



STATE OF CONNECTICUT  
*CONNECTICUT SITING COUNCIL*

Ten Franklin Square, New Britain, CT 06051

Phone: (860) 827-2935 Fax: (860) 827-2950

E-Mail: [siting.council@ct.gov](mailto:siting.council@ct.gov)

Web Site: [portal.ct.gov/csc](http://portal.ct.gov/csc)

**VIA ELECTRONIC MAIL**

March 28, 2023

Katie Adams  
Crown Castle  
100 Apollo Drive, Suite 303  
Chelmsford, MA 01824  
[kadams@nbcllc.com](mailto:kadams@nbcllc.com)

RE: **TS-VER-109-230106** – Cellco Partnership d/b/a Verizon Wireless request for an order to approve tower sharing at an existing telecommunications facility located at 954 Norwich Road, Plainfield, Connecticut.

Dear Katie Adams:

The Connecticut Siting Council (Council) is in receipt of your correspondence of March 27, 2023 submitted in response to the Council's January 24, 2023 notification of an incomplete request for tower sharing with regard to the above-referenced matter.

The submission renders the request for tower sharing complete and the Council will process the request in accordance with the Federal Communications Commission 60-day timeframe.

Thank you for your attention and cooperation.

Sincerely,

Melanie Bachman  
Executive Director

MAB/IN/laf

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**From:** Katie Adams <kadams@nbcllc.com>

**Sent:** Monday, March 27, 2023 2:15 PM

**To:** Fontaine, Lisa <Lisa.Fontaine@ct.gov>

**Cc:** CSC-DL Siting Council <Siting.Council@ct.gov>

**Subject:** RE: Council Extension Decisoin - TS-VER-109-230106 - 954 Norwich Road, Plainfield - Request for Extension to submit documentation to make filing complete

Good afternoon,

Please see the attached revised drawings as requested. The drawings now show the size of the compound in relation to the leased space. This is a compound / fence expansion only, staying within the existing leased area.

Thanks,

**Katie Adams**

*SR Site Acquisition Specialist*

**NETWORK BUILDING + CONSULTING**

100 Apollo Drive | Suite 303 | Chelmsford, MA | 01824  
M 781-392-7547



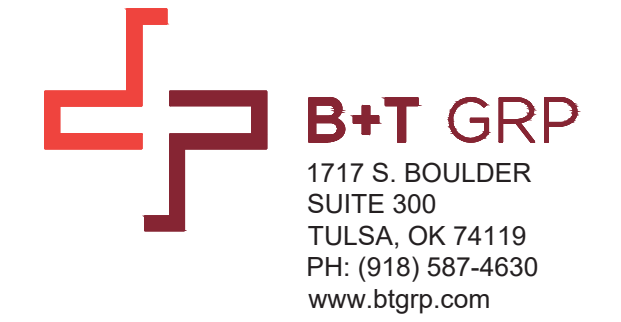




**VERIZON SITE NUMBER:** 617226648  
**VERIZON SITE NAME:** PLAINFIELD SOUTH 2 CT  
**SITE TYPE:** MONOPOLE  
**TOWER HEIGHT:** 130'-0"

**BUSINESS UNIT #:** 876359  
**SITE ADDRESS:** 954 NORWICH ROAD  
 PLAINFIELD, CT 06062  
**COUNTY:** WINDHAM  
**JURISDICTION:** CONNECTICUT SITING COUNCIL

**VERIZON INITIAL BUILD**



**VERIZON SITE NUMBER:** 617226648  
**BU #:** 876359  
**NORWICH**  
 954 NORWICH ROAD  
 PLAINFIELD, CT 06062  
 EXISTING 130'-0" MONOPOLE

SITE INFORMATION	
CROWN CASTLE USA INC. SITE NAME:	NORWICH
SITE ADDRESS:	954 NORWICH ROAD PLAINFIELD, CT 06062
COUNTY:	WINDHAM
MAP/PARCEL #:	010-013B-0015
AREA OF CONSTRUCTION:	EXISTING
LATITUDE:	41.658739°
LONGITUDE:	-71.924931°
LAT/LONG TYPE:	NAD83
GROUND ELEVATION:	186'
CURRENT ZONING:	C
JURISDICTION:	CONNECTICUT SITING COUNCIL
OCCUPANCY CLASSIFICATION:	U
TYPE OF CONSTRUCTION:	IIB
A.D.A. COMPLIANCE:	FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION
PROPERTY OWNER:	GLOBAL SIGNAL ACQUISITION P.O.BOX 277455 ATLANTA, GA 30384-7455
TOWER OWNER:	CROWN CASTLE 2000 CORPORATE DRIVE CANONSBURG, PA 15317
CARRIER/APPLICANT:	VERIZON WIRELESS 20 ALEXANDER DRIVE, 2ND FLOOR WALLINGFORD, CT 06492
ELECTRIC PROVIDER:	NORTHEAST UTILITIES 800-286-2000
TELCO PROVIDER:	FRONTIER 800-921-8101

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ALL DRAWINGS CONTAINED HEREIN ARE FORMATTED FOR FULL SIZE. CONTRACTOR SHALL VERIFY ALL PLANS AND EXISTING DIMENSIONS AND CONDITIONS ON THE JOB SITE AND SHALL IMMEDIATELY NOTIFY THE ENGINEER IN WRITING OF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR BE RESPONSIBLE FOR SAME.

### LOCATION MAP

NO SCALE

DRIVING DIRECTIONS FROM VERIZON LOCAL OFFICE (819 HARTFORD TURNPIKE, WATERFORD, CT 06385, UNITED STATES)  
 HEAD NORTHWEST ON CT-85 N TOWARD DAYTON PL, TURN RIGHT TO MERGE WITH I-395 N TOWARD NORWICH, TAKE EXIT 28 FOR LATHROP RD, TURN LEFT ONTO LATHROP RD, TURN LEFT ONTO CT-12 S DESTINATION WILL BE ON THE LEFT.

ISSUED FOR:				
REV	DATE	DRWN	DESCRIPTION	DES./QA
B	11/04/22	MEH	PRELIMINARY REVIEW	CV
0	11/22/22	MEH	CONSTRUCTION	ANP
1	11/30/22	YX	CONSTRUCTION	CV
2	2/2/23	YX	CONSTRUCTION	LR
3	2/17/23	YX	CONSTRUCTION	MTJ
4	3/9/23	YX	CONSTRUCTION	LR

PROJECT TEAM	
A&E FIRM:	B+T GROUP 1717 S. BOULDER AVE. TULSA, OK 74119 MARVIN PHILLIPS MARVIN.PHILLIPS@BTGRP.COM
CROWN CASTLE USA INC. DISTRICT CONTACTS:	1200 MACARTHUR BLVD, SUITE 200 MAHWAH, NJ 07430  WILLIAM GATES - PROJECT MANAGER WILLIAM.GATES@CROWNCastle.COM JASON D'AMICO - CONSTRUCTION MANAGER JASON.DAMICO@CROWNCastle.COM

### PROJECT DESCRIPTION

THE PURPOSE OF THIS PROJECT IS TO ENHANCE BROADBAND CONNECTIVITY AND CAPACITY TO THE EXISTING ELIGIBLE WIRELESS FACILITY.

**TOWER SCOPE OF WORK:**

- INSTALL (6) ANTENNAS
- INSTALL (3) ANTENNAS W/INTEGRATED RRH
- INSTALL (6) RRHs
- INSTALL (1) OVP
- INSTALL (1) HYBRID CABLES
- INSTALL (1) PLATFORM MOUNT VALMONT - F3P-12 W/ VALMONT - HRK12 SUPPORT RAIL KIT AND (12) 2-1/2" STD. x 10'-6" LONG PIPES

**GROUND SCOPE OF WORK:**

- INSTALL CONCRETE PAD W/ (2) OUTDOOR EQUIPMENT CABINETS
- INSTALL ICE CANOPY
- INSTALL NEW H-FRAMES
- INSTALL (1) 50KW GENERATOR

**GROUND SCOPE OF WORK:**

- INSTALL GAS METER NEXT TO COMPOUND
- INSTALL NEW METER IN EXISTING METER BANK
- CONTRACTOR SHALL CALL UTILITY COMPANY TO START SERVICE ONCE INSPECTIONS ARE COMPLETE
- CONTRACTOR SHALL CONFORM SITE TO LOCAL UTILITY COMPANY CODES AND REGULATIONS
- CONTRACTOR SHALL PROVIDE AND SECURE ALL REQUIRED PERMITS, LICENSES, INSPECTIONS, APPROVALS AND PAYMENT OF ALL FEES
- COMPOUND EXPANSION BY PROPOSED CHAIN LINK FENCE

### APPLICABLE CODES/REFERENCE DOCUMENTS

ALL WORK SHALL BE PERFORMED AND MATERIALS INSTALLED IN ACCORDANCE WITH THE CURRENT EDITIONS OF THE FOLLOWING CODES AS ADOPTED BY THE LOCAL GOVERNING AUTHORITIES. NOTHING IN THESE PLANS IS TO BE CONSTRUED TO PERMIT WORK NOT CONFORMING TO THESE CODES:

CODE TYPE	CODE
BUILDING	2022 CONNECTICUT SBC
MECHANICAL	2022 CONNECTICUT SBC
ELECTRICAL	2022 CONNECTICUT SBC

**REFERENCE DOCUMENTS:**

STRUCTURAL ANALYSIS:	MORRISON HERSHFIELD
DATED:	9/23/22
MOUNT ANALYSIS:	POD GROUP
DATED:	11/7/22
RFDS REVISION:	1
DATED:	9/14/22
ORDER ID:	625747
REVISION:	3

**INSTALLER NOTES:**

REFERENCE LATEST VERIZON CONSTRUCTION STANDARDS.

**NOTE:**  
 PRIOR TO ACCESSING/ENTERING THE SITE YOU MUST CONTACT THE CROWN NOC AT (800) 788-7011 & CROWN CONSTRUCTION MANAGER

CALL CONNECTICUT ONE CALL  
 (800) 922-4455 CBYD.COM  
 CALL 2 WORKING DAYS BEFORE YOU DIG!

MTS ENGINEERING P.L.L.C.  
 BER:2386985  
 Expires 3/31/23

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.

SHEET NUMBER:	REVISION:
T-1	4

7/9/21:005:01:0001\_876359\_NORWICH\_2.17.23.dwg - Sheet:1-1 - User: liso.rider - Mar 09, 2023 - 5:01pm



**CROWN CASTLE USA INC. SITE ACTIVITY REQUIREMENTS:**

- NOTICE TO PROCEED-- NO WORK SHALL COMMENCE PRIOR TO CROWN CASTLE USA INC. WRITTEN NOTICE TO PROCEED (NTP) AND THE ISSUANCE OF A PURCHASE ORDER. PRIOR TO ACCESSING/ENTERING THE SITE YOU MUST CONTACT THE CROWN CASTLE USA INC. NOC AT 800-788-7011 & THE CROWN CASTLE USA INC. CONSTRUCTION MANAGER.
- "LOOK UP" – CROWN CASTLE USA INC. SAFETY CLIMB REQUIREMENT:  
THE INTEGRITY OF THE SAFETY CLIMB AND ALL COMPONENTS OF THE CLIMBING FACILITY SHALL BE CONSIDERED DURING ALL STAGES OF DESIGN, INSTALLATION, AND INSPECTION. TOWER MODIFICATION, MOUNT REINFORCEMENTS, AND/OR EQUIPMENT INSTALLATIONS SHALL NOT COMPROMISE THE INTEGRITY OR FUNCTIONAL USE OF THE SAFETY CLIMB OR ANY COMPONENTS OF THE CLIMBING FACILITY ON THE STRUCTURE. THIS SHALL INCLUDE, BUT NOT BE LIMITED TO: PINCHING OF THE WIRE ROPE, BENDING OF THE WIRE ROPE FROM ITS SUPPORTS, DIRECT CONTACT OR CLOSE PROXIMITY TO THE WIRE ROPE WHICH MAY CAUSE FRICTIONAL WEAR, IMPACT TO THE ANCHORAGE POINTS IN ANY WAY, OR TO IMPEDE/BLOCK ITS INTENDED USE. ANY COMPROMISED SAFETY CLIMB, INCLUDING EXISTING CONDITIONS MUST BE TAGGED OUT AND REPORTED TO YOUR CROWN CASTLE USA INC. POC OR CALL THE NOC TO GENERATE A SAFETY CLIMB MAINTENANCE AND CONTRACTOR NOTICE TICKET.
- PRIOR TO THE START OF CONSTRUCTION, ALL REQUIRED JURISDICTIONAL PERMITS SHALL BE OBTAINED. THIS INCLUDES, BUT IS NOT LIMITED TO, BUILDING, ELECTRICAL, MECHANICAL, FIRE, FLOOD ZONE, ENVIRONMENTAL, AND ZONING. AFTER ONSITE ACTIVITIES AND CONSTRUCTION ARE COMPLETED, ALL REQUIRED PERMITS SHALL BE SATISFIED AND CLOSED OUT ACCORDING TO LOCAL JURISDICTIONAL REQUIREMENTS.
- ALL CONSTRUCTION MEANS AND METHODS; INCLUDING BUT NOT LIMITED TO, ERECTION PLANS, RIGGING PLANS, CLIMBING PLANS, AND RESCUE PLANS SHALL BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR RESPONSIBLE FOR THE EXECUTION OF THE WORK CONTAINED HEREIN, AND SHALL MEET ANSI/ASSE A10.48 (LATEST EDITION); FEDERAL, STATE, AND LOCAL REGULATIONS; AND ANY APPLICABLE INDUSTRY CONSENSUS STANDARDS RELATED TO THE CONSTRUCTION ACTIVITIES BEING PERFORMED. ALL RIGGING PLANS SHALL ADHERE TO ANSI/ASSE A10.48 (LATEST EDITION) AND CROWN CASTLE USA INC. STANDARD CED-STD-10253, INCLUDING THE REQUIRED INVOLVEMENT OF A QUALIFIED ENGINEER FOR CLASS IV CONSTRUCTION, TO CERTIFY THE SUPPORTING STRUCTURE(S) IN ACCORDANCE WITH ANSI/TIA-322 (LATEST EDITION).
- ALL SITE WORK TO COMPLY WITH QAS-STD-10068 "INSTALLATION STANDARDS FOR CONSTRUCTION ACTIVITIES ON CROWN CASTLE USA INC. TOWER SITE," CED-STD-10294 "STANDARD FOR INSTALLATION OF MOUNTS AND APPURTENANCES," AND LATEST VERSION OF ANSI/TIA-1019-A-2012 "STANDARD FOR INSTALLATION, ALTERATION, AND MAINTENANCE OF ANTENNA SUPPORTING STRUCTURES AND ANTENNAS."
- IF THE SPECIFIED EQUIPMENT CAN NOT BE INSTALLED AS SHOWN ON THESE DRAWINGS, THE CONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION FOR APPROVAL BY CROWN CASTLE USA INC. PRIOR TO PROCEEDING WITH ANY SUCH CHANGE OF INSTALLATION.
- ALL MATERIALS FURNISHED AND INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS AND ORDINANCES. CONTRACTOR SHALL ISSUE ALL APPROPRIATE NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY REGARDING THE PERFORMANCE OF THE WORK. ALL WORK CARRIED OUT SHALL COMPLY WITH ALL APPLICABLE MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS AND LOCAL JURISDICTIONAL CODES, ORDINANCES AND APPLICABLE REGULATIONS.
- THE CONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.
- THE CONTRACTOR SHALL CONTACT UTILITY LOCATING SERVICES PRIOR TO THE START OF CONSTRUCTION.
- 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 CONTRACTOR. EXTREME CAUTION SHOULD BE USED BY THE CONTRACTOR WHEN EXCAVATING OR DRILLING PIERS AROUND OR NEAR UTILITIES. CONTRACTOR 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 AND EXCAVATION E) CONSTRUCTION SAFETY PROCEDURES.
- ALL SITE WORK SHALL BE AS INDICATED ON THE STAMPED CONSTRUCTION DRAWINGS AND PROJECT SPECIFICATIONS, LATEST APPROVED REVISION.
- CONTRACTOR SHALL KEEP THE SITE FREE FROM ACCUMULATING WASTE MATERIAL, DEBRIS, AND TRASH AT THE COMPLETION OF THE WORK. IF NECESSARY, RUBBISH, STUMPS, DEBRIS, STICKS, STONES AND OTHER REFUSE SHALL BE REMOVED FROM THE SITE AND DISPOSED OF LEGALLY.
- 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 CONTRACTOR, TOWER OWNER, CROWN CASTLE USA INC., AND/OR LOCAL UTILITIES.
- THE CONTRACTOR SHALL PROVIDE SITE SIGNAGE IN ACCORDANCE WITH THE TECHNICAL SPECIFICATION FOR SITE SIGNAGE REQUIRED BY LOCAL JURISDICTION AND SIGNAGE REQUIRED ON INDIVIDUAL PIECES OF EQUIPMENT, ROOMS, AND SHELTERS.
- THE SITE SHALL BE GRADED TO CAUSE SURFACE WATER TO FLOW AWAY FROM THE CARRIER'S EQUIPMENT AND TOWER AREAS.
- THE SUB GRADE SHALL BE COMPACTED AND BROUGHT TO A SMOOTH UNIFORM GRADE PRIOR TO FINISHED SURFACE APPLICATION.
- 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 ON THE CONSTRUCTION DRAWINGS AND/OR PROJECT SPECIFICATIONS.
- CONTRACTOR 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.
- THE CONTRACTOR SHALL PROTECT EXISTING IMPROVEMENTS, PAVEMENTS, CURBS, LANDSCAPING AND STRUCTURES. ANY DAMAGED PART SHALL BE REPAIRED AT CONTRACTOR'S EXPENSE TO THE SATISFACTION OF OWNER.
- CONTRACTOR 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.
- CONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION. TRASH AND DEBRIS SHOULD BE REMOVED FROM SITE ON A DAILY BASIS.
- 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.

**GREENFIELD GROUNDING NOTES:**

- ALL GROUND ELECTRODE SYSTEMS (INCLUDING TELECOMMUNICATION, RADIO, LIGHTNING PROTECTION AND AC POWER GES'S) SHALL BE BONDED TOGETHER AT OR BELOW GRADE, BY TWO OR MORE COPPER BONDING CONDUCTORS IN ACCORDANCE WITH THE NEC.
- THE CONTRACTOR SHALL PERFORM IEEE FALL-OF-POTENTIAL RESISTANCE TO EARTH TESTING (PER IEEE 1100 AND 81) FOR GROUND ELECTRODE SYSTEMS. THE CONTRACTOR SHALL FURNISH AND INSTALL SUPPLEMENTAL GROUND ELECTRODES AS NEEDED TO ACHIEVE A TEST RESULT OF 5 OHMS OR LESS.
- THE CONTRACTOR 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 AND PROVIDE TESTING RESULTS.
- METAL CONDUIT AND TRAY SHALL BE GROUNDING AND MADE ELECTRICALLY CONTINUOUS WITH LISTED BONDING FITTINGS OR BY BONDING ACROSS THE DISCONTINUITY WITH #6 COPPER WIRE UL APPROVED GROUNDING TYPE CONDUIT CLAMPS.
- METAL RACEWAY SHALL NOT BE USED AS THE NEC REQUIRED EQUIPMENT GROUND CONDUCTOR. STRANDED COPPER CONDUCTORS WITH GREEN INSULATION, SIZED IN ACCORDANCE WITH THE NEC, SHALL BE FURNISHED AND INSTALLED WITH THE POWER CIRCUITS TO BTS EQUIPMENT.
- EACH CABINET FRAME SHALL BE DIRECTLY CONNECTED TO THE MASTER GROUND BAR WITH GREEN INSULATED SUPPLEMENTAL EQUIPMENT GROUND WIRES, #6 STRANDED COPPER OR LARGER FOR INDOOR BTS; #2 BARE SOLID TINNED COPPER FOR OUTDOOR BTS.
- CONNECTIONS TO THE GROUND BUS SHALL NOT BE DOUBLED UP OR STACKED BACK TO BACK CONNECTIONS ON OPPOSITE SIDE OF THE GROUND BUS ARE PERMITTED.
- ALL EXTERIOR GROUND CONDUCTORS BETWEEN EQUIPMENT/GROUND BARS AND THE GROUND RING SHALL BE #2 SOLID TINNED COPPER UNLESS OTHERWISE INDICATED.
- ALUMINUM CONDUCTOR OR COPPER CLAD STEEL CONDUCTOR SHALL NOT BE USED FOR GROUNDING CONNECTIONS.
- USE OF 90° BENDS IN THE PROTECTION GROUNDING CONDUCTORS SHALL BE AVOIDED WHEN 45° BENDS CAN BE ADEQUATELY SUPPORTED.
- EXOTHERMIC WELDS SHALL BE USED FOR ALL GROUNDING CONNECTIONS BELOW GRADE.
- ALL GROUND CONNECTIONS ABOVE GRADE (INTERIOR AND EXTERIOR) SHALL BE FORMED USING HIGH PRESS CRIMPS.
- COMPRESSION GROUND CONNECTIONS MAY BE REPLACED BY EXOTHERMIC WELD CONNECTIONS.
- ICE BRIDGE BONDING CONDUCTORS SHALL BE EXOTHERMICALLY BONDED OR BOLTED TO THE BRIDGE AND THE TOWER GROUND BAR.
- APPROVED ANTI-OXIDANT COATINGS (i.e. CONDUCTIVE GEL OR PASTE) SHALL BE USED ON ALL COMPRESSION AND BOLTED GROUND CONNECTIONS.
- ALL EXTERIOR GROUND CONNECTIONS SHALL BE COATED WITH A CORROSION RESISTANT MATERIAL.
- MISCELLANEOUS ELECTRICAL AND NON-ELECTRICAL METAL BOXES, FRAMES AND SUPPORTS SHALL BE BONDED TO THE GROUND RING, IN ACCORDANCE WITH THE NEC.
- BOND ALL METALLIC OBJECTS WITHIN 6 FT OF MAIN GROUND RING WITH (1) #2 BARE SOLID TINNED COPPER GROUND CONDUCTOR.
- GROUND CONDUCTORS USED FOR THE FACILITY GROUNDING AND LIGHTNING PROTECTION SYSTEMS SHALL NOT BE ROUTED THROUGH METALLIC OBJECTS THAT FORM A RING AROUND THE CONDUCTOR, SUCH AS METALLIC CONDUITS, METAL SUPPORT CLIPS OR SLEEVES THROUGH WALLS OR FLOORS. WHEN IT IS REQUIRED TO BE HOUSED IN CONDUIT TO MEET CODE REQUIREMENTS OR LOCAL CONDITIONS, NON-METALLIC MATERIAL SUCH AS PVC CONDUIT SHALL BE USED. WHERE USE OF METAL CONDUIT IS UNAVOIDABLE (i.e., NONMETALLIC CONDUIT PROHIBITED BY LOCAL CODE) THE GROUND CONDUCTOR SHALL BE BONDED TO EACH END OF THE METAL CONDUIT.
- ALL GROUNDS THAT TRANSITION FROM BELOW GRADE TO ABOVE GRADE MUST BE #2 BARE SOLID TINNED COPPER IN 3/4" NON-METALLIC, FLEXIBLE CONDUIT FROM 24" BELOW GRADE TO WITHIN 3" TO 6" OF CAD-WELD TERMINATION POINT. THE EXPOSED END OF THE CONDUIT MUST BE SEALED WITH SILICONE CAULK. (ADD TRANSITIONING GROUND STANDARD DETAIL AS WELL).
- BUILDINGS WHERE THE MAIN GROUNDING CONDUCTORS ARE REQUIRED TO BE ROUTED TO GRADE, THE CONTRACTOR SHALL ROUTE TWO GROUNDING CONDUCTORS FROM THE ROOFTOP, TOWERS, AND WATER TOWERS GROUNDING RING, TO THE EXISTING GROUNDING SYSTEM, THE GROUNDING CONDUCTORS SHALL NOT BE SMALLER THAN 2/0 COPPER. ROOFTOP GROUNDING RING SHALL BE BONDED TO THE EXISTING GROUNDING SYSTEM, THE BUILDING STEEL COLUMNS, LIGHTNING PROTECTION SYSTEM, AND BUILDING MAIN WATER LINE (FERROUS OR NONFERROUS METAL PIPING ONLY).

**GENERAL NOTES:**

- FOR THE PURPOSE OF CONSTRUCTION DRAWING, THE FOLLOWING DEFINITIONS SHALL APPLY:  
CONTRACTOR: GENERAL CONTRACTOR RESPONSIBLE FOR CONSTRUCTION  
CARRIER: VERIZON  
TOWER OWNER: CROWN CASTLE USA INC.
- THESE DRAWINGS HAVE BEEN PREPARED USING STANDARDS OF PROFESSIONAL CARE AND COMPLETENESS NORMALLY EXERCISED UNDER SIMILAR CIRCUMSTANCES BY REPUTABLE ENGINEERS IN THIS OR SIMILAR LOCALITIES. IT IS ASSUMED THAT THE WORK DEPICTED WILL BE PERFORMED BY AN EXPERIENCED CONTRACTOR AND/OR WORKPEOPLE WHO HAVE A WORKING KNOWLEDGE OF THE APPLICABLE CODE STANDARDS AND REQUIREMENTS AND OF INDUSTRY ACCEPTED STANDARD GOOD PRACTICE. AS NOT EVERY CONDITION OR ELEMENT IS (OR CAN BE) EXPLICITLY SHOWN ON THESE DRAWINGS, THE CONTRACTOR SHALL USE INDUSTRY ACCEPTED STANDARD GOOD PRACTICE FOR MISCELLANEOUS WORK NOT EXPLICITLY SHOWN.
- THESE DRAWINGS REPRESENT THE FINISHED STRUCTURE. THEY DO NOT INDICATE THE MEANS OR METHODS OF CONSTRUCTION. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR THE CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, AND PROCEDURES. THE CONTRACTOR SHALL PROVIDE ALL MEASURES NECESSARY FOR PROTECTION OF LIFE AND PROPERTY DURING CONSTRUCTION. SUCH MEASURES SHALL INCLUDE, BUT NOT BE LIMITED TO, BRACING, FORMWORK, SHORING, ETC. SITE VISITS BY THE ENGINEER OR HIS REPRESENTATIVE WILL NOT INCLUDE INSPECTION OF THESE ITEMS AND IS FOR STRUCTURAL OBSERVATION OF THE FINISHED STRUCTURE ONLY.
- NOTES AND DETAILS IN THE CONSTRUCTION DRAWINGS SHALL TAKE PRECEDENCE OVER GENERAL NOTES AND TYPICAL DETAILS. WHERE NO DETAILS ARE SHOWN, CONSTRUCTION SHALL CONFORM TO SIMILAR WORK ON THE PROJECT, AND/OR AS PROVIDED FOR IN THE CONTRACT DOCUMENTS. WHERE DISCREPANCIES OCCUR BETWEEN PLANS, DETAILS, GENERAL NOTES, AND SPECIFICATIONS, THE GREATER, MORE STRICT REQUIREMENTS, SHALL GOVERN. IF FURTHER CLARIFICATION IS REQUIRED CONTACT THE ENGINEER OF RECORD.
- SUBSTANTIAL EFFORT HAS BEEN MADE TO PROVIDE ACCURATE DIMENSIONS AND MEASUREMENTS ON THE DRAWINGS TO ASSIST IN THE FABRICATION AND/OR PLACEMENT OF CONSTRUCTION ELEMENTS BUT IT IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO FIELD VERIFY THE DIMENSIONS, MEASUREMENTS, AND/OR CLEARANCES SHOWN IN THE CONSTRUCTION DRAWINGS PRIOR TO FABRICATION OR CUTTING OF ANY NEW OR EXISTING CONSTRUCTION ELEMENTS. IF IT IS DETERMINED THAT THERE ARE DISCREPANCIES AND/OR CONFLICTS WITH THE CONSTRUCTION DRAWINGS THE ENGINEER OF RECORD IS TO BE NOTIFIED AS SOON AS POSSIBLE.
- PRIOR TO THE SUBMISSION OF BIDS, THE BIDDING CONTRACTOR 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 CROWN CASTLE.
- ALL MATERIALS FURNISHED AND INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS AND ORDINANCES. CONTRACTOR SHALL ISSUE ALL APPROPRIATE NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY REGARDING THE PERFORMANCE OF THE WORK. ALL WORK CARRIED OUT SHALL COMPLY WITH ALL APPLICABLE MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS AND LOCAL JURISDICTIONAL CODES, ORDINANCES AND APPLICABLE REGULATIONS.
- UNLESS NOTED OTHERWISE, THE WORK SHALL INCLUDE FURNISHING MATERIALS, EQUIPMENT, APPURTENANCES AND LABOR NECESSARY TO COMPLETE ALL INSTALLATIONS AS INDICATED ON THE DRAWINGS.
- THE CONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.
- IF THE SPECIFIED EQUIPMENT CAN NOT BE INSTALLED AS SHOWN ON THESE DRAWINGS, THE CONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION FOR APPROVAL BY THE CARRIER AND CROWN CASTLE PRIOR TO PROCEEDING WITH ANY SUCH CHANGE OF INSTALLATION.
- CONTRACTOR IS TO PERFORM A SITE INVESTIGATION AND IS TO DETERMINE THE BEST ROUTING OF ALL CONDUITS FOR POWER, AND TELCO AND FOR GROUNDING CABLES AS SHOWN IN THE POWER, TELCO, AND GROUNDING PLAN DRAWINGS.
- THE CONTRACTOR SHALL PROTECT EXISTING IMPROVEMENTS, PAVEMENTS, CURBS, LANDSCAPING AND STRUCTURES. ANY DAMAGED PART SHALL BE REPAIRED AT CONTRACTOR'S EXPENSE TO THE SATISFACTION OF CROWN CASTLE USA INC.
- CONTRACTOR 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.
- CONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION. TRASH AND DEBRIS SHOULD BE REMOVED FROM SITE ON A DAILY BASIS.

**CONCRETE, FOUNDATIONS, AND REINFORCING STEEL:**

- 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.
- UNLESS NOTED OTHERWISE, SOIL BEARING PRESSURE USED FOR DESIGN OF SLABS AND FOUNDATIONS IS ASSUMED TO BE 1000 psf.
- ALL CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH (f'c) OF 3000 psi AT 28 DAYS, UNLESS NOTED OTHERWISE. NO MORE THAN 90 MINUTES SHALL ELAPSE FROM BATCH TIME TO TIME OF PLACEMENT UNLESS APPROVED BY THE ENGINEER OF RECORD. TEMPERATURE OF CONCRETE SHALL NOT EXCEED 90°F AT TIME OF PLACEMENT.
- CONCRETE EXPOSED TO FREEZE--THAW CYCLES SHALL CONTAIN AIR ENTRAINING ADMIXTURES. AMOUNT OF AIR ENTRAINMENT TO BE BASED ON SIZE OF AGGREGATE AND F3 CLASS EXPOSURE (VERY SEVERE). CEMENT USED TO BE TYPE II PORTLAND CEMENT WITH A MAXIMUM WATER-TO-CEMENT RATIO (W/C) OF 0.45.
- ALL STEEL REINFORCING SHALL CONFORM TO ASTM A615. ALL WELDED WIRE FABRIC (WWF) SHALL CONFORM TO ASTM A185. ALL SPLICES SHALL BE CLASS "B" TENSION SPLICES, UNLESS NOTED OTHERWISE. ALL HOOKS SHALL BE STANDARD 90 DEGREE HOOKS, UNLESS NOTED OTHERWISE. YIELD STRENGTH (Fy) OF STANDARD DEFORMED BARS ARE AS FOLLOWS:  
#4 BARS AND SMALLER.....40 ksi  
#5 BARS AND LARGER.....60 ksi
- THE FOLLOWING MINIMUM CONCRETE COVER SHALL BE PROVIDED FOR REINFORCING STEEL UNLESS SHOWN OTHERWISE ON DRAWINGS:  
CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH.....3"  
CONCRETE EXPOSED TO EARTH OR WEATHER:  
#6 BARS AND LARGER.....2"  
#5 BARS AND SMALLER.....1-1/2"  
CONCRETE NOT EXPOSED TO EARTH OR WEATHER:  
SLAB AND WALLS.....3/4"  
BEAMS AND COLUMNS.....1-1/2"
- A TOOLED EDGE OR A 3/4" CHAMFER SHALL BE PROVIDED AT ALL EXPOSED EDGES OF CONCRETE, UNLESS NOTED OTHERWISE, IN ACCORDANCE WITH ACI 301 SECTION 4.2.4.

**ELECTRICAL INSTALLATION NOTES:**

- ALL ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS, NEC AND ALL APPLICABLE FEDERAL, STATE, AND LOCAL CODES/ORDINANCES.
- CONDUIT ROUTINGS ARE SCHEMATIC. CONTRACTOR SHALL INSTALL CONDUITS SO THAT ACCESS TO EQUIPMENT IS NOT BLOCKED AND TRIP HAZARDS ARE ELIMINATED.
- WIRING, RACEWAY AND SUPPORT METHODS AND MATERIALS SHALL COMPLY WITH THE REQUIREMENTS OF THE NEC.
- ALL CIRCUITS SHALL BE SEGREGATED AND MAINTAIN MINIMUM CABLE SEPARATION AS REQUIRED BY THE NEC.
- ALL EQUIPMENT SHALL BEAR THE UNDERWRITERS LABORATORIES LABEL OF APPROVAL, AND SHALL CONFORM TO REQUIREMENT OF THE NATIONAL ELECTRICAL CODE.
- ALL OVERCURRENT DEVICES SHALL HAVE AN INTERRUPTING CURRENT RATING THAT SHALL BE GREATER THAN THE SHORT CIRCUIT CURRENT TO WHICH THEY ARE SUBJECTED, 22,000 AIC MINIMUM. VERIFY AVAILABLE SHORT CIRCUIT CURRENT DOES NOT EXCEED THE RATING OF ELECTRICAL EQUIPMENT IN ACCORDANCE WITH ARTICLE 110.24 NEC OR THE MOST CURRENT ADOPTED CODE PRE THE GOVERNING JURISDICTION.
- EACH END OF EVERY POWER PHASE CONDUCTOR, GROUNDING CONDUCTOR, AND TELCO CONDUCTOR OR CABLE SHALL BE LABELED WITH COLOR-CODED INSULATION OR ELECTRICAL TAPE (3M BRAND, 1/2" PLASTIC ELECTRICAL TAPE WITH UV PROTECTION, OR EQUAL). THE IDENTIFICATION METHOD SHALL CONFORM WITH NEC AND OSHA.
- ALL ELECTRICAL COMPONENTS SHALL BE CLEARLY LABELED WITH LAMICOID TAGS SHOWING THEIR RATED VOLTAGE, PHASE CONFIGURATION, WIRE CONFIGURATION, POWER OR AMPACITY RATING AND BRANCH CIRCUIT ID NUMBERS (i.e. PANEL BOARD AND CIRCUIT ID'S).
- PANEL BOARDS (ID NUMBERS) SHALL BE CLEARLY LABELED WITH PLASTIC LABELS.
- ALL THE WRAPS SHALL BE CUT FLUSH WITH APPROVED CUTTING TOOL TO REMOVE SHARP EDGES.
- ALL POWER AND EQUIPMENT GROUND WIRING IN TUBING OR CONDUIT SHALL BE SINGLE COPPER CONDUCTOR (#14 OR LARGER) WITH TYPE THHW, THWN, THWN-2, XHHW, XHHW-2, THW, THW-2, RHW, OR RHW-2 INSULATION UNLESS OTHERWISE SPECIFIED.
- SUPPLEMENTAL EQUIPMENT GROUND WIRING LOCATED INDOORS SHALL BE SINGLE COPPER CONDUCTOR (#6 OR LARGER) WITH TYPE THHW, THWN, THWN-2, XHHW, XHHW-2, THW, THW-2, RHW, OR RHW-2 INSULATION UNLESS OTHERWISE SPECIFIED.
- POWER AND CONTROL WIRING IN FLEXIBLE CORD SHALL BE MULTI-CONDUCTOR, TYPE SOOW CORD (#14 OR LARGER) UNLESS OTHERWISE SPECIFIED.
- POWER AND CONTROL WIRING FOR USE IN CABLE TRAY SHALL BE MULTI-CONDUCTOR, TYPE TC CABLE (#14 OR LARGER), WITH TYPE THHW, THWN, THWN-2, XHHW, XHHW-2, THW, THW-2, RHW, OR RHW-2 INSULATION UNLESS OTHERWISE SPECIFIED.
- 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 NOT LESS THAN 75° C (90° C IF AVAILABLE).
- RACEWAY AND CABLE TRAY SHALL BE LISTED OR LABELED FOR ELECTRICAL USE IN ACCORDANCE WITH NEMA, UL, ANSI/IEEC AND NEC.
- ELECTRICAL METALLIC TUBING (EMT), INTERMEDIATE METAL CONDUIT (IMC), OR RIGID METAL CONDUIT (RMC) SHALL BE USED FOR EXPOSED INDOOR LOCATIONS.
- ELECTRICAL METALLIC TUBING (EMT) OR METAL-CLAD CABLE (MC) SHALL BE USED FOR CONCEALED INDOOR LOCATIONS.
- SCHEDULE 40 PVC UNDERGROUND ON STRAIGHTS AND SCHEDULE 80 PVC FOR ALL ELBOWS/90s AND ALL APPROVED ABOVE GRADE PVC CONDUIT.
- LIQUID-TIGHT FLEXIBLE METALLIC CONDUIT (LIQUID-TITE FLEX) SHALL BE USED INDOORS AND OUTDOORS, WHERE VIBRATION OCCURS OR FLEXIBILITY IS NEEDED.
- CONDUIT AND TUBING FITTINGS SHALL BE THREADED OR COMPRESSION-TYPE AND APPROVED FOR THE LOCATION USED. SET SCREW FITTINGS ARE NOT ACCEPTABLE.
- CABINETS, BOXES AND WIRE WAYS SHALL BE LABELED FOR ELECTRICAL USE IN ACCORDANCE WITH NEMA, UL, ANSI/IEEC AND THE NEC.
- WIREWAYS SHALL BE METAL WITH AN ENAMEL FINISH AND INCLUDE A HINGED COVER, DESIGNED TO SWING OPEN DOWNWARDS (WIREMOULD SPECMATE WIREWAY).
- SLOTTED WIRING DUCT SHALL BE PVC AND INCLUDE COVER (PANDUIT TYPE E OR EQUAL).
- CONDUITS SHALL BE FASTENED SECURELY IN PLACE WITH APPROVED NON-PERFORATED STRAPS AND HANGERS. EXPLOSIVE DEVICES (i.e. POWDER-ACTUATED) FOR ATTACHING HANGERS TO STRUCTURE WILL NOT BE PERMITTED. CLOSELY FOLLOW THE LINES OF THE STRUCTURE, MAINTAIN CLOSE PROXIMITY TO THE STRUCTURE AND KEEP CONDUITS IN TIGHT ENVELOPES. CHANGES IN DIRECTION TO ROUTE AROUND OBSTACLES SHALL BE MADE WITH CONDUIT OUTLET BODIES. CONDUIT SHALL BE INSTALLED IN A NEAT AND WORKMANLIKE MANNER. PARALLEL AND PERPENDICULAR TO STRUCTURE WALL AND CEILING LINES. ALL CONDUIT SHALL BE FISHED TO CLEAR OBSTRUCTIONS. ENDS OF CONDUITS SHALL BE TEMPORARILY CAPPED FLUSH TO FINISH GRADE TO PREVENT CONCRETE, PLASTER OR DIRT FROM ENTERING. CONDUITS SHALL BE RIGIDLY CLAMPED TO BOXES BY GALVANIZED MALLEABLE IRON BUSHING ON INSIDE AND GALVANIZED MALLEABLE IRON LOCKOUT ON OUTSIDE AND INSIDE.
- EQUIPMENT CABINETS, TERMINAL BOXES, JUNCTION BOXES AND PULL BOXES SHALL BE GALVANIZED OR EPOXY-COATED SHEET STEEL. SHALL MEET OR EXCEED UL 50 AND BE RATED NEMA 1 (OR BETTER) FOR INTERIOR LOCATIONS AND NEMA 3R (OR BETTER) FOR EXTERIOR LOCATIONS.
- 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 BE RATED NEMA 1 (OR BETTER) FOR INTERIOR LOCATIONS AND WEATHER PROTECTED (WP OR BETTER) FOR EXTERIOR LOCATIONS.
- NONMETALLIC RECEPTACLE, SWITCH AND DEVICE BOXES SHALL MEET OR EXCEED NEMA OS 2 (NEWEST REVISION) AND BE RATED NEMA 1 (OR BETTER) FOR INTERIOR LOCATIONS AND WEATHER PROTECTED (WP OR BETTER) FOR EXTERIOR LOCATIONS.
- THE CONTRACTOR SHALL NOTIFY AND OBTAIN NECESSARY AUTHORIZATION FROM THE CARRIER AND/OR CROWN CASTLE USA INC. BEFORE COMMENCING WORK ON THE AC POWER DISTRIBUTION PANELS.
- THE CONTRACTOR SHALL PROVIDE NECESSARY TAGGING ON THE BREAKERS, CABLES AND DISTRIBUTION PANELS IN ACCORDANCE WITH THE APPLICABLE CODES AND STANDARDS TO SAFEGUARD LIFE AND PROPERTY.
- INSTALL LAMICOID LABEL ON THE METER CENTER TO SHOW "VERIZON".
- ALL EMPTY/SPARE CONDUITS THAT ARE INSTALLED ARE TO HAVE A METERED MULE TAPE PULL CORD INSTALLED.

CONDUCTOR COLOR CODE		
SYSTEM	CONDUCTOR	COLOR
120/240V, 1Ø	A PHASE	BLACK
	B PHASE	RED
	NEUTRAL	WHITE
	GROUND	GREEN
	A PHASE	BLACK
120/208V, 3Ø	B PHASE	RED
	C PHASE	BLUE
	NEUTRAL	WHITE
	GROUND	GREEN
	A PHASE	BROWN
277/480V, 3Ø	B PHASE	ORANGE OR PURPLE
	C PHASE	YELLOW
	NEUTRAL	GREY
	GROUND	GREEN
	POS (+)	RED**
DC VOLTAGE	NEG (-)	BLACK**

**APWA UNIFORM COLOR CODE:**

- WHITE PROPOSED EXCAVATION
- PINK TEMPORARY SURVEY MARKINGS
- RED ELECTRIC POWER LINES, CABLES, CONDUIT, AND LIGHTING CABLES
- YELLOW GAS, OIL, STEAM, PETROLEUM, OR GASEOUS MATERIALS
- ORANGE COMMUNICATION, ALARM OR SIGNAL LINES, CABLES, OR CONDUIT AND TRAFFIC LOOPS
- BLUE POTABLE WATER
- PURPLE RECLAIMED WATER, IRRIGATION, AND SLURRY LINES
- GREEN SEWERS AND DRAIN LINES

\* SEE NEC 210.5(C)(1) AND (2)  
\*\* POLARITY MARKED AT TERMINATION

**ABBREVIATIONS:**

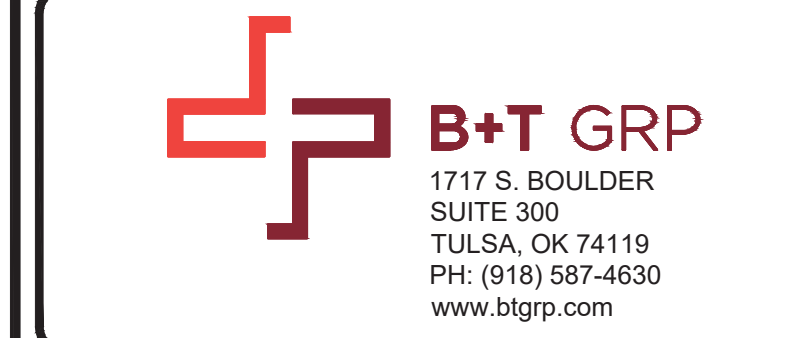
- ANT ANTENNA
- (E) EXISTING
- FIF FACILITY INTERFACE FRAME
- GEN GENERATOR
- GPS GLOBAL POSITIONING SYSTEM
- GSM GLOBAL SYSTEM FOR MOBILE
- LTE LONG TERM EVOLUTION
- MGB MASTER GROUND BAR
- MW MICROWAVE
- (N) NEW
- NEC NATIONAL ELECTRIC CODE
- (P) PROPOSED
- PP POWER PLANT
- QTY QUANTITY
- RECT RECTIFIER
- RBS RADIO BASE STATION
- RET REMOTE ELECTRIC TILT
- RFDS RADIO FREQUENCY DATA SHEET
- RRH REMOTE RADIO HEAD
- RRU REMOTE RADIO UNIT
- SIAD SMART INTEGRATED DEVICE
- TMA TOWER MOUNTED AMPLIFIER
- TYP TYPICAL
- UMTS UNIVERSAL MOBILE TELECOMMUNICATIONS SYSTEM
- W.P. WORK POINT



20 ALEXANDER DRIVE  
WALLINGFORD, CT 06492



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MAHWAH, NJ 07430



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SUITE 300  
TULSA, OK 74119  
PH: (918) 587-4630  
www.btgrp.com

**VERIZON SITE NUMBER:**  
**617226648**

**BU #: 876359  
NORWICH**

**954 NORWICH ROAD  
PLAINFIELD, CT 06062**

**EXISTING 130'-0" MONOPOLE**

**ISSUED FOR:**

REV	DATE	DRWN	DESCRIPTION	DES./QA
B	11/04/22	MEH	PRELIMINARY REVIEW	CV
0	11/22/22	MEH	CONSTRUCTION	ANP
1	11/30/22	YX	CONSTRUCTION	CV
2	2/2/23	YX	CONSTRUCTION	LR
3	2/17/23	YX	CONSTRUCTION	MTJ
4	3/9/23	YX	CONSTRUCTION	LR

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BER:2386985  
Expires 3/31/23

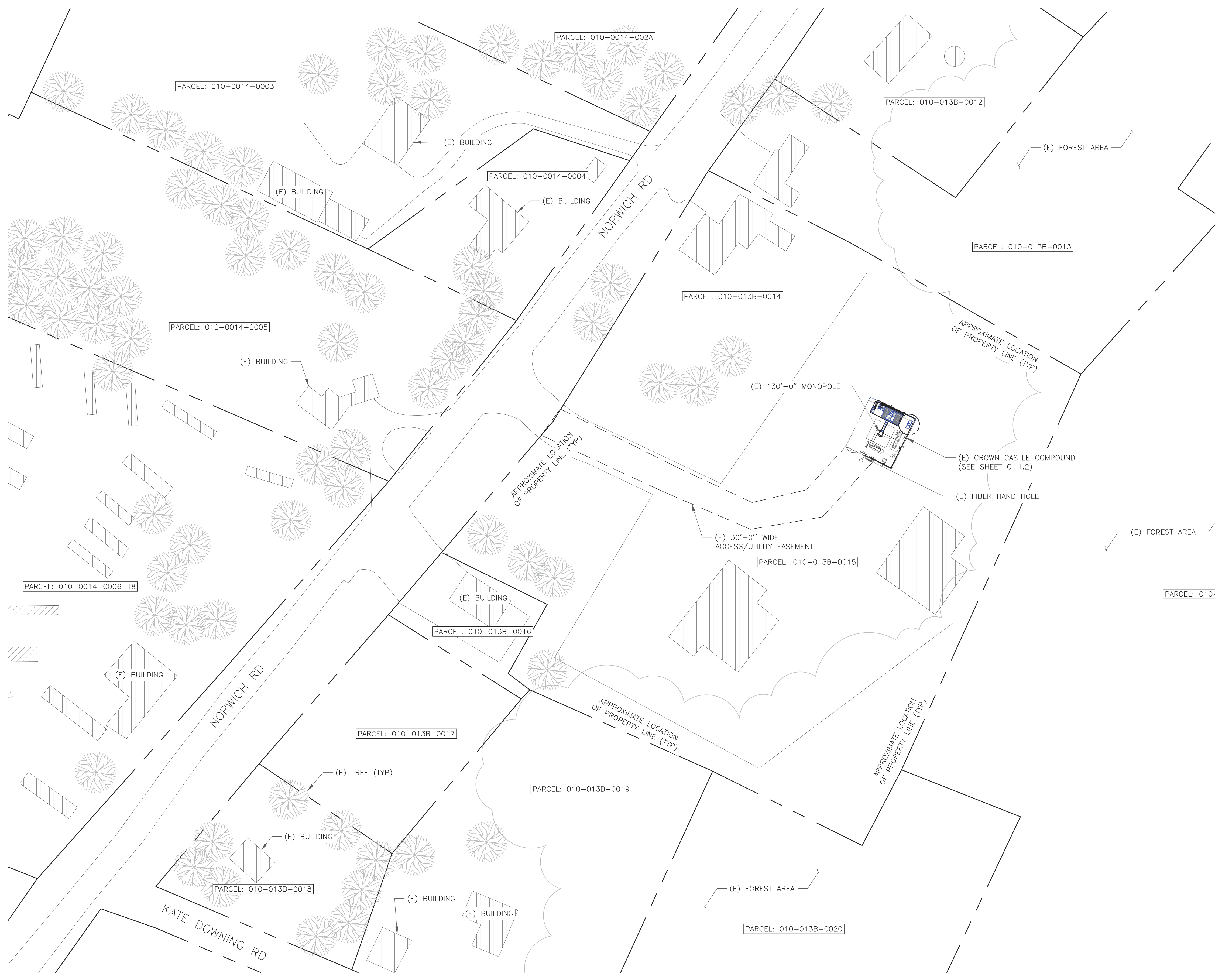
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**SHEET NUMBER:**  
**T-2**

**REVISION:**  
**4**



**SITE PLAN DISCLAIMER:**  
 PROPERTY LINES AND STRUCTURES HAVE BEEN DIGITIZED FROM PREVIOUS PLAN SETS OR FROM ASSESSORS MAPS. B+T GROUP HAS NOT COMPLETED A SITE SURVEY AND THEREFORE MAKES NO CLAIMS AS TO THE ACCURACY OF INFORMATION DEPICTED ON THIS SHEET.



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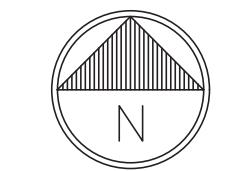
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**REVISION:** 4

1 OVERALL SITE PLAN  
 SCALE: 1" = 50'-0" (FULL SIZE)  
 1" = 100'-0" (11x17)



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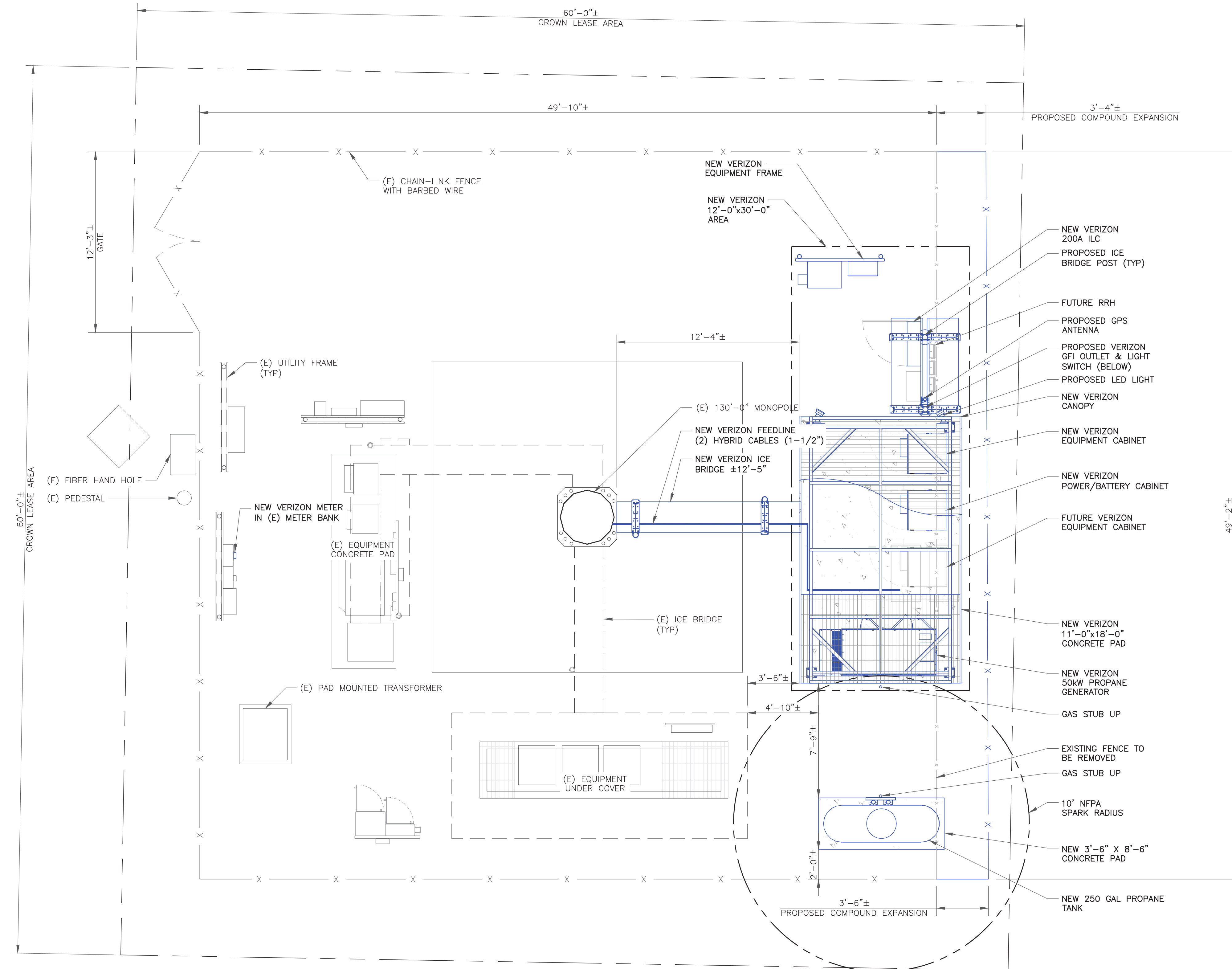
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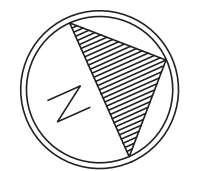
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REVISION:

**4**



1 SITE PLAN  
SCALE: 1/4"=1'-0" (FULL SIZE)  
1/8"=1'-0" (11x17)



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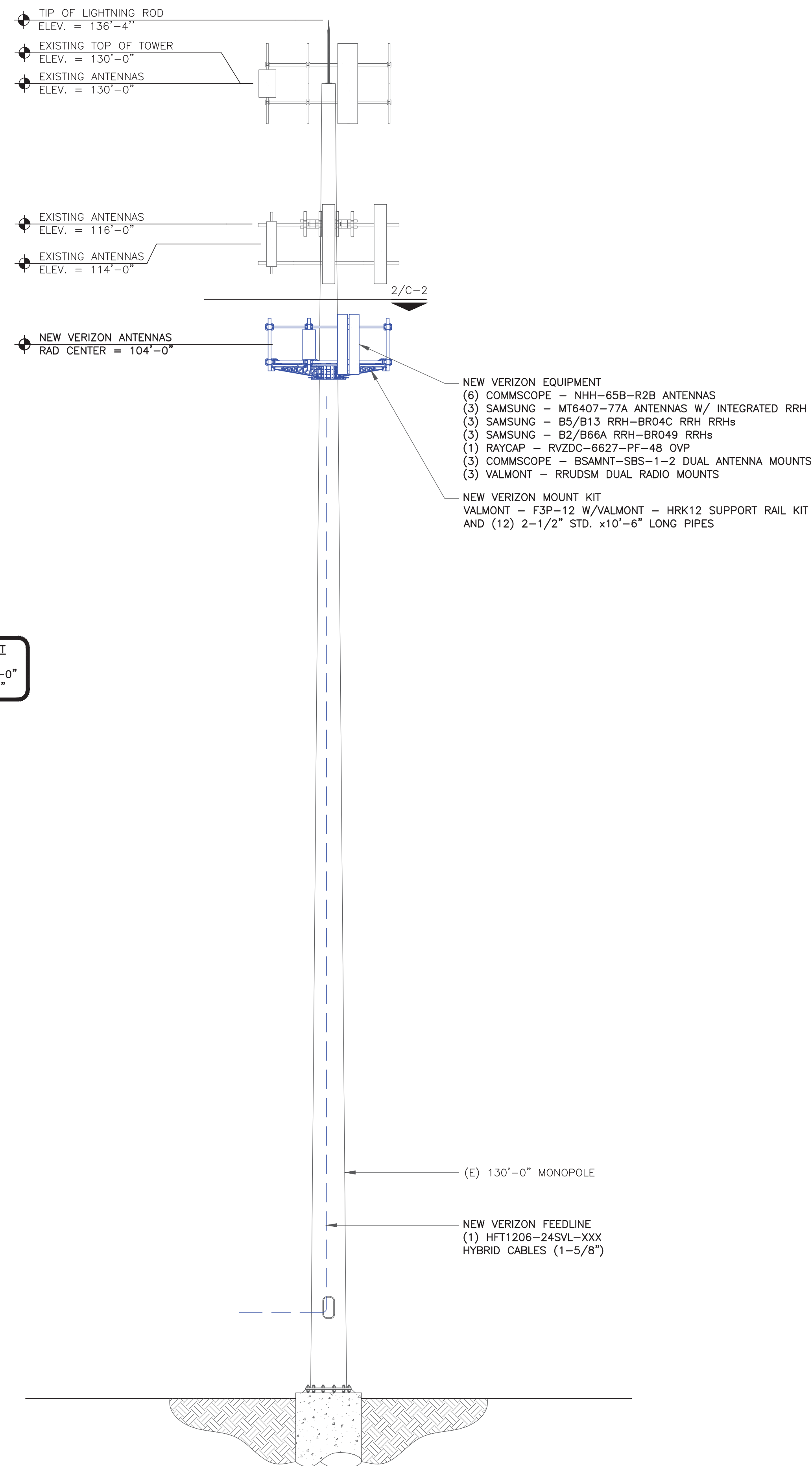
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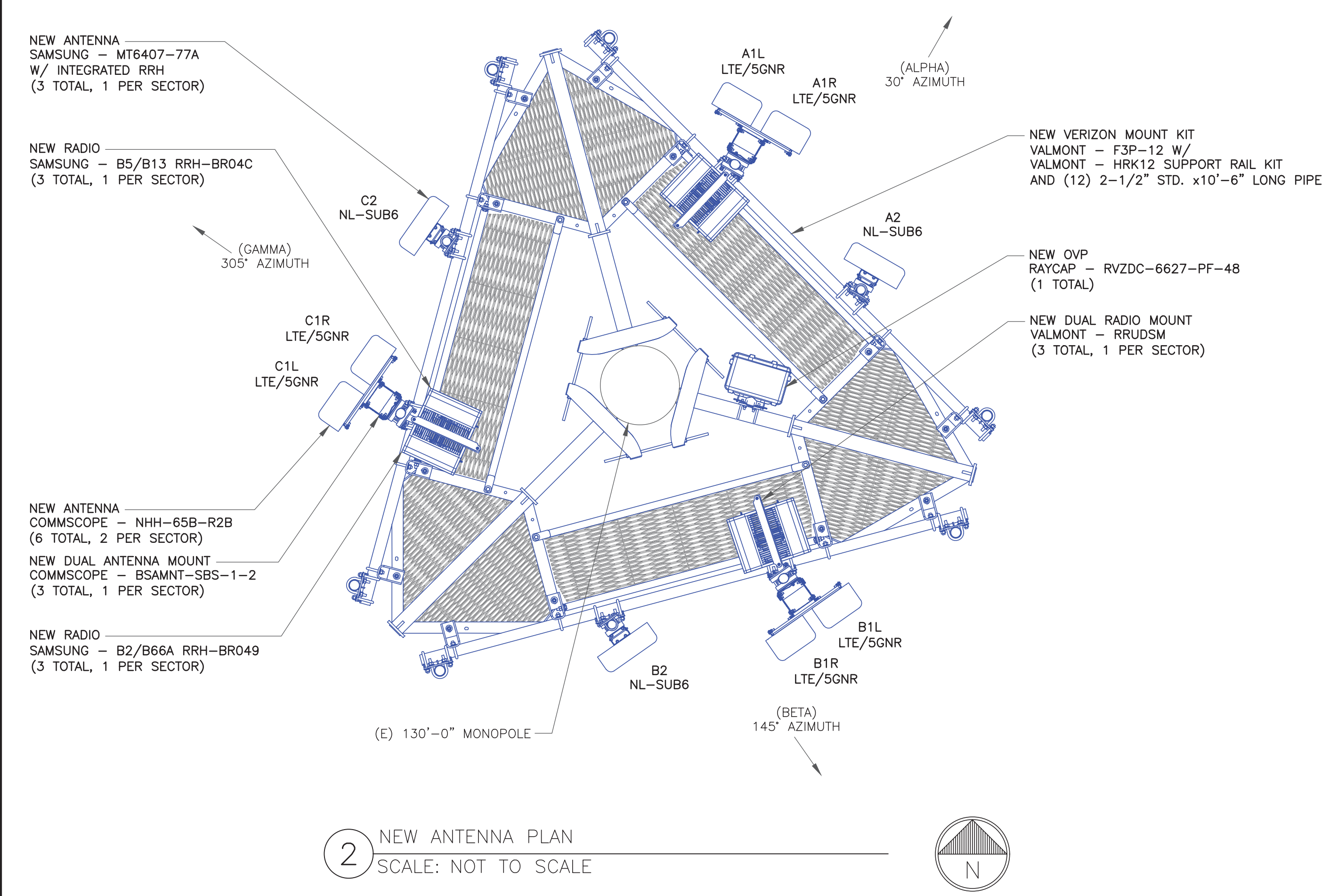
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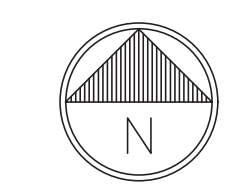
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**1** TOWER ELEVATION  
SCALE: NOT TO SCALE

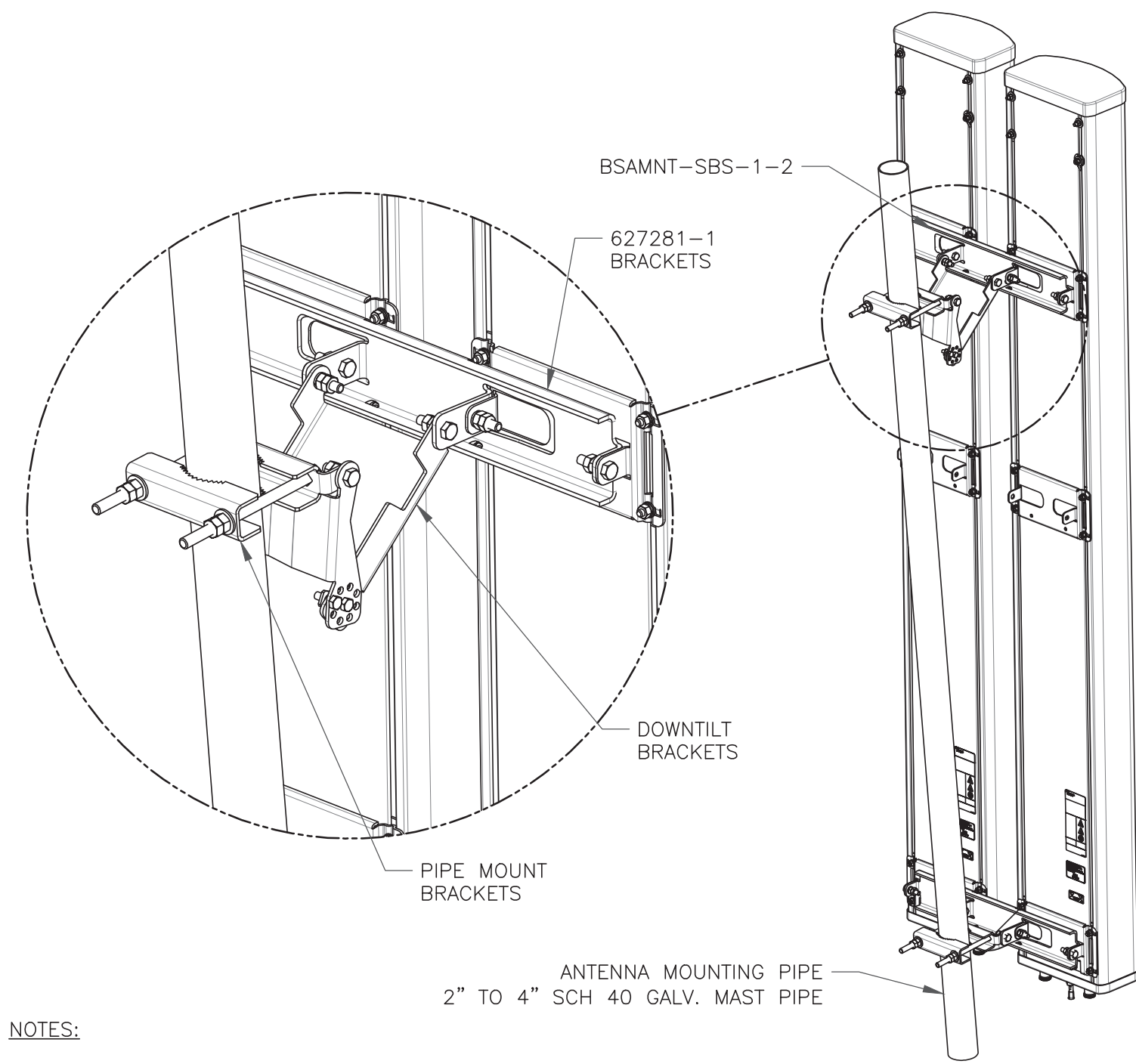


**2** NEW ANTENNA PLAN  
SCALE: NOT TO SCALE



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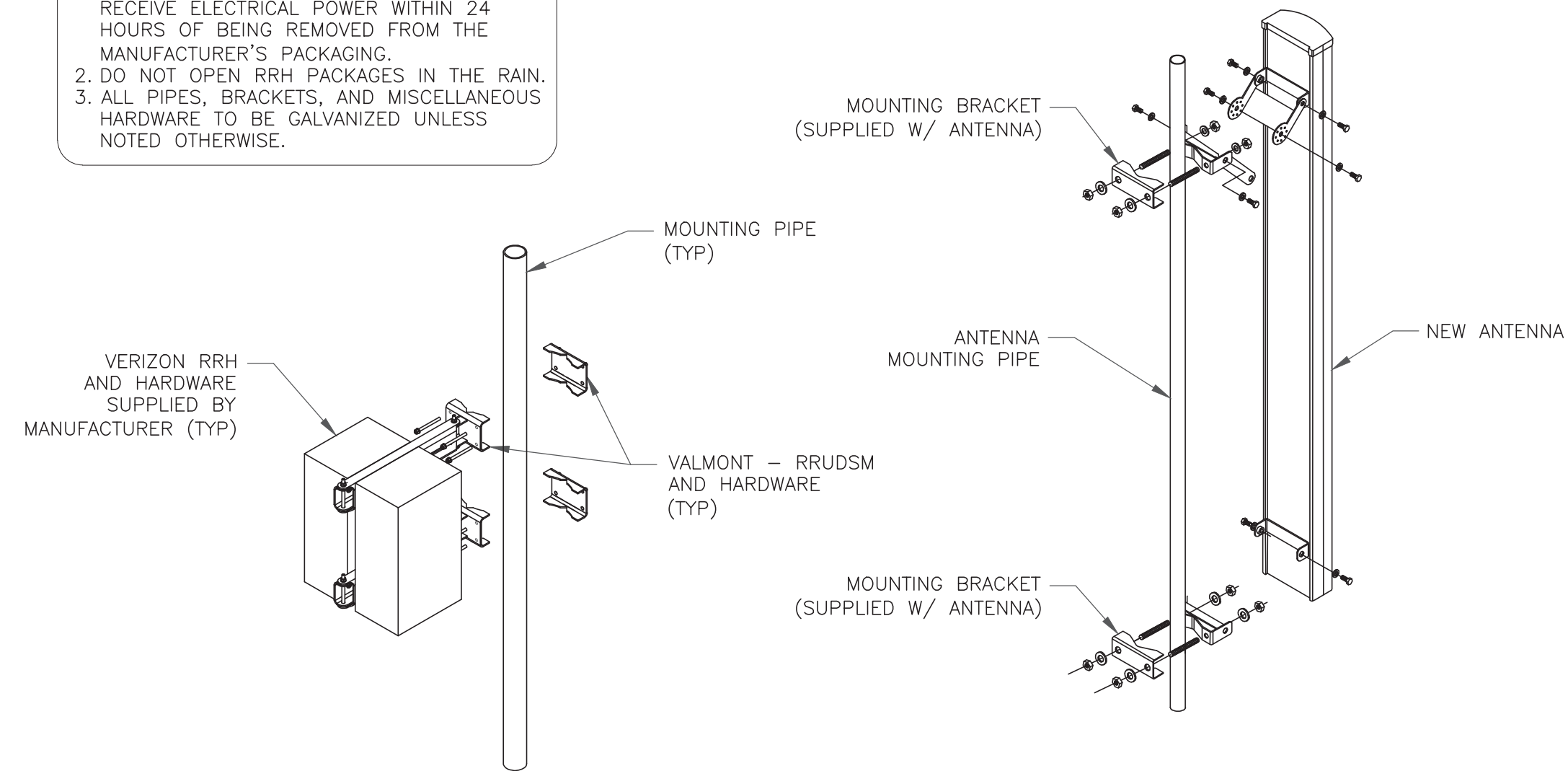
**NOTES:**

- BSAMNT-SBS-1-2 KIT CONTAINS (2) 627281 MOUNTING BRACKETS.
- TORQUE THE M10 BOLT ASSEMBLY TO 37 N.m. PER MANUFACTURE'S RECOMMENDATIONS.

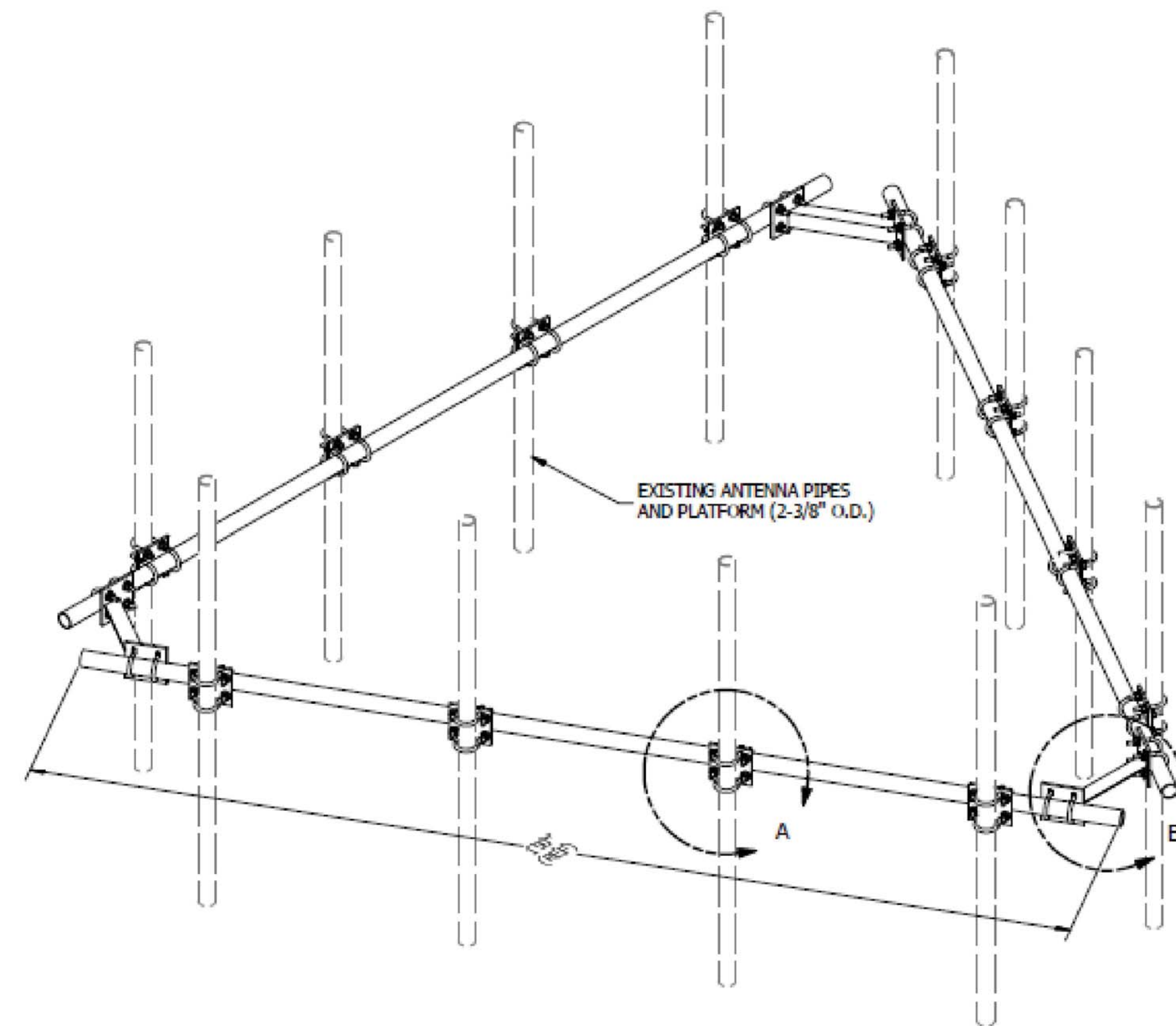
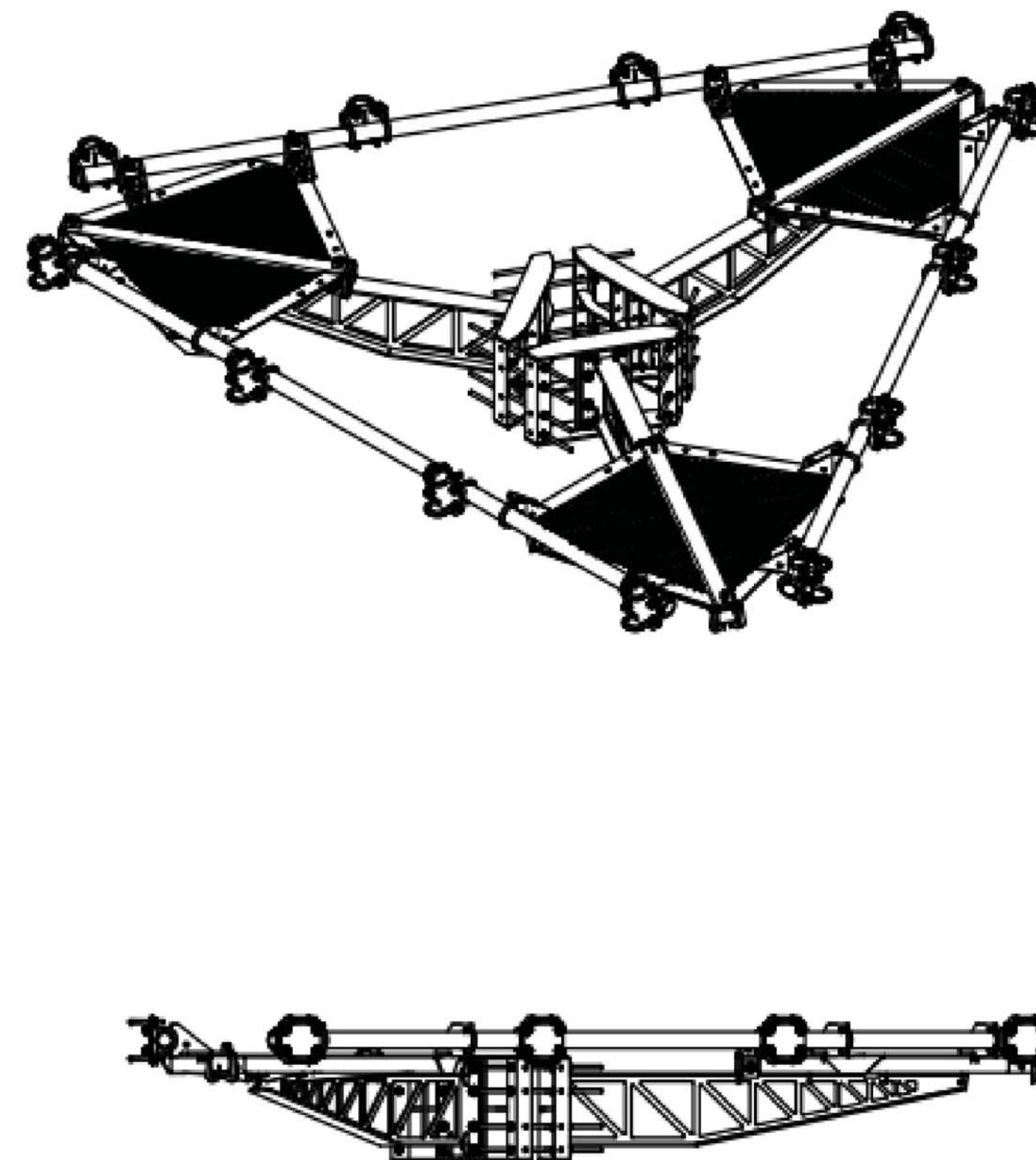
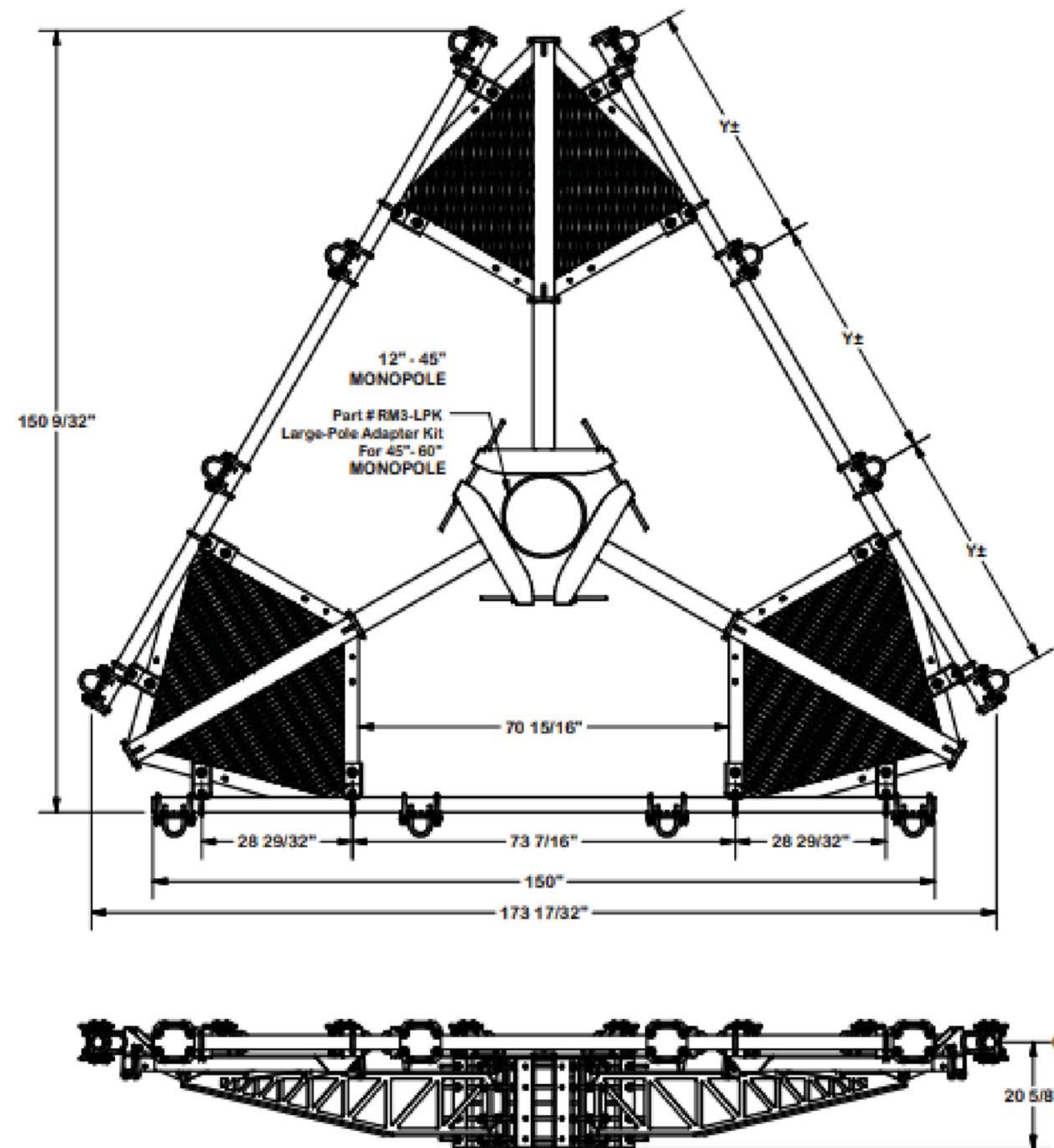
1 COMMSCOPE - BSAMNT-SBS-1-2  
SCALE: NOT TO SCALE

**INSTALLER NOTES:**

1. COMPLY WITH MANUFACTURERS INSTRUCTIONS TO ENSURE THAT ALL RRHs RECEIVE ELECTRICAL POWER WITHIN 24 HOURS OF BEING REMOVED FROM THE MANUFACTURER'S PACKAGING.
2. DO NOT OPEN RRH PACKAGES IN THE RAIN.
3. ALL PIPES, BRACKETS, AND MISCELLANEOUS HARDWARE TO BE GALVANIZED UNLESS NOTED OTHERWISE.



2 ANTENNA WITH RRHs MOUNTING DETAIL  
SCALE: NOT TO SCALE



3 VALMONT - F3P-12W & VALMONT - HRK12  
SCALE: NOT TO SCALE

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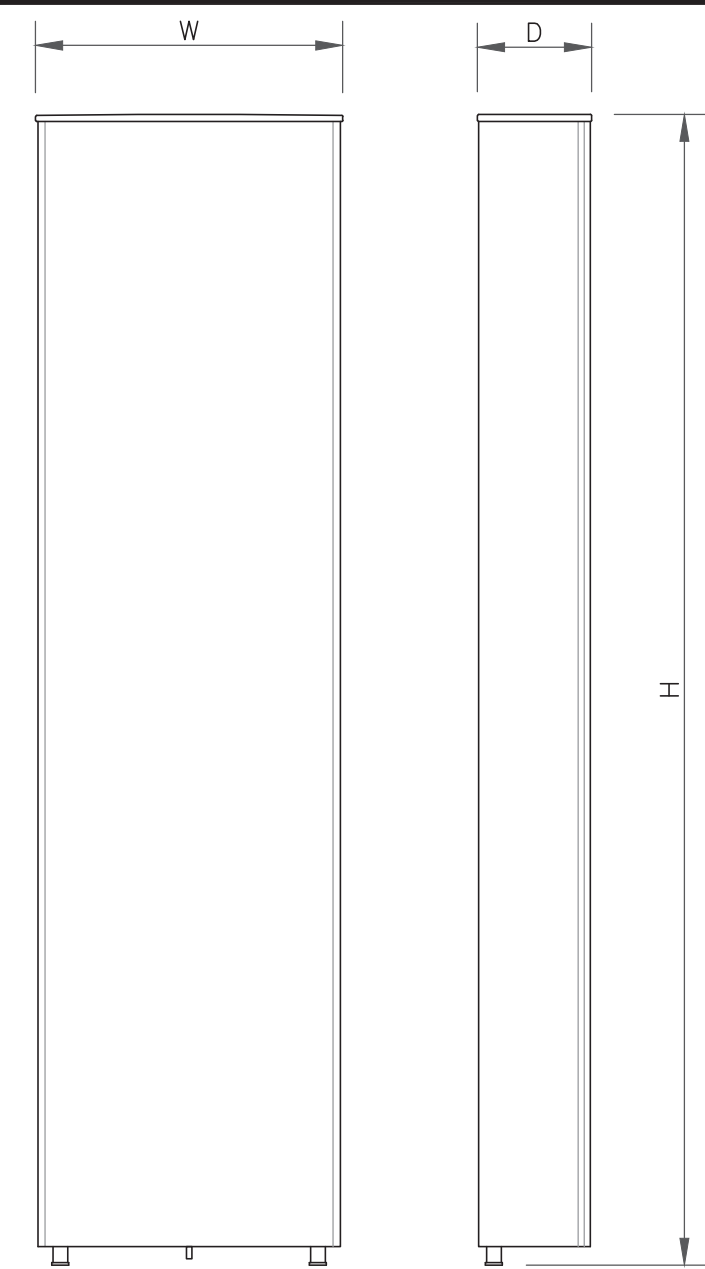
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**C-3**

REVISION:

**4**

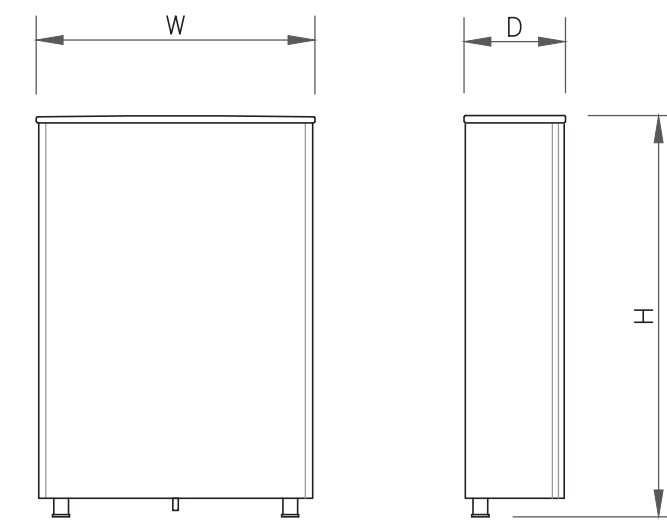




**ANTENNA SPECS**

MANUFACTURER	COMMSCOPE
MODEL #	NHH-65B-R2B
WIDTH	11.90"
DEPTH	7.10"
HEIGHT	72.00"
WEIGHT	43.70 LBS

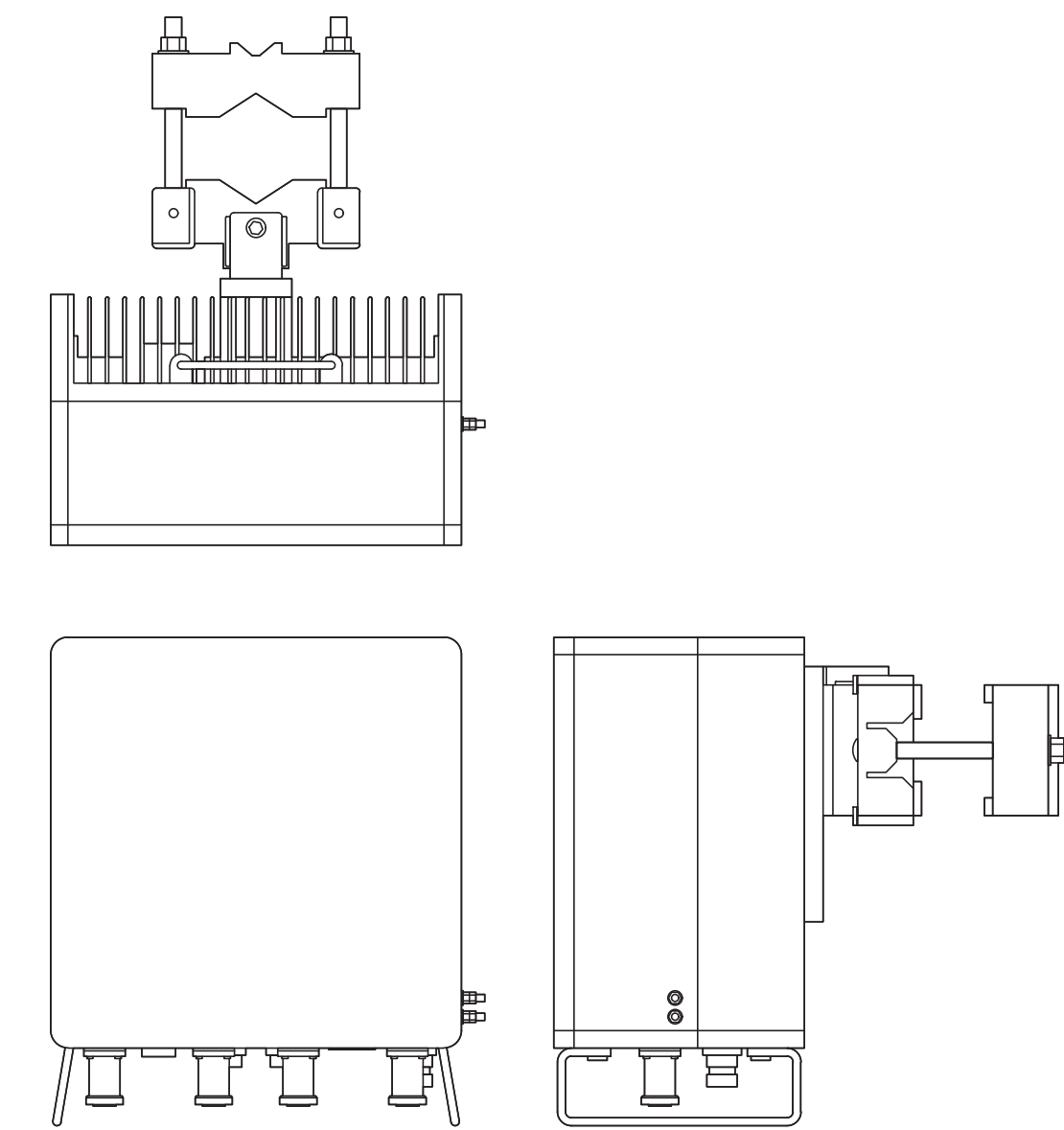
1 ANTENNA SPECS  
SCALE: NOT TO SCALE



**ANTENNA SPECS**

MANUFACTURER	SAMSUNG
MODEL #	MT6407-77A
WIDTH	16.06"
DEPTH	5.51"
HEIGHT	35.06"
WEIGHT	81.57 LBS

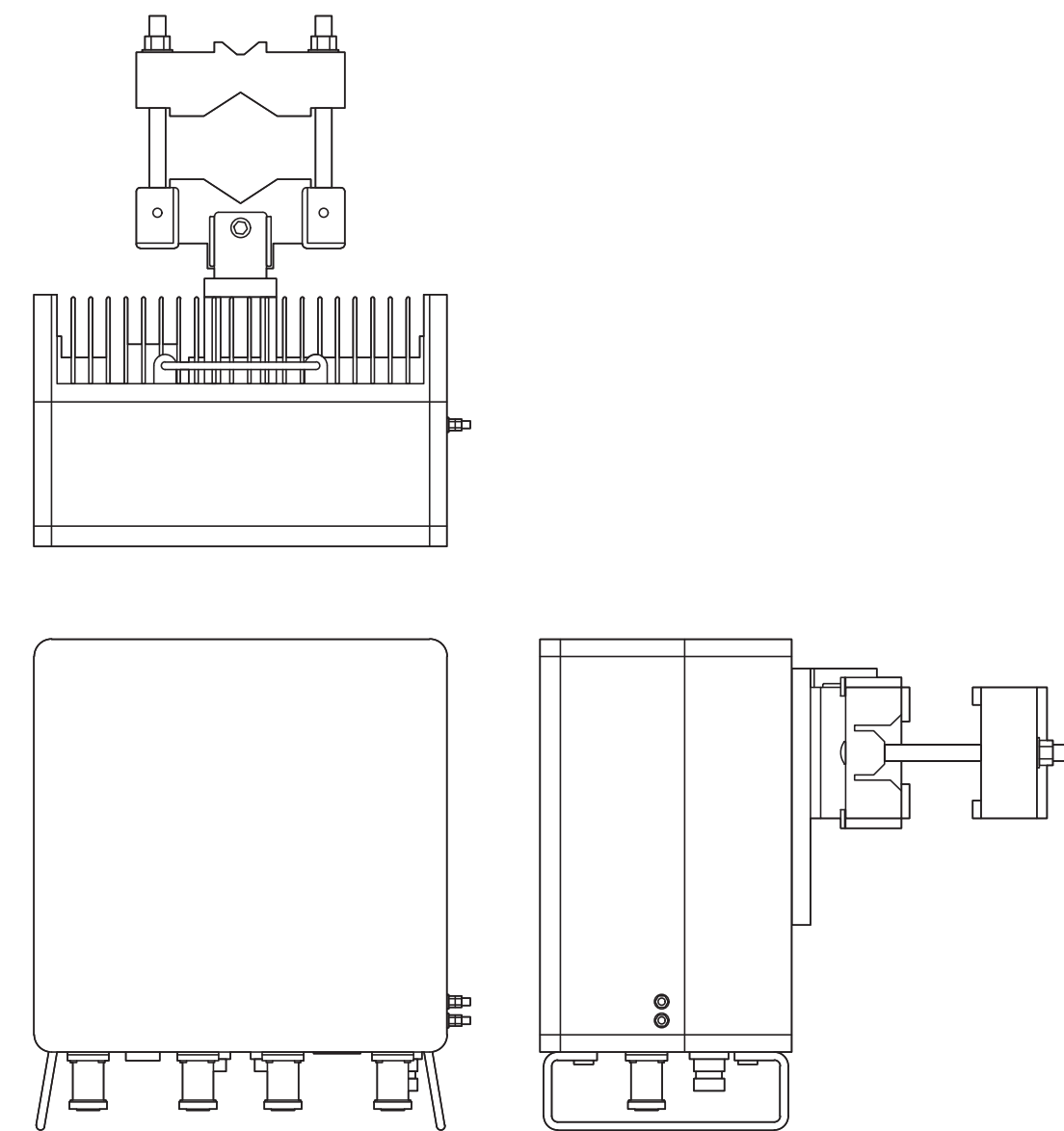
2 ANTENNA SPECS  
SCALE: NOT TO SCALE



**RRU SPECS**

MANUFACTURER	SAMSUNG
MODEL #	B2/B66A RRH-BR049
WIDTH	15.00"
DEPTH	10.00"
HEIGHT	15.00"
WEIGHT	84.40 LBS

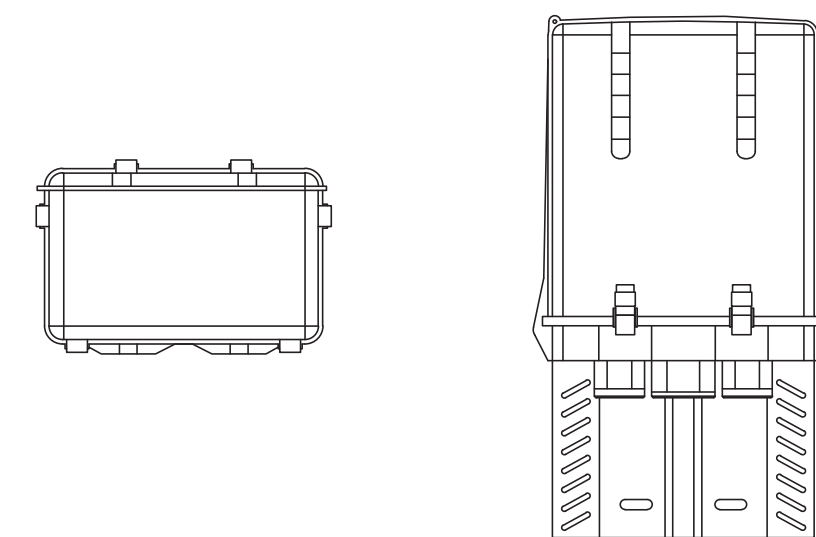
3 RRU SPECS  
SCALE: NOT TO SCALE



**RRU SPECS**

MANUFACTURER	SAMSUNG
MODEL #	B5/B13 RRH-BR04C
WIDTH	15.00"
DEPTH	8.10"
HEIGHT	15.00"
WEIGHT	70.30 LBS

4 RRU SPECS  
SCALE: NOT TO SCALE



COMMSCOPE - RVZDC-6627-PF-48  
WEIGHT (WITHOUT MOUNTING HARDWARE): 32.0 LBS  
SIZE (HxWxD): 29.50x16.50x12.60 IN.

RATED WIND VELOCITY: 150 MPH (SUSTAINED)  
OPERATING TEMPERATURE: -40° C TO +80° C  
NOMINAL OPERATING DC VOLTAGE: 48 VDC  
VOLTAGE PROTECTION RATING (VRP): 400V

5 RAYCAP - RVZDC-6627-PF-48  
SCALE: NOT TO SCALE

6 NOT USED  
SCALE: NOT TO SCALE



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SUITE 300  
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VERIZON SITE NUMBER:  
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BU #: **876359**  
**NORWICH**

954 NORWICH ROAD  
PLAINFIELD, CT 06062

EXISTING 130'-0" MONOPOLE

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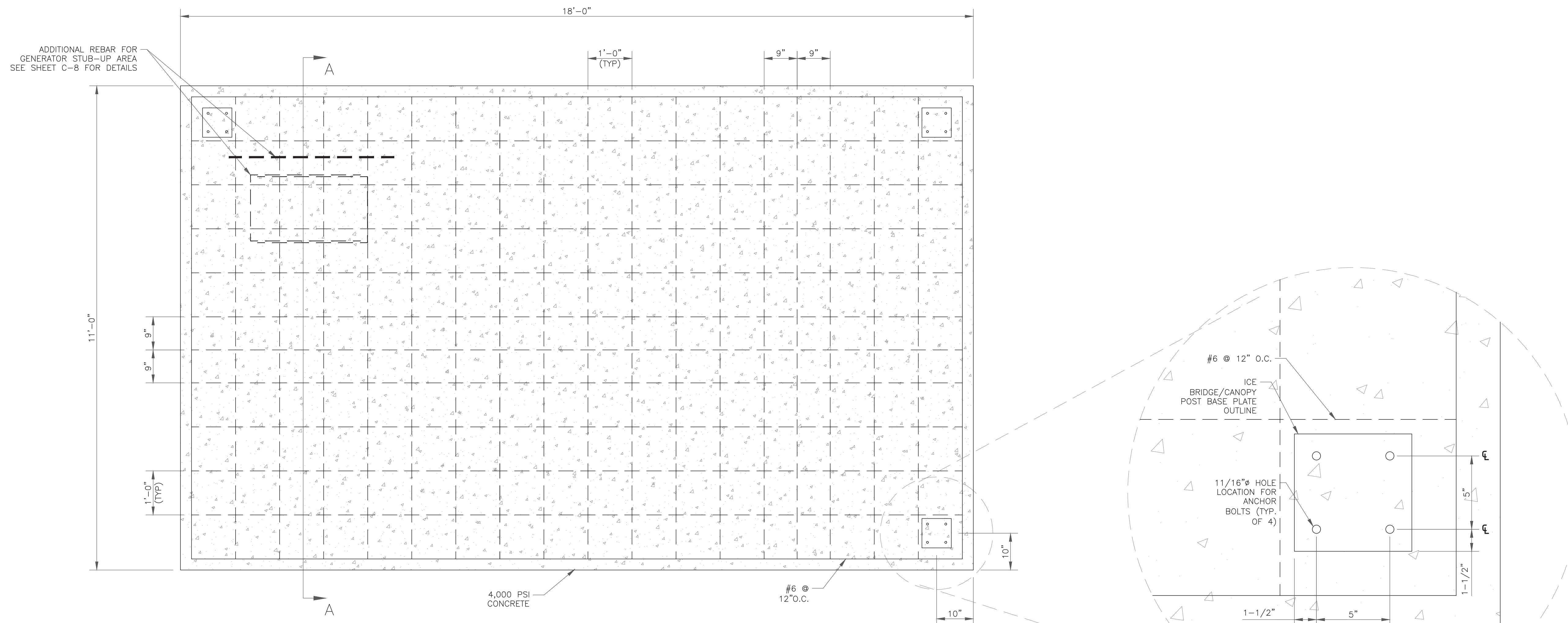
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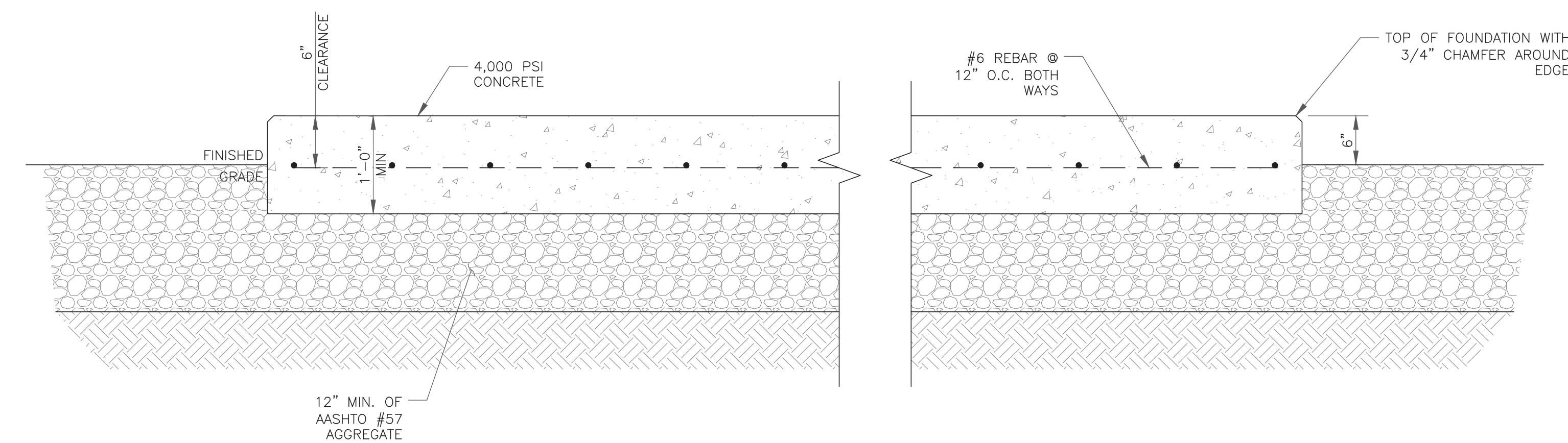
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**1** EQUIPMENT PAD FOUNDATION  
SCALE: NOT TO SCALE



**2** SECTION 'A-A'  
SCALE: NOT TO SCALE

- FOUNDATION NOTES:**
- REFER TO CIVIL DRAWINGS FOR ORIENTATION OF FOUNDATION.
  - FOUNDATION IS DESIGNED FOR THE FOLLOWING LOADS: FLOOR LIVE LOAD 40 PSF 3.
  - EQUIPMENT SHALL NOT BE SET UNTIL FOUNDATION HAS BEEN CURED FOR 72 HOURS MINIMUM.
  - ALL CONCRETE SHALL HAVE 28 DAY STRENGTH OF 4000 PSI MINIMUM, WITH A MAXIMUM SLUMP OF 3" AND SHALL BE AIR ENTRAINED.
  - REINFORCING STEEL TO HAVE INTERMEDIATE GRADE DEFORMED BARS OF NEW BILLET STEEL CONFORMING TO ASTM A615, GRADE 60.
  - FOUNDATION SHALL BE INSTALLED PER VERIZON WIRELESS STATEMENT OF WORK SECTION 7.1.
  - CONTRACTOR MUST GROUND THE FOUNDATION PER VERIZON WIRELESS NSTD46 STANDARDS.
  - CONTRACTOR TO ENSURE FOUNDATION IS POURED TO MEET FLATNESS LEVEL TOLERANCES AS INDICATED IN ACI 4.5.6 AND ACI 4.5.7.
  - SLAB TOLERANCE IS ± 1/4".
  - THIS FOUNDATION IS DESIGNED FOR A MINIMUM OF 1,000 PSF ALLOWABLE SOIL BEARING CAPACITY.
  - FOUNDATION BEARING MATERIAL SHALL BE TESTED & VERIFIED

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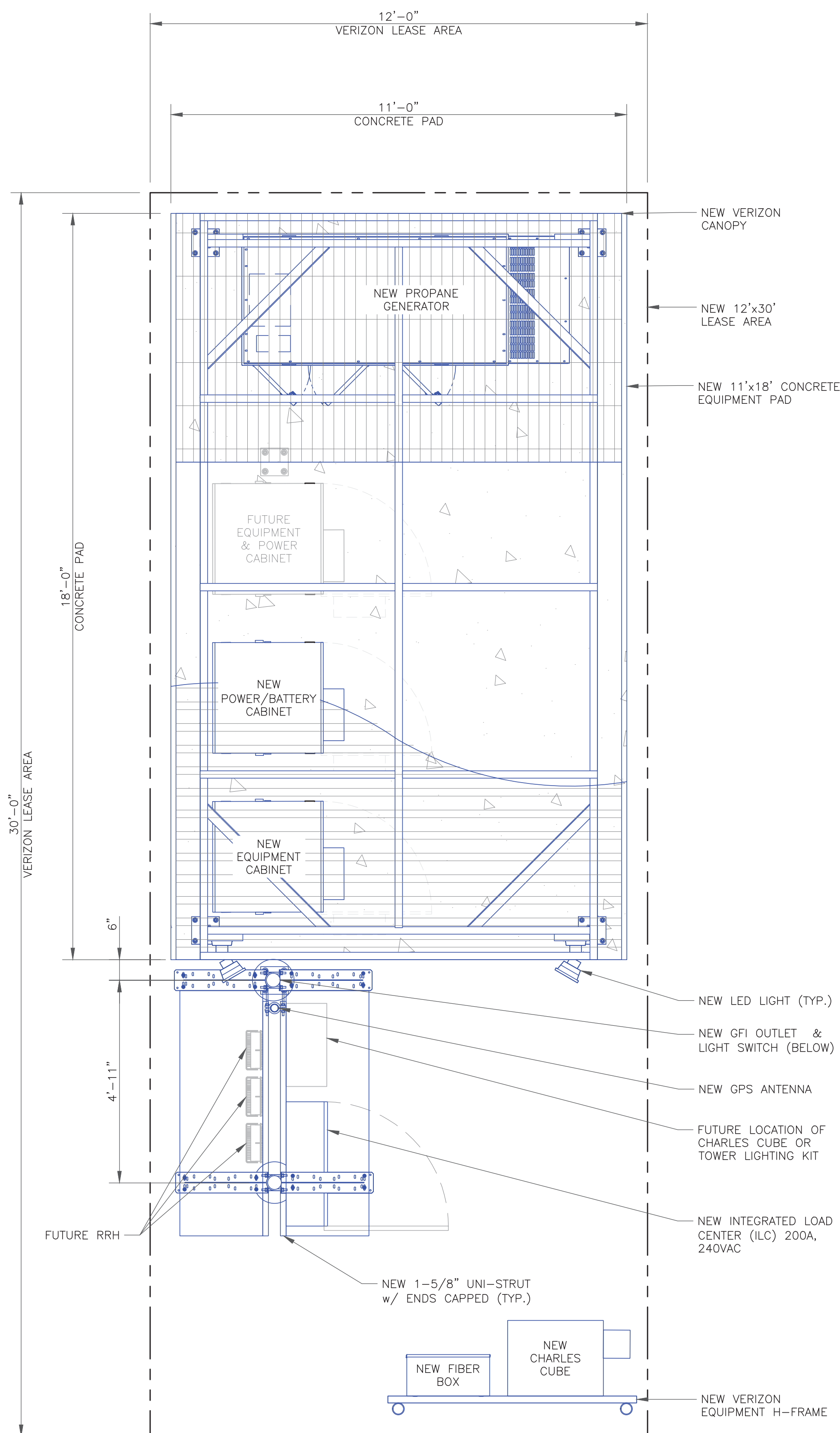
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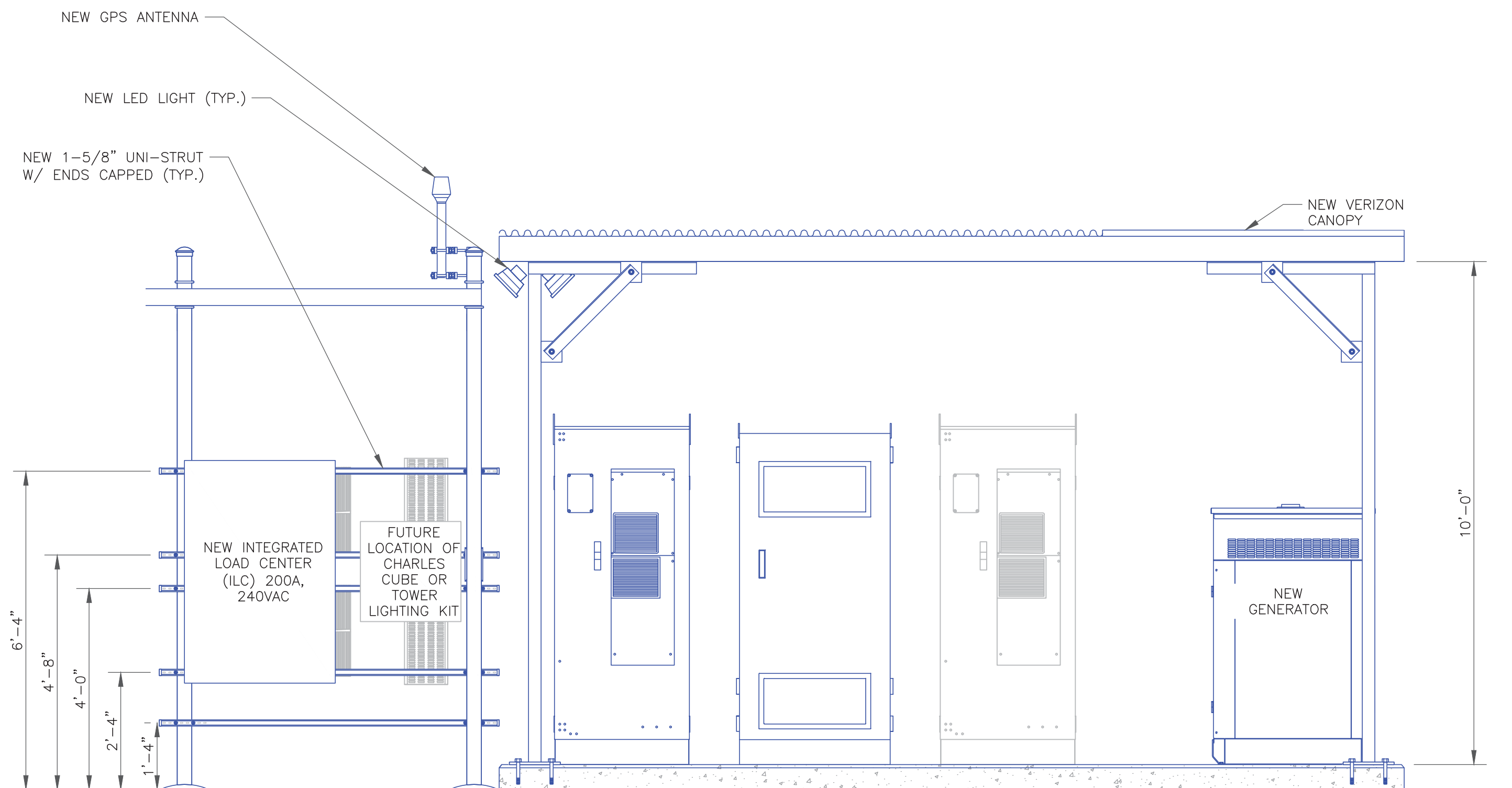
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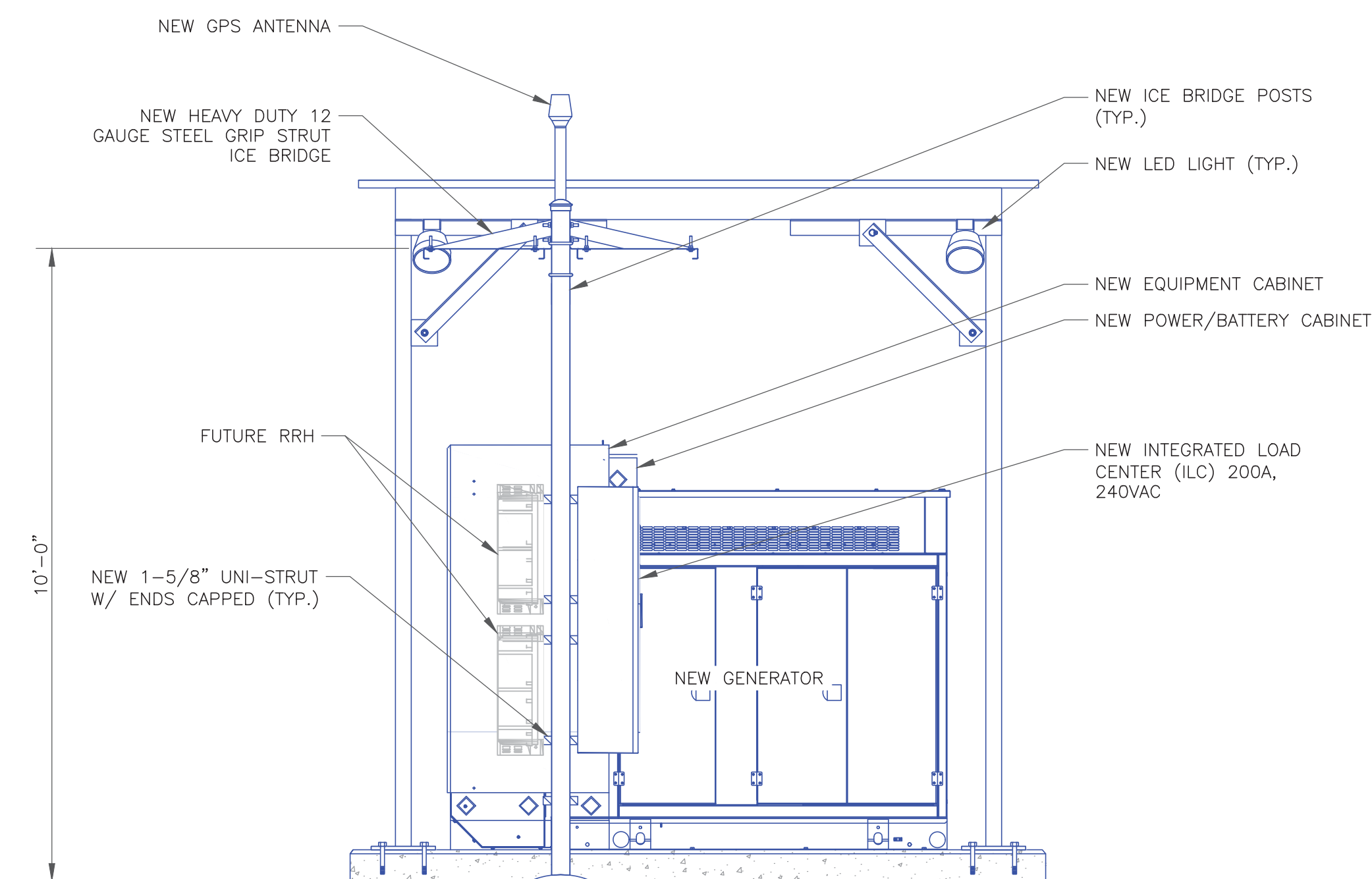
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1 EQUIPMENT PAD PLAN IN 12'-0"x30'-0" LEASE AREA  
SCALE: NOT TO SCALE



2 FRONT ELEVATION  
SCALE: NOT TO SCALE



3 SIDE ELEVATION  
SCALE: NOT TO SCALE



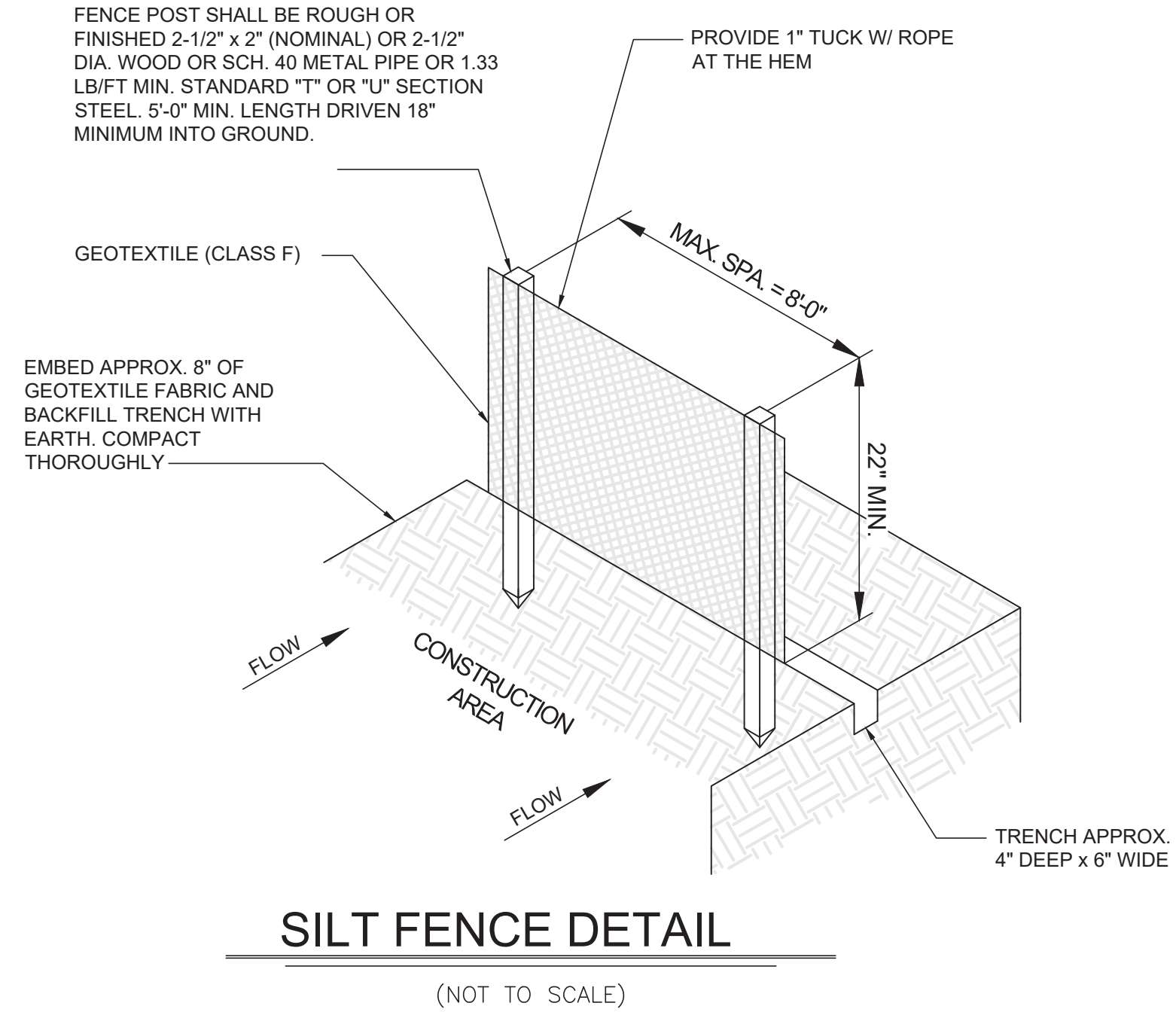
**STORM WATER POLLUTION PREVENTION NOTES**

- ALL WORK SPECIFIED AS A/AN DOT ITEM SHALL BE GOVERNED BY THE CURRENT DEPARTMENT OF TRANSPORTATION CONSTRUCTION AND MATERIAL SPECIFICATION HANDBOOK. IT IS CONTRACTORS RESPONSIBILITY TO POSSESS AND BE FAMILIAR WITH APPLICABLE SECTIONS.
- THIS CONTRACT DRAWING SHALL BE MADE AVAILABLE ON SITE AT ALL TIMES AND PRESENTED UPON REQUEST. IF UNFORESEEN STORM WATER POLLUTION PREVENTION IS ENCOUNTERED, ADDITIONAL STORM WATER POLLUTION PREVENTION (SWPP) MEASURES MAY BE REQUESTED BY THE OWNER, COUNTY ENGINEER, PROJECT ENGINEER OR SOIL CONSERVATION SERVICE REPRESENTATIVE AT ANYTIME. SUCH REQUESTS SHALL BE IMPLEMENTED IMMEDIATELY AT CONTRACTOR'S EXPENSE.
- ALL STORM WATER POLLUTION PREVENTION ITEMS SHALL BE INSTALLED AS SHOWN OR NOTED ON THIS SHEET.
- PLANT TEMPORARY SEEDING AND MULCHING IN ALL AREAS THAT SHALL BE INACTIVE FOR 15 DAYS OR MORE. ALL DISTURBED AND ERODED EARTH SHALL BE REGRADED AND SEEDED WITHIN 14 DAYS WITH SEEDING, AS DEFINED ABOVE AND AS SHOWN ON THE TABLE BELOW. TO ESTABLISH STABILITY AND PROVIDE SEDIMENT CONTROL, WHERE POSSIBLE. TEMPORARY SEEDING GROWTH SHALL NOT BE MOWED UNTIL IT HAS GONE TO SEED FOR 1 YEAR.

SEEDING DATES	SEED TYPE	APPLICATION RATE PER 1,000 S.F.
MARCH 1 - AUGUST 15	OATS PERENNIAL RYE GRASS OR TALL FESCUE	3# 1#
AUGUST 16 - NOVEMBER 1	RYE, WHEAT OR PERENNIAL RYE GRASS TALL FESCUE	3# 1#
AFTER NOVEMBER 1	STRAW OR HAY MULCH	2-3 BALES
SEED BED PREPARATION	LIME 10-10-10 OR 12-12-12 FERTILIZER	100# 12-15#

**SILT FENCE AND EROSION CONTROL NOTES:**

- GEOTEXTILE FABRIC TO BE FASTENED SECURELY TO FENCE POSTS BY WIRE TIES OR HOG RINGS.
- ENDS OF INDIVIDUAL ROLLS OF GEOTEXTILE FABRIC SHALL BE SECURELY FASTENED TO A COMMON POST OR OVERLAPPED 3'-0" MINIMUM.
- THIS DEVICE IS INTENDED TO CONTROL SHEET FLOW ONLY. IT WILL NOT BE USED IN AREAS OF CONCENTRATED FLOW WITH A DRAINAGE ARE OF 1/2 ACRE OR MORE.
- ALL SILT FENCING SHALL BE INSTALLED PRIOR TO COMMENCING ANY LAND DISTURBING ACTIVITIES, AND SHALL REMAIN IN PLACE UNTIL ALL CONSTRUCTION ACTIVITIES ARE COMPLETED.



- PERMANENT VEGETATION SHALL BE INSTALLED WITHIN 10 DAYS AT THE COMPLETION OF ANY GRADED AREAS, WEATHER PERMITTING. ALL PERMANENT VEGETATION SHALL CONSIST OF PLANTING AND SOD AS DETAIL ON THE LANDSCAPE PLAN L-1
- AT SUCH TIME ROUGH GRADING OF THE SITE IS COMPLETE AND DRAINAGE DIVERTS TO INLETS, INLET SEDIMENT FILTERS SHALL BE INSTALLED AT ALL INLET STRUCTURES TO KEEP PIPING SYSTEMS FREE OF SILTATION.
- SILT BARRIERS SHALL BE INSTALLED AROUND ALL EXISTING OR NEW STORM INLETS, CATCH BASINS, AND YARD DRAINS. INSTALL ROCK CHECK DAMS FOR HEADWALL INLETS FOR STORM WATER POLLUTION PREVENTION.
- STORM WATER POLLUTION PREVENTION MEASURES SHALL BE INSTALLED OR TOPSOIL STOCKPILES AND OTHER TEMPORARILY DISTURBED AREAS AS SHOWN ON THESE PLANS AND AS DIRECTED BY THE ENGINEER.
- CONTRACTOR SHALL INSPECT ALL SWPP MEASURES DAILY AND REPAIR AS NECESSARY TO PREVENT EROSION. SILTATION SHALL BE REMOVED FROM AREAS WHERE FAILURES HAVE OCCURRED AND CORRECTIVE ACTION TAKEN WITHIN 24 HOURS TO MAINTAIN ALL SWPP.
- SILT BARRIERS, CONSTRUCTION ENTRANCES, AND SILT FENCES SHALL REMAIN IN PLACE UNTIL A GOOD STAND OF GRASS HAS BEEN OBTAINED AND/OR PAVING OPERATIONS ARE COMPLETE. CONTRACTOR SHALL KEEP SILT FROM ENTERING ANY STORM DRAINAGE SYSTEM. ONCE SITE HAS BEEN COMPLETELY STABILIZED, ANY SILT IN PIPES AND DRAINAGE SWALES SHALL BE REMOVED WITHIN 10 DAYS.
- TEMPORARY SEDIMENTATION AND STORM WATER POLLUTION PREVENTION MEASURES MUST BE INSPECTED AND LOGGED BY THE CONTRACTOR FOR INSPECTION. LOGGING SHALL BE WEEKLY AND AFTER RAIN STORMS.
- UTILITY COMPANIES MUST COMPLY WITH ALL STORM WATER POLLUTION PREVENTION MEASURES AS DEFINED ON THE STORM WATER PREVENTION PLANS, DETAILS AND NOTES.
- THE TOTAL AREA OF DISTURBANCE FOR THIS PROJECT IS 0.386 ACRES.
- ALL EXISTING WATER COURSES WITHIN THE PROJECT LIMITS SHALL BE TEMPORARILY PROTECTED DURING LAND CLEARING AND GRADING OPERATIONS. SOILS WITHIN 50 FEET OF SAID WATER COURSES SHALL BE STABILIZED WITHIN 2 DAYS OF THE INITIAL CLEARING / GRADING OPERATION AS SHOWN ON PLANS.
- ALL DISTURBED AREAS SHALL BE STABILIZED WITHIN 7 DAYS OF FINAL GRADING.
- IT IS THE CONTRACTOR'S RESPONSIBILITY TO MAINTAIN ALL SEDIMENTATION AND STORM WATER POLLUTION PREVENTION ITEMS AT ALL TIMES.
- IT IS THE CONTRACTOR'S RESPONSIBILITY TO MAINTAIN ALL SEDIMENTATION AND STORM WATER POLLUTION PREVENTION ITEMS AT ALL TIMES.
- ALL STORM WATER POLLUTION PREVENTION PRACTICES WILL BE INSTALLED BEFORE ANY OTHER EARTH MOVING OCCURS.
- THE FOLLOWING STORM WATER POLLUTION PREVENTION AND SEDIMENT CONTROL MEASURES WILL BE USED ON THIS SITE:
  - SILT BARRIERS
  - SILT FENCE
  - CONSTRUCTION ENTRANCE

**CONSTRUCTION SEQUENCE**

- STAKE AND/OR FLAG LIMITS OF CLEARING
- DURING PRECONSTRUCTION MEETING ALL EROSION & SEDIMENT CONTROL FACILITIES & PROCEDURES SHALL BE DISCUSSED.
- CLEARING & GRUBBING, AS NECESSARY, FOR INSTALLATION OF PERIMETER CONTROLS.
- INSTALL SILT FENCE PERIMETER CONTROLS AS SHOWN ON PLANS.
- INSTALL CONSTRUCTION ENTRANCE. IF CONDITIONS ARE SUCH THAT MUD IS COLLECTION ON VEHICLE TIRES, THE TIRES MUST BE CLEANED BEFORE THE VEHICLES ENTER THE PUBLIC ROADWAY. THE SITE ENTRANCE SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT THE TRACKING OR FLOW OF MUD INTO THE PUBLIC RIGHT-OF-WAY. ALL MATERIALS SPILLED, DROPPED, WASHED OR TRACKED FROM VEHICLES ONTO THE ROADWAY MUST BE REMOVED PROMPTLY.
- CLEARING & GRUBBING THE REMAINING SITE AS NECESSARY.
- BEGIN FILLING & GRADING AS REQUIRED TO REACH SUBGRADE.
- CONSTRUCT AND MAINTAIN TEMPORARY DRAINAGE SWALE DURING FILLING AND GRADING ACTIVITIES.
- CONSTRUCT SITE WORK INCLUDING STORM DRAINAGE FACILITIES.
- UPON INSTALLATION OF STORM DRAINAGE CATCH BASINS, INSTALL INLET PROTECTION.
- MAINTAIN EROSION & SEDIMENTATION CONTROL MEASURES UNTIL THE SITE HAS BEEN COMPLETELY STABILIZED.
- REMOVE SEDIMENT CONTROLS.

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**NORWICH**  
  
954 NORWICH ROAD  
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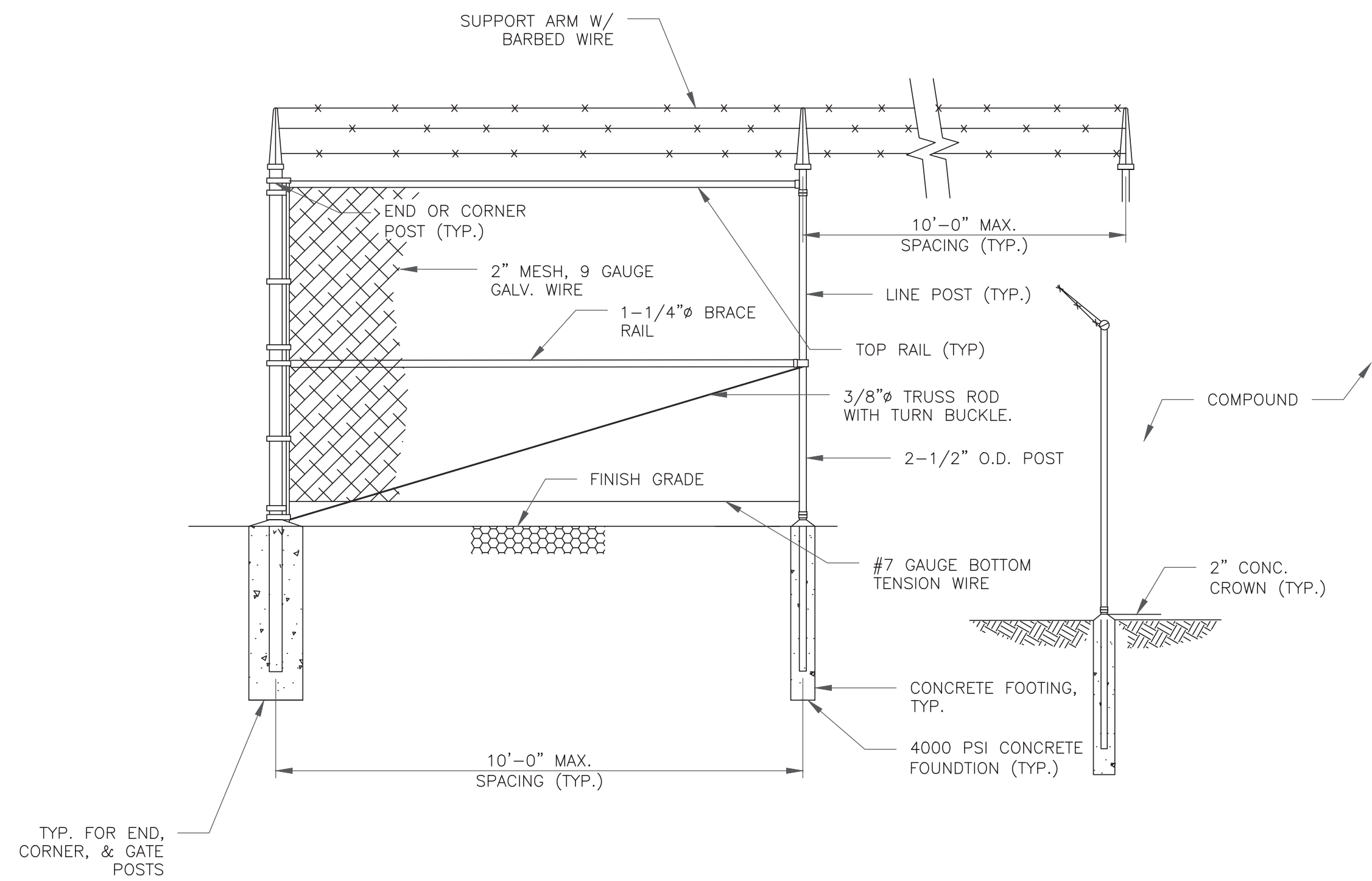
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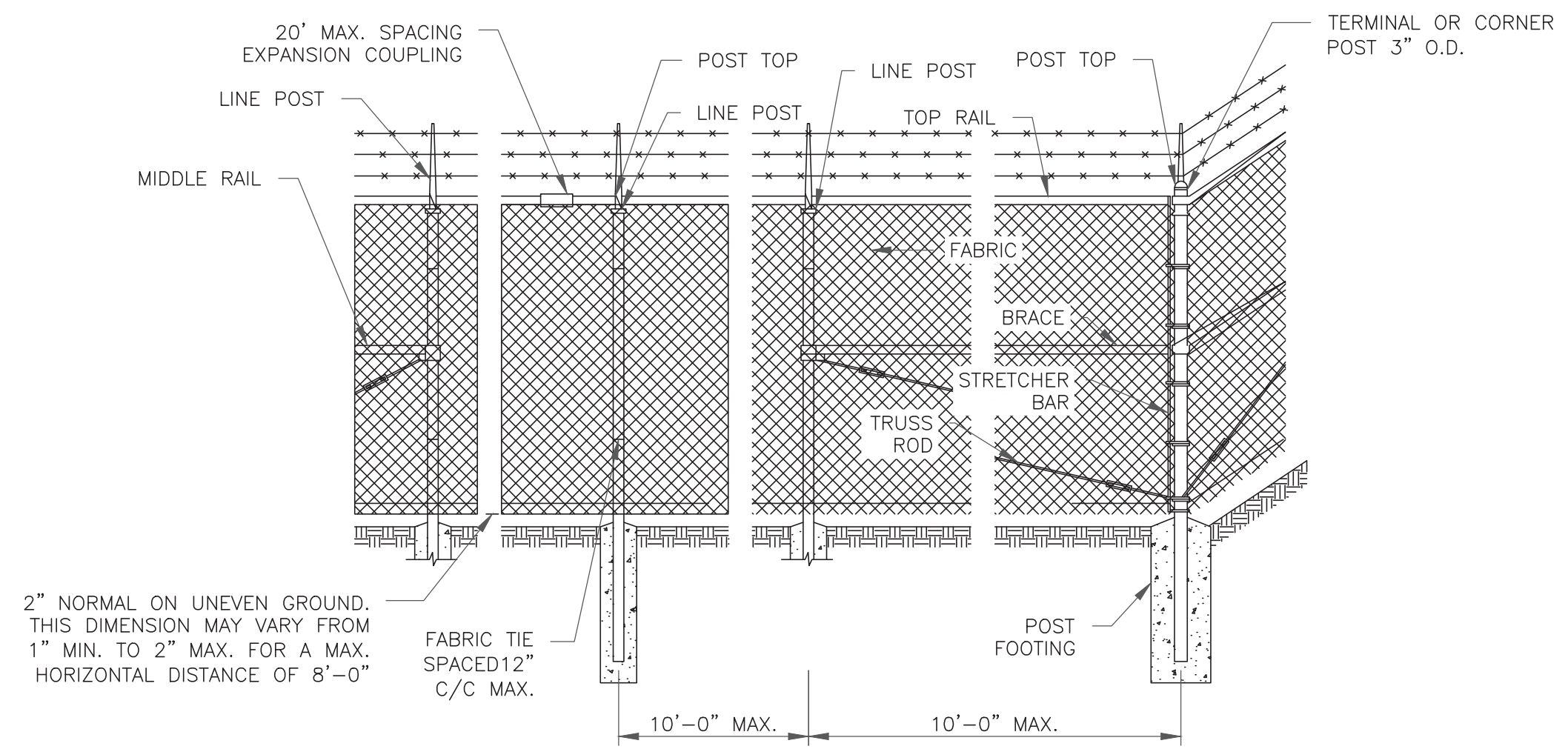
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**1** CHAIN LINK FENCE DETAIL  
SCALE: NOT TO SCALE



**2** POST/CORNER POST ARRANGEMENT  
SCALE: NOT TO SCALE

**NOTES:**

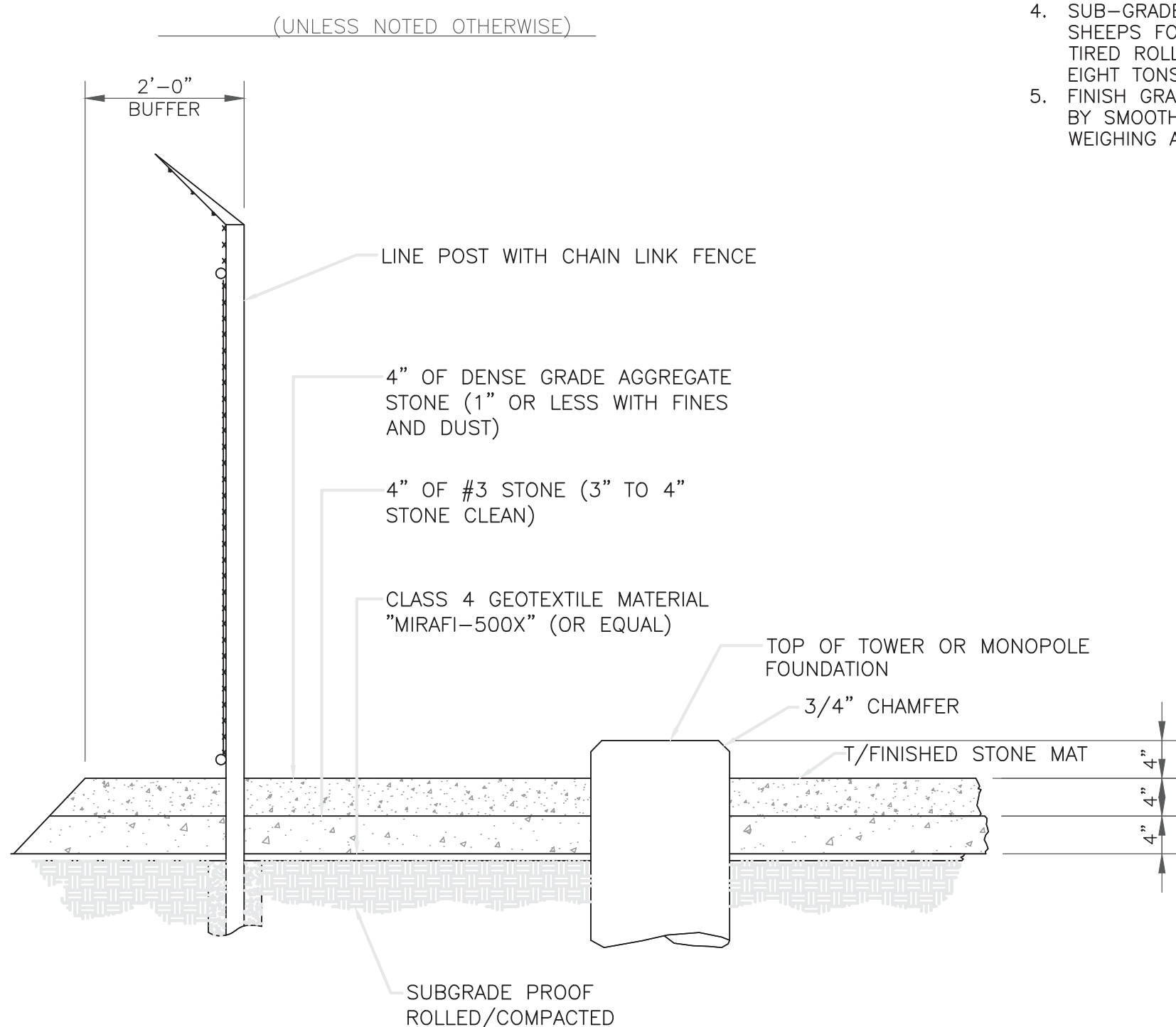
-WHEN FACE WITH SLOPES LESS THEN 2 TO 1 SLOPE, ALL SLOPES SHOULD BE DOZER TRACKED PRIOR TO SEEDING. ALL SLOPES SHOULD HAVE EROSION CONTROL BLANKETS OR RIP RAP EMBEDDED ON SLOPE SURFACES TO REDUCE EROSION

EXAMPLE OF CONSTRUCTION OF DRAINAGE DITCH LINE AND SLOPES AS SHOWN.

-ALL FLOW LINES MUST BE INSTALLED AT A MINIMUM OF 6" BELOW SUB-GRADE OF COMPOUND.

**NOTES:**

1. USE OF SWALES AND/OR DRAINAGE DITCHES FOR PROPER WATER RUNOFF AS NEEDED
2. AGGREGATE IS BASED ON STANDARD AASHTO
3. SLOPE NOT TO EXCEED 1/4" PER FOOT TO MAX. GRADE OF 6" FROM CENTER OF COMPOUND TO EACH FENCE LINE
4. SUB-GRADE SHALL BE COMPACTED BY SHEEPS FOOT VIBRATOR OR RUBBER TIRE ROLLERS WEIGHING AT LEAST EIGHT TONS
5. FINISH GRADE SHALL BE COMPACTED BY SMOOTH DRUM VIBRATOR ROLLERS WEIGHING AT LEAST EIGHT TONS.



**3** SITE COMPOUND AREA RESURFACING  
SCALE: NOT TO SCALE



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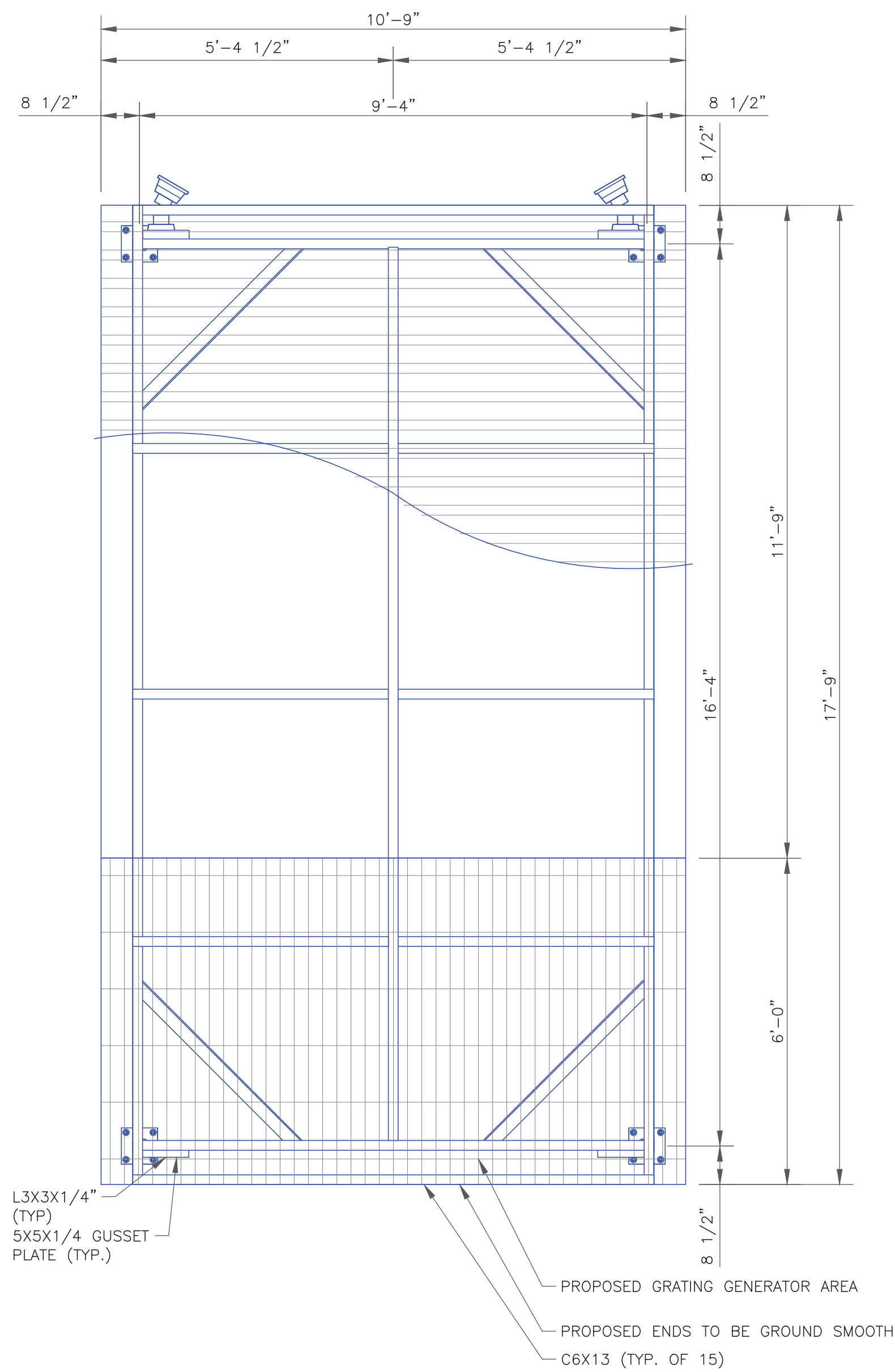
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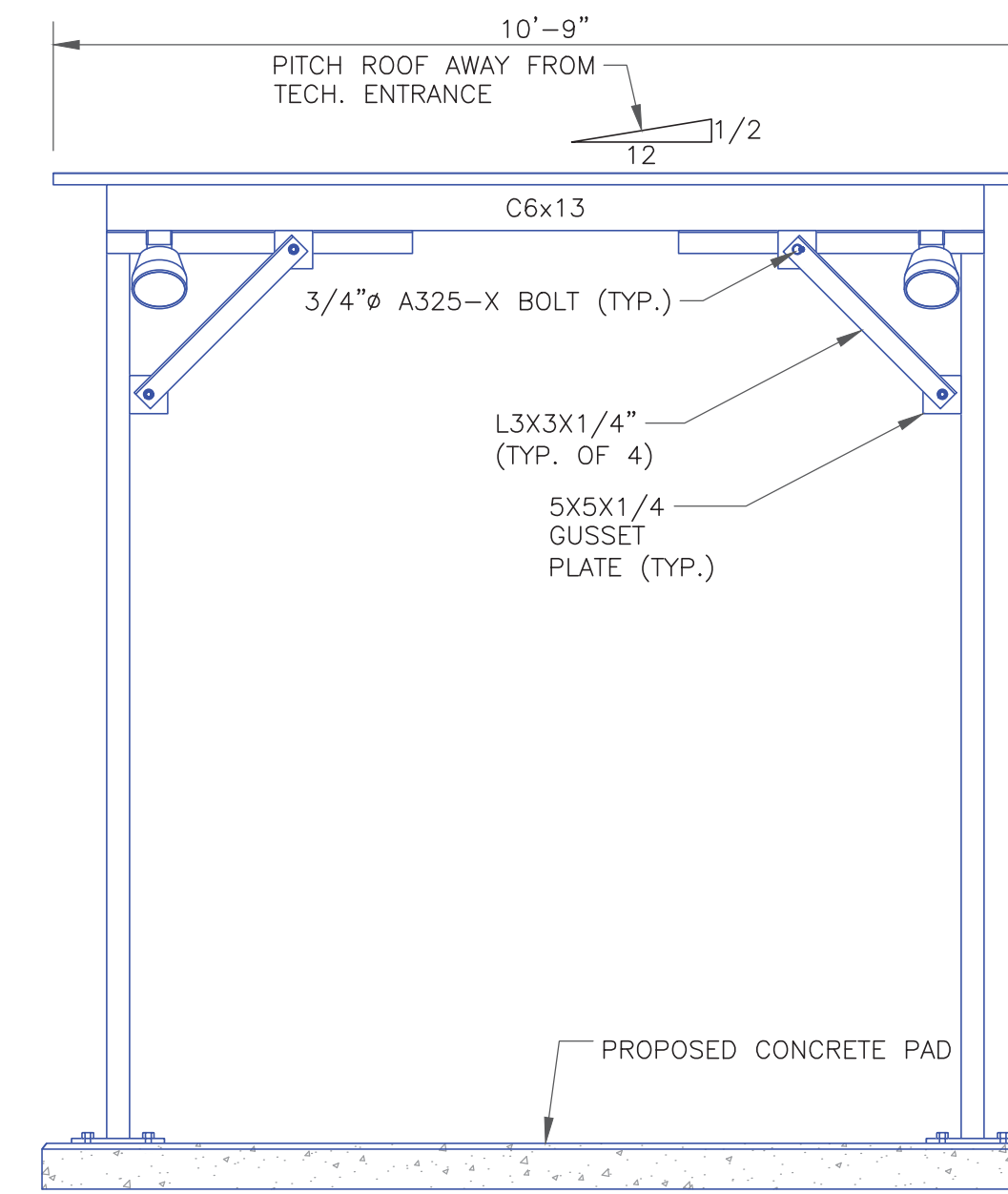
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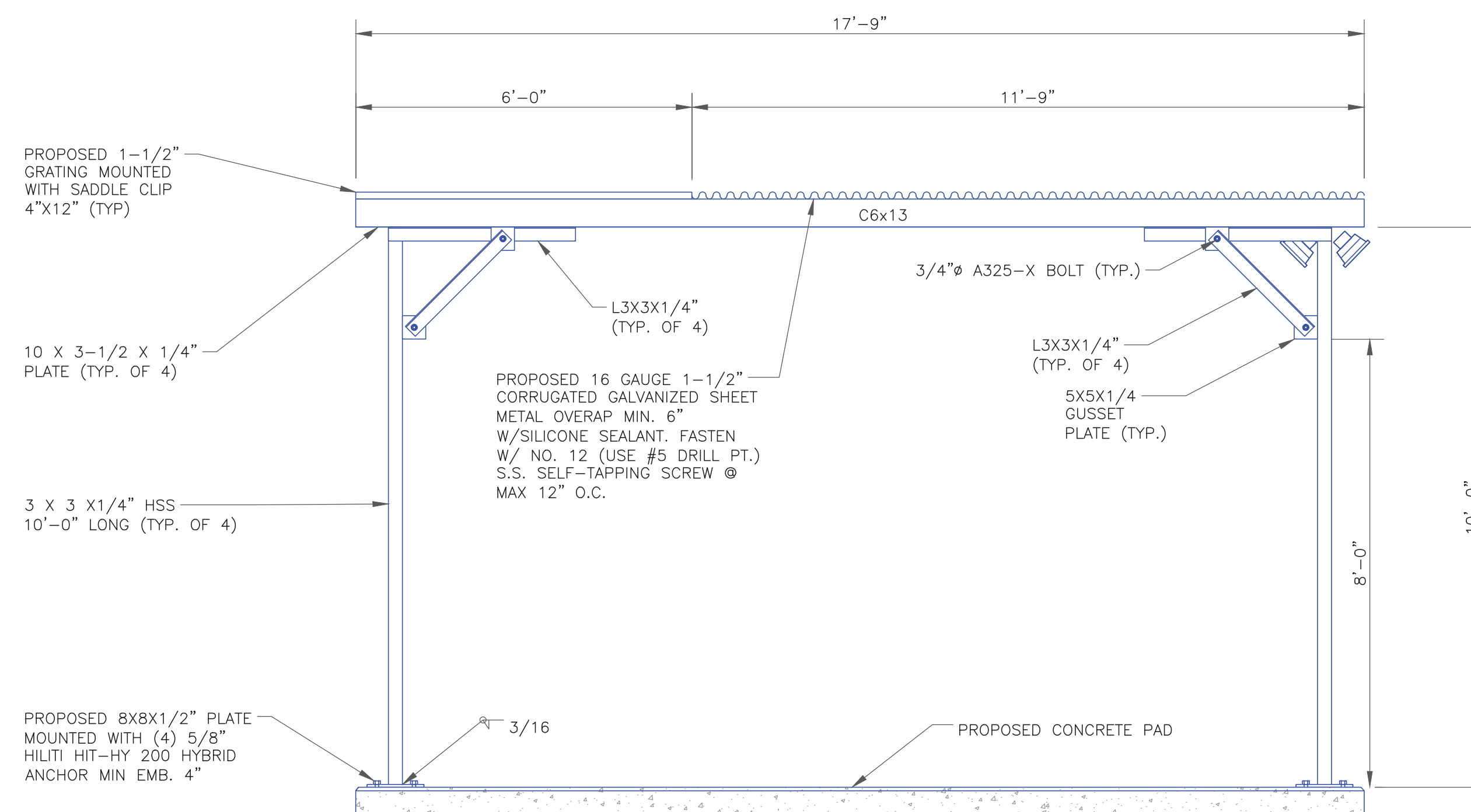
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**1** ICE CANOPY DETAIL PLAN  
SCALE: NOT TO SCALE

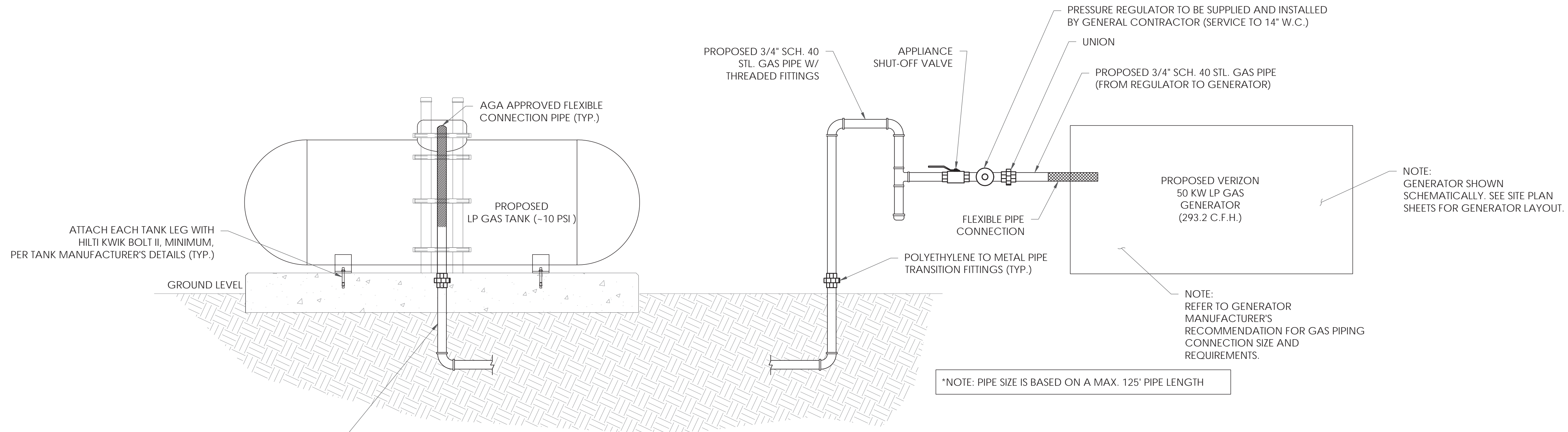


**2** ICE CANOPY DETAIL SIDE  
SCALE: NOT TO SCALE



**3** ICE CANOPY DETAIL ELEVATION  
SCALE: NOT TO SCALE





3/4" MDPE GAS SUPPLY LINE. PROVIDE PROTECTIVE COATING FOR UNDERGROUND PIPE. INSTALLER TO VERIFY GENERATOR REQUIRED FLOW RATE PRIOR TO INSTALLATION. SUPPLY LINE SHALL BE BURIED 3' MIN. BELOW GRADE AND MARKED WITH BURIED FLAGGING AT 3' O.C. 12" BELOW GRADE

**GENERAL NOTES:**

1. MAINTAIN MINIMUM 1'-0" VERTICAL AND 1'-0" HORIZONTAL SEPARATION OF GAS LINE FROM OTHER UTILITIES.
2. CONNECTION POINT MAY VARY WITH GENERATOR MANUFACTURER.
3. MAINTAIN 3' SERVICE CLEARANCE ON ALL SIDES OF GENERATOR.
4. GENERAL CONTRACTOR SHALL ANCHOR GENERATOR BASE TO SLAB OR PLATFORM WITH HOLES PROVIDED.
5. CONTRACTOR SHALL VERIFY LOCATION OF ALL EQUIPMENT PRIOR TO INSTALLATION.
6. CONTRACTOR SHALL COORDINATE INSTALLATION WITH GAS COMPANY & OTHER DISCIPLINES.
7. CONTRACTOR SHALL ADHERE TO APPLICABLE STATE & LOCAL CODES.
8. COORDINATE LOCATION OF GAS PIPE WITH OTHER UTILITIES.
9. FLEXIBLE CONNECTION TO BE SAME SIZE AS PIPING TIE-IN THAT IS PROVIDED BY THE GENERATOR SUPPLIER.
10. CONTRACTOR TO VERIFY GAS PRESSURE PER NOTE ON "GAS PIPE SIZING SCHEDULE".
11. GENERATOR TO BE LOCATED A SUITABLE DISTANCE FROM ANY ROOF PENETRATIONS IN ACCORDANCE WITH NFPA.
12. CONTRACTOR TO PROVIDE LOW POINT DRAINS AND HIGH POINT VENTS PER NFPA AND AGA CODES.

**SPECIFICATIONS:**

1. PIPE (LOW-PRESSURE): STEEL PIPE: ASTM A53, TYPE OR S, ELECTRIC-RESISTANCE WELDED OR SEAMLESS, GRADE A OR B, SCHEDULE 40 GALVANIZED STEEL, PAINTED YELLOW.
2. PIPE FITTINGS (ABOVE GROUND):
  - A. GRAY-IRON THREAD FITTINGS: ASME B16.4, CLASS 125, GALVANIZED STANDARD PATTERN.
  - B. UNIONS: ASME B16.39, CLASS 150, BLACK MALLEABLE IRON, FEMALE PATTERN, BRASS TO IRON SEAT, GROUND JOINT.
  - C. TRANSITION FITTINGS: TYPE, MATERIAL, AND END CONNECTIONS TO MATCH PIPING BEING JOINED.
  - D. PROVIDE DI-ELECTRIC UNIONS WHERE REQUIRED BETWEEN DIFFERENT METALLIC PIPE MATERIALS.
3. PIPE (UNDERGROUND): POLYETHYLENE PIPE; ASTM D 2513, SDR 11 OR IN ACCORDANCE WITH LOCAL CODES AND REGULATIONS.
4. POLYETHYLENE FITTINGS (UNDERGROUND): ASTM D 2683, SOCKET TYPE OR ASTM D 3261, BUTT TYPE WITH DIMENSIONS MATCHING ASTM D 2513, SDR 11, POLYETHYLENE PIPE.
5. TRANSITION FITTINGS: MANUFACTURED PIPE FITTING FOR CONNECTION TO POLYETHYLENE PIPE AND WITH ONE ASTM A 533 / A 53M, SCHEDULE 40, GALVANIZED STEEL PIPE END FOR THREADED CONNECTION TO GALVANIZED STEEL PIPE.
6. SERVICE-LINE RISER: MANUFACTURED PIPE FITTING WITH POLYETHYLENE PIPE INLET FOR CONNECTION TO UNDERGROUND POLYETHYLENE PIPE RISER SECTION WITH PROTECTIVE-COATED, ANODES, STEEL CASING AND THREADED OUTLET FOR THREADED CONNECTION TO ABOVE GROUND STEEL PIPING.

**GENERATOR INSTALLATION RESPONSIBILITIES:**

**BTS ENGINEER:**

1. DELIVERY AND SET UP OF GENERATOR.

**GENERAL CONTRACTOR:**

1. RUNS STUB-UPS FOR LP GAS TO GENERATOR.
2. COORDINATE DELIVERY OF LP GAS LINE TO THE SITE.
3. PULLS ALARM WIRES, START CIRCUIT WIRES, CONTROL CIRCUIT WIRES, AND LINE VOLTAGE WIRES FROM THE PPC TO THE ATS AND TO THE GENERATOR. HOME RUNS WIRES BACK TO THE ATS.
4. GROUNDS FOR GENERATOR.

**GENERATOR MANUFACTURER CERTIFIED ELECTRICIAN:**

1. COMPLETES FUEL CONNECTIONS.
2. TERMINATES ALARMS AND CONTROL CIRCUITS TO THE GENERATOR.
3. INSTALL FUEL REGULATORS.
4. FINAL INSPECTION AND START UP.
5. NOTIFY OPERATIONS (CELL TECHS) TWO DAYS PRIOR TO START-UP SCHEDULE, PLAN ON CELL TECH ARRIVAL EARLY AFTERNOON. IF START-UP PROBLEMS OCCUR, NOTIFY CELL TECH OF DELAY BEFORE NOON.
6. RUN LOAD TEST (ADDITIONAL COST TO VERIZON) AS REQUIRED, MOSTLY IN CORE.
7. EMAIL COPY OF START-UP CHECK OFF LIST TO VERIZON.

**CELL TECH:**

1. CELL TECH TO PUNCH DOWN ALL ALARMS IN CROSS CONNECT AND BTS.
2. CELL TECH TO VERIFY START-UP AND SIGN OFF ACCEPTING GENERATOR.
3. CELL TECH TO NOTIFY VIA TEXT MESSAGING OF ACCEPTANCE.

**GENERATOR MANUFACTURER / VERIZON WIRELESS START-UP PROCEDURES:**

NOTE: BEFORE RUNNING GENERATOR OR INTERRUPTING POWER, NOTIFY THE NETWORK OPERATIONS CENTER (NOC) AND APPROPRIATE CELL TECH.

1. INSPECT ALL CONNECTING CIRCUITS (GROUND LEADS - START LEADS - BLOCK HEATER - BATTERY CHARGER - POWER OUTLET LEADS) AND ANCHORING OF THE GENERATOR.
2. VERIFY ALL CIRCUITS ARE TERMINATED CORRECTLY AND CORRECT WIRE SIZES ARE USED, THE BATTERY IS CONNECTED, THE CHARGER ACTIVATED AND THE BATTERY IS CHARGING.
3. CHECK ALL LIQUID LEVELS.
4. PLACE ATS IN THE MANUAL MODE AND PROGRAMMED TO SET THE EXERCISER CLOCK TO OPERATE EVERY TWO WEEKS FOR ONE HOUR UNDER LOAD.
5. FUEL SYSTEM IS INSPECTED AND CHECKED FOR LEAKS. VERIFY CORRECT PRESSURE (4 TO 6 OUNCES) AND VERIFY PIPE SIZE.
6. DOCUMENT THE MODEL AND SERIAL NUMBER (SEND INFORMATION TO OPS AND BTS ENGINEER).
7. PREPARE FOR A NO LOAD (MANUAL) START-UP - IF REQUIRED.
8. VERIFY ATS IS IN MANUAL CONTROL POSITION.
9. START UP GENERATOR MANUALLY AND VERIFY VOLTAGE AND FREQUENCY. SET VOLTAGE FOR 230 VOLTS AND FREQUENCY FOR 60 HERTZ.
10. VERIFY ENGINE RUN ALARM IS ACTIVATED AND THERE IS CONTINUITY TO TELCO BOX.
11. INDUCE LOW OIL PRESSURE, HIGH WATER TEMP, OVER/UNDER VOLTAGE/FREQUENCY FAULTS SEPARATELY AND VERIFY THE ALARM IS ACTIVATED AND HAS CONTINUITY TO TELCO BOX.
12. PLACE ATS CONTROLS IN AUTOMATIC.
13. MANUALLY DISCONNECT COMMERCIAL POWER AND VERIFY GENERATOR TRANSFER.
14. ALLOW GENERATOR TO RUN UNDER LOAD FOR ONE HOUR - IF REQUIRED AND RECORD LOAD, COOLANT TEMPERATURE AND VOLTAGE (SEND INFORMATION TO OPS).
15. RESTORE COMMERCIAL POWER AND CHECK FOR TRANSFER, GENERATOR WILL REMAIN RUNNING FOR APPROXIMATELY 5 MINUTES FOR COOL DOWN.
16. COMPLETE ALL REQUIRED START-UP DOCUMENTATION LOCATED IN THE MANUAL, SCAN INTO JOB FILE AND EMAIL COPY TO KATOLIGHT AND OPS.
17. CONTACT OPS TWO DAYS PRIOR TO TESTING.



20 ALEXANDER DRIVE  
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1200 MACARTHUR BLVD, SUITE 200  
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PH: (918) 587-4630  
www.btgrp.com

VERIZON SITE NUMBER:  
**617226648**

BU #: **876359**  
**NORWICH**

954 NORWICH ROAD  
PLAINFIELD, CT 06062

EXISTING 130'-0" MONOPOLE

**ISSUED FOR:**

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4	3/9/23	YX	CONSTRUCTION	LR



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SHEET NUMBER:

**C-10**

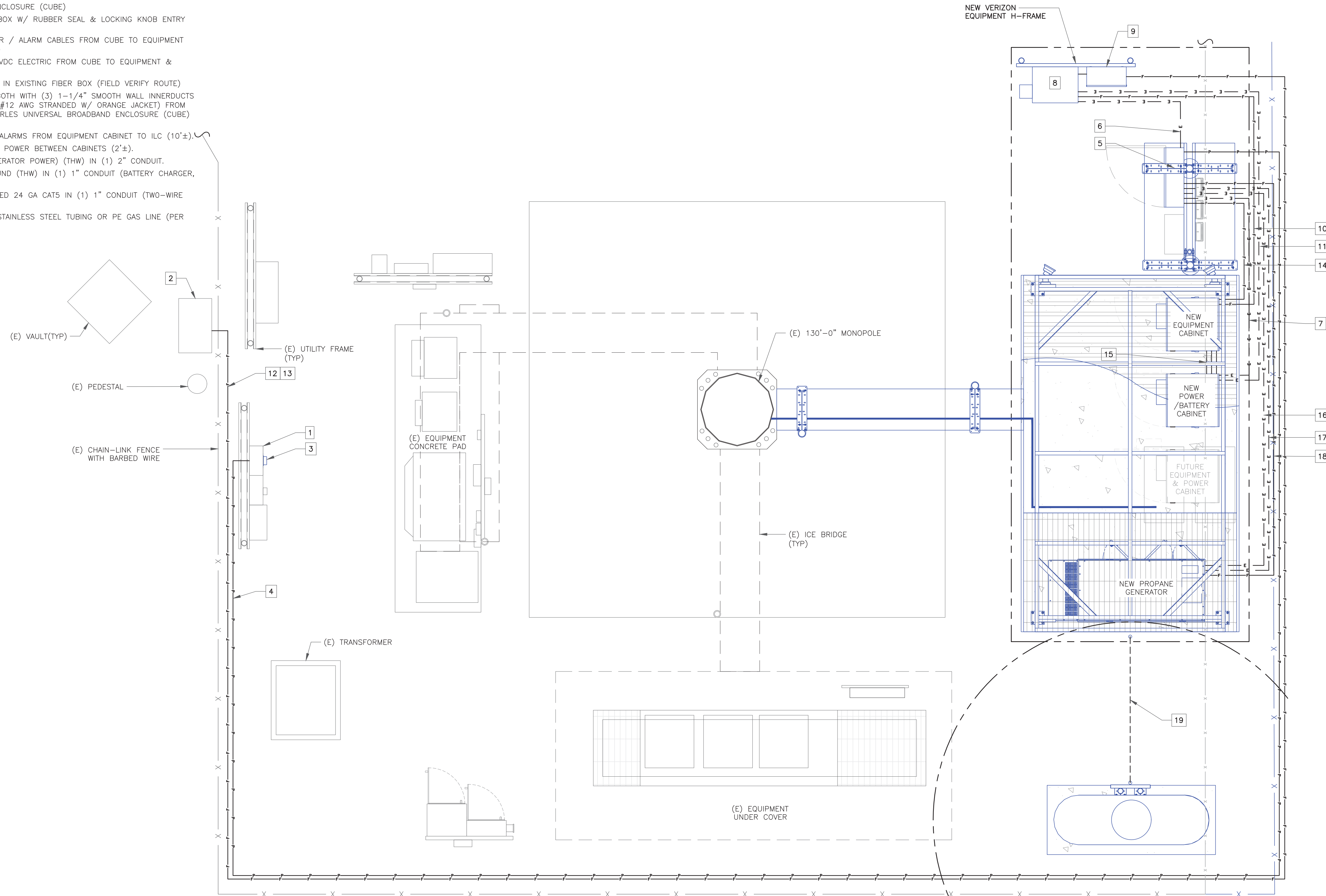
REVISION:

**4**



**CODED DRAWING NOTES:**

1. EXISTING METER BANK
2. EXISTING FIBER HANDHOLE
3. NEW METER WITH 200A MAIN BREAKER IN EXISTING EMPTY METER SOCKET ON UTILITY H-FRAME TO BE UTILIZED BY VERIZON
4. 3" SCH 40 PVC CONDUIT FOR ELECTRIC FROM SERVICE DISCONNECT (OCPD) TO ILC ON EQUIPMENT PAD H-FRAME (90'±)
5. INTEGRATED LOAD CENTER (ILC) - 200AMP/ 120/240 VAC MOUNTED ON EQUIPMENT PAD H-FRAME (ILC COMES EQUIPPED WITH (2) MAIN BREAKERS ONLY - G.C. SHALL PROVIDE ALL MISCELLANEOUS BREAKERS)
6. 2" SCH 40 PVC CONDUIT FOR ELECTRIC FROM (ILC) TO CUBE (9'±)
7. (1) 3" SCH 40 PVC CONDUIT FROM ILC TO EQUIPMENT & POWER CABINETS (13'±)
8. CHARLES UNIVERSAL BROADBAND ENCLOSURE (CUBE)
9. 24" x 24" x 12" NEMA 3R FIBER BOX W/ RUBBER SEAL & LOCKING KNOB ENTRY LATCH
10. 2" SCH 40 PVC CONDUIT FOR FIBER / ALARM CABLES FROM CUBE TO EQUIPMENT CABINET ON EQUIPMENT PAD (20'±)
11. 2" SCH 40 PVC CONDUIT FOR -48VDC ELECTRIC FROM CUBE TO EQUIPMENT & POWER CABINET (20'±)
12. NEW FIBER FROM EXISTING SOURCE IN EXISTING FIBER BOX (FIELD VERIFY ROUTE)
13. (2) 4" SCH 40 PVC CONDUITS - BOTH WITH (3) 1-1/4" SMOOTH WALL INNERDUCTS W/ PULL STRING & TRACER WIRE (#12 AWG STRANDED W/ ORANGE JACKET) FROM EXISTING UTILITY POLE TO NEW CHARLES UNIVERSAL BROADBAND ENCLOSURE (CUBE) (PENDING ROUTE BY OTHERS)
14. (1) 1" SCH 40 PVC CONDUIT FOR ALARMS FROM EQUIPMENT CABINET TO ILC (10'±).
15. (3) 3" SCH 40 PVC CONDUITS FOR POWER BETWEEN CABINETS (2'±).
16. (3) 3/0 W/ (1) #6 GROUND (GENERATOR POWER) (THW) IN (1) 2" CONDUIT.
17. (6) #10 (3-H/3-N) W/ #10 GROUND (THW) IN (1) 1" CONDUIT (BATTERY CHARGER, BATTERY HEATER, BLOCK HEATER).
18. (2) #16 W/ (2) 12-PAIR GEL-FILLED 24 GA CAT5 IN (1) 1" CONDUIT (TWO-WIRE START & ALARM CABLING).
19. (1) 2'-0" JACKETED CORRUGATED STAINLESS STEEL TUBING OR PE GAS LINE (PER LOCAL CODE REQUIREMENTS)



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 TULSA, OK 74119  
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**VERIZON SITE NUMBER:**  
 617226648

**BU #: 876359**  
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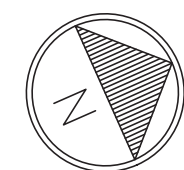
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**SHEET NUMBER:**  
**E-1**

**REVISION:**  
**4**

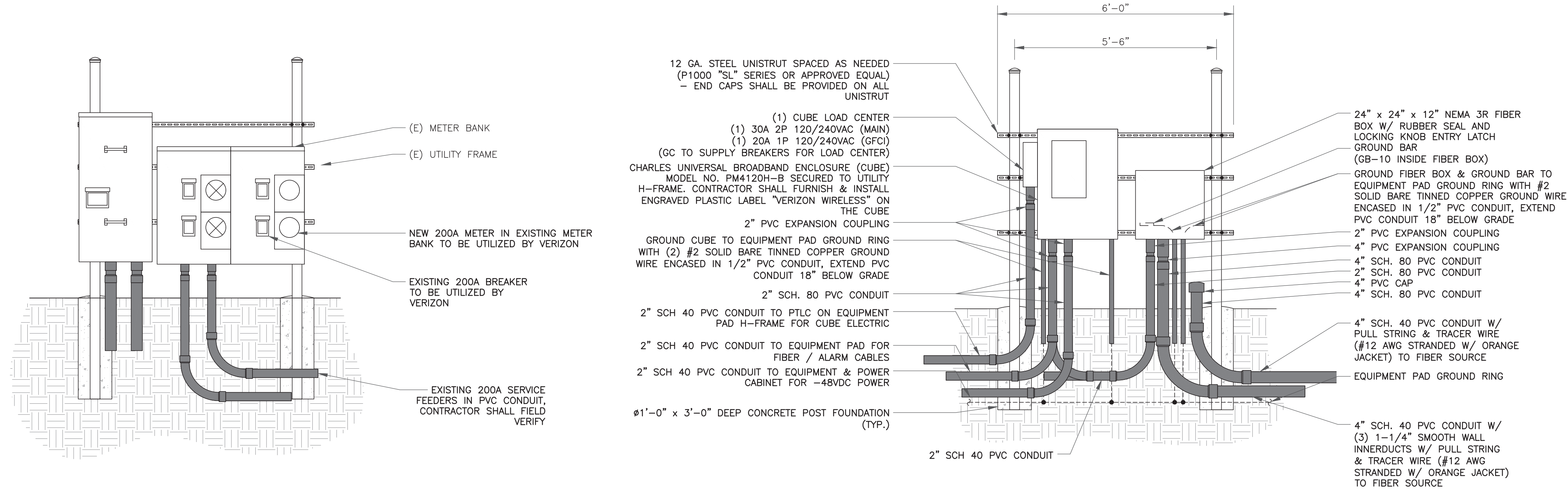
1 UTILITY PLAN  
 SCALE: 3/8"=1'-0" (FULL SIZE)  
 3/16"=1'-0" (11x17)



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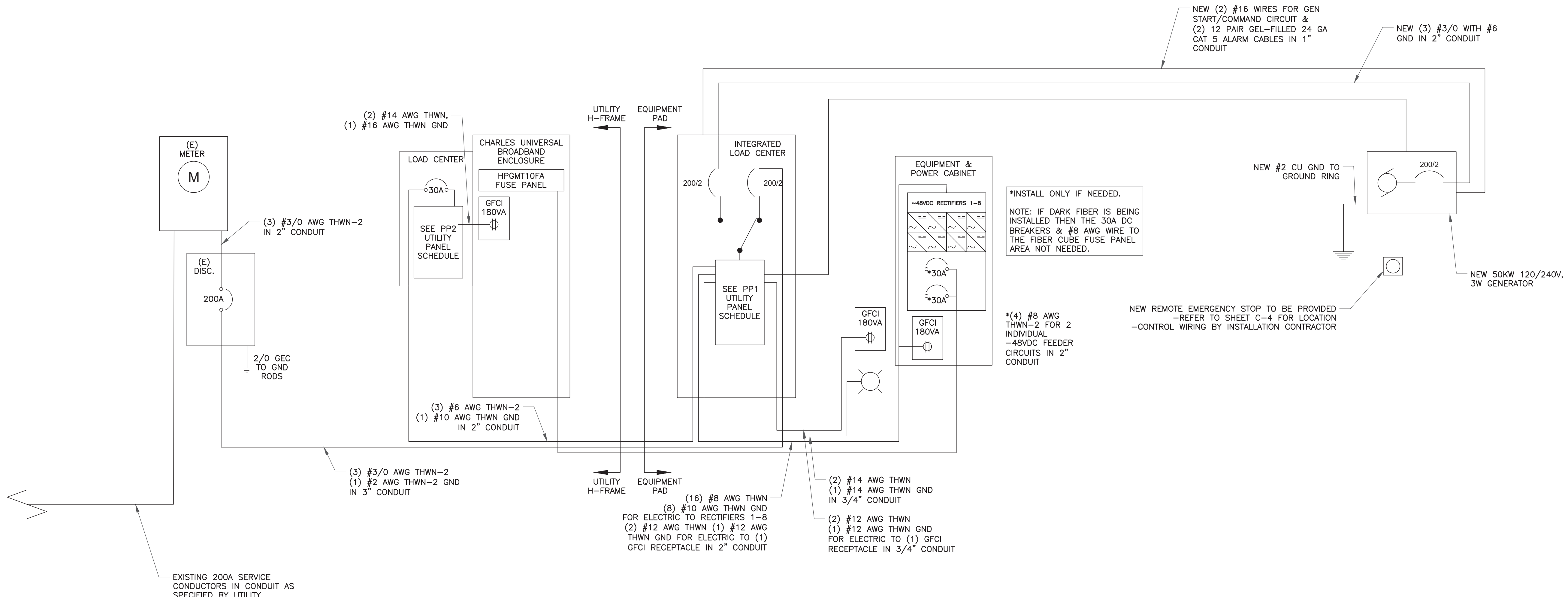


25 PAIR ALARM CABLE FROM III CUBC 10  
 HE ALARM PANEL INSIDE THE EQUIPMENT &  
 OWER CABINET LOCATED ON THE EQUIPMENT  
 AD.



1 METER/DISCONNECT H-FRAME DETAIL  
 SCALE: NOT TO SCALE

2 CUBE/FIBER H-FRAME DETAIL  
 SCALE: NOT TO SCALE



3 ONE LINE DIAGRAM - PERMANENT POWER  
 SCALE: NOT TO SCALE

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Professional Engineer Seal: **Professional Engineer No. 23924 Expires 3/31/23**

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**E-3**

REVISION:

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CKT	LOAD DESCRIPTION	BREAKER AMPS	BREAKER POLES	BREAKER STATUS	SERVICE LOAD VA	USAGE FACTOR	PHASE A VA	PHASE B VA	USAGE FACTOR	SERVICE LOAD VA	BREAKER STATUS	BREAKER POLES	BREAKER AMPS	LOAD DESCRIPTION	CKT
1	RECTIFIER #1	30	2	ON	1000	1.25	2500		1.25	1000	ON	2	30	RECTIFIER #2	2
3					1000	1.25		2500	1.25	1000					4
5	RECTIFIER #3	30	2	ON	1000	1.25	2500		1.25	1000	ON	2	30	RECTIFIER #4	6
7					1000	1.25		2500	1.25	1000					8
9	RECTIFIER #5	30	2	ON	1000	1.25	2500		1.25	1000	ON	2	30	RECTIFIER #6	10
11					1000	1.25		2500	1.25	1000					12
13	RECTIFIER #7	30	2	ON	1000	1.25	2500		1.25	1000	ON	2	30	RECTIFIER #8	14
19					1000	1.25		2500	1.25	1000					16
21	GFCI RECEPTACLE	20	1	ON	180	1.00	360		1.00	180	ON	2	30	PP2 CUBE LOAD CENTER	18
19	GFCI RECEPTACLE	20	1	ON	180	1.00		360	1.00	180					20
21	GFCI RECEPTACLE	20	1	ON	180	1.00	1680		1.00	1500	ON	1	20	BLOCK HEATER	22
23	LED LIGHTS	15	1	ON	400	1.25		740	1.00	240	ON	1	20	BATTERY CHARGER	24
25	SPACE	---	---	N/A	0	1.00	1500		1.00	1500	ON	1	20	BATTERY HEATER	26
27	SPACE	---	---	N/A	0	1.00		0	1.00	0	N/A	---	---	SPACE	28
29	SPACE	---	---	N/A	0	1.00		0	1.00	0	N/A	---	---	SPACE	30
31	SPACE	---	---	N/A	0	1.00		0	1.00	0	N/A	---	---	SPACE	32
33	SPACE	---	---	N/A	0	1.00		0	1.00	0	N/A	---	---	SPACE	34
35	SPACE	---	---	N/A	0	1.00		0	1.00	0	N/A	---	---	SPACE	36
37	SPACE	---	---	N/A	0	1.00		0	1.00	0	N/A	---	---	SPACE	38
39	SPACE	---	---	N/A	0	1.00		0	1.00	0	N/A	---	---	SPACE	40
41	SPACE	---	---	N/A	0	1.00		0	1.00	0	N/A	---	---	SPACE	42
					<b>13540</b>		<b>11100</b>		<b>VA</b>			<b>TOTAL KVA</b>	<b>24.64</b>		
												<b>AMPS</b>	<b>102.67</b>		

NOTES:

ILC COMES EQUIPPED WITH (2) MAIN BREAKERS ONLY. GC SHALL PROVIDE ALL MICELLANEOUS BREAKERS.

PP2 CUBE LOAD CENTER									30A, 120/240V 1ø3W, 60HZ			
CKT	LOAD DESCRIPTION	BREAKER AMPS	BREAKER POLES	BREAKER STATUS	SERVICE LOAD VA	USAGE FACTOR	PHASE A VA	PHASE B VA				
1	GFCI RECEPTACLE	20	1	ON	180	1.00	180					
2	GFCI RECEPTACLE	20	1	ON	180	1.00		180				
3	---	---	---	---	0	1.00		0				
4	---	---	---	---	0	1.00						0
5	---	---	---	---	0	1.00		0				
6	---	---	---	---	0	1.00						0
								180	180			
								<b>TOTAL KVA</b>	<b>0.36</b>			
								<b>AMPS</b>	<b>1.50</b>			

NOTES:

1 PANEL SCHEDULE  
SCALE: NOT TO SCALE



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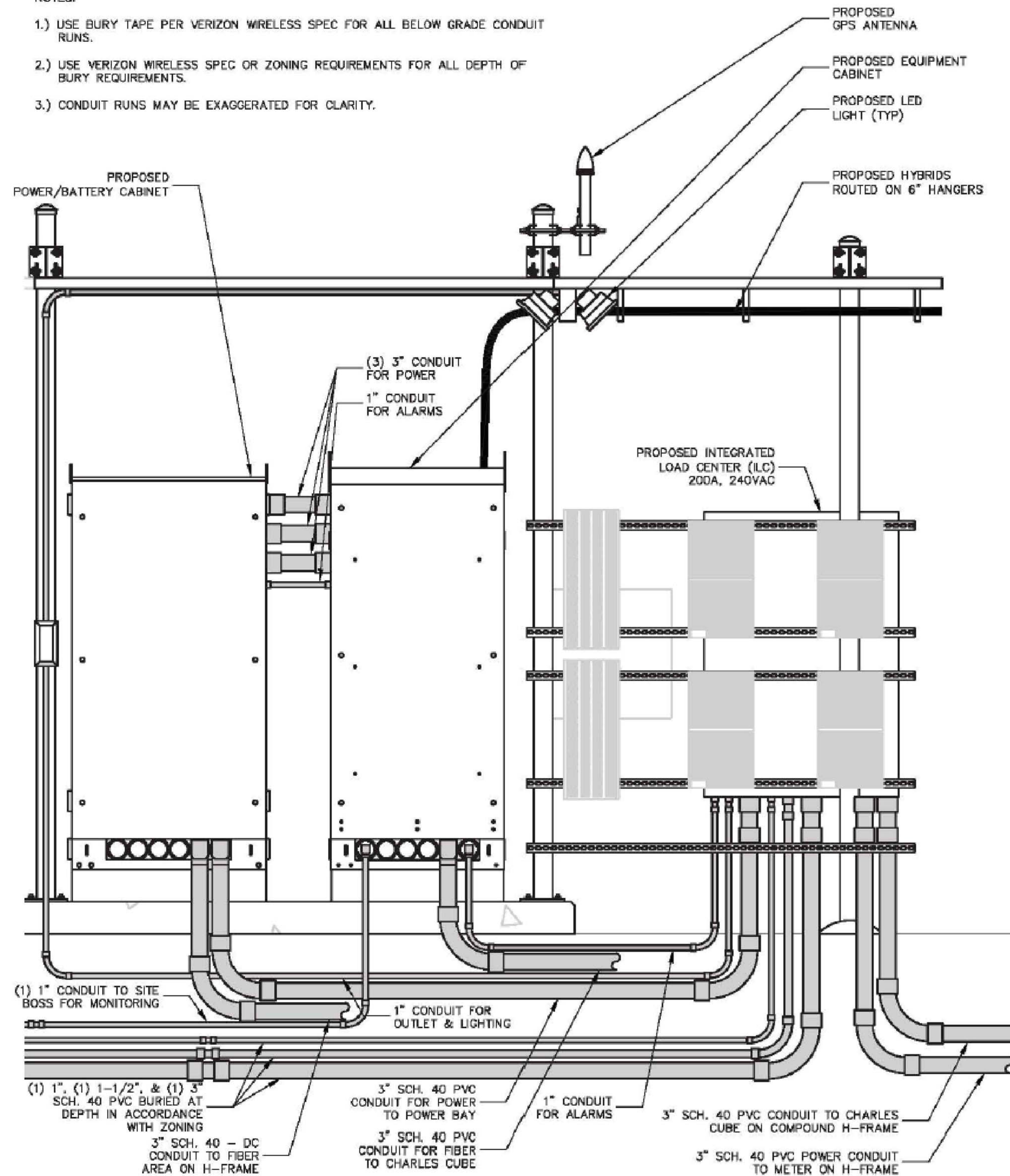
**E-4**

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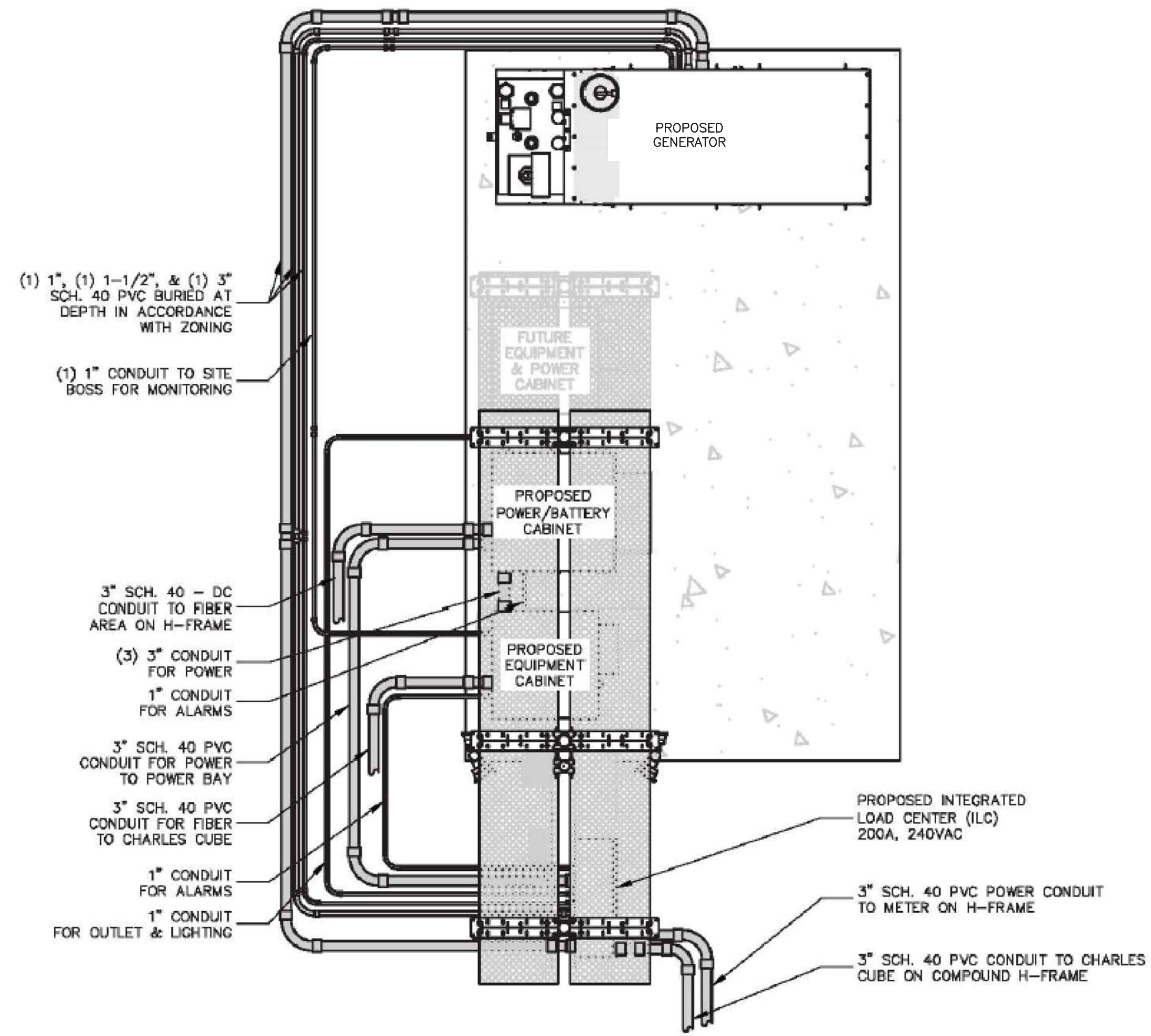
**4**

NOTES:

- 1.) USE BURY TAPE PER VERIZON WIRELESS SPEC FOR ALL BELOW GRADE CONDUIT RUNS.
- 2.) USE VERIZON WIRELESS SPEC OR ZONING REQUIREMENTS FOR ALL DEPTH OF BURY REQUIREMENTS.
- 3.) CONDUIT RUNS MAY BE EXAGGERATED FOR CLARITY.



2 H-FRAME DETAIL  
SCALE: NOT TO SCALE



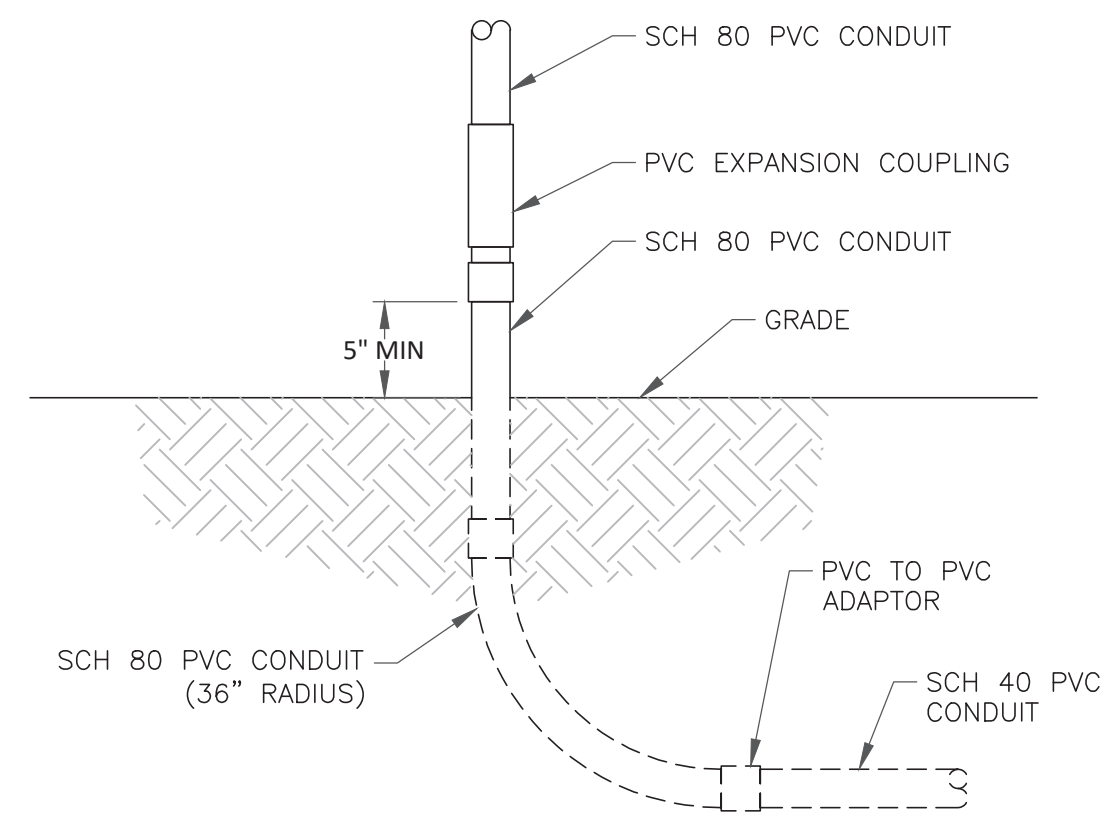
NOTE:  
CONDUIT RUNS MAY BE EXAGGERATED FOR CLARITY.

1 CONDUIT PLAN  
SCALE: NOT TO SCALE

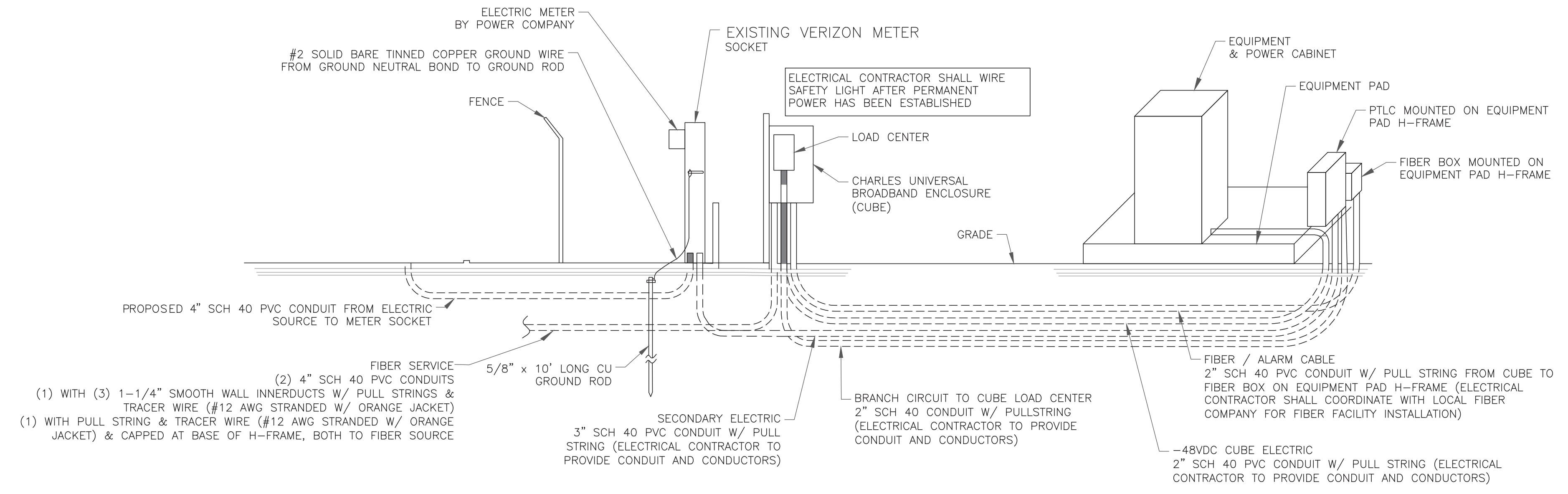
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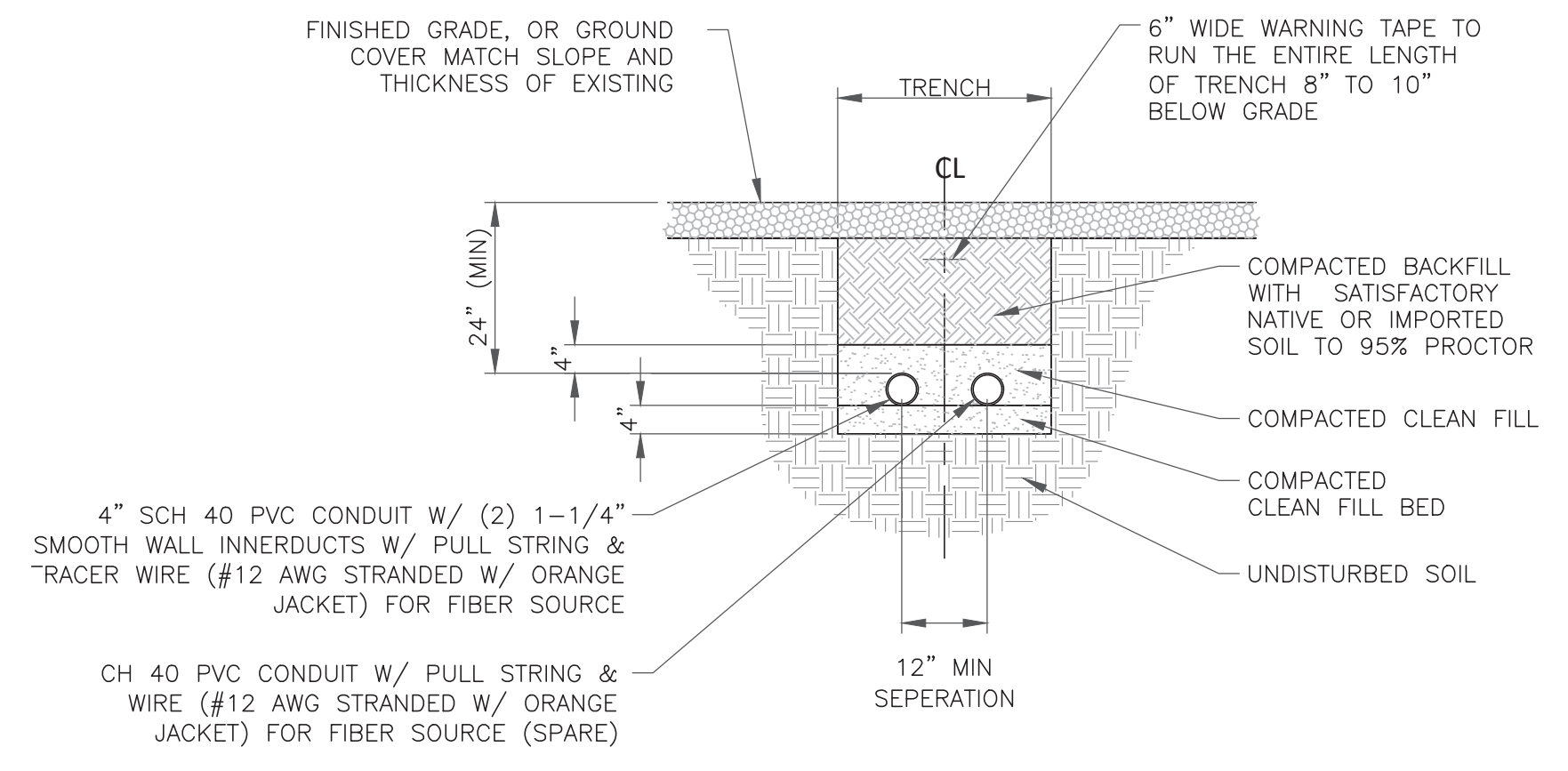
- NOTES:  
 1. SEE E-1 SHEET FOR CONDUIT SIZES  
 2. ALL PVC CONDUITS THAT TRANSITION FROM BELOW GRADE TO ABOVE GRADE SHALL HAVE EXPANSION COUPLINGS INSTALLED.



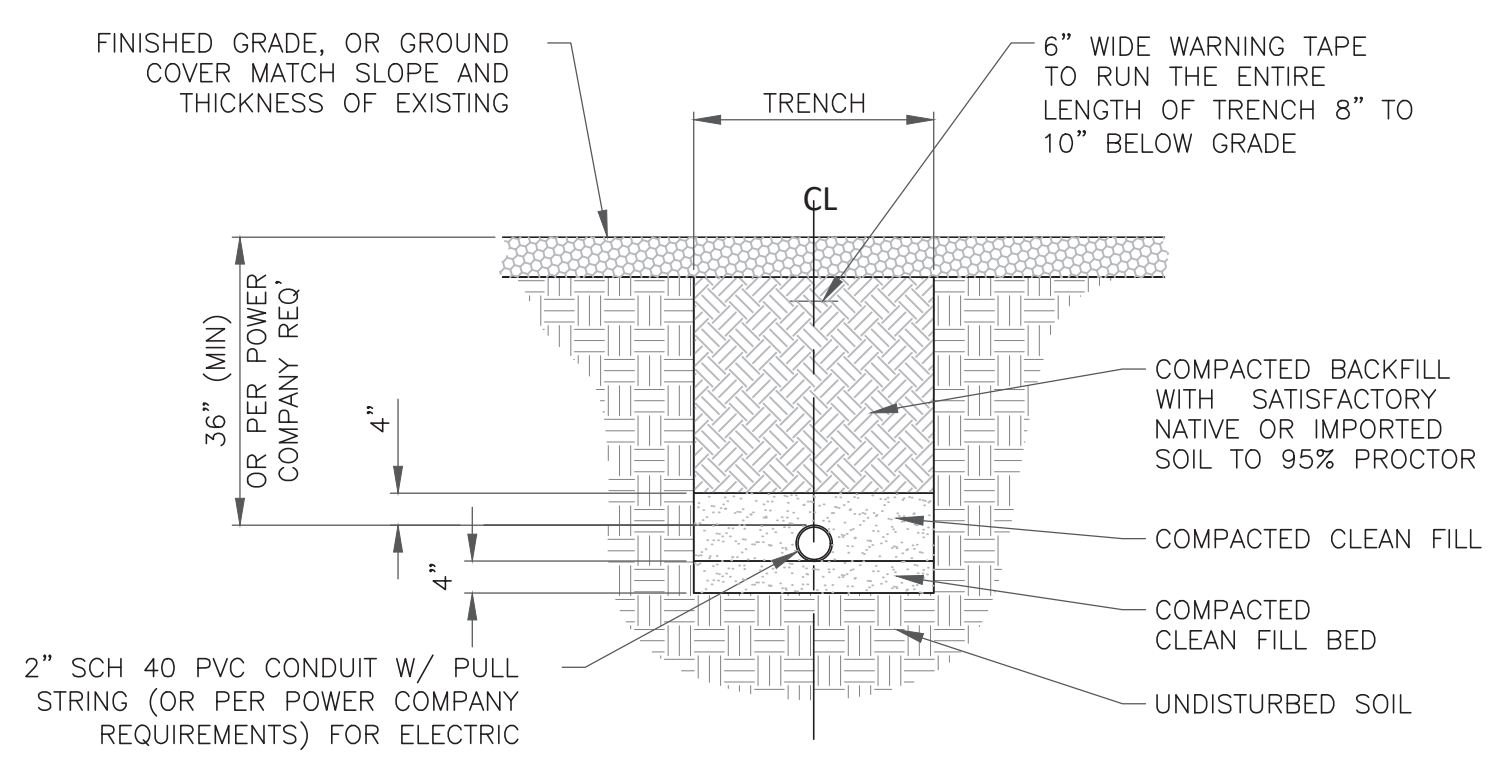
1 UNDERGROUND CONDUIT STUB-UP DETAIL  
 SCALE: NOT TO SCALE



2 TYPICAL ELECTRICAL RISER DIAGRAM  
 SCALE: NOT TO SCALE



3 FIBER TRENCH DETAIL (SOURCE)  
 SCALE: NOT TO SCALE



4 ELECTRIC TRENCH DETAIL (SOURCE)  
 SCALE: NOT TO SCALE

UTILITY TRENCH NOTES:

- CONDUIT SIZE, TYPE, QUANTITY, AND SEPARATION DIMENSION TO BE VERIFIED WITH LOCAL UTILITY.
- ALL UTILITY TRENCHES WITHIN THE FENCED COMPOUND OR UNDER ANY PORTION OF A GRAVEL DRIVE AND/OR ROADWAY SHALL BE BACKFILLED WITH #57 COMPACTED AGGREGATE.
- ALL CONDUITS SHALL BE INSTALLED WITH A PULL STRING.
- ALL CONDUITS THAT ARE TO BE USED FOR FIBER/ALARM SHALL BE INSTALLED WITH A TRACER WIRE (#12 AWG STRANDED W/ ORANGE JACKET).
- ALL CONDUITS SHALL BE CLEAN INSIDE WITH NO DIRT OR ANY OTHER OBSTRUCTIONS.
- ALL BENDS MUST SWEEP 36" RADIUS AND MAXIMUM OF 3 SWEEPS. ANY ADDITIONAL SWEEPS MUST BE APPROVED BY THE POWER COMPANY.
- THE CONTRACTOR SHALL VERIFY AND FOLLOW THE POWER COMPANY SPECIFICATIONS FOR INSTALLATIONS INVOLVING PAD MOUNTED TRANSFORMERS, UTILITY POLE, ETC...

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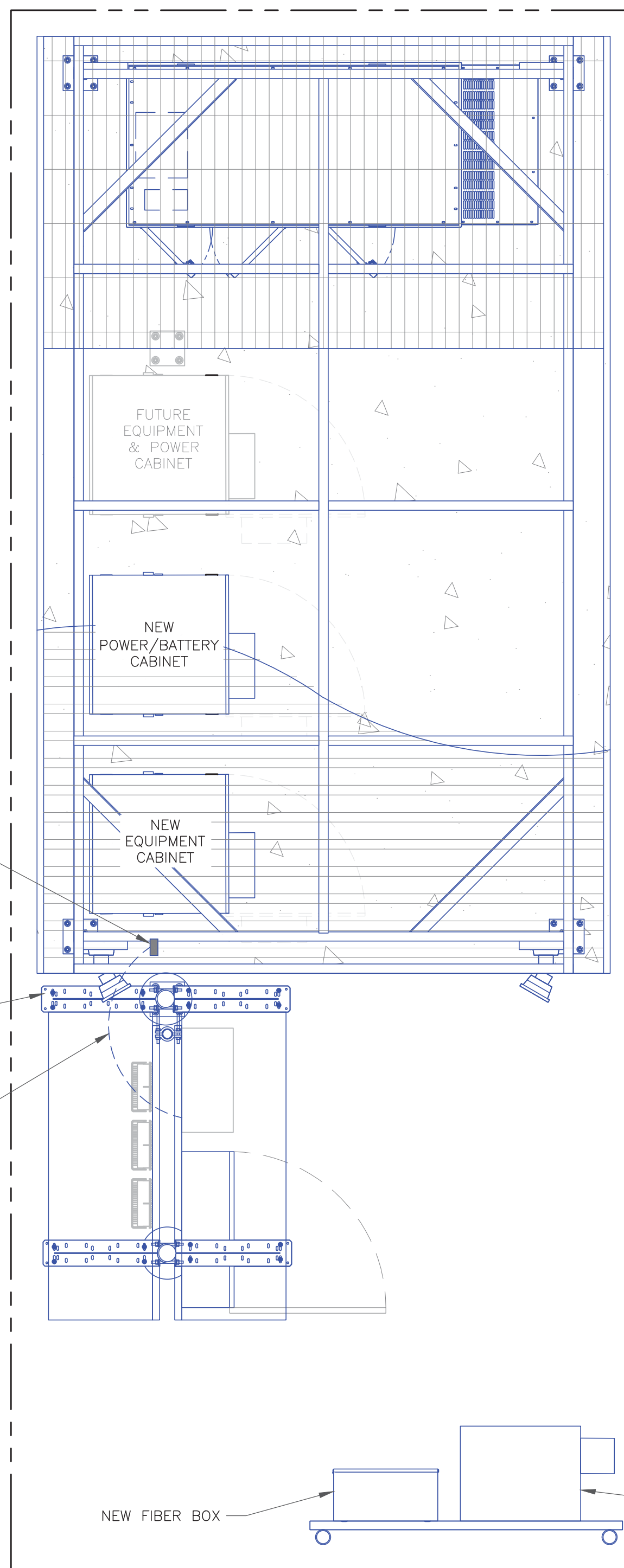
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**E-6**

REVISION:

**4**



PROVIDE MANUAL MOTOR DISCONNECT SWITCH FOR LIGHTS, RATED AT 15A MIN. AT 120V AC, PROVIDE EATON MST01AH OR APPROVED EQUAL MOUNT ON ICE BRIDGE POST IN NEMA 3R ENCLOSURE. SWITCH SHALL CONTROL 4AC, FLOODLIGHTS

NEW 70 WATT AC STANCHION MOUNT LED LIGHT FIXTURE (4 TOTAL, MOUNTED ON ICE BRIDGE AND AIM TOWARD EQUIPMENT AS REQUIRED)

(2) #14 THWN W/ (1) #14 THWN GROUND IN 3/4" CONDUIT TO SWITCH

NEW FIBER BOX

NEW CHARLES CUBE

**1** EQUIPMENT PAD LIGHTING PLAN  
SCALE: NOT TO SCALE



NOTES:

1. PROVIDE "ELECTRIC MOTION" TAMPER RESISTANT BUS BARS AT BULKHEAD AND ABOVE THE TURN AT THE ICE BRIDGE. UTILITY H-FRAME BUS BAR (IF REQUIRED) WILL BE AN ELECTRIC MOTION TINNED COPPER BUS BAR ON RED SEAL INSULATORS & STAINLESS STEEL BRACKET. COAT WITH ELECTRIC MOTION ANTI-THEFT COMPOUND.
2. CONTACT CONSTRUCTION MANAGER PRIOR TO BACKFILLING GROUNDING INSTALLATION.
3. ALL EXPOSED GROUND LEADS NEED TO USE EMC MODEL #2223-TMC THEFT-RESISTANT CABLE FROM 18" BELOW GRADE TO THE FINAL TERMINATION POINT. VERIFY ALL GROUND LEADS ARE VERTICAL AS THEY ENTER THE GROUND.
4. ALL BELOW GRADE GROUND LEADS ARE REQUIRED TO BE SEALED USING SEALTITE TO 18" BELOW GRADE. SEALTITE SHOULD EXTEND AS CLOSE AS POSSIBLE TO THE FINAL TERMINATION POINT AND FILL OPENINGS WITH SILICONE CAULKING.
5. ALL GROUND LEVEL BUS BARS NEED TO USE ANTI-THEFT MOUNTING HARDWARE.

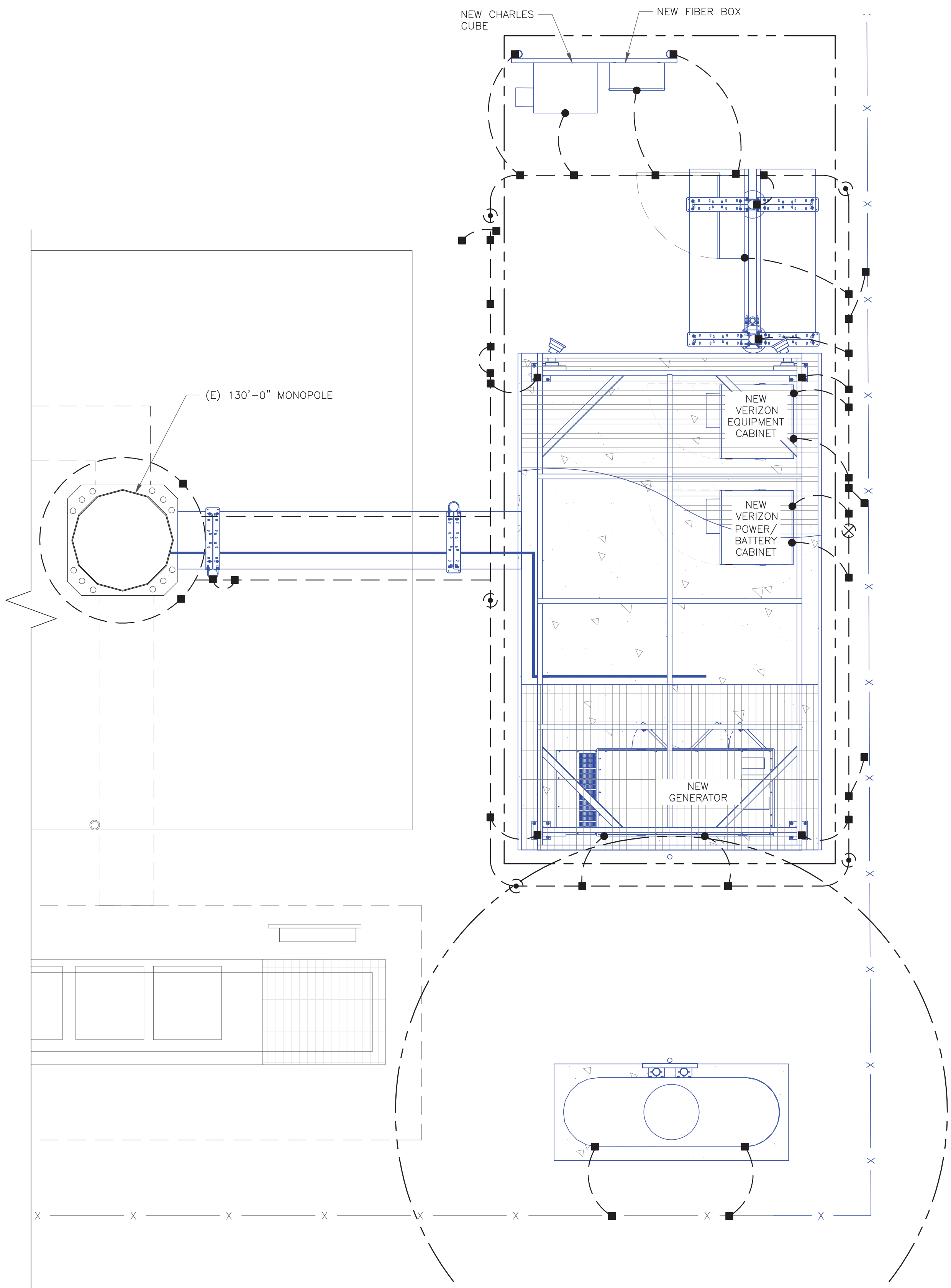
NOTE: FOR ALL ABOVE GRADE CONNECTIONS TO TOWER, ICE BRIDGE, UTILITY H-FRAME, FENCE POSTS, GATE POSTS, GENERATORS, ETC... ALL OF THESE EXPOSED PIGTAILS SHALL BE WITH EMC MODEL #2223-TMC THEFT RESISTANT CABLE. THESE PIGTAILS SHALL THEN HAVE THE SHIELDS STRIPPED BACK AND CADWELDED TO THE TOWER AND EQUIPMENT PAD GROUND RING. ON LONG BELOW GRADE RUNS ONLY, THE ABOVE GROUND PORTIONS (FROM 18" BELOW GRADE UP TO ABOVE GRADE) SHALL BE IN THE EMC THEFT RESISTANT CABLE. CADWELD CONNECTIONS FOR IN-LINE BUT SPLICE FROM #2 TO THE EMC CABLE SHALL BE WITH SSC-1T.

NOTE:  
"NO-OX-ID" SANCHEM INC. IS THE APPROVED GROUNDING COMPOUND

GROUNDING PLAN LEGEND:

---	#2 SOLID BARE TINNED COPPER GROUND WIRE	⊙	COPPER GROUND ROD
■	EXOTHERMIC WELD	⊗	GROUND ROD W/ TEST WELL
●	MECHANICAL CONNECTION		

NOTE TO CONTRACTOR:  
ALL FENCE POSTS WITHIN 6' OF VERIZON GROUND EQUIPMENT MUST BE GROUNDED.



1 SITE PLAN  
SCALE: 3/8"=1'-0" (FULL SIZE)  
3/16"=1'-0" (11x17)

NOTE: SEE SHEETS G-2 THROUGH G-3 FOR GROUNDING DETAILS  
NOTE: ACTUAL RESISTANCE MUST BE MEASURED PRIOR TO CONNECTION TO THE POWER GRID.



20 ALEXANDER DRIVE  
WALLINGFORD, CT 06492



1200 MACARTHUR BLVD, SUITE 200  
MAHWAH, NJ 07430



1717 S. BOULDER  
SUITE 300  
TULSA, OK 74119  
PH: (918) 587-4630  
www.btgrp.com

VERIZON SITE NUMBER:  
617226648

BU #: 876359  
NORWICH

954 NORWICH ROAD  
PLAINFIELD, CT 06062

EXISTING 130'-0" MONOPOLE

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION	DES./QA
B	11/04/22	MEH	PRELIMINARY REVIEW	CV
0	11/22/22	MEH	CONSTRUCTION	ANP
1	11/30/22	YX	CONSTRUCTION	CV
2	2/2/23	YX	CONSTRUCTION	LR
3	2/17/23	YX	CONSTRUCTION	MTJ
4	3/9/23	YX	CONSTRUCTION	LR



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BER:2386985  
Expires 3/31/23

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SHEET NUMBER: REVISION:

G-1 4

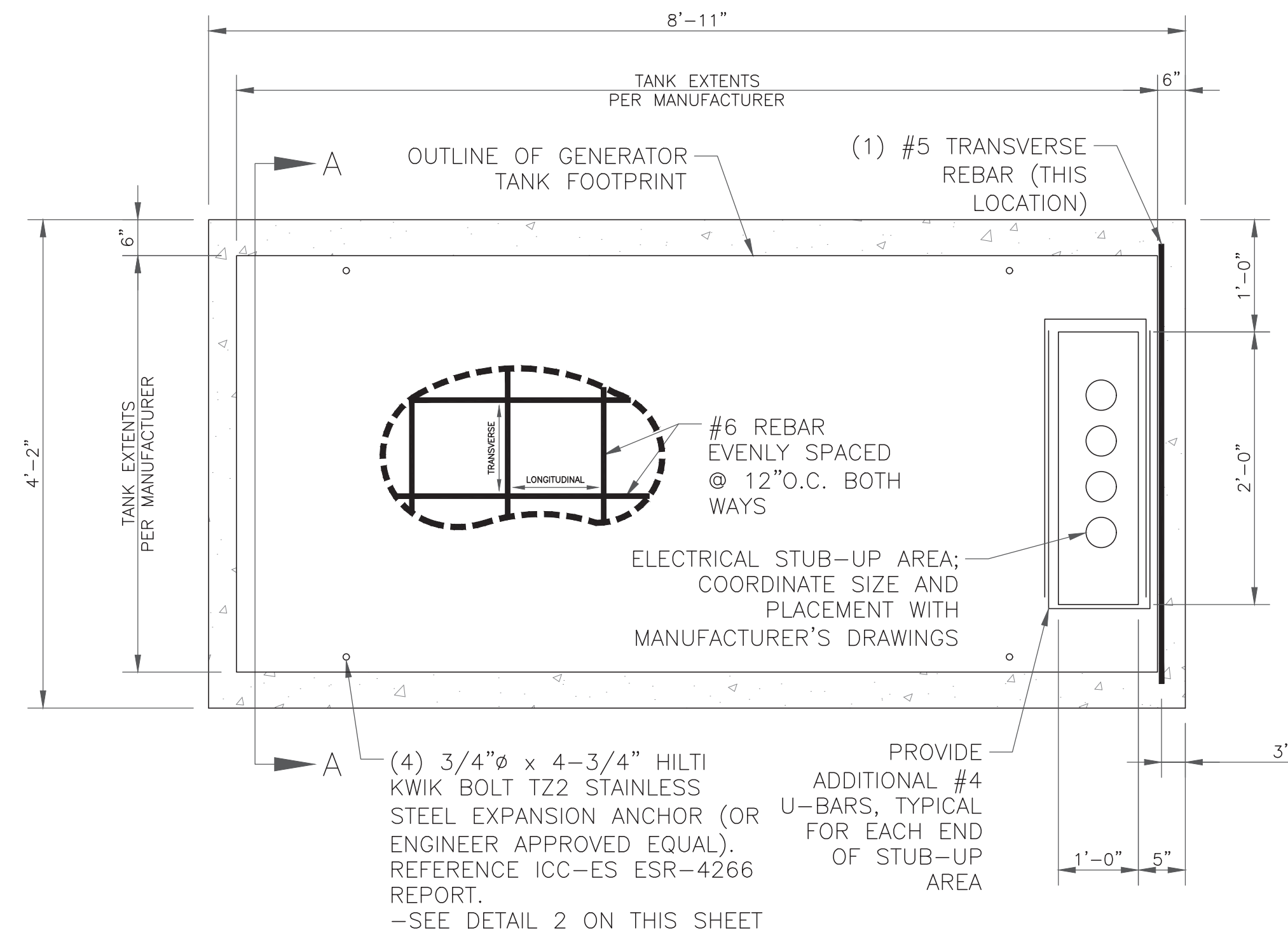
79791.005.01.0001\_876359\_NORWICH\_2.17.23.dwg - Sheet:G-1 - User: lisa.rider - Mar 09, 2023 - 5:01pm



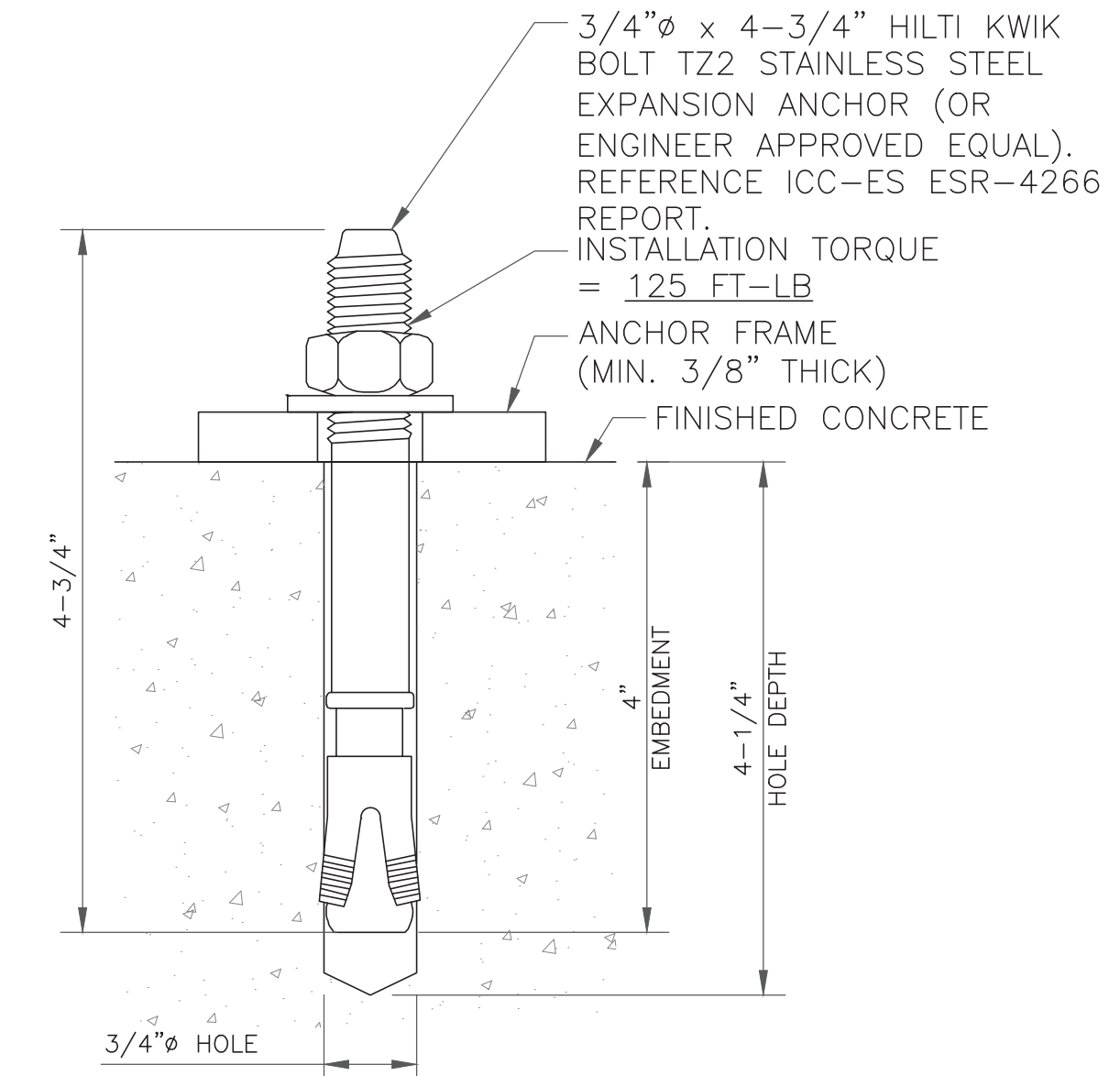
**GENERAL NOTES:**

1. FLEXIBLE UTILITY CONNECTIONS SHOULD BE USED AT UNDERGROUND TO GENERATOR INTERACTIONS.
2. INSTALL EQUIPMENT ANCHORAGE PER MANUFACTURER'S WRITTEN RECOMMENDATIONS.
3. THE ATTACHMENT OF THE GENERATOR TO THE FOUNDATION SLAB AND THE FOUNDATION ITSELF ARE DESIGNED TO RESIST A 3 SECOND GUST WIND SPEED OF 143 MPH (ULTIMATE WIND SPEED).
4. ELECTRICAL STUB-UP AREA WILL BE DETERMINED BY GENERATOR ORIENTATION.

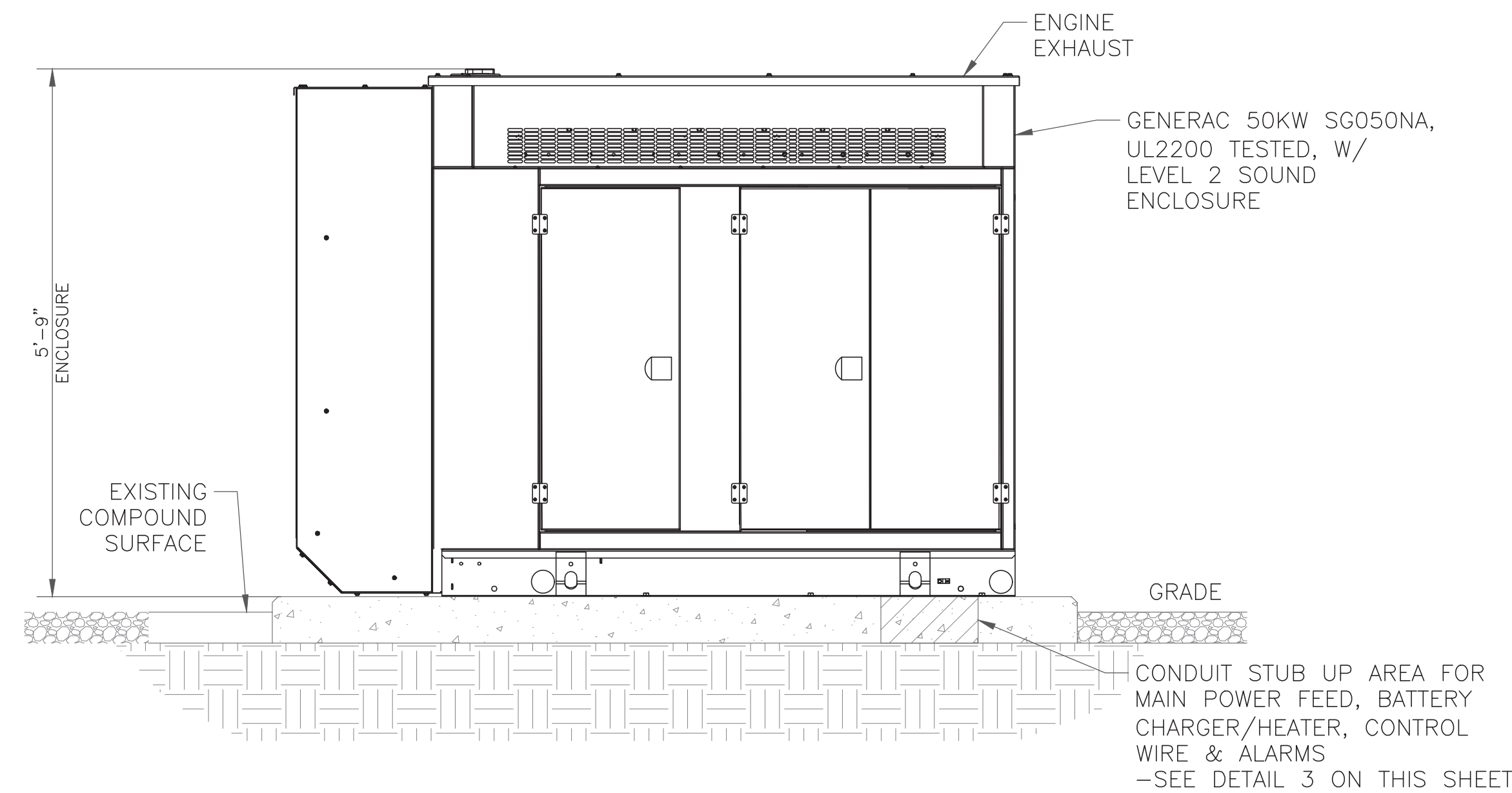
**INSTALLER NOTE:**  
CONDUIT STUB UP LOCATIONS SHALL BE COORDINATED ON SITE WITH CONSTRUCTION MANAGER, PRIOR TO INSTALLING CONCRETE PAD.



1 GENERATOR PAD DETAIL  
SCALE: NOT TO SCALE



2 TYPICAL ANCHOR DETAIL  
SCALE: NOT TO SCALE



3 ELEVATION VIEW  
SCALE: NOT TO SCALE

**NOTES**

1. SEE GENERATOR MANUFACTURE'S DRAWINGS FOR PHYSICAL LOCATION OF FUEL LINES, CONTROL AND POWER INTERCONNECTIONS AND OTHER INTERFACES THAT ARE TO CAST INTO THE CONCRETE. THE PREFERRED METHOD IS TO BRING THE CONDUIT THROUGH THE PAD TO THE UNDERSIDE OF THE GENERATOR (MINIMIZES RODENT DAMAGE). FINISH CONNECTIONS WITH FLEXIBLE CONDUIT PER GENERATOR MANUFACTURES SPECS. RIGID CONDUITS SHALL BE SECURED TO THE EXISTING SLAB, THEN BURIED BETWEEN SLAB AND SHELTER.
2. THE GENERATOR SHALL BE LOCATED A MIN 5' AWAY FROM A COMBUSTIBLE WALL.
3. THE GENERATOR SHALL BE LOCATED A MIN OF 3' AWAY FROM A NON-COMBUSTIBLE WALL.

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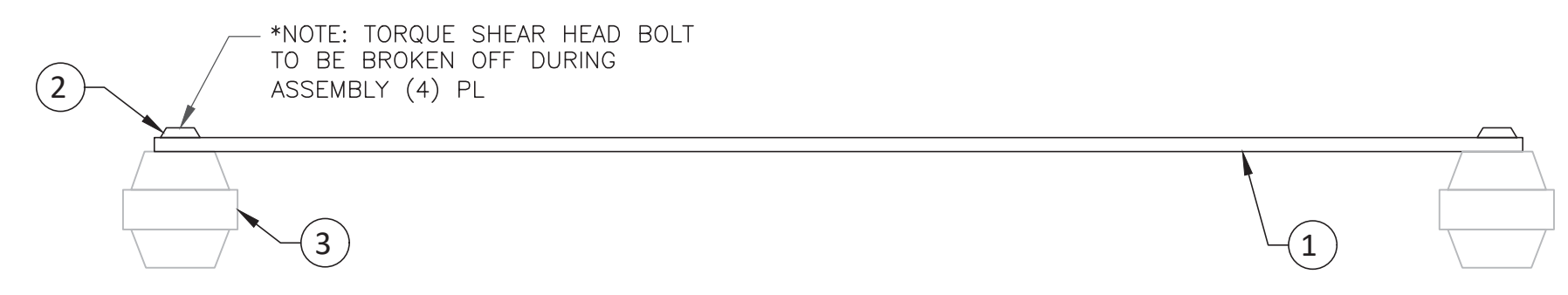
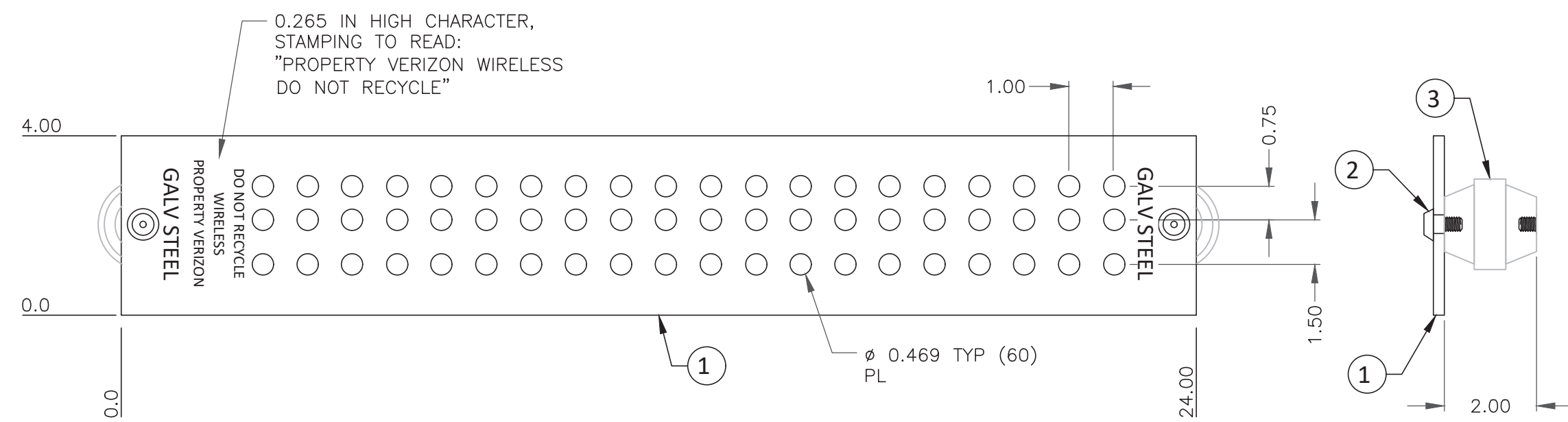
SHEET NUMBER:

**G-2**

REVISION:

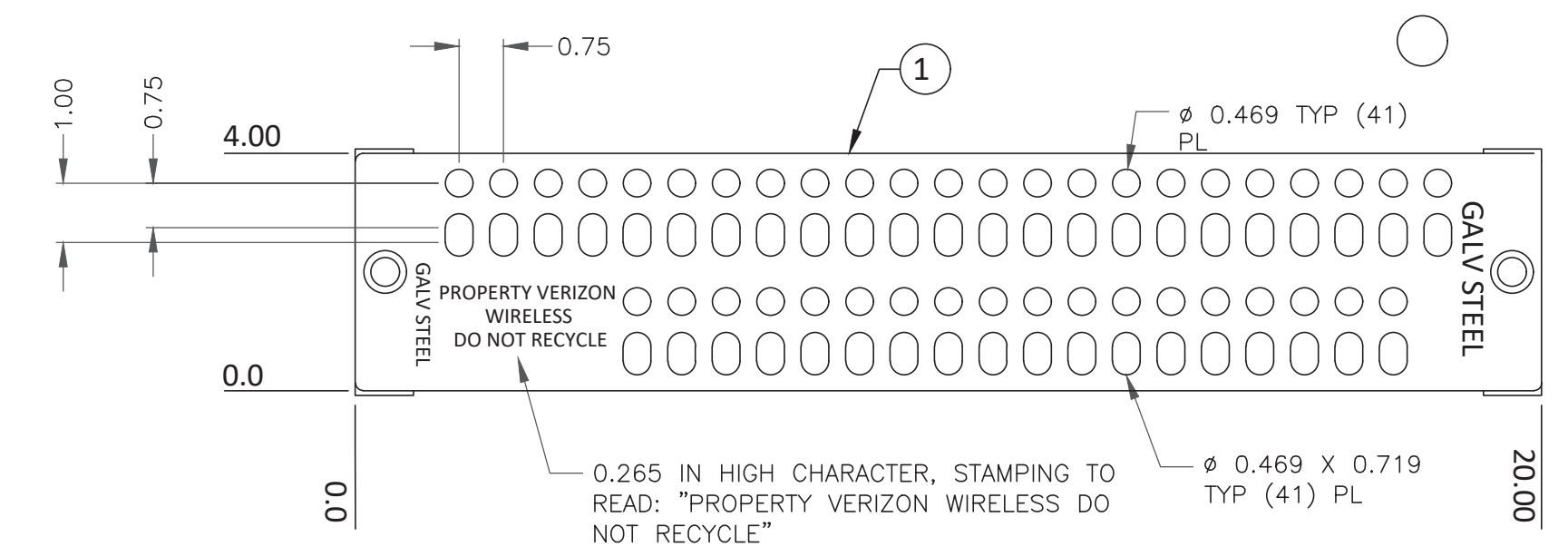
**4**





ITEM	PART NO.	DESCRIPTION	REQ
3	03-009-0118-000	THREADED (3/8-16) INSULATORS, 2" DIA X 2" HEIGHT; FIBERGLASS	2
2	02-009-0633-000	3/8-16 X 5/8" TORQUE SHEAR HEAD BOLT (NON-REMOVABLE) WITH VIBRASEAL; STAINLESS STEEL	2
1	02-009-0662-000	GROUND BAR, GALVANIZED STEEL 1/4" X 4" X 24"	1

1 MAIN GROUND BUS BAR  
SCALE: NOT TO SCALE

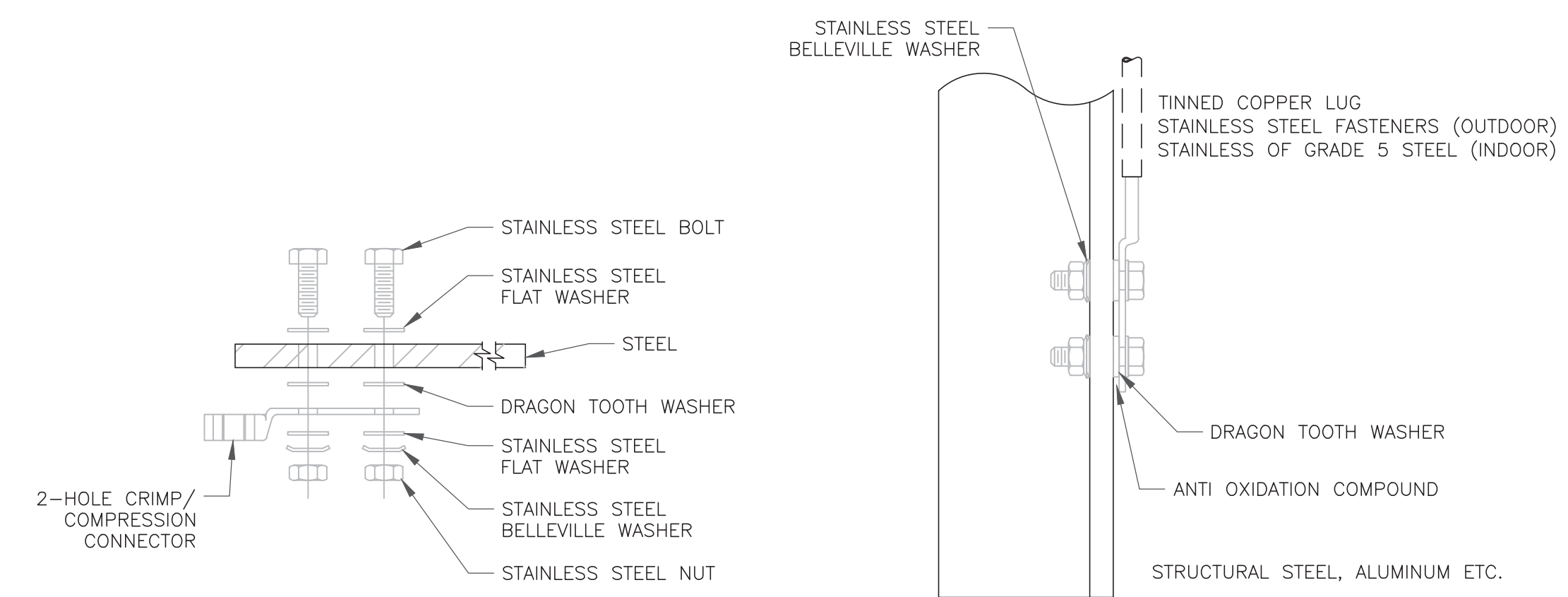


**EMC**  
ELECTRIC MOTION CO., INC.  
110 GROPPA DR./ BOX 626  
WINSTED, CT 06098  
PART #EM SGM420-BM-NR

ATTENTION NOTE:  
ALL NON LIKE METALS NEED DRAGON  
TOOTH WASHERS AND BELLEVILLE  
WASHERS

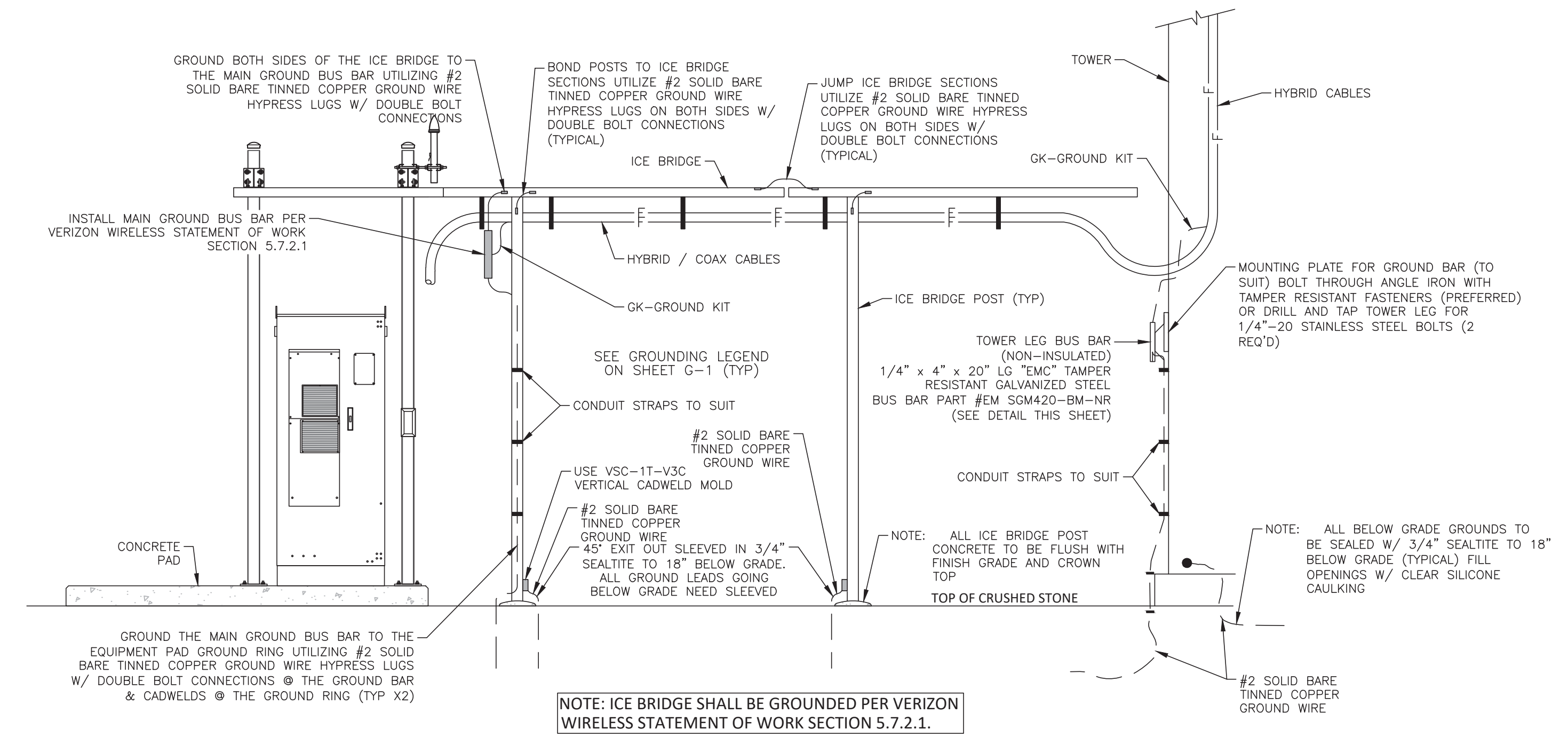
4	02-009-0663-000 (SUB-ASSEMBLY)	3/8-16 x 5/8" TORQUE SHEAR HEAD BOLT IN A STANDARD 4 x 6 BAG INCLUDES: (2) 3/8-16 x 5/8" TORQUE SHEAR HEAD BOLT (NON-REMOVABLE) WITH VIBRASEAL; STAINLESS STEEL (303) P/N 02-009-0603-000 (1) STANDARD 4" x 6" BAG (P/N 03-009-0209-00)	1
3	02-009-0633-000	3/8-16 x 5/8" TORQUE SHEAR HEAD BOLT (NON-REMOVABLE) WITH VIBRASEAL; STAINLESS STEEL (303)	2
2	02-009-0524-000	MOUNTING BRACKET; STAINLESS STEEL, 16 GA (.060) THICK	1
1	02-009-0672-000	20" GROUND BAR; STEEL; GALVANIZED	1

2 TOWER LEG BUS BAR (NON-INSULATED)  
SCALE: NOT TO SCALE



- INSTALLATION NOTES:**
1. ALL OUTDOOR HARDWARE (I.E. BOLTS, SCREWS, NUTS, WASHERS) SHOULD BE 18-8 GRADE STAINLESS STEEL.
  2. ALL INDOOR HARDWARE (I.E. BOLTS, SCREWS, NUTS, WASHERS) SHOULD BE GRADE 5 STEEL HARDWARE.
  3. BOLT LENGTH SHOULD ALLOW THE EXPOSURE OF AT TWO THREADS.
  4. BACK TO BACK LUG CONNECTIONS ARE AN ACCEPTABLE PRACTICE WHEN BONDING TO A GROUND BAR OR STEEL OBJECTS.
  5. ANY CONNECTIONS MADE BETWEEN STEEL OR OTHER DISSIMILAR METALS REQUIRE THE USE OF A DRAGON TOOTH WASHER.
  6. \*SINGLE CONNECTOR AT GROUND BARS\* PERTAINS TO COPPER GROUND BARS ONLY!
  7. GALVANIZED GROUND BARS AND OTHER STEEL OBJECTS (I.E. CABINETS, GENERATOR TANKS, ICE BRIDGE POSTS, ETC.) SHOULD FOLLOW THE \*SINGLE CONNECTOR AT STEEL OBJECTS\* DETAIL.

3 STANDARD GROUNDING HARDWARE CONFIGURATION  
SCALE: NOT TO SCALE



NOTE: ICE BRIDGE SHALL BE GROUNDED PER VERIZON WIRELESS STATEMENT OF WORK SECTION 5.7.2.1.

4 ICE BRIDGE GROUNDING DETAIL  
SCALE: NOT TO SCALE

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SHEET NUMBER: **G-3** REVISION: **4**

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SHEET NUMBER: REVISION:

REF1 4

VZW GENERATOR RETROFIT ALARM LAYOUT

02/04/2010 GFH

New GEN PROG ALARM layout

Replaces existing alarm positions on BLK#2

All GEN PROG ALARMS on BLK#1 to remain the same

TB2

ROW	DESIGNATION	NOMENCLATURE	RELAY	CONTACT	WIRE COLOR
1	GEN PROG ALARM J1	GEN OVERCRANK	1	1	W/BL
2	GEN PROG ALARM J1	GEN OVERCRANK	1	2	BL/W
3	GEN PROG ALARM J2	HIGH WATER TEMP	2	1	W/O
4	GEN PROG ALARM J2	HIGH WATER TEMP	2	2	O/W
5	GEN PROG ALARM J3	PRE-LOW OIL PRESSURE	3	1	W/GR
6	GEN PROG ALARM J3	PRE-LOW OIL PRESSURE	3	2	GR/W
7	GEN PROG ALARM J4	PRE-HIGH WATER TEMP	4	1	W/BR
8	GEN PROG ALARM J4	PRE-HIGH WATER TEMP	4	2	BR/W
9	GEN PROG ALARM J5	PRE-LOW FUEL	5	1	W/SL
10	GEN PROG ALARM J5	PRE-LOW FUEL	5	2	SL/W
11	GEN PROG ALARM J6	BATTERY CHARGER FAIL	6	1	R/BL
12	GEN PROG ALARM J6	BATTERY CHARGER FAIL	6	2	BL/R
13	GEN PROG ALARM J7	GEN RUN	7	1	R/O
14	GEN PROG ALARM J7	GEN RUN	7	2	O/R
15	GEN PROG ALARM J8	GEN NOT IN AUTO	8	1	R/GR
16	GEN PROG ALARM J8	GEN NOT IN AUTO	8	2	GR/R
17	GENERATOR SUMMARY ALARM	SUMMARY	9	C	R/BR
18	GENERATOR SUMMARY ALARM	SUMMARY	9	NC	BR/R
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					
31					
32					
33					
34					
35	SUB-PANEL AC POWER FAIL	EXT AC CKT SUB-PANEL	RELAY	NO	W/BL
36	SUB-PANEL AC POWER FAIL	EXT AC CKT SUB-PANEL	RELAY	C	BL/W
37	EXTERNAL AC CIRCUIT TVSS	LAE(TVSS3)	SA	NO	W/O
38	EXTERNAL AC CIRCUIT TVSS	LAE(TVSS3)	SA	C	O/W
39	GEN. FAIL COMMON (PROG RELAY	GPR2	GEN	NO	W/BL
40	GEN. FAIL COMMON (PROG RELAY	GPR2	GEN	C	BL/W
41	CATCH BASIN (PROG RELAY #4)	GPR4	GEN	NO	W/O
42	CATCH BASIN (PROG RELAY #4)	GPR4	GEN	C	O/W
43	UTILITY POWER FAIL	PFA	ATS	NO	W/GR
44	UTILITY POWER FAIL	PFA	ATS	C	GR/W
45	ATS/UTILITY SURGE ARREST.	LAU (TVSS1)	ATS	NC	W/BR
46	ATS/UTILITY SURGE ARREST.	LAU (TVSS1)	ATS	C	BR/W
47	ATS/GEN SURGE ARREST.	LAG(TVSS2)	ATS	NC	W/SL
48	ATS/GEN SURGE ARREST.	LAG(TVSS2)	ATS	C	SL/W
49	ATS/ILC NOT IN AUTO	ATS/ILC	ILC	NC	R/BL
50	ATS/ILC NOT IN AUTO	ATS/ILC	ILC	C	BL/R

TVSS  
ALARM  
CABLE

CABLE 4A

SURGE ARRESTOR BLOCK

ROW	CABLE #		DESIGNATION	CONTACT	ARRESTOR MODEL
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19	4	1	GEN. FAIL COMMON (PROG RELAY #2)	GPR2	
20	4	2	GEN. FAIL COMMON (PROG RELAY #2)	GPR2	66PO60
21	4	3	CATCH BASIN (PROG RELAY #4)	GPR4	
22	4	4	CATCH BASIN (PROG RELAY #4)	GPR4	66PO60
23	7	1	UTILITY POWER FAIL	PFA	
24	7	2	UTILITY POWER FAIL	PFA	66PO60
25	7	3	ATS/UTILITY SURGE ARREST.	LAU (TVSS1)	
26	7	4	ATS/UTILITY SURGE ARREST.	LAU (TVSS1)	66PO60
27	7	5	ATS/GEN SURGE ARREST.	LAG(TVSS2)	
28	7	6	ATS/GEN SURGE ARREST.	LAG(TVSS2)	66PO60
29	7	7	ATS/ILC NOT IN AUTO	ATS/ILC	
30	7	8	ATS/ILC NOT IN AUTO	ATS/ILC	66PO60
31					
32					
33	6	1	AI REMOTE RS232 PORT	DB9 PIN 2	
34	6	2	AI REMOTE RS232 PORT	DB9 PIN 3	66PO15
35	6	3	AI REMOTE RS232 PORT	DB9 PIN 5	
36					66PO15
37					
38					
39					
40					
41					
42					
43					
44					
45	5	1	21LT ANNUNCIATOR PANEL	RS485 (+)	
46	5	2	21LT ANNUNCIATOR PANEL	RS485(-)	66PO15
47					
48	5	4	21LT ANNUNCIATOR PANEL	12V (-)	66PO60
49					
50	5	3	21LT ANNUNCIATOR PANEL	12V (+)	66PO60

CABLE 4A

B/WH  
W/O  
W/G

**NOTE:** This document pertains to the install of the generator related alarms only. Adjust the placement of the alarms on TB1 as required based on current site configuration. For LP or Natural Gas generators substitute Pre-Low Water Temp for Pre-Low Fuel alarm on J5.