

ELECTRICAL SYMBOLS LEGEND

	SELECTOR SWITCH 2 POSITION		THERMAL OVERLOAD RELAY
	NORMALLY OPEN TIME DELAY CLOSING AFTER COIL ENERGIZED		DETAIL DESIGNATION
	NORMALLY CLOSED TIME DELAY OPENING AFTER COIL ENERGIZED		DETAIL CALL OUT
	INDICATOR LIGHT		SHEET REFERENCE
	REMOTE DEVICE CONNECTION		GROUND ROD
	CLOSED RELAY CONTACT		GROUND ROD IN GROUND WELL
	OPEN RELAY CONTACT		GROUND RISER FROM THE GROUND PLATE (REBAR)
	TERMINAL TO EXTERNAL REMOTE DEVICE		BOLTED AND WELDED GROUND CONNECTIONS, RESPECTIVELY
	WIRE TERMINAL OR CONNECTION POINT		GROUND CABLE: • EMBEDDED IN CONCRETE • BURIED IN EARTH • EXPOSED
	SINGLE PHASE MOTOR		CONDUIT EXPOSED
	MOTOR OVERLOAD RELAY		CONDUIT RUN UNDERGROUND OR IN CONCRETE
	LIMIT SWITCH		BARE COPPER WIRE IN SLAB OR UNDERGROUND GRID, SIZE AS NOTED
	CONTROL RELAY		TRANSFORMER W/ DELTA-Y AND GROUND
	TRANSFORMER		UTILITY METER
	SELECTOR SWITCH 3 POSITION MAINTAINED CONTACT		UTILITY CT
	LEVEL SWITCH CLOSING ON FALLING LEVEL		MOTOR, HORSEPOWER AS NOTED
	LEVEL SWITCH CLOSING ON RISING LEVEL		CIRCUIT BREAKER
	CONTROL SWITCH PUSHBUTTON, MOMENTARY CONTACT		ELECTRICAL PANEL
	GROUND CONNECTION		FUSE
	FRACTIONAL HP MOTOR		MOTOR STARTER NEMA SIZE AS NOTED
	CONTROL STATION		DISCONNECT SWITCH SIZE AS NOTED
	JUNCTION BOX		GFCI DUPLEX RECEPTACLE
	DUPLEX RECEPTACLE		INCANDESCENT FIXTURE
	LIGHT FIXTURE TYPE AS INDICATED		POLE MOUNTED HID FIXTURE
	FUSED DISCONNECT		ELECTRICAL CONNECTION
	SINGLE LIGHT SWITCH		
	DISCONNECT UNFUSED SIZE NOTED		
	CONTACTOR/STARTER (NO. OF POLES SHOWN)		
	CIRCUIT BREAKER (NO. OF POLES SHOWN)		
	SOLENOID		
	FLOW SWITCH CLOSING ON LOW FLOW		
	PRESSURE SWITCH CLOSING ON RISING PRESSURE		

EQUIPMENT GROUNDING CONDUCTORS

FUSE OR CB SIZE	CB SIZE (COPPER)
15	14
20	12
30	10
40	10
60	10
100	8
200	6
300	4
400	3
500	2
600	1
800	1/0
1000	2/0
1200	3/0
1600	4/0
2000	250
2500	350

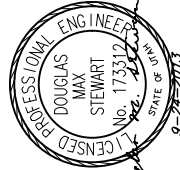
GROUNDING ELECTRODE CONDUCTOR SERVICE ENTRANCE OR SEPARATELY DERIVED SYSTEM

COPPER CONDUCTOR	WIRE SIZE
#2 OR SMALLER	#8
1 OR 1/0	#6
2/0 OR 3/0	#4
>3/0 THRU 350 KCMIL	#2
>350 KCMIL THRU 600 KCMIL	1/0

GENERAL NOTES:

1. VERIFY ALL EQUIPMENT DIMENSIONS AND LOCATIONS BEFORE BEGINNING ROUGH-IN. CONSULT ALL APPLICABLE CONTRACT DRAWINGS AND SHOP DRAWINGS TO ENSURE NEC CODE CLEARANCE REQUIRED AROUND ALL ELECTRICAL EQUIPMENT.
2. CONTRACTOR SHALL VERIFY ALL ELECTRICAL LOADS (VOLTAGE, PHASE, CONNECTION REQUIREMENTS, ETC.) OF EQUIPMENT FURNISHED BEFORE BEGINNING ROUGH-IN.
3. SEE APPLICABLE SHOP DRAWINGS FOR ROUGH-IN LOCATION OF ALL EQUIPMENT, WIRING DEVICES, ETC.
4. THE ELECTRICAL CONTRACTOR SHALL NOTIFY AND COOPERATE WITH THE MECHANICAL CONTRACTOR SUCH THAT NO PIPING, OR EQUIPMENT FOREIGN TO THE OPERATION OF THE ELECTRICAL EQUIPMENT SHALL BE PERMITTED TO BE INSTALLED IN, ENTER OR PASS THROUGH ELECTRICAL ROOMS OR SPACES; OR ABOVE OR BELOW ELECTRICAL EQUIPMENT IN THE OTHER AREAS.
5. ALL PENETRATIONS OF FLOORS, WALLS AND CEILINGS SHALL BE SEALED WITH APPROVED MATERIAL.
6. FOR PACKAGE EQUIPMENT PROVIDED ON THE PROJECT, SOME CONDUITS AND WIRES ARE SHOWN ON THE DRAWINGS, BUT IT IS EXPECTED THAT SOME ADDITIONAL CONDUITS AND WIRES MAY BE REQUIRED BY EQUIPMENT MANUFACTURERS TO COMPLETE INSTALLATION. IT IS INCUMBENT UPON THE GENERAL CONTRACTOR TO COORDINATE THIS REQUIREMENT WITH HIS SUBCONTRACTORS TO MAKE SURE THAT EQUIPMENT SUPPLIER PROVIDED ALL NECESSARY ELECTRICAL INFORMATION TO ELECTRICAL SUBCONTRACTOR FOR INCLUSION WHETHER SHOWN OR NOT SHOWN ON THE DRAWINGS.
7. IF OTHER THAN FIRST NAMED EQUIPMENT IS USED, IT SHALL BE CAREFULLY CHECKED FOR ELECTRICAL REQUIREMENTS AND CONTROL REQUIREMENTS OF ALTERNATE EQUIPMENT. SHOULD CHANGES OR ADDITIONS OCCUR IN ELECTRICAL WORK, OR THE WORK OF OTHER CONTRACTORS BE REVISED BY THE ALTERNATE EQUIPMENT, THE COST OF ALL CHANGES SHALL BE BORNE BY THE CONTRACTOR.
8. IT IS THE ELECTRICAL SUBCONTRACTOR'S RESPONSIBILITY TO DELIVER THE COMPLETE SET OF PLANS IN ORDER TO INSURE THAT ALL ITEMS RELATED TO ELECTRICAL POWER AND CONTROL SYSTEMS ARE COMPLETELY ACCOUNTED FOR.
9. ALL EQUIPMENT DIMENSIONS SHOWN ON PLANS AND ELEVATIONS ARE APPROXIMATE ONLY. THE CONTRACTOR SHALL USE THE SHOP DRAWINGS FOR PROPER LAYOUT, FOUNDATION AND PAD, ETC. FOR FINAL INSTALLATION WITHOUT ANY ADDITIONAL COST TO THE OWNER.
10. THE DRAWINGS DIAGRAMMATICALLY INDICATE THE DESIRED LOCATION AND ARRANGEMENT OF OUTLETS, CONDUIT RUNS, EQUIPMENT AND OTHERS ITEMS. DETERMINE EXACT LOCATIONS IN THE FIELD BASED ON PHYSICAL SIZE AND ARRANGEMENT OF EQUIPMENT, FINISHED ELEVATIONS, AND OTHERS OBSTRUCTIONS. LOCATIONS SHOWN ON THE DRAWINGS, HOWEVER, SHALL BE ADHERED TO AS CLOSELY AS POSSIBLE.

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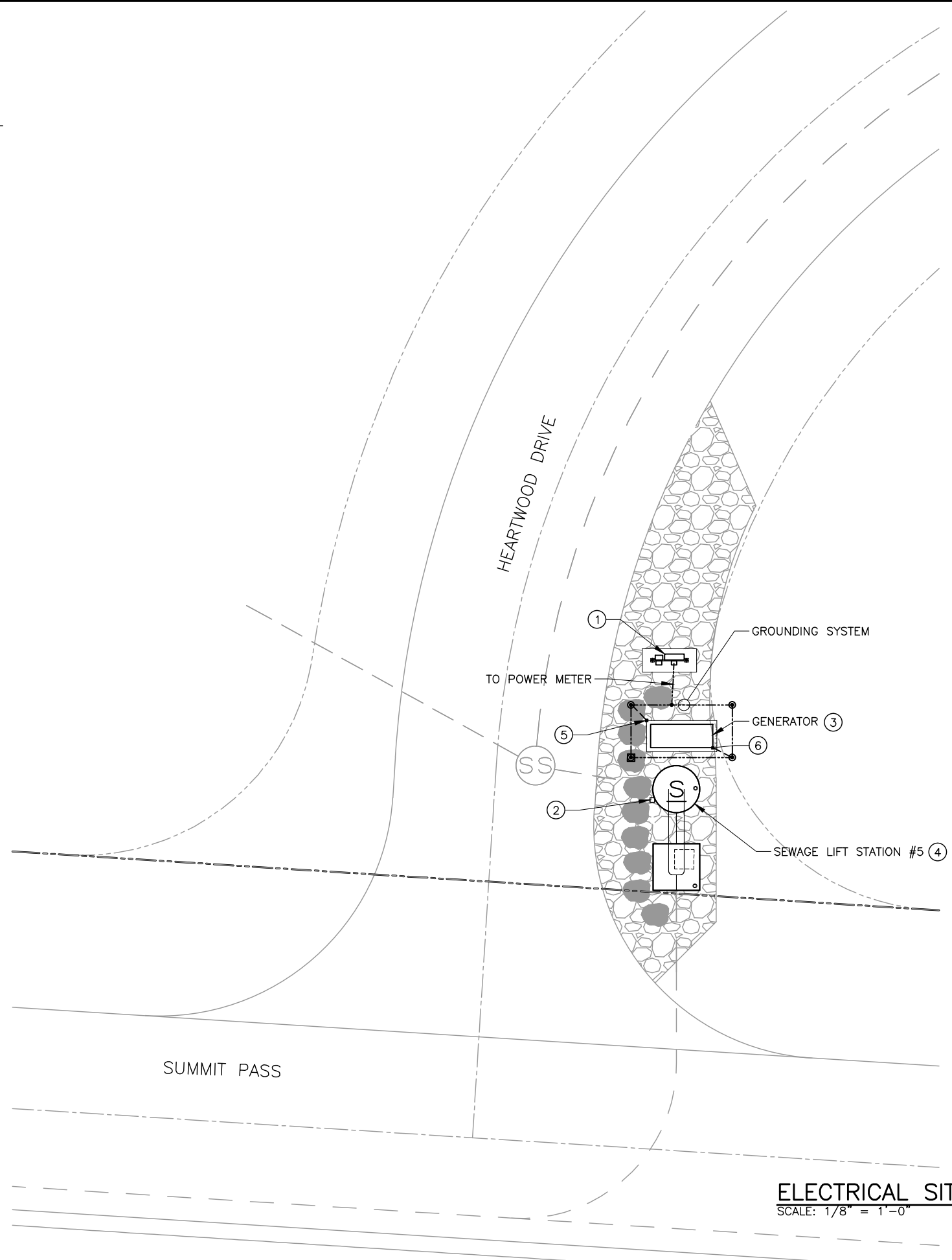


NO.	DATE	REV. BY	DESCRIPTION

VERIFY SCALE BAR IS ONE INCH ON ORIGINAL DRAWING

DESIGN	D. STEWART
DESIGN	D. STEWART
DRAWN	D. LAMPH
REVIEW	D. STEWART
CHECKED	D. STEWART
APPROVED	J. BECKMAN

ELECTRICAL SYMBOLS AND NOTES
 DATE: September 2013
 PROJECT NUMBER 334-13-01



ELECTRICAL SITE PLAN SEWAGE LIFT STATION #5
 SCALE: 1/8" = 1'-0"

GENERAL NOTES:

1. THE GROUNDING SYSTEM SHALL HAVE A GROUND RING OF 2/0 AWG BARE COPPER BURIED NOT LESS THAN 30" BELOW THE EARTH'S SURFACE. CONNECT REBAR TO THE GROUND RING VIA 2/0 AWG BARE COPPER GROUND CABLE (GROUND RISERS). EQUIPMENT AND MISCELLANEOUS METALWORK SHALL BE CONNECTED TO THE GROUND RING WITH 2/0 AWG BARE COPPER GROUND CABLE. 2/0 AWG CONDUCTOR FROM GROUND RING SHALL CONNECT TO GENERATOR, METER BASE, AND AUTOMATIC TRANSFER SWITCH. THE GROUND RING SHALL BE A MINIMUM OF 2 FEET FROM GENERATOR FOUNDATION WHERE POSSIBLE. REFER TO DETAILS E-5001, E-5002, E-5003.
2. DRAWING SHOWS TYPICAL LOCATIONS OF GROUNDING SYSTEM COMPONENTS.
3. DRAWING SHOWS APPROXIMATE LOCATIONS AND MINIMUM NUMBER OF RISERS AND GROUNDING CONNECTIONS TO BE INSTALLED.
4. REFER TO POWER ONE-LINE DIAGRAM FOR GENERATOR SIZE AND CONDUIT AND CONDUCTOR SIZES.
5. REFER TO POWER ONE-LINE DIAGRAM FOR PUMP SIZES AND QUANTITY. FOR CONDUIT AND CONDUCTOR SIZES REFER TO POWER ONE-LINE DIAGRAM AND CONTROL BLOCK DIAGRAM.

KEY NOTES:

- ① SEWAGE LIFT STATION CONTROL PANEL, AUTOMATIC TRANSFER SWITCH, POWER METER, AND POWER PANEL. REFER TO POWER ONE-LINE DIAGRAM AND CONTROL BLOCK DIAGRAM FOR SIZES AND MORE INFORMATION. REFER TO DETAIL E-5073 FOR MOUNTING INFORMATION.
- ② JUNCTION BOX TO CONNECT PUMP CABLES AND LEVEL SWITCHES REFER TO DETAIL E-5201
- ③ STANDBY GENERATOR WITH CONCRETE PAD AND GROUND SYSTEM. THE GENERATOR PAD SHALL BE SIZED BY CONTRACTOR FOR GENERATOR REFER TO DETAIL E-5081, APPROXIMATE SIZE IS 9 FEET LONG BY 4 FEET WIDE.
- ④ REFER TO CIVIL DRAWINGS FOR LOCATION AND MECHANICAL DRAWINGS FOR SECTION VIEW OF LIFT STATION.
- ⑤ CONNECT TO REBAR.
- ⑥ CONNECT TO GENERATOR.

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 DRAWN: D. LAMPH

REVIEW: D. STEWART
 CHECKED: D. STEWART
 APPROVED: J. BECKMAN

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PROJECT NUMBER: 334-13-01
 DATE: September 2013

DRAWING NO.: E-2
 SHEET 2 OF 5

THE ORIGINAL DRAWING WAS STAMPED BY DOUGLAS MAX STEWART REGISTERED P.E. UTAH 173312

REVISIONS	
NO.	DESCRIPTION
2	11/2013 PMS ADDENDUM NO. 2
1	10/2013 PMS ADDENDUM NO. 1
	REV. BY
	DATE

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CHECKED D. STEWART
APPROVED D. STEWART

DESIGN
DESIGN T. BIRD
DRAWN D. LAMPH

SEWER LIFT STATION #5 POWER ONE-LINE DIAGRAM
PROJECT NUMBER 334-13-01
DATE: September 2013

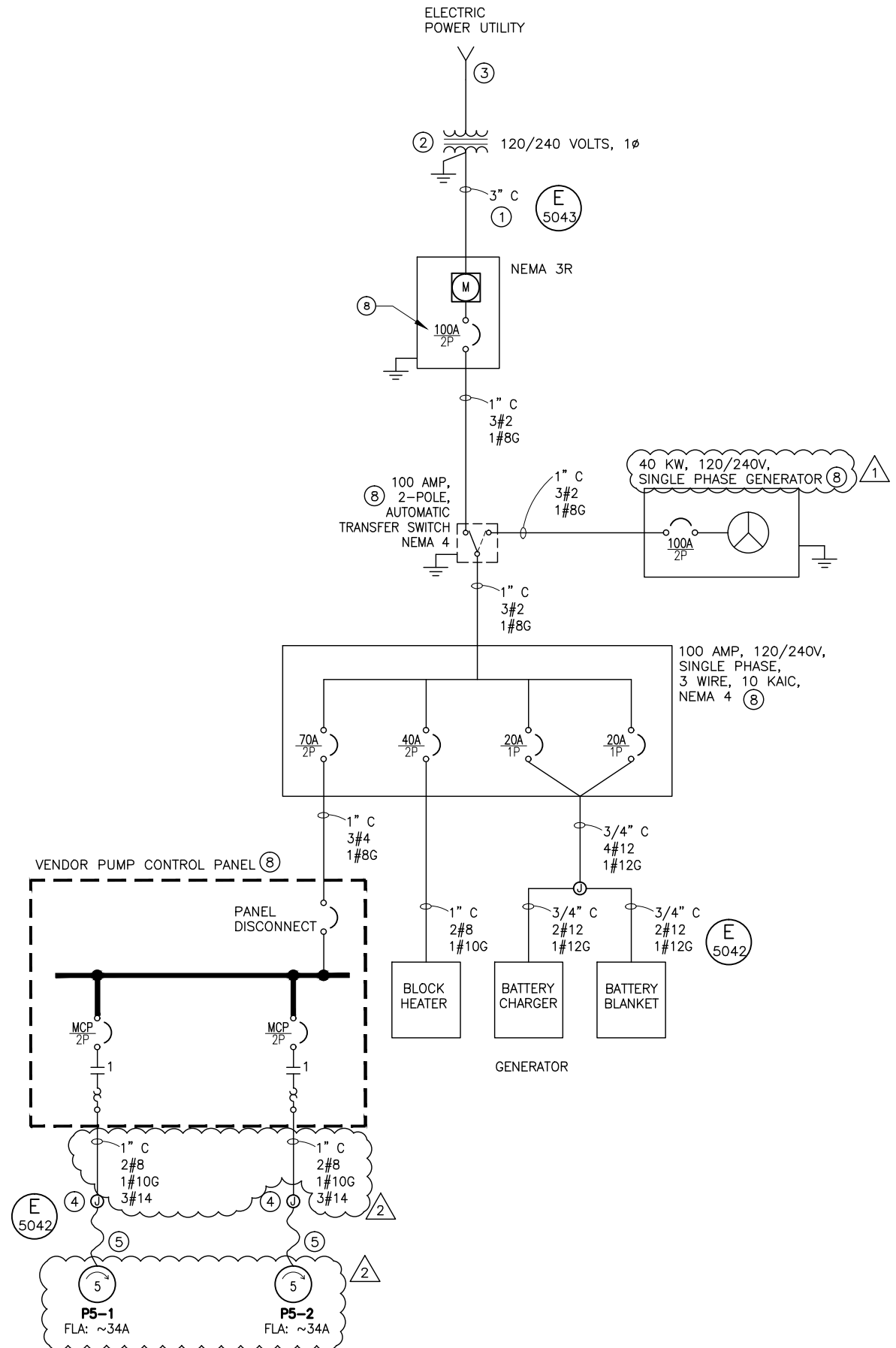
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SHEET 3 OF 5

GENERAL NOTES:

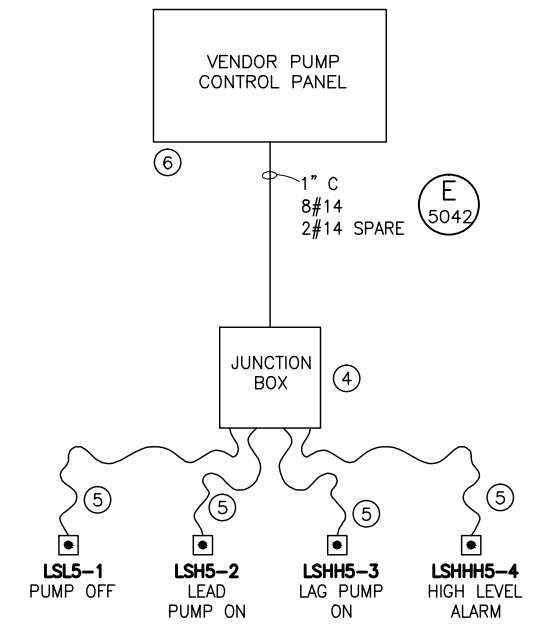
- REFER TO SITE PLAN FOR EQUIPMENT LOCATION.

KEY NOTES:

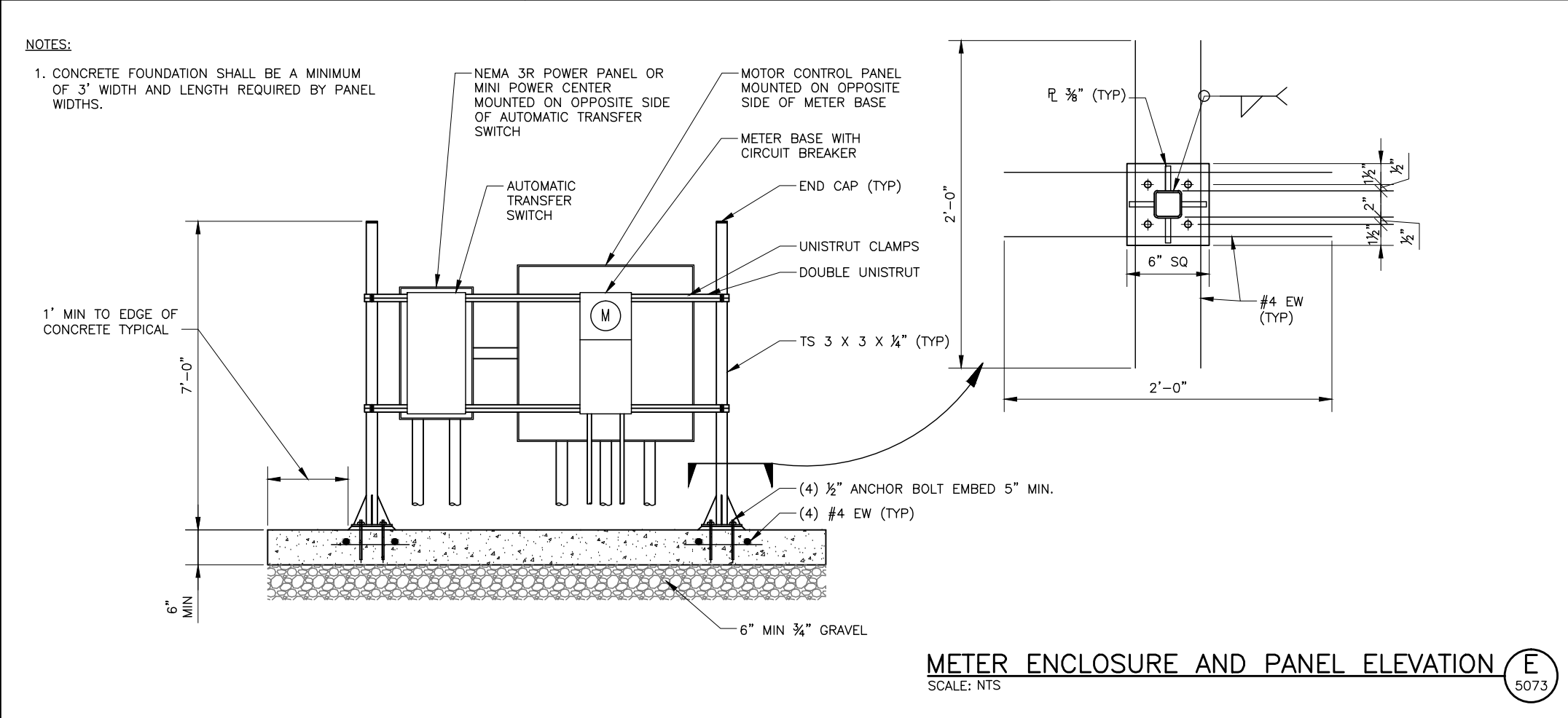
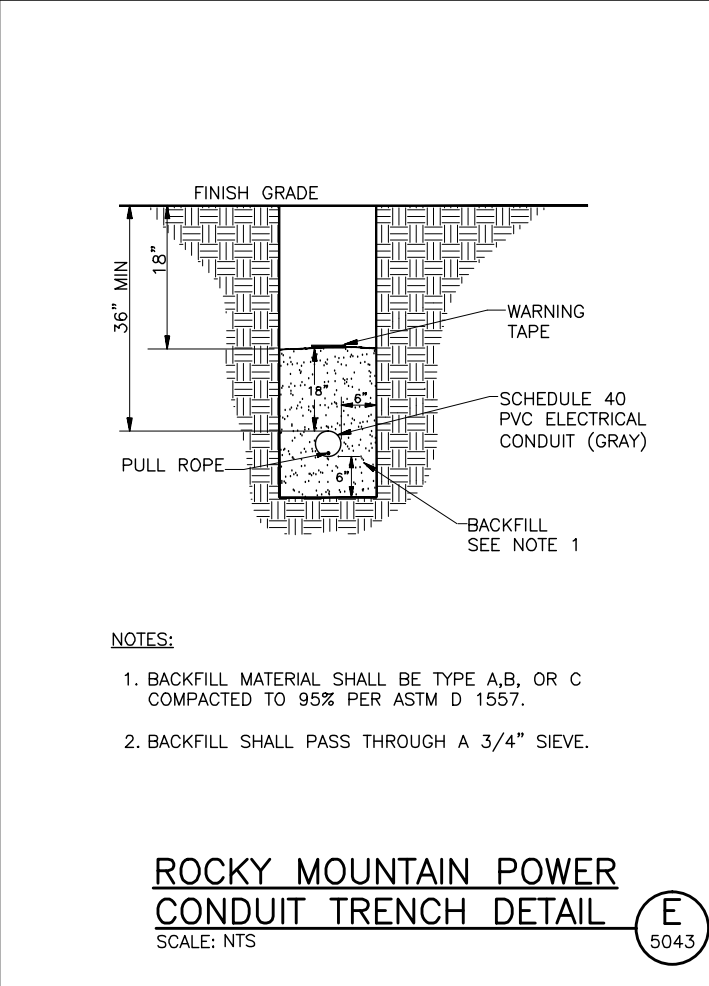
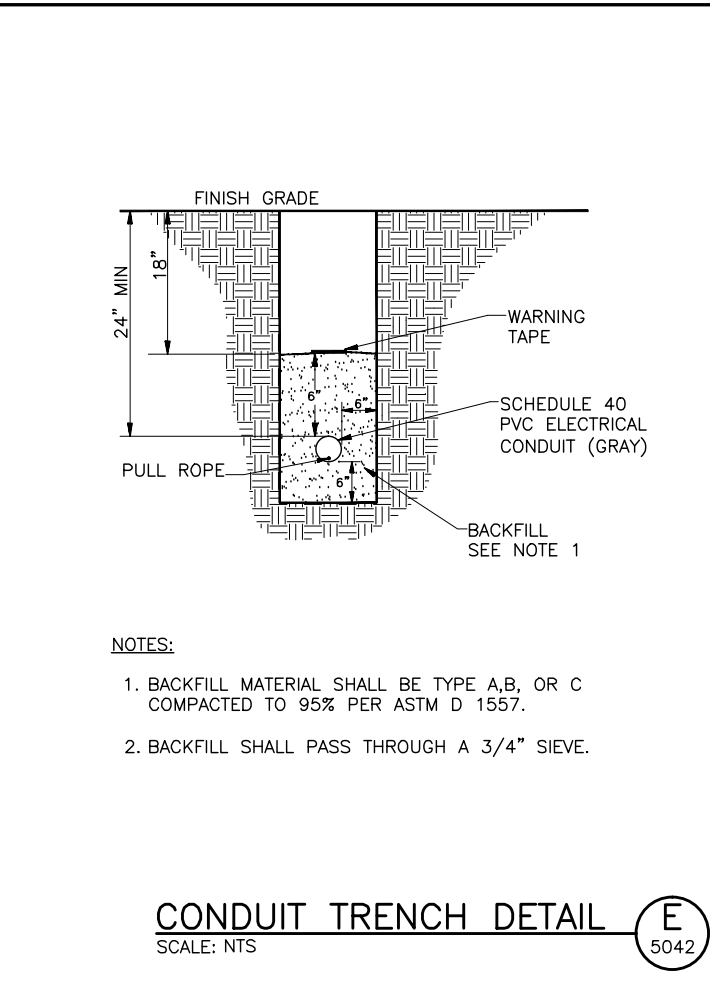
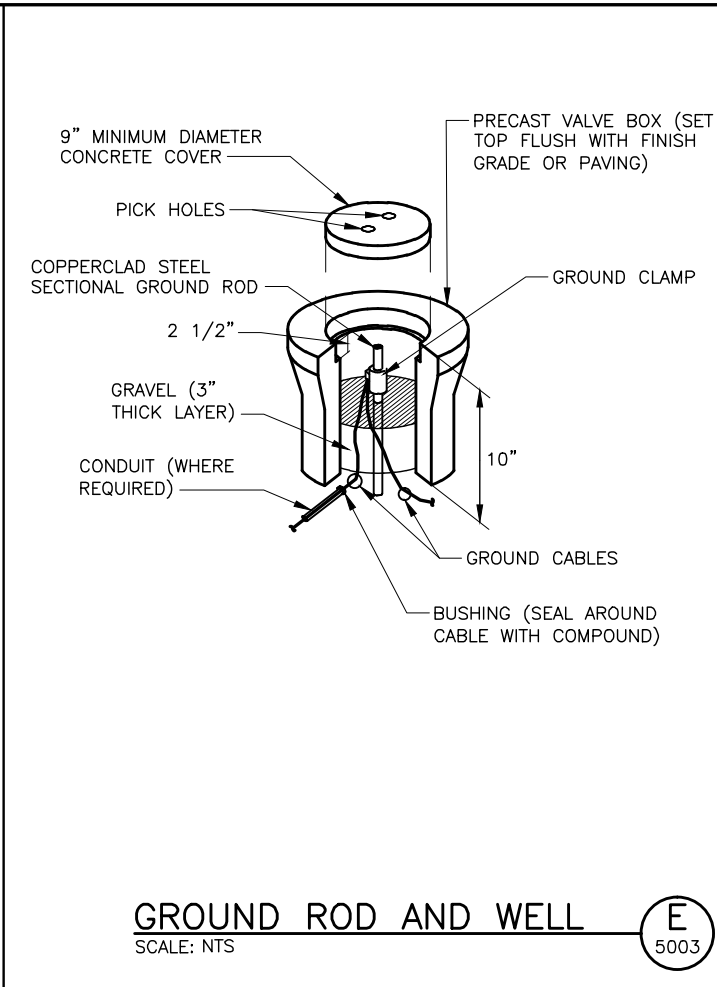
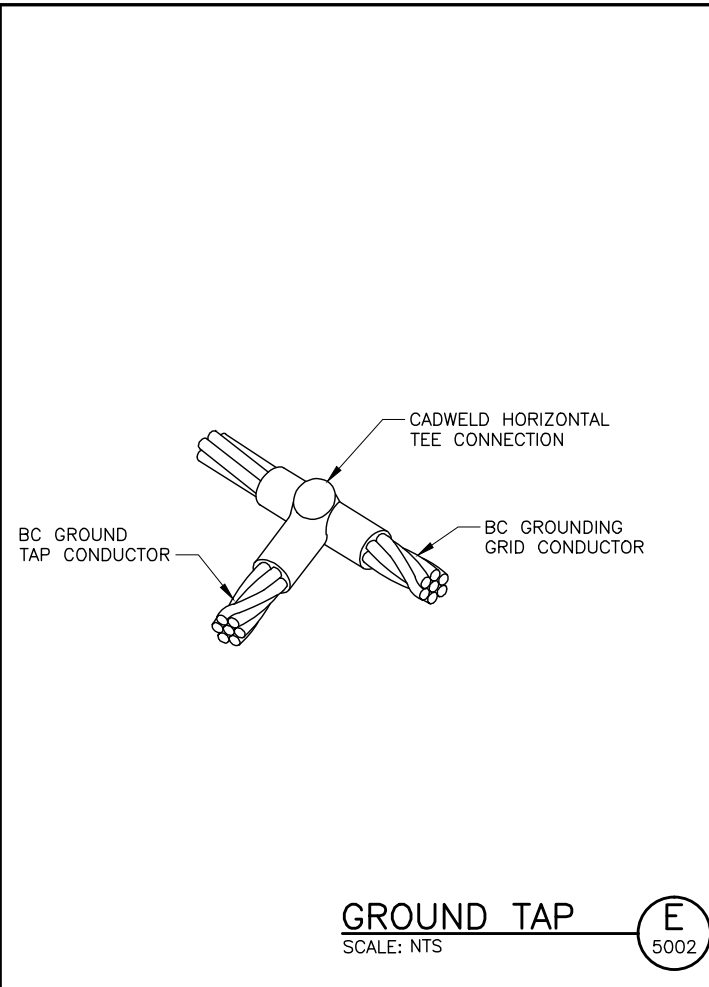
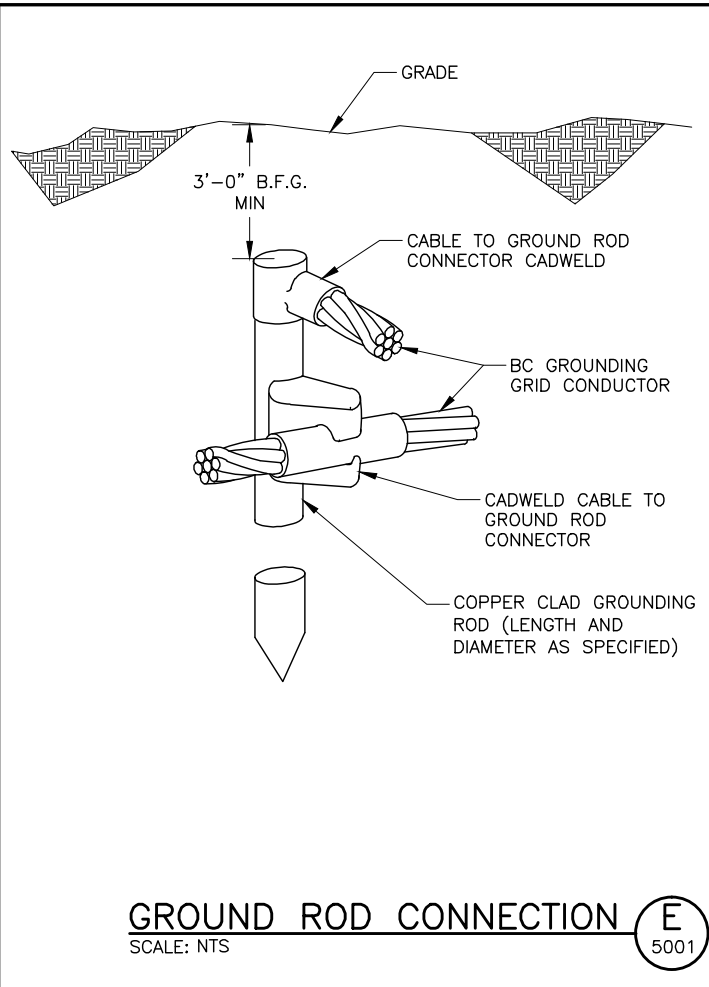
- CONTRACTOR SHALL PROVIDE AND INSTALL CONDUIT IN ACCORDANCE WITH ROCKY MOUNTAIN POWER REQUIREMENTS. CONDUCTORS SHALL BE INSTALLED BY ROCKY MOUNTAIN POWER.
- PROVIDED AND INSTALLED BY ROCKY MOUNTAIN POWER.
- PROVIDED AND INSTALLED BY DEVELOPER.
- HAZARDOUS LOCATION JUNCTION BOX AND CONDUIT SEAL REFER TO DETAIL E-5201.
- MANUFACTURER'S CABLE.
- PROVIDE AND INSTALL AN INTRINSICALLY SAFE BARRIER FOR EACH LEVEL SWITCH. THE LEVEL SWITCHES SHALL BE MADE FOR LOW ENERGY CIRCUITS TO BE USED IN A HAZARDOUS LOCATION, ANCHOR SCIENTIFIC TYPE GSI - GOLD OR EQUAL.
- 3#14 CONDUCTORS ARE FOR MOTOR ALARM SIGNALS.
- VANDAL PROOF PADLOCKABLE ENCLOSURE.



POWER ONE-LINE DIAGRAM #5



CONTROL BLOCK DIAGRAM #5



Bowen Collins & Associates, Inc.
CONSULTING ENGINEERS

PROFESSIONAL ENGINEER
DOUGLAS MARK STEWART
No. 173512
STATE OF UTAH

REVISIONS

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SUMMIT AT POWDER MOUNTAIN
POWDER MOUNTAIN, UT
PHASE 1B

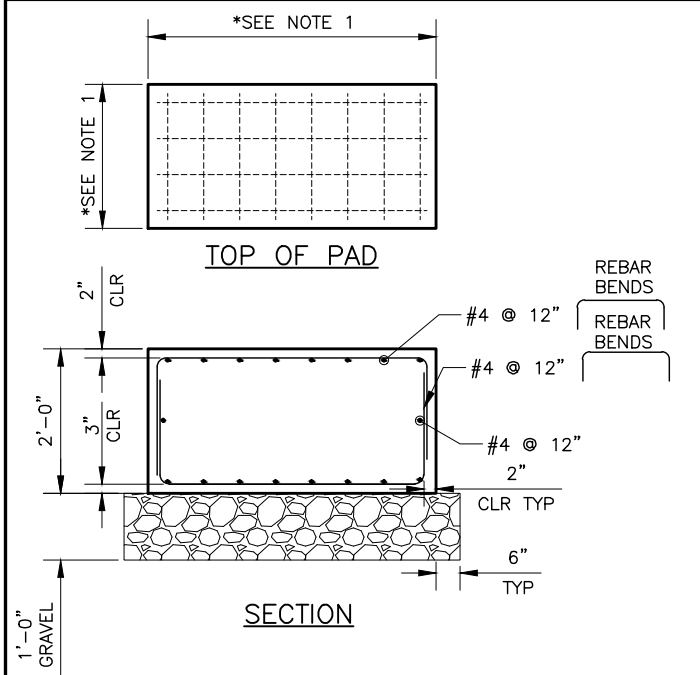
ELECTRICAL

ELECTRICAL DETAILS - 1

DATE: September 2013
PROJECT NUMBER: 334-13-01

DRAWING NO. **GE-1**

SHEET **4** OF **5**



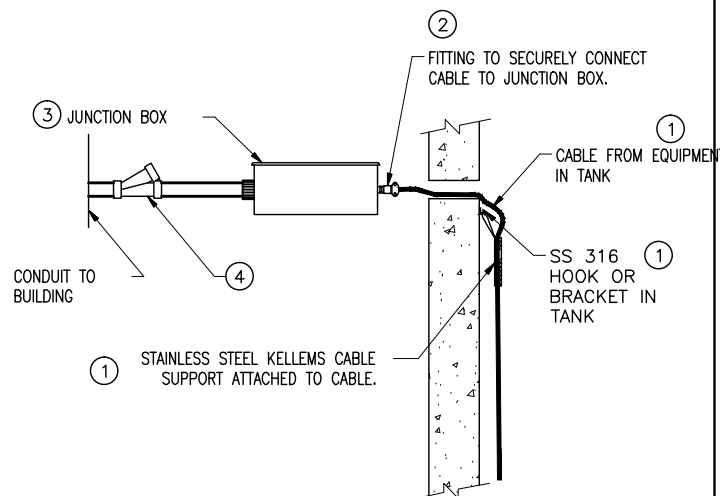
NOTES:

1. THE LENGTH AND WIDTH OF THE GENERATOR PAD WILL BE SIZED AS NEEDED TO ACCOMMODATE THE GENERATOR WITH AN ADDITIONAL EIGHT INCHES OF SPACE ON ALL SIDES. ANCHOR GENERATOR TO CONCRETE PAD WITH FOUR 5/8" EPOXY ANCHORS, MINIMUM 4" EMBEDDED INTO CONCRETE.

CONCRETE GENERATOR PAD (E) 5081
SCALE: NTS

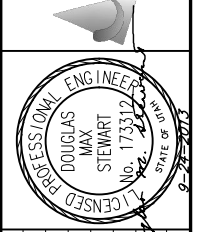
KEY NOTES:

- ① DETAIL SHOWS INFORMATION FOR CABLE, SOME OF THE EQUIPMENT MAY HAVE CONDUIT CONNECTING TO THE JUNCTION BOX. THE CONDUITS WILL CONNECT DIRECTLY TO THE CROUSE-HINDS GUE OR GUB BOX.
- ② CROUSE-HINDS CGBS OR EBY CLASS 1 DIVISION 1 GROUP D CABLE CONNECTOR.
- ③ CROUSE-HINDS GUE OR GUB CLASS 1 DIVISION 1 GROUP D JUNCTION BOX.
- ④ CROUSE-HINDS EZS CONDUIT SEALING FITTING.



JUNCTION BOX CONNECTION DETAIL (E) 5201
SCALE: NTS

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PHASE 1B
POWDER MOUNTAIN, UT

DESIGN: D. STEWART
DRAWN: D. LAMPH

REVIEW: D. STEWART
CHECKED: D. STEWART
APPROVED: J. BECKMAN

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

ELECTRICAL

ELECTRICAL DETAILS - 2

DATE: September 2013
PROJECT NUMBER: 334-13-01

DRAWING NO.
GE-2

SHEET 5 OF 5