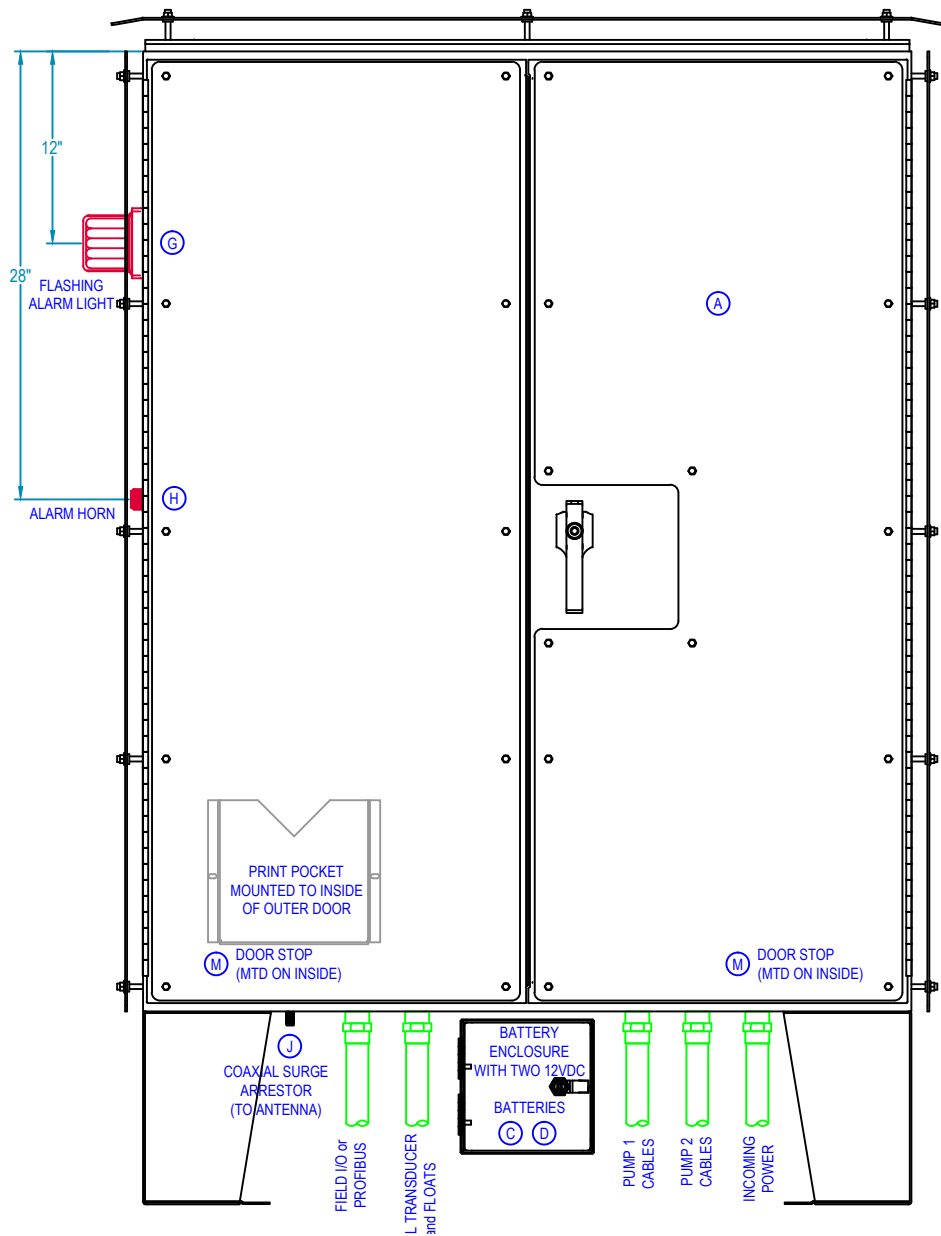


FRONT VIEW



CUSTOM ENCLOSURE:
 (60"H x 48"W x 20"D) NEMA 12/3R RATED, FABRICATED FROM .125 MARINE GRADE ALUMINUM.
 OUTER DOORS ARE FITTED WITH A PADLOCKABLE 3-POINT LATCH AND DOOR STOPS.
 ENCLOSURE IS MOUNTED ON 12-INCH TYPE 316 STAINLESS STEEL LEGS.

HEAT SHIELDS FABRICATED FROM .125 MARINE GRADE ALUMINUM SHALL BE INSTALLED ON FRONT, BACK, TOP, AND SIDES. HOLES SHALL BE CUT IN SHIELD FOR ALARM LIGHT AND HORN.

NOTE: BATTERY ENCLOSURE IS TO BE INSTALLED IN THE FIELD

BILL of MATERIAL

	QTY	MANUFACTURER	PART NUMBER	DESCRIPTION	
△2	A	1	OEM	CUSTOM ENCLOSURE	SEE THIS SHEET FOR DETAILS
△2	B	1	OEM	CUSTOM INNER DOOR	SEE THIS SHEET FOR DETAILS
	C	1	SCHAEFER	SPN1AL-888-JEA	BATTERY ENCLOSURE, .125 ALUMINUM
	D	2	POWER SONIC	PS-12180 F2	BATTERY, LEAD-ACID, 12VDC, 18Ah
	E	-	-	-	-
	F	1	SIEMENS	52PX8A1K / 52BAK	MOMENTARY PUSHBUTTON, 30mm, FLUSH
	G	1	INGRAM PRODUCTS	LX40F	ALARM LIGHT W/ FLASHER, 120VAC, RED
	H	1	INGRAM PRODUCTS	PW120AR	ALARM HORN, ELECTRONIC, 120VAC, RED
△4	I	1	APT	S50A120V2P	SURGE PROTECTOR, 240V SPLIT PHASE
	J	1	POLY PHASER	DSXL	COAXIAL SURGE ARRESTOR (ANTENNA)
	K	1	SIEMENS	6AV6 647-0AH11-3AX0	OPERATOR PANEL KP300 DISPLAY
	L	1	OMRON	6X283	SNAP ACTION SWITCH (DOOR AJAR)
		1	ALLIED	642-2137	ACTUATOR FOR SWITCH
	M	3	SCHAEFER	SP-DSTOPK-SS-SW	INNER/OUTER DOOR STOP KIT, SS
	N	-	-	-	-
	O	2	CUTLER-HAMMER	OPTRMT-9000-KIT	VFD HMI DISPLAY
	P	2	SIEMENS	52SX2BAB	3 POSITION MAINTAINED SWITCH, 30mm
		2	SIEMENS	52BJK	CONTACT BLOCK, 1NO-1NC

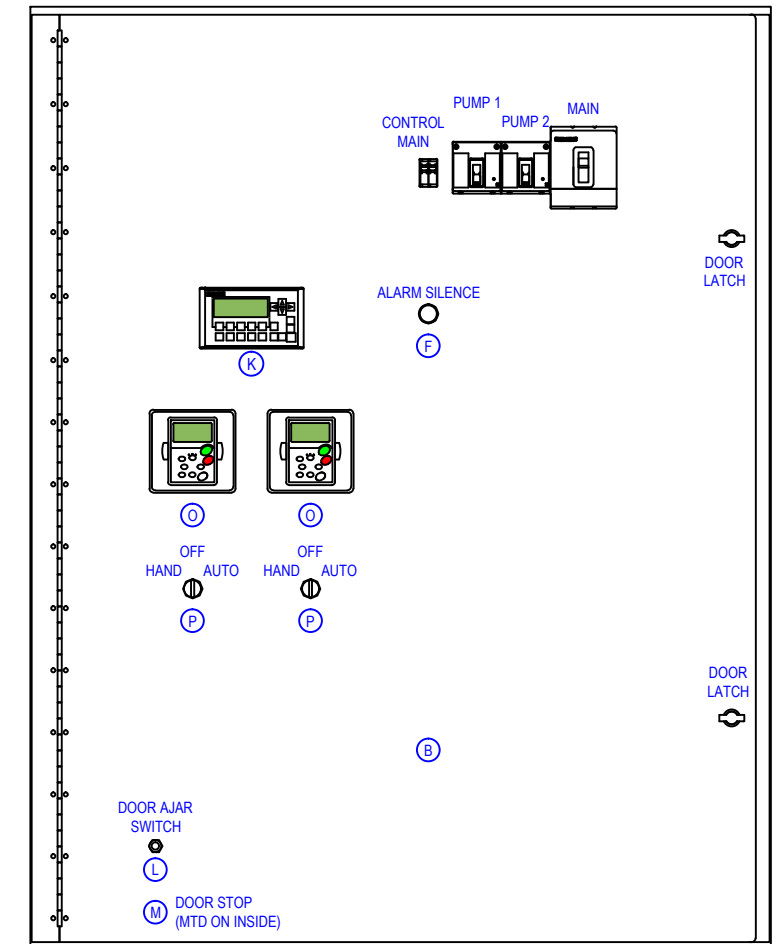
CONTROL WIRE UL508A COLOR:

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

GENERAL NOTES:

- REFER TO "433 LIFT STATION SCADA CONTROLS SPECIFICATION" FOR FURTHER DETAILS THAT MUST BE ADHERED TO SUCH AS WIRE, CONTACTOR, AND CIRCUIT BREAKER SIZING.
- THIS DRAWING IS AN EXAMPLE OF HOW OVERALL CABINET IS TO BE DESIGNED. THE DRAWING WILL NEED TO BE REVISED BASED ON THE PUMP MANUFACTURER, SIZE AND NUMBER OF PUMPS. THINGS THAT WILL CHANGE ARE ENCLOSURE SIZE, CIRCUIT BREAKER SIZE, WIRE SIZE, VFD SIZE, AND OTHER ITEMS. REFER TO SPECIFICATIONS FOR FURTHER DETAILS.
- REFER TO NOTES AND DETAILS ON ALL DRAWING SHEETS FOR MORE MANUFACTURING DETAILS.
- THE SURGE PROTECTION DEVICE (SPD) IS TO BE SHIPPED LOOSE FOR MOUNTING AT THE DISCONNECT IN THE FIELD. THE CORRECT SPD MUST BE SELECTED BASED ON THE SERVICE VOLTAGE: 240V SINGLE PHASE.
- ALL FIELD WIRING SHALL BE #12 AWG STRANDED, TIN-PLATED COPPER. APPLY DIELECTRIC GREASE TO ENDS TO PREVENT CORROSION.
- ALL PLC I/O WIRING INTERNAL TO THE CONTROL PANEL SHALL BE #18 AWG.
- ALL WIRES IN CONTROL PANEL SHALL BE TERMINATED WITH FERRULES.
- ALL MOUNTING SCREWS SHALL BE STAINLESS STEEL, DRILLED AND TAPPED (NO SELF-TAPPING SCREWS ARE ALLOWED).

INNER DOOR VIEW

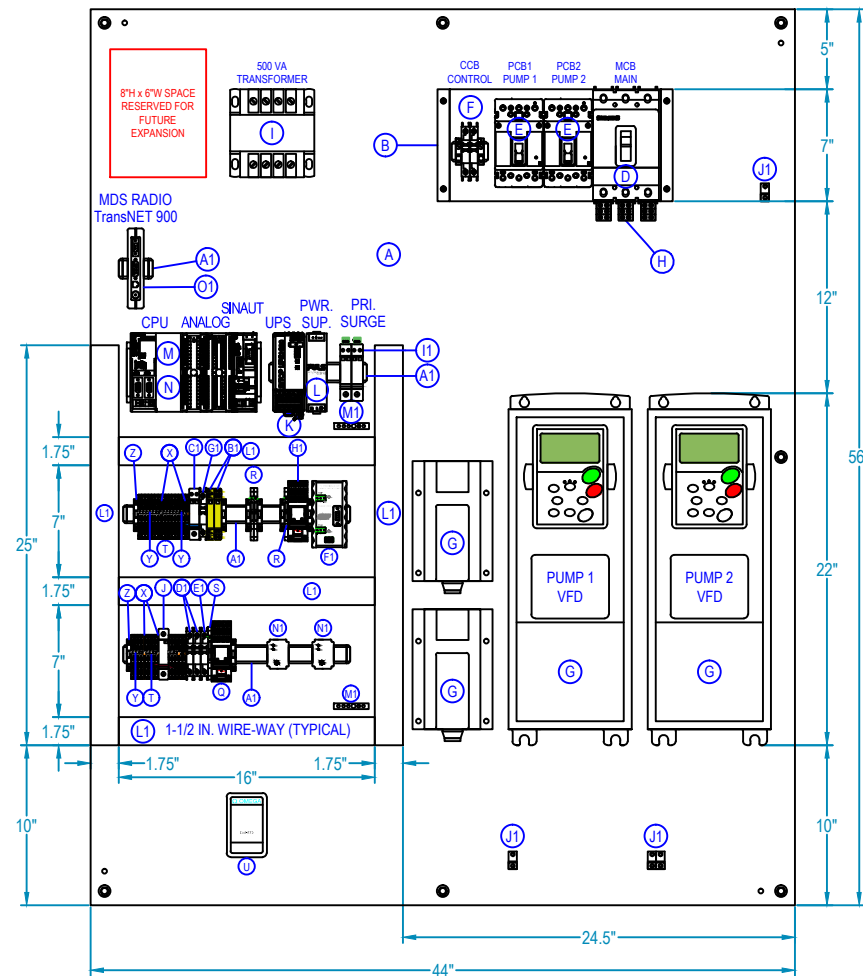


HINGED INNER DOORS:
 FABRICATED FROM .125 ALUMINUM WITH CONTINUOUS HINGE, TWIST LATCHES, AND DOOR STOP MOUNTED ON INSIDE OF EACH.

NO.	BY	DATE	REVISIONS	ELECTRICAL SCHEMATIC		DESIGNER:	SHEET TITLE: FRONT PANEL VIEW
6.				MANUFACTURER		DRAWN BY:	PROJECT: --- PROJECT NAME ---
5.				ADDRESS1		DATE:	1-PH. TO 3-PH. VFD LIFT STATION DIAGRAM
4.				ADDRESS2		CHECKED BY:	JOB No: 12345678
3.				CONTACT_NAME		DATE:	SHEET 1 OF 9
2.				CONTACT_NUMBER		2017 STANDARD PACKAGE, REV. 0	
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BACK PANEL LAYOUT



BACK PANEL:
 (56"H x 44"W) FABRICATED FROM 10ga. CARBON STEEL WITH WHITE INDUSTRIAL GRADE ENAMEL FINISH.

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

BILL of MATERIAL

	QTY	MANUFACTURER	PART NUMBER	DESCRIPTION	
△2	A	1	SCHAEFER	SPDD-6048	BACK PANEL, CARBON STEEL, WHITE
△2	B	1	OEM	BREAKER MOUNT	TO RAISE CBs FLUSH WITH INNER DOOR
	C	-	-	-	-
△2	D	1	SIEMENS	NFG3B125L	MCB, 3 POLE, 125A
△2	E	2	SIEMENS	NEG3B060L	PCB1 and PCB2, 3 POLE, 60A
	F	1	WEIDMULLER	9926 25 2006	CCB, UL489, 2 POLE, 6A (240V SERVICE)
△2	G	2	CUTLER-HAMMER	SVX010A1-2A1B1	VFD, VARIABLE TORQUE, 10HP
△2		2	CUTLER-HAMMER	SP21-KIT	VFD CAPACITOR KIT, EXTERNAL
△2		2	CUTLER-HAMMER	OPTC5	VFD PROFIBUS DP, DB9 CONNECTOR
△2	H	1	SIEMENS	3TA6EG06	POWER DISTRIBUTION LUGS, KIT OF 3
△2	I	1	SIEMENS	MT0500A	CONTROL TRANSFORMER, 500VA
△7	J	1	CITEL	DS41S-120	120VAC SURGE SUPPRESSOR, BASE
△2	K	1	SIEMENS	6EP4 134-3AB00-0AY0	SITOP DC UPS, 10A WITH CHARGER
	L	1	PULS	CS5.241	24VDC POWER SUPPLY, 5A
	M	1	SIEMENS	6ES7 390-1AE80-0AA0	480mm MOUNTING RAIL FOR PLC EQUIP.
		1	SIEMENS	6ES7 313-6CG04-0AB0	CPU 313C-2DP, 16 DI - 16 DO PLC
		1	SIEMENS	6ES7 953-8LG30-0AA0	MMC MEMORY CARD, 128KB
		1	SIEMENS	6ES7 331-1KF02-0AB0	8 FUNCTION ANALOG INPUT MODULE
		2	SIEMENS	6ES7 392-1BM01-0AA0	40-PIN SPRING CONNECTOR
		1	SIEMENS	6NH7 800-3BA00	SINAUT ST7, TIM 3V-IE MODULE
	N	2	BRAD HARRISON	PA9D01-42	PROFIBUS CONNECTOR, 90°, PG PORT
	O	2	BRAD HARRISON	MA9D00-42	PROFIBUS CONNECTOR, 180°
	P	1	SIEMENS	6XV1830-0EH10	PROFIBUS CABLE, FAST CONNECT TYPE
	Q	1	WAGO	858-507	RELAY, STATUS, SPRING, 4NO-NC, 120VAC
	R	3	WAGO	857-304	RELAY, STATUS, SPRING, SPDT, 24VDC

GENERAL NOTES:

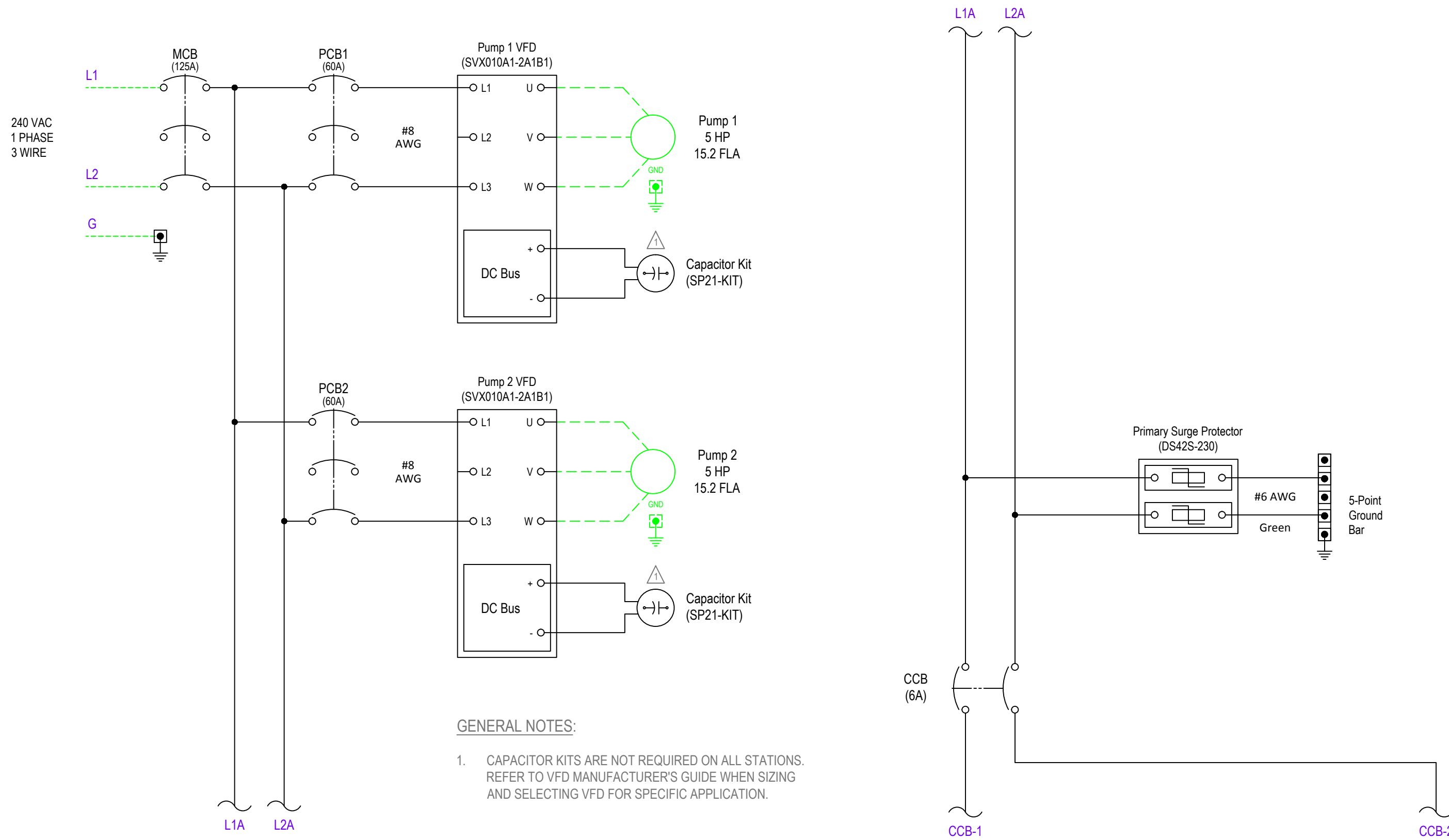
- REFER TO "433 LIFT STATION SCADA CONTROLS SPECIFICATION" FOR FURTHER DETAILS THAT MUST BE ADHERED TO SUCH AS WIRE, CONTACTOR, AND CIRCUIT BREAKER SIZING.
- THIS DRAWING IS AN EXAMPLE OF HOW OVERALL CABINET IS TO BE DESIGNED. THE DRAWING WILL NEED TO BE REVISED BASED ON THE PUMP MANUFACTURER, SIZE AND NUMBER OF PUMPS. THINGS THAT WILL CHANGE ARE ENCLOSURE SIZE, CIRCUIT BREAKER SIZE, WIRE SIZE, VFD SIZE, AND OTHER ITEMS. REFER TO SPECIFICATIONS FOR FURTHER DETAILS.
- VFDs SHALL BE RATED FOR CORROSIVE ENVIRONMENTS AND DRIVE CONTROL BOARDS SHALL BE CONFORMAL COATED TO PROTECT AGAINST CORROSION.
- SEAL LEAK/OVERTEMP RELAYS MUST BE CHANGED AS REQUIRED BY PUMP MANUFACTURER.
- TECHNICAL FIELD SERVICES, INC., JACKSONVILLE, FLORIDA (904) 278-5250
- OBSERVE MINIMUM SPACE ALLOWANCE FOR PROPER VFD COOLING. REFER TO VFD MANUFACTURER'S GUIDE WHEN SIZING AND SELECTING VFD FOR SPECIFIC AIR FLOW AND SPACING REQUIREMENTS.
- CAPACITOR KITS ARE NOT REQUIRED ON ALL STATIONS. REFER TO VFD MANUFACTURER'S GUIDE WHEN SIZING AND SELECTING VFD FOR SPECIFIC APPLICATION.
- ENSURE GOOD ELECTRICAL CONTACT BETWEEN BACK PANEL AND ALL MECHANICAL GROUND CONNECTIONS.

BILL of MATERIAL

	QTY	MANUFACTURER	PART NUMBER	DESCRIPTION	
	S	1	WAGO	857-357	RELAY, STATUS, SPRING, SPDT, 120VAC
	T	27	WAGO	2002-1401	TERMINAL, 2002, SPRING, GRAY
	U	1	OMEGA	EWS-RTD	PT100 TEMPERATURE SENSOR, RTD
	V	2	SIEMENS	6GK1901-1BB10-2AA0	PROFINET CONNECTOR
	W	1	SIEMENS	6XV1840-2AH10	PROFINET CABLE
	X	7	WAGO	2002-1492	TERMINAL END / PART. PLATE, ORANGE
	Y	20	WAGO	2002-400	ADJACENT JUMPER, 2-WAY CONTINUOUS
	Z	8	WAGO	249-116	TERMINAL END STOP, GRAY
	A1	1	WAGO	210-112	2M DIN RAIL, GALVANIZED, SLOTTED
	B1	2	CITEL	DLAW-24D3	ANALOG SURGE SUPPRESSOR, 24VDC
	C1	1	CITEL	DS220S-24DC	24VDC SURGE SUPPRESSOR
	D1	2	WEIDMULLER	9926 25 1000	CB11 and CB12, UL489, 1 POLE, 0.5A
	E1	1	WEIDMULLER	9926 25 1002	CB13, UL489, 1 POLE, 2A
	F1	1	PROCENTEC	101-00211A	PROFIBUS TERMINATOR
	G1	1	WEIDMULLER	9926 25 1910	CB20, UL489, 1 POLE, 10A
	H1	1	WAGO	585-304	RELAY, STATUS, SPRING, 4NO-NC, 24VDC
	I1	1	CITEL	DS42S-230	PRIMARY SPD, 240V SINGLE PHASE
	J1	4	PANDUIT	LAMA2-14-QY	GROUND LUG, DUAL-RATED, #2-14AWG
	K1	-	CITEL	DLA-12D3	PROFIBUS SURGE PROTECTOR
	L1	2	PANDUIT	1.5"W x 2"H x 72"L	WIREWAY, HINGE COVER, WIDE FINGER
	M1	2	SQUARE D	PK5GTA	EQUIPMENT GROUND BAR, 5-POINT
△4	N1	2	MACROMATIC	TCP2G100	SEAL LEAK / OVERTEMP RELAY, 120VAC
	O1	1	MDS	TRANSNET 900	RADIO, SPREAD-SPECTRUM, UNLICENSED
		1	MDS	03-4124A01	DIN RAIL MOUNT KIT
△5		1	TFS, INC.	-	SINAUT TO RADIO NULL CABLE

NO.	BY	DATE	REVISIONS	ELECTRICAL SCHEMATIC		DESIGNER:	SHEET TITLE: BACK PANEL LAYOUT
6.				MANUFACTURER	ADDRESS1	DRAWN BY:	PROJECT: --- PROJECT NAME ---
5.				ADDRESS2		DATE:	1-PH. TO 3-PH. VFD LIFT STATION DIAGRAM
4.				CONTACT_NAME		CHECKED BY:	JOB No: 12345678
3.				CONTACT_NUMBER		DATE:	SHEET 2 OF 9
2.						2017 STANDARD PACKAGE, REV. 0	
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GENERAL NOTES:

- CAPACITOR KITS ARE NOT REQUIRED ON ALL STATIONS. REFER TO VFD MANUFACTURER'S GUIDE WHEN SIZING AND SELECTING VFD FOR SPECIFIC APPLICATION.

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ELECTRICAL SCHEMATIC

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SHEET TITLE: 240 VAC VOLTAGE

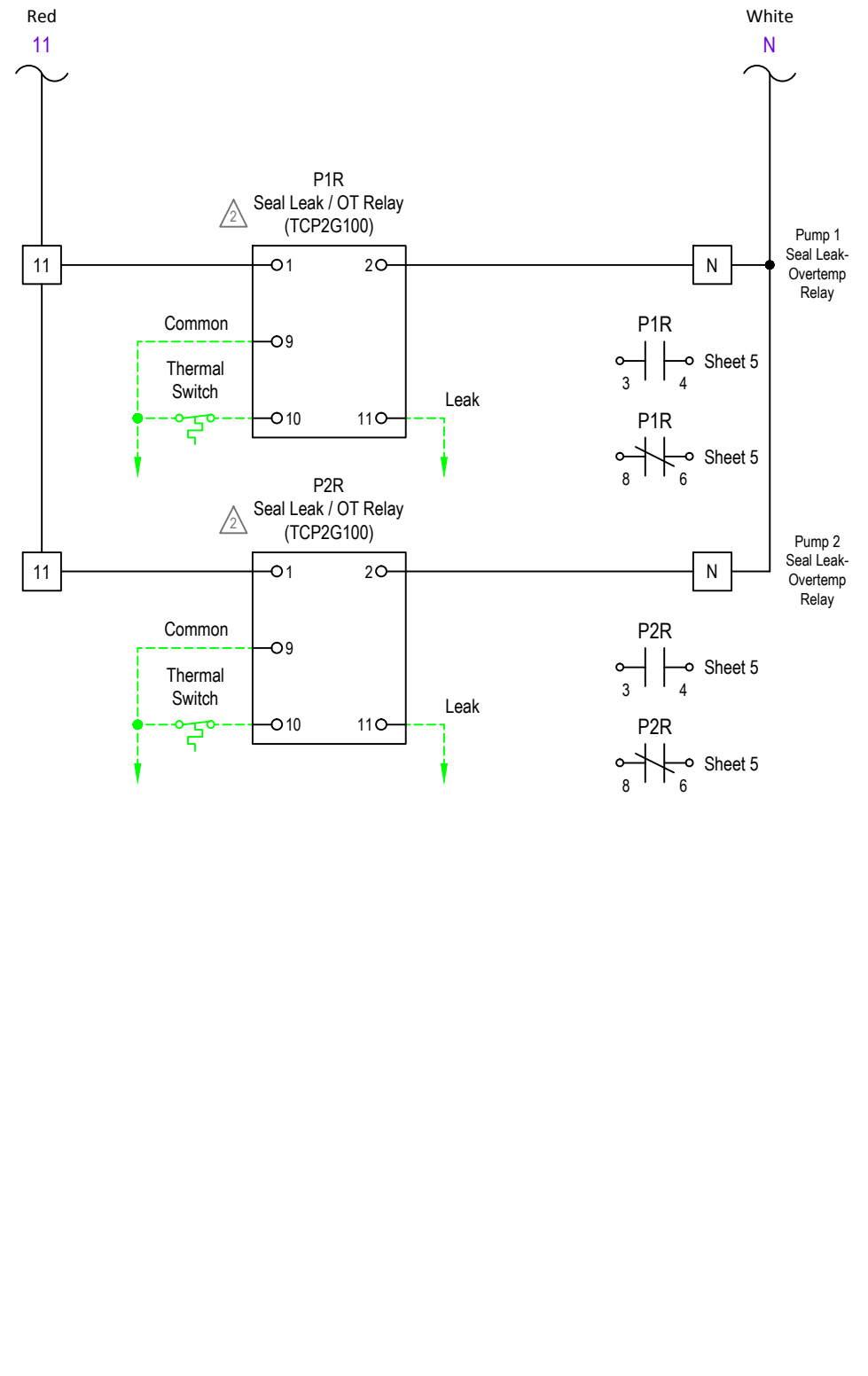
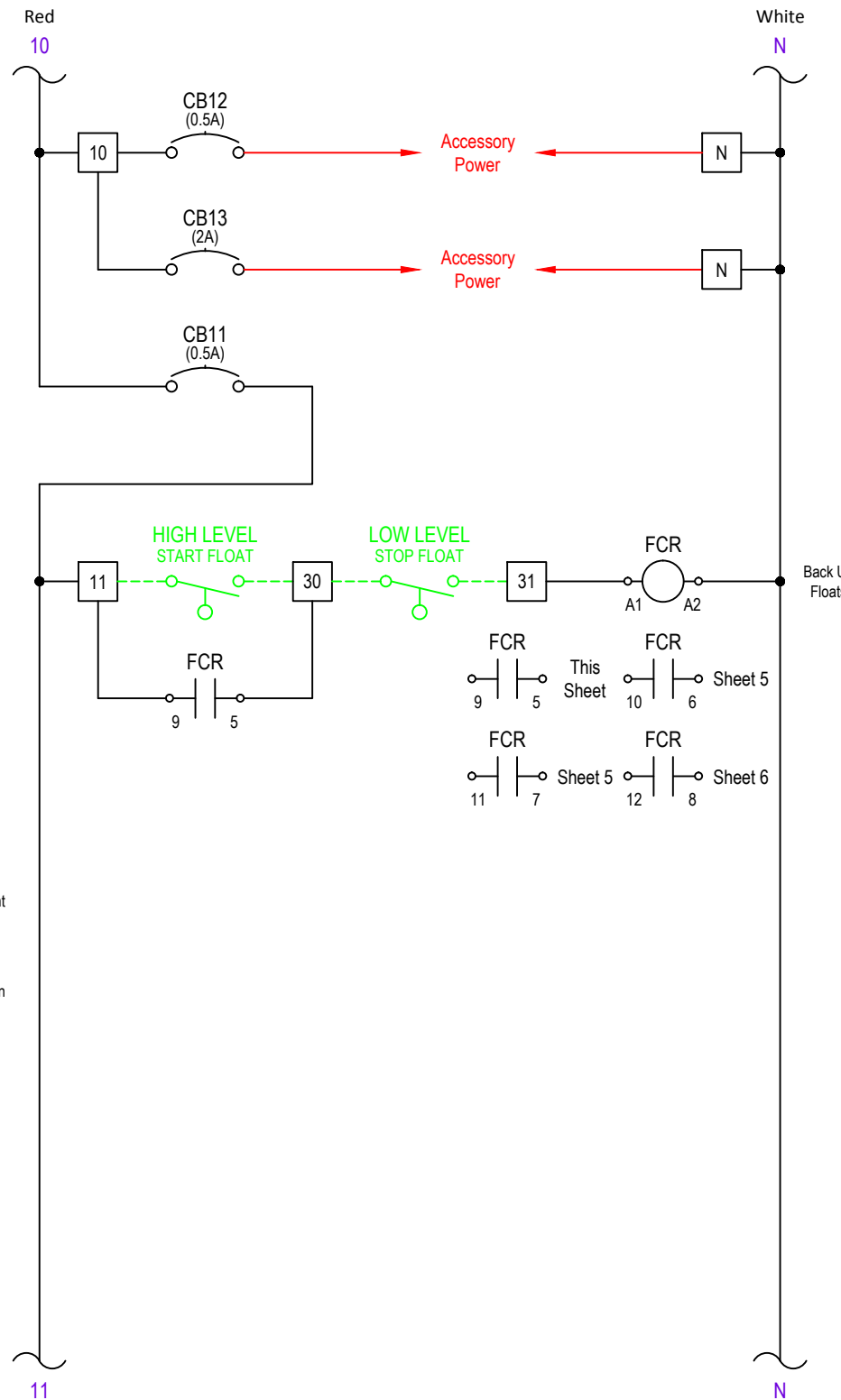
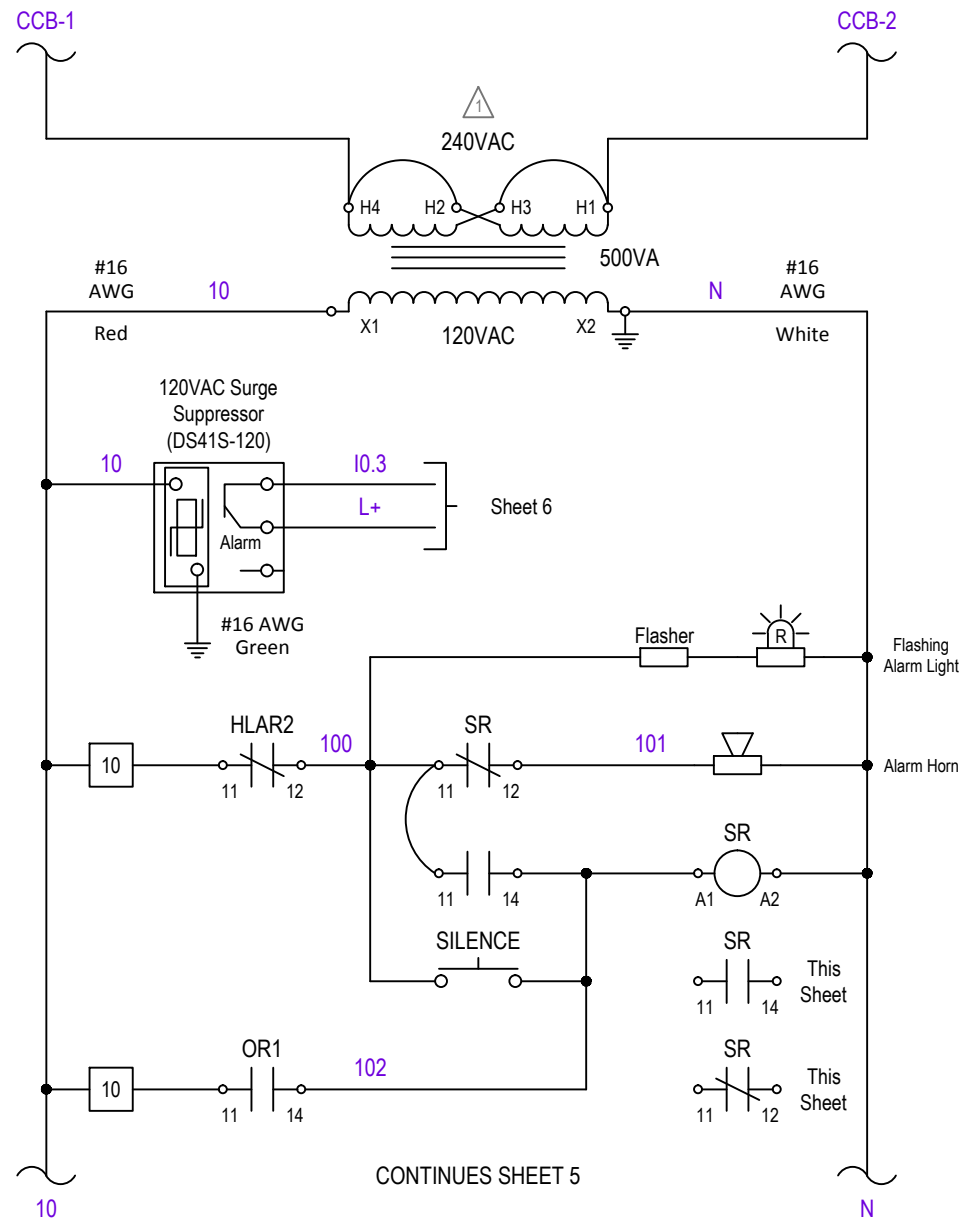
PROJECT: --- PROJECT NAME ---

1-PH. TO 3-PH. VFD LIFT STATION DIAGRAM

JOB No: 12345678 SHEET 3 OF 9

GENERAL NOTES:

1. THIS DRAWING IS FOR 240VAC SERVICE. THE TAPS ON THE TRANSFORMER MUST BE CONNECTED FOR 240VAC.
2. DIP SWITCH SETTINGS SHOWN ARE FOR THE STANDARD SEAL LEAK/OVERTEMP RELAYS. RELAYS MUST BE CHANGED AS REQUIRED BY PUMP MANUFACTURER AND ADJUSTED TO RECOMMENDED SETTINGS.
3. ALL CONTROL WIRING AND 12-18 AWG SHALL BE STRANDED TIN-PLATED COPPER WIRE. APPLY DIELECTRIC GREASE TO ENDS TO PREVENT CORROSION.
4. ALL WIRES IN CONTROL PANEL SHALL BE TERMINATED WITH FERRULES.
5. ALL WIRES TERMINATING AT PLC RACK MUST BE ROUTED THROUGH WIREWAY FROM BELOW.
6. THIS DRAWING IS FOR A DUPLEX PUMP STATION. TRIPLEX PUMP STATIONS REQUIRE ADDITIONAL PUMP CONTROLS.



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ELECTRICAL SCHEMATIC

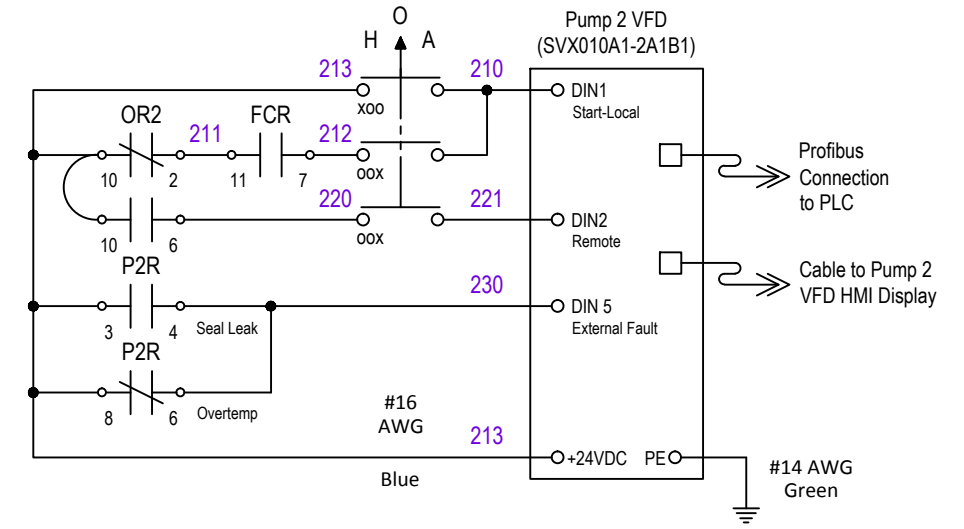
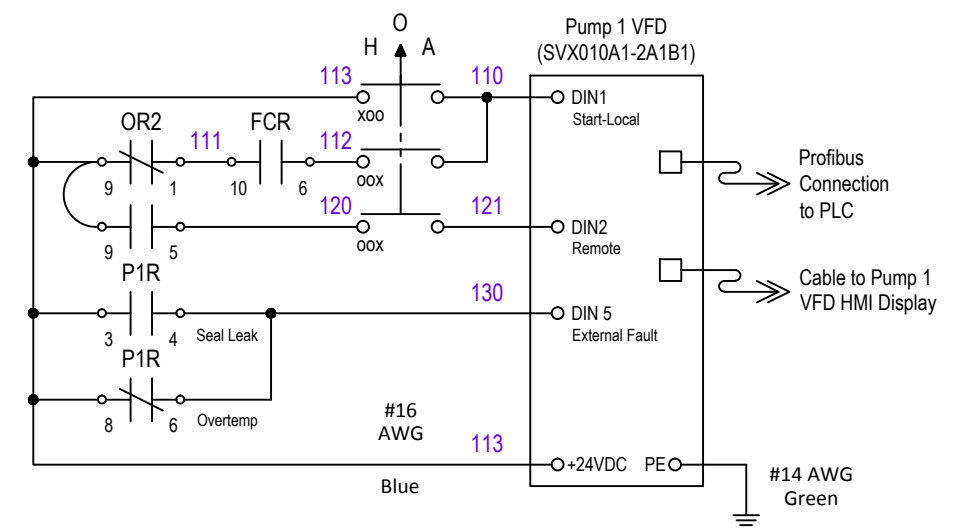
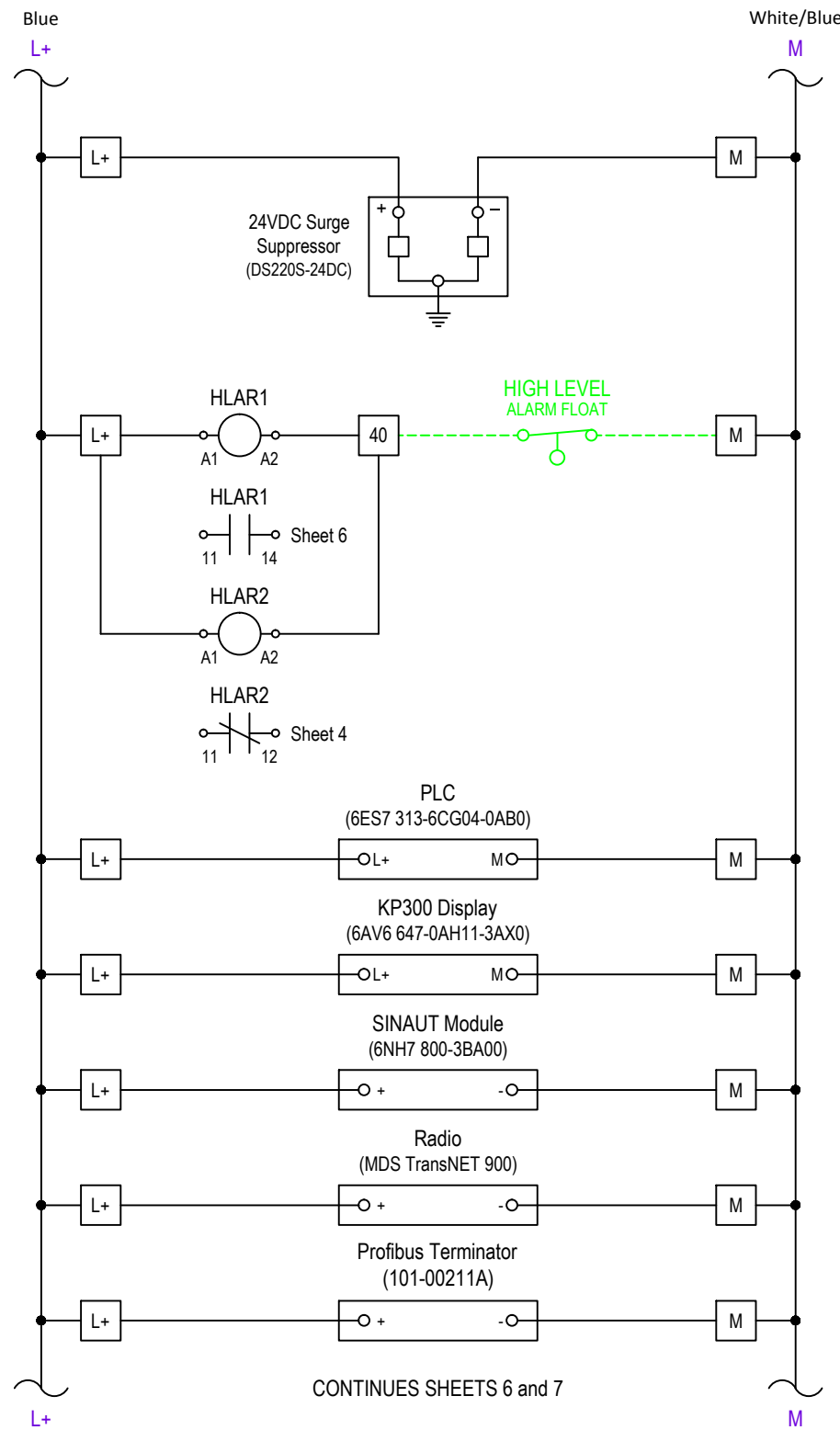
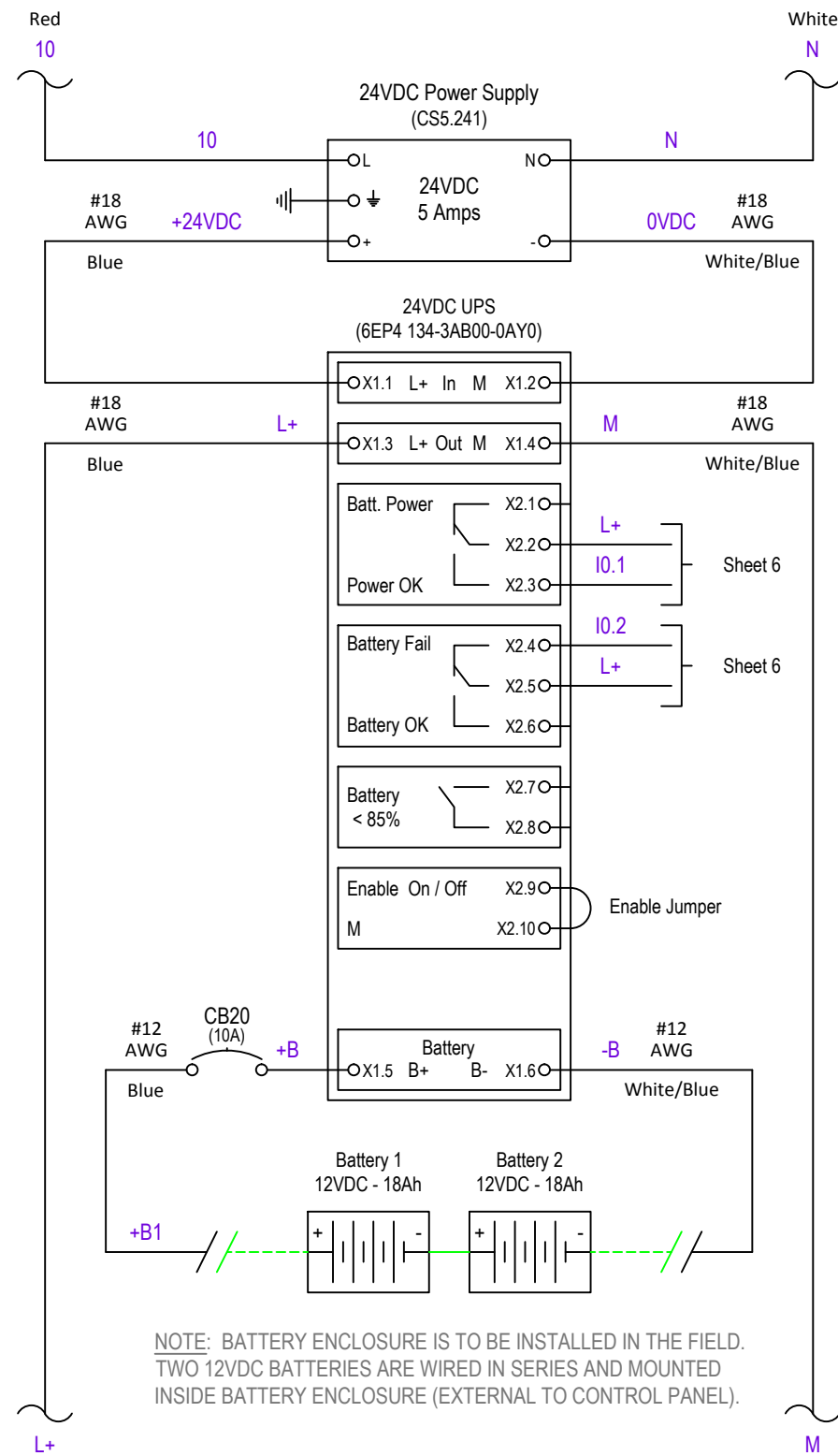
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SHEET TITLE: 120 VAC VOLTAGE	
PROJECT: --- PROJECT NAME ---	
1-PH. TO 3-PH. VFD LIFT STATION DIAGRAM	
JOB No: 12345678	SHEET 4 OF 9



CONTINUES SHEETS 6 and 7

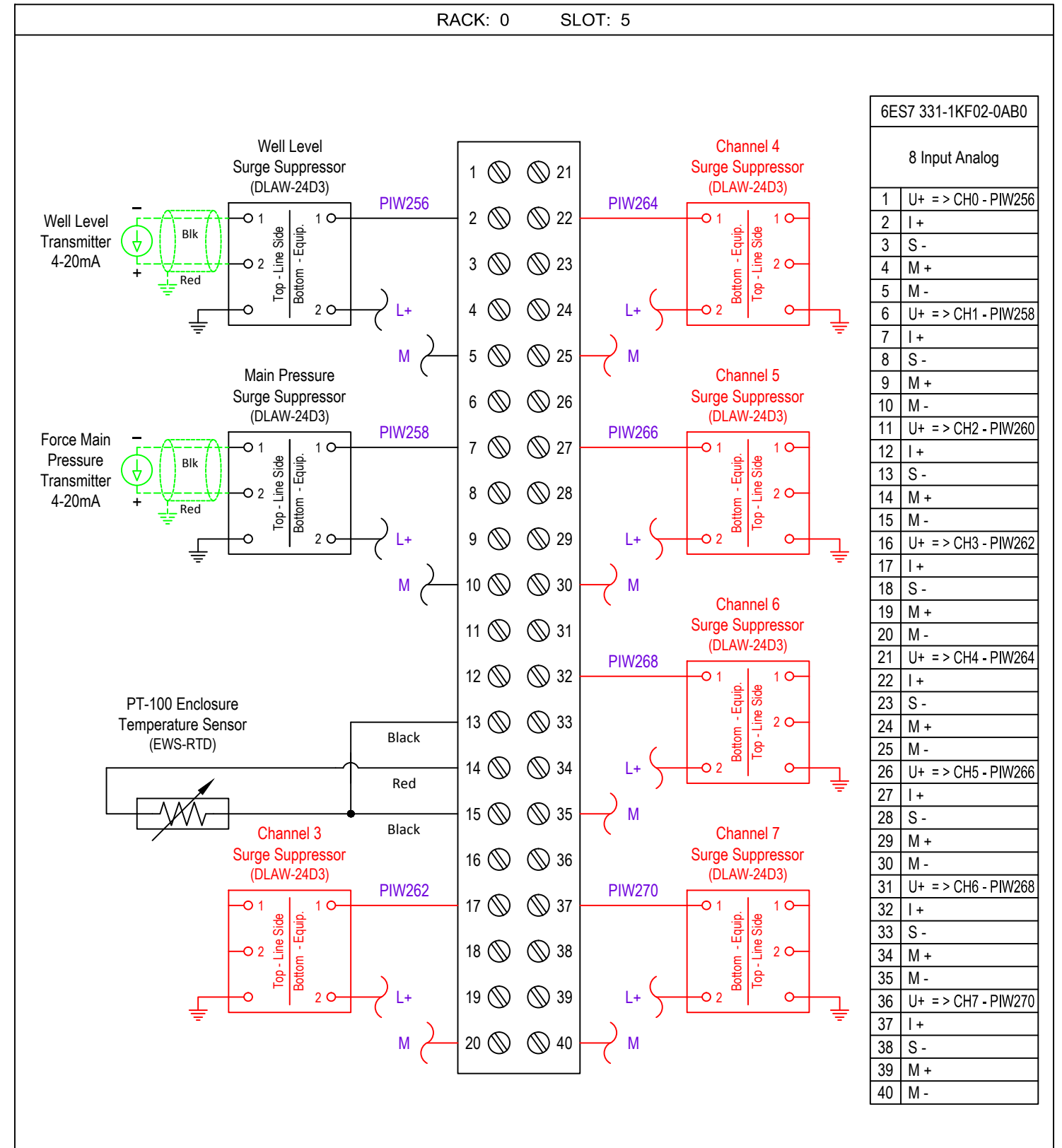
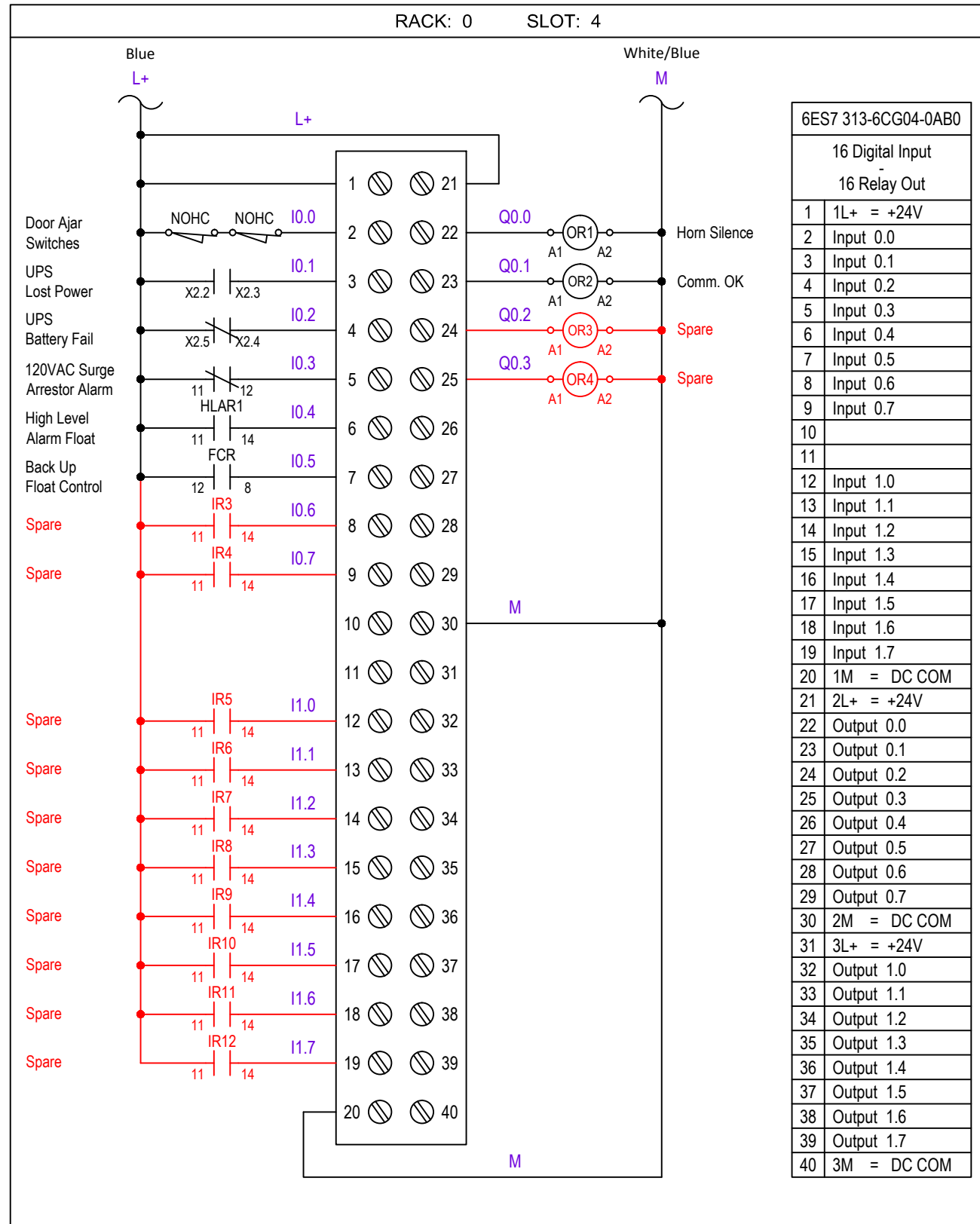
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 2017 STANDARD PACKAGE, REV. 0

SHEET TITLE: **24VDC VOLTAGE**
 PROJECT: --- PROJECT NAME ---
1-PH. TO 3-PH. VFD LIFT STATION DIAGRAM
 JOB No: 12345678 SHEET 5 OF 9



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ELECTRICAL SCHEMATIC

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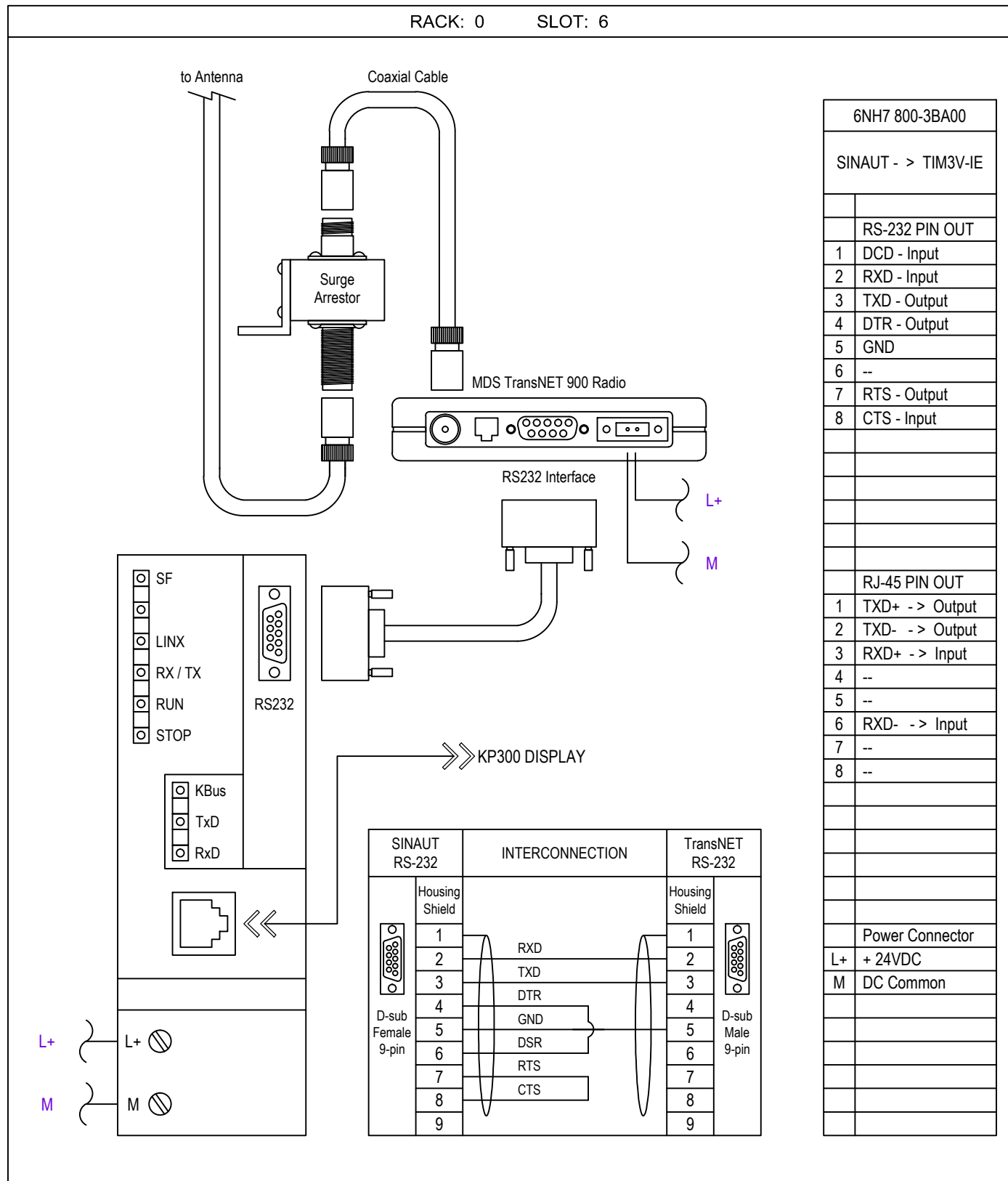
SHEET TITLE:
PLC DIGITAL I/O - ANALOG INPUT

PROJECT:
--- PROJECT NAME ---

1-PH. TO 3-PH. VFD LIFT STATION DIAGRAM

JOB No:
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SHEET 6 OF 9



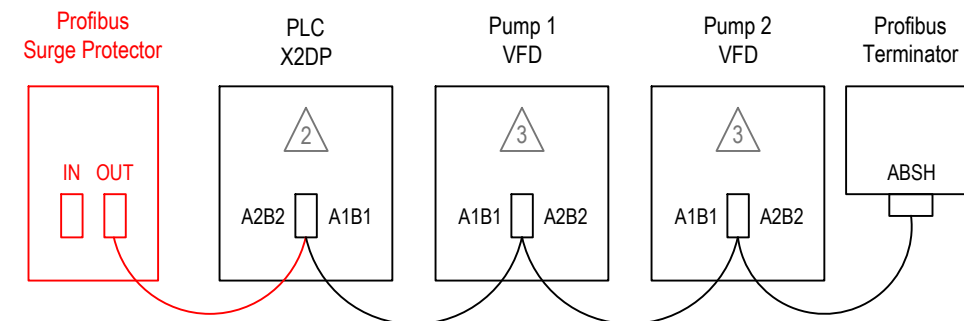
VFD Functional

- OFF - Drive is disabled.
- MANUAL - The drive will be forced to Local control and will be given a start signal to ramp it up to maximum speed.
- AUTO - If the VFD selector switch is put into Auto and Communication OK relay is good then the drive will be controlled over Profibus using PPO4. If the PLC communication is ever lost to the VFD, the communication OK relay will drop out and control the VFD from the Float Control Relay. The communication OK relay is controlled by the PLC and is to be energized as long as the VFD communication is OK.

Setting up Cutler-Hammer SVX9000 on Profibus with Backup Float Revised 6/7/13

- Contact JEA for the latest documentation.

Profibus Connection Diagram



GENERAL NOTES:

1. ALL PLC I/O WIRING SHALL BE #18 AWG. APPLY DIELECTRIC GREASE TO ENDS TO PREVENT CORROSION.
2. SET PROFIBUS CONNECTOR RESISTOR SWITCH TO THE "ON" POSITION.
3. SET PROFIBUS CONNECTOR RESISTOR SWITCH TO THE "OFF" POSITION.

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ELECTRICAL SCHEMATIC

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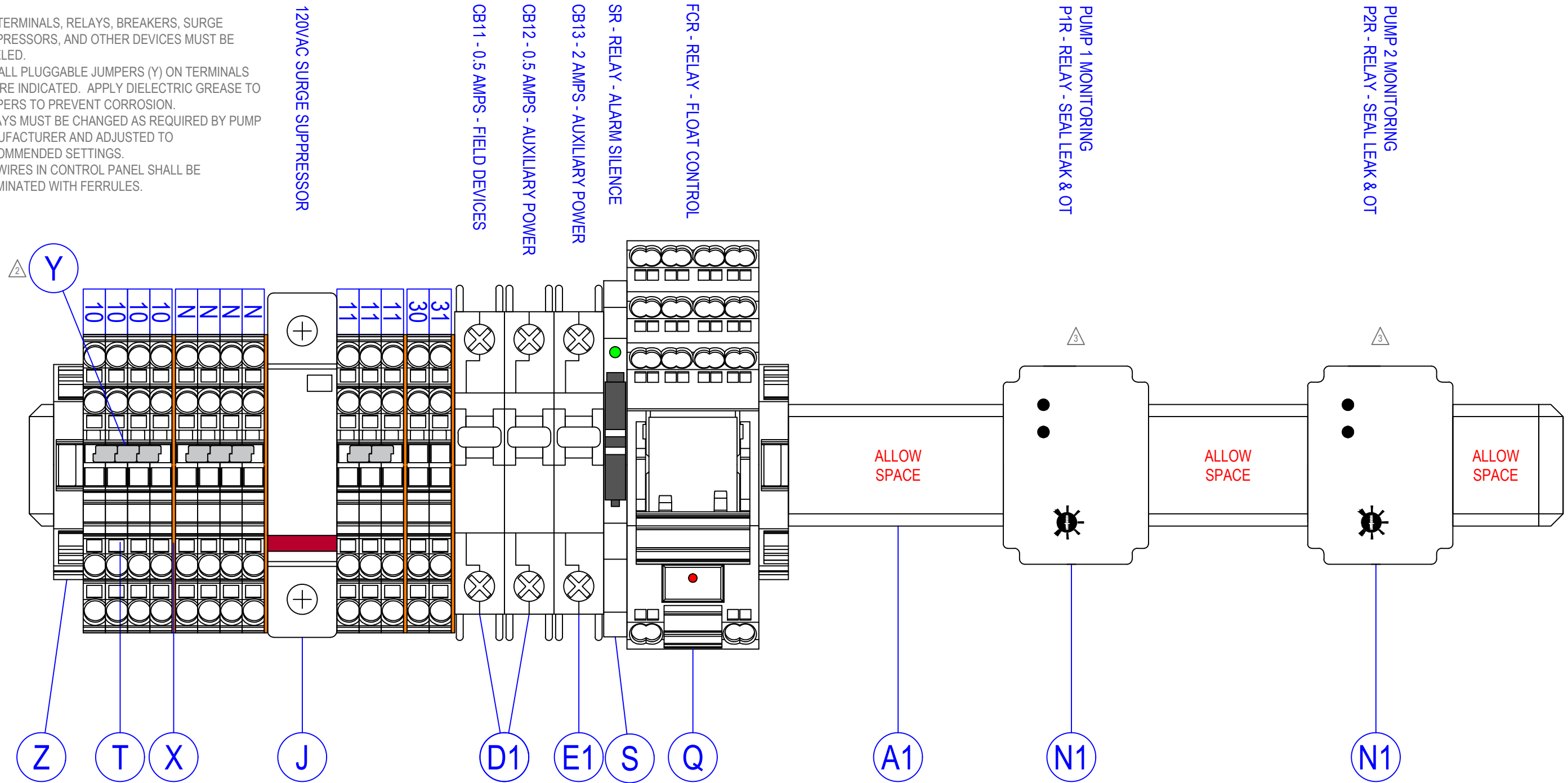


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DATE:
2017 STANDARD PACKAGE, REV. 0

SHEET TITLE: PLC & RADIO CONNECTION	
PROJECT: --- PROJECT NAME ---	
1-PH. TO 3-PH. VFD LIFT STATION DIAGRAM	
JOB No: 12345678	SHEET 7 OF 9

GENERAL NOTES:

1. ALL TERMINALS, RELAYS, BREAKERS, SURGE SUPPRESSORS, AND OTHER DEVICES MUST BE LABELED.
2. INSTALL PLUGGABLE JUMPERS (Y) ON TERMINALS WHERE INDICATED. APPLY DIELECTRIC GREASE TO JUMPERS TO PREVENT CORROSION.
3. RELAYS MUST BE CHANGED AS REQUIRED BY PUMP MANUFACTURER AND ADJUSTED TO RECOMMENDED SETTINGS.
4. ALL WIRES IN CONTROL PANEL SHALL BE TERMINATED WITH FERRULES.



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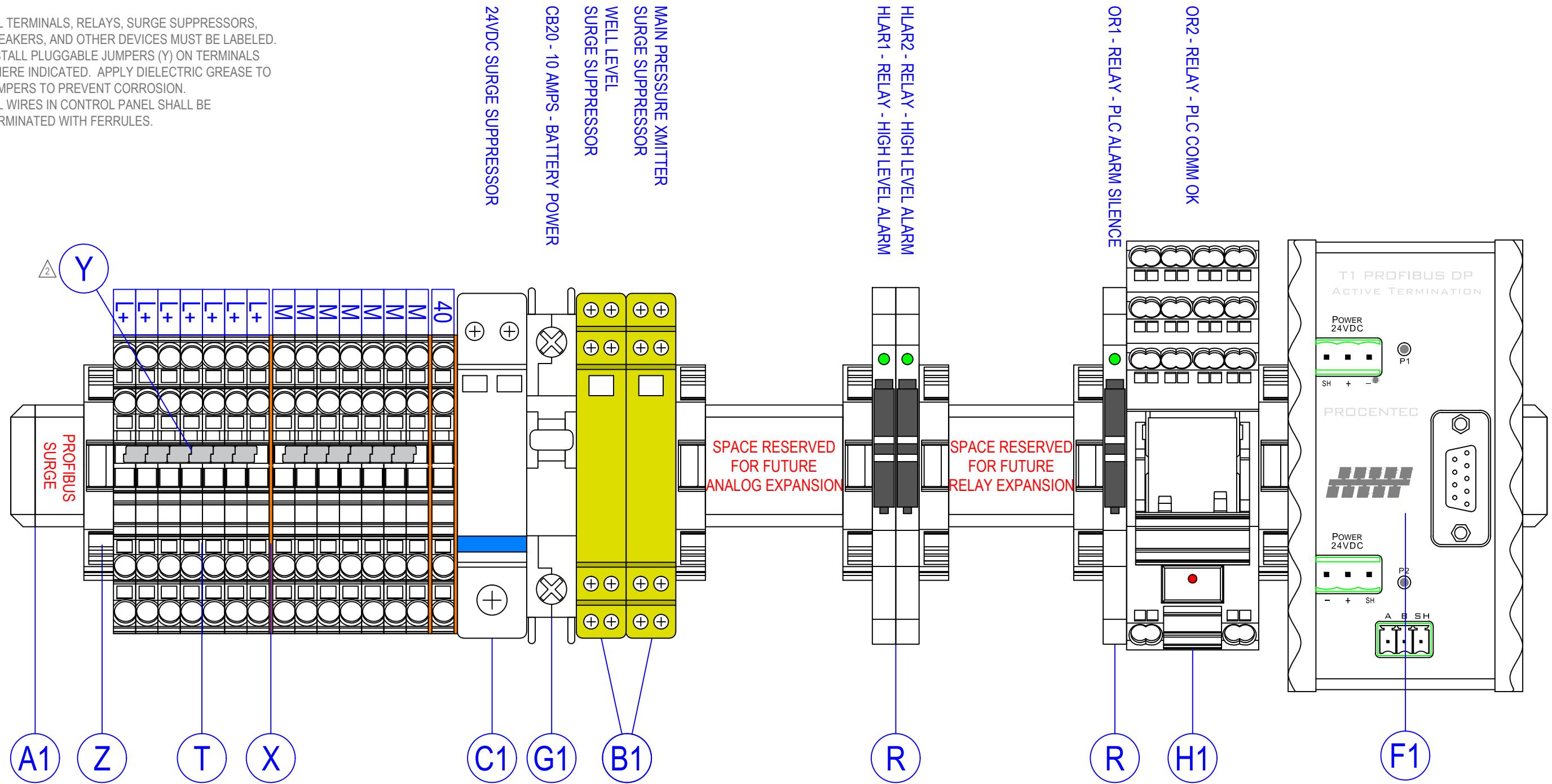


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 DATE:
 2017 STANDARD PACKAGE, REV. 0

SHEET TITLE:
120 VAC TERMINAL BLOCK LAYOUT
 PROJECT:
 --- PROJECT NAME ---
1-PH. TO 3-PH. VFD LIFT STATION DIAGRAM
 JOB No: 12345678
 SHEET 8 OF 9

GENERAL NOTES:

1. ALL TERMINALS, RELAYS, SURGE SUPPRESSORS, BREAKERS, AND OTHER DEVICES MUST BE LABELED.
2. INSTALL PLUGGABLE JUMPERS (Y) 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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2017 STANDARD PACKAGE, REV. 0

SHEET TITLE:
24 VDC TERMINAL BLOCK LAYOUT


PROJECT:
--- PROJECT NAME ---

1-PH. TO 3-PH. VFD LIFT STATION DIAGRAM

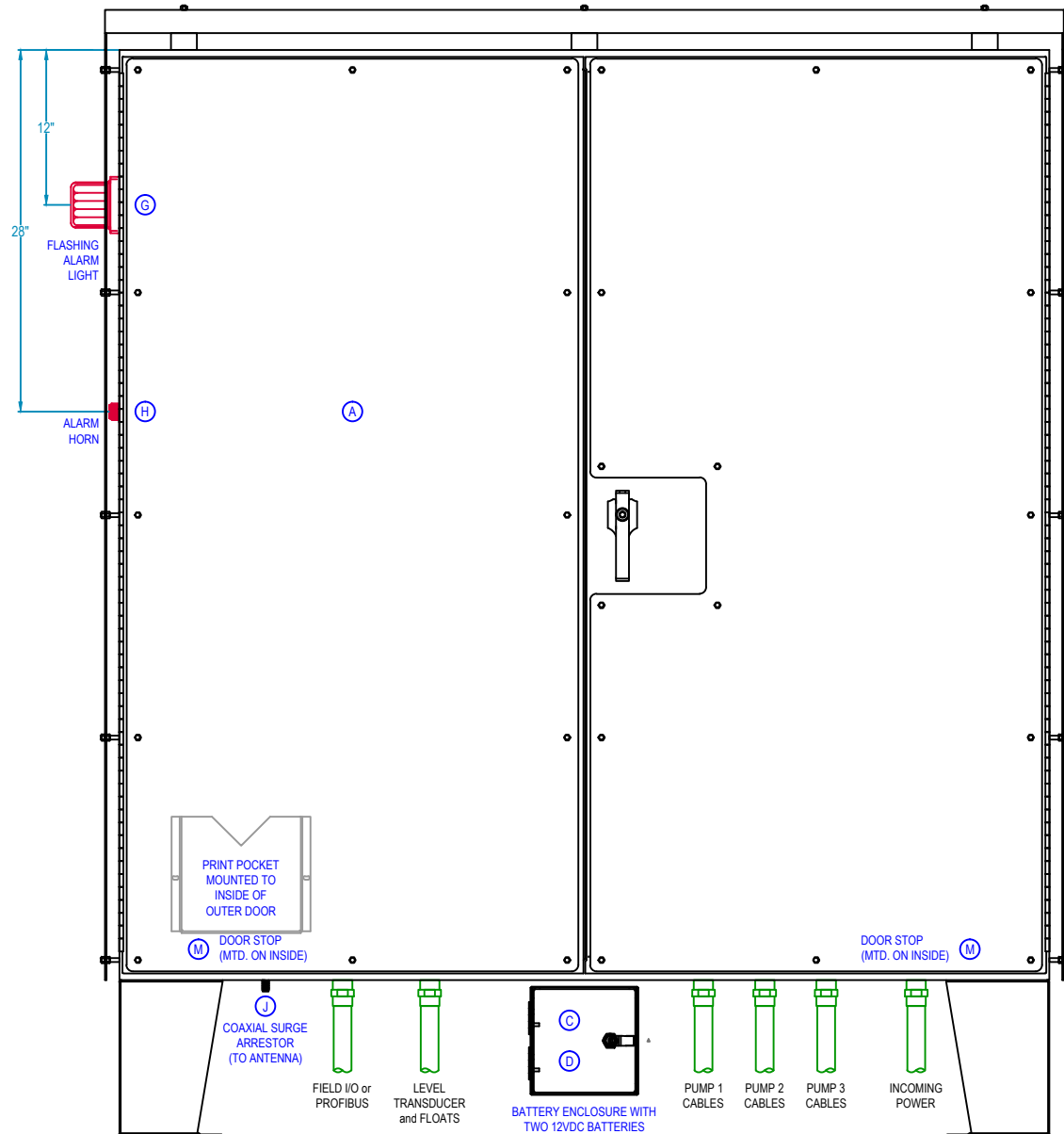
JOB No: 12345678 SHEET 9 OF 9

INSTRUCTIONS:

1. CONTRACTOR SHALL USE THIS DRAWING FILE TO CREATE SHOP DRAWINGS FOR JEA REVIEW.
2. RETURN COMPLETED SHOP DRAWINGS AS PDF FILE TO ARISS FAJARDO AT FAJAAJ@JEA.COM FOR APPROVAL.
3. PLEASE CONTACT ARISS FAJARDO FOR QUESTIONS OR ADDITIONAL INFORMATION.
4. DO NOT PRINT THIS SHEET IN SUBMITAL SET.

NO.	BY	DATE	REVISIONS	<p style="color: green; text-align: center;">ELECTRICAL SCHEMATIC</p> <p style="text-align: center; color: blue;">MANUFACTURER ADDRESS1 ADDRESS2</p> <p style="text-align: center; color: blue;">CONTACT_NAME CONTACT_NUMBER</p>		DESIGNER:	SHEET TITLE: INSTRUCTION SHEET		
6.						DRAWN BY:	PROJECT: --- PROJECT NAME ---		
5.						DATE:	3-PHASE VFD LIFT STATION DIAGRAM		
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2.						2017 STANDARD PACKAGE, REV. 0	12345678	0	9
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FRONT VIEW



CUSTOM ENCLOSURE:

NEMA 12/3R RATED, FABRICATED FROM TYPE 316 STAINLESS STEEL WITH WHITE POLYESTER POWDER COAT FINISH INSIDE AND OUT. OUTER DOORS ARE FITTED WITH A PADLOCKABLE 3-POINT LATCH AND DOOR STOPS. ENCLOSURE IS MOUNTED ON 12-INCH TYPE 316 STAINLESS STEEL LEGS.

HEAT SHIELDS FABRICATED FROM .125 MARINE GRADE ALUMINUM SHALL BE INSTALLED ON FRONT, BACK, TOP, AND SIDES. HOLES SHALL BE CUT IN SHIELD FOR ALARM LIGHT AND HORN. HEAT SHIELDS SHALL ALSO HAVE WHITE POLYESTER POWDER COAT FINISH ON ALL SIDES.

REFER TO ENCLOSURE SPECIFICATIONS FOR FURTHER DETAILS.

NOTE: BATTERY ENCLOSURE IS TO BE INSTALLED IN THE FIELD

BILL of MATERIAL

QTY	MANUFACTURER	PART NUMBER	DESCRIPTION
A 1	OEM	CUSTOM ENCLOSURE	SEE THIS SHEET FOR DETAILS
B 2	OEM	CUSTOM INNER DOORS	SEE THIS SHEET FOR DETAILS
C 1	SCHAEFER	SPN1AL-888-JEA	BATTERY ENCLOSURE, .125 ALUMINUM
D 2	POWER SONIC	PS-12180 F2	BATTERY, LEAD-ACID, 12VDC, 18Ah
E -	-	-	-
F 1	SIEMENS	52PX8A1K / 52BAK	MOMENTARY PUSHBUTTON, 30mm, FLUSH
G 1	INGRAM PRODUCTS	LX40F	ALARM LIGHT W/ FLASHER, 120VAC, RED
H 1	INGRAM PRODUCTS	PW120AR	ALARM HORN, ELECTRONIC, 120VAC, RED
I 1	APT	S50A277V3Y	SURGE PROTECTOR, 480V WYE
J 1	POLY PHASER	DSXL	COAXIAL SURGE ARRESTOR (ANTENNA)
K 1	SIEMENS	6AV6 647-0AH11-3AX0	OPERATOR PANEL KP300 DISPLAY
L 2	OMRON	6X283	SNAP ACTION SWITCH (DOOR AJAR)
M 4	ALLIED	642-2137	ACTUATOR FOR SWITCH
N -	-	-	-
O 3	SCHAEFER	SP-DSTOPK-SS-SW	INNER/OUTER DOOR STOP KIT, SS
P 3	CUTLER-HAMMER	OPTRMT-9000-KIT	VFD HMI DISPLAY
Q 12	SIEMENS	52SX2BAB	3 POSITION MAINTAINED SWITCH, 30mm
R 1	SIEMENS	52BJK	CONTACT BLOCK, 1NO-1NC
S 1	SIEMENS	7KM2 111-1BA00-3AA0	PAC-3200 POWER MONITOR, 3 PHASE
T 1	SIEMENS	7KM9 300-0AB00-0AA0	PROFIBUS EXPANSION MODULE

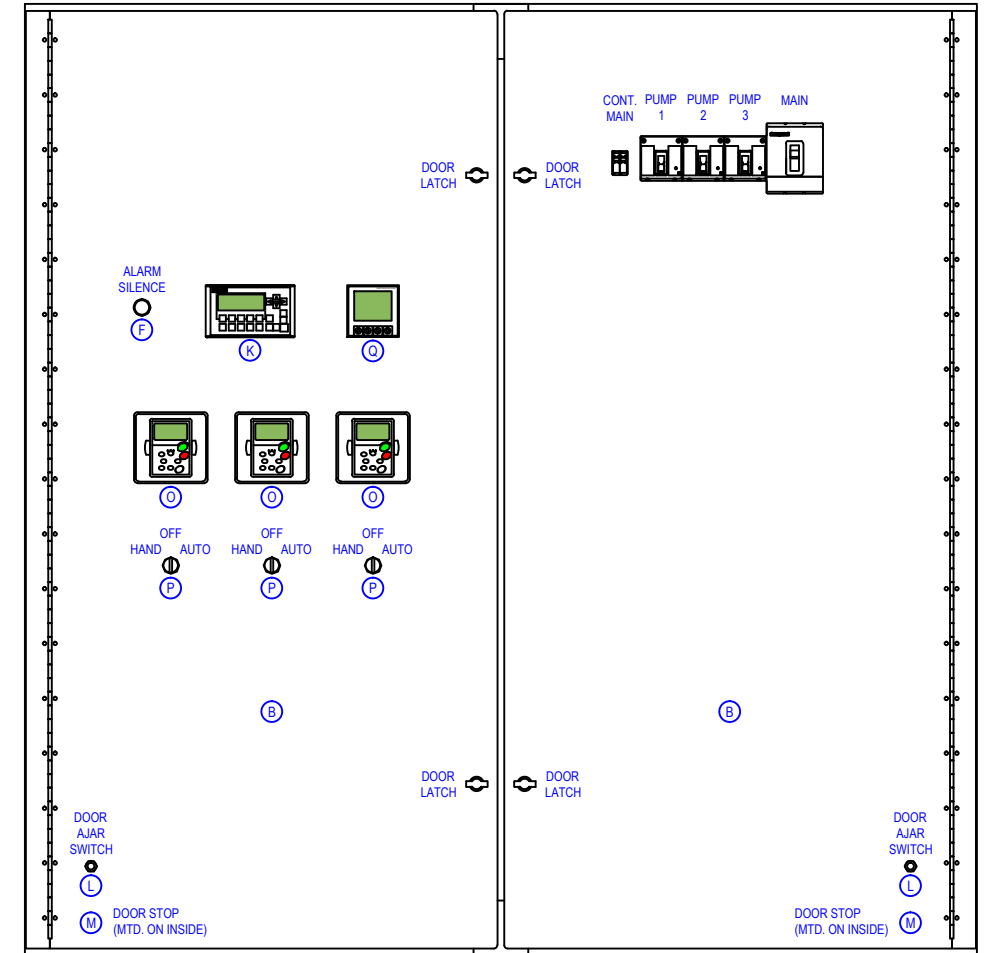
DRAWING LAYER COLOR LEGEND:

- 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

INNER DOOR VIEW



HINGED INNER DOORS:

FABRICATED FROM .125 ALUMINUM WITH CONTINUOUS HINGE, TWIST LATCHES, AND DOOR STOP MOUNTED ON INSIDE OF EACH.

GENERAL NOTES:

- REFER TO "433 LIFT STATION SCADA CONTROLS SPECIFICATION" FOR FURTHER DETAILS THAT MUST BE ADHERED TO SUCH AS WIRE, CONTACTOR, AND CIRCUIT BREAKER SIZING.
- THIS DRAWING IS AN EXAMPLE OF HOW OVERALL CABINET IS TO BE DESIGNED. THE DRAWING WILL NEED TO BE REVISED BASED ON THE PUMP MANUFACTURER, SIZE AND NUMBER OF PUMPS. THINGS THAT WILL CHANGE ARE ENCLOSURE SIZE, CIRCUIT BREAKER SIZE, WIRE SIZE, VFD SIZE, AND OTHER ITEMS. REFER TO SPECIFICATIONS FOR FURTHER DETAILS.
- VFD ENCLOSURES LOCATED OUTSIDE SHALL BE NEMA 12/3R WITH THE VFD HEAT SINKS VENTED OUT THE BACK. REFER TO DRAWINGS FOR FURTHER DETAILS.
- REFER TO NOTES AND DETAILS ON ALL DRAWING SHEETS FOR MORE MANUFACTURING DETAILS.
- THE SURGE PROTECTION DEVICE (SPD) IS TO BE SHIPPED LOOSE FOR MOUNTING AT THE DISCONNECT IN THE FIELD. THE CORRECT SPD MUST BE SELECTED BASED ON THE SERVICE VOLTAGE: 480V WYE.
- ALL FIELD WIRING SHALL BE #12 AWG STRANDED, TIN-PLATED COPPER. APPLY DIELECTRIC GREASE TO ENDS TO PREVENT CORROSION.
- ALL PLC I/O WIRING INTERNAL TO THE CONTROL PANEL SHALL BE #18 AWG.
- ALL WIRES IN CONTROL PANEL SHALL BE TERMINATED WITH FERRULES.
- ALL MOUNTING SCREWS SHALL BE STAINLESS STEEL, DRILLED AND TAPPED (NO SELF-TAPPING SCREWS ARE ALLOWED).

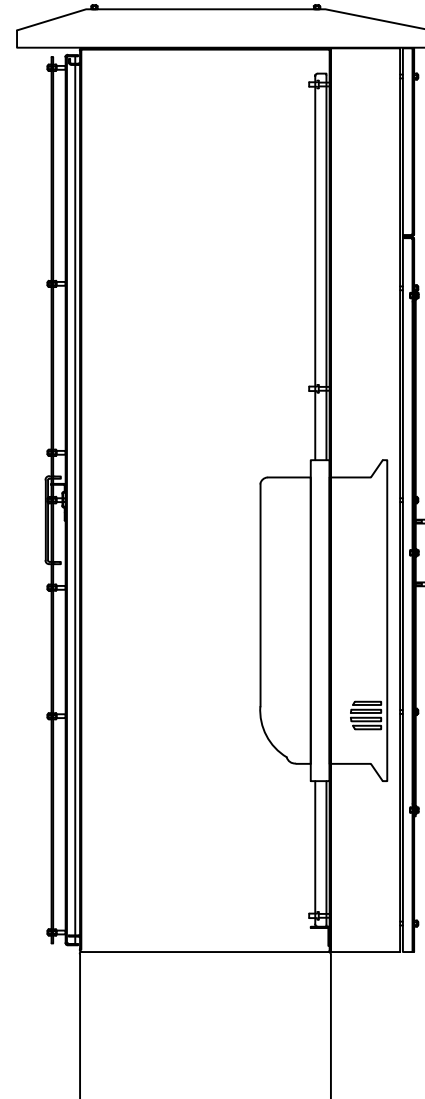
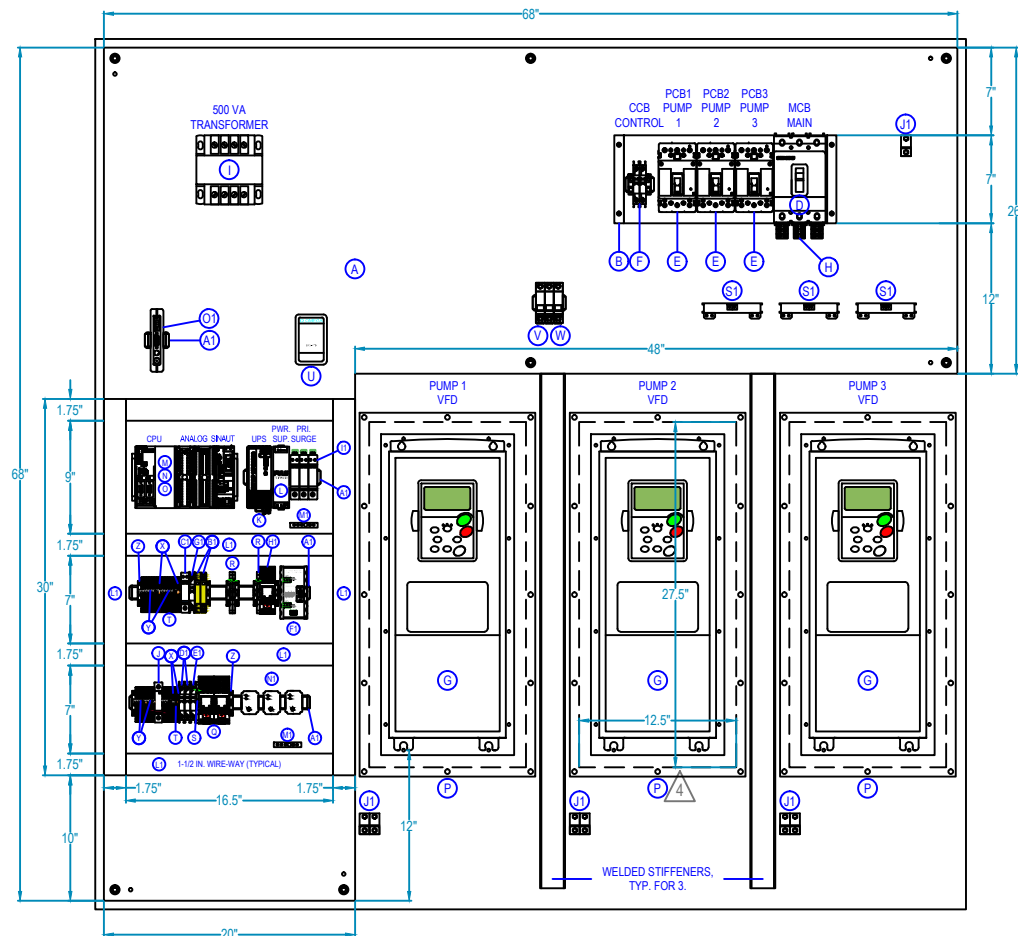
NO.	BY	DATE	REVISIONS	ELECTRICAL SCHEMATIC		DESIGNER:	SHEET TITLE: FRONT PANEL VIEW
6.				MANUFACTURER		DRAWN BY:	PROJECT: --- PROJECT NAME ---
5.				ADDRESS1		DATE:	3-PHASE VFD LIFT STATION DIAGRAM
4.				ADDRESS2		CHECKED BY:	JOB No: 12345678
3.				CONTACT_NAME		DATE:	SHEET 1 OF 9
2.				CONTACT_NUMBER		2017 STANDARD PACKAGE, REV.0	
1.							



BACK PANEL LAYOUT

RIGHT SIDE VIEW

BILL of MATERIAL



Installation of Flange Mount VFDs:

Provide cut-outs in the back of the enclosure to accept VFD aluminum mounting plates. Mounting plates shall be attached to studs on the back of the enclosure and gasketed.

VFDs are to be bolted to these plates with the heat sinks extending outside the enclosure for cooling.

Consult VFD manufacturer's installation guide for flange mount cut-out dimensions and recommended instructions. See General Note #4 for additional details and requirements. Dimensions of cut-out must be shown on drawing.

The rear sunshield shall have a removable cover with handles to allow access to the VFD heat sinks for cleaning and maintenance. The heat shield will have studs with wing nuts for attaching the removable cover.

Seal all penetrations.

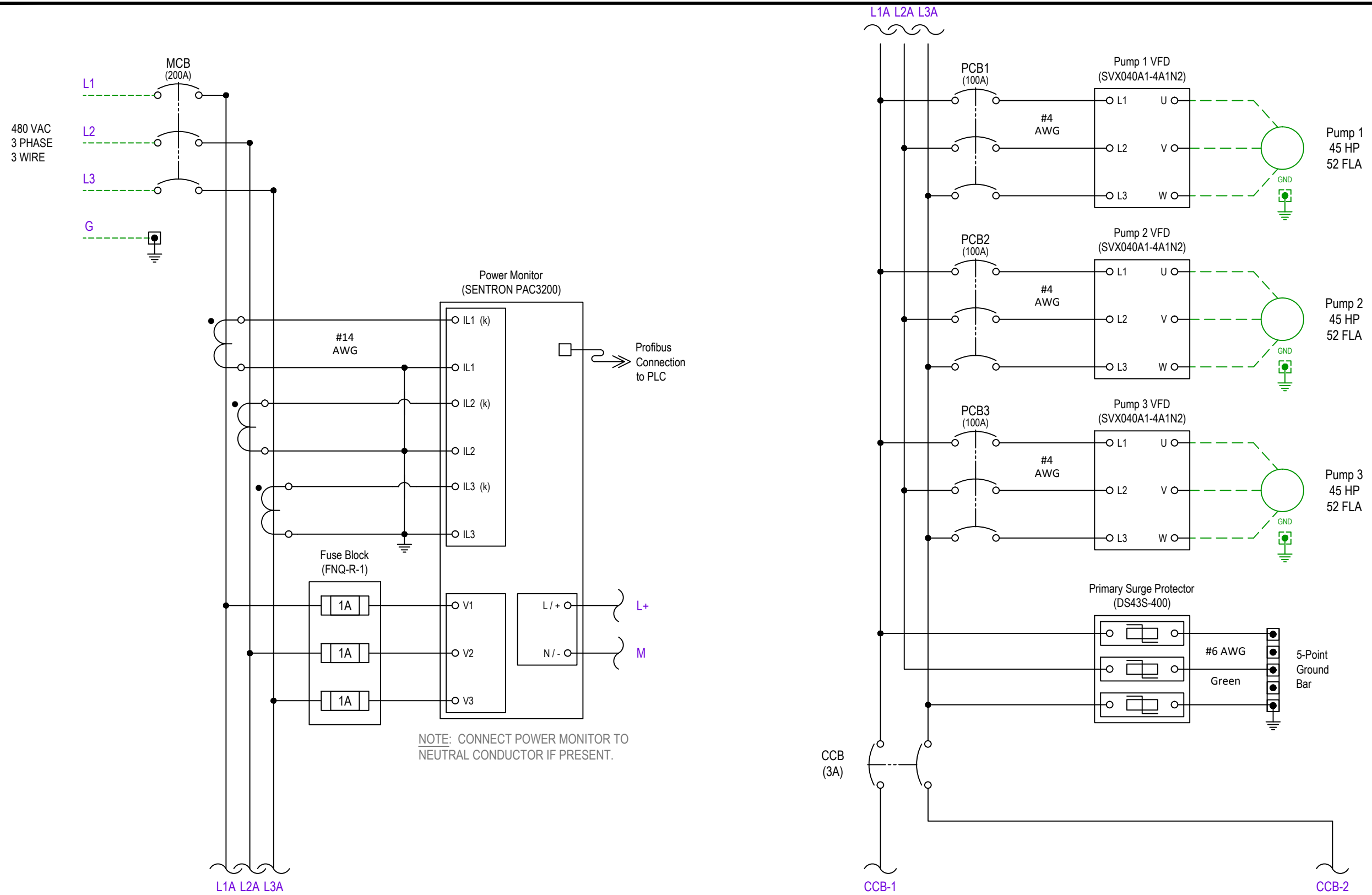
BACK PANEL:
CUSTOM "L" SHAPED, FABRICATED FROM 10ga. CARBON STEEL WITH WHITE INDUSTRIAL GRADE ENAMEL FINISH.

GENERAL NOTES:

- REFER TO "433 LIFT STATION SCADA CONTROLS SPECIFICATION" FOR FURTHER DETAILS THAT MUST BE ADHERED TO SUCH AS WIRE, CONTACTOR, AND CIRCUIT BREAKER SIZING.
- THIS DRAWING IS AN EXAMPLE OF HOW OVERALL CABINET IS TO BE DESIGNED. THE DRAWING WILL NEED TO BE REVISED BASED ON THE PUMP MANUFACTURER, SIZE AND NUMBER OF PUMPS. THINGS THAT WILL CHANGE ARE ENCLOSURE SIZE, CIRCUIT BREAKER SIZE, WIRE SIZE, VFD SIZE, AND OTHER ITEMS. REFER TO SPECIFICATIONS FOR FURTHER DETAILS.
- REFER TO "433 LIFT STATION SCADA CONTROLS SPECIFICATION" HEAT LOAD CALCULATIONS SECTION AND ENCLOSURE SPECIFICATIONS TO SIZE ENCLOSURE CORRECTLY.
- VFDs SHALL BE BOLTED TO A REMOVABLE PLATE THAT WILL THEN BE CONNECTED TO THE BACK OF THE ENCLOSURE WITH A GASKET. THE BACK OF THE ENCLOSURE SHALL HAVE STUDS TO ATTACH THE PLATE TO. THIS PLATE IS TO BE ADEQUATELY DESIGNED TO SUPPORT THE VFD. ENCLOSURE CUTOUT SHALL BE SIZED A MINIMUM OF 2.75" WIDER AND 3.5" HIGHER ON EACH SIDE OF THE MANUFACTURER RECOMMENDED CUTOUT FOR 40HP VFDs. THIS WILL RESULT IN A CUTOUT THAT IS NO LESS THAN 5.5" WIDER AND 7" HIGHER THAN THE MANUFACTURER'S SPECIFICATION. ADDITIONALLY THIS DISTANCE WILL INCREASE PROPORTIONATELY WITH THE SIZE OF THE VFD. FOR EXAMPLE: 80HP VFDs REQUIRE A CUTOUT THAT IS 5.5" WIDER AND 7.0" HIGHER ON EACH SIDE (A TOTAL OF 11" WIDER AND 14" HIGHER) OF THE MANUFACTURER SPECIFIED CUTOUT. THIS REQUIREMENT IS TO ENSURE THAT A FUTURE REPLACEMENT OF A VFD WILL ALLOW FOR DIFFERENT VFD DIMENSIONS.
- VFDs SHALL BE RATED FOR CORROSIVE ENVIRONMENTS AND DRIVE CONTROL BOARDS SHALL BE CONFORMAL COATED TO PROTECT AGAINST CORROSION.
- THE REAR SUNSHIELD SHALL HAVE A REMOVABLE COVER WITH HANDLES TO ALLOW ACCESS TO THE VFD HEAT SINKS FOR CLEANING AND MAINTENANCE. THE HEAT SHIELD WILL HAVE STUDS WITH WING NUTS FOR ATTACHING THE REMOVABLE COVER.
- SEAL LEAK/OVERTEMP RELAYS MUST BE CHANGED AS REQUIRED BY PUMP MANUFACTURER.
- TECHNICAL FIELD SERVICES, INC., JACKSONVILLE, FLORIDA (904) 278-5250
- ENSURE GOOD ELECTRICAL CONTACT BETWEEN BACK PANEL AND ALL MECHANICAL GROUND CONNECTIONS.

QTY	MANUFACTURER	PART NUMBER	DESCRIPTION		
2	A	1	OEM	CUSTOM BACK PANEL	SEE THIS SHEET FOR DETAILS
2	B	1	OEM	BREAKER MOUNT	TO RAISE CBs FLUSH WITH INNER DOOR
-	C	-	-	-	-
2	D	1	SIEMENS	NFG3B200L	MCB, 3 POLE, 200A
2	E	3	SIEMENS	NEG3B100L	PCB1, PCB2 and PCB3, 3 POLE, 100A
1	F	1	WEIDMULLER	9926 25 2003	CCB, UL489, 2 POLE, 3A (480V SERVICE)
3	G	3	CUTLER-HAMMER	SVX040A1-4A1N2	VFD, VARIABLE TORQUE, 50HP
3	G	3	CUTLER-HAMMER	OPTTHR7	VFD FLANGE MOUNTING KIT, FRAME 7
3	G	3	CUTLER-HAMMER	OPTC5	VFD PROFIBUS DP, DB9 CONNECTOR
1	H	1	SIEMENS	3TA6EG06	POWER DISTRIBUTION LUGS, KIT OF 3
1	I	1	SIEMENS	MT0500A	CONTROL TRANSFORMER, 500VA
1	J	1	CITEL	DS41S-120	120VAC SURGE SUPPRESSOR, BASE
1	K	1	SIEMENS	6EP4 134-3AB00-0AY0	SITOP DC UPS, 10A WITH CHARGER
1	L	1	PULS	CS5.241	24VDC POWER SUPPLY, 5A
1	M	1	SIEMENS	6ES7 390-1AE80-0AA0	480mm MOUNTING RAIL FOR PLC EQUIP.
1	M	1	SIEMENS	6ES7 313-6CG04-0AB0	CPU 313C-2DP, 16 DI - 16 DO PLC
1	M	1	SIEMENS	6ES7 953-8LG30-0AA0	MMC MEMORY CARD, 128KB
1	M	1	SIEMENS	6ES7 331-1KF02-0AB0	8 FUNCTION ANALOG INPUT MODULE
2	M	2	SIEMENS	6ES7 392-1BM01-0AA0	40-PIN SPRING CONNECTOR
1	M	1	SIEMENS	6NH7 800-3BA00	SINAUT ST7, TIM 3V-IE MODULE
2	N	2	BRAD HARRISON	PA9D01-42	PROFIBUS CONNECTOR, 90°, PG PORT
3	O	3	BRAD HARRISON	MA9D00-42	PROFIBUS CONNECTOR, 180°
3	P	3	OEM	VFD MOUNTING PLATE	SEE THIS SHEET FOR DETAILS
2	Q	2	WAGO	858-507	RELAY, STATUS, SPRING, 4NO-NC, 120VAC
3	R	3	WAGO	857-304	RELAY, STATUS, SPRING, SPDT, 24VDC
1	S	1	WAGO	857-357	RELAY, STATUS, SPRING, SPDT, 120VAC
28	T	28	WAGO	2002-1401	TERMINAL, 2002, SPRING, GRAY
1	U	1	OMEGA	EWS-RTD	PT100 TEMPERATURE SENSOR, RTD
1	V	1	WAGO	811-430	3-POLE CLASS CC FUSE HOLDER
3	W	3	BUSSMANN	FNQ-R-1	FUSE, CLASS CC REJECTION, 600V, 1A
7	X	7	WAGO	2002-1492	TERMINAL END / PART. PLATE, ORANGE
20	Y	20	WAGO	2002-400	ADJACENT JUMPER, 2-WAY CONTINUOUS
10	Z	10	WAGO	249-116	TERMINAL END STOP, GRAY
1	A1	1	WAGO	210-112	2M DIN RAIL, GALVANIZED, SLOTTED
2	B1	2	CITEL	DLAW-24D3	ANALOG SURGE SUPPRESSOR, 24VDC
1	C1	1	CITEL	DS220S-24DC	24VDC SURGE SUPPRESSOR
2	D1	2	WEIDMULLER	9926 25 1000	CB11 and CB12, UL489, 1 POLE, 0.5A
1	E1	1	WEIDMULLER	9926 25 1002	CB13, UL489, 1 POLE, 2A
1	F1	1	PROCENTEC	101-00211A	PROFIBUS TERMINATOR
1	G1	1	WEIDMULLER	9926 25 1910	CB20, UL489, 1 POLE, 10A
1	H1	1	WAGO	585-304	RELAY, STATUS, SPRING, 4NO-NC, 24VDC
1	I1	1	CITEL	DS43S-400	PRIMARY SPD, 480V WYE
7	J1	7	PANDUIT	LAMA2-14-QY	GROUND LUG, DUAL-RATED, #2-14AWG
-	K1	-	CITEL	DLA-12D3	PROFIBUS SURGE PROTECTOR
2	L1	2	PANDUIT	1.5"W x 2"H x 72"L	WIREWAY, HINGE COVER, WIDE FINGER
2	M1	2	SQUARE D	PK5GTA	EQUIPMENT GROUND BAR, 5-POINT
3	N1	3	MACROMATIC	TCP2G100	SEAL LEAK / OVERTEMP RELAY, 120VAC
1	O1	1	MDS	TRANSNET 900	RADIO, SPREAD-SPECTRUM, UNLICENSED
1	O1	1	MDS	03-4124A01	DIN RAIL MOUNT KIT
1	O1	1	TFS, INC.	-	SINAUT TO RADIO NULL CABLE
1	P1	1	SIEMENS	6XV1830-0EH10	PROFIBUS CABLE, FAST CONNECT TYPE
2	Q1	2	SIEMENS	6GK1901-1BB10-2AA0	PROFINET CONNECTOR
1	R1	1	SIEMENS	6XV1840-2AH10	PROFINET CABLE
3	S1	3	SIEMENS	PDS-CTSC-021	CURRENT XFMR, 200:5 RATIO, SPLIT CORE

NO.	BY	DATE	REVISIONS	<p>ELECTRICAL SCHEMATIC</p> <p>MANUFACTURER ADDRESS1 ADDRESS2</p> <p>CONTACT_NAME CONTACT_NUMBER</p>		DESIGNER:	SHEET TITLE: BACK PANEL LAYOUT PROJECT: --- PROJECT NAME --- 3-PHASE VFD LIFT STATION DIAGRAM
6.						DRAWN BY:	
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4.						CHECKED BY:	
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2.				2017 STANDARD PACKAGE, REV. 0	JOB No: 12345678	SHEET 2 OF 9	



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ELECTRICAL SCHEMATIC

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2017 STANDARD PACKAGE, REV. 0

SHEET TITLE: **240 VAC VOLTAGE**

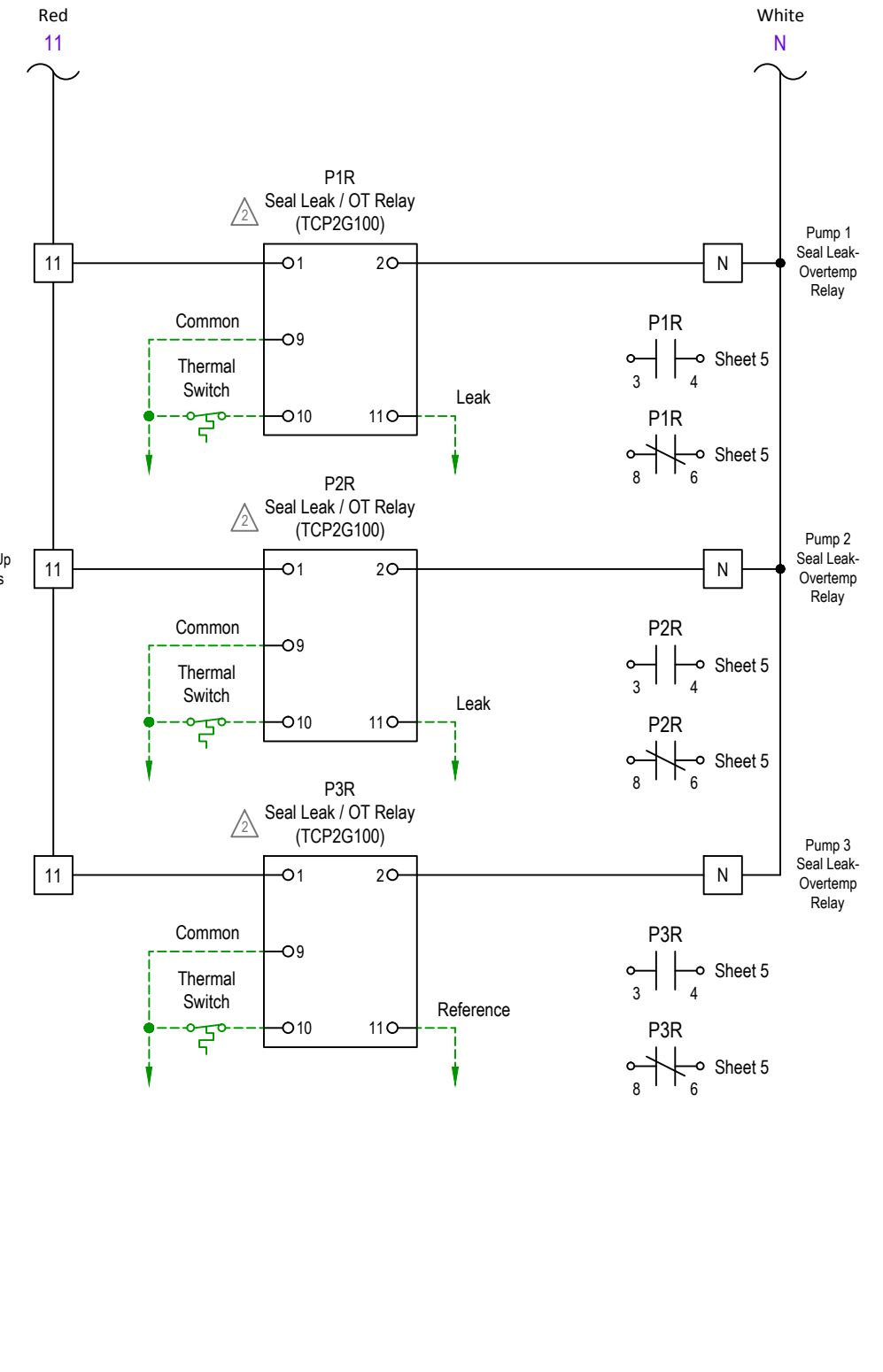
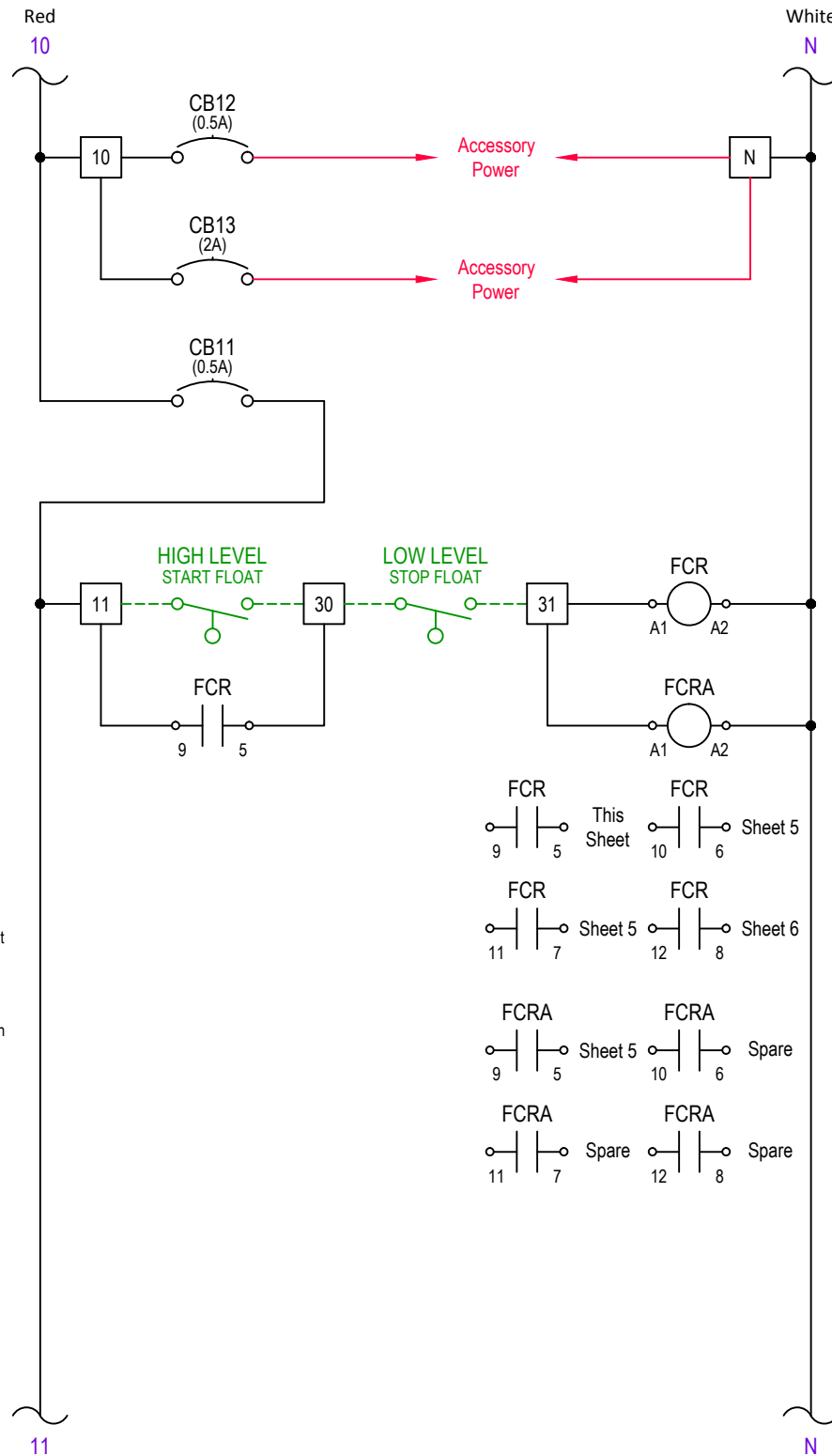
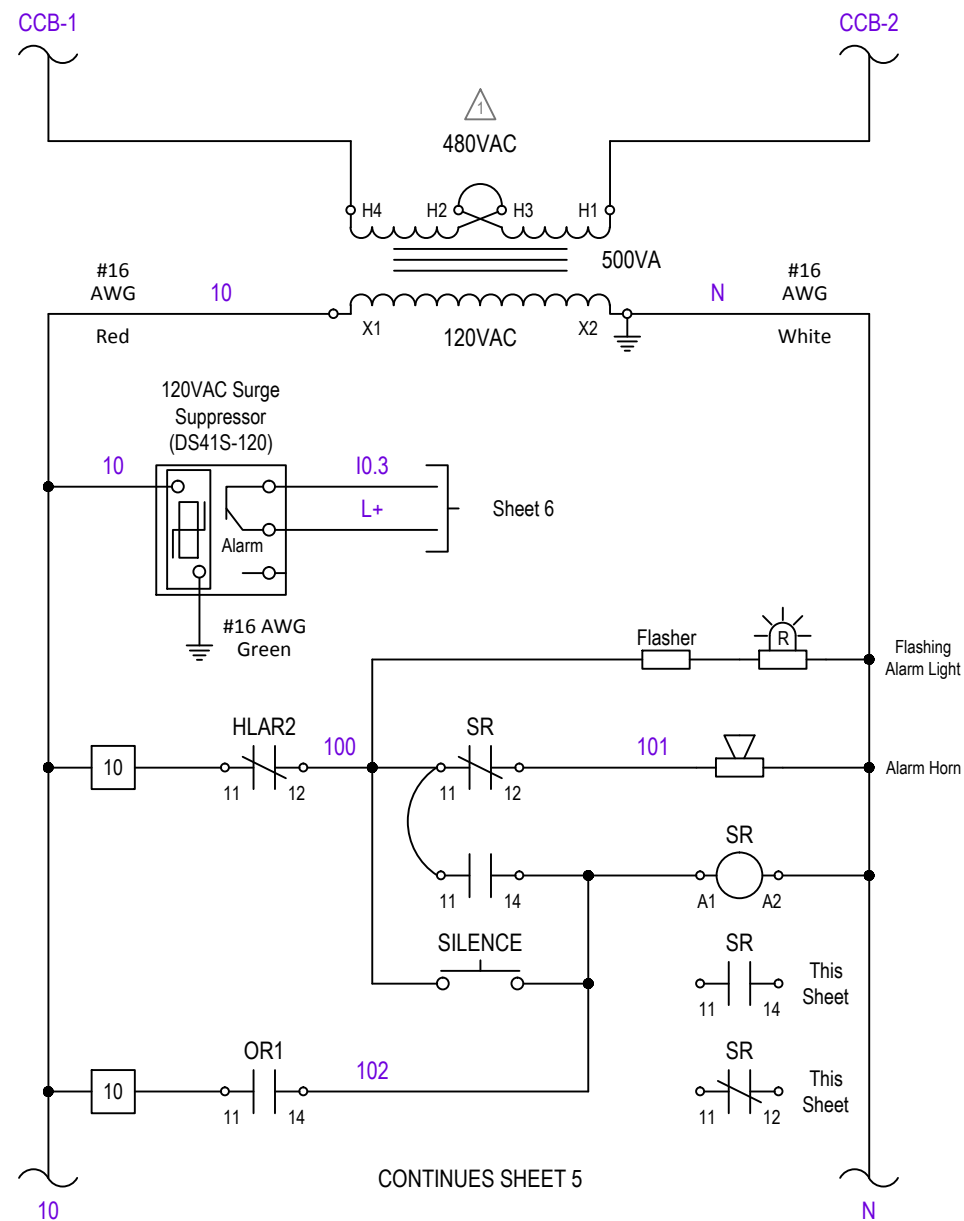
PROJECT: **--- PROJECT NAME ---**

3-PHASE VFD LIFT STATION DIAGRAM

JOB No: **12345678** SHEET **3** OF **9**

GENERAL NOTES:

1. THIS DRAWING IS FOR 480VAC SERVICE. THE TAPS ON THE TRANSFORMER MUST BE CONNECTED FOR 480VAC.
2. RELAYS MUST BE CHANGED AS REQUIRED BY PUMP MANUFACTURER AND ADJUSTED TO RECOMMENDED SETTINGS.
3. ALL CONTROL WIRING AND 12-18 AWG SHALL BE STRANDED TIN-PLATED COPPER WIRE. APPLY DIELECTRIC GREASE TO ENDS TO PREVENT CORROSION.
4. ALL WIRES IN CONTROL PANEL SHALL BE TERMINATED WITH FERRULES.
5. ALL WIRES TERMINATING AT PLC RACK MUST BE ROUTED THROUGH WIREWAY FROM BELOW.
6. THIS DRAWING IS FOR A TRIPLEX PUMP STATION. DUPLEX PUMP STATIONS REQUIRE FEWER PUMP CONTROLS.



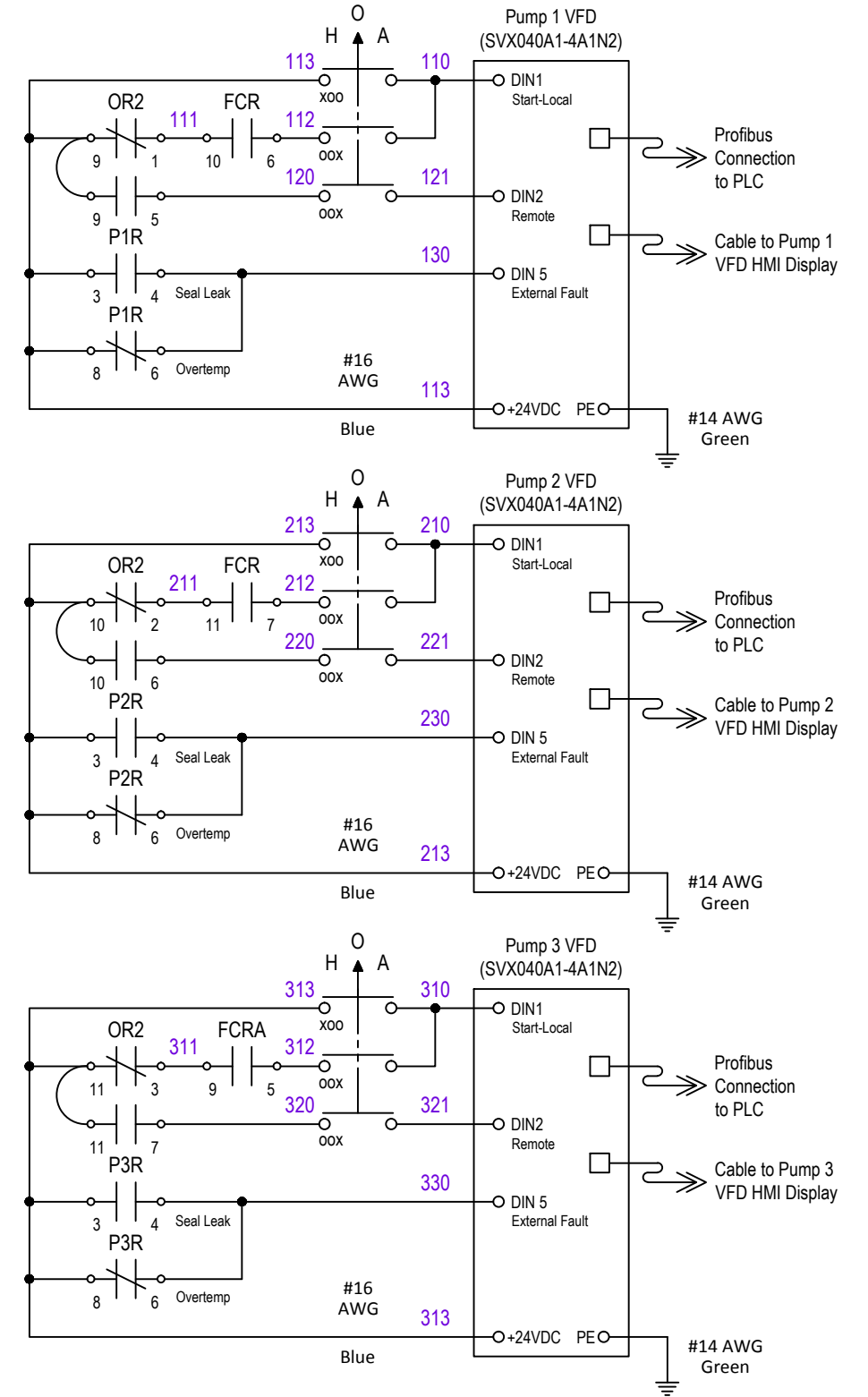
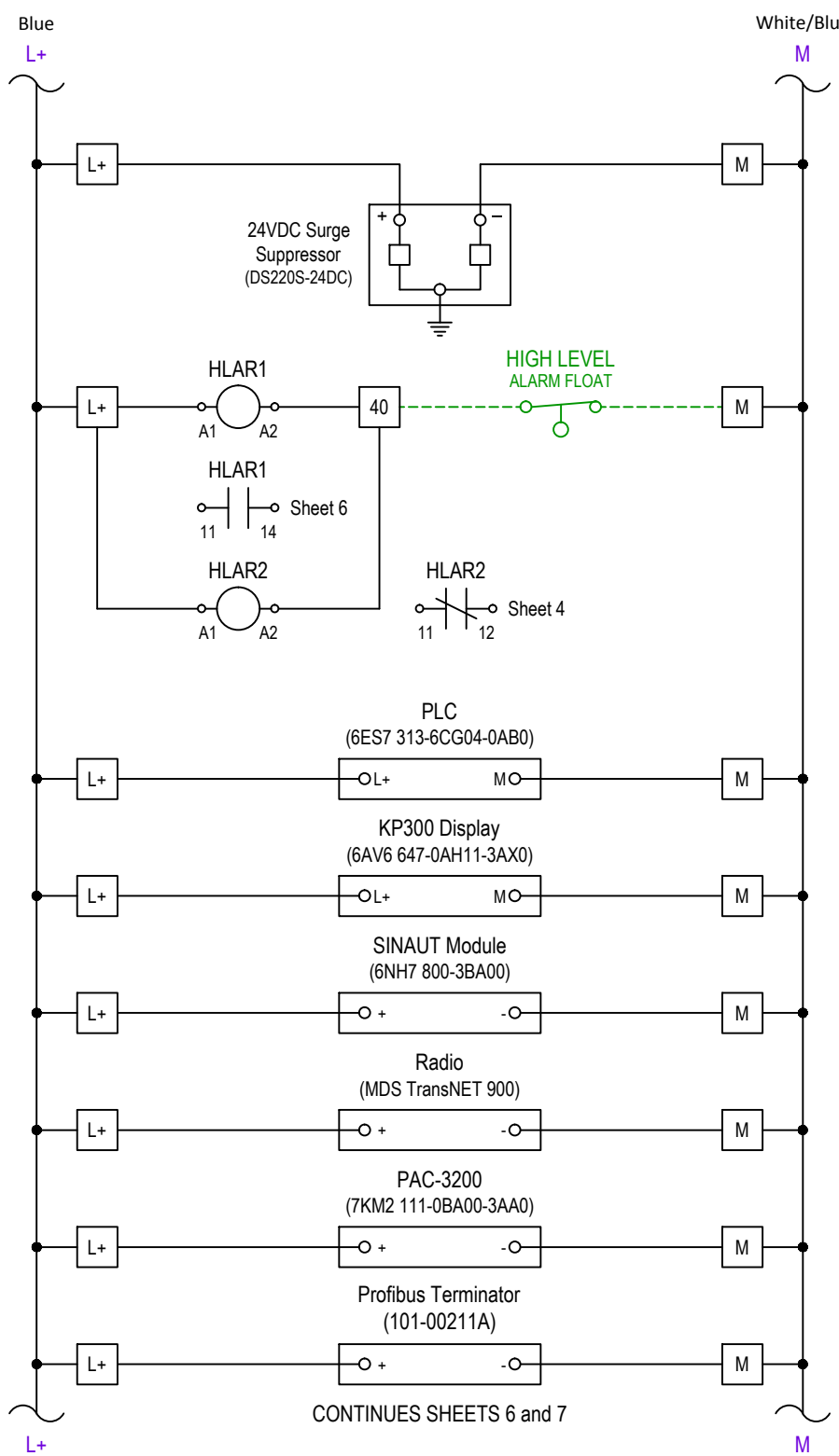
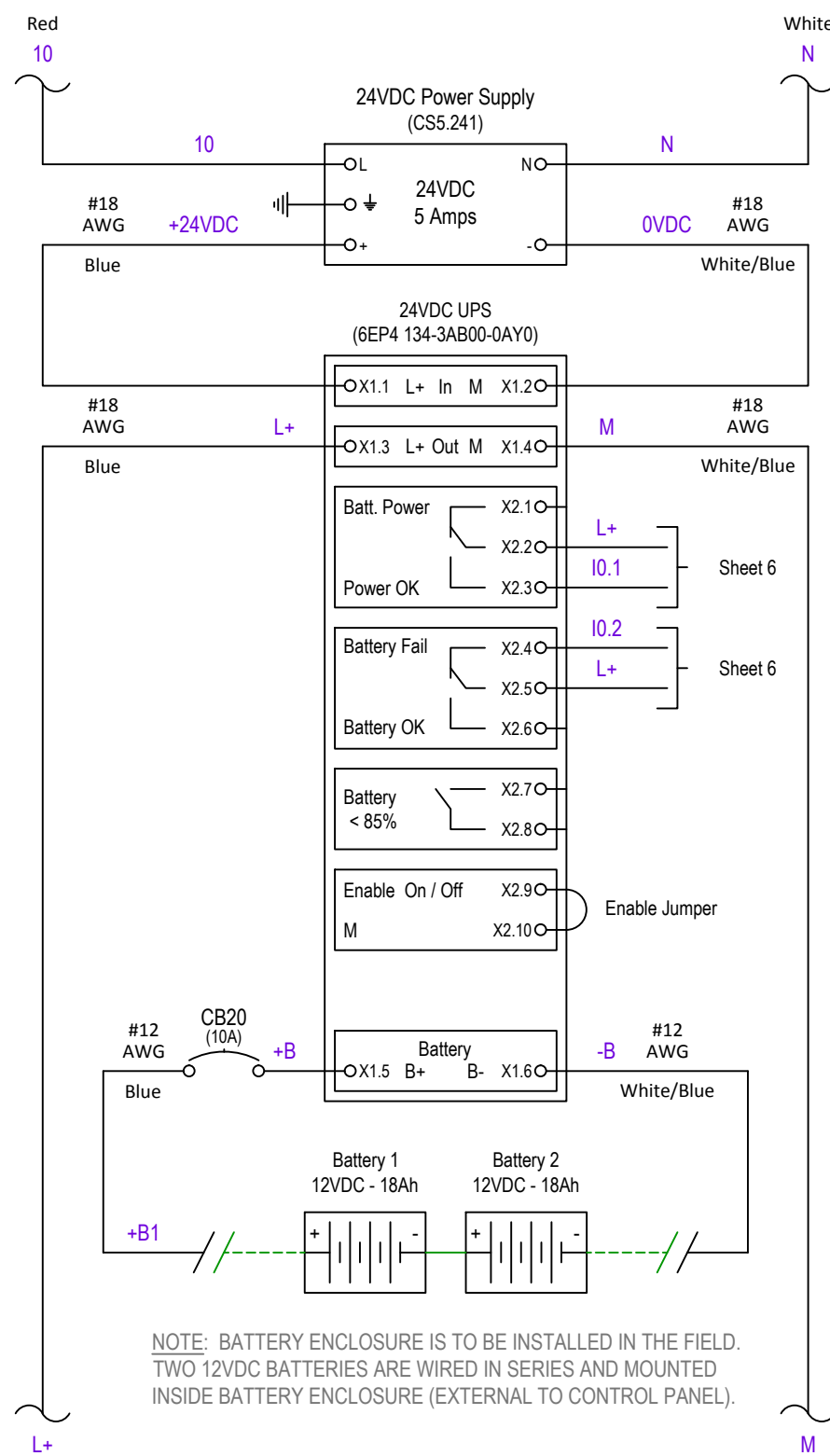
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SHEET TITLE: **120 VAC VOLTAGE**
 PROJECT: **--- PROJECT NAME ---**
3-PHASE VFD LIFT STATION DIAGRAM
 JOB No: **12345678** SHEET **4** OF **9**



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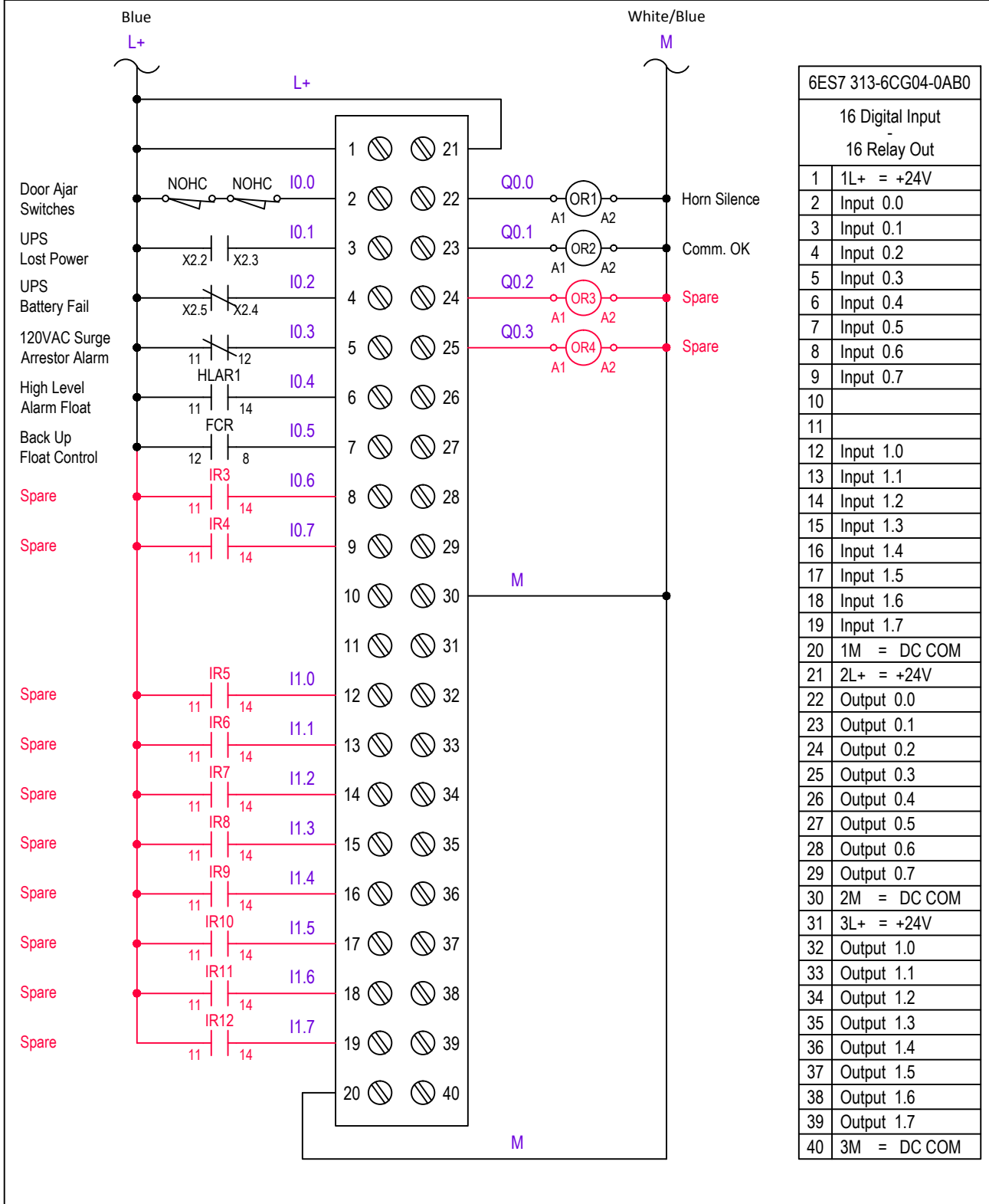
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PROJECT: **--- PROJECT NAME ---**

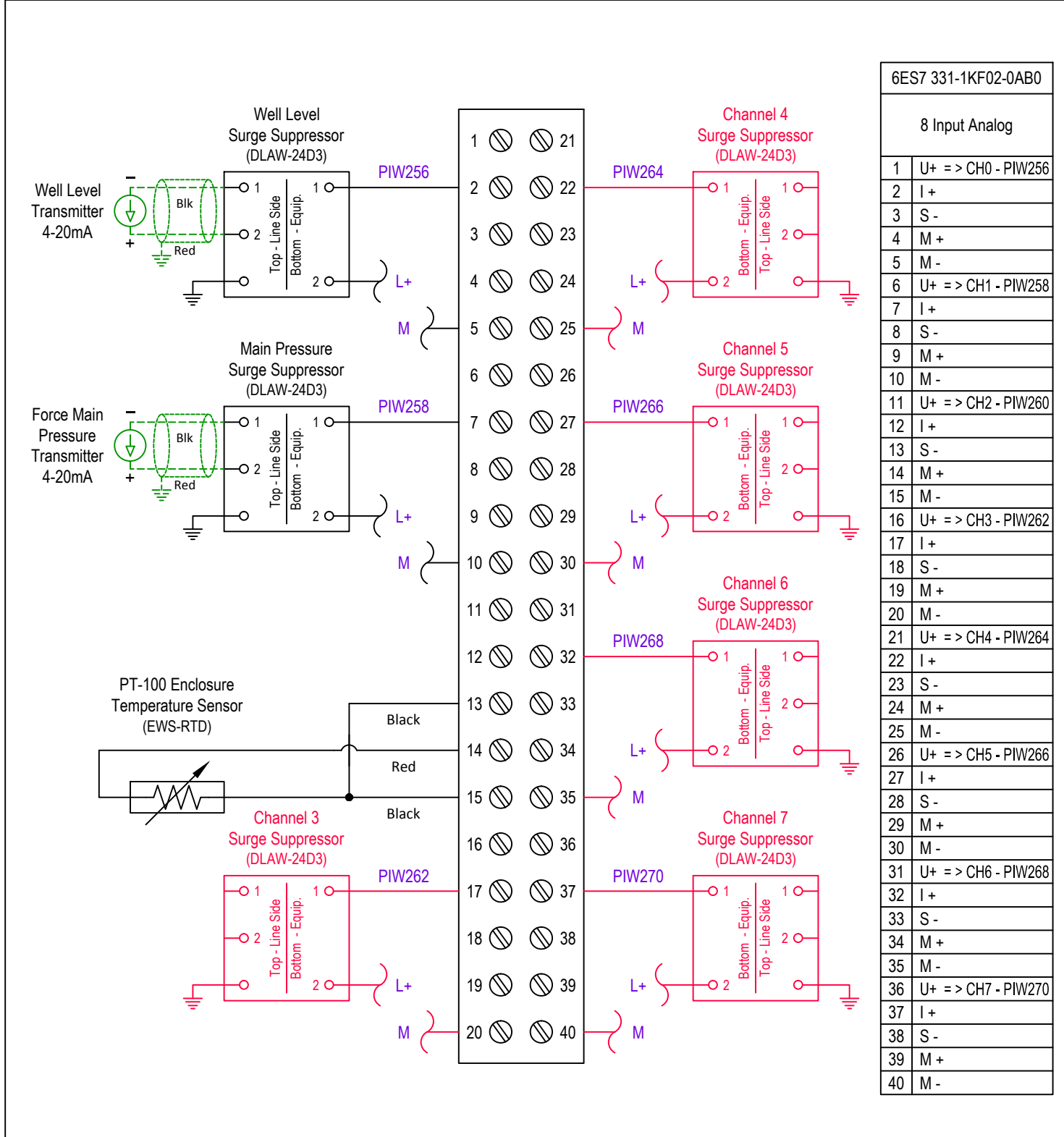
3-PHASE VFD LIFT STATION DIAGRAM

JOB No: **12345678** SHEET **5** OF **9**

RACK: 0 SLOT: 4



RACK: 0 SLOT: 5



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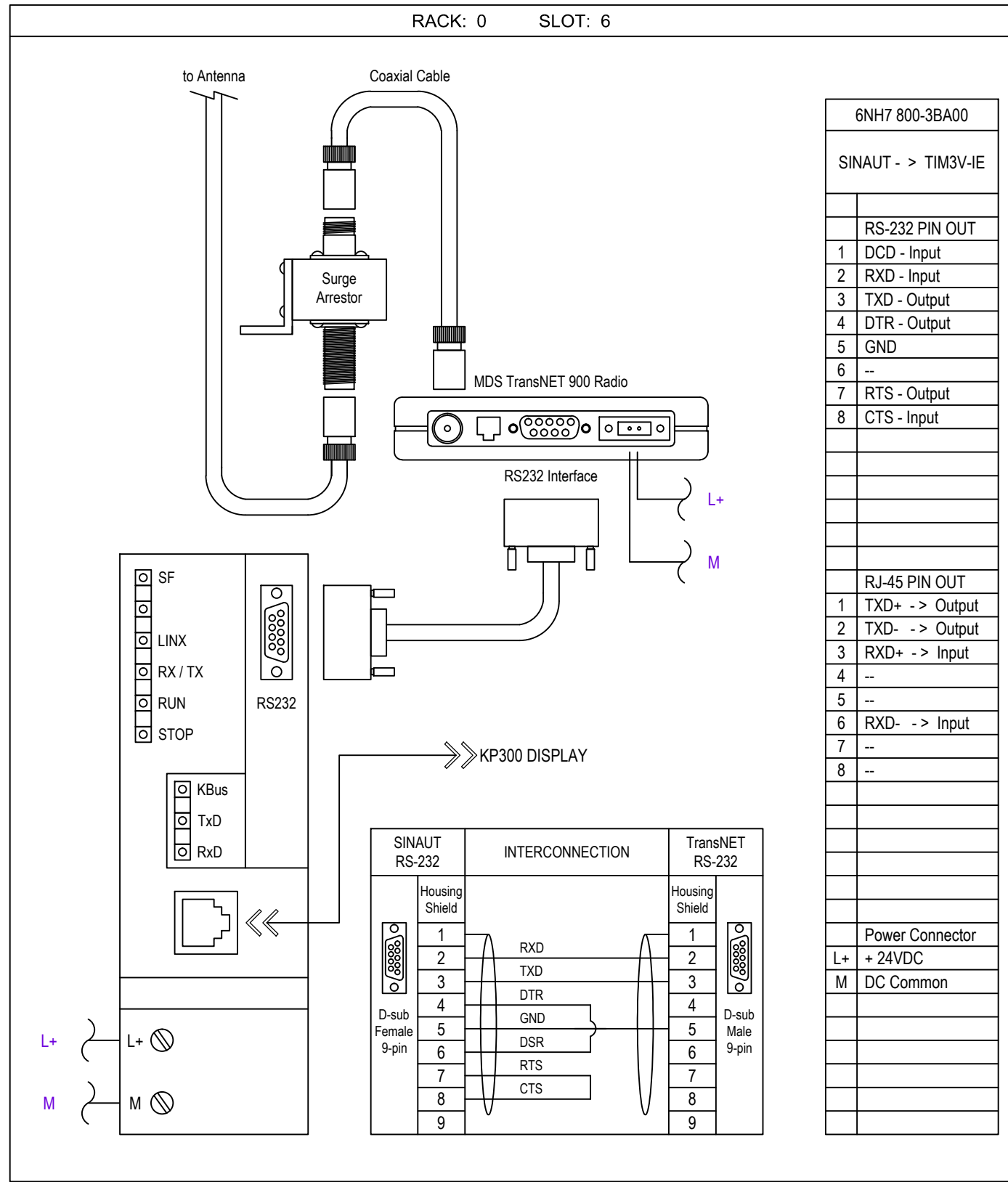
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 2017 STANDARD PACKAGE, REV. 0

SHEET TITLE:
PLC DIGITAL I/O - ANALOG INPUT

PROJECT:
 --- PROJECT NAME ---

3-PHASE VFD LIFT STATION DIAGRAM

JOB No: 12345678 SHEET 6 OF 9



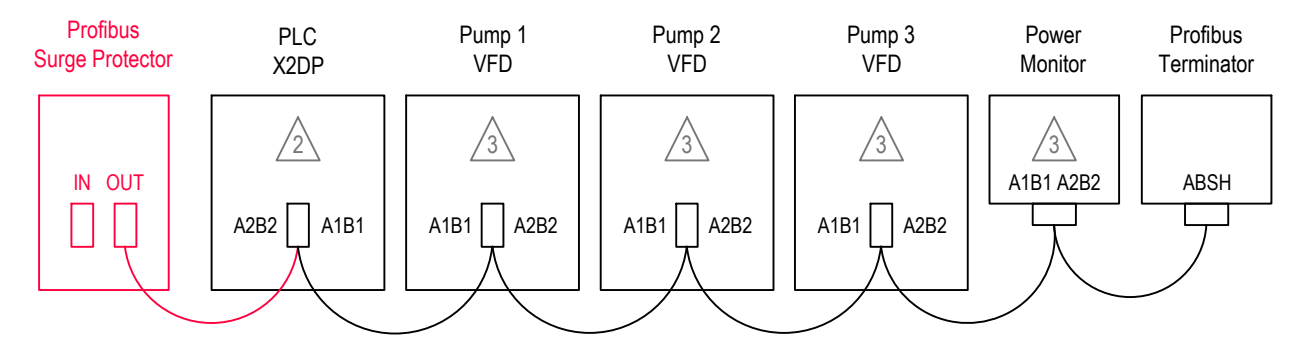
VFD Functional

- OFF - Drive is disabled.
- MANUAL - The drive will be forced to Local control and will be given a start signal to ramp it up to maximum speed.
- AUTO - If the VFD selector switch is put into Auto and Communication OK relay is good then the drive will be controlled over Profibus using PPO4. If the PLC communication is ever lost to the VFD, the communication OK relay will drop out and control the VFD from the Float Control Relay. The communication OK relay is controlled by the PLC and is to be energized as long as the VFD communication is OK.

Setting up Cutler-Hammer SVX9000 on Profibus with Backup Float Revised 6/7/13

- Contact JEA for the latest documentation.

Profibus Connection Diagram



GENERAL NOTES:

1. ALL PLC I/O WIRING SHALL BE #18 AWG. APPLY DIELECTRIC GREASE TO ENDS TO PREVENT CORROSION.
2. SET PROFIBUS CONNECTOR RESISTOR SWITCH TO THE "ON" POSITION.
3. SET PROFIBUS CONNECTOR RESISTOR SWITCH TO THE "OFF" POSITION.

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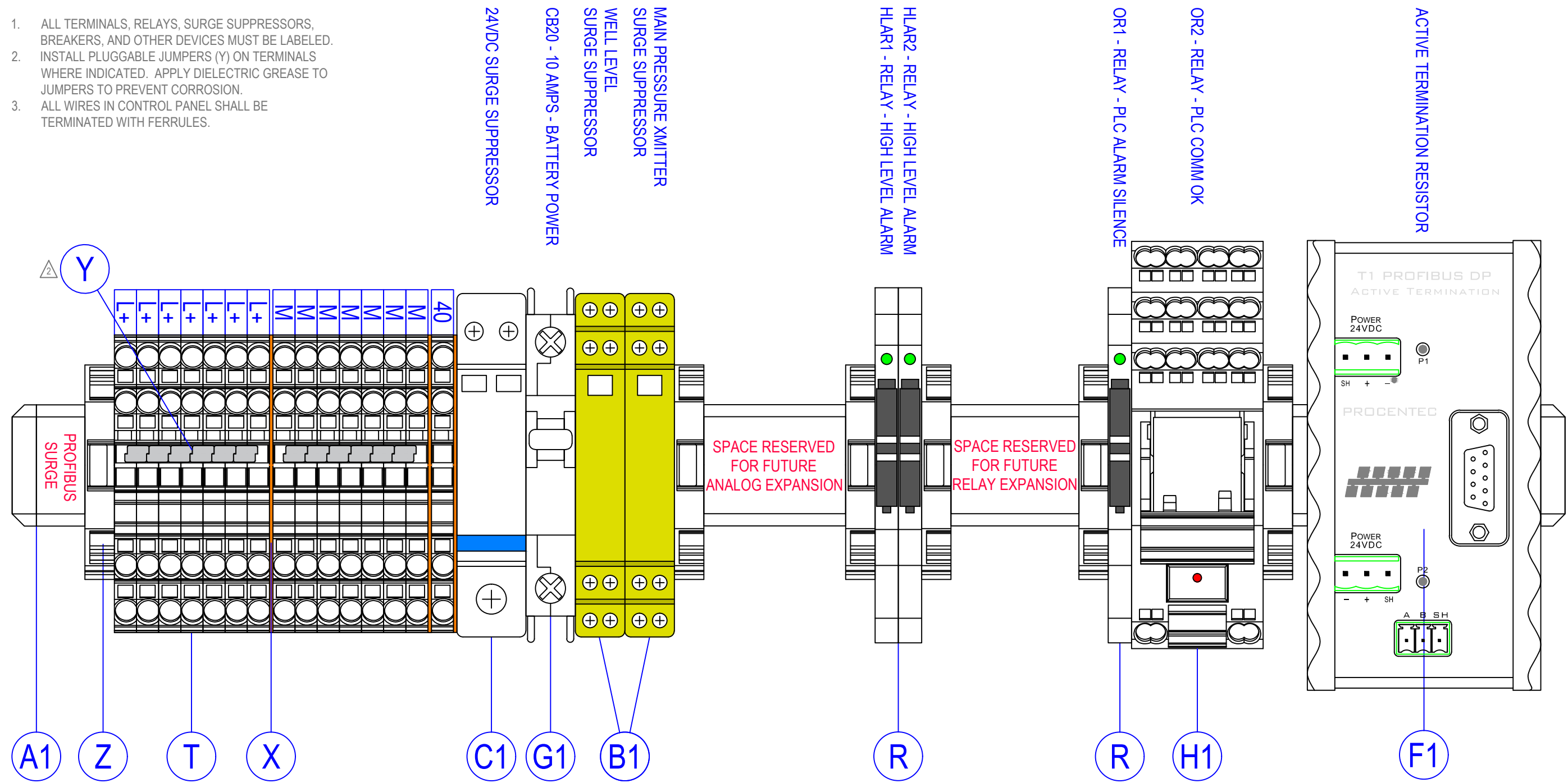


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SHEET TITLE: PLC & RADIO CONNECTION	
PROJECT: --- PROJECT NAME ---	
3-PHASE VFD LIFT STATION DIAGRAM	
JOB No: 12345678	SHEET 7 OF 9

GENERAL NOTES:

1. ALL TERMINALS, RELAYS, SURGE SUPPRESSORS, BREAKERS, AND OTHER DEVICES MUST BE LABELED.
2. INSTALL PLUGGABLE JUMPERS (Y) 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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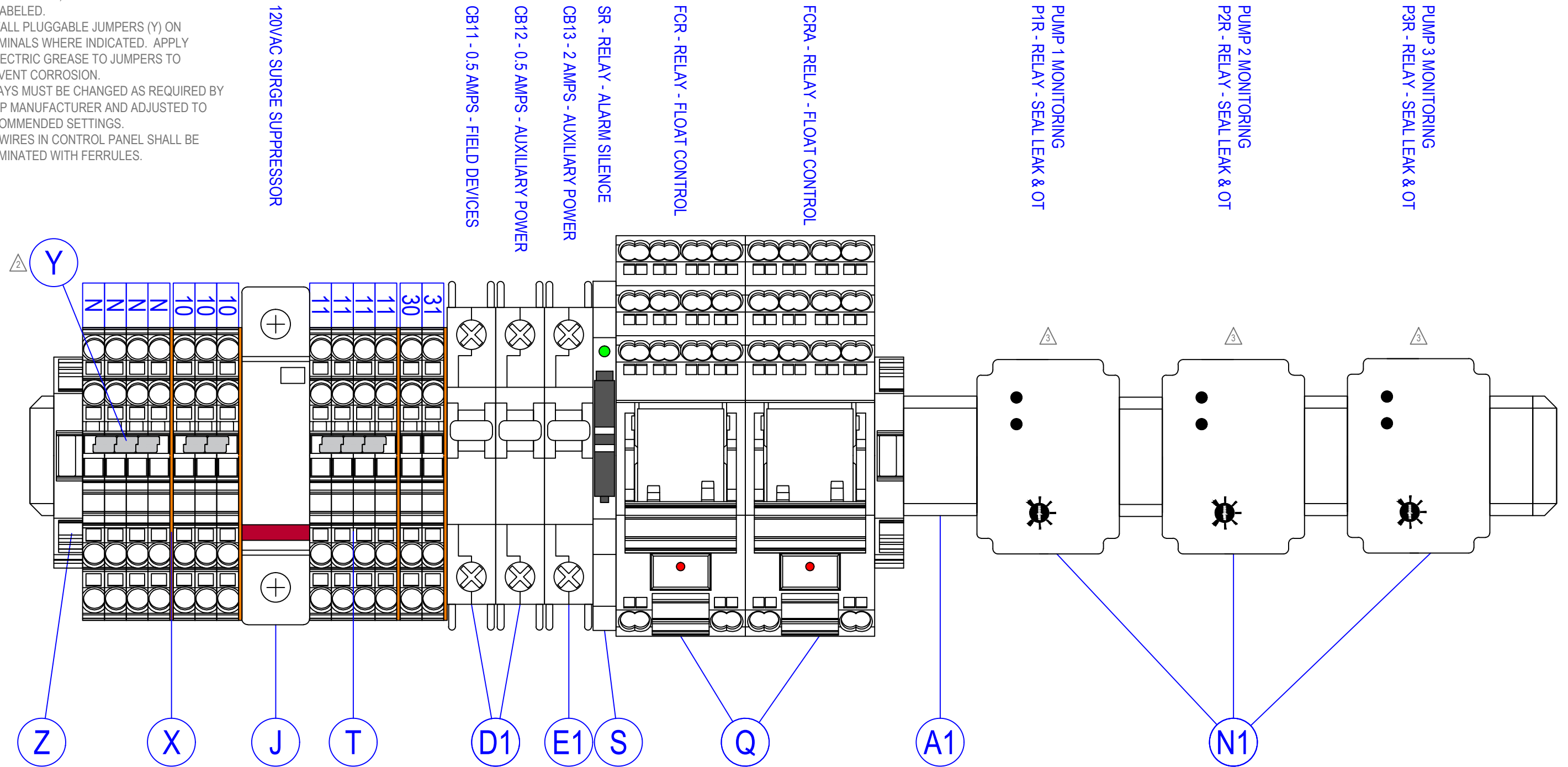


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 2017 STANDARD PACKAGE, REV. 0

SHEET TITLE:
24 VDC TERMINAL BLOCK LAYOUT
 PROJECT:
 --- PROJECT NAME ---
3-PHASE VFD LIFT STATION DIAGRAM
 JOB No: 12345678 SHEET 8 OF 9

GENERAL NOTES:

1. ALL TERMINALS, RELAYS, BREAKERS, SURGE SUPPRESSORS, AND OTHER DEVICES MUST BE LABELED.
2. INSTALL PLUGGABLE JUMPERS (Y) ON TERMINALS WHERE INDICATED. APPLY DIELECTRIC GREASE TO JUMPERS TO PREVENT CORROSION.
3. RELAYS MUST BE CHANGED AS REQUIRED BY PUMP MANUFACTURER AND ADJUSTED TO RECOMMENDED SETTINGS.
4. ALL WIRES IN CONTROL PANEL SHALL BE TERMINATED WITH FERRULES.



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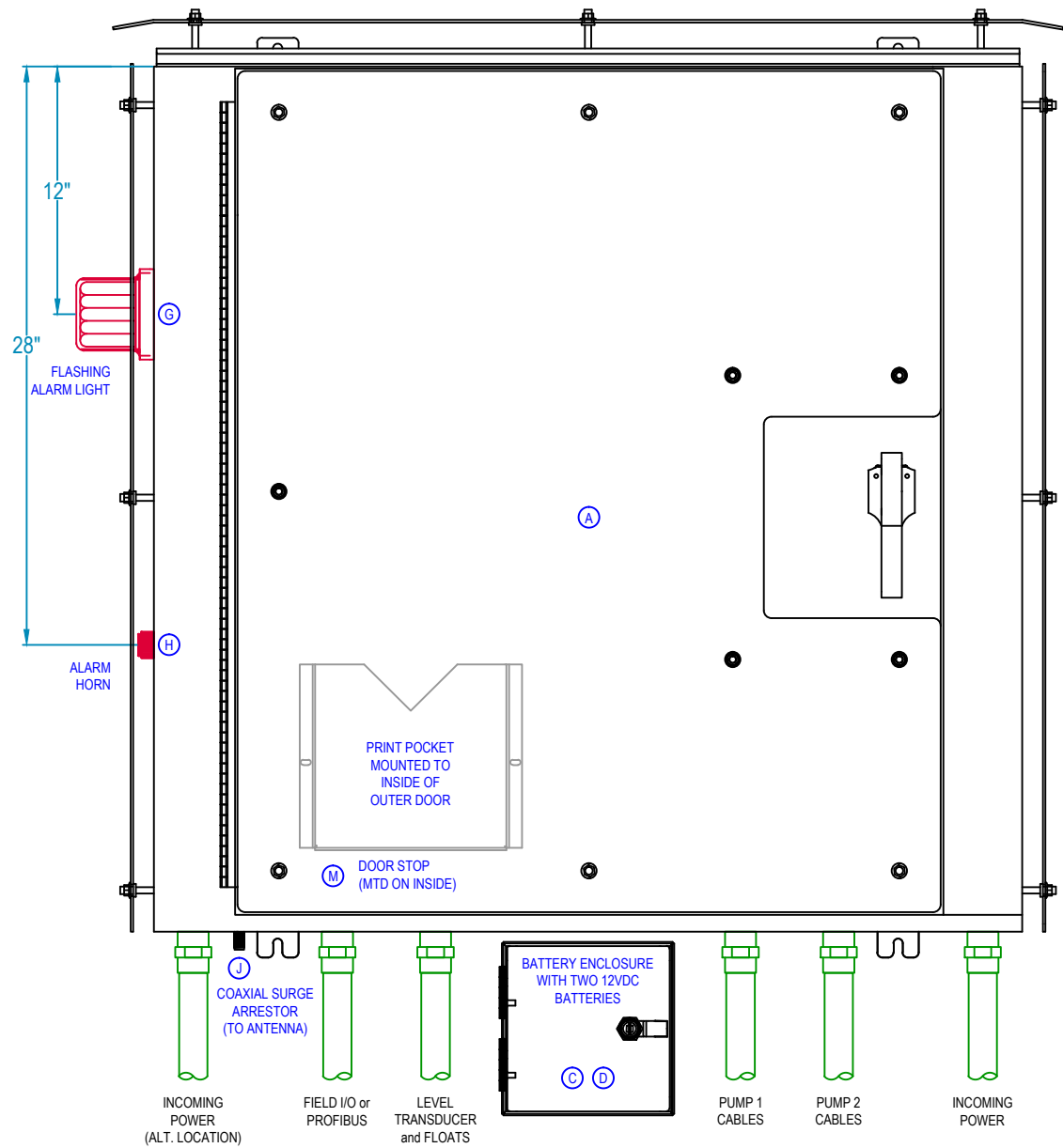
SHEET TITLE: 120 VAC TERMINAL BLOCK LAYOUT	
PROJECT: --- PROJECT NAME ---	
3-PHASE VFD LIFT STATION DIAGRAM	
JOB No: 12345678	SHEET OF 9 OF 9

INSTRUCTIONS:

1. CONTRACTOR SHALL USE THIS DRAWING FILE TO CREATE SHOP DRAWINGS FOR JEA REVIEW.
2. RETURN COMPLETED SHOP DRAWINGS AS PDF FILE TO ARISS FAJARDO AT FAJAAJ@JEA.COM FOR APPROVAL.
3. PLEASE CONTACT ARISS FAJARDO FOR QUESTIONS OR ADDITIONAL INFORMATION.
4. DO NOT PRINT THIS SHEET IN SUBMITAL SET.

NO.	BY	DATE	REVISIONS	<p style="color: green; text-align: center;">ELECTRICAL SCHEMATIC</p> <p style="color: blue; text-align: center;">MANUFACTURER ADDRESS1 ADDRESS2</p> <p style="color: blue; text-align: center;">CONTACT_NAME CONTACT_NUMBER</p>		DESIGNER:	SHEET TITLE: INSTRUCTION SHEET		
6.						DRAWN BY:	PROJECT: --- PROJECT NAME ---		
5.						DATE:	ACROSS THE LINE LIFT STATION DIAGRAM		
4.						CHECKED BY:			
3.						DATE:	JOB No:	SHEET	OF
2.						2017 STANDARD PACKAGE, REV. 0	12345678	0	9
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FRONT VIEW



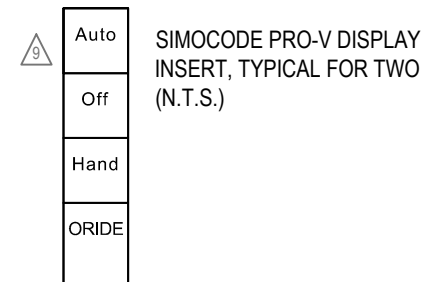
CUSTOM ENCLOSURE:
 SPN123RAL-424210-JEA (42"H x 42"W x 10"D) NEMA 12/3R RATED, FABRICATED FROM .125 MARINE GRADE ALUMINUM. OUTER DOOR IS FITTED WITH A PADLOCKABLE 3-POINT LATCH AND DOOR STOP.

HEAT SHIELDS FABRICATED FROM .125 MARINE GRADE ALUMINUM SHALL BE INSTALLED ON FRONT, BACK, TOP, AND SIDES. HOLES SHALL BE CUT IN SHIELD FOR ALARM LIGHT AND HORN.

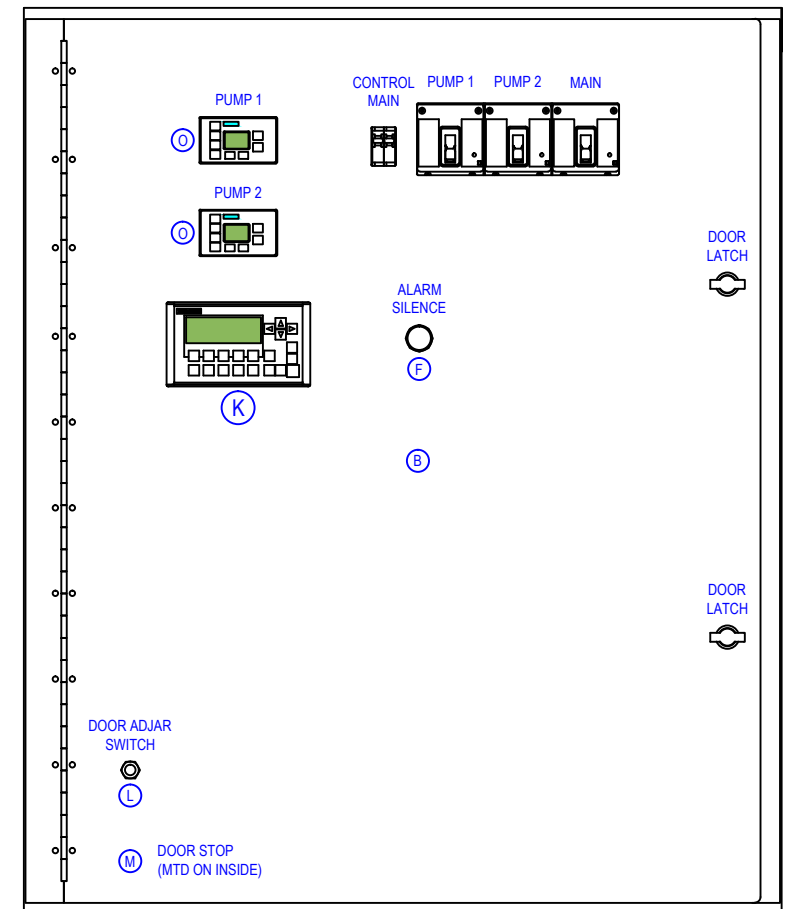
NOTE: BATTERY ENCLOSURE IS TO BE INSTALLED IN THE FIELD

BILL of MATERIAL

QTY	MANUFACTURER	PART NUMBER	DESCRIPTION
2	SCHAEFER	SPN123RAL-424210-JEA	CUSTOM ENCLOSURE, NEMA 12/3R, ALUM.
1	OEM	-	HINGED INNER DOOR, .125 ALUMINUM
1	SCHAEFER	SPN1AL-888-JEA	BATTERY ENCLOSURE, .125 ALUMINUM
2	POWER SONIC	PS-12180 F2	BATTERY, LEAD-ACID, 12VDC, 18Ah
-	-	-	-
1	SIEMENS	52PX8A1K / 52BAK	MOMENTARY PUSHBUTTON, 30mm, FLUSH
1	INGRAM PRODUCTS	LX40F	ALARM LIGHT W/ FLASHER, 120VAC, RED
1	INGRAM PRODUCTS	PW120AR	ALARM HORN, ELECTRONIC, 120VAC, RED
1	APT	S50A240V3H	SURGE PROTECTOR, 240V DELTA HI-LEG
1	APT	S50A277V3Y	SURGE PROTECTOR, 480V WYE
1	POLY PHASER	DSXL	COAXIAL SURGE ARRESTOR (ANTENNA)
1	SIEMENS	6AV6 647-0AH11-3AX0	OPERATOR PANEL KP300 DISPLAY
1	OMRON	6X283	SNAP ACTION SWITCH (DOOR ADJAR)
1	ALLIED	642-2137	ACTUATOR FOR SWITCH
2	SCHAEFER	SP-DSTOPK-SS-SW	INNER/OUTER DOOR STOP KIT, SS
-	-	-	-
2	SIEMENS	3UF7 210-1AA00-0	SIMOCODE PRO V DISPLAY (PUMPS)



INNER DOOR VIEW



HINGED INNER DOOR:
 FABRICATED FROM .125 ALUMINUM WITH CONTINUOUS HINGE, TWIST LATCHES, AND DOOR STOP MOUNTED ON INSIDE.

GENERAL NOTES:

- REFER TO "433 LIFT STATION SCADA CONTROLS SPECIFICATION" FOR FURTHER DETAILS THAT MUST BE ADHERED TO SUCH AS WIRE, CONTACTOR, AND CIRCUIT BREAKER SIZING.
- THIS DRAWING IS AN EXAMPLE OF HOW OVERALL CABINET IS TO BE DESIGNED. THE DRAWING WILL NEED TO BE REVISED BASED ON THE PUMP MANUFACTURER, SIZE AND NUMBER OF PUMPS. THINGS THAT WILL CHANGE ARE CIRCUIT BREAKER SIZE, WIRE SIZE, CONTACTOR SIZE, SIMOCODE VOLTAGE/CURRENT MODULE, AND OTHER ITEMS. REFER TO SPECIFICATIONS FOR FURTHER DETAILS.
- REFER TO NOTES AND DETAILS ON ALL DRAWING SHEETS FOR MORE MANUFACTURING DETAILS.
- THE SURGE PROTECTION DEVICE (SPD) IS TO BE SHIPPED LOOSE FOR MOUNTING AT THE DISCONNECT IN THE FIELD. THE CORRECT SPD MUST BE SELECTED BASED ON THE SERVICE VOLTAGE: 240V DELTA HI-LEG OR 480V WYE.
- ALL FIELD WIRING SHALL BE #12 AWG STRANDED, TIN-PLATED COPPER. APPLY DIELECTRIC GREASE TO ENDS TO PREVENT CORROSION.
- ALL PLC I/O WIRING INTERNAL TO THE CONTROL PANEL SHALL BE #18 AWG.
- ALL WIRES IN CONTROL PANEL SHALL BE TERMINATED WITH FERRULES.
- ALL MOUNTING SCREWS SHALL BE STAINLESS STEEL, DRILLED AND TAPPED (NO SELF-TAPPING SCREWS ARE ALLOWED).
- PRINT LED LEGEND STRIPS (BLACK & WHITE ON TRANSPARENCY) AND INSERT INTO EACH PUMP SIMOCODE PRO-V DISPLAY (ITEM O).



NO.	BY	DATE	REVISIONS
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ELECTRICAL SCHEMATIC

MANUFACTURER
 ADDRESS1
 ADDRESS2

CONTACT_NAME
 CONTACT_NUMBER



DESIGNER:
 DRAWN BY:
 DATE:
 CHECKED BY:
 DATE:
 2017 STANDARD PACKAGE, REV.0

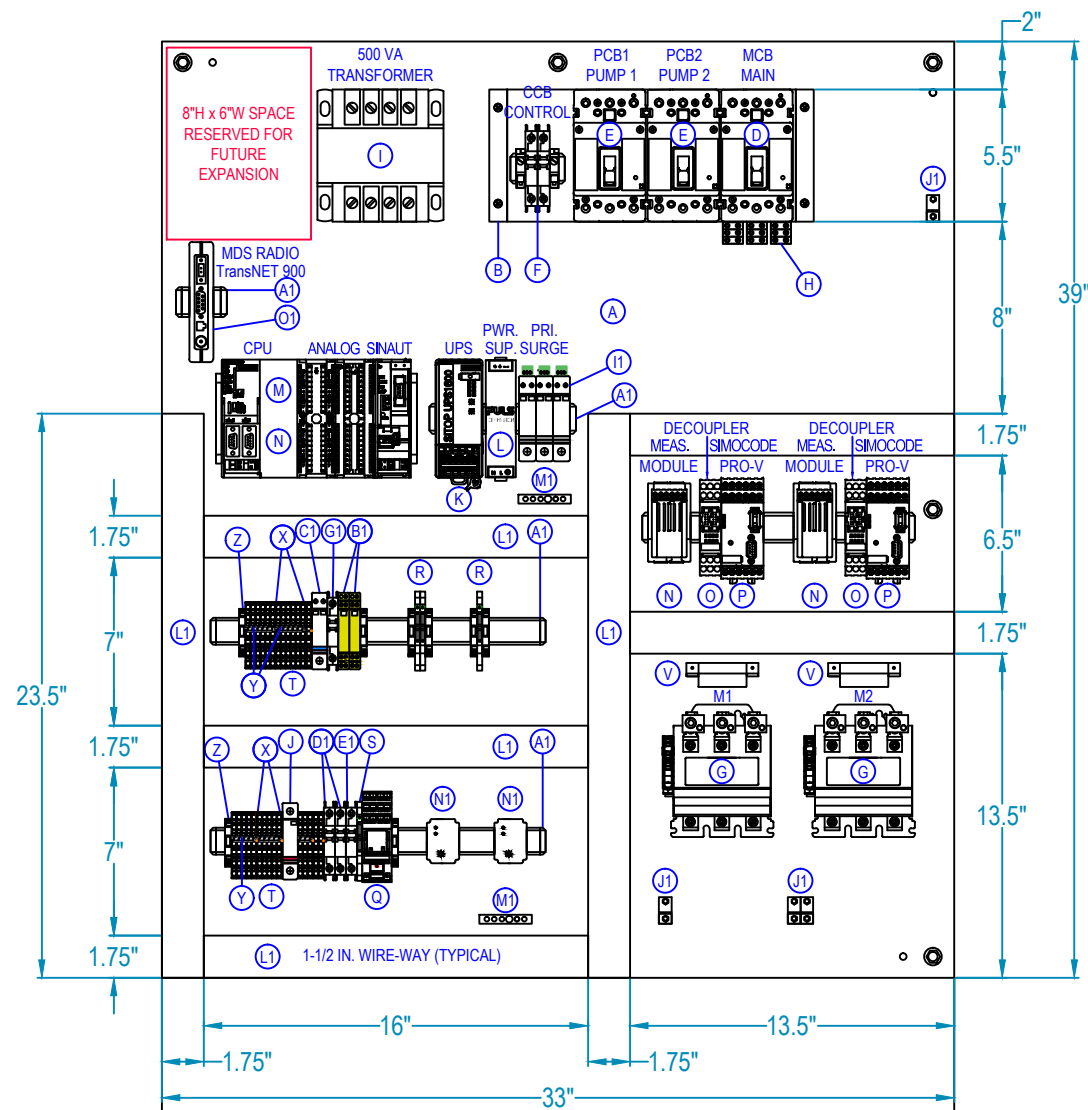
SHEET TITLE:
100 AMP FRONT PANEL VIEW

PROJECT:
 --- PROJECT NAME ---

ACROSS THE LINE LIFT STATION DIAGRAM

JOB No: 12345678 SHEET 1 OF 9

BACK PANEL LAYOUT



BACK PANEL:
SPP-4236 (39"H x 33"W) FABRICATED FROM 12ga. CARBON STEEL WITH WHITE INDUSTRIAL GRADE ENAMEL FINISH.

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

BILL of MATERIAL

QTY	MANUFACTURER	PART NUMBER	DESCRIPTION
1	SCHAEFER	SPP-4236	BACK PANEL, CARBON STEEL, WHITE
1	OEM	BREAKER MOUNT	TO RAISE CBs FLUSH WITH INNER DOOR
-	-	-	-
1	SIEMENS	NEG3B100L	MCB, 3 POLE, 100A
2	SIEMENS	NEG3B020L	PCB1 and PCB2, 3 POLE, 20A
1	WEIDMULLER	9926 25 2006	CCB, UL489, 2 POLE, 6A (240V SERVICE)
1	WEIDMULLER	9926 25 2003	CCB, UL489, 2 POLE, 3A (480V SERVICE)
2	SIEMENS	40DP32A	FVNR CONTACTOR, 3 POLE, NEMA 1
1	SIEMENS	3TA6EG06	POWER DISTRIBUTION LUGS, KIT OF 3
1	SIEMENS	MT0500A	CONTROL TRANSFORMER, 500VA
1	CITEL	DS41S-120	120VAC SURGE SUPPRESSOR, BASE
1	SIEMENS	6EP4 134-3AB00-0AY0	SITOP DC UPS, 10A WITH CHARGER
1	PULS	CS5.241	24VDC POWER SUPPLY, 5A
1	SIEMENS	6ES7 390-1AE80-0AA0	480mm MOUNTING RAIL FOR PLC EQUIP.
1	SIEMENS	6ES7 313-6CG04-0AB0	CPU 313C-2DP, 16 DI - 16 DO PLC
1	SIEMENS	6ES7 953-8LG30-0AA0	MMC MEMORY CARD, 128KB
1	SIEMENS	6ES7 331-1KF02-0AB0	8 FUNCTION ANALOG INPUT MODULE
2	SIEMENS	6ES7 392-1BM01-0AA0	40-PIN SPRING CONNECTOR
1	SIEMENS	6NH7 800-3BA00	SINAUT ST7, TIM 3V-IE MODULE
-	-	-	-
3	BRAD HARRISON	PA9D01-42	PROFIBUS CONNECTOR, 90°, PG PORT
-	BRAD HARRISON	MA9D00-42	PROFIBUS CONNECTOR, 180°
2	SIEMENS	3UF7 010-1AU00-0	SIMOCODE PRO V BASE UNIT, 120VAC
2	SIEMENS	3UF7 112-1AA00-0	SIMOCODE PRO I/E MEAS. MODULE
2	SIEMENS	3UF7 933-0BA00-0	SIMOCODE CABLE TO DISPLAY, 2.5M
4	SIEMENS	3UF7 935-0AA00-0	SIMOCODE CABLE, 0.3M
2	SIEMENS	3UF7 150-1AA00-0	SIMOCODE DECOUPLING MODULE

GENERAL NOTES:

- REFER TO "433 LIFT STATION SCADA CONTROLS SPECIFICATION" FOR FURTHER DETAILS THAT MUST BE ADHERED TO SUCH AS WIRE, CONTACTOR, AND CIRCUIT BREAKER SIZING.
- THIS DRAWING IS AN EXAMPLE OF HOW OVERALL CABINET IS TO BE DESIGNED. THE DRAWING WILL NEED TO BE REVISED BASED ON THE PUMP MANUFACTURER, SIZE AND NUMBER OF PUMPS. THINGS THAT WILL CHANGE ARE CIRCUIT BREAKER SIZE, WIRE SIZE, CONTACTOR SIZE, SIMOCODE VOLTAGE/CURRENT MODULE, AND OTHER ITEMS. REFER TO SPECIFICATIONS FOR FURTHER DETAILS.
- SEAL LEAK/OVERTEMP RELAYS MUST BE CHANGED AS REQUIRED BY PUMP MANUFACTURER.
- TECHNICAL FIELD SERVICES, INC., JACKSONVILLE, FLORIDA (904) 278-5250
- MINIMUM SIZE FOR MOTOR CONTACTORS SHALL BE NEMA SIZE 1.
- WIRE BEND FROM CIRCUIT BREAKERS SHALL NOT BE ROUTED OVER OR OBSTRUCT WIREWAY BELOW.
- ENSURE GOOD ELECTRICAL CONTACT BETWEEN BACK PANEL AND ALL MECHANICAL GROUND CONNECTIONS.

BILL of MATERIAL

QTY	MANUFACTURER	PART NUMBER	DESCRIPTION
1	WAGO	858-507	RELAY, STATUS, SPRING, 4NO-NC, 120VAC
3	WAGO	857-304	RELAY, STATUS, SPRING, SPDT, 24VDC
1	WAGO	857-357	RELAY, STATUS, SPRING, SPDT, 120VAC
28	WAGO	2002-1401	TERMINAL, 2002, SPRING, GRAY
1	SIEMENS	6XV1830-0EH10	PROFIBUS CABLE, FAST CONNECT TYPE
2	SIEMENS	49D26344	CONTACTOR SURGE SUPPRESSOR
2	SIEMENS	6GK1901-1BB10-2AA0	PROFINET CONNECTOR
7	WAGO	2002-1492	TERMINAL END / PART. PLATE, ORANGE
20	WAGO	2002-400	ADJACENT JUMPER, 2-WAY CONTINUOUS
8	WAGO	249-116	TERMINAL END STOP, GRAY
1	WAGO	210-112	2M DIN RAIL, GALVANIZED, SLOTTED
2	CITEL	DLAW-24D3	ANALOG SURGE SUPPRESSOR, 24VDC
1	CITEL	DS220S-24DC	24VDC SURGE SUPPRESSOR
2	WEIDMULLER	9926 25 1000	CB11 and CB12, UL489, 1 POLE, 0.5A
1	WEIDMULLER	9926 25 1002	CB13, UL489, 1 POLE, 2A
1	SIEMENS	6XV1840-2AH10	PROFINET CABLE
1	WEIDMULLER	9926 25 1910	CB20, UL489, 1 POLE, 10A
-	-	-	-
1	CITEL	DS43S-230	PRIMARY SPD, 240V DELTA HI-LEG
1	CITEL	DS43S-400	PRIMARY SPD, 480V WYE
4	PANDUIT	LAMA2-14-QY	GROUND LUG, DUAL-RATED, #2-14AWG
-	CITEL	DLA-12D3	PROFIBUS SURGE PROTECTOR
2	PANDUIT	1.5"W x 2"H x 72"L	WIREWAY, HINGE COVER, WIDE FINGER
2	SQUARE D	PK5GTA	EQUIPMENT GROUND BAR, 5-POINT
2	MACROMATIC	TCP2G100	SEAL LEAK / OVERTEMP RELAY, 120VAC
1	MDS	TRANSNET 900	RADIO, SPREAD-SPECTRUM, UNLICENSED
1	MDS	03-4124A01	DIN RAIL MOUNT KIT
1	TFS, INC.	-	SINAUT TO RADIO NULL CABLE

CONTROL WIRE UL508A COLOR:

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

NO.	BY	DATE	REVISIONS
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ELECTRICAL SCHEMATIC

MANUFACTURER
ADDRESS1
ADDRESS2

CONTACT_NAME
CONTACT_NUMBER



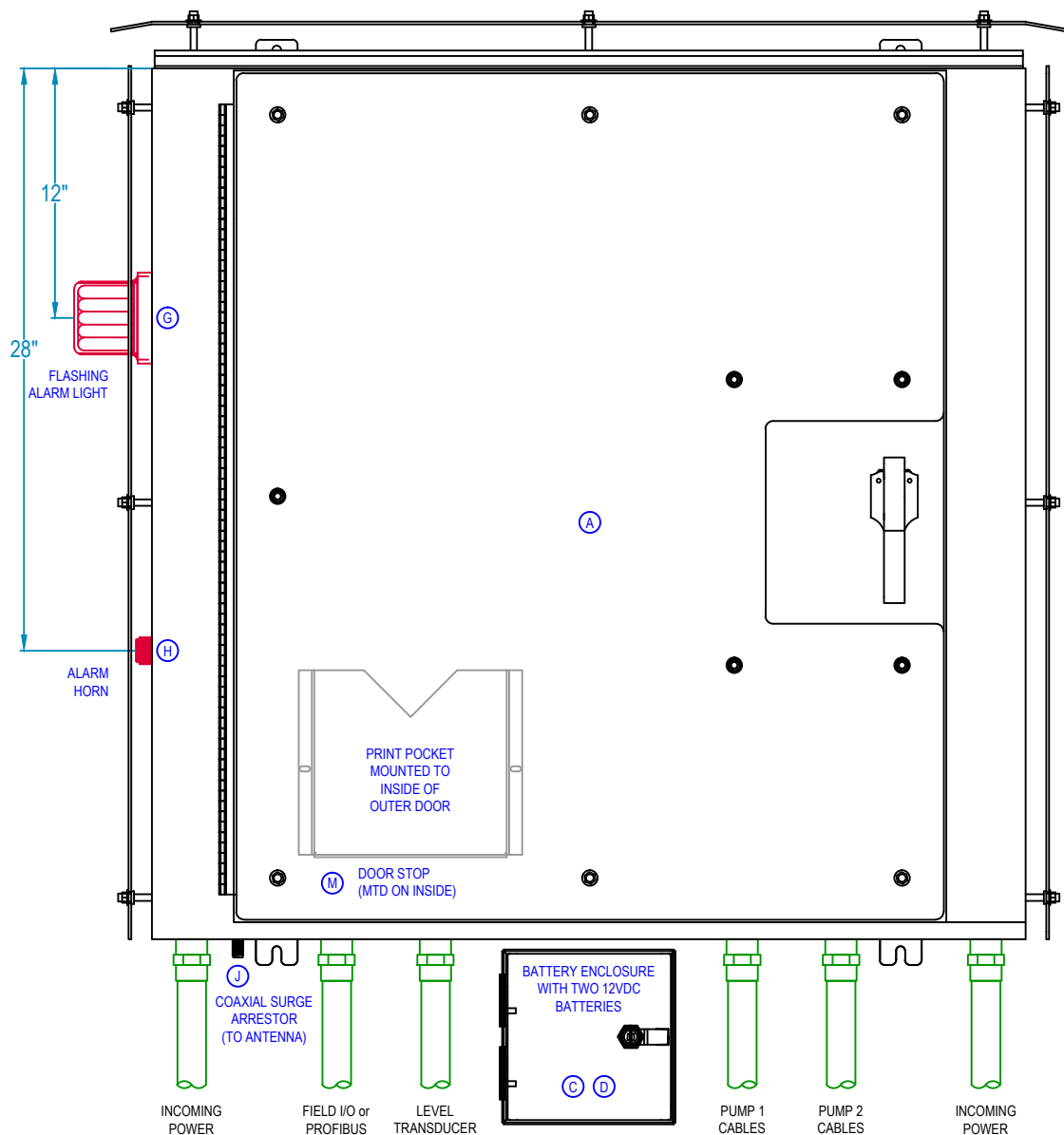
DESIGNER:
DRAWN BY:
DATE:
CHECKED BY:
DATE:
2017 STANDARD PACKAGE, REV. 0

SHEET TITLE: 100 AMP BACK PANEL LAYOUT	
PROJECT: --- PROJECT NAME ---	
ACROSS THE LINE LIFT STATION DIAGRAM	
JOB No: 12345678	SHEET OF 2 OF 9

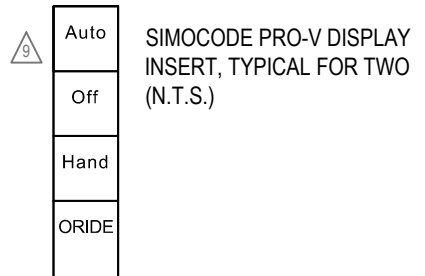
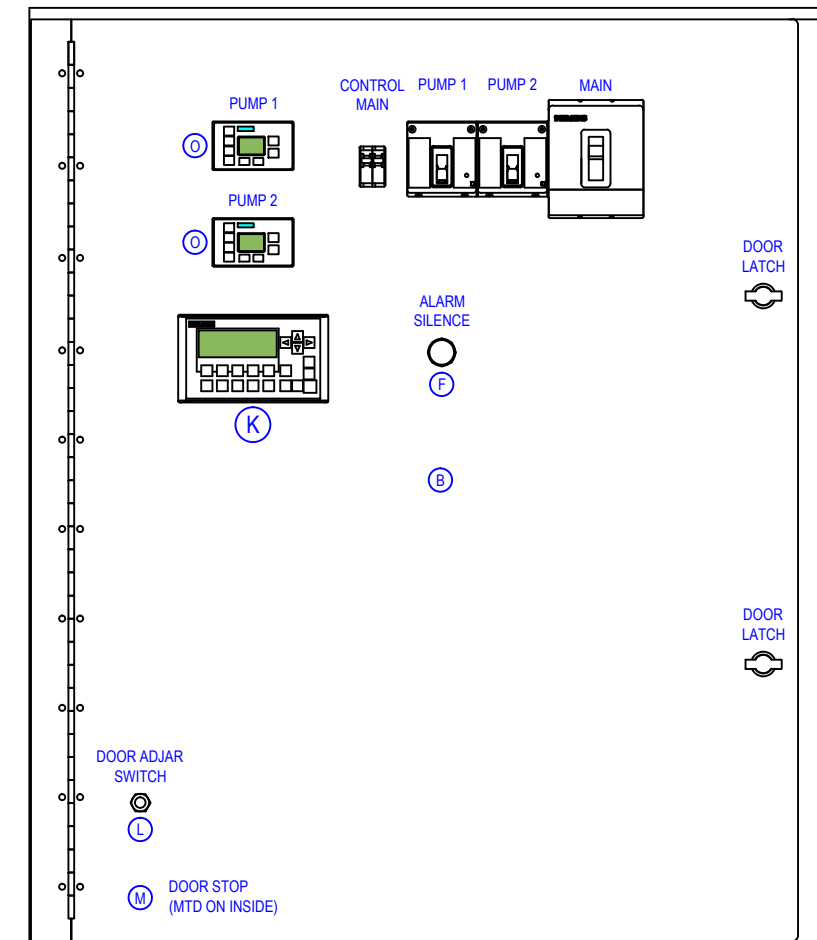
FRONT VIEW

BILL of MATERIAL

INNER DOOR VIEW



	QTY	MANUFACTURER	PART NUMBER	DESCRIPTION
△2	A	SCHAEFER	SPN123RAL-424210-JEA	CUSTOM ENCLOSURE, NEMA 12/3R, ALUM.
△2	B	OEM	-	HINGED INNER DOOR, .125 ALUMINUM
	C	SCHAEFER	SPN1AL-888-JEA	BATTERY ENCLOSURE, .125 ALUMINUM
	D	POWER SONIC	PS-12180 F2	BATTERY, LEAD-ACID, 12VDC, 18Ah
△2	E	-	-	-
	F	SIEMENS	52PX8A1K / 52BAK	MOMENTARY PUSHBUTTON, 30mm, FLUSH
	G	INGRAM PRODUCTS	LX40F	ALARM LIGHT W/ FLASHER, 120VAC, RED
	H	INGRAM PRODUCTS	PW120AR	ALARM HORN, ELECTRONIC, 120VAC, RED
△4/2	I	APT	S50A240V3H	SURGE PROTECTOR, 240V DELTA HI-LEG
		APT	S50A27V3Y	SURGE PROTECTOR, 480V WYE
	J	POLY PHASER	DSXL	COAXIAL SURGE ARRESTOR (ANTENNA)
	K	SIEMENS	6AV6 647-0AH11-3AX0	OPERATOR PANEL KP300 DISPLAY
	L	OMRON	6X283	SNAP ACTION SWITCH (DOOR AJAR)
		ALLIED	642-2137	ACTUATOR FOR SWITCH
	M	SCHAEFER	SP-DSTOPK-SS-SW	INNER/OUTER DOOR STOP KIT, SS
	N	-	-	-
△9	O	SIEMENS	3UF7 210-1AA00-0	SIMOCODE PRO V DISPLAY (PUMPS)



CUSTOM ENCLOSURE:
 SPN123RAL-424210-JEA (42"H x 42"W x 10"D) NEMA 12/3R RATED, FABRICATED FROM .125 MARINE GRADE ALUMINUM. OUTER DOOR IS FITTED WITH A PADLOCKABLE 3-POINT LATCH AND DOOR STOP.

HEAT SHIELDS FABRICATED FROM .125 MARINE GRADE ALUMINUM SHALL BE INSTALLED ON FRONT, BACK, TOP, AND SIDES. HOLES SHALL BE CUT IN SHIELD FOR ALARM LIGHT AND HORN.

NOTE: BATTERY ENCLOSURE IS TO BE INSTALLED IN THE FIELD



GENERAL NOTES:

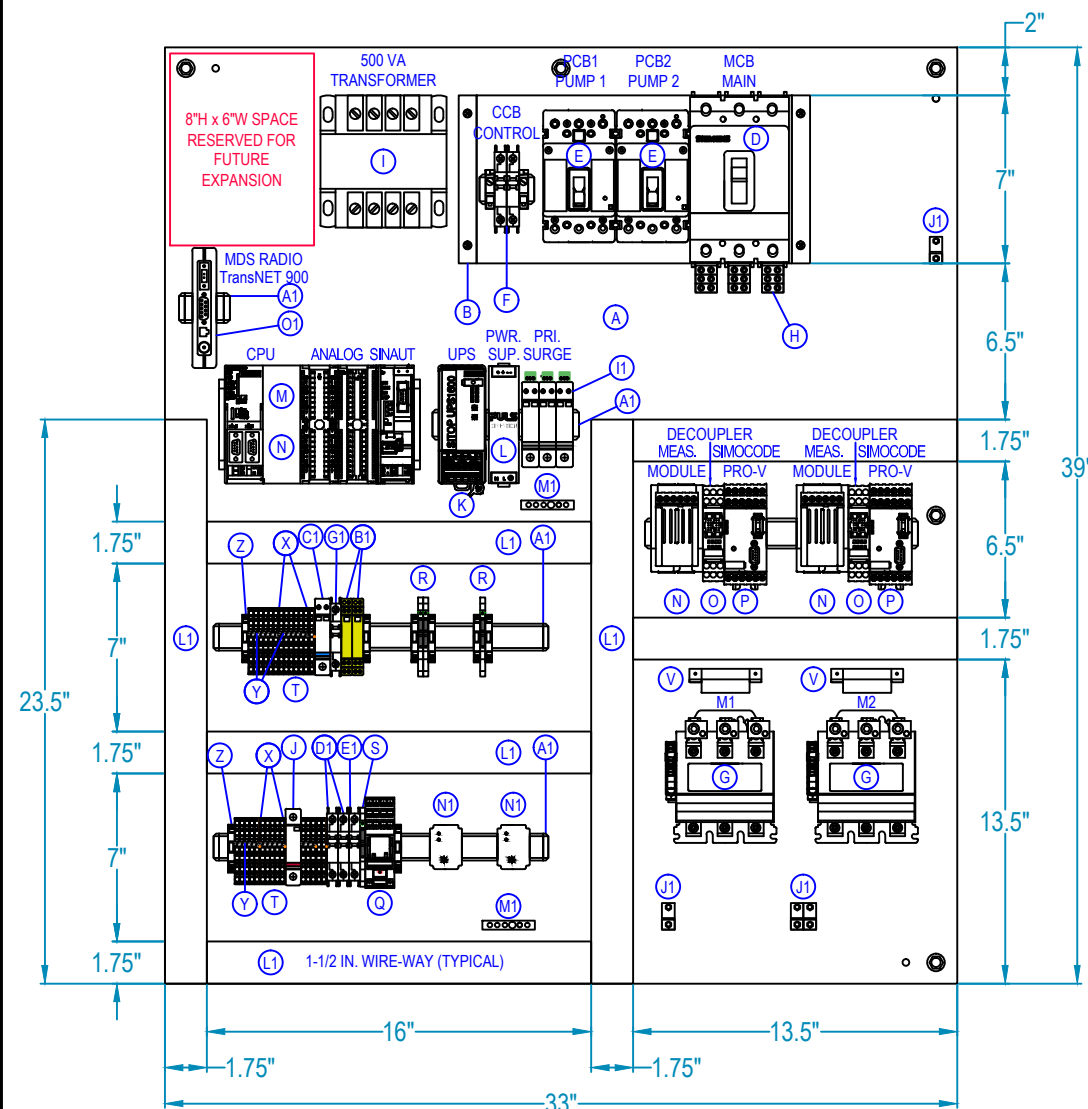
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- REFER TO NOTES AND DETAILS ON ALL DRAWING SHEETS FOR MORE MANUFACTURING DETAILS.
- THE SURGE PROTECTION DEVICE (SPD) IS TO BE SHIPPED LOOSE FOR MOUNTING AT THE DISCONNECT IN THE FIELD. THE CORRECT SPD MUST BE SELECTED BASED ON THE SERVICE VOLTAGE: 240V DELTA HI-LEG OR 480V WYE.
- ALL FIELD WIRING SHALL BE #12 AWG STRANDED, TIN-PLATED COPPER. APPLY DIELECTRIC GREASE TO ENDS TO PREVENT CORROSION.
- ALL PLC I/O WIRING INTERNAL TO THE CONTROL PANEL SHALL BE #18 AWG.
- ALL WIRES IN CONTROL PANEL SHALL BE TERMINATED WITH FERRULES.
- ALL MOUNTING SCREWS SHALL BE STAINLESS STEEL, DRILLED AND TAPPED (NO SELF-TAPPING SCREWS ARE ALLOWED).
- PRINT LED LEGEND STRIPS (BLACK & WHITE ON TRANSPARENCY) AND INSERT INTO EACH PUMP SIMOCODE PRO-V DISPLAY (ITEM O).

HINGED INNER DOOR:
 FABRICATED FROM .125 ALUMINUM WITH CONTINUOUS HINGE, TWIST LATCHES, AND DOOR STOP MOUNTED ON INSIDE.

NO.	BY	DATE	REVISIONS	ELECTRICAL SCHEMATIC	DESIGNER:	SHEET TITLE:
6.				MANUFACTURER ADDRESS1 ADDRESS2 CONTACT_NAME CONTACT_NUMBER	2017 STANDARD PACKAGE, REV.0	200 AMP FRONT PANEL VIEW
5.						PROJECT: --- PROJECT NAME ---
4.						ACROSS THE LINE LIFT STATION DIAGRAM
3.						JOB No: 12345678
2.						SHEET 1 OF 9
1.						



BACK PANEL LAYOUT



BACK PANEL:
SPP-4236 (39"H x 33"W) FABRICATED FROM 12ga. CARBON STEEL WITH WHITE INDUSTRIAL GRADE ENAMEL FINISH.

DRAWING LAYER COLOR LEGEND:

- 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

BILL of MATERIAL

QTY	MANUFACTURER	PART NUMBER	DESCRIPTION
1	SCHAEFER	SPP-4236	BACK PANEL, CARBON STEEL, WHITE
1	OEM	BREAKER MOUNT	TO RAISE CBs FLUSH WITH INNER DOOR
-	-	-	TO SECURE RADIO IN PLACE
1	SIEMENS	NFG3B200L	MCB, 3 POLE, 200A
2	SIEMENS	NEG3B100L	PCB1 and PCB2, 3 POLE, 100A
1	WEIDMULLER	9926 25 2006	CCB, UL489, 2 POLE, 6A (240V SERVICE)
1	WEIDMULLER	9926 25 2003	CCB, UL489, 2 POLE, 3A (480V SERVICE)
2	SIEMENS	40HP32A	FVNR CONTACTOR, 3 POLE, NEMA 3
1	SIEMENS	3TA6FG04	POWER DISTRIBUTION LUGS, KIT OF 3
1	SIEMENS	MT0500A	CONTROL TRANSFORMER, 500VA
1	CITEL	DS41S-120	120VAC SURGE SUPPRESSOR, BASE
1	SIEMENS	6EP4 134-3AB00-0AY0	SITOP DC UPS, 10A WITH CHARGER
1	PULS	CS5.241	24VDC POWER SUPPLY, 5A
1	SIEMENS	6ES7 390-1AE80-0AA0	480mm MOUNTING RAIL FOR PLC EQUIP.
1	SIEMENS	6ES7 313-6CG04-0AB0	CPU 313C-2DP, 16 DI - 16 DO PLC
1	SIEMENS	6ES7 953-8LG30-0AA0	MMC MEMORY CARD, 128KB
1	SIEMENS	6ES7 331-1KF02-0AB0	8 FUNCTION ANALOG INPUT MODULE
2	SIEMENS	6ES7 392-1BM01-0AA0	40-PIN SPRING CONNECTOR
1	SIEMENS	6NH7 800-3BA00	SINAUT ST7, TIM 3V-IE MODULE
-	-	-	-
3	BRAD HARRISON	PA9D01-42	PROFIBUS CONNECTOR, 90°, PG PORT
-	BRAD HARRISON	MA9D00-42	PROFIBUS CONNECTOR, 180°
2	SIEMENS	3UF7 010-1AU00-0	SIMOCODE PRO V BASE UNIT, 120VAC
2	SIEMENS	3UF7 113-1AA00-0	SIMOCODE PRO I/E MEAS. MODULE
2	SIEMENS	3UF7 933-0BA00-0	SIMOCODE CABLE TO DISPLAY, 2.5M
4	SIEMENS	3UF7 935-0AA00-0	SIMOCODE CABLE, 0.3M
2	SIEMENS	3UF7 150-1AA00-0	SIMOCODE DECOUPLING MODULE

QTY	MANUFACTURER	PART NUMBER	DESCRIPTION
1	WAGO	858-507	RELAY, STATUS, SPRING, 4NO-NC, 120VAC
3	WAGO	857-304	RELAY, STATUS, SPRING, SPDT, 24VDC
1	WAGO	857-357	RELAY, STATUS, SPRING, SPDT, 120VAC
28	WAGO	2002-1401	TERMINAL, 2002, SPRING, GRAY
1	SIEMENS	6XV1830-0EH10	PROFIBUS CABLE, FAST CONNECT TYPE
2	SIEMENS	49D26344	CONTACTOR SURGE SUPPRESSOR
2	SIEMENS	6GK1901-1BB10-2AA0	PROFINET CONNECTOR
7	WAGO	2002-1492	TERMINAL END / PART. PLATE, ORANGE
20	WAGO	2002-400	ADJACENT JUMPER, 2-WAY CONTINUOUS
8	WAGO	249-116	TERMINAL END STOP, GRAY
1	WAGO	210-112	2M DIN RAIL, GALVANIZED, SLOTTED
2	CITEL	DLAW-24D3	ANALOG SURGE SUPPRESSOR, 24VDC
1	CITEL	DS220S-24DC	24VDC SURGE SUPPRESSOR
2	WEIDMULLER	9926 25 1000	CB11 and CB12, UL489, 1 POLE, 0.5A
1	WEIDMULLER	9926 25 1002	CB13, UL489, 1 POLE, 2A
1	SIEMENS	6XV1840-2AH10	PROFINET CABLE
1	WEIDMULLER	9926 25 1910	CB20, UL489, 1 POLE, 10A
-	-	-	-
1	CITEL	DS43S-230	PRIMARY SPD, 240V DELTA HI-LEG
1	CITEL	DS43S-400	PRIMARY SPD, 480V WYE
4	PANDUIT	LAMA2-14-QY	GROUND LUG, DUAL-RATED, #2-14AWG
-	CITEL	DLA-12D3	PROFIBUS SURGE PROTECTOR
2	PANDUIT	1.5"W x 2"H x 72"L	WIREWAY, HINGE COVER, WIDE FINGER
2	SQUARE D	PK5GTA	EQUIPMENT GROUND BAR, 5-POINT
2	MACROMATIC	TCP2G100	SEAL LEAK / OVERTEMP RELAY, 120VAC
1	MDS	TRANSNET 900	RADIO, SPREAD-SPECTRUM, UNLICENSED
1	MDS	03-4124A01	DIN RAIL MOUNT KIT
1	TFS, INC.	-	SINAUT TO RADIO NULL CABLE

GENERAL NOTES:

- REFER TO "433 LIFT STATION SCADA CONTROLS SPECIFICATION" FOR FURTHER DETAILS THAT MUST BE ADHERED TO SUCH AS WIRE, CONTACTOR, AND CIRCUIT BREAKER SIZING.
- THIS DRAWING IS AN EXAMPLE OF HOW OVERALL CABINET IS TO BE DESIGNED. THE DRAWING WILL NEED TO BE REVISED BASED ON THE PUMP MANUFACTURER, SIZE AND NUMBER OF PUMPS. THINGS THAT WILL CHANGE ARE CIRCUIT BREAKER SIZE, WIRE SIZE, CONTACTOR SIZE, SIMOCODE VOLTAGE/CURRENT MODULE, AND OTHER ITEMS. REFER TO SPECIFICATIONS FOR FURTHER DETAILS.
- SEAL LEAK/OVERTEMP RELAYS MUST BE CHANGED AS REQUIRED BY PUMP MANUFACTURER.
- TECHNICAL FIELD SERVICES, INC., JACKSONVILLE, FLORIDA (904) 278-5250
- MINIMUM SIZE FOR MOTOR CONTACTORS SHALL BE NEMA SIZE 1.
- WIRE BEND FROM CIRCUIT BREAKERS SHALL NOT BE ROUTED OVER OR OBSTRUCT WIREWAY BELOW.
- ENSURE GOOD ELECTRICAL CONTACT BETWEEN BACK PANEL AND ALL MECHANICAL GROUND CONNECTIONS.

CONTROL WIRE UL508A COLOR:

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

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ELECTRICAL SCHEMATIC

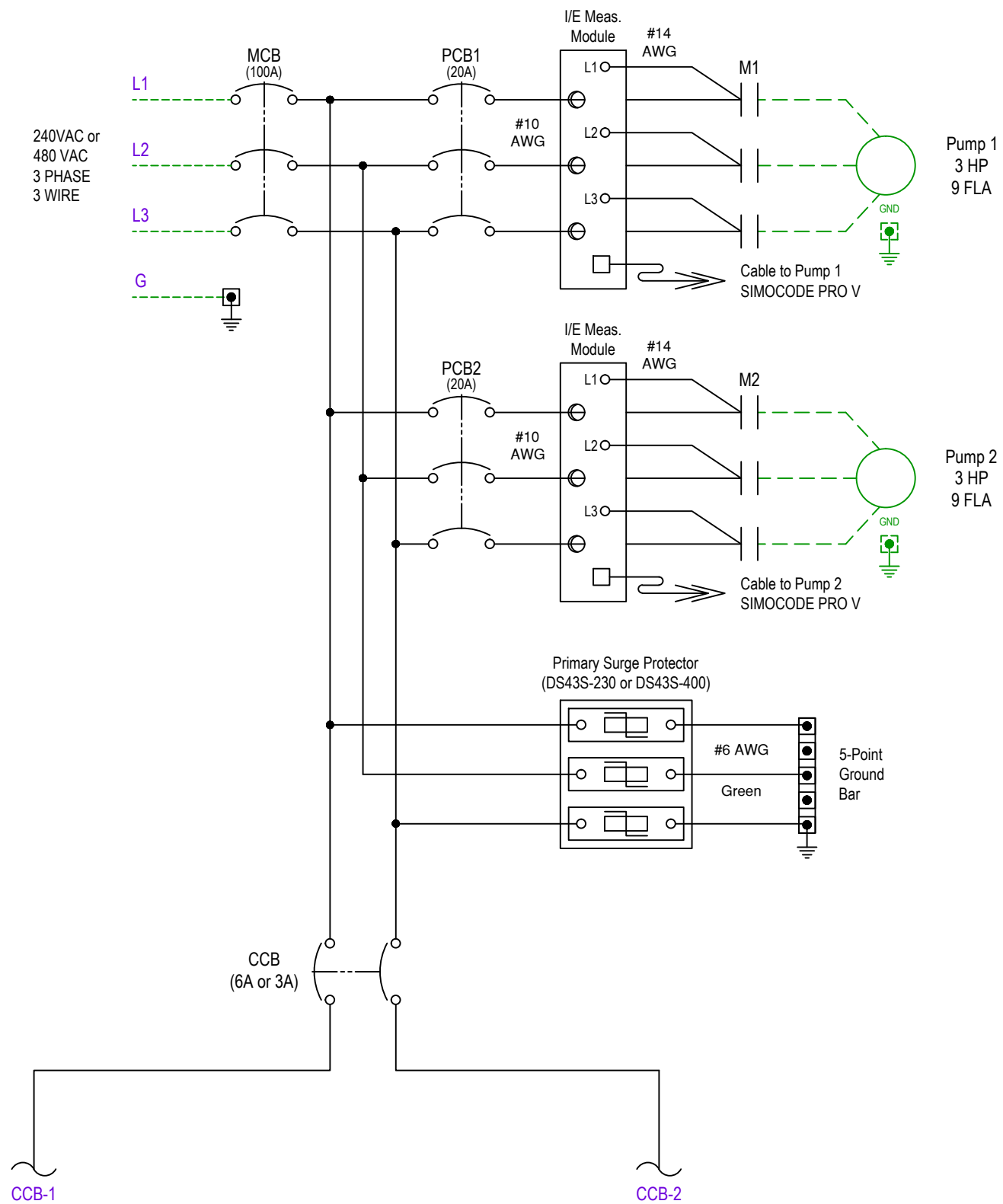
MANUFACTURER
ADDRESS1
ADDRESS2

CONTACT_NAME
CONTACT_NUMBER



DESIGNER:
DRAWN BY:
DATE:
CHECKED BY:
DATE:
2017 STANDARD PACKAGE, REV. 0

SHEET TITLE: 200 AMP BACK PANEL LAYOUT	
PROJECT: --- PROJECT NAME ---	
ACROSS THE LINE LIFT STATION DIAGRAM	
JOB No: 12345678	SHEET OF 2 OF 9



NO.	BY	DATE	REVISIONS
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ELECTRICAL SCHEMATIC

MANUFACTURER
ADDRESS1
ADDRESS2

CONTACT_NAME
CONTACT_NUMBER

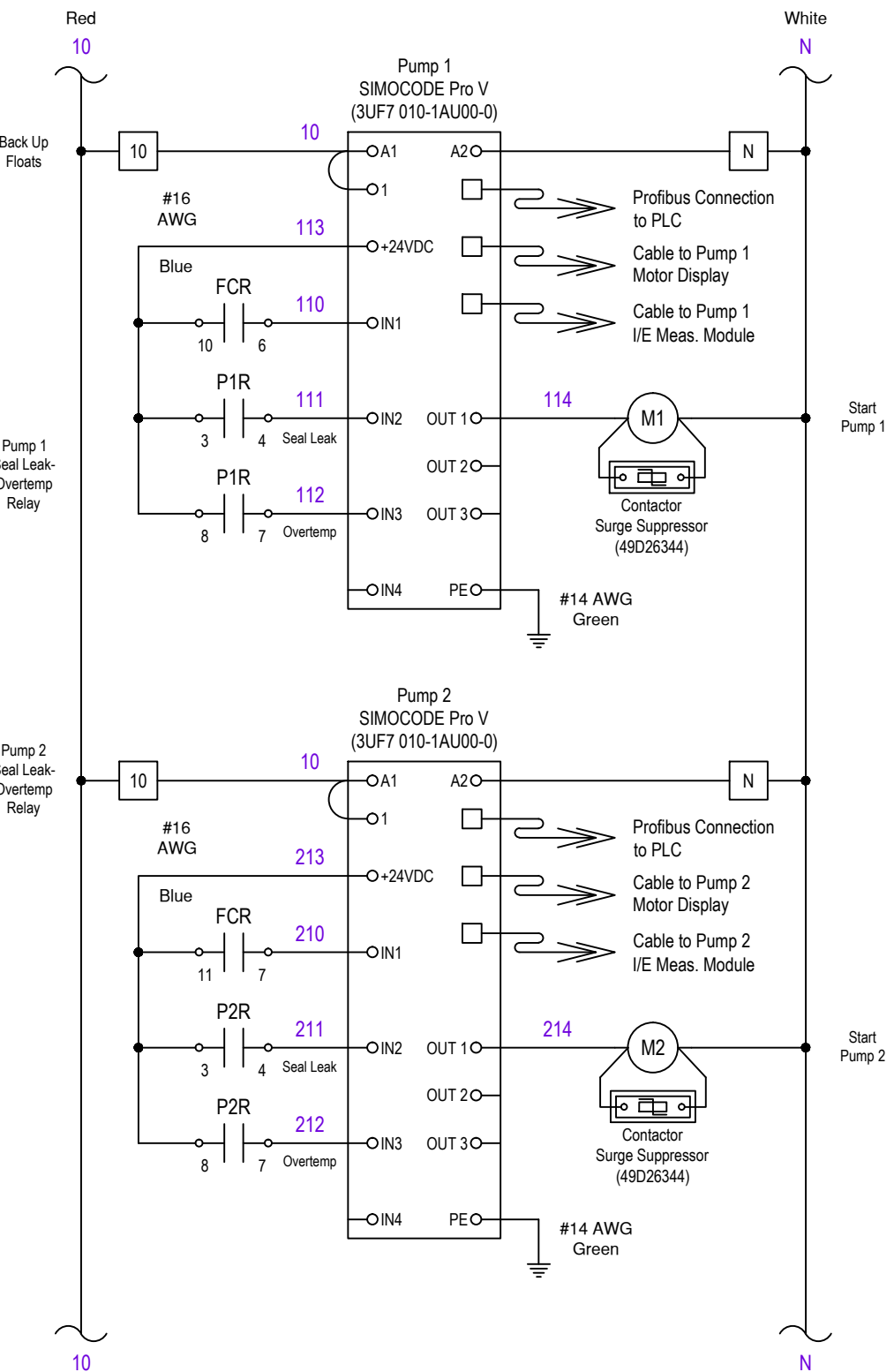
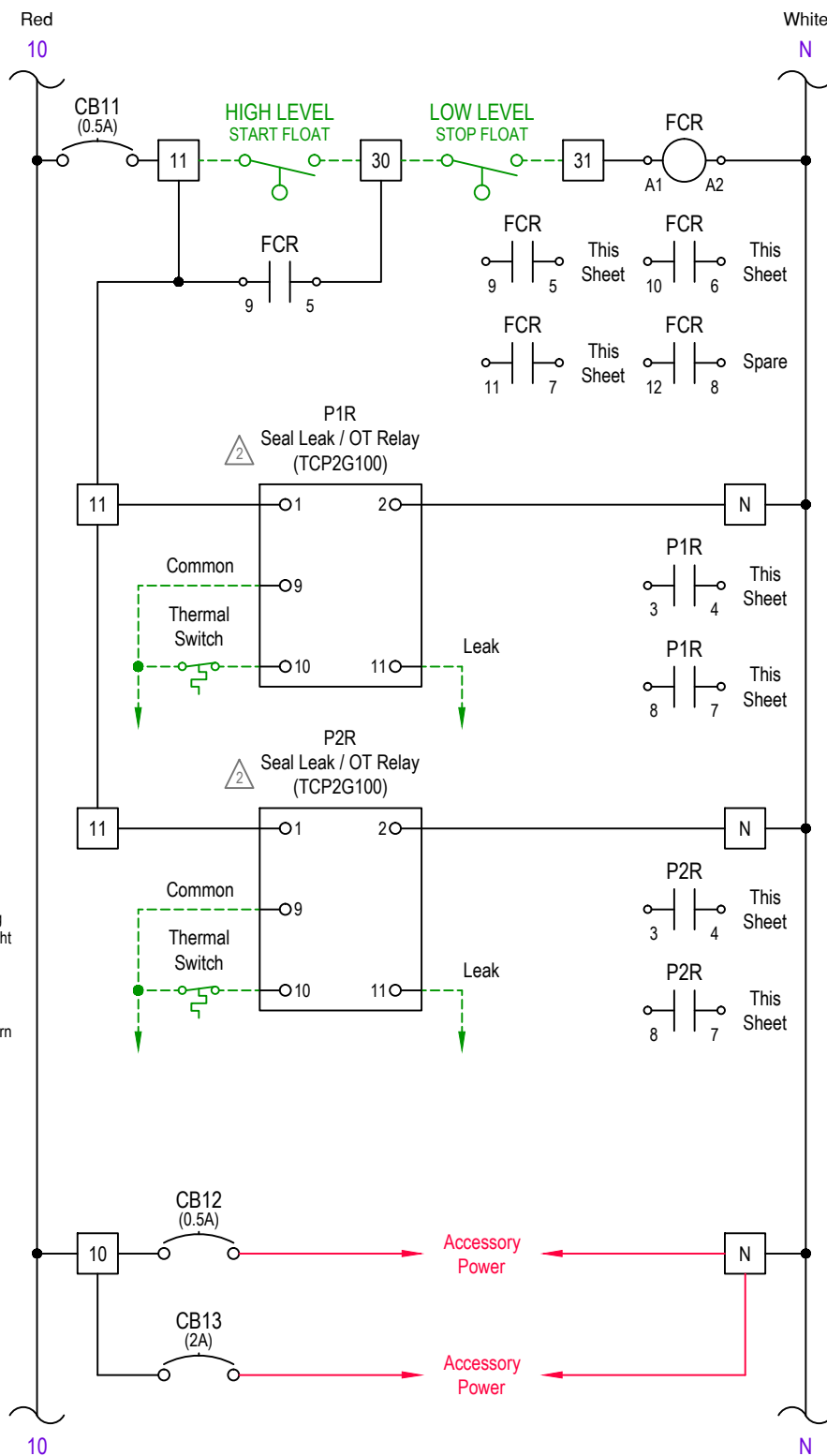
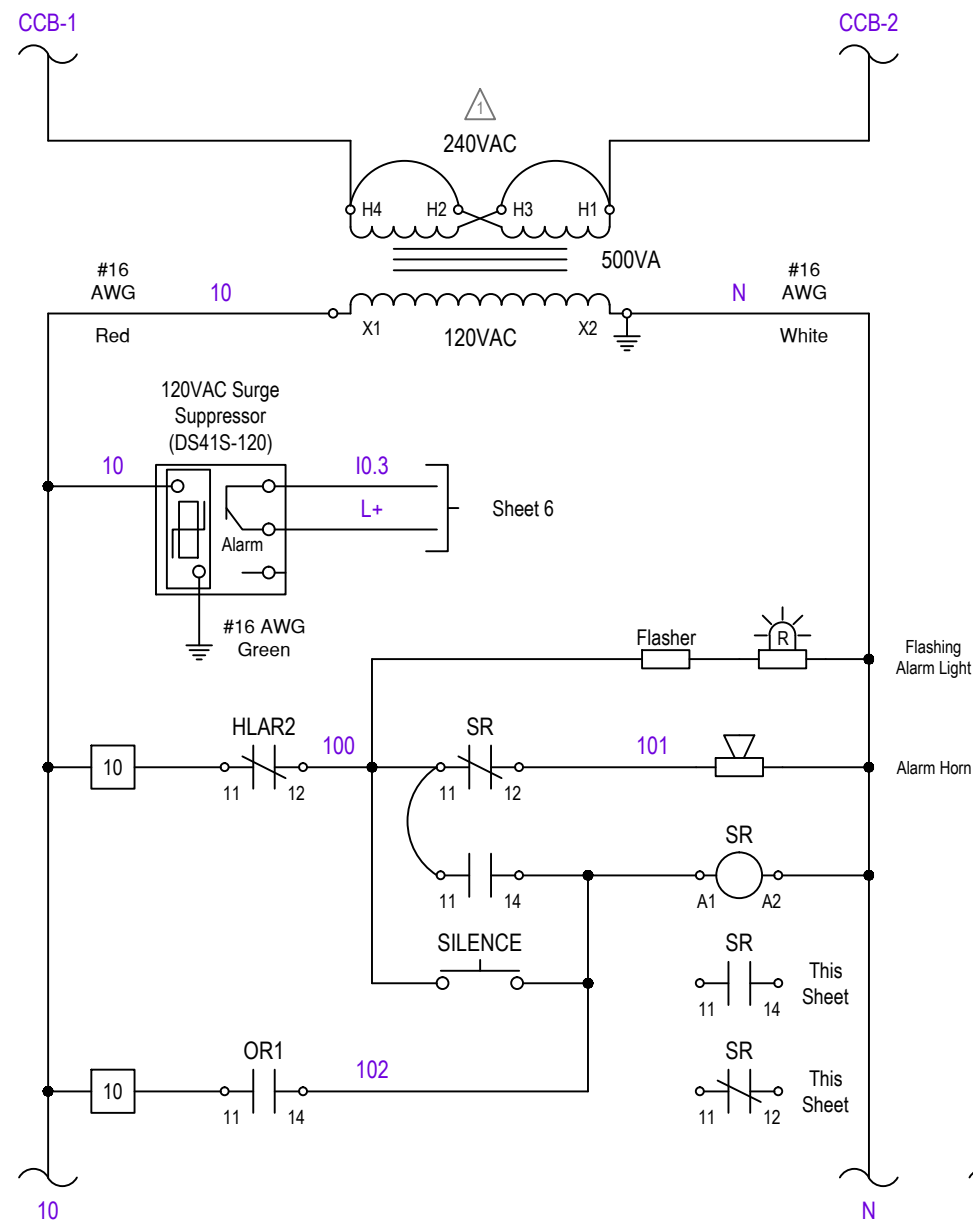


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SHEET TITLE: 240 VAC VOLTAGE	
PROJECT: --- PROJECT NAME ---	
ACROSS THE LINE LIFT STATION DIAGRAM	
JOB No: 12345678	SHEET 3 OF 9

GENERAL NOTES:

1. THIS DRAWING IS FOR A 240VAC CONNECTION. IF SERVICE IS 480VAC, THE TAPS ON THE TRANSFORMER MUST BE CHANGED.
2. RELAYS MUST BE CHANGED AS REQUIRED BY PUMP MANUFACTURER AND ADJUSTED TO RECOMMENDED SETTINGS.
3. ALL CONTROL WIRING AND 12-18 AWG SHALL BE STRANDED TIN-PLATED COPPER WIRE. APPLY DIELECTRIC GREASE TO ENDS TO PREVENT CORROSION.
4. ALL WIRES IN CONTROL PANEL SHALL BE TERMINATED WITH FERRULES.
5. ALL WIRES TERMINATING AT PLC RACK MUST BE ROUTED THROUGH WIREWAY FROM BELOW.
6. THIS DRAWING IS FOR A DUPLEX PUMP STATION. TRIPLEX PUMP STATIONS REQUIRE ADDITIONAL PUMP CONTROLS.



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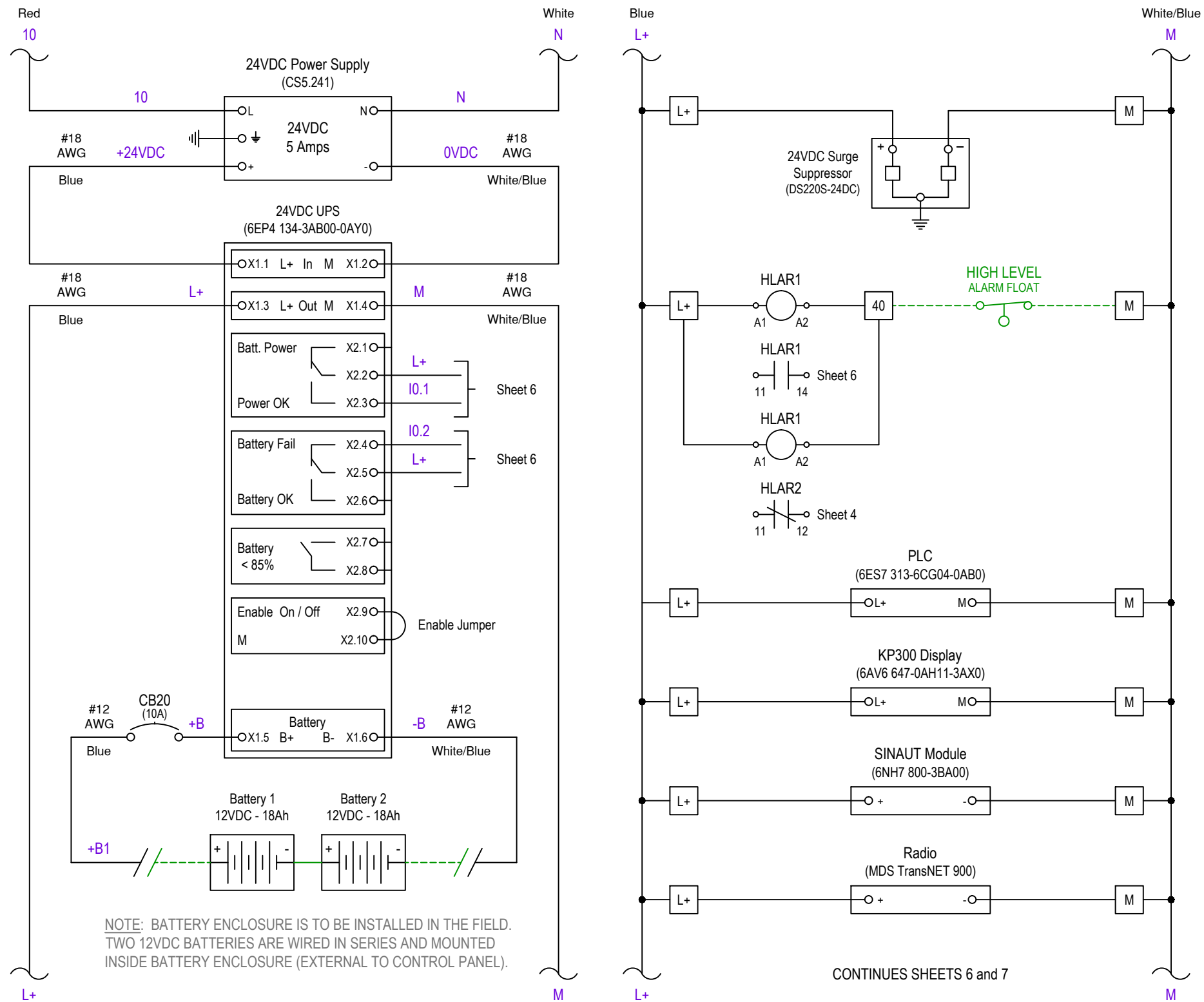
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SHEET TITLE: **120 VAC VOLTAGE**

PROJECT: **--- PROJECT NAME ---**

ACROSS THE LINE LIFT STATION DIAGRAM

JOB No: **12345678** SHEET **4** OF **9**



NOTE: 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).

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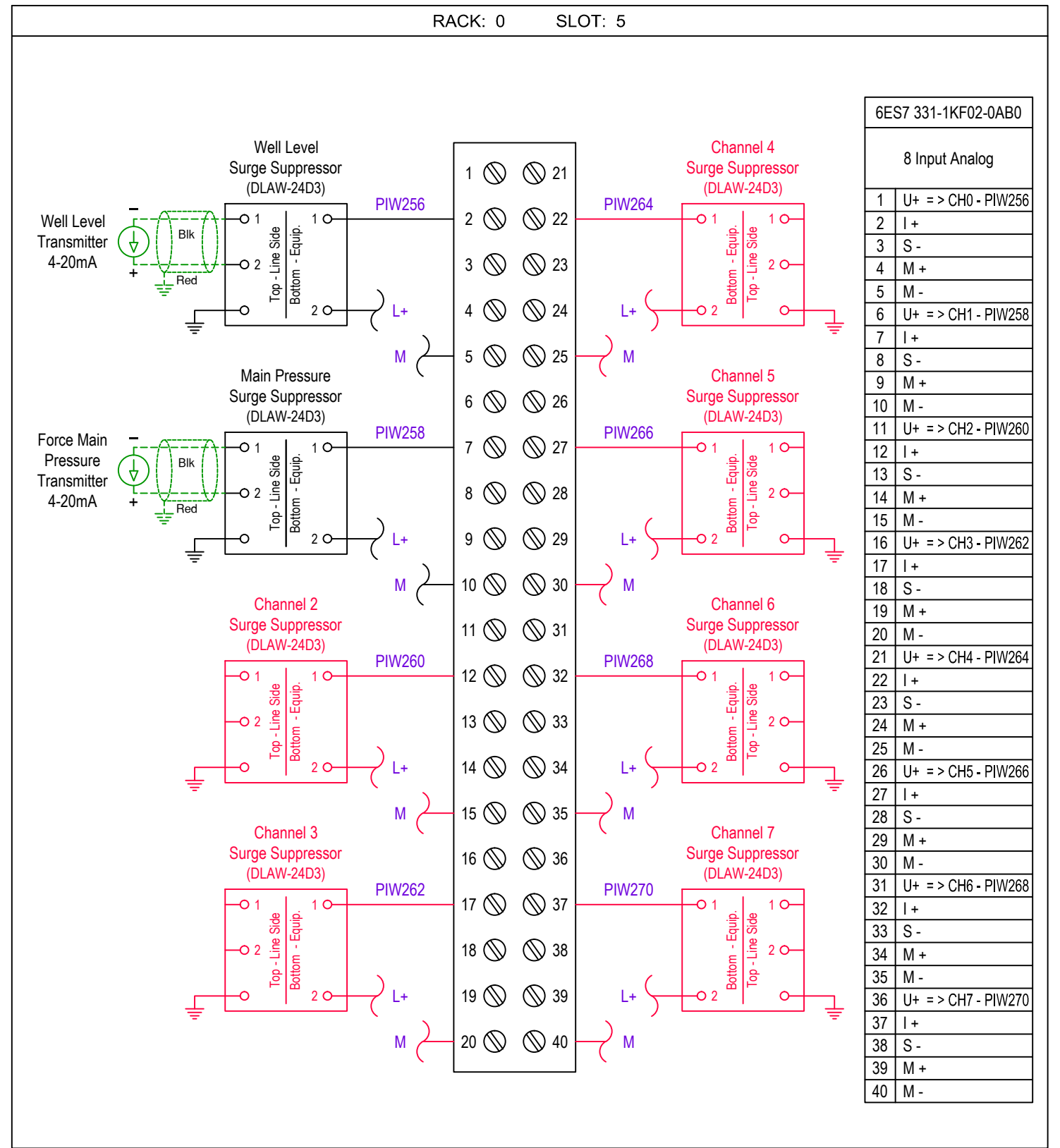
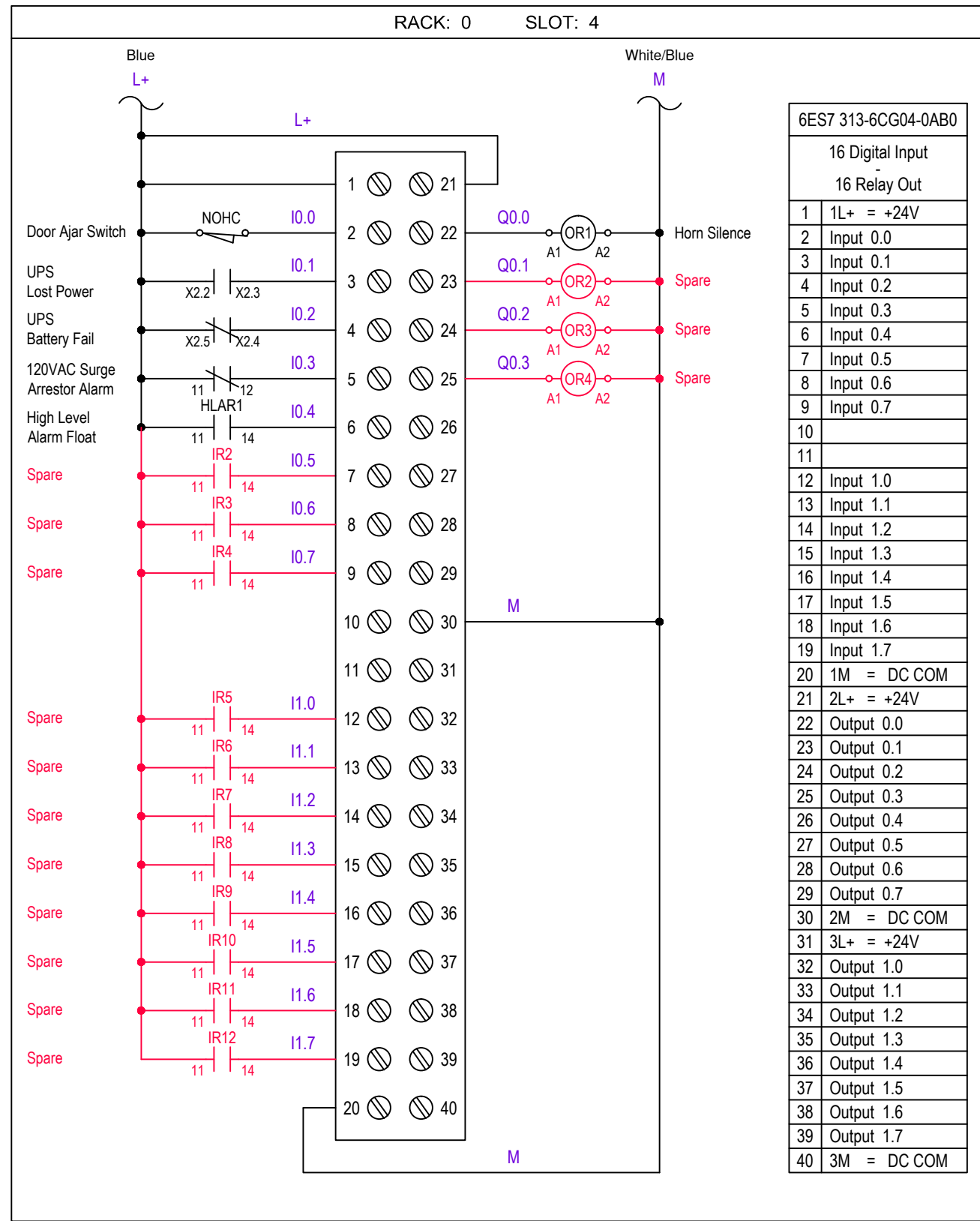
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SHEET TITLE: **24 DCV VOLTAGE**
PROJECT: **--- PROJECT NAME ---**
ACROSS THE LINE LIFT STATION DIAGRAM
JOB No: **12345678** SHEET **5** OF **9**



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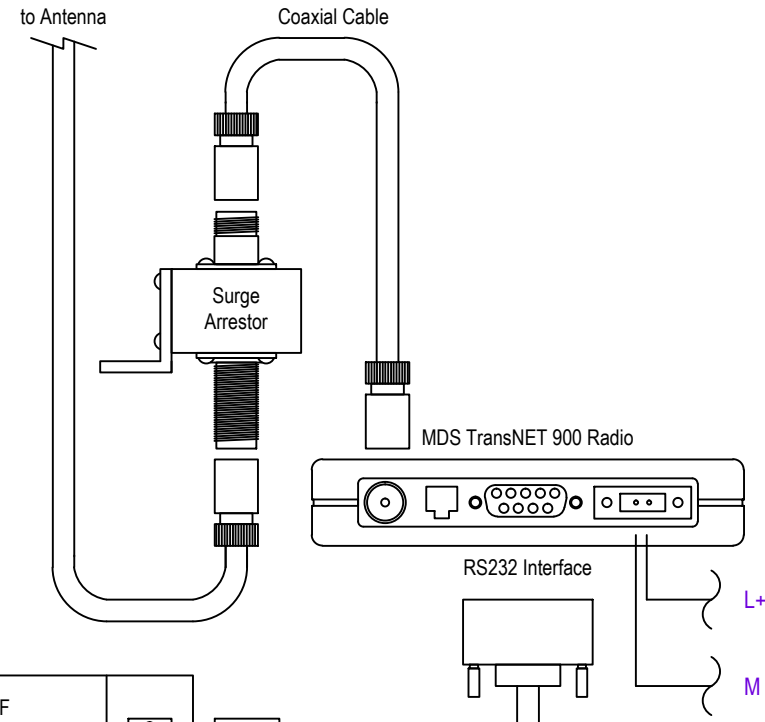
SHEET TITLE:
PLC DIGITAL I/O - ANALOG INPUT

PROJECT:
--- PROJECT NAME ---

ACROSS THE LINE LIFT STATION DIAGRAM

JOB No: 12345678 SHEET 6 OF 9

RACK: 0 SLOT: 6

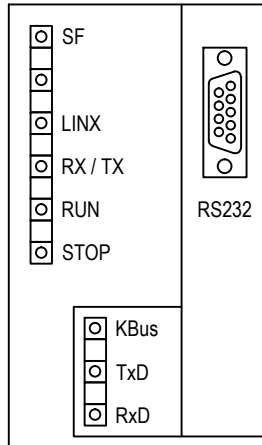


6NH7 800-3BA00	
SINAUT -> TIM3V-IE	
RS-232 PIN OUT	
1	DCD - Input
2	RXD - Input
3	TXD - Output
4	DTR - Output
5	GND
6	--
7	RTS - Output
8	CTS - Input

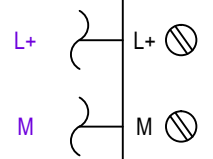
RJ-45 PIN OUT	
1	TXD+ -> Output
2	TXD- -> Output
3	RXD+ -> Input
4	--
5	--
6	RXD- -> Input
7	--
8	--

Power Connector	
L+	+ 24VDC
M	DC Common

SINAUT RS-232	INTERCONNECTION	TransNET RS-232
Housing Shield		Housing Shield
1	RXD	1
2	TXD	2
3	DTR	3
4	GND	4
5	DSR	5
6	RTS	6
7	CTS	7
8		8
9		9

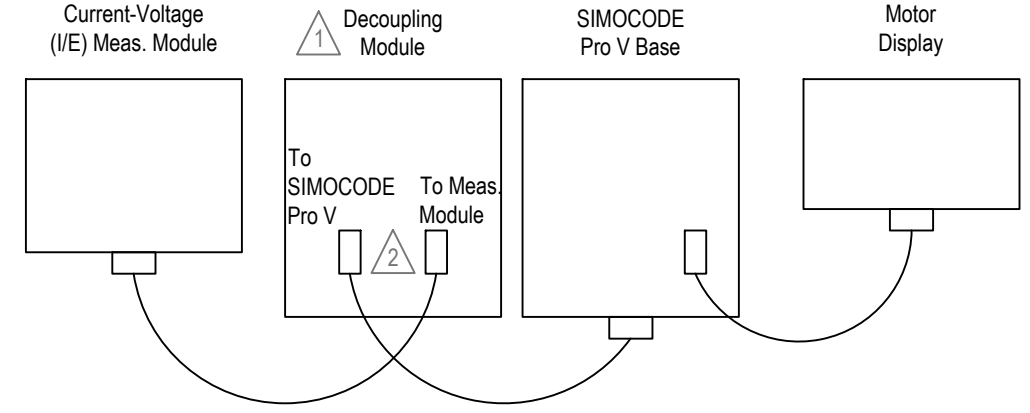


KP300 DISPLAY

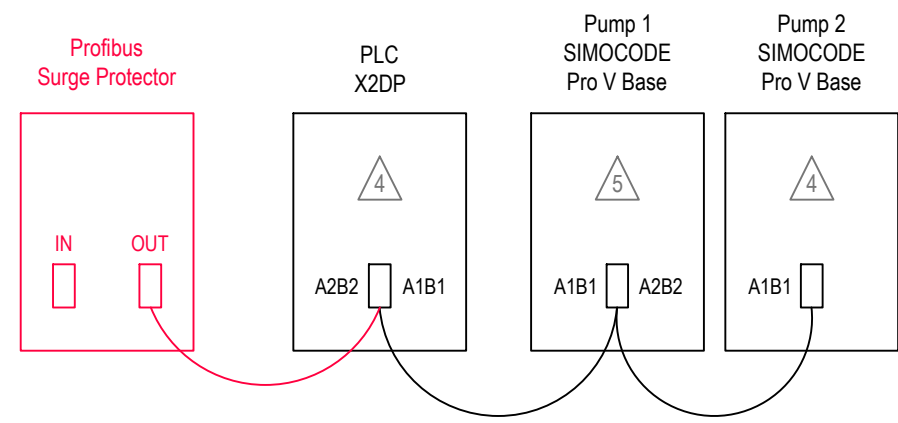


SIMOCODE Bus Connection Diagram

(Typical for each Pump)



Profibus Connection Diagram



GENERAL NOTES:

1. REMOVE THE SIMOCODE DECOUPLING MODULE IF THE POWER SUPPLIED TO THE STATION IS A WYE TRANSFORMER. THE SIMOCODE DECOUPLING MODULE IS REQUIRED FOR UNGROUNDED DELTA SYSTEMS SUCH AS 240VAC OPEN DELTA SYSTEMS.
2. CHECK SIMOCODE DECOUPLING MODULE FOR CORRECT WIRING CONNECTIONS.
3. ALL PLC I/O WIRING SHALL BE #18 AWG. APPLY DIELECTRIC GREASE TO ENDS TO PREVENT CORROSION.
4. SET PROFIBUS CONNECTOR RESISTOR SWITCH TO THE "ON" POSITION.
5. SET PROFIBUS CONNECTOR RESISTOR SWITCH TO THE "OFF" POSITION.

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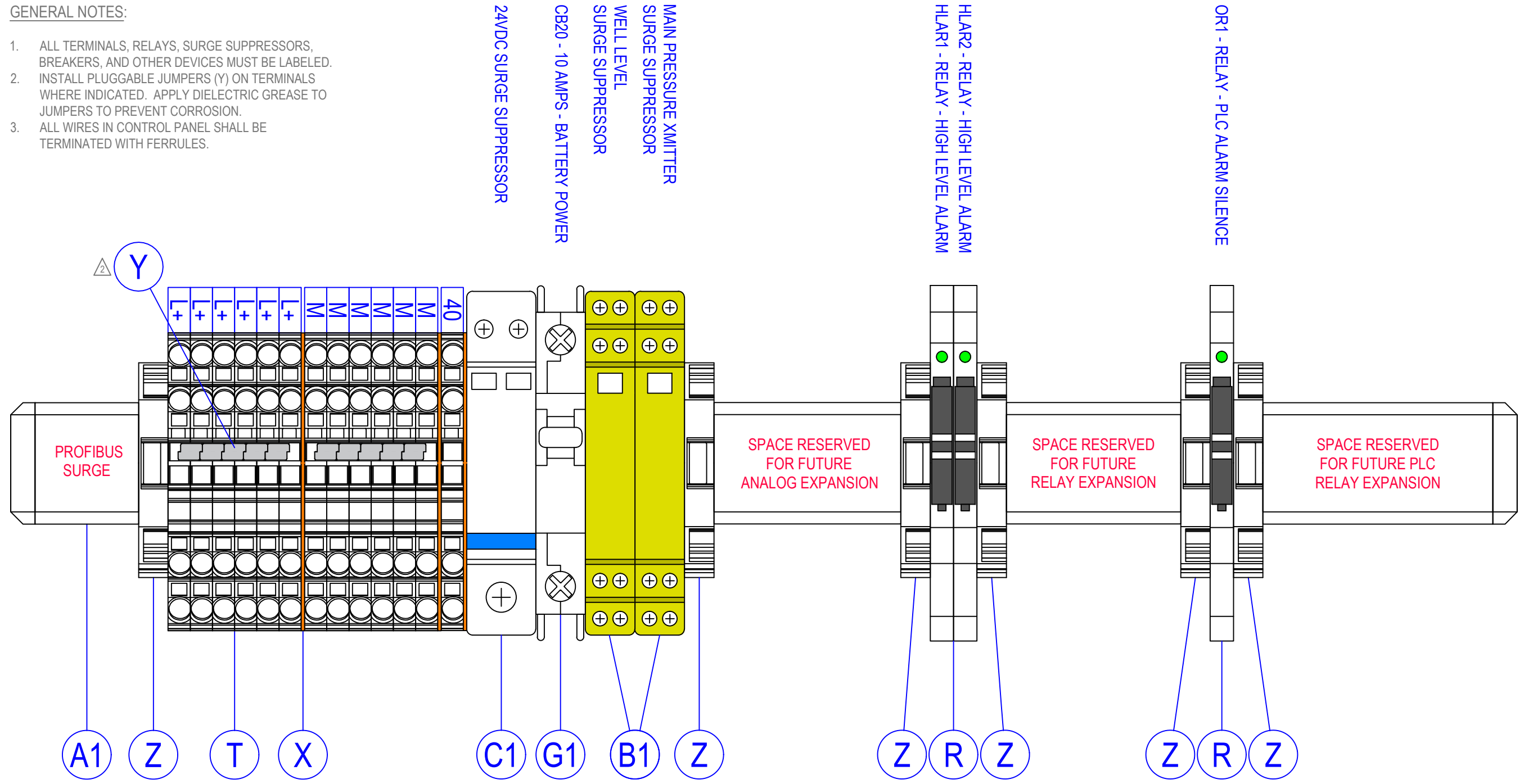


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SHEET TITLE: **PLC & RADIO CONNECTION**
 PROJECT: --- PROJECT NAME ---
ACROSS THE LINE LIFT STATION DIAGRAM
 JOB No: 12345678 SHEET 7 OF 9

GENERAL NOTES:

1. ALL TERMINALS, RELAYS, SURGE SUPPRESSORS, BREAKERS, AND OTHER DEVICES MUST BE LABELED.
2. INSTALL PLUGGABLE JUMPERS (Y) 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:
24 VDC TERMINAL BLOCK LAYOUT

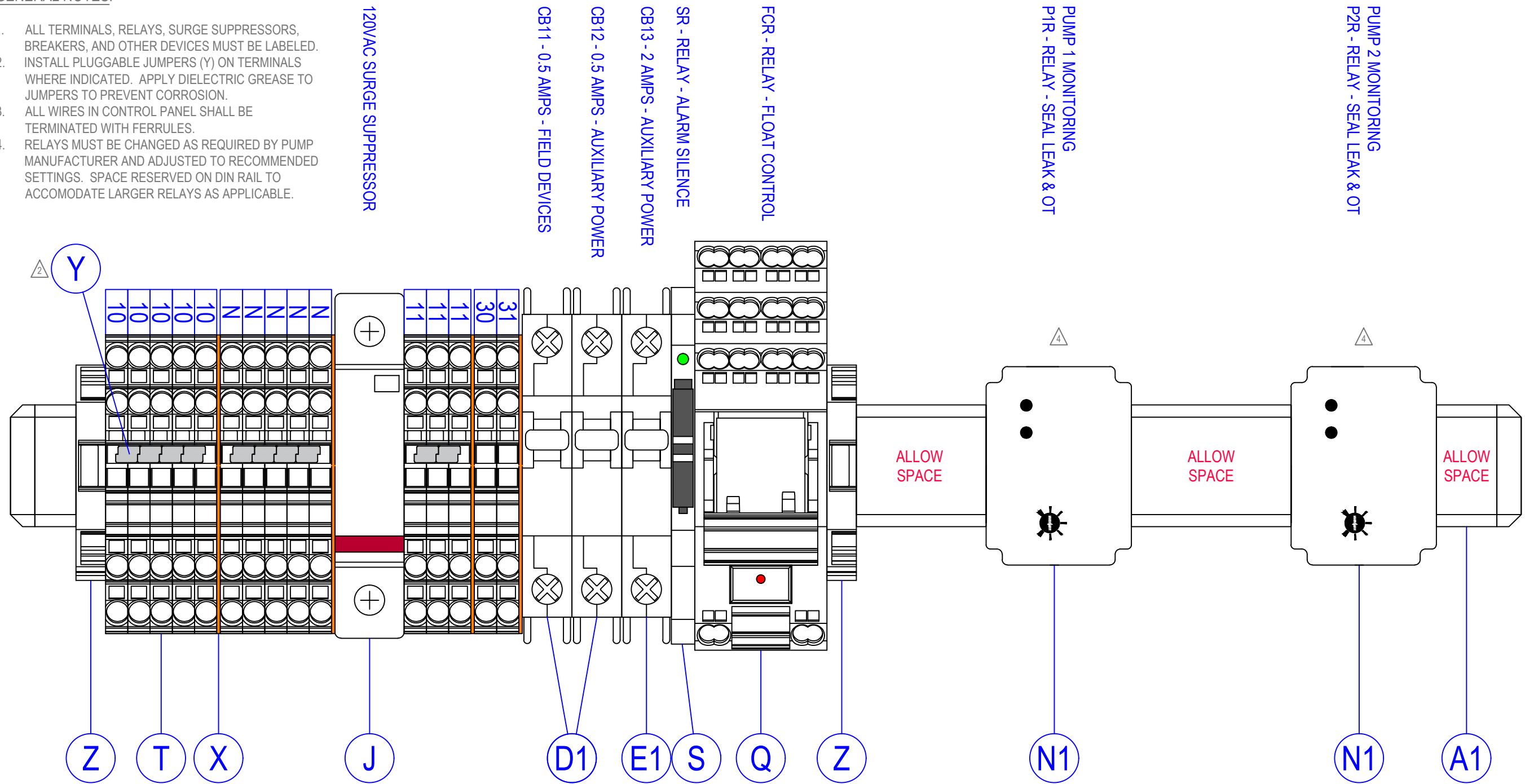
PROJECT:
--- PROJECT NAME ---

ACROSS THE LINE LIFT STATION DIAGRAM

JOB No: 12345678
SHEET 8 OF 9

GENERAL NOTES:

1. ALL TERMINALS, RELAYS, SURGE SUPPRESSORS, BREAKERS, AND OTHER DEVICES MUST BE LABELED.
2. INSTALL PLUGGABLE JUMPERS (Y) ON TERMINALS WHERE INDICATED. APPLY DIELECTRIC GREASE TO JUMPERS TO PREVENT CORROSION.
3. ALL WIRES IN CONTROL PANEL SHALL BE TERMINATED WITH FERRULES.
4. RELAYS MUST BE CHANGED AS REQUIRED BY PUMP MANUFACTURER AND ADJUSTED TO RECOMMENDED SETTINGS. SPACE RESERVED ON DIN RAIL TO ACCOMMODATE LARGER RELAYS AS APPLICABLE.



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SHEET TITLE: 120 VAC TERMINAL BLOCK LAYOUT	
PROJECT: --- PROJECT NAME ---	
ACROSS THE LINE LIFT STATION DIAGRAM	
JOB No: 12345678	SHEET 9 OF 9