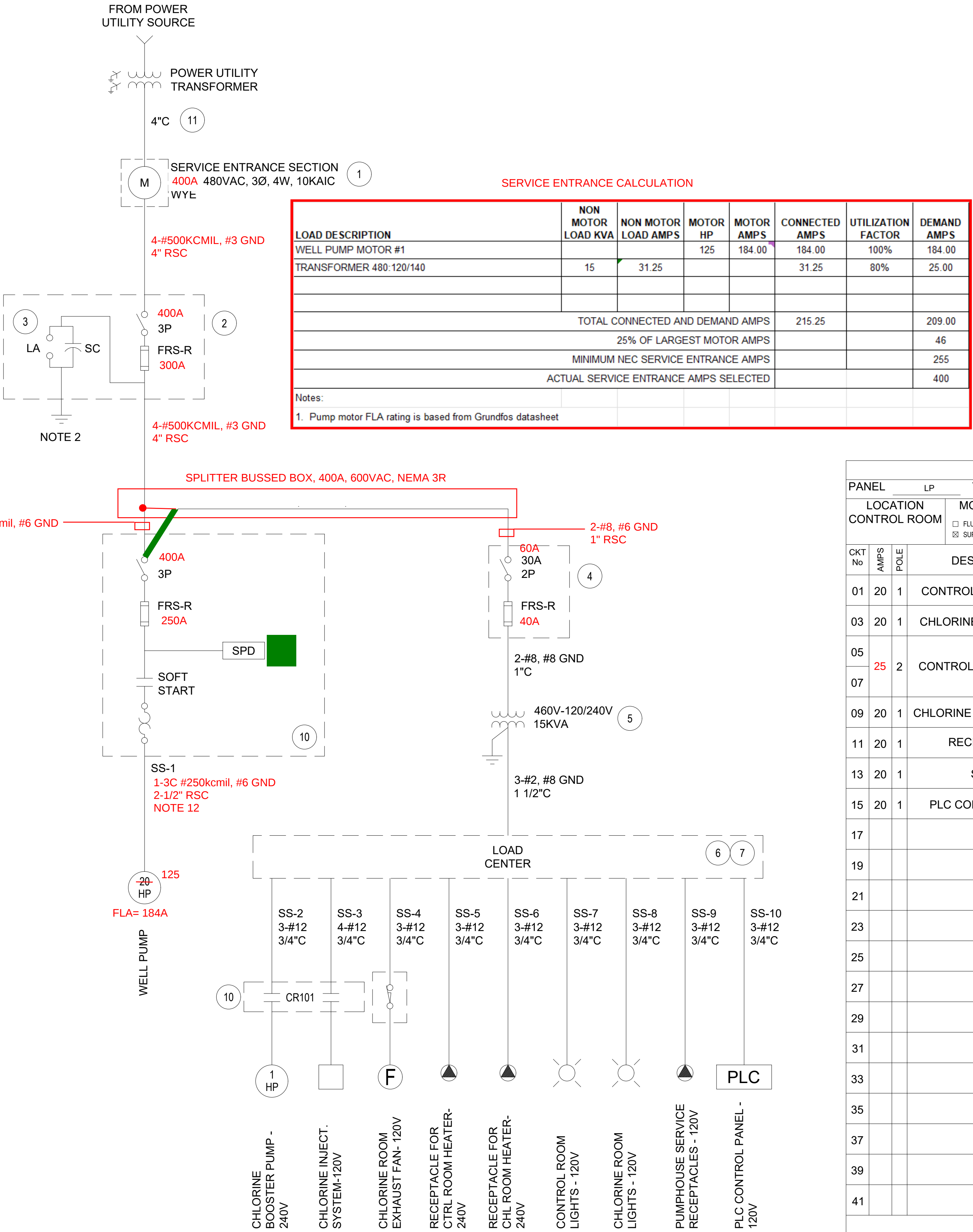
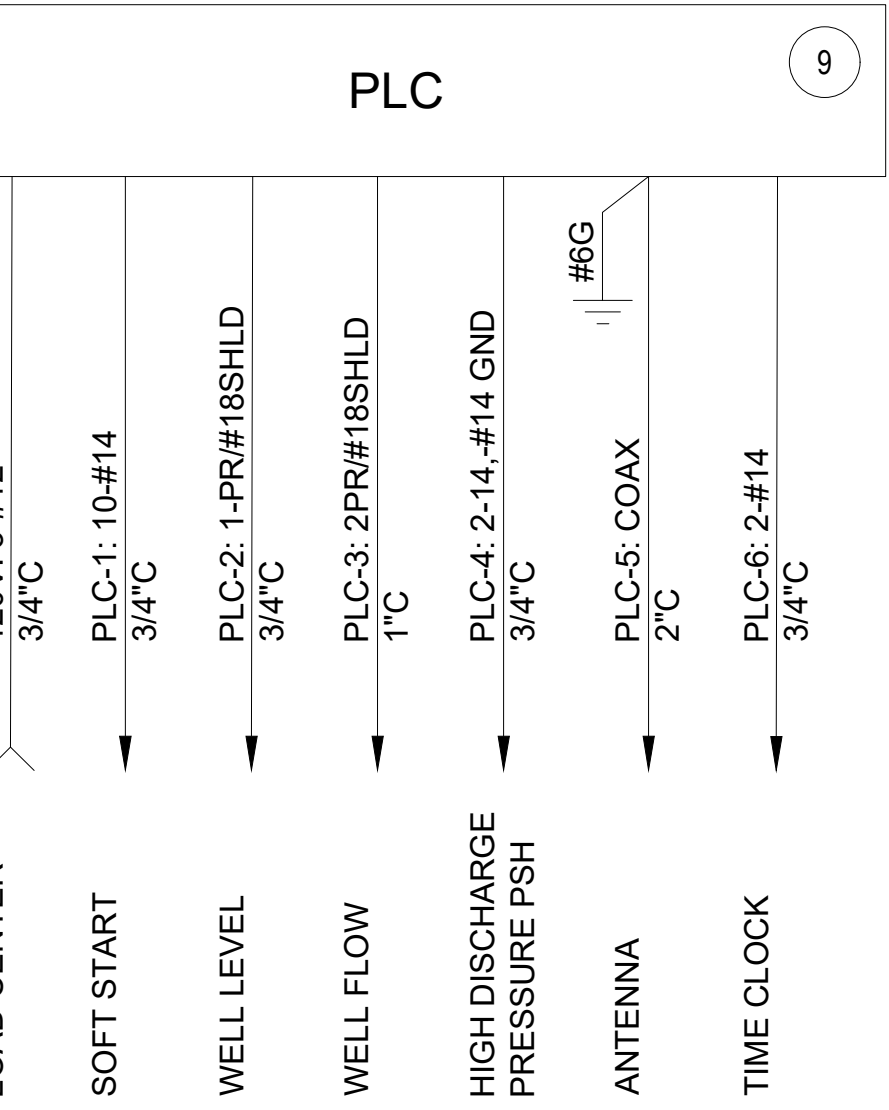




POWER ONE-LINE DIAGRAM

LOAD DESCRIPTION	NON MOTOR LOAD KVA	NON MOTOR LOAD AMPS	MOTOR HP	MOTOR AMPS	CONNECTED AMPS	UTILIZATION FACTOR	DEMAND AMPS
WELL PUMP MOTOR #1			125	184.00	184.00	100%	184.00
TRANSFORMER 480-120/140	15	31.25			31.25	80%	25.00
TOTAL CONNECTED AND DEMAND AMPS					215.25		209.00
25% OF LARGEST MOTOR AMPS							46
MINIMUM NEC SERVICE ENTRANCE AMPS							255
ACTUAL SERVICE ENTRANCE AMPS SELECTED							400
Notes:							
1. Pump motor FLA rating is based from Grundfos datasheet							



CONTROL ONE-LINE DIAGRAM

PANEL SCHEDULE																	
PANEL		LP		VOLTS		120/240		PHASE		1		WIRE		3		CAT No	
LOCATION CONTROL ROOM			MOUNTING ☐ FLUSH ☒ SURFACE		FEED ☐ TOP ☒ BOTTOM		.125 ☒ LUGS ONLY ☐ NA		MAIN AMPERE RATING AMP BRKR				FEEDER CONDUIT _____ WIRE _____ CIRCUIT No _____				
CKT No	AMPS	POLE	DESCRIPTION			WATTS	LOAD L1N L2			WATTS	DESCRIPTION			POLE	AMPS	CKT No	
01	20	1	CONTROL ROOM LIGHTS			200	1.7 2.5				750	CHLORINE BOOSTER PUMP			2	20	02
03	20	1	CHLORINE ROOM LIGHTS			200		1.7 2.5									04
05	25	2	CONTROL ROOM HEATER			4000	16.7A			4000	CHLORINE ROOM HEATER			2	25	06	
07							16.7A									08	
09	20	1	CHLORINE INJECT. SYSTEM			1500	12.5 2				240	CHLORINE ROOM EXH. FAN			1	20	10
11	20	1	RECEPTACLES			180		1 1.5			120	CHLORINE GAS DETECTOR			1	20	12
13	20	1	SPARE									SPARE			1	20	14
15	20	1	PLC CONTROL PANEL			180		1.5				SPARE			1	20	16
17																	18
19																	20
21																	22
23																	24
25																	26
27																	28
29																	30
31																	32
33																	34
35																	36
37																	38
39																	40
41																	42
TOTAL AMPS						46.5	36.0			TOTAL WATTS		10050	AVERAGE AMPS		41.25		

GENERAL NOTES

- POWER UTILITY: NAVAJO TRIBAL AUTHORITY
- SUPPLEMENTAL GROUNDING ELECTRODE CONDUCTOR SHALL BE A MINIMUM OF 5/8" COPPER CLAD GROUND ROD OR OTHER NTUA APPROVED REQUIREMENTS (MUST BE APPROVED BY NTUA AND INSPECTED PRIOR TO INSTALL) CONNECTOR FOR GROUNDING CONDUCTOR AND GROUNDING ELECTRODE SHALL BE U.L. APPROVED FOR THIS APPLICATION.
- REFER TO NTUA UNDERGROUND ELECTRICAL STANDARDS DWG NO. CM-04 FOR SERVICE ENTRANCE REQUIREMENTS
- REFER TO NAVAJO INDIAN HEALTH SERVICE TECHNICAL PROVISIONS FOR PROGRAMMABLE LOGIC CONTROL AND MOTOR CONTROLS.
- CONTRACTOR TO VERIFY FINAL LOCATION OF SERVICE ENTRANCE AND COMPLY WITH NEC 240.21 FEEDER TAP RULE. KEEP THE SERVICE ENTRANCE BELOW 25 FEET OR MOVE IT CLOSER TO THE PUMPHOUSE BUILDING OTHERWISE NEED TO PROVIDE SEPARATE LOAD CENTER AFTER THE UTILITY METER.

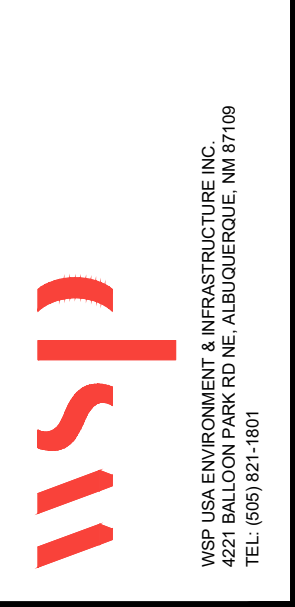
KEY NOTES

- SERVICE ENTRANCE METER SOCKET, NEMA 3R, EUSERC, TEST BLOCKS, SUN VALLEY.
- MAIN DISCONNECT SWITCH, HEAVY DUTY, NEMA 3R, CLASS R FUSE REJECTION KIT, SQUARE D.
- LIGHTNING ARRESTOR, DELTA LA603.
- LOAD CENTER TRANSFORMER DISCONNECT SWITCH, HEAVY DUTY, NEMA 3R, SQUARE D.
- TRANSFORMER, TOTALLY ENCLOSED/ENCAPSULATED, 115 DEGREE C RISE, ACME T-2-53517-3S.
- LOAD CENTER WITH GROUND BAR, NEMA 3R, SQUARE D QO816L100RB.
- SURGE PROTECTIVE DEVICE, BUS CONNECTED, UL 1449 TYPE 2, 22.5KA SURGE, 1 PHASE, 3 WIRE, SQUARE D QO12175SB.



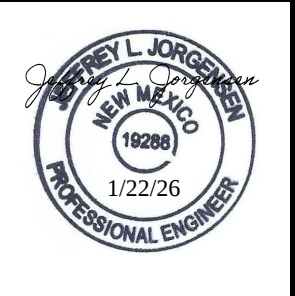
- PROVIDE PER NTUA - TECHNICAL PROVISIONS 4.0 FOR MOTOR CONTROL CENTER AND TANK CONTROL PANEL - PLC CONTROL PANEL, INPUT/OUTPUT WIRING FOR SIMPLEX WELL WITH SOFT STARTER.
- COORDINATE WITH NTUA ON THE DESIGN OF THE SOFT START PUMP PANEL. THE TECHNICAL PROVISIONS IS LIMITED ONLY TO UP TO 100HP. CONTROL PANEL NEEDS TO BE DESIGNED AND RATED FOR A 125HP MOTOR
- CONDUCTORS FROM POLE TO METER BY POWER UTILITY.
- USE AN APPROVED UL RATED, THW SUBMERSIBLE PUMP CABLE

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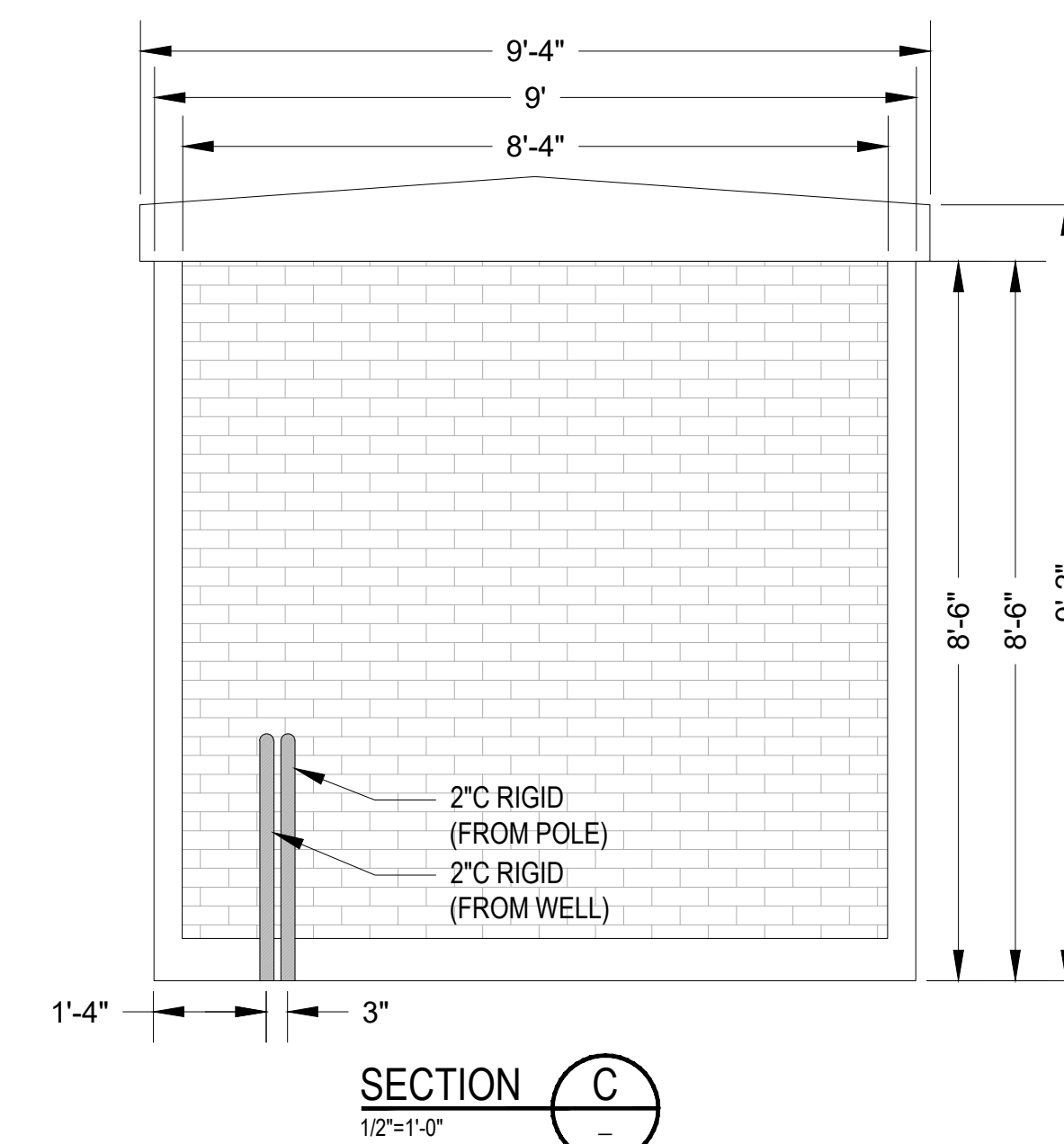
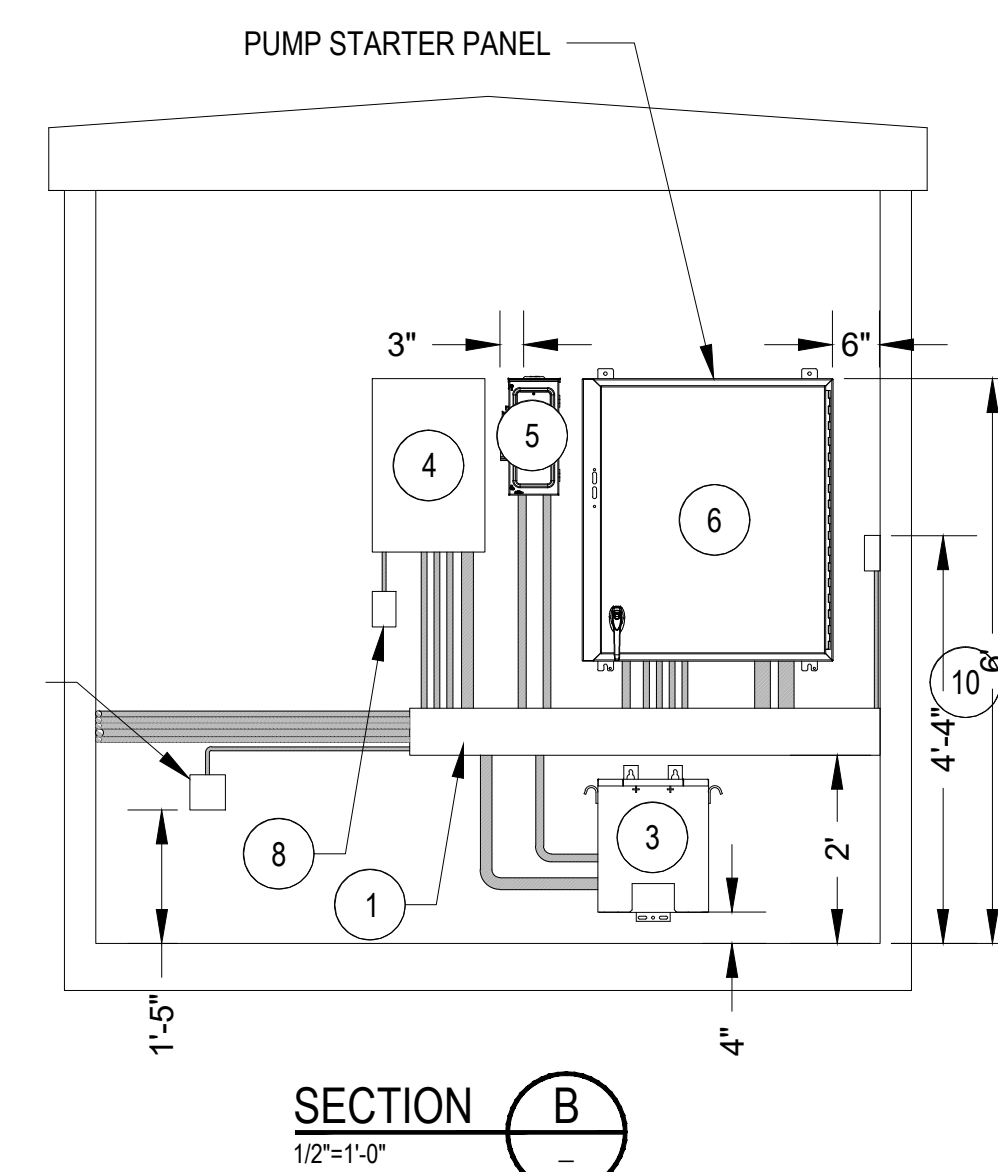
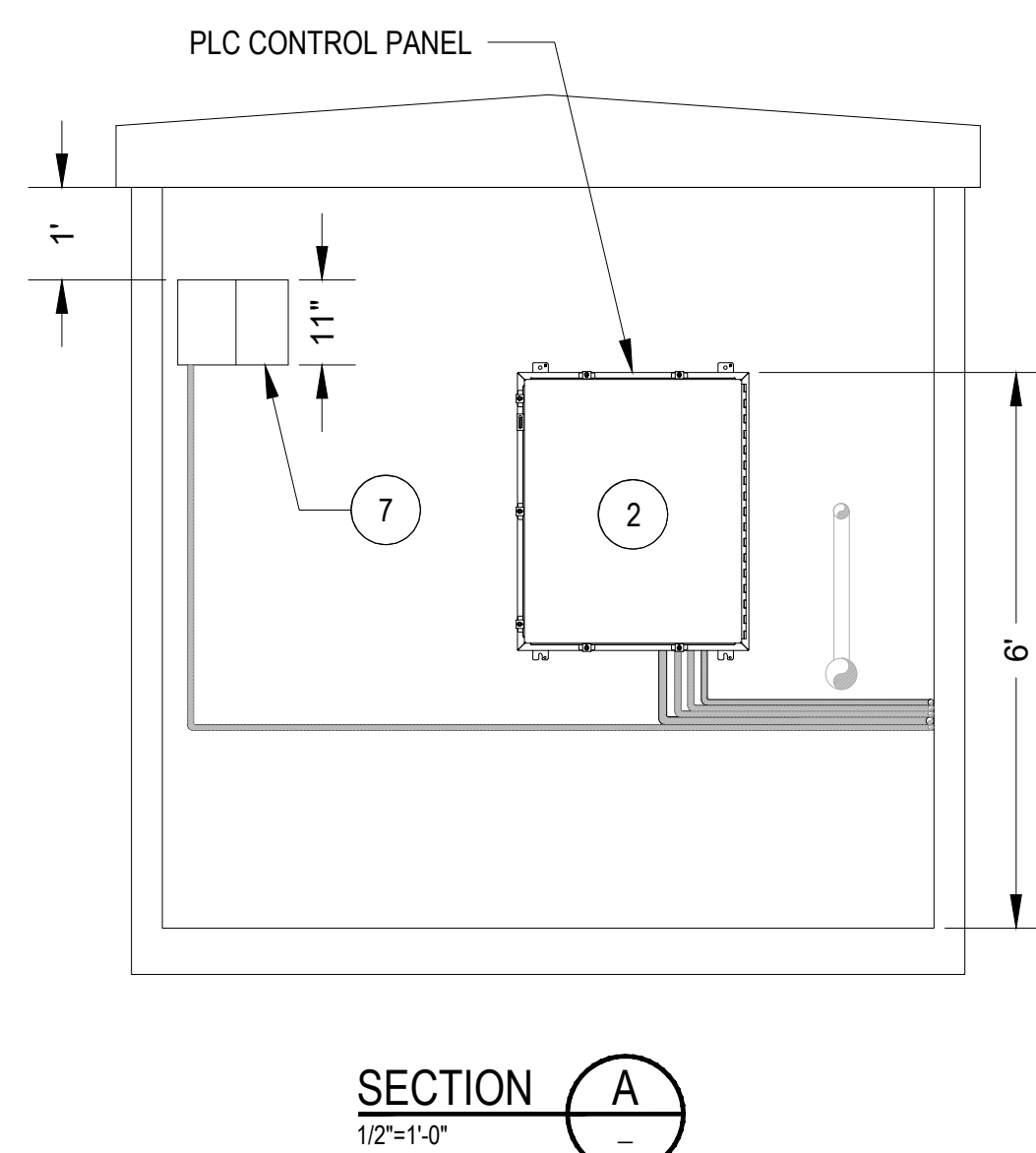
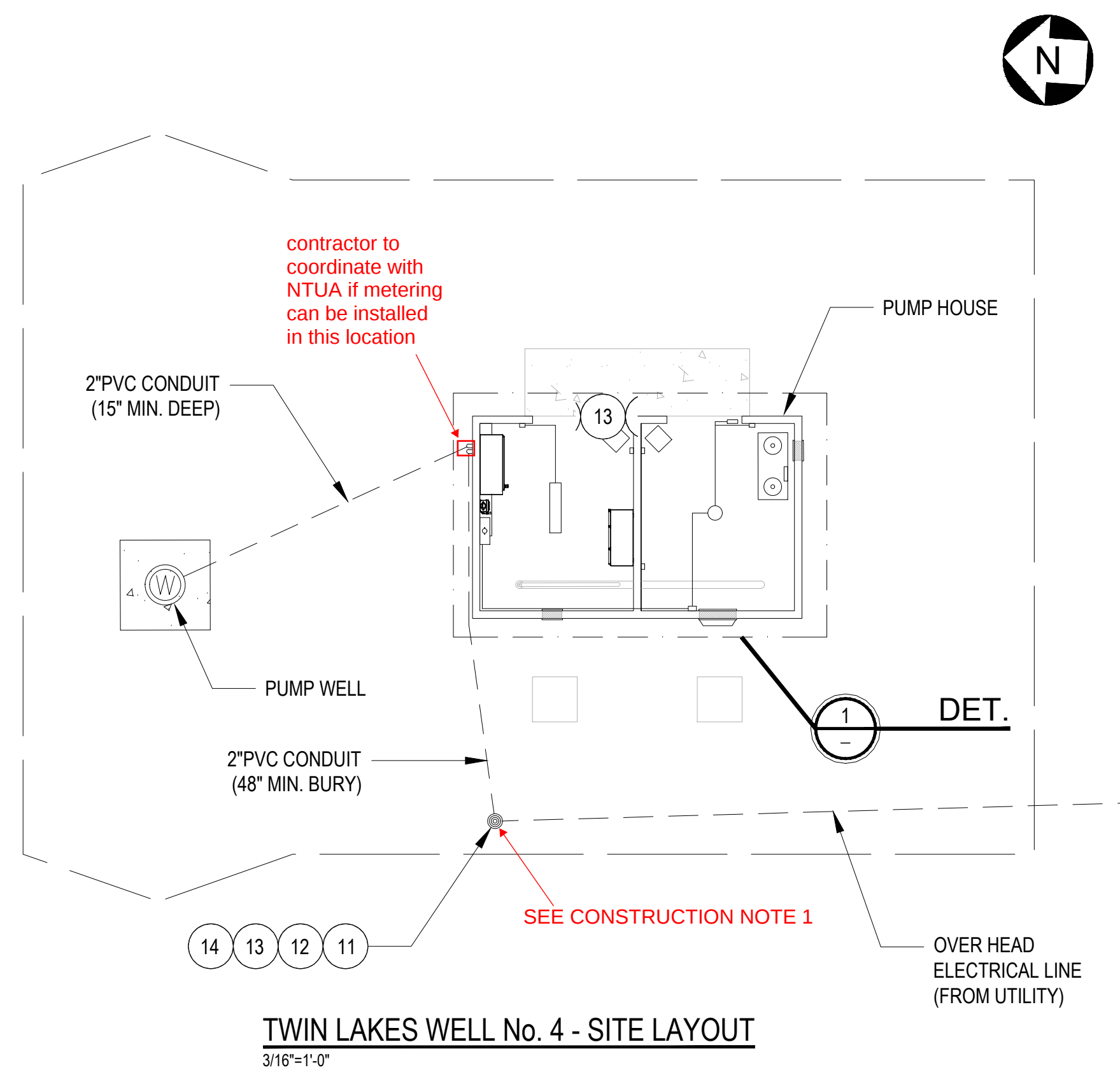
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NAVAJO TRIBAL UTILITY AUTHORITY
TWIN LAKES WELL No. 4
TWIN LAKES CHAPTER, ARIZONA
ONE LINE DIAGRAM

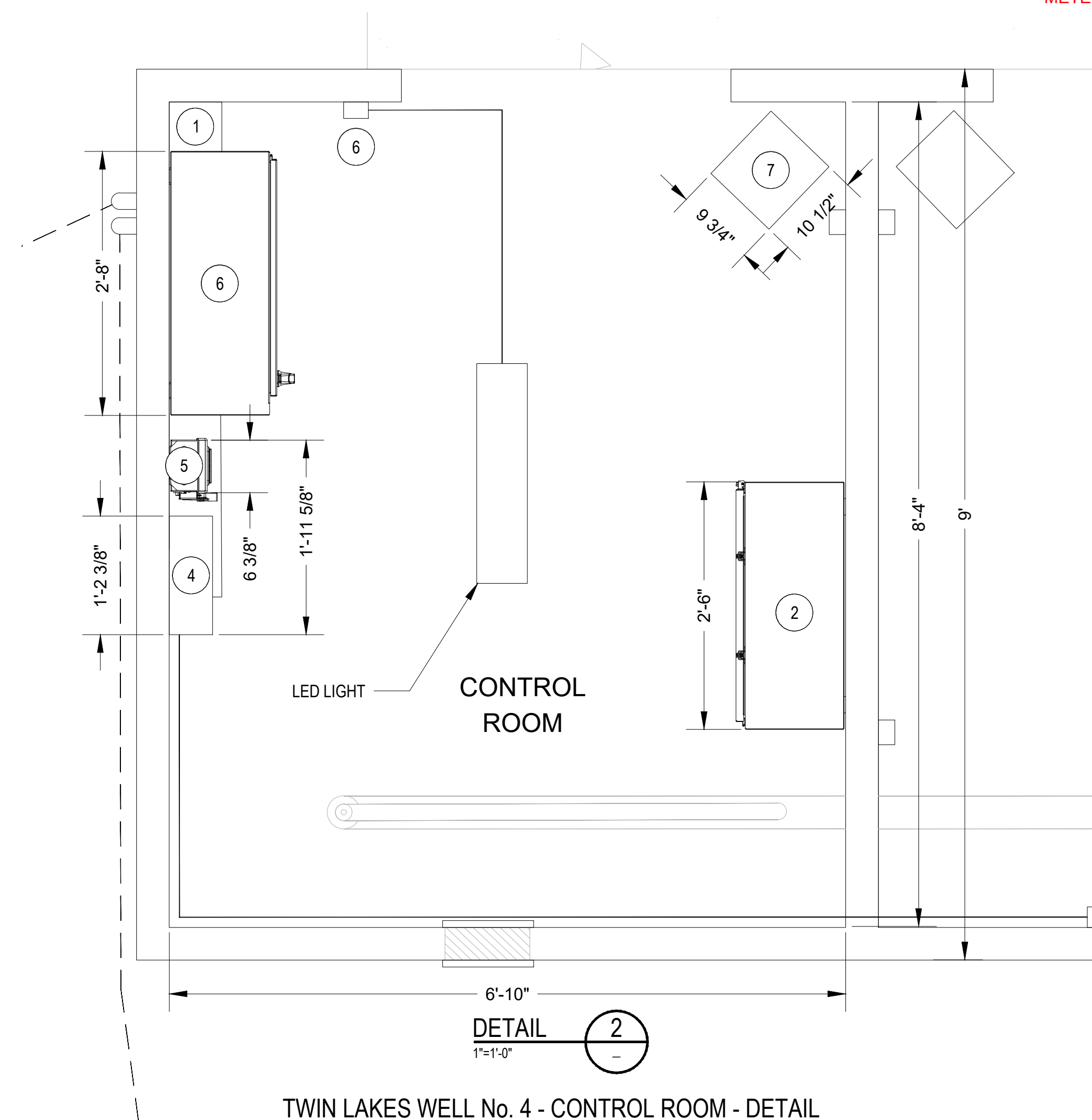
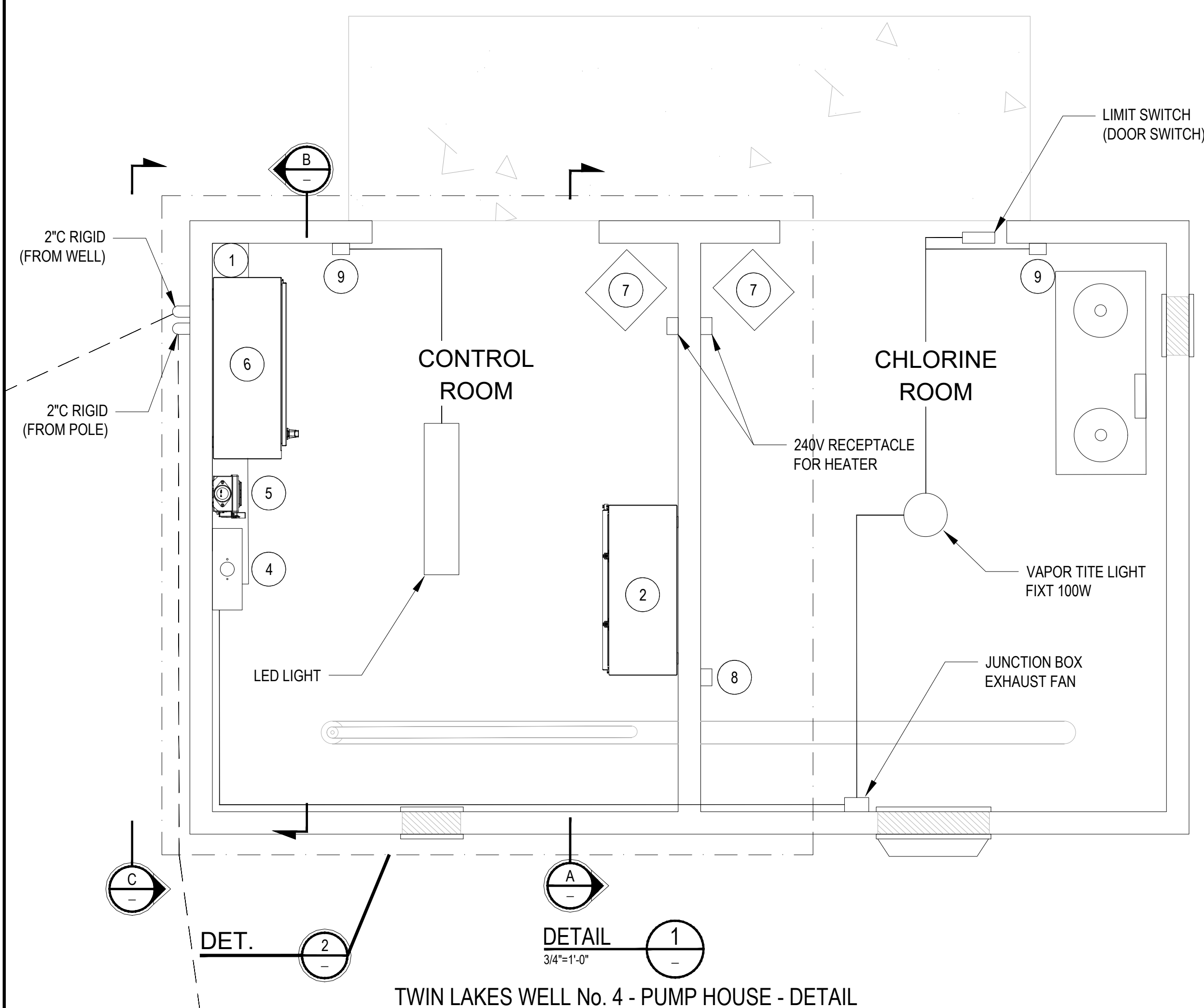


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SHEET 1 OF 2



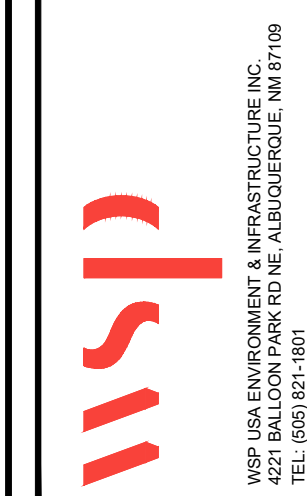
CONSTRUCTION NOTES:
1. CONTRACTOR TO VERIFY FINAL LOCATION OF SERVICE ENTRANCE AND COMPLY WITH NEC 240.21 FEEDER TAP RULE. KEEP THE SERVICE ENTRANCE BELOW 25 FEET OR MOVE IT CLOSER TO THE PUMPHOUSE BUILDING OTHERWISE NEED TO PROVIDE SEPARATE LOAD CENTER AFTER THE UTILITY METER.



- ## KEY NOTES

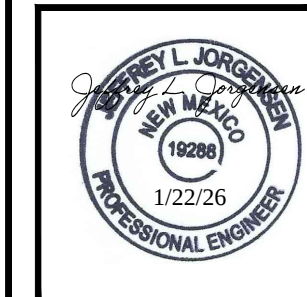
- 1 GUTTER: 6" x 60" x 6 3/8"
- 2 PROPOSED PANEL "A": HOFFMANN #A36H30DLP
36" X 30" X 12" (HWD), NEMA 12 (OR EQUIVALENT).
- 3 TRANSFORMER: TOTALLY ENCLOSED/ENCAPSULATED
115 DEGREE C RISE, 15KVA, 3PH, 460/240-120 VAC
ACME #T253517-3S, 17" x 14" x 12" (HWD).
- 4 LOAD CENTER: 100A W/ MAIN LUGS, SQUARE D
#QO816L100RB, 12.65", 8.88", 4.27" (HWD), NEMA 3R.
- 5 DISCONNECT SW W/HANDLE, W/FRS-~~30R~~^{40A} FUSES (~~30A~~^{60A})
SQUARE D #VH361NRRB, 14.8" x 7.6" x 5.1" (HWD).
- 6 PROPOSED PANEL "B": HOFFMAN #A36SA3212LPPL
36" X 32" X 12" (HWD), NEMA 12 (OR EQUIVALENT).
- 7 HEATER: 220V, 4000W, DAYTON #3UG52
11" x 10 1/2" x 9 3/4" (HWD).
- 8 ~~GFCI~~
RECEPTACLE: 120V, DUPLEX, 4 1/2" X 3" X 2" (HWD).
- 9 LIGHT SWITCH: 4 1/2" X 3" X 2" (HWD).
- 10 PRESSURE SWITCH: DPDT, HONEYWELL #L404B-1353
4 1/2" x 3" x 2" (HWD).
- 11 POLE: 8" DIA. 25' LONG.
- 12 SERVICE ENTRANCE METER SOCKET, 7 TERM, 3 PH,
DURHAM #R6821-7N-N, 22 1/8", 14 3/8", 5 1/4" (HWD).
- 13 MAIN DISCONNECT SWITCH: W/FRS-~~100R~~^{300A} FUSES (~~100A~~^{400A}),
SQUARE D #~~361NRRB~~^{H365NRRB}, 15 1/8" x 6 3/8" x 4 1/4" (HWD).
~~H365NRRB~~^{H365NRRB}, 50.3" x 27.8" x 10.1" (HWD)
- 14 LIGHTNING ARRESTOR, DELTA LA603.

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DRAWN BY:	SA
CHECKED BY:	JJ
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NAVAJO TRIBAL UTILITY AUTHORITY
TWIN LAKES WELL No. 4
TWIN LAKES CHAPTER, NEW MEXICO
ELECTRICAL EQUIPMENT LAYOUT



JOB NO.
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SHEET 2 OF 2