

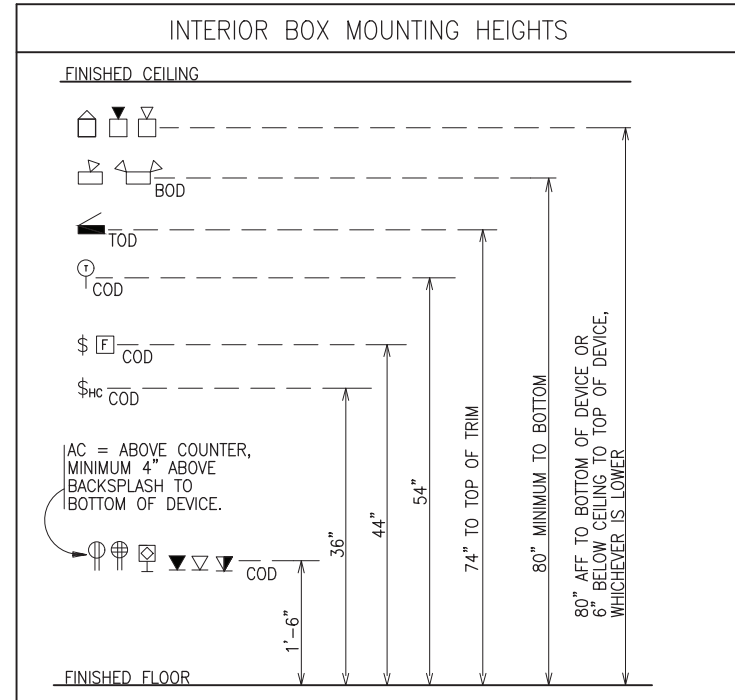
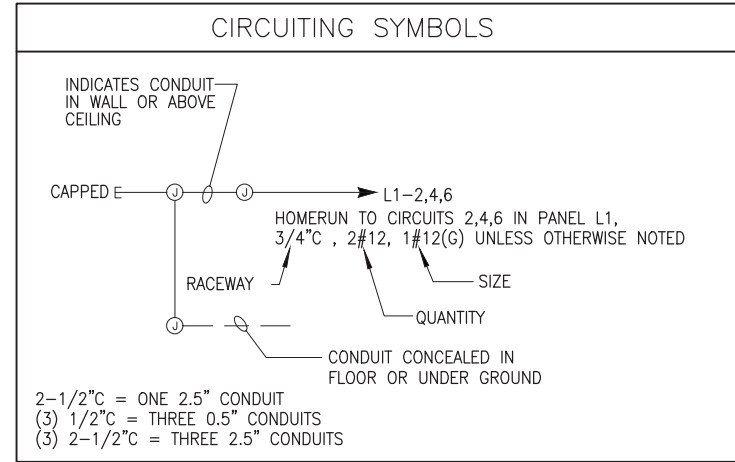
# LEGEND

SYMBOL	LIGHTING
	RECESSED TROFFER
	WALL MOUNTED LINEAR FIXTURE
	SURFACE MOUNTED LINEAR FIXTURE
	SUSPENDED LINEAR FIXTURE
	SHADED FIXTURE INDICATES EMERGENCY BALLAST
	RECESSED DOWNLIGHT
	WALL MOUNTED FIXTURE
	POLE MOUNTED AREA LIGHT
	WALL MOUNT EXIT LIGHT (W/ DIRECTIONAL ARROWS)
	SURFACE MOUNTED DOWNLIGHT
	EMERGENCY WALL LIGHT, SINGLE
	EMERGENCY WALL LIGHT, DOUBLE

SYMBOL	DEVICES & POWER
	SWITCH - SPST 3 THREE WAY 4 FOUR WAY WP WEATHER PROOF EXP EXPLOSION PROOF M MANUAL MOTOR DISCONNECT/STARTER T TIMER MC MOMENTARY CONTACT HC HANDICAPPED
	RECEPTACLE - SIMPLEX RECEPTACLE - DUPLEX GFI GROUND FAULT INTERRUPT WP WEATHER RESISTANT DEVICE W/ WHILE-IN-USE COVER
	RECEPTACLE - DOUBLE DUPLEX SAME INDICATORS AS SHOWN FOR DUPLEX J-BOX, J-BOX WALL MOUNTED, 4"x4"x2 1/8" DEEP UNLESS NOTED OTHERWISE J-BOX, CONDUIT, PULL STRING BY EC THERMOSTAT, SUPPLIED AND INSTALLED BY MC POWER POLE
	LCS (LOCAL CONTROL STATION)
	EMERGENCY PUSHBUTTON
	PHOTOCELL
	SPECIAL PURPOSE CONNECTION, BOX INDICATES FLOOR MOUNTING, WORK AS NOTED PANELBOARD, MOUNTING AS INDICATED ON PANEL SCHEDULE
	COMBINATION STARTER
	DISCONNECT SWITCH
	CONTACTOR
	CIRCUIT BREAKER
	TRANSFORMER, DRY-TYPE TRANSFORMER, PAD MOUNTED

SYMBOL	GROUNDING
	GROUND ROD
	GROUND ROD WITH GROUND TEST WELL
	GROUND RISER FROM REBAR
	MECHANICALLY CRIMPED OR WELDED GROUND CONNECTIONS
	GROUND CABLE: EMBEDDED IN CONCRETE BURIED IN EARTH EXPOSED

SYMBOL	SCHEMATIC
	SELECTOR SWITCH 2 POSITION
	NORMALLY OPEN TIME DELAY CLOSING AFTER COIL ENERGIZED
	NORMALLY CLOSED TIME DELAY OPENING AFTER COIL ENERGIZED
	INDICATOR LIGHT
	REMOTE DEVICE CONNECTION
	CLOSED RELAY CONTACT
	OPEN RELAY CONTACT
	TERMINAL TO EXTERNAL REMOTE DEVICE
	WIRE TERMINAL OR CONNECTION POINT
	LIMIT SWITCH
	CONTROL RELAY
	VT/PT CPT
	SELECTOR SWITCH 3 POSITION MAINTAINED CONTACT
	LEVEL SWITCH CLOSES ON FALLING LEVEL
	LEVEL SWITCH CLOSES ON RISING LEVEL
	CONTROL SWITCH PUSHBUTTON, MOMENTARY CONTACT N.C.
	GROUND CONNECTION
	SOLENOID
	FLOW SWITCH CLOSES ON LOW FLOW
	PRESSURE SWITCH CLOSES ON RISING PRESSURE
	TRANSFORMER W/ DELTA-Y AND GROUND
	UTILITY METER, UTILITY CT
	CIRCUIT BREAKER
	ELECTRICAL PANEL
	FUSE
	MOTOR STARTER NEMA SIZE AS NOTED
	DISCONNECT SWITCH SIZE AS NOTED
	ACTIVE HARMONIC FILTER
	PASSIVE HARMONIC FILTER
	MOTOR (10 HORSEPOWER NOTED)
	SURGE PROTECTION DEVICE
	POWER QUALITY METER
	VARIABLE FREQUENCY DRIVE
	PUMP MONITOR RELAY
	REDUCED VOLTAGE SOFT STARTER
	dV/dt FILTER



SYMBOL	ABBREVIATIONS AND MISCELLANEOUS
ATS	AUTOMATIC TRANSFER SWITCH
EC	ELECTRICAL CONTRACTOR
MC	MECHANICAL CONTRACTOR
GC	GENERAL CONTRACTOR
C	CONDUIT
GND, G	GROUND
BOD	BOTTOM OF DEVICE
COD	CENTER OF DEVICE
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
BLG	BELOW GRADE
AC	ABOVE COUNTER, 4" ABOVE BACK SPLASH
BC	BELOW COUNTER, 4" BELOW COUNTER TOP
W/	WITH
a,b,c	SWITCH DESIGNATION
UON	UNLESS OTHERWISE NOTED
UG	UNDERGROUND
WP	WEATHER PROOF
FO	FIBER OPTIC
MD	MEDIUM VOLTAGE
	INDICATES STANDARD DETAIL
XXX	EQUIPMENT TAG NUMBER
X,xxx	FAULT CURRENT VALUE
XXX	CONDUIT TAG

### GENERAL NOTES:

- NOT ALL SYMBOLS SHOWN ARE USED.
- 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.
- CONTRACTOR SHALL VERIFY ALL ELECTRICAL LOADS (VOLTAGE, PHASE, CONNECTION REQUIREMENTS, ETC.) OF EQUIPMENT FURNISHED BEFORE BEGINNING ROUGH-IN.
- SEE APPLICABLE SHOP DRAWINGS FOR ROUGH-IN LOCATION OF ALL EQUIPMENT, WIRING DEVICES, ETC.
- 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.
- ALL PENETRATIONS OF FLOORS, WALLS AND CEILINGS SHALL BE SEALED WITH APPROVED MATERIAL.
- 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.
- 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 THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR.
- IT IS THE ELECTRICAL SUBCONTRACTOR'S RESPONSIBILITY TO RECEIVE THE COMPLETE SET OF PLANS IN ORDER TO ENSURE THAT ALL ITEMS RELATED TO ELECTRICAL POWER AND CONTROL SYSTEMS ARE COMPLETELY ACCOUNTED FOR.
- 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.
- THE DRAWINGS GENERALLY ILLUSTRATE THE APPROXIMATE 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, EASEMENT LOCATIONS, AND OTHER OBSTRUCTIONS. LOCATIONS SHOWN ON THE DRAWINGS, HOWEVER, SHALL BE ADHERED TO AS CLOSELY AS POSSIBLE.
- THE ELECTRICAL INSTALLATION SHALL COMPLY WITH THE CURRENT VERSION OF THE NEC, LOCAL, AND STATE CODES.
- CONDUIT PENETRATIONS SHALL BE MADE PER SPECIFICATIONS AND DETAILS.

E 5011 E 5012

**BOWEN COLLINS & ASSOCIATES**

PROFESSIONAL ENGINEER  
 No. 12649767  
 JOSHUA JAY LAKE  
 STATE OF UTAH  
 07/09/2024

NO.	DATE	REV. BY	DESCRIPTION

**VERIFY SCALE**  
 BAR IS ONE INCH ON ORIGINAL DRAWING

CHECKED: S. CAVANAUGH  
 APPROVED: J. LAKE

**ZONE 2 & 3 PUMP STATION PROJECT**

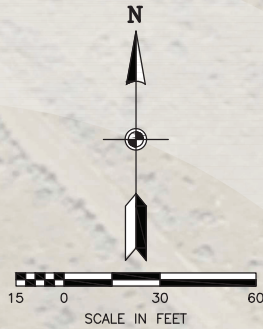
HERRIMAN CITY  
 HERRIMAN, UTAH

**ELECTRICAL NOTES, LEGEND, AND SCHEDULE**

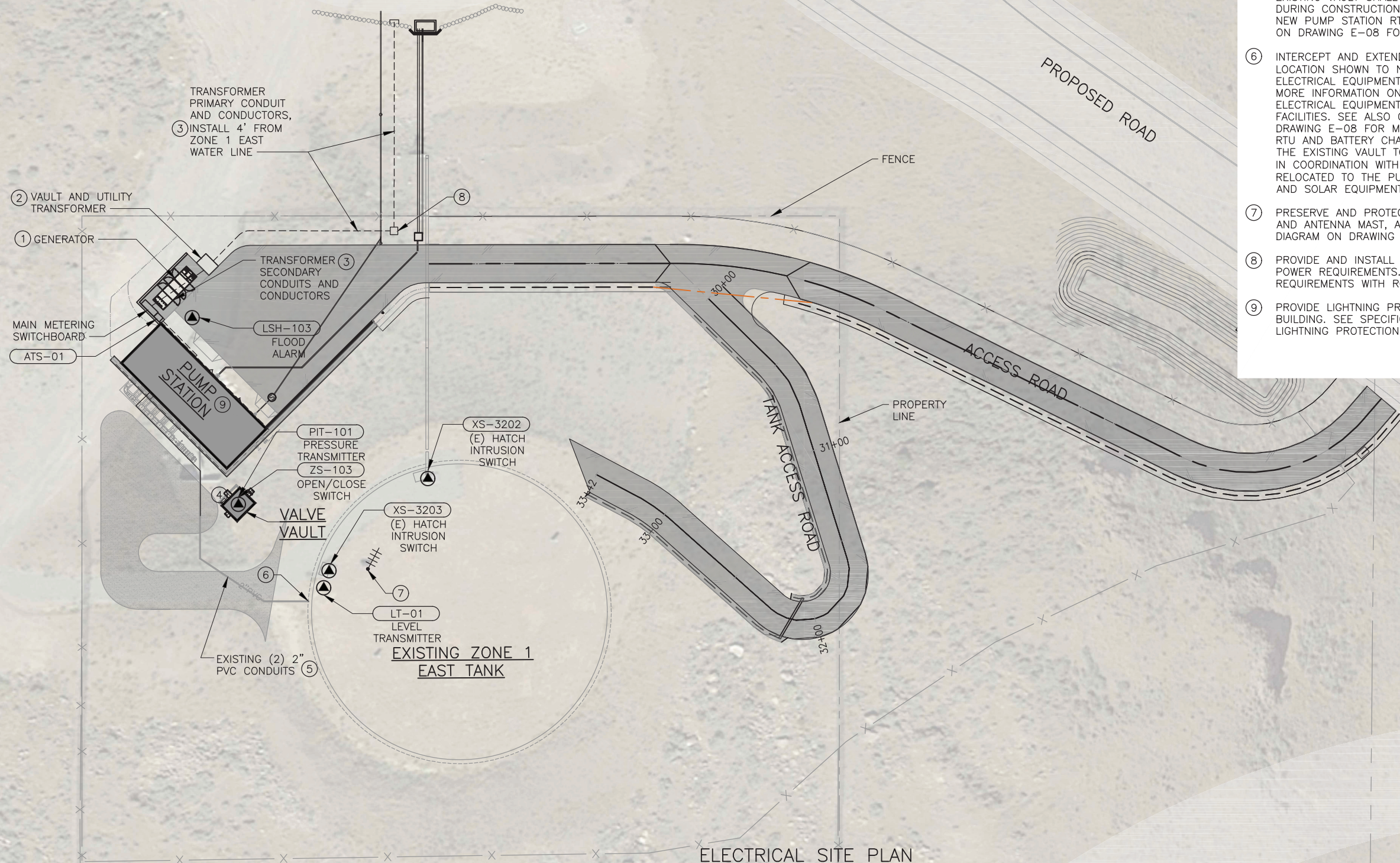
DATE: JULY 2024  
 PROJECT NUMBER: 217-19-04


DRAWING NO.  
**E-01**

SHEET 55 OF 72

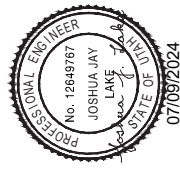


- KEY NOTES:**
- ① NEW GENERATOR. SEE E-5268 FOR GENERATOR GROUND RING DETAIL AND E-5184 FOR GENERATOR PAD DETAIL.
  - ② PROVIDE AND INSTALL NEW CONCRETE VAULT FOR ROCKY MOUNTAIN POWER TRANSFORMER. SEE E-5185.
  - ③ PROVIDE AND INSTALL CONDUITS. PROVIDE TRENCH, BACKFILL, AND COMPACTION. UTILITY WILL PROVIDE, INSTALL, AND TERMINATE CABLES. FOR QUANTITY AND SIZE OF CONDUITS, SEE POWER ONE-LINE DIAGRAM ON DRAWING E-06. FOR INSTALLATION REQUIREMENTS, SEE KEY NOTES #1 AND 3 ON DRAWING E-06 AND DETAIL E-5088.
  - ④ OPEN/CLOSE SWITCH IS LOCATED ON VALVE (BFV-103) INSIDE VALVE VAULT. PRESSURE TRANSMITTER IS LOCATED ON THE TEE - INTAKE TO PUMP STATION.
  - ⑤ EXISTING (2) 2" PVC CONDUITS BETWEEN TANK AND EXISTING VAULT SHALL BE PRESERVED AND PROTECTED DURING CONSTRUCTION. CONDUITS SHALL BE EXTENDED TO NEW PUMP STATION RTU. SEE CONTROL ONE-LINE DIAGRAM ON DRAWING E-08 FOR MORE INFORMATION.
  - ⑥ INTERCEPT AND EXTEND EXISTING (2) 2" PVC CONDUITS AT LOCATION SHOWN TO NEW JUNCTION BOX AND TEMPORARY ELECTRICAL EQUIPMENT RACK. SEE DETAIL E-5372 FOR MORE INFORMATION ON RACK. PROVIDE SHADE OVER ELECTRICAL EQUIPMENT FOR DURATION OF TEMPORARY FACILITIES. SEE ALSO CONTROL ONE-LINE DIAGRAM ON DRAWING E-08 FOR MORE INFORMATION. RELOCATE EXISTING RTU AND BATTERY CHARGE CONTROLLER ENCLOSURES FROM THE EXISTING VAULT TO NEW TEMPORARY EQUIPMENT RACK IN COORDINATION WITH APCO. ONCE I/O HAS BEEN RELOCATED TO THE PUMP STATION RTU, DEMO RACK, RTU, AND SOLAR EQUIPMENT, AND RETURN TO OWNER.
  - ⑦ PRESERVE AND PROTECT EXISTING SOLAR POWER SYSTEM AND ANTENNA MAST, ANTENNA, ETC. SEE CONTROL ONE-LINE DIAGRAM ON DRAWING E-08 FOR MORE INFORMATION.
  - ⑧ PROVIDE AND INSTALL JUNCTION BOX PER ROCKY MOUNTAIN POWER REQUIREMENTS. COORDINATE JUNCTION BOX REQUIREMENTS WITH ROCKY MOUNTAIN POWER.
  - ⑨ PROVIDE LIGHTNING PROTECTION FOR PUMP STATION BUILDING. SEE SPECIFICATION SECTION 26 50 10 - LIGHTNING PROTECTION.





**BOWEN COLLINS & ASSOCIATES**



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HERRIMAN CITY  
HERRIMAN, UTAH

**ZONE 2 & 3 PUMP STATION PROJECT**

DESIGN: J. LAKE  
DRAWN: J. LAKE

VERIFY SCALE  
BAR IS ONE INCH ON ORIGINAL DRAWING

REVIEW: S. CAVANAUGH  
CHECKED: S. CAVANAUGH  
APPROVED: J. LAKE

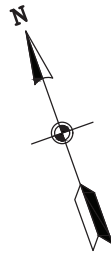
ELECTRICAL

**ELECTRICAL SITE PLAN**

DATE: JULY 2024  
PROJECT NUMBER: 217-19-04

DRAWING NO.  
**E-02**

SHEET **56** OF **72**

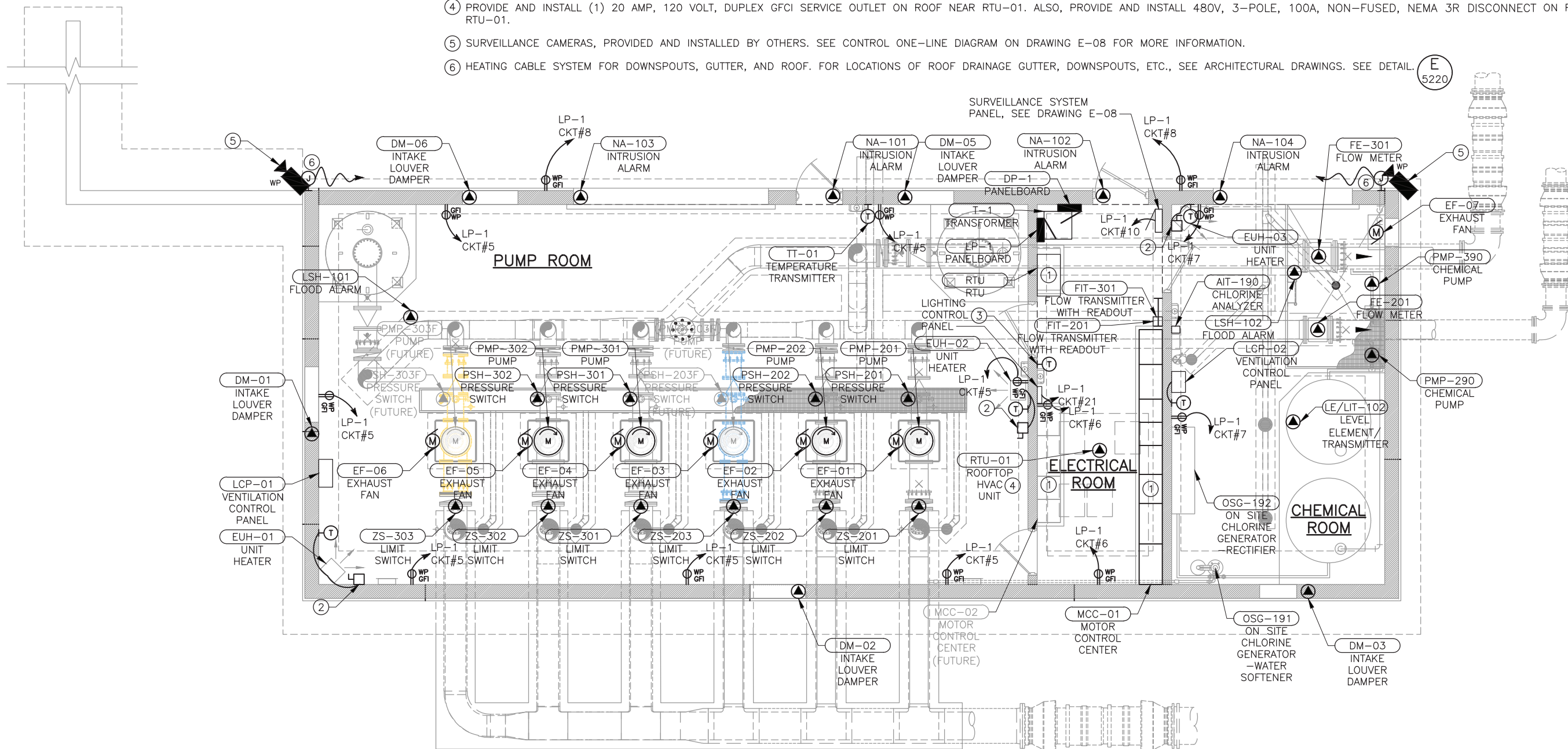


**GENERAL NOTES:**


- FOR SITE INFORMATION REFER TO THE ELECTRICAL SITE PLAN ON DRAWING E-02.
- REFER TO POWER ONE-LINE DIAGRAM ON DRAWING E-06, PANEL SCHEDULE LP-1 ON DRAWING E-07, AND CONTROL ONE-LINE DIAGRAMS ON DRAWINGS E-08 AND E-9 FOR CONDUIT, CONDUCTORS, CABLES, AND ELECTRICAL EQUIPMENT INFORMATION.
- ALL INDOOR OUTLETS ARE GFCI WITH WEATHER PROOF COVER AND MOUNTED 48" ABOVE FINISHED FLOOR. ALL OUTSIDE WEATHER RESISTANT GFCI OUTLETS SHALL HAVE A WHILE-IN-USE WEATHER PROOF COVER, HUBBLE, METALLIC WP26E OR WP26EH. MOUNT OUTLETS 48" MIN ABOVE FINISH GRADE.
- FOR ROUTING OF FEEDER CONDUITS, SEE DRAWING E-04.
- SUPPORT ELECTRICAL CONDUITS ON SUPPORTS INDEPENDENT OF PIPING. SUPPORTING THE ELECTRICAL CONDUIT OFF PIPING WILL NOT BE ALLOWED. ALL CONDUITS WILL BE EMBEDDED IN THE WALLS AND ROUTED ABOVE CEILING AND BELOW SLAB. CONDUITS TO EQUIPMENT IN THE CENTER OF ROOM WILL BE BELOW SLAB AND AVOID RUNNING ACROSS OPEN SPACES. SWITCHES, RECEPTACLES, AND ALL OTHER ELECTRICAL BOXES SHALL BE INSTALLED SO THAT THEY ARE FLUSH WITH THE BLOCK. ALL CONDUIT TO BE CONCEALED EXCEPT FOR STRAIGHT RUN FROM FLOOR PENETRATION TO EQUIPMENT. REQUEST PERMISSION OF THE ENGINEER BEFORE RUNNING ANY OTHER EXPOSED CONDUIT.

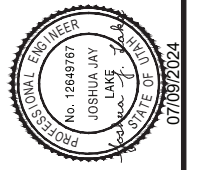
**KEY NOTES:**

- INSTALL HOUSEKEEPING PAD UNDER MCC-01, FUTURE MCC-02, AND RTU PER STRUCTURAL DRAWINGS.
- 480V, 3-POLE, 30A, NON-FUSED, NEMA 1 DISCONNECT FOR UNIT HEATER.
- THERMOSTAT FOR RTU-01.
- PROVIDE AND INSTALL (1) 20 AMP, 120 VOLT, DUPLEX GFCI SERVICE OUTLET ON ROOF NEAR RTU-01. ALSO, PROVIDE AND INSTALL 480V, 3-POLE, 100A, NON-FUSED, NEMA 3R DISCONNECT ON ROOF NEAR RTU-01.
- SURVEILLANCE CAMERAS, PROVIDED AND INSTALLED BY OTHERS. SEE CONTROL ONE-LINE DIAGRAM ON DRAWING E-08 FOR MORE INFORMATION.
- HEATING CABLE SYSTEM FOR DOWNSPOUTS, GUTTER, AND ROOF. FOR LOCATIONS OF ROOF DRAINAGE GUTTER, DOWNSPOUTS, ETC., SEE ARCHITECTURAL DRAWINGS. SEE DETAIL. (E 5220)



**POWER AND CONTROLS PLAN**  
SCALE: 1/4" = 1'-0"





NO.	DATE	REV. BY	DESCRIPTION

HERRIMAN CITY  
HERRIMAN, UTAH

**ZONE 2 & 3 PUMP STATION PROJECT**

DESIGN: J. LAKE  
DRAWN: J. TANNER

REVIEW: CHECKED: CAVANAUGH  
APPROVED: J. LAKE

VERIFY SCALE: BAR IS ONE INCH ON ORIGINAL DRAWING

ELECTRICAL

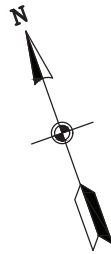
**POWER & INSTRUMENTATION PLAN**

DATE: JULY 2024

PROJECT NUMBER: 217-19-04

DRAWING NO. **E-03**

SHEET **57** OF **72**

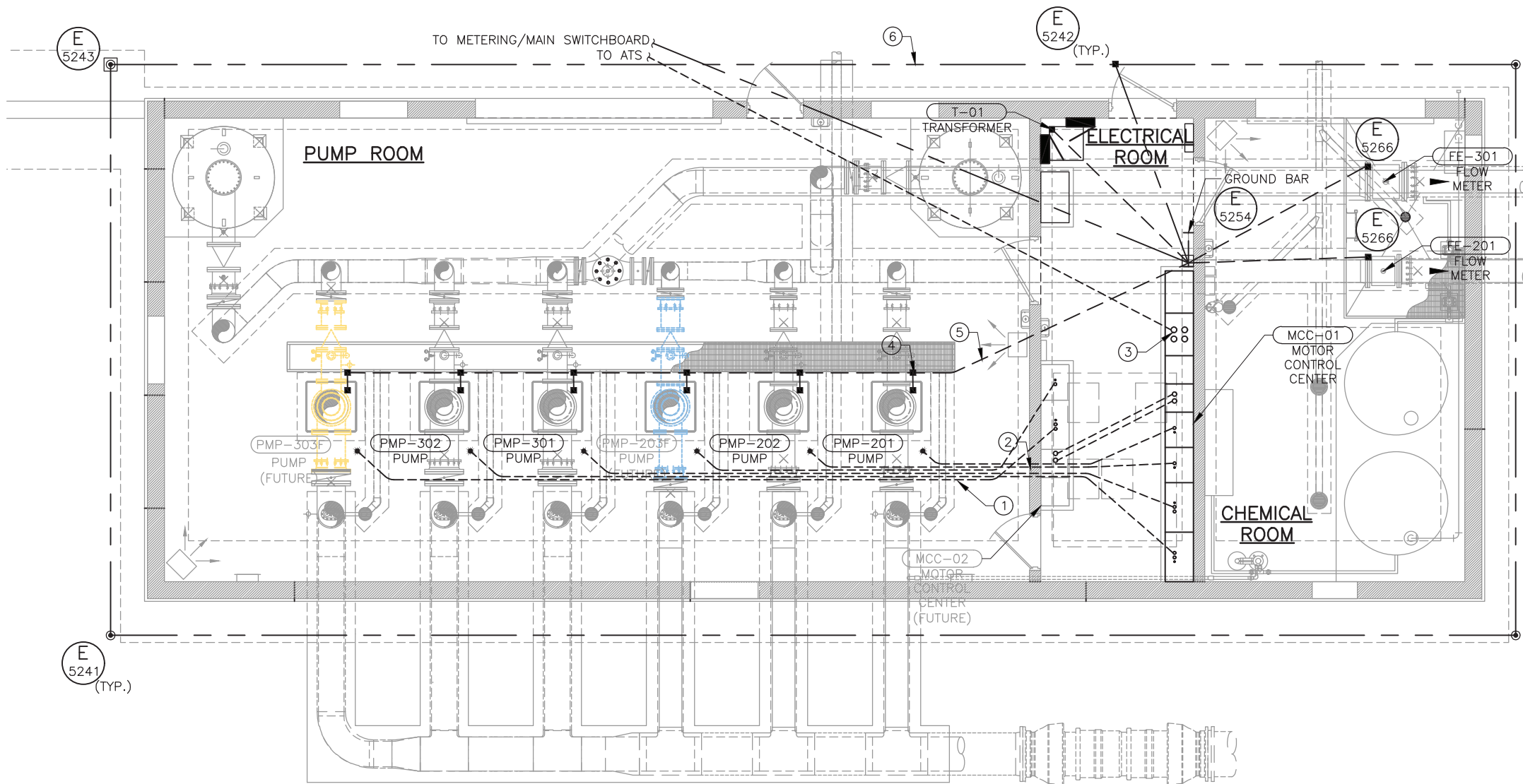


**GENERAL NOTES:**

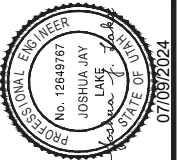
1. FOR SITE INFORMATION REFER TO THE ELECTRICAL SITE PLAN ON DRAWING E-02.
2. ALL BARE COPPER GROUND CABLES FOR CONNECTIONS FROM EQUIPMENT INSIDE THE PUMP STATION TO THE GROUND BAR SHALL BE RUN INSIDE PVC CONDUIT WHERE PENETRATING THROUGH SLAB. ALL BARE COPPER GROUND CABLES FOR CONNECTIONS FROM EQUIPMENT OUTSIDE THE PUMP STATION TO THE GROUND BAR SHALL BE RUN INSIDE PVC CONDUIT FROM STUBBED POINT JUST OUTSIDE PUMP STATION FOUNDATION TO THE GROUND BAR INSIDE.

**KEY NOTES:**

- ① PUMP FEEDER CONDUIT TO BE ROUTED IN SPACE SHOWN, 3" TO 11" BELOW PUMP ROOM CONCRETE SLAB.
- ② WHERE CONDUIT PENETRATE STEM WALL, PROVIDE AND SEAL CONDUIT SLEAVE. TYPICAL.
- ③ REFERENCE POWER AND CONTROL ONE-LINE DIAGRAMS FOR QUANTITY OF CONDUIT TO EQUIPMENT. TYPICAL.
- ④ PROVIDE #3/0 AWG BARE COPPER GROUND CONNECTION BETWEEN UFER AND PUMP MOTOR. TYPICAL.
- ⑤ UFER GROUND. RUN BARE COPPER CONDUCTOR IN PUMP ROOM CONCRETE SLAB.
- ⑥ GROUND RING. RUN BARE COPPER CONDUCTOR A MINIMUM OF 36" BELOW GRADE, 24" MINIMUM FROM BUILDING FOOTING.



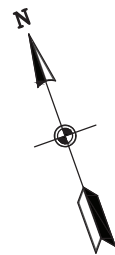
**GROUNDING PLAN**  
SCALE: 1/4"=1'-0"



NO.	DATE	REV. BY	DESCRIPTION

HERRIMAN CITY HERRIMAN, UTAH		VERIFY SCALE BAR IS ONE INCH ON ORIGINAL DRAWING	
DESIGN	J. LAKE	REVIEW	CHECKED: CAVANAUGH
DRAWN	T. TANNER	APPROVED	J. LAKE

ELECTRICAL	FEEDER CONDUIT AND GROUNDING PLAN	DATE:	JULY 2024
		PROJECT NUMBER	217-19-04

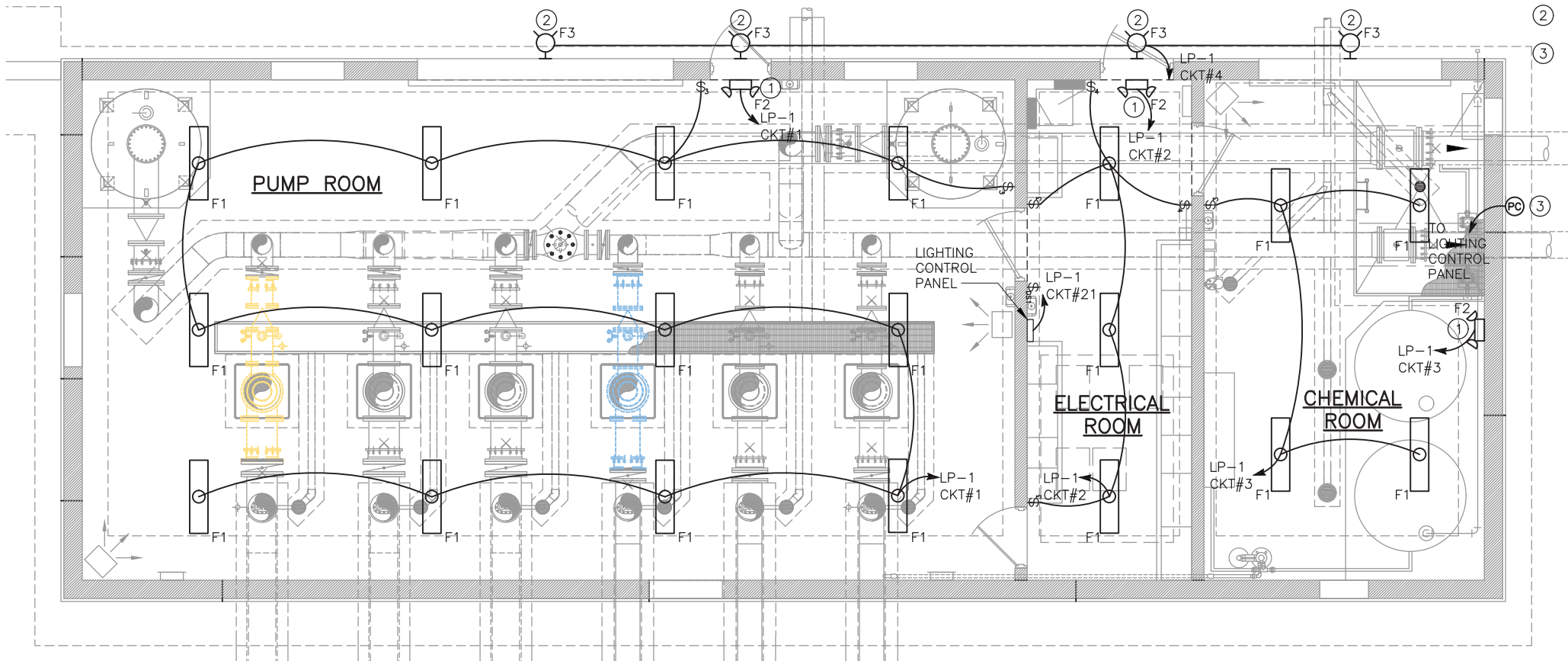


**GENERAL NOTES:**

- SUPPORT ELECTRICAL CONDUITS ON SUPPORTS INDEPENDENT OF PIPING. SUPPORTING THE ELECTRICAL CONDUIT OFF PIPING WILL NOT BE ALLOWED. ALL CONDUITS WILL BE EMBEDDED IN THE WALLS AND ROUTED ABOVE CEILING AND BELOW SLAB. CONDUITS TO EQUIPMENT IN THE CENTER OF ROOM WILL BE BELOW SLAB AND AVOID RUNNING ACROSS OPEN SPACES. SWITCHES, RECEPTACLES, AND ALL OTHER ELECTRICAL BOXES SHALL BE INSTALLED SO THAT THEY ARE FLUSH WITH THE BLOCK. ALL CONDUIT TO BE CONCEALED EXCEPT FOR STRAIGHT RUN FROM FLOOR PENETRATION TO EQUIPMENT. REQUEST PERMISSION OF THE ENGINEER BEFORE RUNNING ANY OTHER EXPOSED CONDUIT.

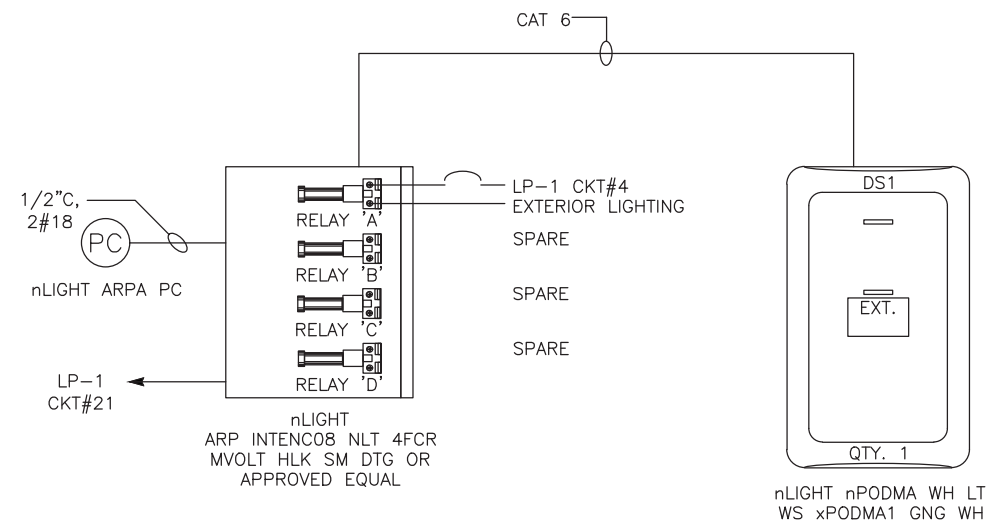
**KEY NOTES:**

- MOUNT EMERGENCY LIGHTS APPROXIMATELY 8' ABOVE FINISHED FLOOR.
- MOUNT WALL PACK LIGHTS AS SHOWN ON ARCHITECTURAL DRAWING A-01.
- MOUNT PHOTOCELL UNDER SOFFIT AND ADJUST TO 1 FOOTCANDLE.

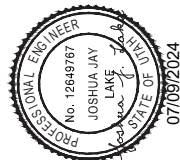


**LIGHTING PLAN**  
SCALE: 1/4"=1'-0"

FIXTURE SCHEDULE							
SYMBOL	DESCRIPTION	MANUFACTURER	CATALOG NO.	VA	LAMP	MOUNTING	NOTES
F1	ENCLOSED INDUSTRIAL, FIBERGLASS HOUSING GASKETED, LED, 120 VOLT, WITH CMB MOUNTING BRACKET. 6000 LUMENS	HOLOPHANE	EVT4 6000LM PCL MD MVOLT 40K 80CRI CMB	49	LED	CEILING, CHAIN SUSPENDED	CHAIN HANG FIXTURE AT 12' ABOVE FINISHED FLOOR
F2	EMERGENCY LIGHT WITH TWO HEADS, 90 MIN BATTERY POWER, WET LOCATION, 120 VAC	HOLOPHANE	DM30 WL LED	2.7	LED	WALL	
F3	WALL PACK LED, EXTERIOR WALL MOUNTED 120 VOLT AC, BLACK.	HOLOPHANE	W4GLED 10C 1000 40K T3M 120 BKSDP	39	LED	WALL	



**EXTERIOR LIGHTING CONTROL DETAIL**  
SCALE: NTS



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HERRIMAN CITY  
HERRIMAN, UTAH

**ZONE 2 & 3 PUMP STATION PROJECT**

DESIGN: J. LAKE  
DRAWN: T. TANNER

REVIEW: CHECKED: CAVANAUGH  
APPROVED: J. LAKE

VERIFY SCALE: BAR IS ONE INCH ON ORIGINAL DRAWING

ELECTRICAL

**LIGHTING PLAN**

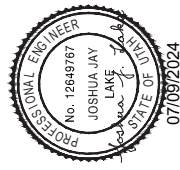
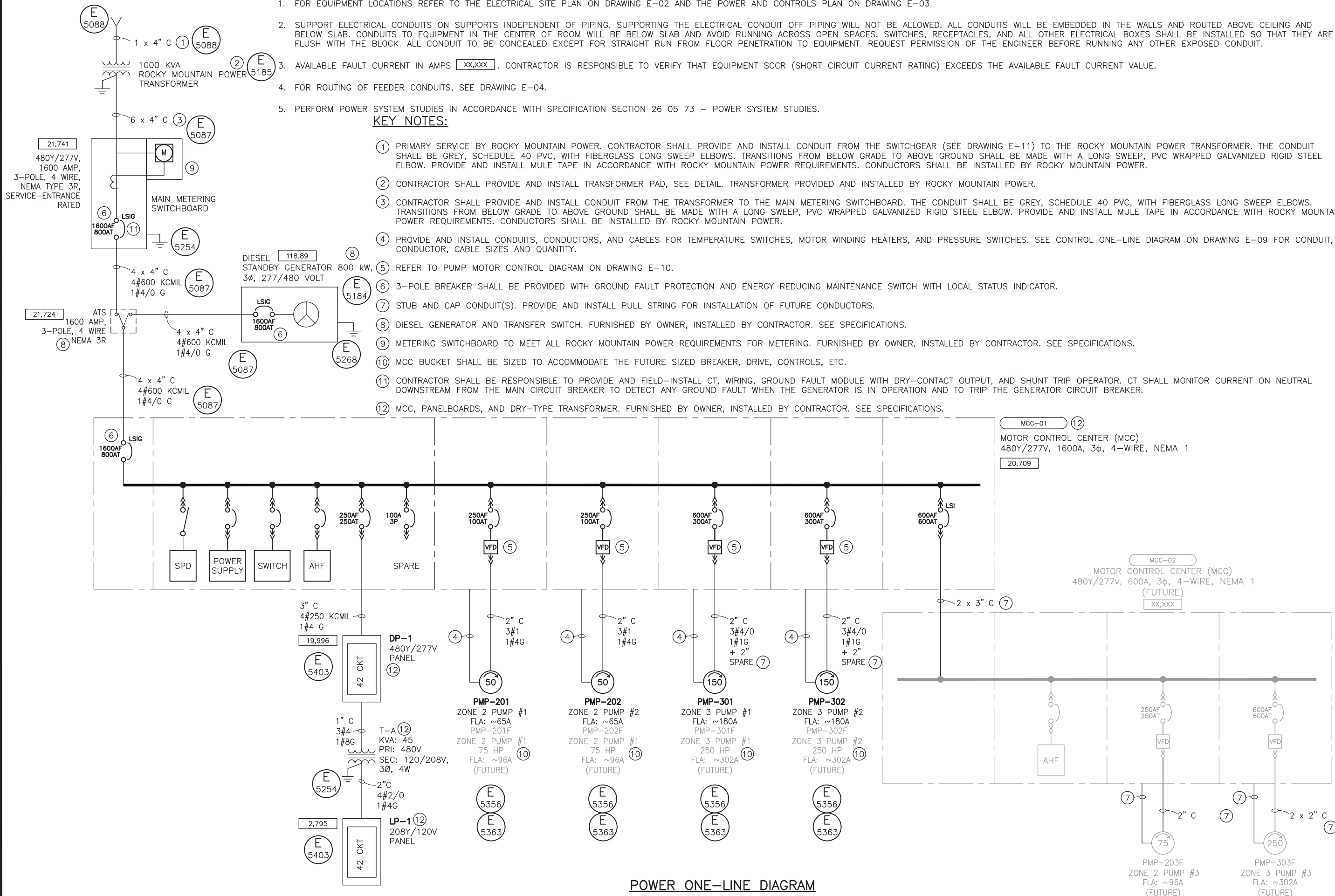
DATE: JULY 2024  
PROJECT NUMBER: 217-19-04

**GENERAL NOTES:**

1. FOR EQUIPMENT LOCATIONS REFER TO THE ELECTRICAL SITE PLAN ON DRAWING E-02 AND THE POWER AND CONTROLS PLAN ON DRAWING E-03.
2. SUPPORT ELECTRICAL CONDUITS ON SUPPORTS INDEPENDENT OF PIPING. SUPPORTING THE ELECTRICAL CONDUIT OFF PIPING WILL NOT BE ALLOWED. ALL CONDUITS WILL BE EMBEDDED IN THE WALLS AND ROUTED ABOVE CEILING AND BELOW SLAB. CONDUITS TO EQUIPMENT IN THE CENTER OF ROOM WILL BE BELOW SLAB AND AVOID RUNNING ACROSS OPEN SPACES. SWITCHES, RECEPTACLES, AND ALL OTHER ELECTRICAL BOXES SHALL BE INSTALLED SO THAT THEY ARE FLUSH WITH THE BLOCK. ALL CONDUIT TO BE CONCEALED EXCEPT FOR STRAIGHT RUN FROM FLOOR PENETRATION TO EQUIPMENT. REQUEST PERMISSION OF THE ENGINEER BEFORE RUNNING ANY OTHER EXPOSED CONDUIT.
3. AVAILABLE FAULT CURRENT IN AMPS [XX,XXX]. CONTRACTOR IS RESPONSIBLE TO VERIFY THAT EQUIPMENT SCCR (SHORT CIRCUIT CURRENT RATING) EXCEEDS THE AVAILABLE FAULT CURRENT VALUE.
4. FOR ROUTING OF FEEDER CONDUITS, SEE DRAWING E-04.
5. PERFORM POWER SYSTEM STUDIES IN ACCORDANCE WITH SPECIFICATION SECTION 26 05 73 - POWER SYSTEM STUDIES.

**KEY NOTES:**

- ① PRIMARY SERVICE BY ROCKY MOUNTAIN POWER. CONTRACTOR SHALL PROVIDE AND INSTALL CONDUIT FROM THE SWITCHGEAR (SEE DRAWING E-11) TO THE ROCKY MOUNTAIN POWER TRANSFORMER. THE CONDUIT SHALL BE GREY, SCHEDULE 40 PVC, WITH FIBERGLASS LONG SWEEP ELBOWS. TRANSITIONS FROM BELOW GRADE TO ABOVE GROUND SHALL BE MADE WITH A LONG SWEEP, PVC WRAPPED GALVANIZED RIGID STEEL ELBOW. PROVIDE AND INSTALL MULE TAPE IN ACCORDANCE WITH ROCKY MOUNTAIN POWER REQUIREMENTS. CONDUCTORS SHALL BE INSTALLED BY ROCKY MOUNTAIN POWER.
- ② CONTRACTOR SHALL PROVIDE AND INSTALL TRANSFORMER PAD, SEE DETAIL. TRANSFORMER PROVIDED AND INSTALLED BY ROCKY MOUNTAIN POWER.
- ③ CONTRACTOR SHALL PROVIDE AND INSTALL CONDUIT FROM THE TRANSFORMER TO THE MAIN METERING SWITCHBOARD. THE CONDUIT SHALL BE GREY, SCHEDULE 40 PVC, WITH FIBERGLASS LONG SWEEP ELBOWS. TRANSITIONS FROM BELOW GRADE TO ABOVE GROUND SHALL BE MADE WITH A LONG SWEEP, PVC WRAPPED GALVANIZED RIGID STEEL ELBOW. PROVIDE AND INSTALL MULE TAPE IN ACCORDANCE WITH ROCKY MOUNTAIN POWER REQUIREMENTS. CONDUCTORS SHALL BE INSTALLED BY ROCKY MOUNTAIN POWER.
- ④ PROVIDE AND INSTALL CONDUITS, CONDUCTORS, AND CABLES FOR TEMPERATURE SWITCHES, MOTOR WINDING HEATERS, AND PRESSURE SWITCHES. SEE CONTROL ONE-LINE DIAGRAM ON DRAWING E-09 FOR CONDUIT, CONDUCTOR, CABLE SIZES AND QUANTITY.
- ⑤ REFER TO PUMP MOTOR CONTROL DIAGRAM ON DRAWING E-10.
- ⑥ 3-POLE BREAKER SHALL BE PROVIDED WITH GROUND FAULT PROTECTION AND ENERGY REDUCING MAINTENANCE SWITCH WITH LOCAL STATUS INDICATOR.
- ⑦ STUB AND CAP CONDUIT(S). PROVIDE AND INSTALL PULL STRING FOR INSTALLATION OF FUTURE CONDUCTORS.
- ⑧ DIESEL GENERATOR AND TRANSFER SWITCH. FURNISHED BY OWNER, INSTALLED BY CONTRACTOR. SEE SPECIFICATIONS.
- ⑨ METERING SWITCHBOARD TO MEET ALL ROCKY MOUNTAIN POWER REQUIREMENTS FOR METERING. FURNISHED BY OWNER, INSTALLED BY CONTRACTOR. SEE SPECIFICATIONS.
- ⑩ MCC BUCKET SHALL BE SIZED TO ACCOMMODATE THE FUTURE SIZED BREAKER, DRIVE, CONTROLS, ETC.
- ⑪ CONTRACTOR SHALL BE RESPONSIBLE TO PROVIDE AND FIELD-INSTALL CT, WIRING, GROUND FAULT MODULE WITH DRY-CONTACT OUTPUT, AND SHUNT TRIP OPERATOR. CT SHALL MONITOR CURRENT ON NEUTRAL DOWNSTREAM FROM THE MAIN CIRCUIT BREAKER TO DETECT ANY GROUND FAULT WHEN THE GENERATOR IS IN OPERATION AND TO TRIP THE GENERATOR CIRCUIT BREAKER.
- ⑫ MCC, PANELBOARDS, AND DRY-TYPE TRANSFORMER. FURNISHED BY OWNER, INSTALLED BY CONTRACTOR. SEE SPECIFICATIONS.



NO.	DATE	REV. BY	DESCRIPTION

HERRIMAN CITY HERRIMAN, UTAH	
DESIGN DRAWN: J. TANNER	REVIEW CHECKED: S. CAVANAUGH APPROVED: J. LAKE
<b>ZONE 2 &amp; 3 PUMP STATION PROJECT</b>	
VERIFY SCALE BAR IS ONE INCH ON ORIGINAL DRAWING	

ELECTRICAL	PROJECT NUMBER 217-19-04
<b>POWER ONE-LINE DIAGRAM</b>	
DRAWING NO. <b>E-06</b>	
DATE: JULY 2024	
SHEET 60 OF 72	

NAME: MCC-01						
UPDATED:	6/5/24		NOTES:			
EQUIPMENT RATING:	1600A		1.			
LOCATION:	ELECTRICAL ROOM					
TOTAL AMPS:	718.0 A					
TOTAL VOLT-AMPS:	596.76 kVA					
VOLTAGE L-L:	480 V					
NOTE	SPACE	DESCRIPTION	A	B	C	DEMAND AMPS
	1	SPD				0.0 A
	2	POWER SUPPLY				0.0 A
	3	SWITCH				0.0 A
	4	AHF				0.0 A
	5	PMP-201 (50 HP)	18,013	18,013	18,013	65.0 A
	6	PMP-202 (50 HP)	18,013	18,013	18,013	65.0 A
	7	PMP-301 (150 HP)	62,354	62,354	62,354	225.0 A
	8	PMP-302 (150 HP)	49,883	49,883	49,883	180.0 A
	9	DP-1	53,913	46,255	51,798	182.8 A
	10	SPARE	0	0	0	0.0 A

LOAD SUMMARY MCC-01 (INITIAL)

NAME: MCC-01						
UPDATED:	6/5/24		NOTES:			
EQUIPMENT RATING:	1600A		1.			
LOCATION:	ELECTRICAL ROOM					
TOTAL AMPS:	1452.0 A					
TOTAL VOLT-AMPS:	1207.41 kVA					
VOLTAGE L-L:	480 V					
NOTE	SPACE	DESCRIPTION	A	B	C	DEMAND AMPS
	1	SPD				0.0 A
	2	POWER SUPPLY				0.0 A
	3	SWITCH				0.0 A
	4	AHF				0.0 A
	5	PMP-201 (75 HP)	26,604	26,604	26,604	96.0 A
	6	PMP-202 (75 HP)	26,604	26,604	26,604	96.0 A
	7	PMP-203 (75 HP)	26,604	26,604	26,604	96.0 A
	8	PMP-301 (250 HP)	104,616	104,616	104,616	377.5 A
	9	PMP-302 (250 HP)	83,693	83,693	83,693	302.0 A
	10	PMP-303 (250 HP)	83,693	83,693	83,693	302.0 A
	11	DP-1	53,913	46,255	51,798	182.8 A
	12	SPARE	0	0	0	0.0 A

LOAD SUMMARY MCC-01 (BUILDOUT)

GENERAL NOTES:

- A. POWER CONDUCTORS FOR CIRCUITS FED FROM DP-1 AND LP-A SHALL BE #12 AWG AND CONDUIT SHALL BE 3/4" UNLESS OTHERWISE NOTED.
- B. REFER TO THE ELECTRICAL SITE PLAN ON DRAWING E-02, THE POWER AND CONTROLS PLAN ON DRAWING E-03, AND LIGHTING PLAN ON DRAWING E-05 FOR EQUIPMENT LOCATIONS.

KEY NOTES: (#)

- 1. PROVIDE AND INSTALL 1" C WITH 3#3 AND 1#8G.
- 2. SEE POWER ONE-LINE DIAGRAM ON DRAWING E-06 FOR CONDUIT AND CONDUCTOR SIZES AND QUANTITIES.
- 3. PROVIDE AND INSTALL 1" C WITH 2#6 AND 1#10G.
- 4. PROVIDE AND INSTALL 1" C WITH 2#10 AND 1#10G.

HERRIMAN CITY ZONE 2 & 3 PUMP STATION												
PANEL: DP-1			VOLT: 480/277			AMP: 250			PHASE: 3			WIRE: 4
LOCATION (ROOM #):			ELECTRICAL ROOM			NOTE:			---			
MFG:			SEE SPECIFICATION			AIC RATING:			SEE ONE-LINE			
TYPE:			NEMA TYPE 1			GROUND BUS:			YES			
TYPE OF MAIN:			MLO			MOUNTING:			SURFACE			
FEEDER:			SEE ONE-LINE			FED FROM:			SEE ONE-LINE			
CIRCUIT DESCRIPTION	P	BRK	CKT	A	B	C	CKT	BRK	P	CIRCUIT DESCRIPTION		
MICROCLOR MC-80	3	20	1	3,326			2	80	3	ROOFTOP HVAC UNIT	①	
OSG-192	*	**	3	19,954	3,326		4	**	*	RTU-01		
"	*	**	5		19,954	3,326	6	**	*	"		
"	*	**	9		2,500	2,500	10	**	*	"		
UNIT HEATER EUH-01	3	20	7	2,500			8	20	3	UNIT HEATER EUH-02		
"	*	**	11		2,500	2,500	12	**	*	"		
UNIT HEATER EUH-03	3	20	13	3,334			14	70	3	LP-A VIA T-A	②	
"	*	**	15	11,516	3,334		16	**	*	"		
"	*	**	17		5,390	3,334	18	**	*	"		
SPARE	3	20	19	0		9,824	20	20	3	SPARE		
"	*	**	21	0	0		22	**	*	"		
"	*	**	23	0	0		24	**	*	"		
SPARE	3	20	25	0		0	26	20	3	SPARE		
"	*	**	27	0	0		28	**	*	"		
"	*	**	29	0	0		30	**	*	"		
SPARE	1	20	31	0		0	32	20	3	SPARE		
SPARE	1	20	33	0		0	34	**	*	"		
SPARE	1	20	35	0		0	36	**	*	"		
SPARE	1	20	37	0		0	38	20	3	SPARE		
SPARE	1	20	39	0		0	40	**	*	"		
SPARE	1	20	41	0		0	42	**	*	"		
PHASE TOTALS				43,130	37,004	41,438						
TOTAL WATTS				121,572								
TOTAL AMPS				146		6/5/24						

PANEL SCHEDULE DP-1

HERRIMAN CITY ZONE 2 & 3 PUMP STATION												
PANEL: LP-1			VOLT: 208/120			AMP: 225			PHASE: 3			WIRE: 4
LOCATION (ROOM #):			ELECTRIC ROOM			NOTE:			---			
MFG:			SEE SPECIFICATION			AIC RATING:			SEE ONE-LINE			
TYPE:			NEMA TYPE 1			GROUND BUS:			YES			
TYPE OF MAIN:			150 AMP MCB			MOUNTING:			SURFACE			
FEEDER:			SEE ONE-LINE			FED FROM:			SEE ONE-LINE			
CIRCUIT DESCRIPTION	P	BRK	CKT	A	B	C	CKT	BRK	P	CIRCUIT DESCRIPTION		
PUMP ROOM LIGHTING	1	20	1	591	150		2	20	1	ELECTRICAL ROOM LIGHTING		
CHEMICAL ROOM LIGHTING	1	20	3		199		4	20	1	EXTERIOR LIGHTING		
PUMP ROOM RECEPTACLES	1	20	5		156		6	20	1	ELECTRICAL ROOM RECEPTACLES		
CHEMICAL ROOM RECEPTACLES	1	20	7	360		360	8	20	1	EXTERIOR RECEPTACLES		
HVAC UNIT (RTU-01)	1	20	9		180		10	20	1	SURVEILLANCE SYSTEM PANEL		
SERVICE OUTLET RTU PANEL	1	20	11		180		12	20	1	WATER SOFTENER OSG-191		
GENERATOR LOAD CENTER	2	50	13	4115			14	20	1	SPARE	③	
"	*	**	15		4115		16	20	1	SPARE		
VENTILATION CONTROL PANEL LCP-01-EF-01/02	1	20	17			1392	18	20	1	VENTILATION CONTROL PANEL LCP-01-EF-03/04		
VENTILATION CONTROL PANEL LCP-01-EF-05/06	1	20	19	1392			20	20	1	VENTILATION CONTROL PANEL LCP-02-EF-07		
LIGHTING CONTROL PANEL	1	20	21		500		22	20	1	SPARE		
DEICING SYSTEM	2	30	23			1980	24	30	2	DEICING SYSTEM	④	
"	*	**	25	1980			26	**	*	"		
SPARE	1	20	27		1980		28	20	1	SPARE		
SPARE	1	20	29			0	30	20	1	SPARE		
SPARE	1	20	31	0		0	32	15	1	SPARE		
SPARE	1	20	33			0	34	20	1	SPARE		
SPARE	1	20	35			0	36	20	1	SPARE		
CHEMICAL INJECTION PUMP PMP-290	3	20	37	30			38	20	3	CHEMICAL INJECTION PUMP PMP-390		
"	*	**	39		30		40	**	*	"		
"	*	**	41			30	42	**	*	"		
PHASE TOTALS				11516	5390	9824						
TOTAL WATTS				26730								
TOTAL AMPS				74		6/5/24						

PANEL SCHEDULE LP-1



**BOWEN COLLINS & ASSOCIATES**



PROFESSIONAL ENGINEER  
No. 12649767  
JOSHUA JAY LAKE  
STATE OF UTAH  
07/09/2024

NO.	DATE	REV. BY	DESCRIPTION

HERRIMAN CITY  
HERRIMAN, UTAH

**ZONE 2 & 3 PUMP STATION PROJECT**

DESIGN: J. LAKE  
DRAWN: T. TANNER

REVIEW: S. CAVANAUGH  
CHECKED: S. CAVANAUGH  
APPROVED: J. LAKE

ELECTRICAL

**LOAD SUMMARY AND PANEL SCHEDULES**

DATE: JULY 2024  
PROJECT NUMBER: 217-19-04

DRAWING NO. **E-07**

SHEET 61 OF 72

NO.	DATE	REV. BY	DESCRIPTION

**ZONE 2 & 3 PUMP STATION PROJECT**

HERRIMAN CITY  
HERRIMAN, UTAH

**VERIFY SCALE**  
BAR IS ONE INCH ON ORIGINAL DRAWING

DESIGN: J. LAKE  
DRAWN: J. TANNER

REVIEW: CHECKED: S. CAVANAUGH  
APPROVED: J. LAKE

**ELECTRICAL**

**CONTROL ONE-LINE DIAGRAM - 1**

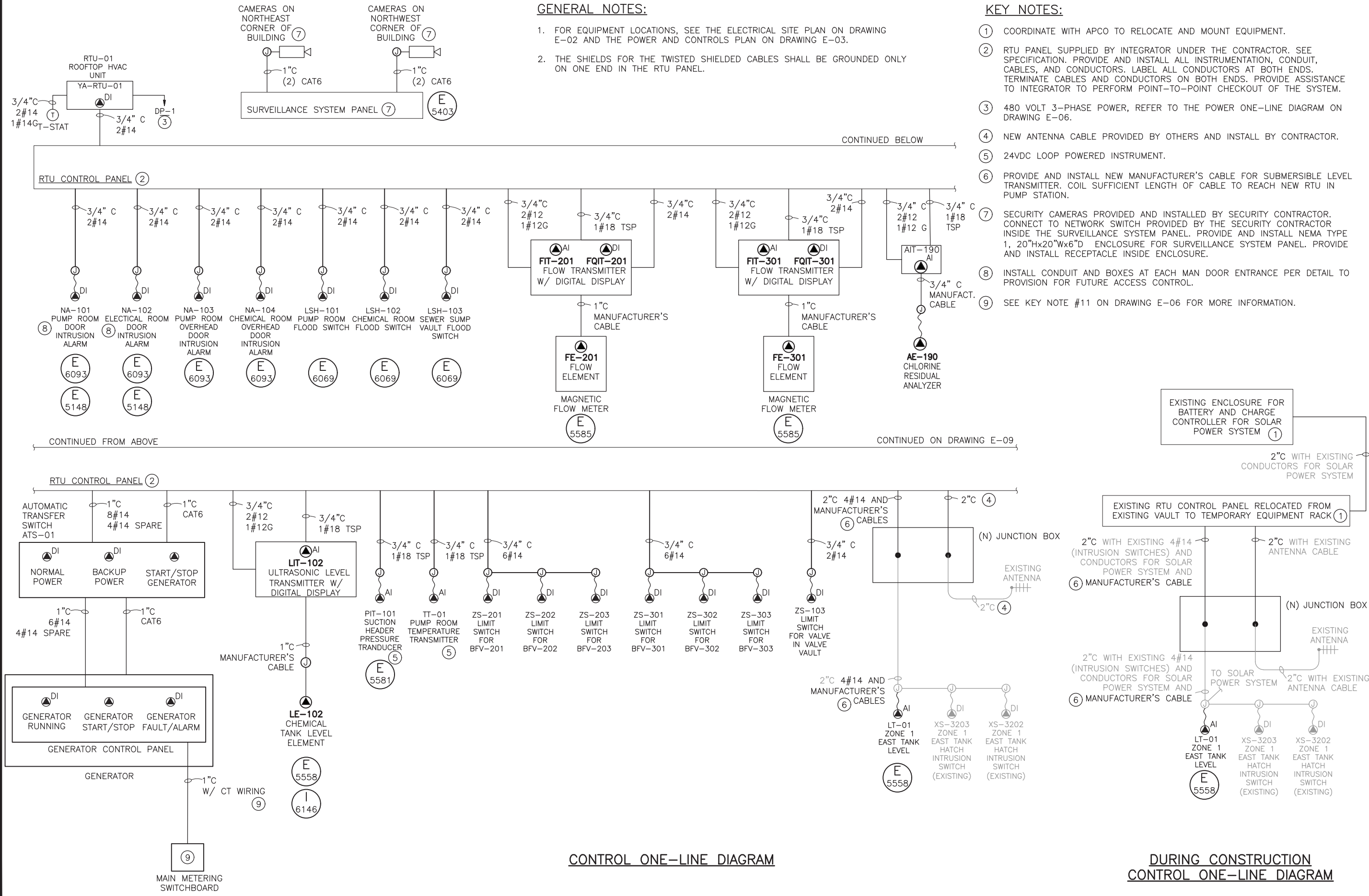
PROJECT NUMBER: 217-18-04  
DATE: JULY 2024

**GENERAL NOTES:**

- FOR EQUIPMENT LOCATIONS, SEE THE ELECTRICAL SITE PLAN ON DRAWING E-02 AND THE POWER AND CONTROLS PLAN ON DRAWING E-03.
- THE SHIELDS FOR THE TWISTED SHIELDED CABLES SHALL BE GROUNDED ONLY ON ONE END IN THE RTU PANEL.

**KEY NOTES:**

- COORDINATE WITH APCO TO RELOCATE AND MOUNT EQUIPMENT.
- RTU PANEL SUPPLIED BY INTEGRATOR UNDER THE CONTRACTOR. SEE SPECIFICATION. PROVIDE AND INSTALL ALL INSTRUMENTATION, CONDUIT, CABLES, AND CONDUCTORS. LABEL ALL CONDUCTORS AT BOTH ENDS. TERMINATE CABLES AND CONDUCTORS ON BOTH ENDS. PROVIDE ASSISTANCE TO INTEGRATOR TO PERFORM POINT-TO-POINT CHECKOUT OF THE SYSTEM.
- 480 VOLT 3-PHASE POWER, REFER TO THE POWER ONE-LINE DIAGRAM ON DRAWING E-06.
- NEW ANTENNA CABLE PROVIDED BY OTHERS AND INSTALL BY CONTRACTOR.
- 24VDC LOOP POWERED INSTRUMENT.
- PROVIDE AND INSTALL NEW MANUFACTURER'S CABLE FOR SUBMERSIBLE LEVEL TRANSMITTER. COIL SUFFICIENT LENGTH OF CABLE TO REACH NEW RTU IN PUMP STATION.
- SECURITY CAMERAS PROVIDED AND INSTALLED BY SECURITY CONTRACTOR. CONNECT TO NETWORK SWITCH PROVIDED BY THE SECURITY CONTRACTOR INSIDE THE SURVEILLANCE SYSTEM PANEL. PROVIDE AND INSTALL NEMA TYPE 1, 20"Hx20"Wx6"D ENCLOSURE FOR SURVEILLANCE SYSTEM PANEL. PROVIDE AND INSTALL RECEPTACLE INSIDE ENCLOSURE.
- INSTALL CONDUIT AND BOXES AT EACH MAN DOOR ENTRANCE PER DETAIL TO PROVISION FOR FUTURE ACCESS CONTROL.
- SEE KEY NOTE #11 ON DRAWING E-06 FOR MORE INFORMATION.



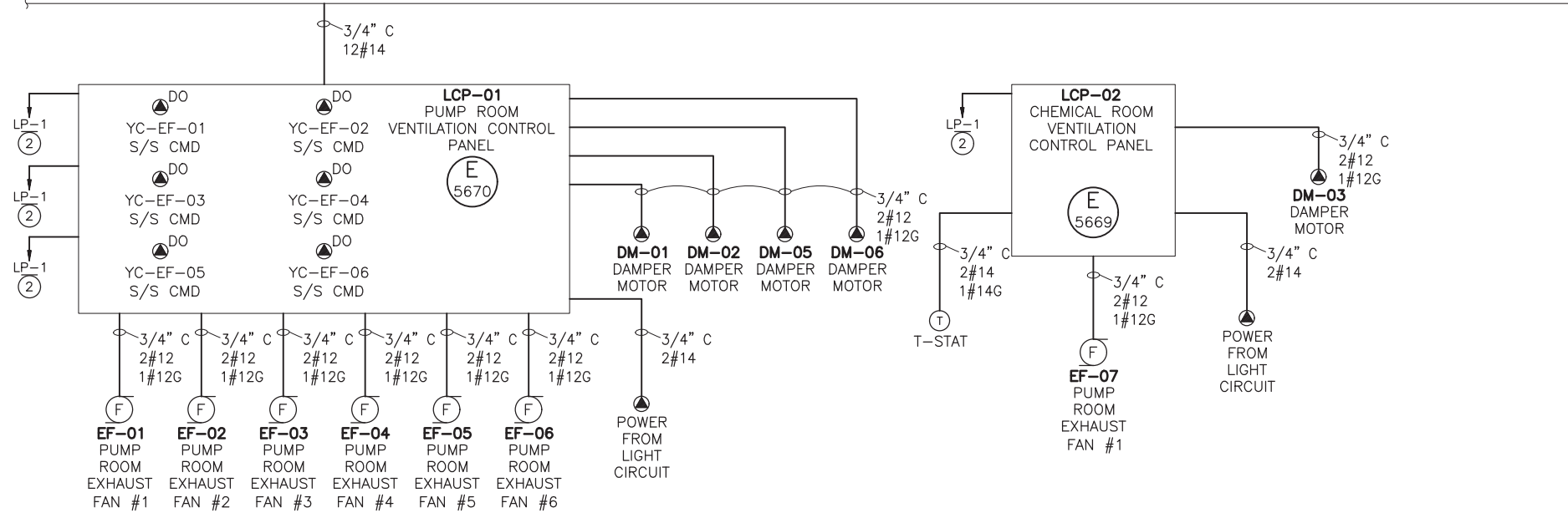
**CONTROL ONE-LINE DIAGRAM**

**DURING CONSTRUCTION CONTROL ONE-LINE DIAGRAM**



CONTINUED FROM E-08

RTU CONTROL PANEL



**GENERAL NOTES:**

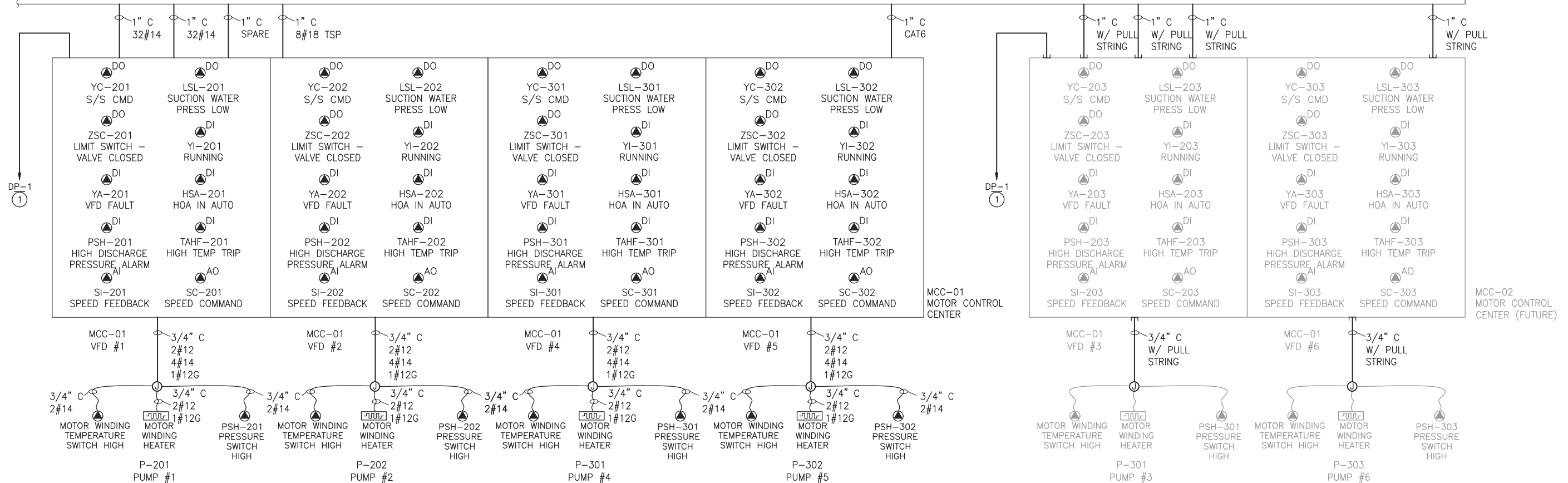
- FOR EQUIPMENT LOCATIONS, SEE THE ELECTRICAL SITE PLAN ON DRAWING E-02 AND THE POWER AND CONTROLS PLAN ON DRAWING E-03.
- THE SHIELDS FOR THE TWISTED SHIELDED CABLES SHALL BE GROUNDED ONLY ON ONE END IN THE RTU PANEL.

**KEY NOTES:**

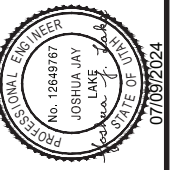
- 480 VOLT 3-PHASE POWER, REFER TO THE POWER ONE-LINE DIAGRAM ON DRAWING E-06.
- 120 VAC POWER. REFER TO PANEL SCHEDULE LP-1 FOR CIRCUIT NUMBER.

CONTINUED FROM ABOVE

RTU CONTROL PANEL



**CONTROL ONE-LINE DIAGRAM (CONT. FROM DRAWING E-08)**



NO.	DATE	REV. BY	DESCRIPTION

**VERIFY SCALE**  
BAR IS ONE INCH ON ORIGINAL DRAWING

**ZONE 2 & 3 PUMP STATION PROJECT**

HERRIMAN CITY  
HERRIMAN, UTAH

DESIGN: J. LAKE  
DRAWN: J. TANNER

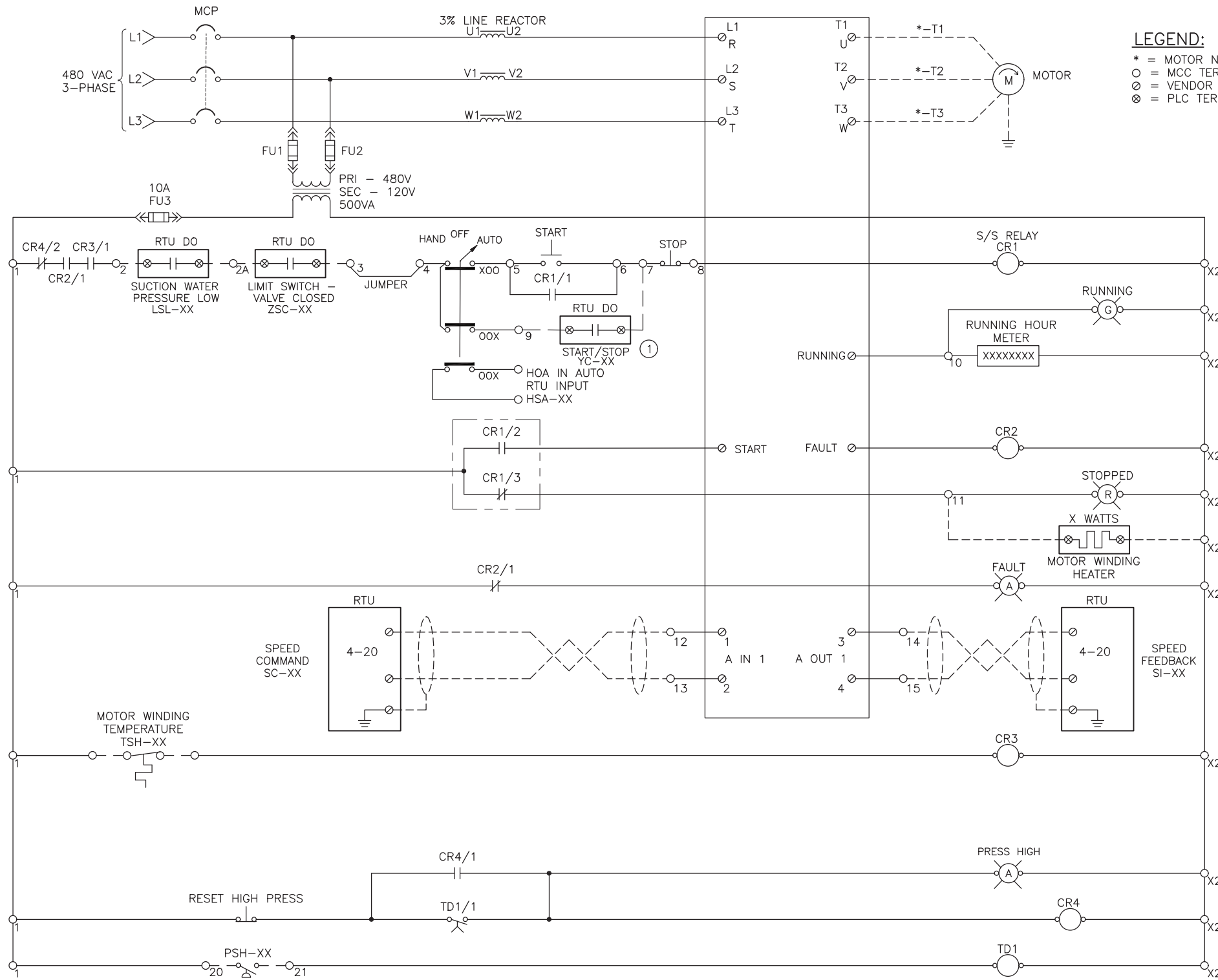
REVIEW: S. CAVANAUGH  
CHECKED: S. CAVANAUGH  
APPROVED: J. LAKE

**CONTROL ONE-LINE DIAGRAM - 2**

DATE: JULY 2024

PROJECT NUMBER: 217-19-04

P:\HERRIMAN\217-19-04 - ZONE 2 & 3 MAJOR WATER IMPROVEMENTS\2.0 DESIGN PHASE\2.9 DRAWINGS\PUMP STATIONS\HT\2171904\_E-09.dwg Plotted: 7/9/2024 4:27 PM By: Josh Lake



**LEGEND:**  
 \* = MOTOR NUMBER  
 ○ = MCC TERMINAL  
 ⊗ = VENDOR TERMINAL  
 ⊗ = PLC TERMINAL

**GENERAL NOTES:**

1. THIS IS A GENERIC WIRING DIAGRAM OF A VARIABLE FREQUENCY DRIVE. DEPENDING ON THE MANUFACTURER, THE ACTUAL WIRING DIAGRAM MAY DIFFER SLIGHTLY.
2. INSTALL COOLING FANS, TO PREVENT VFD FROM OVERHEATING.
3. VFD KEYPAD SHALL BE ACCESSIBLE ON FRONT DOOR OF ENCLOSURE.

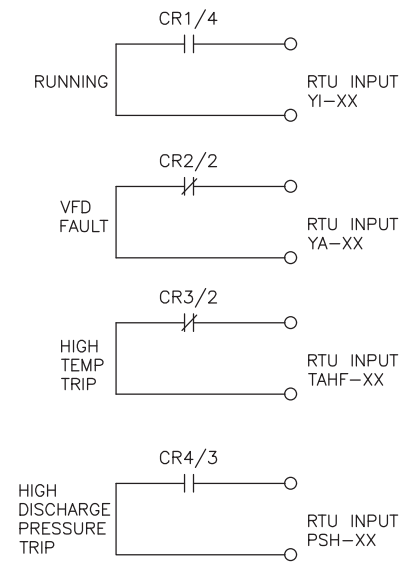
**KEY NOTES:**

- ① RTU OUTPUT TO START AND STOP PUMP.

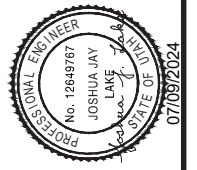
RELAY CR2 IS DE-ENERGIZED WHEN VFD HAS A FAULT

MOTOR HIGH TEMP TRIP

DISCHARGE PRESSURE HIGH ALARM LIGHT  
 DISCHARGE PRESSURE HIGH SHUTDOWN RELAY  
 DISCHARGE PRESSURE HIGH TIME DELAY RELAY; ON DELAY 0-10 SEC



**PUMP MOTOR CONTROL DIAGRAM**



NO.	DATE	REV. BY	DESCRIPTION

HERRIMAN CITY  
 HERRIMAN, UTAH

**ZONE 2 & 3 PUMP STATION PROJECT**

DESIGN: J. LAKE  
 DRAWN: T. TANNER

REVIEW: CHECKED: CAVANAUGH  
 APPROVED: J. LAKE

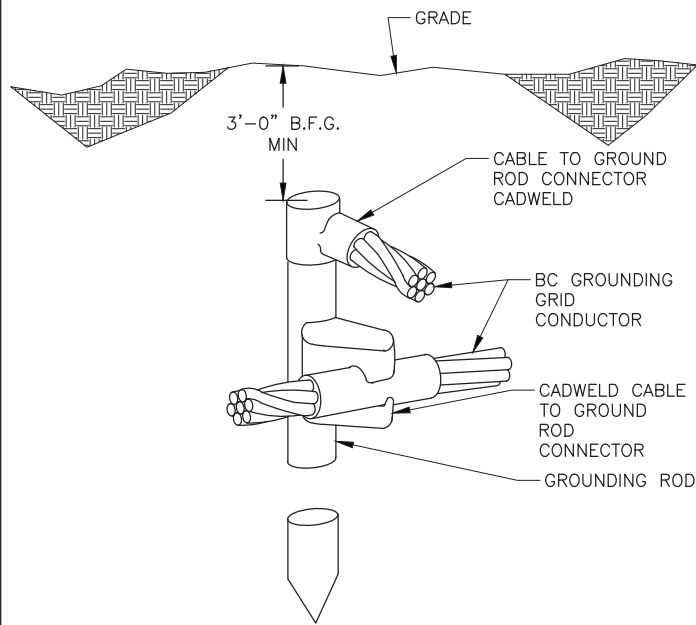
VERIFY SCALE: BAR IS ONE INCH ON ORIGINAL DRAWING

ELECTRICAL

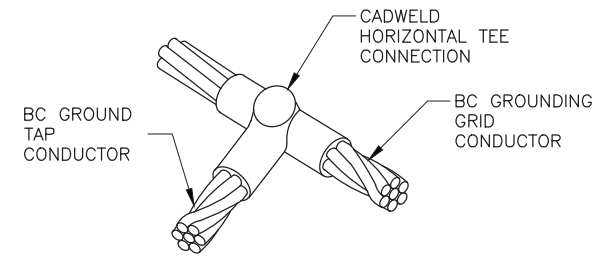
**PUMP MOTOR CONTROL DIAGRAM**

DATE: JULY 2024  
 PROJECT NUMBER: 217-18-04

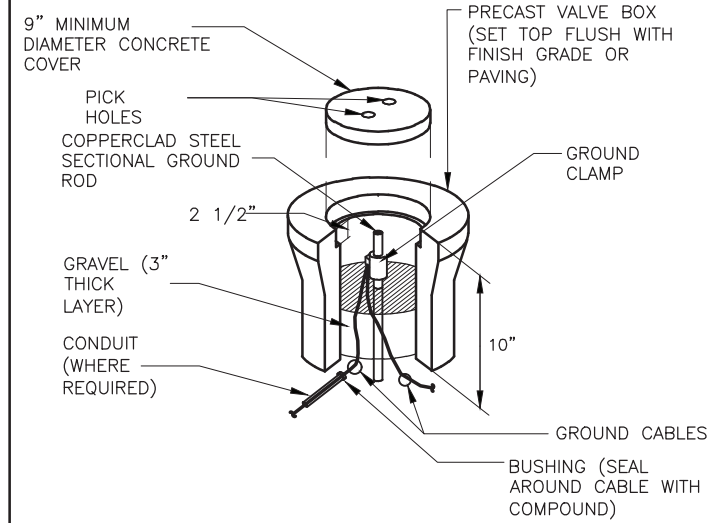
P:\HERRIMAN\217-19-04 - ZONE 2 & 3 MAJOR WATER IMPROVEMENTS\2.0 DESIGN PHASE\2.9 DRAWINGS\PUMP STATION\SH1\2171904\_E-10.dwg Plotted: 7/9/2024 4:27 PM By: Josh Lake



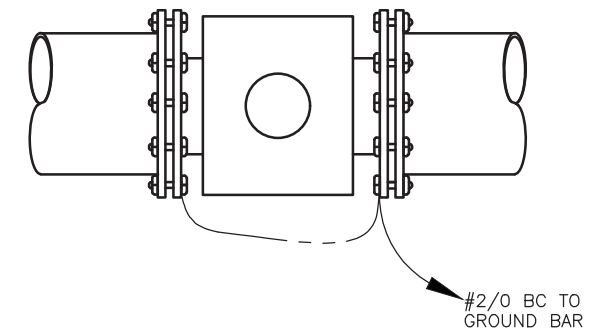
**GROUND ROD CONNECTION** (E) 5241  
SCALE: NTS



**GROUND TAP DETAIL** (E) 5242  
SCALE: NTS

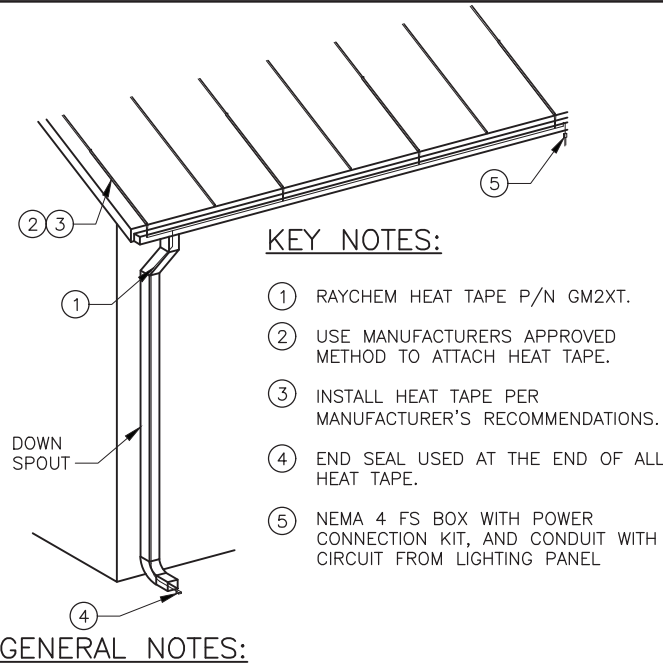


**GROUND ROD AND WELL** (E) 5243  
SCALE: NTS



**NOTES:**  
1. BOND THE STAINLESS STEEL GROUNDING RINGS OF THE FLOW ELEMENT TO THE GROUND BAR IN THE ELECTRICAL ROOM. REFER TO DRAWING E-03 AND DETAIL E-5017.

**MAGNETIC FLOW METER GROUNDING** (E) 5266  
SCALE: NTS



**KEY NOTES:**

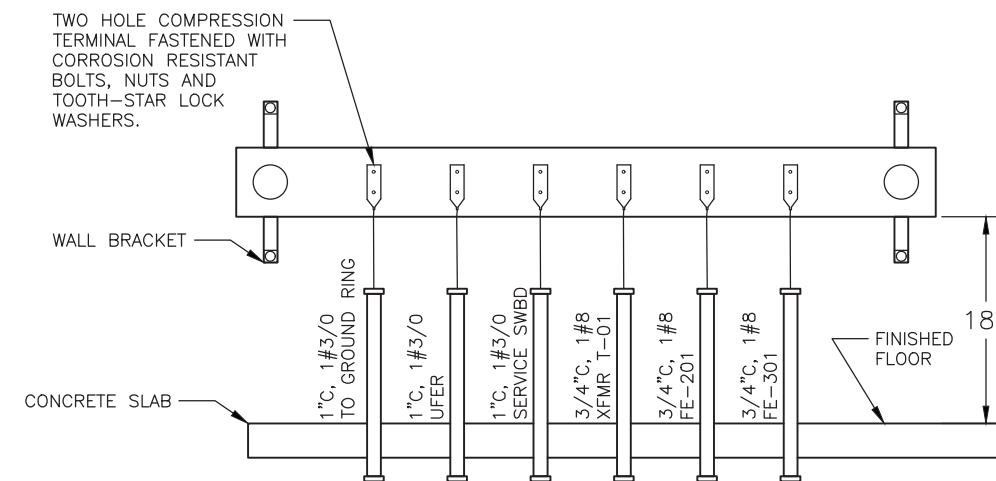
- ① RAYCHEM HEAT TAPE P/N GM2XT.
- ② USE MANUFACTURERS APPROVED METHOD TO ATTACH HEAT TAPE.
- ③ INSTALL HEAT TAPE PER MANUFACTURER'S RECOMMENDATIONS.
- ④ END SEAL USED AT THE END OF ALL HEAT TAPE.
- ⑤ NEMA 4 FS BOX WITH POWER CONNECTION KIT, AND CONDUIT WITH CIRCUIT FROM LIGHTING PANEL

**GENERAL NOTES:**

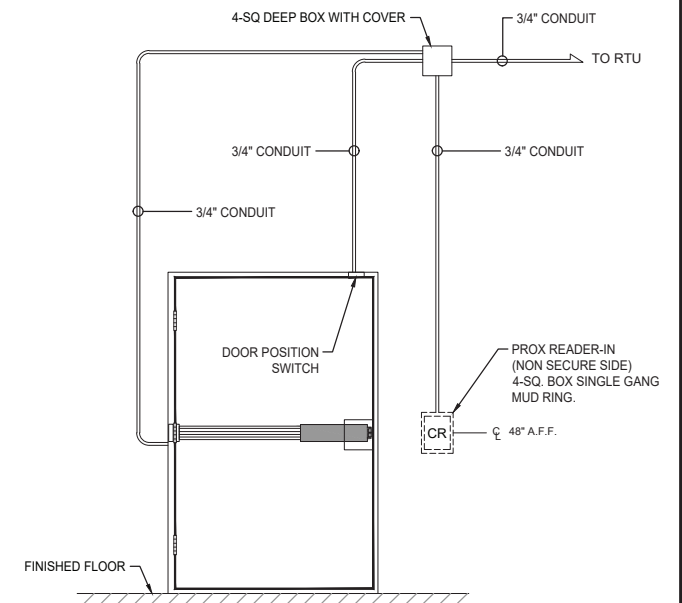
1. THE HEAT TAPE ITEMS SHOWN IN DETAIL ARE MANUFACTURED BY RAYCHEM OR APPROVED EQUAL.

**TYPICAL HEAT TAPE INSTALLATION FOR STANDING SEAM METAL ROOF** (E) 5220  
SCALE: NTS

**NOTES**  
1. ALL CONDUCTORS SHALL BE IN CONDUIT WHERE PENETRATING CONCRETE, UNLESS SHOWN OTHERWISE  
2. ALL CONDUITS SHALL HAVE A BELL END AT ABOVE GRADE END.



**GROUND BAR DETAIL** (E) 5254  
SCALE: NTS



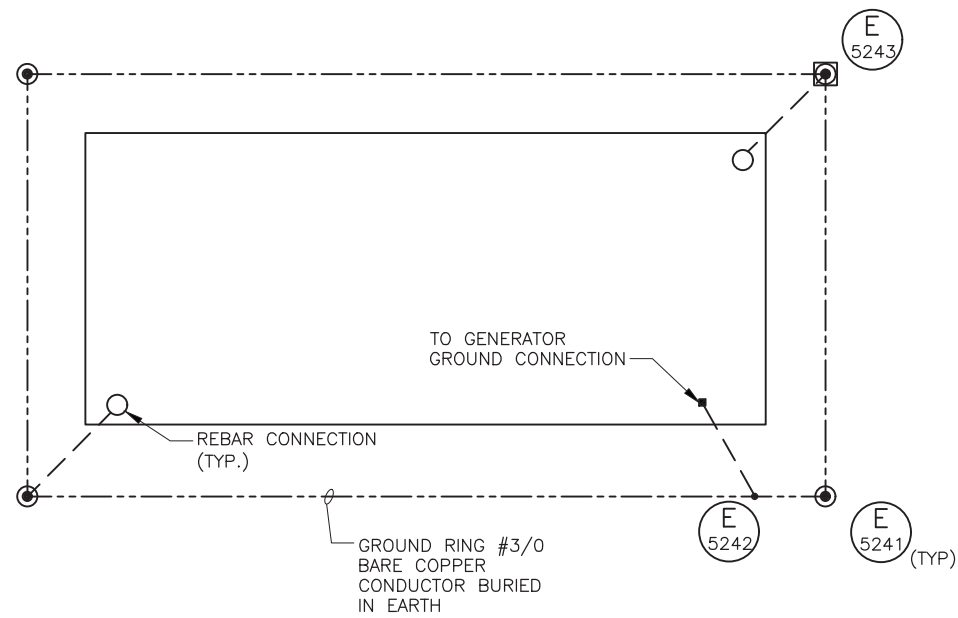
**SINGLE DOOR ACCESS CONTROL DETAIL** (E) 5148  
SCALE: NTS

NO.	DATE	REV. BY	DESCRIPTION

<b>VERIFY SCALE</b> BAR IS ONE INCH ON ORIGINAL DRAWING	DESIGN	J. LAKE	DESIGN	J. LAKE
	REVIEW	S. CAVANAUGH	CHECKED	S. CAVANAUGH
	APPROVED	J. LAKE	APPROVED	J. LAKE

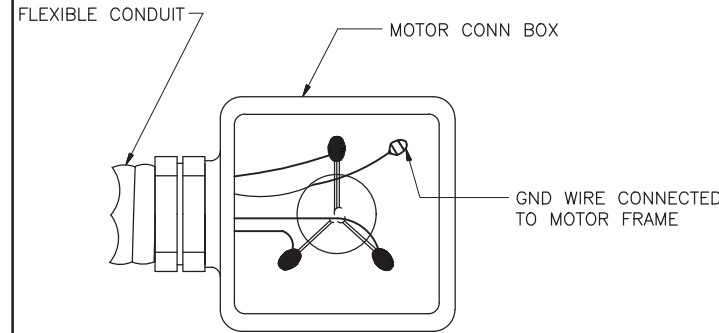
HERRIMAN CITY HERRIMAN, UTAH <b>ZONE 2 &amp; 3 PUMP STATION PROJECT</b>	PROJECT NUMBER	217-19-04
	DATE	JULY 2024

NOTES  
1. REFER TO GENERAL NOTES ON DRAWING E-03 FOR GROUND GRID INFORMATION.

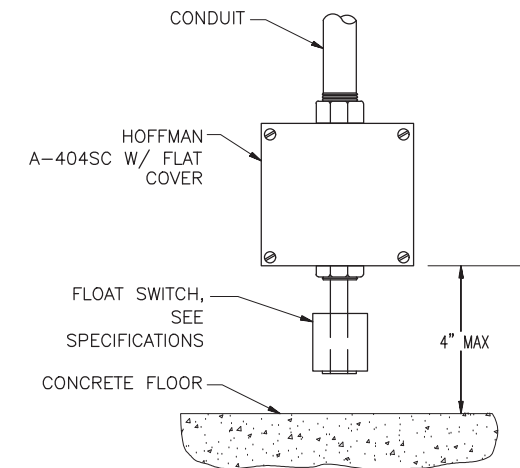


**GENERATOR GROUND RING DETAIL** E 5268  
SCALE: NTS

NOTES:  
1. LUGGED AND BOLTED, INSULATED WITH 1/2 LAPPED LAYER OF VARNISHED CAMBRIC TAPE AND TWO 1/2 LAPPED LAYERS OF VINYL PLASTIC ELECTRICIANS TAPE WITH IRREGULAR SURFACES PADDED PER SPEC.  
(TYPICAL FOR NON STAR-DELTA STARTED MOTORS)



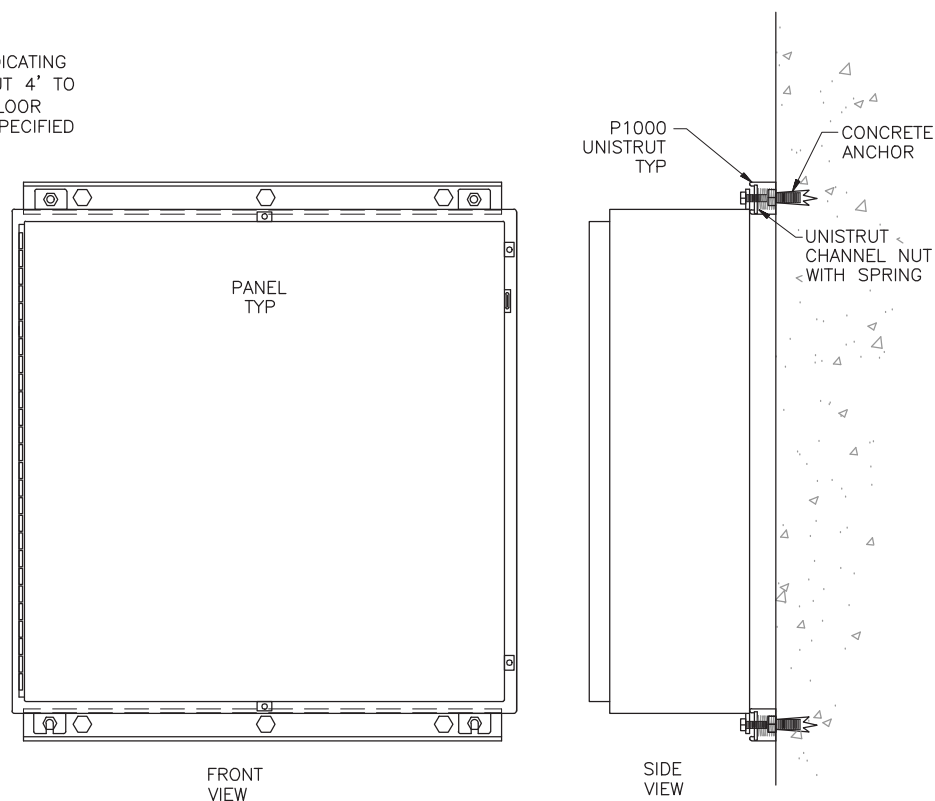
**MOTOR GROUND** E 5356  
SCALE: NTS



**FLOOD SWITCH INTALLATION DETAIL** I 6069  
SCALE: NTS

NOTES

1. MOUNT PANEL OR INDICATING TRANSMITTER AT ABOUT 4' TO 5' ABOVE FINISHED FLOOR UNLESS OTHERWISE SPECIFIED IN DRAWINGS.



**TYPICAL PANEL MOUNTING DETAIL ON WALL** E 5403  
SCALE: NTS

CABLE TO UNSHOWN J-BOX. PROVIDE J-BOX WITH LIQUID TIGHT STRAIN RELIEF CORD CONNECTOR.

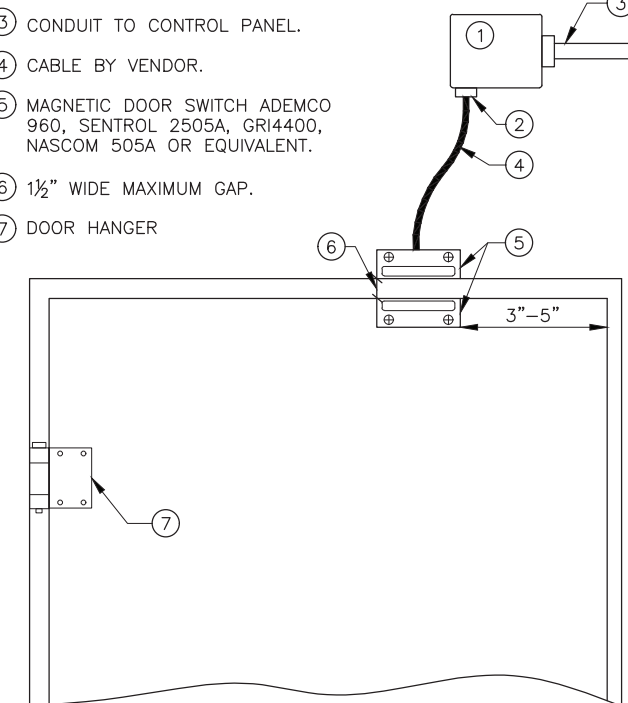


FLOOR MOUNTED SWITCH. MANUFACTURED BY GEORGE RISK INDUSTRIES, INC. MODEL 220-36 OR EQUAL

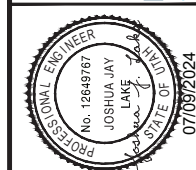
**ROLL-UP DOOR SECURITY SWITCH INSTALLATION DETAIL** E 6092  
SCALE: NTS

NOTES:

- 1 JUNCTION BOX.
- 2 LIQUID TIGHT CORD CONNECTOR.
- 3 CONDUIT TO CONTROL PANEL.
- 4 CABLE BY VENDOR.
- 5 MAGNETIC DOOR SWITCH ADEMCO 960, SENTROL 2505A, GRI4400, NASCOM 505A OR EQUIVALENT.
- 6 1 1/2" WIDE MAXIMUM GAP.
- 7 DOOR HANGER



**DOOR INTRUSION SWITCH INSTALLATION DETAIL** E 6093  
SCALE: NTS

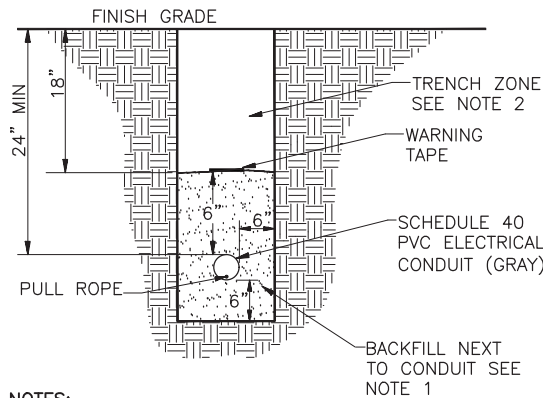


NO.	DATE	REV. BY	DESCRIPTION

VERIFY SCALE  
BAR IS ONE INCH ON ORIGINAL DRAWING

HERRIMAN CITY  
HERRIMAN, UTAH  
**ZONE 2 & 3 PUMP STATION PROJECT**  
DESIGN J. LAKE  
DRAWN T. TANNER  
CHECKED S. CAVANAUGH  
APPROVED J. LAKE

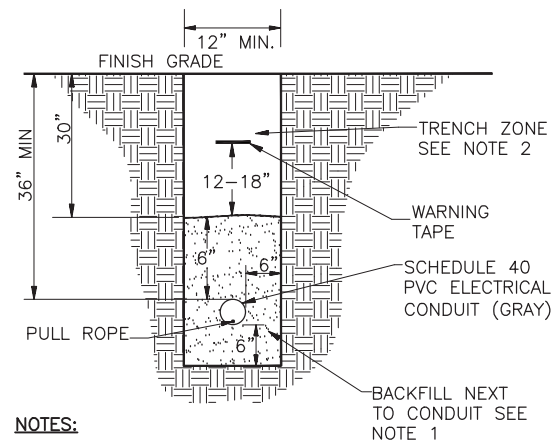
ELECTRICAL  
**GENERAL ELECTRICAL DETAILS - 2**  
DATE: JULY 2024  
PROJECT NUMBER 217-19-04  
DRAWING NO. GE-02  
SHEET 66 OF 72



**NOTES:**

1. BACKFILL MATERIAL SHALL BE TYPE C COMPACTED TO 95% PER ASTM D 1557. SEE SPECIFICATION 31 23 00.
2. NATIVE MATERIAL MEETING SPECIFICATION 31 23 00 FOR SUITABLE MATERIAL MAY BE USED FOR TRENCH ZONE BACKFILL IN UNIMPROVED AREAS, COMPACT TO 85%.
3. FOR MORE THAN ONE CONDUIT OF THE SAME VOLTAGE IN TRENCH ALLOW 6 INCHES BETWEEN CONDUITS.
4. REFER TO POWER ONE-LINE DIAGRAM FOR CONDUIT SIZES.

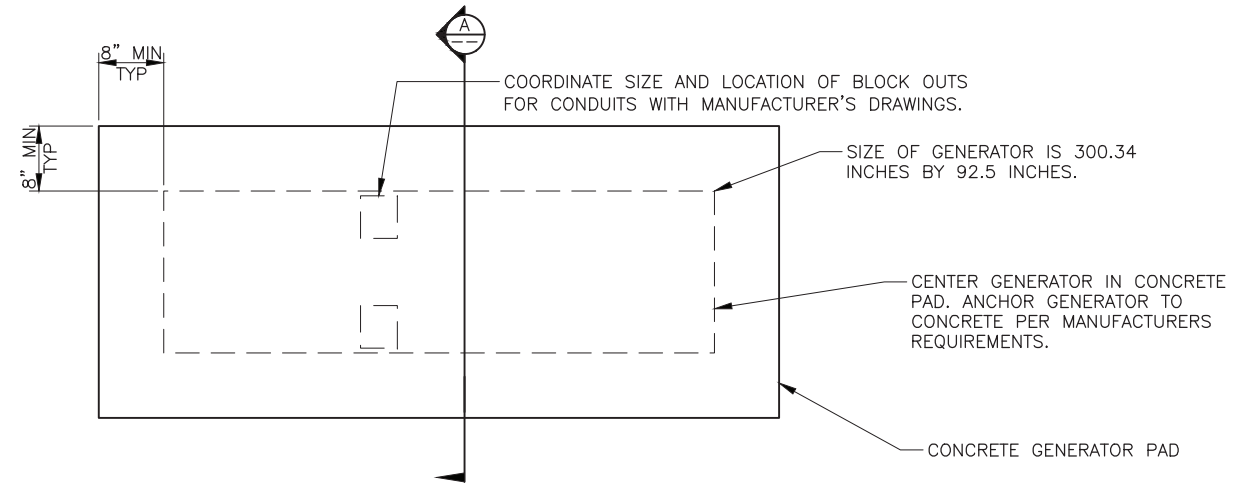
**CONDUIT TRENCH DETAIL E 5087**  
SCALE: NTS



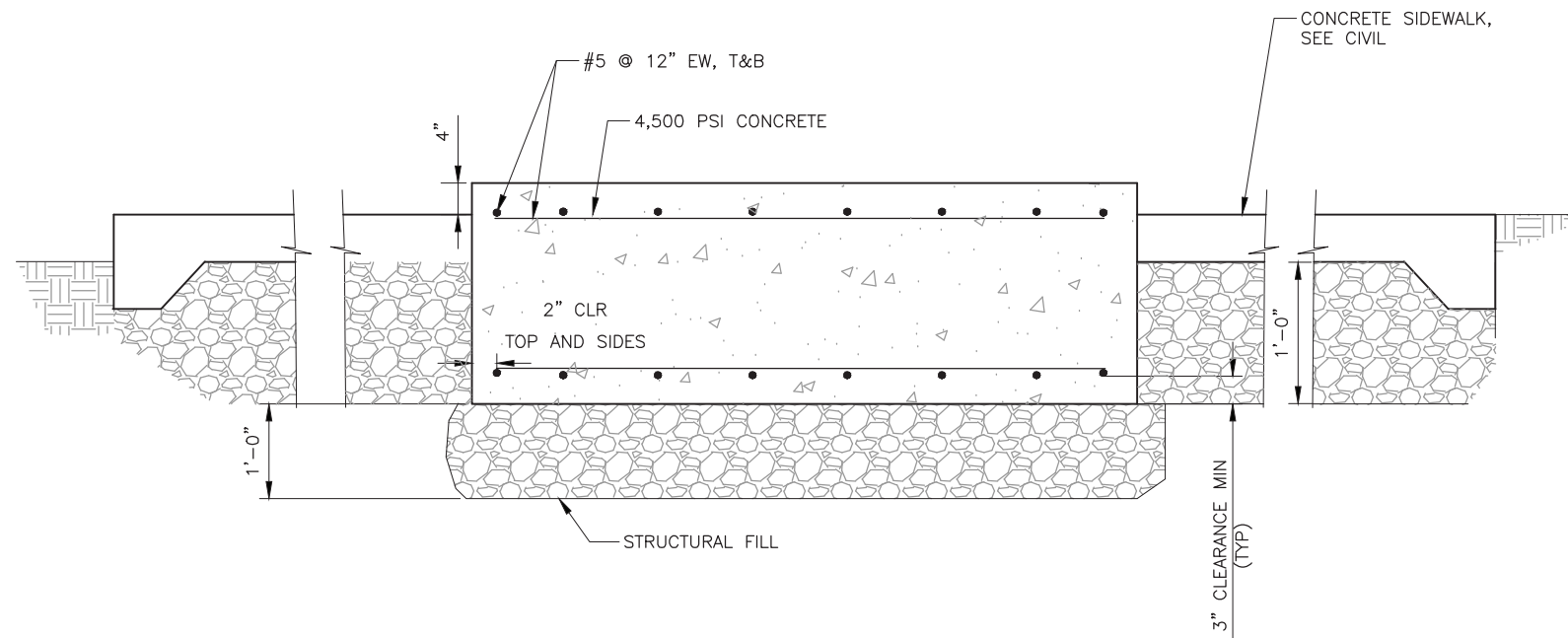
**NOTES:**

1. BACKFILL MATERIAL SHALL BE TYPE C COMPACTED TO 95% PER ASTM D 1557. SEE SPECIFICATION 31 23 00. BACKFILL MATERIAL SHALL BE CAPABLE OF PASSING THROUGH A 3/4" SIEVE.
2. NATIVE MATERIAL MEETING SPECIFICATION 31 23 00 FOR SUITABLE MATERIAL MAY BE USED FOR TRENCH ZONE BACKFILL IN UNIMPROVED AREAS, COMPACT TO 85%.
3. FOR MORE THAN ONE CONDUIT OF THE SAME VOLTAGE IN TRENCH ALLOW 6 INCHES BETWEEN CONDUITS.
4. REFER TO POWER ONE-LINE DIAGRAM FOR CONDUIT SIZES.

**ROCKY MOUNTAIN POWER CONDUIT TRENCH DETAIL E 5088**  
SCALE: NTS



**PLAN**  
SCALE: NTS



**SECTION A**  
SCALE: NTS

**EQUIPMENT PAD DETAIL E 5184**  
SCALE: NTS

NO.	DATE	REV. BY	DESCRIPTION

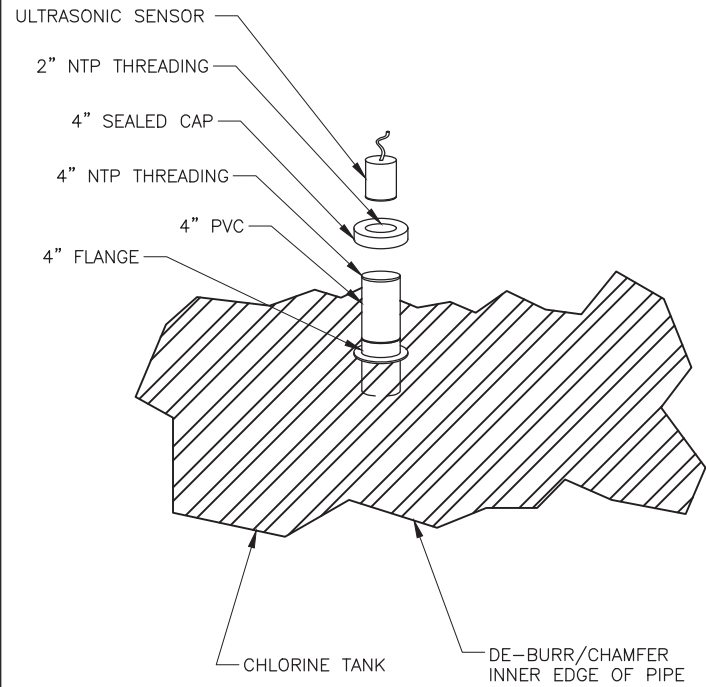
**VERIFY SCALE**  
BAR IS ONE INCH ON ORIGINAL DRAWING

DESIGN: J. LAKE  
DRAWN: J. TANNER  
CHECKED: S. CAVANAUGH  
APPROVED: J. LAKE

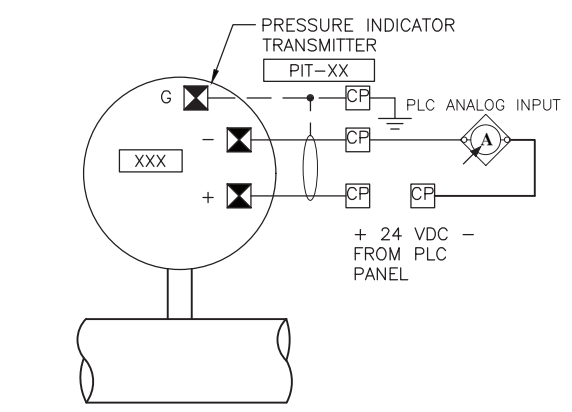
HERRIMAN CITY  
HERRIMAN, UTAH  
**ZONE 2 & 3 PUMP STATION PROJECT**

ELECTRICAL  
**GENERAL ELECTRICAL DETAILS - 3**

DATE: JULY 2024  
PROJECT NUMBER: 217-19-04  
DRAWING NO.: **GE-03**

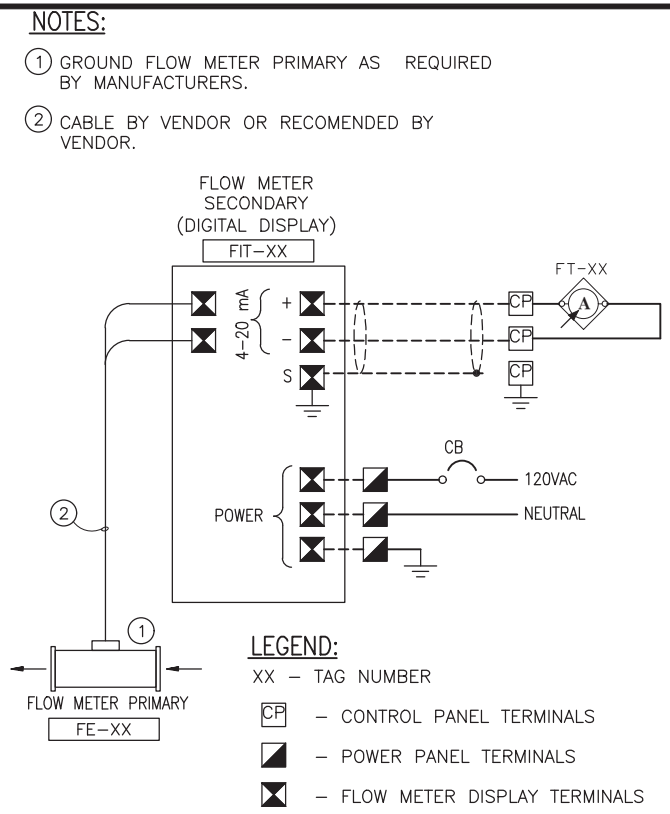


**ULTRASONIC SENSOR DETAIL** I  
SCALE: NTS 6146



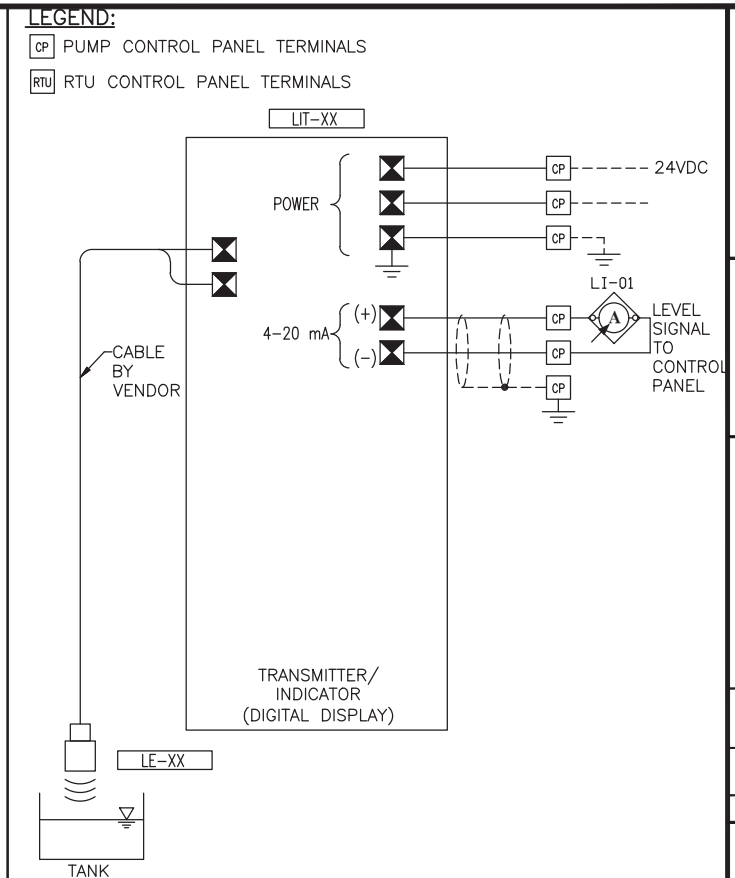
**LEGEND:**  
XX - TAG NUMBER  
CP - CONTROL PANEL TERMINALS  
X - PRESSURE TRANSMITTER TERMINALS

**PRESSURE TRANSMITTER SCHEMATIC** E  
SCALE: NTS 5581

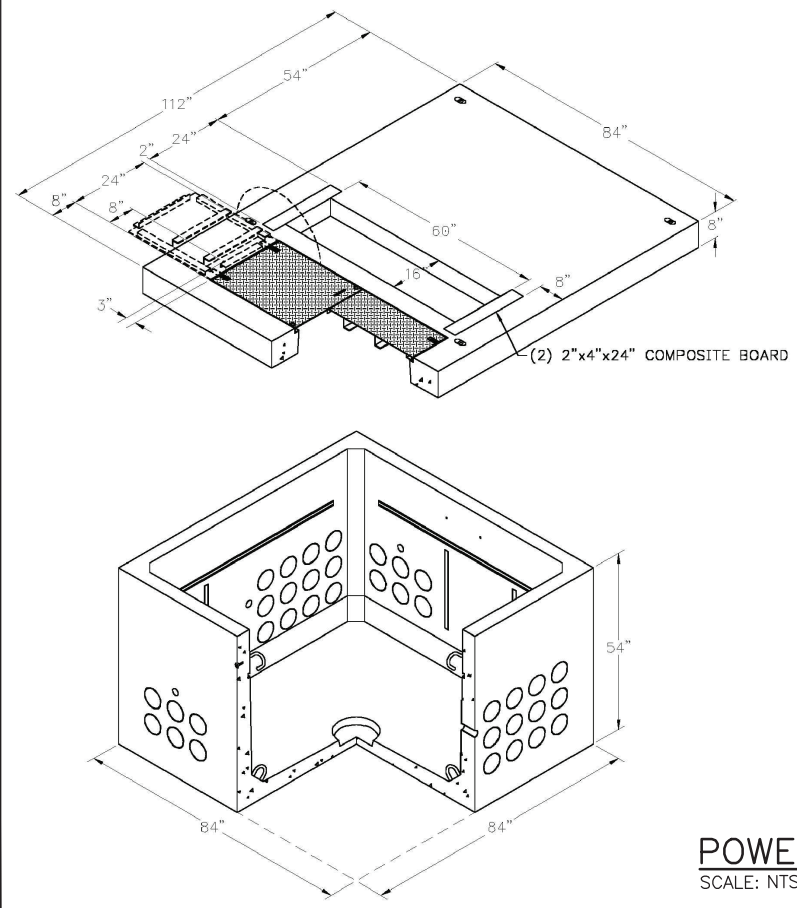


**LEGEND:**  
XX - TAG NUMBER  
CP - CONTROL PANEL TERMINALS  
X - POWER PANEL TERMINALS  
X - FLOW METER DISPLAY TERMINALS

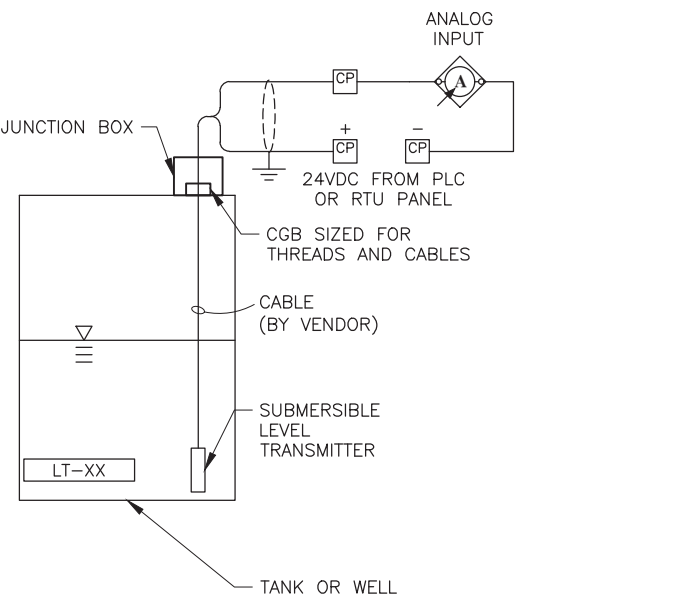
**TYPICAL FLOW METER SCHEMATIC** E  
SCALE: NTS 5585



**ULTRASONIC CONTROL SCHEMATIC** E  
SCALE: NTS 5558



**POWER TRANSFORMER PAD DETAIL** E  
SCALE: NTS 5185



**LEGEND:**  
XX - TAG NUMBER  
CP - CONTROL PANEL TERMINALS

**TYPICAL SUBMERSIBLE LEVEL TRANSDUCER** I  
SCALE: NTS 6130

**NOT USED** E  
SCALE: NTS 50XX

**BOWEN COLLINS ASSOCIATES**

PROFESSIONAL ENGINEER  
No. 12649767  
JOSHUA JAY LAKE  
STATE OF UTAH  
07/09/2024

NO.	DATE	REV. BY	DESCRIPTION

**VERIFY SCALE**  
BAR IS ONE INCH ON ORIGINAL DRAWING

**DESIGN** J. LAKE  
**DRAWN** T. TANNER  
**REVIEW** S. CAVANAUGH  
**CHECKED** S. CAVANAUGH  
**APPROVED** J. LAKE

HERRIMAN CITY  
HERRIMAN, UTAH

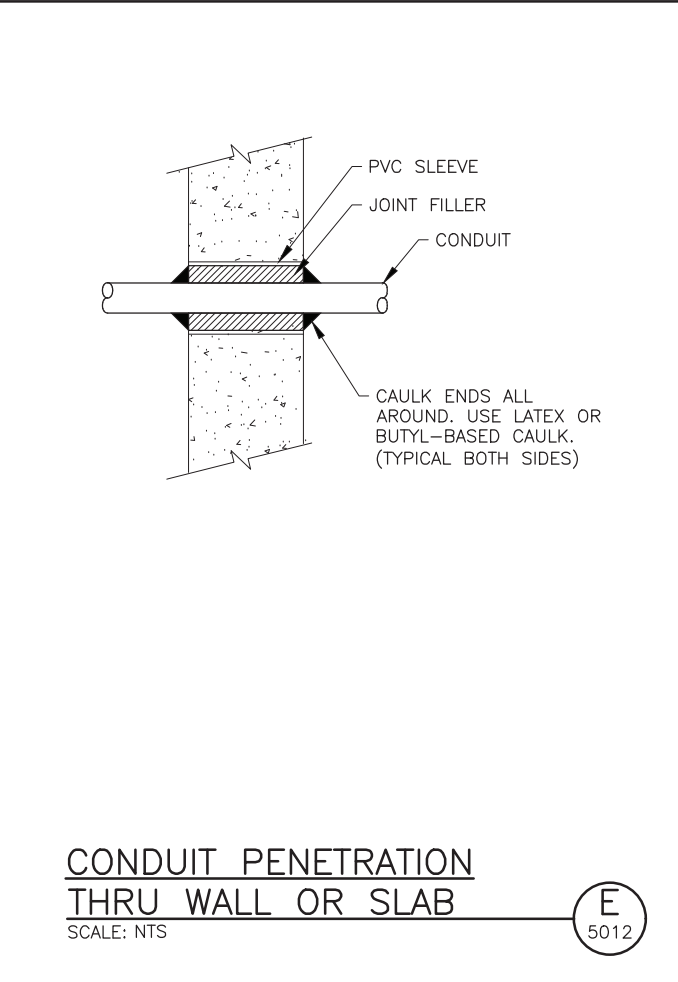
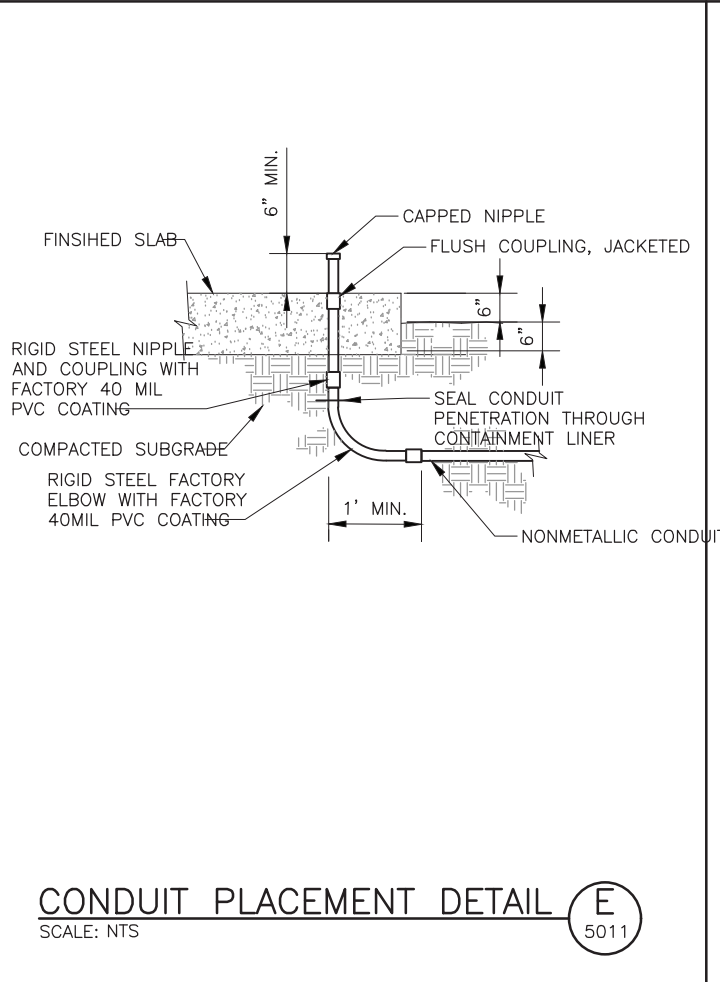
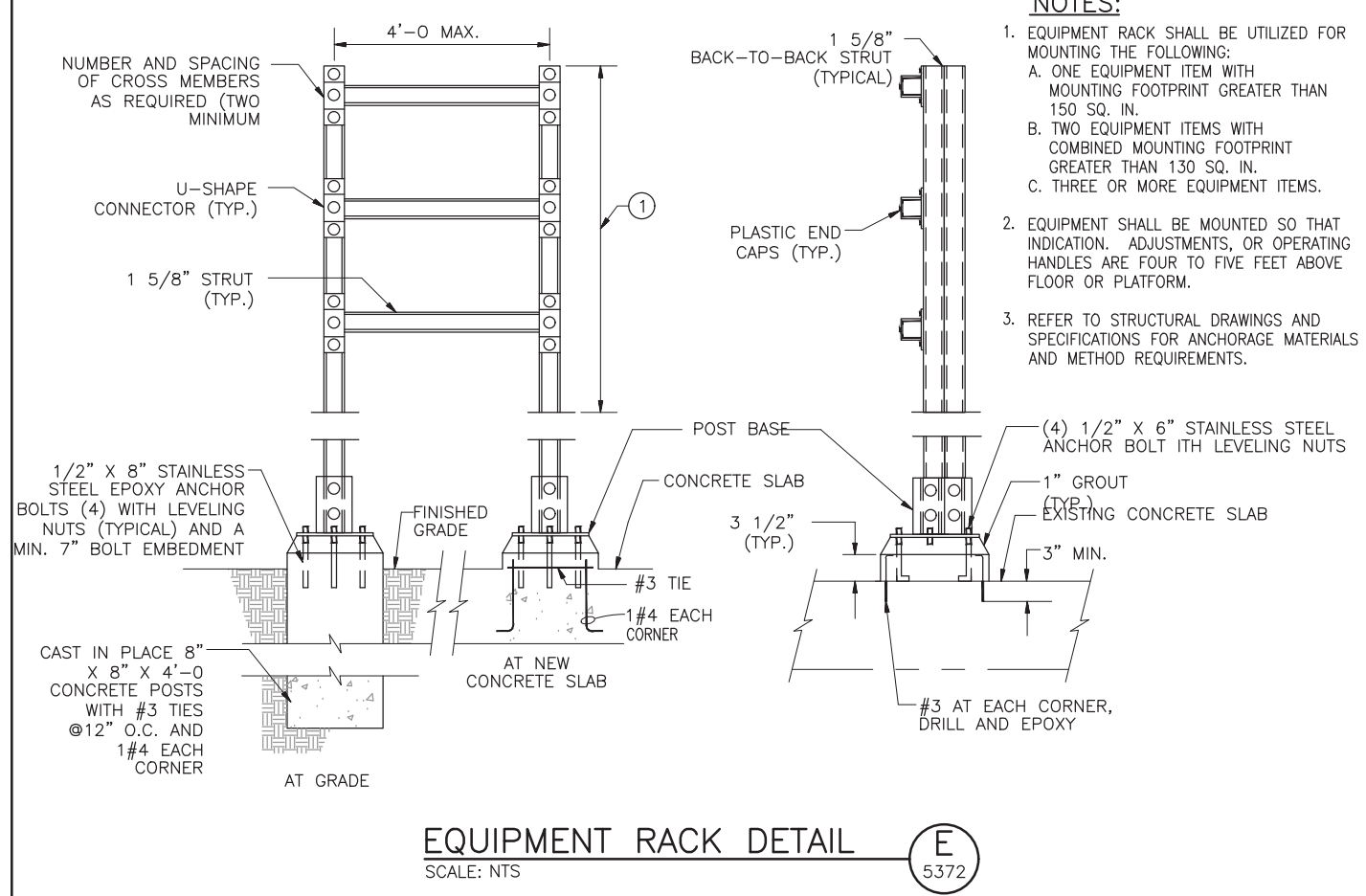
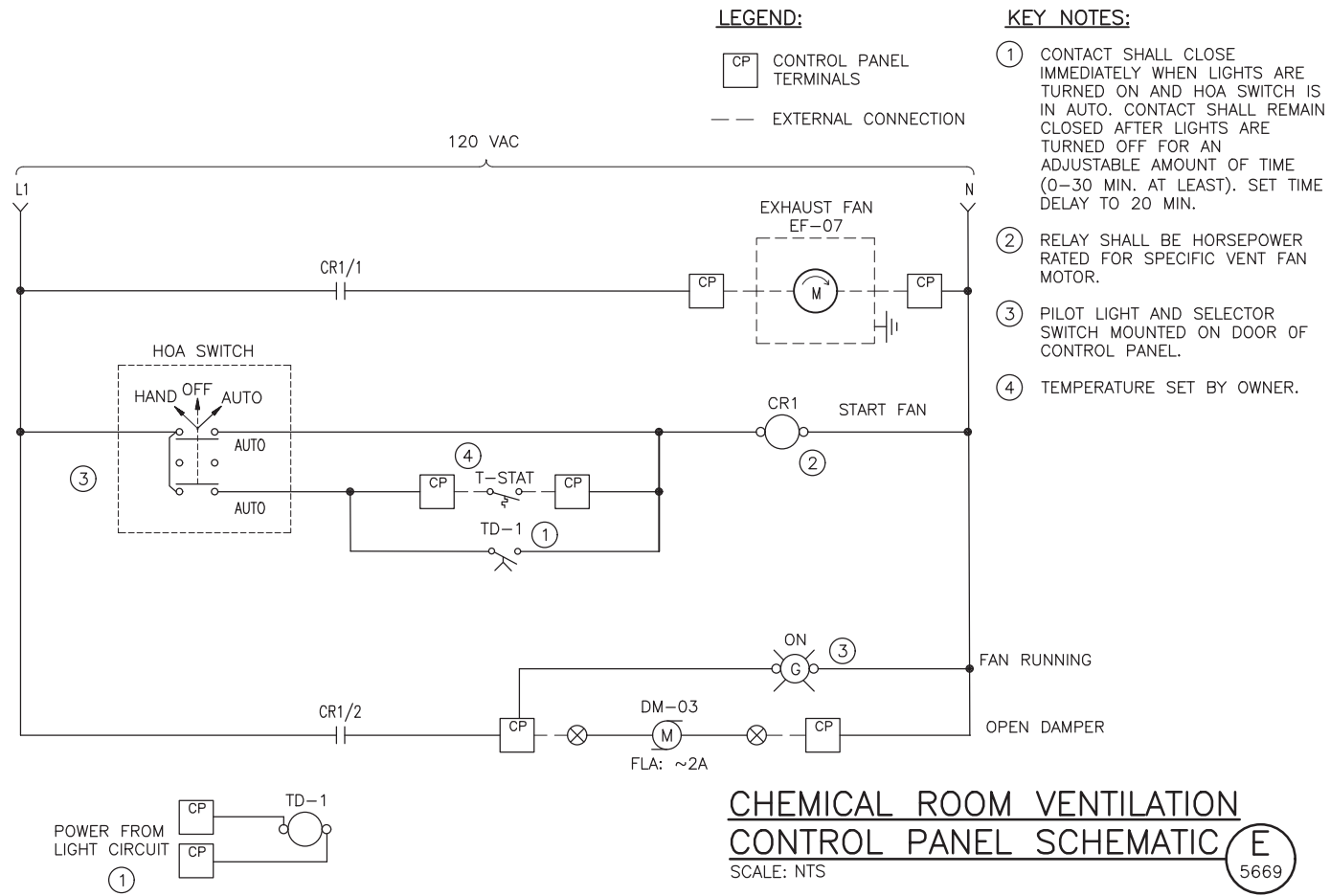
**ZONE 2 & 3 PUMP STATION PROJECT**

**GENERAL ELECTRICAL DETAILS - 4**

DATE: JULY 2024  
PROJECT NUMBER: 217-19-04

DRAWING NO. **GE-04**

SHEET **68** OF **72**



**NOT USED** (E) 50XX  
 SCALE: NTS

**NOT USED** (E) 5188  
 SCALE: NTS

**BOWEN COLLINS ASSOCIATES**

PROFESSIONAL ENGINEER  
 No. 12649767  
 JOSHUA JAY LAKE  
 STATE OF UTAH  
 07/09/2024

NO.	DATE	REV. BY	DESCRIPTION

**VERIFY SCALE**  
 BAR IS ONE INCH ON ORIGINAL DRAWING

**ZONE 2 & 3 PUMP STATION PROJECT**  
 HERRIMAN CITY  
 HERRIMAN, UTAH

DESIGN: J. LAKE  
 DRAWN: J. TANNER

REVIEW: S. CAVANAUGH  
 CHECKED: S. CAVANAUGH  
 APPROVED: J. LAKE

**GENERAL ELECTRICAL DETAILS - 5**

DATE: JULY 2024  
 PROJECT NUMBER: 217-19-04

DRAWING NO. **GE-05**  
 SHEET **69** OF **72**

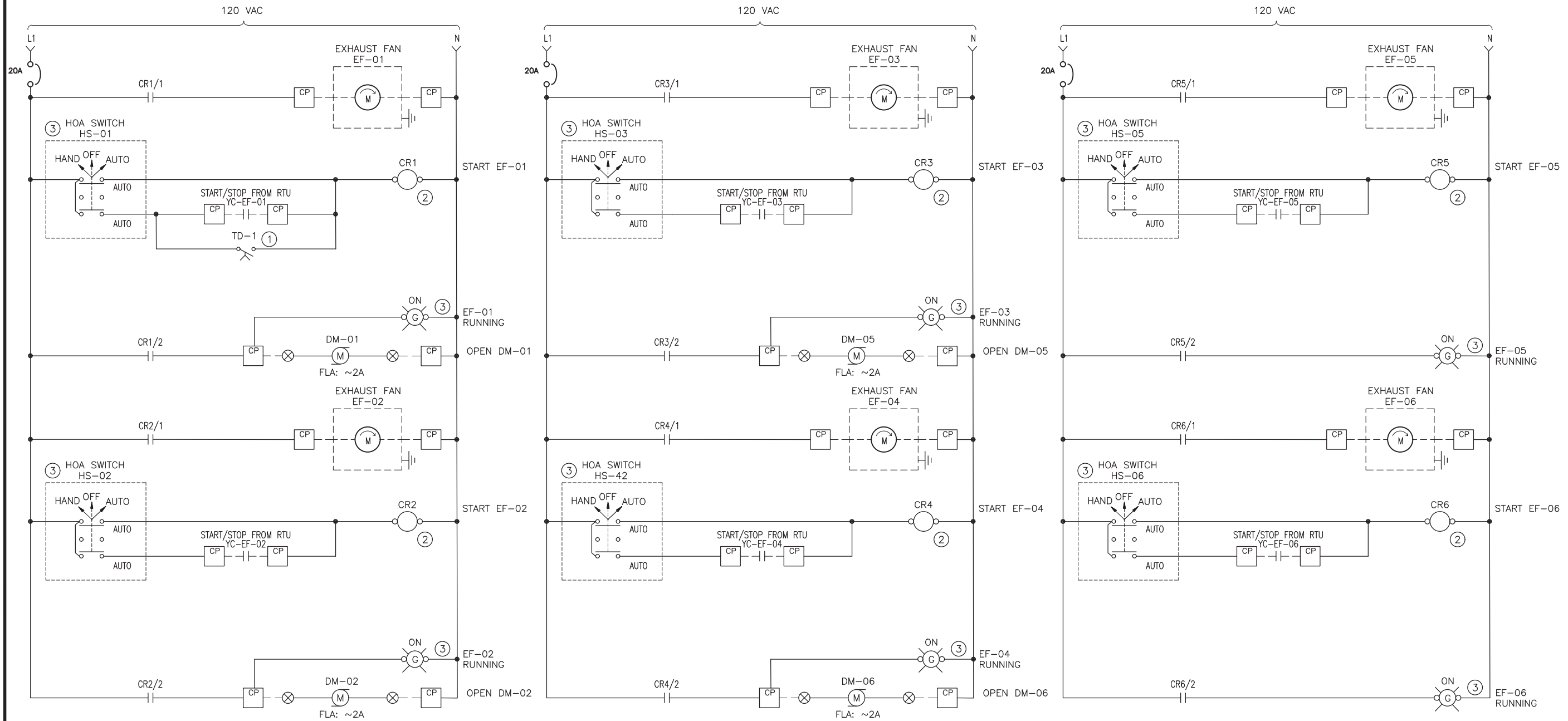
- LEGEND:**
- CP CONTROL PANEL TERMINALS
  - EXTERNAL CONNECTION

**NOTES:**

1. OWNER SHALL COORDINATE WITH RTU PROGRAMMER TO SET TEMPERATURE AT WHICH EF-01 TURNS ON. CONSECUTIVE FANS SHALL TURN ON IN 2 DEGREE INCREMENTS.

**KEY NOTES:**

- ① CONTACT SHALL CLOSE IMMEDIATELY WHEN LIGHTS ARE TURNED ON AND HOA SWITCH IS IN AUTO. CONTACT SHALL REMAIN CLOSED AFTER LIGHTS ARE TURNED OFF FOR AN ADJUSTABLE AMOUNT OF TIME (0-30 MIN. AT LEAST). SET TIME DELAY TO 20 MIN. THIS IS ONLY FOR EXHAUST FAN EF-01.
- ② RELAY SHALL BE HORSEPOWER RATED FOR SPECIFIC VENT FAN MOTOR.
- ③ PILOT LIGHT AND SELECTOR SWITCH MOUNTED ON DOOR OF CONTROL PANEL.



**PUMP ROOM VENTILATION  
CONTROL PANEL SCHEMATIC E**  
SCALE: NTS 5670

**BOWEN COLLINS & ASSOCIATES**

NO.	DATE	REV. BY	DESCRIPTION

**VERIFY SCALE**  
BAR IS ONE INCH ON ORIGINAL DRAWING

<b>DESIGN</b> J. LAKE	<b>REVIEW</b> S. CAVANAUGH	<b>APPROVED</b> J. LAKE
<b>ZONE 2 &amp; 3 PUMP STATION PROJECT</b>		
HERRIMAN CITY, HERRIMAN, UTAH		

**GENERAL ELECTRICAL DETAILS - 6**

DATE: JULY 2024	PROJECT NUMBER: 217-19-04
DRAWING NO. <b>GE-06</b>	
SHEET <b>70</b> OF <b>72</b>	