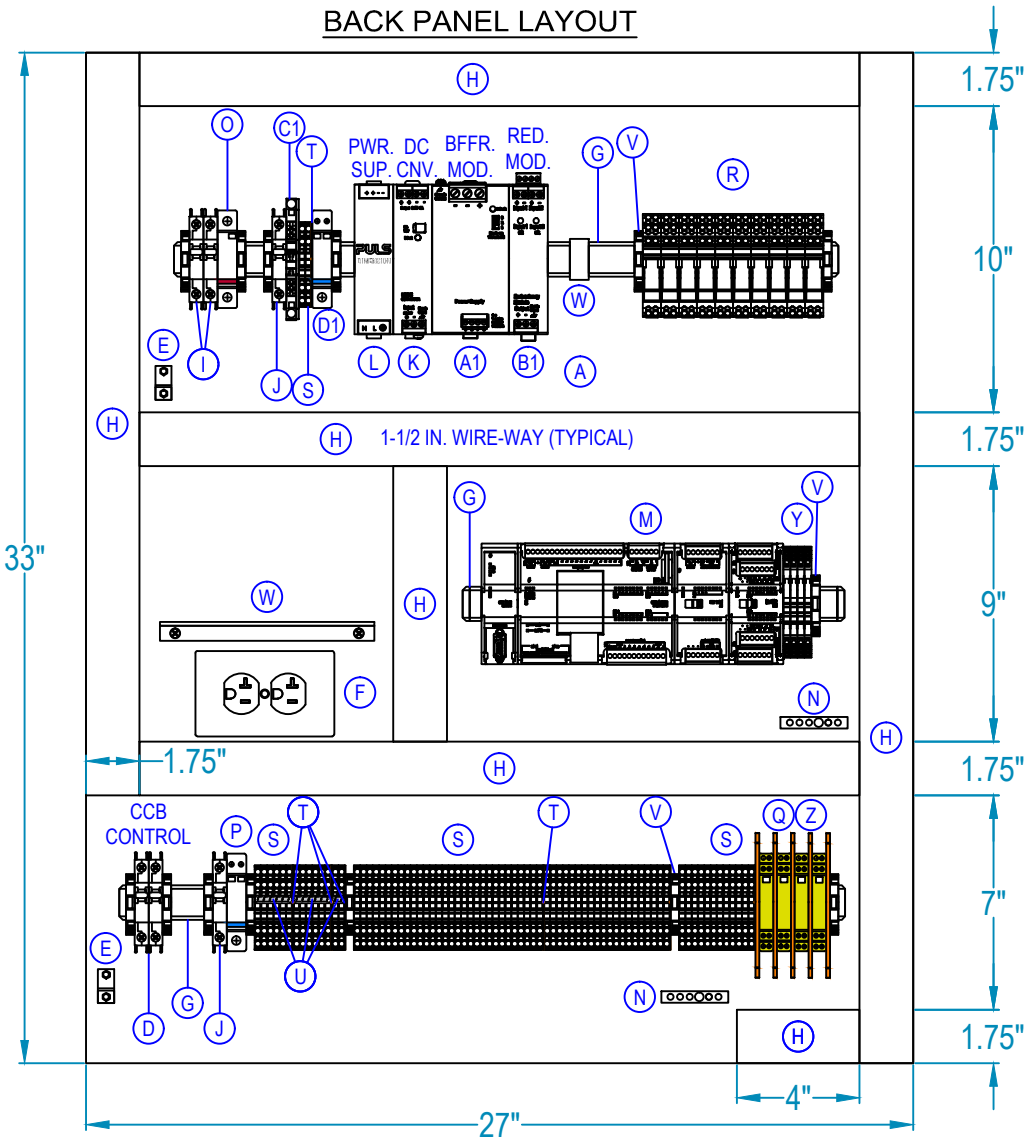


BACK PANEL LAYOUT



BACK PANEL:
SPP-3630 (33"H x 27"W) FABRICATED FROM 12ga. CARBON STEEL
WITH WHITE INDUSTRIAL GRADE ENAMEL FINISH.

GENERAL NOTES:

1. REFER TO "433 LIFT STATION SCADA CONTROLS SPECIFICATION" FOR FURTHER DETAILS THAT MUST BE ADHERED TO.
2. REFER TO NOTES AND DETAILS ON ALL DRAWING SHEETS FOR MORE MANUFACTURING DETAILS.
3. BATTERY ENCLOSURE IS TO BE INSTALLED IN THE FIELD. TWO 12VDC BATTERIES ARE WIRED IN SERIES AND MOUNTED INSIDE BATTERY ENCLOSURE (EXTERNAL TO CONTROL PANEL).
4. ALL PLC I/O WIRING INTERNAL TO THE CONTROL PANEL SHALL BE #18 AWG.
5. ALL WIRES IN CONTROL PANEL SHALL BE TERMINATED WITH FERRULES.
6. ALL MOUNTING SCREWS SHALL BE STAINLESS STEEL, DRILLED AND TAPPED (NO SELF-TAPPING SCREWS ARE ALLOWED).
7. ENSURE GOOD ELECTRICAL CONTACT BETWEEN BACK PANEL AND ALL MECHANICAL GROUND CONNECTIONS.
8. TECHNICAL FIELD SERVICES, INC., JACKSONVILLE, FLORIDA (904) 278-5250

DRAWING LAYER COLOR LEGEND:

- GREY - NOTES
BLACK - ELECTRICAL SCHEMATIC WIRING DIAGRAMS AND DEVICES
BLUE - PART IDENTIFICATION
PURPLE - WIRE NUMBERS
GREEN - FIELD DEVICES AND WIRING OUTSIDE ENCLOSURE (DASHED)
RED - FUTURE DEVICES AND WIRING
TEAL - DIMENSIONS

CONTROL WIRE UL508A COLOR:

- RED - 120 VAC
WHITE - NEUTRAL
BLUE - +24 VDC
WHITE / BLUE STRIPE - 0 VDC

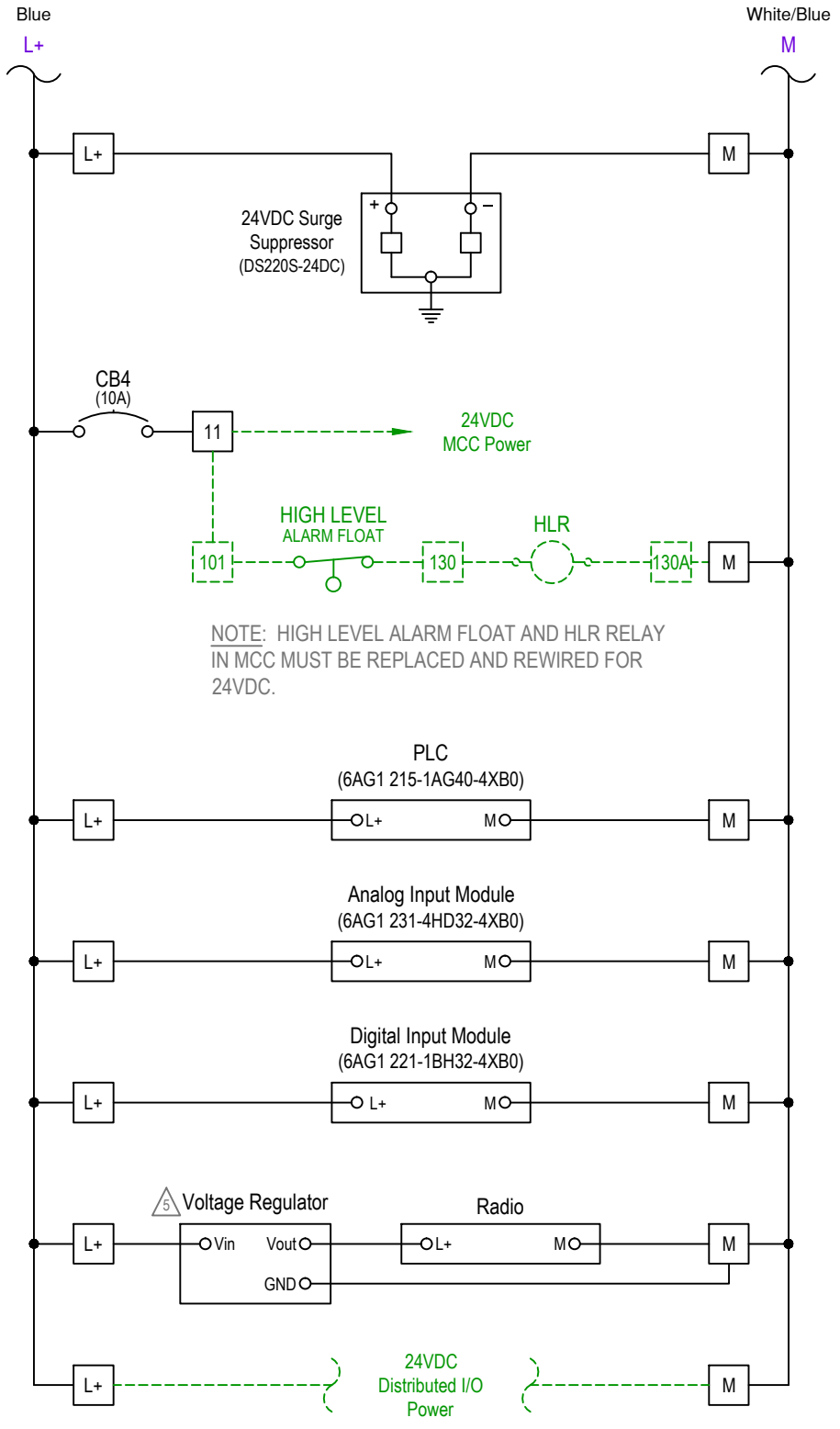
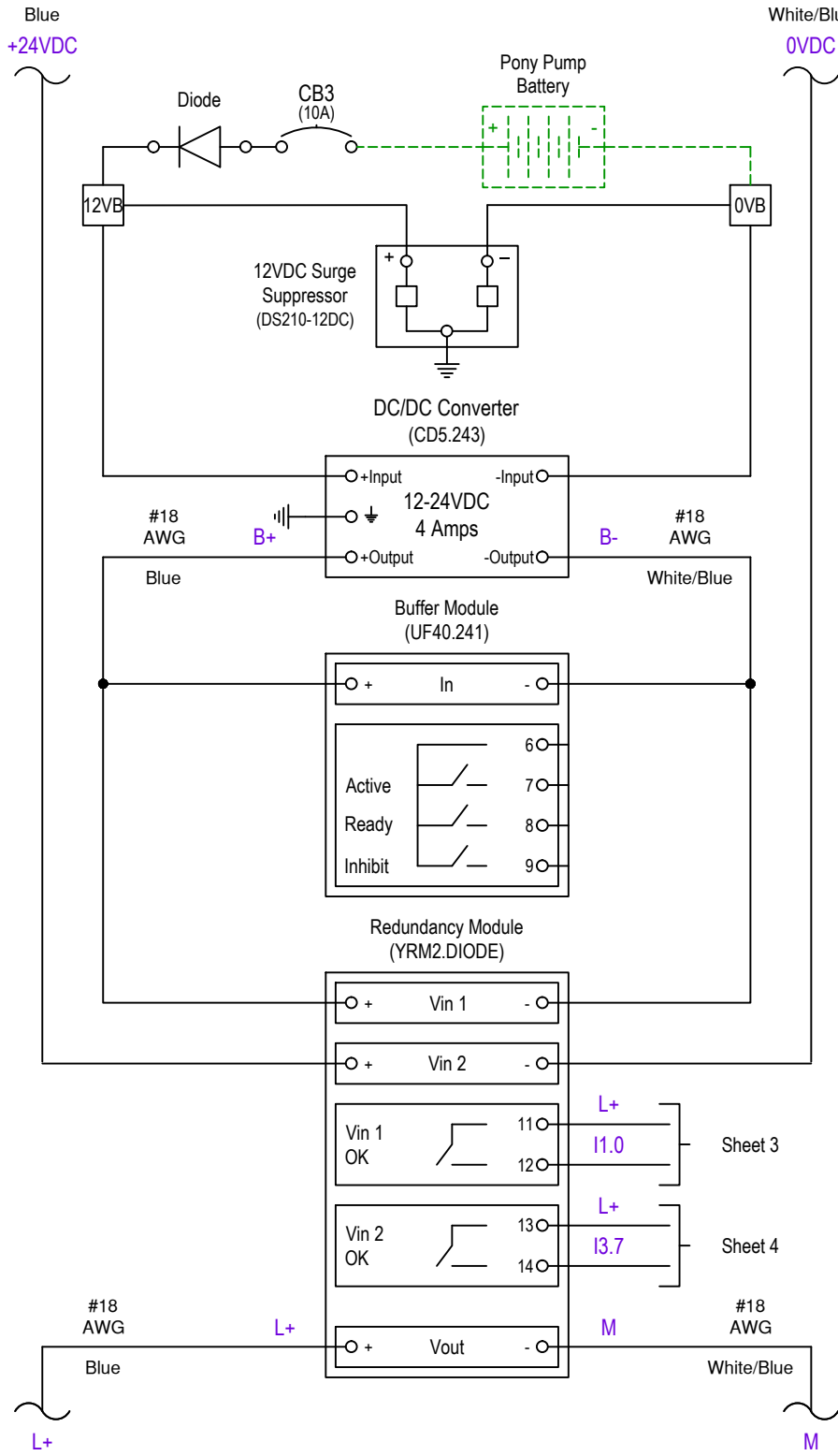
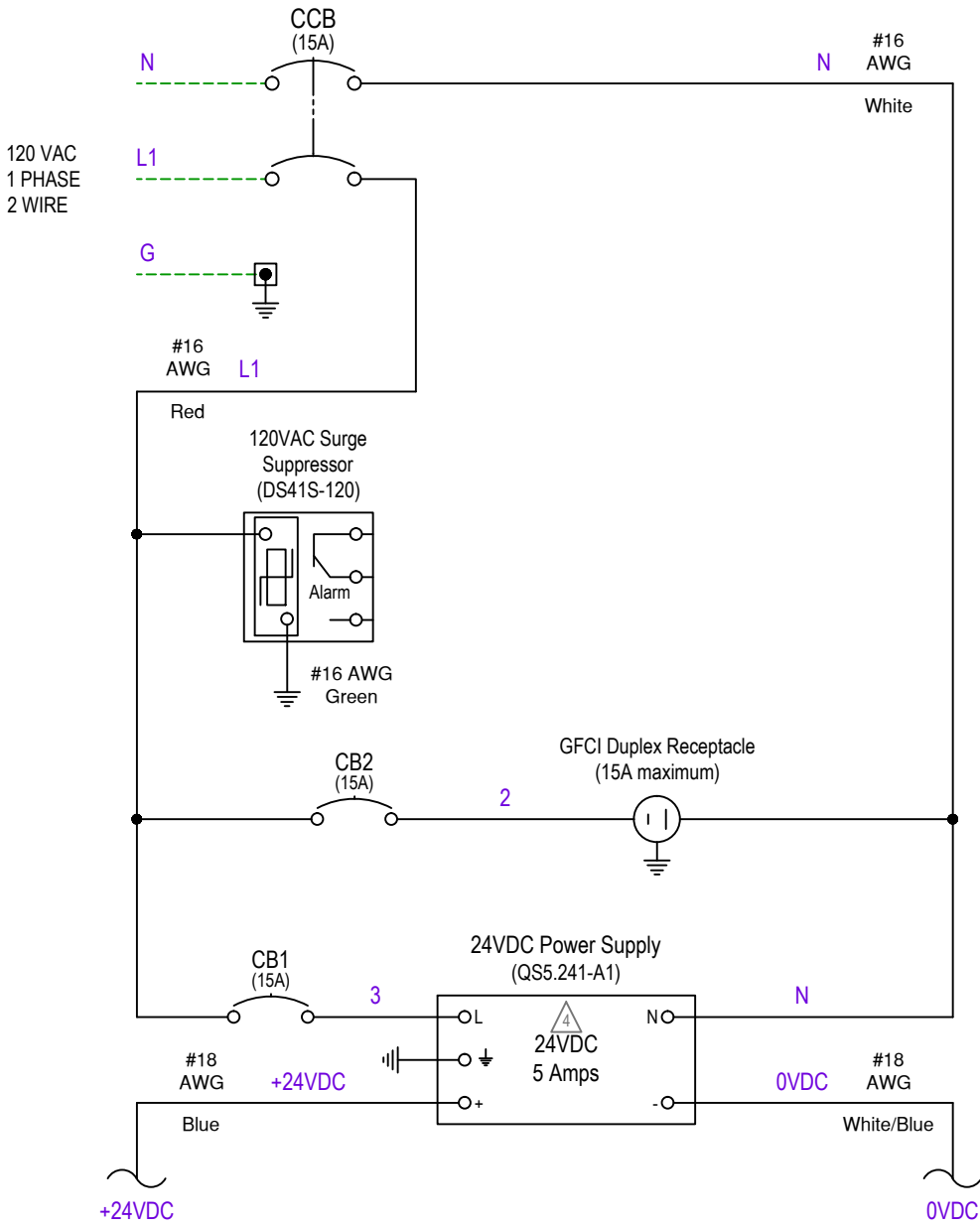
BILL of MATERIAL

	QTY	MANUFACTURER	PART NUMBER	DESCRIPTION
A	1	SCHAEFER	SPP-3630	BACK PANEL, CARBON STEEL, WHITE
B	-	SCHAEFER	SPN1AL-888-JEA	BATTERY ENCLOSURE, .125 ALUMINUM
C	-	POWER SONIC	PS-12180 F2	BATTERY, LEAD-ACID, 12VDC, 18Ah
D	1	WEIDMULLER	9926 25 2015	CCB, UL489, 2 POLE, 15A
E	2	PANDUIT	LAMA2-14-QY	GROUND LUG, DUAL-RATED, #2-14AWG
F	1	-	-	GFCI DUPLEX RECEPTACLE, 15A, 120VAC
G	1	WAGO	210-112	2M DIN RAIL, GALVANIZED, SLOTTED
H	2	PANDUIT	1.5"W x 3"H x 72"L	WIREWAY, HINGE COVER, WIDE FINGER
I	2	WEIDMULLER	9926 25 1015	CB1 and CB2, UL489, 1 POLE, 15A
J	2	WEIDMULLER	9926 25 1010	CB3 and CB4, UL489, 1 POLE, 10A
K	1	PULS	CD5.243	DC/DC CONVERTER, 12-24V, 4A
L	1	PULS	QS5.241-A1	24VDC POWER SUPPLY, 5A
M	1	SIEMENS	6AG1 215-1AG40-4XB0	CPU 1215C DC/DC/DC, 14 DI - 10 DO PLC
	1	SIEMENS	6ES7 954-8LC02-0AA0	SIMATIC MEMORY CARD, 4MB
	1	SIEMENS	6AG1 221-1BH32-4XB0	16 DIGITAL INPUT MODULE
	1	SIEMENS	6AG1 231-4HD32-4XB0	4 CHANNEL ANALOG INPUT MODULE
	1	SIEMENS	6AG1 241-1AH32-4XB0	COMMUNICATION MODULE, RS232
N	2	SQUARE D	PK5GTA	EQUIPMENT GROUND BAR, 5-POINT
O	1	CITEL	DS41S-120	120VAC SURGE SUPPRESSOR, BASE
P	1	CITEL	DS220S-24DC	24VDC SURGE SUPPRESSOR
Q	4	CITEL	DLAW-24D3	ANALOG SURGE SUPPRESSOR, 24VDC
R	10	WAGO	788-341	RELAY, STATUS, SPRING, SPDT, 24VDC
	10	WAGO	788-148	SUPPRESSOR MODULE, PLUGGABLE
	9	WAGO	788-113	JUMPER BAR, MODULE/MODULE, 2-WAY
S	78	WAGO	2002-1401	TERMINAL, 2002, SPRING, GRAY
T	7	WAGO	2002-1492	TERMINAL END / PART. PLATE, ORANGE
U	11	WAGO	2002-400	ADJACENT JUMPER, 2-WAY CONTINUOUS
V	13	WAGO	249-116	TERMINAL END STOP, GRAY
W	-	MDS	TRANSNET 900	RADIO, SPREAD-SPECTRUM, UNLICENSED
	-	MDS	03-4124S01	DIN RAIL MOUNT KIT
	1	TFS, INC.	-	RADIO CABLE, RS232
	1	TFS, INC	12V3A	VOLTAGE REGULATOR
	1	OEM	-	RADIO MOUNT / SHELF, MDS 9710
X	1	-	-	6' NM /TNC MRA 195 JUMPER
	1	-	-	NM/TNCF ADAPTER
Y	4	WAGO	857-411	ANALOG SIGNAL ISOLATOR
Z	5	WAGO	209-191	SEPARATOR, ORANGE
A1	1	PULS	UF40.241	BUFFER MODULE, 24VDC, 40A
B1	1	PULS	YRM2.DIODE	REDUNDANCY MODULE
C1	1	PHOENIX CONTACT	3035691	COMPONENT TERMINAL, DIODE
	1	PHOENIX CONTACT	3034426	END COVER
D1	1	CITEL	DS210-12DC	12VDC SURGE SUPPRESSOR

NO.	BY	DATE	REVISIONS	ELECTRICAL SCHEMATIC		DESIGNER:	SHEET TITLE: BACK PANEL LAYOUT	
6.				MANUFACTURER		DRAWN BY:	PROJECT: --- PROJECT NAME ---	
5.				ADDRESS1		DATE:	RETROFIT RTU LIFT STATION DIAGRAM	
4.				ADDRESS2		CHECKED BY:	JOB No: 12345678	
3.				CONTACT_NAME		DATE:	SHEET 1 OF 10	
2.				CONTACT_NUMBER				
1.								

GENERAL NOTES:

- 1. ALL CONTROL WIRING AND 12-18 AWG SHALL BE STRANDED TIN-PLATED COPPER WIRE. APPLY DIELECTRIC GREASE TO ENDS TO PREVENT CORROSION.
- 2. ALL WIRES IN CONTROL PANEL SHALL BE TERMINATED WITH FERRULES.
- 3. USE 6MM FERRULES FOR WIRES TERMINATING AT PLC.
- 4. ADJUST OUTPUT VOLTAGE POTENTIOMETER TO 26.5VDC MINIMUM.
- 5. VOLTAGE REGULATOR REQUIRED FOR MDS 9710 RADIO ONLY.



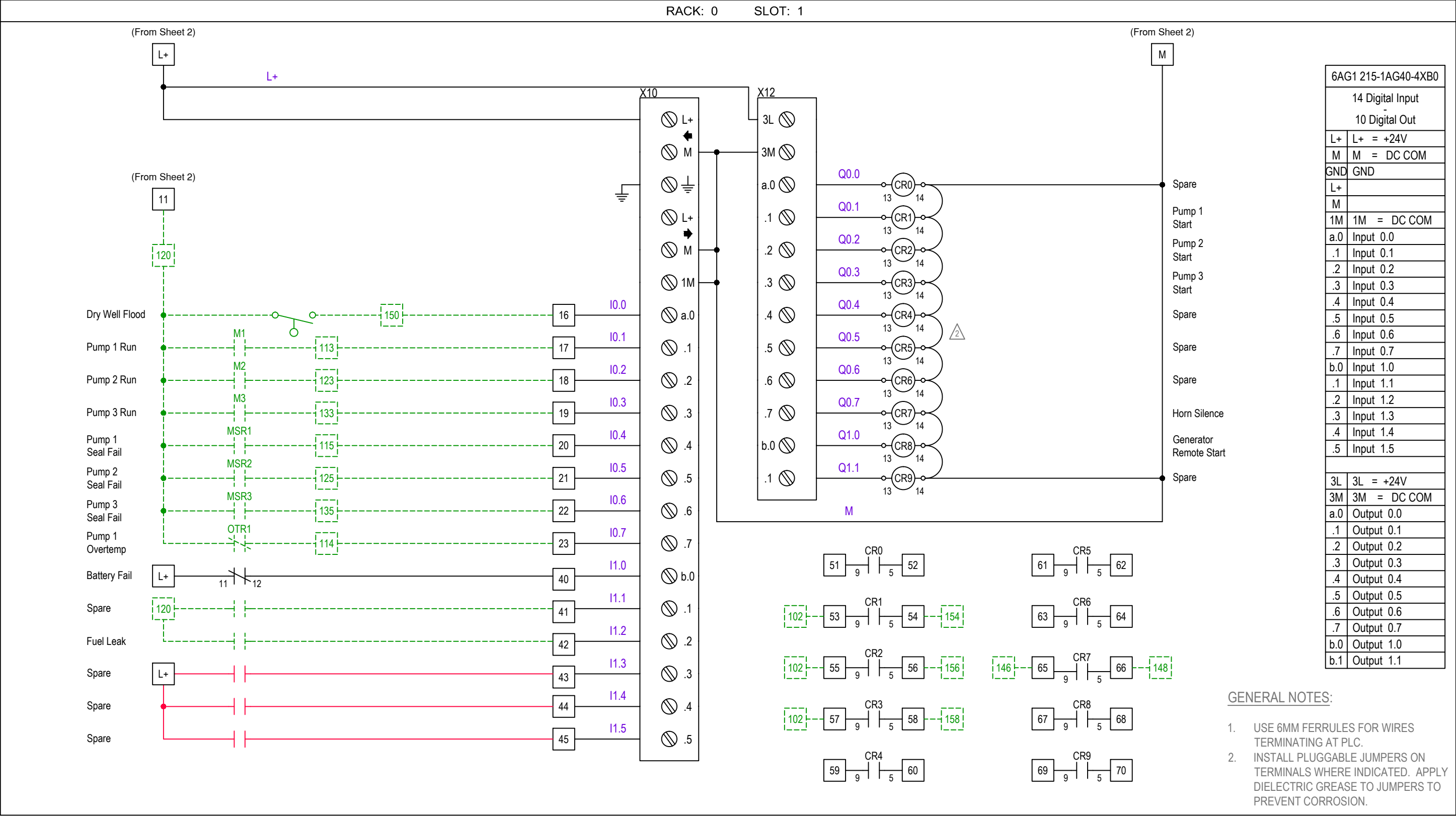
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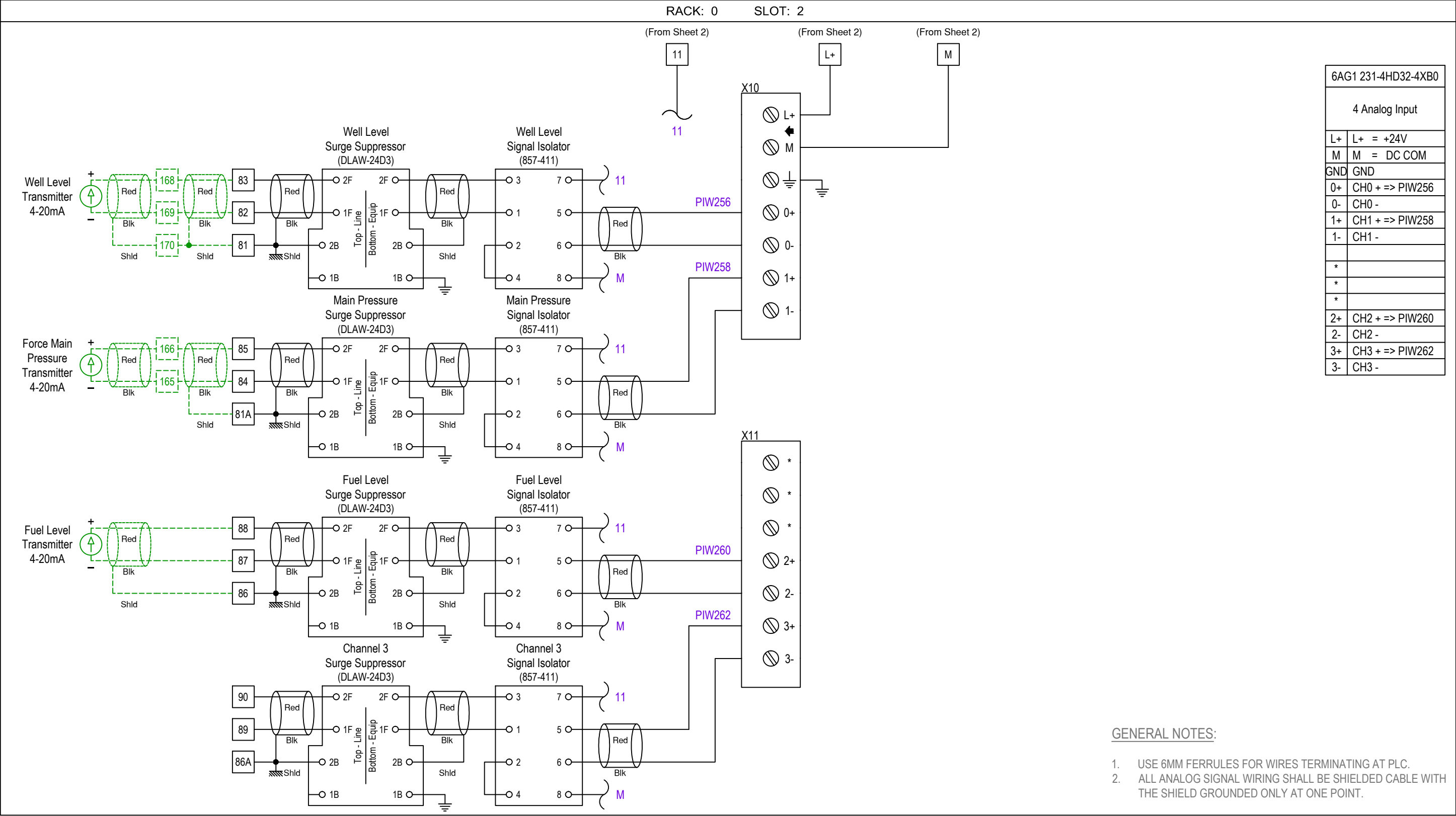
SHEET TITLE:	WIRING DIAGRAM
PROJECT:	--- PROJECT NAME ---
JOB No:	12345678
SHEET	2
OF	10



GENERAL NOTES:

1. USE 6MM FERRULES FOR WIRES TERMINATING AT PLC.

2. INSTALL PLUGGABLE JUMPERS ON TERMINALS WHERE INDICATED. APPLY DIELECTRIC GREASE TO JUMPERS TO PREVENT CORROSION.



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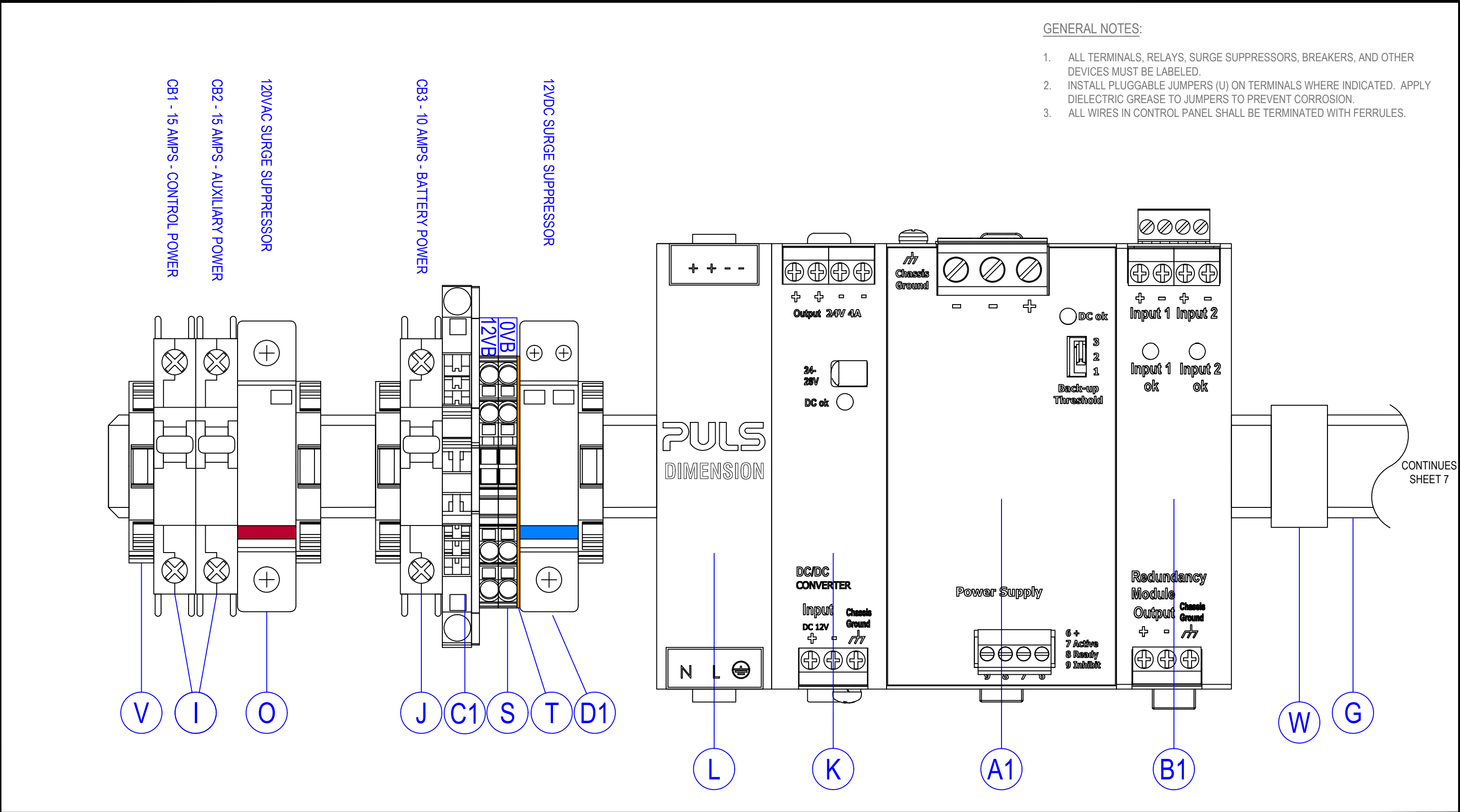
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SHEET TITLE: PLC ANALOG I/O	
PROJECT: --- PROJECT NAME ---	
RETROFIT RTU LIFT STATION DIAGRAM	
JOB No: 12345678	SHEET 5 OF 10



NO.	BY	DATE	REVISIONS	ELECTRICAL SCHEMATIC MANUFACTURER ADDRESS1 ADDRESS2 CONTACT_NAME CONTACT_NUMBER				DESIGNER:		SHEET TITLE: CONTROL POWER LAYOUT	
6.								DRAWN BY:		PROJECT: --- PROJECT NAME ---	
5.								DATE:		RETROFIT RTU LIFT STATION DIAGRAM	
4.								CHECKED BY:		JOB No: 12345678	
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CR9 - RELAY - CONTROL RELAY
CR8 - RELAY - CONTROL RELAY
CR7 - RELAY - CONTROL RELAY
CR6 - RELAY - CONTROL RELAY
CR5 - RELAY - CONTROL RELAY
CR4 - RELAY - CONTROL RELAY
CR3 - RELAY - CONTROL RELAY
CR2 - RELAY - CONTROL RELAY
CR1 - RELAY - CONTROL RELAY
CR0 - RELAY - CONTROL RELAY

GENERAL NOTES:

- 1. ALL TERMINALS, RELAYS, SURGE SUPPRESSORS, BREAKERS, AND OTHER DEVICES MUST BE LABELED.
- 2. INSTALL PLUGGABLE JUMPERS (U) ON TERMINALS WHERE INDICATED. APPLY DIELECTRIC GREASE TO JUMPERS TO PREVENT CORROSION.
- 3. ALL WIRES IN CONTROL PANEL SHALL BE TERMINATED WITH FERRULES.

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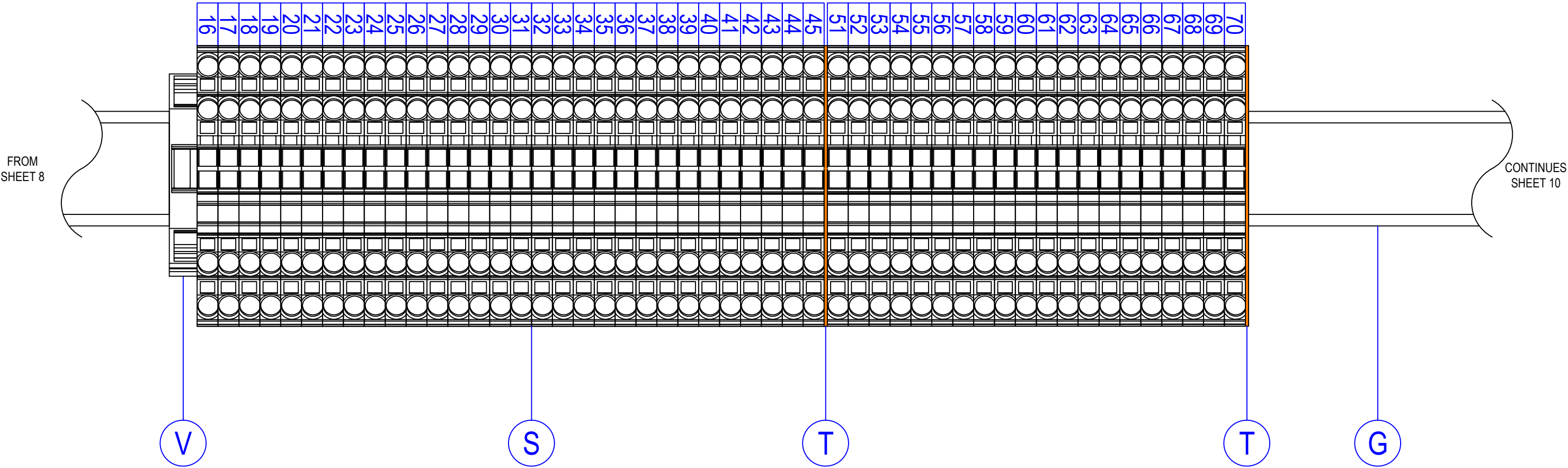


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SHEET TITLE: RELAY LAYOUT	
PROJECT: --- PROJECT NAME ---	
RETROFIT RTU LIFT STATION DIAGRAM	
JOB No: 12345678	SHEET 7 OF 10

GENERAL NOTES:

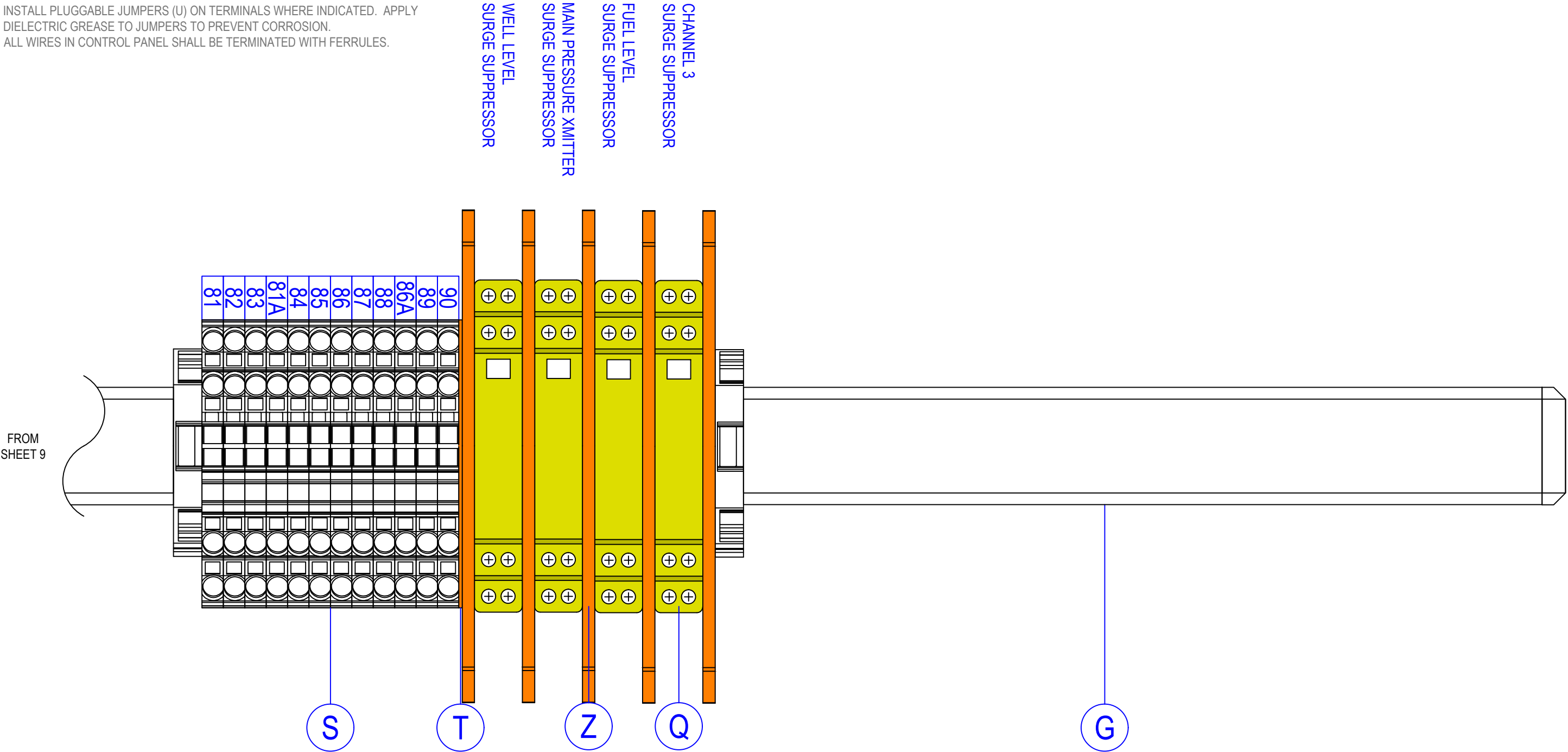
- 1. ALL TERMINALS, RELAYS, SURGE SUPPRESSORS, BREAKERS, AND OTHER DEVICES MUST BE LABELED.
- 2. INSTALL PLUGGABLE JUMPERS (U) ON TERMINALS WHERE INDICATED. APPLY DIELECTRIC GREASE TO JUMPERS TO PREVENT CORROSION.
- 3. ALL WIRES IN CONTROL PANEL SHALL BE TERMINATED WITH FERRULES.



NO.	BY	DATE	REVISIONS	ELECTRICAL SCHEMATIC MANUFACTURER ADDRESS1 ADDRESS2 CONTACT_NAME CONTACT_NUMBER	JEAsm Building Communitysm	DESIGNER:	SHEET TITLE: REMOTE TERMINAL BLOCK LAYOUT	
6.						DRAWN BY:	PROJECT: --- PROJECT NAME ---	
5.						DATE:	RETROFIT RTU LIFT STATION DIAGRAM	
4.						CHECKED BY:	JOB No: 12345678	
3.						DATE:	SHEET 9 OF 10	
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GENERAL NOTES:

- 1. ALL TERMINALS, RELAYS, SURGE SUPPRESSORS, BREAKERS, AND OTHER DEVICES MUST BE LABELED.
- 2. INSTALL PLUGGABLE JUMPERS (U) ON TERMINALS WHERE INDICATED. APPLY DIELECTRIC GREASE TO JUMPERS TO PREVENT CORROSION.
- 3. ALL WIRES IN CONTROL PANEL SHALL BE TERMINATED WITH FERRULES.



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SHEET TITLE: ANALOG TERMINAL BLOCK LAYOUT	
PROJECT: --- PROJECT NAME ---	
RETROFIT RTU LIFT STATION DIAGRAM	
JOB No: 12345678	SHEET 10 OF 10