

## ELECTRICAL STANDARDS LEGEND

---	DIRECT BURIED OR CONCRETE EMBEDDED CONDUIT
—	CONDUIT RUN EXPOSED
→	PROCESS FLOW
—●—	ELECTRICAL WIRING (PANEL CIRCUITS)
—//—	PNEUMATIC SIGNAL
---	ELECTRICAL SIGNAL
[ ]	PANEL OR ENCLOSURE
STAND-BY GENERATOR ??? DENOTES SIZE	
??KW (G)	GENERATOR MAIN BREAKER XXX DENOTES BREAKER SIZE
WP	WALL PACK 7'-2" ABOVE FLOOR
WP/MC	FLOOD LIGHT WITH MOTION CONTROL 7'-2" ABOVE FLOOR
WP/PC	WALL PACK WITH PHOTO CELL 7'-2" ABOVE FLOOR
FL	FLOOD LIGHT 7'-2" ABOVE FLOOR
EXIT	EMERGENCY EXIT SIGN 7'-2" ABOVE FLOOR
EM	EMERGENCY LIGHTING PACK 7'-2" ABOVE FLOOR
[6]	6 LAMP 4'x2' FLUORESCENT FIXTURES - SURFACE MOUNTED FIXTURE
[4]	4 LAMP 4'-0" FLUORESCENT FIXTURES - SURFACE MOUNTED FIXTURE
[3]	3 LAMP 4'-0" FLUORESCENT FIXTURES - SURFACE MOUNTED FIXTURE
[2]	2 LAMP 4'-0" FLUORESCENT FIXTURES - SURFACE MOUNTED FIXTURE
[2C]	2 LAMP 4'-0" FLUORESCENT FIXTURES - WITH COLD WEATHER BALLAST
[2E]	2 LAMP 4'-0" FLUORESCENT FIXTURES - W/EMERGENCY/BATTERY BACK-UP BALLAST
(G)	INDICATOR LAMP - LETTER INDICATES COLOR
(A)	AREA LIGHT AND POLE - LETTER INDICATES DISTRIBUTION TYPE
(R)	FLASHING BEACON - LETTER INDICATES COLOR
(PC)	PHOTOCELL
(MS)	MOTION SENSOR
(F)	EXHAUST FAN
(100W)	100W LIGHT FIXTURE (INCANDESCENT)
(A)	AUDIBLE ALARM OR HORN
(JB)	UNDERGROUND JUNCTION/PULLBOX - SIZE 5 UNLESS OTHERWISE INDICATED
(J)	STEEL JUNCTION/PULLBOX
(E)	ELECTRIC MANHOLE
(1000)	PUSHBUTTON STATION (START/STOP/RESET)
(A)	AIR HANDLER
(C)	CONDENSER UNIT
(T)	TELEPHONE JACK
(TD)	TELEPHONE DIALER

(DN)	DATA NETWORK JACK
(XX)	FUSE; XX - DENOTES AMPERAGE
(DFCI)	120 V GROUND FAULT INTERRUPTER
(WP)	120 V DUPLEX RECEPTACLE, WP (WEATHER PROOF)
(240)	240 V RECEPTACLE
(DIS)	DISCONNECT SWITCH
(20A)	CIRCUIT BREAKER - UPPER NUMBER INDICATES AMP TRIP RATING - LOWER NUMBER INDICATES POLES
(B)	BOND TO METALLIC COLD WATER PIPE
(MO)	MOTOR OVERLOAD
(EG)	EQUIPMENT GROUND
(GT)	GROUND DETECTION
(I)	INDICATES ELECT. EQUIP. IN MCC
(L)	INDICATES ELECT. EQUIP. AT LOAD
(V)	INDICATES ELECT. EQUIP. IN ALARM/CONTROL PANEL
(*)	DEVICE LOCATED IN MOTOR CONTROL CENTER
(TB)	TERMINAL BLOCK
(LWS)	LIGHT SWITCH, SINGLE POLE, MOUNT 4'-6" ABOVE FLOOR ON BUILDING WALL
(LWSP)	LIGHT SWITCH, SINGLE POINT MOUNT 4'-6" ABOVE FLOOR ON BUILDING WALL WEATHER PROOF
(MS)	MANUAL STARTER, WITH OVERLOAD PROTECTION, MOUNT 4'-6" ABOVE FLOOR ON BUILDING WALL
(AS)	AMMETER SWITCH
(AS S)	AMMETER SCALE SELECTOR SWITCH
(TV)	TOUCHPLATE TRANSVERTER
(TS)	TOUCHPLATE SWITCH
(R)	RELAY
(TR)	TIMING RELAY
(TDR)	TIMING DELAY RELAY
(CR)	CONTROL RELAY COIL
(M)	MAGNETIC RELAY
(AM)	AMMETER
(EL)	ELECTRONIC LOUVERS
(LO)	LOCK-OFF-STOP
(ON/OFF)	ON-OFF SELECTOR SWITCH
(H/O/A)	HAND-OFF-AUTO SELECTOR SWITCH
(PC)	POWER CABLE PLUG/CONNECTOR

(NC)	NORMALLY CLOSED PUSHBUTTON
(NO)	NORMALLY OPEN PUSHBUTTON
(RTM)	RUNNING TIME METER
(MS)	MOTOR STARTER - NUMBER INDICATES SIZE
(NC)	NORMALLY CLOSED CONTACTS
(NO)	NORMALLY OPEN CONTACTS
(C)	CONTACTOR OR STARTER, NUMBER DENOTES NEMA SIZE
(TP)	TOUCHPLATE RELAY
(NTO)	NORMALLY OPEN TIME OPEN CONTACT (NTO)
(NCTO)	NORMALLY CLOSED TIME OPEN CONTACT (NCTO)
(NOTC)	NORMALLY OPEN TIME CLOSED CONTACT (NOTC)
(NCTC)	NORMALLY CLOSED TIME CLOSED CONTACT (NCTC)
(TS)	THERMAL SWITCH
(M)	MOTOR - NUMBER INDICATES HORSE POWER RATING
(VM)	VOLT METER
(VMS)	VOLT METER SWITCH
(FM)	FLOW METER
(ETM)	ELAPSED TIME METER
(MFM)	MAG FLOW METER
(VFM)	VENTURI FLOW METER
(LS)	LIMIT SWITCH
(LP)	LEVEL PROBE
(LFS)	LEVEL FLOAT SWITCH
(FS)	FLOW SWITCH
(PS)	PRESSURE SWITCH
(IT)	INSTRUMENT TRANSFORMER
(CT)	CURRENT TRANSFORMER
(PT)	POTENTIAL TRANSFORMER
(PT)	POWER TRANSFORMER
(T)	THERMOSTAT
(H)	HUMIDISTAT
(CLF)	FUSE, CURRENT LIMITING TYPE
(G.F.I.)	GROUND FAULT INTERRUPTER
(PT)	PRESSURE TRANSMITTER (4-20MA)
(AUX)	AUXILIARY CONTACT
(I)	INTERLOCK
(KWH)	KILOWATT HOUR, DEMAND
(KVAR)	KILOVOLT - AMPERE REACTIVE
(P)	PUMP

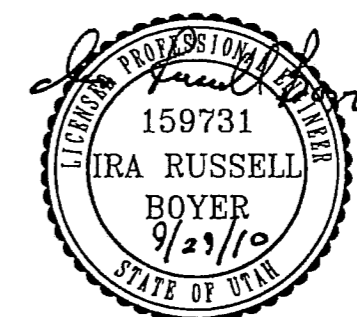
(FAH)	FORCED AIR HEATER
(H)	HEATER
(BH)	BASEBOARD HEATER
(HE)	HEAT EXCHANGER
(PP)	PLUNGER PUMP
(SP)	SCREW PUMP
(S)	SOLENOID VALVE
(S3)	3-WAY SOLENOID VALVE
(S)	VALVE WITH MANUAL OPERATOR
(M)	ELECTRIC MOTOR OPERATED VALVE (MODULATING OR NON-MODULATING)
(M)	MOTOR OPERATED VALVE WITH LIMIT SWITCH ASSEMBLY
(S)	NON-MODULATING PNEUMATIC OPERATED AIR SUPPLY
(I)	COMPUTER INPUT
(O)	COMPUTER CONTROL OUTPUT
(IFM)	ORIFICE FLOW METER
(LP1-XX)	LP1 - PANEL XX - CIRCUIT NUMBER
(I)	EXPLOSION PROOF SEAL OFF

## GENERAL ELECTRICAL REQUIREMENTS

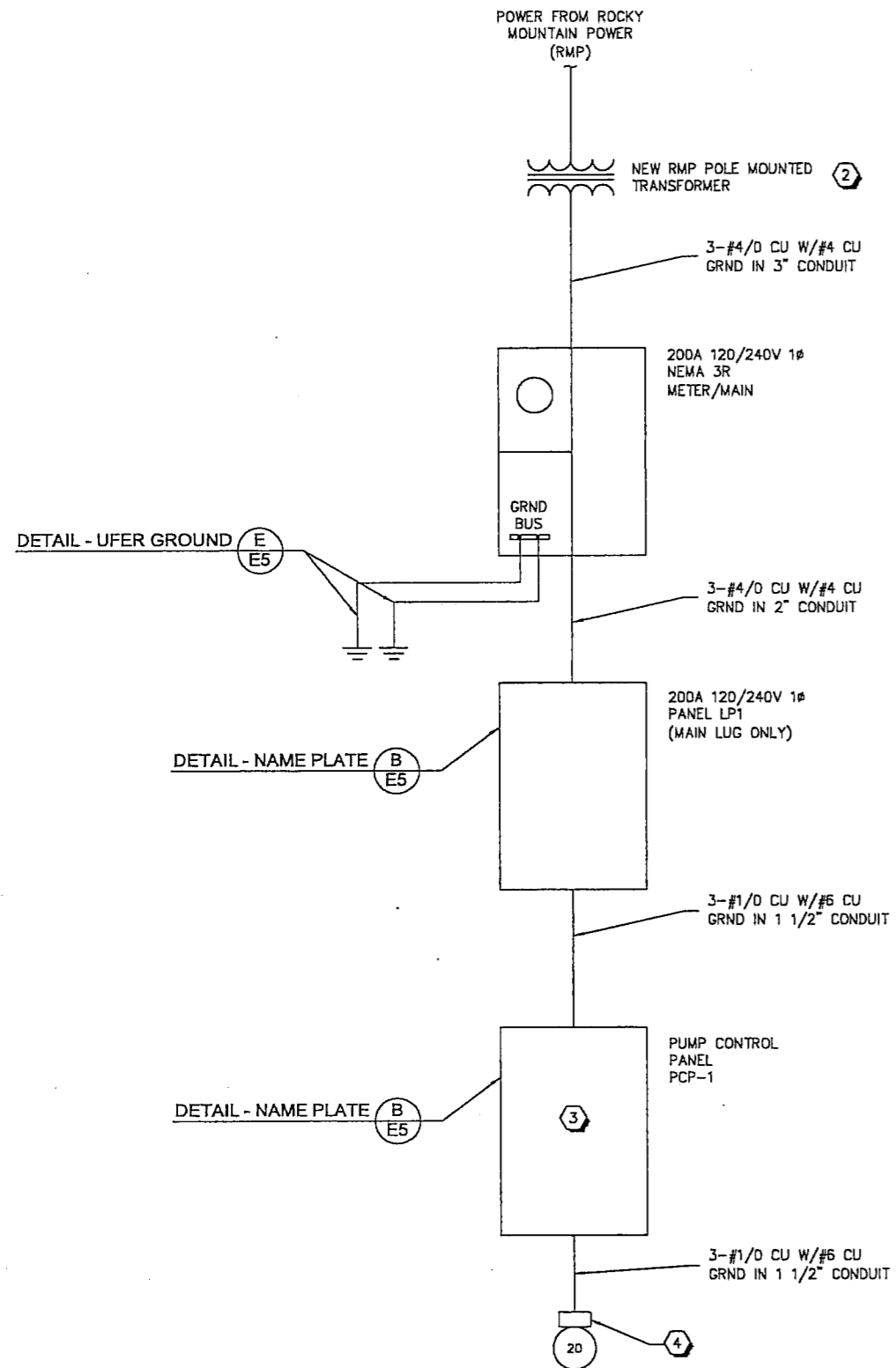
- THE COMPLETED INSTALLATION SHALL CONFORM TO ALL APPLICABLE FEDERAL, STATE AND LOCAL CODE ORDINANCES AND REGULATIONS. CONTRACTOR SHALL OBTAIN NECESSARY PERMITS AND INSPECTIONS REQUIRED BY THE GOVERNING AUTHORITIES. ALL WORK SHALL BE DONE IN A NEAT, PROFESSIONAL, FINISHED AND SAFE MANNER, ACCORDING TO THE LATEST PUBLISHED N.E.C.A. STANDARDS OF INSTALLATION, UNDER COMPETENT SUPERVISION. INSTALL GROUNDING AND ALL ELECTRICAL WORK AS REQUIRED BY THE LATEST EDITION OF THE NATIONAL ELECTRICAL CODE AS WELL AS ANY OTHER APPLICABLE CODES.
- MATERIAL, EQUIPMENT AND INSTALLATION SHALL BE IN ACCORDANCE WITH SECTIONS 16000 AND 15000 OF THE PROJECT SPECIFICATIONS WHICH ARE PART OF THE CONTRACT DOCUMENTS FOR THIS PROJECT.
- VISIT THE SITE PRIOR TO BIDDING TO BECOME FAMILIAR WITH EXISTING CONDITIONS AND ALL OTHER FACTORS WHICH MAY AFFECT THE EXECUTION OF THIS WORK. INCLUDE ALL RELATED COSTS IN THE INITIAL BID PROPOSAL.
- ALL MATERIALS SHALL BE NEW AND OF THE BEST QUALITY, MANUFACTURED IN ACCORDANCE WITH NEMA, ANSI, U.L. OR OTHER APPLICABLE STANDARDS. THE USE OF MANUFACTURER'S NAMES, MODELS AND NUMBERS IS INTENDED TO ESTABLISH STYLE, QUALITY, APPEARANCE, USEFULNESS AND BID PRICE. PROPOSED SUBSTITUTIONS SHALL BE SUBMITTED IN WRITING AND APPROVED BY THE ENGINEER BEFORE ORDERING.
- PROTECT ALL ELECTRICAL MATERIAL AND EQUIPMENT INSTALLED UNDER THIS PROJECT AGAINST DAMAGE BY OTHER TRADES, WEATHER CONDITIONS OR ANY OTHER CAUSES. EQUIPMENT FOUND DAMAGED OR IN OTHER THAN NEW CONDITIONS WILL BE REJECTED AS DEFECTIVE.
- LEAVE THE SITE CLEAN, REMOVE ALL DEBRIS, EMPTY CARTONS, TOOLS, CONDUIT, WIRE SCRAPS AND ALL MISCELLANEOUS SPARE EQUIPMENT AND MATERIALS USED IN THE WORK DURING CONSTRUCTION. ALL COMPONENTS SHALL BE FREE OF DUST, GRIT AND FOREIGN MATERIALS, LEFT AS NEW BEFORE FINAL ACCEPTANCE OF WORK.
- ALL CONDUCTORS SHALL BE THHN/THWN COPPER, STRANDED RATED AT 600 VOLTS UNLESS OTHERWISE NOTED. ALUMINUM WIRE WILL NOT BE ALLOWED.
- ALL UNDERGROUND CONDUIT TO BE SCHEDULE 40 PVC, MINIMUM DEPTH 30", MINIMUM SIZE 3/4". ALL UNDERGROUND ELBOWS SHALL BE RIGID LONG SWEEP WRAPPED WITH 3M-50 10 MIL PIPE WRAP OR APPROVED EQUAL EXCEPT FOR COMMUNICATIONS CABLE AND CONDUIT WHEN SPECIFIED DIFFERENTLY ON THE DETAILED ELECTRICAL DRAWINGS.
- ALL EXPOSED CONDUIT SHALL BE IMC OR RIGID STEEL CONDUIT, WITH A MINIMUM SIZE OF 3/4" WITH THE EXCEPTION OF COMMUNICATIONS CONDUIT WHERE SPECIFIED ON THE DETAILED ELECTRICAL DRAWINGS. EMT WILL BE PERMITTED, ONLY IN WALLS OR 10' ABOVE FINISHED FLOOR.
- ALL SAFETY SWITCHES AND OTHER DISTRIBUTION AND CONTROL ELECTRICAL EQUIPMENT SHALL BE RATED FOR HEAVY DUTY SERVICE.
- ALL WIRING DEVICES SHALL BE SPECIFICATION GRADE GROUNDING BODY TYPE DEVICES.
- THE CONTRACTOR SHALL INSTALL ALL INSTRUMENTS AND CONTROLS, INCLUDING HVAC AND CONTROL PANELS. THE CONTRACTOR SHALL OBTAIN AND REVIEW ALL INSTRUMENT, CONTROL AND HVAC DRAWINGS FOR TOTAL SCOPE OF WORK.
- ALL PANELS, DISCONNECTS AND SWITCH GEAR ON THE OUTSIDE OF THE BUILDING SHALL BE NEMA 3R TYPE ENCLOSURES UNLESS OTHERWISE SPECIFIED. CT CABINET AND METER BASE SHALL BE OUTSIDE THE BUILDING.
- SURGE SUPPRESSER SHALL BE SIZED FOR 160KA AMPS UNLESS OTHERWISE NOTED.
- ALL CONDUIT FOR ALL EQUIPMENT, INCLUDING EQUIPMENT FURNISHED BY OTHERS, SHALL BE FURNISHED AND INSTALLED BY THE CONTRACTOR.
- ALL CONDUIT, WHERE LEAVING ELECTRICAL EQUIPMENT TO GO UNDERGROUND, MUST BE ANCHORED TO THE FOUNDATION WITH STAND-OFF BRACKETS TO ALLOW FOR SUFFICIENT CLEARANCE FOR FOOTINGS AND WALL STUDS ON THE WALLS IN THE BUILDING. ALL RGS CONDUIT AND ELBOWS USED UNDERGROUND WILL BE WRAPPED WITH AN APPROVED PIPE WRAP. (TYP. FOR ALL BUILDINGS)

### GENERAL ELECTRICAL ABBREVIATIONS

MCP	MOTOR CIRCUIT PROTECTOR	C	CONDUIT	ACB	AIR CIRCUIT BREAKER	SPIC	SPARE INSTRUMENT CONDUIT
NC	NORMALLY CLOSED	CB	CIRCUIT BREAKER	AFF	ABOVE FINISHED FLOOR	WP	WEATHERPROOF
NO	NORMALLY OPEN	CNTL	CONTROL	AFG	ABOVE FINISHED GRADE	OL	MOTOR OVERLOAD
SPC	SPARE CONDUIT	IC	INSTRUMENTATION CONDUIT	EMH	ELECTRICAL MANHOLE	LP	LIGHTING PANEL
PLC	PROGRAMMABLE LOGIC CONTROLLER	INST	INSTRUMENT	MTU	MASTER TERMINAL UNIT	RTU	REMOTE TERMINAL UNIT
ATS	AUTOMATIC TRANSFER SWITCH	HMI	HUMAN MACHINE INTERFACE	TSP	TWISTED SHIELDED PAIRS	TVSS	TRANSIENT VOLTAGE SURGE SUPPRESSER
LCP	LOCAL CONTROL PANEL	SSSS	SOLID STATE SOFT START	PP	POWER PANEL		



REV. NO.	COMMENT	DATE
<b>SUNRISE ENGINEERING</b> 12227 SOUTH BUSINESS PARK DR. SUITE 220 DRAPER, UTAH 84020 TEL 801.523.0100 • FAX 801.523.0990 www.sunrise-eng.com		
<b>CROYDON PIPELINE COMPANY</b>		
<b>HILL TOP WELL #1</b>		
<b>ELECTRICAL INDEX</b>		
SET NO. 0355Z	DESIGNED MDD	DRAWN MDD
CHECKED IRB	SHEET NO. 21 of 30	E-1



ONE-LINE DIAGRAM

LP1

CROYDON HILL TOP WELL #1				CU Bus					
PANEL LP1				10 KA SC Rating (RMS)					
120/240 1Ø				200 Amp Main Lug Only					
CKT. NO.	AMP	POLE	DESCRIPTION	LOAD		VOLT AMPS	DESCRIPTION	CU BUS	CKT. NO.
				A	B				
1	40	2	UNIT HEATER-1	11Ø		21000	PUMP CONTROL PANEL (PCP-1)	2	160
3						11Ø			4
5	20	1	HVAC PANEL	Ø00	13	Ø00	RECEPTACLE (GFCI BREAKER)	1	20
7	20	1	LIGHTING	1Ø2		1.5	SPARE	1	20
8				Ø					10
11						Ø			12
13				Ø					14
15						Ø			16
17				Ø					18
19						Ø			20
21				Ø					22
23						Ø			24
				131	120			Total AMPS	
Subtotal Watts				Ø2Ø2		21Ø0Ø	Subtotal Watts		
Total Watts				301Ø2		125.ØØ	Average Amps		

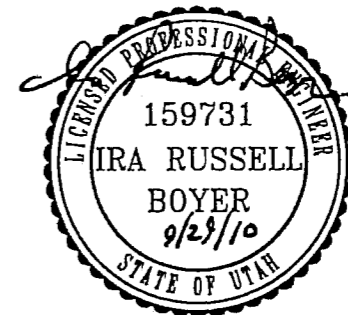
PANEL SCHEDULE

GENERAL NOTES:

1. THE CONTRACTOR IS RESPONSIBLE FOR ALL TRENCHING, BACKFILL AND COMPACTION, AND INSTALLATION OF CONDUIT FROM ROCKY MOUNTAIN POWER POLE, TO TRANSFORMER/PADVAULT, AND TO METER. ROCKY MOUNTAIN POWER WILL PROVIDE AND INSTALL TRANSFORMERS, AND CONDUCTORS FROM TRANSFORMER TO METER.
2. THE CONTRACTOR WILL BE RESPONSIBLE TO LOCATE ALL EXISTING UNDERGROUND UTILITIES BEFORE ANY EXCAVATION IS PERFORMED. ANY DAMAGE TO EXISTING UTILITIES SHALL BE REPAIRED TO NEW CONDITION OR REPLACED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.

KEY NOTES:

1. ALL CIRCUIT BREAKERS FOR RECEPTACLE CIRCUITS SHALL BE GFCI TYPE.
2. SEE DRAWINGS E-3 FOR RMP POWER POLE AND TRANSFORMER LOCATIONS.
3. REFERENCE DRAWING E-2.2 FOR PCP-1 PANEL CONTROL SCHEMATIC.
4. REFERENCE DRAWING E-3 FOR WELL HEAD LOCATION.
5. VERIFY CIRCUIT BREAKER SIZE WITH VFD MANUFACTURER RECOMMENDATIONS.



REV. NO.	COMMENT	DATE



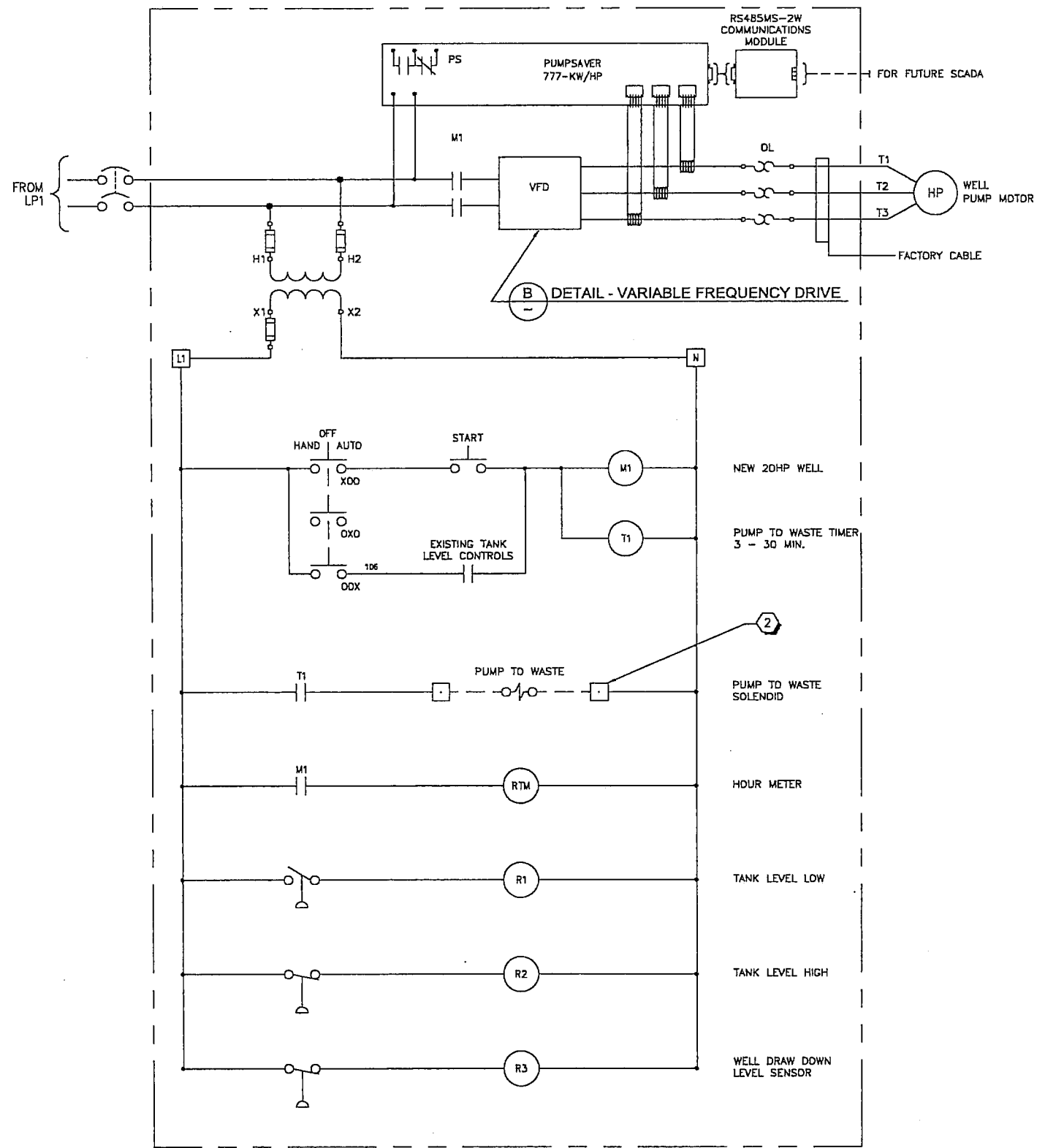
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HILL TOP WELL #1

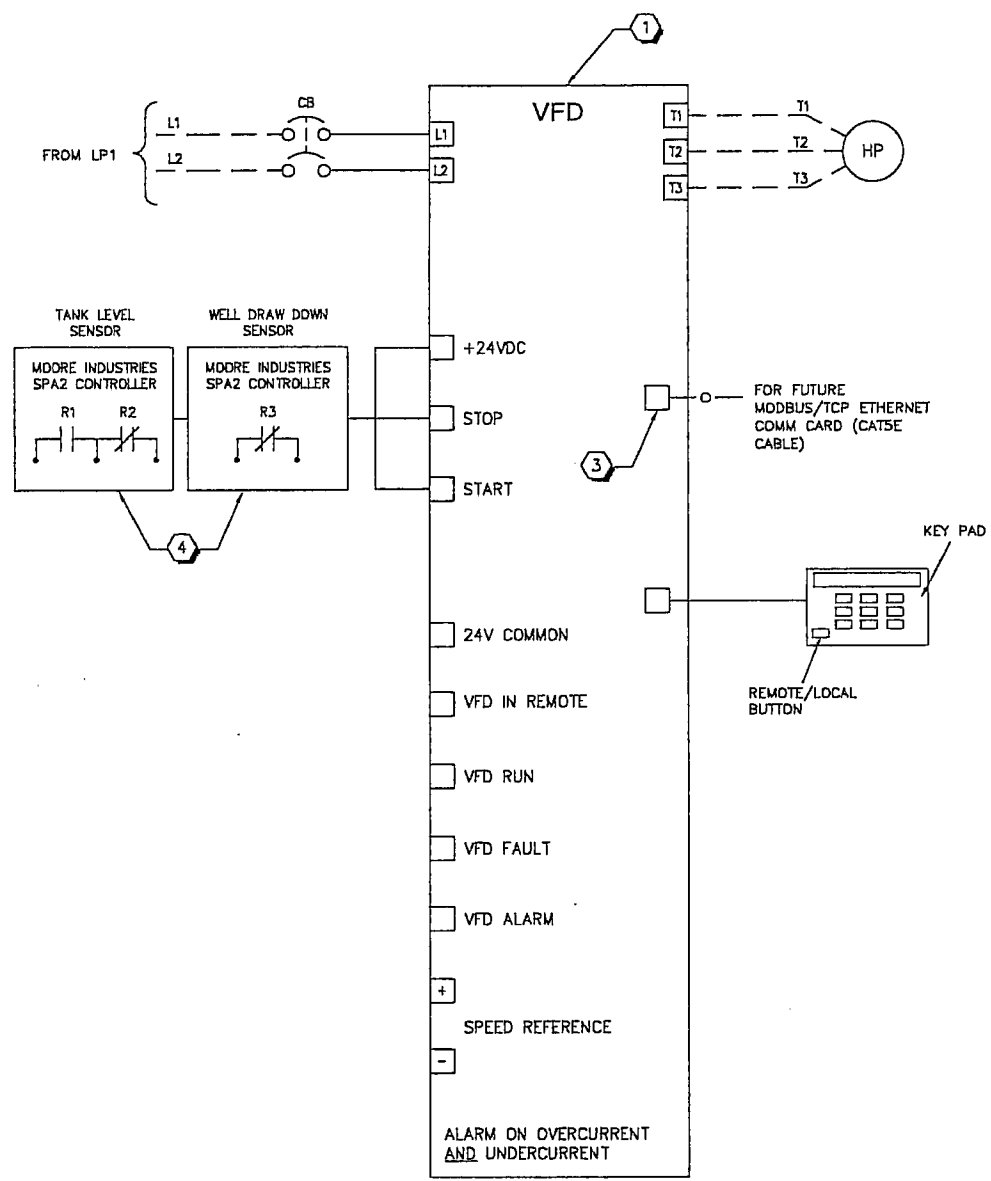
ONE-LINE DIAGRAM

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E-2.1



**(A) DETAIL - PUMP CONTROL SCHEMATIC**



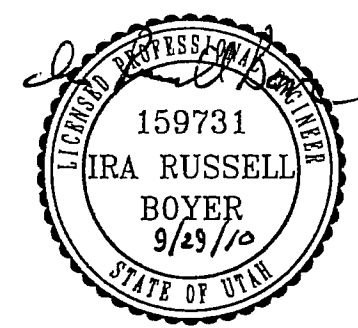
**(B) DETAIL - VARIABLE FREQUENCY DRIVE**

**GENERAL NOTES:**

- THIS DRAWING IS NOT INTENDED TO BE DEFINITIVE AS TO PANEL DESIGN, BUT RATHER TO SERVE AS A GUIDE, SHOWING THE DESIRED OPERABILITY. ACTUAL PANEL TO INCORPORATE BEST DESIGN PRACTICES AND FUNCTIONALITY TO ACCOMPLISH THE OPERABILITY DEMONSTRATED IN THE DRAWING.

**KEY NOTES:**

- THE VFD SHALL BE CAPABLE OF CONVERTING THE PROVIDED SINGLE PHASE POWER (120-240V) TO THREE PHASE POWER (240V) FOR THE PUMP MOTOR. PRIOR TO ORDERING THE VFD FOR THE NEW SUBMERSIBLE WELL PUMP THE CONTRACTOR SHALL VERIFY PUMP DEPTH AND COORDINATE VFD HP RATING/SIZE WITH VFD MANUFACTURER. THE VFD SHALL COME EQUIPPED WITH HARMONIC FILTERS AND WAVEFORM REGENERATION CAPABILITIES TO DEAL WITH DEEP SUBMERSIBLE WELL HARMONIC ISSUES. THE CONTRACTOR SHALL ENSURE THE VFD MANUFACTURER SELECTED IS AWARE OF THESE REQUIREMENTS. ALL NECESSARY CONTROLS, RELAYS, CONDUIT, CONDUCTORS, TERMINATIONS, AND NECESSARY APPURTENANCES SHALL BE PROVIDED AND INSTALLED BY THE CONTRACTOR FOR A FULLY FUNCTIONAL SYSTEM AS DESCRIBED.
- THE CONTRACTOR SHALL PROVIDE AND INSTALL THE PUMP TO WASTE VALVE CONTROL PANEL FOR THE NEW WELL, AND SHALL INCORPORATE THE VALVES FUNCTIONALITY AS SHOWN IN THE CONTROL DIAGRAM. THE CONTRACTOR SHALL PROVIDE AND INSTALL ALL CONDUIT CONDUCTORS, TERMINATIONS, AND NECESSARY APPURTENANCES TO INSTALL PUMP TO WASTE CONTROL PANEL PER MANUFACTURERS REQUIREMENTS.
- THE CONTRACTOR SHALL PROVIDE THE NECESSARY MEANS AND SPACE FOR THE INSTALLATION OF FUTURE AUTOMATED PLC CONTROLS FOR THIS SYSTEM.
- THE CONTROLLER FOR THE TANK LEVEL INDICATOR AND THE WELL DRAW DOWN SENSOR WILL EACH REQUIRE A NEMA 3R ENCLOSURE. REFERENCE MANUFACTURER RECOMMENDATIONS FOR INSTALLATION. THE TANK LEVEL CONTROLLER SHALL BE CAPABLE OF START AND STOPPING THE VFD BASED ON LEVELS IN THE TANK. THE WELL DRAW DOWN SENSOR SHALL BE CAPABLE OF STOPPING THE VFD TO KEEP THE WELL FROM DRY PUMPING. CONTRACTOR TO PROVIDE AS BUILT DRAWING SHOWING WIRING AND CONNECTIONS DIAGRAM FOR VFD CONTROL SCHEME.



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**SUNRISE ENGINEERING**  
 12227 SOUTH BUSINESS PARK DR. SUITE 220  
 DRAPER, UTAH 84020  
 TEL 801.523.0100 • FAX 801.523.0990  
 www.sunrise-eng.com

**CROYDON PIPELINE COMPANY**  
 HILL TOP WELL #1

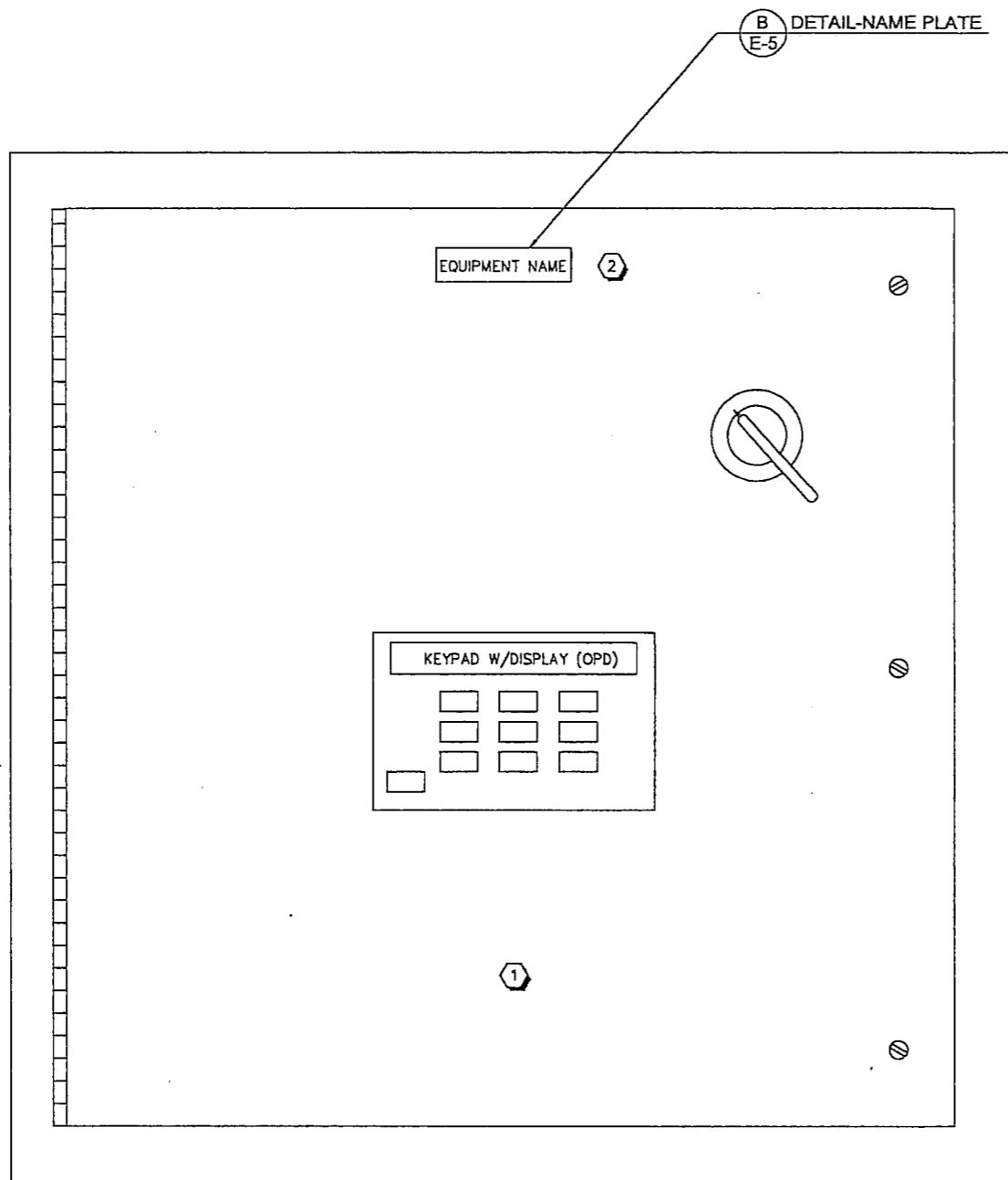
**PUMP MOTOR CONTROL SCHEMATICS**

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**E-2.2**

**GENERAL NOTES:**

1. THE ACTUAL SIZE AND DIMENSIONS OF THE PUMP CONTROL PANEL (PCP-1) MAY VARY BASED ON MANUFACTURER USED.

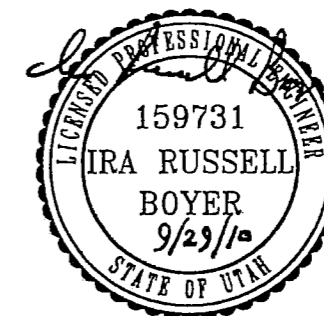


**A** - DETAIL - PUMP CONTROL PANEL (PCP-1)

**B** - DETAIL-NAME PLATE  
E-5

**KEY NOTES:**

1. PCP-1 SHALL BE A NEMA 3R ENCLOSURE. THE CONTROLS SHOWN SHALL BE ON AN INSIDE HINGED DEAD FRONT DOOR/COVER.
2. EQUIPMENT LABEL SHALL BE ON THE OUTSIDE PANEL COVER.



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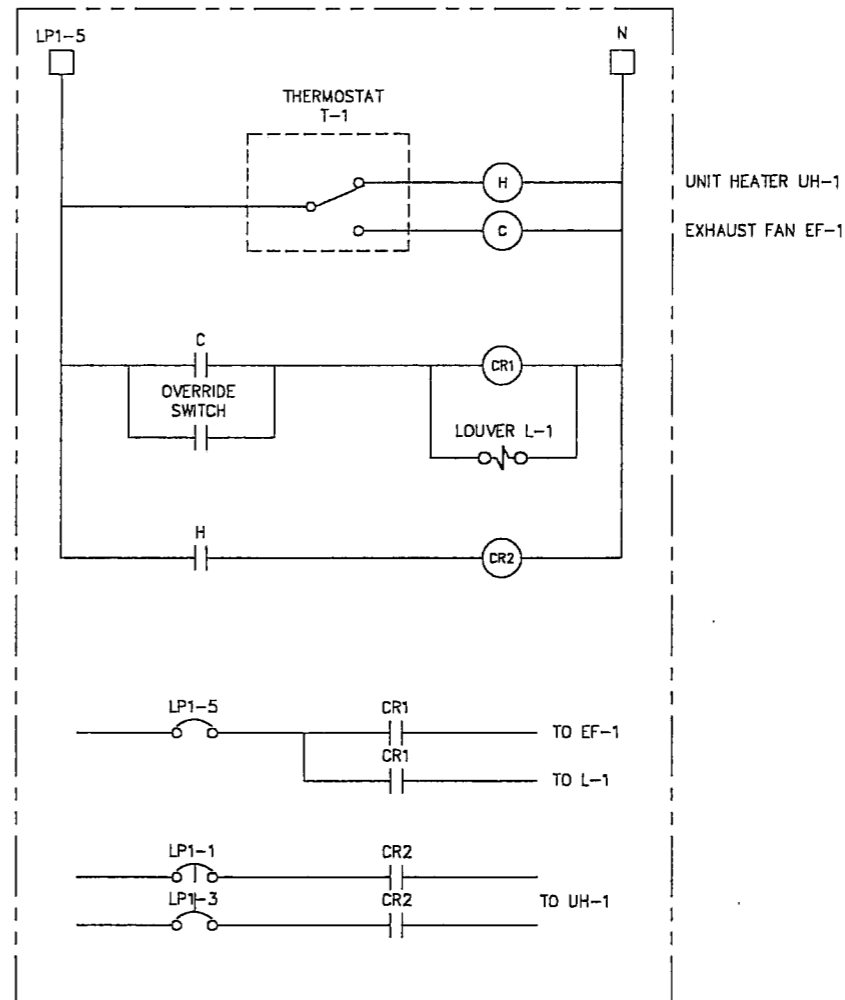
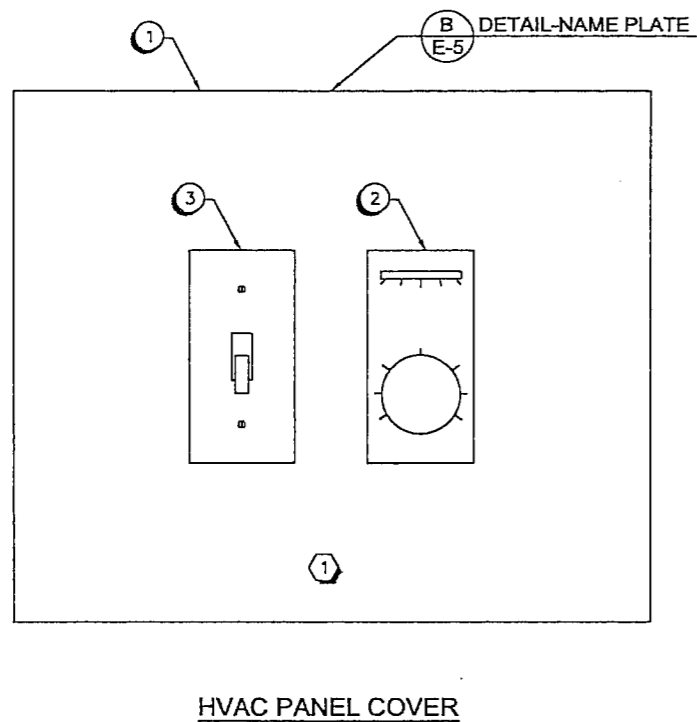
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DRAPER, UTAH 84020  
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CROYDON PIPELINE COMPANY

HILL TOP WELL #1

PUMP CONTROL PANEL CABINET

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03562	MDO	MDO	IRB	24 of 30	E-2.3



A  
DETAIL - HVAC CONTROL PANEL

HVAC PANEL SCHEMATIC

GENERAL NOTES:

1. THE HVAC EQUIPMENT IS SIZED PER THE BUILDING DIMENSIONS OF 20' X 25' X 8'-6".

KEY NOTES:

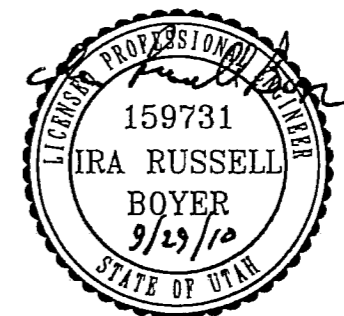
1. THE CONTRACTOR SHALL PROVIDE AND INSTALL ALL NECESSARY CONDUIT, CONDUCTORS, CONTROLS, RELAYS AND ALL NECESSARY APPURTENANCES FOR A FULLY FUNCTIONAL HVAC SYSTEM.
2. REFERENCE DRAWING E-4 FOR ALL ASSOCIATED MECHANICAL WORK.
3. PRIOR TO FINALIZING FAN OR LOUVER OPENINGS THE CONTRACTOR SHALL REFERENCE FAN AND LOUVER SUBMITTALS FOR OPENING DIMENSIONS.

LOUVER SCHEDULE								SPECIFICATION SECTION 15830
SYMBOL	MANUFACTURER AND MODEL NO.	SERVICE	SIZE (IN)	FREE AREA SQ. FT.	DAMPER	FINISH	MOUNTING HEIGHT TO BOTTOM OF UNIT	ACCESSORIES AND REMARKS
L-1	RUSKIN	PUMP HOUSE	36" x 36"	9	W/ELECTRICAL ACTUATOR	BAKED ENAMEL	18"	PROVIDE WITH INSECT SCREENS

EXHAUST FAN SCHEDULE (W/GRILLE)													SPECIFICATION SECTION 10210	
SYMBOL	MANUFACTURER AND MODEL NO.	AREA SERVED	TYPE	CFM @ ELEV.	TSP	FAN RPM	MOTOR HP	VOLT/PH	DAMPER	METHOD OF CONTROL	OPENING SIZE	MOUNTING HEIGHT FROM CEILING TO TOP OF UNIT	OPERATING WT (LBS)	ACCESSORIES AND REMARKS
EF-1	COOK 20A17D	PUMP HOUSE	CENTRIFUGAL BELT DRIVE	2222	.25	1725	1/4	120/1	MOTORIZED	HVAC PANEL	24 1/2"	18"	NA	PROVIDE WITH MOTORIZED SHUTTER, EXTERNAL GRILLE AND BUG SCREEN

UNIT HEATER SCHEDULE												SPECIFICATION SECTION 10210
SYMBOL	MANUFACTURER AND MODEL NO.	AREA SERVED	MOUNTING HEIGHT FROM CEILING TO TOP OF UNIT	DIRECTION OF AIR DELIVERY	AIRFLOW RATE (CFM)	HEATING (BTUH)	GAS INLET (IN)	FLUE SIZE (IN)	VOLT/PH	AMPS	KW	NOTES
UH-1	DAYTON ZYLSS (GRANGER)	PUMP HOUSE	PER MANUFACTURER REQUIREMENTS	CENTER OF ROOM	350	17000	NA	NA	240/1	31	7.5	PROVIDE WITH ALL MOUNTING ACCESSORIES

EQUIPMENT SCHEDULE					
ITEM #	DESCRIPTION	QUANTITY	SPECIFICATION/MODEL #	MANUFACTURE/COMMENTS	FURNISHED BY
1	HVAC PANEL ENCLOSURE	1	A1412BCH	HOFFMAN	CONTRACTOR
2	120V THERMOSTAT (T-1)	1	1A16-51	WHITE RODGERS	CONTRACTOR
3	MOTOR RATED SWITCH (BYPASS SWITCH)	1	2510FS1	SQUARE D	CONTRACTOR

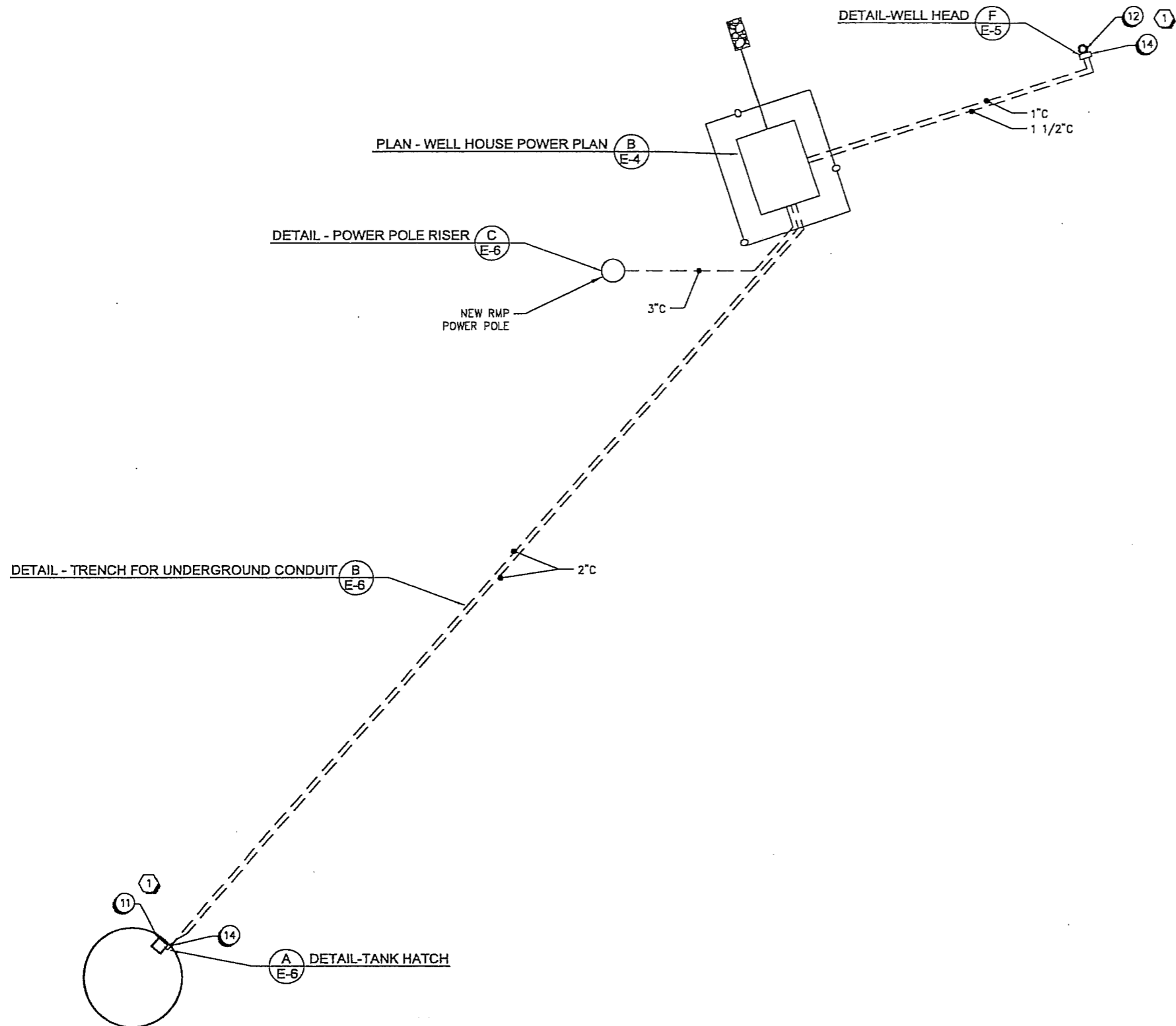


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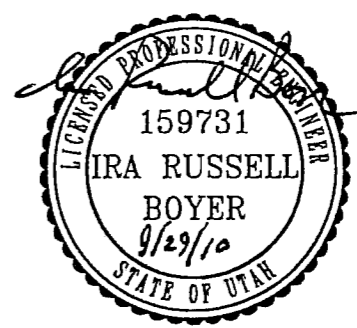
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 12227 SOUTH BUSINESS PARK DR. SUITE 220  
 DRAPER, UTAH 84020  
 TEL 801.523.0100 • FAX 801.523.0990  
 www.sunrise-eng.com

CROYDON PIPELINE COMPANY  
 HILL TOP WELL #1  
 HVAC CONTROL PANEL

SEI NO. 03562	DESIGNED MDD	DRAWN MDD	CHECKED IRB	SHEET NO. 25 of 30	E-2.4
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(A) PLAN - HILL TOP WELL HOUSE AND TANK SITE  
SCALE: 1/8"=1'-0"



**NOTES:**

1. THE CONTRACTOR WILL BE RESPONSIBLE TO LOCATE ALL EXISTING UNDERGROUND UTILITIES BEFORE ANY EXCAVATION IS PERFORMED. ANY DAMAGE TO EXISTING UTILITIES SHALL BE REPAIRED TO NEW CONDITION OR REPLACED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.

**KEY NOTES:**

1. REFERENCE DRAWING E-4 FOR EQUIPMENT SCHEDULE.

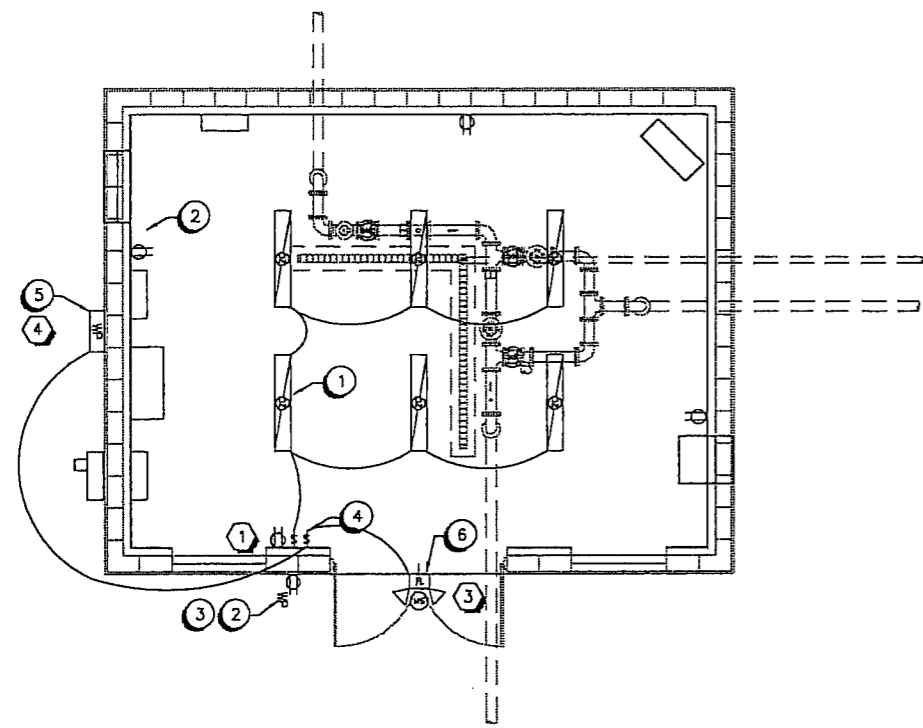
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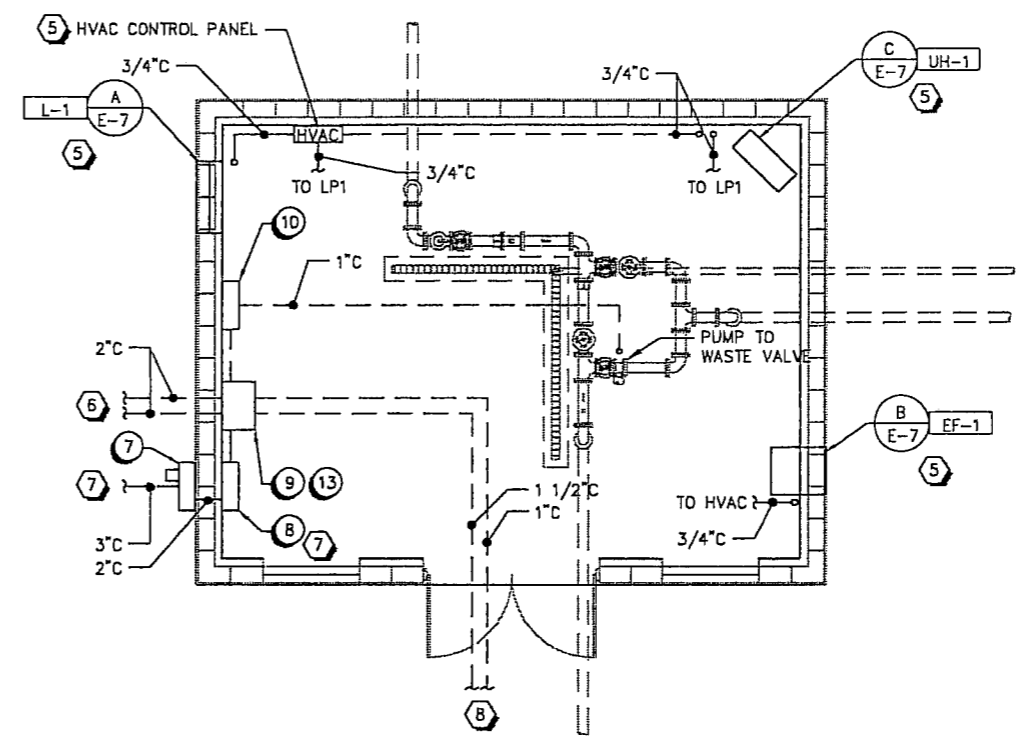
**CROYDON PIPELINE COMPANY**  
**HILL TOP WELL #1**

**SITE PLAN**

SET NO. D3562	DESIGNED MDD	DRAWN MDD	CHECKED IRB	SHEET NO. 26 of 30	<b>E-3</b>
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**A PLAN - LIGHTING PLAN**  
SCALE: 1/8"=1'-0"



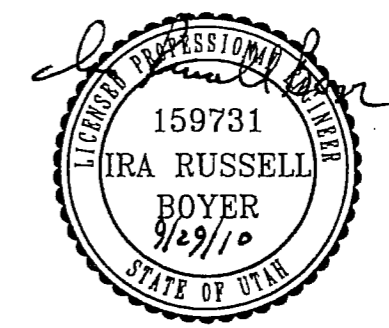
**B PLAN - POWER PLAN**  
SCALE: 1/8"=1'-0"

**NOTES:**

1. THE CONTRACTOR WILL BE RESPONSIBLE TO LOCATE ALL EXISTING UNDERGROUND UTILITIES BEFORE ANY EXCAVATION IS PERFORMED. ANY DAMAGE TO EXISTING UTILITIES SHALL BE REPAIRED TO NEW CONDITION OR REPLACED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.

- KEY NOTES:**
1. ALL INDOOR RECEPTACLES AND LIGHT SWITCHES SHALL HAVE STAINLESS STEEL COVER PLATES.
  2. ALL CONDUIT FOR LIGHTING AND RECEPTACLE CIRCUITS SHALL BE RAN IN WALLS AND CEILING SPACE. NO SURFACE MOUNTED CONDUIT WILL BE PERMITTED.
  3. MOUNT MOTION SENSOR LIGHTS CENTERED AT 12' ABOVE DOOR.
  4. WALL PACKS TO BE MOUNTED AT SAME ELEVATION AS MOTION SENSOR LIGHTS. (TYPICAL)
  5. REFERENCE DRAWING E-2.4 FOR MECHANICAL EQUIPMENT SCHEDULE AND CONTROLS.
  6. THE CONTRACTOR SHALL PROVIDE AND INSTALL ALL CONDUIT AND CONDUCTORS FROM EXISTING TANK SITE APPROX. 350' AWAY FOR TANK LEVEL CONTROLS. SEE DRAWING E-3.
  7. THE CONTRACTOR SHALL PROVIDE AND INSTALL THE 3" CONDUIT FROM THE METER BASE TO THE RMP POWER POLE APPROX. 50' AWAY. SEE DRAWING E-3. ALL ASSOCIATED WORK SHALL BE COORDINATED WITH RMP REPRESENTATIVE JON PANTKE (435) 655-7828.
  8. THE CONTRACTOR SHALL PROVIDE AND INSTALL THE CONDUIT AND CONDUCTORS FOR THE SUBMERSIBLE WELL PUMP AND WELL DRAW DOWN SENSOR APPROX. 60' AWAY. SEE DRAWING E-3.

EQUIPMENT SCHEDULE					
ITEM #	DESCRIPTION	QUANTITY	SPECIFICATION/MODEL #	MANUFACTURE/COMMENTS	FURNISHED BY
1	4FT FLUORESCENT LIGHT FIXTURE	6	DM248H0120	LITHONIA LIGHTING	CONTRACTOR
2	RECEPTACLE	5	CR5362GY	HUBBELL	CONTRACTOR
3	WEATHER PROOF RECEPTACLE COVER	1	WP1010HMC	INTERMATIC	CONTRACTOR
4	SINGLE POLE SWITCH	2	CS115GY	HUBBELL	CONTRACTOR
5	WALL PACK W/PHOTO CELL	1	PS-40DS-12B-1LP WITH PBT-1	HUBBELL	CONTRACTOR
6	FLOOD LIGHT W/MOTION SENSOR	1	MSPFKIDDBL/LP	LITHONIA	CONTRACTOR
7	200A 120/240V 1Ø METER MAIN	1	16400	SQUARE D	CONTRACTOR
8	200A 120/240V 1Ø PANEL (LP1)	1	16400	SQUARE D	CONTRACTOR
9	PUMP CONTROL PANEL (PCP-1)	1	SEE DRAWING E-2.2	SUPPLIED BY PUMP MANUFACTURER	CONTRACTOR
10	PUMP TO WASTE VALVE CONTROL PANEL	1	SEE DRAWING E-2.2	SUPPLIED BY VALVE MANUFACTURER	CONTRACTOR
11	TANK LEVEL SENSOR	1	US-21	DREXELBROOK USONIC	CONTRACTOR
12	WELL PUMP DRAW DOWN SENSOR	1	509-0075-93B-00 / 700-0005-35-F400.OBA00	DREXELBROOK U-III	CONTRACTOR
13	LEVEL SENSOR CONTROLLERS	2	SPA2/HLPGRG/2PRG/UAC/[DIN]	MOORE INDUSTRIES (TO BE MOUNTED IN PCP-1)	CONTRACTOR
14	NEMA 3R J-BDX	2	A1614BCH	HOFFMAN (J-BOXES LOCATED AT WELL HEAD AND TANK SITE. SEE DWG E-3)	CONTRACTOR



REV NO.	COMMENT	DATE

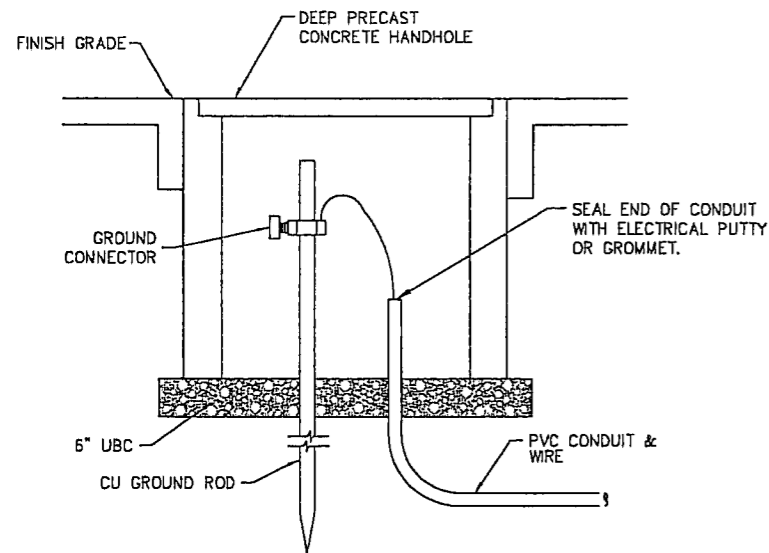
**SUNRISE ENGINEERING**  
12227 SOUTH BUSINESS PARK DR. SUITE 220  
DRAPER, UTAH 84020  
TEL 801.523.0100 • FAX 801.523.0990  
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**CROYDON PIPELINE COMPANY**  
**HILL TOP WELL #1**

**WELL HOUSE POWER AND LIGHTING PLAN**

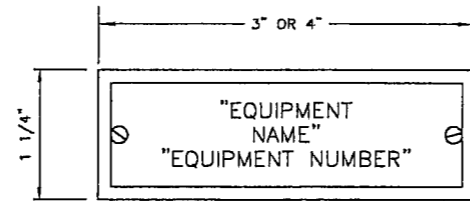
SET NO.	DESIGNED	DRAWN	CHECKED	SHEET NO.
03562	MDD	MDD	IRB	27 of 30

**E-4**



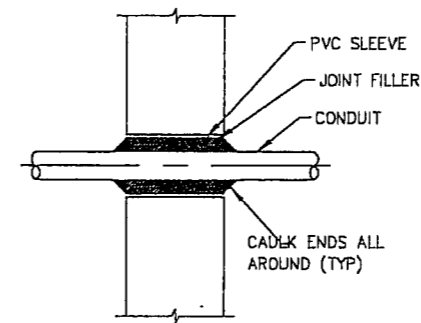
NOTE:  
ALL GROUNDING ELECTRODES SHALL COMPLY WITH LOCAL, STATE AND NATIONAL ELECTRICAL CODES.

**A** DETAIL - GROUND WELL  
N.T.S.



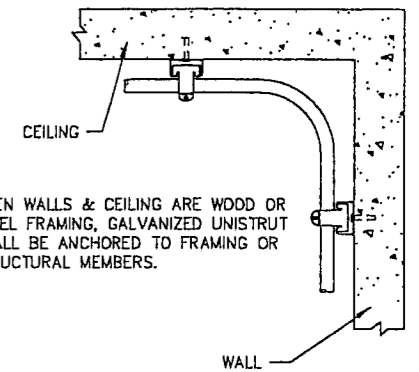
1. ALL LETTERS TO BE WHITE 1/4" HIGH, ON A BLACK BACKGROUND UNLESS NOTED OTHERWISE.
2. ALL NAMEPLATES TO BE MOUNTED ON THE VERTICAL CENTER LINE OF THE CUBICLE OR DEVICE.
3. ATTACH ALL NAMEPLATES WITH STAINLESS STEEL SCREWS.
4. PROVIDE BLANK NAMEPLATES FOR ALL SPARE AND AN ADDITIONAL TEN PERCENT FOR FUTURE DEVICES.

**B** DETAIL - NAMEPLATE  
N.T.S.



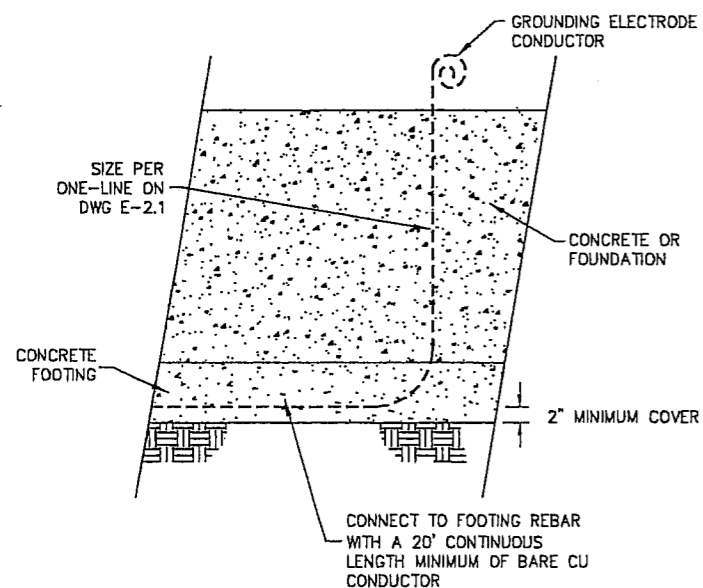
**C** DETAIL - CONDUIT PENETRATION AT WALL OR SLAB  
N.T.S.

7/8" GALVANIZED UNISTRUT TO BE ANCHORED TO THE WALL & CEILING, THEN CONDUIT SHALL BE RUN AND ATTACHED WITH UNISTRUT STRAPS.

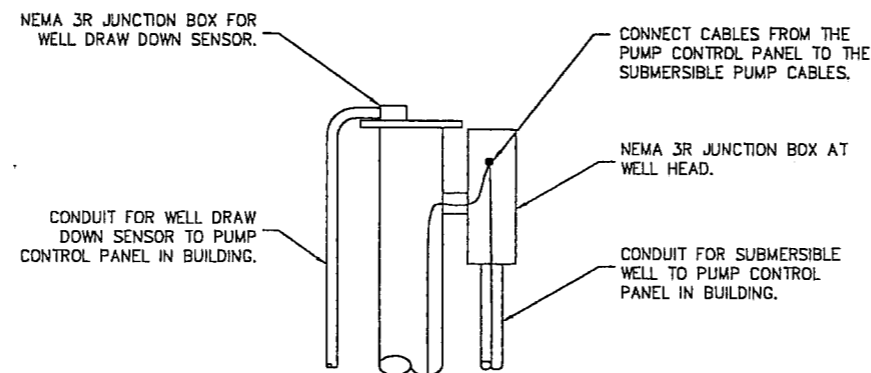


WHEN WALLS & CEILING ARE WOOD OR STEEL FRAMING, GALVANIZED UNISTRUT SHALL BE ANCHORED TO FRAMING OR STRUCTURAL MEMBERS.

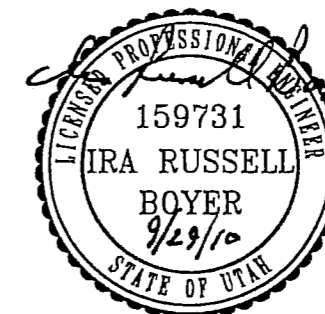
**D** DETAIL-CONDUIT MOUNT  
N.T.S.



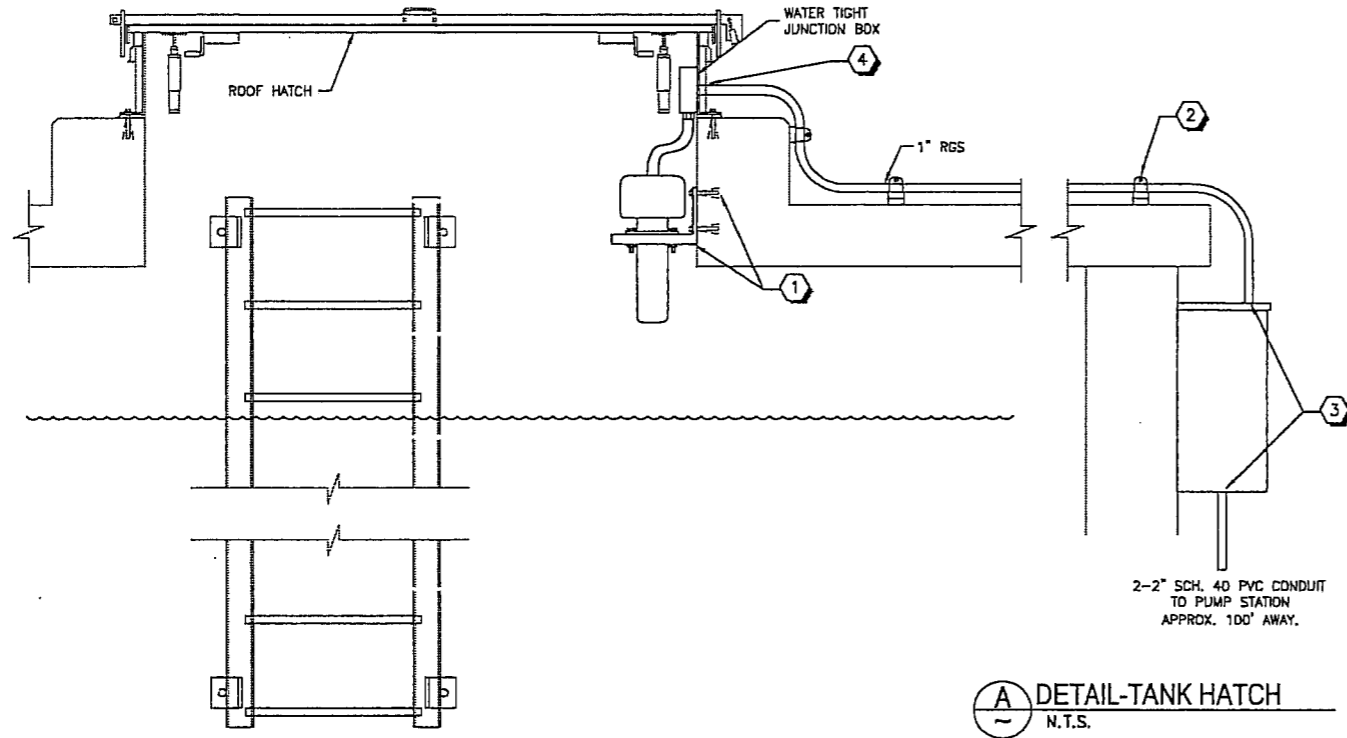
**E** DETAIL - UFER GROUND  
N.T.S.



**F** DETAIL - WELL HEAD  
N.T.S.

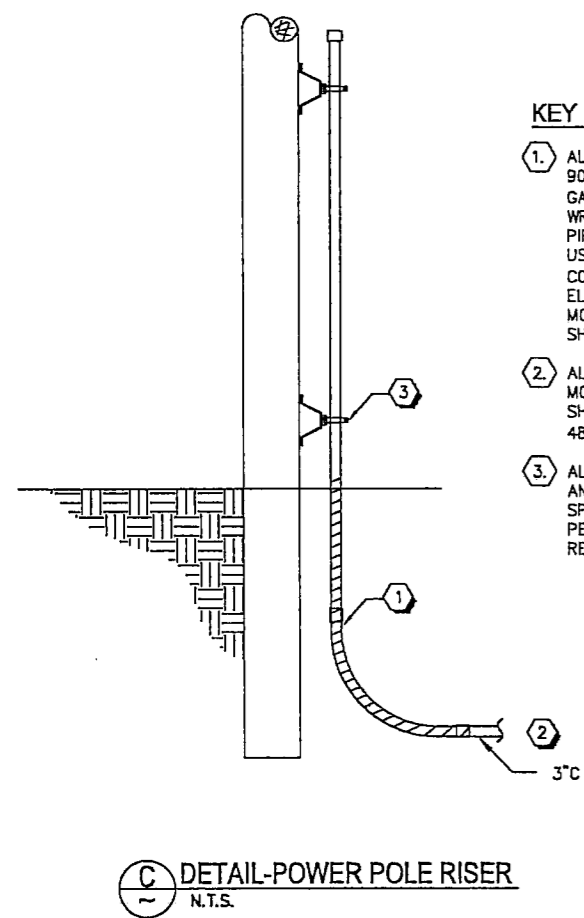
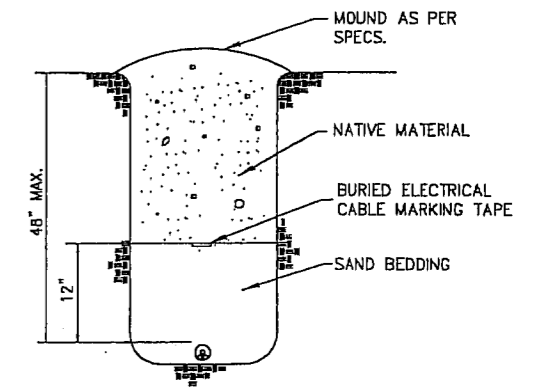


REV. NO.	COMMENT	DATE
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<b>CROYDON PIPELINE COMPANY</b> <b>HILL TOP WELL #1</b> <b>ELECTRICAL DETAILS</b>		
DESIGNED D3552 MDD	DRAWN MDD	CHECKED IRB
SHEET NO. 28 of 30		SHEET NO. E-5



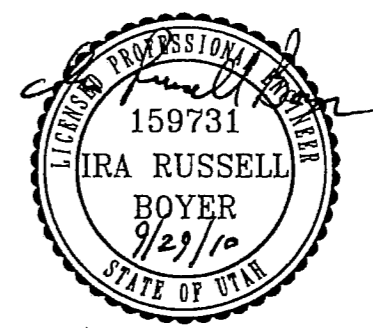
**NOTES:**

- 1. THE ULTRASONIC LEVEL SENSOR SHALL BE MOUNTED ON A STAINLESS STEEL MOUNTING BRACKET WITH A 2" NPT FLANGE. ALL MOUNTING HARDWARE SHALL BE STAINLESS STEEL.
- 2. ALL EXTERIOR TANK MOUNTING HARDWARE SHALL BE STAINLESS STEEL.
- 3. ALL CONDUIT CONNECTIONS TO NEMA 3R ENCLOSURES SHALL BE MADE USING A MEYERS TYPE THREADED HUB WITH ENDS SEALED WITH ELECTRICAL PUTTY.
- 4. ALL PENETRATIONS THROUGH TANK HATCH SHALL BE SEALED WITH A UV/WEATHER TIGHT SEAL.

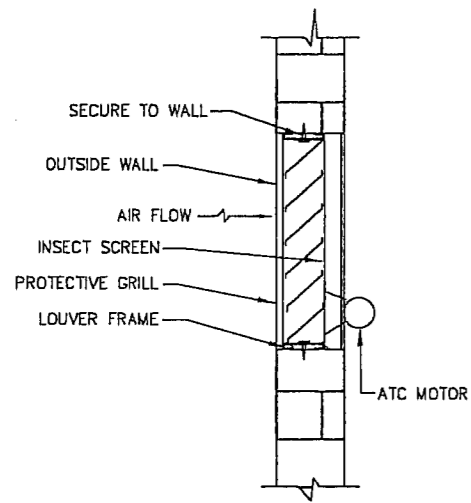


**KEY NOTES:**

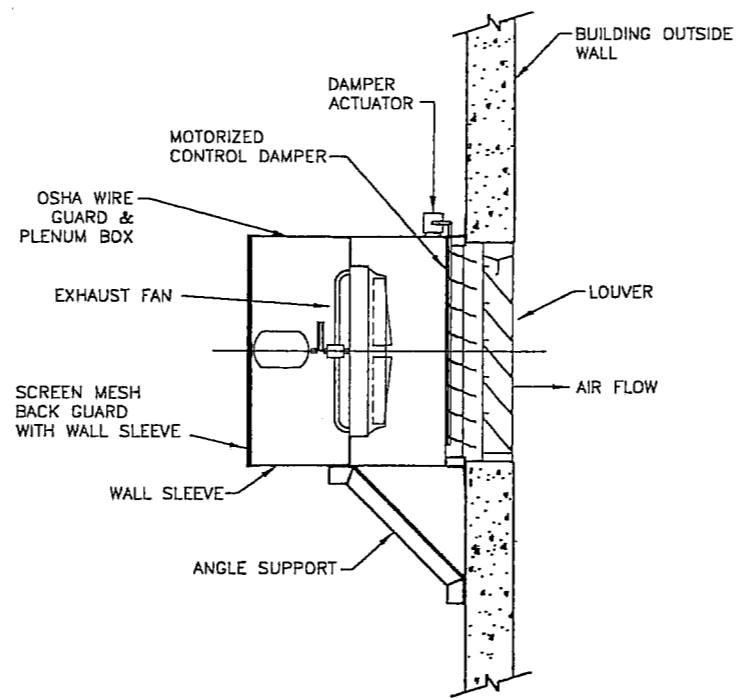
- 1. ALL VERTICAL CONDUIT AND 90° ELBOWS SHALL BE RIGID GALVANIZED STEEL (RGS) WRAPPED WITH AN APPROVED PIPE WRAP. PVC MAY BE USED FOR THE UNDERGROUND CONDUIT. ALL 3" 90° ELBOWS FROM ROCKY MOUNTAIN POWER SOURCE SHALL BE LONG SWEEP TYPE.
- 2. ALL CONDUIT FROM ROCKY MOUNTAIN POWER SOURCE SHALL BE A MAXIMUM OF 48" DEEP.
- 3. ALL MOUNTING HARDWARE, AND CONDUIT SUPPORT SPACING SHALL BE DONE PER ROCKY MOUNTAIN POWER REQUIREMENTS.



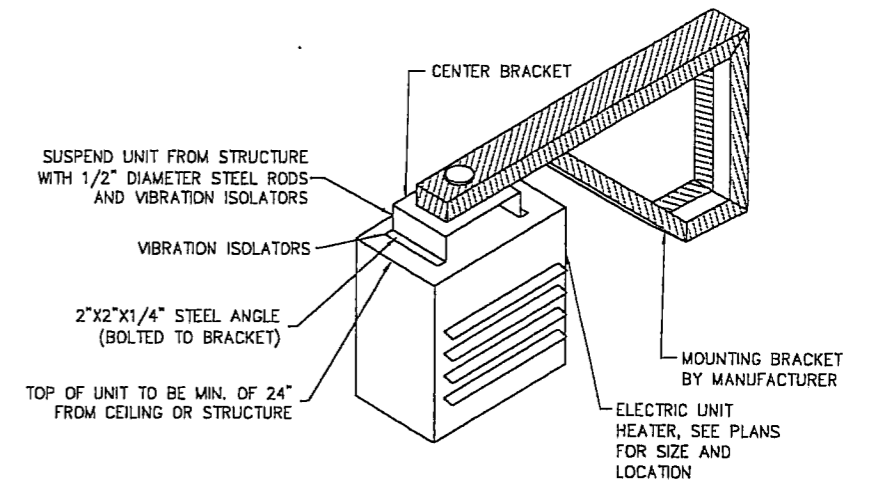
REV. NO.	COMMENT	DATE
<p><b>SUNRISE ENGINEERING</b> 12227 SOUTH BUSINESS PARK DR. SUITE 220 DRAPER, UTAH 84020 TEL 801.523.0100 · FAX 801.523.0990 www.sunrise-eng.com</p>		
CROYDON PIPELINE COMPANY		
HILL TOP WELL #1		
ELECTRICAL DETAILS		
DESIGNED D3562	DRAWN MDD	CHECKED IRB
SHEET NO. 29 of 30		E-6



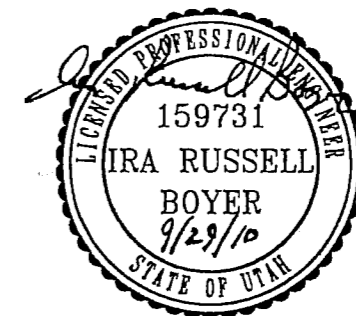
**A** DETAIL-LOUVER  
~ N.T.S.




**B** DETAIL-EXHAUST FAN  
~ N.T.S.



**C** DETAIL-UNIT HEATER  
~ N.T.S.



REV. NO.	COMMENT	DATE
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CROYDON PIPELINE COMPANY		
HILL TOP WELL #1		
MECHANICAL DETAILS		
DESIGNED MDD	DRAWN MDD	CHECKED IRB
SHEET NO. 03562	SHEET NO. 30 of 30	
		<b>E-7</b>