

PLAN SYMBOLS		ONE LINE DIAGRAM SYMBOLS		SCHEMATIC DIAGRAM SYMBOLS	
<p>LE LT FE FT PE PT</p> <p>FIRQ</p> <p>ZS</p> <p>FS</p> <p>TB1</p> <p>PB</p> <p>PH</p> <p>HH</p> <p>WALL MOUNTED EXTERIOR LIGHTING FIXTURE WITH DESIGNATION IN CENTER</p> <p>SQUARE OR ROUND CEILING MOUNTED INTERIOR OR SOFFIT MOUNTED EXTERIOR LED LIGHTING FIXTURE WITH DESIGNATION</p> <p>A A</p> <p>A</p> <p>C</p> <p>B</p> <p>TC PC</p> <p>RTU</p> <p>ANTENNA</p> <p>GEN</p> <p>R</p>	<p>CONDUIT ROUTED UNDERGROUND OR IN FLOOR SLAB.</p> <p>EXPOSED OR CONCEALED CONDUIT CONDUIT ABOVE FLOOR</p> <p>CONDUIT & WIRE DESIGNATION, E.G., 3 #10 POWER, 1 #10 (G) IN 3" CONDUIT; (P)=POWER; (C) = CONTROL; (G) = GROUND; (A) = ALARM; (SH) = SPACE HEATER; (I) = INSTRUMENTATION; (SP) = SPARE WIRES (EC) = EMPTY CONDUIT</p> <p>CONDUIT TURNING DOWN</p> <p>CONDUIT TURNING UP</p> <p>CONDUIT WITH TWISTED PR SHIELDED CABLE. SHOWN ABOVE FINISH FLOOR OR GRADE AND SHOWN BELOW.</p> <p>WIRING IN CONDUIT. SHORT LINES INDICATE HOT WIRES; LONG LINE INDICATES NEUTRAL; SEE SYMBOL BELOW FOR GROUND WIRE, #12 AWG TYPE THWN UON</p> <p>GROUND WIRE. IN CONDUIT.</p> <p>SWITCH WIRE. IN CONDUIT.</p> <p>HOT, NEUTRAL & GROUND, DENOTES THE LIMITS OF SWITCHING WHEN SHOWN BETWEEN ROOMS ON LIGHTING PLANS</p> <p>GROUND WIRE. BARE COPPER. UNDERGROUND.</p> <p>FLEXIBLE CONDUIT OR PORTABLE CABLE</p> <p>CONDUIT AND WIRE DESIGNATION.</p> <p>KEYNOTE REFERENCE</p> <p>MOTOR CONNECTION. HP INDICATED. AS SHOWN ON PLAN DWG.</p> <p>ENCLOSURE</p> <p>MOTOR CONTROL CENTER. NO. OF SECTIONS INDICATED.</p> <p>DISCONNECT SWITCH.</p> <p>JUNCTION BOX</p> <p>GROUND ROD. 3/4" X 10'-0"</p> <p>120 VOLT, 20A, 2 POLE, GROUND FAULT INTERRUPTER TYPE DUPLEX RECEPTACLE. PROVIDE WITH SS WEATHERPROOF COVER AND SS BACKBOX WHEN SHOWN AT EXTERIOR LOCATIONS.</p> <p>120 VOLT, 20A, 2 POLE, GROUNDING DUPLEX CONVENIENCE OUTLET OR RECEPTACLE. (ABBREVIATION=DCO)</p> <p>SPST SWITCH WHEN SHOWN ON LIGHTING PLANS DENOTES SWITCHING FOR THAT SAME ROOM, WHICH IT IS SHOWN; OR SS WEATHERPROOF SWITCH WITH PILOT LT PROVIDE WITH SS (STAINLESS STEEL) BACKBOX AND SS WP COVER.</p> <p>LOW VOLTAGE (120/208V)</p> <p>HIGH VOLTAGE (277/480V)</p> <p>TRANSFORMER - SEE ONE LINE FOR SIZE</p> <p>EMERGENCY PUSHBUTTON - SQUARE 'D' #9001KR2B-KA1 RED MOMENTARY PUSHBUTTON WITH EXTENDED GUARD AND PUSH-TO-TEST PILOT LIGHT.</p> <p>SELECTION SWITCH: HOA = HAND-OFF-AUTO OOT = ON-OFF-TEST LOR = LOCAL-OFF-REMOTE SS = START-STOP K = KEY OPERATED MOR = MANUAL-OFF-REMOTE</p>	<p>CIRCUIT BREAKER, THERMAL MAGNETIC, RATING AND NUMBER OF POLES AS SHOWN.</p> <p>MAGNETIC TRIP ONLY MOTOR CIRCUIT PROTECTOR.</p> <p>SURGE PROTECTION/TRANSIENT VOLTAGE SURGE SUPPRESSOR</p> <p>POWER TRANSFORMER. RATING AND PRIMARY AND SECONDARY VOLTAGES AND WINDING CONNECTIONS INDICATED.</p> <p>CURRENT TRANSFORMER. TURNS RATIO AND NUMBER REQ'D. AS INDICATED.</p> <p>MOTOR. HP INDICATED. AS SHOWN ON ONE-LINE DIAGRAM.</p> <p>TIME DELAY RELAY</p> <p>3-PHASE POWER MONITOR.</p> <p>POWER MONITOR RELAY</p> <p>SOFT START - SOLID STATE NON-REVERSING STARTER WITH MOTOR CIRCUIT PROTECTOR DISCONNECT, MAIN FUSE AND ISOLATING CONTACTOR. (WHEN SHOWN GRAY SCALED WITH DASHED LINES, PROVIDE SPARE SPACE IN MCC FOR FUTURE DEVICE, SIZE AS SHOWN))</p> <p>MOTOR OVERLOAD</p> <p>ALARM HORN</p> <p>FUSED DISCONNECT SWITCH. SWITCH AND FUSE SIZE INDICATED.</p> <p>NON FUSED DISCONNECT SWITCH. SIZE INDICATED.</p> <p>PUSHBUTTON - START/STOP UNLESS OTHERWISE NOTED</p> <p>SELECTOR SWITCH</p> <p>PILOT LIGHT. COLOR INDICATED.</p> <p>ELAPSED TIME METER</p> <p>POWER COMPANY KILOWATT HOUR METER</p> <p>CONDUIT SEAL</p> <p>SPST SWITCH IN A NEMA 4X ENCLOSURE.</p> <p>COMBINATION FUSIBLE DISCONNECT/STARTER. PROVIDE MINIMUM NEMA SIZE 1 STARTER & FUSE PER MOTOR MFPR'S RECOMMENDATIONS</p> <p>FLOAT LEVEL SWITCH. LSHH=HIGH LEVEL;LSLL=LOW LEVEL; LSO=PUMPS OFF; LS1=LEAD PUMP START; LS2=LAG PUMP START.</p> <p>AUTOMATIC TRANSFER SWITCH. NUMBER OF POLES AND RATING AS NOTED.</p> <p>GENERATOR</p> <p>PUMP TEMPERATURE SWITCH; SEAL LEAK DETECTOR;</p> <p>LEVEL INDICATOR/CONTROLLER</p> <p>INTRINSICALLY SAFE BARRIER</p>	<p>MOTOR SPACE HEATER, PANEL HEATER.</p> <p>MOTOR STARTER COIL.</p> <p>RELAY COIL.</p> <p>NORMALLY OPEN RELAY CONTACT. RELAY NUMBER INDICATED</p> <p>NORMALLY CLOSED RELAY CONTACT. RELAY NUMBER INDICATED</p> <p>MOTOR STARTER OVERLOAD CONTACT. OPENS ON OVERCURRENT</p> <p>TIME DELAY RELAY. ON OR OFF DELAY AS NOTED.</p> <p>3 POSITION SELECTOR SWITCH. MAINTAINED CONTACT TYPE. H-O-A = HAND-OFF-AUTO; M-O-R = MANUAL-OFF-REMOTE L-O-R = LOCAL-OFF-REMOTE XOO = CONTACT STATE AT EACH POSITION</p> <p>2 POSITION, ON-OFF SELECTOR SWITCH. MAINTAINED CONTACT TYPE. XO = CONTACT STATE AT EACH POSITION.</p> <p>2 POSITION, TRANSMITTER-FLOAT SWITCH CONTROL SELECTOR SWITCH. MAINTAINED CONTACT TYPE. XO = CONTACT STATE AT EACH POSITION.</p> <p>MOMENTARY CONTACT TYPE PUSHBUTTONS. NORMALLY OPEN; AND NORMALLY CLOSED.</p> <p>SPST TOGGLE SWITCH</p> <p>DPST TOGGLE SWITCH</p> <p>PHASE MONITOR AUXILIARY RELAY CONTACT. OPENS ON PHASE FAILURE.</p> <p>PILOT LIGHT. PUSH-TO-TEST. COLOR INDICATED.</p> <p>ELAPSED TIME METER</p> <p>CONTROL POWER TRANSFORMER - 480 VOLT PRIMARY, 120 VOLT SECONDARY.</p> <p>FUSE</p> <p>GROUND CONNECTION</p> <p>TEMPERATURE SWITCH. OPENS ON RISING TEMPERATURE LEVEL</p> <p>FLOAT LEVEL SWITCH. CLOSING ON RISING LEVEL.</p> <p>FLOAT LEVEL SWITCH. OPENS ON RISING LEVEL.</p>	<p>TERMINAL FOR CONTROL WIRING IN RTU PANEL</p> <p>TERMINAL FOR I/O WIRING IN CONTROL PANEL</p> <p>TERMINAL IN MOTOR CONTROL CENTER OR PUMP POWER PANEL</p> <p>TERMINAL FOR WIRING AT LOCAL PANEL OR JUNCTION BOX</p> <p>WIRING REMOTE FROM CONTROL PANELS</p> <p>WIRING INSIDE OF CONTROL PANELS</p> <p>CONNECTION.</p> <p>NO CONNECTION.</p> <p>SHIELDED TWISTED PR. #18 INSTRUMENTATION WIRE WITH SHIELD COILED AND TAPED</p> <p>SHIELDED TWISTED PR. #18 INSTRUMENTATION WIRE WITH SHIELD CONNECTED TO GROUNDING TERMINAL</p> <p>RTU I/O MODULE WITH INPUT/OUTPUT TYPE AND QUANTITY AS NOTED: DI = DISCRETE INPUT DO = DISCRETE OUTPUT AI = ANALOG INPUT AO = ANALOG OUTPUT</p> <p>DUPLEX RECEPTACLE.</p>	

ABBREVIATIONS

A AMPERES	ATS AUTOMATIC TRANSFER SWITCH	DO DISCRETE OUTPUT	HPS HIGH PRESSURE SODIUM LAMP	MC MAIN CONTACTOR	OT OVERTORQUE/OVERTEMPERATURE	RGS RIGID GALVANIZED STEEL	UG UNDERGROUND
AC ALTERNATING CURRENT	AWG AMERICAN WIRE GAUGE	EC ELECTRICAL CONTRACTOR	HT HEIGHT - ABOVE FINISH FLOOR OR GRADE	MCC MOTOR CONTROL CENTER	PB PULLBOX OR PUSHBUTTON	RTU REMOTE TERMINAL UNIT	LION UNLESS OTHERWISE NOTED
AF AMPS FRAME - CIRCUIT BREAKER FRAME SIZE	BKR BREAKER	EF EXHAUST FAN	HMCP MOTOR CIRCUIT PROTECTOR	MCP MOTOR CIRCUIT PROTECTOR	PEC PEDERNALES ELECTRIC COMPANY	SP SPARE	VM VOLTMETER
AF AMPS FUSE - FUSED SWITCH	C CONDUIT	ETM ELAPSED TIME METER	HZ FREQUENCY IN HERTZ - CYCLES PER SEC.	MCB MAIN CIRCUIT BREAKER	PR PAIR	SS STAINLESS STEEL	VFC VARIABLE FREQUENCY CONTROLLER
AFF MOUNTING HEIGHT ABOVE FINISHED FLOOR	COA CITY OF AUSTIN	EXIST EXISTING	INST INSTRUMENT	MSB MAIN SWITCHBOARD	PL PILOT LIGHT	SSMU SOLID STATE METERING UNIT	VFD VARIABLE FREQUENCY DRIVE
AFG MOUNTING HEIGHT ABOVE FINISHED GRADE	CB CIRCUIT BREAKER	F FUSE	ISB INTRINSICALLY SAFE BARRIER	NATS NON-AUTOMATIC TRANSFER SWITCH	PNL PANEL	SSRV REDUCED VOLT. SOFT STARTER	WP WEATHERPROOF
AG ABOVE GRADE	CKT CIRCUIT	FDR FEEDER	JB JUNCTION BOX	NC NORMALLY CLOSED CONTACT	PP POWER POLE	ST SOLID STATE TRIP UNIT	WW WATER AND WASTEWATER UTILITY
AI ANALOG INPUT	CP CONTROL PANEL	FIXT FIXTURE	KWH KILOWATT HOURS	NF NON-FUSED	PS PRESSURE SWITCH	ST SINGLE THROW	XFER TRANSFER
AIC FAULT CURRENT INTERRUPTING CAPACITY	CPT CONTROL POWER TRANSFORMER	GEN GENERATOR	LC LIGHTING CONTACTOR	NO NORMALLY OPEN CONTACT	PT POTENTIAL TRANSFORMER	TDR TIME DELAY RELAY	XFMR TRANSFORMER
AM AMMETER	CR CONTROL RELAY	GFCI GROUND FAULT CIRCUIT INTERRUPTER	LIC LEVEL INDICATOR/CONTROLLER	OL OVERLOAD	PVC POLYVINYL CHLORIDE CONDUIT OR COATING	TR TIMING RELAY	XMTR TRANSMITTER
AO ANALOG OUTPUT	CT CURRENT TRANSFORMER	GND GROUND	LP LIGHTING PANEL		PW PULLWIRE	T/S TWISTED/SHIELDED	3PDT THREE POLE DOUBLE-THROW
AT AMPS TRIP - CIRCUIT BREAKER TRIP SETTING/RATING	DI DISCRETE INPUT	HP HORSEPOWER	LV LOW VOLTAGE			TU TEXAS ELECTRIC UTILITIES	

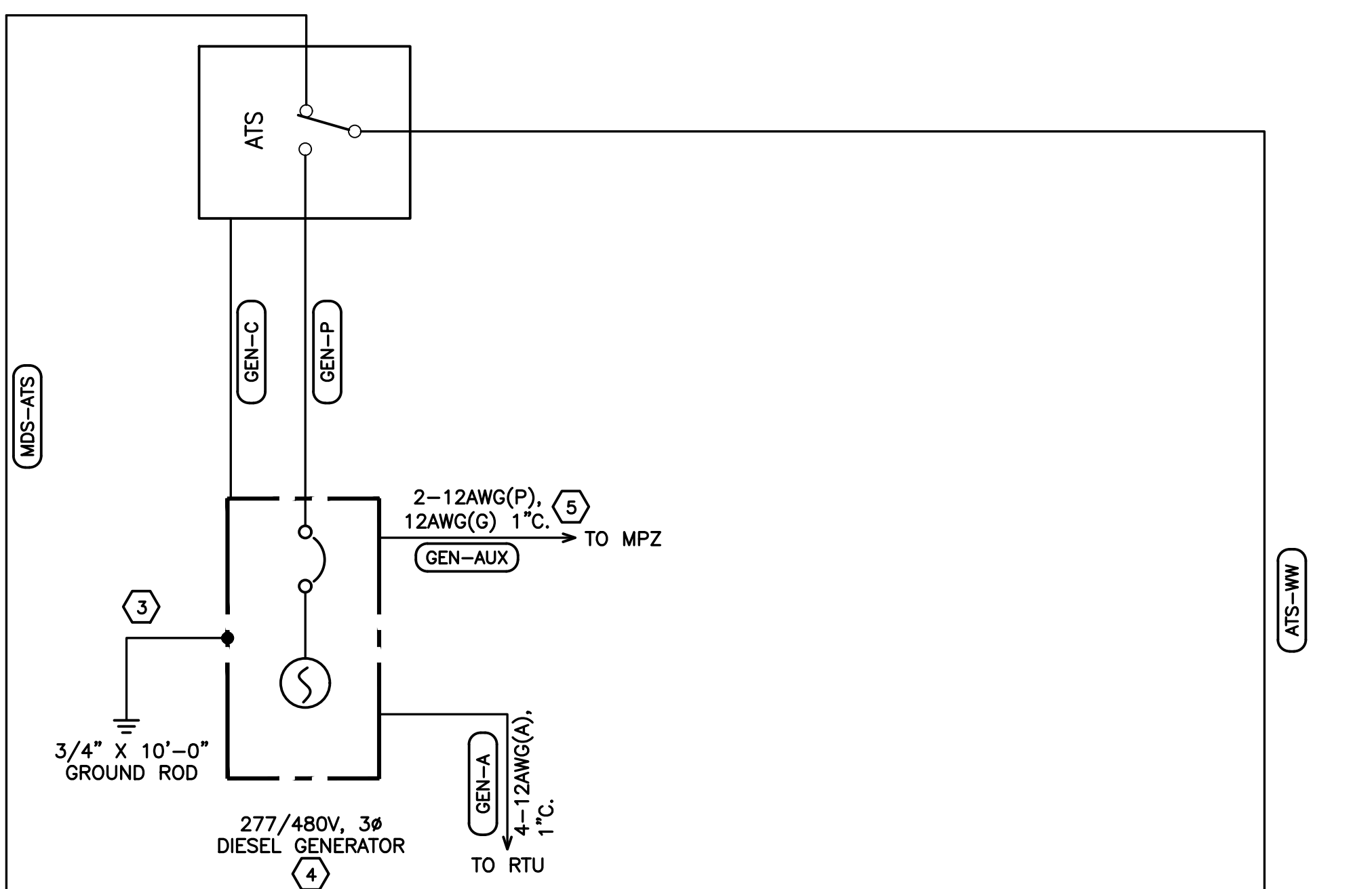
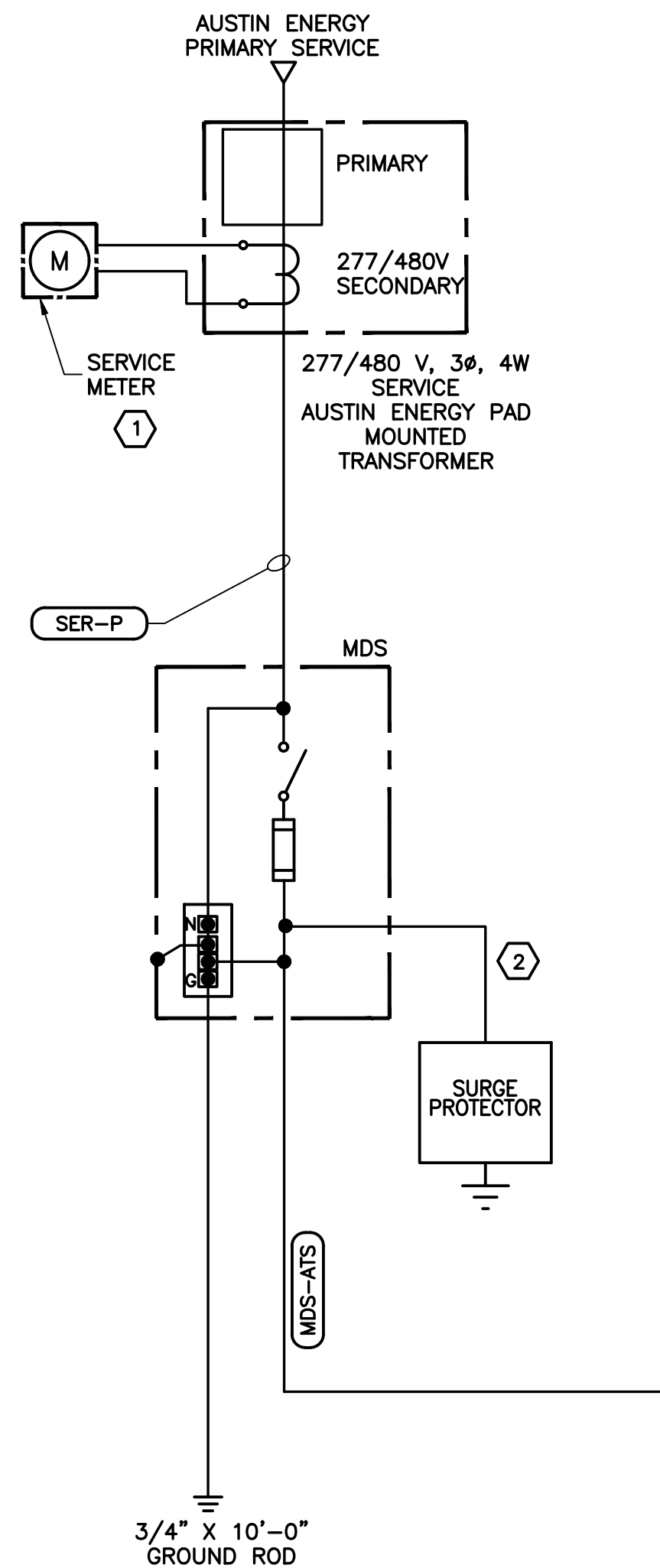
TRAVIS COUNTY WCID NO. 17
TYPICAL LIFT STATION STANDARDS

ELECTRICAL LEGEND

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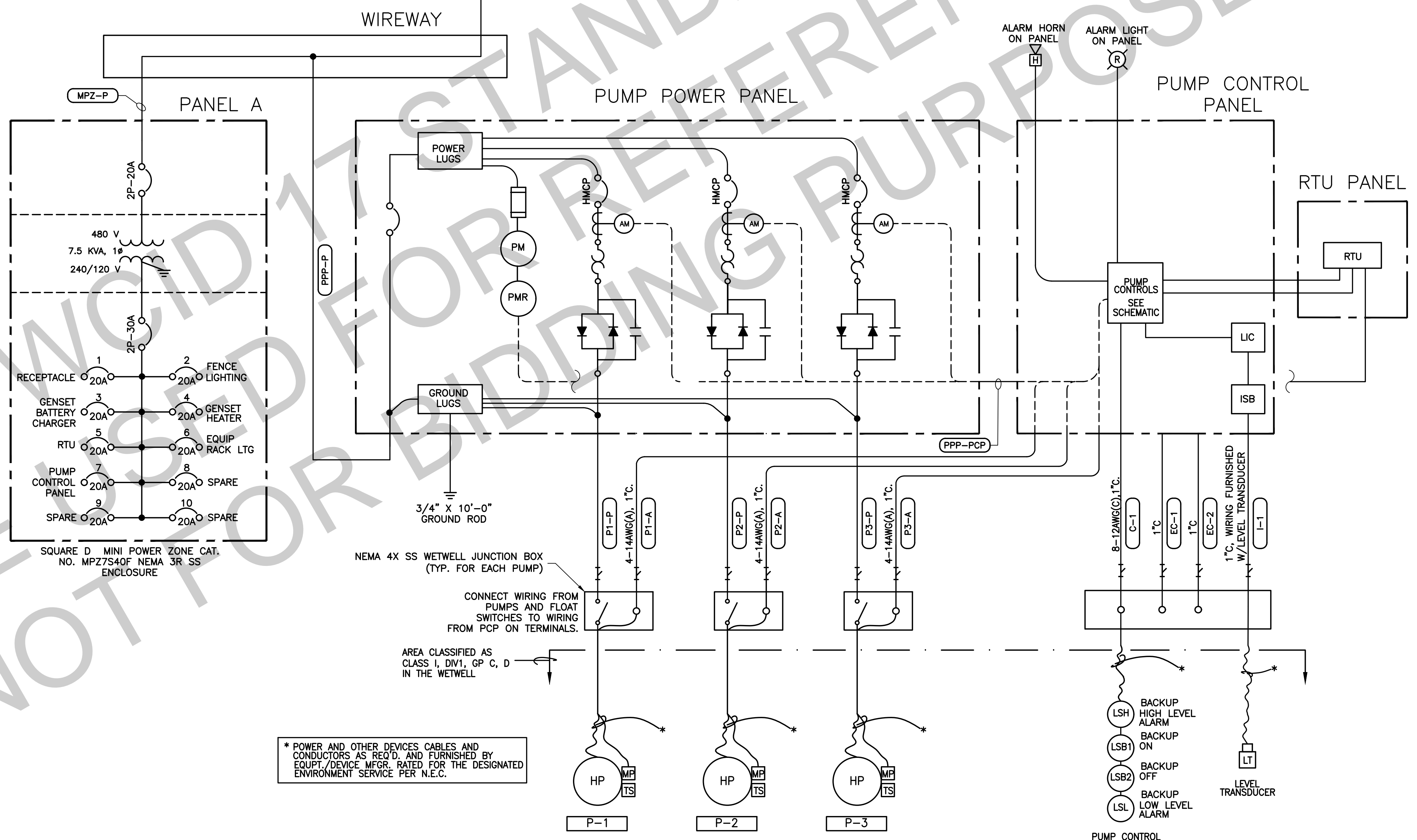


ELECTRICAL LOAD CHART @ 277/480V, 3Ø, 4W SERVICE

LOAD DESCRIPTION	LOAD CURRENT (AMPERES)	
	INITIAL	FUTURE
MOTORS, FLA	A	-
25% LARGEST MOTOR	A	-
OTHERS	A	-
TOTAL	AMPS	A
	KVA	KVA

SERVICE CONDUCTORS: SIZE AS REQUIRED

- KEYNOTES:**
- COORDINATE ELECTRICAL SERVICE WITH SERVICE PROVIDER (AUSTIN ENERGY OR PEC).
 - MINIMIZE CONDUCTOR LENGTH TO NO MORE THAN 18".
 - BOND GROUND ONLY TO GENERATOR ENCLOSURE. DO NOT BOND GROUND TO GENERATOR NEUTRAL.
 - GENERATOR SIZED TO CARRY CONNECTED LOAD, AND RUN ALL PUMPS AT THE SAME TIME.
 - AUXILIARY GENERATOR CIRCUIT, IF REQUIRED.



- GENERAL NOTES:**
- MOTOR STARTERS, GENERATOR, DISCONNECT(S), TRANSFER SWITCH, CIRCUIT BREAKERS AND ANY OTHER UN-SIZED EQUIPMENT TO BE SIZED APPROPRIATELY ACCORDING TO PROJECT REQUIREMENTS.
 - ALL UN-SIZED CONDUIT AND WIRING TO BE SIZED APPROPRIATELY ACCORDING TO PROJECT REQUIREMENTS.
 - DESIGN SHOWN FOR TRIPLEX PUMP SYSTEM. FOR DUPLEX SYSTEM, REMOVE ALL EQUIPMENT/CONDUIT/ETC. FOR THIRD PUMP.

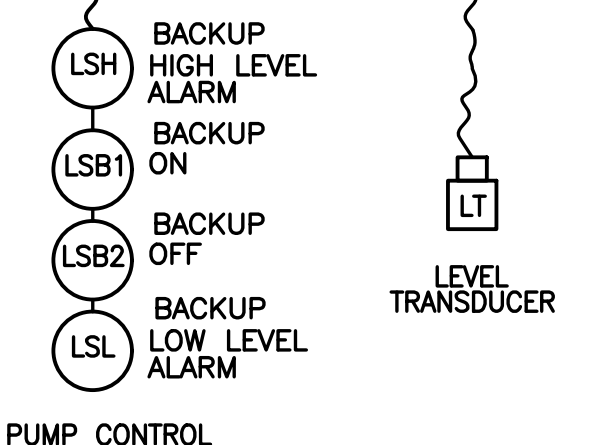
* POWER AND OTHER DEVICES CABLES AND CONDUCTORS AS REQ'D. AND FURNISHED BY EQUIP./DEVICE MFR. RATED FOR THE DESIGNATED ENVIRONMENT SERVICE PER N.E.C.

AREA CLASSIFIED AS CLASS I, DIV1, GP C, D IN THE WETWELL

CONNECT WIRING FROM PUMPS AND FLOAT SWITCHES TO WIRING FROM PCP ON TERMINALS.

NEMA 4X SS WETWELL JUNCTION BOX (TYP. FOR EACH PUMP)

SQUARE D MINI POWER ZONE CAT. NO. MPZ7S40F NEMA 3R SS ENCLOSURE



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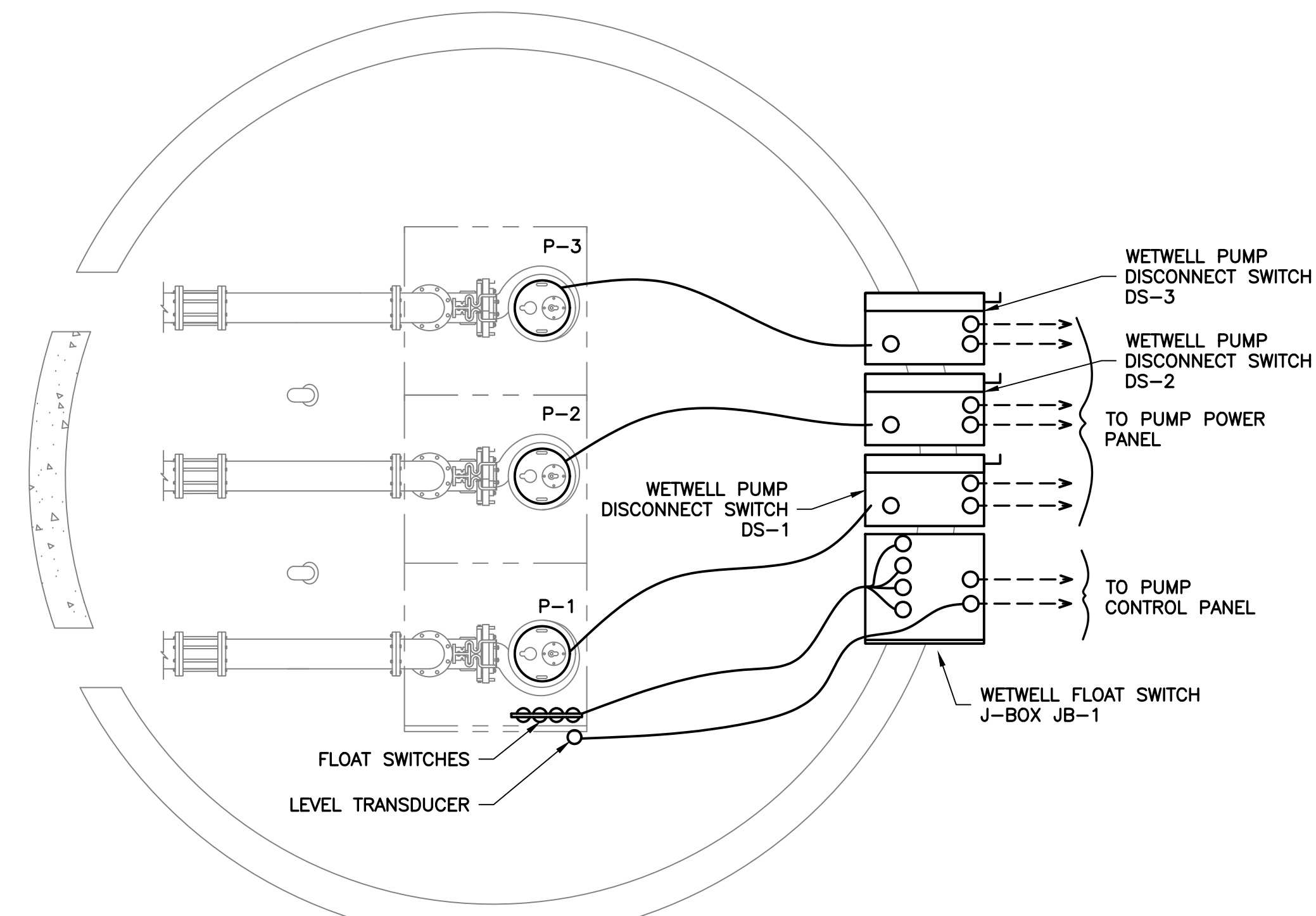
ONE-LINE DIAGRAM

SHEET
1-3
OF 21

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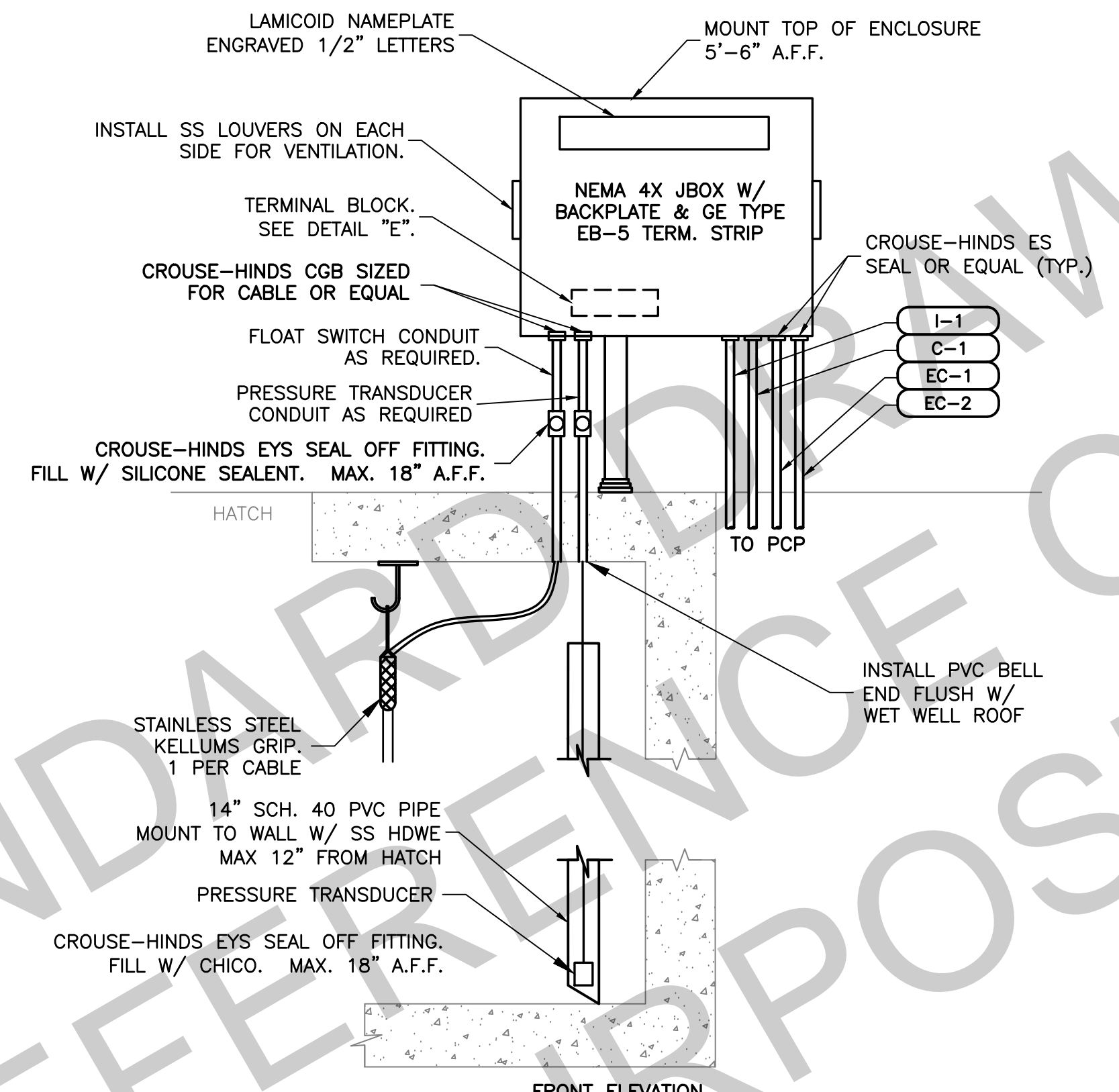
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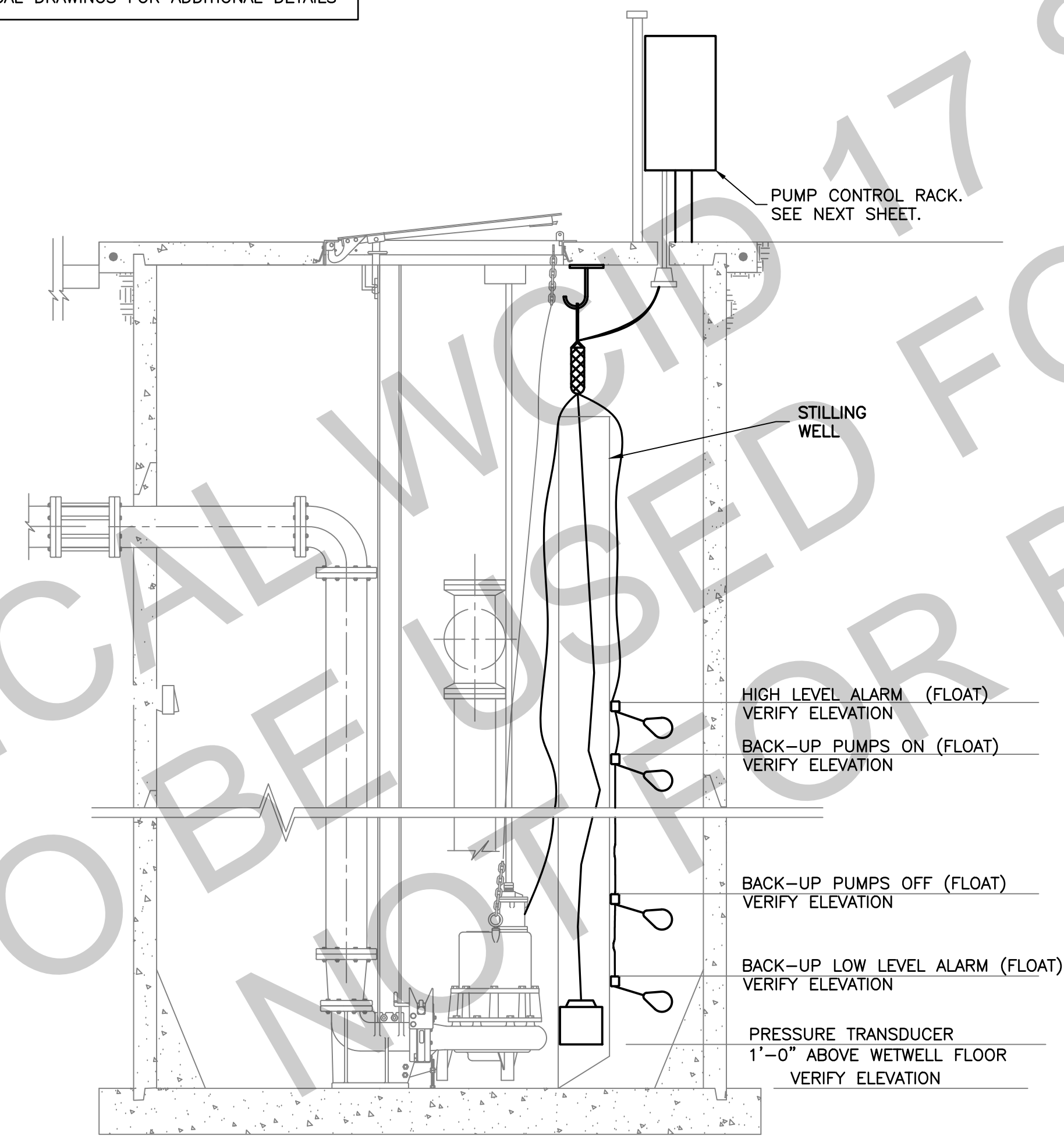


(A) WETWELL PLAN
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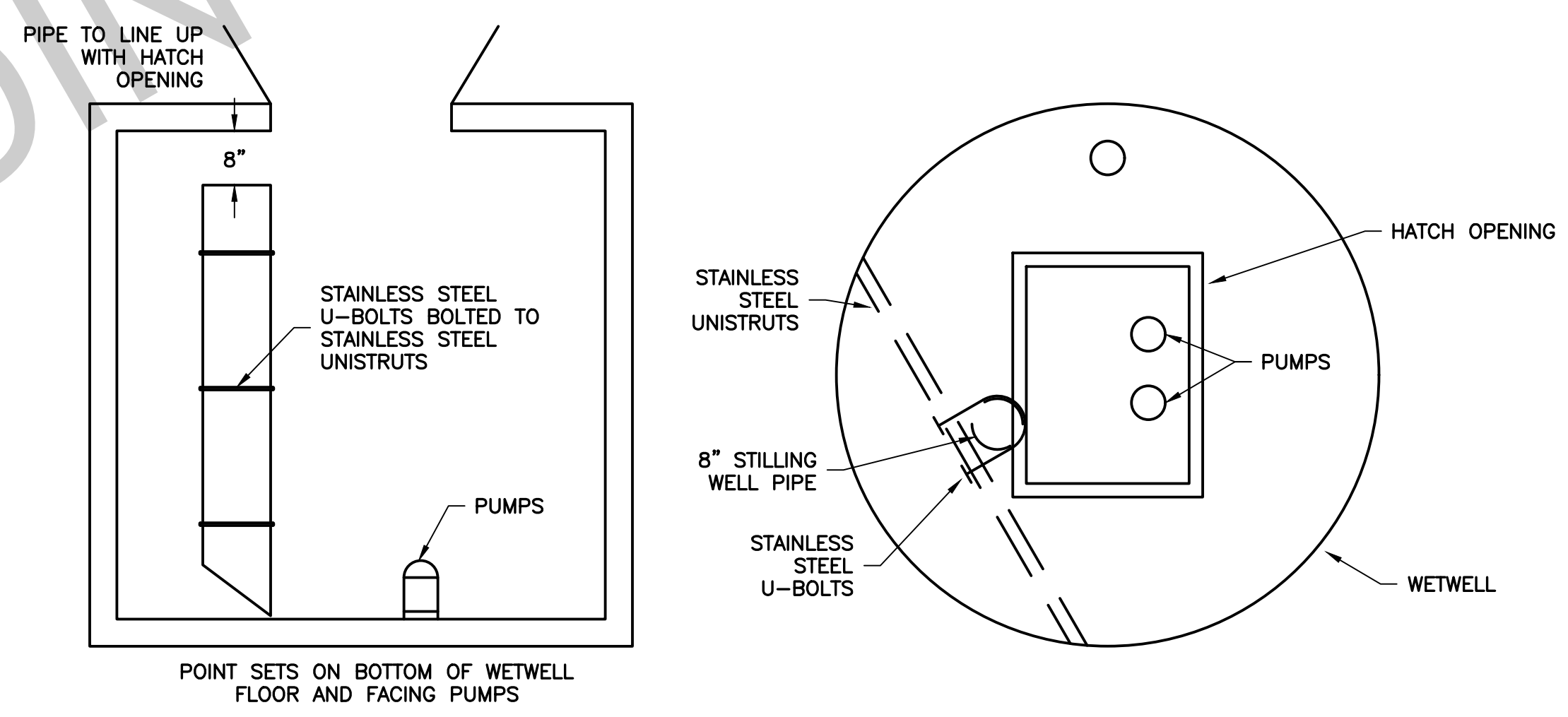
SEE MECHANICAL DRAWINGS FOR ADDITIONAL DETAILS



(B) WETWELL J-BOX DETAIL
N.T.S.



(C) WETWELL ELEVATION
N.T.S.

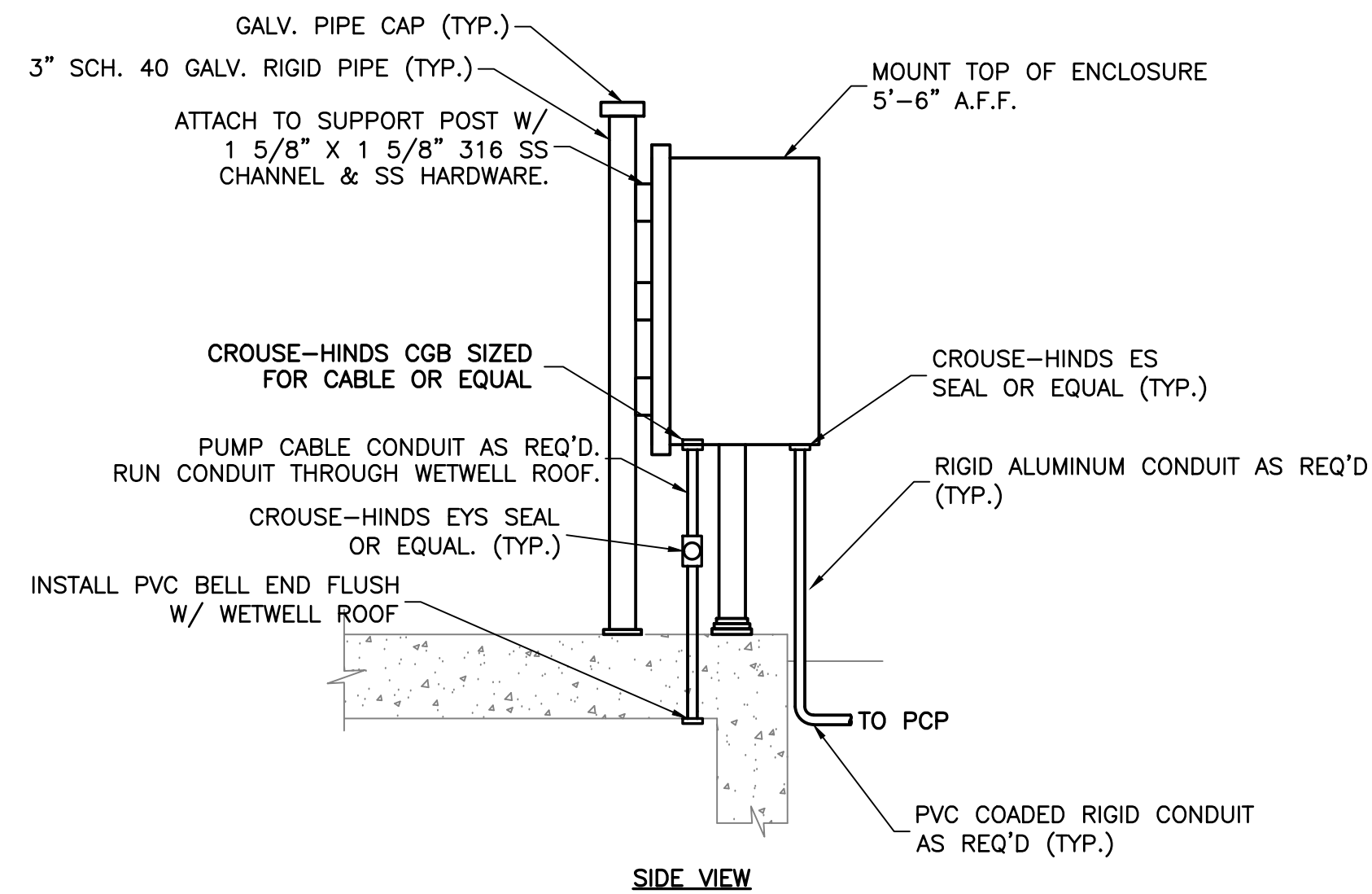


(D) STILLING WELL DETAIL
N.T.S.

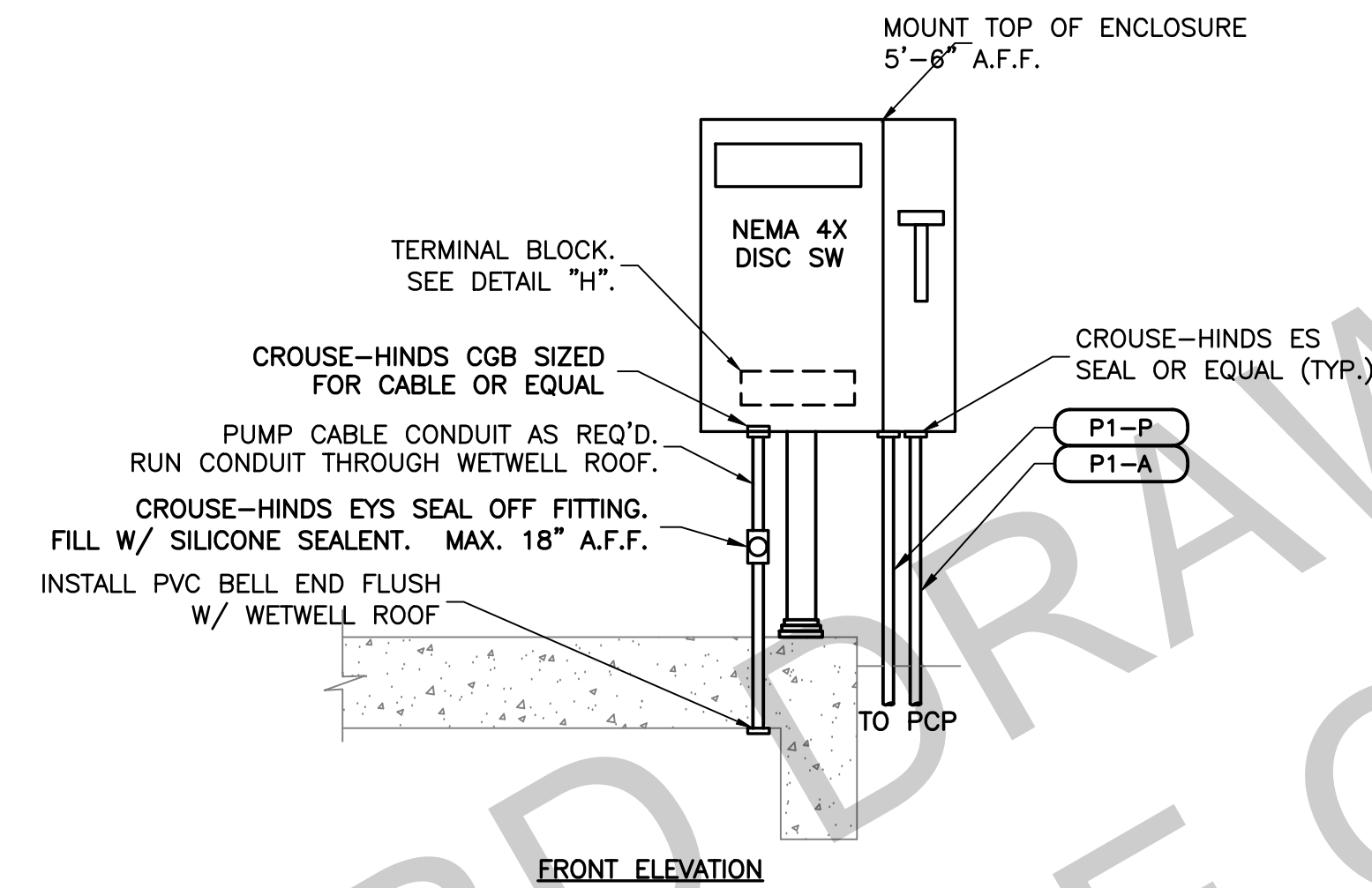
GENERAL NOTES:

- DESIGN SHOWN FOR TRIPLEX PUMP SYSTEM. FOR DUPLEX SYSTEM, REMOVE ALL EQUIPMENT/CONDUIT/ETC. FOR THIRD PUMP.

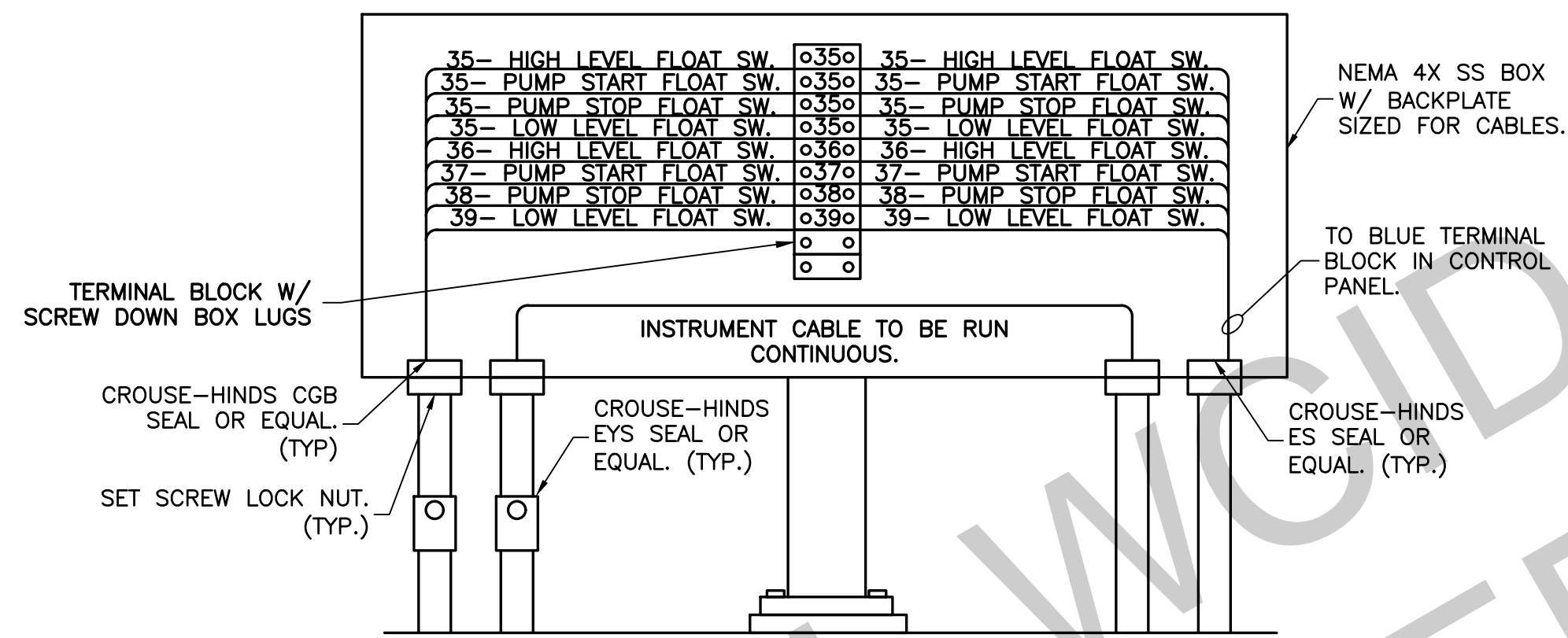
TRAVIS COUNTY WCID NO. 17 TYPICAL LIFT STATION STANDARDS		ELECTRICAL DETAILS 1	
SHEET E-4 OF 21		<p>JRSA ENGINEERING, INC. Consulting Electrical Engineers, TSP# #F-0987 6101 West Courtyard Drive, Bldg. 1, Suite 200 Austin, Texas 78730 (512) 452-8788</p> <p>Green Civil Design Engineering & Consulting Texas Registered Engineering Firm F-17563 11130 Jollyville Rd., Ste. 101 Austin, Texas 78725 (512) 840-6800</p>	
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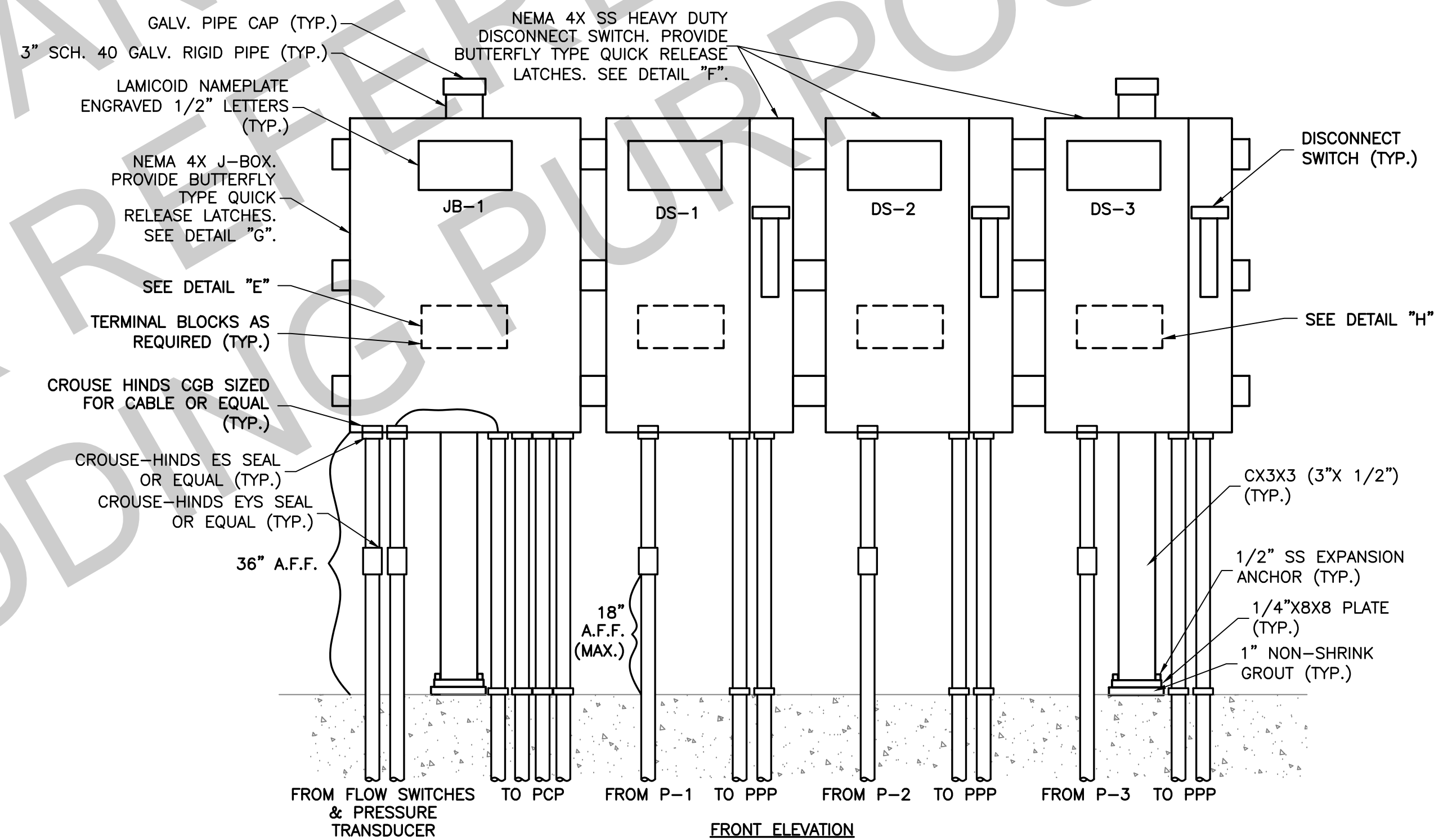
(A) TYPICAL POST MOUNTED EQUIPMENT ELEVATION
N.T.S.



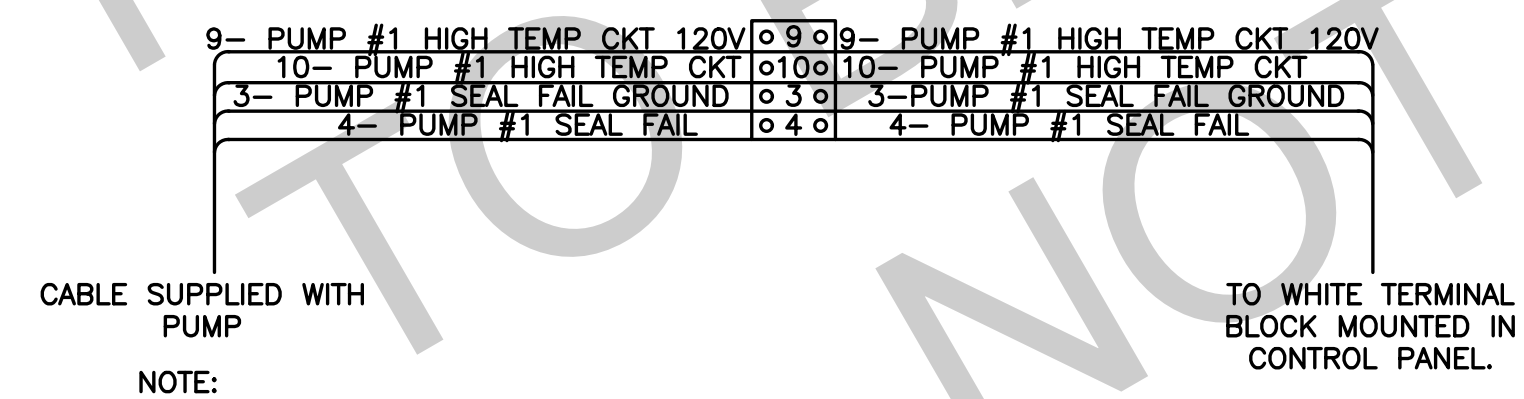
(B) TYPICAL WETWELL DISCONNECT SWITCH DETAIL
N.T.S.



(C) TYPICAL WETWELL J-BOX CABLE INSTALLATION DETAIL
N.T.S.



(D) TYPICAL PUMP CONTROL RACK ELEVATION
N.T.S.

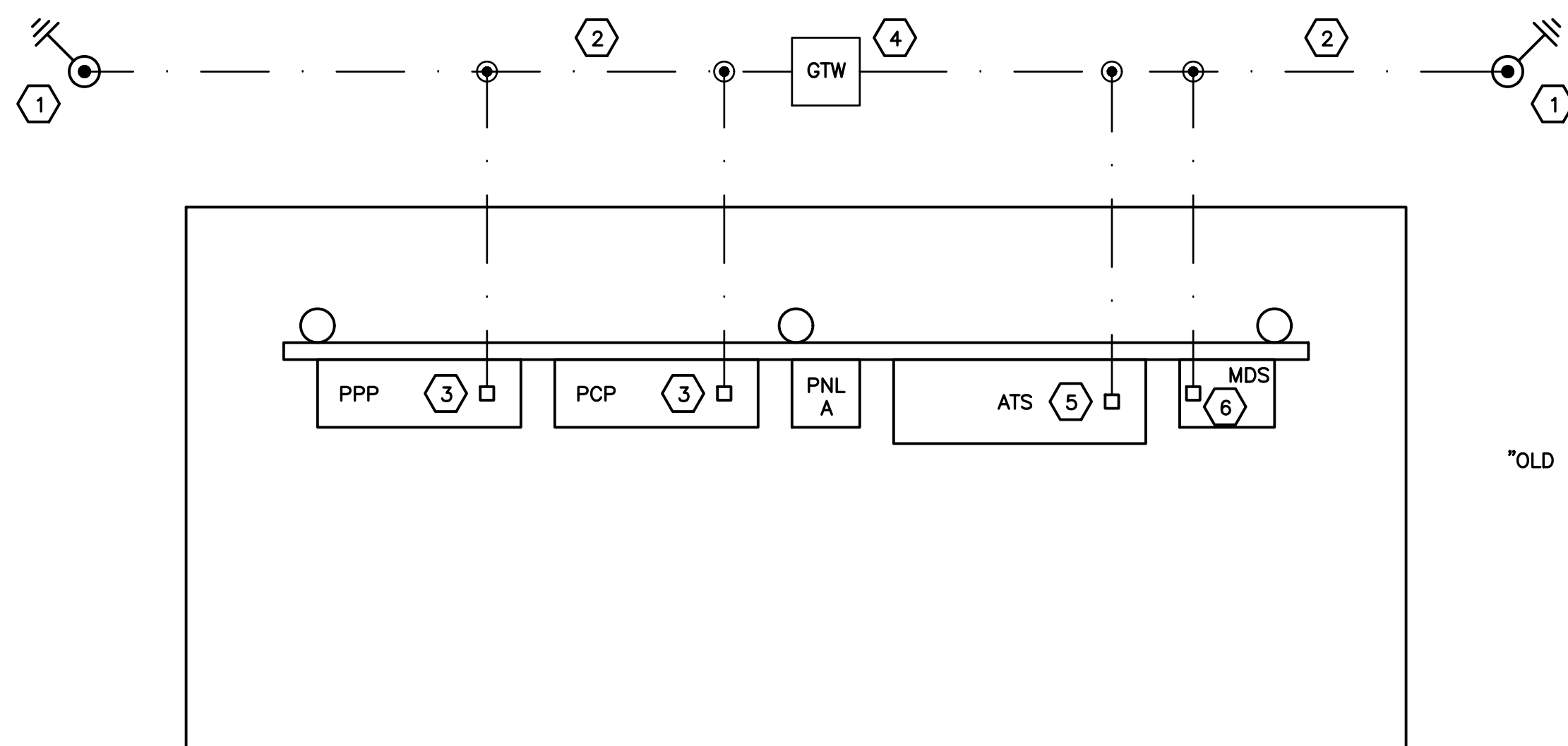


(E) TYP. PUMP SAFETIES TERMINAL BLOCK INSTALLATION
N.T.S.

GENERAL NOTES:

- DESIGN SHOWN FOR TRIPLEX PUMP SYSTEM. FOR DUPLEX SYSTEM, REMOVE ALL EQUIPMENT/CONDUIT/ETC. FOR THIRD PUMP.

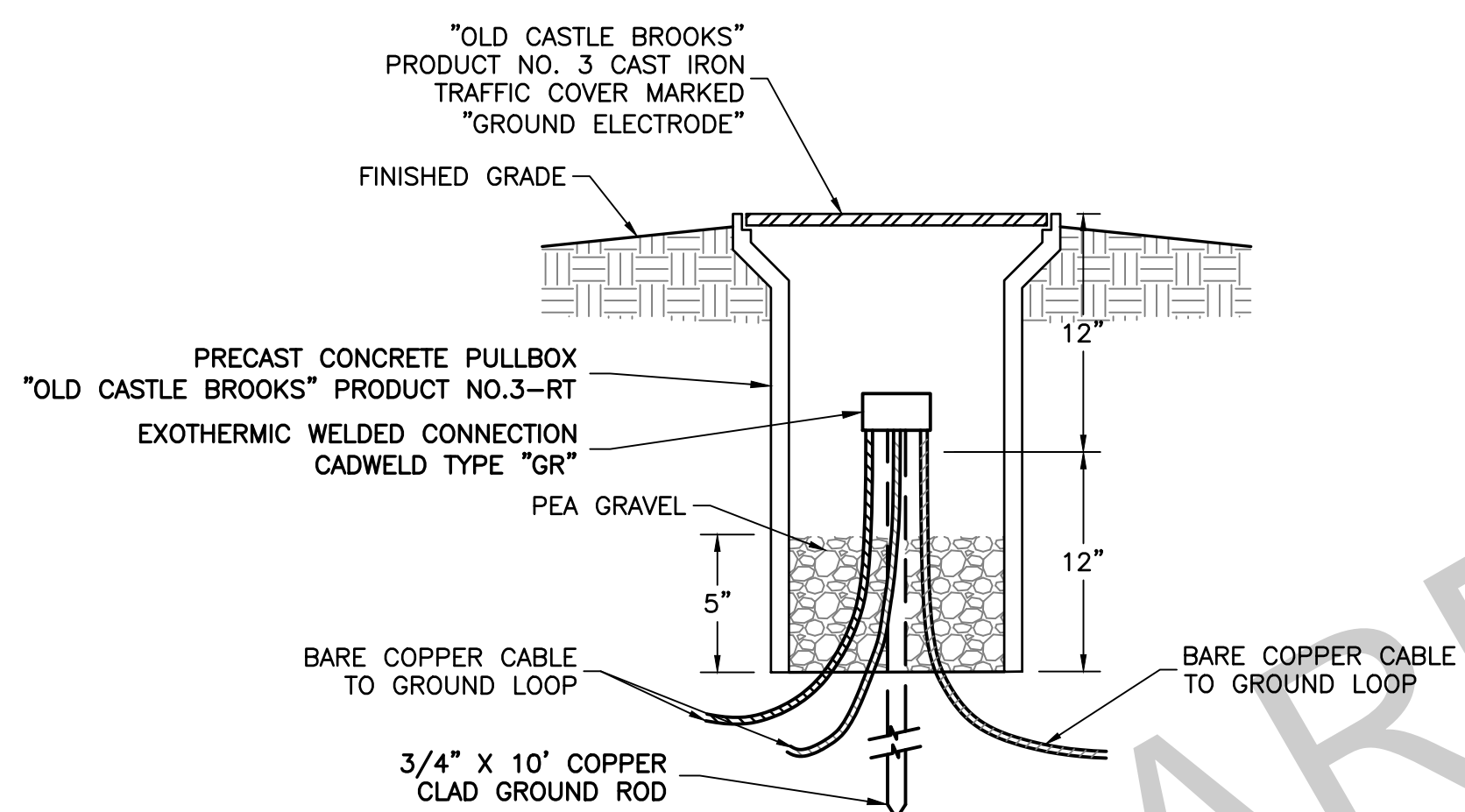
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ELECTRICAL DETAILS 2	
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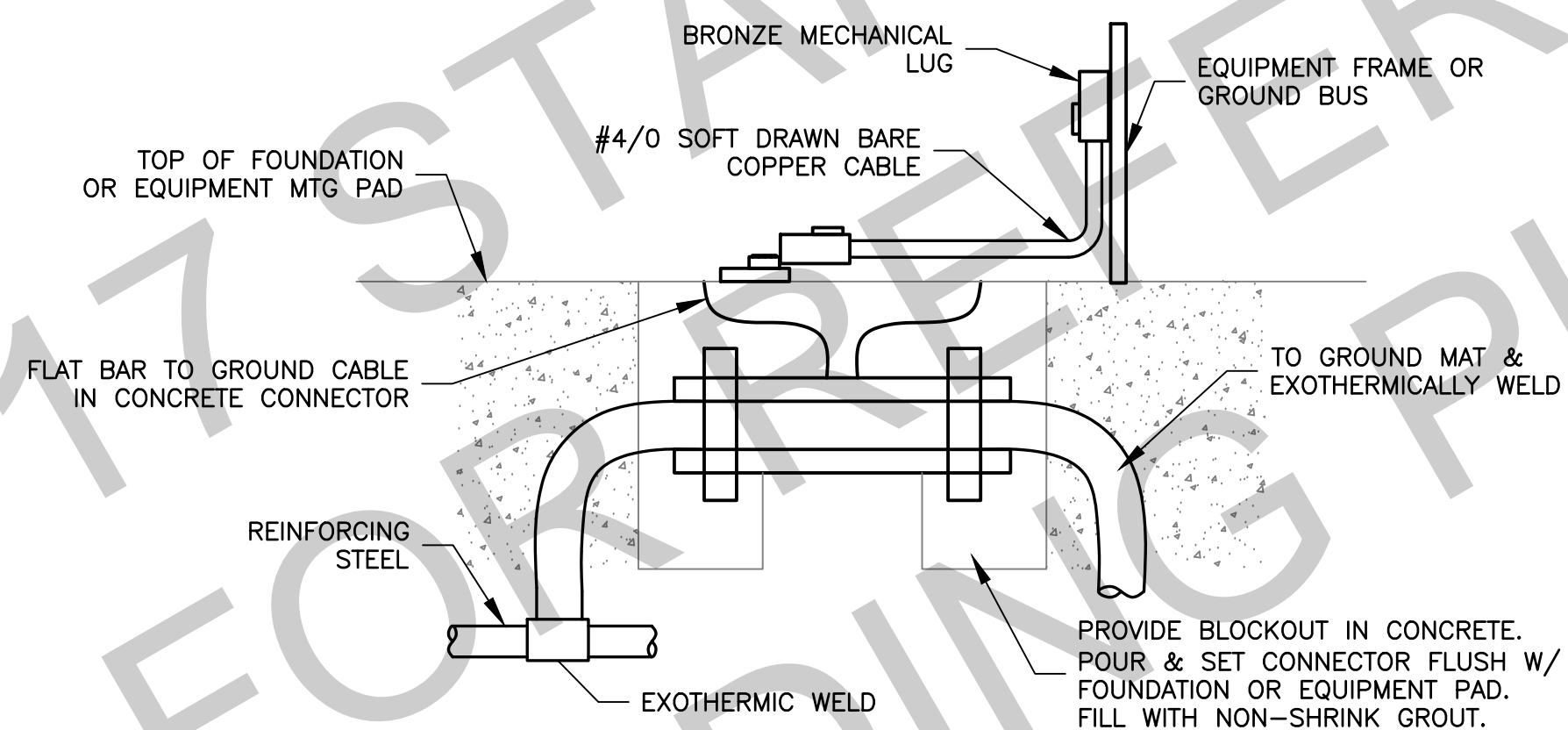
KEYNOTES:

- ① 3/4"x10' COPPER CLAD GROUND ROD. EXOTHERMICALLY WELD TO GROUND CABLE BURIED MIN. 18" BELOW GRADE
- ② #4/0 SOFT DRAWN BARE COPPER CABLE BURIED MIN. 18" BELOW GRADE (TYP. ALL BELOW GRADE CABLE). EXOTHERMICALLY WELD ALL BELOW GRADE CONNECTIONS.
- ③ EXTEND UP INTO CONTROL PANEL AND GROUND TO GROUND BUS. REFER TO EQUIPMENT CONNECTION TO GROUND MAT DETAIL.
- ④ REFER TO GROUNDING SYSTEM TEST WELL INSTALLATION DETAIL.
- ⑤ EXTEND UP INTO ATS AND GROUND TO GROUND BUS. REFER TO EQUIPMENT CONNECTION TO GROUND MAT DETAIL.
- ⑥ EXTEND UP INTO MSD AND GROUND TO GROUND BUS. REFER TO EQUIPMENT CONNECTION TO GROUND MAT DETAIL.

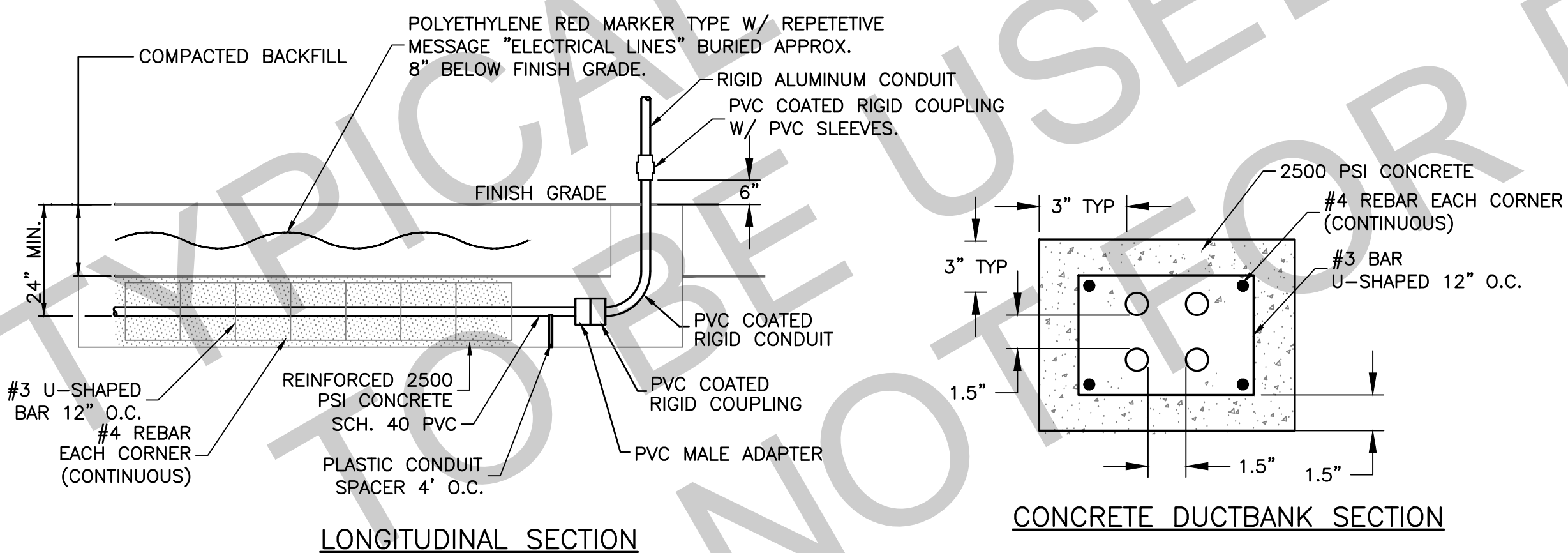
(A) TYPICAL ELECTRICAL GROUNDING PLAN
N.T.S.



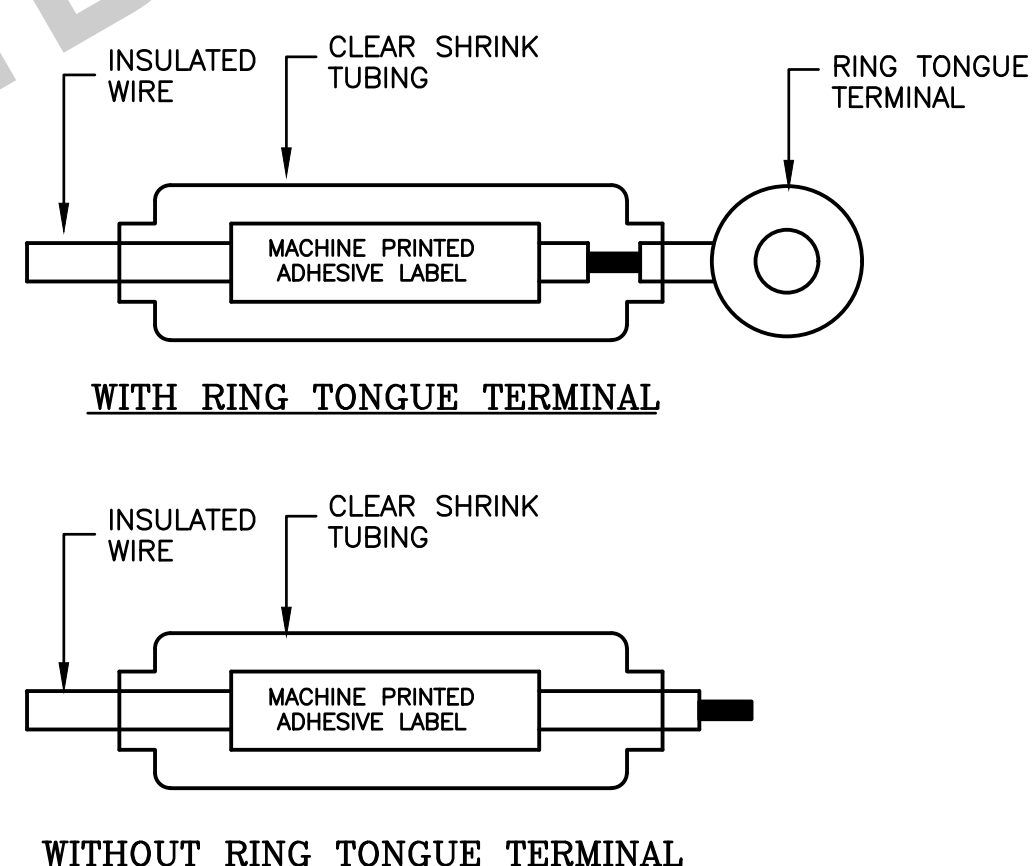
(B) GROUNDWELL
N.T.S.



(D) EQUIPMENT CONNECTION TO GROUND MAT
N.T.S.

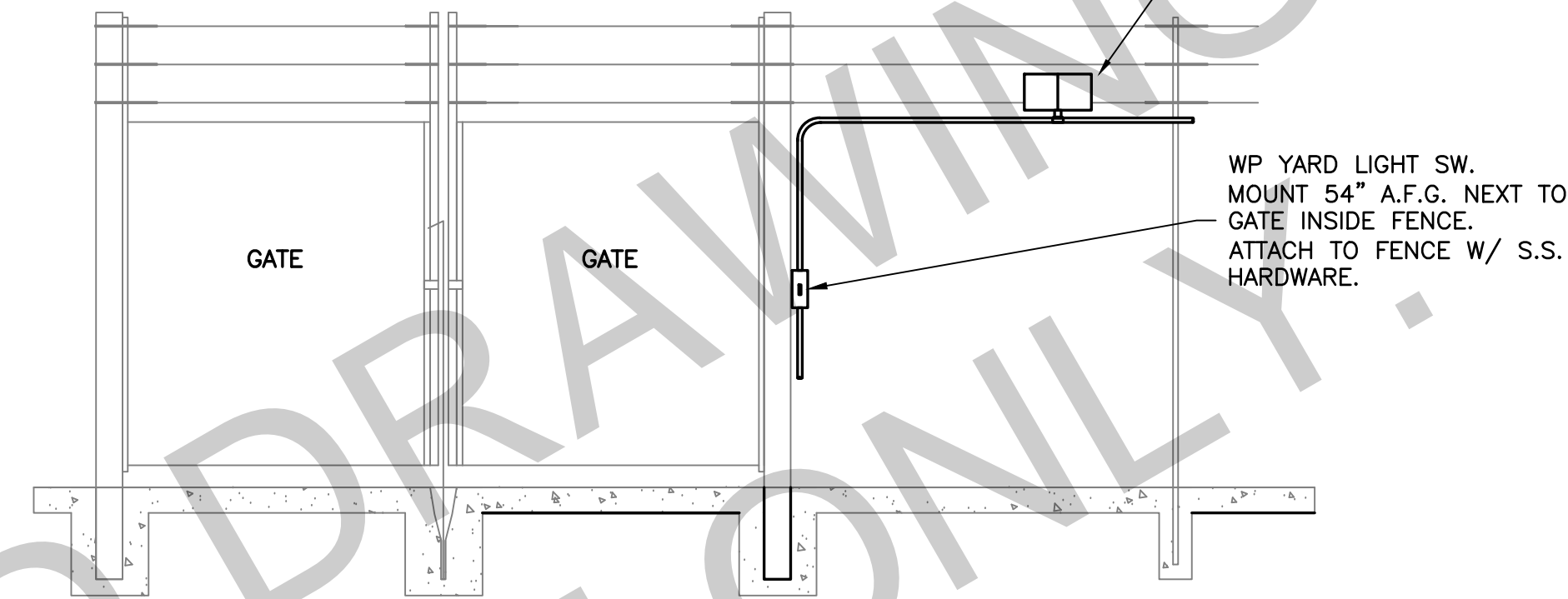


(E) TYPICAL UNDERGROUND CONDUIT INSTALLATION
N.T.S.



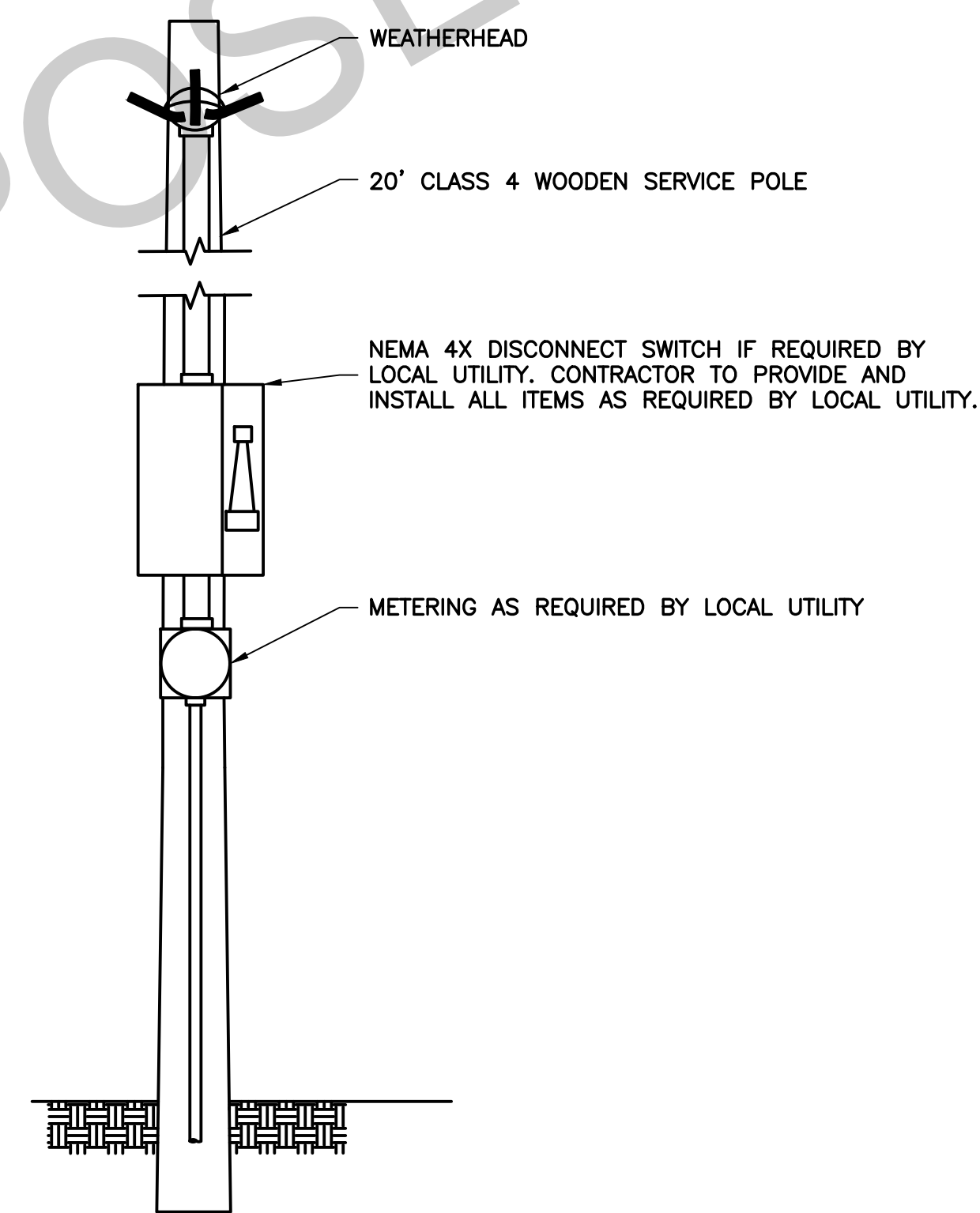
NOTE: WHERE POSSIBLE, RING TERMINALS SHALL BE USED. ONE OF THE ABOVE METHODS SHALL BE USED ON ALL WIRE #8 AWG AND SMALLER. THE SAME MUST ALSO BE USED ON LARGER WIRE UNLESS AN ALTERNATE METHOD IS SUBMITTED AND APPROVED.

(F) WIRE TERMINATION & MARKINGS
N.T.S.



- NOTE:
1. ATTACH CONDUIT TO FENCE WITH S.S. HARDWARE AS REQUIRED.
 2. CONTRACTOR TO COORDINATE LOCATION AND NUMBER OF FIXTURES AS REQUIRED BY WCID 17.

(C) TYPICAL FENCE YARD LIGHTING DETAIL
N.T.S.



NOTE:

1. GROUND PER LOCAL UTILITY REQUIREMENTS.
2. ALL ELECTRIC SERVICE EQUIPMENT TO BE LOCATED OUTSIDE LIFT STATION EXTERIOR FENCE. THIS INCLUDES MAIN DISCONNECT SWITCHES, UTILITY COMPANY METERING EQUIPMENT, TRANSFORMER PADS, AND SERVICE POLES.
3. CONTRACTOR TO COORDINATE THE INSTALLATION OF OVERHEAD OR UNDERGROUND ELECTRICAL SERVICE WITH WCID #17 AND LOCAL UTILITY. POLE TO BE LOCATED OUTSIDE FENCE.
4. FOR UNDERGROUND ELECTRIC SERVICE COORDINATE EXACT REQUIREMENTS WITH WCID #17 AND LOCAL UTILITY. CONTRACTOR TO PAY FOR AND INSTALL ALL ITEMS AS REQUIRED BY LOCAL UTILITY.

(G) TYP. ELECTRICAL SERVICE INSTALLATION
N.T.S.

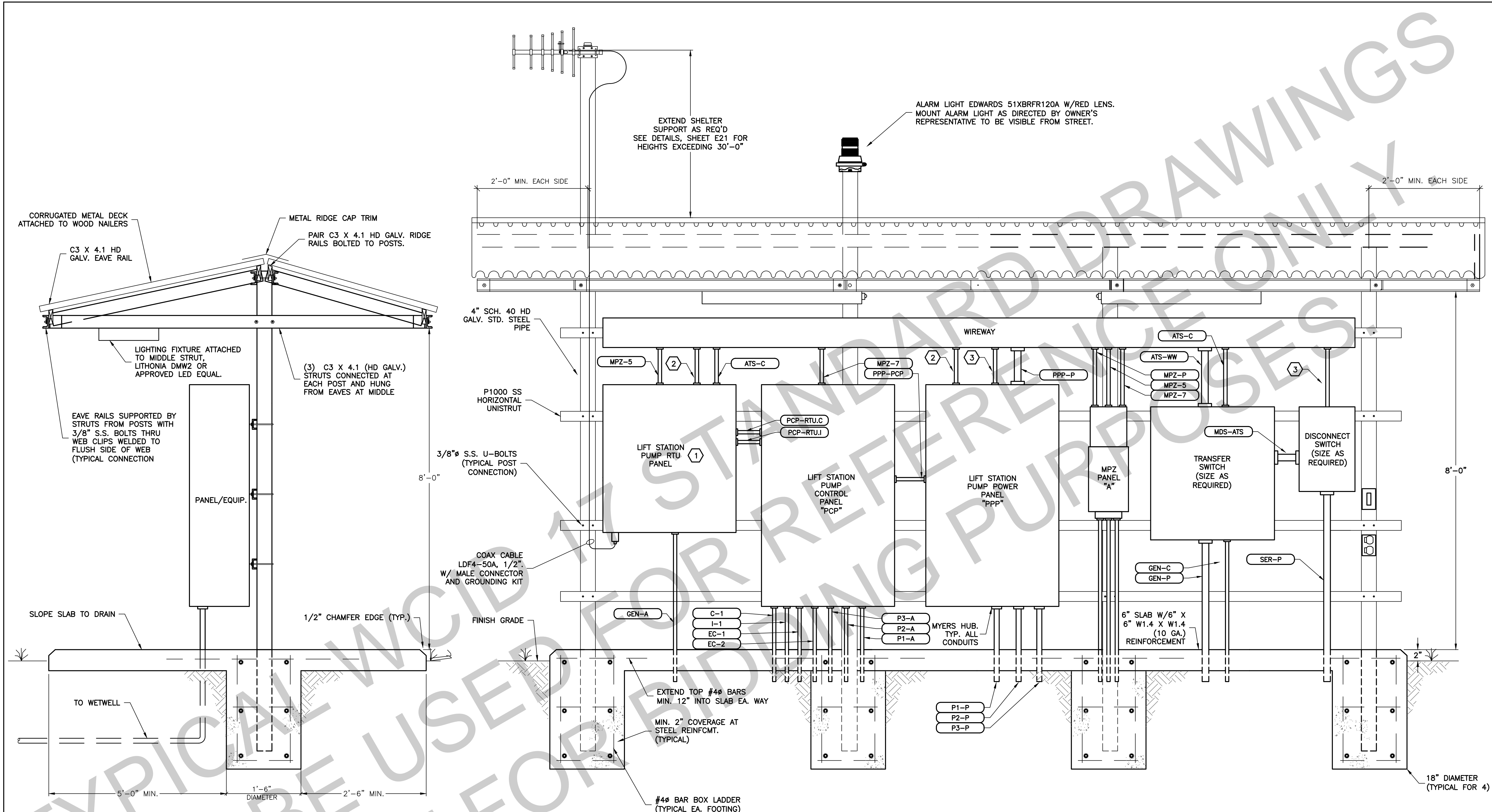
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ELECTRICAL DETAILS 3



1 TYP. ELECTRICAL RACK ELEVATION - SIDE
SCALE: N.T.S.

2 TYP. ELECTRICAL RACK ELEVATION - FRONT
SCALE: N.T.S.

KEYNOTES:

- ① FOR PROJECTS WITH RACK LENGTH RESTRICTIONS, LOCATE AND MOUNT LIFT STATION PUMP RTU CABINET ON BACKSIDE OF ELECTRICAL RACK. ROUTE ALL ASSOCIATED CONDUITS ACCORDINGLY.
- ② PHASE FAILURE RELAY SIGNAL CONDUIT. 2#12(A), 3/4" C. RUN THROUGH WIREWAY FROM PPP TO RTU
- ③ PHASE FAILURE CONDUIT, 3#10, 1" C. RUN THROUGH WIREWAY FROM MDS TO PPP.

GENERAL NOTES:

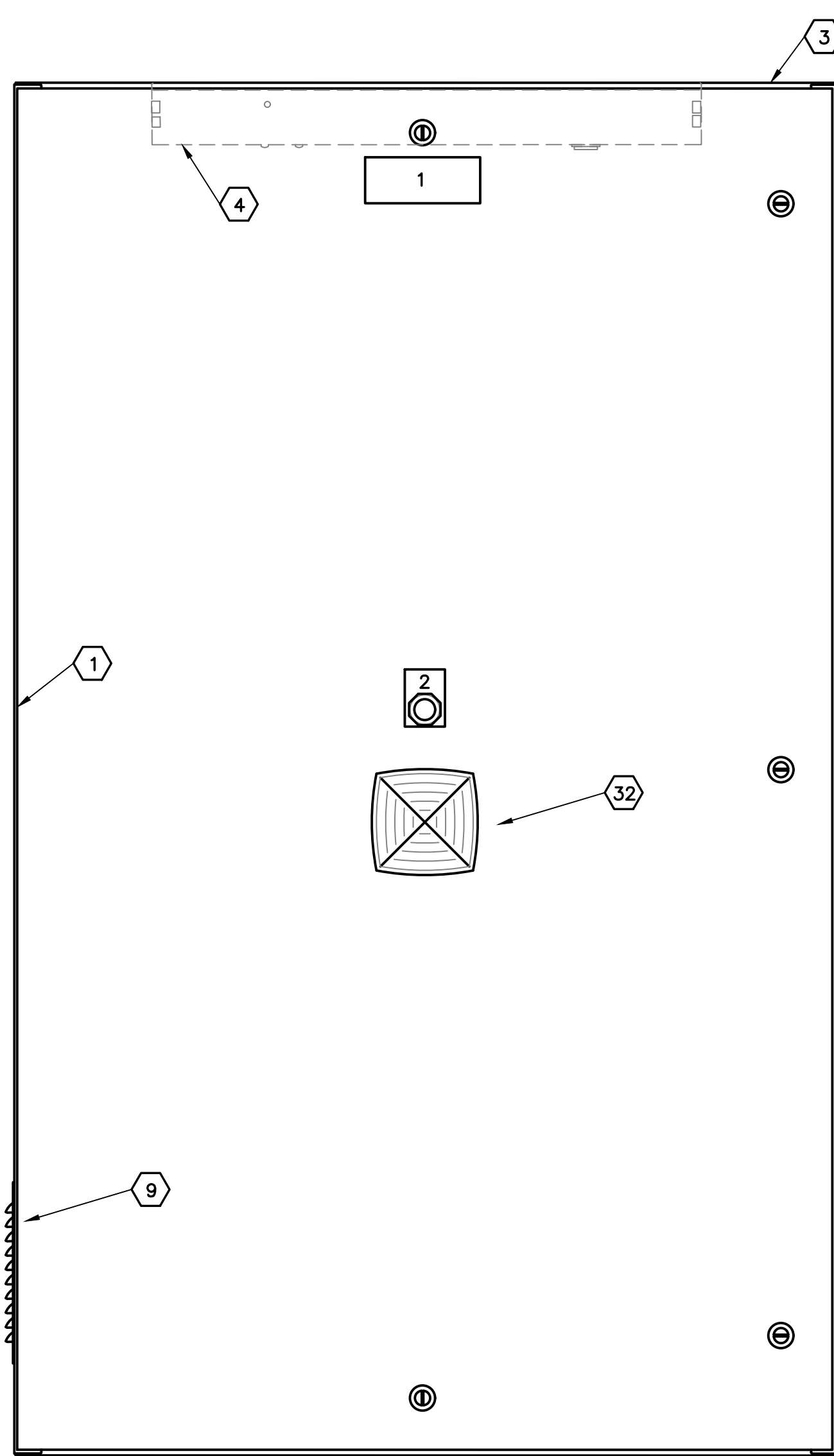
- 1. DESIGN SHOWN FOR TRIPLEX PUMP SYSTEM. FOR DUPLEX SYSTEM, REMOVE ALL EQUIPMENT/CONDUIT/ETC. FOR THIRD PUMP.

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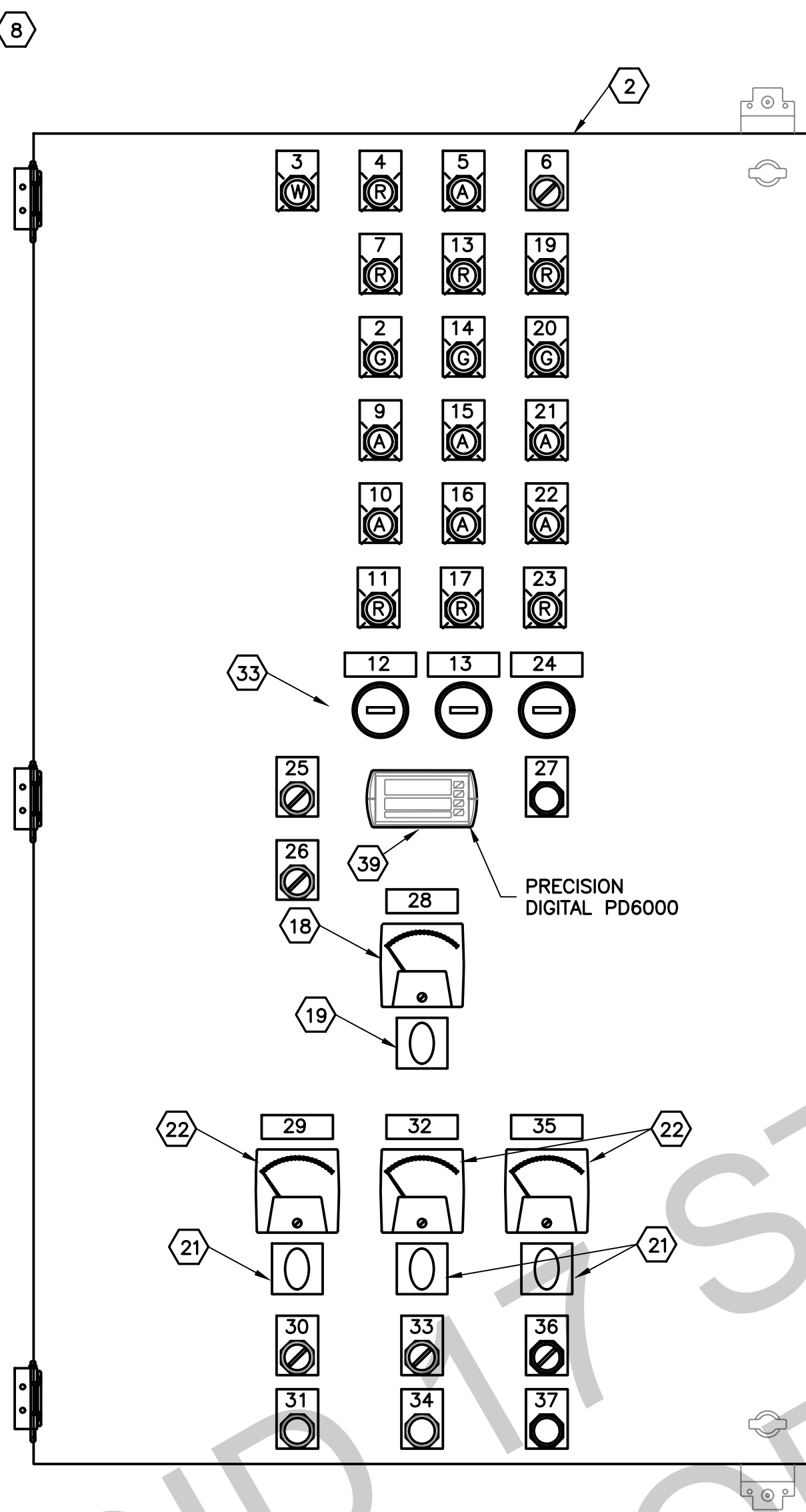
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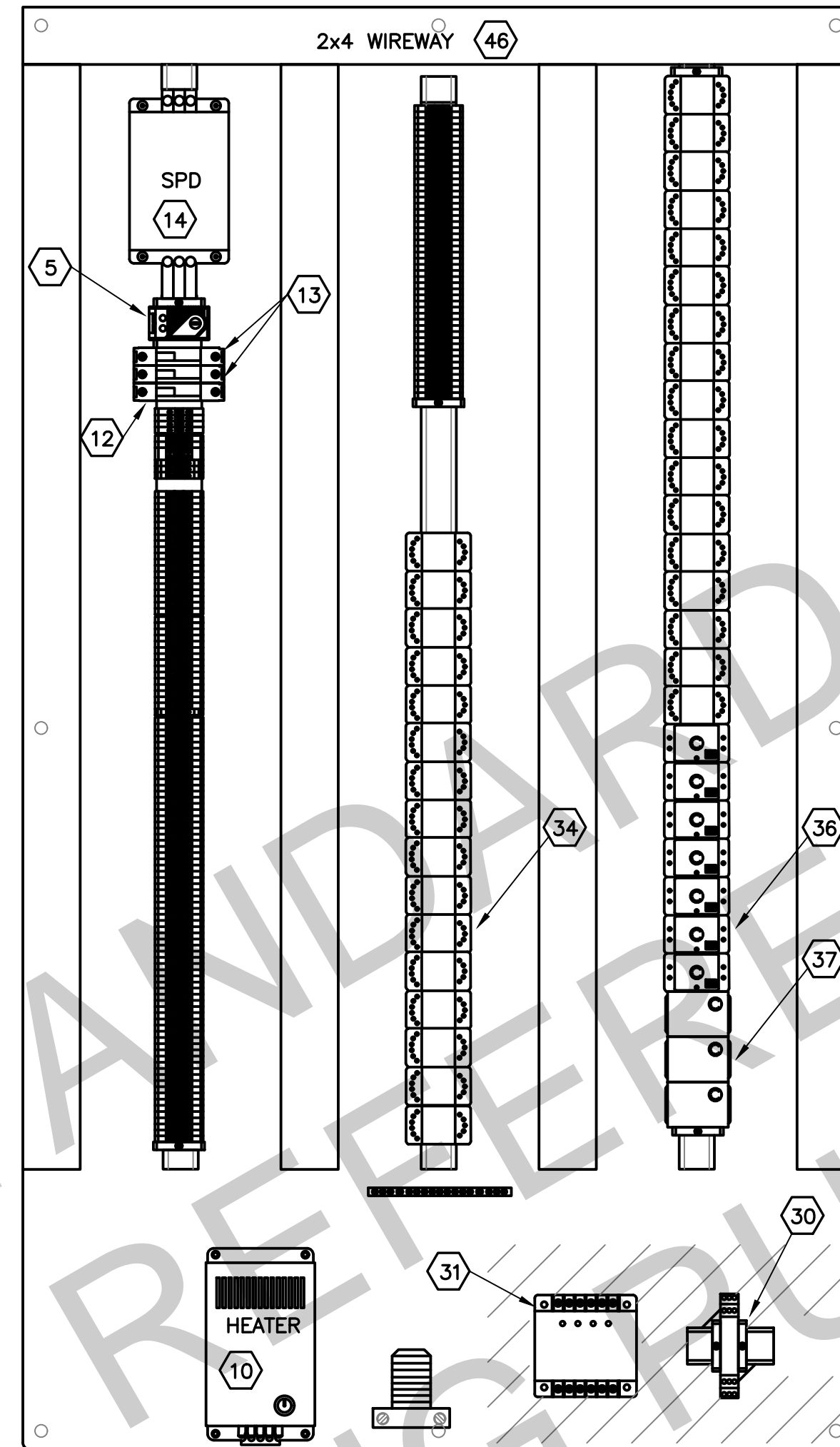
TRAVIS COUNTY WCID NO. 17
 TYPICAL LIFT STATION STANDARDS
 ELECTRICAL RACK ELEVATIONS



1 EXTERIOR DOOR
SCALE: N.T.S.



2 SWINGOUT PANEL
SCALE: N.T.S.



3 BACK PANEL
SCALE: N.T.S.

MARK	INSCRIPTION	REMARKS
1	PUMP CONTROL PANEL	1/2"
2	HORN SILENCE	PUSHBUTTON
3	CONTROL POWER ON	WHITE LED
4	GENERAL ALARM	RED LED
5	BACKUP FLOAT ON	AMBER LED
6	CONTROL POWER ON	SWITCH
7	PUMP #1 ON	RED LED
8	PUMP #1 OFF	GREEN LED
9	PUMP #1 OVERTEMP	AMBER LED
10	PUMP #1 SEAL FAIL	AMBER LED
11	PUMP #1 SSRV FAIL	AMBER LED
12	PUMP #1 ELAPSED TIME	RED LED
13	PUMP #2 ON	RED LED
14	PUMP #2 OFF	GREEN LED
15	PUMP #2 OVERTEMP	AMBER LED
16	PUMP #2 SEAL FAIL	AMBER LED
17	PUMP #2 SSRV FAIL	AMBER LED
18	PUMP #2 ELAPSED TIME	RED LED
19	PUMP #3 ON	RED LED
20	PUMP #3 OFF	GREEN LED
21	PUMP #3 OVERTEMP	AMBER LED
22	PUMP #3 SEAL FAIL	AMBER LED
23	PUMP #3 SSRV FAIL	AMBER LED
24	PUMP #3 ELAPSED TIME	RED LED
25	LEAD PUMP P1	SWITCH
26	TRANSMITTER - FLOATS	SWITCH
27	ALARM RESET	PUSHBUTTON
28	MAIN POWER VOLTAGE	
29	PUMP #1 AMPS	
30	PUMP #1 HAND-OFF-AUTO	SWITCH
31	PUMP #1 RESET	PUSHBUTTON
32	PUMP #2 AMPS	
33	PUMP #2 HAND-OFF-AUTO	SWITCH
34	PUMP #2 RESET	PUSHBUTTON
35	PUMP #3 AMPS	
36	PUMP #3 HAND-OFF-AUTO	SWITCH
37	PUMP #3 RESET	PUSHBUTTON

KEYED NOTES

- THE PUMP CONTROL PANEL SHALL BE ASSEMBLED AND TESTED BY A SHOP MEETING U.L. STANDARD 508 FOR INDUSTRIAL CONTROLS. THE MOTOR AND CONTROL PANEL SHALL BE ASSEMBLED AND TESTED BY THE SAME MANUFACTURER SUPPLYING THE PUMP SO AS TO ENSURE SUITABILITY AND ASSURANCE OF EXPERIENCE IN MATCHING CONTROLS TO MOTORS AND TO ENSURE SINGLE SOURCE RESPONSIBILITY FOR THE EQUIPMENT.
- THE CONTROL PANEL SHALL COMPLY WITH NEC REGULATIONS AND HAVE A U.L. LABEL.
- PUMP CONTROLS SHALL BE PROVIDED BY THE SUPPLIER AND BE CONTAINED IN A STAINLESS STEEL ENCLOSURE MEETING NEMA 3R REQUIREMENTS WITH A HINGED DOOR AND NEOPRENE GASKET. THE ENCLOSURE SHALL HAVE PROVISIONS FOR PADLOCKING A NAMEPLATE SHALL BE PERMANENTLY AFFIXED TO THE PANEL AND INCLUDE THE MODEL NUMBER, VOLTAGE, PHASE, HERTZ, AMPERE RATING, AND HORSEPOWER RATING. A WARNING LABEL AGAINST ELECTRIC SHOCK SHALL BE PERMANENTLY AFFIXED TO THE OUTER DOOR.
- THE PUMP CONTROL PANEL SHALL BE MANUFACTURED BY ALTERMAN, PRIME CONTROLS OR CONTROL PANELS USA.
- THE PUMP CONTROLLER SHALL INDICATE PUMP CONTROL OPERATIONS UTILIZING RED AND AMBER LED INDICATOR LIGHTS. LED INDICATOR LIGHTS SHALL PROVIDE ADEQUATE INFORMATION SO THAT THEY CAN BE USED FOR DIAGNOSIS IN TROUBLESHOOTING. EACH LED SHALL BE PERMANENTLY LABELED ON THE PUMP CONTROLLER AS TO FUNCTION.
- * ITEM #42 IS NOT SHOWN ON THIS DRAWING. IT IS A SUBMERSIBLE PRESSURE TRANSMITTER 4-20 mA OUTPUT TO THE PCP. PRESSURE TRANSMITTER IS TO BE SUPPLIED WITH A MINIMUM 40 FT. CABLE.
- CONTRACTOR TO PROVIDE AN INTERIOR CONTROL PANEL LIGHT ACTIVATED BY OPENING THE INTERNAL SWING PANEL. PROVIDE ONE LIGHT AND SWITCH FOR EACH SIDE.

GENERAL NOTES:

- DESIGN SHOWN FOR TRIPLEX PUMP SYSTEM. FOR DUPLEX SYSTEM, REMOVE ALL EQUIPMENT/CONDUIT, ETC. FOR THIRD PUMP.

LIST OF MATERIALS

ITEM	QTY	VENDOR	DESCRIPTION	REFERENCE
1	1	SAGINAW	ENCLOSURE 60"H x 36"W x 16"D, 304SS, NEMA 3R, THREE POINT LATCHING DOOR W/PADLOCKING HANDLE, #4 BRUSHED FINISHED	SCE-60EL3616SSLPL
2	1	SAGINAW	BACK PANEL	SCE-60P36
3	1	SAGINAW	DRIP SHIELD, 304SS	SCE-DS36SS
4	1	SAGINAW	PANEL LIGHT	SCE-LF24
5	1	SAGINAW	THERMOSTAT, 1A INDUCTIVE RATING, CONTACTS OPEN ON TEMPERATURE DROP	SCE-TEMNO
6	1	SAGINAW	FILTER KIT	SCE-FLT66
7	2	SAGINAW	WING KNOB DOOR LATCH	SCE-DLWKE
8	2	SAGINAW	LOUVER KIT	SCE-AVK66SS
9	1	SAGINAW	COOLING FAN	SCE-CF6
10	1	HOFFMAN	HEATER, 400WATT	DAH4001B
11	1	SIEMENS	BREAKER, THERMAL MAGNETIC, 600VAC WITH LUGS	FD63B250L
12	1	SIEMENS	CIRCUIT BREAKER, UL489, 1-POLE, 5AMP	5SJ411-7HG40
13	2	SIEMENS	CIRCUIT BREAKER, UL489, 1-POLE, 10AMP	5SJ411-7HG40
14	1	CONTROL CONCEPT	SURGE SUPPRESSOR, 120VAC, 5AMP, FILTERING, 45KA, 10YR WARRANTY	IC+105
15	A/R	PHOENIX CONTACT	TERMINAL BLOCK, FEED THROUGH, FINGER SAFE, 26-10AWG, 41AMP, 800VOLT, TYPE UT4	3044102
16	A/R	PHOENIX CONTACT	FUSEABLE TERMINAL BLOCK, FINGER SAFE, TYPE UT4-TG	3044142
17	A/R	PRECISION DIGITAL	FUSE PLUG FOR DISCONNECT TERMINAL BLOCK	3036806

18	1	YOKAGAWA	VOLTMETER, 0-600 VOLT	250344SJSJ
19	1	ELECTROSWITCH	VOLTMETER SWITCH	3104C
20	A/R	PRECISION DIGITAL	GROUND TERMINAL BLOCK, FINGER SAFE, 26-10AWG, 41AMP, 800VOLT, TYPE UT4-PE	3044128
21	3	ELECTROSWITCH	AMMETER SWITCH	3110C
22	3	YOKAGAWA	AMMETER, TRANSFORMER RATED, 0-150AMP DISPLAY, 0-5AMP INPUT, 25-500HZ, PIVOT & JEWEL	250-340-LSPZ
23	8	ALLEN-BRADLEY	PUSH-TO-TEST PILOT LIGHT, LED, FULL VOLTAGE, 30.5MM, NEMA 4/4X/13, 12-130V AC/DC, RED	800H-QRTH2R
24	3	ALLEN-BRADLEY	PUSH-TO-TEST PILOT LIGHT, LED, FULL VOLTAGE, 30.5MM, NEMA 4/4X/13, 12-130V AC/DC, GREEN	800H-QRTH2G
25	7	ALLEN-BRADLEY	PUSH-TO-TEST PILOT LIGHT, LED, FULL VOLTAGE, 30.5MM, NEMA 4/4X/13, 12-130V AC/DC, AMBER	800H-QRTH2A
26	1	ALLEN-BRADLEY	PUSH-TO-TEST PILOT LIGHT, LED, FULL VOLTAGE, 30.5MM, NEMA 4/4X/13, 12-130V AC/DC, WHITE	800H-QRTH2W
27	2	ALLEN-BRADLEY	TWO POSITION SELECTOR SWITCH, 30.5MM, NEMA 4/4X/13, MAINTAINED	800H-HR2
28	4	ALLEN-BRADLEY	THREE POSITION SELECTOR SWITCH, 30.5MM, NEMA 4/4X/13, MAINTAINED	800H-JR2
29	5	ALLEN-BRADLEY	PUSHBUTTON, 30.5MM, NEMA 4/4X/13, FLUSH BLACK	800H-AR2
30	1	TURCK	INTRINSICALLY SAFE BARRIER, 2WIRE, 4-20mA	IM33-11EX-HI/24VDC
31	1	DIVERSIFIED	INTRINSICALLY SAFE RELAY, 120VAC, 4 CHANNELS	ISO-120-ACE

32	1	EDWARDS	ALARM HORN, 120VAC, 78-103 dB	870P-N5
33	3	ENM COMPANY / ALLIED ELECTRONICS	HOUR METER, 120VAC, PANEL MOUNT, 5 DIGITS, NON-RESETTABLE, NEMA 4X	T50AS/207-0039
34	32	ALLEN-BRADLEY	RELAY, TUBE BASE, 10AMP CONTACT, 3PDT, 120VAC, LED LIGHT	700-HA33A1-4
35	32	ALLEN-BRADLEY	11-PIN RELAY BASE	700-HN101
36	7	MAGNACRAFT	TIME DELAY RELAY-ON DELAY, 0.1SEC TO 10HRS, 120VAC COIL, 12AMP CONTACTS, 8 PIN	TDRSXP-120V
37	3	SSAC	SEAL FAILURE DETECTION RELAY	LLC54AA
38	10	ALLEN-BRADLEY	8 PIN RELAY BASE	700-HN100
39	1	PRECISION DIGITAL	LIQUID LEVEL CONTROLLER, DUAL DISPLAY METER, 120 VAC, 4-20mA INPUT & OUTPUT, 4 RELAY OUTPUTS	PD6000-6R7
40	1	PRECISION DIGITAL	EXPANSION MODULE WITH 4 RELAY OUTPUTS	PDA-1004
41	1	PRECISION DIGITAL	8 PIN RELAY BASE	PDA-1002
42	1	MISSION CONTROLS	SUBM. TRANSDUCER, 4-20mA OUTPUT, CABLE LENGTH AS REQ'D, TERMINATE IN ENCL. W/DESICCANT, PROTECT REFERENCE TUBE IN CABLE DURING AND AFTER INSTALLATION.	WWLP-015-50 24111
43	1	ANCHOR SCIENTIFIC	FLOAT SWITCH, INTERNAL WEIGHT, CABLE LENGTH AS REQ'D, NORMALLY CLOSED CONTACT, MERCURY-FREE	GS130NC
44	3	ANCHOR SCIENTIFIC	FLOAT SWITCH, INTERNAL WEIGHT, CABLE LENGTH AS REQ'D, NORMALLY OPEN CONTACT, MERCURY-FREE	GS130NO
45	A/R	SQUARE D	GROUND BUS BAR	PK7GTA
46	A/R	THOMAS & BETTS	WIREWAY	TY SERIES

TRAVIS COUNTY WCID NO. 17
TYPICAL LIFT STATION STANDARDS

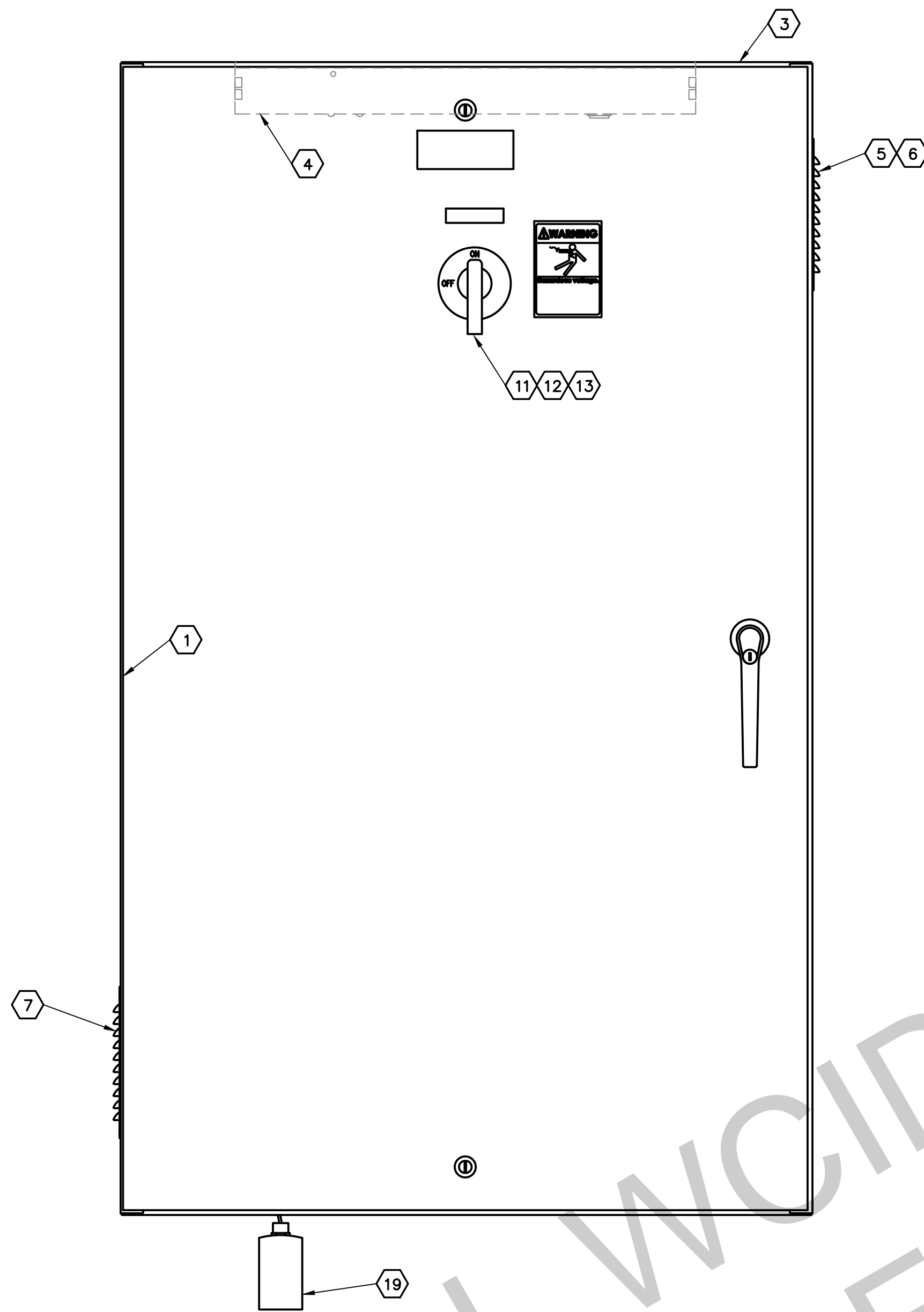
JRSA ENGINEERING, INC.
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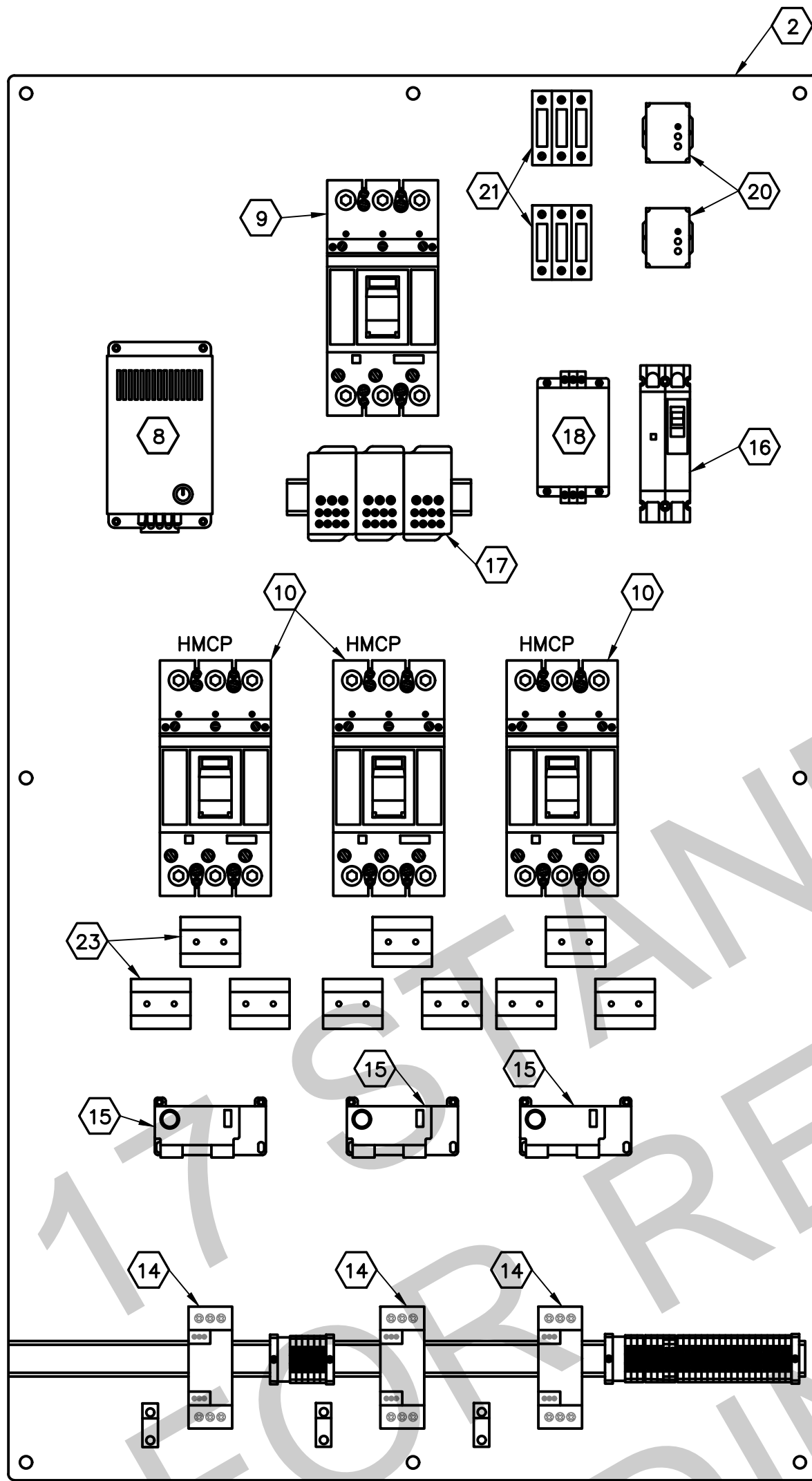
PUMP CONTROL PANEL
ELEVATION

NO.	DESCRIPTION	REVISIONS	DATE

SHEET
E-8
OF 21



EXTERIOR PANEL LAYOUT



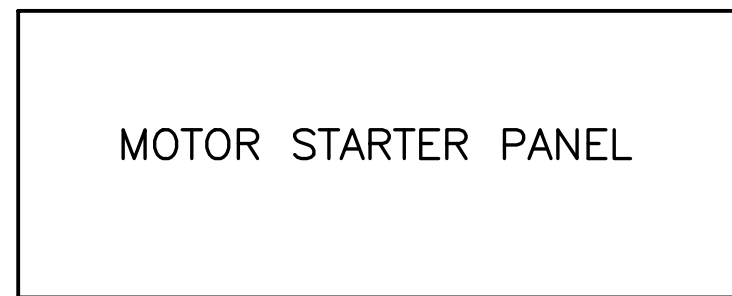
INTERIOR SWING DOOR LAYOUT
TYPICAL THREE PUMP POWER PANEL
FRONT VIEW
OUTER DOORS NOT SHOWN

1 PUMP POWER PANEL ELEVATION
SCALE: N.T.S.

GENERAL NOTES:

- DESIGN SHOWN FOR TRIPLEX PUMP SYSTEM. FOR DUPLEX SYSTEM, REMOVE ALL EQUIPMENT/CONDUIT/ETC. FOR THIRD PUMP.

1-B/W



2-B/W



DOOR TAG LAYOUT

LIST OF MATERIALS

ITEM	QTY	VENDOR	DESCRIPTION	REFERENCE
1	1	SAGINAW	ENCLOSURE 60"H x 36"W x 16"D, 304SS, NEMA 3R, THREE POINT LATCHING DOOR W/PADLOCKING HANDLE, #4 BRUSHED FINISHED	SCE-60EL3616SSLPL
2	1	SAGINAW	BACK PANEL	SCE-60P36
3	1	SAGINAW	DRIP SHIELD, 304SS	SCE-DS36SS
4	2	SAGINAW	PANEL LIGHT	SCE-LF24
5	1	SAGINAW	FILTER KIT	SCE-FLT66
6	2	SAGINAW	LOUVER KIT	SCE-AVK66SS
7	1	SAGINAW	COOLING FAN	SCE-CF6
8	1	HOFFMAN	HEATER, 400WATT	DAH4001B
9	1	SIEMENS	BREAKER, THERMAL MAGNETIC, 600VAC WITH LUGS	52PX6G6 (1)
10	3	SIEMENS	BREAKER, MOTOR CONTROL PROTECTOR, 600VAC, ADJUSTABLE TRIP, WITH LUGS	FXD63AXL (1)
11	1	SIEMENS	BREAKER HANDLE, ROTARY	CRHOH
12	1	SIEMENS	BREAKER OPERATOR	RHOFB0
13	1	SIEMENS	BREAKER SHAFT 16"	RHOSXD
14	3	SIEMENS	SOLID STATE STARTER, 460 VOLT	3RW40
15	3	SIEMENS	SOLID STATE OVERLOAD RELAY, ESP200, MANUAL RESET, 50-200A	48BTH3S00 (1)
16	1	SIEMENS	CIRCUIT BREAKER, UL489, 1-POLE, 10AMP	5SJ411-7HG40
17	3	ERICO	DISTRIBUTION BLOCK	569040
18	1	CONTROL CONCEPT	SURGE SUPPRESSOR, 120VAC, 5AMP, FILTERING, 45KA, 10YR WARRANTY	IC+105
19	1	DELTA	SURGE ARRESTOR, 480VAC	LA603
20	2	DIVERSIFIED ELECTRONICS	POWER MONITOR RELAY	SLA-440-ASA
21	6	BUSSMANN	FUSE, CLASS CC	FNQ-R-1
22	2	BUSSMAN	FUSE BLOCK, 3 PHASE, CLASS CC	BC6033P
23	9	FLEXCORE	CURRENT TRANSFORMER, 60:5	2SFT-600
24	3	ALLEN-BRADLEY	RELAY, TUBE BASE, 10AMP CONTACT, 3PDT, 120VAC, LED LIGHT	700-HA33A1-4
25	3	ALLEN-BRADLEY	11-PIN RELAY BASE	700-HN101
26	A/R	PHOENIX CONTACT	FUSEABLE TERMINAL BLOCK, FINGER SAFE, TYPE UT4-TG	3044142
27	A/R	PRECISION DIGITAL	FUSE PLUG FOR DISCONNECT TERMINAL BLOCK	3036806

(1) SEE ONE LINE DIAGRAM FOR SIZE

NAMEPLATE SCHEDULE

MARK	INSCRIPTION	LETTER SIZE
A	DANGER 480 VOLTS	1/2"
B	PANEL MAIN DISCONNECT	3/8"
C	PUMP NO. 1	3/8"
D	PUMP NO. 2	3/8"
E	PUMP NO. 3	3/8"
F	PUMP ON	3/8"
G	ELAPSED TIME	3/8"
H	PUMP OFF	3/8"
J	SSRV FAIL	3/8"
K	SSRV RESET	3/8"

KEYED NOTES

- THE PUMP POWER PANEL SHALL BE ASSEMBLED AND TESTED BY A SHOP MEETING U.L. STANDARD 508 FOR INDUSTRIAL CONTROLS. THE MOTOR AND CONTROL PANEL SHALL BE ASSEMBLED AND TESTED BY THE SAME MANUFACTURER SUPPLYING THE PUMP SO AS TO ENSURE SUITABILITY AND ASSURANCE OF EXPERIENCE IN MATCHING CONTROLS TO MOTORS AND TO ENSURE SINGLE SOURCE RESPONSIBILITY FOR THE EQUIPMENT.
- THE POWER PANEL SHALL COMPLY WITH NEC REGULATIONS AND HAVE A U.L. LABEL.
- PUMP POWER EQUIPMENT SHALL BE PROVIDED BY THE SUPPLIER AND BE CONTAINED IN A STAINLESS STEEL ENCLOSURE MEETING NEMA 3R REQUIREMENTS WITH A HINGED DOOR AND NEOPRENE GASKET. THE ENCLOSURE SHALL HAVE PROVISIONS FOR PADLOCKING. A NAMEPLATE SHALL BE PERMANENTLY AFFIXED TO THE PANEL AND INCLUDE THE MODEL NUMBER, VOLTAGE, PHASE, HERTZ, AMPERE RATING, AND HORSEPOWER RATING. A WARNING LABEL AGAINST ELECTRIC SHOCK SHALL BE PERMANENTLY AFFIXED TO THE OUTER DOOR.
- THE PUMP POWER PANEL SHALL BE MANUFACTURED BY SQUARE D OR CUTLER-HAMMER (OR APPROVED EQUAL).
- THE PUMP CONTROLLER SHALL INDICATE PUMP CONTROL OPERATIONS UTILIZING RED AND AMBER LED INDICATOR LIGHTS. LED INDICATOR LIGHTS SHALL PROVIDE ADEQUATE INFORMATION SO THAT THEY CAN BE USED FOR DIAGNOSIS IN TROUBLESHOOTING. EACH LED SHALL BE PERMANENTLY LABELED ON THE PUMP CONTROLLER AS TO FUNCTION.
- CIRCUIT BREAKERS, MOTOR CIRCUIT PROTECTORS AND MOTOR STARTERS ARE TO BE SIZED AS REQUIRED. SEE ONE LINE DIAGRAM.
- SURGE ARRESTOR IS TO BE LOCATED OUTSIDE OF THE PANEL ENCLOSURE.

REVISONS

NO.	DESCRIPTION	APP	DATE

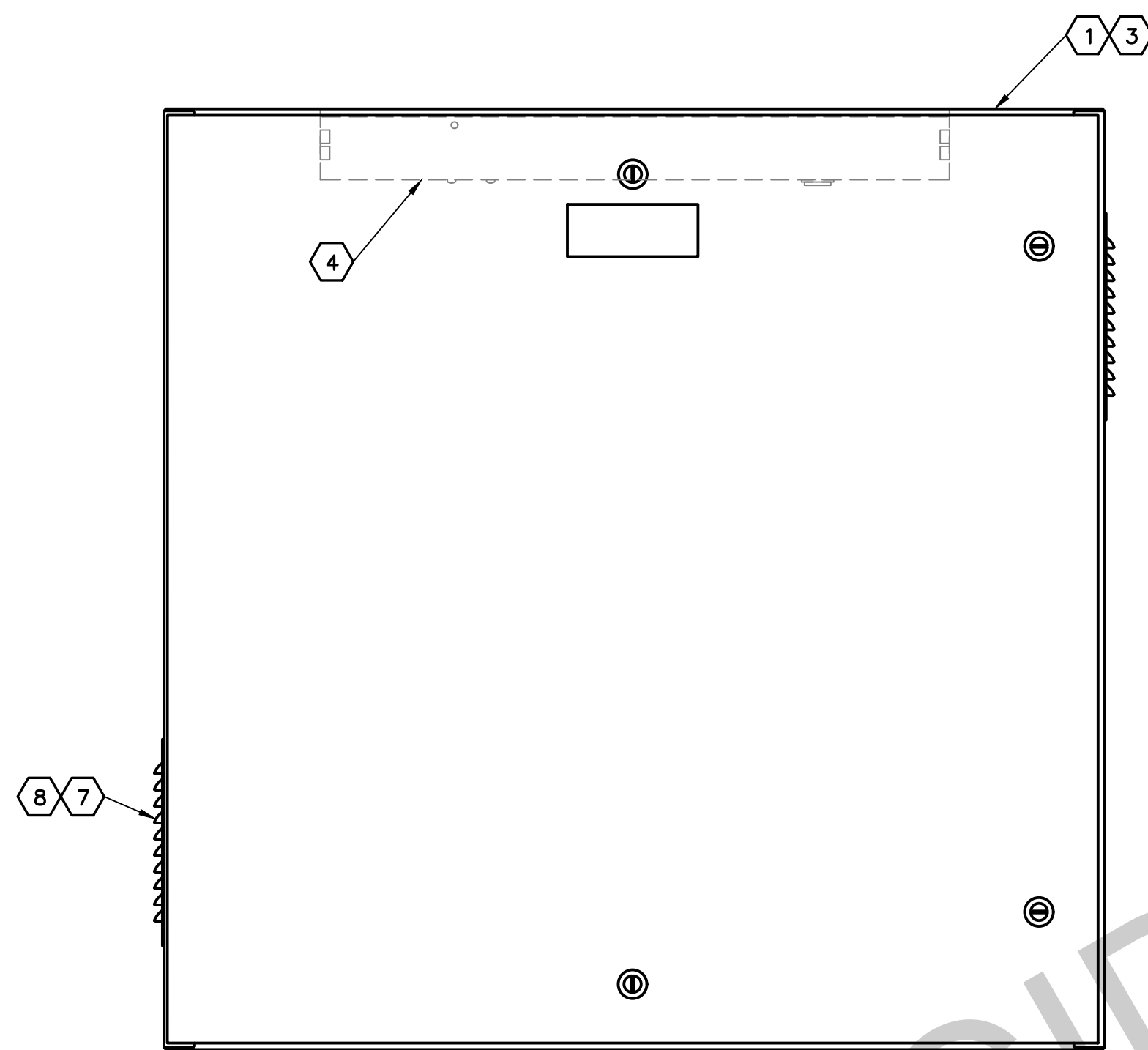
JRSA ENGINEERING, INC.
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6101 West Courtyard Drive, Bldg. 1, Suite 200
Austin, Texas 78730
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Engineering & Consulting
Texas Registered Engineering Firm F-17563

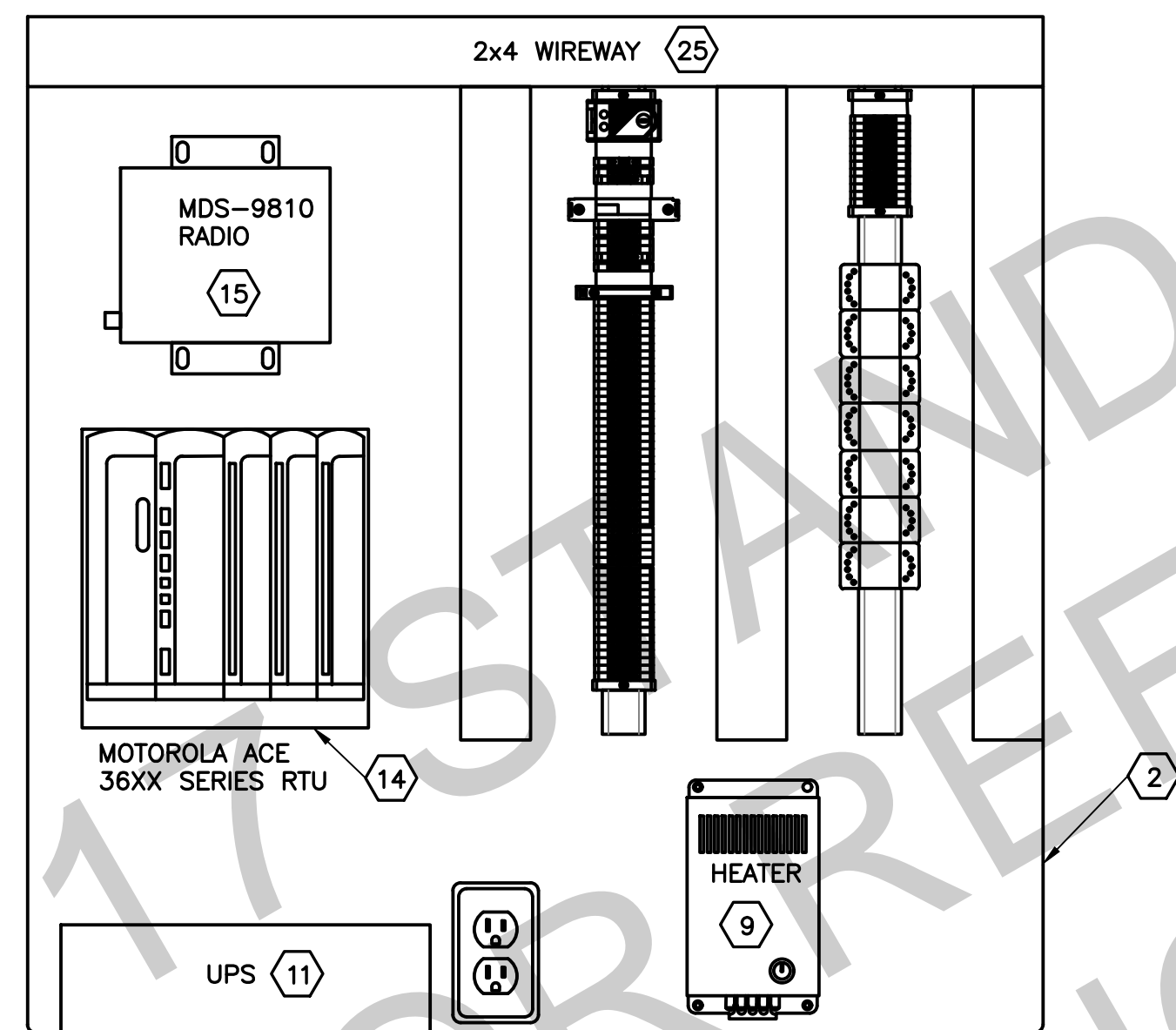
TRAVIS COUNTY WCID NO. 17
TYPICAL LIFT STATION STANDARDS

PUMP POWER PANEL ELEVATION

SHEET 9 OF 21



EXTERIOR PANEL LAYOUT



INTERIOR PANEL LAYOUT

1 RTU PANEL DETAILS
SCALE: N.T.S.

GENERAL NOTES:

1. DESIGN SHOWN FOR TRIPLEX PUMP SYSTEM. FOR DUPLEX SYSTEM, REMOVE ALL EQUIPMENT/CONDUIT/ETC. FOR THIRD PUMP.

1-B/W



LIST OF MATERIALS

ITEM	QTY	VENDOR	DESCRIPTION	REFERENCE
1	1	SAGINAW	ENCLOSURE 36"H x 36"W x 12"D, 304SS, NEMA 3R, THREE POINT LATCHING DOOR W/PADLOCKING HANDLE, #4 BRUSHED FINISHED	SCE-36EL3612SSLPL
2	1	SAGINAW	BACK PANEL	SCE-36P36
3	1	SAGINAW	DRIP SHIELD, 304SS	SCE-DS36SS
4	2	SAGINAW	PANEL LIGHT	SCE-LF24
5	1	SAGINAW	THERMOSTAT, 1A INDUCTIVE RATING, CONTACTS OPEN ON TEMPERATURE DROP	SCE-TEMNO
6	1	SAGINAW	FILTER KIT	SCE-FLT66
7	2	SAGINAW	LOUVER KIT	SCE-AVK66SS
8	1	SAGINAW	COOLING FAN	SCE-CF6
9	1	HOFFMAN	HEATER, 400WATT	DAH4001B
10	1	DELTA ELECTRONICS	POWER SUPPLY, 24V, 2 5A, CURRENT LIMITING, SHORT CIRCUIT & OVERLOAD PROTECTION BUILT IN	DPR024V060W1AZ
11	1	APC	UNINTERRUPTIBLE SURGE PROTECTED POWER SUPPLY, 390 WATTS/ 650VA, THREE SURGE PROTECTED OUTLETS, THREE BATTERY BACKUP OUTLETS	BE650G1
12	7	ALLEN-BRADLEY	700-HA GENERAL PURPOSE TUBE BASE, 10AMP CONTACT, 3PDT, 24VAC, LED LIGHT	700-HA33Z24-4
13	7	ALLEN-BRADLEY	11-PIN RELAY BASE	700-HN101
SCADA EQUIPMENT				
14	1	MOTOROLA	PLC, ACE 3640 CPU, 3 I/O SLOT FRAME, 38CM x 38CM METAL CHASSIS, ONE 16DI CARD, ONE 16DI/4DO/4AI MIXED I/O CARD, ONE 8DI/4DO MIXED I/O CARD, ONE 20WIRE/3METER CABLE, ONE 40WIRE/3METER CABLE, 120AC POWER SUPPLY W/BATTERY CHARGER, 6.5AH BATTERY BACKUP	F7509 V103 V214 V265 V245 V253 V356 V261 V114 V152AK
15	1	MDS	RADIO	9810
16	1	KATHREIN-SCALE	YAGI ANTENNA	TY-900
17	1	POLYPHASER	COAXIAL SURGE PROTECTOR	IS-B50LN-C2
18	A/R	TIMES	FLEXIBLE LOW-LOSS COMMUNICATION COAXIAL CABLE	LMR-600
19	2	TIMES	ANTENNA CABLE CONNECTORS, QUICK CONNECT STYLE	EZ-600-NMH-X
20	8	TIMES	COAXIAL GROUNDING CABLE KIT, MFG PART # GK-S900TT	GK-S600TT
21	1	SAT-PAK	6" JUMPER, LMR-195, N MALE TO TNC MALE	ST-SP195-72NMTM
TYPICAL PANEL EQUIPMENT				
22	A/R	PHOENIX CONTACT	FUSEABLE TERMINAL BLOCK, FINGER SAFE, TYPE UT4-TG	3046142
23	A/R	PHOENIX CONTACT	GROUND TERMINAL BLOCK, FINGER SAFE 26-10AWG, 41AMP, 800VOLT, TYPE UT4-PE	3044126
24	A/R	SQUARE D	GROUND BUS BAR	PK7GTA
25	A/R	THOMAS & BETTS	WIREWAY	TY SERIES

NO.	DESCRIPTION	APPROVED	DATE

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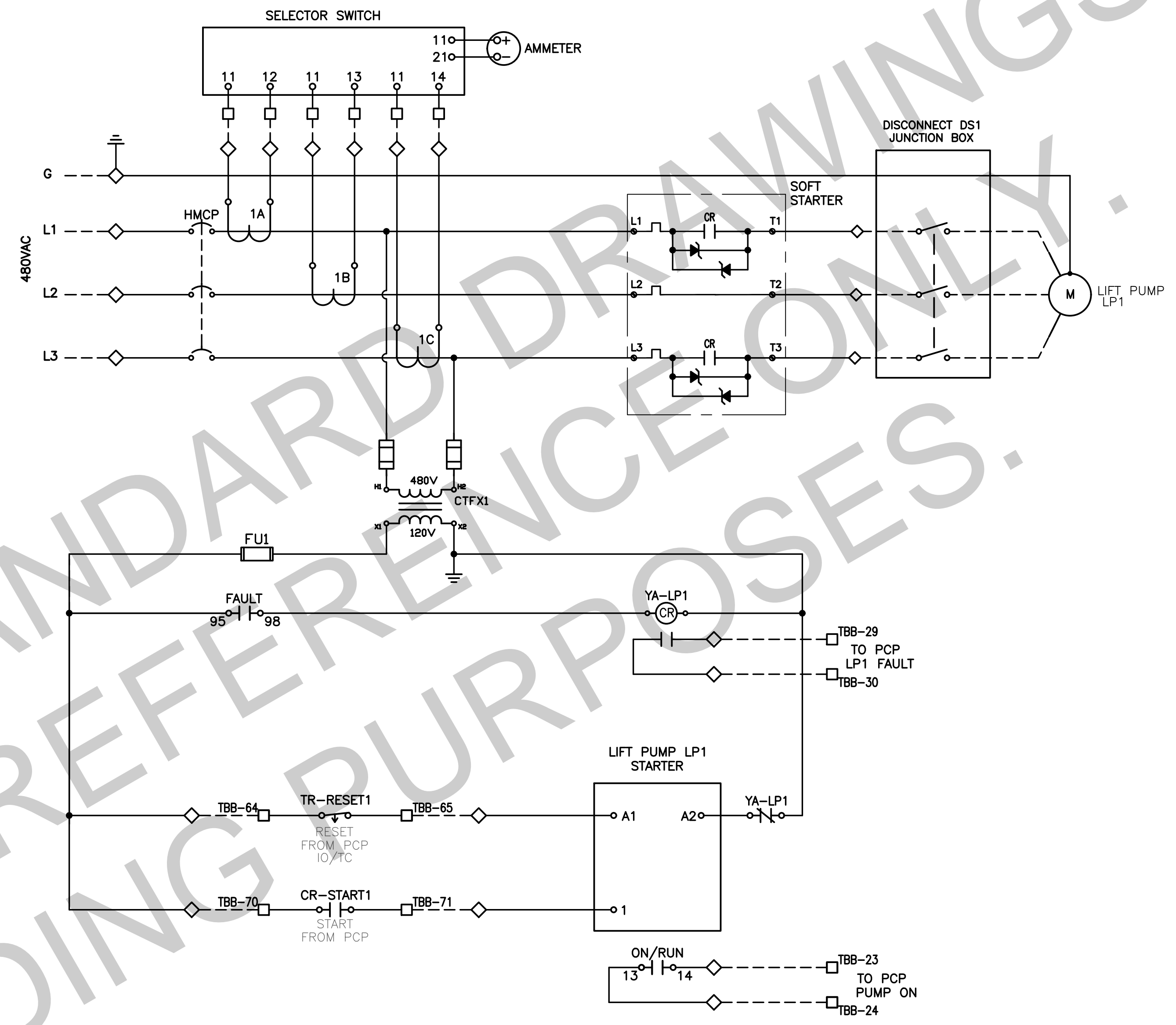
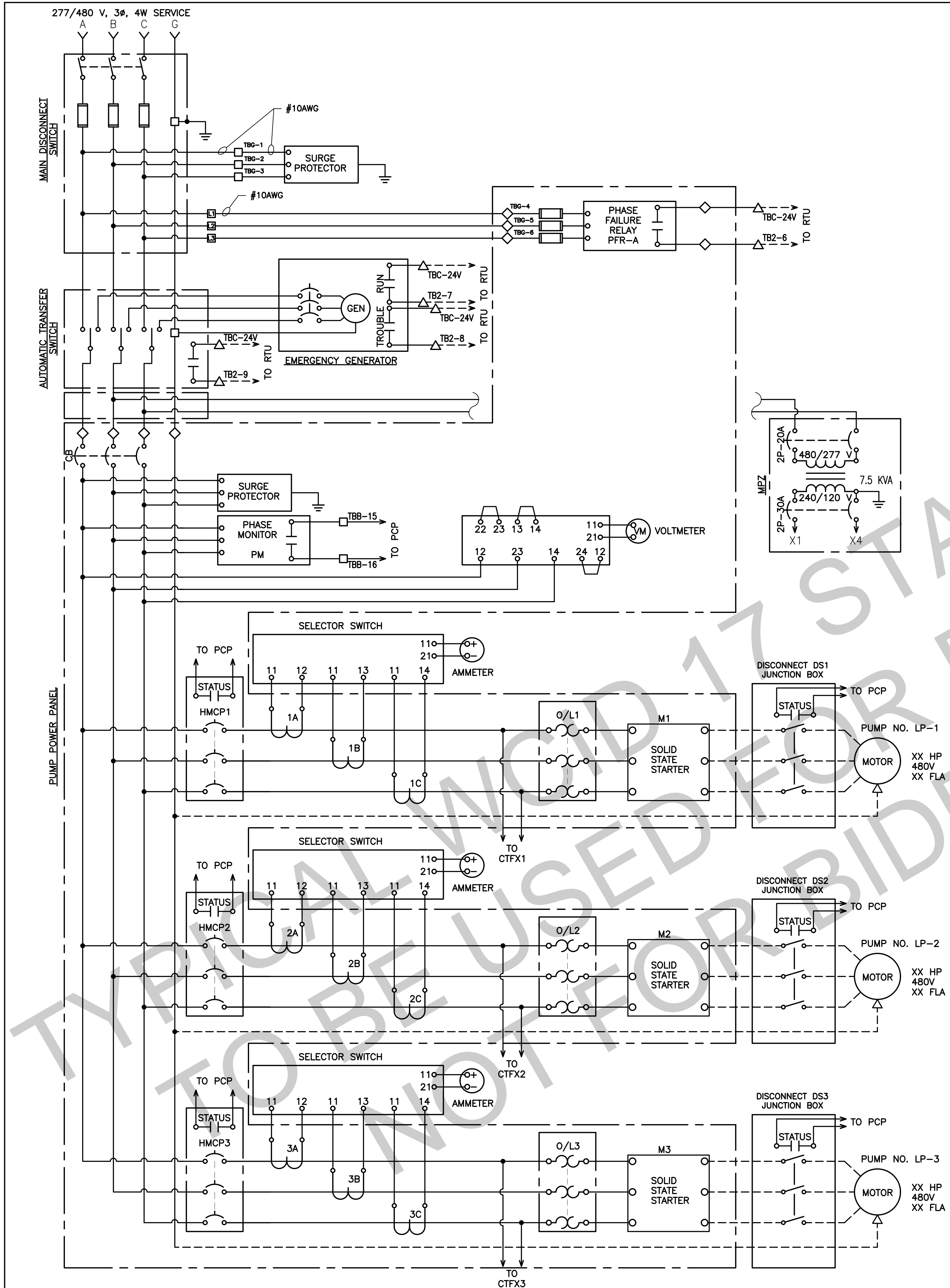
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Texas Registered Engineering Firm F-17563

TRAVIS COUNTY WCID NO. 17
TYPICAL LIFT STATION STANDARDS

RTU PANEL ELEVATION

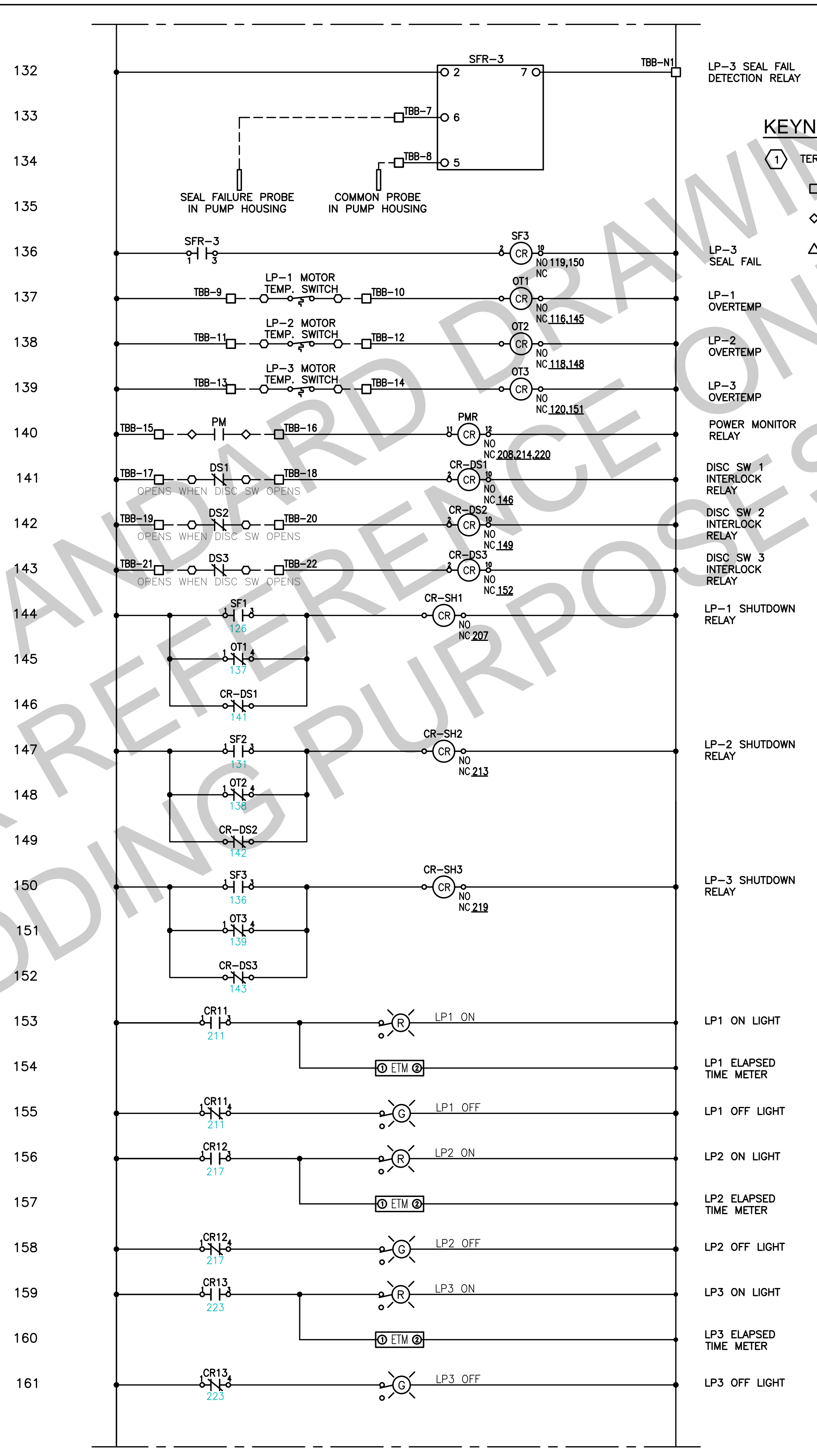
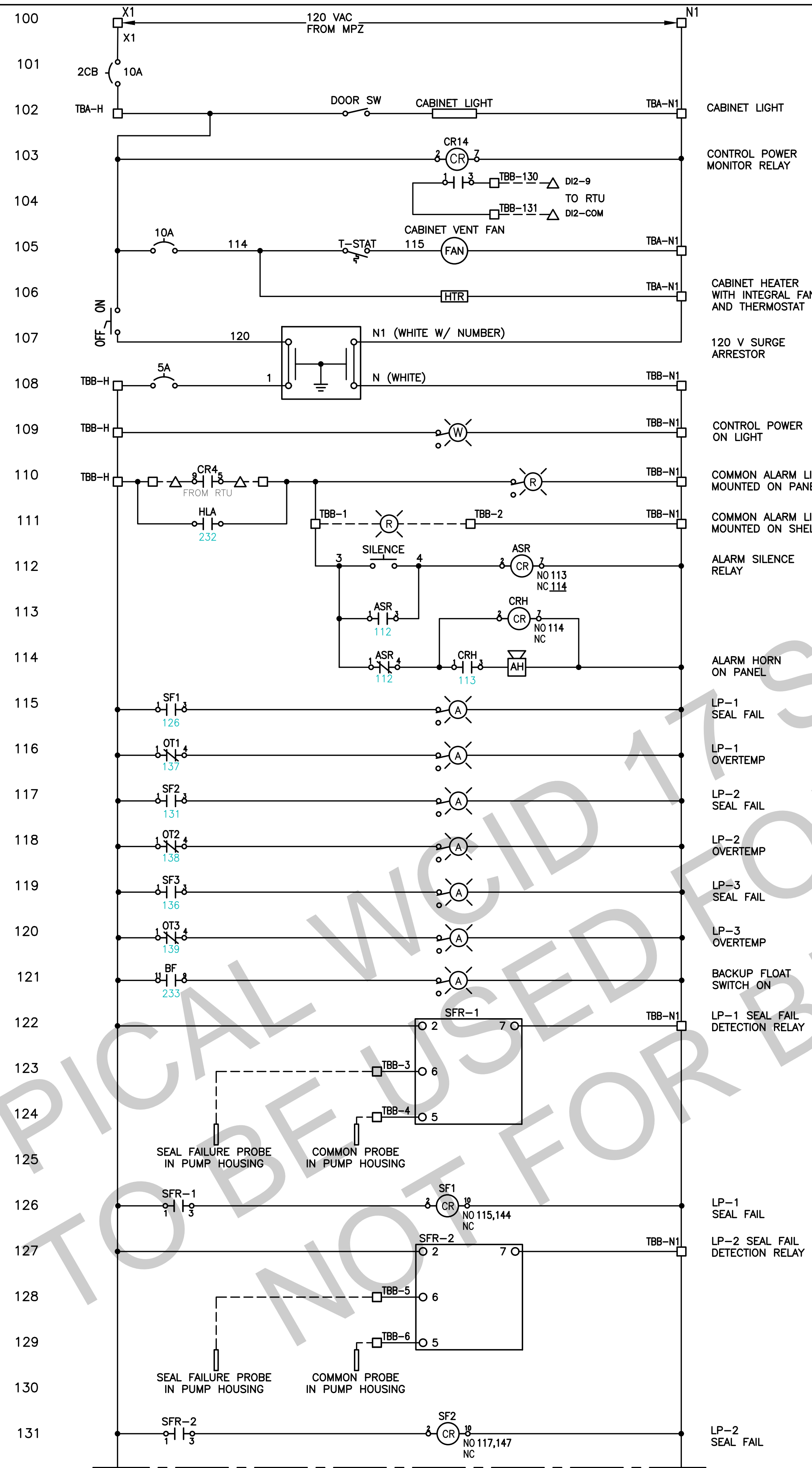


① LIFT STATION PUMP MOTOR STARTER (TYP. FOR 3)
NOTE: TERMINAL BLOCK NUMBERS SHOWN ARE FOR LP1

- KEYNOTES:**
- ① TERMINAL DESIGNATIONS ARE AS FOLLOWS:
 - TYPICAL CONTROL PANEL "PCP" TERMINAL
 - ◇ TYPICAL POWER PANEL "PPP" TERMINAL
 - △ TYPICAL "RTU" PANEL TERMINAL

- GENERAL NOTES:**
1. MOTOR STARTERS, GENERATOR, DISCONNECT, TRANSFER SWITCH, CIRCUIT BREAKERS AND ANY OTHER UN-SIZED EQUIPMENT TO BE SIZED APPROPRIATELY ACCORDING TO PROJECT REQUIREMENTS.
 2. DESIGN SHOWN FOR TRIPLEX PUMP SYSTEM. FOR DUPLEX SYSTEM, REMOVE ALL EQUIPMENT/CONDUIT/ETC. FOR THIRD PUMP.
 3. SOFT START WIRING SHOWN BASED ON SIEMENS 3RW40 SIZE 2-4. FOR LARGER SIZE, PROVIDE ADDITIONAL REMOTE RESET MODULE AND WIRE ACCORDING TO MANUFACTURER. PRODUCTS FROM OTHER SPEC'D MANUFACTURERS WILL BE ACCEPTED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY ADDITIONAL DESIGN AND/OR CONSTRUCTION COSTS THAT MAY RESULT FROM THE USE OF AN ALTERNATE MANUFACTURER.

TRAVIS COUNTY WCID NO. 17 TYPICAL LIFT STATION STANDARDS		ELECTRICAL SCHEMATICS 1	
SHEET E-11 OF 21		<p>JRSA ENGINEERING, INC. Consulting Electrical Engineers, TSPG #F-0997 6101 West Courtyard Drive, Bldg. 1, Suite 200 Austin, Texas 78750 (512) 452-8789</p> <p>11130 Jollyville Rd., Ste. 101 Austin, Texas 78758 (512) 840-6880</p> <p>Green Civil Design Engineering & Consulting Texas Registered Engineering Firm F-17563</p>	
NO.		REVISIONS	
DESCRIPTION		APP	
DATE		DATE	



KEYNOTES:

① TERMINAL DESIGNATIONS ARE AS FOLLOWS:

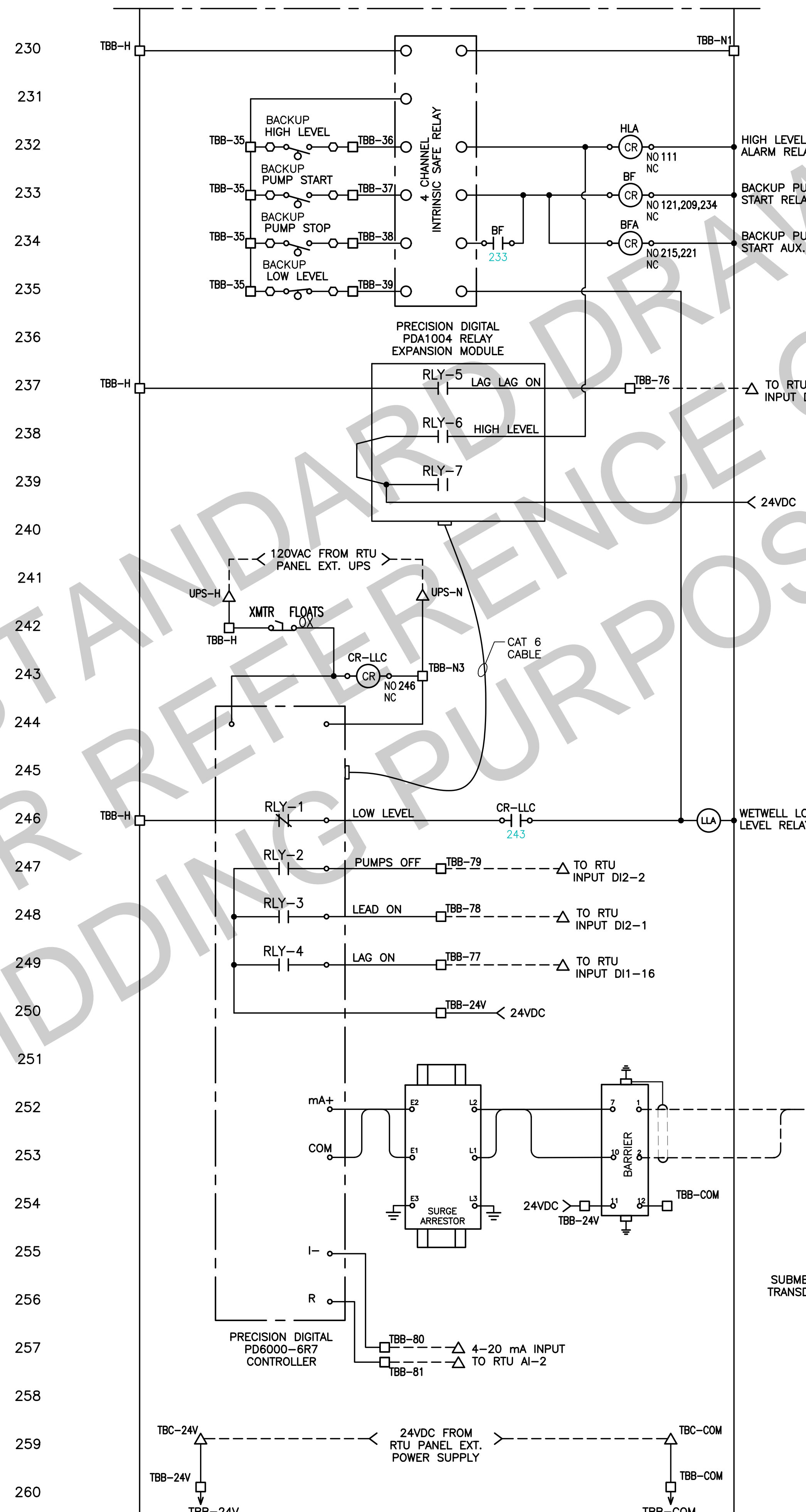
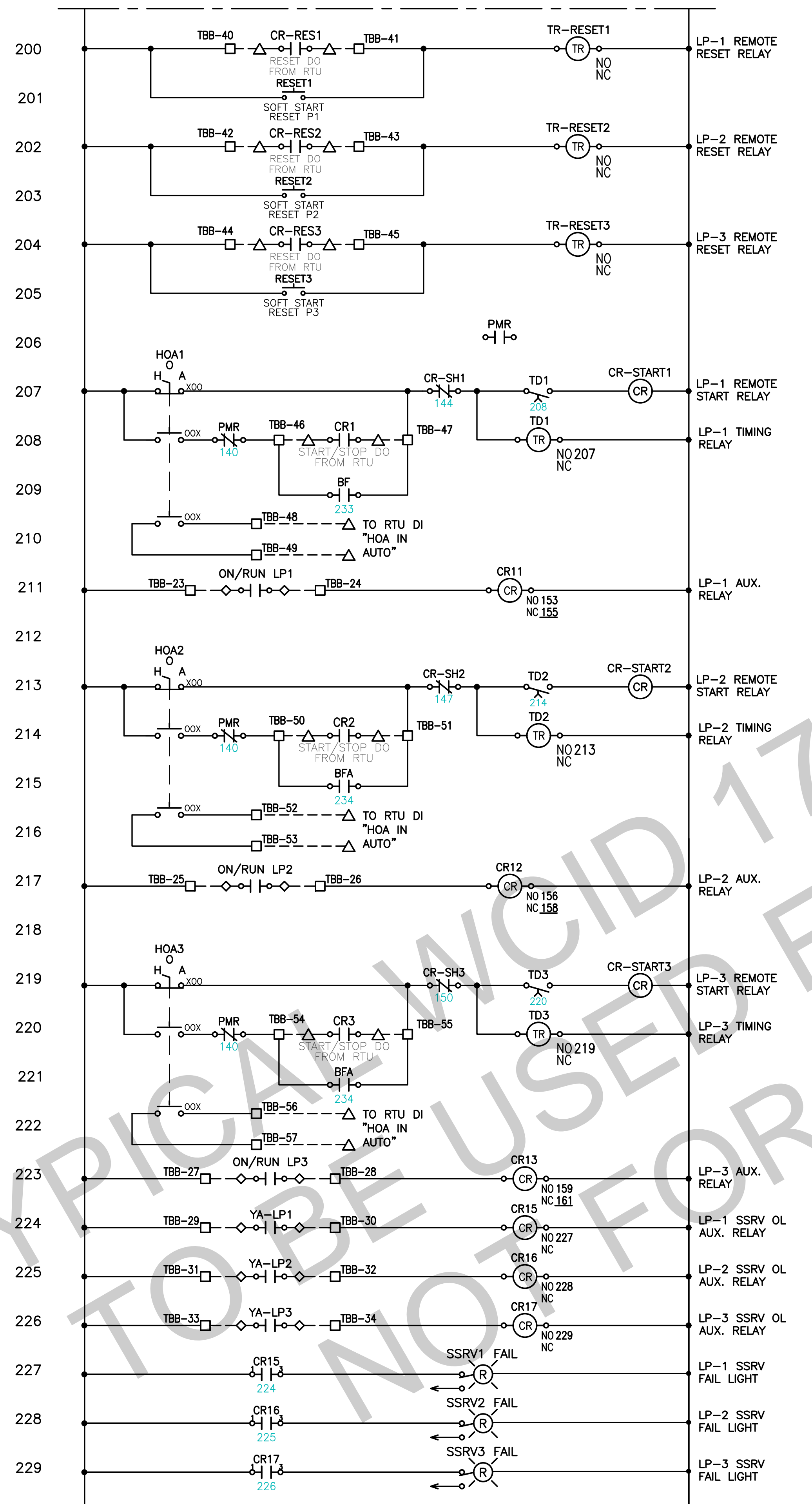
□ TYPICAL CONTROL PANEL "PCP" TERMINAL

◇ TYPICAL POWER PANEL "PPP" TERMINAL

△ TYPICAL "RTU" PANEL TERMINAL

REVISIONS		DATE
NO.	DESCRIPTION	APP

JRSA ENGINEERING, INC. Consulting Electrical Engineers, TBBP #F-0997 6101 West Courtyard Drive, Bldg. 1, Suite 200 Austin, Texas 78750 (512) 452-8789	
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TRAVIS COUNTY WCID NO. 17 TYPICAL LIFT STATION STANDARDS	ELECTRICAL SCHEMATICS 2
SHEET F-12 OF 21	



KEYNOTES:

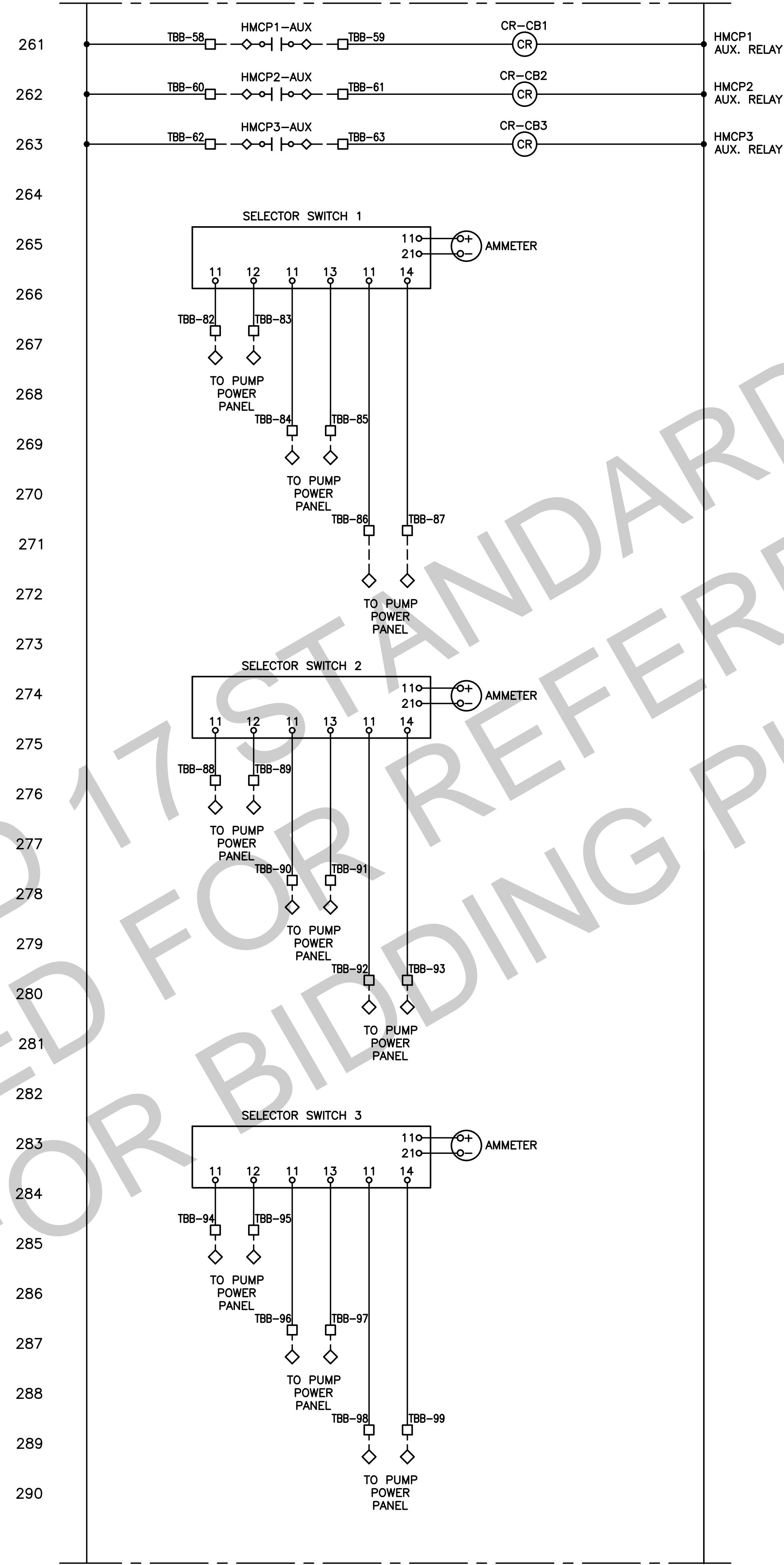
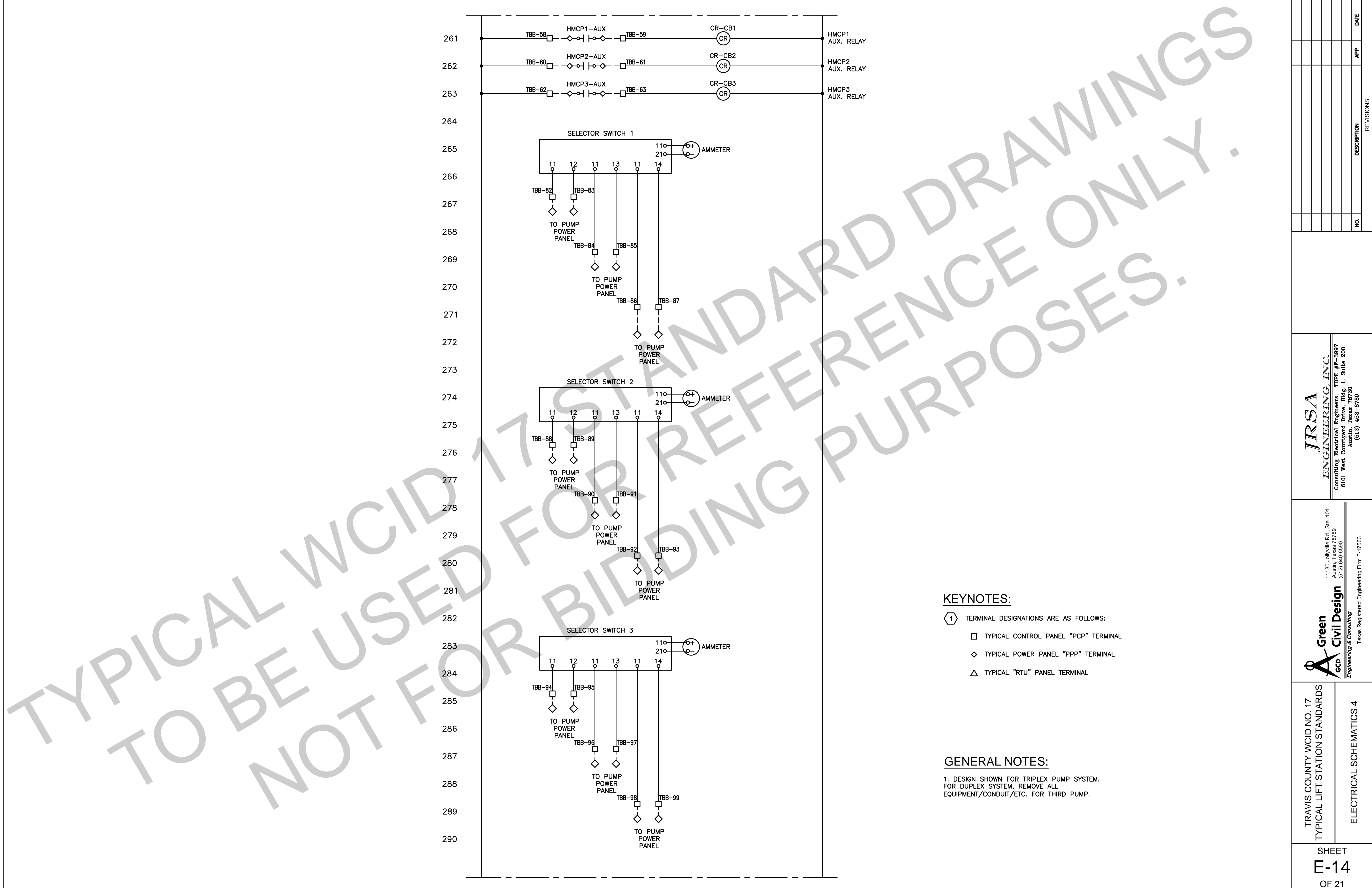
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- △ TYPICAL "RTU" PANEL TERMINAL

GENERAL NOTES:

1. DESIGN SHOWN FOR TRIPLEX PUMP SYSTEM. FOR DUPLEX SYSTEM, REMOVE ALL EQUIPMENT/CONDUIT/ETC. FOR THIRD PUMP.

NO.	DESCRIPTION	REVISIONS	DATE

JRSA ENGINEERING, INC.	
Consulting Electrical Engineers, TBBP #F-0997 6101 West Courtyard Drive, Bldg. 1, Suite 200 Austin, Texas 78720 (512) 452-8789	
Green Civil Design Engineering & Consulting GCD	11130 Jollyville Rd., Ste. 101 Austin, Texas 78725 (512) 940-6800
Texas Registered Engineering Firm F-17563	
TRAVIS COUNTY WCID NO. 17	TYPICAL LIFT STATION STANDARDS
ELECTRICAL SCHEMATICS 3	
SHEET	
E-13	
OF 21	

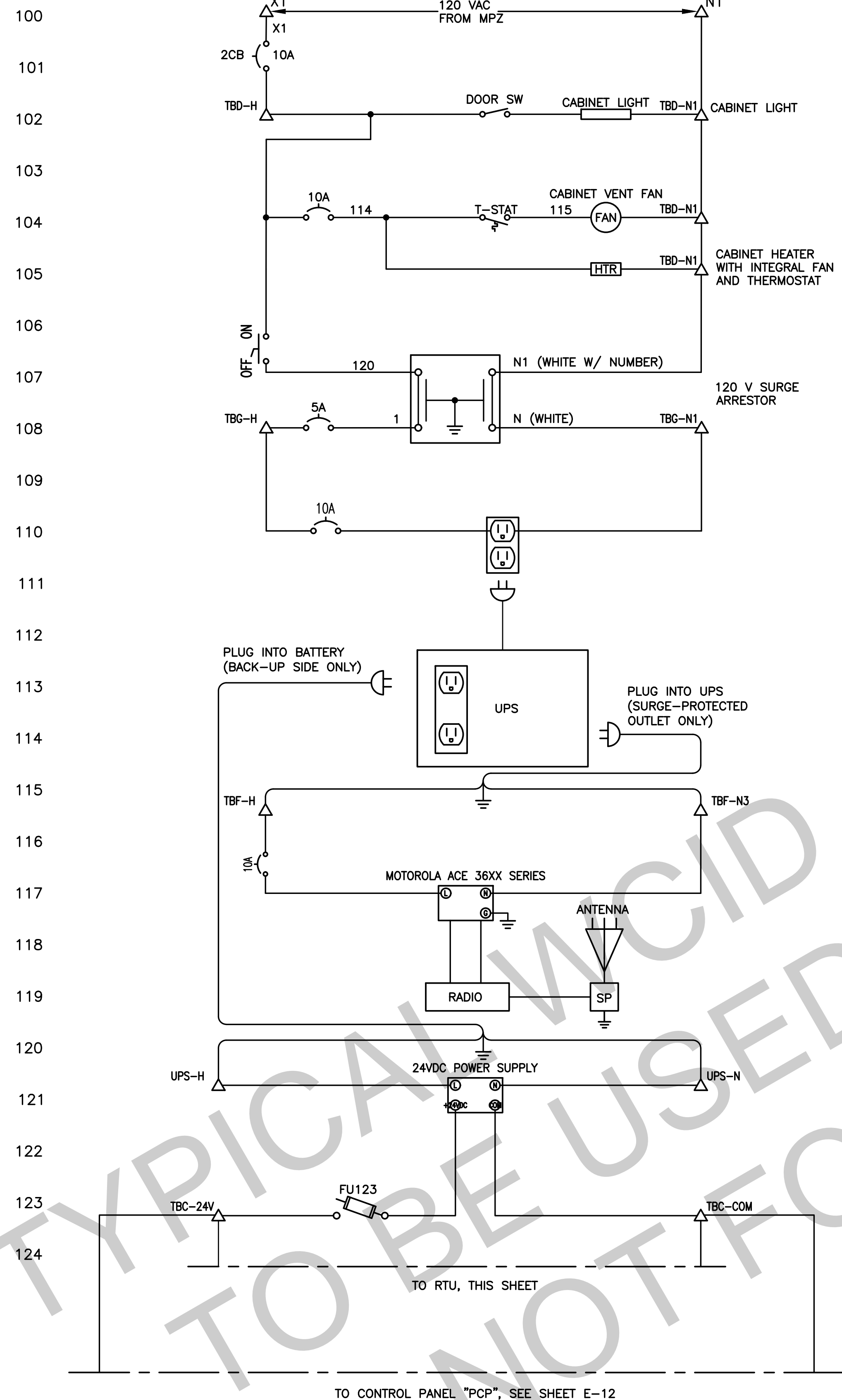


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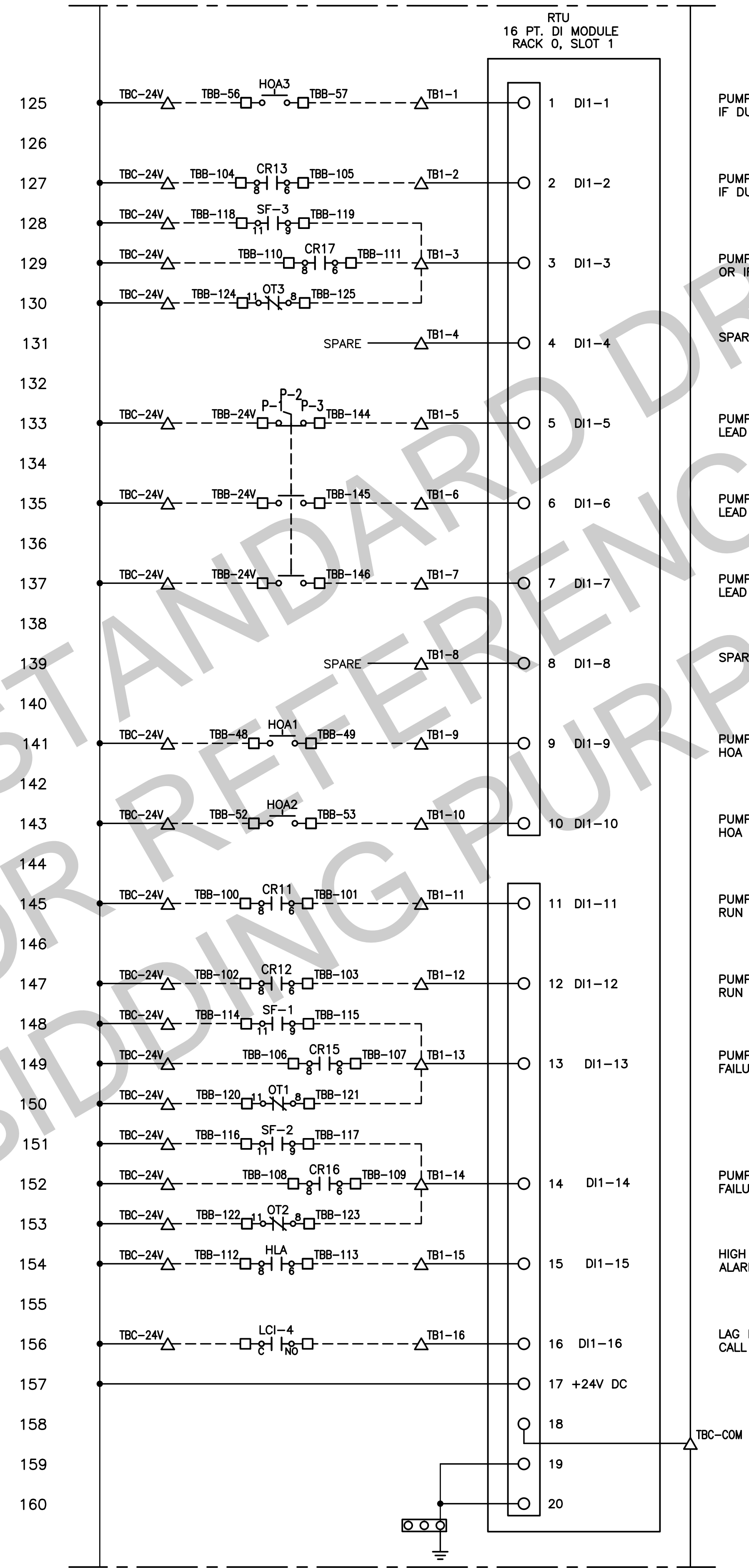
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<p>JRSA ENGINEERING, INC. Consulting Electrical Engineers, TEPG #F-0997 6101 West Courtyard Drive, Bldg. 1, Suite 200 Austin, Texas 78730 (512) 452-8789</p>					
<p>Green Civil Design Engineering & Consulting 11130 Jollyville Rd., Ste. 101 Austin, Texas 78758 (512) 640-6300 Texas Registered Engineering Firm F-17563</p>					
TRAVIS COUNTY WCID NO. 17 TYPICAL LIFT STATION STANDARDS				ELECTRICAL SCHEMATICS 4	
SHEET E-14 OF 21					



1 RTU SCHEMATICS



- 1 DI1-1 PUMP #3 AUTO, OR IF DUPLEX: SPARE
- 2 DI1-2 PUMP #3 RUN, OR IF DUPLEX: SPARE
- 3 DI1-3 PUMP #3 FAILURE, OR IF DUPLEX: SPARE
- 4 DI1-4 SPARE
- 5 DI1-5 PUMP #1 LEAD SELECTOR
- 6 DI1-6 PUMP #2 LEAD SELECTOR
- 7 DI1-7 PUMP #3 LEAD SELECTOR
- 8 DI1-8 SPARE
- 9 DI1-9 PUMP #1 HOA IN AUTO
- 10 DI1-10 PUMP #2 HOA IN AUTO
- 11 DI1-11 PUMP #1 RUN
- 12 DI1-12 PUMP #2 RUN
- 13 DI1-13 PUMP #1 FAILURE
- 14 DI1-14 PUMP #2 FAILURE
- 15 DI1-15 HIGH LEVEL ALARM
- 16 DI1-16 LAG PUMP CALL
- 17 +24V DC
- 18 TBC-COM
- 19
- 20

KEYNOTES:

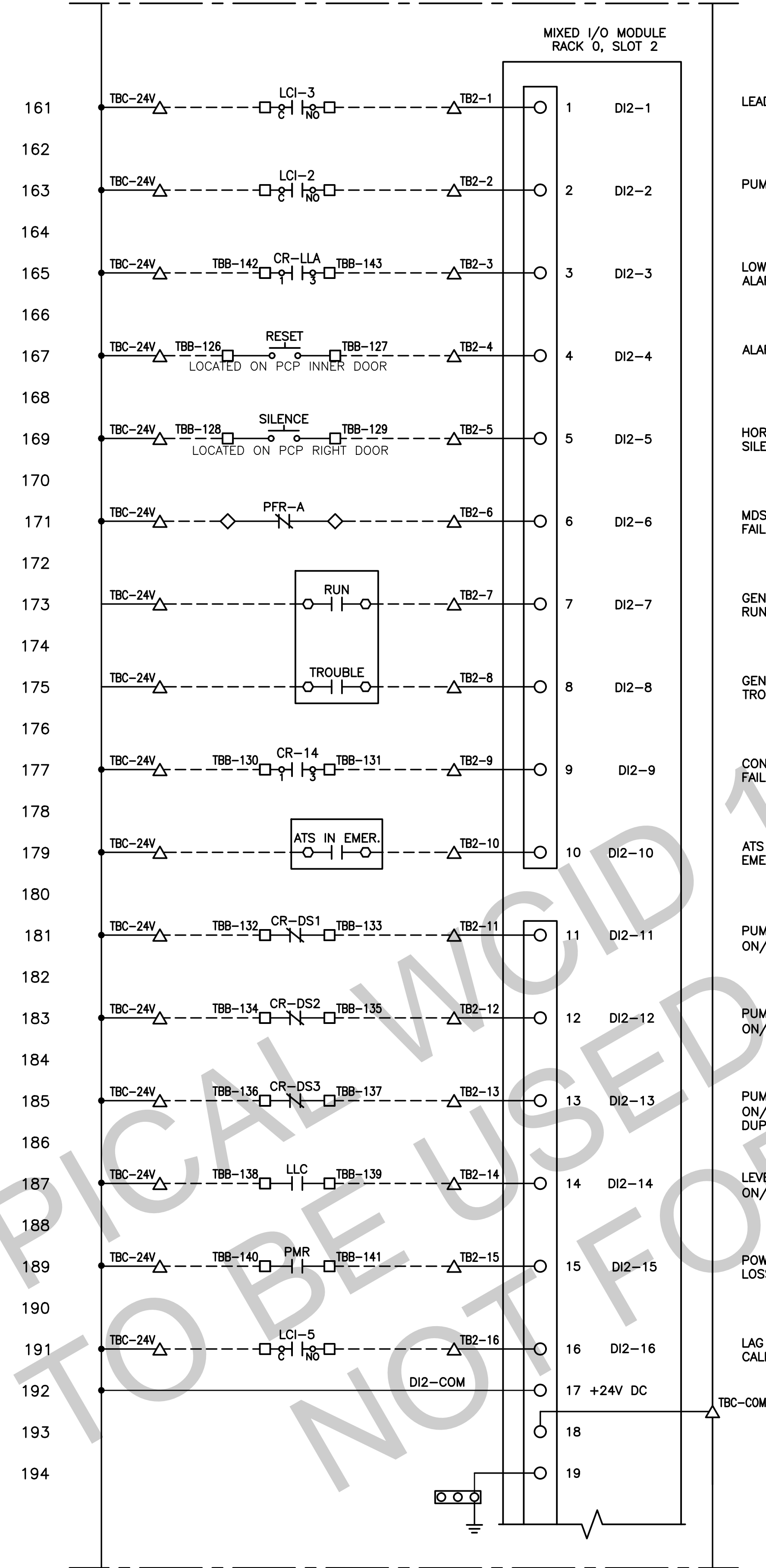
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TRAVIS COUNTY WCID NO. 17 TYPICAL LIFT STATION STANDARDS		ELECTRICAL SCHEMATICS 5									
SHEET E-15 OF 21		<p>JRSA ENGINEERING, INC. Consulting Electrical Engineers, TBBP #E-9987 6101 West Courtyard Drive, Bldg. 1, Suite 200 Austin, Texas 78750 (512) 408-8788</p> <p>Green Civil Design Engineering & Consulting 11300 Jollyville Rd., Ste. 101 Austin, Texas 78758 (512) 840-6800 Texas Registered Engineering Firm F-17563</p>									
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NO.	DESCRIPTION	APP	DATE								



161 TBC-24V LCI-3 TB2-1 1 DI2-1 LEAD PUMP CALL

162 TBC-24V LCI-2 TB2-2 2 DI2-2 PUMPS OFF

163 TBC-24V TBB-142 CR-LLA TBB-143 TB2-3 3 DI2-3 LOW LEVEL ALARM

164

165 TBC-24V TBB-126 RESET TBB-127 TB2-4 4 DI2-4 ALARM RESET
LOCATED ON PCP INNER DOOR

166

167 TBC-24V TBB-128 SILENCE TBB-129 TB2-5 5 DI2-5 HORN SILENCE
LOCATED ON PCP RIGHT DOOR

168

169 TBC-24V PFR-A TB2-6 6 DI2-6 MDS PHASE FAILURE

170

171 TBC-24V RUN TB2-7 7 DI2-7 GENERATOR RUN

172

173 TBC-24V TROUBLE TB2-8 8 DI2-8 GENERATOR TROUBLE

174

175 TBC-24V TBB-130 CR-14 TBB-131 TB2-9 9 DI2-9 CONTROL POWER FAILURE

176

177 TBC-24V ATS IN EMER. TB2-10 10 DI2-10 ATS ON EMERGENCY POWER

178

179 TBC-24V TBB-132 CR-DS1 TBB-133 TB2-11 11 DI2-11 PUMP #1 DISC. ON/OFF

180

181 TBC-24V TBB-134 CR-DS2 TBB-135 TB2-12 12 DI2-12 PUMP #2 DISC. ON/OFF

182

183 TBC-24V TBB-136 CR-DS3 TBB-137 TB2-13 13 DI2-13 PUMP #3 DISC. ON/OFF OR IF DUPLEX, SPARE

184

185 TBC-24V TBB-138 LLC TBB-139 TB2-14 14 DI2-14 LEVEL CONTROLLER ON/OFF

186

187 TBC-24V TBB-140 PMR TBB-141 TB2-15 15 DI2-15 POWER PANEL LOSS OF POWER

188

189 TBC-24V LCI-5 TB2-16 16 DI2-16 LAG LAG PUMP CALL

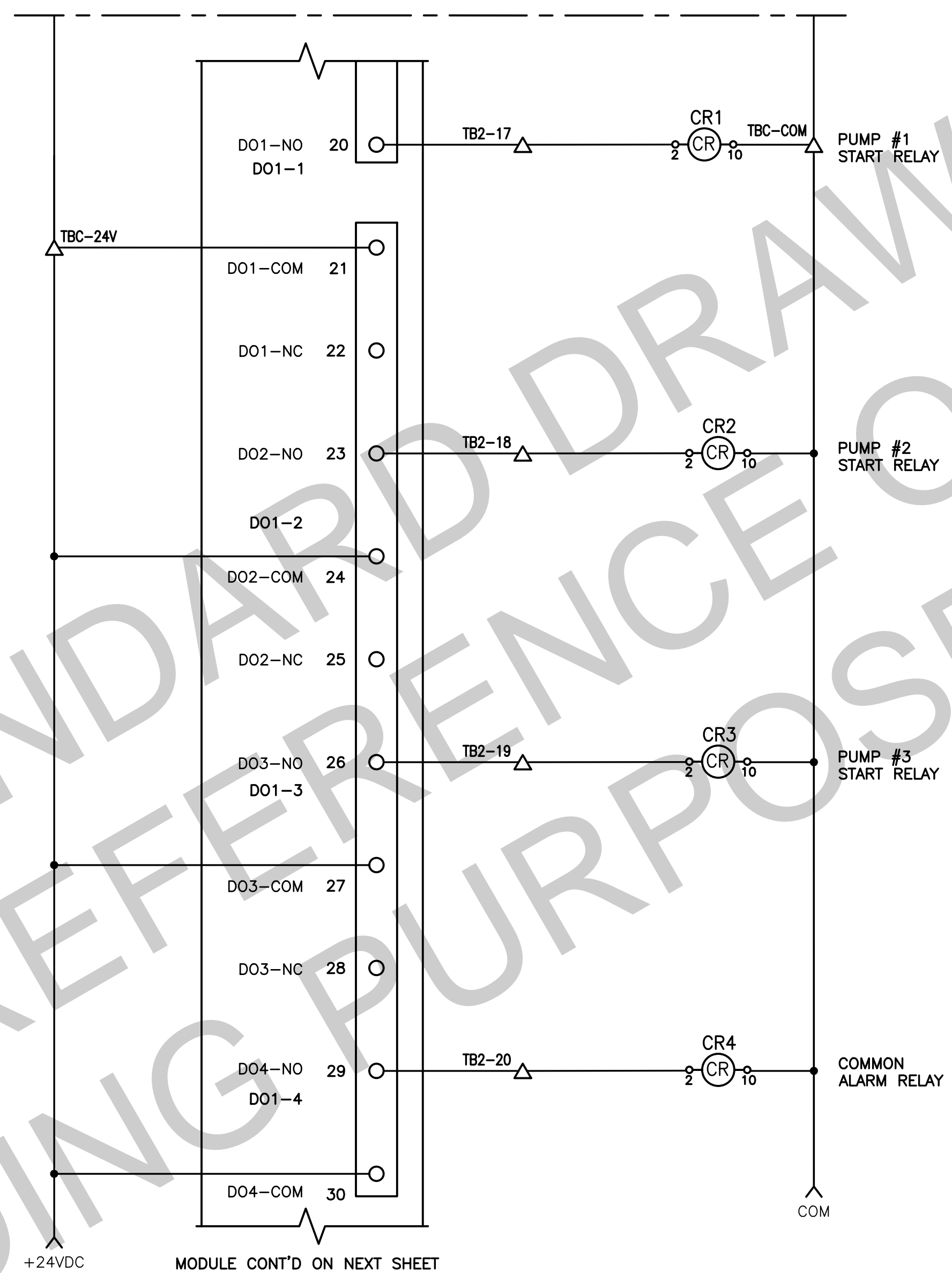
190

191

192

193

194



① RTU SCHEMATICS (CONT'D)

GENERAL NOTES:

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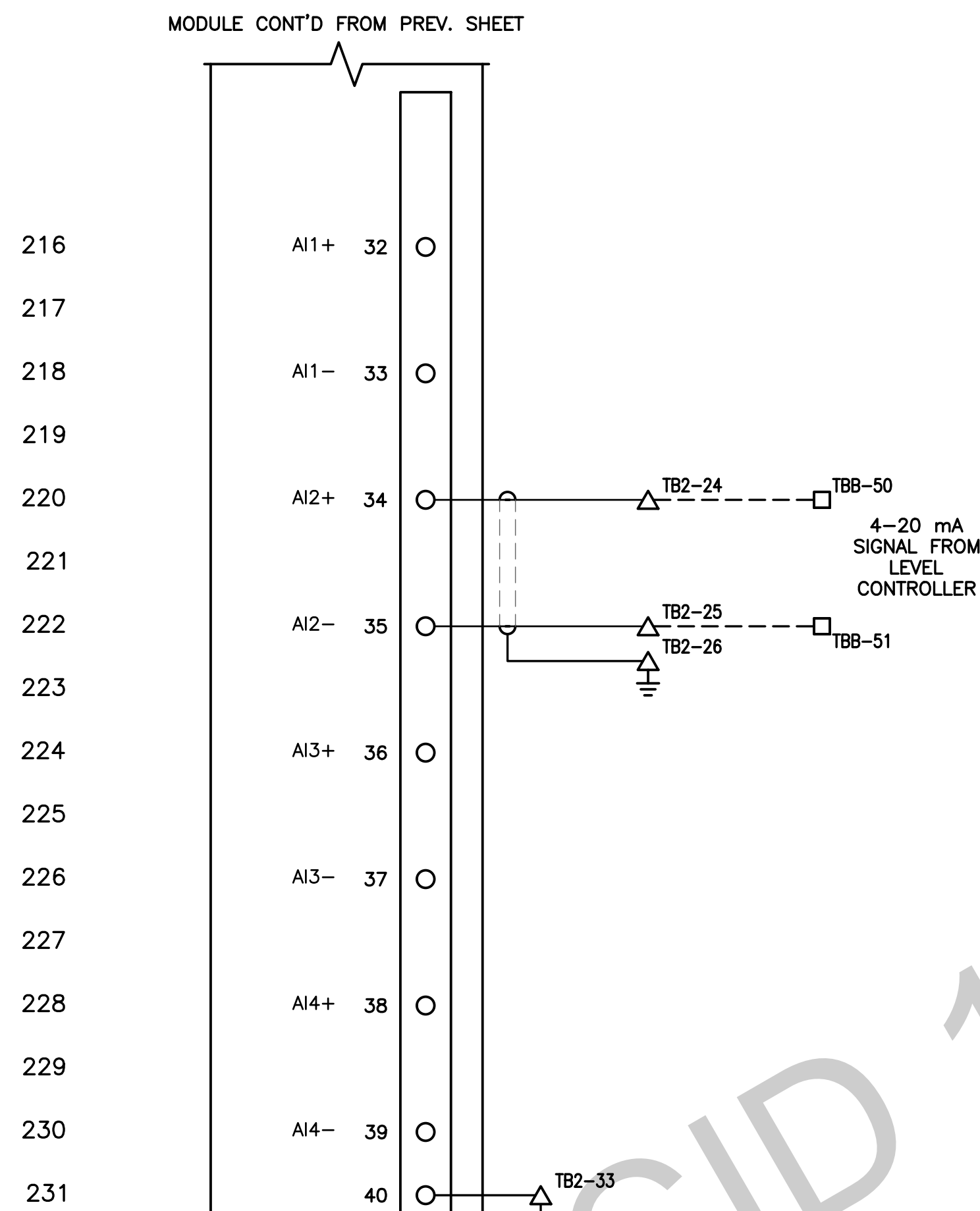
JRSA
ENGINEERING, INC.
Consulting Electrical Engineers, TSPG #F-0997
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(512) 452-8789

11130 Jollyville Rd., Ste. 101
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(512) 840-6890

Green
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Engineering & Consulting

Texas Registered Engineering Firm F-17563

TRAVIS COUNTY WCID NO. 17 TYPICAL LIFT STATION STANDARDS	ELECTRICAL SCHEMATICS 6
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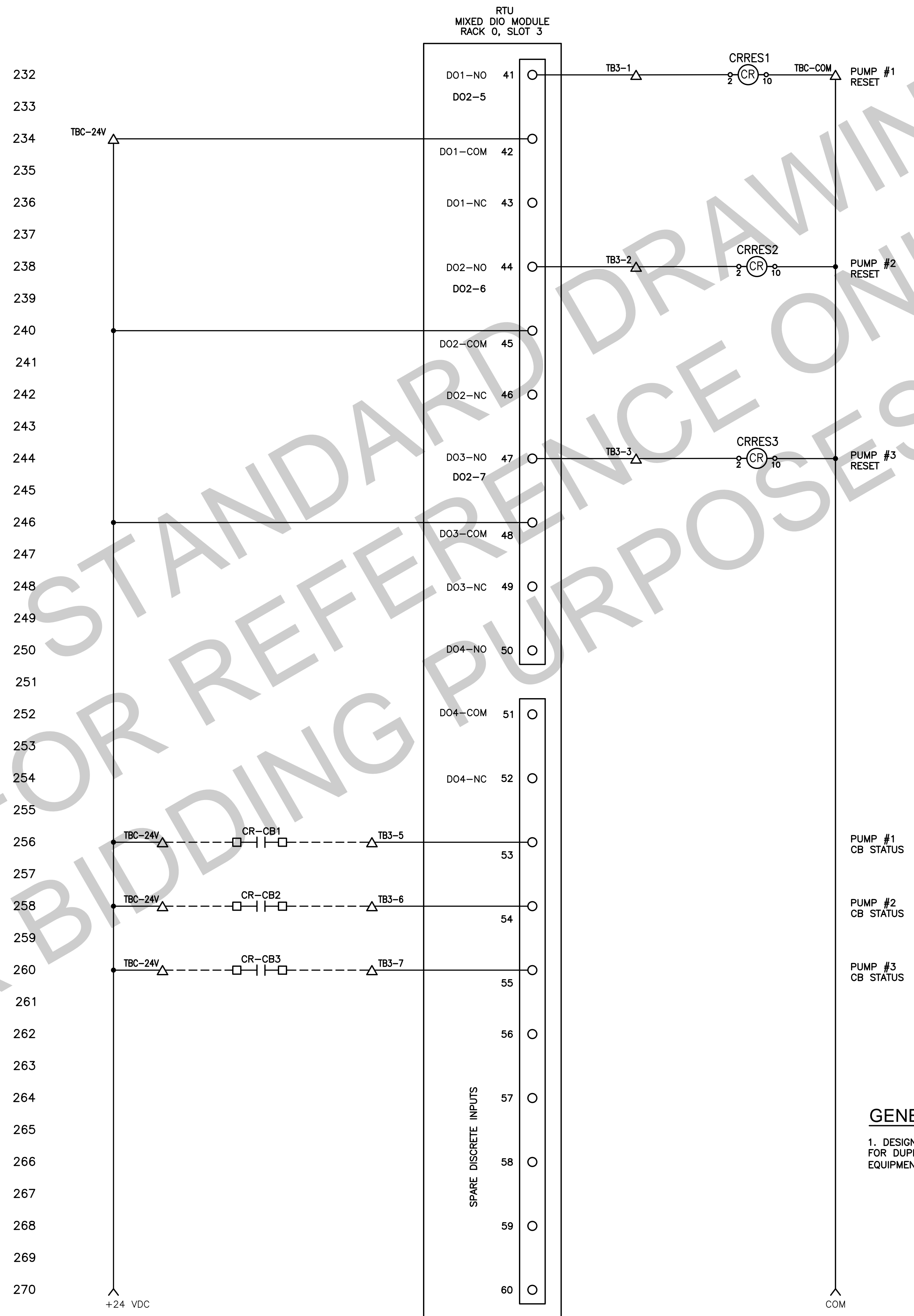


1 RTU SCHEMATICS (CONT'D)

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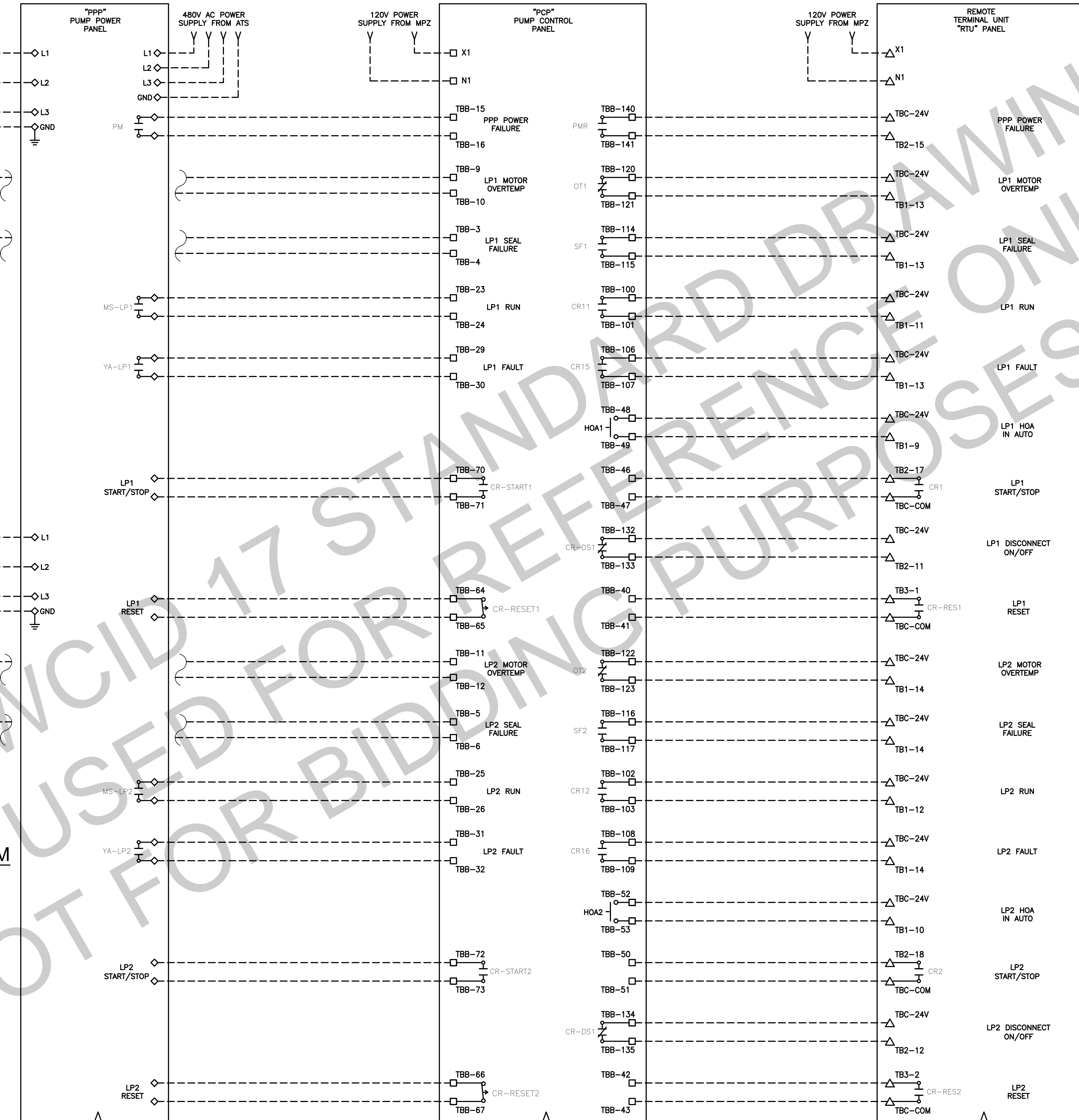
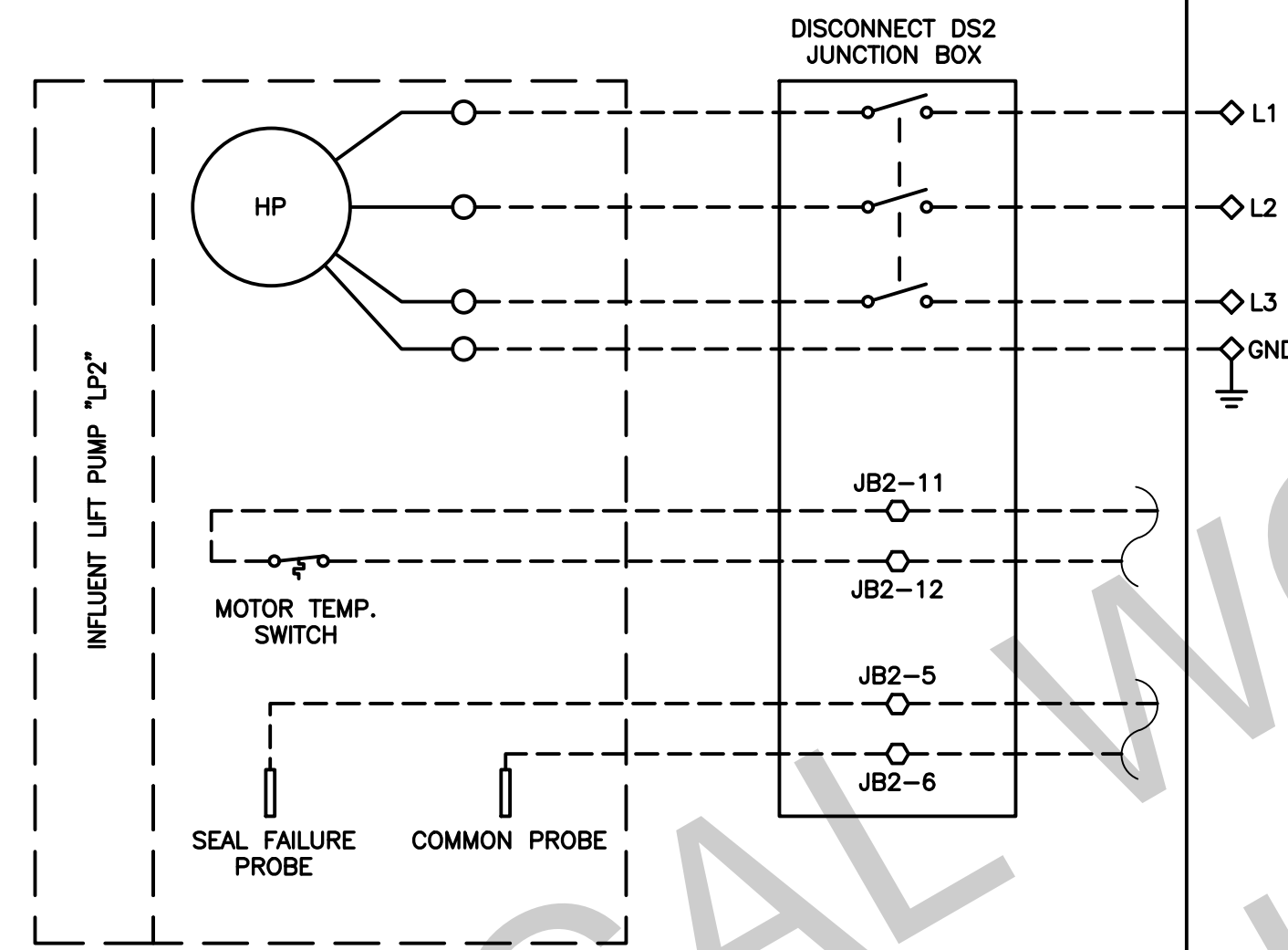
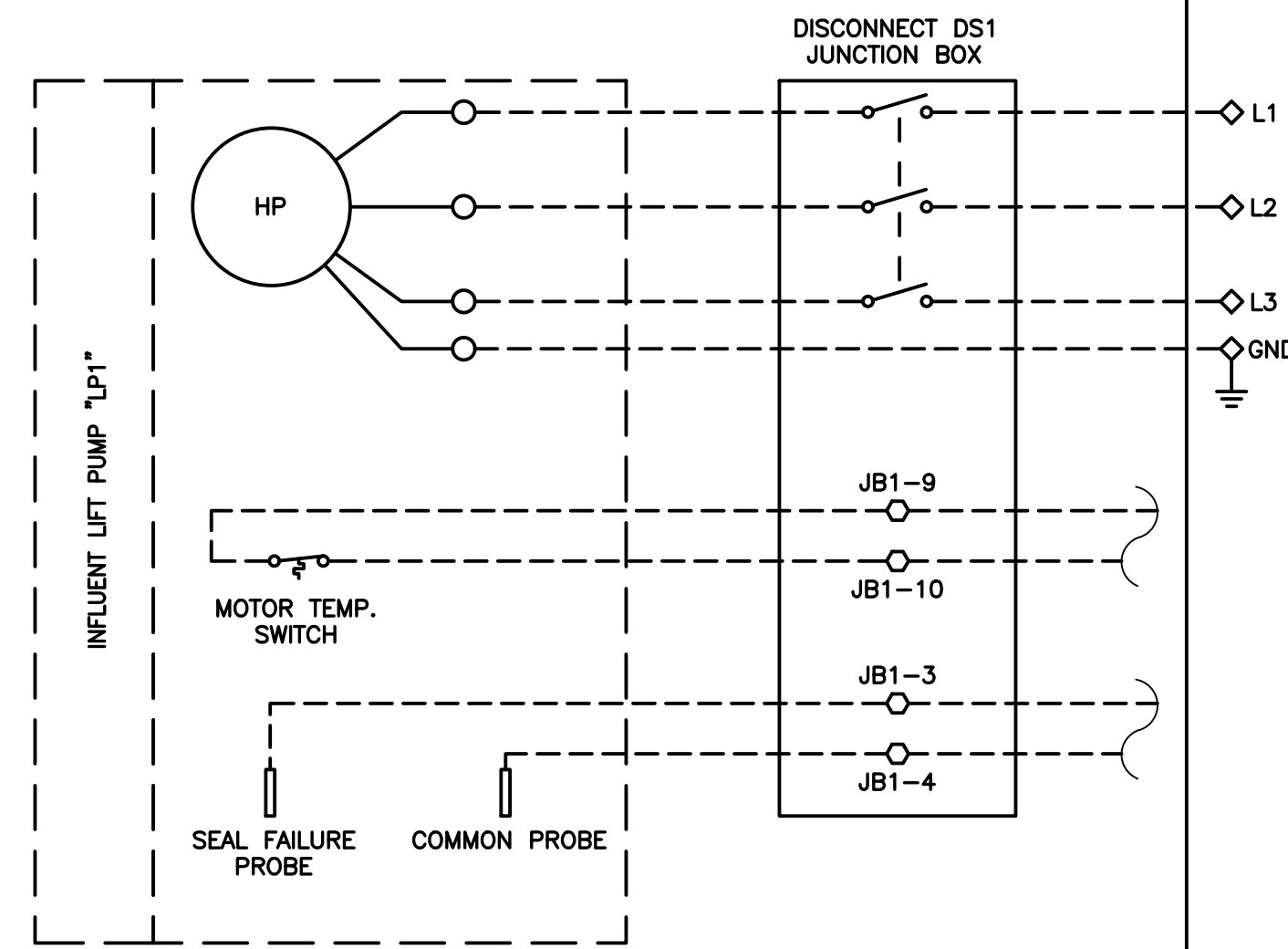
TRAVIS COUNTY WCID NO. 17
TYPICAL LIFT STATION STANDARDS

ELECTRICAL SCHEMATICS 7

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Austin, Texas 78725
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Texas Registered Engineering Firm F-17563

SHEET
E-17
OF 21



1 LIFT STATION CONNECTION DIAGRAM

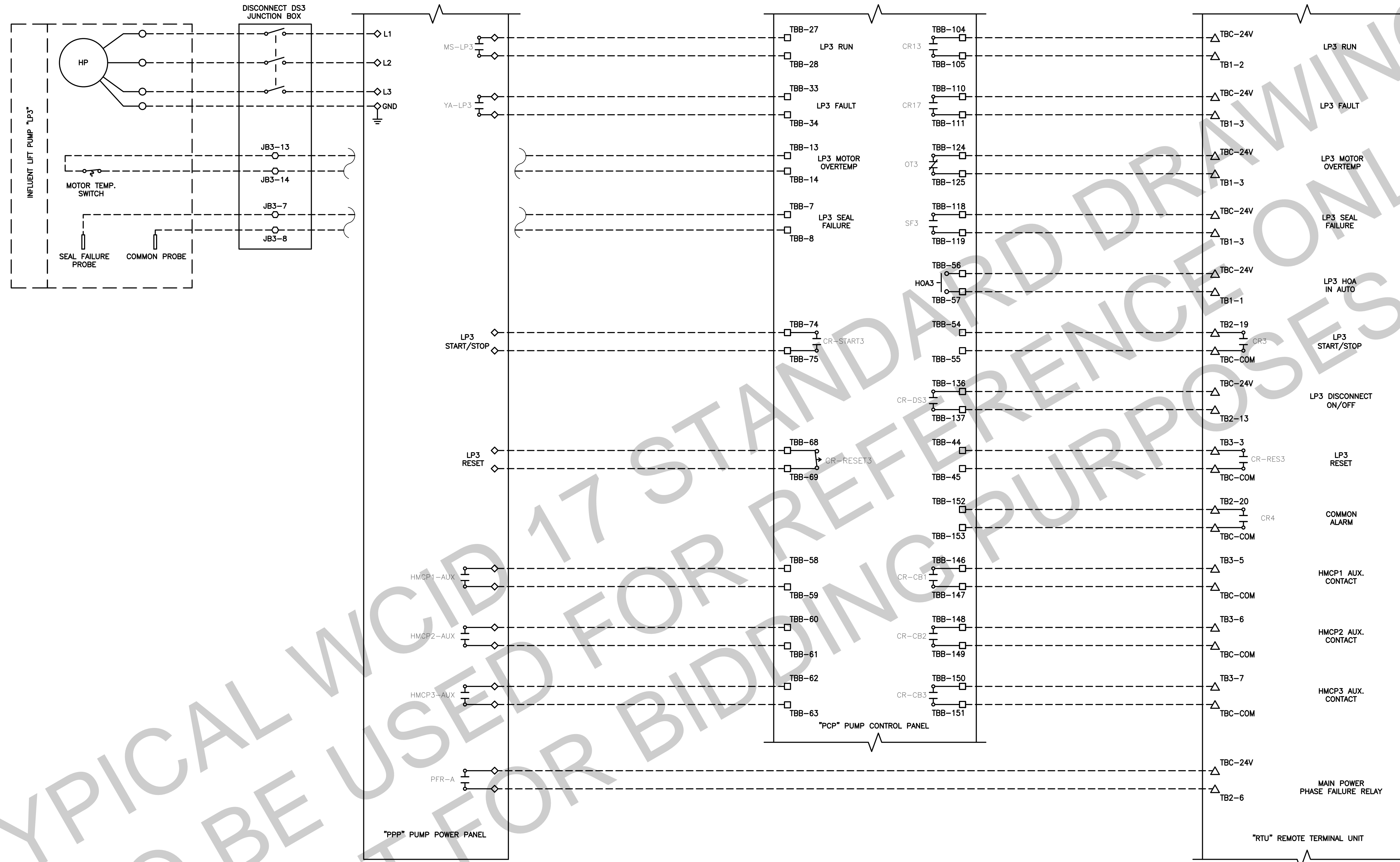
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TRAVIS COUNTY WCID NO. 17 TYPICAL LIFT STATION STANDARDS		SHEET E-18 OF 21	
ELECTRICAL SCHEMATICS 8		REVISIONS	
<p>JRSA ENGINEERING, INC. Consulting Electrical Engineers, TSP# #F-0987 6101 West Courtyard Drive, Bldg. 1, Suite 200 Austin, Texas 78750 (512) 402-8789</p>		<p>Green Civil Design Engineering & Consulting Texas Registered Engineering Firm F-17563 11130 Jollyville Rd., Ste. 101 Austin, TX 78758 (512) 840-6800</p>	
NO.	DESCRIPTION	APP	DATE



① LIFT STATION CONNECTION DIAGRAM (CONT'D)

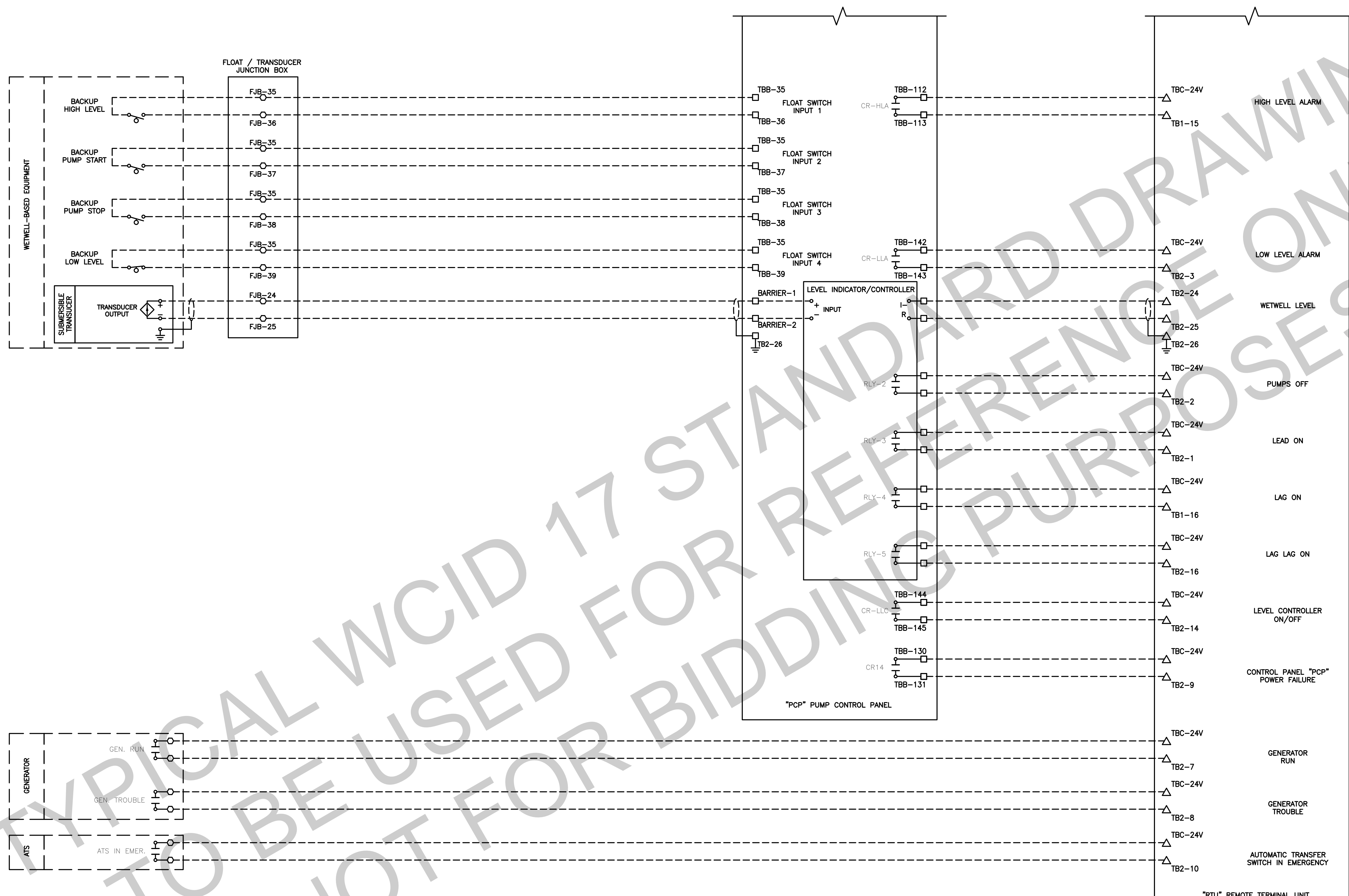
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TRAVIS COUNTY WCID NO. 17 TYPICAL LIFT STATION STANDARDS		ELECTRICAL SCHEMATICS 9	
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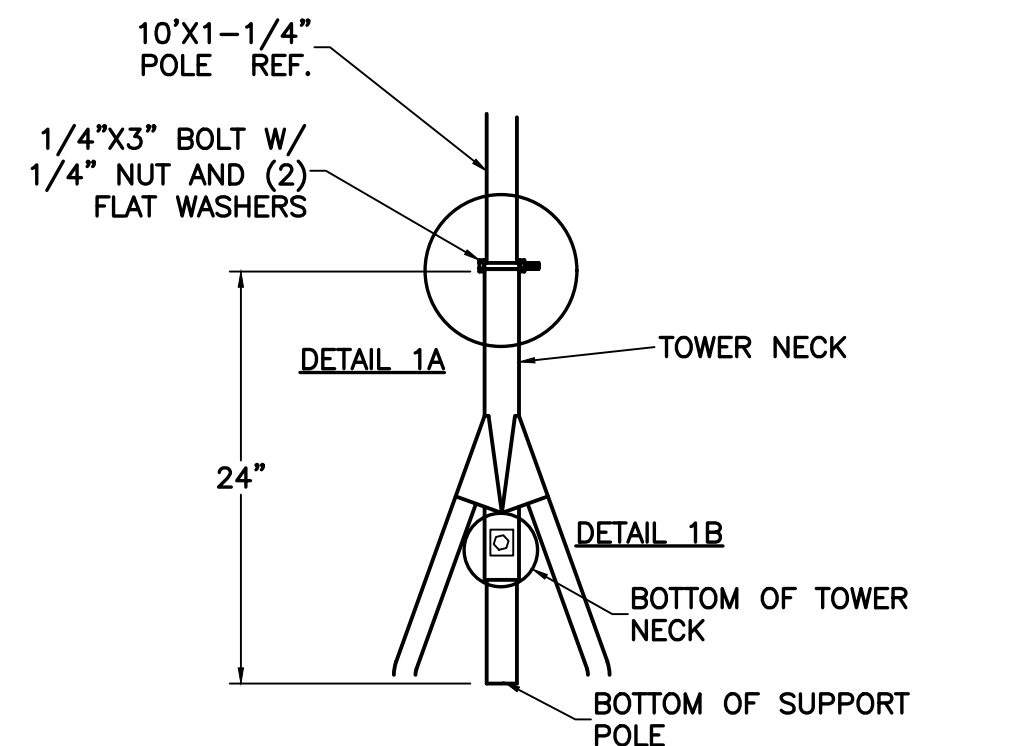


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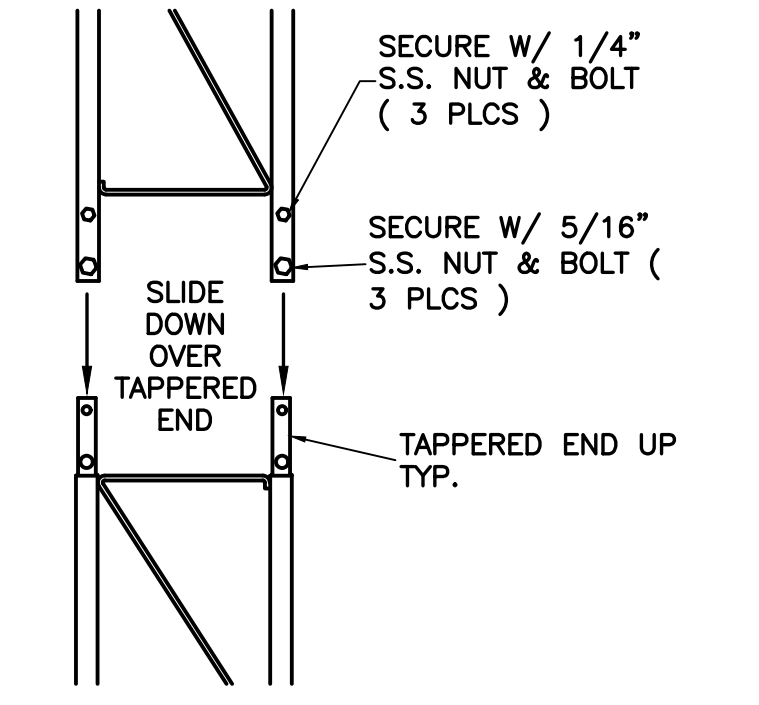
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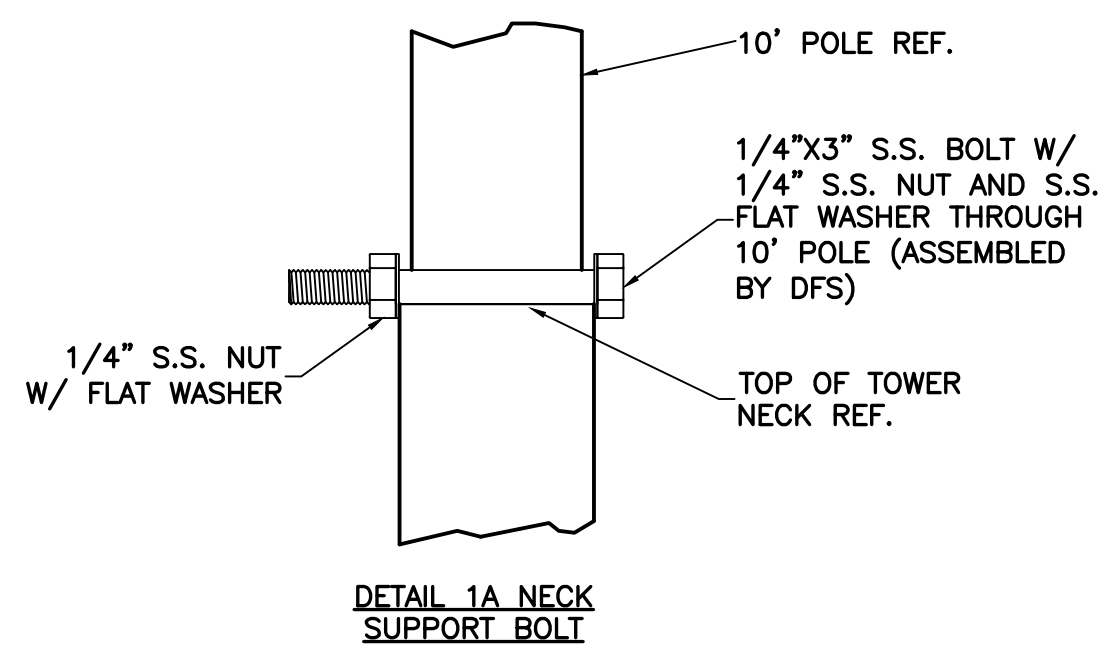
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<p>TRAVIS COUNTY WCID NO. 17 TYPICAL LIFT STATION STANDARDS</p>	<p>ELECTRICAL SCHEMATICS 10</p>								
<p>SHEET F-20 OF 21</p>									
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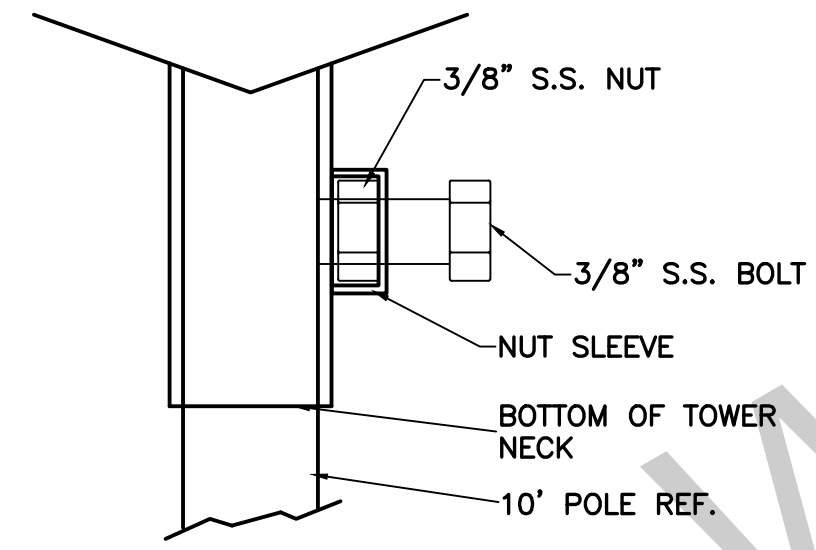
A ANTENNA MOUNTING POLE



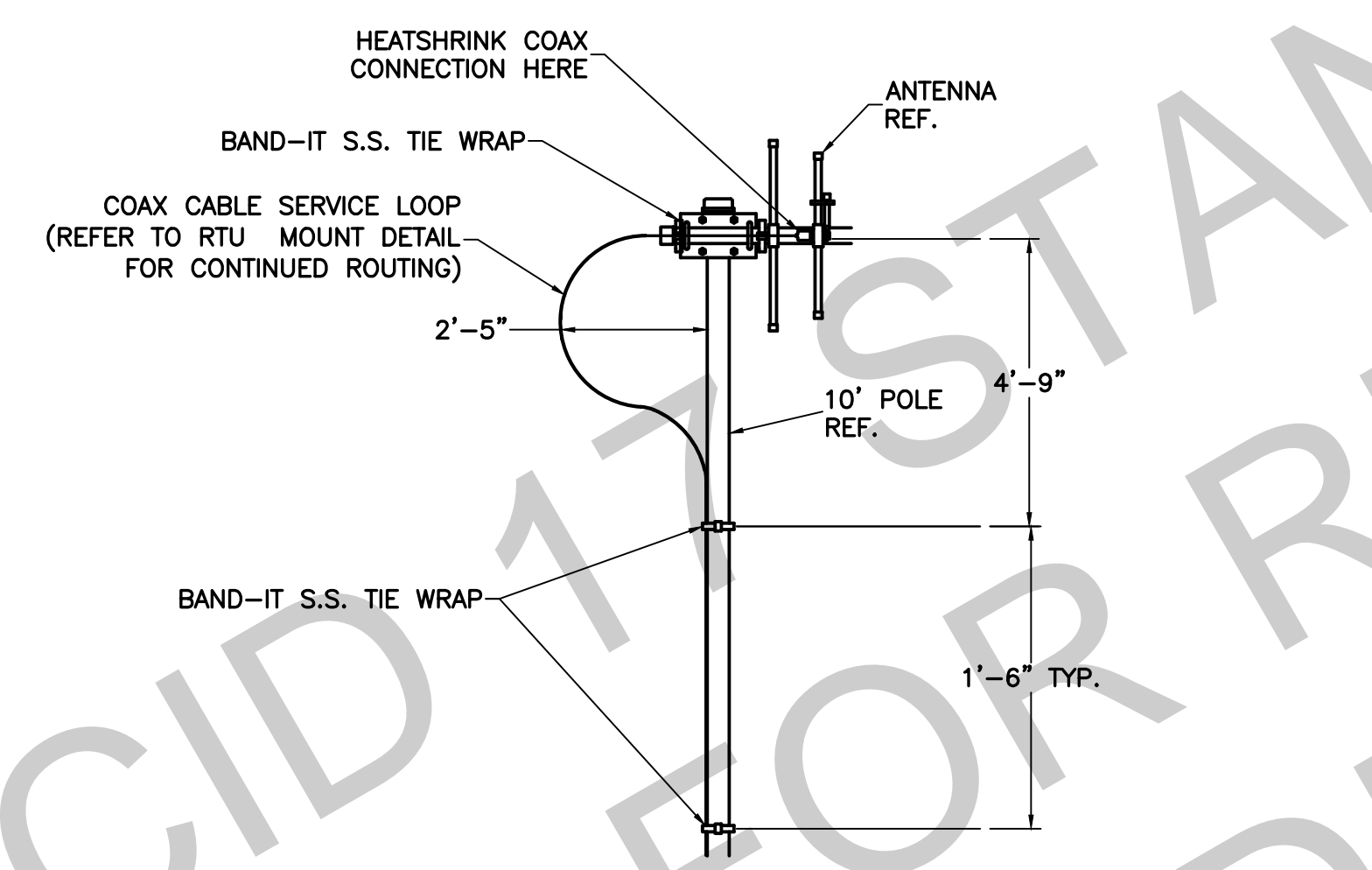
B TOWER SUPPORT



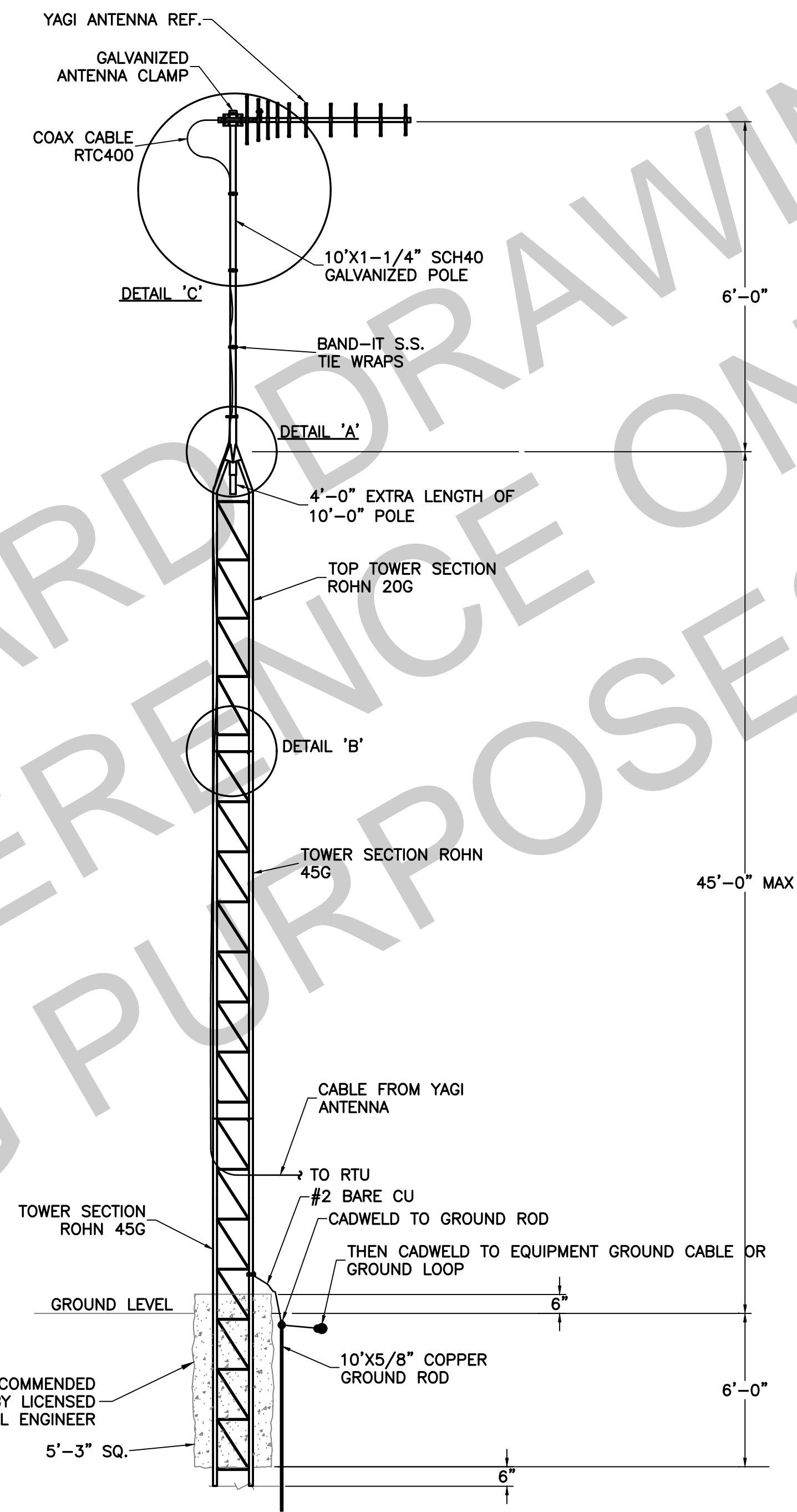
A1 NECK SUPPORT BOLT



A2 POLE SWIVEL BOLT (SIDE VIEW)



C COAX CABLE ROUTING & SUPPORT



1 ANTENNA MAST DETAIL

PROVIDE CONCRETE SUPPORT AS RECOMMENDED BY MANUFACTURER AND VERIFIED BY LICENSED STRUCTURAL ENGINEER

- NOTES:
1. PROVIDE SELF SUPPORTING ANTENNA TOWER FOR MOUNTING REQUIREMENTS OVER 30'-0". HEIGHT REQUIREMENTS SHALL BE DETERMINED BY RADIO PATH STUDY.
 2. ANTENNA TOWER SHALL BE A MINIMUM OF ROHN 45G, OR EQUAL, FOR HEIGHTS NOT EXCEEDING 45'-0". ROHN 65G MAY BE REQUIRED FOR TALLER ANTENNAS SUPPORTS.
 3. ANTENNA CONCRETE BASE SUPPORT SHALL BE AS REQUIRED BY MANUFACTURER AND VERIFIED BY A LICENSED, STRUCTURAL ENGINEER.

TYPICAL W/CID 17
 TO BE USED FOR BIDDING PURPOSES ONLY.

NO.	DESCRIPTION	APP	DATE

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 ENGINEERING, INC.
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TRAVIS COUNTY W/CID NO. 17
 TYPICAL LIFT STATION STANDARDS
 ANTENNA DETAILS