

BILL OF MATERIAL					PROJECT SPECIFIC LEGEND & UL TORQUE SPECIFICATIONS				
MARK	COUNT	DESCRIPTION	MANUFACTURER	MODEL	MARK	COUNT	DESCRIPTION	MANUFACTURER	MODEL
1	1	DUPLEX RECEPTACLE, 15 A, 125 VAC, GFCI	ALLEN BRADLEY	1492-REC15G	41	3	TERMINAL BLOCK, UK10N	PHOENIX CONTACT	3005073
2	1	HMI, PANELVIEW PLUS 7 STANDARD, 10.4 INCH, COLOR TOUCH SCREEN, WIN 10 IOT, 24 VDC	ALLEN BRADLEY	2711P-T10C21D8S	42	6	PROTECTIVE CAP FOR CUT CENTERLINE JUMPER, FBSC	PHOENIX CONTACT	3012325
3	2	5069 COMPACT I/O 16 CHANNEL 24VDC DIGITAL INPUT MODULE	ALLEN BRADLEY	5069-IB16	43	5	PLUG-IN BRIDGE, CENTERLINE JUMPER, 20 POS, FBS 20-6	PHOENIX CONTACT	3030365
4	2	5069 COMPACT I/O 8 CHANNEL ANALOG INPUT MODULE	ALLEN BRADLEY	5069-IF8	44	44	24 VDC FUSE PLUG, P-FUXS20LED24	PHOENIX CONTACT	3036819
5	2	5069 COMPACT I/O 4 CHANNEL UNIVERSAL RTD ANALOG INPUT MODULE	ALLEN BRADLEY	5069-IY4	45	10	250 VAC FUSE PLUG, P-FUXS20LA250	PHOENIX CONTACT	3036835
6	1	COMPACTLOGIX 5380 PLC, 1MB USER MEMORY, 8 I/O SLOTS, 24 ETHERNET/IP DEVICES, 24VDC	ALLEN BRADLEY	5069-L310ER	46	46	DOUBLE LEVEL FUSIBLE TERMINAL BLOCK, UTTB4-TG	PHOENIX CONTACT	3044720
7	1	5069 COMPACT I/O 16 CHANNEL 24 VDC DIGITAL OUTPUT MODULE	ALLEN BRADLEY	5069-OB16	47	16	DOUBLE LEVEL 1/2 GROUND TERMINAL BLOCK, UTTB 4-PE/L	PHOENIX CONTACT	3044746
8	7	5069 COMPACT I/O 18 PINS SCREW TYPE TERMINAL BLOCK KIT	ALLEN BRADLEY	5069-RTB18-SCREW	48	8	DOUBLE LEVEL GROUND TERMINAL BLOCK, UTT4-PE	PHOENIX CONTACT	3044759
9	1	POWER TERMINAL RTB KIT FOR COMPACTLOGIX 5380 CONTROLLERS	ALLEN BRADLEY	5069-RTB64-SCREW	49	64	DOUBLE LEVEL TERMINAL BLOCK, UTTB4	PHOENIX CONTACT	3044814
10	16	CONTROL RELAY, 24 VDC COIL, SPDT, 15 A CONTACT RATING, LED INDICATOR, PUSH-TO-TEST	AUTOMATION DIRECT	781-1C-24D	50	9	SPACER PLATE - DP-UTTБ 2,5/4	PHOENIX CONTACT	3047303
11	16	RELAY SOCKET FOR SPDT CONTROL RELAYS	AUTOMATION DIRECT	781-1C-SKT	51	10	DOUBLE LEVEL TB CAP, ATP-UTTБ 2.5/4	PHOENIX CONTACT	3047316
12	2	DIN RAIL, SLOTTED, 35mm X 7.5mm (1m LENGTH, PKG OF 2)	AUTOMATION DIRECT / DINNECTORS	DN-R35S1-2	52	1	CLASS CC FUSE HOLDER, UK 10.3-CC HESILED N 600	PHOENIX CONTACT	3048616
13	1	CIRCUIT BREAKER, 10A, 240 VAC / 48 VDC, 1-POLE, C CURVE	AUTOMATION DIRECT / EATON	FAZ-C10-1-NA-L-SP	53	1	INSERTION BRIDGE COMB JUMPER, 8-PIN, EB 10-8	PHOENIX CONTACT	3118135
14	1	CIRCUIT BREAKER, 15A, 240 VAC / 48 VDC, 1-POLE, C CURVE	AUTOMATION DIRECT / EATON	FAZ-C15-1-NA-L-SP	54	1	BATTERY, LONG LIFE VRLA, 12 VDC, 75 Ah	POWER SONIC	PG-12V75 FR
15	1	ENCLOSURE, NEMA 4, 48" H X 36" W X 12" D, PAINTED CARBON STEEL, LOCKING HANDLE	AUTOMATION DIRECT / HAMMOND MANUFACTURING	EN4SD483612GY	55	1	POWER SUPPLY, 24 VDC, 10 A	PULS	CS10.241
16	1	BACK PANEL FOR 48" H X 36" W ENCLOSURE, PAINTED CARBON STEEL	AUTOMATION DIRECT / HAMMOND MANUFACTURING	EP4836	56	1	UPS, 24 VDC, 10 A	PULS	UB10.242
17	1	MOUNTING FEET, CARBON STEEL, (PKG OF 4)	AUTOMATION DIRECT / HAMMOND MANUFACTURING	EZPMFHD	57	3	DESICCANT PACKET, 4-UNIT, TYVEK POUCH	SCS	4PLDES
18	1	WIRE DUCT, 1" X 1", WHITE, WITH COVER	AUTOMATION DIRECT / IBOCO	T1-1010W-1	58	1	GROUND BUS BAR	SIEMENS	ECGB10
19	1	WIRE DUCT, 1-1/2" X 3", WHITE, WITH COVER	AUTOMATION DIRECT / IBOCO	T1-1530W-1					
20	3	WIRE DUCT, 2.25" X 3", WHITE, WITH COVER	AUTOMATION DIRECT / IBOCO	T1E-2230W-1					
21	1	MAGNETIC MOUNTS FOR LED LIGHT BAR	AUTOMATION DIRECT / PATLITE	CWF-002					
22	1	LED LIGHT BAR, 24 INCH, 24 VDC, CLASS 2	AUTOMATION DIRECT / PATLITE	CWF6S-24-CD					
23	16	DIODE	DIGIKEY	1N4002G					
24	1	30 AMP FUSE	FERRAZ	ATMR30					
25	1	LOCKNUT, 3/4" NYLON NPT (PKG OF 10)	HEYCO	8465					
26	2	LIQUID TIGHT THREADED VENT PLUG, HYDROPHOBIC, 3/4" NPT	HEYCO	3547VB					
27	1	VAPOR CORROSION INHIBITOR, 10 FT^3 VOLUME PROTECTION, 2 YEAR LIFE	HOFFMANN	AHC110E					
28	5	FUSE, 1/2A (GSC-1/2A)	LITTELFUSE	239.500					
29	2	FUSE, 2A (GSC-2A)	LITTELFUSE	239002					
30	2	FUSE, 4A (GSC-4A)	LITTELFUSE	239004					
31	1	FUSE, 5A (GSC-5A)	LITTELFUSE	239005					
32	7	FUSE, 1A (GGM-1A)	LITTELFUSE	GGM1					
33	30	FUSE, 1/2A (GGM-1/2A)	LITTELFUSE	GGM1/2					
34	3	FUSE, 2A (GGM-2A)	LITTELFUSE	GGM2					
35	4	FUSE, 4A (GGM-4A)	LITTELFUSE	GGM4					
36	9	INSERTION BRIDGE COMB JUMPER, 10-PIN, EB 10-10	PHOENIX CONTACT	0203137					
37	5	ROW PARTITION	PHOENIX CONTACT	0800307					
38	23	END ANCHOR, E/NS 35N	PHOENIX CONTACT	0800886					
39	1	CLASS 2 ELECTRONIC CIRCUIT PROTECTOR, 24VDC, 1A	PHOENIX CONTACT	2909909					
40	3	END CAP FOR UK10N	PHOENIX CONTACT	3003020					

45

46

44

46

49

48

47

41

13

OR

14

58

52

UPPER LEVEL

DOUBLE LEVEL AC FUSED TERMINAL BLOCK, UTTB4-TG [0.6-0.8 Nm]

LOWER LEVEL

DOUBLE LEVEL DC FUSED TERMINAL BLOCK, UTTB4-TG [0.6-0.8 Nm]

DOUBLE LEVEL TERMINAL BLOCK, UTTB 4 [0.6-0.8 Nm]

DOUBLE LEVEL GROUND TERMINAL BLOCK, UTTB 4-PE [0.6-0.8 Nm]

DOUBLE LEVEL BOTTOM GROUND TERMINAL BLOCK UTTB4-PE/L [0.6-0.8 Nm]

FIELD DEVICE TERMINAL BLOCK.

TERMINAL BLOCK, UK10N [1.5-1.8 Nm]

EATON FAZ SERIES CIRCUIT BREAKER [2.4 Nm]

SIEMENS ECGB10 GROUND BUS BAR [2.7-3.3 Nm]

UK 10,3 HESI CLASS CC FUSE HOLDER [2.5-3 Nm]

PROJECT SPECIFIC NOTES

UNITS ARE SHIPPED WITH DEFAULT IP ADDRESSES OF:
PLC = TBD
HMI = TBD

REFERENCE SHEET 12 FOR FUSE LIST

NOTES: GENERAL

1

- MAIN DISCONNECT AND BRANCH CIRCUIT PROTECTION TO BE PROVIDED BY OTHERS.

2

- PANEL WIRING SHALL BE MTW RATED FOR 75°C TINNED, CU, UNLESS OTHERWISE NOTED.

3

- FIELD WIRING SHALL BE CU, RATED AT 60°C MINIMUM.

4

- CONDUIT HUBS SHALL BE OF SAME RATING AS ENCLOSURE. DUCT SEAL SHALL BE USED AT CONDUIT

5

- CONDUIT ENTRIES SHALL BE DUCT SEALED TO PREVENT THE INGRESS OF DUST AND MOISTURE.

6

- WIRE FERRULES SHALL BE USED AT TERMINAL BLOCKS

7

- MOUNT DIN RAILS ON 1/2 INCH. STANDOFFS

8

- THE PARTS LISTED IN THE BILL OF MATERIALS ARE FOR REFERENCE ONLY AND DO NOT GUARANTEE THE EXACT QUANTITIES REQUIRED TO CONSTRUCT A COMPLETE PANEL. THE DESIGN ENGINEER MAY SUBSTITUTE COMPONENTS WITH "LIKE EQUALS" PENDING APPROVAL BY THE SDSTA. THE SDSTA RESERVES THE RIGHT TO APPROVE OR REJECT ANY PROPOSED SUBSTITUTE PARTS. THE DESIGNER IS SOLELY RESPONSIBLE FOR ENSURING THAT THE SUBSTITUTED PARTS MEET ALL APPLICABLE QUALITY AND PERFORMANCE REQUIREMENTS.

B	OPERATIONS FEEDBACK REV	2/6/2023	CWP
A	NEW DRAWING	9/20/2022	CWP
REV	DESCRIPTION	DATE	BY

Sanford

Underground Research Facility

630 EAST SUMMIT STREET

LEAD, SD 57754

1 (605) 722-8650

PRELIMINARY

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	SCALE NTS

DESCRIPTION:

BILL OF MATERIALS,
NOTES, AND LEGEND

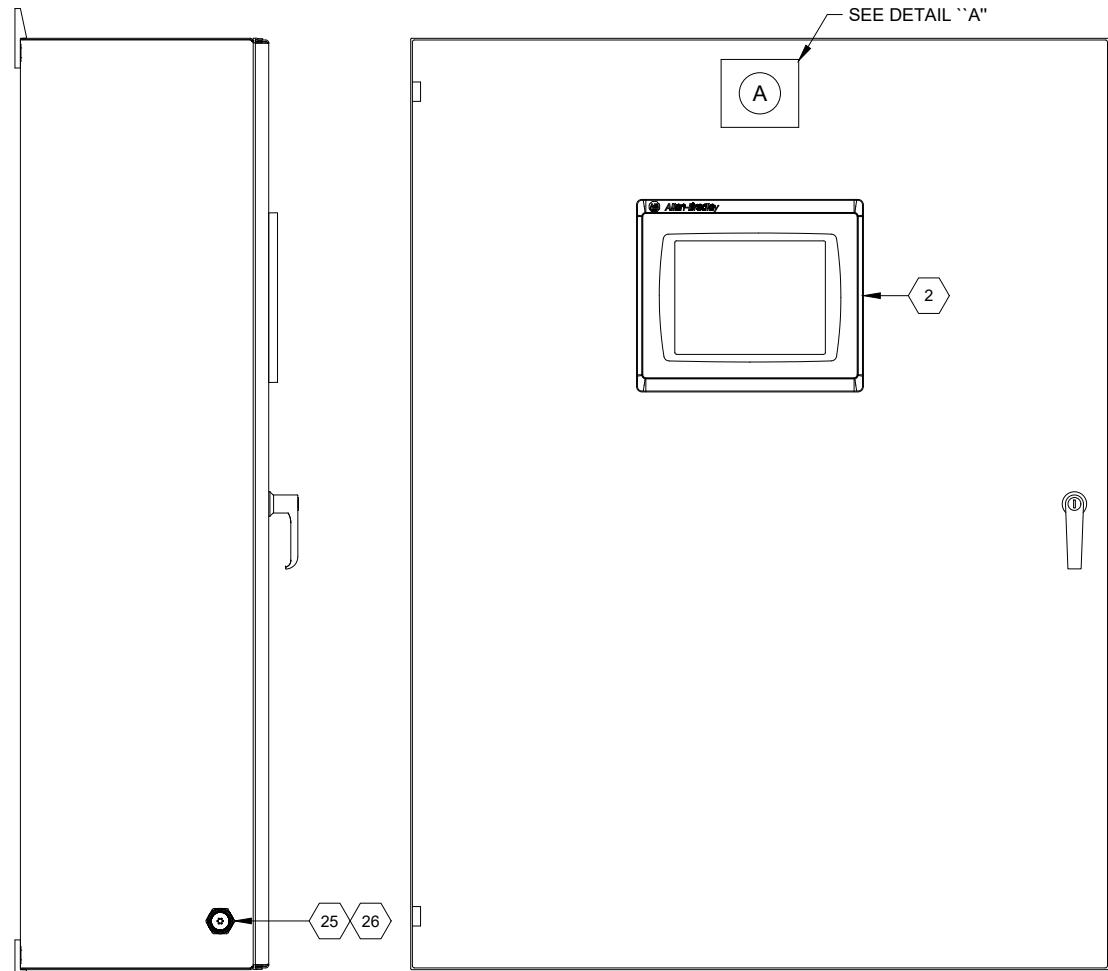
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PUMP STATION CONTROLLER

NUMBER:
D-PSC

SHEET #
1 of 12

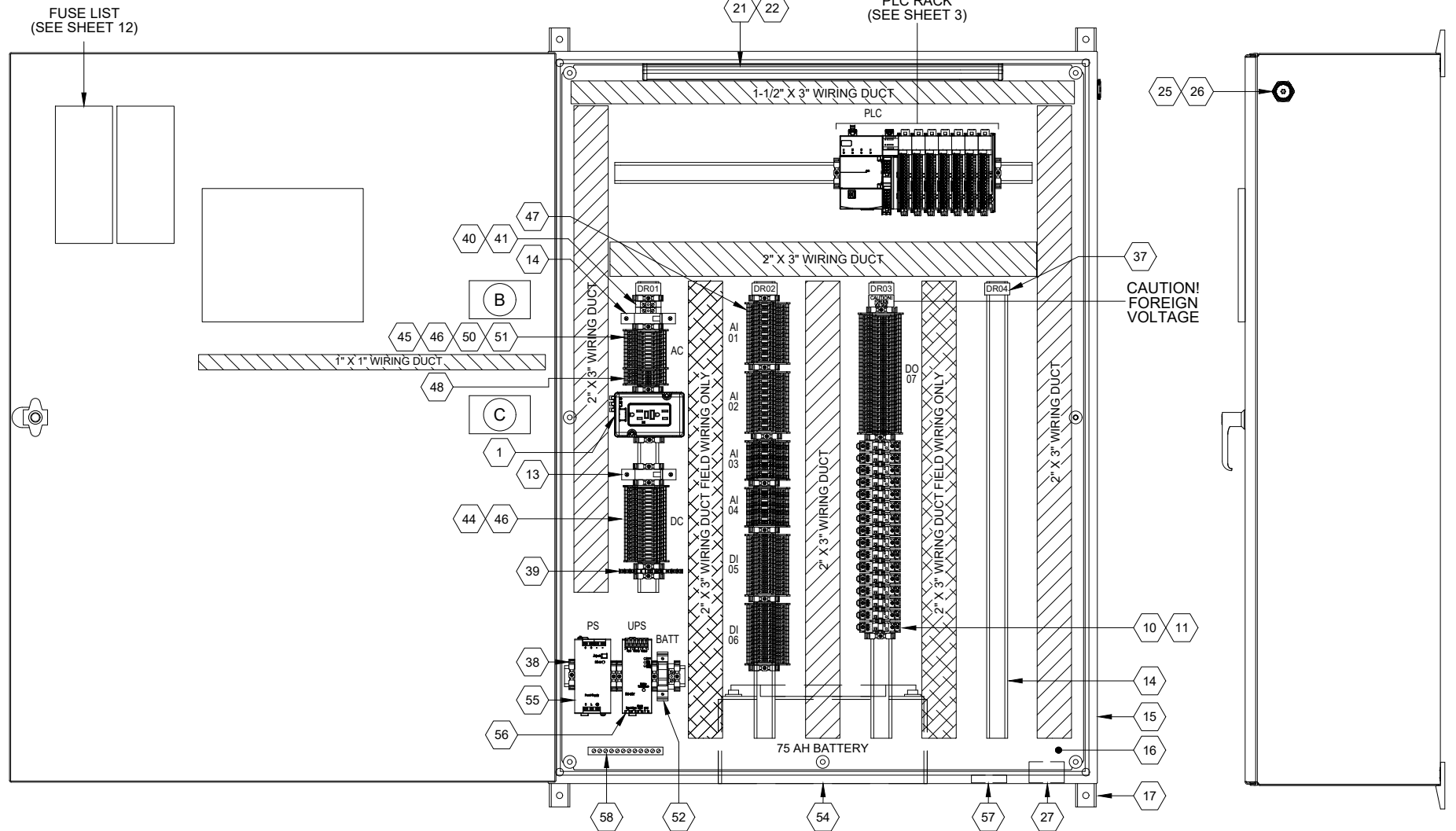
SIZE
B

REV
B



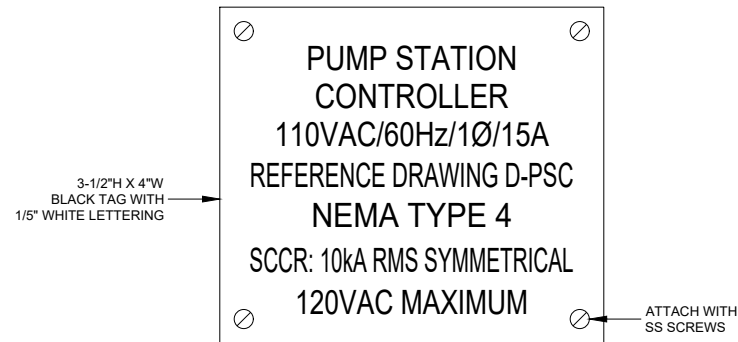
ENCLOSURE
LEFT SIDE DETAIL

ENCLOSURE
DOOR DETAIL

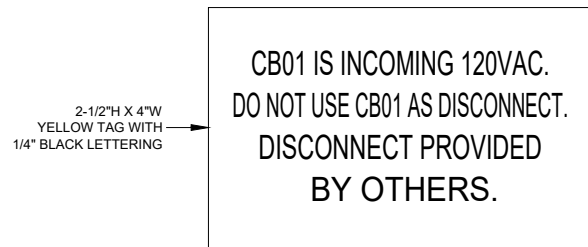


ENCLOSURE
INTERIOR DETAIL

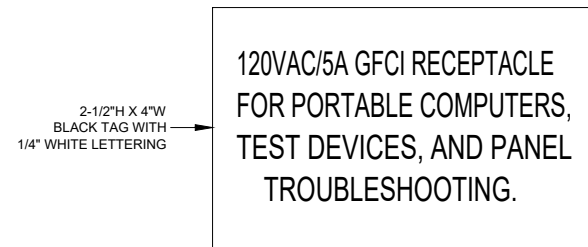
ENCLOSURE
RIGHT SIDE DETAIL



DETAIL "A"



DETAIL "B"



DETAIL "C"

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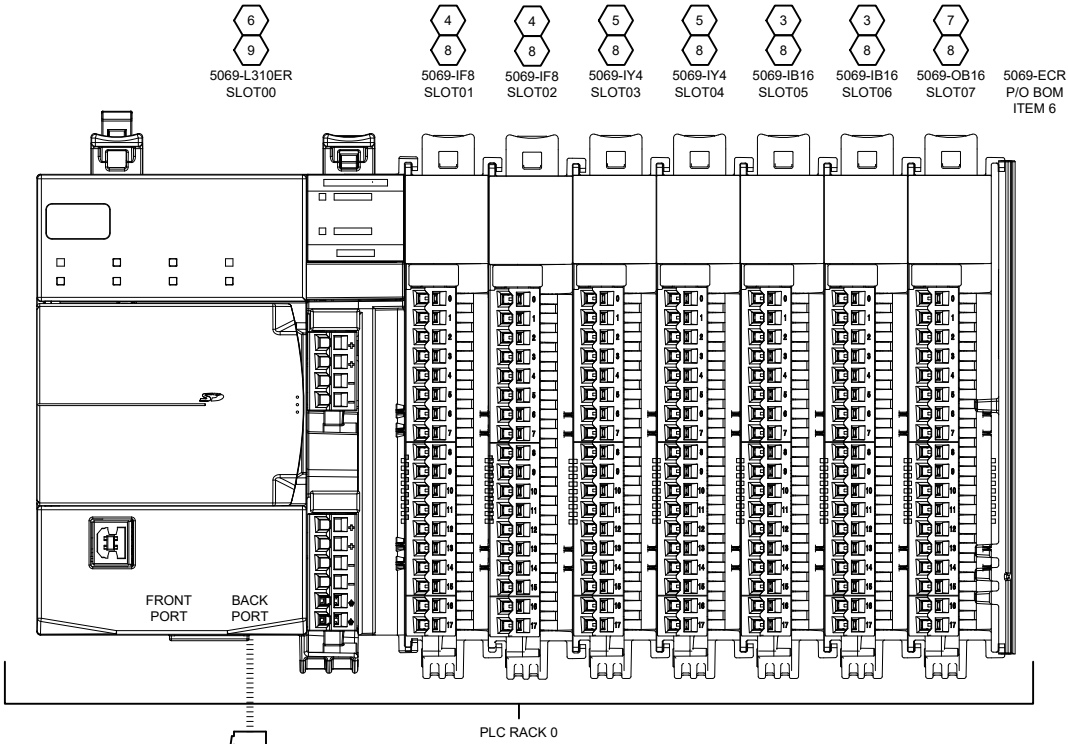
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DESCRIPTION:	CABINET LAYOUT & NAMEPLATE DETAILS		
TITLE:	PUMP STATION CONTROLLER		
NUMBER:	D-PSC	SHEET # 2 of 12	SIZE B
		REV B	

B	OPERATIONS FEEDBACK REV	2/6/2023	CWP
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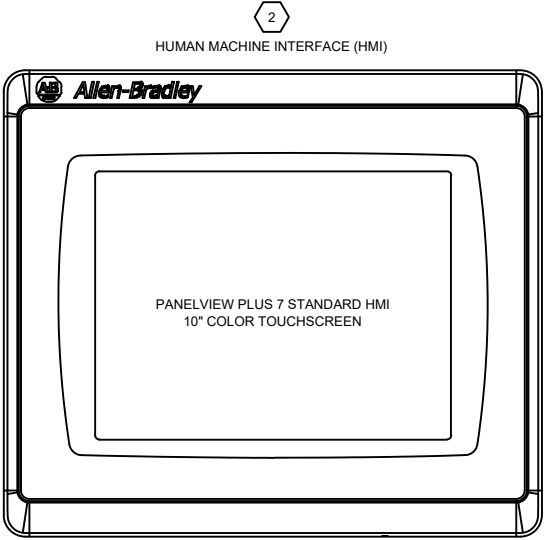
LOCAL NETWORK
IP ADDRESS LISTING

PLC: TBD
HMI: TBD



ETHERNET/IP

GIGABIT
ETHERNET
(FROM NETWORKING CABINET)



ETHERNET/IP

GIGABIT
ETHERNET
(FROM NETWORKING CABINET)

WIRE TYPE LEGEND

— - PANEL SHOP INSTALLED WIRING.
- - - - - ELECTRICIAN INSTALLED WIRING.

NOTES:

SEE SHEET 1
FOR B.O.M.,
NOTES & LEGEND

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DESCRIPTION: PLC RACK LAYOUT & COMMUNICATIONS ARCHITECTURE			
TITLE: PUMP STATION CONTROLLER			
NUMBER: D-PSC		SHEET # 3 of 12	SIZE B
		REV B	

B	OPERATIONS FEEDBACK REV	2/6/2023	CWP
A	NEW DRAWING	9/20/2022	CWP
REV	DESCRIPTION	DATE	BY

WIRE TYPE LEGEND

- — — — — - PANEL SHOP INSTALLED WIRING.
- - - - - - ELECTRICIAN INSTALLED WIRING.

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NOTES & LEGEND

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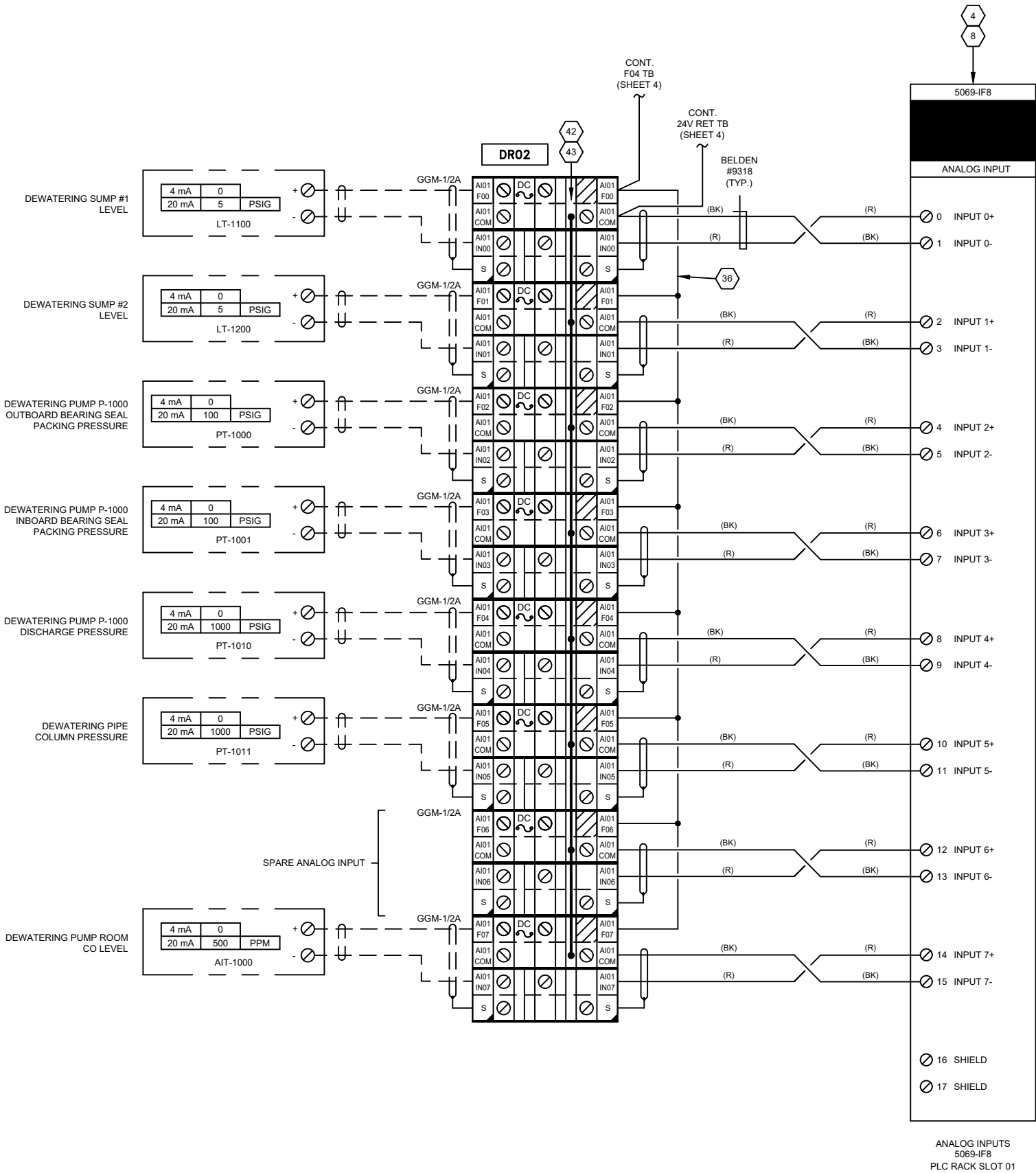


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DESCRIPTION: ANALOG INPUTS WIRING DIAGRAM			
TITLE: PUMP STATION CONTROLLER			
NUMBER: D-PSC		SHEET # 5 of 12	SIZE B
		REV B	BY



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A	NEW DRAWING	9/20/2022	CWP
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WIRE TYPE LEGEND

- — — — — - PANEL SHOP INSTALLED WIRING.
- - - - - - ELECTRICIAN INSTALLED WIRING.

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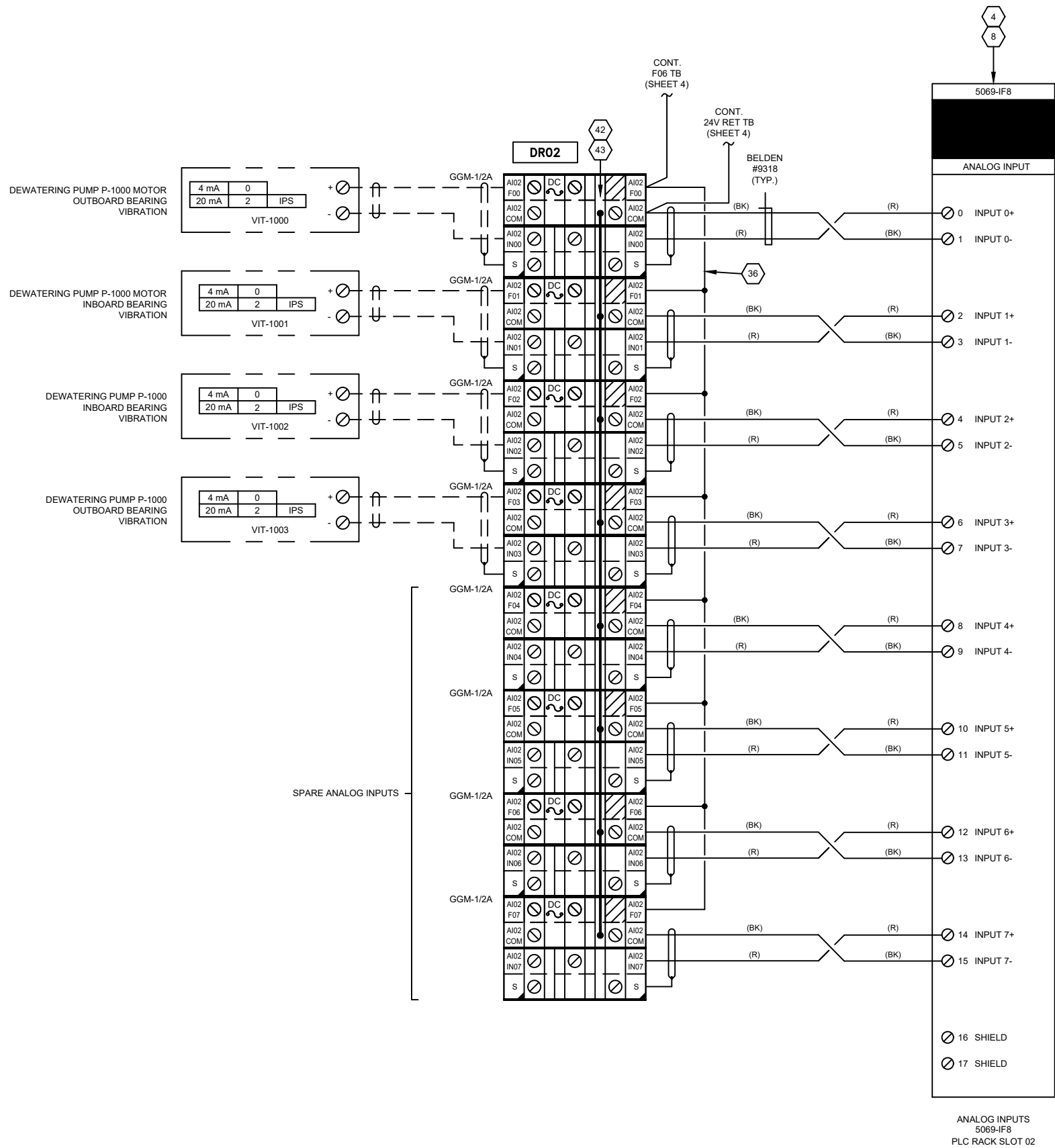


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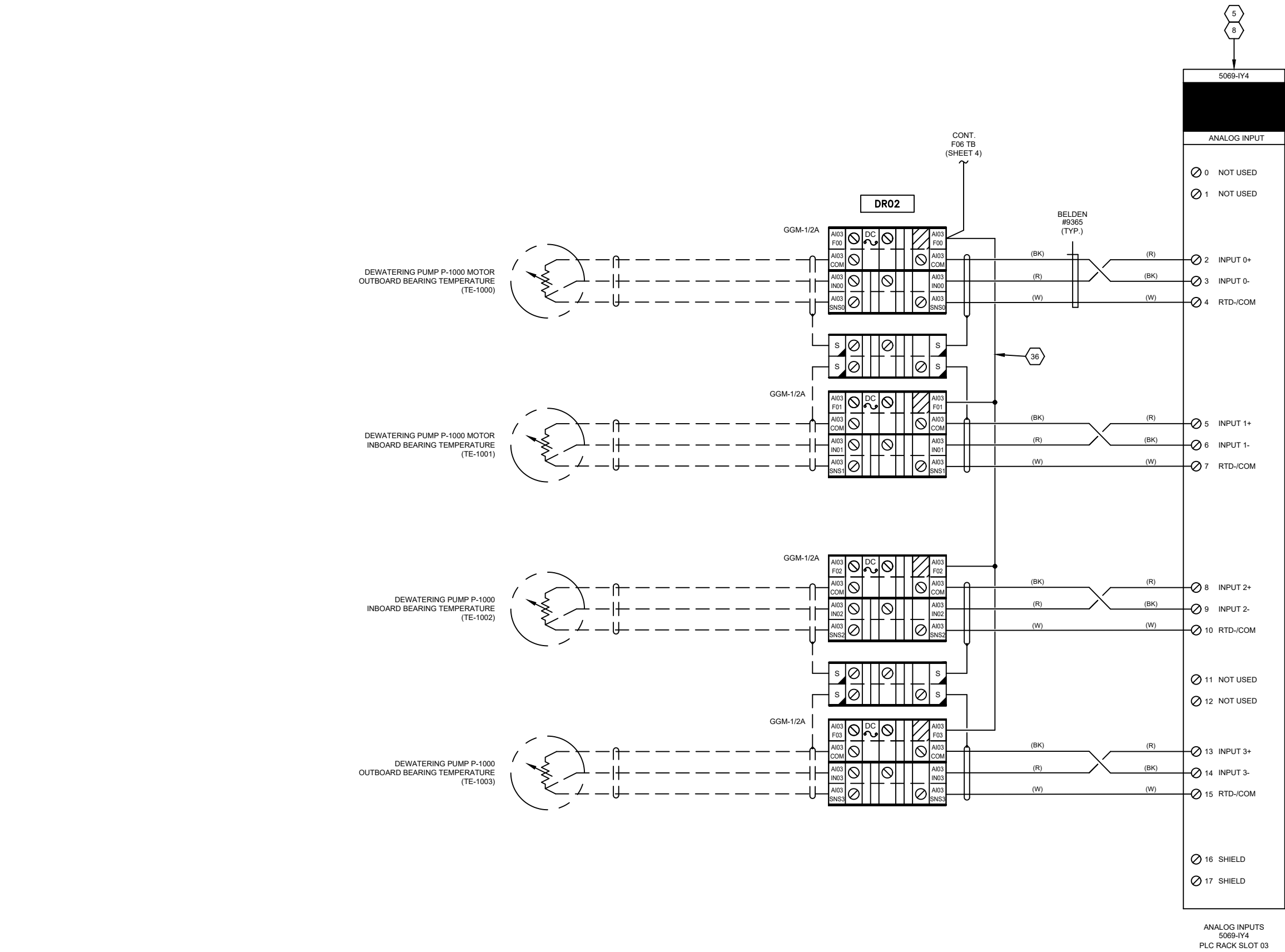
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DESCRIPTION: ANALOG INPUTS WIRING DIAGRAM			
TITLE: PUMP STATION CONTROLLER			
NUMBER: D-PSC		SHEET # 6 of 12	SIZE B
		REV B	BY



B	OPERATIONS FEEDBACK REV	2/6/2023	CWP
A	NEW DRAWING	9/20/2022	CWP
REV	DESCRIPTION	DATE	BY



WIRE TYPE LEGEND

- PANEL SHOP INSTALLED WIRING.
- ELECTRICIAN INSTALLED WIRING.

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DESCRIPTION: ANALOG INPUTS WIRING DIAGRAM			
TITLE: PUMP STATION CONTROLLER			
NUMBER: D-PSC	SHEET # 7 of 12	SIZE B	REV B

B	OPERATIONS FEEDBACK REV	2/6/2023	CWP
A	NEW DRAWING	9/20/2022	CWP
REV	DESCRIPTION	DATE	BY

WIRE TYPE LEGEND

- - PANEL SHOP INSTALLED WIRING.
- - - - - ELECTRICIAN INSTALLED WIRING.

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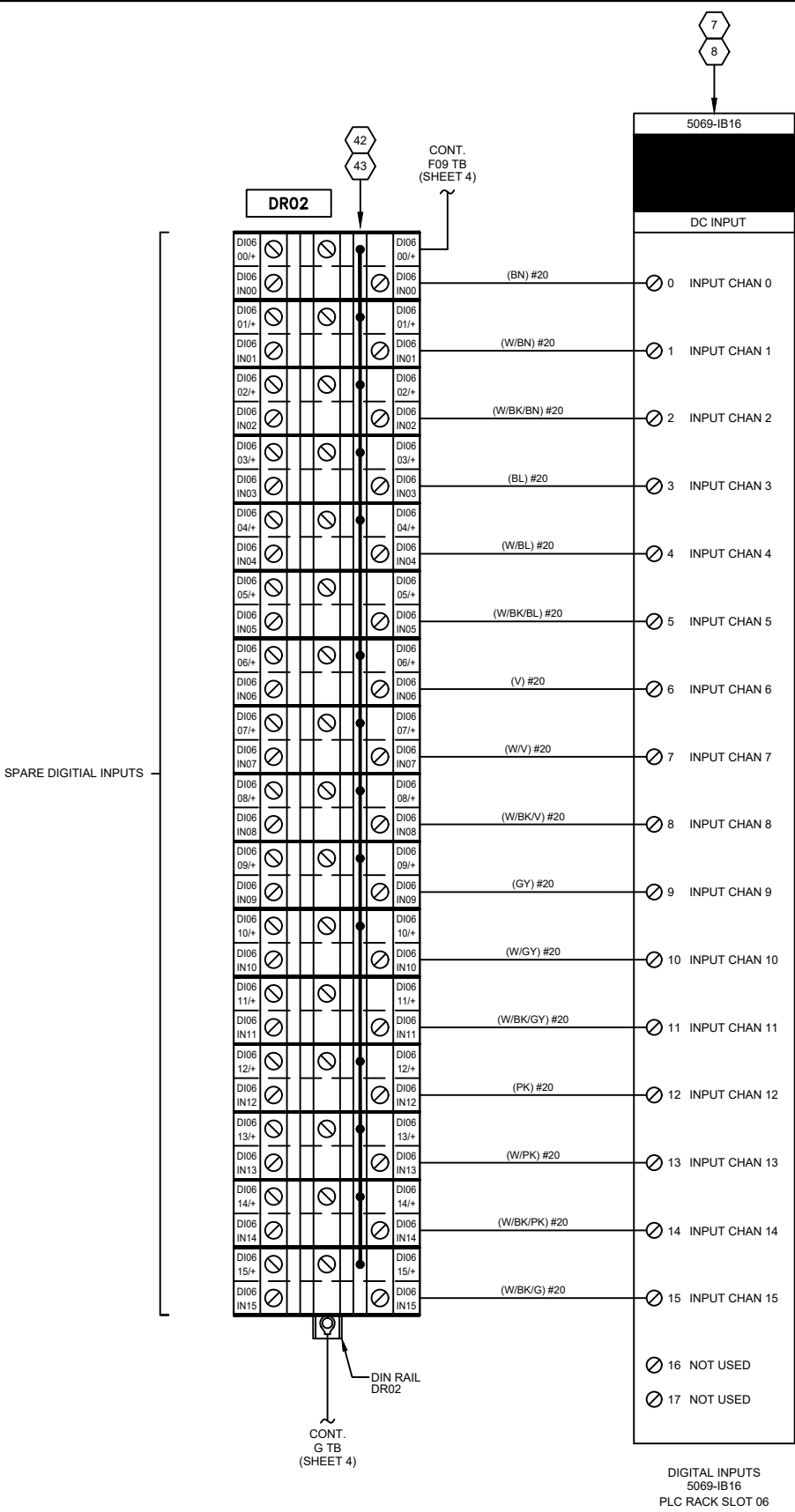
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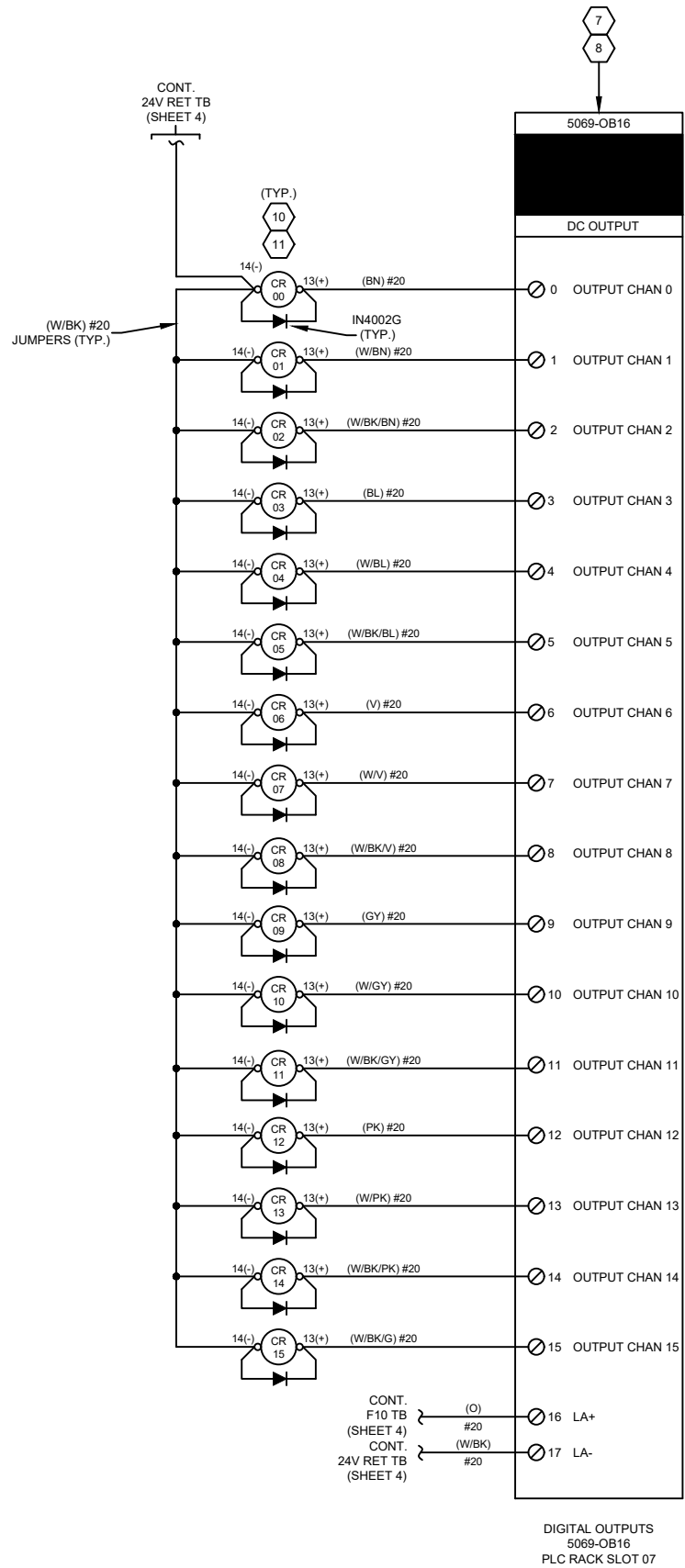
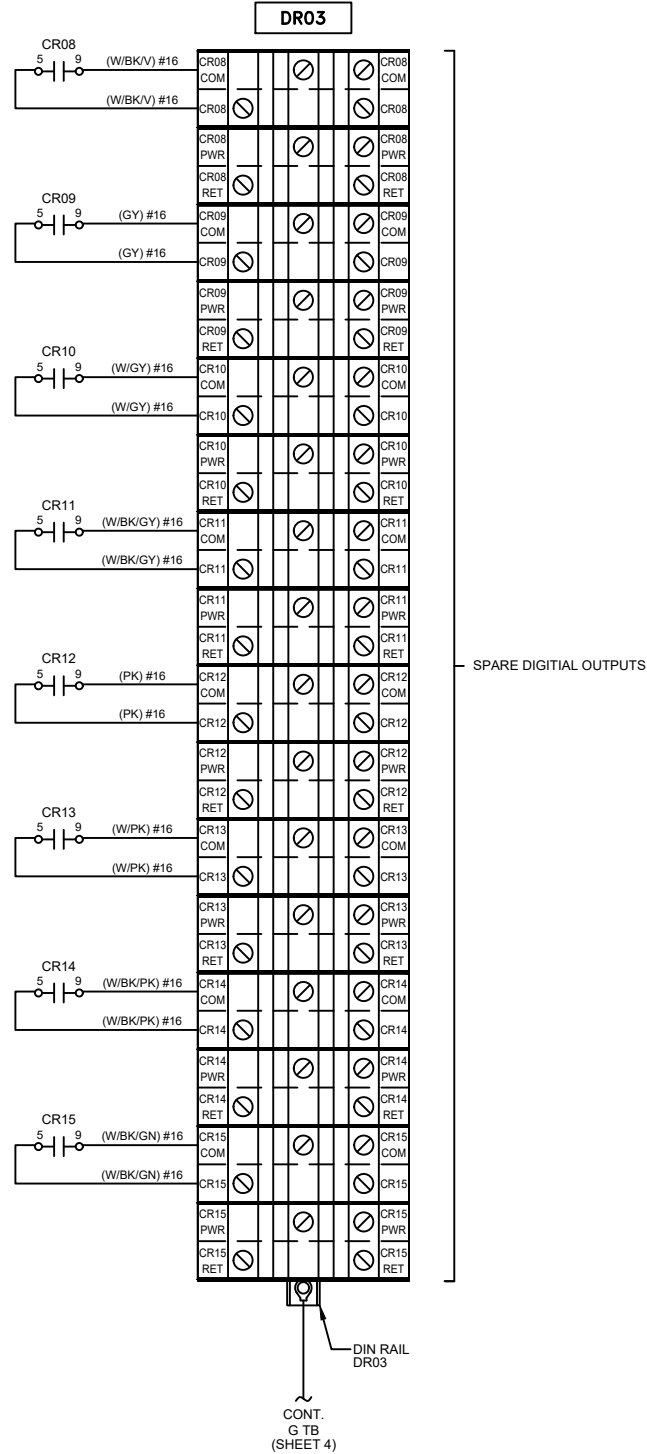
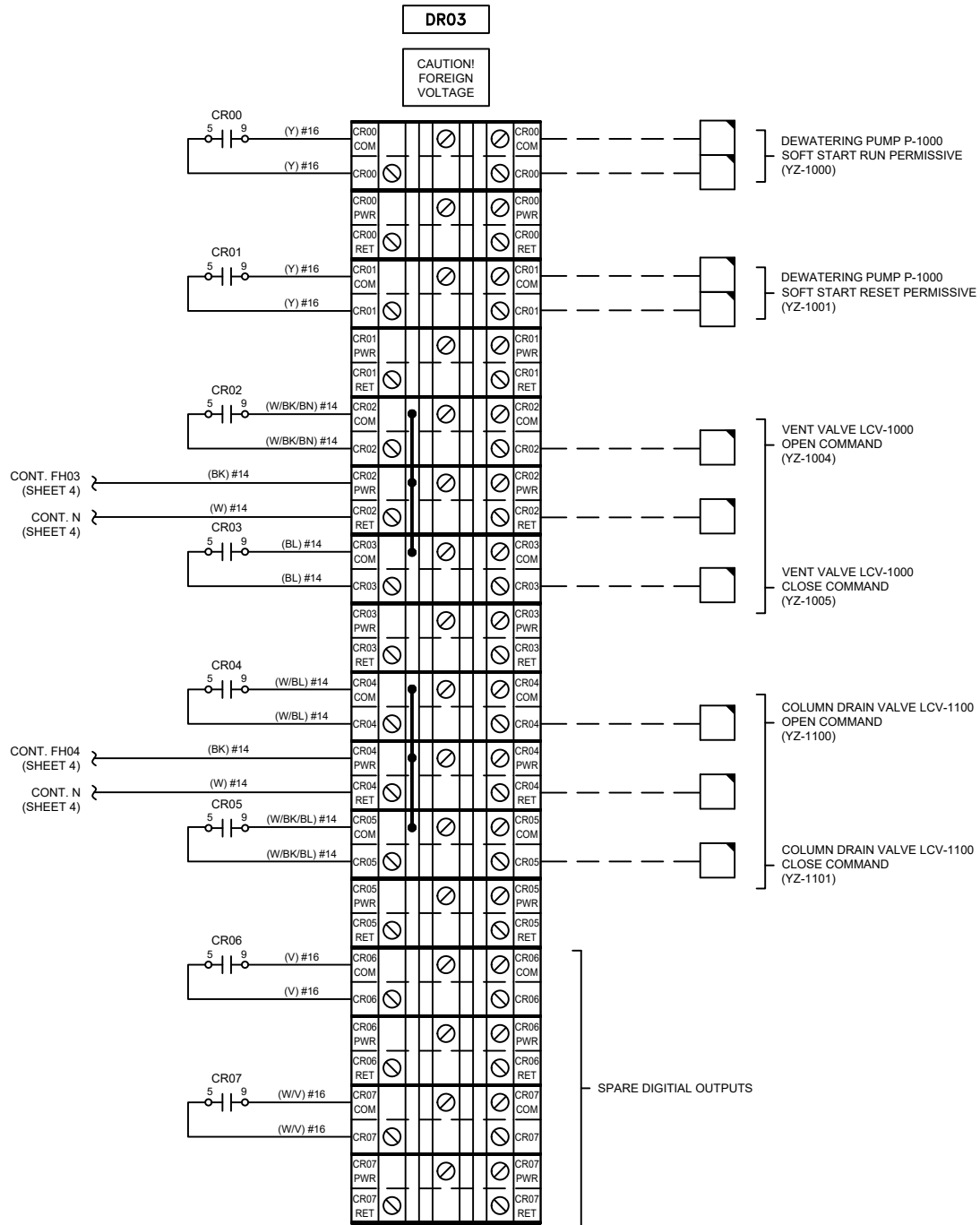
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DESCRIPTION: DIGITAL INPUTS WIRING DIAGRAM			
TITLE: PUMP STATION CONTROLLER			
NUMBER: D-PSC		SHEET # 10 of 12	SIZE B
		REV B	BY

B	OPERATIONS FEEDBACK REV	2/6/2023	CWP
A	NEW DRAWING	9/20/2022	CWP
REV	DESCRIPTION	DATE	BY





WIRE TYPE LEGEND

— — — — — - PANEL SHOP INSTALLED WIRING.
- - - - - - ELECTRICIAN INSTALLED WIRING.

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DESCRIPTION: DIGITAL OUTPUTS WIRING DIAGRAM			
TITLE: PUMP STATION CONTROLLER			
NUMBER: D-PSC	SHEET # 11 of 12	SIZE B	REV B

B	OPERATIONS FEEDBACK REV	2/6/2023	CWP
A	NEW DRAWING	9/20/2022	CWP
REV	DESCRIPTION	DATE	BY

FUSE	SIZE CLASS	TYPE	PART	RATING
FBATT	CLASS CC	SLOW	ATMR30	30A
FH01	5X20MM	SLOW	239004P	4A
FH02	5X20MM	SLOW	239005P	5A
FH03	5X20MM	SLOW	23900.5P	1/2A
FH04	5X20MM	SLOW	23900.5P	1/2A
FH05	5X20MM	SLOW	23900.5P	1/2A
FH06	5X20MM	SLOW	239004P	4A
FH07	5X20MM	SLOW	239002P	2A
FH08	5X20MM	SLOW	239002P	2A
FH09	5X20MM	SLOW	23900.5P	1/2A
FH10	5X20MM	SLOW	23900.5P	1/2A
F01	5X20MM	FAST	GGM4	4A
F02	5X20MM	FAST	GGM4	4A
F03	5X20MM	FAST	GGM1	1A
F04	5X20MM	FAST	GGM1	1A
F05	5X20MM	FAST	GGM1	1A
F06	5X20MM	FAST	GGM1	1A
F07	5X20MM	FAST	GGM1	1A
F08	5X20MM	FAST	GGM1/2	1/2A
F09	5X20MM	FAST	GGM1/2	1/2A
F10	5X20MM	FAST	GGM2	2A
F11	5X20MM	FAST	GGM1/2	1/2A
F12	5X20MM	FAST	GGM4	4A
F13	5X20MM	FAST	GGM4	4A
F14	5X20MM	FAST	GGM2	2A
F15	5X20MM	FAST	GGM2	2A
F16	5X20MM	FAST	GGM1	1A
F17	5X20MM	FAST	GGM1	1A
F18	5X20MM	FAST	GGM1/2	1/2A
F19	5X20MM	FAST	GGM1/2	1/2A
F20	5X20MM	FAST	GGM1/2	1/2A

FUSE	SIZE CLASS	TYPE	PART	RATING
AI01 F00	5X20MM	FAST	GGM1/2	1/2A
AI01 F01	5X20MM	FAST	GGM1/2	1/2A
AI01 F02	5X20MM	FAST	GGM1/2	1/2A
AI01 F03	5X20MM	FAST	GGM1/2	1/2A
AI01 F04	5X20MM	FAST	GGM1/2	1/2A
AI01 F05	5X20MM	FAST	GGM1/2	1/2A
AI01 F06	5X20MM	FAST	GGM1/2	1/2A
AI01 F07	5X20MM	FAST	GGM1/2	1/2A
AI02 F00	5X20MM	FAST	GGM1/2	1/2A
AI02 F01	5X20MM	FAST	GGM1/2	1/2A
AI02 F02	5X20MM	FAST	GGM1/2	1/2A
AI02 F03	5X20MM	FAST	GGM1/2	1/2A
AI02 F04	5X20MM	FAST	GGM1/2	1/2A
AI02 F05	5X20MM	FAST	GGM1/2	1/2A
AI02 F06	5X20MM	FAST	GGM1/2	1/2A
AI02 F07	5X20MM	FAST	GGM1/2	1/2A
AI03 F00	5X20MM	FAST	GGM1/2	1/2A
AI03 F01	5X20MM	FAST	GGM1/2	1/2A
AI03 F02	5X20MM	FAST	GGM1/2	1/2A
AI03 F03	5X20MM	FAST	GGM1/2	1/2A
AI04 F00	5X20MM	FAST	GGM1/2	1/2A
AI04 F01	5X20MM	FAST	GGM1/2	1/2A
AI04 F02	5X20MM	FAST	GGM1/2	1/2A
AI04 F03	5X20MM	FAST	GGM1/2	1/2A

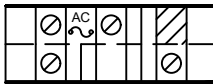
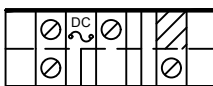
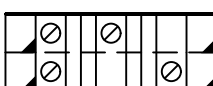
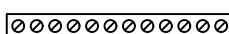
FUSE VOLTAGE RATINGS	
Ferraz Shawmut GGM Series	250VAC≤3A, 3A< 125VAC
Ferraz Shawmut ATDR Series	600VAC/300VDC
Ferraz Shawmut ATMR Series	600VAC/600VDC
Littelfuse 239 Series	250VAC≤3.5A, 3.5A< 125VAC
Littelfuse FLM Series	250VAC/125VDC
Littelfuse KLDR Series	600VAC/300VDC

RECOMMENDED SPARE FUSES (QTY NOT INCLUDED IN BOM)		
QTY	PART	RATING
2	ATMR30	30A
5	239.500P	1/2A
5	239002P	2A
5	239004P	4A
5	239005P	5A
10	GGM1/2	1/2A
5	GGM1	1A
5	GGM2	2A
5	GGM4	4A

B	OPERATIONS FEEDBACK REV	2/6/2023	CWP
A	NEW DRAWING	9/20/2022	CWP
REV	DESCRIPTION	DATE	BY

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 630 EAST SUMMIT STREET LEAD, SD 57754 1 (605) 722-8650	DRAWN BY	SIGNED	DESCRIPTION: FUSE LIST		
	CHECKED BY	SIGNED			
	APPROVED BY	SIGNED	TITLE: PUMP STATION CONTROLLER		
		SCALE NTS	NUMBER: D-PSC	SHEET # 12 of 12	SIZE B REV B

BILL OF MATERIAL					PROJECT SPECIFIC LEGEND & UL TORQUE SPECIFICATIONS			
MARK	COUNT	DESCRIPTION	MANUFACTURER	MODEL				
1	1	HMI, PANELVIEW PLUS 7 STANDARD, 10.4 INCH, COLOR TOUCH SCREEN, WIN 10 IOT, 24 VDC	ALLEN BRADLEY	2711P-T10C21D8S				
2	1	DIN RAIL, SLOTTED, 35mm X 7.5mm (1m LENGTH, PKG OF 2)	AUTOMATION DIRECT / DINNECTORS	DN-R35S1-2				
3	1	CIRCUIT BREAKER, 10A, 240 VAC / 48 VDC, 1-POLE, C CURVE	AUTOMATION DIRECT / EATON	FAZ-C10-1-NA-L-SP				
4	1	CIRCUIT BREAKER, 15A, 240 VAC / 48 VDC, 1-POLE, C CURVE	AUTOMATION DIRECT / EATON	FAZ-C15-1-NA-L-SP				
5	1	ENCLOSURE, NEMA 12, 16.38" H X 14.39" W X 8.2" D, PAINTED CARBON STEEL, SCREW CLAMPS	AUTOMATION DIRECT / HAMMOND MANUFACTURING	SCE-16148CHNF				
6	1	BACK PANEL FOR 16" H X 14" W ENCLOSURE, PAINTED CARBON STEEL	AUTOMATION DIRECT / HAMMOND MANUFACTURING	SCE-16P14				
7	1	WIRE DUCT, 1-1/2" X 3", WHITE, WITH COVER	AUTOMATION DIRECT / IBOCO	T1-1530W-1				
8	1	30 AMP FUSE	FERRAZ	ATMR30				
9	1	FUSE, 4A (GSC-4A)	LITTELFUSE	239004				
10	1	FUSE, 4A (GGM-4A)	MERSEN	GGM4				
11	10	END ANCHOR, E/NS 35N	PHOENIX CONTACT	0800886				
12	3	END CAP FOR UK10N	PHOENIX CONTACT	3003020				
13	3	TERMINAL BLOCK, UK10N	PHOENIX CONTACT	3005073				
14	1	24 VDC FUSE PLUG, P-FUXS20LED24	PHOENIX CONTACT	3036819				
15	1	250 VAC FUSE PLUG, P-FUXS20LA250	PHOENIX CONTACT	3036835				
16	2	DOUBLE LEVEL FUSIBLE TERMINAL BLOCK, UTTB4-TG	PHOENIX CONTACT	3044720				
17	1	DOUBLE LEVEL GROUND TERMINAL BLOCK, UTT4-PE	PHOENIX CONTACT	3044759				
18	2	SPACER PLATE - DP-UTTB 2,5/4	PHOENIX CONTACT	3047303				
19	2	DOUBLE LEVEL TB CAP, ATP-UTTB 2.5/4	PHOENIX CONTACT	3047316				
20	1	CLASS CC FUSE HOLDER, UK 10.3-CC HESILED N 600	PHOENIX CONTACT	3048616				
21	1	BATTERY, LONG LIFE VRLA, 12VDC, 28Ah	POWER SONIC	PG-12V30				
22	1	POWER SUPPLY, 24VDC, 10A	PULS	CS10.241				
23	1	UPS, 24VDC, 10A	PULS	UB10.242				
24	1	GROUND BUS BAR	SIEMENS	ECGB10				
					15 16  UPPER LEVEL - DOUBLE LEVEL AC FUSED TERMINAL BLOCK, UTTB4-TG [0.6-0.8 Nm] LOWER LEVEL 14 16  - DOUBLE LEVEL DC FUSED TERMINAL BLOCK, UTTB4-TG [0.6-0.8 Nm] 17  - DOUBLE LEVEL GROUND TERMINAL BLOCK, UTTB 4-PE [0.6-0.8 Nm] 13  - TERMINAL BLOCK, UK10N [1.5-1.8 Nm] 3 OR 4  - EATON FAZ SERIES CIRCUIT BREAKER [2.4 Nm] 24  - SIEMENS ECGB10 GROUND BUS BAR [2.7-3.3 Nm] 20  - UK 10,3 HESI CLASS CC FUSE HOLDER [2.5-3 Nm]			
					PROJECT SPECIFIC NOTES			
					UNITS ARE SHIPPED WITH DEFAULT IP ADDRESSES OF: HMI = TBD REFERENCE SHEET 5 FOR FUSE LIST			
					NOTES: GENERAL			
					1 - MAIN DISCONNECT AND BRANCH CIRCUIT PROTECTION TO BE PROVIDED BY OTHERS. 2 - PANEL WIRING SHALL BE MTW RATED FOR 75°C TINNED, CU, UNLESS OTHERWISE NOTED. 3 - FIELD WIRING SHALL BE CU, RATED AT 60°C MINIMUM. 4 - CONDUIT HUBS SHALL BE OF SAME RATING AS ENCLOSURE. 5 - WIRE FERRULES SHALL BE USED AT TERMINAL BLOCKS 6 - MOUNT DIN RAILS ON 1/2 INCH. STANDOFFS 7 - THE PARTS LISTED IN THE BILL OF MATERIALS ARE FOR REFERENCE ONLY AND DO NOT GUARANTEE THE EXACT QUANTITIES REQUIRED TO CONSTRUCT A COMPLETE PANEL. THE DESIGN ENGINEER MAY SUBSTITUTE COMPONENTS WITH "LIKE EQUALS" PENDING APPROVAL BY THE SDSTA. THE SDSTA RESERVES THE RIGHT TO APPROVE OR REJECT ANY PROPOSED SUBSTITUTE PARTS. THE DESIGNER IS SOLELY RESPONSIBLE FOR ENSURING THAT THE SUBSTITUTED PARTS MEET ALL APPLICABLE QUALITY AND PERFORMANCE REQUIREMENTS.			

A		NEW DRAWING		2/7/2023		CWP	
REV		DESCRIPTION		DATE		BY	



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SIGNED

SCALE

NTS

DESCRIPTION:

BILL OF MATERIALS,
NOTES, AND LEGEND

TITLE:

PROCESS MONITORING HMI

NUMBER:

D-PMH

SHEET #

1 of 5

SIZE

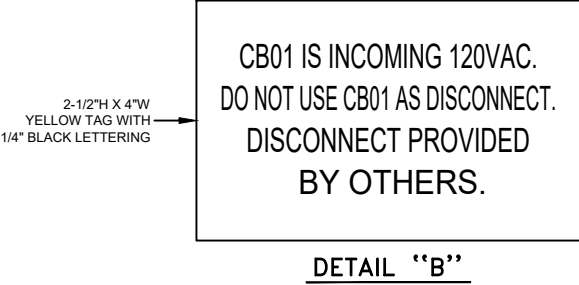
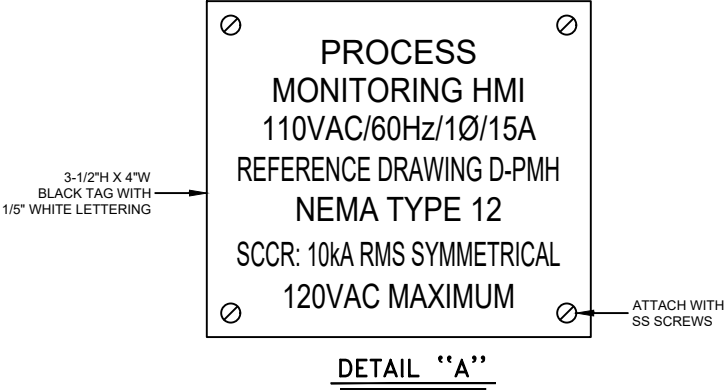
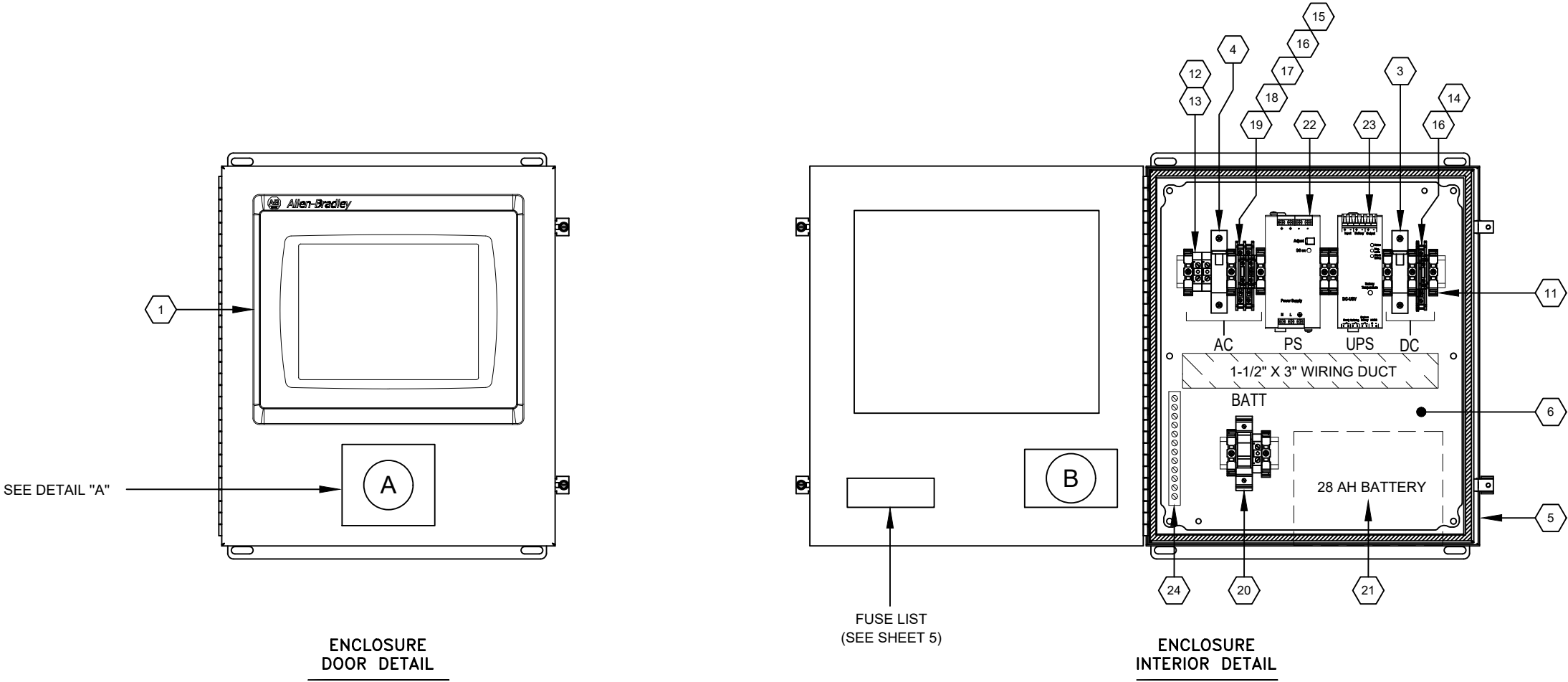
B

REV

A

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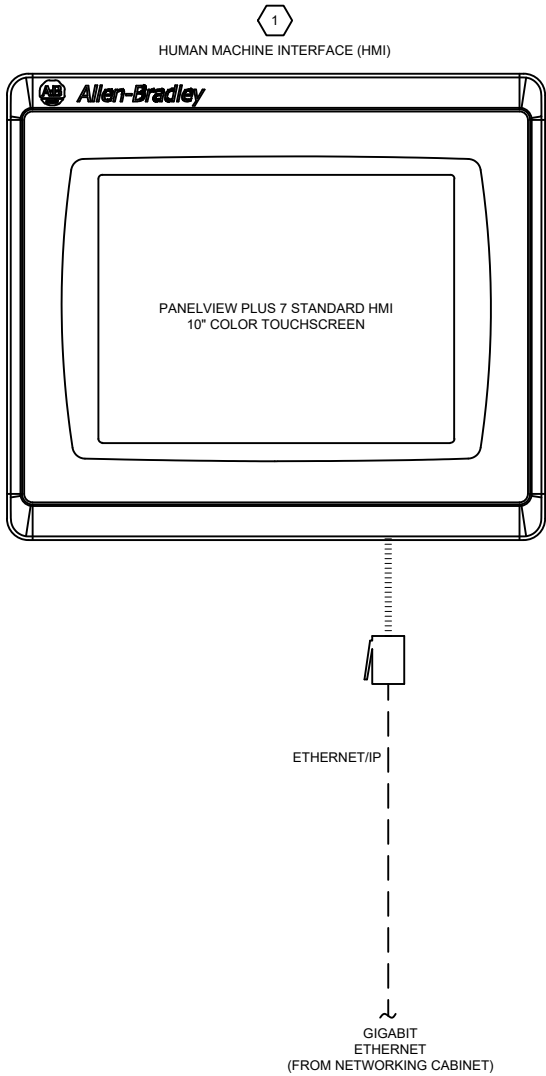
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APPROVED BY	SIGNED
	SCALE NTS

DESCRIPTION:		CABINET LAYOUT & NAMEPLATE DETAILS	
TITLE:		PROCESS MONITORING HMI	
NUMBER:	D-PMH	SHEET # 2 of 5	SIZE B
		REV A	

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REV	DESCRIPTION	DATE	BY

LOCAL NETWORK
IP ADDRESS LISTING

HMI: TBD



WIRE TYPE LEGEND

- PANEL SHOP INSTALLED WIRING.
- ELECTRICIAN INSTALLED WIRING.

NOTES:

SEE SHEET 1
FOR B.O.M.,
NOTES & LEGEND

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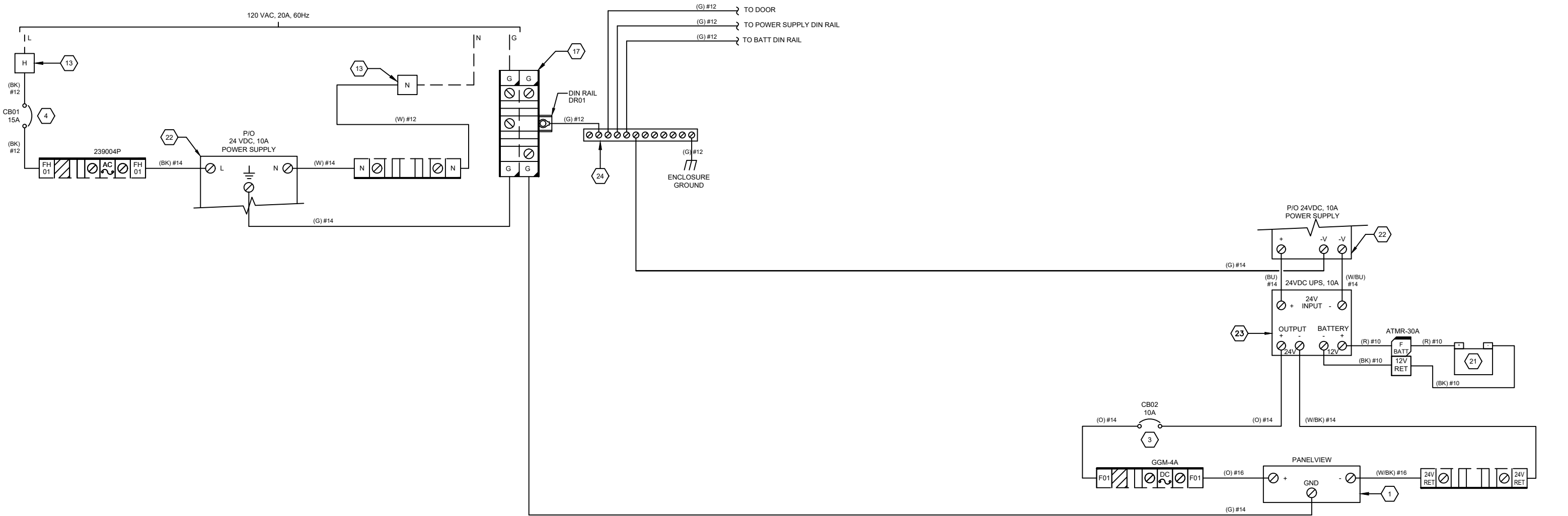
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DESCRIPTION: COMMUNICATIONS ARCHITECTURE			
TITLE: PROCESS MONITORING HMI			
NUMBER: D-PMH	SHEET # 3 of 5	SIZE B	REV A

A	NEW DRAWING	2/7/2023	CWP
REV	DESCRIPTION	DATE	BY



WIRE TYPE LEGEND

- PANEL SHOP INSTALLED WIRING.
- ELECTRICIAN INSTALLED WIRING.

NOTES:

SEE SHEET 1
FOR B.O.M.,
NOTES & LEGEND

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DESCRIPTION:		AC AND DC POWER WIRING DIAGRAM	
TITLE:		PROCESS MONITORING HMI	
NUMBER:		D-PMH	
		SHEET # 4 of 5	SIZE B
		REV A	

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REV	DESCRIPTION	DATE	BY

FUSE	SIZE CLASS	TYPE	PART	RATING
FBATT	CLASS CC	SLOW	ATMR30	30A
FH01	5X20MM	SLOW	239004P	4A
F01	5X20MM	FAST	GGM4	4A

FUSE VOLTAGE RATINGS	
Ferraz Shawmut GGM Series	250VAC≤3A, 3A< 125VAC
Ferraz Shawmut ATDR Series	600VAC/300VDC
Ferraz Shawmut ATMR Series	600VAC/600VDC
Littelfuse 239 Series	250VAC≤3.5A, 3.5A< 125VAC
Littelfuse FLM Series	250VAC/125VDC
Littelfuse KLDR Series	600VAC/300VDC

RECOMMENDED SPARE FUSES (QTY NOT INCLUDED IN BOM)		
QTY	PART	RATING
2	ATMR30	30A
2	239004P	4A
2	GGM4	4A

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DESCRIPTION: FUSE LIST			
TITLE: PROCESS MONITORING HMI			
NUMBER: D-PMH		SHEET # 5 of 5	SIZE B
		REV A	