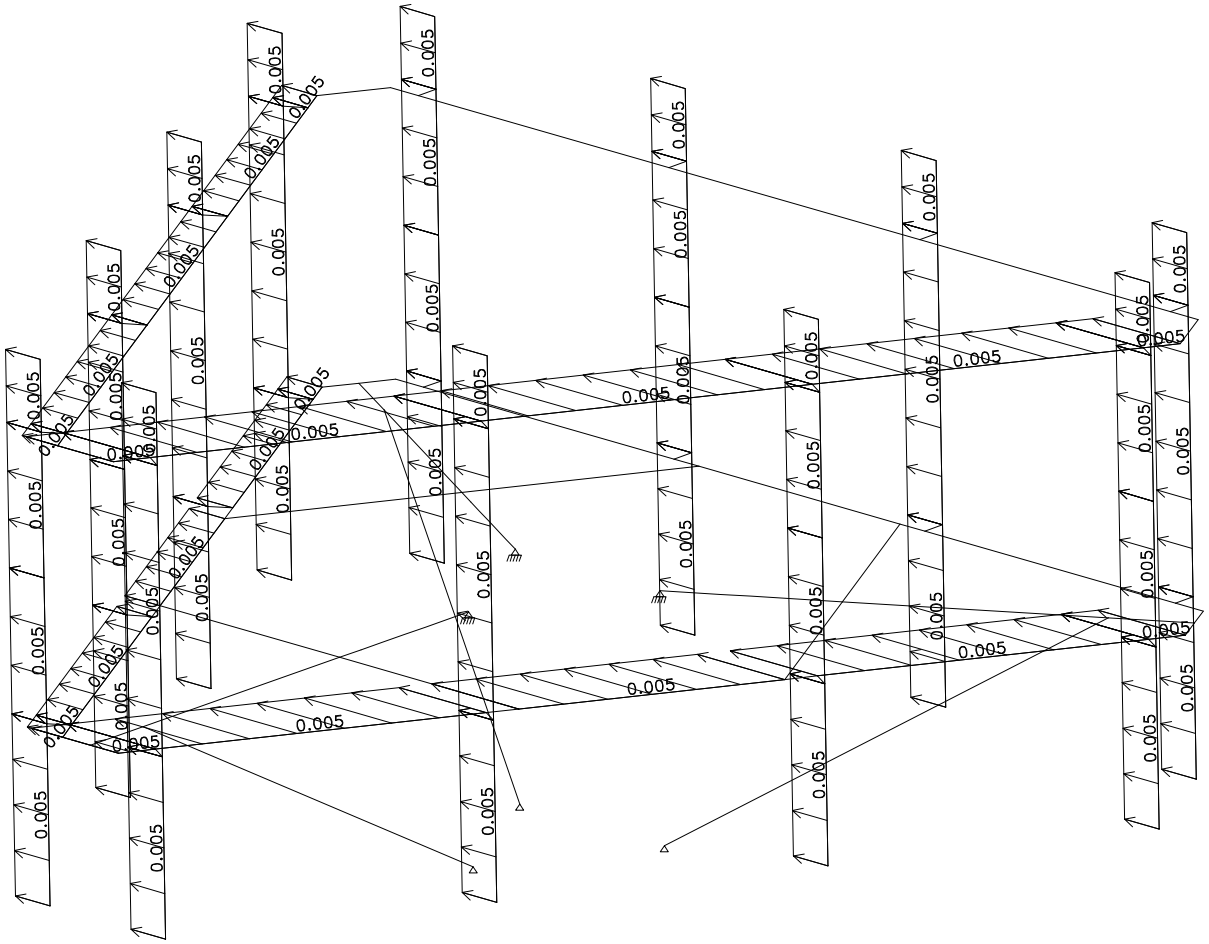


Burlington Southwest CT Mount Analysis

Load 9: Side Frame No Ice



SCALE = 1:30	UNITS: kip ft	DATE: 7/ 8/20



Burlington Southwest CT Mount Analysis

Prepared by: ***Date:*** 7/ 8/20

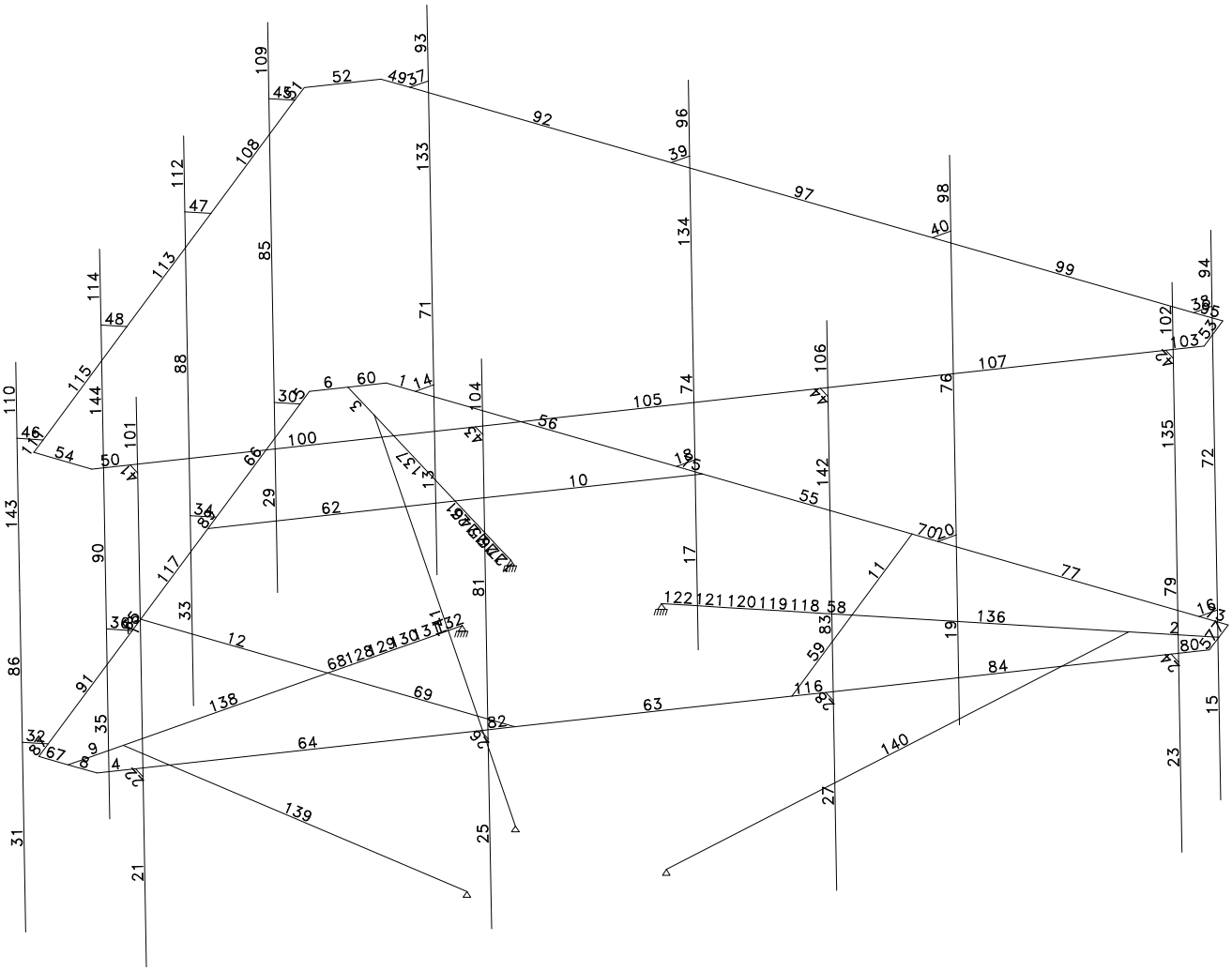
COMBINATIONS TABLE

Comb.	
1	Front No Ice 1 * 1.00 + 5 * 1.05 + 8 * 1.00
2	Side No Ice 2 * 1.00 + 5 * 1.05 + 9 * 1.00
3	Front Iced 3 * 1.00 + 5 * 1.25 + 6 * 1.00
4	Side Iced 4 * 1.00 + 5 * 1.25 + 7 * 1.00

Burlington Southwest CT Mount Analysis

SCALE = 1:27

DATE: 7/ 8/20



Burlington Southwest CT Mount Analysis **Code:** AISC-ASD

Prepared by: **Date:** 7/ 8/20

Results Summary Table

Beam	Section	Com	Defl L/	Slen	CAPACITY Axial	Dir	Shear	Mom	LTB	Combined Axial+Mom
1	PIPE 3	4	649	150	-0.01	MJ	0.04	0.21	0.21	0.28
						MI	0.04	0.13	0.00	
2	TS 4x4x1/4	1	3274	40	0.02	MJ	0.04	0.11	0.11	0.27
						MI	0.03	0.22	0.00	
3	TS 4x4x1/4	1	2525	57	0.03	MJ	0.04	0.12	0.12	0.38
						MI	0.05	0.33	0.00	
6	PIPE 2	1	4534	8	-0.01	MJ	0.06	0.32	0.32	0.48
						MI	0.06	0.15	0.00	
7	PIPE 2	2	9999	8	0.01	MJ	0.05	0.14	0.14	0.26
						MI	0.07	0.17	0.00	
8	PIPE 2	2	6831	8	-0.01	MJ	0.05	0.18	0.18	0.21
						MI	0.04	0.11	0.00	
9	TS 4x4x1/4	2	3058	57	0.03	MJ	0.05	0.11	0.11	0.37
						MI	0.05	0.31	0.00	
10	TS 4x4x1/4	1	9999	26	-0.01	MI	0.00	0.00	0.00	0.01
11	TS 4x4x1/4	1	9999	26	0.00	MI	0.00	0.00	0.00	0.00
12	TS 4x4x1/4	3	9999	26	0.01	MI	0.00	0.00	0.00	0.01
14	PIPE 2	1	9567	5	-0.01	MJ	0.04	0.19	0.19	0.30
						MI	0.04	0.11	0.00	
16	PIPE 2	2	9999	5	0.00	MJ	0.03	0.12	0.12	0.15
						MI	0.02	0.07	0.00	
18	PIPE 2	1	4183	5	-0.02	MJ	0.04	0.46	0.46	0.50
						MI	0.06	0.13	0.00	
20	PIPE 2	1	6134	5	-0.01	MJ	0.01	0.30	0.30	0.37
						MI	0.01	0.07	0.00	
22	PIPE 2	1	9999	5	0.00	MJ	0.02	0.19	0.19	0.24
						MI	0.03	0.10	0.00	
24	PIPE 2	1	8943	5	0.01	MJ	0.05	0.25	0.25	0.27
						MI	0.02	0.09	0.00	
26	PIPE 2	2	6560	5	-0.01	MJ	0.01	0.28	0.28	0.33
						MI	0.03	0.10	0.00	
28	PIPE 2	2	5172	5	-0.02	MJ	0.04	0.37	0.37	0.46
						MI	0.04	0.08	0.00	
30	PIPE 2	1	9999	5	0.00	MJ	0.05	0.22	0.22	0.23
						MI	0.02	0.10	0.00	
32	PIPE 2	2	9999	5	0.01	MJ	0.06	0.21	0.21	0.28
						MI	0.04	0.13	0.00	
34	PIPE 2	2	9877	5	0.00	MJ	0.01	0.17	0.17	0.28
						MI	0.02	0.11	0.00	
36	PIPE 2	2	5595	5	0.02	MJ	0.04	0.34	0.34	0.37
						MI	0.06	0.13	0.00	
37	PIPE 2	1	9999	5	0.00	MJ	0.04	0.07	0.07	0.15
						MI	0.03	0.11	0.00	
38	PIPE 2	2	9999	5	0.00	MJ	0.03	0.12	0.12	0.14
						MI	0.02	0.07	0.00	
39	PIPE 2	1	9150	5	-0.01	MJ	0.02	0.20	0.20	0.24
						MI	0.02	0.03	0.00	
40	PIPE 2	1	9999	5	0.00	MJ	0.01	0.05	0.05	0.13
						MI	0.01	0.07	0.00	
41	PIPE 2	1	9999	5	0.00	MJ	0.03	0.09	0.09	0.18
						MI	0.03	0.09	0.00	
42	PIPE 2	1	9999	5	0.00	MJ	0.04	0.11	0.11	0.14
						MI	0.02	0.08	0.00	
43	PIPE 2	1	9999	5	0.00	MJ	0.01	0.04	0.04	0.11
						MI	0.03	0.09	0.00	
44	PIPE 2	2	9999	5	-0.01	MJ	0.02	0.15	0.15	0.18
						MI	0.03	0.04	0.00	
45	PIPE 2	2	9999	5	0.00	MJ	0.05	0.14	0.14	0.16
						MI	0.02	0.10	0.00	
46	PIPE 2	2	9999	5	0.00	MJ	0.05	0.08	0.08	0.18
						MI	0.03	0.10	0.00	
47	PIPE 2	2	9999	5	0.00	MJ	0.01	0.05	0.05	0.14
						MI	0.02	0.10	0.00	

Burlington Southwest CT Mount Analysis **Code:** AISC-ASD

Prepared by: **Date:** 7/ 8/20

Results Summary Table

Beam	Section	Com	Defl L/	Slen	CAPACITY Axial	Dir	Shear	Mom	LTB	Combined Axial+Mom	
48	PIPE 2	2	9999	5	0.01	MJ	0.02	0.17	0.17	0.22	
						MI	0.03	0.05	0.00		
49	PIPE 2	1	576	207	-0.07	MJ	0.04	0.26	0.26	0.37	***
						MI	0.01	0.24	0.00		
52	PIPE 2	1	9999	15	0.00	MJ	0.04	0.10	0.10	0.10	
53	PIPE 2	1	9999	15	0.00	MJ	0.03	0.08	0.08	0.08	
54	PIPE 2	2	9999	15	0.01	MJ	0.04	0.09	0.09	0.09	
57	PIPE 2	1	4194	8	0.01	MJ	0.07	0.36	0.36	0.41	
						MI	0.07	0.17	0.00		
59	TS 4x4x1/4	2	9999	26	-0.01	MI	0.00	0.00	0.00	0.01	
60	PIPE 2	1	5645	8	-0.01	MJ	0.07	0.20	0.20	0.36	
						MI	0.06	0.15	0.00		
62	TS 4x4x1/4	3	9999	26	0.00	MI	0.00	0.00	0.00	0.00	
67	PIPE 2	2	4551	8	-0.01	MJ	0.08	0.36	0.36	0.38	
						MI	0.04	0.11	0.00		
69	TS 4x4x1/4	2	9999	26	0.00	MI	0.00	0.00	0.00	0.00	
80	PIPE 3	3	642	150	-0.01	MJ	0.04	0.20	0.20	0.28	
						MI	0.03	0.12	0.00		
87	PIPE 3	4	612	150	-0.01	MJ	0.04	0.20	0.20	0.30	
						MI	0.03	0.12	0.00		
93	PIPE 2	1	249	114	-0.02	MJ	0.04	0.38	0.38	0.52	
						MI	0.02	0.15	0.00		
94	PIPE 2	3	1482	114	-0.02	MJ	0.02	0.23	0.23	0.30	
						MI	0.01	0.12	0.00		
96	PIPE 2	1	147	81	-0.01	MJ	0.03	0.28	0.28	0.52	***
						MI	0.04	0.47	0.00		
98	PIPE 2	1	713	114	0.00	MJ	0.01	0.15	0.15	0.36	
						MI	0.02	0.31	0.00		
101	PIPE 2	1	1043	114	-0.01	MJ	0.02	0.29	0.29	0.52	
						MI	0.02	0.22	0.00		
102	PIPE 2	2	336	114	-0.03	MJ	0.01	0.14	0.14	0.36	
						MI	0.02	0.25	0.00		
103	PIPE 2	1	677	200	-0.09	MJ	0.04	0.24	0.24	0.43	
						MI	0.02	0.16	0.00		
104	PIPE 2	2	732	114	0.00	MJ	0.02	0.32	0.32	0.44	
						MI	0.03	0.30	0.00		
106	PIPE 2	2	192	80	-0.01	MJ	0.03	0.39	0.39	0.47	***
						MI	0.03	0.17	0.00		
109	PIPE 2	4	1209	103	-0.03	MJ	0.01	0.11	0.11	0.41	
						MI	0.02	0.29	0.00		
110	PIPE 2	2	283	99	-0.03	MJ	0.02	0.25	0.25	0.59	
						MI	0.03	0.32	0.00		
111	PIPE 2	2	614	204	-0.08	MJ	0.04	0.27	0.27	0.48	***
						MI	0.02	0.21	0.00		
112	PIPE 2	2	994	114	0.00	MJ	0.02	0.28	0.28	0.44	
						MI	0.02	0.18	0.00		
114	PIPE 2	2	184	67	-0.01	MJ	0.03	0.26	0.26	0.47	***
						MI	0.03	0.37	0.00		
139	2L 3x3x1/4	3	9999	91	-0.08	MI	0.00	0.00	0.00	0.08	
140	2L 3x3x1/4	3	9999	90	-0.07	MI	0.00	0.00	0.00	0.07	
141	2L 3x3x1/4	4	9999	90	-0.08	MI	0.00	0.00	0.00	0.08	

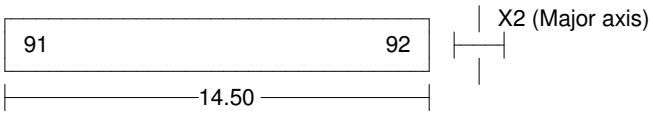
Burlington Southwest CT Mount Analysis **Code:** AISC-ASD

Prepared by: **Date:** 7/ 8/20

Detailed Results Table for Beam 49 - 95

*Moments: kips*foot , Forces: kips , Stresses: ksi , Section prop.: inch*

Beam: 49, 92, 97, 99, 95



CONSTRAINTS

- Sections : Check
- Steel Grade: A500C

DESIGN DATA

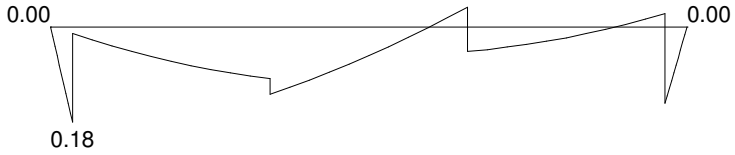
- Kx = 1.00 - Ky = 1.00
- Allow. Slend. : 200 (compr.) 300 (tens.)
- Allowable Deflection : 1/240
- Tension Area Reduction Factor : 1.00
- Building type : Unbraced

Section: PIPE 2

Ix = 0.67 Iy = 0.67in4 Zx = 0.76 Zy = 0.76in3 Area = 1.07
D = 2.37 t = 0.15in
J = 1.33 Cw = 0.00in6

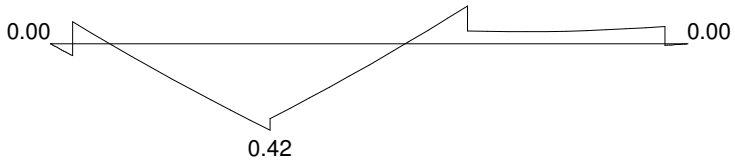
DESIGN COMBINATION = 1

M2 Moment Diagram



Max. AXIAL Force = -0.14 (compr.) Max. SHEAR Force = 0.36

M3 Moment Diagram



Max. AXIAL Force = -0.14 (compr.) Max. SHEAR Force = 0.13

SECTION CLASSIFICATION: *** COMPACT ***

Limiting Ratios:		Compact	Non-Compact	Slender	-axial	
d/t= 15.46	<	44.1	195.4	69.3	(Fy= 46.0	R = 0.003)

DESIGN	EQUATION	FACTORS	VALUES	RESULT
V2 Shear G2.1.b-i	Vu/0.6Vn<1.00 Vn=0.6*Fy*Aw	Aw = 0.54	Vu = 0.13 Vn = 14.87	0.01
M3 Moment (F8-1) without LTB	$\frac{M}{0.6Mn} < 1.00$	Z = 0.76	M = 0.42 Mn = 2.92	0.24
V3 Shear G2.1.b-i	Vu/0.6Vn<1.00 Vn=0.6*Fy*Aw	Aw = 0.54	Vu = 0.36 Vn = 14.87	0.04

Burlington Southwest CT Mount Analysis **Code:** AISC-ASD

Prepared by: **Date:** 7/ 8/20

Detailed Results Table for Beam 49 - 95

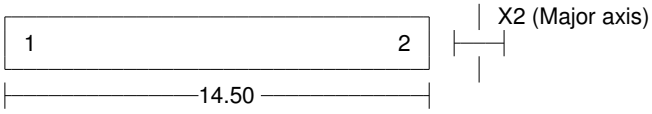
*Moments: kips*foot , Forces: kips , Stresses: ksi , Section prop.: inch*

DESIGN	EQUATION	FACTORS	VALUES	RESULT
M2 Moment (F8-1) without LTB	$\frac{M}{0.6Mn} < 1.00$	Z = 0.76	M = 0.18 Mn = 2.92	0.10
Deflection	$\frac{defl.}{L / 240} < 1.00$		defl = 0.30224	0.42
Axial Force (E3-1)	$\frac{Pu}{0.6AgFcr} < 1.00$ Slender. reduct.	(kL/r)x =197 (kL/r)y =197 x = 0.89	Pu = 0.14 Ag = 1.07 Fcr = 6.49 y = 0.89	0.03
Combined Forces (compress.) (H1-1b)	$\frac{Pr}{2\phi Pn} + \frac{Mrx}{\phi Mnx} + \frac{Mry}{\phi Mny} < 1.00$	Cmx = 1.00 Cmy = 1.00 Pex = 7.96 Pey = 7.96	Mrx = 0.18 Mry = 0.43 B1x = 1.03 B1y = 1.03	0.37

Detailed Results Table for Beam 1 - 73

*Moments: kips*foot , Forces: kips , Stresses: ksi , Section prop.: inch*

Beam: 1, 56, 75, 55, 70, 77, 73



CONSTRAINTS

- Sections : Check
- Steel Grade: A500C

DESIGN DATA

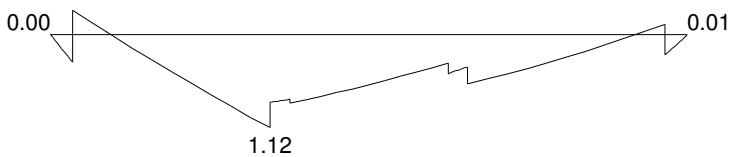
- Kx = 1.00 - Ky = 1.00
- Allow. Slend. : 200 (compr.) 300 (tens.)
- Allowable Deflection : 1/240
- Tension Area Reduction Factor : 1.00
- Building type : Unbraced

Section: PIPE 3

Ix = 3.02 Iy = 3.02in4 Zx = 2.33 Zy = 2.33in3 Area = 2.23
D = 3.50 t = 0.22in
J = 6.03 Cw = 0.00in6

DESIGN COMBINATION = 4

M2 Moment Diagram



Max. AXIAL Force = 0.58 (tens.) Max. SHEAR Force = 0.66

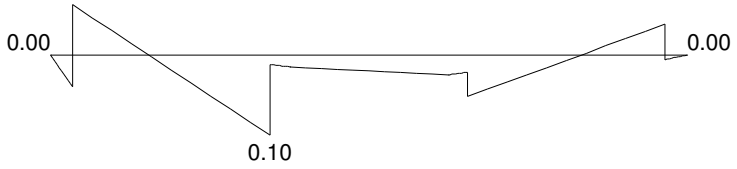
Burlington Southwest CT Mount Analysis **Code:** AISC-ASD

Prepared by: **Date:** 7/ 8/20

Detailed Results Table for Beam 1 - 73

*Moments: kips*foot , Forces: kips , Stresses: ksi , Section prop.: inch*

M3 Moment Diagram



Max. AXIAL Force = 0.58 (tens.) Max. SHEAR Force = 0.08

SECTION CLASSIFICATION: *** COMPACT ***

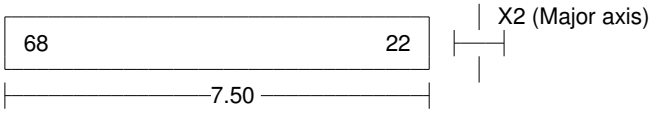
Limiting Ratios:		Compact	Non-Compact	Slender -axial	
d/t= 16.16	<	44.1	195.4	69.3	(Fy= 46.0 R = -0.006)

DESIGN	EQUATION	FACTORS	VALUES	RESULT
M3 Moment (F8-1) without LTB	$\frac{M}{0.6Mn} < 1.00$	Z = 2.33	M = 0.10 Mn = 8.95	0.02
V3 Shear G2.1.b-i	Vu/0.6Vn<1.00 Vn=0.6*Fy*Aw	Aw = 1.11	Vu = 0.66 Vn = 30.86	0.04
M2 Moment (F8-1) without LTB	$\frac{M}{0.6Mn} < 1.00$	Z = 2.33	M = 1.12 Mn = 8.95	0.21
Deflection	$\frac{defl.}{L / 240} < 1.00$		defl = 0.26811	0.37
Axial Force (D2-1)	$\frac{Pu}{0.6AgFy} < 1.00$	(kL/r)x =150 (kL/r)y =150	Pu = 0.58 Ag = 2.23 Fy = 46.00	0.01
Combined Forces (compress.) (H1-1b)	$\frac{Pr}{2\phi Pn} + \frac{Mrx}{\phi Mnx} + \frac{Mry}{\phi Mny} < 1.00$	Cmx = 1.00 Cmy = 1.00 Pex = 28.48 Pey = 28.48	Mrx = 1.12 Mry = 0.10 B1x = 1.00 B1y = 1.00	0.23

Detailed Results Table for Beam 93 - 13

*Moments: kips*foot , Forces: kips , Stresses: ksi , Section prop.: inch*

Beam: 93, 71, 133, 13



CONSTRAINTS

- Sections : Check
- Steel Grade: A500C

DESIGN DATA

- Kx = 1.00 - Ky = 1.00
- Allow. Slend. : 200 (compr.) 300 (tens.)
- Allowable Deflection : 1/240
- Tension Area Reduction Factor : 1.00
- Building type : Unbraced

Burlington Southwest CT Mount Analysis **Code:** AISC-ASD

Prepared by: **Date:** 7/ 8/20

Detailed Results Table for Beam 93 - 13

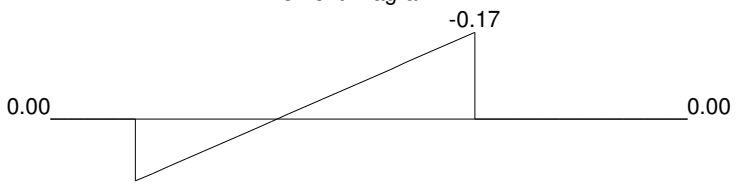
*Moments: kips*foot , Forces: kips , Stresses: ksi , Section prop.: inch*

Section: PIPE 2

Ix = 0.67 Iy = 0.67in4 Zx = 0.76 Zy = 0.76in3 Area = 1.07
D = 2.37 t = 0.15in
J = 1.33 Cw = 0.00in6

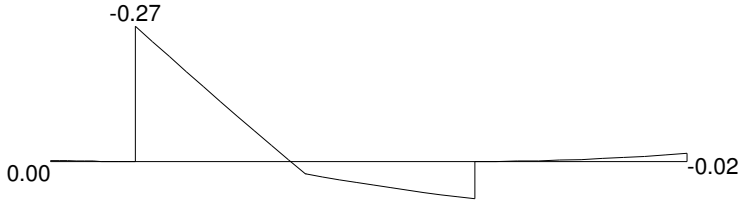
DESIGN COMBINATION = 1

M2 Moment Diagram



Max. AXIAL Force = 0.32 (tens.), 0.00 (compr.) Max. SHEAR Force = 0.07

M3 Moment Diagram



Max. AXIAL Force = 0.32 (tens.), 0.00 (compr.) Max. SHEAR Force = 0.15

SECTION CLASSIFICATION: *** COMPACT ***

Limiting Ratios:		Compact	Non-Compact	Slender	-axial
d/t= 15.46	<	44.1	195.4	69.3	(Fy= 46.0 R = -0.006)

DESIGN	EQUATION	FACTORS	VALUES	RESULT
V2 Shear G2.1.b-i	Vu/0.6Vn<1.00 Vn=0.6*Fy*Aw	Aw = 0.54	Vu = 0.15 Vn = 14.87	0.02
M3 Moment (F8-1) without LTB	$\frac{M}{0.6Mn} < 1.00$	Z = 0.76	M = 0.27 Mn = 2.92	0.15
V3 Shear G2.1.b-i	Vu/0.6Vn<1.00 Vn=0.6*Fy*Aw	Aw = 0.54	Vu = 0.07 Vn = 14.87	0.01
M2 Moment (F8-1) without LTB	$\frac{M}{0.6Mn} < 1.00$	Z = 0.76	M = 0.17 Mn = 2.92	0.09
Deflection	$\frac{defl.}{L / 240} < 1.00$		defl = 0.36214	0.97
Axial Force (D2-1)	$\frac{Pu}{0.6AgFy} < 1.00$	(kL/r)x =114 (kL/r)y =114	Pu = 0.32 Ag = 1.07 Fy = 46.00	0.01

Burlington Southwest CT Mount Analysis **Code:** AISC-ASD

Prepared by: **Date:** 7/ 8/20

Detailed Results Table for Beam 93 - 13

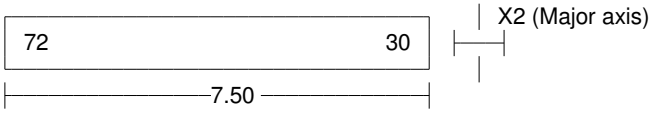
*Moments: kips*foot , Forces: kips , Stresses: ksi , Section prop.: inch*

DESIGN	EQUATION	FACTORS	VALUES	RESULT
Combined Forces (tension) (H1-1b)	$\frac{Pr}{2\phi Pn} + \frac{Mrx}{\phi Mnx} + \frac{Mry}{\phi Mny} < 1.00$		Mrx = 0.17 Mry = 0.27	0.25

Detailed Results Table for Beam 96 - 17

*Moments: kips*foot , Forces: kips , Stresses: ksi , Section prop.: inch*

Beam: 96, 74, 134, 17



CONSTRAINTS

- Sections : Check
- Steel Grade: A500C

DESIGN DATA

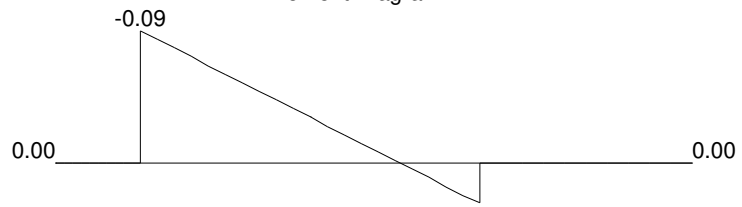
- Kx = 1.00 - Ky = 1.00
- Allow. Slend. : 200 (compr.) 300 (tens.)
- Allowable Deflection : 1/240
- Tension Area Reduction Factor : 1.00
- Building type : Unbraced

Section: PIPE 2

Ix = 0.67 Iy = 0.67in4 Zx = 0.76 Zy = 0.76in3 Area = 1.07
D = 2.37 t = 0.15in
J = 1.33 Cw = 0.00in6

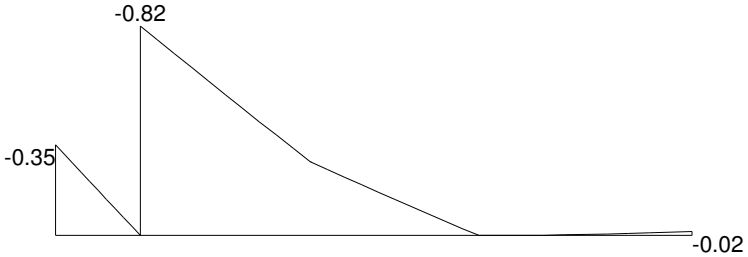
DESIGN COMBINATION = 1

M2 Moment Diagram



Max. AXIAL Force = 0.01 (tens.), -0.11 (compr.) Max. SHEAR Force = 0.03

M3 Moment Diagram



Max. AXIAL Force = 0.01 (tens.), -0.11 (compr.) Max. SHEAR Force = 0.36

Burlington Southwest CT Mount Analysis **Code:** AISC-ASD

Prepared by: **Date:** 7/ 8/20

Detailed Results Table for Beam 96 - 17

*Moments: kips*foot , Forces: kips , Stresses: ksi , Section prop.: inch*

SECTION CLASSIFICATION: *** COMPACT ***

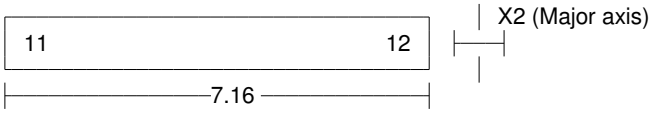
Limiting Ratios: Compact Non-Compact Slender -axial
d/t= 15.46 < 44.1 195.4 69.3 (Fy= 46.0 R = 0.002)

DESIGN	EQUATION	FACTORS	VALUES	RESULT
V2 Shear G2.1.b-i	Vu/0.6Vn<1.00 Vn=0.6*Fy*Aw	Aw = 0.54	Vu = 0.36 Vn = 14.87	0.04
M3 Moment (F8-1) without LTB	M / 0.6Mn < 1.00	Z = 0.76	M = 0.82 Mn = 2.92	0.47
M2 Moment (F8-1) without LTB	M / 0.6Mn < 1.00	Z = 0.76	M = 0.09 Mn = 2.92	0.05
Deflection	defl. / L / 240 < 1.00		defl = 0.61054	1.63
Axial Force (E3-1)	Pu / 0.6AgFcr Slender. reduct. < 1.00	(kL/r)x =81 (kL/r)y =81 x = 0.71	Pu = 0.11 Ag = 1.07 Fcr = 29.63 y = 0.71	0.01
Combined Forces (compress.) (H1-1b)	Pr/2φPn + Mrx/φMnx + Mry/φMny < 1.00	Cmx = 1.00 Cmy = 1.00 Pex = 47.07 Pey = 47.07	Mrx = 0.09 Mry = 0.82 B1x = 1.00 B1y = 1.00	0.52

Detailed Results Table for Beam 9 - 132

*Moments: kips*foot , Forces: kips , Stresses: ksi , Section prop.: inch*

Beam: 9, 138, 68, 128, 129, 130, 131, 132



CONSTRAINTS

- Sections : Check
- Steel Grade: A500B

DESIGN DATA

- Kx = 1.00 - Ky = 1.00
- Allow. Slend. : 200 (compr.) 300 (tens.)
- Allowable Deflection : 1/240
- Tension Area Reduction Factor : 1.00
- Building type : Unbraced

INTERMEDIATE SUPPORTS

L =	1.00	4.71	5.08	5.46	5.88	6.25	6.67
Lat.-Tors.							
Compress.	X	X	X	X	X	X	X

Burlington Southwest CT Mount Analysis **Code:** AISC-ASD

Prepared by: **Date:** 7/ 8/20

Detailed Results Table for Beam 9 - 132

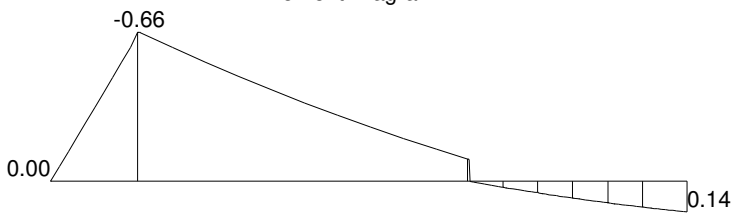
*Moments: kips*foot , Forces: kips , Stresses: ksi , Section prop.: inch*

Section: TS 4x4x1/4

Ix = 8.22 Iy = 8.22in4 Zx = 4.97 Zy = 4.97in3 Area = 3.59
h = 4.00 b = 4.00in t = 0.25in
J = 13.50 Cw = 0.00in6

DESIGN COMBINATION = 2

M2 Moment Diagram



Moments at Intermediate Supports:
-0.66 -0.10 0.05 0.09
0.03 0.07 0.11

Max. AXIAL Force = 1.69 (tens.) Max. SHEAR Force = 0.67

M3 Moment Diagram

Moments at Intermediate Supports:
0.07 0.33 1.30 2.34
0.81 1.85 2.88

Max. AXIAL Force = 1.69 (tens.) Max. SHEAR Force = 1.31

SECTION CLASSIFICATION: *** COMPACT ***

Limiting Ratios:		Compact	Non-Compact	Slender	-axial
d/t= 13.13	<	60.8	143.1	35.2	(Fy= 46.0 R = -0.010)
b/t= 13.13	<	28.1	35.2	35.2	

DESIGN	EQUATION	FACTORS	VALUES	RESULT
V2 Shear G2.1.b-i	Vu/0.6Vn<1.00 Vn=0.6*Fy*Aw	Aw = 1.62	Vu = 1.31 Vn = 44.72	0.05
M3 Moment (F7-1) without LTB	M / 0.6Mn < 1.00	Z = 4.97	M = 3.53 Mn = 19.07	0.31
V3 Shear G2.1.b-i	Vu/0.6Vn<1.00 Vn=0.6*Fy*Aw	Aw = 1.62	Vu = 0.67 Vn = 44.72	0.02
M2 Moment (F7-1) without LTB	M / 0.6Mn < 1.00	Z = 4.97	M = 0.66 Mn = 19.07	0.06
Deflection	defl. / L / 240 < 1.00		defl = 0.02810	0.08

Burlington Southwest CT Mount Analysis **Code:** AISC-ASD

Prepared by: **Date:** 7/ 8/20

Detailed Results Table for Beam 9 - 132

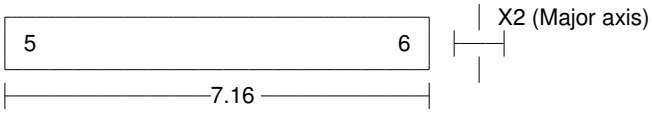
*Moments: kips*foot , Forces: kips , Stresses: ksi , Section prop.: inch*

DESIGN	EQUATION	FACTORS	VALUES	RESULT
Axial Force (D2-1)	$\frac{Pu}{0.6AgFy} < 1.00$	(kL/r)x =29 (kL/r)y =57	Pu = 1.69 Ag = 3.59 Fy = 46.00	0.02
Lateral Torsional Buckling	$\frac{M}{0.6Mn} < 1.00$ Critical Segment from 0.00 to 7.16 on -z flange Segment End Moments: 0.00 and 0.14	Lb = 7.16 Lp = 14.40	M = 0.66 Mn = 19.07	0.06
Combined Forces (tension) (H1-1b)	$\frac{Pr}{2\phi Pn} + \frac{Mrx}{\phi Mnx} + \frac{Mry}{\phi Mny} < 1.00$		Mrx = 0.66 Mry = 3.53	0.37

Detailed Results Table for Beam 3 - 127

*Moments: kips*foot , Forces: kips , Stresses: ksi , Section prop.: inch*

Beam:
3, 137, 61,
123, 124, 125,
126, 127



CONSTRAINTS

- Sections : Check
- Steel Grade: A500B

DESIGN DATA

- Kx = 1.00 - Ky = 1.00
- Allow. Slend. : 200 (compr.) 300 (tens.)
- Allowable Deflection : 1/240
- Tension Area Reduction Factor : 1.00
- Building type : Unbraced

INTERMEDIATE SUPPORTS

L =	1.17	4.71	5.12	5.50	5.92	6.29	6.71
Lat.-Tors.							
Compress.	X	X	X	X	X	X	X

Section: TS 4x4x1/4

Ix = 8.22 Iy = 8.22in4 Zx = 4.97 Zy = 4.97in3 Area = 3.59
h = 4.00 b = 4.00in t = 0.25in
J = 13.50 Cw = 0.00in6

Burlington Southwest CT Mount Analysis **Code:** AISC-ASD

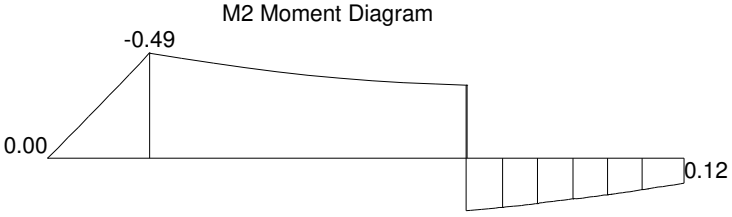
Prepared by: **Date:** 7/ 8/20

Detailed Results Table for Beam 3 - 127

*Moments: kips*foot , Forces: kips , Stresses: ksi , Section prop.: inch*

DESIGN COMBINATION = 1

M2 Moment Diagram



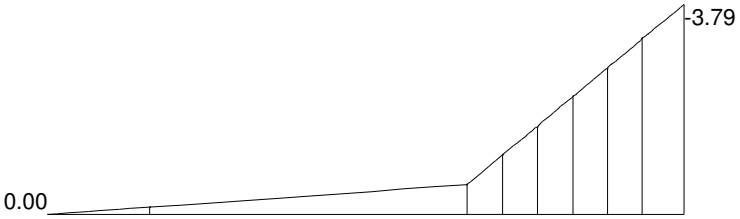
Moments at Intermediate Supports:

-0.49 -0.34 0.21 0.17

0.23 0.19 0.14

Max. AXIAL Force = -1.08 (compr.) Max. SHEAR Force = 0.43

M3 Moment Diagram



Moments at Intermediate Supports:

-0.13 -0.54 -1.58 -2.64

-1.08 -2.14 -3.19

Max. AXIAL Force = -1.08 (compr.) Max. SHEAR Force = 1.33

SECTION CLASSIFICATION: *** COMPACT ***

Limiting Ratios:		Compact	Non-Compact	Slender -axial	
d/t= 13.13	<	60.8	143.1	35.2	(Fy= 46.0 R = 0.007)
b/t= 13.13	<	28.1	35.2	35.2	

DESIGN	EQUATION	FACTORS	VALUES	RESULT
V2 Shear G2.1.b-i	Vu/0.6Vn<1.00 Vn=0.6*Fy*Aw	Aw = 1.62	Vu = 1.33 Vn = 44.72	0.05
M3 Moment (F7-1) without LTB	M / 0.6Mn < 1.00	Z = 4.97	M = 3.79 Mn = 19.07	0.33
V3 Shear G2.1.b-i	Vu/0.6Vn<1.00 Vn=0.6*Fy*Aw	Aw = 1.62	Vu = 0.43 Vn = 44.72	0.02
M2 Moment (F7-1) without LTB	M / 0.6Mn < 1.00	Z = 4.97	M = 0.49 Mn = 19.07	0.04
Deflection	defl. / L / 240 < 1.00		defl = 0.03403	0.10
Axial Force (E3-1)	Pu / 0.6AgFcr < 1.00 Slender. reduct.	(kL/r)x =12 (kL/r)y =27 x = 0.44	Pu = 1.08 Ag = 3.59 Fcr = 43.81 y = 0.48	0.01

Burlington Southwest CT Mount Analysis **Code:** AISC-ASD

Prepared by: **Date:** 7/ 8/20

Detailed Results Table for Beam 3 - 127

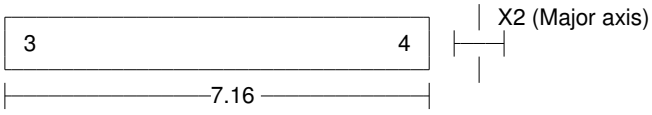
*Moments: kips*foot , Forces: kips , Stresses: ksi , Section prop.: inch*

DESIGN	EQUATION	FACTORS	VALUES	RESULT
Lateral Torsional Buckling	$\frac{M}{0.6Mn} < 1.00$ Critical Segment from 0.00 to 7.16 on -z flange Segment End Moments: 0.00 and 0.12	Lb = 7.16 Lp = 14.40	M = 0.49 Mn = 19.07	0.04
Combined Forces (compress.) (H1-1b)	$\frac{Pr}{2\phi Pn} + \frac{Mrx}{\phi Mnx} + \frac{Mry}{\phi Mny} < 1.00$	Cmx = 1.00 Cmy = 1.00 Pex = 7167.45 Pey = 1415.79	Mrx = 0.49 Mry = 3.80 B1x = 1.00 B1y = 1.00	0.38

Detailed Results Table for Beam 2 - 122

*Moments: kips*foot , Forces: kips , Stresses: ksi , Section prop.: inch*

Beam: 2, 136, 58, 118, 119, 120, 121, 122



CONSTRAINTS

- Sections : Check
- Steel Grade: A500B

DESIGN DATA

- Kx = 1.00 - Ky = 1.00
- Allow. Slend. : 200 (compr.) 300 (tens.)
- Allowable Deflection : 1/240
- Tension Area Reduction Factor : 1.00
- Building type : Unbraced

INTERMEDIATE SUPPORTS

L =	1.17	4.71	5.12	5.50	5.92	6.29	6.71
Lat.-Tors.							
Compress.	X	X	X	X	X	X	X

Section: TS 4x4x1/4

Ix = 8.22 Iy = 8.22in4 Zx = 4.97 Zy = 4.97in3 Area = 3.59
h = 4.00 b = 4.00in t = 0.25in
J = 13.50 Cw = 0.00in6

Burlington Southwest CT Mount Analysis **Code:** AISC-ASD

Prepared by: **Date:** 7/ 8/20

Detailed Results Table for Beam 2 - 122

*Moments: kips*foot , Forces: kips , Stresses: ksi , Section prop.: inch*

DESIGN COMBINATION = 1

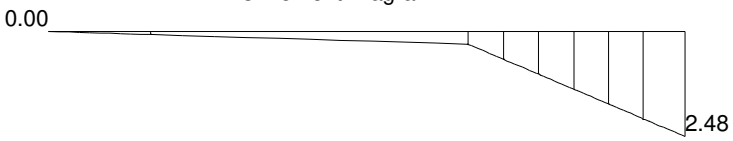
M2 Moment Diagram

Moments at Intermediate Supports:

-0.55 -0.38 0.22 0.18
0.23 0.20 0.16

Max. AXIAL Force = 0.65 (tens.), -0.32 (compr.) Max. SHEAR Force = 0.49

M3 Moment Diagram



Moments at Intermediate Supports:

0.07 0.30 1.00 1.71
0.66 1.37 2.08

Max. AXIAL Force = 0.65 (tens.), -0.32 (compr.) Max. SHEAR Force = 0.89

SECTION CLASSIFICATION: *** COMPACT ***

Limiting Ratios:		Compact	Non-Compact	Slender -axial	
d/t= 13.13	<	60.8	143.1	35.2	(Fy= 46.0 R = -0.004)
b/t= 13.13	<	28.1	35.2	35.2	

DESIGN	EQUATION	FACTORS	VALUES	RESULT
V2 Shear G2.1.b-i	Vu/0.6Vn<1.00 Vn=0.6*Fy*Aw	Aw = 1.62	Vu = 0.89 Vn = 44.72	0.03
M3 Moment (F7-1) without LTB	$\frac{M}{0.6Mn} < 1.00$	Z = 4.97	M = 2.48 Mn = 19.07	0.22
V3 Shear G2.1.b-i	Vu/0.6Vn<1.00 Vn=0.6*Fy*Aw	Aw = 1.62	Vu = 0.49 Vn = 44.72	0.02
M2 Moment (F7-1) without LTB	$\frac{M}{0.6Mn} < 1.00$	Z = 4.97	M = 0.55 Mn = 19.07	0.05
Deflection	$\frac{defl.}{L / 240} < 1.00$		defl = 0.02376	0.07
Axial Force (D2-1)	$\frac{Pu}{0.6AgFy} < 1.00$	(kL/r)x =9 (kL/r)y =18	Pu = 0.65 Ag = 3.59 Fy = 46.00	0.01

Burlington Southwest CT Mount Analysis **Code:** AISC-ASD

Prepared by: **Date:** 7/ 8/20

Detailed Results Table for Beam 2 - 122

*Moments: kips*foot , Forces: kips , Stresses: ksi , Section prop.: inch*

DESIGN	EQUATION	FACTORS	VALUES	RESULT
Lateral Torsional Buckling	$\frac{M}{0.6Mn} < 1.00$ Critical Segment from 0.00 to 7.16 on -z flange Segment End Moments: 0.00 and 0.13	Lb = 7.16 Lp = 14.40	M = 0.55 Mn = 19.07	0.05
Combined Forces (compress.) (H1-1b)	$\frac{Pr}{2\phi Pn} + \frac{Mrx}{\phi Mnx} + \frac{Mry}{\phi Mny} < 1.00$	Cmx = 1.00 Cmy = 1.00 Pex = 12742.13 Pey = 3185.53	Mrx = 0.55 Mry = 2.48 B1x = 1.00 B1y = 1.00	0.27

ATTACHMENT 7

Far Field Approximation
with downtilt variation

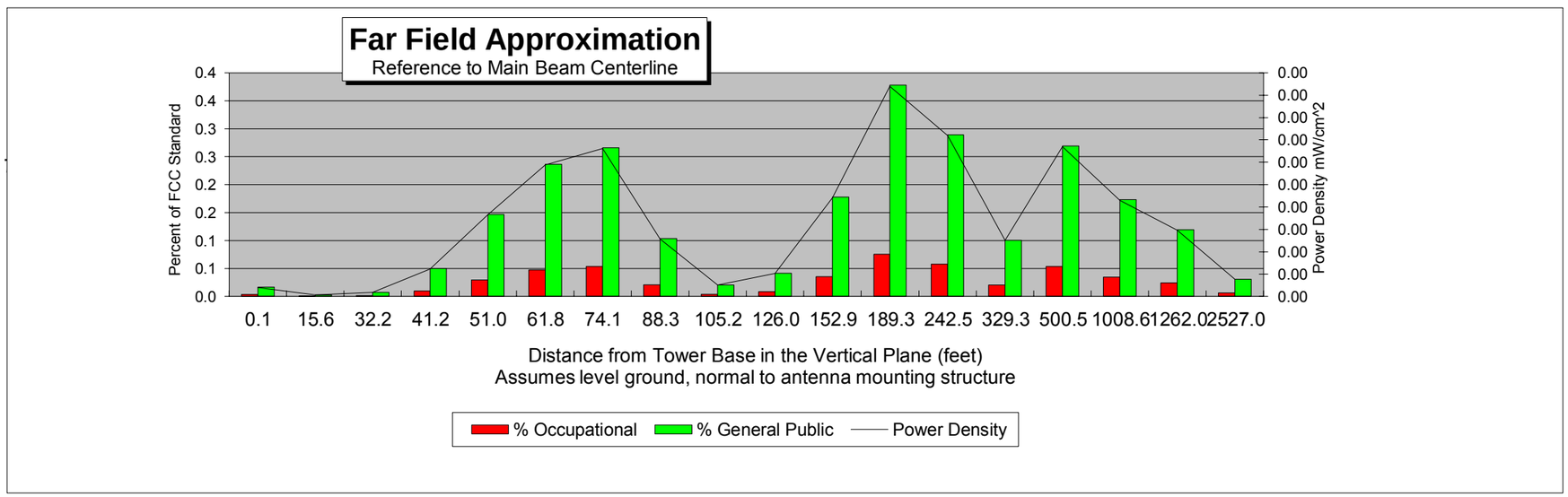
Estimated Radiated Emission

Single Emitter Far Field Model

Dipole / Wire/ Yagi Antenna Types

Location:	Burlington SW, CT
Site #:	
Date:	06/29/20
Name:	Mark Brauer
File Name:	Burlington SW, CT - FF Power

Operating Freq. (MHz)	**746.0**
Antenna Height (ft):	**91.2**
Antenna Gain (dBi):	**14.5**
Antenna Size (in.):	**72.0**
Downtilt (degrees):	**0.0**
Feedline Loss (dB):	**0.0**
Power @ J4 (w):	**160.0**
Number of channels:	**1**



Calc Angle	90.0	80.0	70.0	65.0	60.0	55.0	50.0	45.0	40.0	35.0	30.0	25.0	20.0	15.0	10.0	5.0	4.0	2.0	
Solve for r, dx to antenna	88.2	89.6	93.9	97.3	101.9	107.7	115.2	124.8	137.3	153.8	176.5	208.8	258.0	340.9	508.2	1012.5	1265.0	2528.5	
Distance from Antenna Structure Base in Horizontal plane	0.1	15.6	32.2	41.2	51.0	61.8	74.1	88.3	105.2	126.0	152.9	189.3	242.5	329.3	500.5	1008.6	1262.0	2527.0	
Angle from Main Beam (reference to horizontal plane)	90	80	70	65	60	55	50	45	40	35	30	25	20	15	10	5	4	2	
dB down from centerline (referenced to centerline)	31.96	39.61	35.13	26.28	21.15	18.61	17.51	20.91	27.16	23.07	15.56	10.82	10.14	12.3	4.57	0.5	0.18	0	
Reflection Coefficient (1 to 4, 2.56 typical)	2.56	2.56	2.56	2.56	2.56	2.56	2.56	2.56	2.56	2.56	2.56	2.56	2.56	2.56	2.56	2.56	2.56	2.56	
Power Density (mW/cm^2)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Percent of Occupational Standard	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.1	0.0	0.0	0.0	
Percent of General Population Standard	0.0	0.0	0.0	0.0	0.1	0.2	0.3	0.1	0.0	0.0	0.2	0.4	0.3	0.1	0.3	0.2	0.1	0.0	

Antenna Type NHH-65B
Max% 0.38%

Instructions:

1) Fill in Site Location, Site number, Date, Name of Person Responsible for Date, and enter File Name to ba saved as.
2) References to J4 refer to a point where the transmission line exits the equipment shelter and proceeds to the antenna(s). There is typically a connector located here where power measurements are made.
3) Enter Antenna Height (in feet to bottom of antenna), Antenna Gain (expressed as dBi, add 2.17 to dBd to obtain dBi), Antenna Size (vertical size in inches), Downtilt (in Degrees, enter zero if none), Feedline loss from J4 to Antenna, and J4 Pow
4) From manufacturer's plots, or data sheet, input Angle from mainbeam and dB below mainbeam centerline.
5) Enter Reflection coefficient (2.56 would be typical, 1 for free space)
6) Spreadsheet calculates actual power density, then relates as Occupational or General Population percentage of FCC Standard.
7) An odd distance may be entered in the rightmost column of the lower table.

Far Field Approximation
with downtilt variation

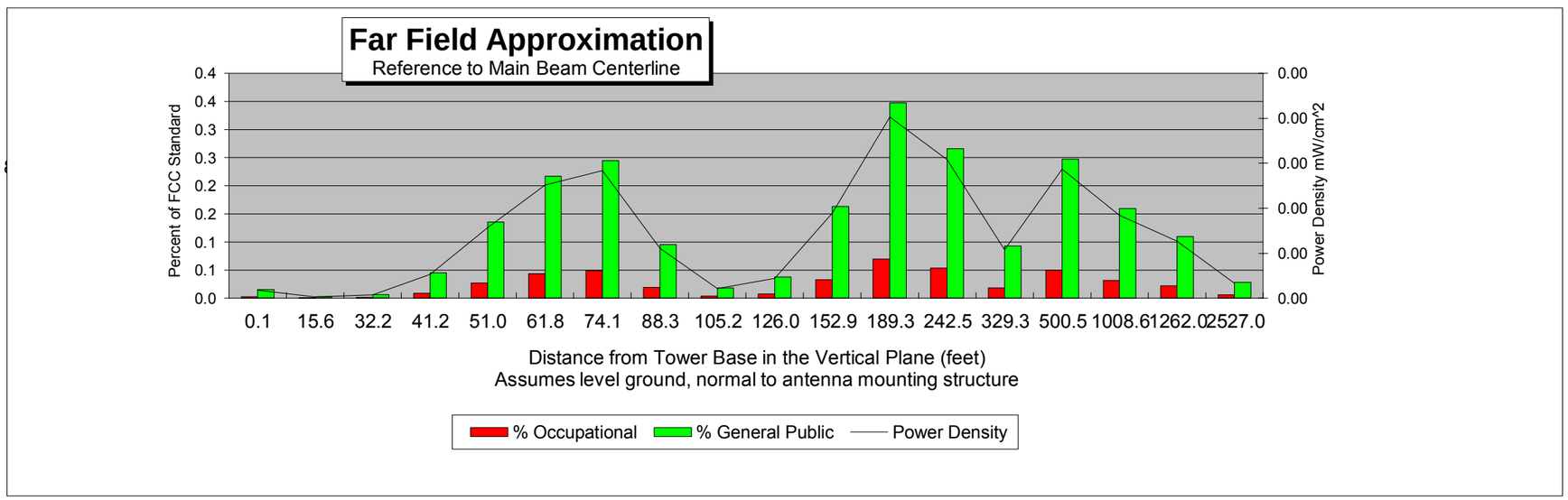
Estimated Radiated Emission

Single Emitter Far Field Model

Dipole / Wire/ Yagi Antenna Types

Location:	Burlington SW, CT
Site #:	
Date:	06/29/20
Name:	Mark Brauer
File Name:	Burlington SW, CT - FF Power

Operating Freq. (MHz)	**869.0**
Antenna Height (ft):	**91.2**
Antenna Gain (dBi):	**14.8**
Antenna Size (in.):	**72.0**
Downtilt (degrees):	**0.0**
Feedline Loss (dB):	**0.0**
Power @ J4 (w):	**160.0**
Number of channels:	**1**



Calc Angle	90.0	80.0	70.0	65.0	60.0	55.0	50.0	45.0	40.0	35.0	30.0	25.0	20.0	15.0	10.0	5.0	4.0	2.0	
Solve for r, dx to antenna	88.2	89.6	93.9	97.3	101.9	107.7	115.2	124.8	137.3	153.8	176.5	208.8	258.0	340.9	508.2	1012.5	1265.0	2528.5	
Distance from Antenna Structure Base in Horizontal plane	0.1	15.6	32.2	41.2	51.0	61.8	74.1	88.3	105.2	126.0	152.9	189.3	242.5	329.3	500.5	1008.6	1262.0	2527.0	
Angle from Main Beam (reference to horizontal plane)	90	80	70	65	60	55	50	45	40	35	30	25	20	15	10	5	4	2	
dB down from centerline (referenced to centerline)	31.96	39.61	35.13	26.28	21.15	18.61	17.51	20.91	27.16	23.07	15.56	10.82	10.14	12.3	4.57	0.5	0.18	0	
Reflection Coefficient (1 to 4, 2.56 typical)	2.56	2.56	2.56	2.56	2.56	2.56	2.56	2.56	2.56	2.56	2.56	2.56	2.56	2.56	2.56	2.56	2.56	2.56	
Power Density (mW/cm^2)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Percent of Occupational Standard	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	
Percent of General Population Standard	0.0	0.0	0.0	0.0	0.1	0.2	0.2	0.1	0.0	0.0	0.2	0.3	0.3	0.1	0.2	0.2	0.1	0.0	

Antenna Type NHH-65B
Max% 0.35%

Instructions:

1) Fill in Site Location, Site number, Date, Name of Person Responsible for Date, and enter File Name to ba saved as.
2) References to J4 refer to a point where the transmission line exits the equipment shelter and proceeds to the antenna(s). There is typically a connector located here where power measurements are made.
3) Enter Antenna Height (in feet to bottom of antenna), Antenna Gain (expressed as dBi, add 2.17 to dBd to obtain dBi), Antenna Size (vertical size in inches), Downtilt (in Degrees, enter zero if none), Feedline loss from J4 to Antenna, and J4 Po
4) From manufacturer's plots, or data sheet, input Angle from mainbeam and dB below mainbeam centerline.
5) Enter Reflection coefficient (2.56 would be typical, 1 for free space)
6) Spreadsheet calculates actual power density, then relates as Occupational or General Population percentage of FCC Standard.
7) An odd distance may be entered in the rightmost column of the lower table.

Far Field Approximation
with downtilt variation

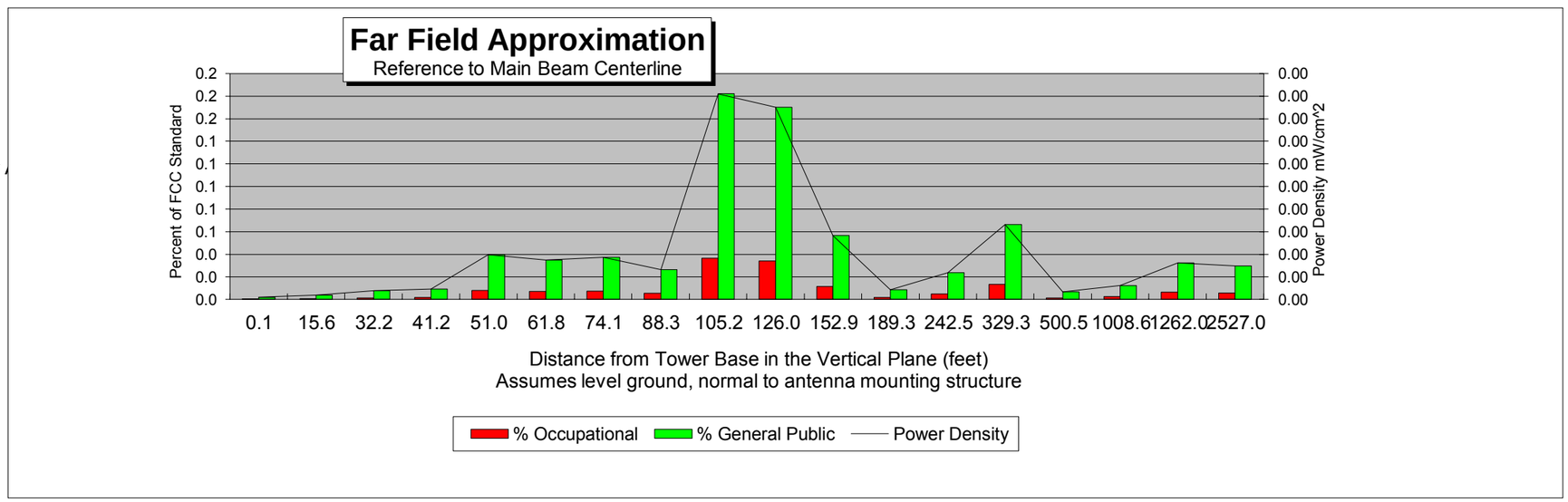
Estimated Radiated Emission

Single Emitter Far Field Model

Dipole / Wire/ Yagi Antenna Types

Location:	Burlington SW, CT
Site #:	
Date:	06/29/20
Name:	Mark Brauer
File Name:	Burlington SW, CT - FF Power

Operating Freq. (MHz)	**2110.0**
Antenna Height (ft):	**91.2**
Antenna Gain (dBi):	**18.4**
Antenna Size (in.):	**72.0**
Downtilt (degrees):	**0.0**
Feedline Loss (dB):	**0.0**
Power @ J4 (w):	**160.0**
Number of channels:	**1**



Calc Angle	90.0	80.0	70.0	65.0	60.0	55.0	50.0	45.0	40.0	35.0	30.0	25.0	20.0	15.0	10.0	5.0	4.0	2.0	
Solve for r, dx to antenna	88.2	89.6	93.9	97.3	101.9	107.7	115.2	124.8	137.3	153.8	176.5	208.8	258.0	340.9	508.2	1012.5	1265.0	2528.5	
Distance from Antenna Structure Base in Horizontal plane	0.1	15.6	32.2	41.2	51.0	61.8	74.1	88.3	105.2	126.0	152.9	189.3	242.5	329.3	500.5	1008.6	1262.0	2527.0	
Angle from Main Beam (reference to horizontal plane)	90	80	70	65	60	55	50	45	40	35	30	25	20	15	10	5	4	2	
dB down from centerline (referenced to centerline)	42.3	39	35.6	34.5	27.7	27.8	26.9	27.7	18.5	17.8	21.4	28.1	21.9	15	21.5	12.8	6.7	1.1	
Reflection Coefficient (1 to 4, 2.56 typical)	2.56	2.56	2.56	2.56	2.56	2.56	2.56	2.56	2.56	2.56	2.56	2.56	2.56	2.56	2.56	2.56	2.56	2.56	
Power Density (mW/cm^2)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Percent of Occupational Standard	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Percent of General Population Standard	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.2	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	

Antenna Type NHHSS-65B
Max% 0.18%

Instructions:

1) Fill in Site Location, Site number, Date, Name of Person Responsible for Date, and enter File Name to ba saved as.
2) References to J4 refer to a point where the transmission line exits the equipment shelter and proceeds to the antenna(s). There is typically a connector located here where power measurements are made.
3) Enter Antenna Height (in feet to bottom of antenna), Antenna Gain (expressed as dBi, add 2.17 to dBd to obtain dBi), Antenna Size (vertical size in inches), Downtilt (in Degrees, enter zero if none), Feedline loss from J4 to Antenna, and J4 Pc
4) From manufacturer's plots, or data sheet, input Angle from mainbeam and dB below mainbeam centerline.
5) Enter Reflection coefficient (2.56 would be typical, 1 for free space)
6) Spreadsheet calculates actual power density, then relates as Occupational or General Population percentage of FCC Standard.
7) An odd distance may be entered in the rightmost column of the lower table.

Far Field Approximation
with downtilt variation

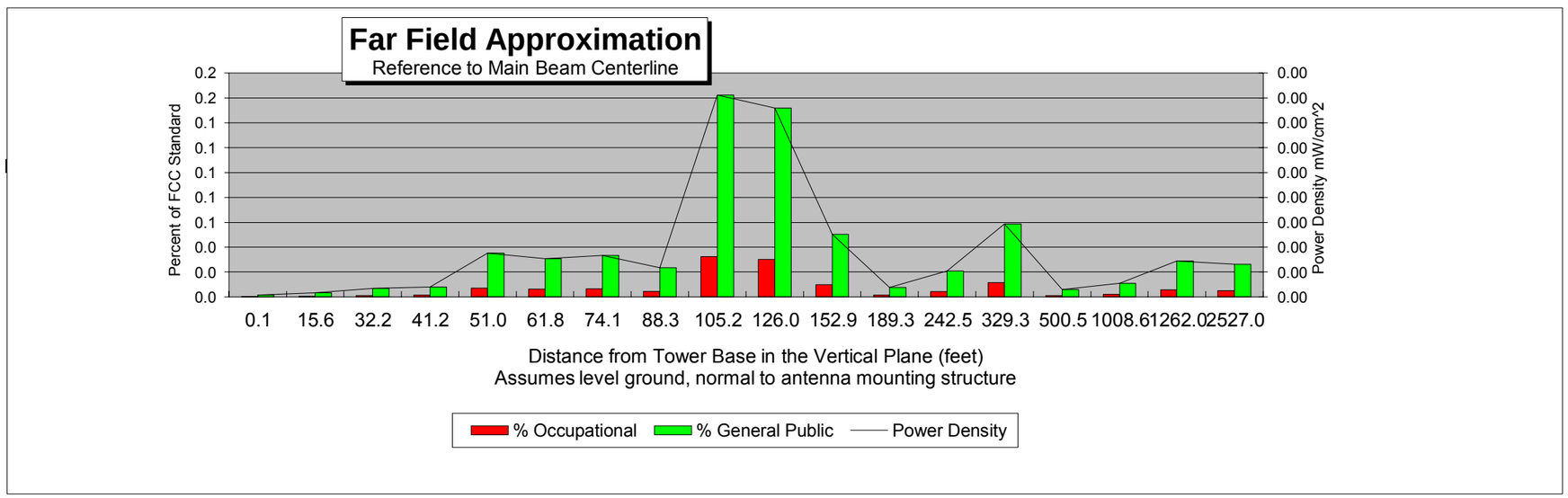
Estimated Radiated Emission

Single Emitter Far Field Model

Dipole / Wire/ Yagi Antenna Types

Location:	Burlington SW, CT
Site #:	
Date:	06/29/20
Name:	Mark Brauer
File Name:	Burlington SW, CT - FF Power

Operating Freq. (MHz)	**1970.0**
Antenna Height (ft):	**91.2**
Antenna Gain (dBi):	**17.9**
Antenna Size (in.):	**72.0**
Downtilt (degrees):	**0.0**
Feedline Loss (dB):	**0.0**
Power @ J4 (w):	**160.0**
Number of channels:	**1**



Calc Angle	90.0	80.0	70.0	65.0	60.0	55.0	50.0	45.0	40.0	35.0	30.0	25.0	20.0	15.0	10.0	5.0	4.0	2.0	
Solve for r, dx to antenna	88.2	89.6	93.9	97.3	101.9	107.7	115.2	124.8	137.3	153.8	176.5	208.8	258.0	340.9	508.2	1012.5	1265.0	2528.5	
Distance from Antenna Structure Base in Horizontal plane	0.1	15.6	32.2	41.2	51.0	61.8	74.1	88.3	105.2	126.0	152.9	189.3	242.5	329.3	500.5	1008.6	1262.0	2527.0	
Angle from Main Beam (reference to horizontal plane)	90	80	70	65	60	55	50	45	40	35	30	25	20	15	10	5	4	2	
dB down from centerline (referenced to centerline)	42.3	39	35.6	34.5	27.7	27.8	26.9	27.7	18.5	17.8	21.4	28.1	21.9	15	21.5	12.8	6.7	1.1	
Reflection Coefficient (1 to 4, 2.56 typical)	2.56	2.56	2.56	2.56	2.56	2.56	2.56	2.56	2.56	2.56	2.56	2.56	2.56	2.56	2.56	2.56	2.56	2.56	
Power Density (mW/cm^2)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Percent of Occupational Standard	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Percent of General Population Standard	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.2	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	

Antenna Type NHH-65B
Max% 0.16%

Instructions:

1) Fill in Site Location, Site number, Date, Name of Person Responsible for Date, and enter File Name to ba saved as.
2) References to J4 refer to a point where the transmission line exits the equipment shelter and proceeds to the antenna(s). There is typically a connector located here where power measurements are made.
3) Enter Antenna Height (in feet to bottom of antenna), Antenna Gain (expressed as dBi, add 2.17 to dBd to obtain dBi), Antenna Size (vertical size in inches), Downtilt (in Degrees, enter zero if none), Feedline loss from J4 to Antenna, and J4 Pov
4) From manufacturer's plots, or data sheet, input Angle from mainbeam and dB below mainbeam centerline.
5) Enter Reflection coefficient (2.56 would be typical, 1 for free space)
6) Spreadsheet calculates actual power density, then relates as Occupational or General Population percentage of FCC Standard.
7) An odd distance may be entered in the rightmost column of the lower table.

ATTACHMENT 8

UNITED STATES POSTAL SERVICE®

Burlington SW

Certificate of Mailing — Firm

Name and Address of Sender	TOTAL NO. of Pieces Listed by Sender	TOTAL NO. of Pieces Received at Post Office™	Affix Stamp Here ***Postmark with Date of Receipt.***
Kenneth C. Baldwin, Esquire Robinson & Cole LLP 280 Trumbull Street Hartford, CT 06103	2	2	neopost 08/11/2020 US POSTAGE $002.84⁰ ZIP 06103 041L12203937
	Postmaster, per (name of receiving employee)		

OLD STATE HOUSE STATION 06103
AUG 11 2020
USPS

USPS® Tracking Number Firm-specific Identifier	Address (Name, Street, City, State, and ZIP Code™)	Postage	Fee	Special Handling	Parcel Airlift
1.	Theodore Shafer, First Selectman Town of Burlington 200 Spielman Highway Burlington, CT 06013				
2.	Jerry Burns, Zoning Enforcement Officer Town of Burlington 200 Spielman Highway Burlington, CT 06013				
3.					
4.					
5.					
6.					