

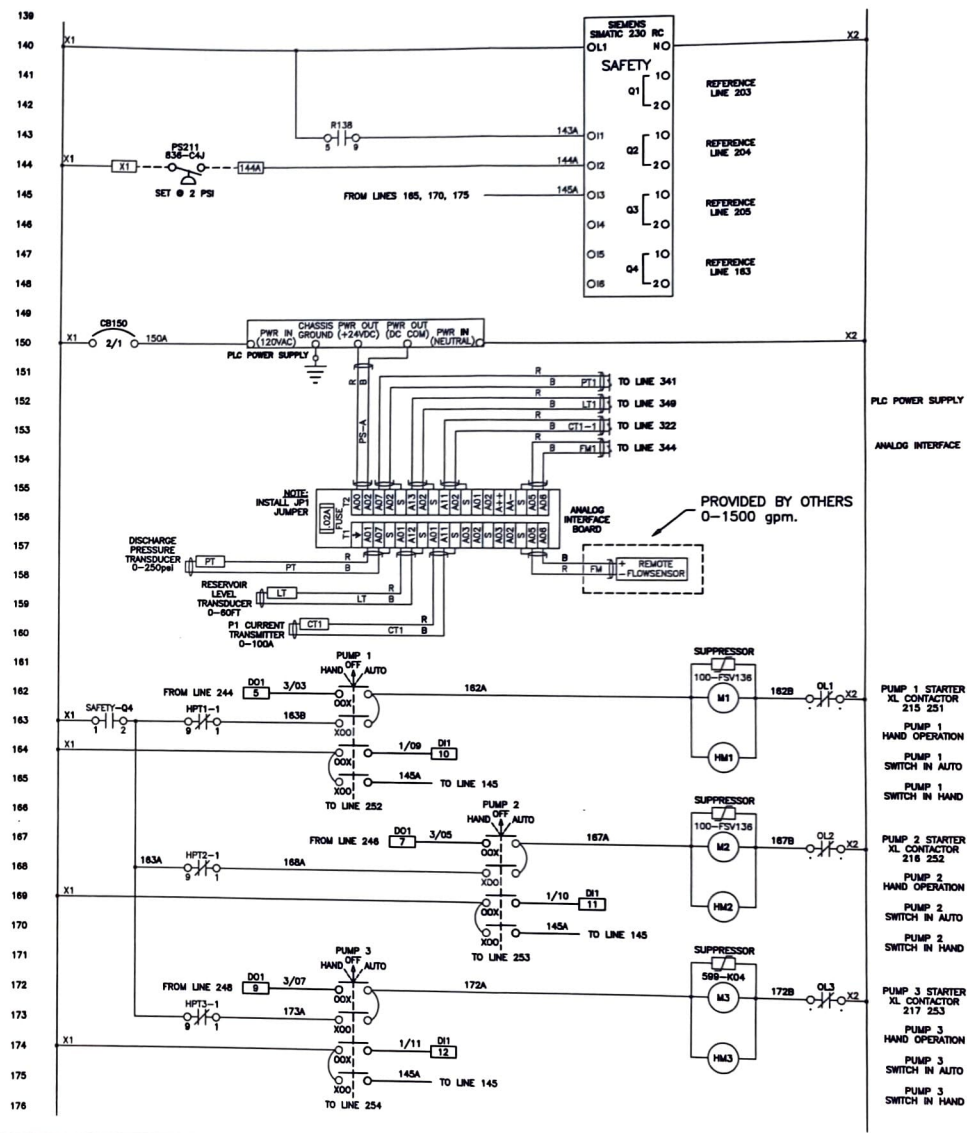
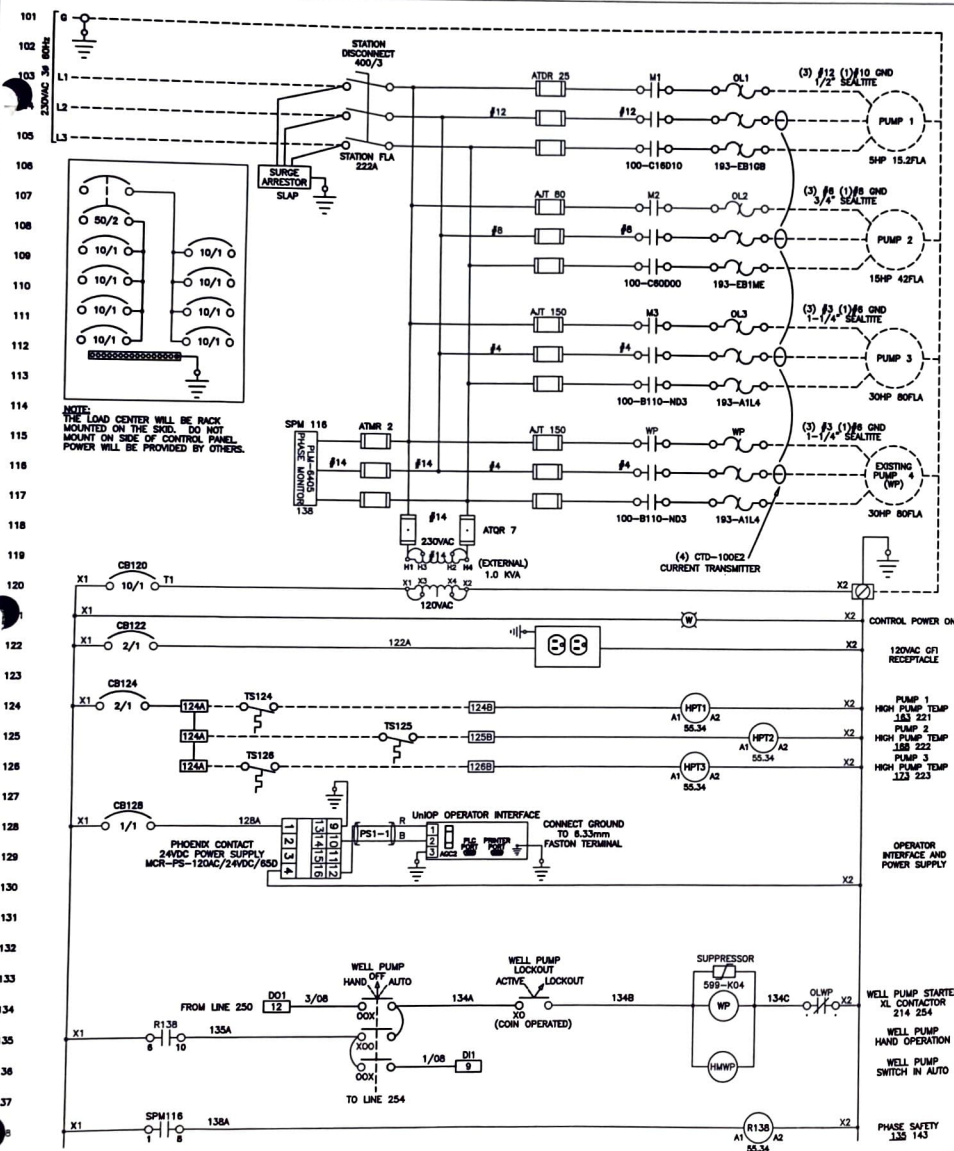
Valley Water District - Alderwood Booster Station
Bill of Materials

Qty	Specification	Manufacturer Part Number	Description	Manufacturer
ALDERWOOD PUMP CONTROL PANEL				
1	Or Approved Equal	CUSTOM	Enclosure Backpan, Custom to fit existing 48" x 37" enclosure	CUSTOM
1	Or Approved Equal	CUSTOM	Enclosure Door Skin, Custom to fit existing enclosure door, powder coat to match existing color	CUSTOM
1	Or Approved Equal	11667154055	Enclosure Fan, PF 67000, 560 CFM, NEMA 12, Plastic Exhaust Grille/Filter, 120 VAC/1.18 A, 12.6" x 12.6" x 6.18"	Pfannenber
1	Or Approved Equal	11760004055	Enclosure Vent, PF 60000 Series, NEMA 12, Plastic Intake Grille/Filter, 12.60" x 12.60" x 1.80"	Pfannenber
1	Or Approved Equal	01141.9-00	Temperature Control Switch, N.O. Contact for fan control or high temperature alarm, Adjustable Set Point Range 32-140 deg.F, 15-amp rated contact at 120VAC	Stego
As Req.	Or Approved Equal	3044102	Terminal Block, UT4, Gray, 26-10 AWG, 600V, 32A	Phoenix Contact
As Req.	Or Approved Equal	3044128	Terminal Block, Grounded, UT4-PE, Yellow-Green, 26-10 AWG	Phoenix Contact
As Req.	Or Approved Equal	3047028	Terminal Block End Barrier, UT2.5/10 Terminals	Phoenix Contact
As Req.	Or Approved Equal	0800886	Terminal Block End Clamp, 9.5mm Wide	Phoenix Contact
As Req.	Or Approved Equal	1492-WFB424	Fuse Terminal Block, 5x20mm Fuse, Black, Red LED Indicator, 30-12 AWG, 15A @ 10-57VAC/VDC	Allen-Bradley
As Req.	Or Approved Equal	1492-WFB4250	Fuse Terminal Block, 5x20mm Fuse, Black, Neon LED Indicator, 30-12 AWG, 15A @ 100-300VAC	Allen-Bradley
As Req.	Or Approved Equal	S500-_-R	Fuse, _ A, Glass Body, 5x20mm, Fast Acting, 250VAC/60VDC (amp rating as required for application)	Bussmann
As Req.	Or Approved Equal	1489-M1C__0	Miniature Circuit Breaker, 1-Pole, _A, Din Rail Mount, 277VAC/48VDC Max, Trip Curve C, 10kA, UL 489 Listed (amp rating as required for application)	Allen-Bradley
As Req.	Or Approved Equal	700-HLT1Z24	Terminal Block Relay, SPDT, 3 A Contacts, LED Indicator, 24 VDC Coil	Allen-Bradley
As Req.	Or Approved Equal	700-HC2Z2Z4-4	Ice Cube Control Relay, DPDT, 10A Contact, 24 VDC, Pilot Light	Allen-Bradley
As Req.	Or Approved Equal	700-HC2A1-4	Ice Cube Control Relay, DPDT, 10A Contact, 120 VAC, Pilot Light	Allen-Bradley
As Req.	Or Approved Equal	700-HN104	Ice Cube Control Relay Base, Mini 14-Blade Base Socket, Screw Terminals	Allen-Bradley
1	Or Approved Equal	5600462	Receptacle, GFCI, 15A/125VAC, DIN rail mounting, duplex	Phoenix Contact
1	Or Approved Equal	TX1505	Temperature Transmitter, 0-150F Span, 8-35 VDC Supply Voltage, 4-20 mA Ouput	TCS Basys Controls
1	Or Approved Equal	TS-1000	RTD, 1000 ohm Platinum RTD, Wall Mount	TCS Basys Controls
4	No Equal	800H-JR2B	Selector Switch, 3-Position, Maintained, 30mm, NEMA-4X, 2 NO/2 NC Contact	Allen-Bradley
As Req.	No Equal	800T-XA	Contact Block, 1 NO/1 NC Contact	Allen-Bradley
4	No Equal	800H-QRBH2G	Pilot Light, Push-to-Test, LED, 12-130VAC/VDC, Green, 30mm, NEMA-4X	Allen-Bradley
1	No Equal	800H-QRBH2R	Pilot Light, Push-to-Test, LED, 12-130VAC/VDC, Red, 30mm, NEMA-4X	Allen-Bradley
1	No Equal	800H-UR29	Potentiometer, 10k Ohms, 30mm, NEMA-4X	Allen-Bradley
4	Or Approved Equal	CEC-55PM-406	Runtime/Start Counts Meter; 55mm Door Mount - Square Hole; 100-130VAC; Non-Resetable	Eaton
1	No Equal	1606-XLS240-UPS	DC UPS, Essential Series, 24-28VDC Input/Output, 10.0 A, 240 W, (Battery Assembly Required)	Allen-Bradley
1	No Equal	1606-XLSBATASSY2	26Ah Battery Assembly w/ Mounting Bracket, (240 W UPS Only)	Allen-Bradley
1	No Equal	1606-XLE240EN	Essential Power Supply, 24-28V DC, 240 W, 120/240V AC Input Voltage	Allen-Bradley
1	No Equal	1783-LMS8	Lightly Managed Ethernet Switch, Stratix 2000, 8-port 10/100 Copper, 18-60VDC Supply	Allen-Bradley
1	No Equal	2711P-T10C22D9P	PanelView Plus 7 Performance Terminal, Touch Screen,10.0 inches SVGA, TFT Color, Ethernet DLR, 24V DC, Windows CE OS License Pro, Performance Model	Allen-Bradley
1	No Equal	5069-L320ER	CompactLogix 5380 Controller, 2 MB, 16 I/Os, 40 nodes, Standard, ships with 5069-ECR end cap	Allen-Bradley
2	No Equal	5069-IA16	5069 Compact I/O 16 channels AC input modules, supporting both 120 & 240 VAC signals	Allen-Bradley
1	No Equal	5069-OA16	5069 Compact I/O 16 channels AC output module supporting both 120 & 240VAC output	Allen-Bradley
1	No Equal	5069-IF8	5069 Compact I/O 8 Channel Voltage/Current Analog Input Module	Allen-Bradley
1	No Equal	5069-OF4	5069 Compact I/O 4 Channel Voltage/Current Analog Output Module	Allen-Bradley
1	No Equal	5069-FPD	5069 Compact I/O Field Potential Distributor Module	Allen-Bradley
1	No Equal	5069-RTB64-SCREW	5069 Compact I/O Power terminal RTB kit for both 4 and 6 pin Screw type	Allen-Bradley
1	No Equal	5069-RTB6-SCREW	5069 Compact I/O 6 pins Screw type terminal block	Allen-Bradley
5	No Equal	5069-RTB18-SCREW	5069 Compact I/O 18 pins Screw type terminal block	Allen-Bradley

Valley Water District - Alderwood Booster Station
Bill of Materials

Qty	Specification	Manufacturer Part Number	Description	Manufacturer
1	No Equal	IX30-00P7	Digi IX30-PR - LTE-A Cat 7 North America, Primary Responder, FirstNet Capable, dual Ethernet, RS-232/422/485, GNSS	Digi
2	Or Approved Equal	TRA6927M3PB-001	Cellular Antenna, Omni, 698-960MHz/3.5 dBi, 1710-1990MHz/5.5 dbi, 2100-2700MHz/4.6 dBi, 50ohms, Pol.Vertical, N-Type, 3.3"H x 1.44"D, Black	Laird
2	Or Approved Equal	TSX-NFF	Coaxial Lightning Protector, 698 MHZ-2.7GHZ, N-Female Connection, IP67 Bulkhead Mounting, DC Block, 500W, 40kA	Polyphaser
2	Or Approved Equal	BFN	Lightning Protector Mounting Bracket	Polyphaser
2	Or Approved Equal	CXTA19K-3	Coax Cable Jumper, 3', N-Male to SMA-Male, LMR195	Talley Communications
As Req.	Or Approved Equal	LMR-400DB	Coax Cable, RG8, Type 3/8", Watertight, Polyethelyne Foam PE Jacket, Impedance 50ohm	Times Microwave
1	Or Approved Equal	140G-K3F3-D30	Molded Case Circuit Breaker, 300A, K Frame, Thermal Magnetic, 35 kAIC/480V Interrupt Rating, 3 Pole	Allen-Bradley
1	Or Approved Equal	140G-K-TLA13	Molded Case Circuit Breaker Terminal Lugs, K Frame, Qty 3, 1 x 250-500 MCM	Allen-Bradley
1	Or Approved Equal	140G-K-MTL63	Molded Case Circuit Breaker Terminal Lugs, K Frame, Multi-Lug, Qty 3, 6 x 6-1/0 AWG	Allen-Bradley
1	Or Approved Equal	140G-K-RVM21R	Circuit Breaker Rotary Operator Handle/Operating Mechanisms, K Frame, Red/Yellow Handle, 21" Max Depth	Allen-Bradley
1	Or Approved Equal	4983-DS230-403	Surge Protector, Din Rail Mount, UL 1449 , 230VAC, 20kA, 3 Pole Configuration	Allen-Bradley
1	Or Approved Equal	SLU-0201	Phase Monitor, Universal Input, SPDT Relay	ATC
As Req.	Or Approved Equal	CCP2-3-30CC	Fuse Holder, 3 Pole w/ Indicator, Class CC-Rejection, 600VAC/30 Amp, 200kA Interrupt Rating, Branch Circuit Protection Rated, Padlockable in Open/Off Position	Bussmann
As Req.	Or Approved Equal	LP-CC-_	Fuse, _ Amp, Class CC-Rejection, 600VAC/200kAIC, Current limiting, Time delay (amp rating as required for application)	Bussmann
1	Or Approved Equal	9070T1000D1	Transformer, 1000 VA, Single Phase, 240/480 VAC Primary, 120 VAC Secondary	Square D
1	Or Approved Equal	9070FSC2	Transformer Finger Safe Guard, 9070T Type, 250-5000 VA sizes	Square D
1	No Equal	25B-B048N104	PowerFlex 525 AC Drive, with Embedded EtherNet/IP, 240 VAC, 3 Phase, 15 HP, 48.3A; Frame E, IP20 NEMA / Open Type, No Filter	Allen-Bradley
1	No Equal	22-HIM-C2S	Remote (Panel Mount) LCD Display, PowerFlex Component Class IP66 (NEMA 4X/12) Remote DSI LCD HIM	Allen-Bradley
1	Or Approved Equal	140M-F8E-C45	Motor Protection Circuit Breaker, 32.0 - 45.0 A, High Performance, Frame Size F	Allen-Bradley
1	Or Approved Equal	1321-3R45-B	Line Reactor, 600VAC 3 phase, 45.0 A Max	Allen-Bradley
1	Or Approved Equal	140MG-G8P-C30	Motor Circuit Protector, 30A, Adjustable Magnetic, 3 Poles	Allen-Bradley
2	Or Approved Equal	140MG-G8P-D12	Motor Circuit Protector, 125A, Adjustable Magnetic, 3 Poles	Allen-Bradley
6	Or Approved Equal	140G-G-TLC13	Molded Case Circuit Breaker Terminal Lugs, Frame G, Qty 3, 1 x 14-1/0 AWG	Allen-Bradley
1	Or Approved Equal	100-C30D10	100-C IEC Contactor, 120V 60Hz, Screw Terminals, Line Side, 30A, 1 N.O. 0 N.C. Auxiliary Contact Configuration	Allen-Bradley
2	Or Approved Equal	100-C85D10	100-C IEC Contactor, 120V 60Hz, Screw Terminals, Line Side, 85A, 1 N.O. 0 N.C. Auxiliary Contact Configuration	Allen-Bradley
1	Or Approved Equal	193-1EFED	E100 Solid State Overload Relay Trip Class 10, 15, 20, 30, Auto/Manual-Auto Reset Screw Type, 5.4-27A (1 or 3 Phase), 100-C30...C55 or 300-B...C	Allen-Bradley
2	Or Approved Equal	193-1EFGE	E100 Solid State Overload Relay Trip Class 10, 15, 20, 30, Auto/Manual-Auto Reset Screw Type, 20-100A (3 Phase), 100-C60...C97 or 300-C...D	Allen-Bradley
ALDERWOOD TELEMETRY CONTROL PANEL				
1	Or Approved Equal	A24P20	Enclosure Backpan, Painted Mild Steel, 21.00" x 17.00"	Hoffman
As Req.	Or Approved Equal	3044102	Terminal Block, UT4, Gray, 26-10 AWG, 600V, 32A	Phoenix Contact
As Req.	Or Approved Equal	3047028	Terminal Block End Barrier, UT2.5/10 Terminals	Phoenix Contact
As Req.	Or Approved Equal	0800886	Terminal Block End Clamp, 9.5mm Wide	Phoenix Contact

PLC I-O LIST				
I-O DESCRIPTION	I-O TYPE	COUNT	LOCATION	NOTES
Well Pump Auto	DI	1	Internal to panel	HOA switch on door
Well Pump Running	DI	2	Internal to panel	Motor starter aux
Well Pump Overload	DI	3	Internal to panel	Overload relay aux. Interlocked with motor control circuit (Hand & Auto)
Booster Pump 1 Auto	DI	4	Internal to panel	HOA switch on door
Booster Pump 1 Running	DI	5	Internal to panel	Motor starter aux
Booster Pump 1 Overload	DI	6	Internal to panel	Overload relay aux. Interlocked with motor control circuit (Hand & Auto)
Booster Pump 1 Temperature High	DI	7	External signal wired to interposing relay in panel	Interlocked with motor control circuit (Hand & Auto)
Booster Pump 2 Auto	DI	8	Internal to panel	HOA switch on door
Booster Pump 2 Running	DI	9	Internal to panel	VFD relay aux
Booster Pump 2 VFD Fault	DI	10	Internal to panel	VFD relay aux. Interlocked with motor control circuit (Hand & Auto)
Booster Pump 2 Temperature High	DI	11	External signal wired to interposing relay in panel	Interlocked with motor control circuit (Hand & Auto)
Booster Pump 3 Auto	DI	12	Internal to panel	HOA switch on door
Booster Pump 3 Running	DI	13	Internal to panel	Motor starter aux
Booster Pump 3 Overload	DI	14	Internal to panel	Overload relay aux. Interlocked with motor control circuit (Hand & Auto)
Booster Pump 3 Temperature High	DI	15	External signal wired to interposing relay in panel	Interlocked with motor control circuit (Hand & Auto)
Phase Fail	DI	16	Internal to panel	Interlocked with motor control circuits (Hand & Auto)
AC Control Power Fail	DI	17	Internal to panel	
DC-UPS 24V Power Fail	DI	18	Internal to panel	
DC-UPS Battery Low	DI	19	Internal to panel	
Building Door Intrusion	DI	20	External device	Signal extended from existing telemetry panel
Suction Pressure Low	DI	21	External device	
Well Pump Run	DO	1	Internal to panel	
Booster Pump 1 Run	DO	2	Internal to panel	
Booster Pump 2 Run	DO	3	Internal to panel	
Booster Pump 2 VFD Reset	DO	4	Internal to panel	
Booster Pump 3 Run	DO	5	Internal to panel	
Alarm Indicator	DO	6	Internal to panel	Indicator light on panel door
Well Level	AI	1	External device	Signal extended from existing telemetry panel
Reservoir Level	AI	2	External device	
Distribution System Flow	AI	3	External device	Signal extended from existing telemetry panel
Well Flow	AI	4	External device	
Booster Pump 2 Speed Feedback	AI	5	Internal to panel	
Control Panel Temperature	AI	6	Internal to panel	
Booster Pump 2 Speed Command	AO	1	Internal to panel	



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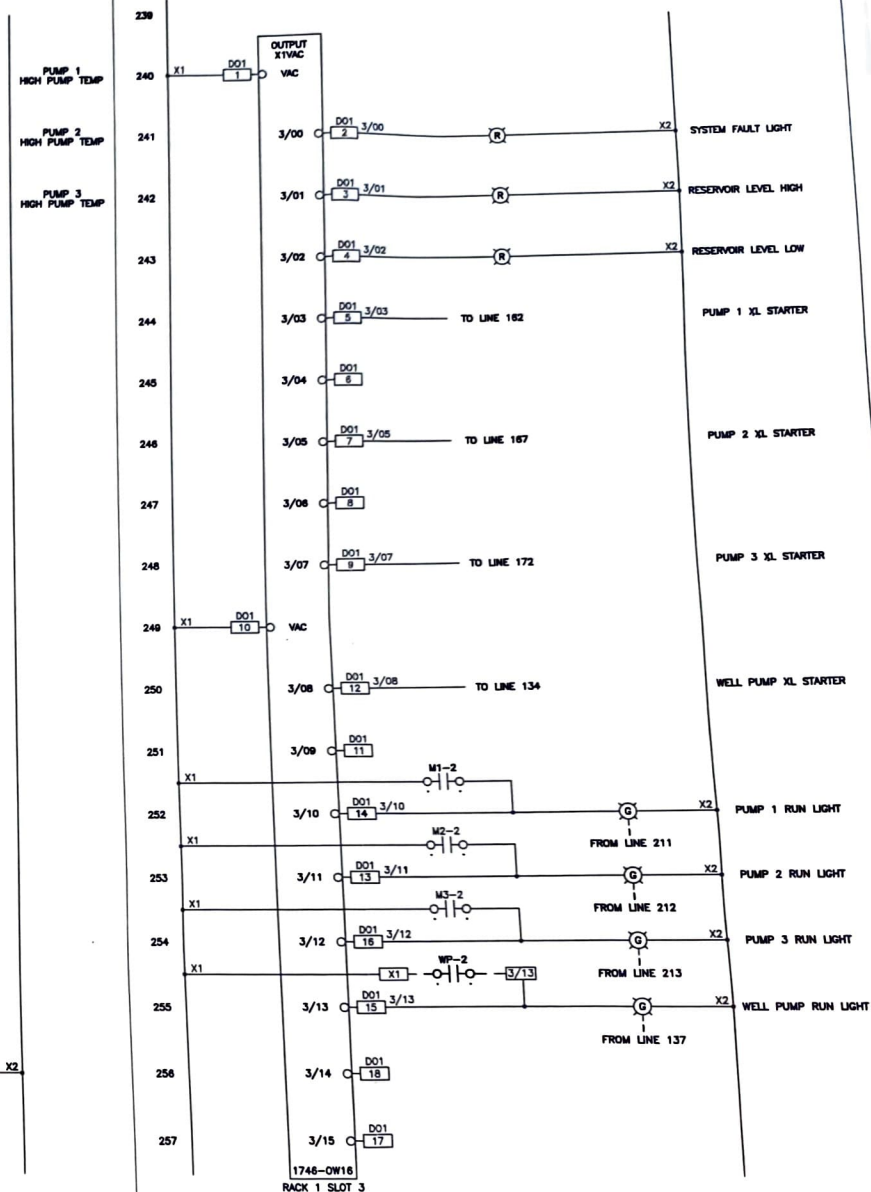
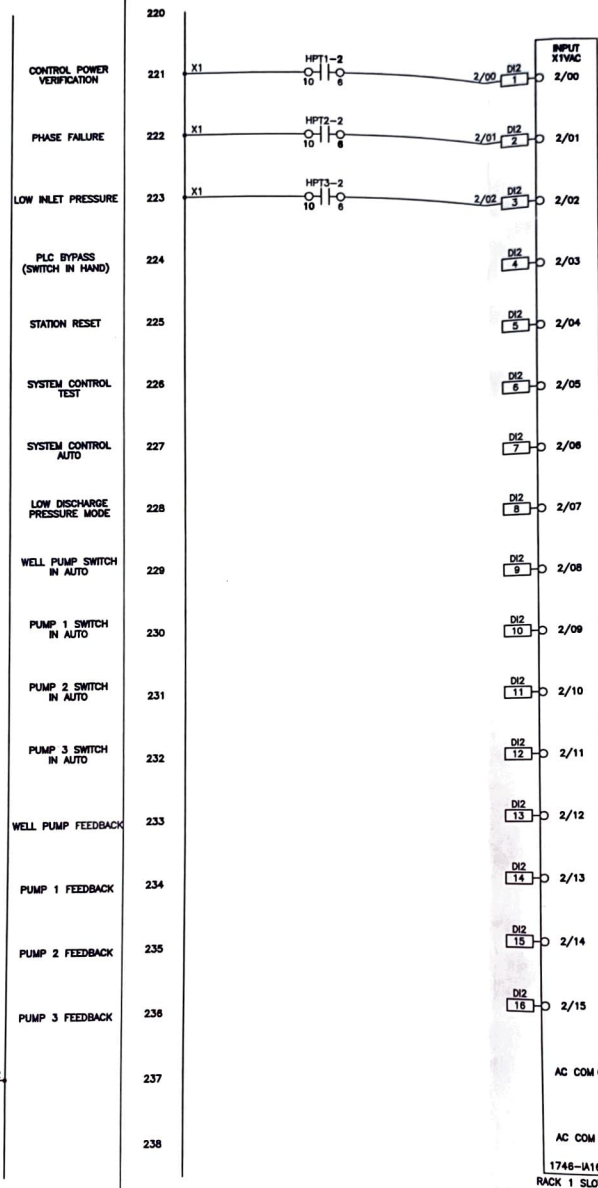
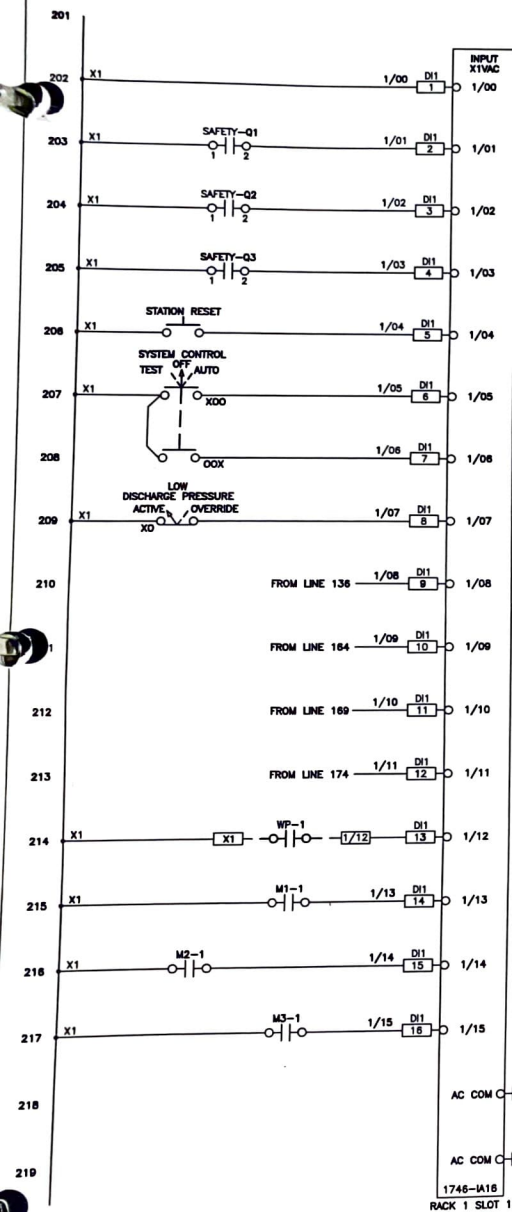
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DATE	DRAWING No.
12/28/2001	11027M
SCALE	SHEET 1 of 3
-	FILE NAME
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	CONTINUED

	CUSTOMER
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	CUSTOMER P.O. No.
	-
	END USER
	Alderwood Estates Booster Station
	RI/VALI

FLOWTRONEXPS
Pumping Systems
10801 NETWORK RD., DALLAS, TEXAS 75220-2303, USA 1-800-537-0000

3 LINE POWER DIAGRAM
120VAC CONTROL LOGIC



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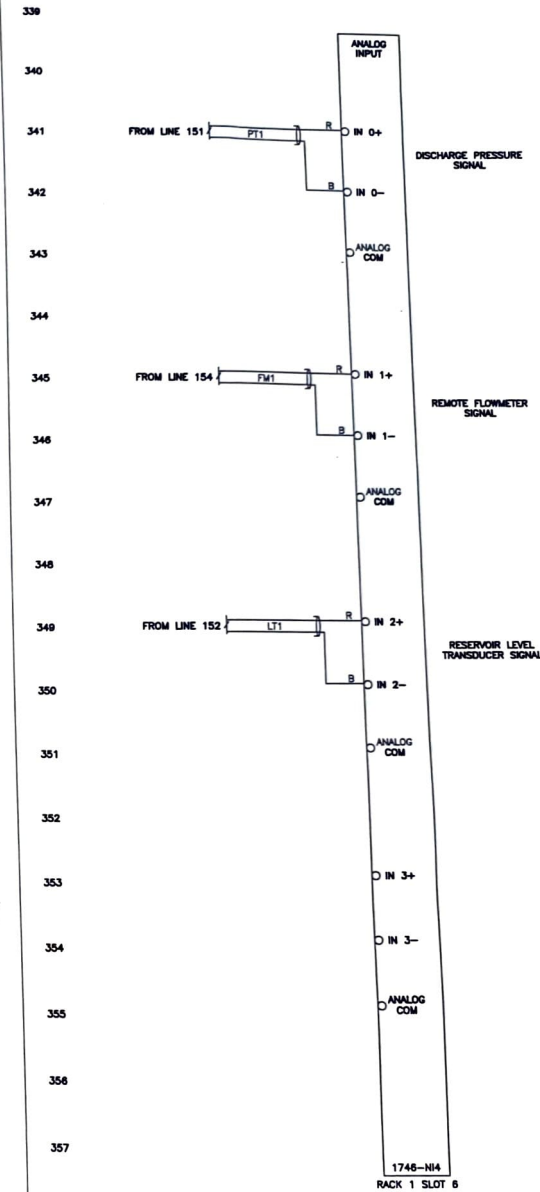
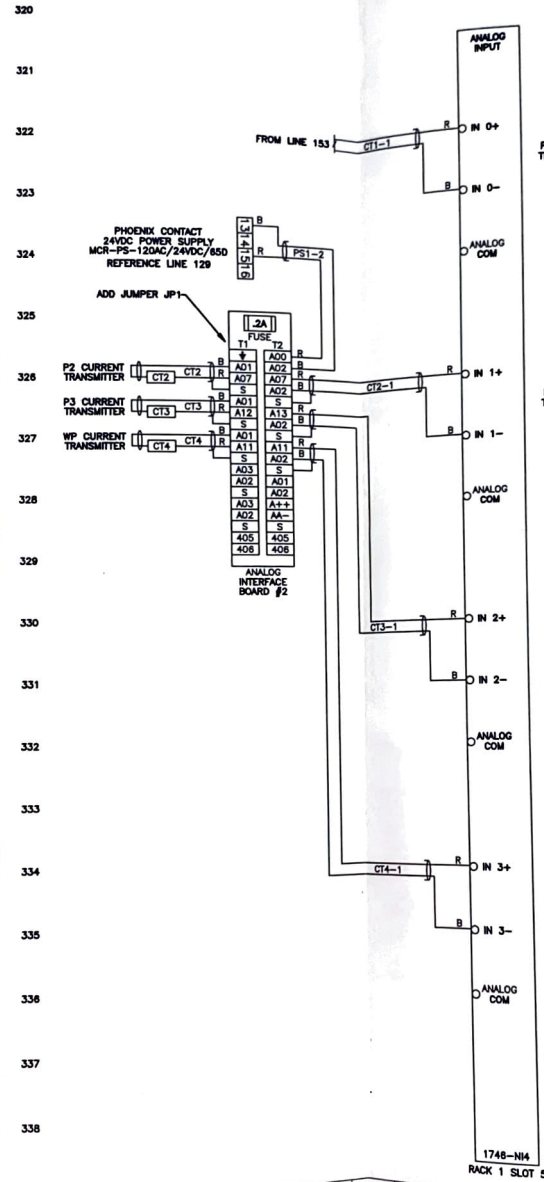
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CONTROL	P5	PUYALLUP, WASHINGTON USA

FLOWTRONEX PSI
Pumping Systems
10841 REVERE BL. DALLAS, TEXAS 75229-2324, USA 1-800-527-0534

PLC I/O SLOTS 1-3

FILLER

RACK 1 SLOT 4



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REV	DATE	BY
1	3/7/02	MCS

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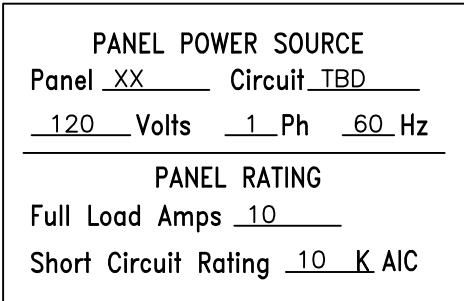
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11027M-03	-	P5

Alderwood Estates Booster Station
PUYALLUP, WASHINGTON USA

FLOWIRONEX PSI
Pumping Systems
10861 NEWKIRK BL., DALLAS, TEXAS 75228-2305, USA 1-800-527-0505

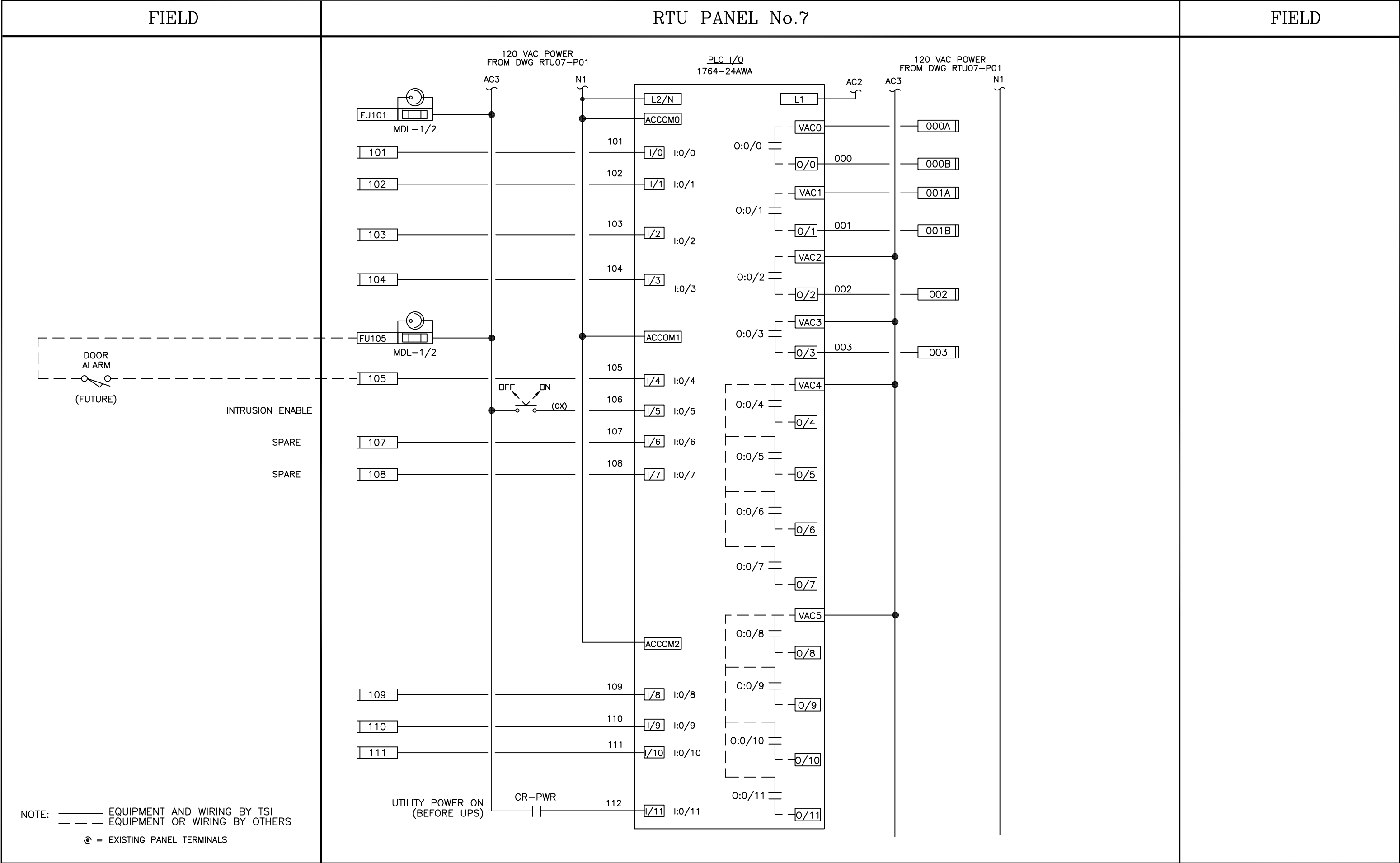
PLC I/O SLOTS 4-6

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						LISTING	 Technical Systems Inc. 2303 196TH ST. S.W. LYNNWOOD, WA. 98036 (425) 775-5696	CUSTOMER VALLEY WATER	DESIGN / CHKD BS/SD	ALDERWOOD SYSTEM RTU 7 POWER DISTRIBUTION	DATE 23 FEB 04
2	FIELD AS-BUILTS / AZ	12/22/04				☐ UL508 S/N _____		DRAWN BS	JOB NO. 6726		
1	SHOP CONSTRUCTION / AZ	4/26/04				☐ ETL			DWG. NO. RTU07-P01		REV. 2
REV	DESCRIPTION/INIT	DATE				☐ OTHER _____	VALLEY WATER DISTRICT				

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						LISTING	TSI	Technical Systems Inc. 2303 196TH ST. S.W. LYNNWOOD, WA. 98036 (425) 775-5696	CUSTOMER VALLEY WATER	DESIGN / CHKD BS/SD	ALDERWOOD SYSTEM RTU 7 BASE UNIT CONTROL WIRING		DATE 23 FEB 04
2	FIELD AS-BUILTS / AZ	12/22/04				☐ UL508 S/N				DRAWN BS			JOB NO. 6726
1	SHOP CONSTRUCTION / AZ	4/26/04				☐ ETL					DWG. NO. RTU07-E01	REV. 2	
REV	DESCRIPTION/INIT	DATE				☐ OTHER	VALLEY WATER DISTRICT						

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