

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
	9	WAGO	788-113	JUMPER BAR, MODULE/MODULE, 2-WAY
	-	-	-	-
S	82	WAGO	2002-1401	TERMINAL, 2002, SPRING, GRAY
T	9	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	PHOENIX CONTACT	2313931	NETWORK ISOLATOR
B1	1	SIEMENS	6XV1840-2AH10	PROFINET CABLE, FAST CONNECT
	2	SIEMENS	6AG1901-1BB10-7AA0	PROFINET CONNECTOR, SIPLUS
C1	1	PULS	UF40.241	BUFFER MODULE, 24VDC, 40A
D1	1	PULS	YRM2.DIODE	REDUNDANCY MODULE
E1	1	PHOENIX CONTACT	3035697	COMPONENT TERMINAL, DIODE, 5A
	1	PHOENIX CONTACT	3034426	END COVER
F1	1	CITEL	DS210-12DC	12VDC SURGE SUPPRESSOR

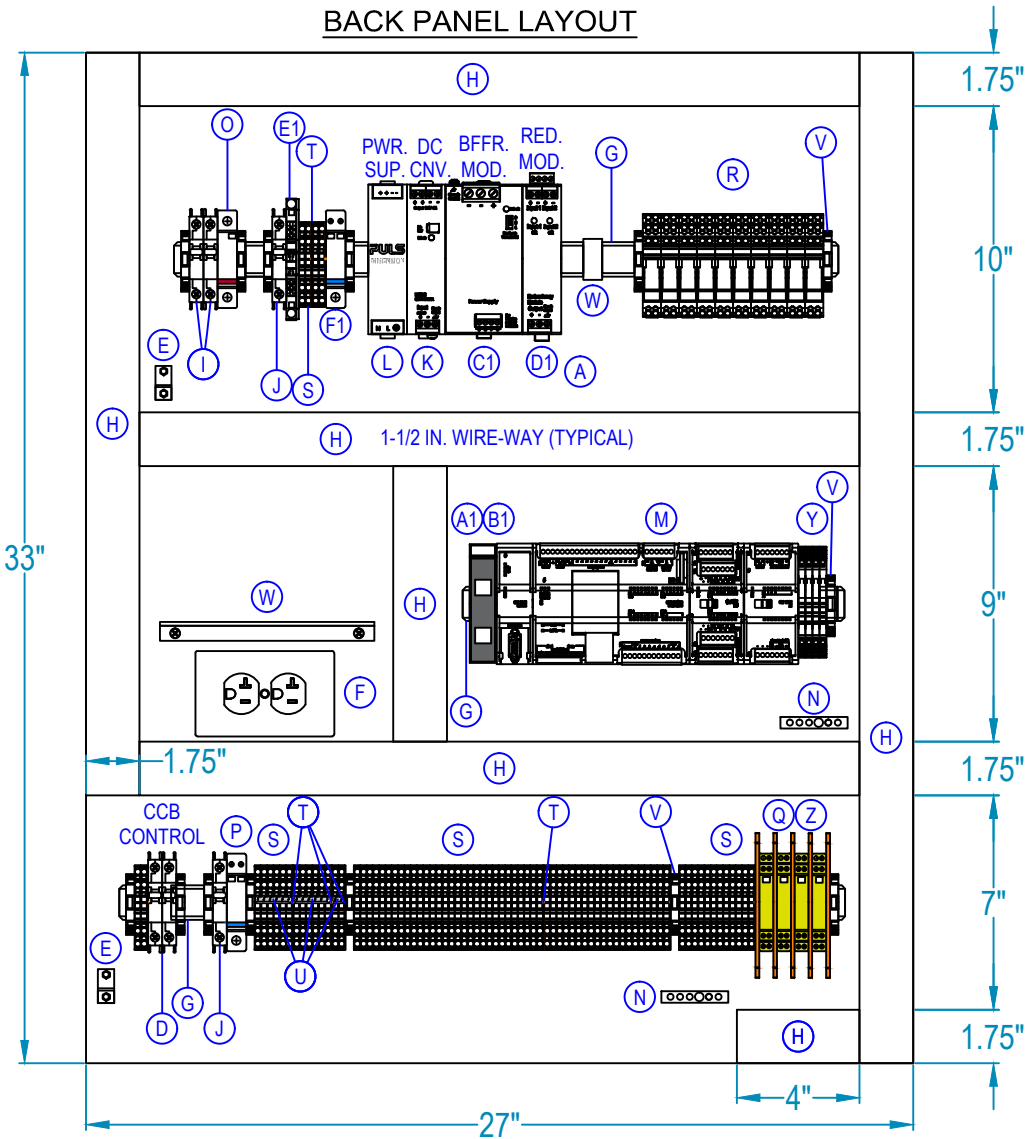
DRAWING LAYER COLOR LEGEND:

- 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

BACK PANEL LAYOUT



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

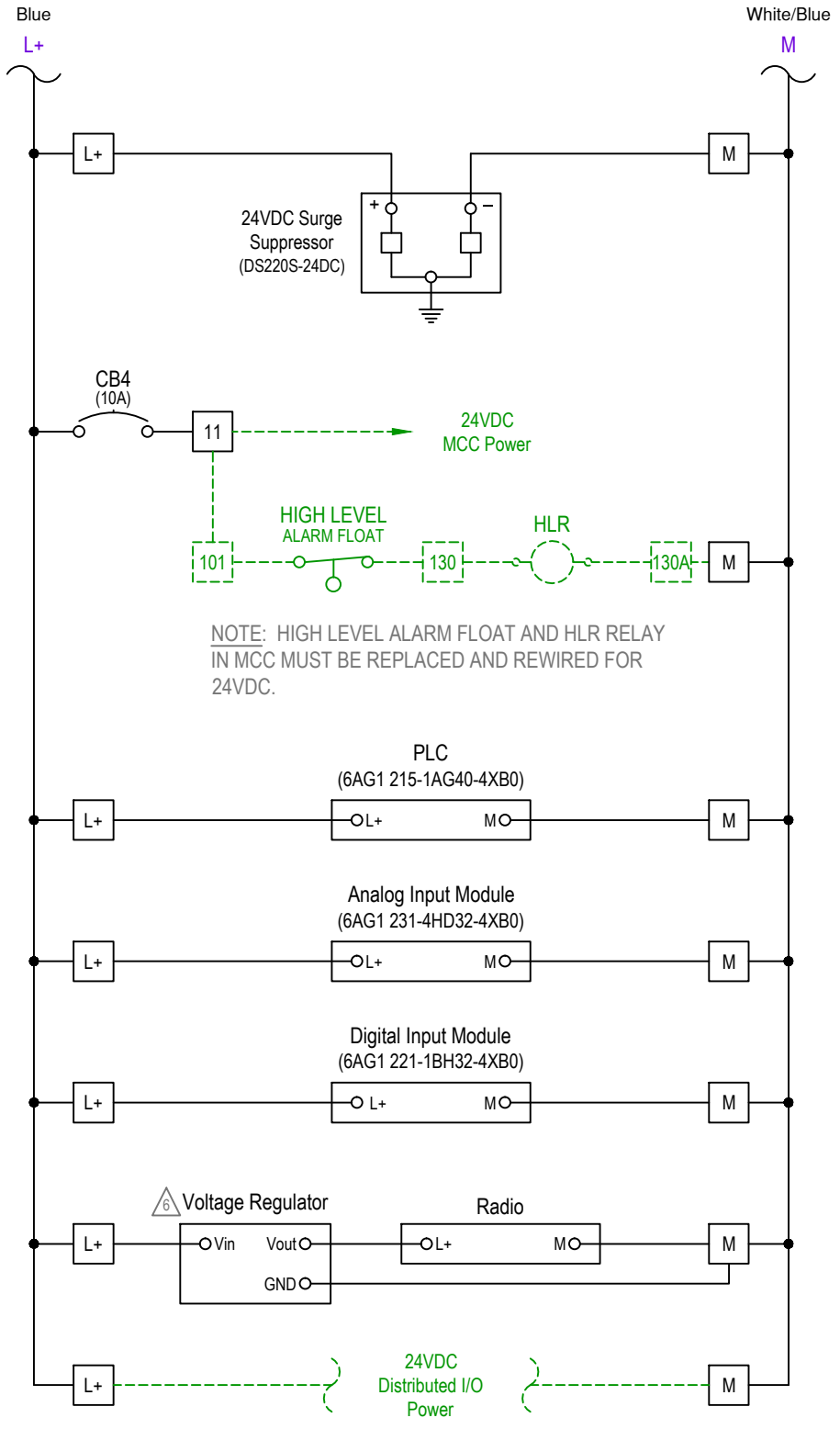
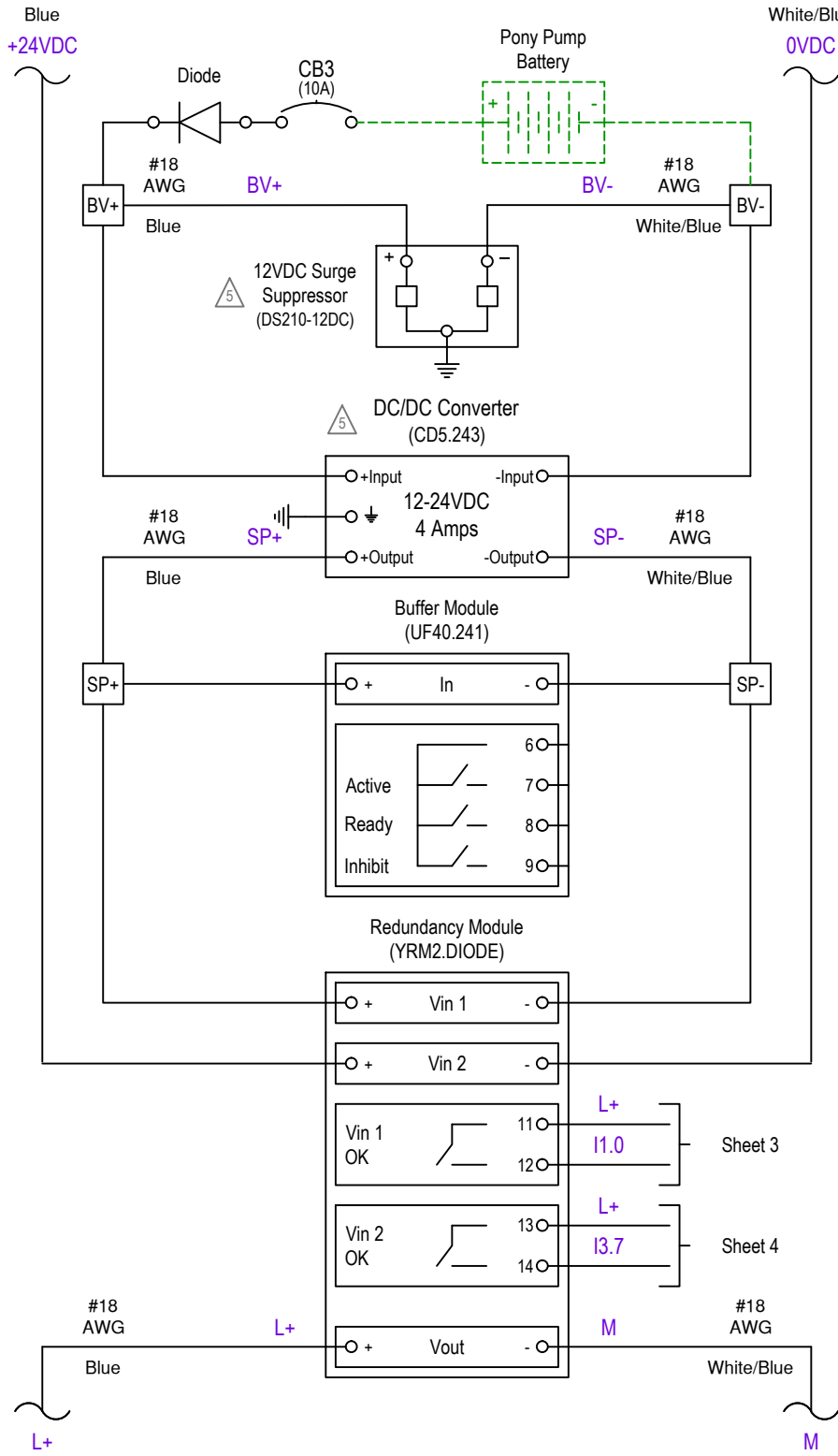
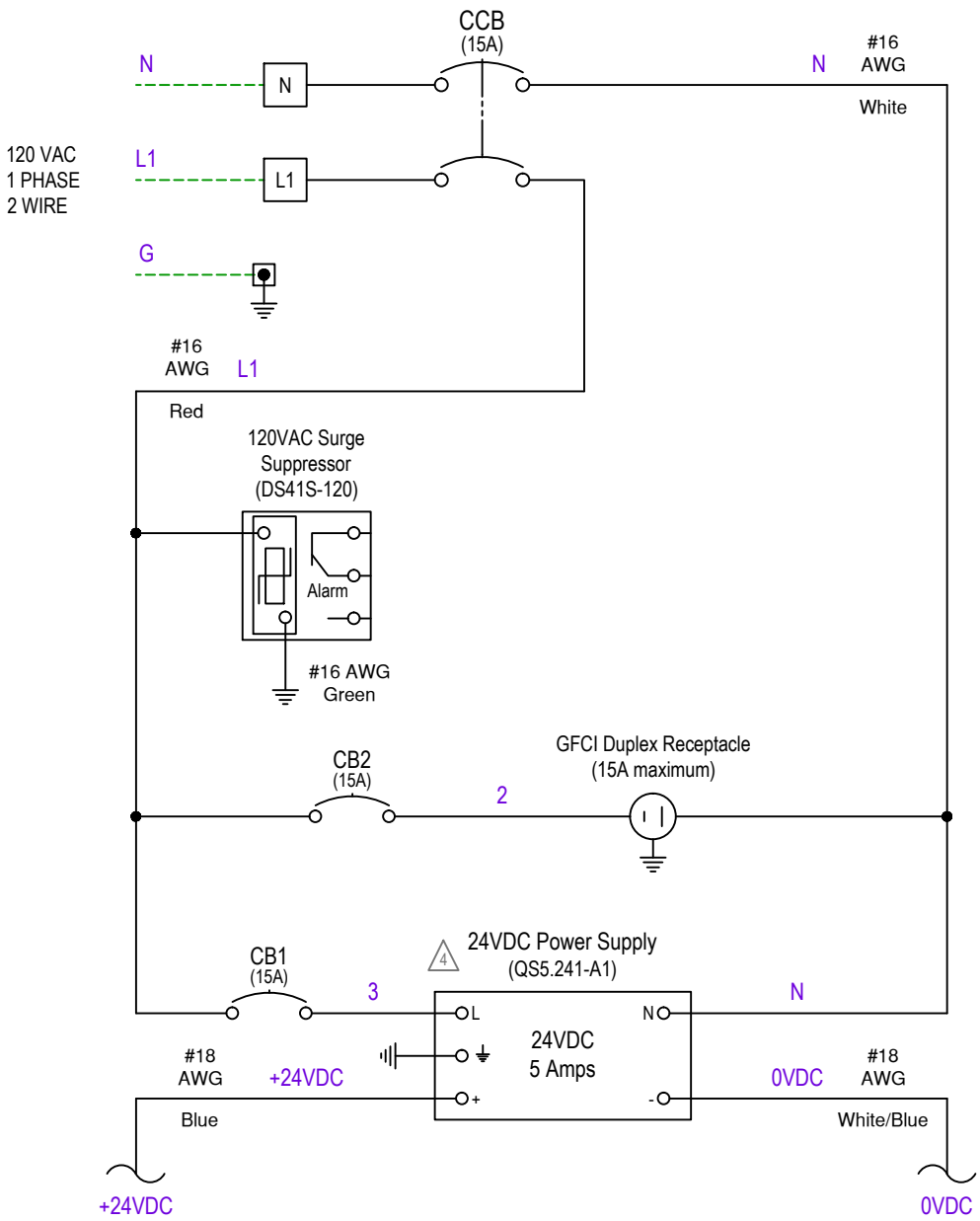
GENERAL NOTES:

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
9. THIS DRAWING IS FOR A PONY PUMP WITH A 12VDC STARTER. REMOVE DC/DC CONVERTER AND WIRE DIRECTLY FOR PUMPS WITH 24VDC STARTERS.

NO.	BY	DATE	REVISIONS	ELECTRICAL SCHEMATIC MANUFACTURER ADDRESS1 ADDRESS2 CONTACT_NAME CONTACT_NUMBER	JEA Building Communitysm	DESIGNER:		SHEET TITLE: BACK PANEL LAYOUT	
6.						DRAWN BY:		PROJECT: --- PROJECT NAME ---	
5.						DATE:		RETROFIT RTU LIFT STATION DIAGRAM	
4.						CHECKED BY:		JOB No: 12345678	SHEET 1 OF 11
3.						DATE:			
2.									
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. THIS DRAWING IS FOR A PONY PUMP WITH A 12VDC STARTER. REPLACE 12VDC SURGE SUPPRESSOR WITH 24VDC. REMOVE DC/DC CONVERTER AND WIRE DIRECTLY FOR PUMPS WITH 24VDC STARTERS.
6. VOLTAGE REGULATOR REQUIRED FOR MDS 9710 RADIO ONLY.



NO.	BY	DATE	REVISIONS
6.			
5.			
4.			
3.			
2.			
1.			

ELECTRICAL SCHEMATIC

MANUFACTURER

ADDRESS1

ADDRESS2

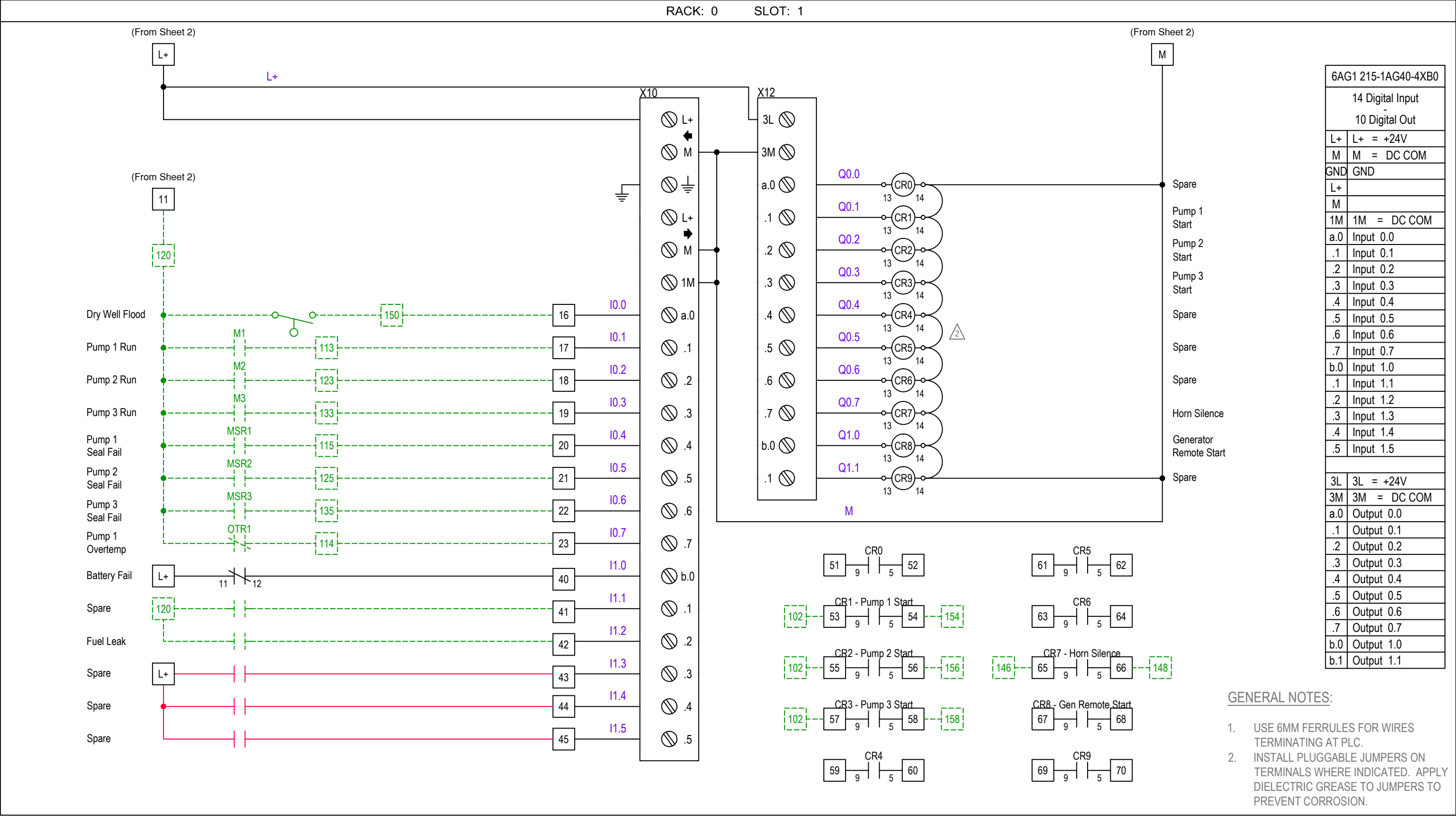
CONTACT_NAME

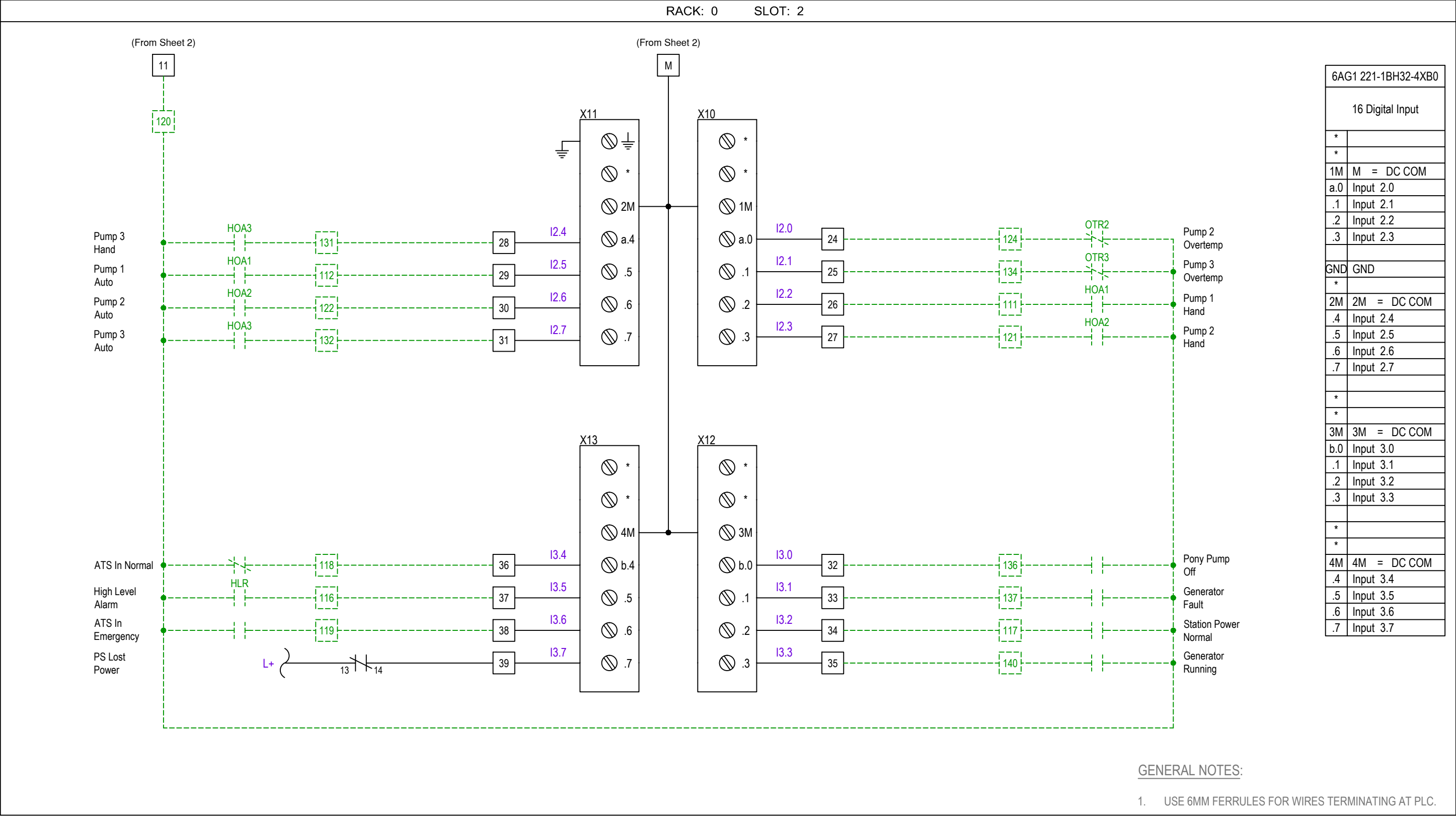
CONTACT_NUMBER

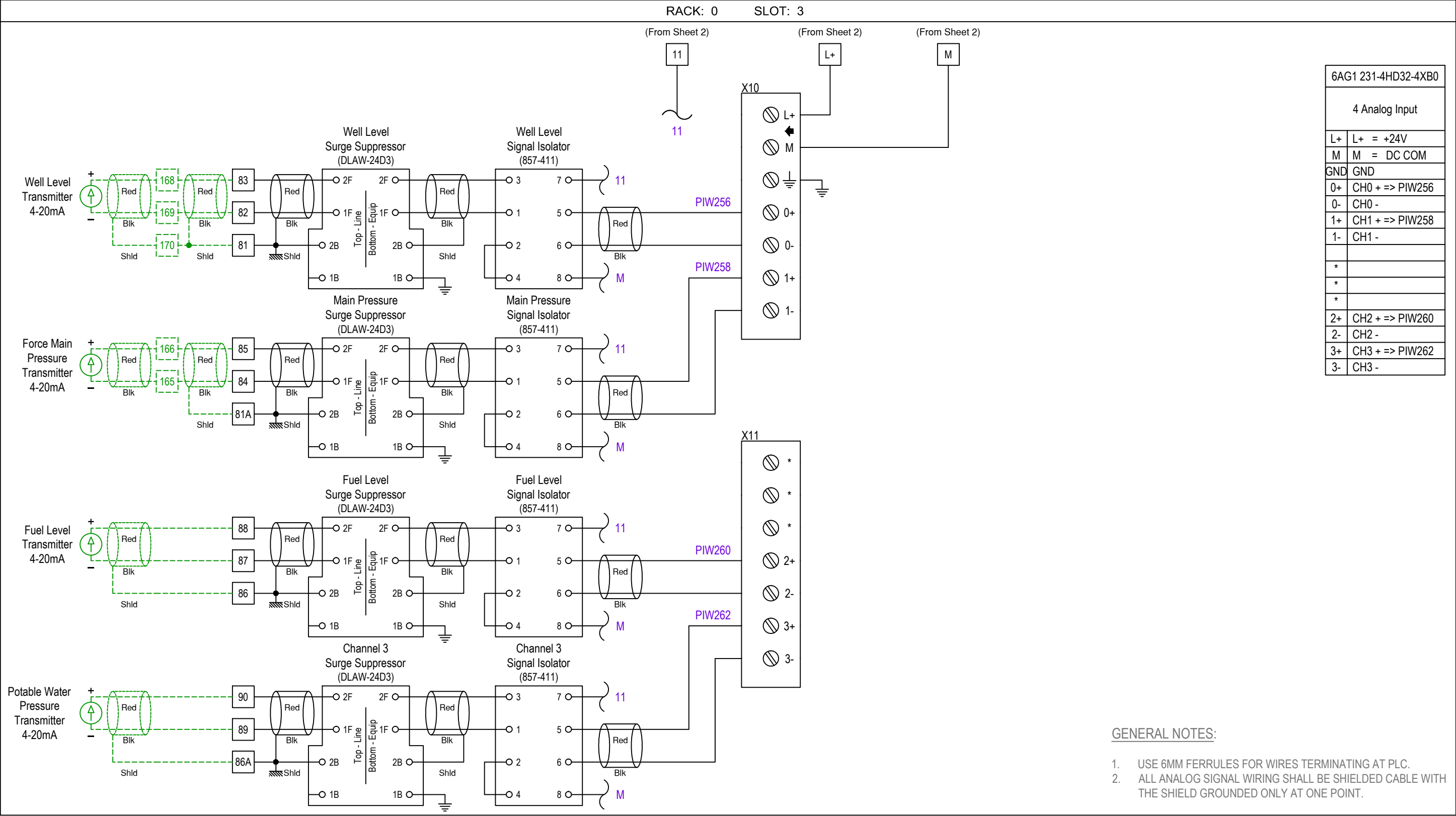


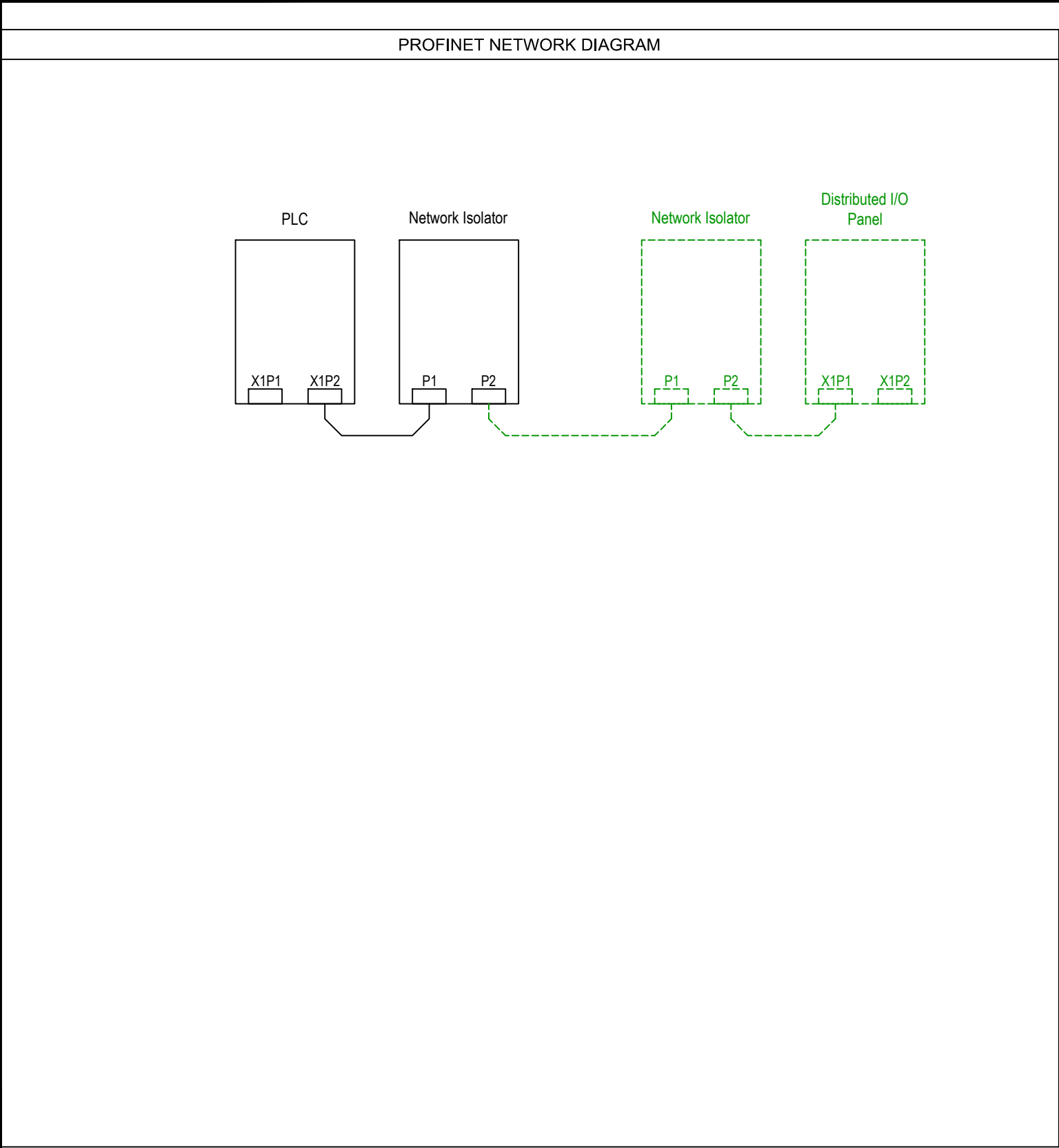
DESIGNER:
DRAWN BY:
DATE:
CHECKED BY:
DATE:

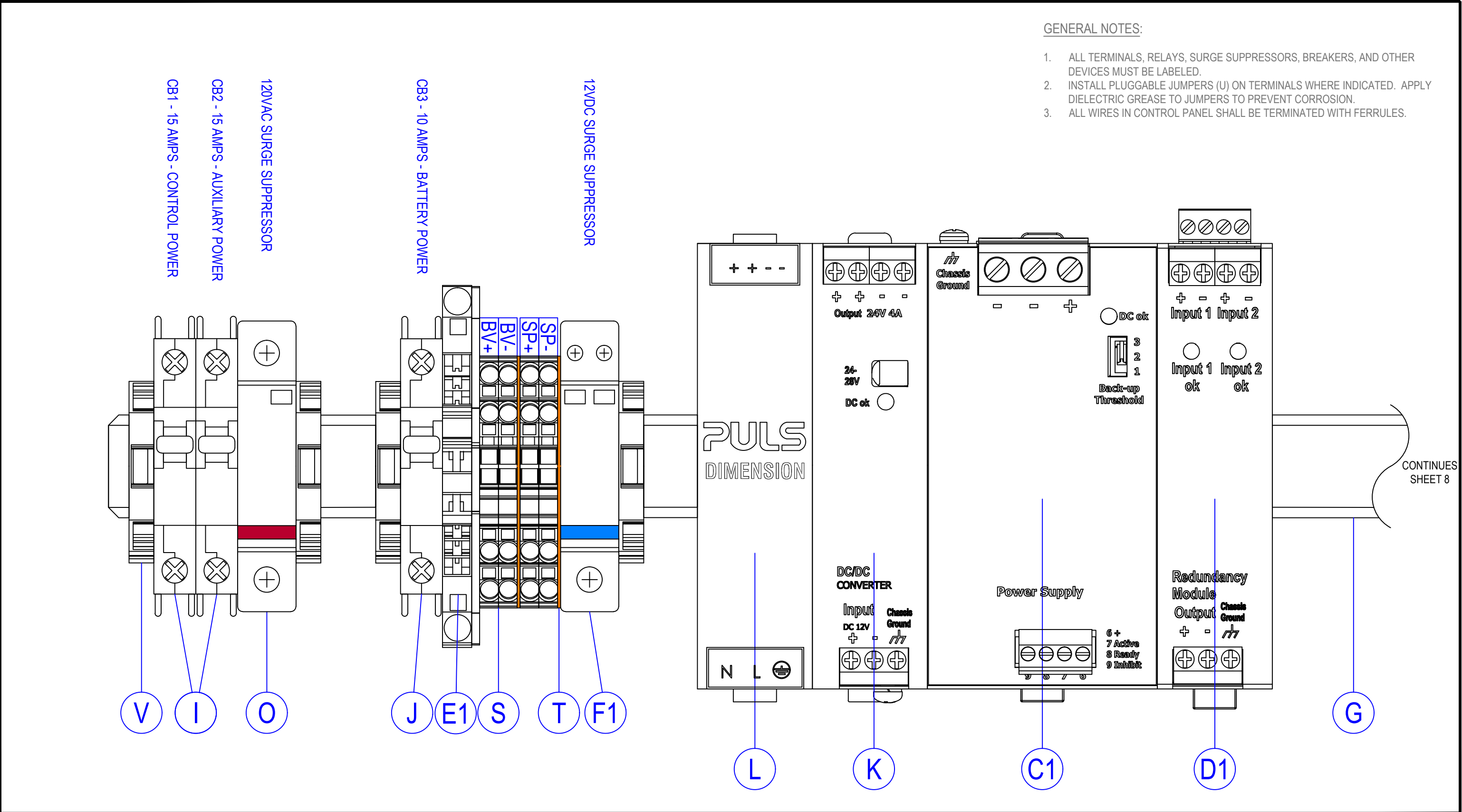
SHEET TITLE:	WIRING DIAGRAM
PROJECT:	--- PROJECT NAME ---
RETROFIT RTU LIFT STATION DIAGRAM	
JOB No:	12345678
SHEET	OF
2	11



GENERAL NOTES:
1. USE 6MM FERRULES FOR WIRES TERMINATING AT PLC.







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:		
3.						DATE:	JOB No:	SHEET OF
2.							12345678	7 11
1.								

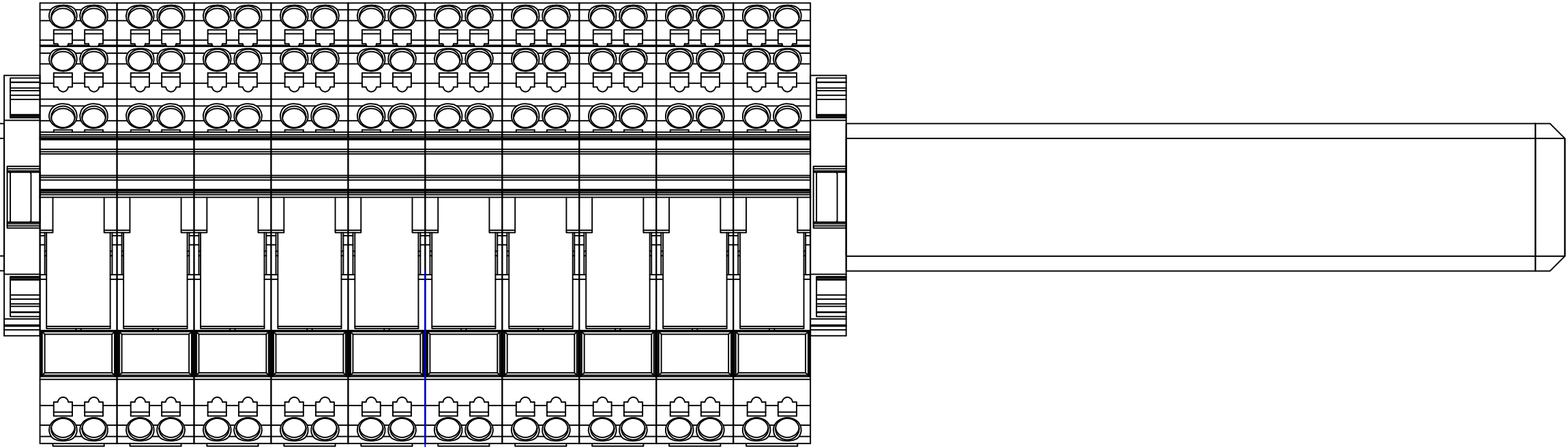
FROM
SHEET 7

G

W

R

CR9 - RELAY - SPARE
CR8 - RELAY -
GENERATOR REMOTE START
CR7 - RELAY - HORN SILENCE
CR6 - RELAY - SPARE
CR5 - RELAY - SPARE
CR4 - RELAY - SPARE
CR3 - RELAY - PUMP 3 START
CR2 - RELAY - PUMP 2 START
CR1 - RELAY - PUMP 1 START
CR0 - RELAY - SPARE



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
6.			
5.			
4.			
3.			
2.			
1.			

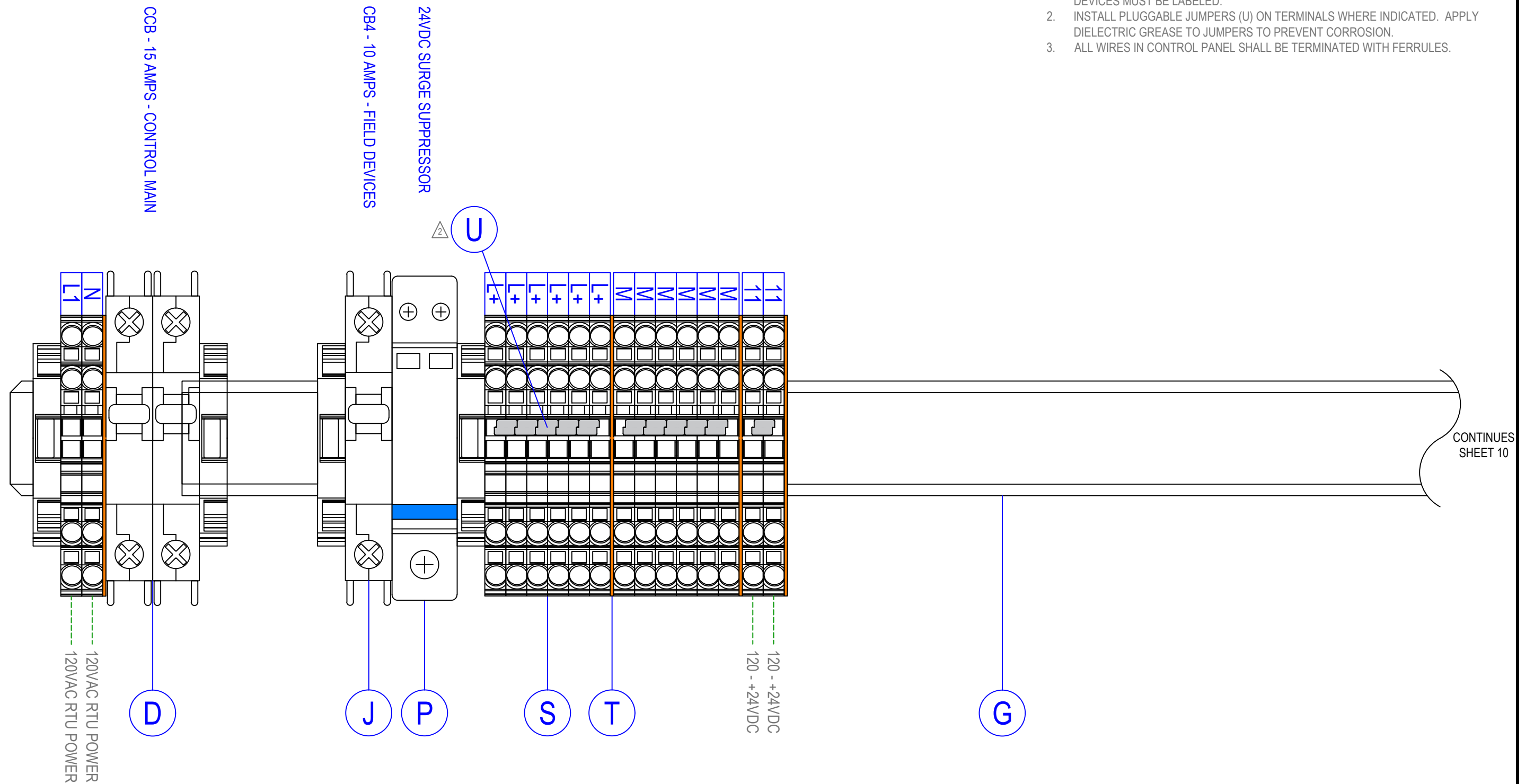
ELECTRICAL SCHEMATIC
MANUFACTURER
ADDRESS1
ADDRESS2
CONTACT_NAME
CONTACT_NUMBER



DESIGNER:
DRAWN BY:
DATE:
CHECKED BY:
DATE:

SHEET TITLE: RELAY LAYOUT	
PROJECT: --- PROJECT NAME ---	
RETROFIT RTU LIFT STATION DIAGRAM	
JOB No: 12345678	SHEET 8 OF 11

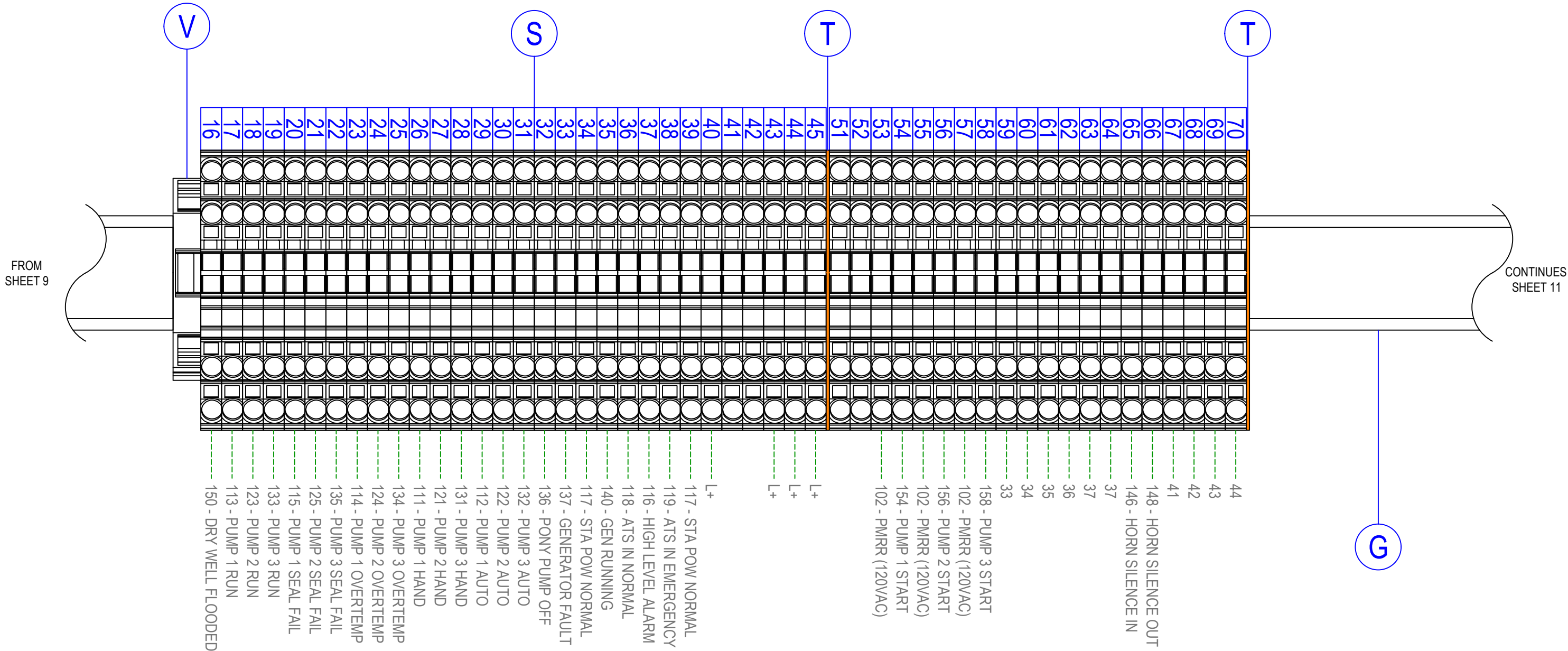
1. ALL TERMINALS, RELAYS, SURGE SUPPRESSORS, BREAKERS, AND OTHER DEVICES MUST BE LABELED.
2. INSTALL PLUGGABLE JUMPERS (U) ON TERMINALS WHERE INDICATED. APPLY DIELECTRIC GREASE TO JUMPERS TO PREVENT CORROSION.
3. ALL WIRES IN CONTROL PANEL SHALL BE TERMINATED WITH FERRULES.



NO.	BY	DATE	REVISIONS	ELECTRICAL SCHEMATIC MANUFACTURER ADDRESS1 ADDRESS2 CONTACT_NAME CONTACT_NUMBER		DESIGNER:	SHEET TITLE:	
6.						DRAWN BY:	POWER TERMINAL BLOCK LAYOUT	
5.						DATE:	PROJECT: --- PROJECT NAME ---	
4.						CHECKED BY:	RETROFIT RTU LIFT STATION DIAGRAM	
3.						DATE:	JOB No:	SHEET OF
2.							12345678	9 11
1.								

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
6.			
5.			
4.			
3.			
2.			
1.			

ELECTRICAL SCHEMATIC

MANUFACTURER
ADDRESS1
ADDRESS2

CONTACT_NAME
CONTACT_NUMBER



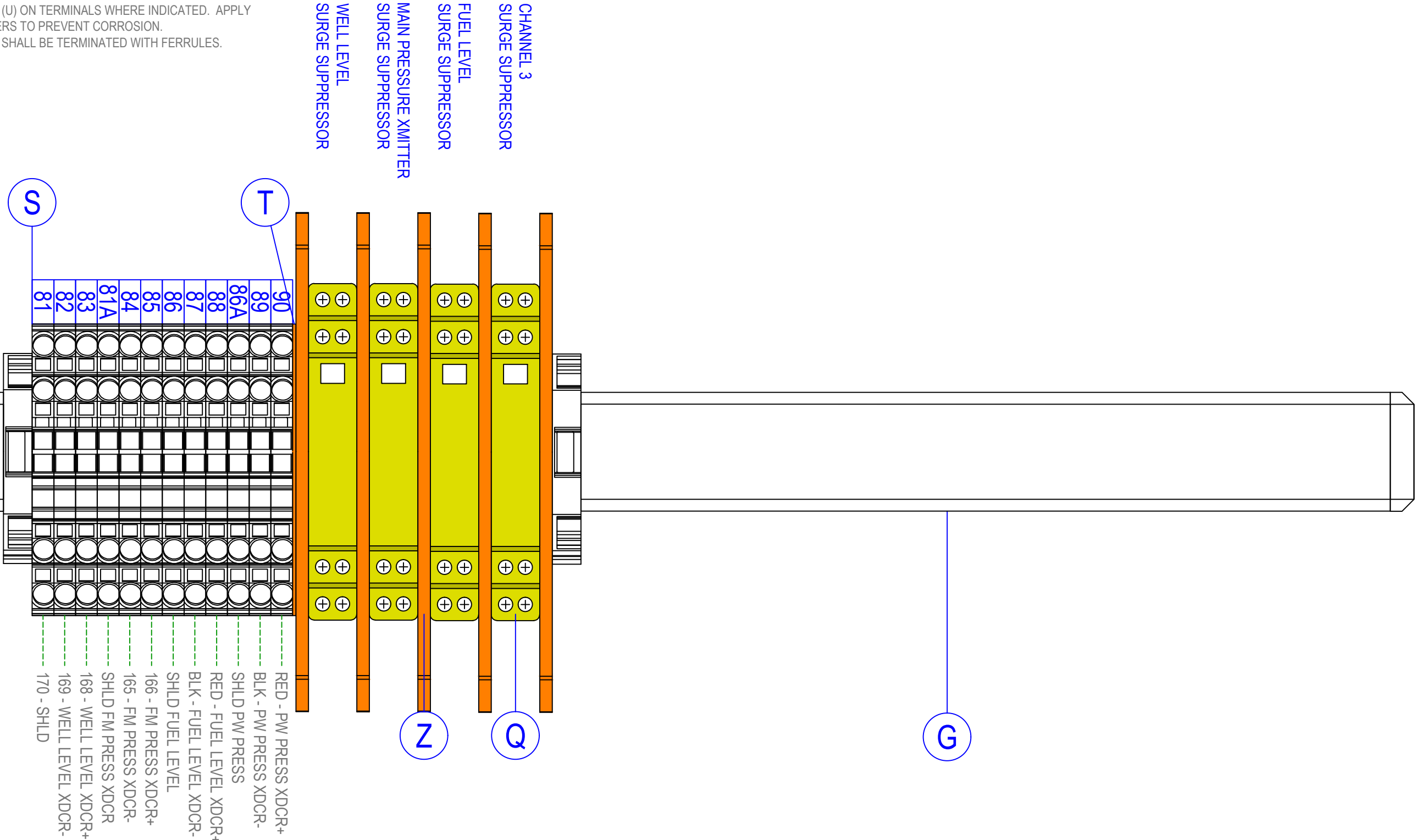
DESIGNER:
DRAWN BY:
DATE:
CHECKED BY:
DATE:

SHEET TITLE: REMOTE TERMINAL BLOCK LAYOUT	
PROJECT: --- PROJECT NAME ---	
RETROFIT RTU LIFT STATION DIAGRAM	
JOB No: 12345678	SHEET 10 OF 11

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.

FROM
SHEET 10



NO.	BY	DATE	REVISIONS
6.			
5.			
4.			
3.			
2.			
1.			

ELECTRICAL SCHEMATIC

MANUFACTURER
ADDRESS1
ADDRESS2

CONTACT_NAME
CONTACT_NUMBER



DESIGNER:
DRAWN BY:
DATE:
CHECKED BY:
DATE:

SHEET TITLE: ANALOG TERMINAL BLOCK LAYOUT	
PROJECT: --- PROJECT NAME ---	
RETROFIT RTU LIFT STATION DIAGRAM	
JOB No: 12345678	SHEET 11 OF 11