

# at&t

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507 AIRPORT BLVD., STE. 111  
MORRISVILLE, NC 27560

### AT&T SITE NUMBER: COL02056

### FA#: 10101716

# TEMPLETON GAP

## 7423 TEMPLETON GAP ROAD COLORADO SPRINGS, CO 80922 GENERATOR PROJECT

### APPLICABLE CODES

ALL WORK SHALL COMPLY WITH THE FOLLOWING APPLICABLE CODES:

1. BUILDING CODE 2021 OF COLORADO
2. RESIDENTIAL CODE 2021 OF COLORADO
3. RESIDENTIAL CODE 2018 OF COLORADO
4. EXISTING BUILDING CODE 2021 OF COLORADO
5. MECHANICAL CODE 2021 OF COLORADO
6. ENERGY CONSERVATION CODE 2021 OF COLORADO
7. NATIONAL ELECTRICAL CODE 2020 OF COLORADO

IN THE EVENT OF CONFLICT, THE MOST RESTRICTIVE CODE SHALL PREVAIL

### GENERAL NOTES

THE FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION. HANDICAPPED ACCESS REQUIREMENTS ARE NOT REQUIRED IN ACCORDANCE WITH THE 2021 COLORADO BUILDING CODE. A TECHNICIAN WILL VISIT THE SITE AS REQUIRED FOR ROUTINE MAINTENANCE. THE PROJECT WILL NOT RESULT IN ANY SIGNIFICANT DISTURBANCE OR EFFECT ON DRAINAGE; NO SANITARY SEWER SERVICE, POTABLE WATER, OR TRASH DISPOSAL IS REQUIRED AND NO COMMERCIAL SIGNAGE IS PROPOSED.

### SITE INFORMATION

**APPLICANT:** AT&T TOWER ASSET GROUP  
575 MOROSGO DR.  
ATLANTA, GA 30324-3300

**TOWER OWNER:** CROWN CASTLE  
2000 CORPORATE DRIVE  
CANONSBURG, PA 15317

**STRUCTURE TYPE:** MONOPOLE

**ASSESSORS PARCEL NUMBER:** 5307001021

**LATITUDE:** 38° 56' 19.6 " N 38.93878°

**LONGITUDE:** 104° 42' 7.8 " W -104.70217°

**LAT/LONG TYPE:** NAD-83

**EXISTING ZONING:** A-5

**PROPOSED PROJECT AREA:** NO INCREASE IN S.F.

**TYPE OF CONSTRUCTION:** TYPE V-B

**OCCUPANCY GROUP:** U

**JURISDICTION:** EL PASO COUNTY

### PROJECT TEAM

**CLIENT REPRESENTATIVE (NATIONAL):** MASTEC NETWORK SOLUTIONS  
3443 AIRPORT RD  
SACRAMENTO, CA 95834  
CONTACT: CLEON MITCHELL  
EMAIL: Cleon.Mitchell@mastec.com

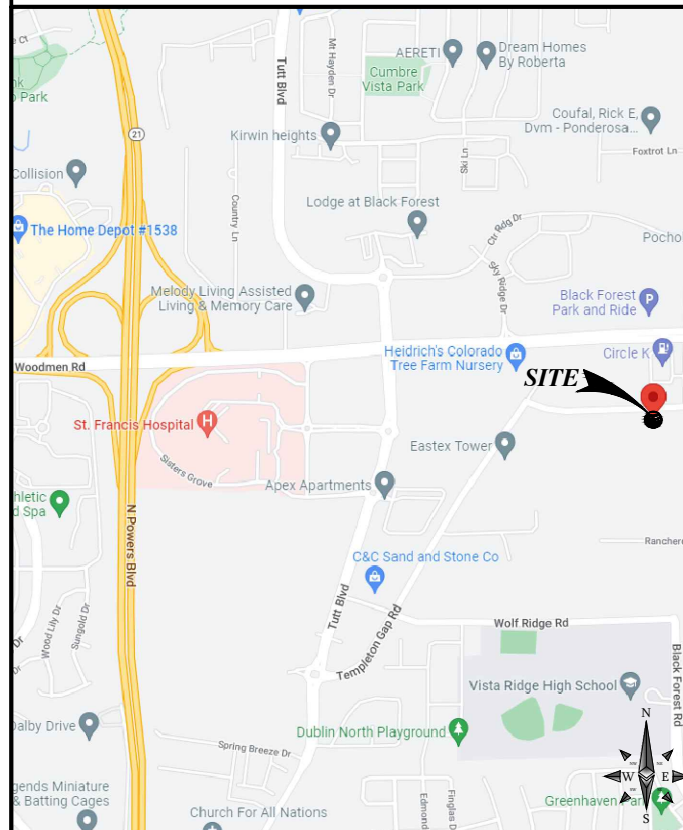
**SCOPING ENGINEER (NATIONAL):** MASTEC NETWORK SOLUTIONS  
2189 PARKWAY LAKE DR.  
HOOVER, AL 35244  
CONTACT: DAVID ROGERS  
EMAIL: David.Rogers@MASTEC.COM

**ENGINEERING (NATIONAL):** MASTEC NETWORK SOLUTIONS  
507 AIRPORT BLVD., STE. 111  
MORRISVILLE, NC 27560  
CONTACT: RAPHAEL MOHAMED  
PH: (919) 674-5895  
EMAIL: Raphael.Mohamed@mastec.com

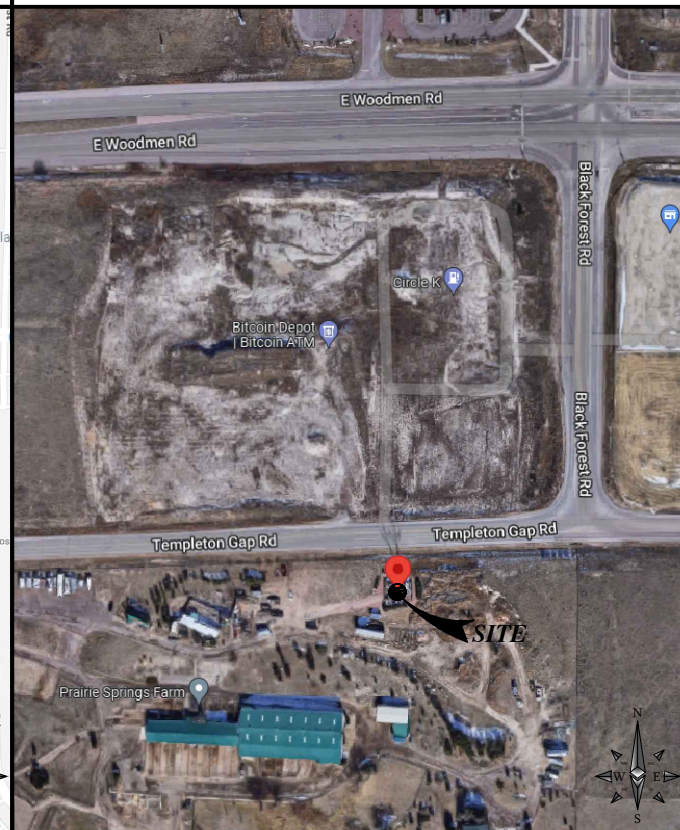
**SITE ACQUISITION (NATIONAL):** MASTEC NETWORK SOLUTIONS  
2189 PARKWAY LAKE DR.  
HOOVER, AL 35244  
CONTACT: CLEON MITCHELL  
EMAIL: Cleon.Mitchell@mastec.com

### LOCATION MAP

#### VICINITY MAP



#### LOCAL MAP



### DRIVING DIRECTIONS

DIRECTIONS FROM: 575 MOROSGO DR., ATLANTA, GA 30324

1. GET ON GA-13 S
2. TAKE I-75 N, I-24 W, I-57 N, I-64 W AND I-70 W TO I-70BL E IN LINCOLN COUNTY.
3. TAKE EXIT 359 FROM I-70 W
4. FOLLOW US-24 W TO TEMPLETON GAP RD IN EL PASO COUNTY. 7445 TEMPLETON GAP RD. COLORADO SPRINGS, CO 80923, USA

### PROJECT DESCRIPTION

AT&T MOBILITY PROPOSES TO MODIFY AN EXISTING UNMANNED WIRELESS COMMUNICATIONS FACILITY. THIS MODIFICATION WILL CONSIST OF THE FOLLOWING:

- TOWER SCOPE OF WORK**
- NO TOWER WORK
- GROUND SCOPE OF WORK**
- REMOVE (E) ATS/CAM LOC
  - INSTALL (1) 30KW KOHLER STANDBY DIESEL GENERATOR (KOHLER 30RE02K) WITH BASE FUEL TANK ON A CONCRETE PAD
  - INSTALL (1) 200A ATS/CAM LOC (#GM90908)
  - INSTALL ATS ALARM RELAY
  - INSTALL E-STOP
  - INSTALL (N) 4"-0" UTILITY H-FRAME

### DRAWING INDEX

SHEET NO:	SHEET TITLE
T-1	TITLE SHEET
GN-1	GENERAL NOTES
A-0	SITE PLAN
A-1	GENERATOR PAD DETAILS
A-1.1	GENERATOR PAD DETAILS
E-1	ELECTRICAL PLAN
E-2	EQUIPMENT & CONDUIT DETAILS
E-3	ALARM DETAILS & ONE LINE DIAGRAM
G-1	GROUNDING DETAILS

### APPROVALS

THE FOLLOWING PARTIES HEREBY APPROVE AND ACCEPT THESE DOCUMENTS & AUTHORIZE THE SUBCONTRACTOR TO PROCEED WITH THE CONSTRUCTION DESCRIBED HEREIN. ALL DOCUMENTS ARE SUBJECT TO REVIEW BY THE LOCAL BUILDING DEPARTMENT & MAY IMPOSE CHANGES OR MODIFICATIONS.

AT&T \_\_\_\_\_ DATE: \_\_\_\_\_

SITE ACQUISITION \_\_\_\_\_ DATE: \_\_\_\_\_

CONSTRUCTION MANAGER \_\_\_\_\_ DATE: \_\_\_\_\_

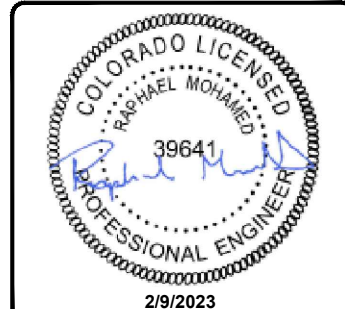
### SCALE

THE DRAWING SCALES SHOWN IN THIS SET REPRESENT THE CORRECT SCALE ONLY WHEN THESE DRAWINGS ARE PRINTED IN A 11"x17" OR 24"x36" FORMAT.



Know what's below.  
Call before you dig.

REV	DATE	DESCRIPTION
1	02/08/23	FOR CONSTRUCTION
0	08/10/22	FOR CONSTRUCTION



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.

COL02056  
TEMPLETON GAP  
7423 TEMPLETON GAP ROAD  
COLORADO SPRINGS, CO 80922  
FA NUMBER  
10101716

SHEET TITLE

TITLE SHEET

SHEET NUMBER

T-1

**GENERAL NOTES:**

- ALL SUB-CONTRACTORS ARE TO SIGN INTO THE LL AND AT&T NOC'S ALONG WITH BEFORE THE START OF WORK AND END OF WORK EACH DAY. THE AT&T LOGBOOK MUST ALSO BE SIGNED EACH DAY ON SITE.
- ALL ORIGINAL PERMITS MUST BE POSTED ON SITE BEFORE WORK CAN COMMENCE. ALL PERMITS ARE REQUIRED TO BE IN A NOTICEABLE LOCATION FOR REVIEW BY THE PERMITTING JURISDICTION.
- FOR THE PURPOSE OF CONSTRUCTION DRAWING, THE FOLLOWING DEFINITIONS SHALL APPLY:  
 CONTRACTOR: GENERAL CONTRACTOR RESPONSIBLE FOR CONSTRUCTION  
 CARRIER: AT&T  
 TOWER OWNER: CROWN CASTLE
- 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 MASTEC NETWORK SOLUTIONS.
- 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 (FOR CAST IN PLACE OPTION):**

- 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.

**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 GROUNDED 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 ANTIOXIDANT 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 1/2" 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).

**ELECTRICAL INSTALLATION NOTES:**

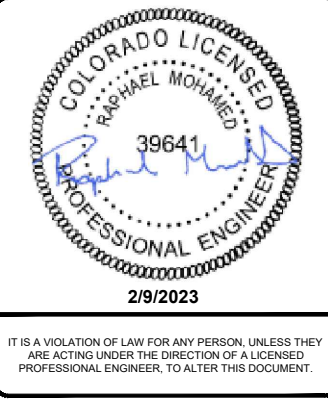
- ALL ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS, NEC AND ALL APPLICABLE FEDERAL, STATE, AND LOCAL CODES/ORDINANCES.
- CONDUIT ROUTINGS ARE SCHEMATIC. CONTRACTOR SHALL INSTALL CONDUITS SO THAT ACCESS TO EQUIPMENT IS NOT BLOCKED AND TRIP HAZARDS ARE ELIMINATED.
- 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. 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 TIE 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/IEEE 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/IEEE AND THE NEC.
- WIREWAYS SHALL BE METAL WITH AN ENAMEL FINISH AND INCLUDE A HINGED COVER, DESIGNED TO SWING OPEN DOWNWARDS (WIREMOLD SPECIMATE 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 LOCKNUT 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 "AT&T".
- ALL EMPTY/SPARE CONDUITS THAT ARE INSTALLED ARE TO HAVE A METERED MULE TAPE PULL CORD INSTALLED.



507 AIRPORT BLVD., STE. 111  
MORRISVILLE, NC 27560

FA CODE:	FA # 10101716
DRAWN BY:	AS
JOB #:	MRUTH046914

REV	DATE	DESCRIPTION
1	02/08/23	FOR CONSTRUCTION
0	08/10/22	FOR CONSTRUCTION



COL02056  
**TEMPLETON GAP**  
 7423 TEMPLETON GAP ROAD  
 COLORADO SPRINGS, CO 80922  
 FA NUMBER  
**10101716**

SHEET TITLE  
**GENERAL NOTES**

SHEET NUMBER  
**GN-1**

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**MasTec**  
Network Solutions

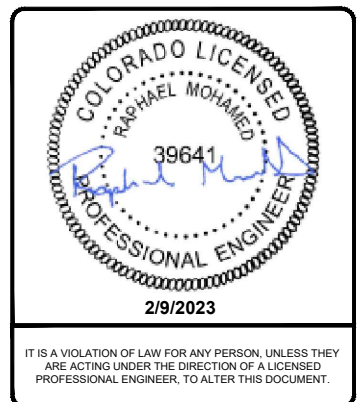
507 AIRPORT BLVD., STE. 111  
MORRISVILLE, NC 27560

FA CODE: FA # 10101716

DRAWN BY: AS

JOB #: MRUTH046914

REV	DATE	DESCRIPTION
1	02/08/23	FOR CONSTRUCTION
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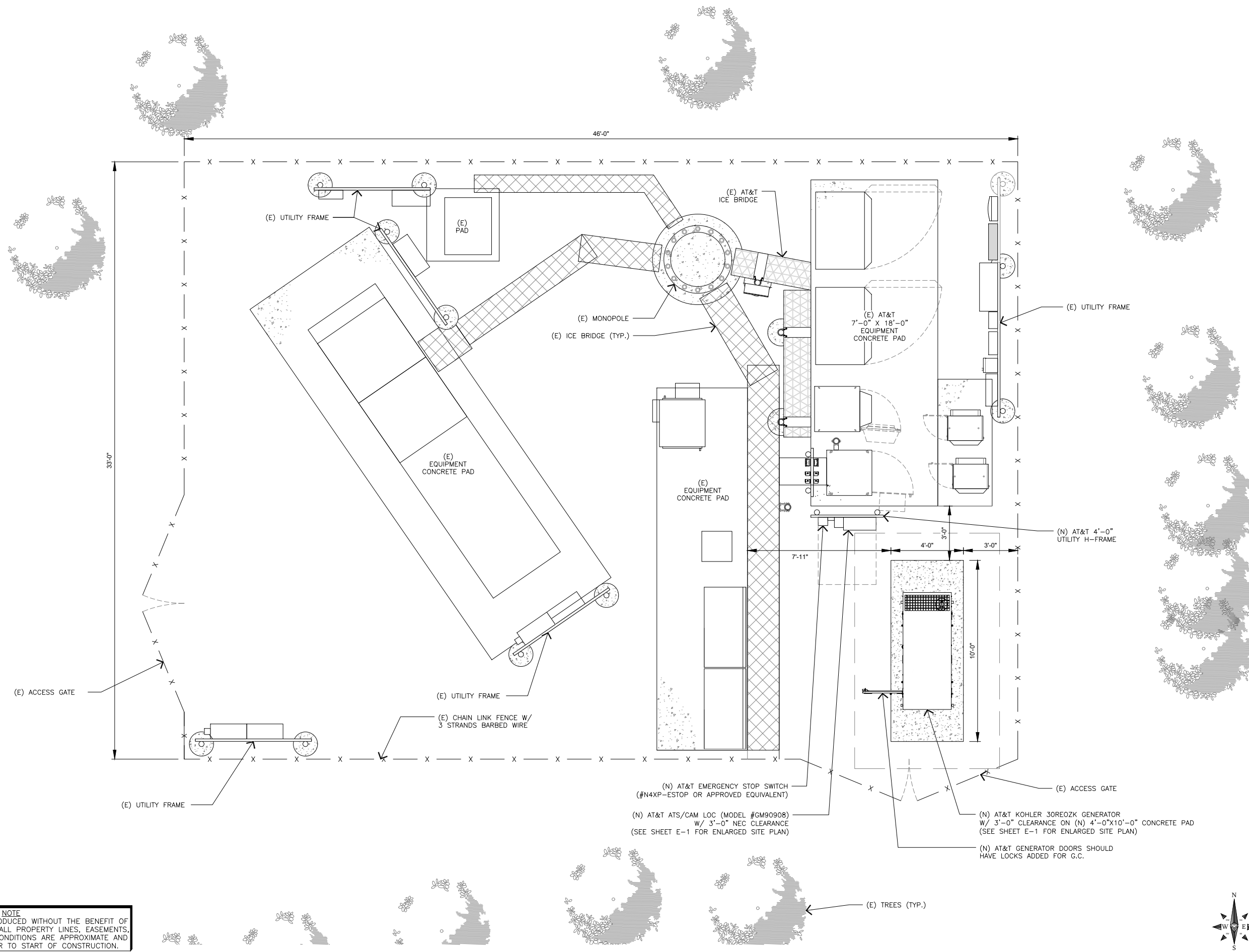


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COL02056  
TEMPLETON GAP  
7423 TEMPLETON GAP ROAD  
COLORADO SPRINGS, CO 80922  
FA NUMBER  
10101716

SHEET TITLE  
SITE PLAN

SHEET NUMBER  
A-0



NOTE  
THESE DRAWINGS WERE PRODUCED WITHOUT THE BENEFIT OF A CURRENT LAND SURVEY. ALL PROPERTY LINES, EASEMENTS, SETBACKS, AND EXISTING CONDITIONS ARE APPROXIMATE AND SHALL BE VERIFIED PRIOR TO START OF CONSTRUCTION.

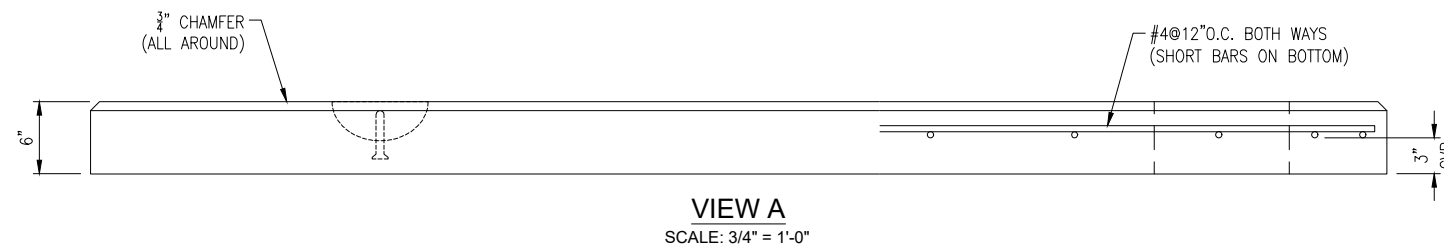
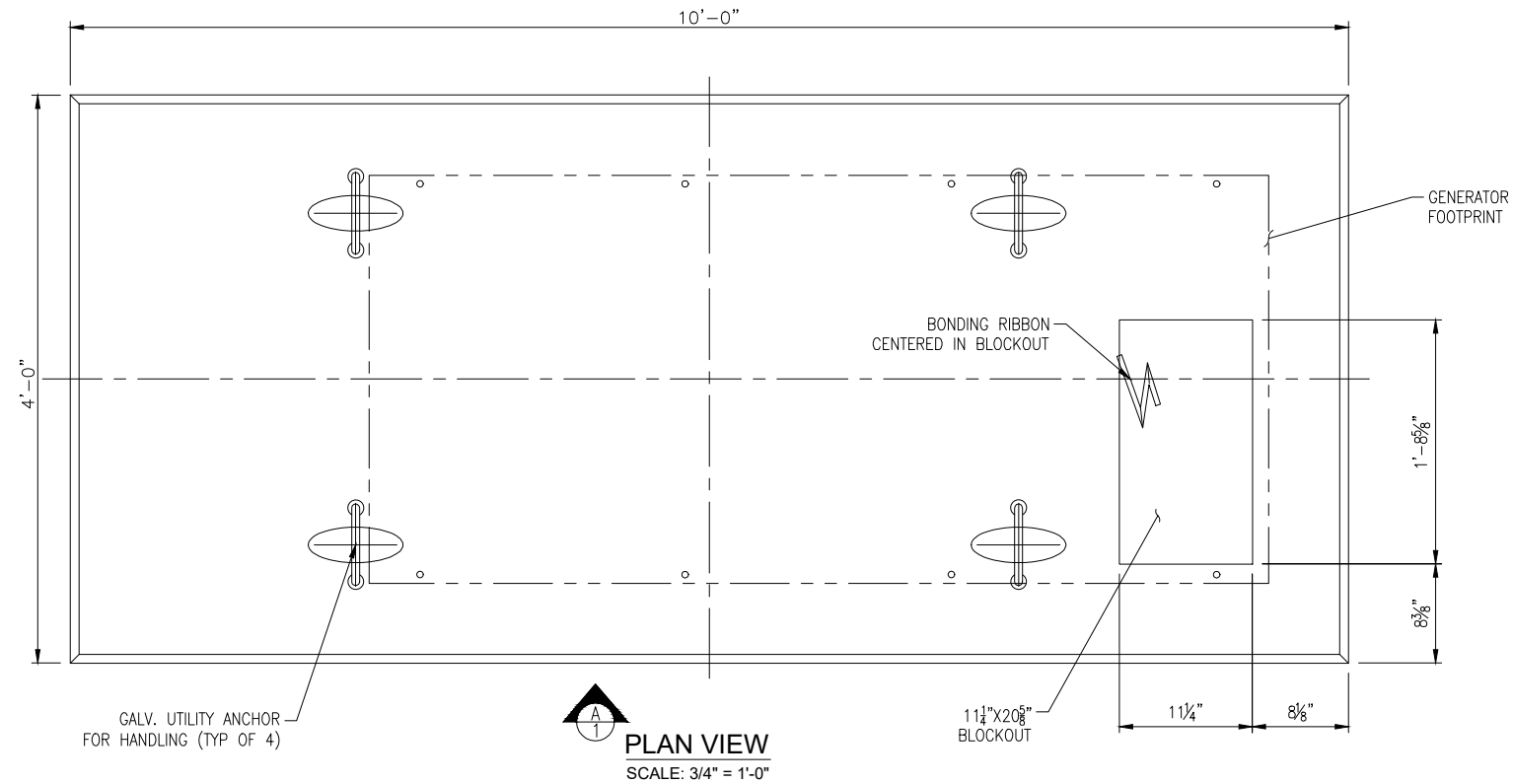
OVERALL SITE PLAN

11x17 SCALE: 3/16"=1'-0"  
24x36 SCALE: 3/8"=1'-0"  
0 1' 2' 3' 6' 1



**GENERAL NOTES**

1. CONCRETE: 28 DAY COMPRESSIVE STRENGTH  $F'_c = 5,000$  PSI (MIN).
2. REINFORCING: ASTM A-615, GRADE 60.
3. SLAB DESIGNED BY OTHERS PER CONTRACT DRAWING #C-2.
4. SLAB SHALL BE SUPPORTED IN ACCORDANCE WITH PROJECT SPECIFICATIONS (I.E. LEVEL AND COMPACTED BEARING SURFACE).
5. ELECTRICAL STUB-UP COORDINATE SIZE & PLACEMENT W/ MANUFACTURER DRAWINGS.



WEIGHT		
SECTION	WEIGHT (lbs.)	CONCRETE (CY)
6" THK PAD	3,000	0.74



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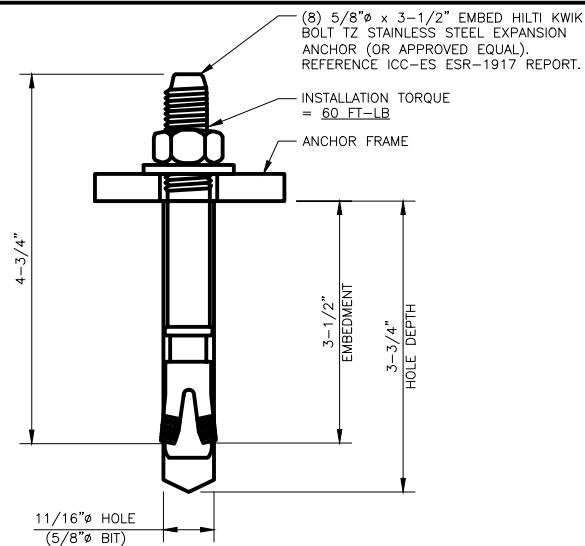
**COL02056**  
**TEMPLETON GAP**  
7423 TEMPLETON GAP ROAD  
COLORADO SPRINGS, CO 80922  
FA NUMBER  
**10101716**

SHEET TITLE  
**GENERATOR PAD DETAILS**

SHEET NUMBER  
**A-1**

**GENERAL NOTES**

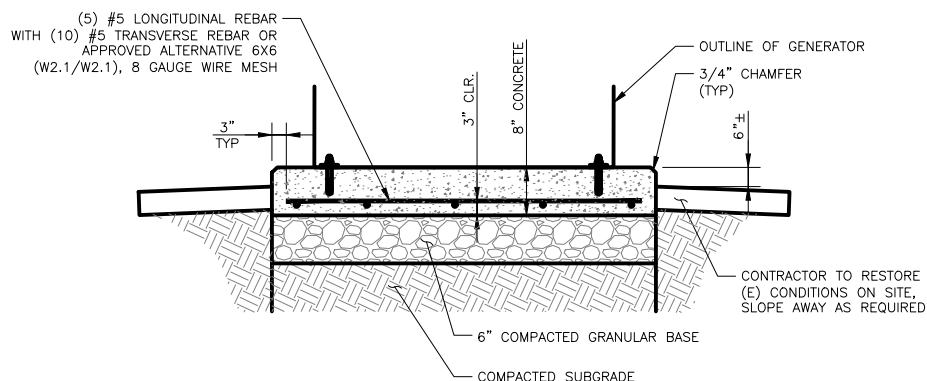
1. CONCRETE SHALL REACH A MINIMUM COMPRESSIVE STRENGTH OF 3,000 PSI IN 28 DAYS FOR FOUNDATIONS, SLABS, AND CONDUIT ENCASEMENTS. CONCRETE SHALL HAVE A 4" NOMINAL SLUMP AND 4.5-6.5% AIR CONTENT. COMPRESSIVE STRENGTH TEST TO BE PERFORMED ON CONCRETE USED FOR FOUNDATION ONLY.
2. ALL REINFORCING STEEL SHALL BE ASTM A-615, GRADE 60 DEFORMED BARS.
3. ALL DETAILING, FABRICATION AND PLACING OF REINFORCING STEEL SHALL CONFORM TO THE MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES (ACI 318).
4. ALL BAR SPLICES SHALL BE CLASS "B" TENSION SPLICES.
5. CHAMFER ALL EXPOSED EXTERNAL CORNERS OF CONCRETE WITH A 3/4" X 45° CHAMFER.
6. FINISHED SLAB TO BE LEVEL ±1/4".
7. FLEXIBLE UTILITY CONNECTIONS SHOULD BE USED AT UNDERGROUND TO GENERATOR INTERACTIONS.
8. EQUIPMENT PAD DESIGN BASED ON AN ASSUMED ALLOWABLE SOIL BEARING CAPACITY OF 2000 PSF. EQUIPMENT FOUNDATIONS BEARING ON CLAY SOILS SHALL HAVE A MAXIMUM SOIL PLASTICITY INDEX OF 27.
9. INSTALL EQUIPMENT ANCHORAGE PER MANUFACTURER'S WRITTEN RECOMMENDATIONS.
10. THE ATTACHMENT OF THE GENERATOR TO THE FOUNDATION SLAB AND THE FOUNDATION ITSELF ARE DESIGNED TO RESIST A 3 SEC. GUST WIND SPEED OF 143 MPH (ULTIMATE WIND SPEED).
11. ELECTRICAL STUB-UP AREA WILL BE DETERMINED BY GENERATOR ORIENTATION.



**TYPICAL ANCHOR DETAIL**

SCALE: 3  
NONE

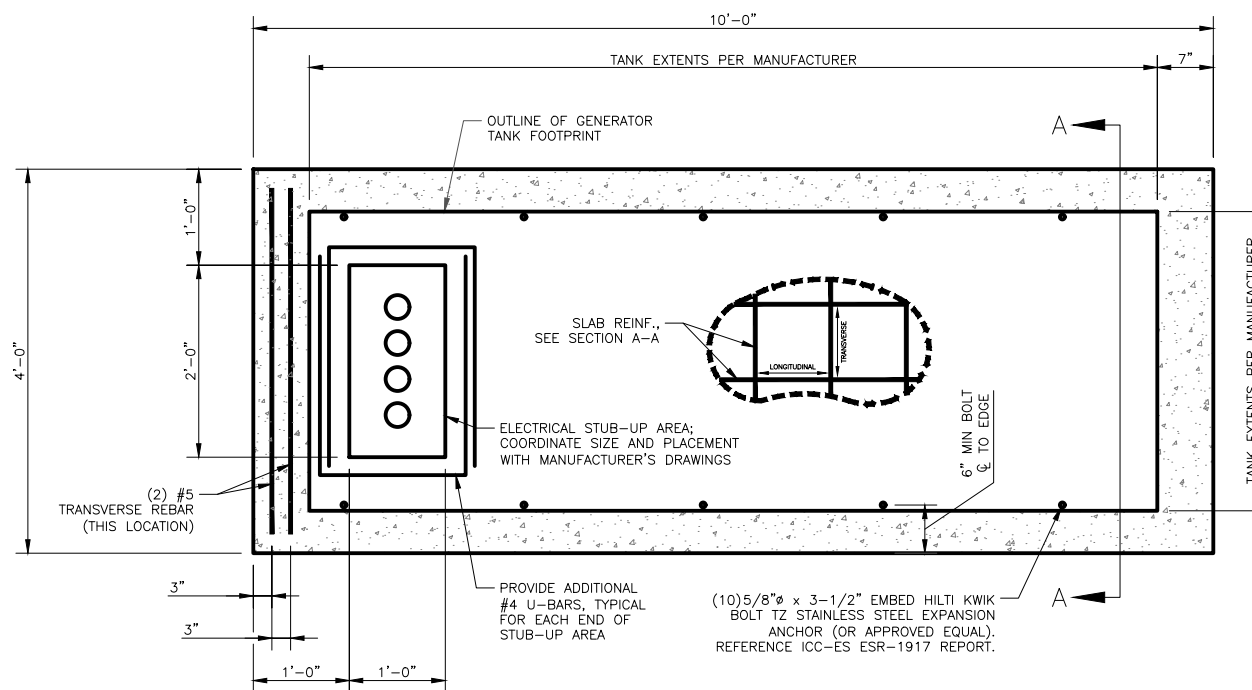
**INSTALLER NOTE:**  
BASE FLOOD ELEVATION (BFE) NOT PROVIDED. CONTRACTOR TO ENSURE TOC OF GENERATOR PAD MATCHES OR EXCEEDS TOC OF EXISTING AT&T EQUIPMENT PAD/FOUNDATION.



**GENERATOR PAD DETAIL – SECTION A-A**

SCALE: 2  
NONE

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



**CAST-IN-PLACE GENERATOR PAD DETAIL**

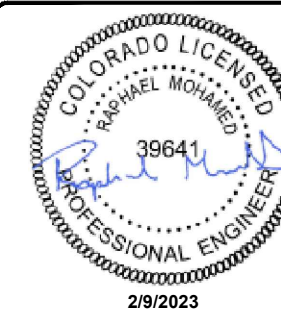
SCALE: 1  
NONE



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10101716

SHEET TITLE  
GENERATOR PAD  
DETAILS

SHEET NUMBER  
A-1.1

**NOTES AND SPECIFICATIONS**

- ALL ELECTRICAL WORK SHALL COMPLY WITH NEC, STATE, AND LOCAL CODES.
- CONTRACTOR SHALL OBTAIN OWNER/TENANT SPECIFICATIONS AND REVIEW FOR ADDITIONAL DETAILS AND REQUIREMENTS THAT MAY NOT BE SHOWN IN THESE DRAWINGS. CONTRACTOR SHALL COMPLY WITH ANY ADDITIONAL OWNER/TENANT SPECIFICATIONS AND REQUIREMENTS.
- CONTRACTOR SHALL COORDINATE WITH THE ELECTRIC UTILITY FOR THE EXACT TRANSFORMER LOCATION, METERING REQUIREMENTS, AND SERVICE ROUTING. CONTRACTOR SHALL COORDINATE WITH THE TELEPHONE UTILITY FOR THE EXACT TELEPHONE REQUIREMENTS AND SERVICE ROUTING.
- PRIOR TO PURCHASING EQUIPMENT, THE CONTRACTOR SHALL CONTACT THE ELECTRIC COMPANY AND OBTAIN IN WRITING THE MAXIMUM AVAILABLE FAULT CURRENT AT THE UTILITY SERVICE POINT. THE CONTRACTOR SHALL ENSURE ALL ELECTRICAL EQUIPMENT, CIRCUIT BREAKERS, DISCONNECTS, FUSES, AND PANELBOARDS HAVE A FAULT CURRENT INTERRUPTING RATING GREATER THAN THE AVAILABLE FAULT CURRENT. IN NO CASE SHALL THE FAULT CURRENT INTERRUPTING RATING BE LESS THAN 10,000 AMPS.
- CONTRACTOR TO PROVIDE 2-200 LB TEST POLYETHYLENE PULL CORDS SECURELY FASTENED AT EACH END OF POWER AND TELCO CONDUIT. PROVIDE CAPS ON END OF UNUSED CONDUIT.
- CONTRACTOR TO PROVIDE A REBAR MARKER WITH AT LEAST 2 FEET EXPOSED ABOVE GRADE AND PAINTED BRIGHT ORANGE TO INDICATE LOCATION OF CONDUIT CAPPED BELOW GRADE.
- PRIOR TO TRENCHING CONTRACTOR SHALL LOCATE ALL EXISTING UNDERGROUND UTILITIES. CONTRACTOR SHALL REPAIR AT CONTRACTOR'S EXPENSE ANY DAMAGE TO EXISTING UTILITIES.
- CONTRACTOR TO VERIFY EXACT ROUTING OF POWER AND TELCO CONDUIT WITH LOCAL UTILITIES AND OWNER/TENANT. ENSURE ALL CONDUIT STUB-UPS ACCOMMODATE EQUIPMENT REQUIREMENTS.
- UNDERGROUND CONDUITS SHALL BE SCHEDULE 40 PVC UNLESS NOTED OTHERWISE. USE SCHEDULE 80 PVC UNDER ROADS.
- CONDUIT RUNS SHALL HAVE A CONTINUOUS SLOPE DOWNWARDS AND AWAY FROM THE EQUIPMENT TO ALLOW WATER TO FLOW AWAY FROM THE EQUIPMENT AND SHELTER. EXCAVATE TRENCHES ALONG STRAIGHT LINES PRIOR TO INSTALLING CONDUIT TO ACCOMMODATE ADJUSTING THE ELEVATION, AS NEEDED.
- CONDUIT ENTERING EQUIPMENT SHALL BE SEALED WITH A SEALANT THAT IS IDENTIFIED FOR USE WITH THE CABLE/CONDUCTOR INSULATION, SHIELDING, ETC.
- THE OWNER SHALL FURNISH AND THE CONTRACTOR SHALL INSTALL ADDITIONAL SIGNAGE TO BE LOCATED AT THE COMPOUND FENCE. CONTRACTOR SHALL COORDINATE WITH OWNER/TENANT CONSTRUCTION MANAGER FOR PLACEMENT OF SIGNAGE.
- UPON COMPLETION OF CONSTRUCTION, CONTRACTOR IS RESPONSIBLE FOR REPAIRING ANY DAMAGE CAUSED BY CONSTRUCTION ACTIVITIES TO THE LANDSCAPING AREA.
- CONTRACTOR TO ENSURE A MIN. 3' CLEARANCE IN FRONT OF ELECTRICAL PANELS PER NEC.
- ALL ELECTRICAL MATERIALS, DEVICES, APPLIANCES AND EQUIPMENT SHALL BE LABEL TESTED BY AN APPROVED THIRD PARTY TESTING AGENCY.

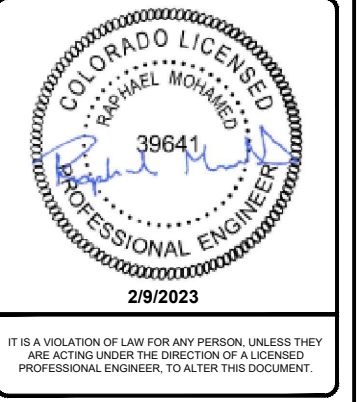
**NOTE:**  
AT&T PORTABLE GEN INTERFACE TO BE REMOVED ONLY IF NECESSARY



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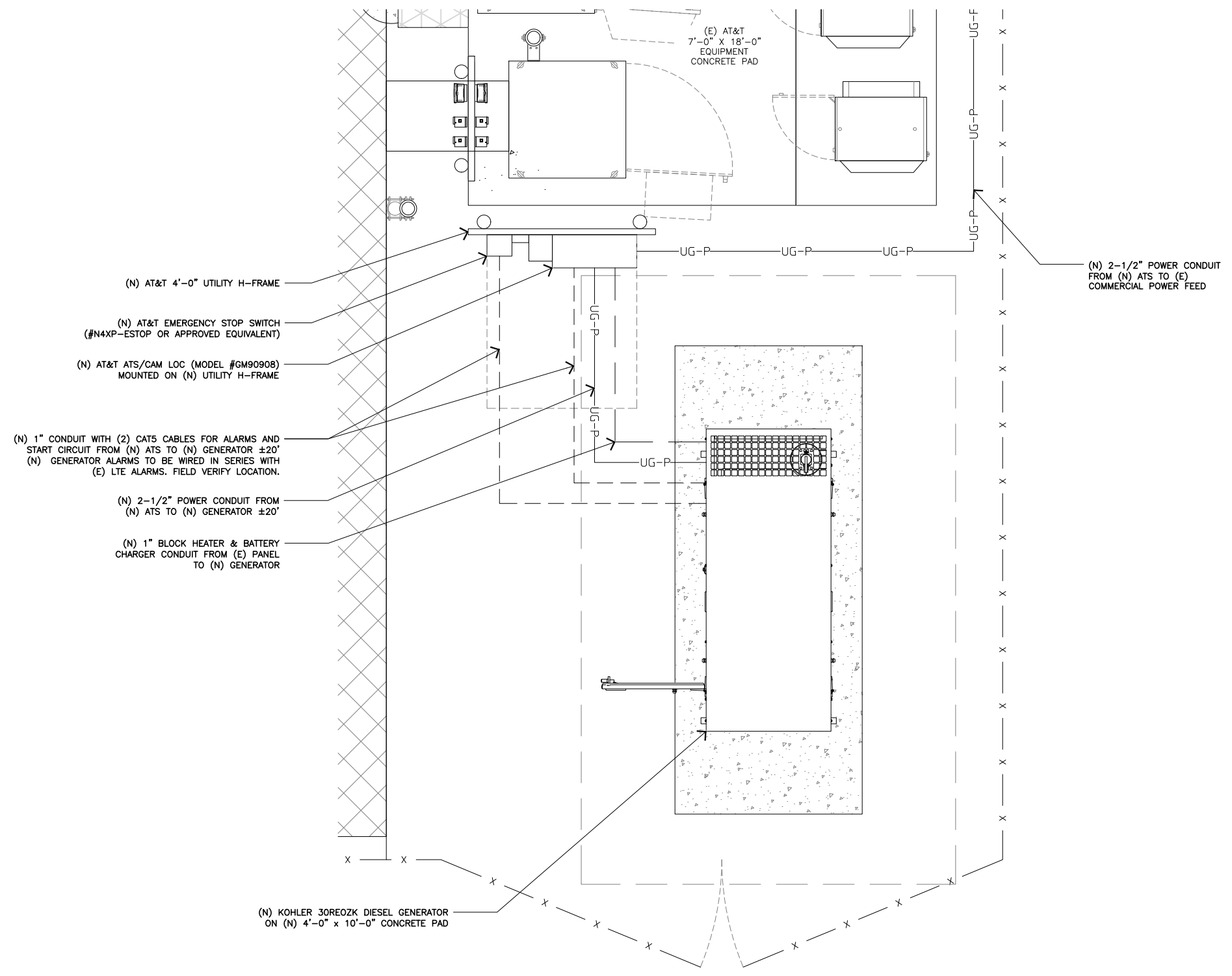
COL02056  
TEMPLETON GAP  
7423 TEMPLETON GAP ROAD  
COLORADO SPRINGS, CO 80922  
FA NUMBER  
10101716

SHEET TITLE  
**ELECTRICAL & LTE SCHEMATIC DIAGRAM**

SHEET NUMBER  
**E-1**

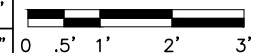
CONDUCTOR COLOR CODE		
SYSTEM	CONDUCTOR	COLOR
120/240V, 1ϕ	A PHASE	BLACK
	B PHASE	RED
	NEUTRAL	WHITE
	GROUND	GREEN
120/208V, 3ϕ	A PHASE	BLACK
	B PHASE	RED
	C PHASE	BLUE
	NEUTRAL	WHITE
277/480V, 3ϕ	A PHASE	BROWN
	B PHASE	ORANGE OR PURPLE
	C PHASE	YELLOW
	NEUTRAL	GREY
DC VOLTAGE	GROUND	GREEN
	POS (+)	RED**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

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



**ELECTRICAL PLAN**

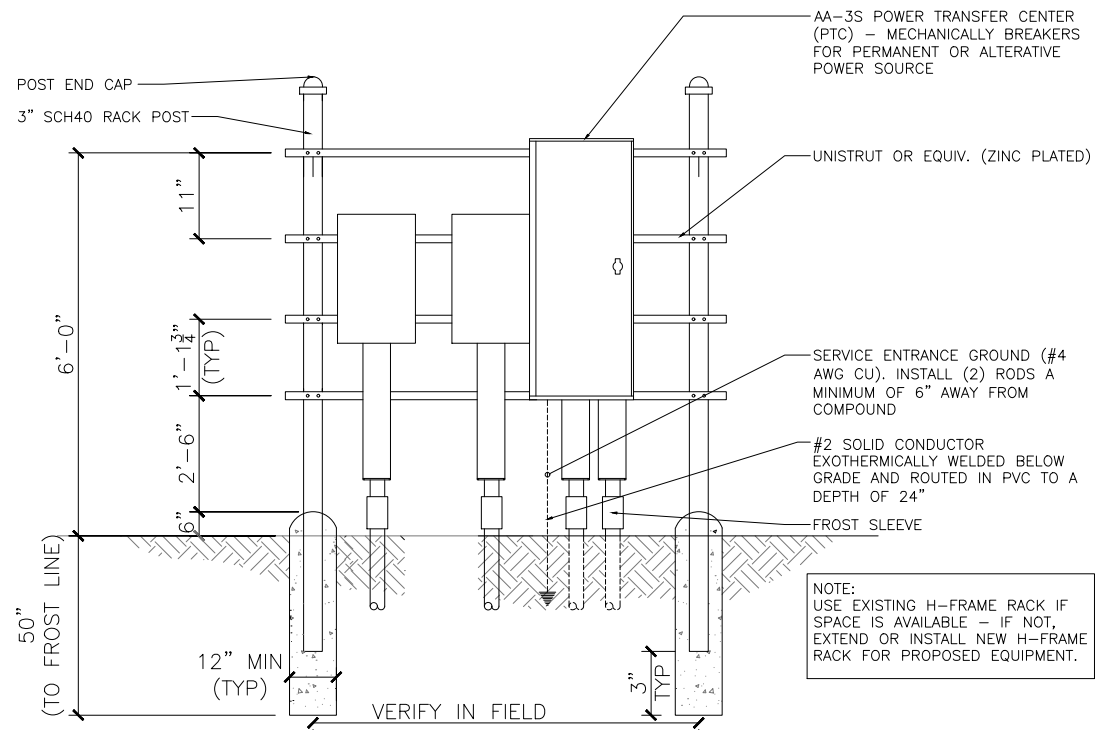
11x17 SCALE: 3/8"=1'-0"  
24x36 SCALE: 3/4"=1'-0"



**1**







**H-FRAME DETAIL**

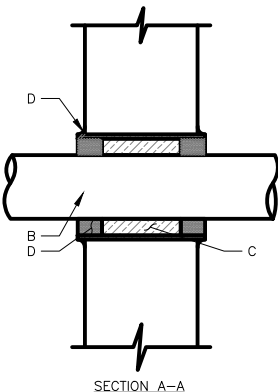
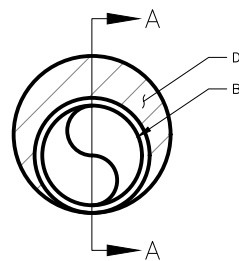
SCALE: NONE **5**

U.L. SYSTEM NO. C-AJ-1150  
 CONDUIT THROUGH BEARING WALL SIMILAR TO U.L. DESIGN NO. U902  
 F RATING = 3 HR  
 T RATING = 0 HR

- A. FLOOR OR WALL ASSEMBLY : MINIMUM 4-1/2" THICK REINFORCED LIGHTWEIGHT OR NORMAL WEIGHT (100-150 PCF) CONCRETE. WALL MAY ALSO BE CONSTRUCTED OF ANY UL CLASSIFIED CONCRETE BLOCKS\*. MAX DIAMETER OF OPENING IS 4". (SEE CONCRETE BLOCKS CATZ) CATEGORY IN THE FIRE RESISTANCE DIRECTORY FOR NAMES OF MANUFACTURERS.
- B. THROUGH PENETRATIONS : ONE METALLIC PIPE OR CONDUIT TO BE RIGIDLY SUPPORTED ON BOTH SIDES OF FLOOR OR WALL ASSEMBLY. THE ANNULAR SPACE SHALL BE MINIMUM 0". (POINT CONTACT) TO MAXIMUM 1-3/8". THE FOLLOWING TYPES AND SIZES OF METALLIC PIPES OR CONDUITS MAY BE USED:
  - a. STEEL PIPE-NOMINAL 6" DIAMETER (OR SMALLER) SCHEDULE 40 (OR HEAVIER) STEEL PIPE
  - b. IRON PIPE-NOMINAL 6" DIAMETER (OR SMALLER) CAST OR DUCTILE IRON PIPE.
  - c. CONDUIT - NOMINAL 4" DIAMETER (OR SMALLER) STEEL ELECTRICAL METALLIC TUBING OR NOMINAL 3-1/2" DIAMETER (OR SMALLER) STEEL CONDUIT.
- C. PACKING MATERIAL: MINIMUM 6" THICKNESS OF MIN 4.0 PCF MINERAL WOOL BATTING INSULATION FIRMLY PACKED INTO OPENING AS A PERMANENT FORM. PACKING MATERIAL TO BE RECESSED FROM TOP SURFACE OF FLOOR OR FROM BOTH SURFACES OF WALL AS REQUIRED TO ACCOMMODATE THE REQUIRED THICKNESS OF FILL MATERIAL.
- D. FILL, VOID, OR CAVITY MATERIAL\*: SEALANT: MINIMUM 1/4" THICKNESS OF FILL MATERIAL APPLIED WITHIN THE ANNULUS, FLUSH WITH TOP SURFACE OF FLOOR AND WITH BOTH SURFACES OF WALL. AT THE POINT CONTACT LOCATION BETWEEN PIPE AND CONCRETE, A MINIMUM 1/2" DIAMETER BEAD OF FILL MATERIAL SHALL BE APPLIED AT THE CONCRETE/PIPE INTERFACE ON THE TOP SURFACE OF FLOOR AND ON BOTH SURFACES OF WALL. W-RATING APPLIES ONLY WHEN CP601S OR CP604 SEALANT IS USED.

HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC. : CP601S, CP604, CP606, OR FS-ONE SEALANT.

\* BEARING THE UL CLASSIFICATION MARK



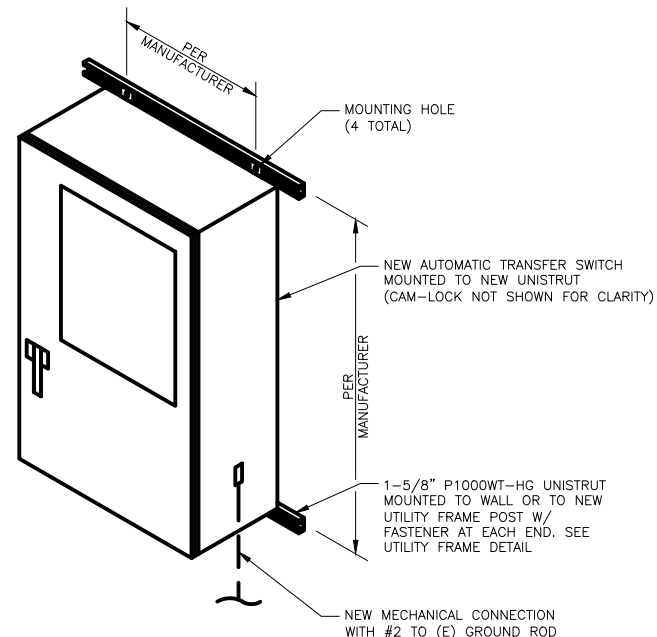
- INSTALLER NOTES:**
- IF EXISTING CONSTRUCTION VARIES FROM THIS DETAIL, AN EQUAL 3-HR U.L. PENETRATION APPROPRIATE FOR THE EXISTING WALL TYPE SHALL BE CONSTRUCTED
  - GC SHALL USE NON-SHRINKING CAULK TO WEATHERSEAL ALL PENETRATIONS INTO OR THRU SHELTER WALL.

**OUTER WALL PENETRATION DETAIL**

SCALE: NONE **6**

UNISTRUT WALL ATTACHMENT:		
WALL CONSTRUCTION TYPE	FASTENER	ANCHOR SPACING
WOOD STUD	3/8" DIA. LAG SCREW	16"
CONCRETE BLOCK (HOLLOW)	-	8"
CONCRETE BLOCK (SOLID)	3/8"Ø SIMPSON TITEN HD ANCHOR MINIMUM EMBEDMENT 2-3/4"	24"

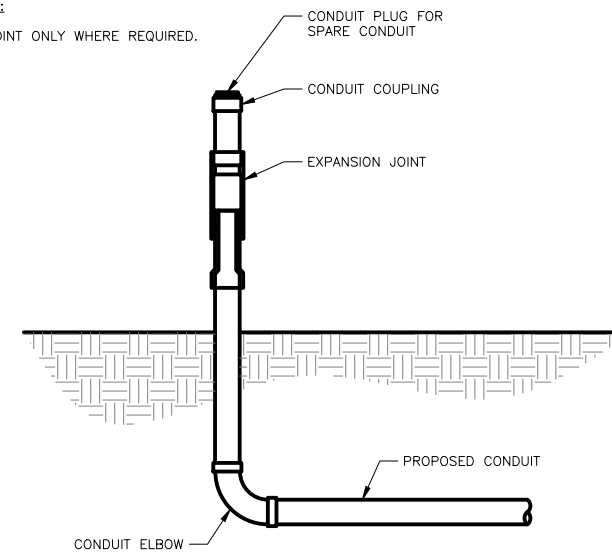
NOTES:  
 1. USE GALVANIZED OR STAINLESS STEEL HARDWARE FOR WALL MOUNT AND CONNECTION OF CHANNELS.  
 2. GC SHALL USE NON-SHRINKING CAULK TO WEATHER SEAL ALL PENETRATIONS INTO OR THROUGH SHELTER WALL.  
 3. MINIMUM (3) ANCHORS TO BE USED FOR EACH CHANNEL.



**ATS MOUNTING DETAIL**

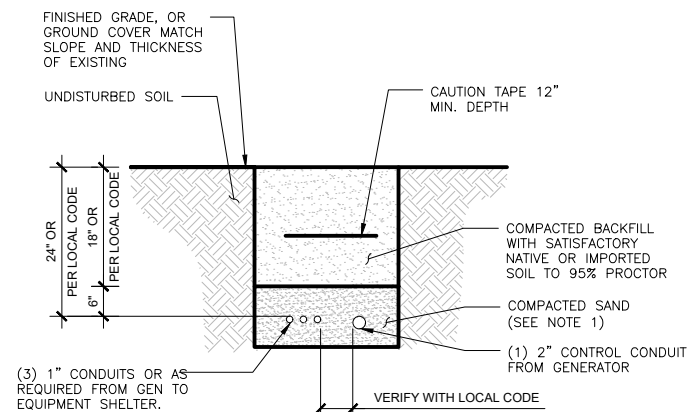
SCALE: NONE **4**

**INSTALLER NOTE:**  
 INSTALL SLIP JOINT ONLY WHERE REQUIRED.



**SLIP JOINT DETAIL**

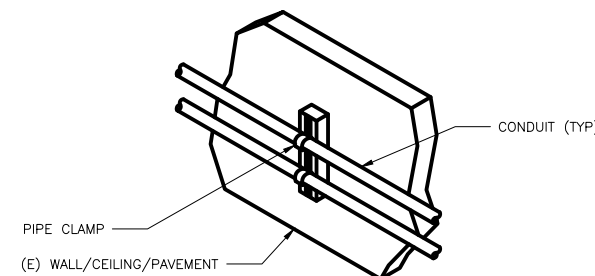
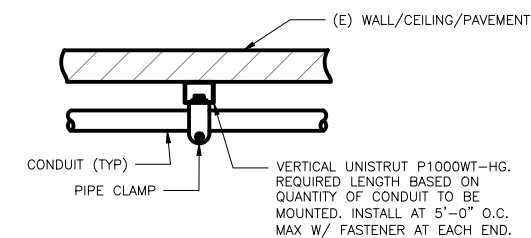
SCALE: NONE **3**



- NOTES:
- SEPARATION DIMENSIONS TO BE VERIFIED WITH LOCAL UTILITY CO. REQUIREMENTS.
  - PROVIDE PVC CONDUIT BELOW GRADE EXCEPT AS NOTED BELOW.
  - PROVIDE RGS CONDUIT AND ELBOWS AT STUB UP LOCATIONS IF REQUIRED.
  - INSTALL UTILITY PULLBOXES PER NEC IF REQUIRED.
  - FOLLOW MINIMUM COVER REQUIREMENTS PER NEC 300-5

**TRENCH DETAIL**

SCALE: NONE **2**



**CONDUIT WALL MOUNT DETAIL**

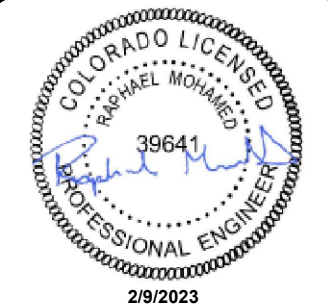
SCALE: NONE **1**



507 AIRPORT BLVD., STE. 111  
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SHEET TITLE  
**EQUIPMENT & CONDUIT DETAILS**

SHEET NUMBER  
**E-2**

GENERATOR ALARM IDENTIFICATION CHART	
NAME	DESCRIPTION
CF	CRITICAL FAILURE
FL	FUEL LEAK OVERFILL
GR	GENERATOR RUNNING
FL	LOW FUEL
MAF	MAJOR FAULT
MF	MINOR FAULT
FL	GEN FUEL LEAK TANK WHT/SLATE

NOTE: CONTRACTOR TO LABEL WIRES W/ P-TOUCH OR SIMILAR LABELS ONLY. ABSOLUTELY NO HANDWRITTEN LABELS.

- ALARM REQUIREMENTS**  
 AT&T REQUIRES FOUR ALARMS CONFIRMED WORKING: NORMALLY CLOSED VOLT-FREE CONTACT FOR:
- GENERATOR RUN
  - GENERATOR FAIL
  - LOW FUEL
  - FUEL LEAK
  - RBS GENERATOR MJ
- COLOR CODE**  
 GENERATOR:  
 A. CABLE - (2) CAT5  
 B. COLOR CODE  
 1. GENERATOR RUN - ALARM PORT #14 (ORANGE & WHITE)  
 2. GENERATOR FAIL - ALARM PORT #15 (BLUE & WHITE)  
 3. LOW FUEL - ALARM (PORT P32) ON I/O BOARD (GREEN & WHITE)  
 4. FUEL LEAK - P32 ON I/O BOARD (BROWN & WHITE)
- AUTOMATIC TRANSFER SWITCH (IF APPLICABLE)**  
 A. CABLE - cat5e  
 B. COLOR CODE  
 1. COMMERCIAL POWER FAIL IF REQUIRED (BLUE WHITE)  
 2. TRANSFER SWITCH POSITION (BROWN WHITE)
- CAM LOCK ALARM**  
 A. CABLE - cat5e  
 B. COLOR CODE  
 1. PORTABLE GENERATOR RUNNING (ORANGE WHITE) (IF REQUIRED)

**NOTES:**

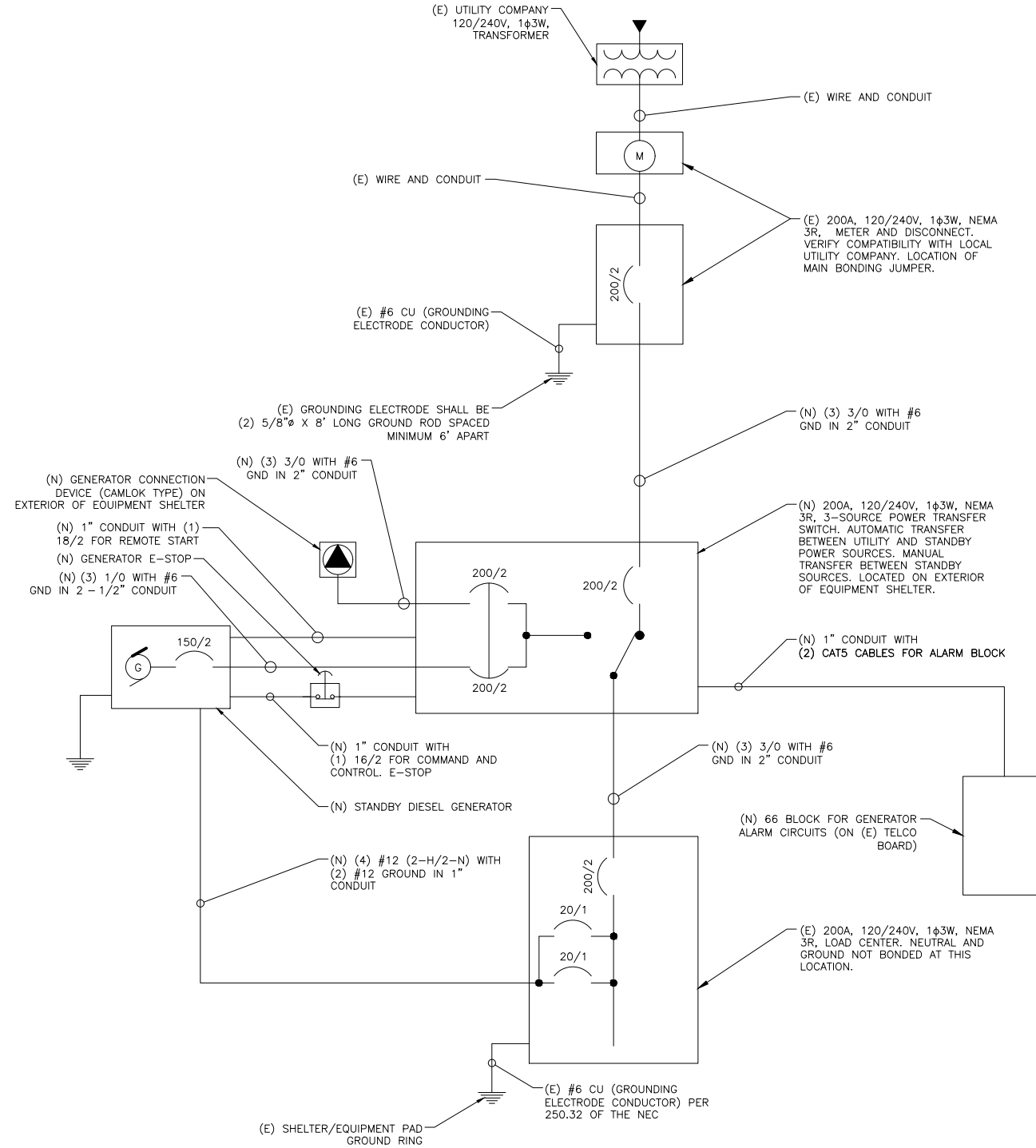
- ALL NEW CONDUCTORS TO BE INSTALLED SHALL BE COPPER. ALL CONDUCTORS SHALL BE THHW, THWN, THWN-2, XHHW, OR XHHW-2 UNLESS NOTED OTHERWISE.
- CONTRACTOR IS TO FIELD VERIFY ALL EXISTING ITEMS SHOWN ON THE ELECTRICAL ONE-LINE DIAGRAM AND NOTIFY THE ENGINEER OF ANY DISCREPANCIES.
- ALL GROUNDING AND BONDING PER THE NEC.
- INSTALL ATS ALARM RELAY

**INSTALLER NOTE:**

CONTRACTOR TO VERIFY EXISTING LOAD PANEL AND INSTALL NEW 20A BREAKER FOR BLOCK HEATER AND NEW 20A BREAKER FOR BATTERY CHARGER (IF REQUIRED).

**INSTALLER NOTES:**

- THE GENERATOR SIZE HAS BEEN DETERMINED BY AT&T BASED ON AN INTERNAL LOAD ANALYSIS OF THEIR EQUIPMENT. THE GENERATOR SIZE WAS PROVIDED AS PART OF THE SCOPING ANALYSIS. AT&T SHALL BE RESPONSIBLE FOR ENSURING THAT THEIR SYSTEM CONFIGURATION DOES NOT EXCEED THE MANUFACTURER POWER RATING OF THE SPECIFIED GENERATOR.
- CONTRACTOR SHALL BE RESPONSIBLE FOR PERFORMING A SPOT READING OF THE PANEL AT PEAK OPERATING HOURS TO VERIFY THE AT&T PANEL SCHEDULE CALCULATIONS ARE NOT EXCEEDED. IN THE EVENT THE READING EXCEEDS THE CALCULATED PANEL SCHEDULE LOADS, RECORD THE READING AND CONSULT AT&T ENGINEERING MANAGER PRIOR TO PROCEEDING WITH GENERATOR INSTALLATION.



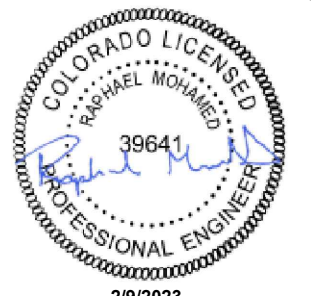
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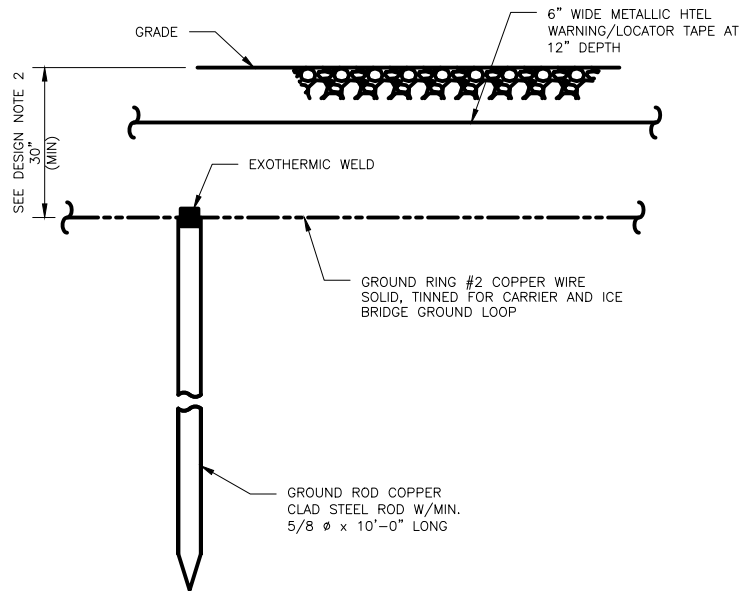
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SHEET TITLE  
 ALARM DETAILS &  
 ONE LINE DIAGRAM

SHEET NUMBER  
 E-3





- NOTES:
- GROUND ROD SHALL BE DRIVEN VERTICALLY, NOT TO EXCEED 45 DEGREES FROM THE VERTICAL.
  - GROUND WIRE SHALL BE MIN. 30" BELOW GRADE OR 6" BELOW FROST LINE. (WHICH EVER IS GREATER) AS PER N.E.C. ARTICLE 250-50(D)

**GROUND ROD DETAIL**

SCALE: **3**  
NONE

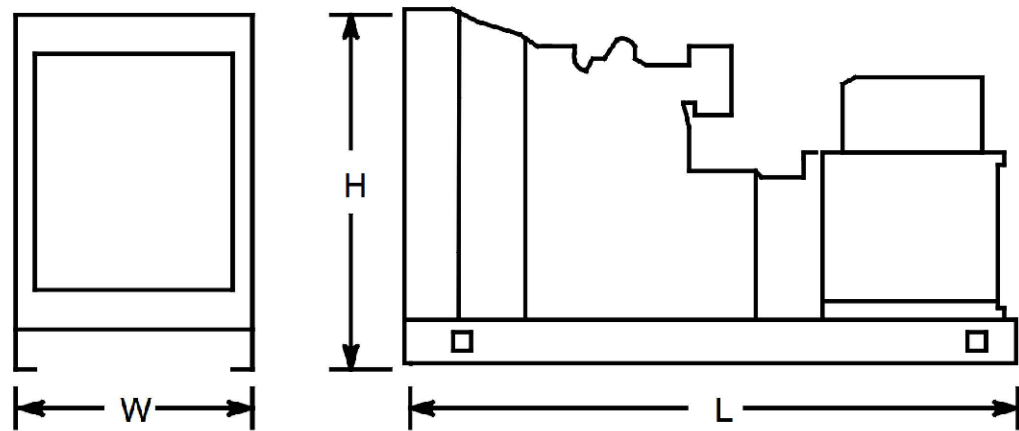
**Dimensions and Weights**

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)

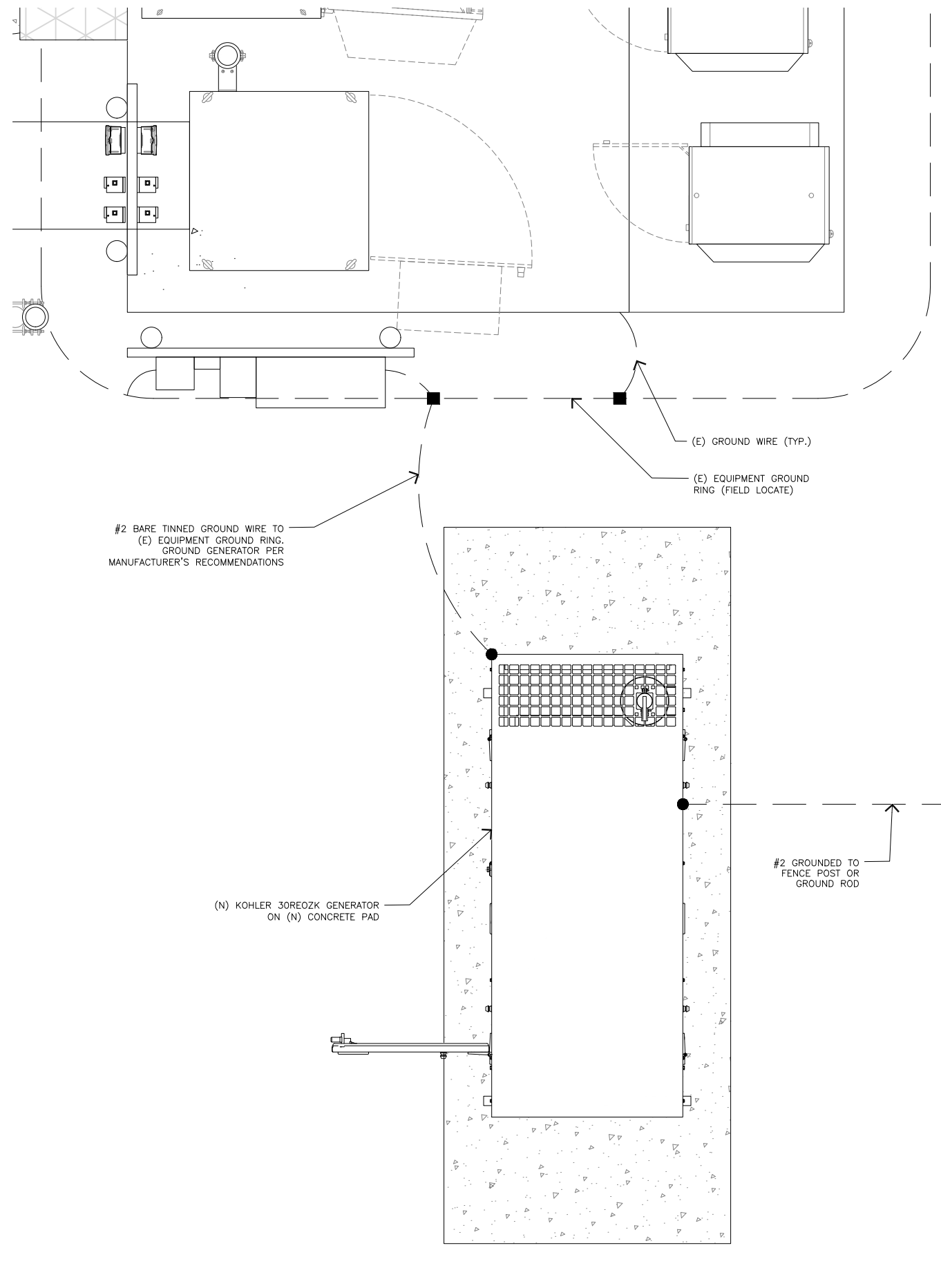
Weight (radiator model), wet, kg (lb.): 512 (1130)



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

**GENERATOR DETAIL**

SCALE: **2**  
NONE



**TYPICAL GROUNDING SCHEMATIC**

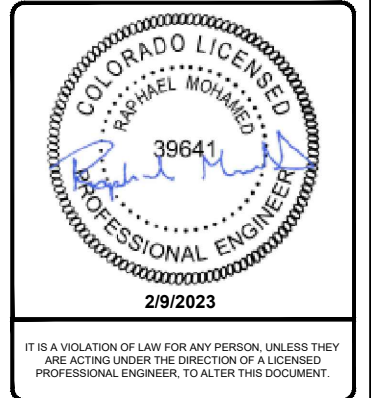
SCALE: **1**  
NONE



507 AIRPORT BLVD., STE. 111  
MORRISVILLE, NC 27560

FA CODE:	FA # 10101716
DRAWN BY:	AS
JOB #:	MRUTH046914

REV	DATE	DESCRIPTION
1	02/08/23	FOR CONSTRUCTION
0	08/10/22	FOR CONSTRUCTION



COL02056  
**TEMPLETON GAP**  
 7423 TEMPLETON GAP ROAD  
 COLORADO SPRINGS, CO 80922  
 FA NUMBER  
 10101716

SHEET TITLE  
**GROUNDING DETAILS**

SHEET NUMBER  
**G-1**



### PROJECT SUMMARY

FIELD SURVEY DATE: 01/26/2023  
 SITE ADDRESS: 7423 TEMPLETON GAP ROAD  
 COLORADO SPRINGS, COLORADO 80922

PARENT PARCEL INFORMATION  
 OWNER: SCHUBERT, RICHARD J  
 OWNER ADDRESS: 7415 TEMPLETON GAP ROAD  
 COLORADO SPRINGS, COLORADO 80923-1271

PID: 5307001021  
 RECORDED IN INSTRUMENT NO. 220206651

TOTAL AREAS:  
 PARENT PARCEL: 9.12+ ACRES  
 TOWER LEASE AREA AS PROVIDED: 1,225.0 SQ FT OR 0.028+ ACRES  
 PROPOSED GENERATOR LEASE AREA AS SURVEYED: 91.0 SQ FT OR 0.002+ ACRES

GEOGRAPHIC COORDINATES OF TOWER:  
 LATITUDE: 38°56'19.7"N LONGITUDE: 104°42'07.8"W  
 VERTICAL DATUM: NAVD 1988 HORIZONTAL DATUM: NAD83  
 GROUND ELEVATION: 6967.6

BEARINGS AND COORDINATES ARE BASED ON COLORADO STATE PLANE AT GROUND, CENTRAL ZONE, FROM GPS OBSERVATION.

FLOODPLAIN:  
 PER THE FEMA FLOODPLAIN MAPS, THE SITE IS LOCATED IN AN AREA DESIGNATED AS ZONE X, AND IS NOT IN A SPECIAL FLOOD HAZARD AREA. COMMUNITY PANEL NUMBER: 0804100529G  
 DATED: 12/07/2018

BOUNDARY NOTE  
 THIS SURVEY DOES NOT CONSTITUTE A BOUNDARY SURVEY OF THE PARENT TRACT. ANY PARENT TRACT PROPERTY LINES SHOWN HEREON ARE FROM SUPPLIED INFORMATION AND MAY NOT BE FIELD VERIFIED.

ENCROACHMENT STATEMENT  
 AT THE TIME OF SURVEY, THERE WAS VISIBLE EVIDENCE OF THE FOLLOWING:  
 A. THE PROVIDED TOWER LEASE AREA LEGAL DESCRIPTION DOES NOT ENCLOSE THE ENTIRE TOWER COMPOUND AND THEREFORE DOES NOT ENCLOSE THE PROPOSED GENERATOR LEASE AREA.  
 B. THE PROVIDED ACCESS EASEMENT LEGAL DESCRIPTION HAS NOT BEEN UPDATED SINCE THE RE-LOCATION OF TEMPLETON GAP ROAD (SEE PARENT PARCEL DETAIL). ACCESS TO THE TOWER COMPOUND AND GENERATOR LEASE AREA IS OBTAINED AT THE LOCATION SHOWN HEREON.

### SURVEYOR'S NOTES

- ACCESS IS OBTAINED VIA THE EXISTING ROAD FROM TEMPLETON GAP ROAD, A PUBLIC RIGHT-OF-WAY.
- THE LOCATIONS OF ALL UTILITIES SHOWN ON THE SURVEY ARE FROM VISIBLE SURFACE EVIDENCE ONLY.
- AT THE TIME OF THIS SURVEY THERE WAS EVIDENCE OF CURRENT DEVELOPMENT ON THE NORTH SIDE OF THE HIGHWAY AND EAST OF THE TOWER, AND TEMPLETON GAP ROAD APPEARS TO BE RECENTLY REROUTED.
- AT THE TIME OF THIS SURVEY, THERE WAS NO OBSERVABLE EVIDENCE OF THE SUBJECT PROPERTY BEING USED AS A SOLID WASTE DUMP, SUMP OR SANITARY LANDFILL.
- THIS SURVEY WAS PREPARED TO SHOW THE INTERESTS OF CROWN CASTLE AND/OR AT&T WIRELESS AND IMPROVEMENTS PROXIMAL TO SAID INTERESTS. IT DOES NOT CONSTITUTE AN AS-BUILT SURVEY OF THE ENTIRE PARENT PARCEL.
- ALL CALLS ARE MEASURED UNLESS OTHERWISE NOTED.
- UNLESS OTHERWISE SPECIFIED, UTILITY POLES DID NOT IDENTIFY OWNERSHIP.
- UTILITY EASEMENT IS PLOTTED AS PROVIDED AND MAY NOT CONTAIN ALL UNDERGROUND UTILITIES NOT LOCATED AT TIME OF SURVEY. UTILITIES SHOULD BE LOCATED IF NECESSARY.
- THE PROPOSED GENERATOR LEASE AREA LIES WHOLLY WITHIN THE PARENT PARCEL.

### ZONING INFORMATION

PROJECT IS ZONED A-5 ACCORDING TO PROVIDED SITE PLAN DATED 11/20/2022.

FOR ADDITIONAL INFORMATION CONTACT:  
 EL PASO COUNTY PLANNING & COMMUNITY DEVELOPMENT  
 2880 INTERNATIONAL CIRCLE, SUITE 110  
 COLORADO SPRINGS, COLORADO 80910  
 (719) 520-6300

### LEGAL DESCRIPTIONS

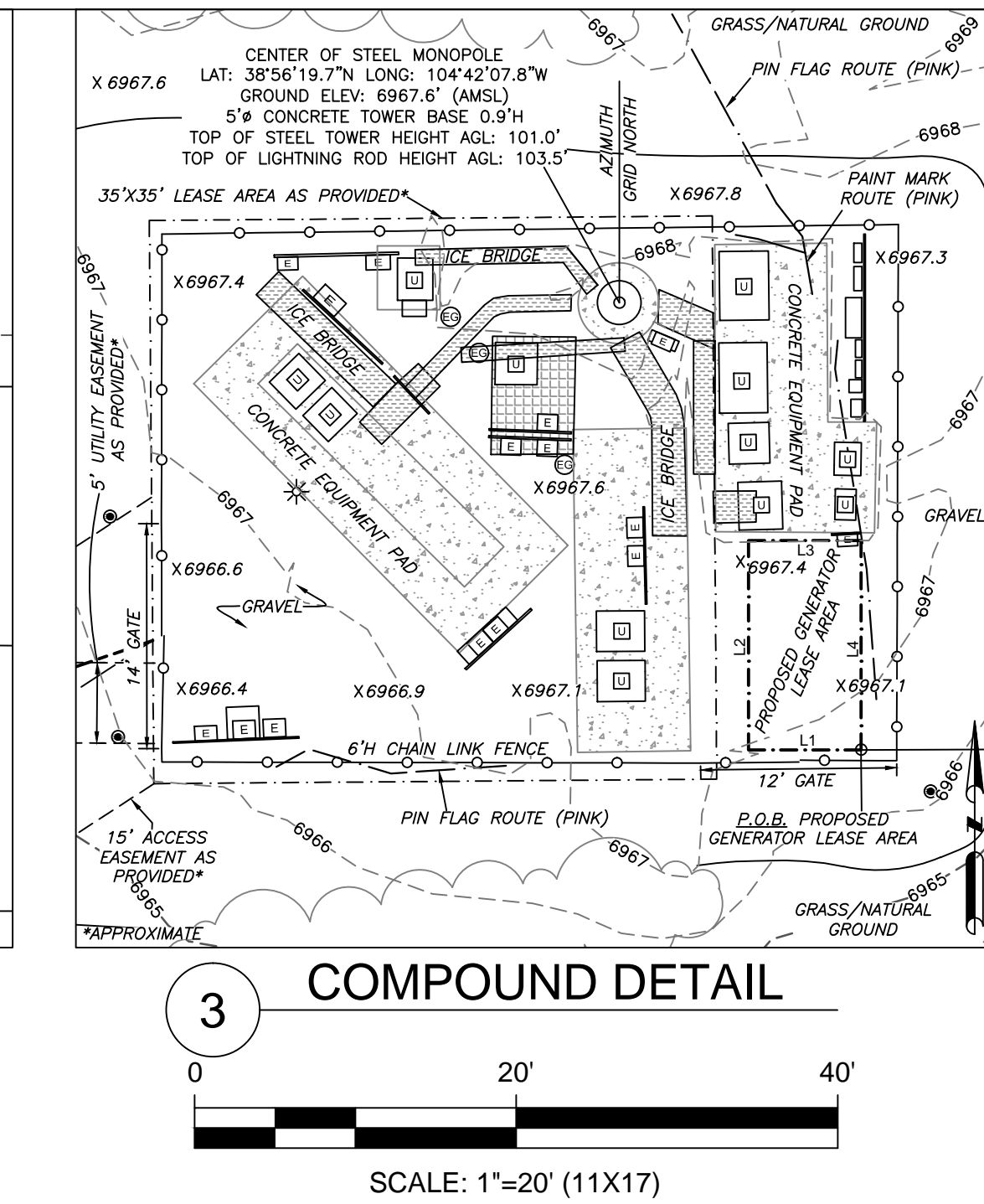
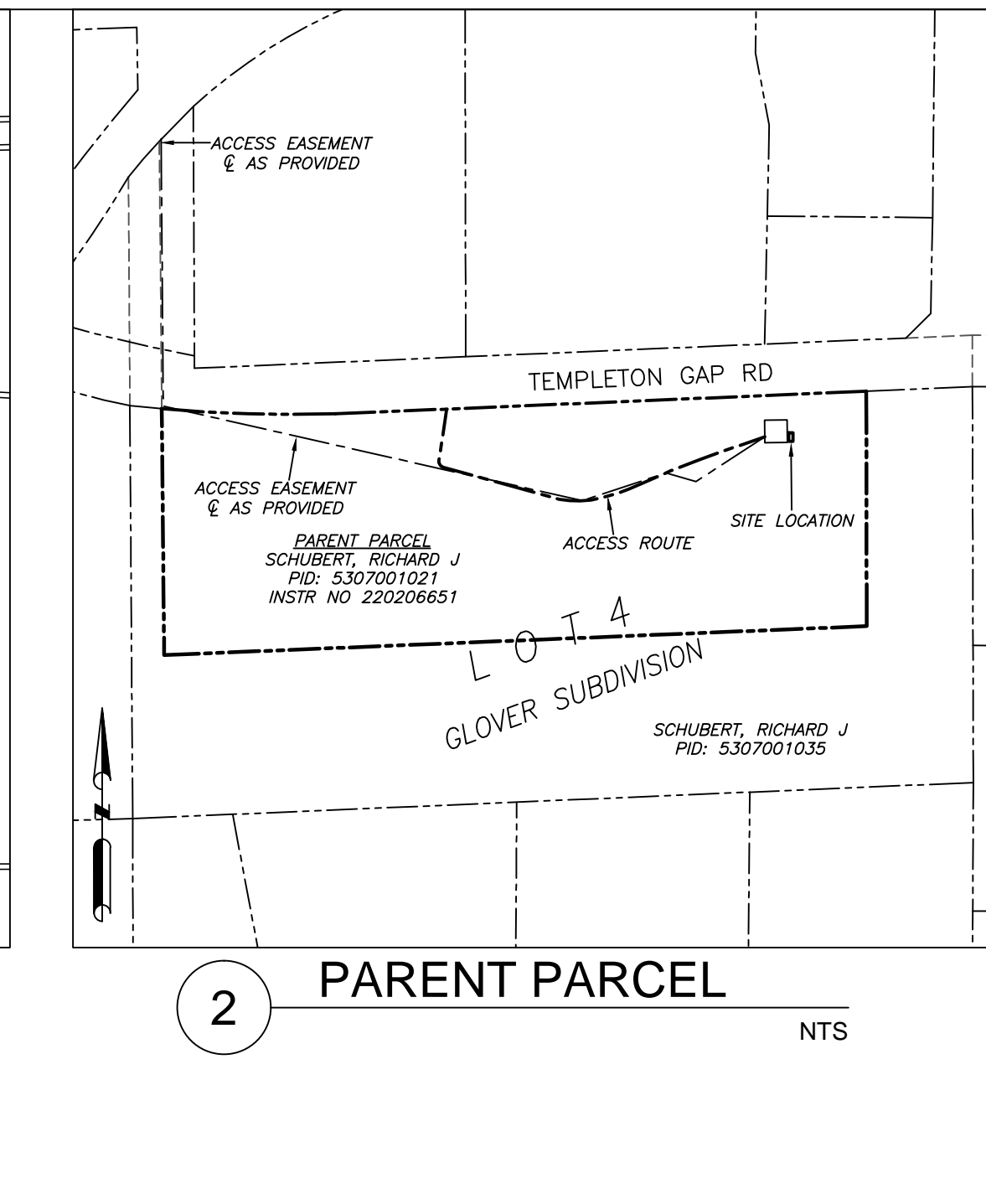
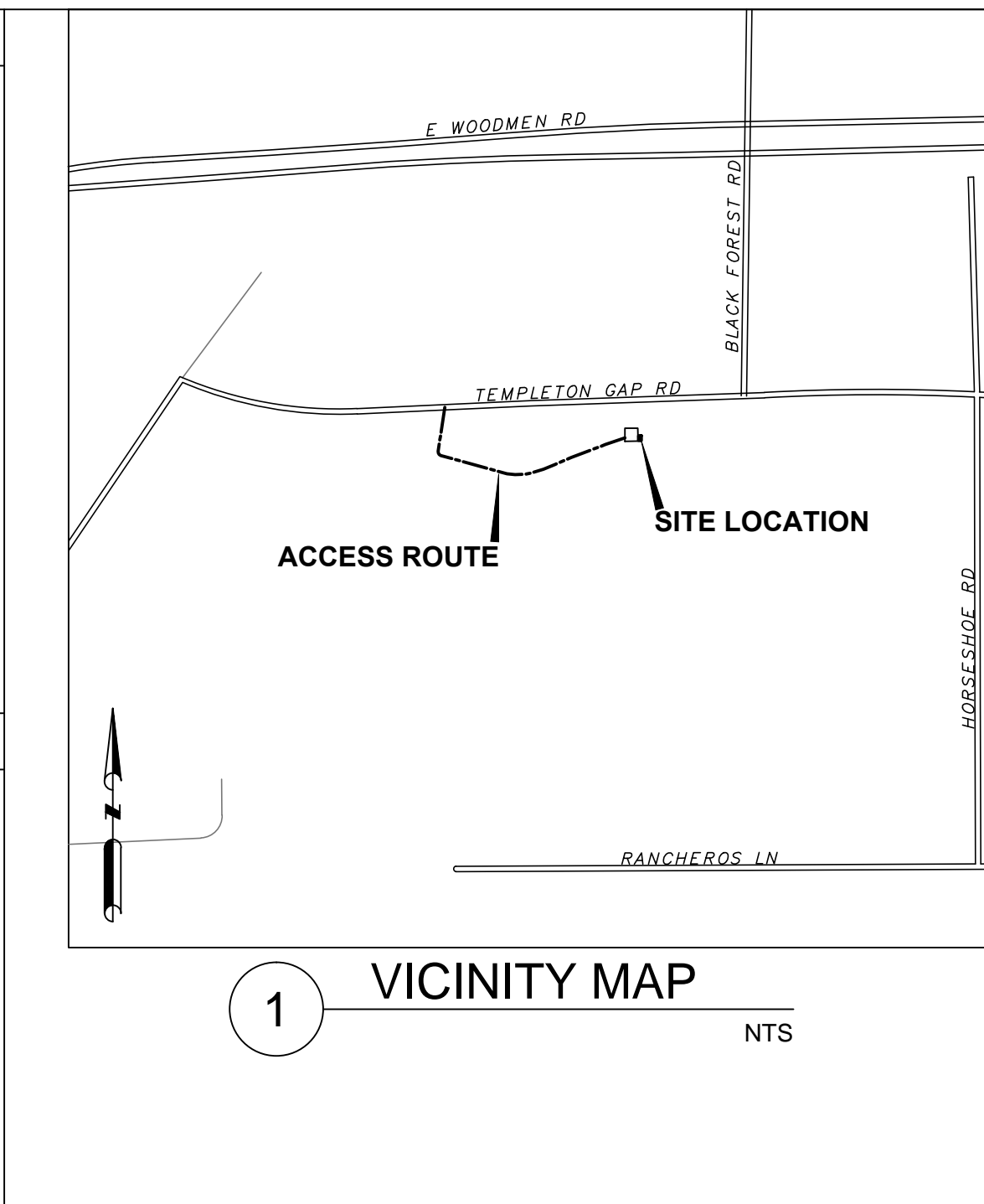
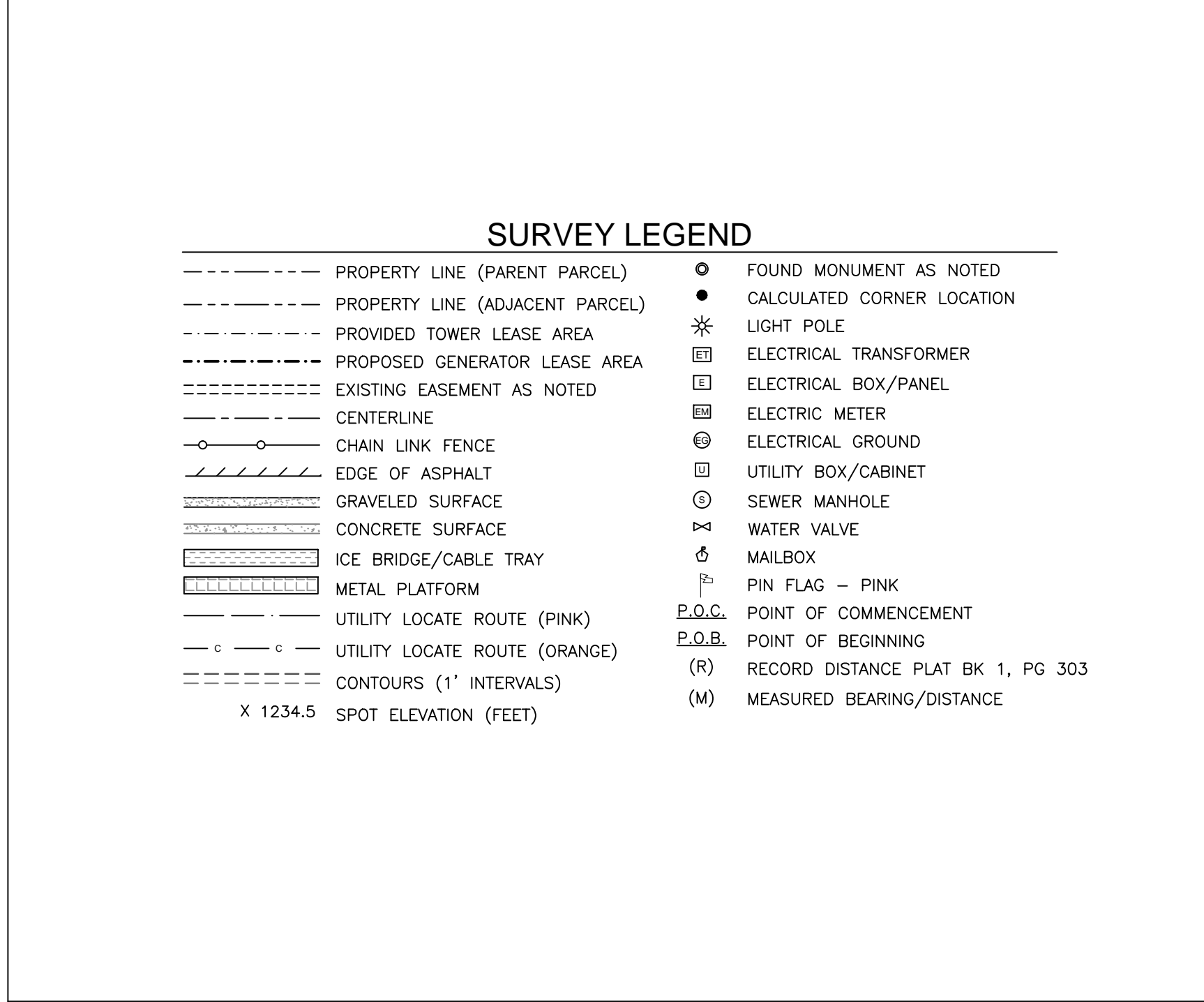
PARENT PARCEL LEGAL DESCRIPTION (APPROXIMATE DEED NOT PROVIDED):  
 PART OF LOT 4 OF GLOVER SUBDIVISION, A PORTION OF THE NORTHEAST QUARTER OF SECTION 7, TOWNSHIP 13 SOUTH, RANGE 65 WEST OF THE 6TH P.M., EL PASO COUNTY, COLORADO, AS SHOWN ON THE PLAT RECORDED JANUARY 9TH, 1978, AS RECEPTION NO. 393897.

TOWER LEASE AREA LEGAL DESCRIPTION (AS PROVIDED BY CLIENT):  
 THAT PART OF LOT 4 IN GLOVER SUBDIVISION, DESCRIBED AS FOLLOWS:  
 COMMENCING AT THE SOUTHEAST CORNER OF SAID LOT 4, THENCE NORTH 28°12'46" WEST, A DISTANCE OF 602.35 FEET TO THE TRUE POINT OF BEGINNING; THENCE WEST, A DISTANCE OF 35.00 FEET; THENCE NORTH, A DISTANCE OF 35.00 FEET; THENCE EAST, A DISTANCE OF 35.00 FEET; THENCE SOUTH, A DISTANCE OF 35.00 FEET TO THE POINT OF BEGINNING.

15' ACCESS EASEMENT LEGAL DESCRIPTION (AS PROVIDED BY CLIENT):  
 THAT PART OF LOT 4 IN GLOVER SUBDIVISION, DESCRIBED AS FOLLOWS:  
 COMMENCING AT THE SOUTHEAST CORNER OF SAID LOT 4, THENCE NORTH 30°38'47" WEST, A DISTANCE OF 627.30 FEET TO THE POINT OF BEGINNING; THENCE SOUTH 67°29'38" WEST, A DISTANCE OF 127.47 FEET; THENCE NORTH 73°31'01" WEST, A DISTANCE OF 48.19 FEET; THENCE SOUTH 22°09'45" WEST, A DISTANCE OF 137.16 FEET; THENCE NORTH 76°49'57" WEST, A DISTANCE OF 294.73 FEET; THENCE SOUTH 89°56'22" WEST, A DISTANCE OF 151.64 FEET TO THE POINT OF TERMINUS, THE SIDELINES OF THIS EASEMENT BEING LENGTHENED OR SHORTENED SO AS NOT TO CREATE GAPS OR OVERLAPS.

5' UTILITY EASEMENT LEGAL DESCRIPTION (AS PROVIDED BY CLIENT):  
 THAT PART OF LOT 4 IN GLOVER SUBDIVISION, DESCRIBED AS FOLLOWS:  
 COMMENCING AT THE SOUTHEAST CORNER OF SAID LOT 4, THENCE NORTH 30°49'19" WEST, A DISTANCE OF 623.90 FEET TO THE POINT OF BEGINNING; THENCE NORTH 89°06'15" WEST, A DISTANCE OF 331.82 FEET; THENCE NORTH 64°19'22" WEST, A DISTANCE OF 145.17 FEET; THENCE SOUTH 87°59'25" WEST, A DISTANCE OF 430.61 FEET; THENCE NORTH 00°09'33" WEST, A DISTANCE OF 294.73 FEET; THENCE SOUTH 89°56'22" WEST, A DISTANCE OF 151.64 FEET TO THE POINT OF TERMINUS, THE SIDELINES OF THIS EASEMENT BEING LENGTHENED OR SHORTENED SO AS NOT TO CREATE GAPS OR OVERLAPS.

PROPOSED GENERATOR LEASE AREA LEGAL DESCRIPTION (AS SURVEYED):  
 A PARCEL OF LAND WITHIN LOT 4 OF GLOVER SUBDIVISION, LOCATED IN THE NORTHEAST QUARTER OF THE NORTHEAST QUARTER (NE 1/4 NE 1/4) OF SECTION 7, TOWNSHIP 13 SOUTH, RANGE 65 WEST OF THE 6TH P.M., EL PASO COUNTY, COLORADO, AS SHOWN ON THE PLAT RECORDED AS RECEPTION NO. 393897 IN THE RECORDS OF SAID COUNTY, AND BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:  
 COMMENCING AT THE SOUTHEAST CORNER OF SAID LOT 4, BEING THE SOUTH EAST CORNER OF SAID NE 1/4 NE 1/4, THENCE NORTH 00°07'55"W ALONG THE EAST LINE OF SAID LOT 4, 530.95 FEET; THENCE S89°52'05"W ALONG A LINE PERPENDICULAR TO SAID EAST LINE, 278.82 FEET TO THE POINT OF BEGINNING; THENCE NORTH 00°00'00"E, 13.00 FEET; THENCE NORTH 00°00'00"E, 7.00 FEET; THENCE SOUTH 00°00'00"E, 13.00 FEET TO THE POINT OF BEGINNING, CONTAINING A TOTAL CALCULATED AREA OF 91.0 SQUARE FEET OR 0.002 ACRES, MORE OR LESS.



### SURVEY LEGEND

---	PROPERTY LINE (PARENT PARCEL)	●	FOUND MONUMENT AS NOTED
---	PROPERTY LINE (ADJACENT PARCEL)	●	CALCULATED CORNER LOCATION
---	PROVIDED TOWER LEASE AREA	*	LIGHT POLE
---	PROPOSED GENERATOR LEASE AREA	⊠	ELECTRICAL TRANSFORMER
---	EXISTING EASEMENT AS NOTED	⊠	ELECTRICAL BOX/PANEL
---	CENTERLINE	⊠	ELECTRIC METER
---	CHAIN LINK FENCE	⊠	ELECTRICAL GROUND
---	EDGE OF ASPHALT	⊠	UTILITY BOX/CABINET
---	GRAVELED SURFACE	⊠	SEWER MANHOLE
---	CONCRETE SURFACE	⊠	WATER VALVE
---	ICE BRIDGE/CABLE TRAY	⊠	MAILBOX
---	METAL PLATFORM	⊠	PIN FLAG - PINK
---	UTILITY LOCATE ROUTE (PINK)	P.O.C.	POINT OF COMMENCEMENT
---	UTILITY LOCATE ROUTE (ORANGE)	P.O.B.	POINT OF BEGINNING
---	CONTOURS (1' INTERVALS)	(R)	RECORD DISTANCE PLAT BK 1, PG 303
---	X 1234.5	(M)	MEASURED BEARING/DISTANCE

### NOTES CORRESPONDING TO TITLE REPORT

THIS SURVEY WAS PERFORMED WITHOUT THE BENEFIT OF A TITLE COMMITMENT OR TITLE REPORT. A TITLE COMMITMENT OR TITLE REPORT MAY DISCLOSE FACTS NOT REFLECTED ON THIS SURVEY.



COORDINATED BY:  
**MasTec**  
 Communications Group



0	PRELIMINARY	HH	02/01/2023
1			
2			
3			

AT&T SITE NUMBER:  
**COL02056**

SITE NAME:  
**TEMPLETON GAP**

SITE ADDRESS:  
 7423 TEMPLETON GAP ROAD  
 COLORADO SPRINGS, COLORADO 80922

SURVEY CERTIFICATE:  
 THIS IS TO CERTIFY THAT ARROW SURVEY GROUP, INC., AT THE REQUEST AND FOR THE EXCLUSIVE USE OF AT&T WIRELESS, HAS PERFORMED THIS AS-BUILT SURVEY OF THE LEASE AREA FROM THE RECORD SOURCES AND ACTUAL FIELD SURVEY ON 01/26/2023 IN ACCORDANCE WITH THE MINIMUM STANDARDS OF PROPERTY BOUNDARY SURVEYS. ALL LINEAR AND ANGULAR VALUES SHOWN ARE BASED UPON DEED OR RECORD INFORMATION UNLESS OTHERWISE NOTED.

DATE OF PLAT: 02/01/2023

JASON D. LEVANEN  
 CO LICENSE NO. 38159

SURVEY PERFORMED BY:  
**Arrow**  
 Survey Group, Inc.  
 Sheridan, WY 82801 (307)751-7543

DRAWN BY:	HH
APPROVED BY:	JL
DATE DRAWN:	02/01/2023
JOB NO:	23-004

AS-BUILT SURVEY WITH  
 TOPOGRAPHY AND  
 PROPOSED LEASE AREA

SHEET NUMBER:	1 of 1	REVISION:	0
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\*PROVIDED LEASE AREA, 5' UTILITY EASEMENT AND 15' ACCESS EASEMENT ARE APPROXIMATE, AS THEY ARE ROTATED MANUALLY TO FIT. (NO RELATIVE BEARINGS ARE PROVIDED TO ROTATE TO PROPERTY LINES.)

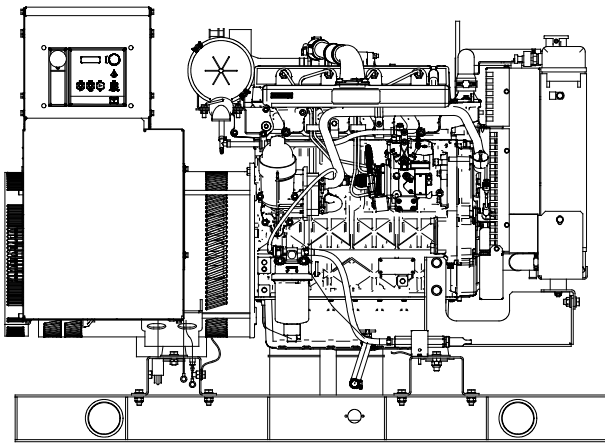




**EPA-Certified for Stationary  
Emergency Applications**

## Ratings Range

		<b>60 Hz</b>
<b>Standby:</b>	<b>kW</b>	23- 31
	<b>kVA</b>	23- 39
<b>Prime:</b>	<b>kW</b>	21- 28
	<b>kVA</b>	21- 35



## Standard Features

- Kohler Co. provides one-source responsibility for the generating system and accessories.
- Approved for use with certified renewable Hydrotreated Vegetable Oil (HVO) / Renewable Diesel (RD) fuels compliant with EN15940 / ASTM D975.
- 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 one-source 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.

## Generator Set Ratings

Alternator	Voltage	Ph	Hz	130°C Rise Standby Rating		105°C Rise Prime Rating	
				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

**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 V
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.
- Capable of sustained line-to-neutral short-circuit current of up to 300% of the rated current for up to 2 seconds. (IEC 60092-301 short-circuit performance.)
- 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/G18
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	Mechanical (or Electronic *)
	Droop, 5% (or Isochr. *)
Frequency regulation, no-load to full-load	±0.5%
Frequency regulation, steady state	Fixed
Frequency	Dry
Air cleaner type, all models	
* Requires available electronic governor option	

### Exhaust

Exhaust System	
Exhaust manifold type	Dry
Exhaust flow at rated kW, m <sup>3</sup> /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.)	50.8 (2)

### 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, electric fuel pump, m (ft.)	3.0 (10.0)
Max. fuel flow, Lph (gph)	46.0 (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 / HVO / RD

### 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	—
§ Kohler recommends the use of Kohler Genuine oil and filters.	

## 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 <sub>2</sub> O)	0.125 (0.5)

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

### Operation Requirements

#### Air Requirements

Radiator-cooled cooling air, m <sup>3</sup> /min. (scfm) †	53.8 (1900)
Combustion air, m <sup>3</sup> /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)

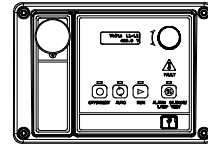
† Air density = 1.20 kg/m<sup>3</sup> (0.075 lbm/ft<sup>3</sup>)

#### 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)

\*\* Fuel consumption is up to 4% higher when using HVO/RD than #2 ULSD.

## Controller



#### APM402 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 G6-161 for additional controller features and accessories.

Modbus® is a registered trademark of Schneider Electric.

## Additional Standard Features

- Air Cleaner, Heavy Duty with Air Cleaner Restriction Indicator
- 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

## Available Options

### Approvals and Listings

- CSA Certified
- IBC Seismic Certification
- 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

- Two Input/Five Output Module
- Manual Speed Adjust (requires Electronic Governor)
- Remote Annunciator Panel
- Remote Emergency Stop
- Run Relay

### Cooling System

- Block Heater (600 W, 110- 120 V)  
Required 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

- Engine Fluids Added
- Rated Power Factor Testing

### Literature

- General Maintenance
- NFPA 110
- Overhaul
- Production

### Warranty

- 2-Year Basic Limited Warranty
- 5-Year Basic Limited Warranty
- 5-Year Comprehensive Limited Warranty

### Other Options

- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_

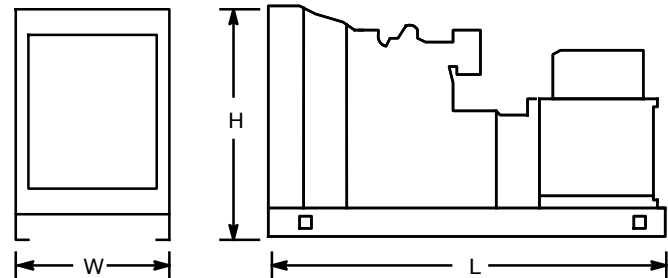
## Dimensions and Weights

Overall Size, L x W x H, mm (in.):

Open Unit Skid: 1438.2 x 810 x 1024.1 (56.6 x 31.9 x 40.3)

Enclosure Skid: 1969 x 882 x 1327 (77.5 x 34.7 x 52.3)

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:**