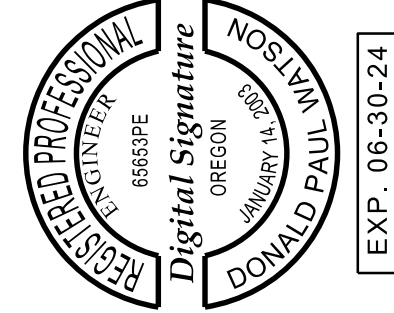


1 2 3 4 5 6

SHT NO.	DWG NO.	DRAWING TITLE
		G - GENERAL
01	G-01	DRAWING INDEX
		E - SITE ELECTRICAL
02	E-01	ELECTRICAL SITE PLAN
		I - INSTRUMENTATION & CONTROLS
03	I-01	BISULFITE CONTROLS - PLC CONTROL PANEL 12CP01 - ENCLOSURE ASSEMBLY CONCEPT
04	I-02	BISULFITE CONTROLS - PLC CONTROL PANEL 12CP01 - PANEL ASSEMBLY CONCEPT
05	I-03	BISULFITE CONTROLS - PLC CONTROL PANEL 12CP01 - BOM AND NAMEPLATE SCHEDULE CONCEPT
06	I-04	BISULFITE CONTROLS - PLC CONTROL PANEL 12CP01 - 120VAC POWER DISTRIBUTION CONCEPT
07	I-05	BISULFITE CONTROLS - PLC CONTROL PANEL 12CP01 - 24VDC POWER DISTRIBUTION CONCEPT
08	I-06	BISULFITE CONTROLS - PLC CONTROL PANEL 12CP01 - AI MODULE STANDARD WIRING CONCEPT
09	I-07	BISULFITE CONTROLS - PLC CONTROL PANEL 12CP01 - AO MODULE STANDARD WIRING CONCEPT
10	I-08	BISULFITE CONTROLS - PLC CONTROL PANEL 12CP01 - DI MODULE STANDARD WIRING CONCEPT
11	I-09	BISULFITE CONTROLS - PLC CONTROL PANEL 12CP01 - DO MODULE STANDARD WIRING CONCEPT
12	I-10	BISULFITE CONTROLS - PLC CONTROL PANEL 12CP01 - RACK 00 SLOT 03, DI POINT 0-7 WIRING CONCEPT
13	I-11	BISULFITE CONTROLS - PLC CONTROL PANEL 12CP01 - RACK 00 SLOT 03, DI POINT 8-15 WIRING CONCEPT
14	I-12	BISULFITE CONTROLS - PLC CONTROL PANEL 12CP01 - RACK 00 SLOT 04, DO POINT 0-7 WIRING CONCEPT
15	I-13	BISULFITE CONTROLS - PLC CONTROL PANEL 12CP01 - RACK 00 SLOT 04, DO POINT 8-15 WIRING CONCEPT
16	I-14	BISULFITE CONTROLS - PLC CONTROL PANEL 12CP01 - RACK 00 SLOT 08, AI CH 0-3 WIRING CONCEPT
17	I-15	BISULFITE CONTROLS - PLC CONTROL PANEL 12CP01 - RACK 00 SLOT 08, AI CH 4-7 WIRING CONCEPT
18	I-16	BISULFITE CONTROLS - PLC CONTROL PANEL 12CP01 - RACK 00 SLOT 09, AO CH 0-7 WIRING CONCEPT
19	I-17	BISULFITE CONTROLS - PLC CONTROL PANEL 12CP01 - NETWORK DETAILS CONCEPT

A  
B  
C  
D



NO.	DATE	DSGN	DR	CHK	REVISION	BY	APVD

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GENERAL  
DRAWING INDEX

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BISULFITE CONTROLS PROJECT  
ROSEBURG, OREGON

VERIFY SCALE  
BAR IS ONE INCH ON ORIGINAL DRAWING.  
DATE      DECEMBER 2023  
PROJ      107769  
DWG      G-01  
SHEET      01

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M.K.O/S      J.BOSS      D.WATSON      A.CHANG  
DR      CHK      APVD      BY

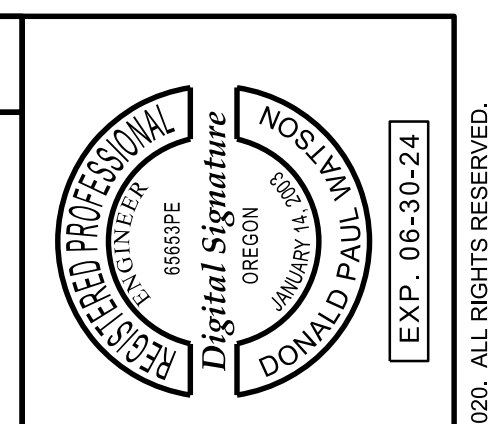
1 2 3 4 5 6

**GENERAL NOTES**

- CONTRACTOR ALLOWED TO COMBINE LIKE CABLE TYPES IN A SINGLE CONDUIT WITH TEE FOR INDIVIDUAL END POINTS. COMBINING DIFFERENT VOLTAGES IS NOT ALLOWED.

**SHEET KEYNOTES**

- FIBER CABLE TO BE ONE CONTINUOUS SEGMENT WITH NO SPLICES, TERMINATED AT INFLUENT PUMP STATION FIBER OPTIC PATCH PANEL AND AT BISULFITE BUILDING FIBER PATCH PANEL.
- INSTALL FIBER PATCH CORDS AND CAT6 PATCH CORDS AS SHOWN ON NETWORK DRAWING. COORDINATE WITH ENGINEER.
- INSTALL 37" X 13" X 2" CONCRETE HOUSEKEEPING PAD ANCHORED TO EXISTING FLOOR. ANCHOR PANEL 12CP01 TO PAD WITH CONCRETE ANCHORS.
- CONTRACTOR TO CONFIRM EXISTING SPARE CONDUITS ARE NOT CRUSHED OR PLUGGED AND AVAILABLE FOR FIBER OPTIC CABLE INSTALLATION PRIOR TO ORDERING FIBER OPTIC CABLE.



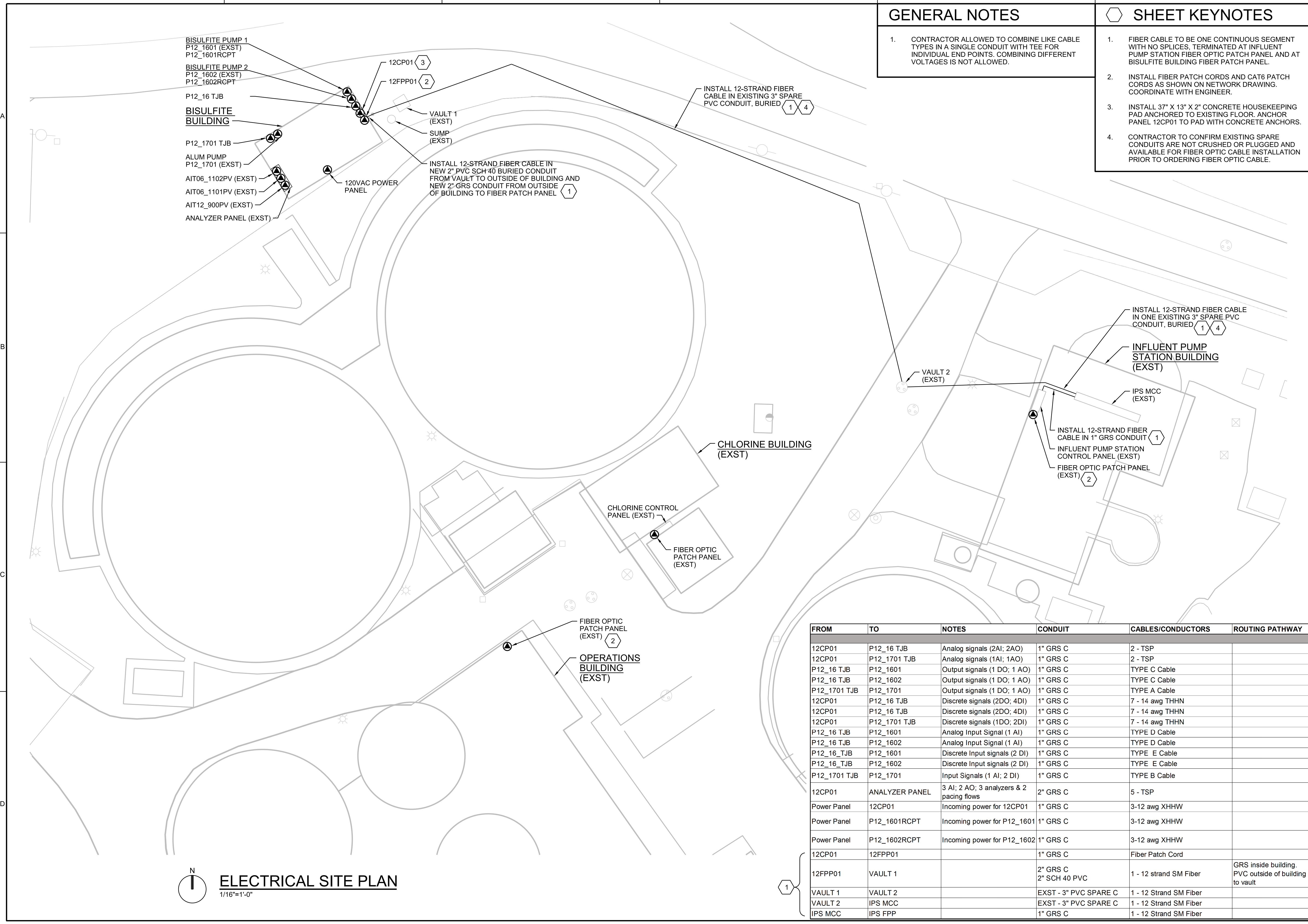
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BISULFITE CONTROLS PROJECT  
ROSEBURG, OREGON

**Jacobs**  
ELECTRICAL  
SITE PLAN

VERIFIED SCALE  
BAR IS ONE INCH ON ORIGINAL DRAWING.  
0 1"

DATE: DECEMBER 2023  
PROJ: 107769  
DWG: E-01  
SHEET: 02



FROM	TO	NOTES	CONDUIT	CABLES/CONDUCTORS	ROUTING PATHWAY
12CP01	P12_16 TJB	Analog signals (2AI; 2AO)	1" GRS C	2 - TSP	
12CP01	P12_1701 TJB	Analog signals (1AI; 1AO)	1" GRS C	2 - TSP	
P12_16 TJB	P12_1601	Output signals (1 DO; 1 AO)	1" GRS C	TYPE C Cable	
P12_16 TJB	P12_1602	Output signals (1 DO; 1 AO)	1" GRS C	TYPE C Cable	
P12_1701 TJB	P12_1701	Output signals (1 DO; 1 AO)	1" GRS C	TYPE A Cable	
12CP01	P12_16 TJB	Discrete signals (2DO; 4DI)	1" GRS C	7 - 14 awg THHN	
12CP01	P12_16 TJB	Discrete signals (2DO; 4DI)	1" GRS C	7 - 14 awg THHN	
12CP01	P12_1701 TJB	Discrete signals (1DO; 2DI)	1" GRS C	7 - 14 awg THHN	
P12_16 TJB	P12_1601	Analog Input Signal (1 AI)	1" GRS C	TYPE D Cable	
P12_16 TJB	P12_1602	Analog Input Signal (1 AI)	1" GRS C	TYPE D Cable	
P12_16_TJB	P12_1601	Discrete Input signals (2 DI)	1" GRS C	TYPE E Cable	
P12_16_TJB	P12_1602	Discrete Input signals (2 DI)	1" GRS C	TYPE E Cable	
P12_1701 TJB	P12_1701	Input Signals (1 AI; 2 DI)	1" GRS C	TYPE B Cable	
12CP01	ANALYZER PANEL	3 AI; 2 AO; 3 analyzers & 2 pacing flows	2" GRS C	5 - TSP	
Power Panel	12CP01	Incoming power for 12CP01	1" GRS C	3-12 awg XHHW	
Power Panel	P12_1601RCPT	Incoming power for P12_1601	1" GRS C	3-12 awg XHHW	
Power Panel	P12_1602RCPT	Incoming power for P12_1602	1" GRS C	3-12 awg XHHW	
12CP01	12FPP01		1" GRS C	Fiber Patch Cord	
12FPP01	VAULT 1		2" GRS C 2" SCH 40 PVC	1 - 12 strand SM Fiber	GRS inside building. PVC outside of building to vault
VAULT 1	VAULT 2		EXST - 3" PVC SPARE C	1 - 12 Strand SM Fiber	
VAULT 2	IPS MCC		EXST - 3" PVC SPARE C	1 - 12 Strand SM Fiber	
IPS MCC	IPS FPP		1" GRS C	1 - 12 Strand SM Fiber	

**ELECTRICAL SITE PLAN**  
1/16"=1'-0"

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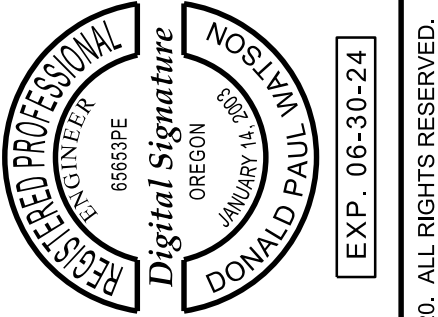


### GENERAL SHEET NOTES

1. CONDUIT FROM OUTSIDE OF BUILDING TO ENTER SIDE OF PANEL NO MORE THAN 10" ABOVE THE FLOOR.
2. SUBMIT ANCHORAGE AND BRACING DESIGN DRAWINGS, CUT SHEETS, AND INSTALLATION INFORMATION. SEE SPECIFICATIONS.

### SHEET KEYNOTES

1. INSTALL 37" X 13" X 2" CONCRETE HOUSEKEEPING PAD ANCHORED TO EXISTING FLOOR. ANCHOR PANEL 12CP01 TO PAD WITH CONCRETE ANCHORS.
2. HMI MONITOR AND COMPUTER POWER TO PLUG DIRECTLY INTO THE BACK OF THE UPS OR A DEDICATED RECEPTACLE IF THE CABLES ARE NOT LONG ENOUGH TO REACH THE UPS.
3. MAX AVAILABLE SPACE FOR PANEL WIDTH IS 48".

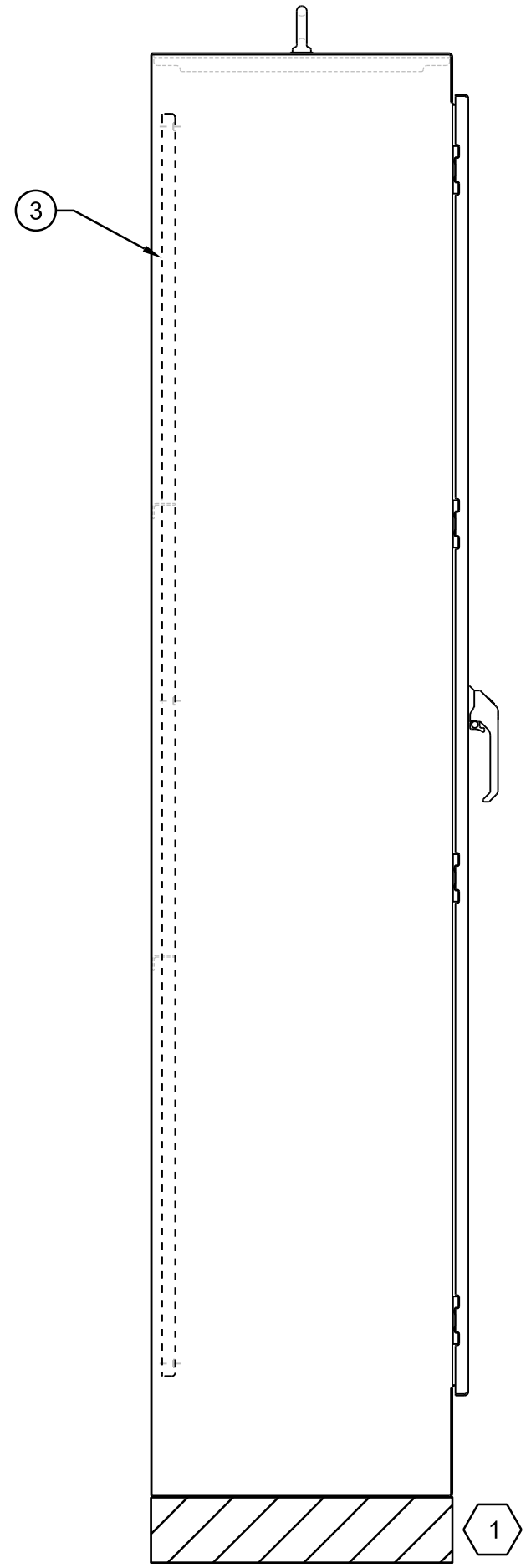


NO.	DATE	DR	CHK	BY
		M.KOJIS	J.BOSS	A.CHANG
				APVD
				APVD

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ROSEBURG, OREGON

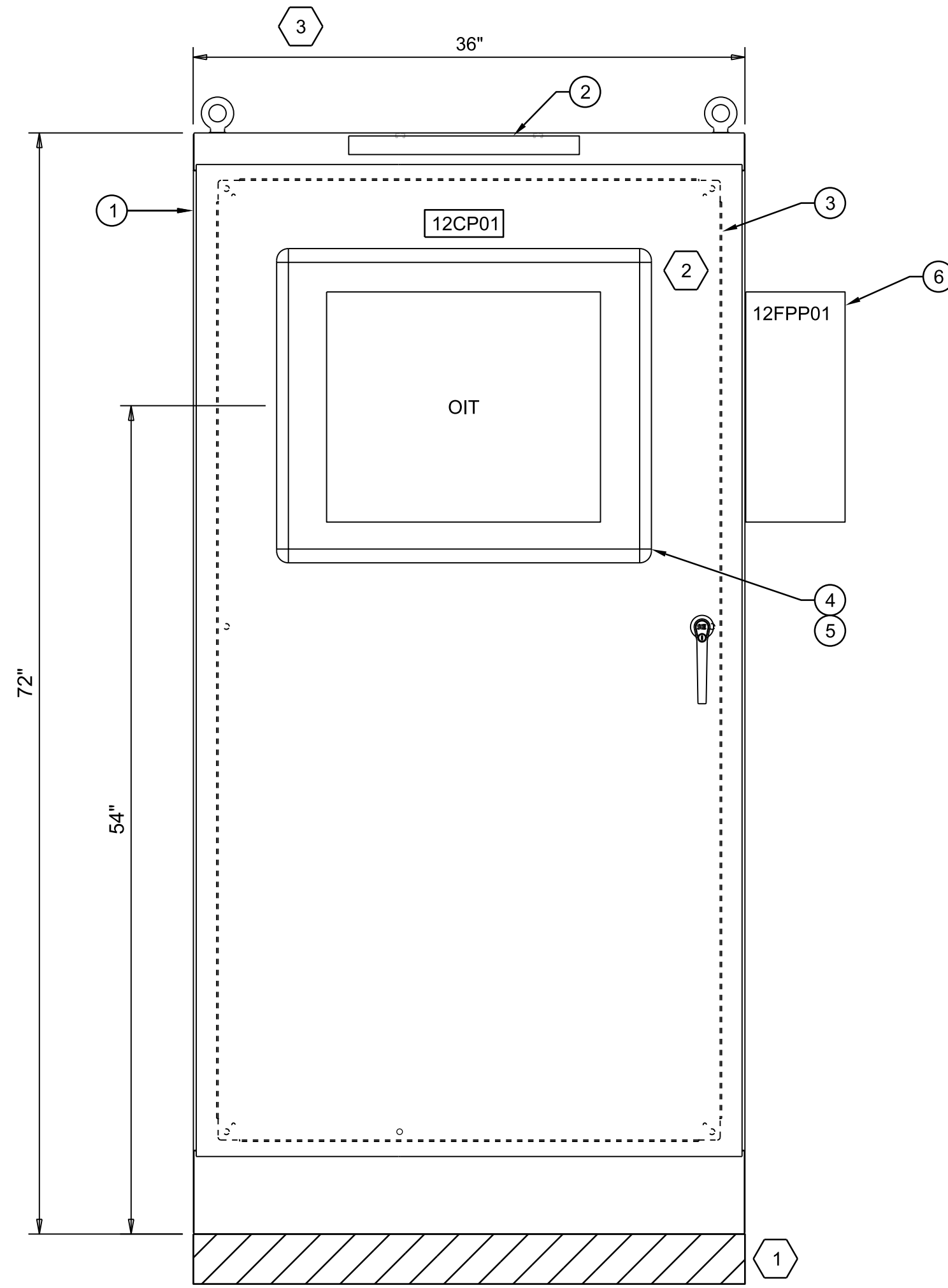
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INSTRUMENTATION AND CONTROL  
**BISULFITE CONTROLS  
PLC CONTROL PANEL 12CP01  
ENCLOSURE ASSEMBLY**

DATE	DECEMBER 2023
PROJ	107769
DWG	I-01
SHEET	03



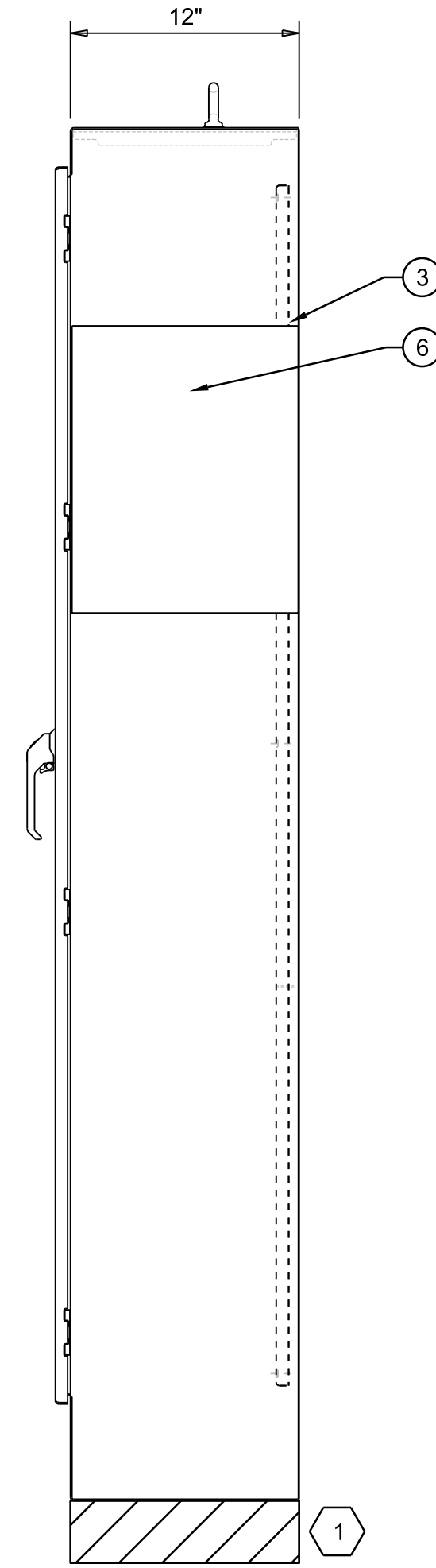
**12CP01 - LEFT SIDE ELEVATION**

1 1/2"=1'-0"



**12CP01 - FRONT ELEVATION**

1 1/2"=1'-0"



**12CP01 - RIGHT SIDE ELEVATION**

1 1/2"=1'-0"

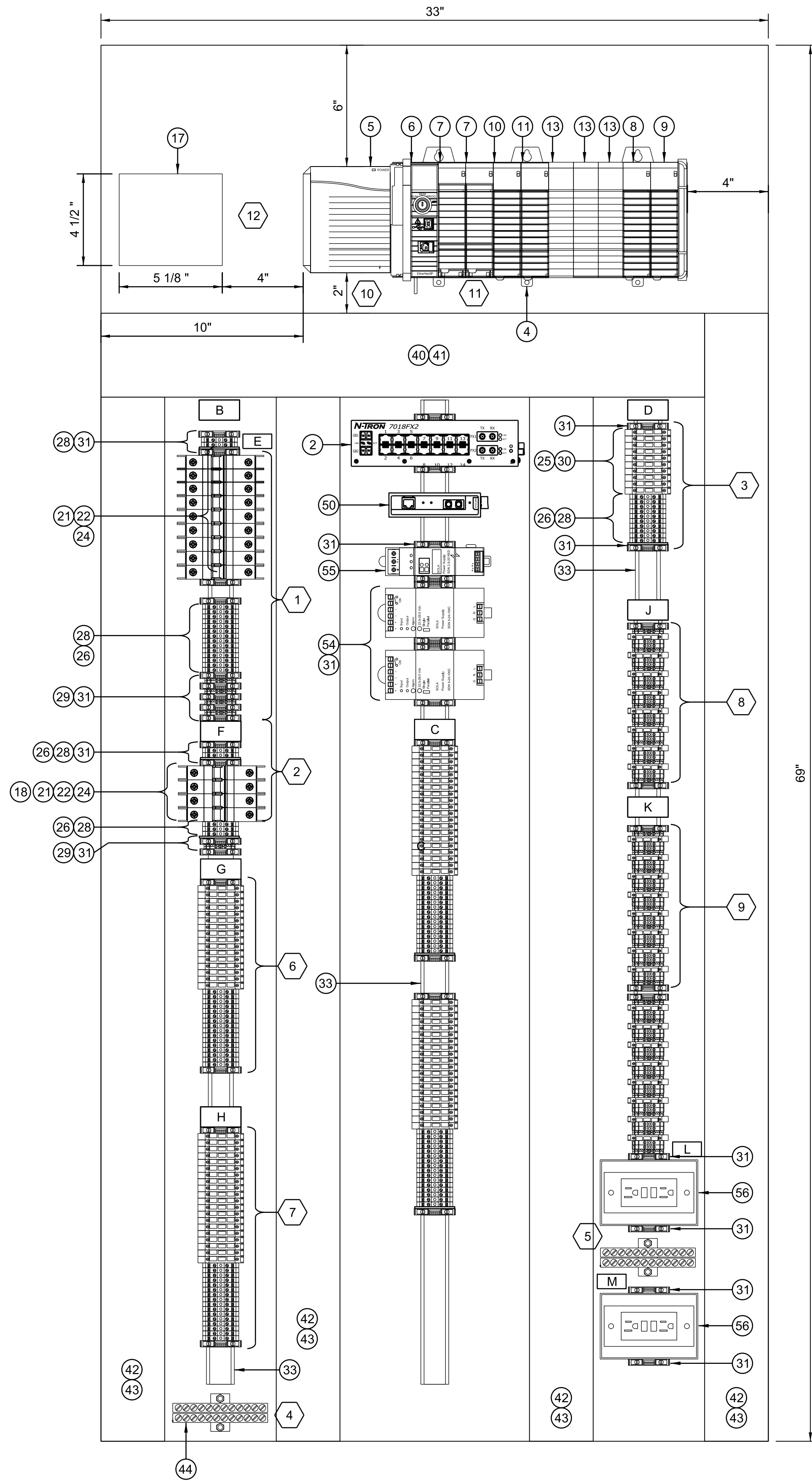
Item	Qty	Part number	Description	Vendor	Note
1	1	SCE-72EL3612LP	Saginaw EL Enclosure - 72"H x 36"W x 12"D	SCE	NEMA 12
2	1	SCE-72LF24NO	LED Enclosure Light, 24", Integral Door Switch	SCE	
3	1	SCE-72P36	Steel Back Panel For 72" x 36" Saginaw Electrical Enclosures	SCE	
4	1	E125897	2002L 20" Touchscreen Monitor	ELO	
5	1		Touchscreen Mounting Brackets	ELO	
6	1	FT-2RU6AP	2U 19" Patch Panel For 6 F-Type Adapter Plates	Ortronics	Or Equivalent

### GENERAL SHEET NOTES

- REFER TO NAMEPLATE SCHEDULE DRAWING FOR NAMEPLATE DATA.
- UPS TO BE LOCATED IN BOTTOM OF PANEL.

### SHEET KEYNOTES

- 120VAC UPS POWER DISTRIBUTION.
- 120VAC UTILITY POWER DISTRIBUTION.
- 24VDC POWER DISTRIBUTION.
- 120VAC GROUND.
- 24VDC GROUND.
- DISCRETE INPUT MODULE TERMINAL BLOCKS - SEE DRAWING I-08 FOR BOM.
- DISCRETE OUTPUT MODULE TERMINAL BLOCKS - SEE DRAWING I-09 FOR BOM.
- ANALOG INPUT MODULE TERMINAL BLOCKS - SEE DRAWING I-06 FOR BOM.
- ANALOG OUTPUT MODULE TERMINAL BLOCKS - SEE DRAWING I-07 FOR BOM.
- PROVIDE MINIMUM 4 INCH SPACE AROUND PLC FOR HEAT DISSIPATION.
- SLOT 1 NETWORK MODULE FOR SCADA NETWORK. SLOT 2 NETWORK MODULE FOR I/O NETWORK.
- HMI MONITOR AND COMPUTER POWER TO PLUG DIRECTLY INTO THE BACK OF THE UPS OR A DEDICATED RECEPTACLE IF THE CABLES ARE NOT LONG ENOUGH TO REACH THE UPS.



**12CP01 BACK PANEL ELEVATION**  
 3"=1'-0"

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**BISULFITE CONTROLS**  
**PLC CONTROL PANEL 12CP01**  
**PANEL ASSEMBLY CONCEPT**

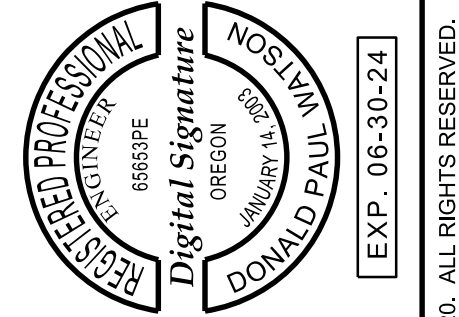
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PROJ	107769
DWG	I-02
SHEET	04

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BILL OF MATERIALS					
Item	Qty	Part number	Description	Vendor	Note
1					
2	1	N-TRON 7018FXE2-ST-15	Network Switch 18 Port	N-TRON	
3	1	BX1000M	APC Back-UPS 1000 Compact Tower, 1000VA, 120V	APC	
4	1	1756-A10	ControlLogix 10-Slot Chassis	Allen-Bradley	
5	1	1756-PA72	ControlLogix Power Supply, AC Power	Allen-Bradley	
6	1	1756-L63	ControlLogix 5563 Controller	Allen-Bradley	Existing
7	2	1756-EN2T	ControlLogix Ethernet Communication Bridge	Allen-Bradley	
8	1	1756-IF8IH with 1756-TBCH	ControlLogix AI Module, 8 Point, HART	Allen-Bradley	
9	1	1756-OF8I with 1756-TBCH	ControlLogix AO Module, 8-Point, Current, Isolated	Allen-Bradley	
10	1	1756-IB16I with 1756-TBCH	ControlLogix DI Module, 16-Point, 24VDC Isolated	Allen-Bradley	
11	1	1756-OW16I with 1756-TBCH	ControlLogix DO Module, 16-Point Relay (NO), Isolated	Allen-Bradley	
12					
13	3	1756-N2	ControlLogix Empty Slot Cover	Allen-Bradley	
14					
14A					
15	As Req'd	1SNA 116-951 R1500	End Barrier (for M4/8, SFD3)	Entrelec	FEM8S
16					
17	1	NUC11PAQI70QA	Intel NUC 11 Performance Mini PC	INTEL	
18	1	1489-SPM1C010	Circuit Breaker, 120VAC, 1.0 Amp	Allen-Bradley	
19					
20					
21	9	1489-SPM1C050	Circuit Breaker, 120VAC, 5.0 Amp	Allen-Bradley	
22	3	1489-SPM1C100	Circuit Breaker, 120VAC, 10.0 Amp	Allen-Bradley	
23					
24	2	1489-M1C200	Circuit Breaker, 120VAC, 20.0 Amp	Allen-Bradley	
25					
26	As Req'd	1SNA 114 776 R2300	Terminal Block, End Barrier (for MA 4/6)	Entrelec	FEM61
27	As Req'd	1SNA 173 523 R1100	Comb type jumper bar - 10 pole	Entrelec	PC81
28	As Req'd	1SNA 115 116 R0700	Terminal Block, 600V AC/DC, Feed Through, Grey	Entrelec	MA 4/6, 30 Amp Max
29	As Req'd	1SNA 165 113 R1600	Terminal Block, Grounding, Green/Yellow	Entrelec	MA 4/6.PI
30	As Req'd	1SNA 115 935 R0400	Terminal Block, 600V AC/DC, 10A max, Fused, Grey	Entrelec	M 4/8.SFD3
31	As Req'd	1SNA 399 903 R0200	Terminal Block, End Anchor (for MA4/6)	Entrelec	BADL
32	As Req'd	1SNA 113 548 R2600	Jumper bar for MA 4/6, 10 Pole	Entrelec	PC6
33	As Req'd	0101 598.26	Din Rail (DIN 3)	Entrelec	TS 35/CF6
34					
35					
36					
37					
38					
39					
40	As Req'd	F4X4WH6	Wire Duct, White, 4x4, Narrow Slot	PANDUIT	
41	As Req'd	C4WH6	Wire Duct Cover, White, to fit 4x4 duct	PANDUIT	
42	As Req'd	F3X4WH6	Wire Duct, White, 3x4, Narrow Slot	PANDUIT	
43	As Req'd	C3WH6	Wire Duct Cover, White, to fit 3x4 duct	PANDUIT	
44	As Req'd	UGB2/0-414-12	Ground Bar	PANDUIT	
45	As Req'd		Fuse, 5x20, 0.25A		
46					
47					
48					
49					
50	3	IMC-21A-S-SC_T	Ethernet-to-Fiber Media Converters	MOXA	Quantity Includes One Spare
51					
52					
53					
54	2	SDN 5-24-100C	24VDC Power Supply - 5 Amp, Compact	SOLA	
55	1	SDN 2.5-20 RED	24VDC Power Supply Redundancy Module	SOLA	
56	2	DRUBGFI 15	Duplex Receptacle 15A, GFI		
57					
58	1	0M9.203X.000	Input Lead M12 IP66, 3m (10ft) Length	Watson-Marlow	Referred to as TYPE A cable in DWGs; Cables to be furnished and installed by Contractor.
59	1	0M9.203Y.000	Output Lead M12 IP66, 3m (10ft) Length	Watson-Marlow	Referred to as TYPE B cable in DWGs; Cables to be furnished and installed by Contractor.
60	2	96609016	Input - 4 Pole Cable for Remote on/off, Pulse, and Analog Signals (5m) Length	Grundfos	Referred to as TYPE C cable in DWGs; Cables to be furnished and installed by Contractor.
61	2	96632922	Output - 5 Pole Cable for Analog Signal (5m) Length	Grundfos	Referred to as TYPE D cable in DWGs; Cables to be furnished and installed by Contractor.
62	2	96609019	Output - 4 Pole Plug for Relay Signal (5m) Length	Grundfos	Referred to as TYPE E cable in DWGs; Used for Relay Output Signals on Bisulfite Pumps.
63	2	96440452	4 Pole Plug	Grundfos	Spare cables for future use of level signals on Bisulfite Pumps.

CONTROL PANEL - PANEL ASSEMBLY				
NAMEPLATE SCHEDULE				
Item	LINE 1	LINE 2	LINE 3	Letter Size
A				
B	TS-01			3/8"
C	TS-02			3/8"
D	TS-03			3/8"
E	120VAC UPS			1/4"
F	120VAC AUX			1/4"
G	SLOT 03 - DI			1/4"
H	SLOT 04 - DO			1/4"
I				
J	SLOT 08 - AI			1/4"
K	SLOT 09 - AO			1/4"
L	UPS RECEPTACLE			1/4"
M	UTILITY RECEPTACLE			1/4"



NO.	DATE	DR	M.KOJIS	J.BOSS	REVISION	CHK	APVD	BY	APVD	A.CHANG
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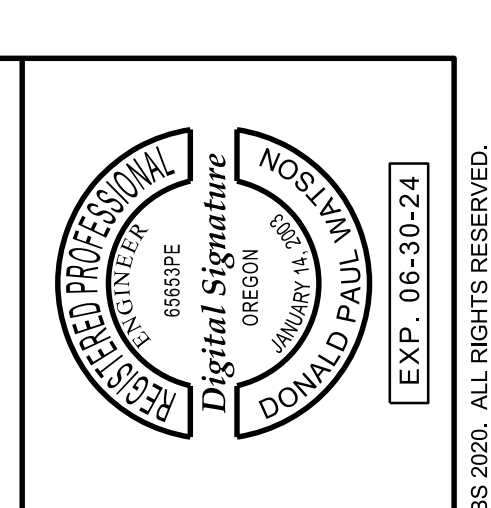
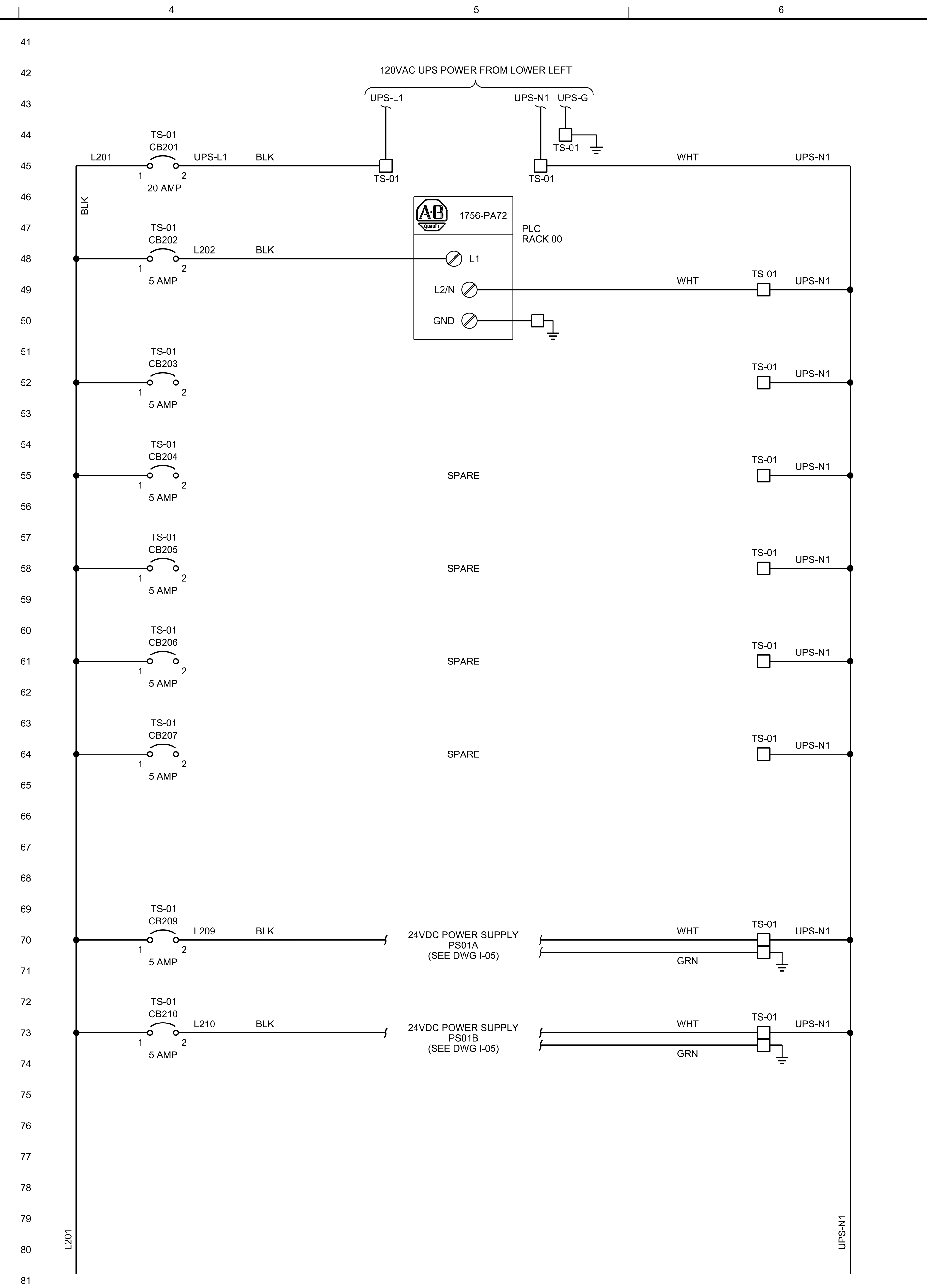
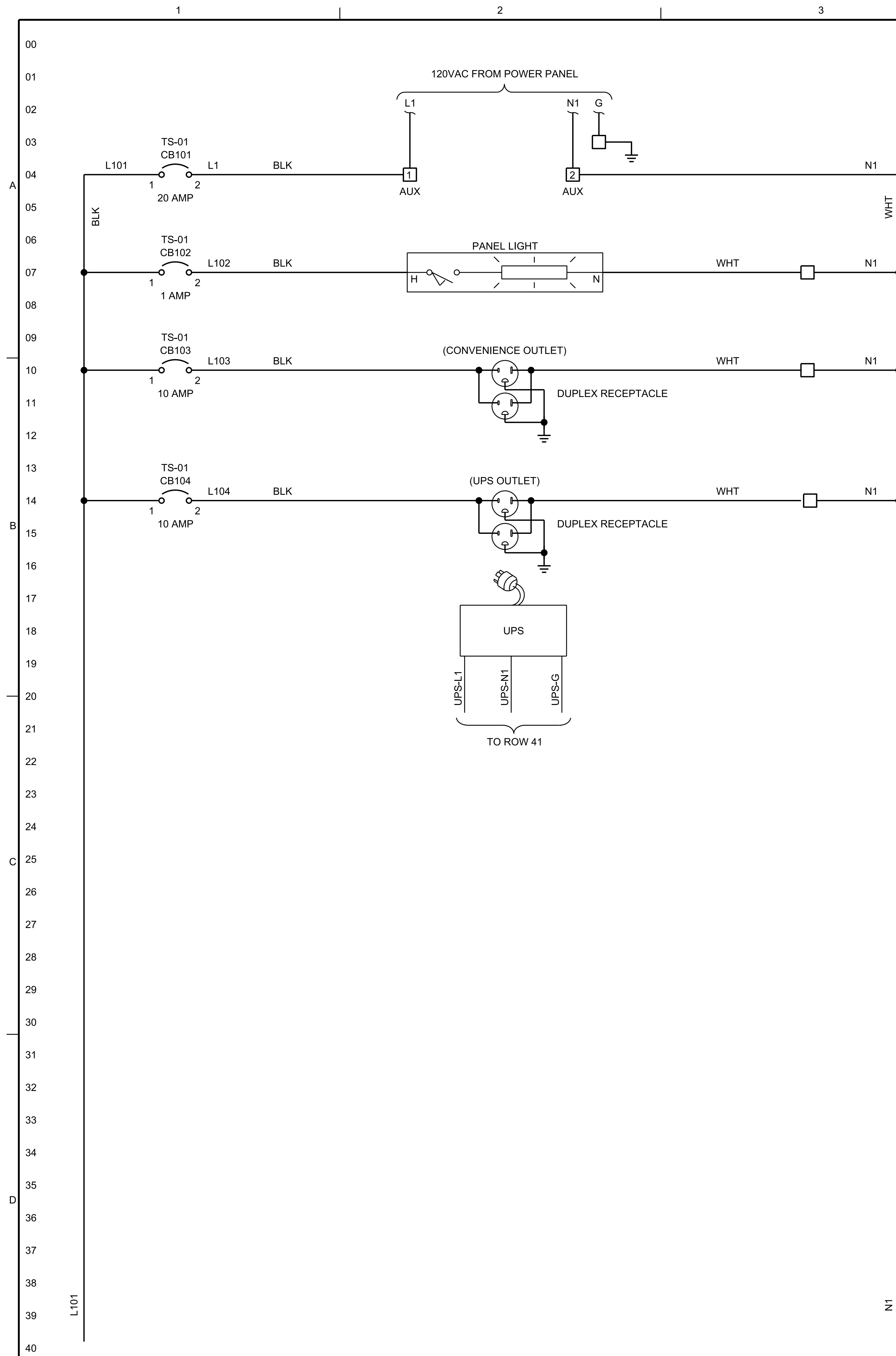
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**BISULFITE CONTROLS**  
**PLC CONTROL PANEL 12CP01 BOM AND**  
**NAMEPLATE SCHEDULE CONCEPT**

VERIFY SCALE	
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DWG	I-03
SHEET	05

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**BISULFITE CONTROLS  
 PLC CONTROL PANEL 12CP01 120VAC  
 POWER DISTRIBUTION CONCEPT**

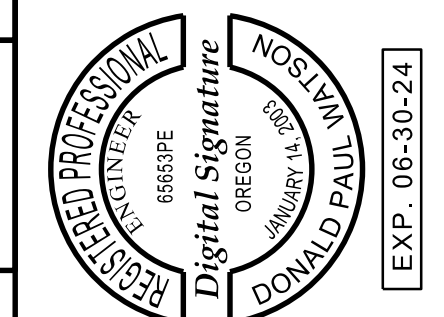
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SHEET	06

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# GENERAL SHEET NOTES

- ALL CIRCUIT BREAKERS, FUSES, AND NEUTRAL / GROUND TERMINALS SHOWN ON THIS SHEET ARE LOCATED ON TERMINAL STRIP TS-03, UNLESS NOTED OTHERWISE.



EXP. 06-30-24

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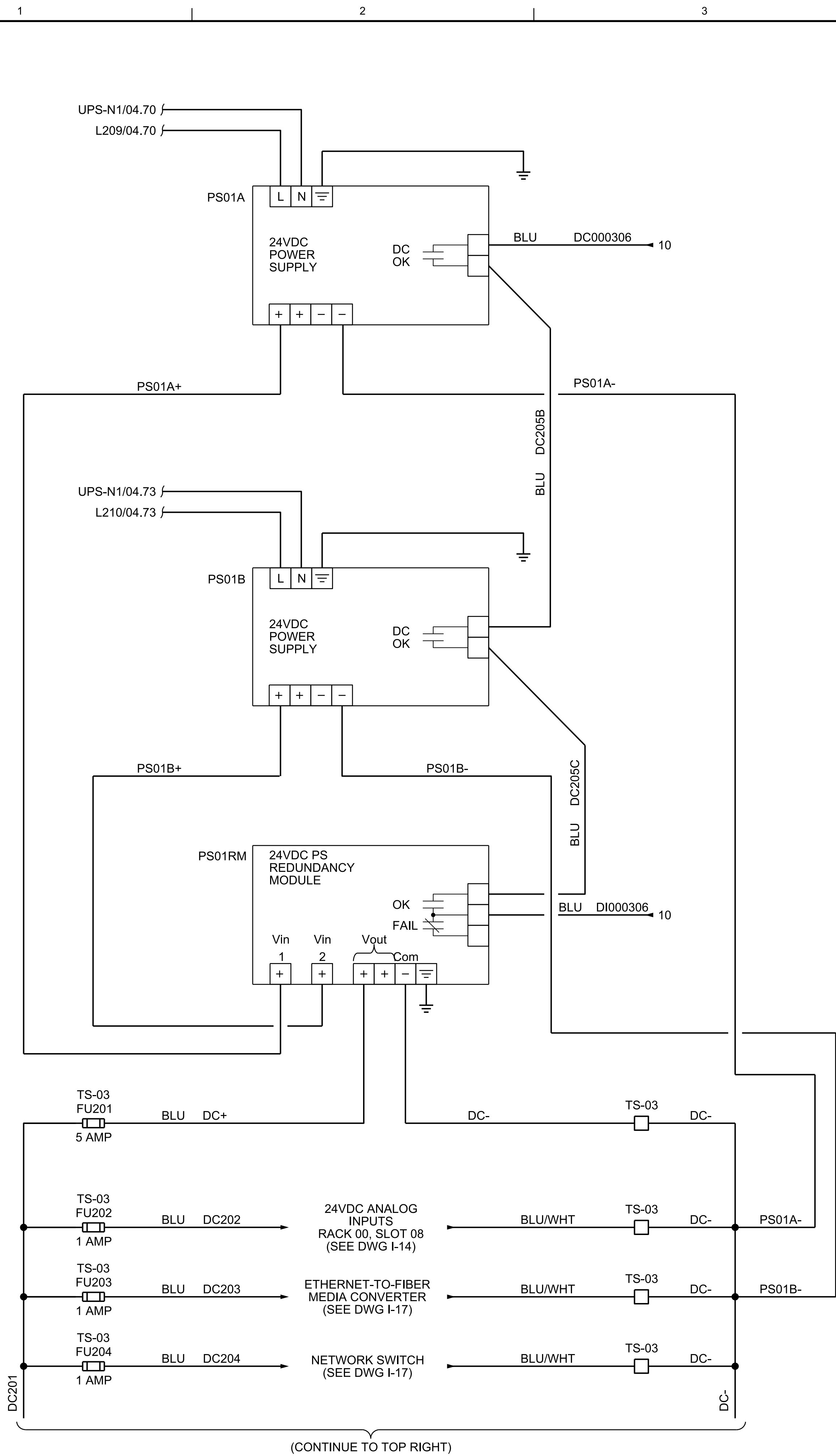


INSTRUMENTATION AND CONTROL

BISULFITE CONTROLS  
PLC CONTROL PANEL 12CP01 24VDC  
POWER DISTRIBUTION CONCEPT

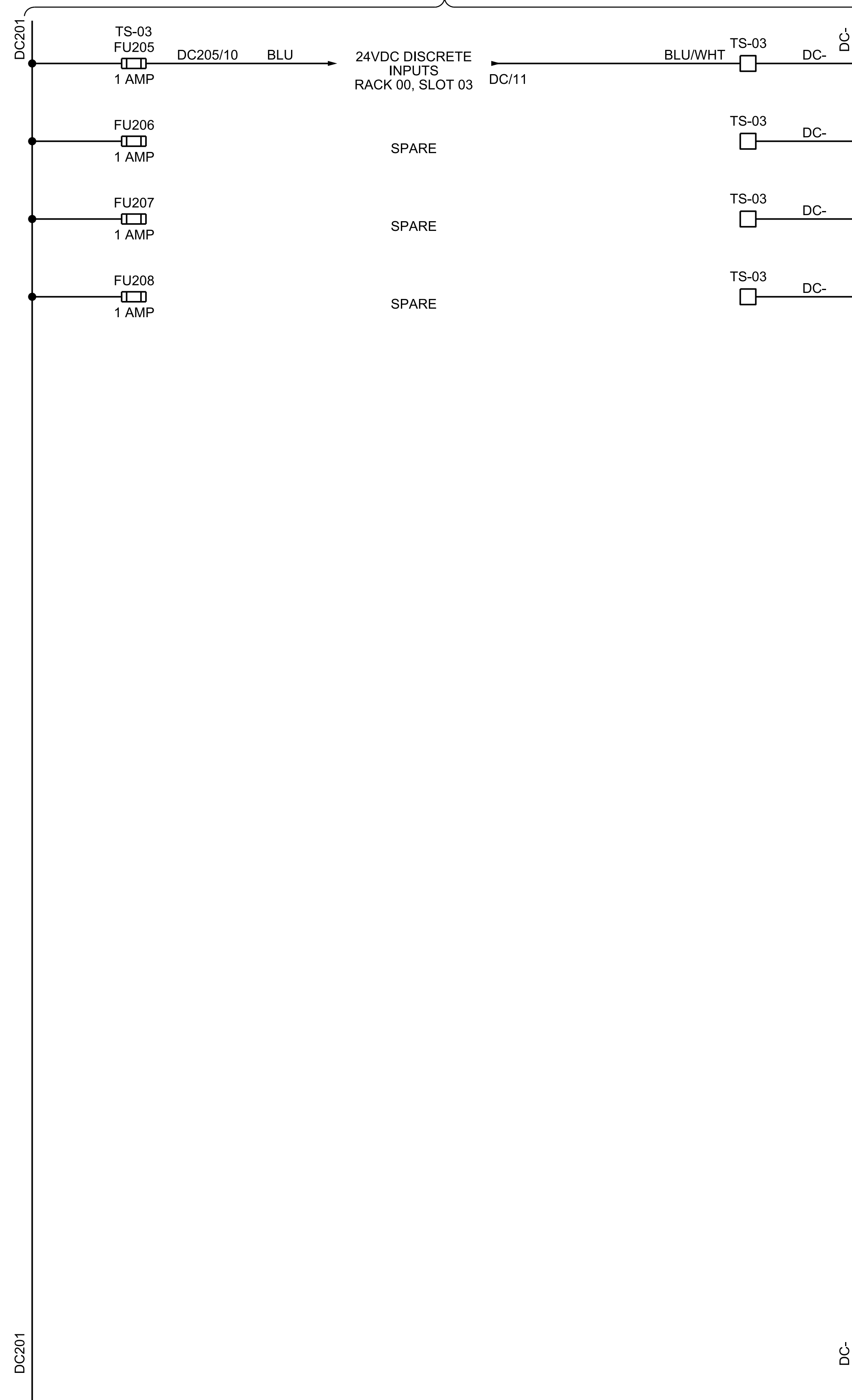
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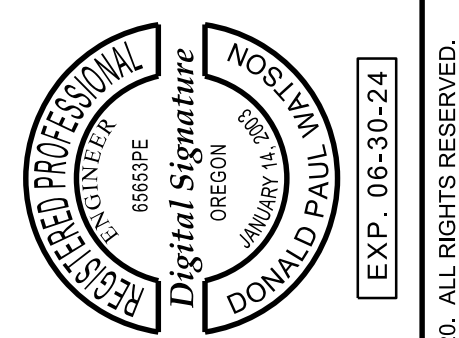


### GENERAL SHEET NOTES

- ALL WIRING BETWEEN TERMINAL BLOCKS AND IO MODULE TO BE #18 TWISTED SHIELDED PAIR.
- SHIELD WIRES TO BE GROUNDED AT TERMINAL STRIP ONLY. SAFE OFF SHIELD WIRES AT IO MODULE END.

### SHEET KEYNOTES

- FIELD WIRING SHOWN FOR REFERENCE ONLY. REFER TO DRAWING I-14 FOR FIELD WIRING DETAILS.



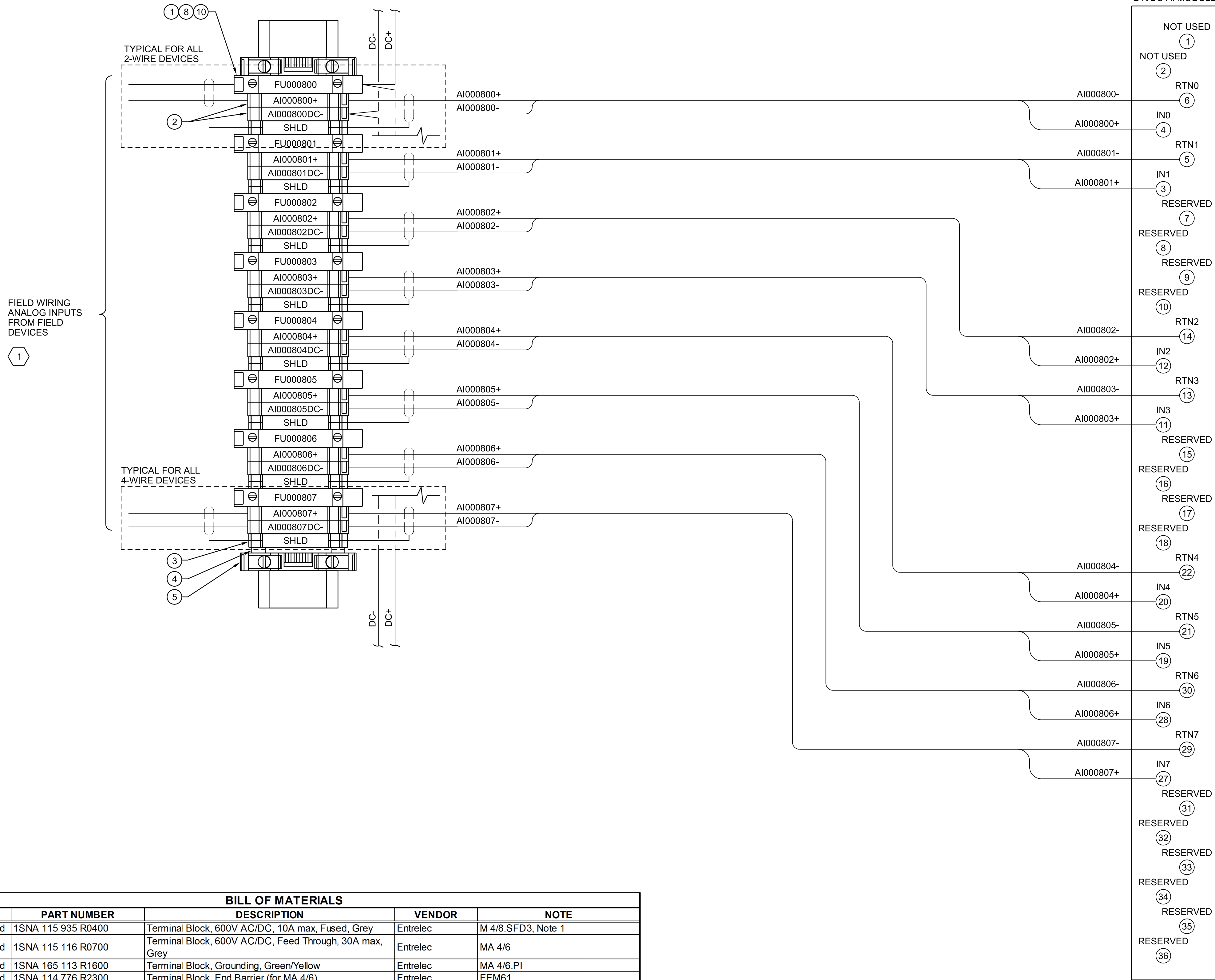
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**BISULFITE CONTROLS**  
PLC CONTROL PANEL 12CP01 AI  
MODULE STANDARD WIRING CONCEPT

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DATE	DECEMBER 2023
PROJ	107769
DWG	I-06
SHEET	08

RACK 00, SLOT 08  
1756-IF8IH  
24VDC AI MODULE



FIELD WIRING ANALOG INPUTS FROM FIELD DEVICES

ITEM	QTY	PART NUMBER	DESCRIPTION	VENDOR	NOTE
1	As Req'd	1SNA 115 935 R0400	Terminal Block, 600V AC/DC, 10A max, Fused, Grey	Entrelec	M 4/8.SFD3, Note 1
2	As Req'd	1SNA 115 116 R0700	Terminal Block, 600V AC/DC, Feed Through, 30A max, Grey	Entrelec	MA 4/6
3	As Req'd	1SNA 165 113 R1600	Terminal Block, Grounding, Green/Yellow	Entrelec	MA 4/6.P1
4	As Req'd	1SNA 114 776 R2300	Terminal Block, End Barrier (for MA 4/6)	Entrelec	FEM61
5	As Req'd	1SNA 399 903 R0200	Terminal Block, End Anchor (for MA 4/6)	Entrelec	BADL
6	As Req'd	1SNA 113 548 R2600	Jumper bar for MA 4/6, 10 Pole	Entrelec	PC6
7					
8	As Req'd		Fuse, 5x20, 0.25A		For All IO
9					
10	As Req'd	1SNA 116 951 R1500	End Barrier (for M4/8.SFD3)	Entrelec	FEM8S
11	As Req'd	1SNA 173 523 R1100	Comb Type Jumper Bar - 10 Pole	Entrelec	PC81

ISSUED FOR CONSTRUCTION

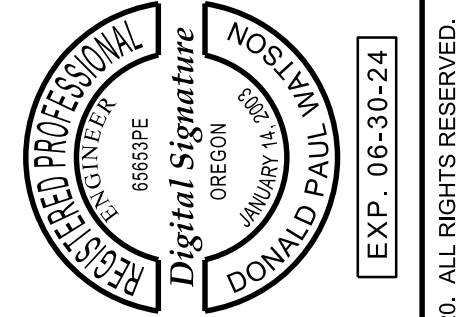


**GENERAL SHEET NOTES**

- ALL WIRING BETWEEN TERMINAL BLOCKS AND IO MODULE TO BE #18 TWISTED SHIELDED PAIR.
- SHIELD WIRES TO BE GROUNDED AT TERMINAL STRIP ONLY. SAFE OFF SHIELD WIRES AT IO MODULE END.

**SHEET KEYNOTES**

- FIELD WIRING SHOWN FOR REFERENCE ONLY. REFER TO DRAWING I-16 FOR FIELD WIRING DETAILS.



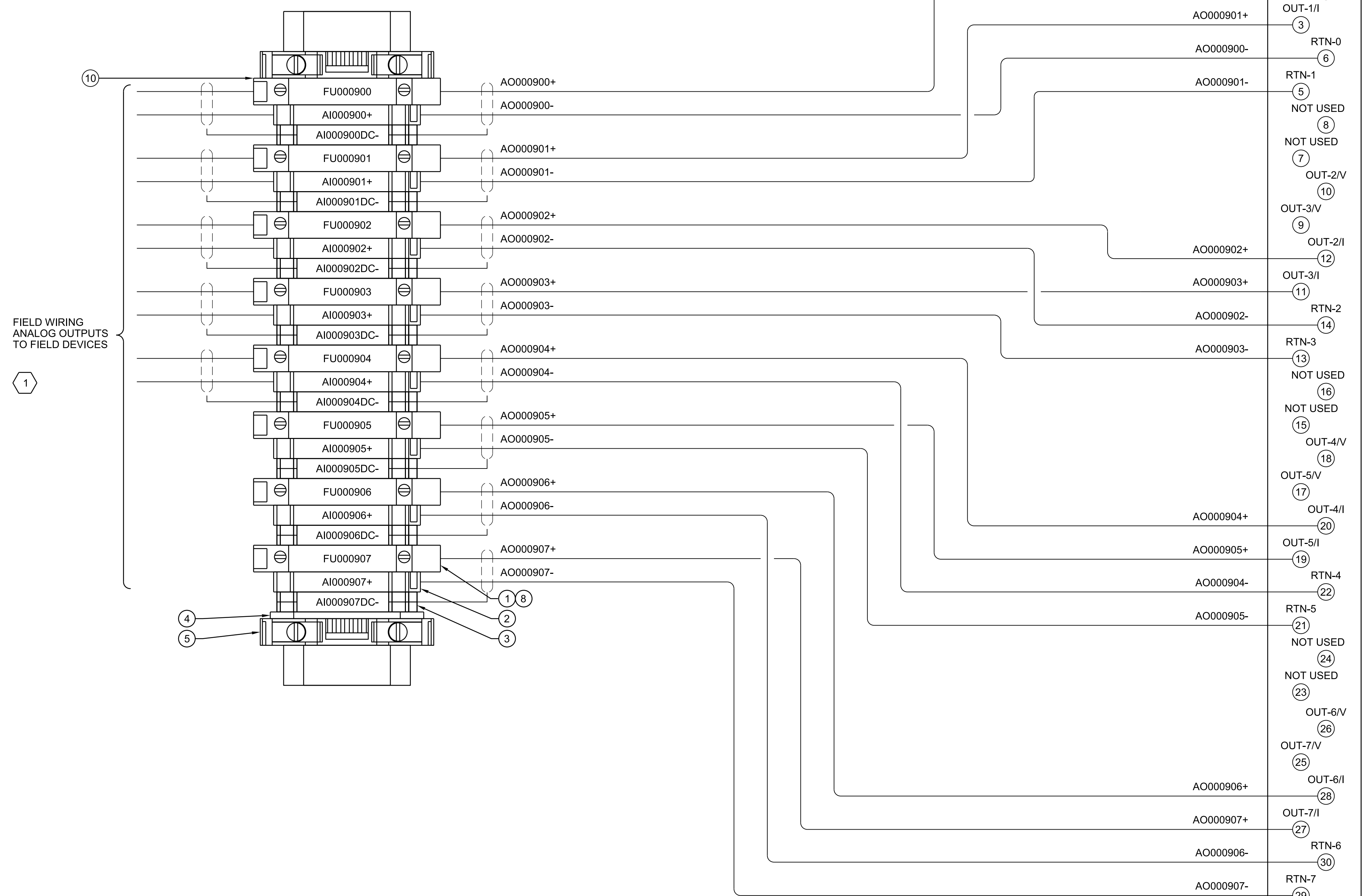
NO.	DATE	DR	CHK	APVD
		M.KOJIS	J.BOSS	A.CHANG
REVISION				

ROSEBURG URBAN SANITARY AUTHORITY  
BISULFITE CONTROLS PROJECT  
ROSEBURG, OREGON

**Jacobs**  
INSTRUMENTATION AND CONTROL  
**BISULFITE CONTROLS  
PLC CONTROL PANEL 12CP01 AO  
MODULE STANDARD WIRING CONCEPT**

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING.
DATE: DECEMBER 2023
PROJ: 107769
DWG: I-07
SHEET: 09

RACK 00, SLOT 09  
1756-OF8I  
24VDC AO MODULE



OUT-0/V	2
OUT-1/V	1
OUT-0/I	4
OUT-1/I	3
RTN-0	6
AO000900+	5
AO000901-	8
NOT USED	7
NOT USED	10
OUT-2/V	9
OUT-3/V	12
OUT-2/I	11
OUT-3/I	14
RTN-2	13
AO000902+	16
AO000903-	15
NOT USED	18
NOT USED	17
OUT-4/V	20
OUT-5/V	19
OUT-4/I	22
OUT-5/I	21
RTN-4	24
RTN-5	23
NOT USED	26
NOT USED	25
OUT-6/V	28
OUT-7/V	27
OUT-6/I	30
OUT-7/I	29
RTN-6	32
RTN-7	31
NOT USED	34
NOT USED	33
NOT USED	36
NOT USED	35

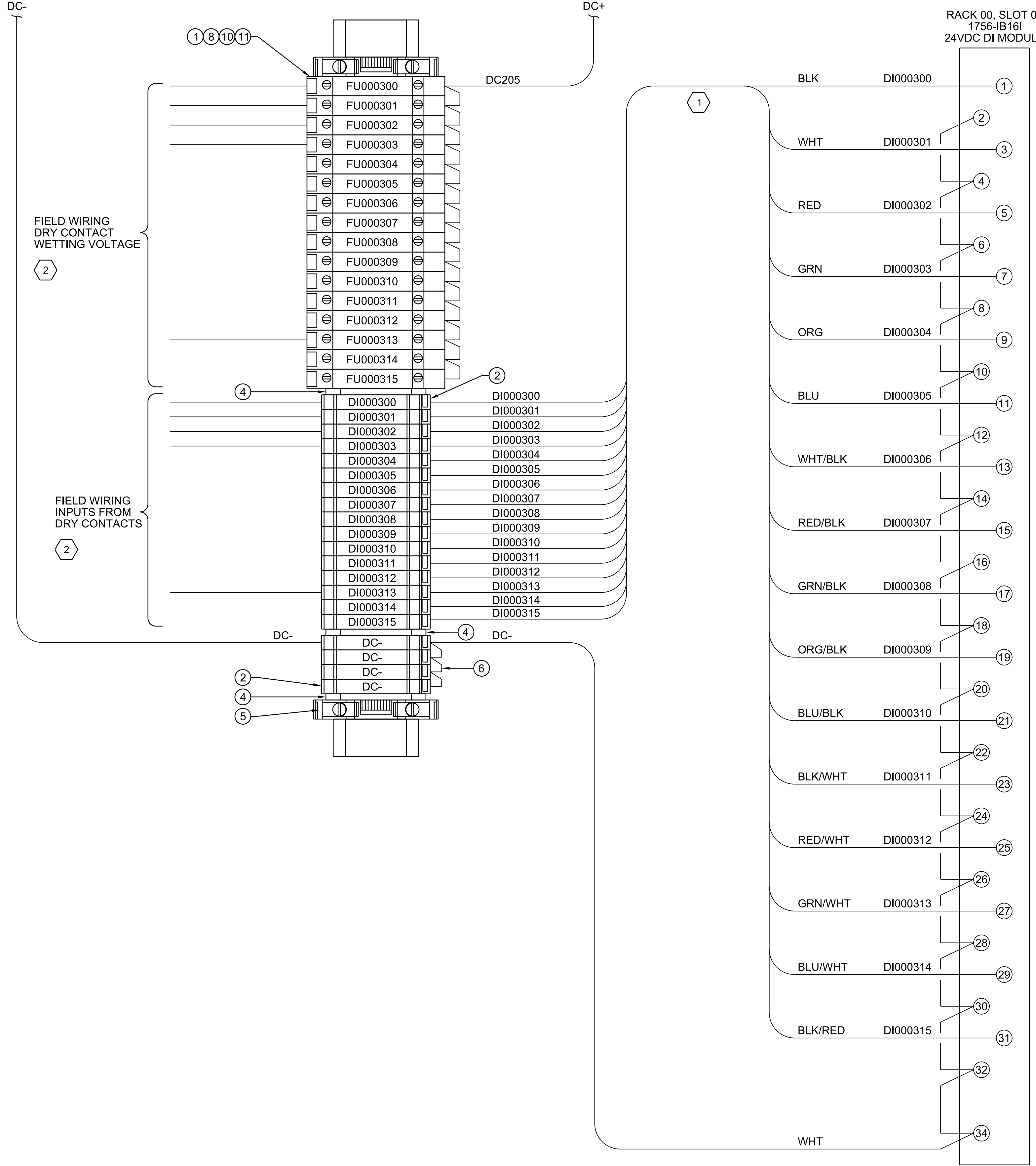
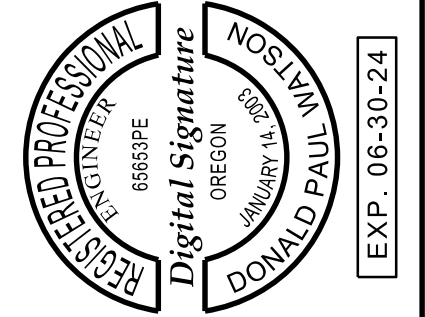
**BILL OF MATERIALS**

ITEM	QTY	PART NUMBER	DESCRIPTION	VENDOR	NOTE
1	As Req'd	1SNA 115 935 R0400	Terminal Block, 600V AC/DC, 10A max, Fused, Grey	Entrelec	M 4/8.SFD3, Note 1
2	As Req'd	1SNA 115 116 R0700	Terminal Block, 600V AC/DC, Feed Through, 30A max, Grey	Entrelec	MA 4/6
3	As Req'd	1SNA 165 113 R1600	Terminal Block, Grounding, Green/Yellow	Entrelec	MA 4/6.P1
4	As Req'd	1SNA 114 776 R2300	Terminal Block, End Barrier (for MA 4/6)	Entrelec	FEM61
5	As Req'd	1SNA 399 903 R0200	Terminal Block, End Anchor (for MA 4/6)	Entrelec	BADL
6	As Req'd	1SNA 113 548 R2600	Jumper bar for MA 4/6, 10 Pole	Entrelec	PC6
7					
8	As Req'd		Fuse, 5x20, 0.25A		For All IO
9					
10	As Req'd	1SNA 116 951 R1500	End Barrier (for M4/8.SFD3)	Entrelec	FEM8S
11	As Req'd	1SNA 173 523 R1100	Comb Type Jumper Bar - 10 Pole	Entrelec	PC81

ISSUED FOR CONSTRUCTION

### SHEET KEYNOTES

- USE BELDEN 9427 OR SIMILAR.
- FIELD WIRING SHOWN FOR REFERENCE ONLY. REFER TO DRAING I-10 FOR FIELD WIRING DETAILS.



BILL OF MATERIALS					
ITEM	QTY	PART NUMBER	DESCRIPTION	VENDOR	NOTE
1	As Req'd	1SNA 115 935 R0400	Terminal Block, 600V AC/DC, 10A max, Fused, Grey	Entrelec	M 4/8.SFD3, Note 1
2	As Req'd	1SNA 115 116 R0700	Terminal Block, 600V AC/DC, Feed Through, 30A max, Grey	Entrelec	MA 4/6
3	As Req'd	1SNA 165 113 R1600	Terminal Block, Grounding, Green/Yellow	Entrelec	MA 4/6.PI
4	As Req'd	1SNA 114 776 R2300	Terminal Block, End Barrier (for MA 4/6)	Entrelec	FEM61
5	As Req'd	1SNA 399 903 R0200	Terminal Block, End Anchor (for MA 4/6)	Entrelec	BADL
6	As Req'd	1SNA 113 548 R2600	Jumper bar for MA 4/6, 10 Pole	Entrelec	PC6
7					
8	As Req'd		Fuse, 5x20, 0.25A		For All IO
9					
10	As Req'd	1SNA 116 951 R1500	End Barrier (for M4/8.SFD3)	Entrelec	FEM8S
11	As Req'd	1SNA 173 523 R1100	Comb Type Jumper Bar - 10 Pole	Entrelec	PC81

NO.	DATE	DR	CHK	REVISION	APVD	BY	APVD

ROSEBURG URBAN SANITARY AUTHORITY  
BISULFITE CONTROLS PROJECT  
ROSEBURG, OREGON

## JACOBS

INSTRUMENTATION AND CONTROL  
**BISULFITE CONTROLS**  
**PLC CONTROL PANEL 12CP01 DI**  
**MODULE STANDARD WIRING CONCEPT**

VERIFY SCALE  
BAR IS ONE INCH ON ORIGINAL DRAWING.  
0 1"

DATE	DECEMBER 2023
PROJ	107769
DWG	I-08
SHEET	10

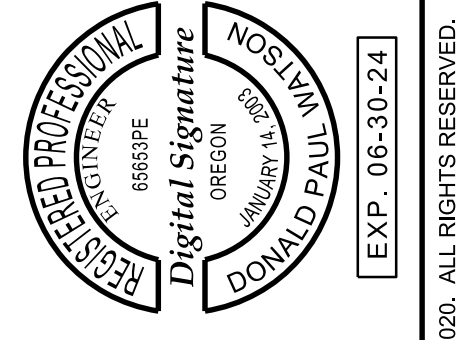
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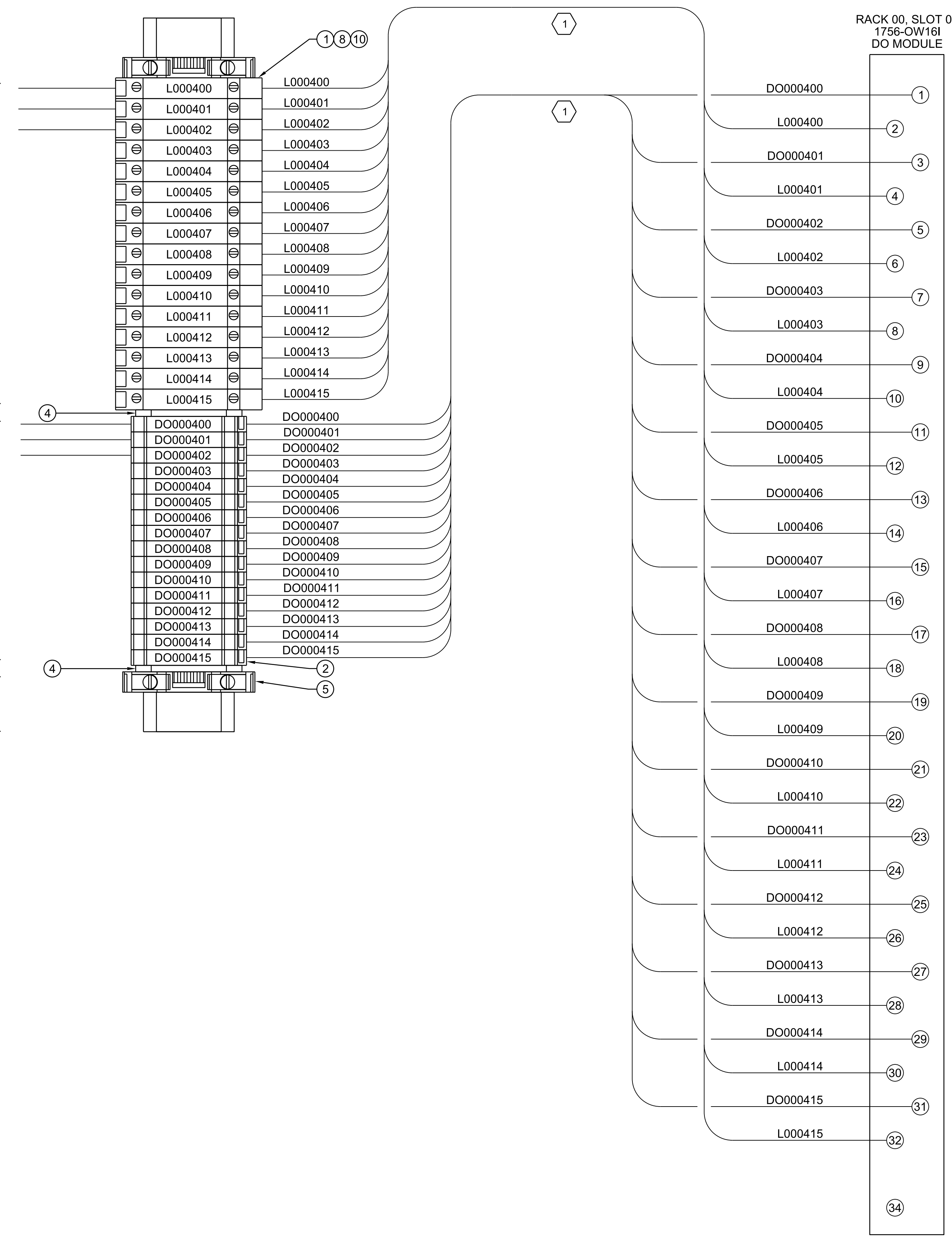
**SHEET KEYNOTES**

- USE BELDEN 9427 OR SIMILAR.
- FIELD WIRING SHOWN FOR REFERENCE ONLY. REFER TO DRAING I-12 FOR FIELD WIRING DETAILS.



**BILL OF MATERIALS**

ITEM	QTY	PART NUMBER	DESCRIPTION	VENDOR	NOTE
1	As Req'd	1SNA 115 935 R0400	Terminal Block, 600V AC/DC, 10A max, Fused, Grey	Entrelec	M 4/8.SFD3, Note 1
2	As Req'd	1SNA 115 116 R0700	Terminal Block, 600V AC/DC, Feed Through, 30A max, Grey	Entrelec	MA 4/6
3	As Req'd	1SNA 165 113 R1600	Terminal Block, Grounding, Green/Yellow	Entrelec	MA 4/6.PI
4	As Req'd	1SNA 114 776 R2300	Terminal Block, End Barrier (for MA 4/6)	Entrelec	FEM61
5	As Req'd	1SNA 399 903 R0200	Terminal Block, End Anchor (for MA 4/6)	Entrelec	BADL
6	As Req'd	1SNA 113 548 R2600	Jumper bar for MA 4/6, 10 Pole	Entrelec	PC6
7					
8	As Req'd		Fuse, 5x20, 0.25A		For All IO
9					
10	As Req'd	1SNA 116 951 R1500	End Barrier (for M4/8.SFD3)	Entrelec	FEM8S
11	As Req'd	1SNA 173 523 R1100	Comb Type Jumper Bar - 10 Pole	Entrelec	PC81



FIELD WIRING DISCRETE OUTPUT CONTACT WETTING VOLTAGE

FIELD WIRING DISCRETE OUTPUTS TO FIELD DEVICES

FUTURE FIELD WIRING NEUTRAL RETURN FOR OUTPUT CONTACTS WETTED WITH INTERNAL UPS POWER

NO.	DATE	DR	CHK	REVISION	BY	APVD

ROSEBURG URBAN SANITARY AUTHORITY  
BISULFITE CONTROLS PROJECT  
ROSEBURG, OREGON

**Jacobs**  
INSTRUMENTATION AND CONTROL  
**BISULFITE CONTROLS  
PLC CONTROL PANEL 12CP01 DO  
MODULE STANDARD WIRING CONCEPT**

VERIFY SCALE	
BAR IS ONE INCH ON ORIGINAL DRAWING.	
DATE	DECEMBER 2023
PROJ	107769
DWG	I-09
SHEET	11

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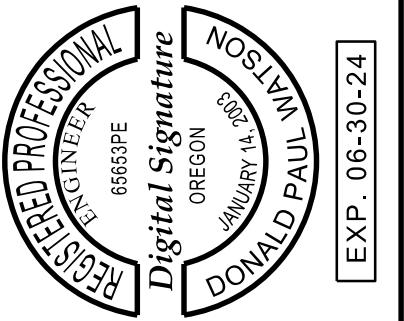






# GENERAL SHEET NOTES

1. LABEL BOTH ENDS OF WIRES WITH WIRE NUMBERS SHOWN.



EXP. 06-30-24

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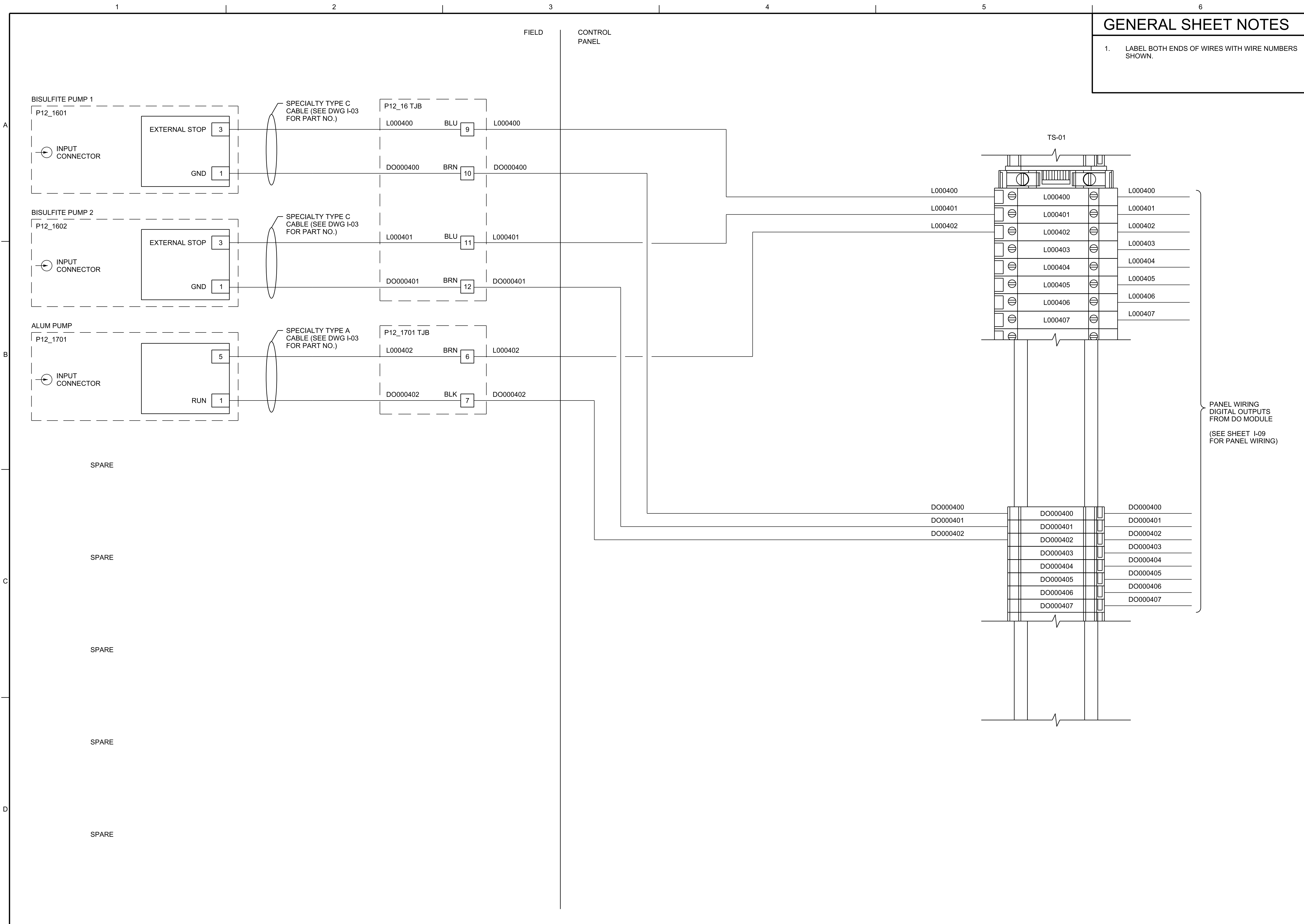
ISSUED FOR CONSTRUCTION

NO.	DATE	DR	CHK	APVD
		M.KOJIS	J.BOSS	D.WATSON
				A.CHANG

ROSEBURG URBAN SANITARY AUTHORITY  
BISULFITE CONTROLS PROJECT  
ROSEBURG, OREGON

**JACOBS**  
INSTRUMENTATION AND CONTROL  
**BISULFITE CONTROLS - PLC CONTROL**  
PANEL 12CP01 RACK 00 SLOT 04,  
DO POINT 0-7 WIRING CONCEPT

VERIFY SCALE	BAR IS ONE INCH ON ORIGINAL DRAWING.
DATE	DECEMBER 2023
PROJ	107769
DWG	I-12
SHEET	14

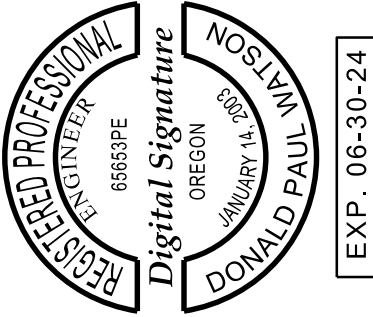


PANEL WIRING  
DIGITAL OUTPUTS  
FROM DO MODULE  
(SEE SHEET I-09  
FOR PANEL WIRING)

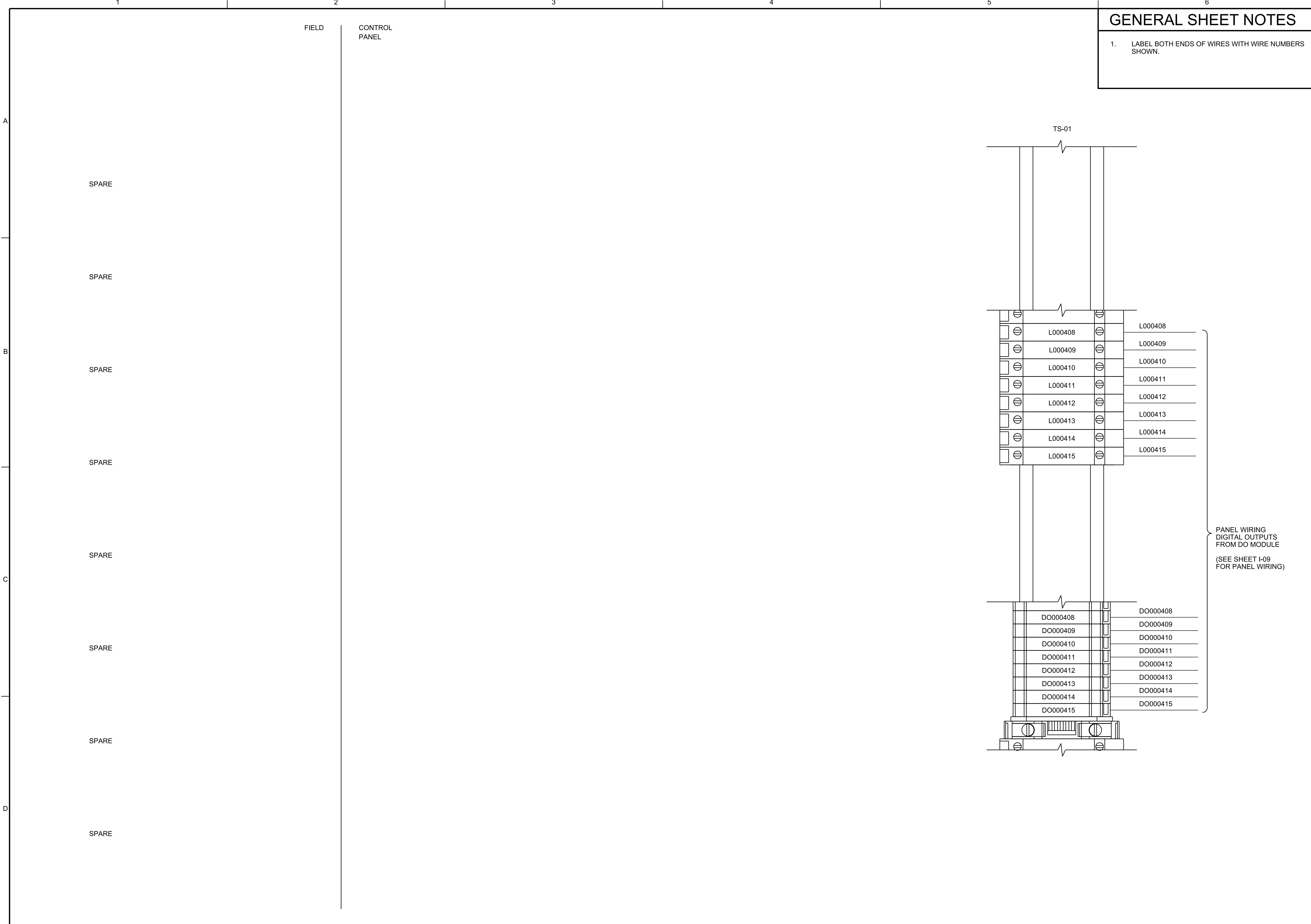


**GENERAL SHEET NOTES**

- 1. LABEL BOTH ENDS OF WIRES WITH WIRE NUMBERS SHOWN.



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PANEL WIRING  
DIGITAL OUTPUTS  
FROM DO MODULE  
  
(SEE SHEET I-09  
FOR PANEL WIRING)

NO.	DATE	REVISION	CHK	DR	APVD	BY	APVD

ROSEBURG URBAN SANITARY AUTHORITY  
BISULFITE CONTROLS PROJECT  
ROSEBURG, OREGON

**JACOBS**  
INSTRUMENTATION AND CONTROL  
**BISULFITE CONTROLS - PLC CONTROL**  
**PANEL 12CP01 RACK 00 SLOT 04,**  
**DO POINT 8-15 WIRING CONCEPT**

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING.
DATE: DECEMBER 2023
PROJ: 107769
DWG: I-13
SHEET: 15

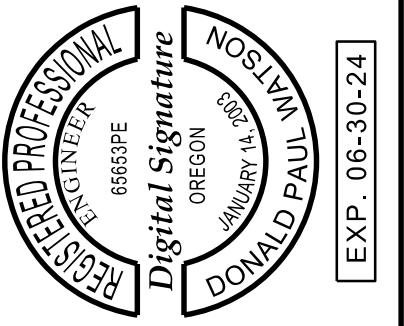
ISSUED FOR CONSTRUCTION

**GENERAL SHEET NOTES**

1. LABEL BOTH ENDS OF WIRES WITH WIRE NUMBERS SHOWN.

**SHEET KEYNOTES**

1. HEAT SHRINK SHIELDS.



APVD BY: A. CHANG

APVD BY: J. BOSS

APVD BY: D. WATSON

APVD BY: M. KOLES

APVD BY: J. BOSS

APVD BY: J. BOSS

APVD BY: J. BOSS

APVD BY: J. BOSS

APVD BY: J. BOSS

APVD BY: J. BOSS

APVD BY: J. BOSS

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APVD BY: J. BOSS

APVD BY: J. BOSS

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APVD BY: J. BOSS

APVD BY: J. BOSS

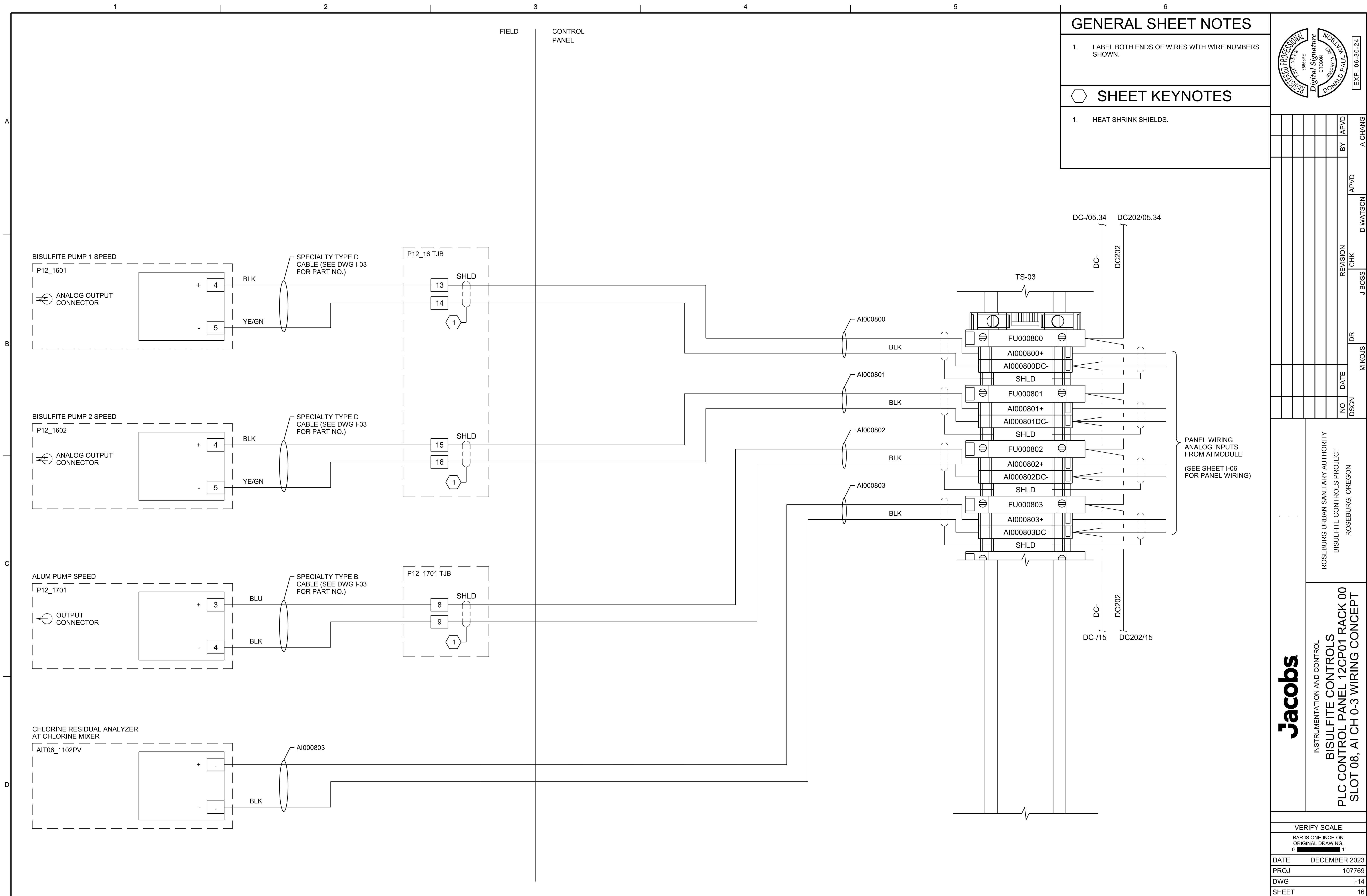
APVD BY: J. BOSS

APVD BY: J. BOSS

APVD BY: J. BOSS

APVD BY: J. BOSS

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BISULFITE CONTROLS PROJECT  
ROSEBURG, OREGON

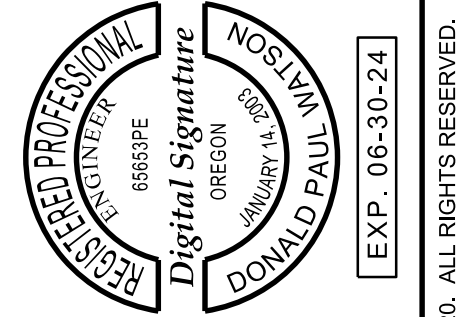
**JACOBS**  
INSTRUMENTATION AND CONTROL  
**BISULFITE CONTROLS**  
**PLC CONTROL PANEL 12CP01 RACK 00**  
**SLOT 08, AI CH 0-3 WIRING CONCEPT**

VERIFY SCALE	BAR IS ONE INCH ON ORIGINAL DRAWING.
DATE	DECEMBER 2023
PROJ	107769
DWG	I-14
SHEET	16

**ISSUED FOR CONSTRUCTION**

**GENERAL SHEET NOTES**

1. LABEL BOTH ENDS OF WIRES WITH WIRE NUMBERS SHOWN.



NO.	DATE	DR	CHK	REVISION	BY	APVD
		M.KOJIS	J.BOSS			APVD
						A.CHANG

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 BISULFITE CONTROLS PROJECT  
 ROSEBURG, OREGON

**Jacobs**  
 INSTRUMENTATION AND CONTROL  
**BISULFITE CONTROLS**  
**PLC CONTROL PANEL 12CP01 RACK 00**  
**SLOT 08, AI CH 4-7 WIRING CONCEPT**

VERIFY SCALE	DATE	DECEMBER 2023
BAR IS ONE INCH ON ORIGINAL DRAWING.	PROJ	107769
	DWG	I-15
	SHEET	17

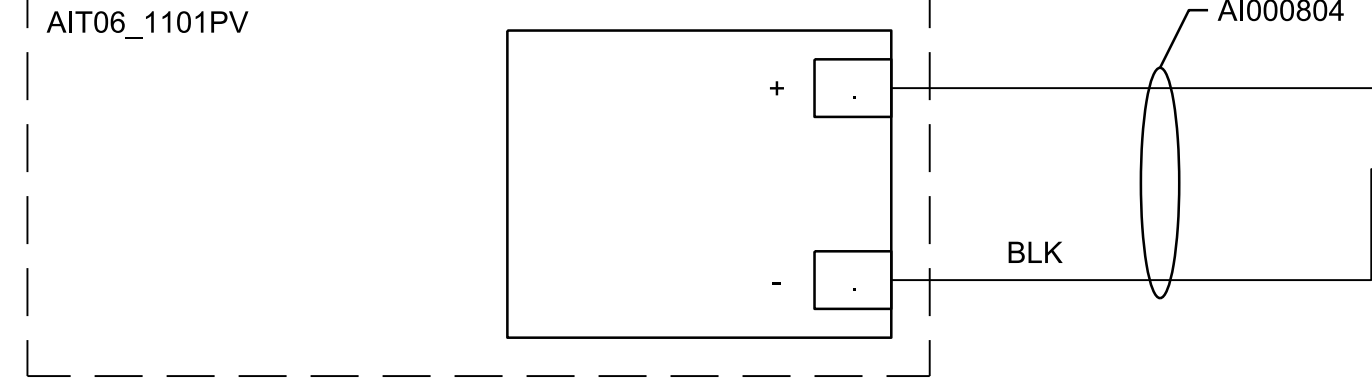
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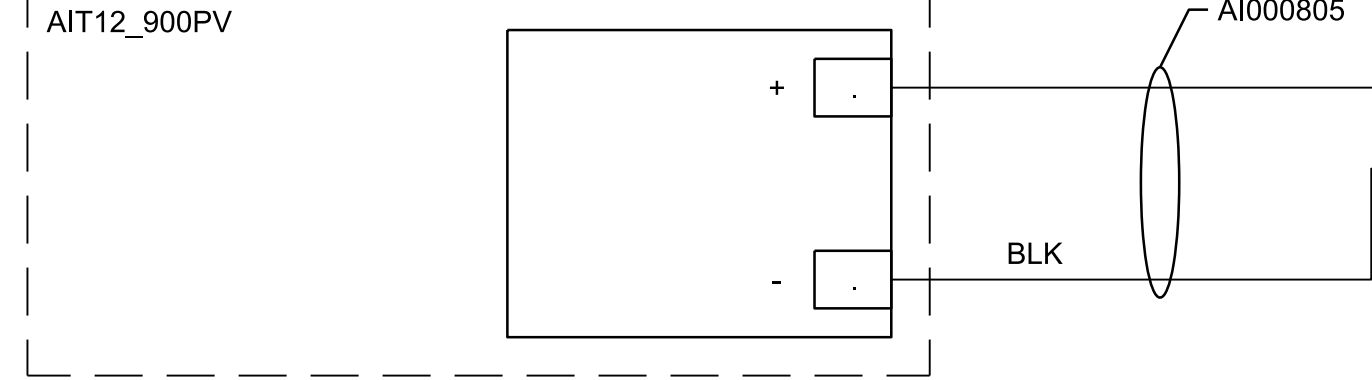
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FIELD CONTROL PANEL

CHLORINE RESIDUAL ANALYZER AT CCC EFFLUENT

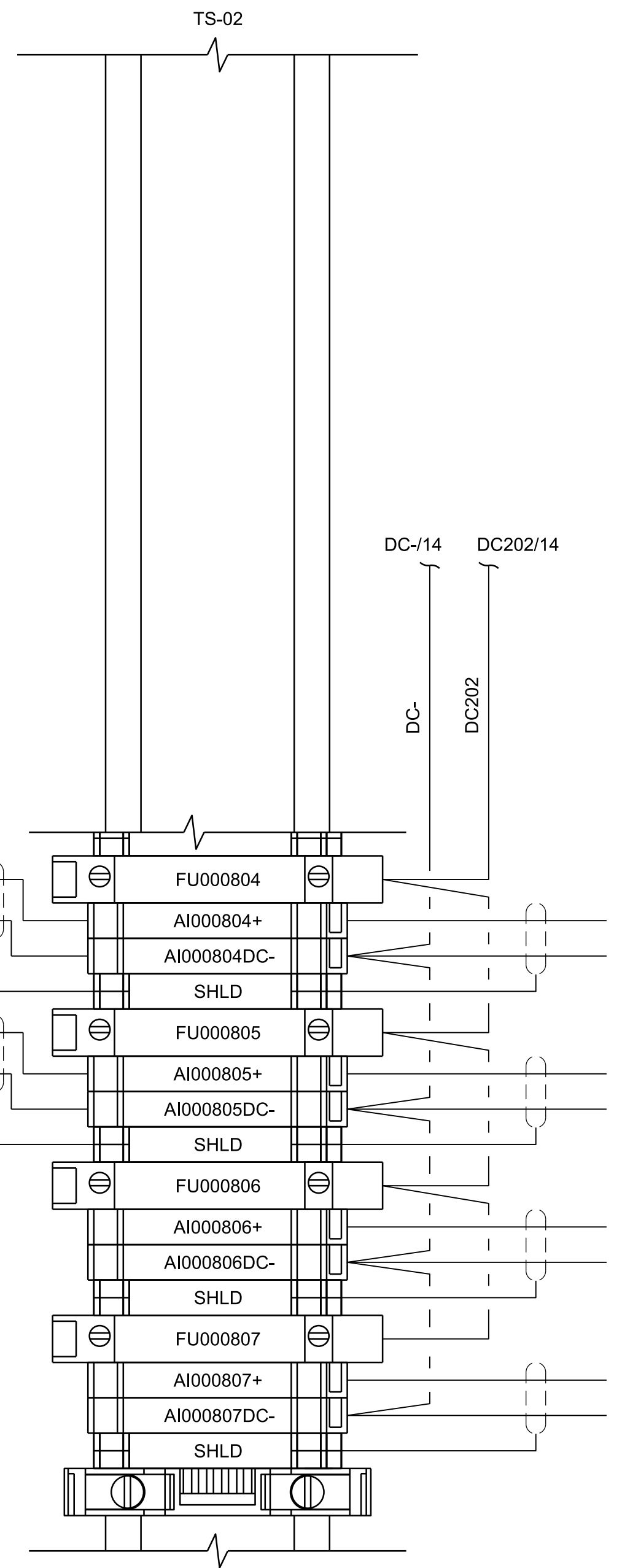


CHLORINE RESIDUAL ANALYZER AFTER BISULFITE INJECTION



SPARE

SPARE



PANEL WIRING ANALOG INPUTS FROM AI MODULE  
 (SEE SHEET I-06 FOR PANEL WIRING)



1

2

3

4

5

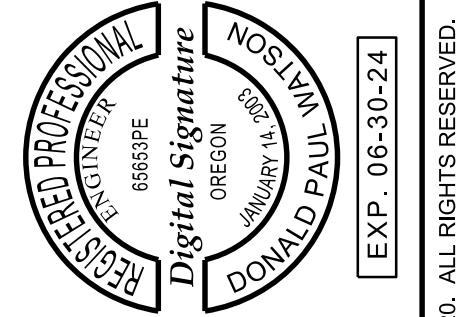
6

### GENERAL SHEET NOTES

1. LABEL BOTH ENDS OF WIRES WITH WIRE NUMBERS SHOWN.

### SHEET KEYNOTES

1. HEAT SHRINK SHIELDS.



APVD BY: A CHANG

APVD BY: D WATSON

APVD BY: J BOSS

APVD BY: M KOLES

APVD BY: DR

APVD BY: DSGN

APVD BY: NO. DATE

APVD BY: REVISION

APVD BY: CHK

APVD BY: J BOSS

APVD BY: M KOLES

APVD BY: DR

APVD BY: DSGN

APVD BY: NO. DATE

APVD BY: REVISION

APVD BY: CHK

APVD BY: J BOSS

APVD BY: M KOLES

APVD BY: DR

APVD BY: DSGN

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INSTRUMENTATION AND CONTROL

BISULFITE CONTROLS

PLC CONTROL PANEL 12CP01 RACK 00

ISSUED FOR CONSTRUCTION

VERIFY SCALE  
BAR IS ONE INCH ON ORIGINAL DRAWING.

DATE: DECEMBER 2023

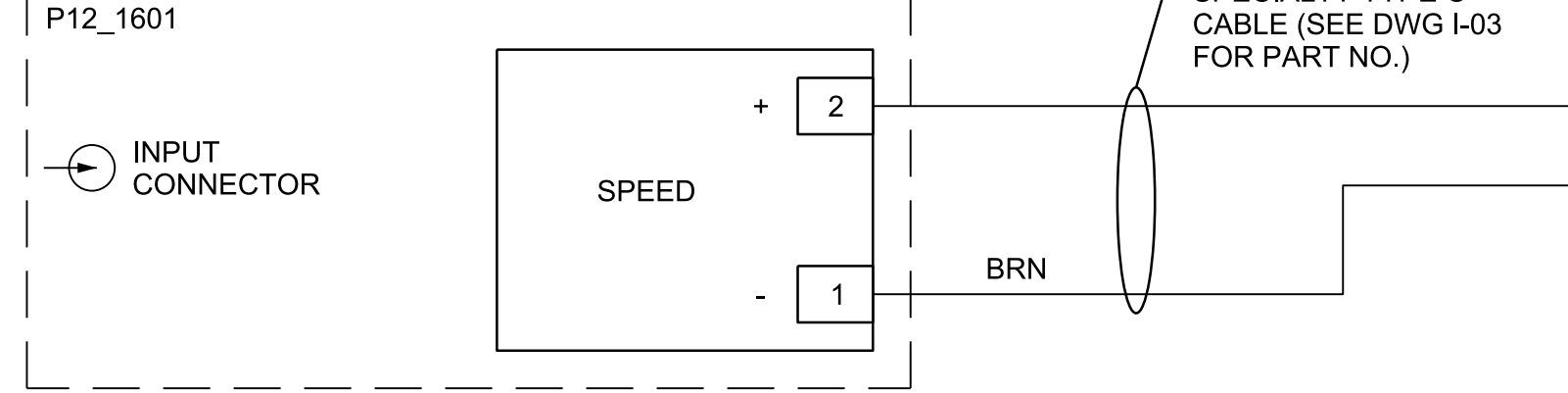
PROJ: 107769

DWG: I-16

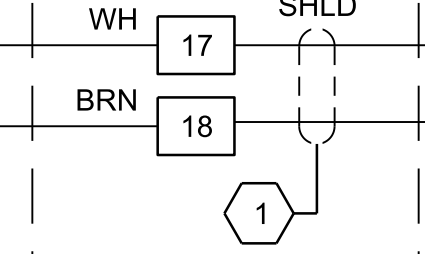
SHEET: 18

FIELD CONTROL PANEL

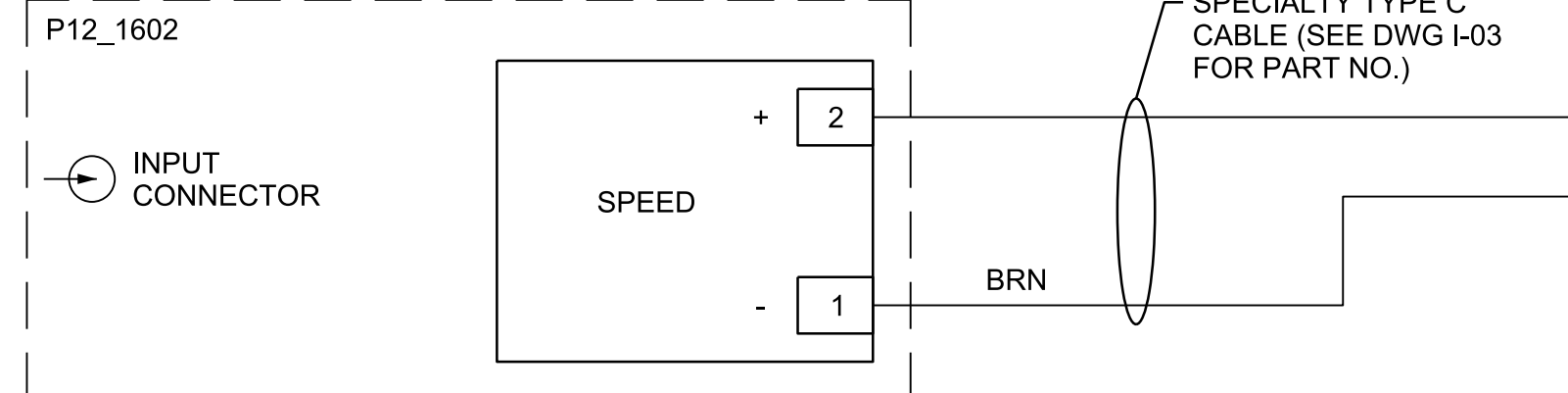
#### BISULFITE PUMP 1 - SPEED CMD



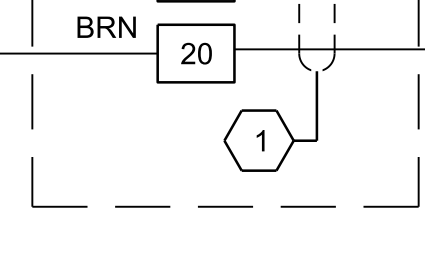
#### P12\_16 TJB



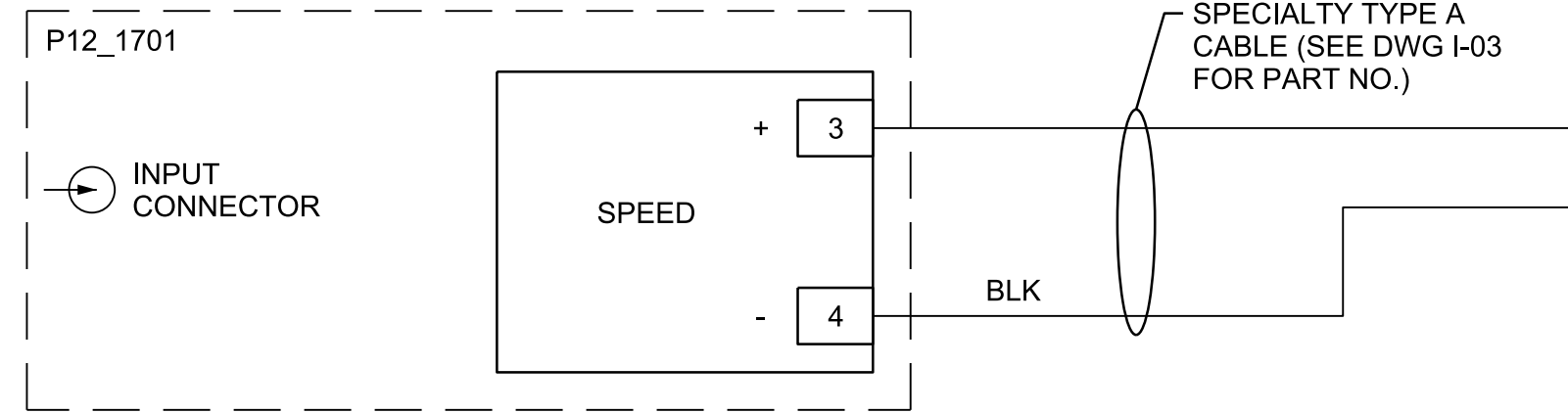
#### BISULFITE PUMP 2 - SPEED CMD



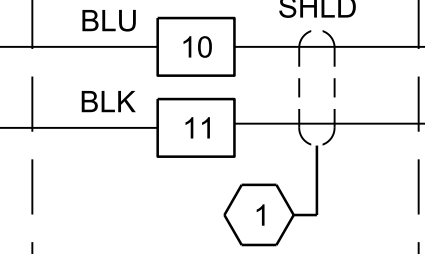
#### P12\_16 TJB



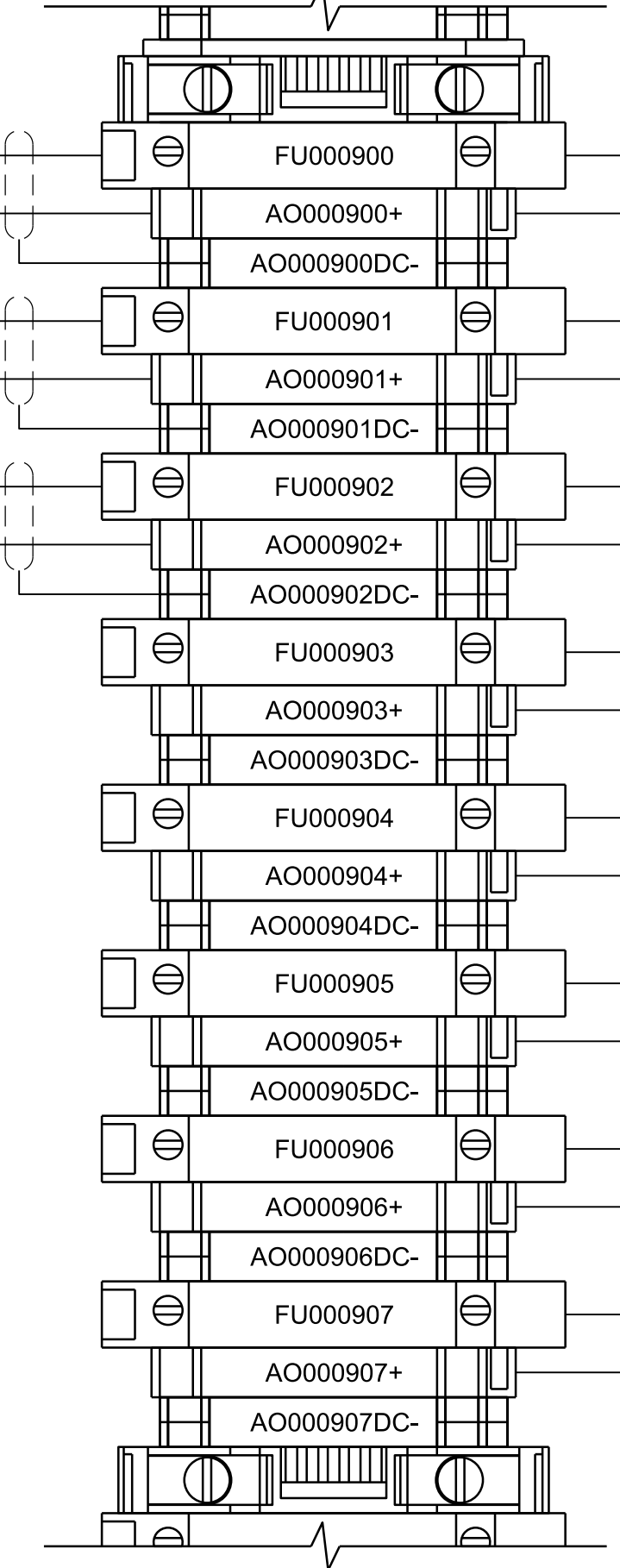
#### ALUM PUMP - SPEED CMD



#### P12\_1701 TJB



#### TS-03



PANEL WIRING ANALOG OUTPUTS FROM AO MODULE (SEE SHEET I-07 FOR PANEL WIRING)

SPARE

SPARE

SPARE

SPARE

SPARE

A

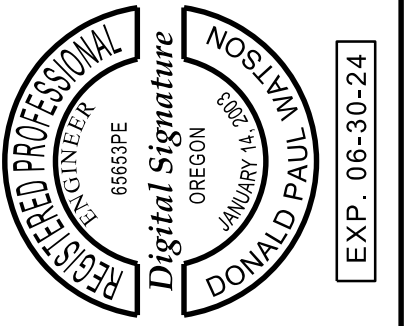
B

C

D

## SHEET KEYNOTES

- POWER FROM EXISTING 24VDC POWER SUPPLY. PROVIDE FUSE TERMINAL BLOCK IF NO SPARES ARE AVAILABLE.



NO.	DATE	DR	CHK	APVD	BY	APVD
		M.KOJIS	J.BOSS	D.WATSON		A.CHANG

ROSEBURG URBAN SANITARY AUTHORITY  
BISULFITE CONTROLS PROJECT  
ROSEBURG, OREGON

# Jacobs

INSTRUMENTATION AND CONTROL  
**BISULFITE CONTROLS  
PLC CONTROL PANEL 12CP01  
NETWORK DETAILS CONCEPT**

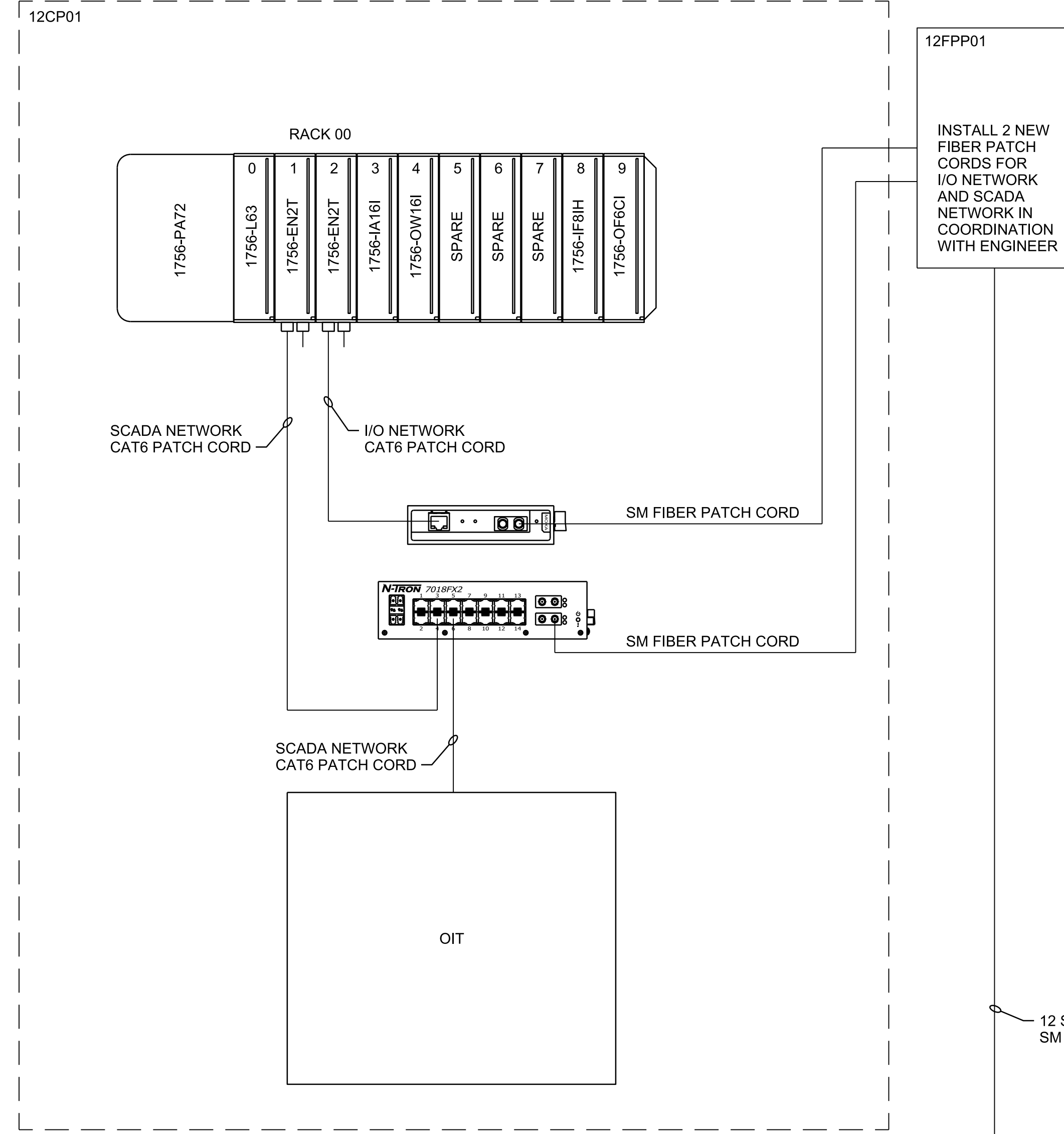
VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING.
DATE DECEMBER 2023
PROJ 107769
DWG I-17
SHEET 19

ISSUED FOR CONSTRUCTION

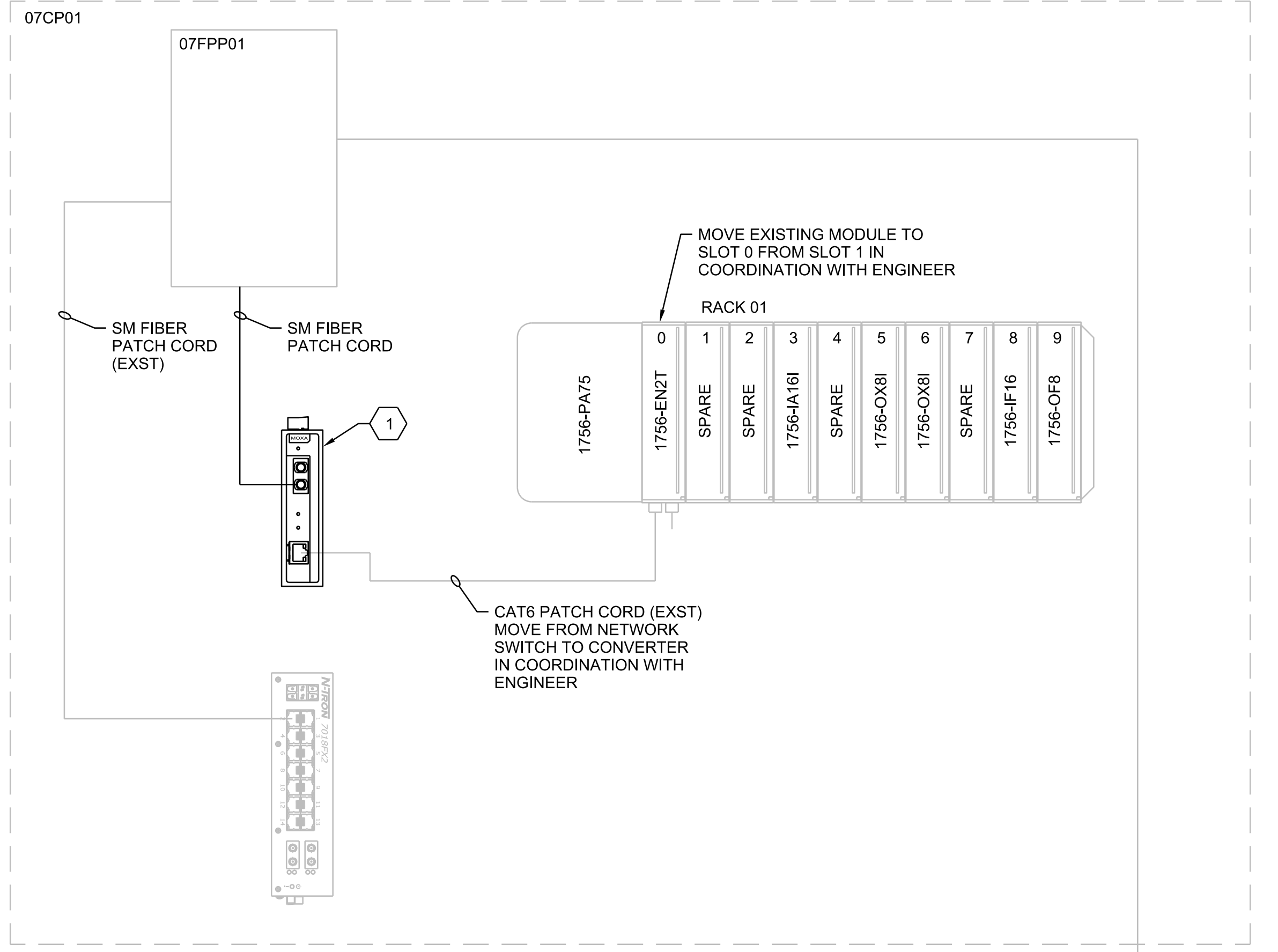
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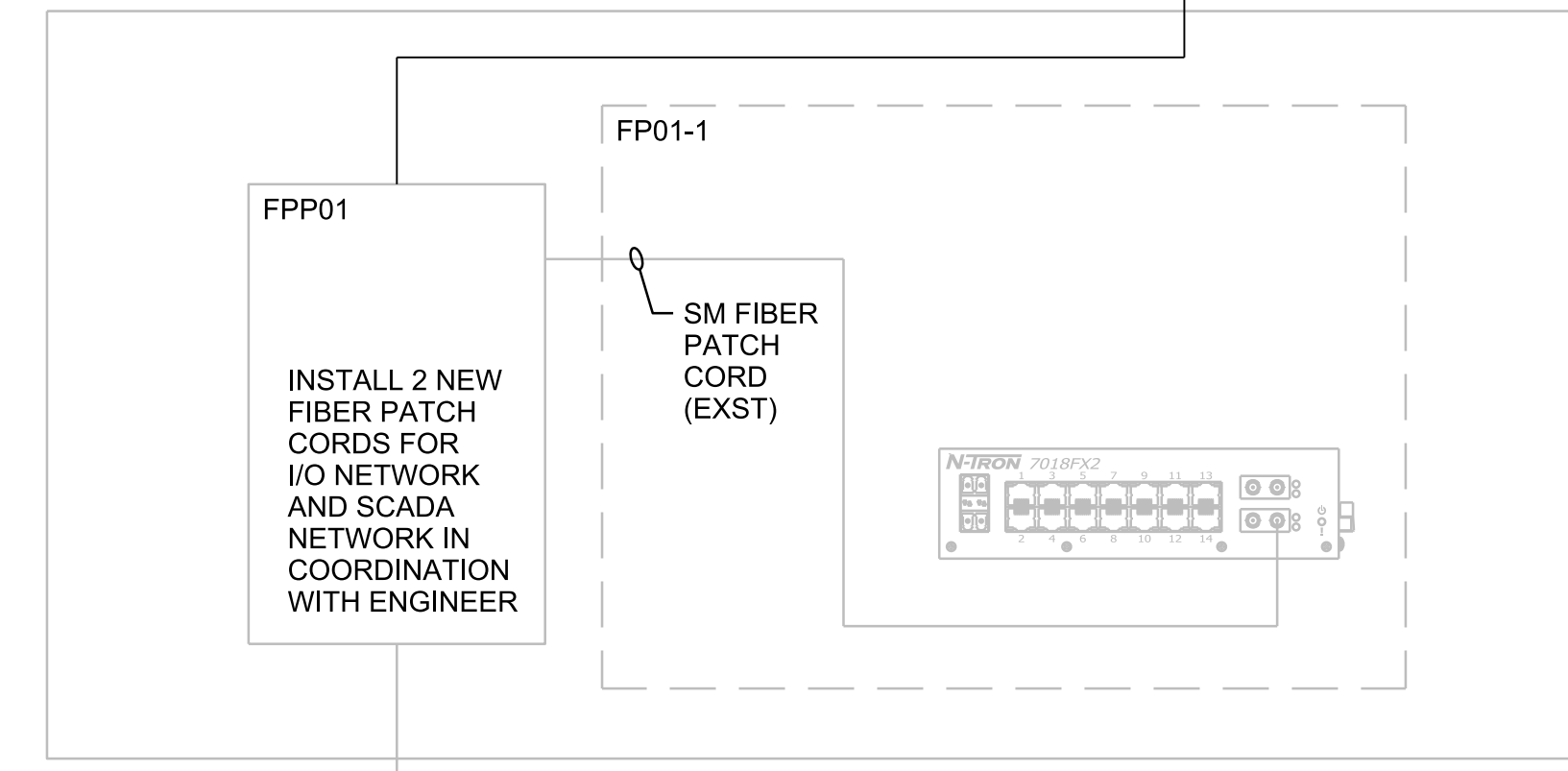
### BISULFITE BUILDING



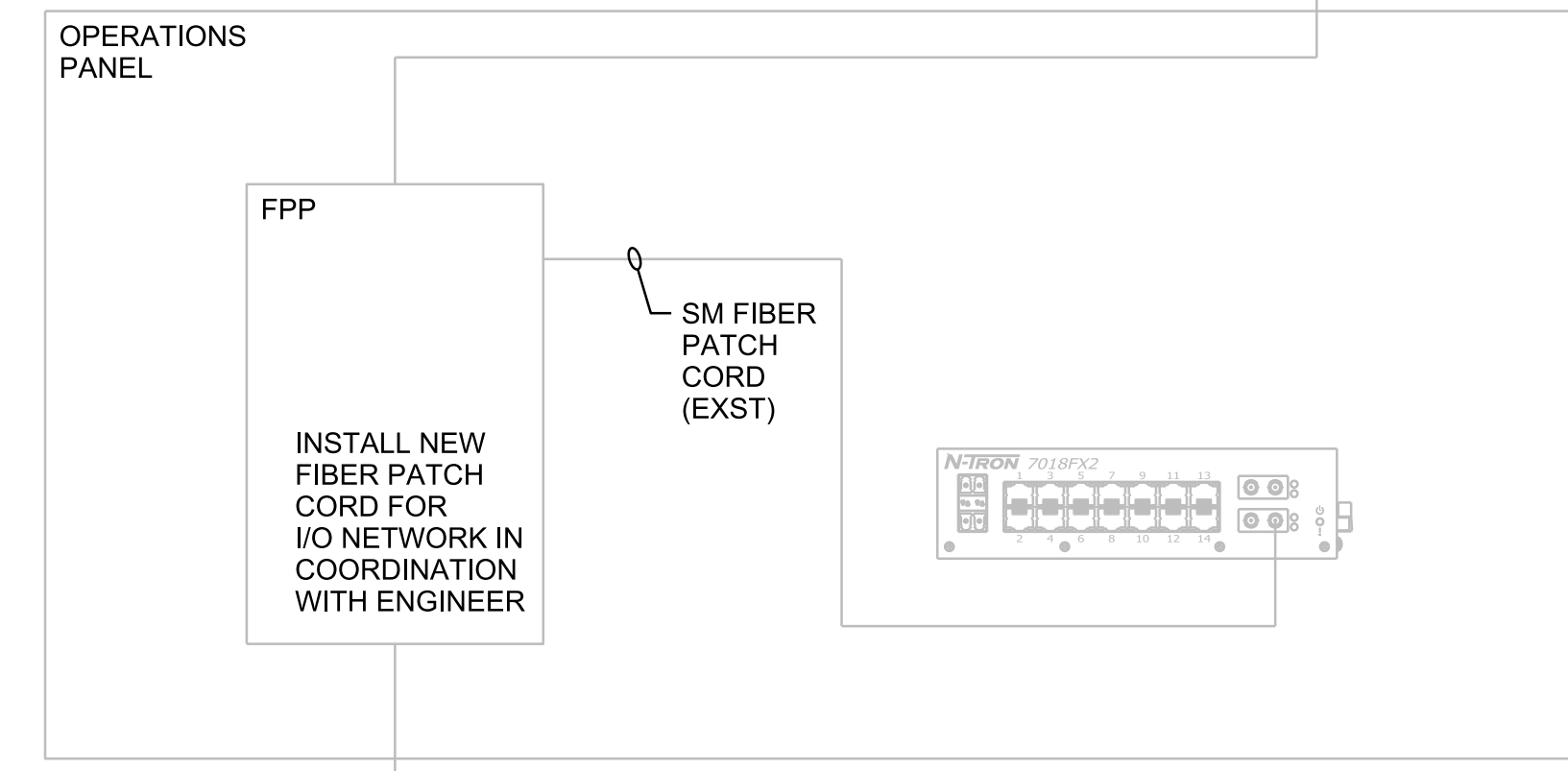
### CHLORINE BUILDING



### INFLUENT PUMP STATION BUILDING



### OPERATIONS BUILDING



12 STRAND SM FIBER (EXST)