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LOUISVILLE, CO

FERMENTATION AND BLENDING SKID

GENERAL ELECTRICAL DRAWING LIST

DRAWING NO. DRAWING DESCRIPTION

000	GENERAL ELECTRICAL DRAWING LIST
010	NUMBERING SYSTEM & SYMBOLS LIBRARY
015	GENERAL ELECTRICAL PROJECT SPECIFICATIONS
020	CP–FSP0 BILL OF MATERIALS – SHEET 1
021	CP–FSP0 BILL OF MATERIALS – SHEET 2
022	CP–FSP1 BILL OF MATERIALS – SHEET 1
023	CP–FSP1 BILL OF MATERIALS – SHEET 2
050	ETHERNET – LEVEL 3 LAYOUT
052	ETHERNET – LEVEL 1 LAYOUT
100	THREE–PHASE POWER (AC) – SHEET 1
101	THREE–PHASE POWER (AC) – SHEET 2
200	SINGLE–PHASE POWER (AC)
220	SINGLE–PHASE POWER (DC) – CP–FSP0
230	SINGLE–PHASE POWER (DC) – CP–FSP1
240	E–STOP CIRCUIT – SHEET 1
241	E–STOP CIRCUIT – SHEET 2
300	INPUT/OUTPUT LAYOUT – RACK 0 SLOT 0 & 1
301	INPUT/OUTPUT LAYOUT – RACK 0 SLOT 2 & 3
310	INPUT/OUTPUT LAYOUT – RACK 1 COMM & SLOT 0
311	INPUT/OUTPUT LAYOUT – RACK 1 SLOT 1 & 2
320	INPUT/OUTPUT LAYOUT – RACK 2 COMM & SLOT 0
321	INPUT/OUTPUT LAYOUT – RACK 2 SLOT 1 & 2
330	INPUT/OUTPUT LAYOUT – RACK 3 ARMORBLOCK
340	INPUT/OUTPUT LAYOUT – RACK 4 ARMORBLOCK
400	AS–I NETWORK – SHEET 1
401	AS–I NETWORK – SHEET 2
500	CP–FSP0 ENCLOSURE LAYOUT
501	CP–FSP0 BACKPANEL LAYOUT
510	CP–FSP1 ENCLOSURE LAYOUT
511	CP–FSP1 BACKPANEL LAYOUT
800	TYPICAL WIRING DIAGRAM – AB POWERFLEX 525 (VFD)
801	TYPICAL WIRING DIAGRAM – E&H TM412, TH13 (TEMPERATURE TRANSMITTER)
802	TYPICAL WIRING DIAGRAM – E&H PMP51 (PRESSURE TRANSMITTER)
803	TYPICAL WIRING DIAGRAM – E&H CLD18 (CONDUCTIVITY TRANSMITTER)
804	TYPICAL WIRING DIAGRAM – E&H FMD78 (LEVEL TRANSMITTER)
805	TYPICAL WIRING DIAGRAM – E&H CM42 (PH TRANSMITTER)
806	TYPICAL WIRING DIAGRAM – E&H PROMAG H 300 (FLOW TRANSMITTER)
807	TYPICAL WIRING DIAGRAM – E&H PROMASS I 300 (FLOW TRANSMITTER)
808	TYPICAL WIRING DIAGRAM – E&H FEL54 (LEVEL SWITCH)
809	TYPICAL WIRING DIAGRAM – SPIRAX SP500 (VALVE POSITIONER)
810	TYPICAL WIRING DIAGRAM – BURKERT 8691, GEA T.VIS (VALVE ACTUATORS)
811	TYPICAL WIRING DIAGRAM – IFM IFT245 (FLOW PANEL PROXIMITY SENSOR)
812	TYPICAL WIRING DIAGRAM – IFM IFT245 (VENT LINE PROXIMITY SENSOR)
813	TYPICAL WIRING DIAGRAM – GEA VARIVENT OVERFLOW VALVE Q

Design Group

NO	DATE	BY	INITIAL RELEASE	REVISION
A	08/15/2018	EJV	ISSUE FOR CONSTRUCTION	
B	08/24/2018	EJV	Design Update	
C	08/28/18	CMO	Add 25-144, 25-244	
D	9-12-18	CMO	Add 25-144, 25-244	
E	9-24-18	CMO	Add E-Stop PLC Input	
F	11-2-18	CMO	Design Changes - Multiple valves, prox sw	
G	3-5-19	CMO	Add I/Os 13pin	

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1900 CHERRY STREET, LOUISVILLE, CO 80027

PROJECT

FERMENTATION AND JUICE SKID

DRAWING TITLE

GENERAL ELECTRICAL DRAWING LIST

ISSUED FOR CONSTRUCTION

PROJECT NO. 1801824

ISSUED 08/15/2018

SCALE NOT TO SCALE

DRAWN BY EJV

DRAWING NO. 000

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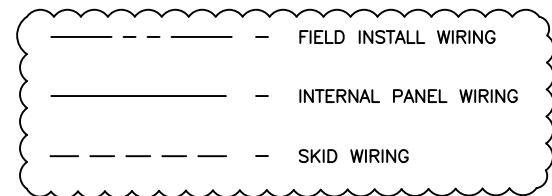
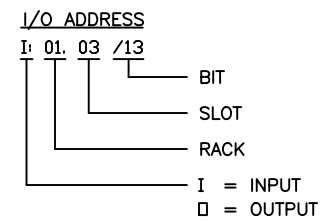
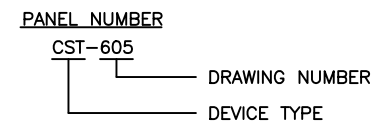
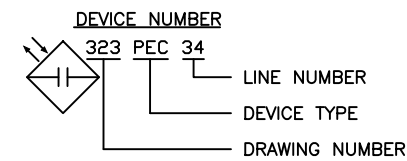
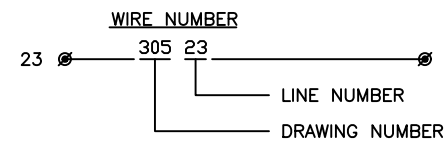
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LOUISVILLE, CO

FERMENTATION AND BLENDING SKID

NUMBERING SYSTEM & SYMBOLS LIBRARY

GENERAL



WIRE CONTINUED ELSEWHERE

TERMINAL BLOCK, CONTROL PANEL

BILL OF MATERIAL, ITEM NUMBER

EARTH GROUND

CHASSIS GROUND

RESISTOR (RES)

REVISION

DEVICE TERMINAL

PLUG

INPUT/OUTPUT

FUSE (FB)

FUSED TERMINAL BLOCK (FTB)

LIMIT SWITCH (LS)

LEVEL SWITCH (LVS)

CONTACT, NORMALLY OPEN

CONTACT, NORMALLY CLOSED

PUSHBUTTON (PB), 3-POSITION

2-WIRE PHOTOEYE (PEC), SCHEMATIC

3-WIRE PHOTOEYE (PEC), SCHEMATIC

PILOT LIGHT (PL)

2-WIRE PROXIMITY SWITCH (PRS), SCHEMATIC

3-WIRE PROXIMITY SWITCH (PRS), SCHEMATIC

PRESSURE SWITCH (PS)

SHIELDED CABLE, 2-WIRE

SELECTOR SWITCH (SS), 2-POSITION

SELECTOR SWITCH (SS), 3-POSITION

SELECTOR SWITCH (SS), 3-POSITION SPRING RETURN TO CENTER

SOLENOID VALVE (SOL)

TEMPERATURE SWITCH (TS)

3-PHASE

POWER DISTRIBUTION BLOCK (PDB), 3-POLE

CIRCUIT BREAKER (CB), 3-POLE

MOTOR CIRCUIT PROTECTOR (MCP)

MOTOR CONTACTOR (CON), 3-POLE

VARIABLE FREQUENCY DRIVE (DR)

CHOKES

OVERLOAD (OL)

DISCONNECT SWITCH (DISC), 3-POLE

MOTOR (MTR)

SINGLE-PHASE

CIRCUIT BREAKER (CB), 1-POLE

CIRCUIT BREAKER (CB), 2-POLE

POWER DISTRIBUTION BLOCK (PDB), 1-POLE

DISCONNECT SWITCH (DISC), 1-POLE

FAN (FN)

HORN (HRN)

CONTROL RELAY (CR)

RECEPTACLE (RECP)

PUSHBUTTON (PB), NORMALLY OPEN

PUSHBUTTON (PB), NORMALLY CLOSED

TRANSFORMER (T)

DEVICE LOCATION

MOTOR (M)

PHOTOEYE (D), DEVICE LOCATION

PROXIMITY SWITCH (D), DEVICE LOCATION

SOLENOID LIMIT SWITCH

THERMOCOUPLE

CONTROL STATION

PROGRAMMING STATION

JUNCTION BOX

NO.	DATE	BY	REVISION
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C	8/28/18	CHO	Design Update
D	9-12-18	CHO	Act 25-144, ZS-244
E	9-24-18	CHO	Act 25-144, ZS-244
F	11-2-18	CHO	Design Changes - multiple valves, prox sw
G	3-6-19	CHO	Act 1041 3rd



DANONE	1900 CHERRY STREET, LOUISVILLE, CO 80027
CLIENT	
PROJECT	FERMENTATION AND JUICE SKID
DRAWING TITLE	NUMBERING SYSTEM & SYMBOLS LIBRARY

ISSUED FOR CONSTRUCTION

PROJECT NO.	1801824
ISSUED	08/15/2018
SCALE	NOT TO SCALE
DRAWN BY	EJV
DRAWING NO.	

010

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LOUISVILLE, CO
FERMENTATION AND BLENDING SKID

WIRING SPECIFICATIONS:

FUNCTION	WIRE COLOR
AC POWER (480 VAC)	PHASE 'A' – BLACK w/ BROWN TAPE PHASE 'B' – BLACK w/ ORANGE TAPE PHASE 'C' – BLACK w/ YELLOW TAPE
AC CONTROL (115/220 VAC)	RED
AC NEUTRAL	WHITE
DC CONTROL (24 VDC)	BLUE
DC NEGATIVE	BLUE w/ WHITE STRIPE
GROUND	GREEN
INTERNAL PANEL JUMPERS	ORANGE
INTERLOCKS	YELLOW

FUNCTION	¹ PANEL WIRE SIZE (MIN.)	² FIELD WIRE SIZE (MIN.)
MAIN POWER CIRCUITS (3–PHASE)	12 AWG.	12 AWG.
MOTOR CIRCUITS	12 AWG.	12 AWG.
POWER CIRCUITS (1–PHASE)	14 AWG.	14 AWG.
CONTROL CIRCUITS (I/O – AC/DC)	16 AWG.	14 AWG.
OTHER ELECTRONIC CIRCUITS	16 AWG.	14 AWG.
ANALOG SIGNALS (TWISTED PAIR)	18 AWG.	18 AWG.
GROUND	14 AWG.	14 AWG.

- 1 WIRE TYPE SHOULD BE MTW.
2 WIRE TYPE SHOULD BE THHN.

PAINT SPECIFICATIONS:

MAIN PANEL NEMA 4X, STAINLESS STEEL

GENERAL NOTES:

- ALL CONTROL PANEL AND JUNCTION BOXES SHOULD BE HINGED ON THE LEFT, WITH THE DOOR OPENING ON THE RIGHT.
- ALL CABLES WILL ENTER CONTROL STATIONS AND JUNCTION BOXES FROM THE BOTTOM.
- 3–PHASE DISTRIBUTION BLOCKS SHOULD HAVE REMOVABLE COVERS.
- ALL WIRING SHOULD MEET UNDERWRITER LABORATORIES (U.L.) AND LOCAL CODE REQUIREMENTS.
- ALL FIELD WIRING TO BE RUN IN STAINLESS STEEL CABLE TRAYS. A MINIMUM 1” GAP MUST BE MAINTAINED BETWEEN HIGH AND LOW VOLTAGE WIRES
- ASi CABLE TO BE INSAPARATE CABLE TRAY FROM HIGH VOLTAGE AC OR DC CABLES
- ALL FIELD QUICK CONNECTS TO BE ASSEMBLED WITH DIELECTRIC GREASE



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D	9-12-18	CMO	Asst E-Stop PLC Input
E	9-24-18	CMO	Asst E-Stop PLC Input
F	11-2-18	CMO	Design Changes - multiple valves, pxx sw
G	3-5-19	CMO	Asst Inst Spn



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DANONE 1900 CHERRY STREET, LOUISVILLE, CO 80027	FERMENTATION AND JUICE SKID	GENERAL ELECTRICAL PROJECT SPECIFICATIONS
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ISSUED FOR CONSTRUCTION

PROJECT NO.	1801824
ISSUED	08/15/2018
SCALE	NOT TO SCALE
DRAWN BY	EJV
DRAWING NO.	015

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LOUISVILLE, CO

CP-FSP0


BILL OF MATERIALS - SHEET 1

ITEM	TOTAL	Mfg.	DESCRIPTION	MFG P/N
2	2	A-B	Circuit Breaker, Standard Configuration, Trip Curve 'C', 1-Pole, 1 A	1489-M1C010
6	1	A-B	Circuit Breaker, Standard Configuration, Trip Curve 'C', 1-Pole, 4 A	1489-M1C040
16	1	A-B	Circuit Breaker, Standard Configuration, Trip Curve 'C', 1-Pole, 25 A	1489-M1C250
20	1	A-B	Circuit Breaker, Standard Configuration, Trip Curve 'C', 1-Pole, 40 A	1489-M1C400
26	1	A-B	Circuit Breaker, Standard Configuration, Trip Curve 'C', 2-Pole, 2 A	1489-M2C020
50	1	A-B	Circuit Breaker, Standard Configuration, Trip Curve 'C', 3-Pole, 4 A	1489-M3C040
82	2	A-B	Circuit Breaker Accessory, Terminal Lug Kit, 3-pole, Single Wire	140G-G-TLC13
903	1	A-B	Distribution block cover, Used for (1 to 8) 335A	1492-PBC8
907	1	A-B	Power Distribution block, Aluminum, 3-pole, 600V, 1 to 8, 335A	1492-PD3183
1171	1	HOFFMAN	Back Panel, 60x36	A60P36
1447	3	BUSSMANN	Time Delay Fuse, Current Limiting, 600VAC, LP-CC Class 1A	LP-CC-1
1463	2	BUSSMANN	Time Delay Fuse, Current Limiting, 600VAC, LP-CC Class 8A	LP-CC-8
1652	1	A-B	Fuse Block, Indicating, 110V to 600V, CC Class, 2-Pole, 30A	1492-FB2C30-L
1653	1	A-B	Fuse Block, Indicating, 110V to 600V, CC Class, 3-Pole, 30A	1492-FB3C30-L
1800	1	HOFFMAN	LED Light, 15", 24VDC	LED24V15
1830	2	A-B	MPCB, Std Magnetic Trip, Frame Size C, 4 - 6.3 A	140M-C2E-B63
1939	11	A-B	Ethernet Cable, Cat5E, Shielded, Teal, 600V, 2 Meter	1585J-M8HBJM-2
2199	1	A-B	Performance Power Supply, 3-Phase, 480 VAC - 24 VDC, 40A	1606-XLS960E-3
2426	86	A-B	Terminal Block, Gray, Screw Connection, 600V AC/DC, 35A	1492-J4
2449	8	A-B	End Anchor	1492-EAJ35
2451	8	A-B	End Barrier, Gray	1492-EBJ3
2454	13	A-B	Partition Plate, Gray	1492-EBJ16
2618	2	A-B	PowerFlex 525 AC Drive, 480 VAC, 3PH, Frame Size A, IP20, LED Display, Fixed Digital Keypad, 1.9 A, 0.5 HP	25B-D1P4N104
2620	3	A-B	PowerFlex 525 AC Drive, 480 VAC, 3PH, Frame Size A, IP20, LED Display, Fixed Digital Keypad, 3.2 A, 1 HP	25B-D2P3N104
2622	2	A-B	PowerFlex 525 AC Drive, 480 VAC, 3PH, Frame Size A, IP20, LED Display, Fixed Digital Keypad, 5.7 A, 2 HP	25B-D4P0N104
2626	1	A-B	PowerFlex 525 AC Drive, 480 VAC, 3PH, Frame Size B, IP20, LED Display, Fixed Digital Keypad, 13.8 A, 5 HP	25B-D010N104
2628	1	A-B	PowerFlex 525 AC Drive, 480 VAC, 3PH, Frame Size C, IP20, LED Display, Fixed Digital Keypad, 15.4 A, 7.5 HP	25B-D013N104
2926	3	STOCK	Ground bar, #14 - #6 Taps, Copper	CTA STOCK
2930	1	BKB	Copper Ground Lug, 125A	L125H



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D	9-12-18	CHO	Adt 25-144, ZS-244
E	9-24-18	CHO	Adt 16 Stop PLC Input
F	11-2-18	CHO	Design Changes - multiple valves, prov sw
G	3-6-19	CHO	Adt Inst 301



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DANONE CLIENT 1900 CHERRY STREET, LOUISVILLE, CO 80027	PROJECT FERMENTATION AND JUICE SKID	DRAWING TITLE CP-FSP0 BILL OF MATERIALS - SHEET 1
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ISSUED FOR CONSTRUCTION

PROJECT NO.	1801824
ISSUED	08/15/2018
SCALE	NOT TO SCALE
DRAWN BY	EJV
DRAWING NO.	

020

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DANONE
LOUISVILLE, CO
CP-FSP0
BILL OF MATERIALS - SHEET 2

ITEM	TOTAL	Mfg.	DESCRIPTION	MFG P/N
5000	1	A-B	140G - Molded Case Circuit Breaker, G frame, 35 kA, T/M - Thermal Magnetic, 3 Poles, Rated Current 70 A	140G-G3C3-C70
5001	1	A-B	140G Flex-Cable , Stainless Steel Flange Handle , 4 ft ,	140G-G-FCS04
5002	1	A-B	Frame-G, Terminal Cover, 3p, Qty 2, High	140G-G-TC3H
5003	2	A-B	MPCB, Standard Magnetic Trip (Fixed at 13 x le), 1.6 - 2.5 A, Std. Performance, Frame Size C, 1 NO, Bot. Front	140M-C2E-B25
5004	3	A-B	MPCB, Standard Magnetic Trip (Fixed at 13 x le), 2.5 - 4 A, Std. Performance, Frame Size C, 1 NO, Bot. Front	140M-C2E-B40
5005	1	A-B	MPCB, Standard Magnetic Trip (Fixed at 13 x le), 10 - 16 A, Std. Performance, Frame Size C, 1 NO, Bot. Front	140M-C2E-C16
5006	1	A-B	MPCB, Standard Magnetic Trip (Fixed at 13 x le), 14.5 - 20 A, Std. Performance, Frame Size C, 1 NO, Bot. Front	140M-C2E-C20
5007	1	A-B	1497 - CCT Standard Transformer, 350VA, 240/480V 60Hz / 220/440V 50Hz Primary, 110V 50Hz / 120V 60Hz Secondary, 2 Pri - 1 Sec Fuse Blocks, No Cover/ No Sec. Fuse	1497-F-BASX-3-N
5008	1	A-B	Stratix 2000 unmanaged switch, 16 copper 10/100 ports	1783-US16T
5009	3	A-B	Compact Busbar Feeder Terminal, for 140M-C, 140M-D	140M-C-WTN
5010	1	A-B	3-Phase Comm. Link for 140M-C,-D, 54mm Spacing, 2 Starters	140M-C-W542N
5011	2	A-B	3-Phase Comm. Link for 140M-C,-D, 54mm Spacing, 4 Starters	140M-C-W544N
5012	1	HOFFMAN	60 x 37 x 16, WATERSHED Disconnect Enclosure, Type 4X	WS60HS3716SS
5013	1	HOFFMAN	12.00 x 12.00 Data Pockets	ADP2
5014	1	HOFFMAN	Indoor Model Stainless Steel Type 4X	N210246G051
5015	1	GRACE	Voltage Indicator	R-3W-KB
5016	1	Teguar	HMI	TP-5045-22-PCIE
5017	1	A-B	30.5mm Type 4/13 2 Pos. PB-Illum., Push-Pull, Red, Mushrm Hd, LED, 12-130V AC/DC, 2 NCLB	800T-FXQH2RA5
5018	1	A-B	Contact Block, Shallow Block, 1 N.O. - 1 N.C.	800T-XA
5019	1	A-B	800T Legend Plate,StandardEMERG. STOP (red) , Package Quantity 1 ,Yellow	800T-X504Y
5020	1	A-B	Guardmaster Dual Input Safety Relay (DI), 2 Dual Channel Universal Inputs, 1 N.C. Solid State Auxiliary Output	440R-D22R2
5021	2	A-B	Safety Control Relay, 8 Pole, 3 N.O. / 1 N.C. Base, 3 N.O. / 1 N.C. Auxiliary, 24V DC (w/Elec. Coil)	700S-CF620EJC
5022	1	A-B	30.5mm Type 4/4X/13 Mom. Contact PB-Illum., Blue, Ext. Hd w/ Guard, LED, 12-130V AC/DC, 1 NO-1 NC, Finger Safe Guards	800HC-QRAH2B
5023	1	A-B	800H Legend Plate,Standard,RESET,White	800H-W521
5025	1	Grace	Phase Monitor Mounting Kit	R-3W-DR-C6
5026	1	Grace	Phase Monitor Label	R-3W-KB-L
5027	1	GRACE	USB/Ethernet Graceport	P-P11R2-K3RFO
5028	1	IFM	ASi Node Addressing Tool	AC1154

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G	3-6-19	CHO	Adt Inst 301

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1900 CHERRY STREET, LOUISVILLE, CO 80027

FERMENTATION AND JUICE SKID

CP-FSP0 BILL OF MATERIALS - SHEET 2

ISSUED FOR CONSTRUCTION

PROJECT NO. 1801824

ISSUED 08/15/2018

SCALE NOT TO SCALE

DRAWN BY EJV

DRAWING NO. 021

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LOUISVILLE, CO

CP-FSP1


BILL OF MATERIALS - SHEET 1

2	2	A-B	Circuit Breaker, Standard Configuration, Trip Curve 'C', 1-Pole, 1 A	1489-M1C010
4	4	A-B	Circuit Breaker, Standard Configuration, Trip Curve 'C', 1-Pole, 2 A	1489-M1C020
7	1	A-B	Circuit Breaker, Standard Configuration, Trip Curve 'C', 1-Pole, 5 A	1489-M1C050
9	2	A-B	Circuit Breaker, Standard Configuration, Trip Curve 'C', 1-Pole, 7 A	1489-M1C070
16	1	A-B	Circuit Breaker, Standard Configuration, Trip Curve 'C', 1-Pole, 25 A	1489-M1C250
1167	1	HOFFMAN	Back Panel, 36x30	A36P30
1536	12	MERSEN	Time Delay Fuse, 250VAC, 5 x 20mm, 1A	GSC1
1538	5	MERSEN	Time Delay Fuse, 250VAC, 5 x 20mm, 2A	GSC2
1541	1	MERSEN	Time Delay Fuse, 125VAC, 5 x 20mm, 8A	GSC8
1800	1	HOFFMAN	LED Light, 15", 24VDC	LED24V15
1938	2	A-B	Ethernet Cable, Cat5E, Shielded, Teal, 600V, 1 Meter	1585J-M8HBJM-1
1939	2	A-B	Ethernet Cable, Cat5E, Shielded, Teal, 600V, 2 Meter	1585J-M8HBJM-2
1975	1	A-B	ControlLogix, 4 Slot Rack	1756-A4
1986	2	A-B	ControlLogix Ethernet/IP Communication Card, 128 TCP/IP connections	1756-EN2T
1995	1	A-B	ControlLogix PLC Processor, User Memory 4 MB	1756-L72
2003	1	A-B	ControlLogix Slot Filler	1756-N2
2023	1	A-B	ControlLogix Power Supply for A or B Racks, 24VDC	1756-PB72
2039	2	A-B	Flex I/O, EtherNet/IP Adapter Module	1794-AENT
2046	1	A-B	Flex I/O, 24V DC Input Module, 16 Pts	1794-IB16
2048	2	A-B	Flex I/O, Analog Input, 8 Pts	1794-IE8
2054	1	A-B	Flex I/O, DC Output Module, 16 Pts, Electronically Fused	1794-OB16P
2055	1	A-B	Flex I/O, Analog ouput, 4 Pts	1794-OE4
2059	5	A-B	Flex I/O, 3 Wire Terminal Base	1794-TB3
2426	19	A-B	Terminal Block, Gray, Screw Connection, 600V AC/DC, 35A	1492-J4
2438	18	A-B	Fused Terminal Block, Gray, Screw Connection, 10-57 AC/DC, 15A	1492-WFB424
2448	1	A-B	Side Jumper, 10-pole, Uninsulated, For 1492-WFB	1492-SJFB8-10
2449	6	A-B	End Anchor	1492-EAJ35
2451	2	A-B	End Barrier, Gray	1492-EBJ3
2454	2	A-B	Partition Plate, Gray	1492-EBJ16



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1900 CHERRY STREET, LOUISVILLE, CO 80027

PROJECT

FERMENTATION AND JUICE SKID

DRAWING TITLE

CP-FSP1 BILL OF MATERIALS - SHEET 1

ISSUED FOR CONSTRUCTION

PROJECT NO.

1801824

ISSUED

08/15/2018

SCALE

NOT TO SCALE

DRAWN BY

EJV

DRAWING NO.


022

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DANONE
LOUISVILLE, CO
CP-FSP1
BILL OF MATERIALS - SHEET 2


ITEM	TOTAL	Mfg.	DESCRIPTION	MFG P/N
2926	1	STOCK	Ground bar, #14 - #6 Taps, Copper	CTA STOCK
5000	1	HOFFMAN	36 x 30 x 12, WATERSHED, Type 4X Enclosure	WS363012SS
5001	1	HOFFMAN	12.00 x 12.00 Data Pockets	ADP2
5002	1	A-B	855E 50mm Control Tower Bases, , Vertical Mount, Black Housing, No Cap	855E-BVM
5003	1	A-B	Control Tower Stack Light, 24V AC/DC Full Voltage, Blue Steady LED (socket mount)	855E-24TL6
5004	1	A-B	Control Tower Stack Light, 24V AC/DC Full Voltage, Green Steady LED (socket mount)	855E-24TL3
5005	1	A-B	Control Tower Stack Light, 24V AC/DC Full Voltage, Amber Steady LED (socket mount)	855E-24TL5
5006	1	A-B	Control Tower Stack Light, 24V AC/DC Full Voltage, Red Steady LED (socket mount)	855E-24TL4
5007	1	A-B	Control Tower Stack Light, 24V AC/DC Full Voltage, Black Housing, Single Circuit Piezo	855E-B24SA3
5008	1	IFM	IFM ASI MASTER	AC1422
5009	2	IFM	IFM ASI POWER SUPPLY	AC1257
5010	1	A-B	Stratix 2000 unmanaged switch, 16 copper 10/100 ports	1783-US16T
5011	1	A-B	HART Analog Input Modules, 8 Single-Ended Inputs	1794-IE8H
5012	1	A-B	Terminal Base, 3-Wire Grounded, Screw Clamp	1794-TB3G

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Design Group

NO.	DATE	BY	INITIAL RELEASE	REVISION
A	08/15/2018	EJV	ISSUE FOR CONSTRUCTION	
B	08/24/2018	EJV	Design Update	
C	8/28/18	CHO	Adt 25-144, ZS-244	
D	9-12-18	CHO	Adt 25-144, ZS-244	
E	9-24-18	CHO	Adt 16-Stop PLC Input	
F	11-2-18	CHO	Design Changes - multiple valves, prox sw	
G	3-6-19	CHO	Adt Inst Sht	



DANONE
ONE PLANET. ONE HEALTH.

CLIENT	DANONE 1900 CHERRY STREET, LOUISVILLE, CO 80027
PROJECT	FERMENTATION AND JUICE SKID
DRAWING TITLE	CP-FSP1 BILL OF MATERIALS - SHEET 2

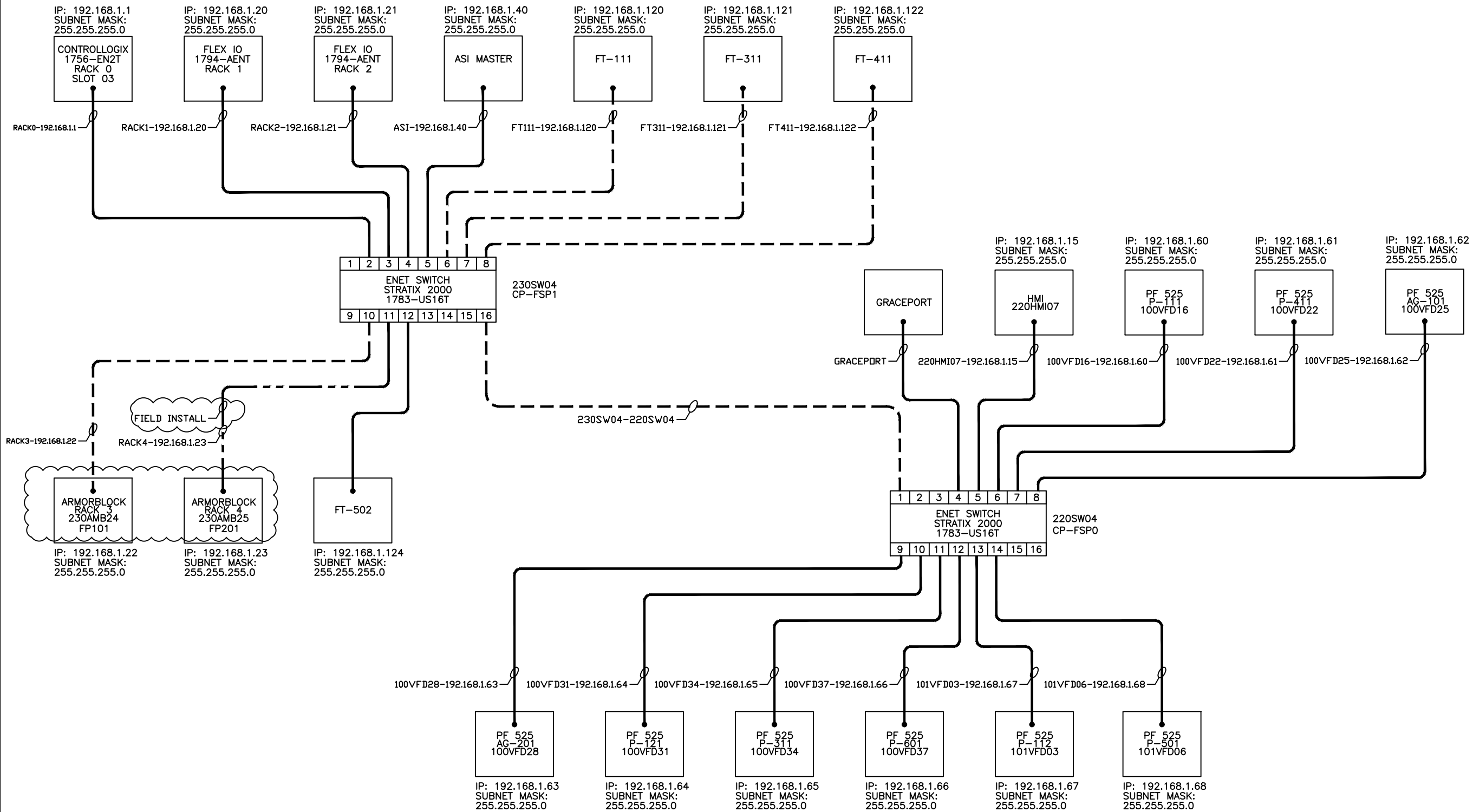
ISSUED FOR CONSTRUCTION

PROJECT NO. 1801824
ISSUED 08/15/2018
SCALE NOT TO SCALE
DRAWN BY EJV
DRAWING NO.

023

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NOTES:

1. ALL ETHERNET CABLES ARE TO BE CATEGORY 5 (CAT5E) SHIELDED CABLES.
2. INDIVIDUAL CABLE LENGTH MAY NOT EXCEED 300 FEET.

NO.	DATE	BY	REVISION
A	08/15/2018	EJV	INITIAL RELEASE
B	08/24/2018	EJV	ISSUE FOR CONSTRUCTION
C	8/28/18	CHO	Design Update
D	9-12-18	CHO	Add 25-144, ZS-244
E	9-24-18	CHO	Add E-Stop PLC Input
F	11-2-18	CHO	Design Changes - multiple valves, prox sw
G	3-6-19	CHO	Add Inst 301



DANONE	1900 CHERRY STREET, LOUISVILLE, CO 80027
CLIENT	
PROJECT	FERMENTATION AND JUICE SKID
DRAWING TITLE	LEVEL 3 LAYOUT ETHERNET

ISSUED FOR CONSTRUCTION

PROJECT NO.	1801824
ISSUED	08/15/2018
SCALE	NOT TO SCALE
DRAWN BY	EJV
DRAWING NO.	

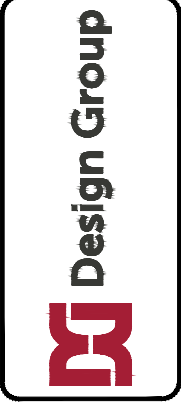
050

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NOTES:

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NO.	DATE	BY	INITIAL RELEASE	REVISION
A	08/15/2018	EJV	ISSUE FOR CONSTRUCTION	
B	08/24/2018	EJV	Design Update	
C	8/28/18	CNO	Design Update	
D	9-12-18	CNO	Acti E-Stop PLC Input	
E	9-24-18	CNO	Design Changes - multiple valves, prox sw	
F	11-2-18	CNO	Design Changes - multiple valves, prox sw	
G	3-6-19	CNO	Acti Inset SH	



CLIENT	DANONE 1900 CHERRY STREET, LOUISVILLE, CO 80027
PROJECT	FERMENTATION AND JUICE SKID
DRAWING TITLE	LEVEL 1 LAYOUT ETHERNET

ISSUED FOR CONSTRUCTION

PROJECT NO. 1801824

ISSUED 08/15/2018

SCALE NOT TO SCALE

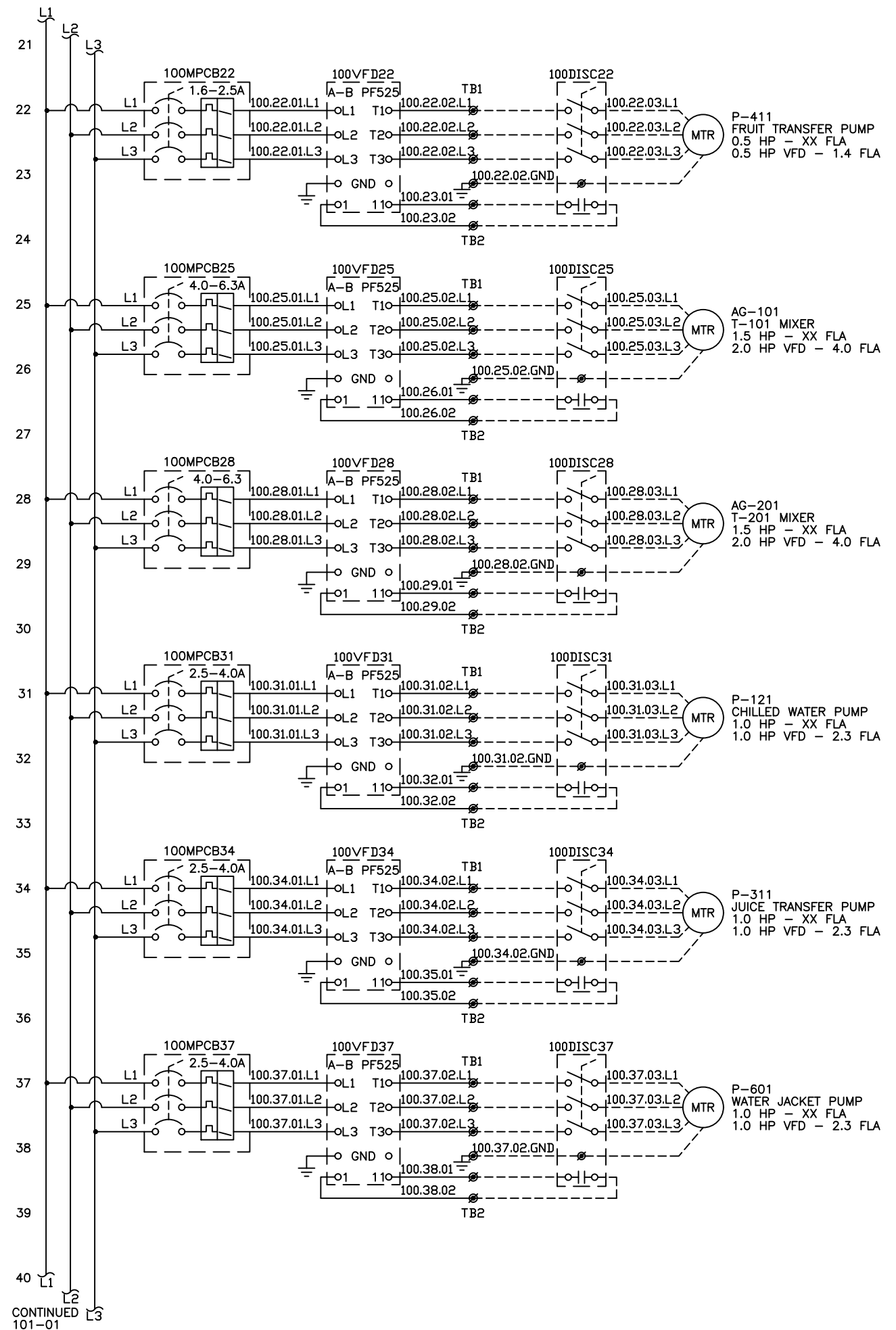
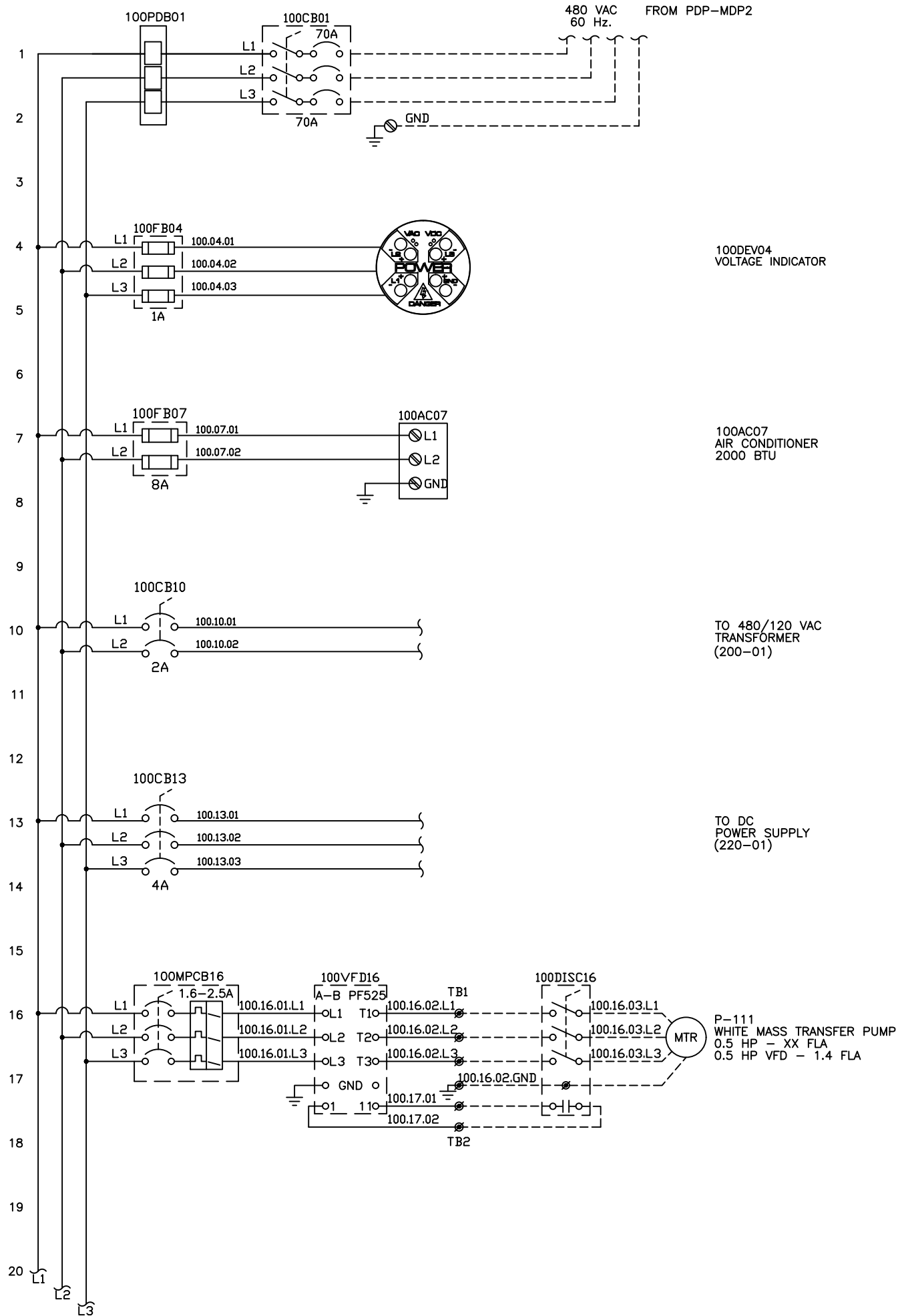
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052

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NO.	DATE	BY	REVISION
A	08/15/2018	EJV	INITIAL RELEASE
B	08/24/2018	EJV	ISSUE FOR CONSTRUCTION
C	08/28/18	CNO	Design Update
D	9-12-18	CNO	Add 2S-144, 2S-244
E	9-24-18	CNO	Add E-Stop PLC Input
F	11-2-18	CNO	Design Changes - multiple valves, prox sw
G	3-6-19	CNO	Add hold 3ph



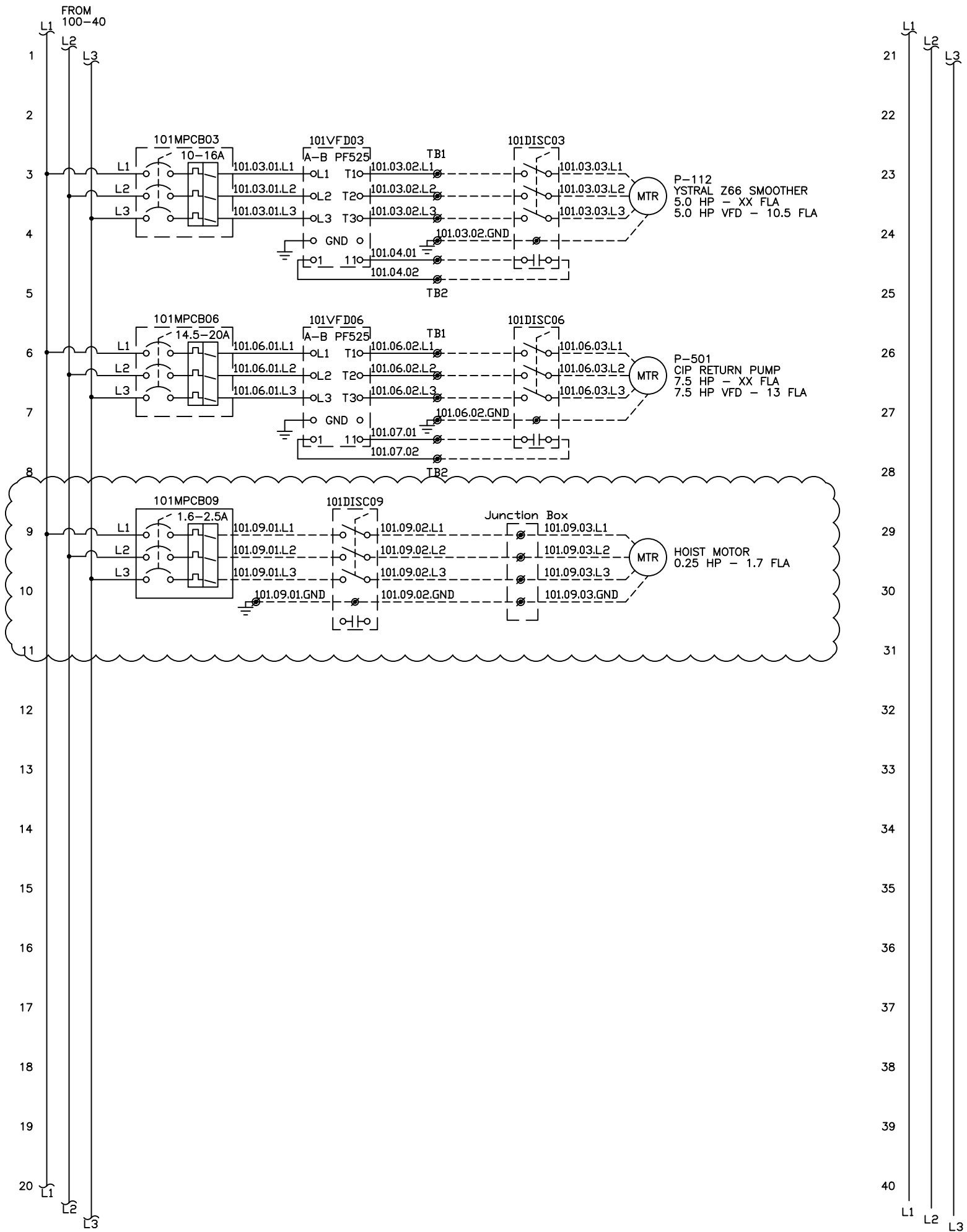
CLIENT	PROJECT	DRAWING TITLE
DANONE 1900 CHERRY STREET, LOUISVILLE, CO 80027	FERMENTATION AND JUICE SKID	THREE-PHASE POWER (AC) - SHEET 1



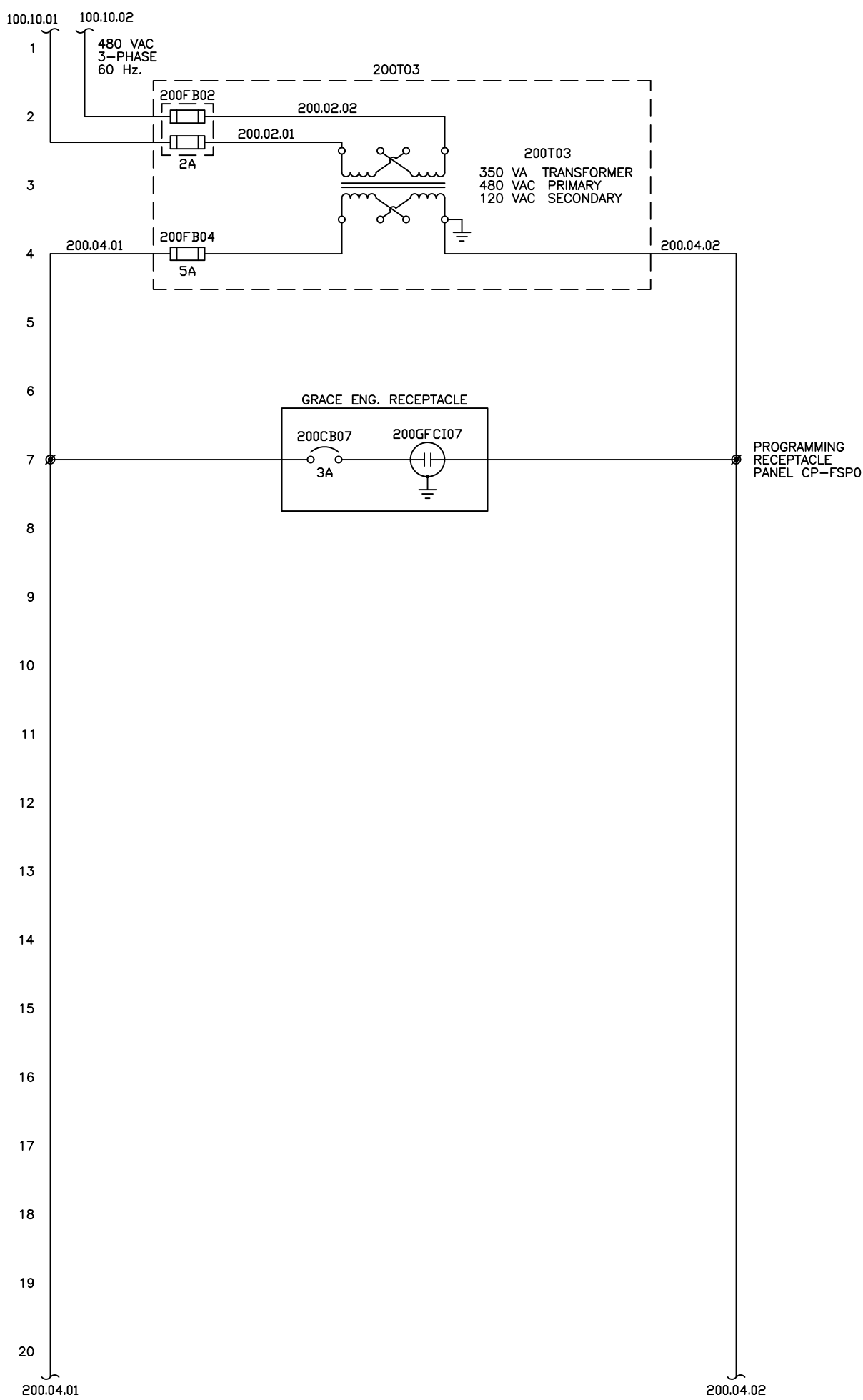
PROJECT NO.	ISSUED	SCALE	DRAWN BY	DRAWING NO.
1801824	08/15/2018	NOT TO SCALE	EJV	100

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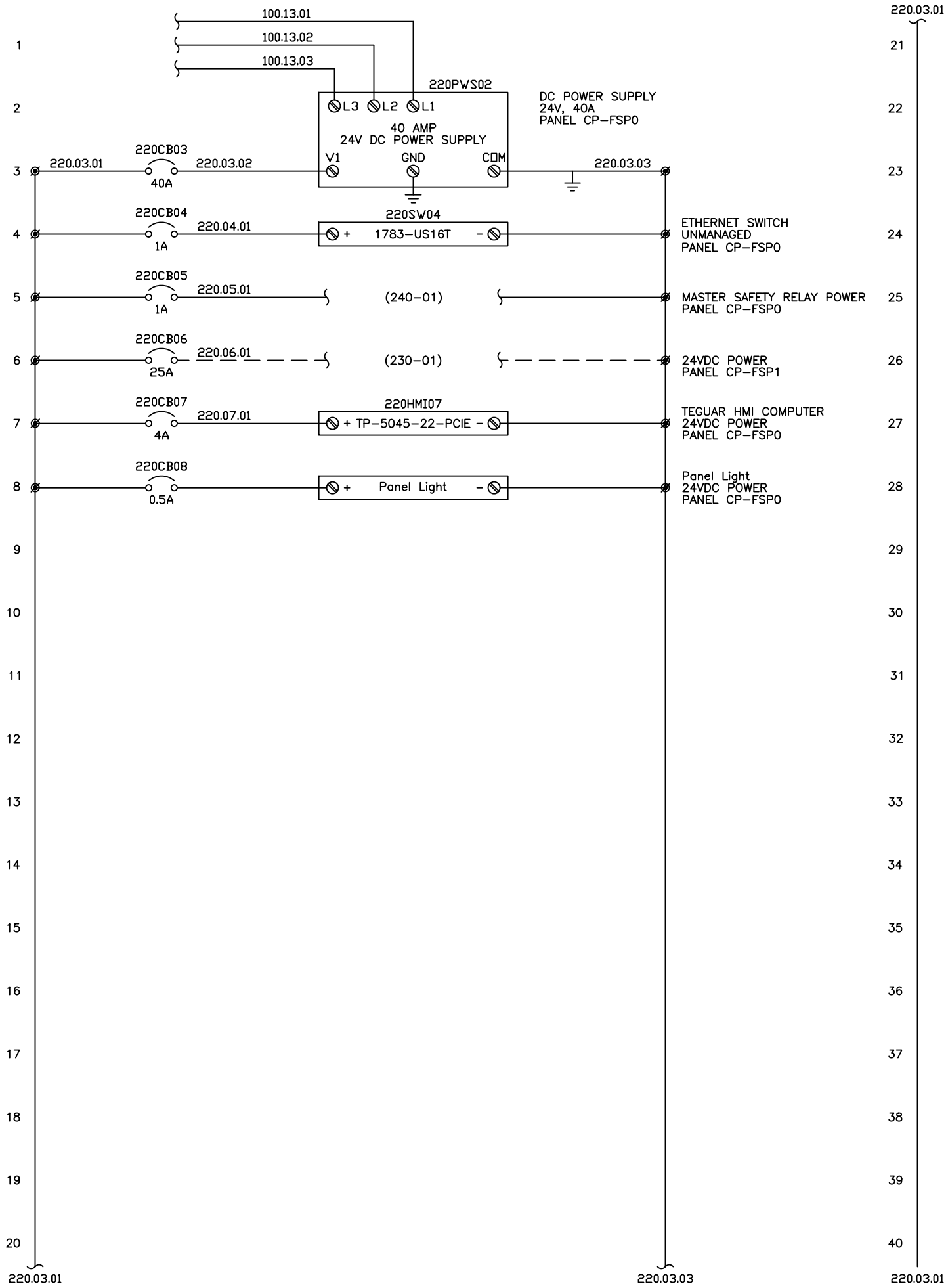
NO	DATE	BY	INITIAL RELEASE	REVISION
A	08/15/2018	EJV	ISSUE FOR CONSTRUCTION	
B	08/24/2018	EJV	ISSUE FOR CONSTRUCTION	
C	8/29/18	CWO	Design Update	
D	9/12/18	CWO	Add 2S-14, 2S-24	
E	9-24-18	CWO	Add E-Stop PLC input	
F	11-2-18	CWO	Design Changes - multiple valves, prox sw	
G	3-6-19	CWO	Add Toilet Spn	



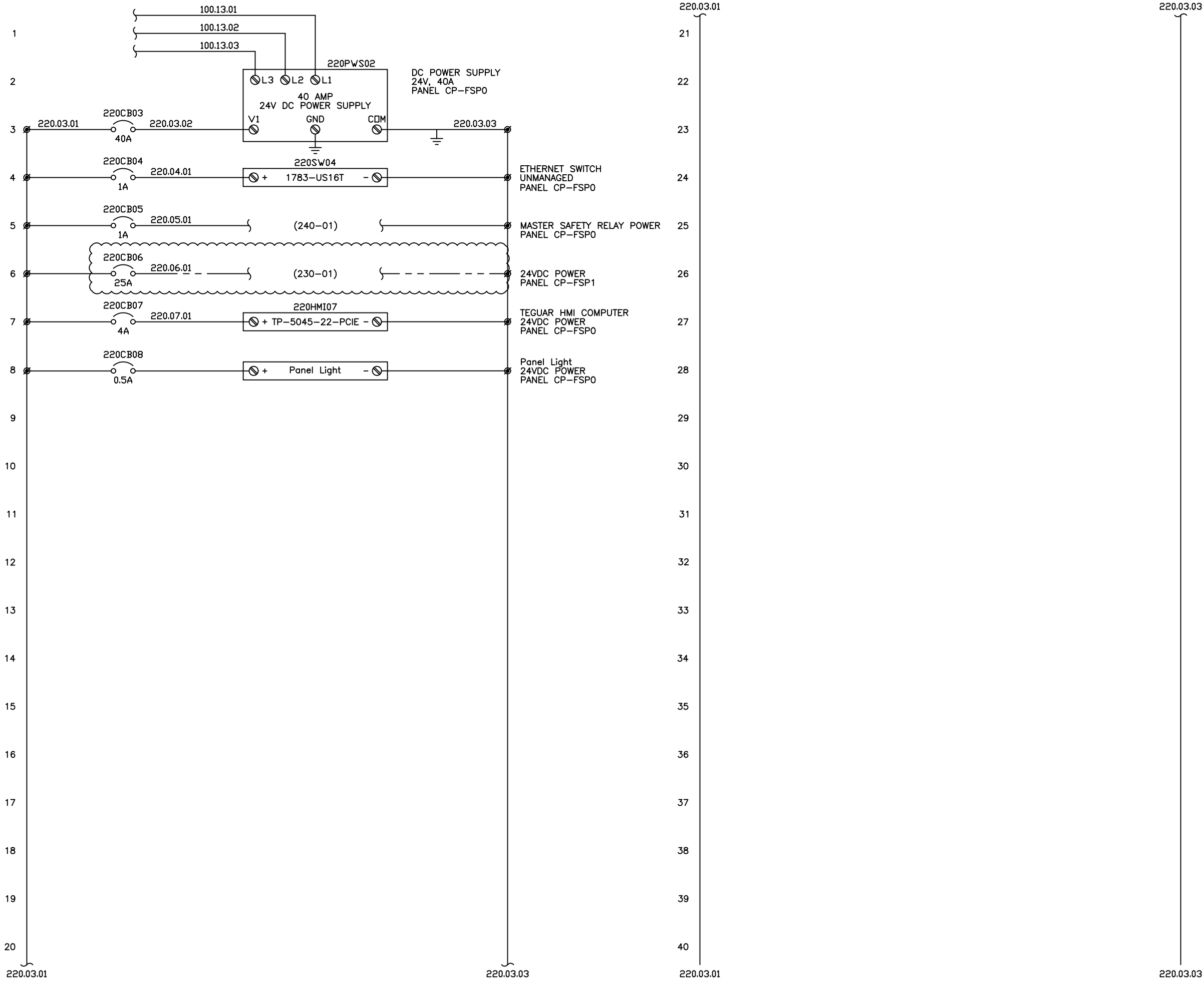
CLIENT	DANONE 1900 CHERRY STREET, LOUISVILLE, CO 80027
PROJECT	FERMENTATION AND JUICE SKID
DRAWING TITLE	SINGLE-PHASE POWER (AC)

ISSUED FOR CONSTRUCTION
PROJECT NO. 1801824
ISSUED 08/15/2018
SCALE NOT TO SCALE
DRAWN BY EJV
DRAWING NO. 200
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NO	DATE	BY	REVISION
A	08/15/2018	EJV	INITIAL RELEASE
B	08/24/2018	EJV	ISSUE FOR CONSTRUCTION
C	08/28/18	CMO	Design Update
D	9-12-18	CMO	Add 2S-144, 2S-244
E	9-24-18	CMO	Add E-Stop PLC Input
F	11-2-18	CMO	Design Changes - multiple valves, prox sw
G	3-6-19	CMO	Add hold 3ph

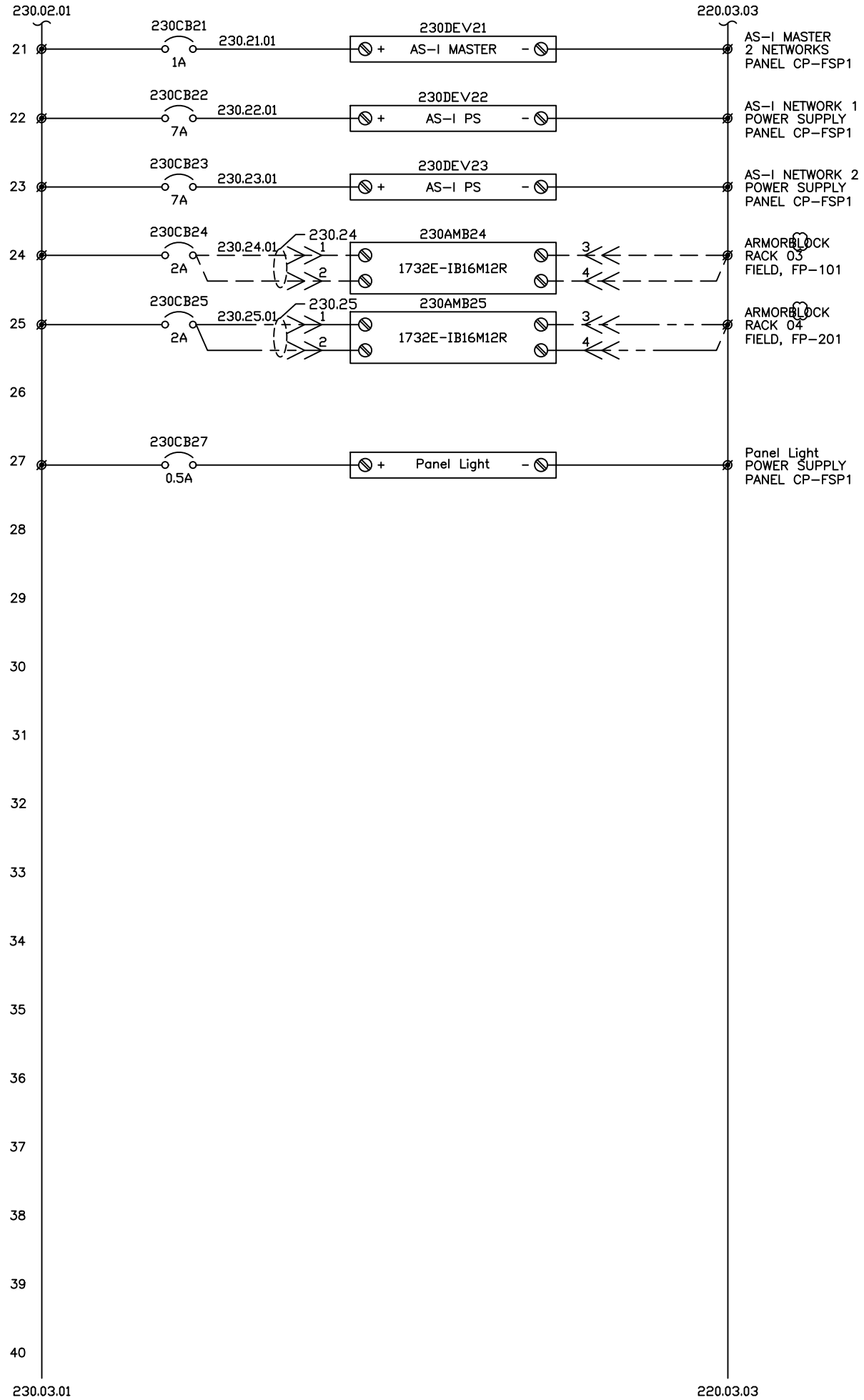
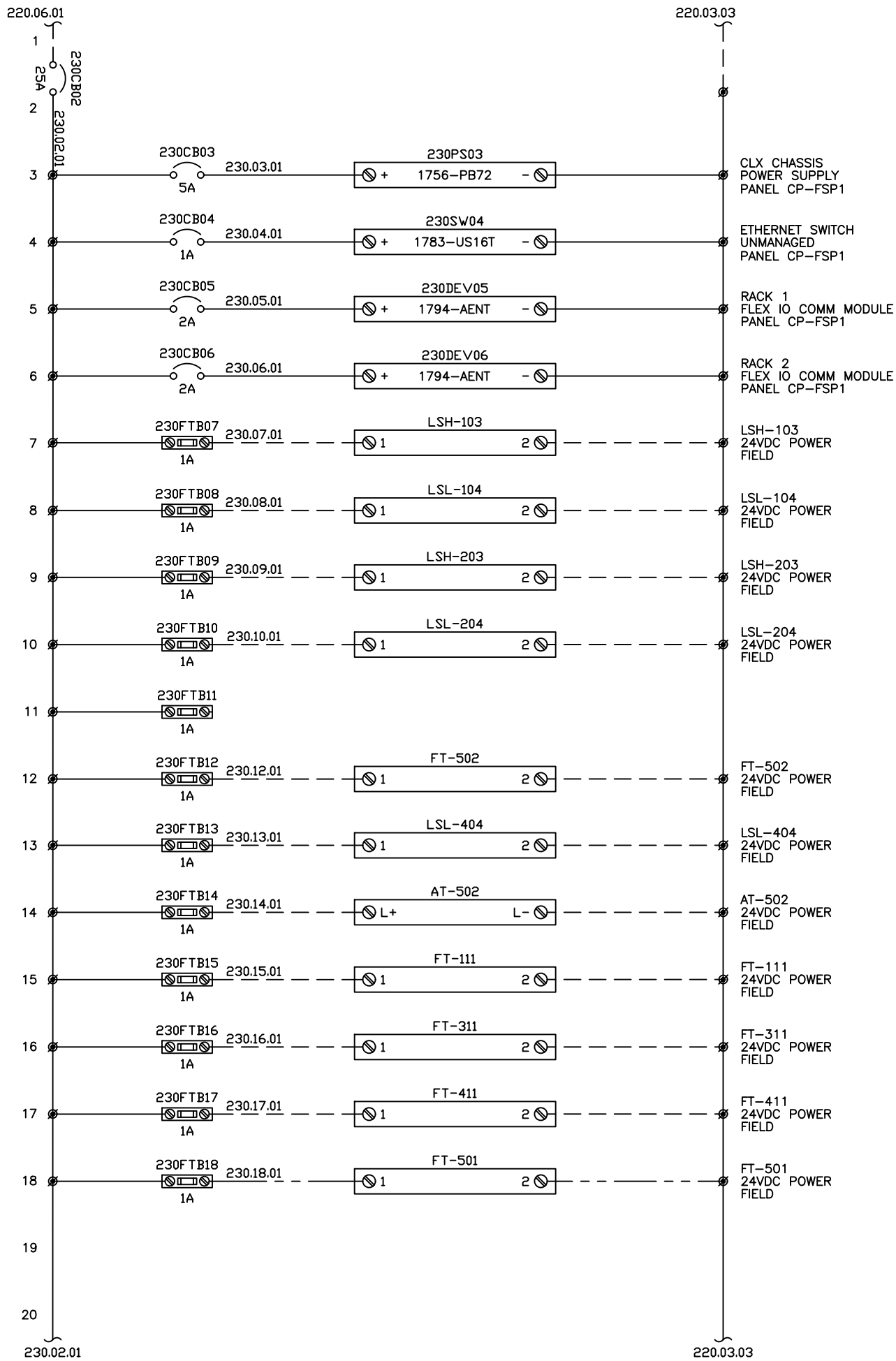


CLIENT	DANONE 1900 CHERRY STREET, LOUISVILLE, CO 80027
PROJECT	FERMENTATION AND JUICE SKID
DRAWING TITLE	SINGLE-PHASE POWER (DC) - CP-FSP0

ISSUED FOR CONSTRUCTION

PROJECT NO.	1801824
ISSUED	08/15/2018
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DRAWN BY	EJV
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A	08/15/2018	EJV	INITIAL RELEASE
B	08/24/2018	CMO	ISSUE FOR CONSTRUCTION
C	8/28/18	CMO	Design Update
D	9-12-18	CMO	Add 2S-144, 2S-244
E	9-24-18	CMO	Add E-Stop PLC input
F	11-2-18	CMO	Design Changes - multiple valves, prox sw
G	3-6-19	CMO	Add hold 3ph



DANONE
1900 CHERRY STREET, LOUISVILLE, CO 80027

CLIENT

PROJECT
FERMENTATION AND JUICE SKID

DRAWING
TITLE
SINGLE-PHASE POWER (DC) - CP-FSP1

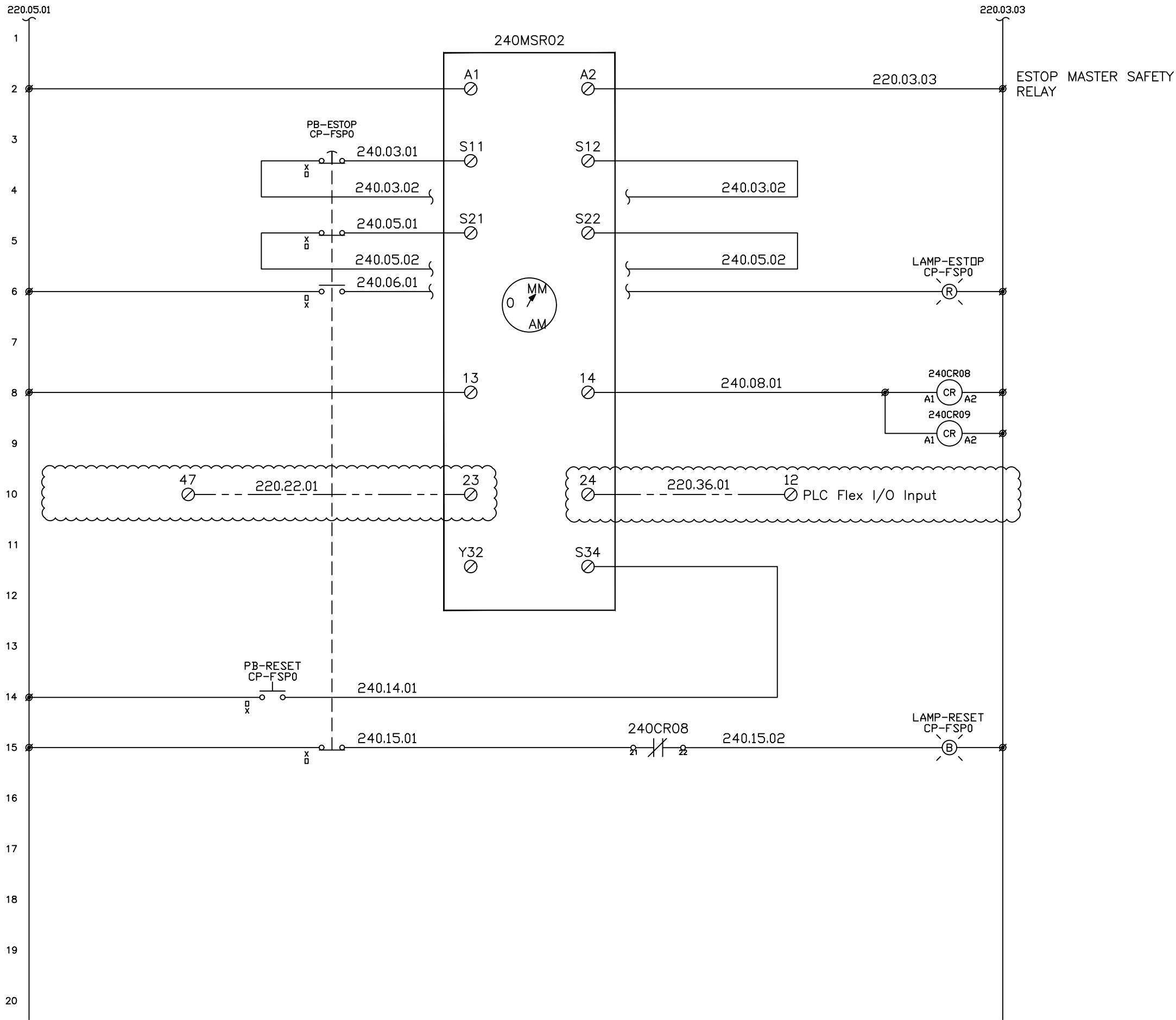
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PROJECT NO. 1801824
ISSUED 08/15/2018
SCALE NOT TO SCALE
DRAWN BY EJV
DRAWING NO.

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A	08/15/2018	EJV	INITIAL RELEASE
B	08/24/2018	EJV	ISSUE FOR CONSTRUCTION
C	8/28/18	CMO	Design Update
D	9-12-18	CMO	Add ZS-144, ZS-244
E	9-24-18	CMO	Add E-Stop PLC Input
F	11-2-18	CMO	Design Changes - multiple valves, prox sw
G	3-6-19	CMO	Add hoist 3ph



CLIENT	DANONE 1900 CHERRY STREET, LOUISVILLE, CO 80027
PROJECT	FERMENTATION AND JUICE SKID
DRAWING TITLE	E-STOP CIRCUIT - SHEET 1

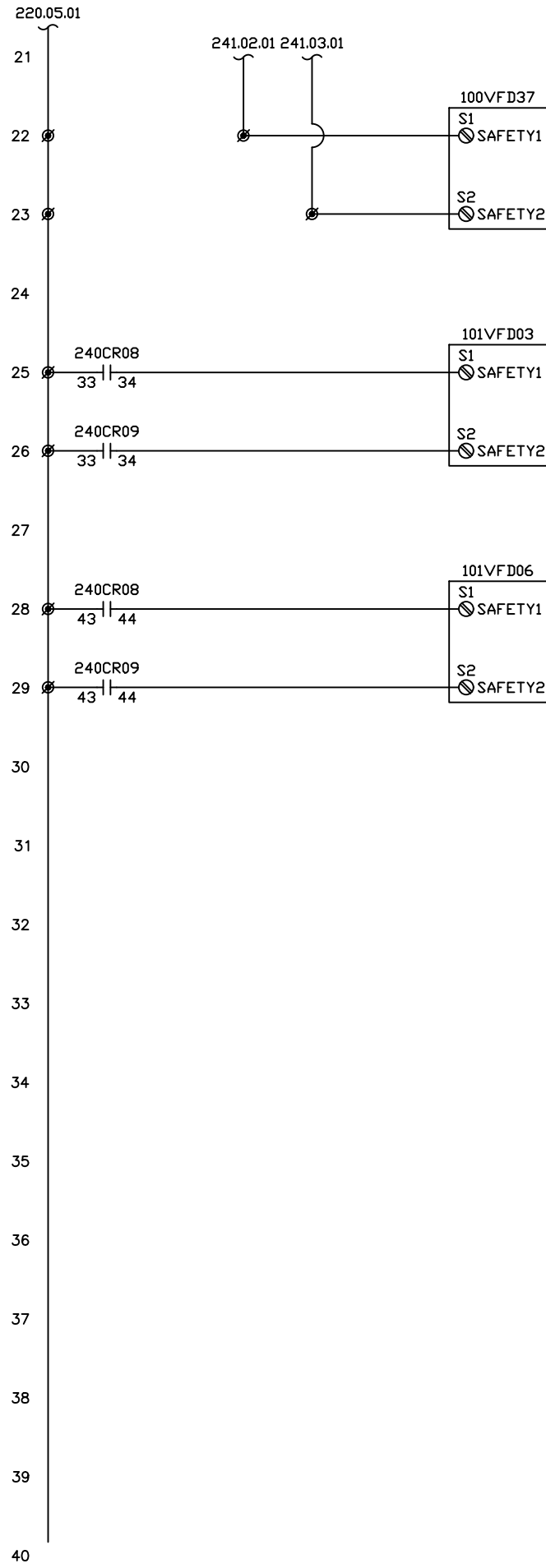
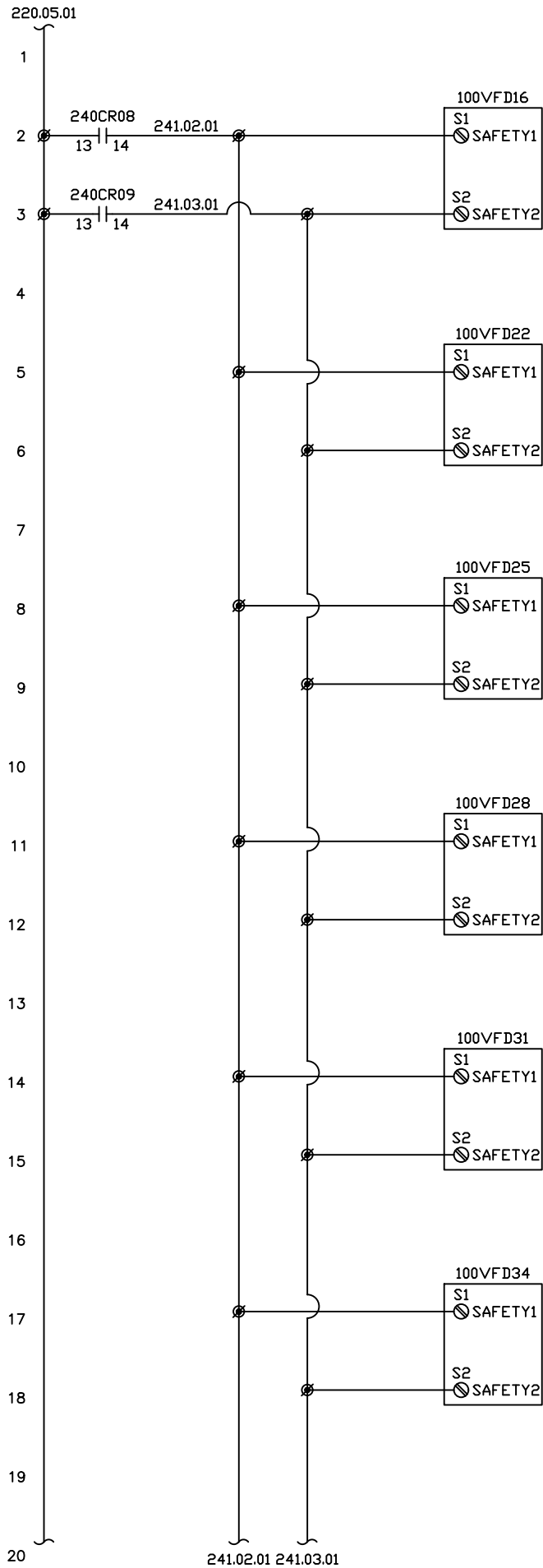
ISSUED FOR CONSTRUCTION

PROJECT NO.	1801824
ISSUED	08/15/2018
SCALE	NOT TO SCALE
DRAWN BY	EJV
DRAWING NO.	

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NO	DATE	BY	REVISION
A	08/15/2018	EJV	INITIAL RELEASE
B	08/24/2018	EJV	ISSUE FOR CONSTRUCTION
C	8/28/18	CMO	Design Update
D	9-12-18	CMO	Add ZS-144, ZS-244
E	9-24-18	CMO	Add E-Stop PLC Input
F	11-2-18	CMO	Design Changes - multiple valves, prox sw
G	3-6-19	CMO	Add hoist 3ph



DANONE
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CLIENT	DANONE 1900 CHERRY STREET, LOUISVILLE, CO 80027
PROJECT	FERMENTATION AND JUICE SKID
DRAWING TITLE	E-STOP CIRCUIT - SHEET 2

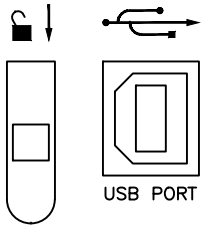
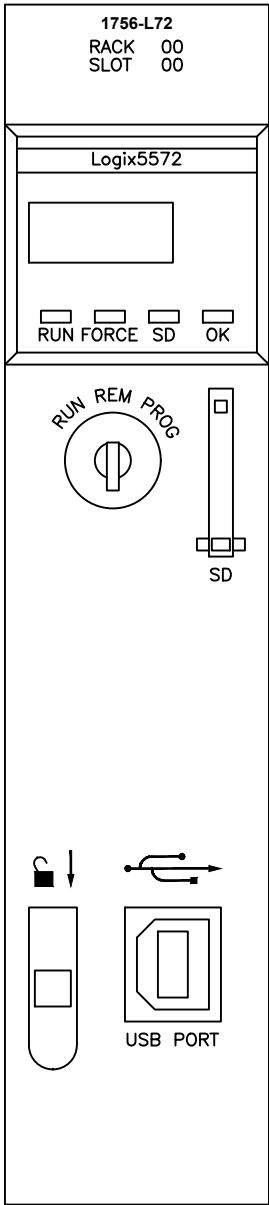
ISSUED FOR CONSTRUCTION

PROJECT NO.	1801824
ISSUED	08/15/2018
SCALE	NOT TO SCALE
DRAWN BY	EJV
DRAWING NO.	241

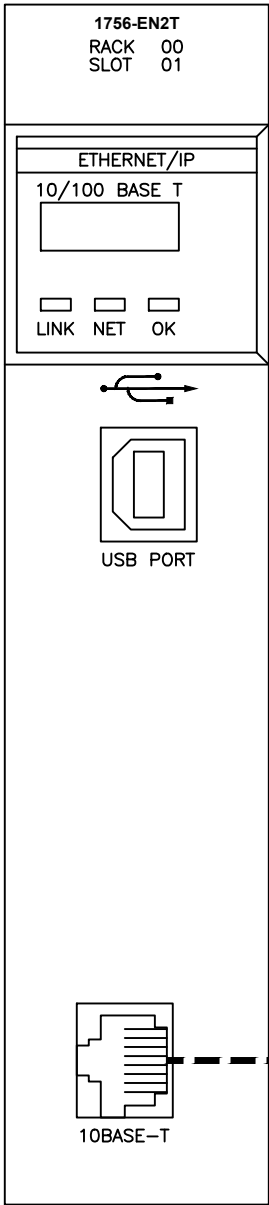
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LOCATED IN CONTROL PANEL
IP ADDRESS: XXX.XXX.XXX.XXX
SUBNET MASK: 255.255.255.0

ETHERNET COMMS LEVEL 1
(PLANT/MES)

LEVEL 1 SEE DRAWING 052

NO	DATE	BY	INITIAL RELEASE	REVISION
A	08/15/2018	EJV	ISSUE FOR CONSTRUCTION	
B	08/24/2018	CMO	Design Update	
C	8/28/18	CMO	Add ZS-144, ZS-244	
D	9-12-18	CMO	Add E-Stop PLC Input	
E	9-24-18	CMO	Design Changes - multiple valves, prox sw	
F	11-2-18	CMO	Add Note 3ph	
G	3-6-19	CMO		

CLIENT	PROJECT	DRAWING TITLE
DANONE 1900 CHERRY STREET, LOUISVILLE, CO 80027	FERMENTATION AND JUICE SKID	INPUT/OUTPUT LAYOUT - RACK 0 SLOT 0 & 1

ISSUED FOR CONSTRUCTION

PROJECT NO.	1801824
ISSUED	08/15/2018
SCALE	NOT TO SCALE
DRAWN BY	EJV
DRAWING NO.	

300

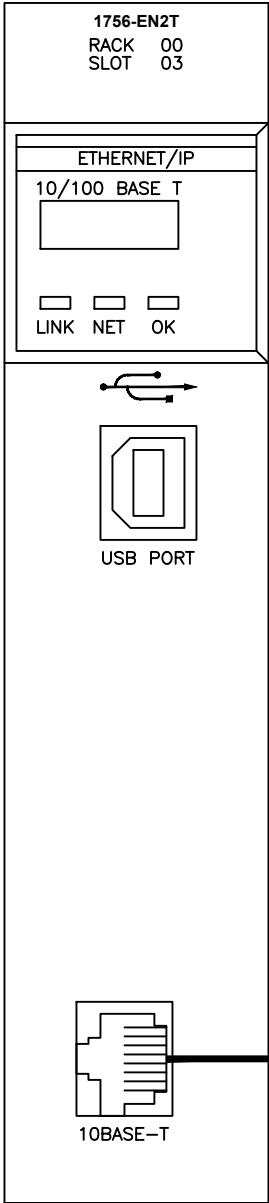
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SPARE
RACK 00 SLOT 02

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LOCATED IN CONTROL PANEL
IP ADDRESS: 192.168.1.1
SUBNET MASK: 255.255.255.0
ETHERNET COMMS LEVEL 3
(I/O)



Design Group

NO	DATE	BY	INITIAL RELEASE	REVISION
A	08/15/2018	EJV	ISSUE FOR CONSTRUCTION	
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C	8/28/18	CMO	Add ZS-144, ZS-244	
D	9-12-18	CMO	Add E-Stop PLC Input	
E	9-24-18	CMO	Design Changes - multiple valves, prox sw	
F	11-2-18	CMO	Add hoist 3ph	
G	3-6-19	CMO		



DANONE
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CLIENT	DANONE 1900 CHERRY STREET, LOUISVILLE, CO 80027
PROJECT	FERMENTATION AND JUICE SKID
DRAWING TITLE	INPUT/OUTPUT LAYOUT - RACK 0 SLOT 2 & 3

ISSUED FOR CONSTRUCTION

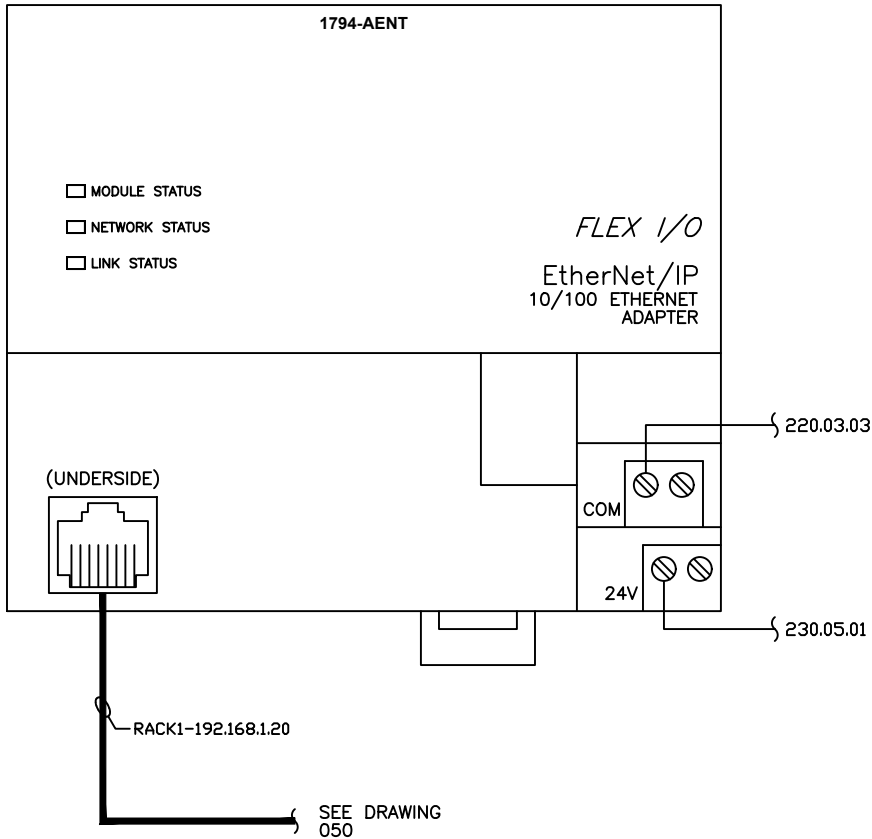
PROJECT NO.	1801824
ISSUED	08/15/2018
SCALE	NOT TO SCALE
DRAWN BY	EJV
DRAWING NO.	301

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LOCATED IN CONTROL PANEL CP-FSP1
IP ADDRESS: 192.168.1.20
SUBNET MASK: 255.255.255.0



230.02.01

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310FTB21
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310.22.01

COMMON TERMINALS (16-33) CONNECTED INTERNALLY.
+24VDC TERMINALS (34-51) CONNECTED INTERNALLY.

LOCATED IN CONTROL PANEL CP-FSP1

TB3 BASE

1794-IE8

RACK 01

SLOT 00

16

34

00

I+

17

35

01

V+

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02

I+

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37

03

V+

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04

I+

21

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05

V+

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I+

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V+

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I+

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V+

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I+

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V+

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I+

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V+

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I+

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V+

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220.03.03

TT-105
4-20 mA
0-200F
TYPICAL DWG. 801

PT-112
4-20 mA
0-150 PSIG
TYPICAL DWG. 802

TT-112
4-20 mA
30-200F
TYPICAL DWG. 801

TT-113
4-20 mA
30-200F
TYPICAL DWG. 801

PT-141
4-20 mA
0-120 PSIG
TYPICAL DWG. 802

TT-141
4-20 mA
0-300F
TYPICAL DWG. 801

TT-142
4-20 mA
0-300F
TYPICAL DWG. 801

TT-161
4-20 mA
0-300F
TYPICAL DWG. 801

NO	DATE	BY	REVISION
A	08/15/2018	EJV	INITIAL RELEASE
B	08/24/2018	EJV	ISSUE FOR CONSTRUCTION
C	8/28/18	CMO	Design Update
D	9-12-18	CMO	Add ZS-144, ZS-244
E	9-24-18	CMO	Add E-Stop PLC Input
F	11-2-18	CMO	Design Changes - multiple valves, prox sw
G	3-6-19	CMO	Add hoist 3ph

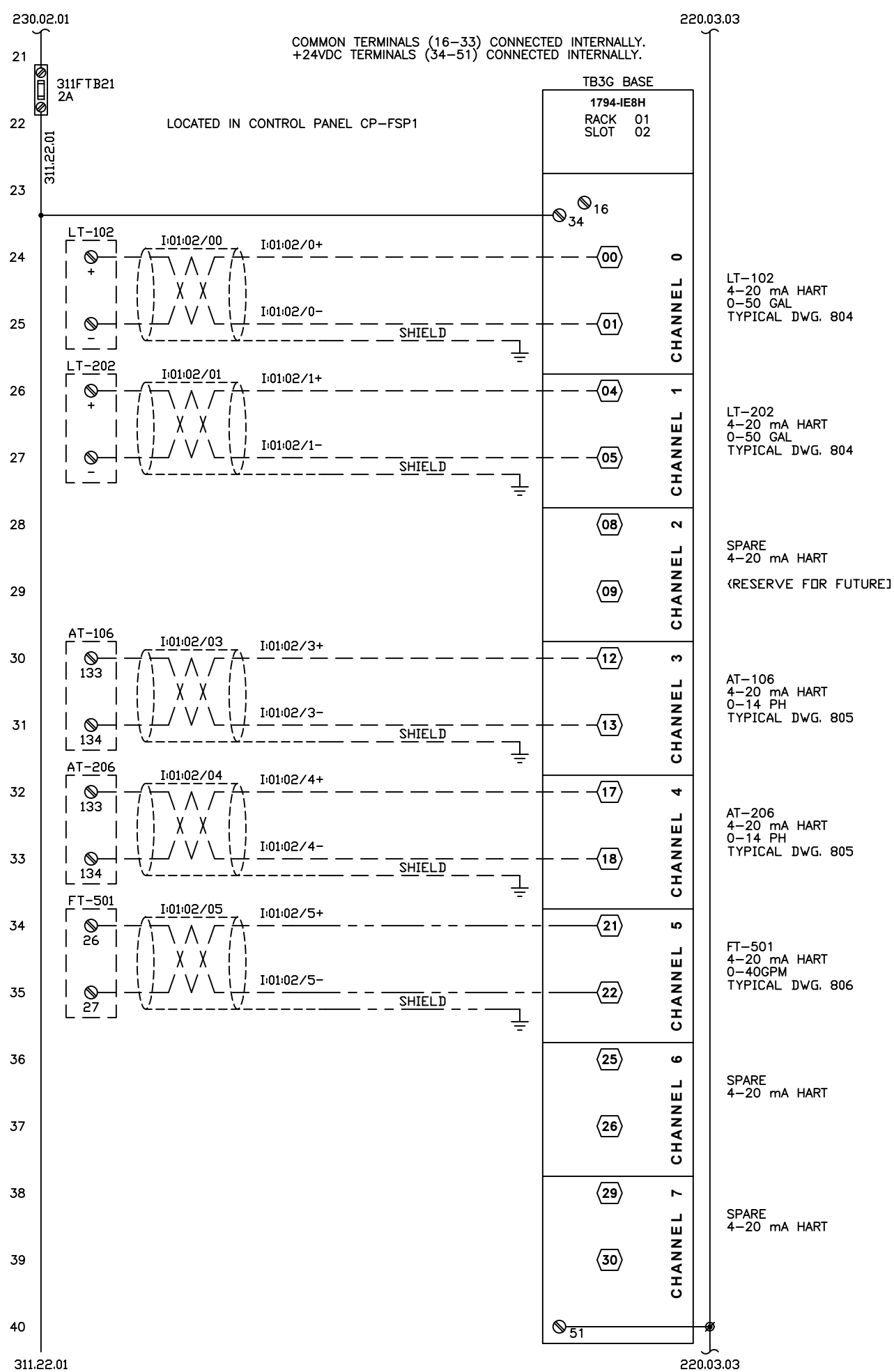
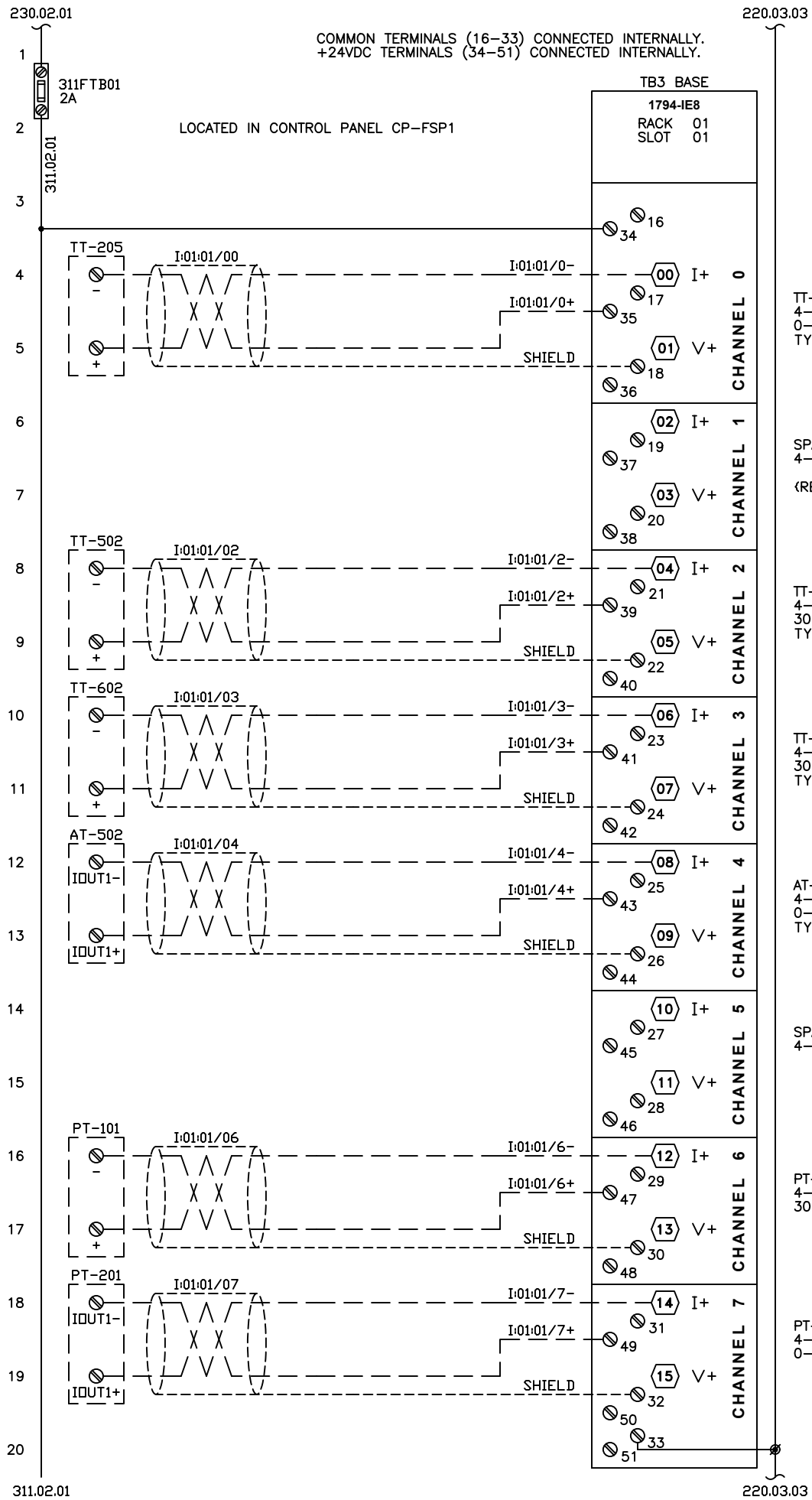


DANONE	1900 CHERRY STREET, LOUISVILLE, CO 80027
CLIENT	FERMENTATION AND JUICE SKID
PROJECT	INPUT/OUTPUT LAYOUT -
DRAWING	RACK 1 COMM & SLOT 00

ISSUED FOR CONSTRUCTION

PROJECT NO.	1801824
ISSUED	08/15/2018
SCALE	NOT TO SCALE
DRAWN BY	EJV
DRAWING NO.	

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C	8/28/18	CMO	Design Update
D	9-12-18	CMO	Add ZS-144, ZS-244
E	9-24-18	CMO	Add E-Stop PLC Input
F	11-2-18	CMO	Design Changes - multiple valves, prox sw
G	3-6-19	CMO	Add hoist 3ph

DANONE

1900 CHERRY STREET, LOUISVILLE, CO 80027

CLIENT

PROJECT

DRAWING TITLE

FERMENTATION AND JUICE SKID

INPUT/OUTPUT LAYOUT - RACK 1 SLOT 01 & 02

ISSUED FOR CONSTRUCTION

PROJECT NO. 1801824

ISSUED 08/15/2018

SCALE NOT TO SCALE

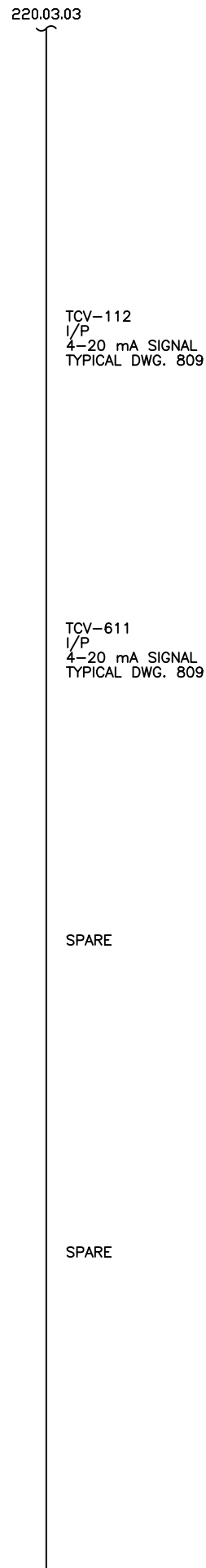
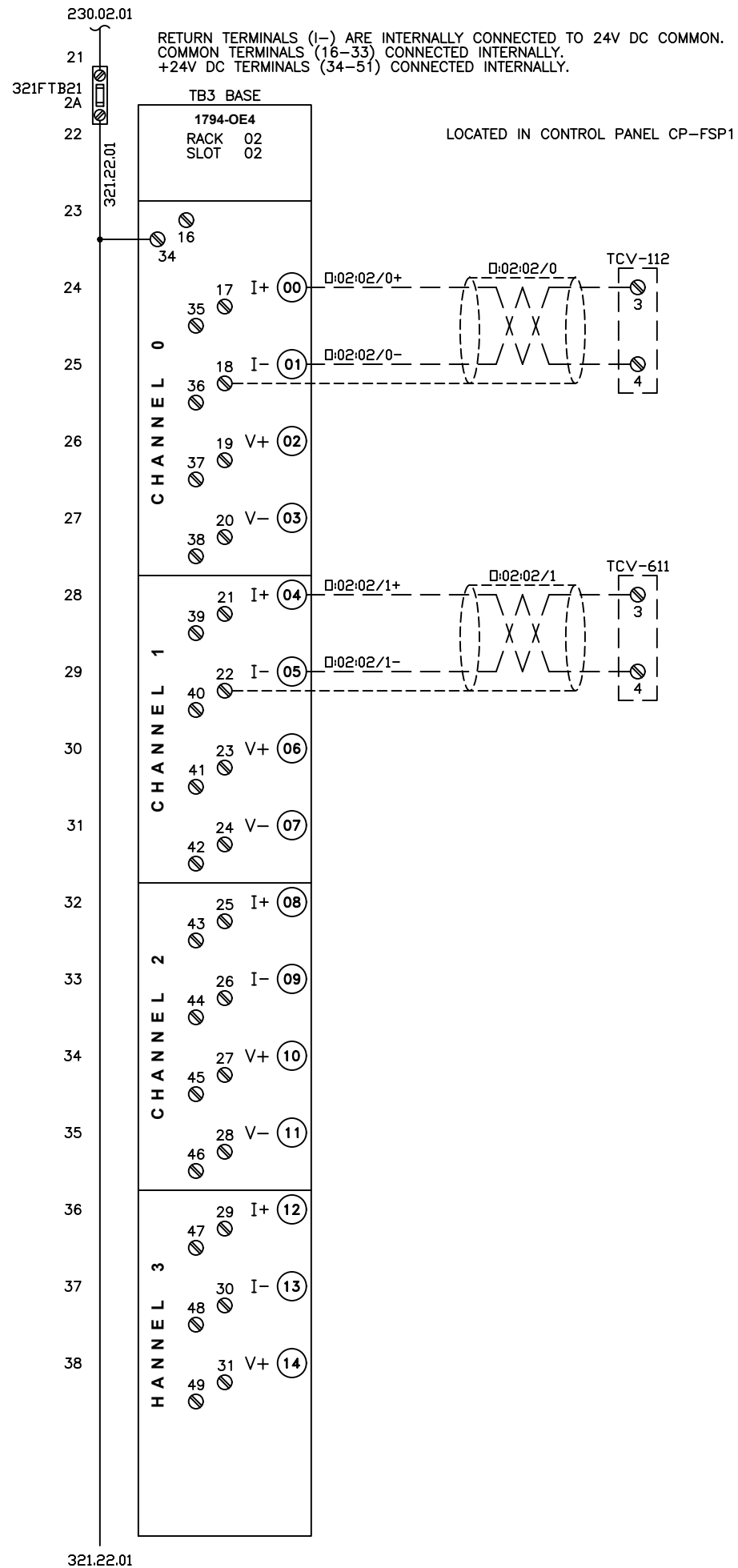
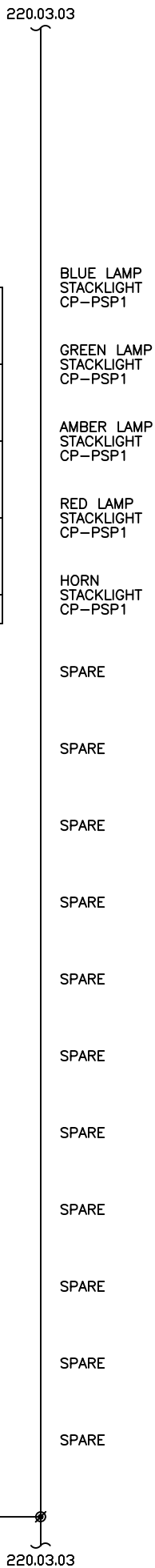
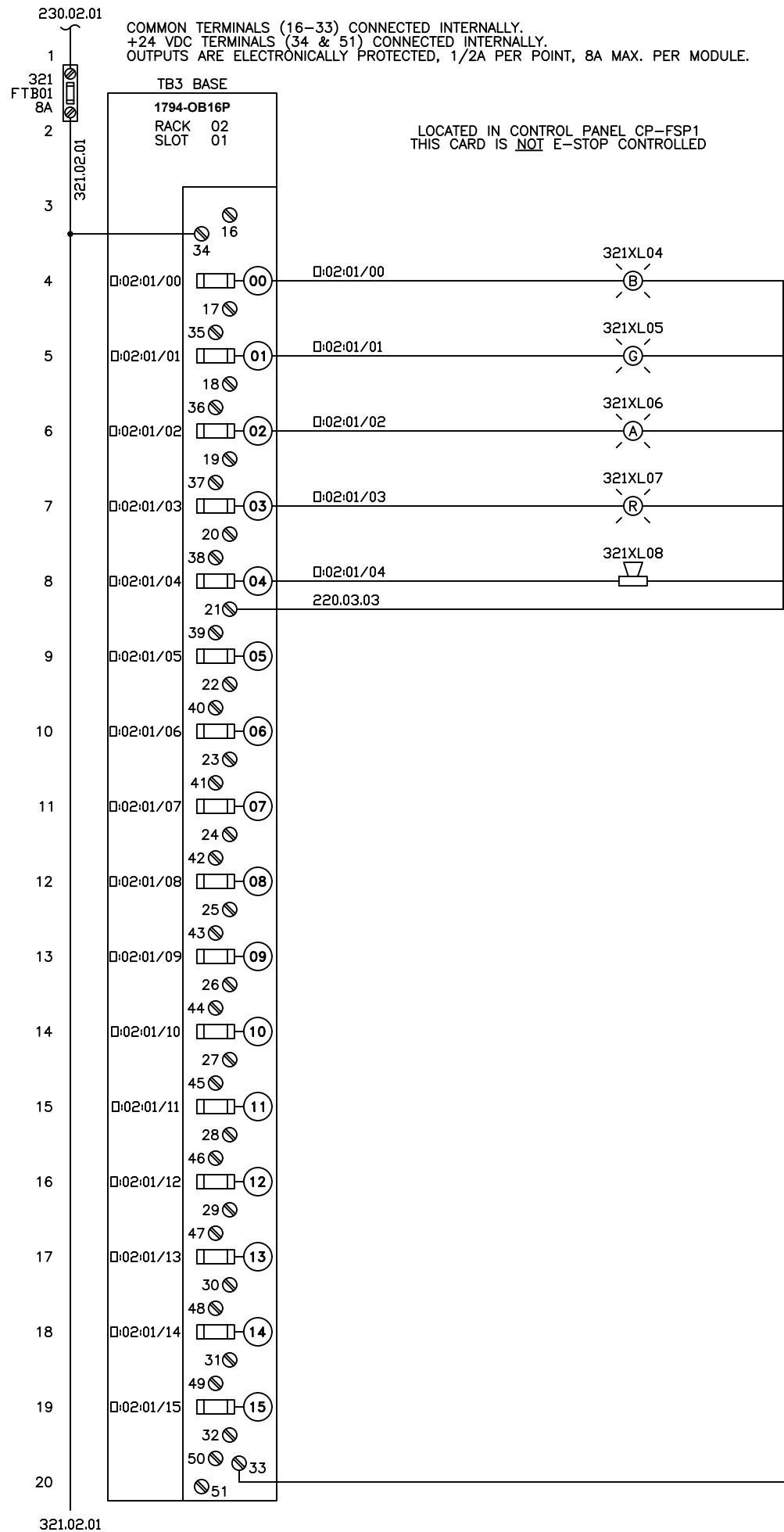
DRAWN BY EJV

DRAWING NO.

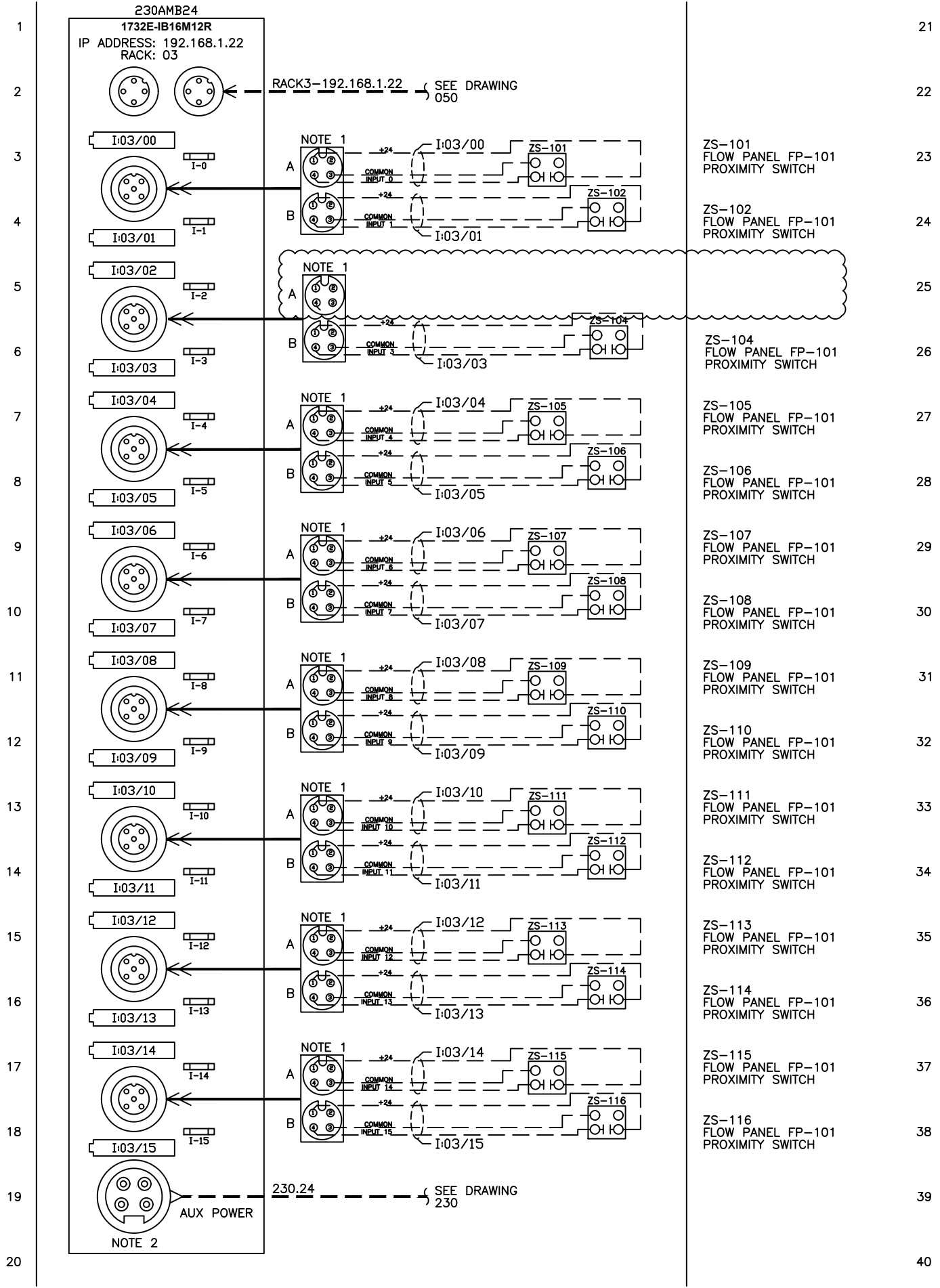
311

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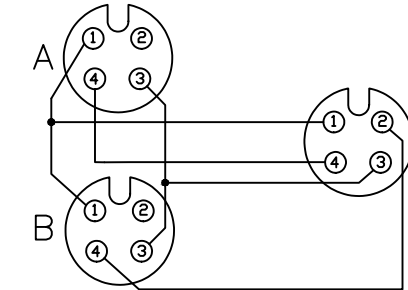
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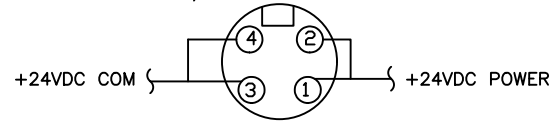
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NOTE 1:
Tee Tap Internal Wiring
P/N: A-B 879D-F4DM



NOTE 2:
24VDC POWER
P/N: A-B 889N-F4AENM-10





NO	DATE	BY	REVISION
A	08/15/2018	EJV	INITIAL RELEASE
B	08/24/2018	EJV	ISSUE FOR CONSTRUCTION
C	8/28/18	CMO	Design Update
D	9-12-18	CMO	Add ZS-144, ZS-244
E	9-24-18	CMO	Add E-Stop PLC Input
F	11-2-18	CMO	Design Changes - multiple valves, prox sw
G	3-6-19	CMO	Add hoist 3ph



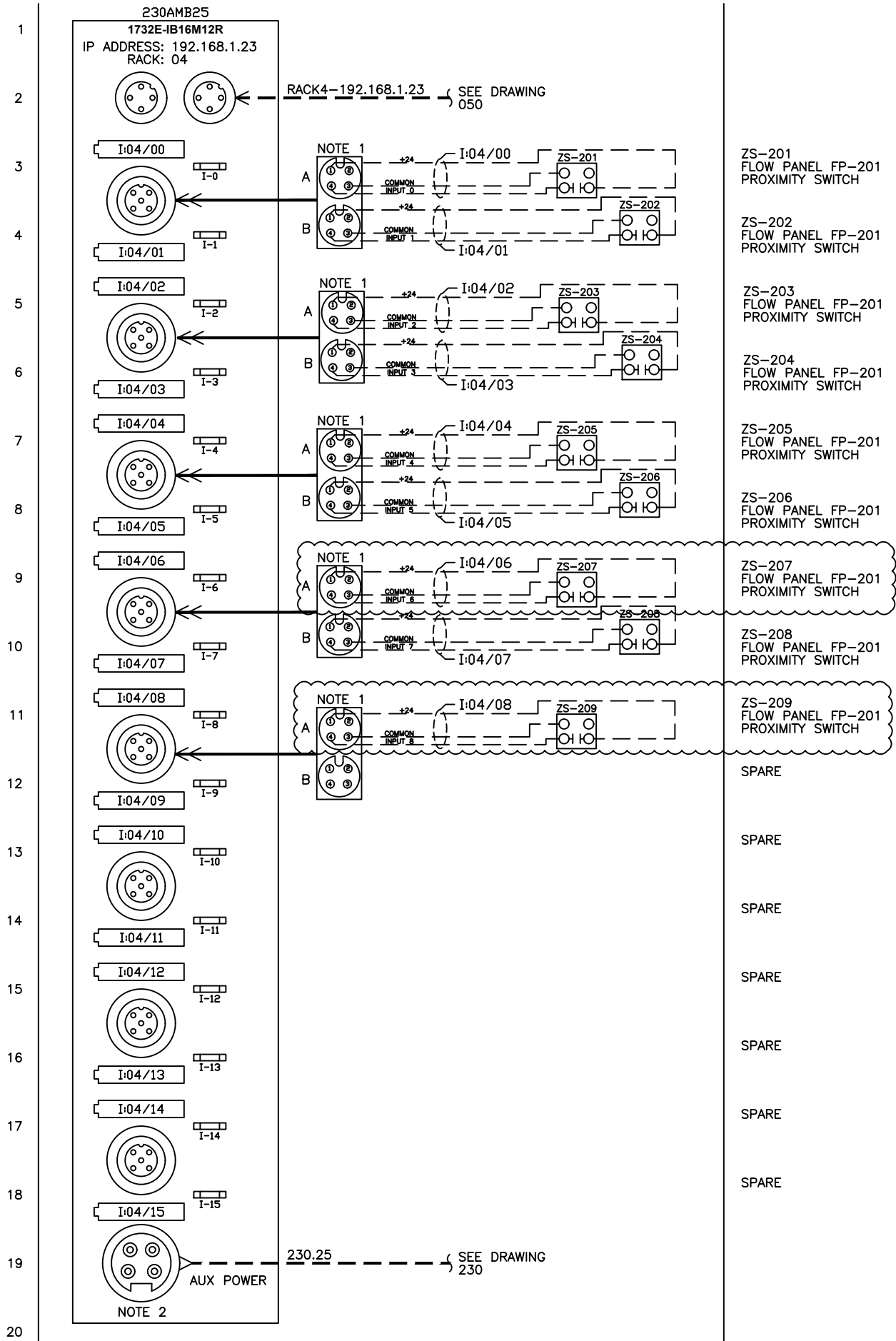
CLIENT	PROJECT	DRAWING TITLE
DANONE 1900 CHERRY STREET, LOUISVILLE, CO 80027	FERMENTATION AND JUICE SKID	INPUT/OUTPUT LAYOUT - RACK 3 ARMORBLOCK



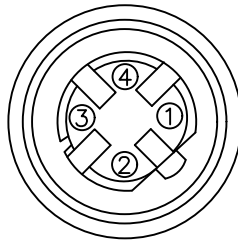
PROJECT NO.	ISSUED	SCALE	DRAWN BY	DRAWING NO.
1801824	08/15/2018	NOT TO SCALE	EJV	330

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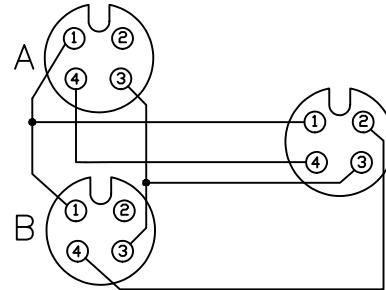
VIEW INTO CABLE



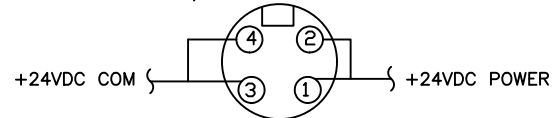
USE TWO TWISTED PAIR CAT5E OR STP CABLES

- PIN 1 M12_TX+ WHITE-ORANGE
- PIN 2 M12_RX+ WHITE-GREEN
- PIN 3 M12_TX- ORANGE
- PIN 4 M12_RX- GREEN
- PIN 5 CONNECTOR SHELL SHIELD FE

NOTE 1:
Tee Tap Internal Wiring
P/N: A-B 879D-F4DM



NOTE 2:
24VDC POWER
P/N: A-B 889N-F4AENM-10



NO	DATE	BY	REVISION
A	08/15/2018	EJV	INITIAL RELEASE
B	08/24/2018	EJV	ISSUE FOR CONSTRUCTION
C	8/28/18	CMO	Design Update
D	9-12-18	CMO	Add ZS-144, ZS-244
E	9-24-18	CMO	Add E-Stop PLC Input
F	11-2-18	CMO	Design Changes - multiple valves, prox sw
G	3-6-19	CMO	Add hoist 3pt

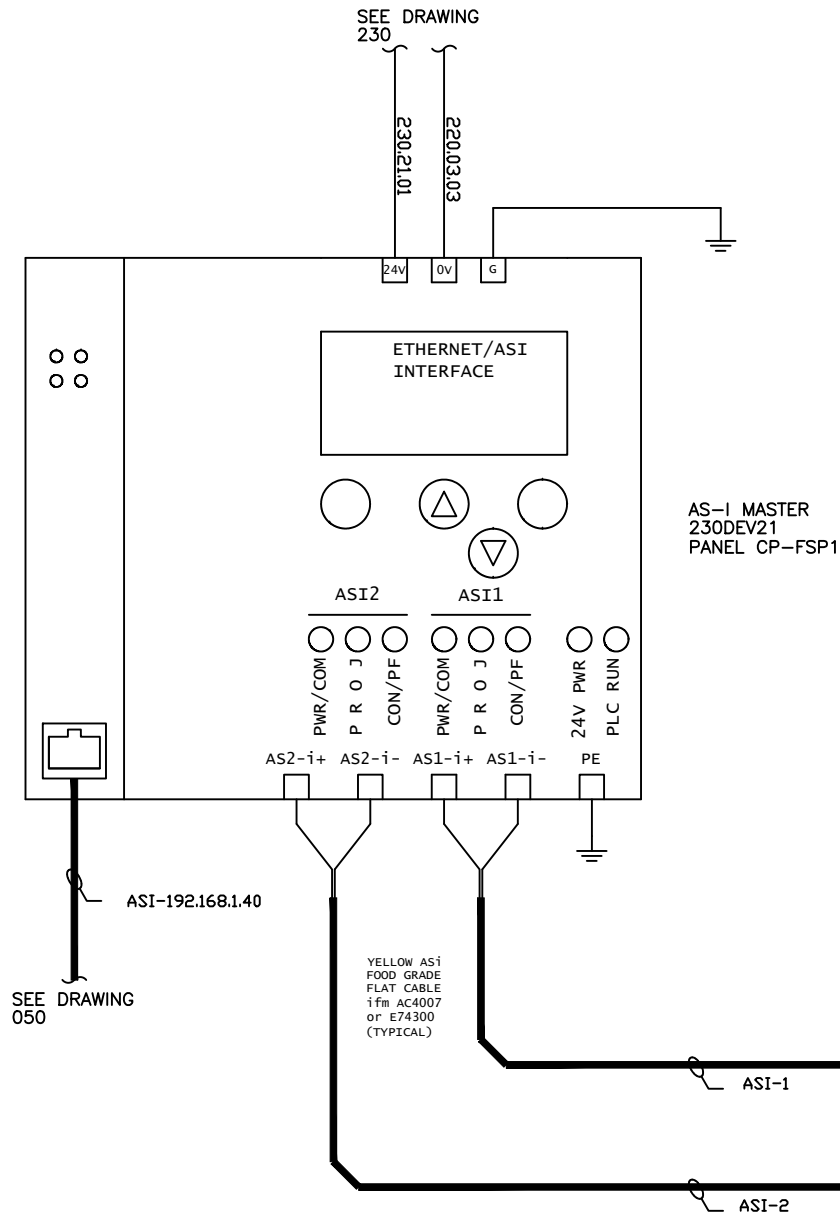
CLIENT	DANONE 1900 CHERRY STREET, LOUISVILLE, CO 80027
PROJECT	FERMENTATION AND JUICE SKID
DRAWING TITLE	INPUT/OUTPUT LAYOUT - RACK 4 ARMORBLOCK

PROJECT NO.	1801824
ISSUED	08/15/2018
SCALE	NOT TO SCALE
DRAWN BY	EJV
DRAWING NO.	340

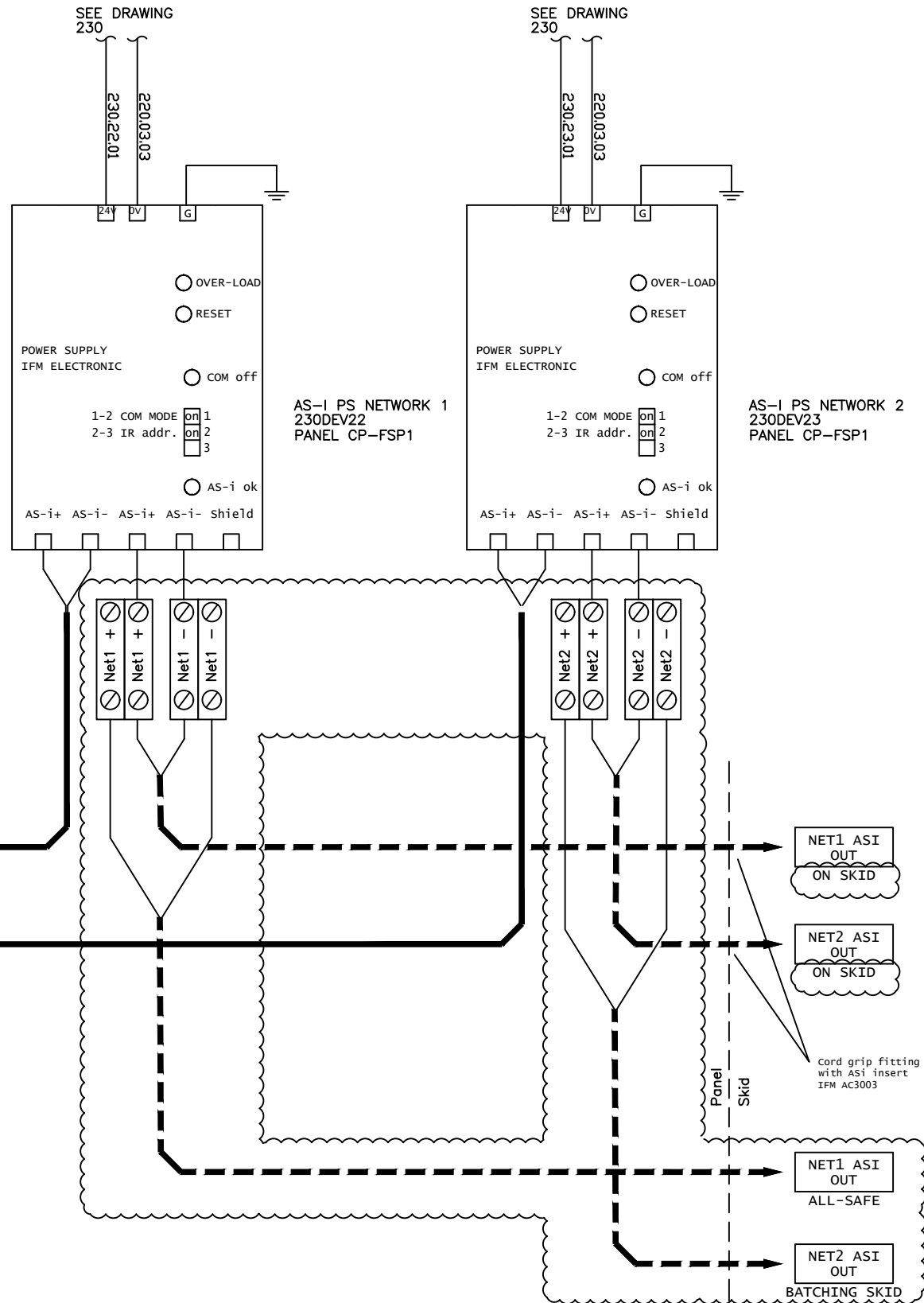
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NO	DATE	BY	REVISION
A	08/15/2018	EJV	INITIAL RELEASE
B	08/24/2018	EJV	ISSUE FOR CONSTRUCTION
C	8/28/18	CMO	Design Update
D	9-12-18	CMO	Add ZS-144, ZS-244
E	9-24-18	CMO	Add E-Stop PLC Input
F	11-2-18	CMO	Design Changes - multiple valves, prox sw
G	3-6-19	CMO	Add hoist 3ph



CLIENT	DANONE 1900 CHERRY STREET, LOUISVILLE, CO 80027
PROJECT	FERMENTATION AND JUICE SKID
DRAWING TITLE	AS-I NETWORK - SHEET 1

ISSUED FOR CONSTRUCTION

PROJECT NO.	1801824
ISSUED	08/15/2018
SCALE	NOT TO SCALE
DRAWN BY	EJV
DRAWING NO.	

400

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AS-I NETWORK 1 CONFIGURATION							
NET	ADDRESS	DEVICE		NET	ADDRESS	DEVICE	
NET1A	1A	MPV-101	NET1B	1B	SPARE		
	2A	MPV-201		2B	SPARE		
	3A	MPV-104		3B	XV-102		
	4A	MPV-204		4B	SPARE		
	5A	XV-105		5B	XV-108		
	6A	XV-106		6B	XV-104		
	7A	MPV-107		7B	SPARE		
	8A	MPV-115		8B	SPARE		
	9A	XV-121		9B	SPARE		
	10A	XV-131		10B	SPARE		
	11A	XV-132		11B	SPARE		
	12A	XV-133		12B	SPARE		
	13A	XV-134		13B	SPARE		
	14A	XV-140		14B	SPARE		
	15A	XV-141		15B	SPARE		
	16A	XV-142		16B	SPARE		
	17A	XV-145		17B	SPARE		
	18A	XV-152		18B	SPARE		
	19A	XV-160		19B	SPARE		
	20A	XV-161		20B	SPARE		
	21A	XV-162		21B	SPARE		
	22A	SPARE		22B	SPARE		
	23A	XV-202		23B	SPARE		
	24A	XV-203		24B	SPARE		
	25A	MPV-207		25B	SPARE		
	26A	XV-205		26B	XV-208		
	27A	XV-231		27B	SPARE		
	28A	XV-232		28B	SPARE		
	29A	XV-233		29B	SPARE		
	30A	XV-234		30B	SPARE		
	31A	XV-245		31B	XV-116		

AS-I NETWORK 2 CONFIGURATION							
NET	ADDRESS	DEVICE		NET	ADDRESS	DEVICE	
NET2A	1A	XV-260	NET2B	1B	SPARE		
	2A	SPARE		2B	SPARE		
	3A	SPARE		3B	SPARE		
	4A	SPARE		4B	SPARE		
	5A	SPARE		5B	SPARE		
	6A	XV-109		6B	SPARE		
	7A	XV-309		7B	SPARE		
	8A	MPV-312		8B	SPARE		
	9A	XV-313		9B	SPARE		
	10A	XV-314		10B	SPARE		
	11A	SPARE		11B	SPARE		
	12A	SPARE		12B	SPARE		
	13A	XV-401		13B	SPARE		
	14A	XV-402		14B	SPARE		
	15A	XV-403		15B	SPARE		
	16A	MPV-404		16B	SPARE		
	17A	XV-405		17B	SPARE		
	18A	XV-407		18B	SPARE		
	19A	XV-408		19B	SPARE		
	20A	MPV-412		20B	SPARE		
	21A	XV-413		21B	SPARE		
	22A	XV-501		22B	SPARE		
	23A	XV-502		23B	SPARE		
	24A	XV-503		24B	SPARE		
	25A	XV-504		25B	SPARE		
	26A	XV-505		26B	SPARE		
	27A	XV-506		27B	SPARE		
	28A	XV-611		28B	SPARE		
	29A	SPARE		29B	SPARE		
	30A	SPARE		30B	SPARE		
	31A	XV-507		31B	SPARE		



Design Group

NO.	DATE	BY	REVISION
A	08/15/2018	EJV	INITIAL RELEASE
B	08/24/2018	EJV	ISSUE FOR CONSTRUCTION
C	8/28/18	CHO	Design Update
D	9-12-18	CHO	Acti ZS-144, ZS-244
E	9-24-18	CHO	Acti E-Stop PLC Input
F	11-2-18	CHO	Design Changes - multiple valves, prox sw
G	3-6-19	CHO	Acti Inst 301



DANONE
ONE PLANET. ONE HEALTH

DANONE
1900 CHERRY STREET, LOUISVILLE, CO 80027

CLIENT

FERMENTATION AND JUICE SKID

PROJECT

AS-I NETWORK - SHEET 2

DRAWING TITLE

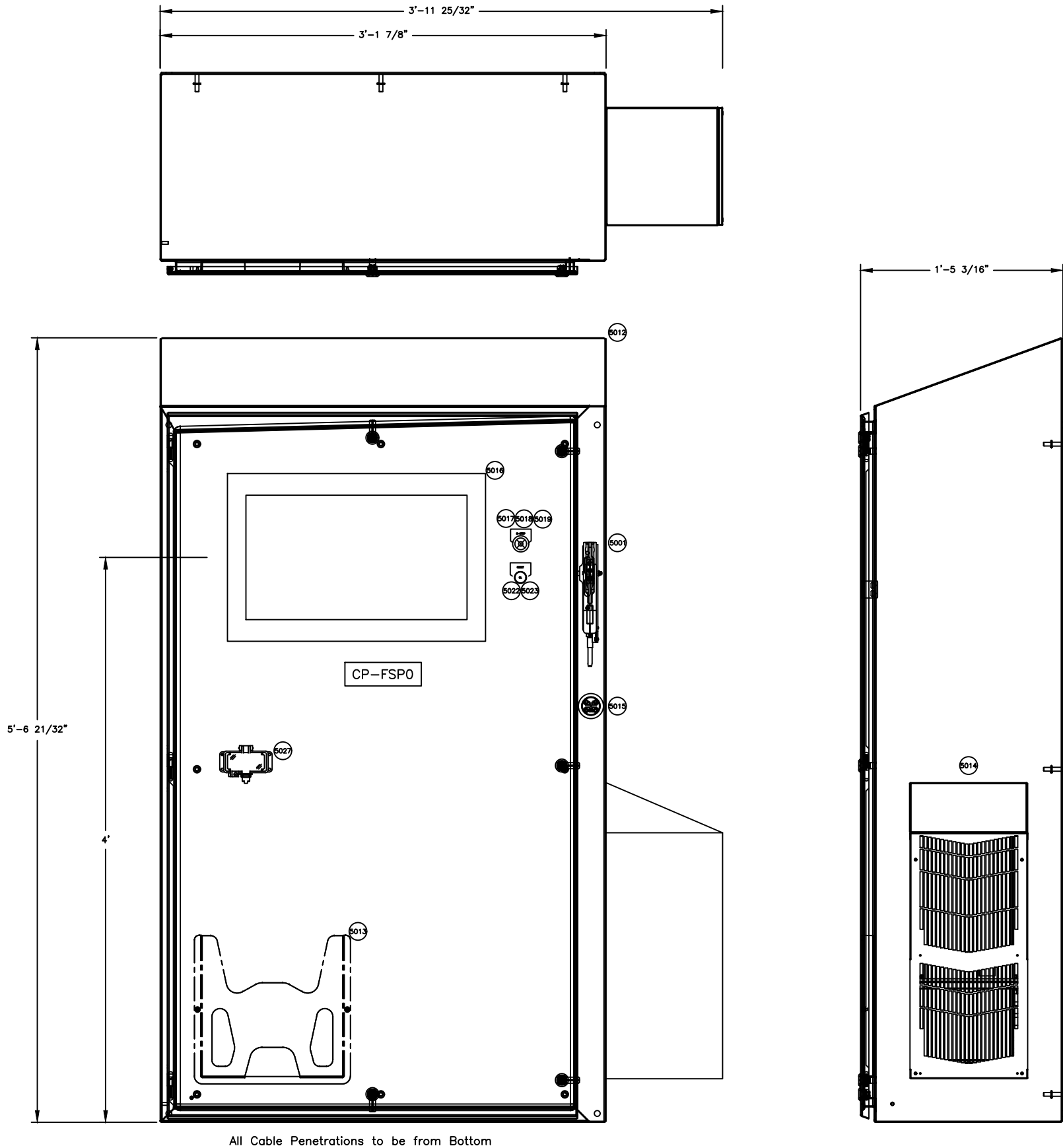
ISSUED FOR CONSTRUCTION

PROJECT NO. 1801824
ISSUED 08/15/2018
SCALE NOT TO SCALE
DRAWN BY EJV
DRAWING NO.

401

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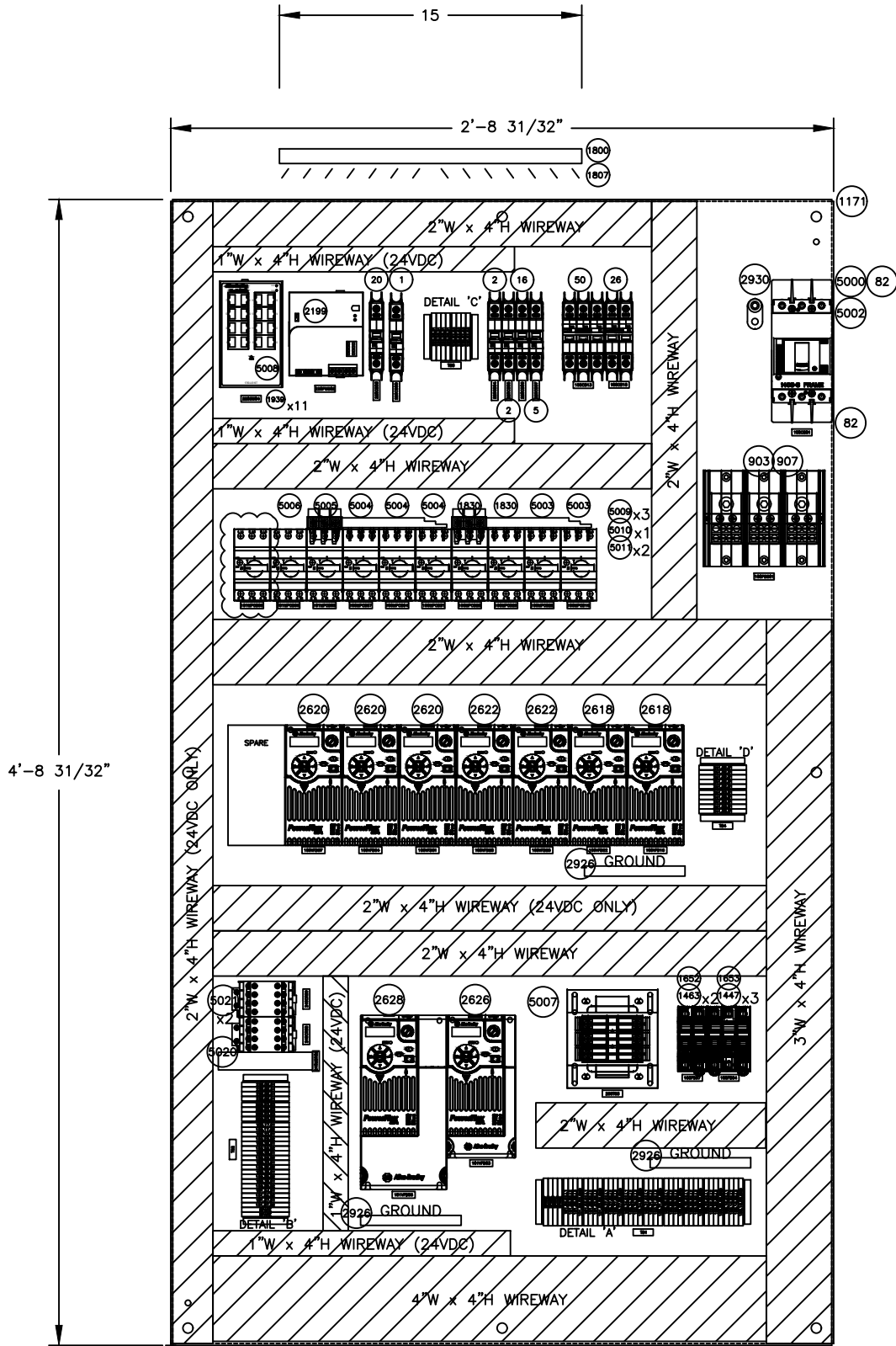
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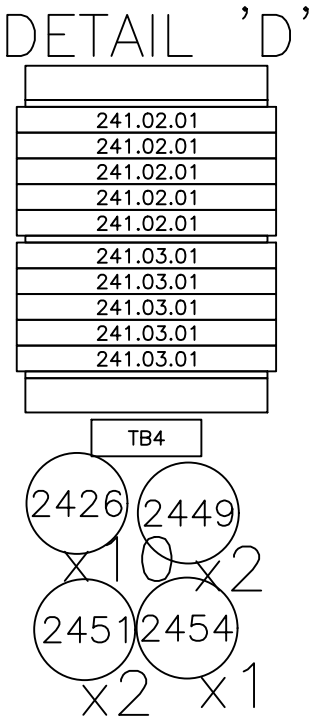
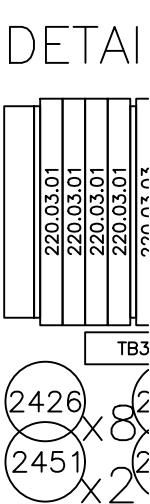
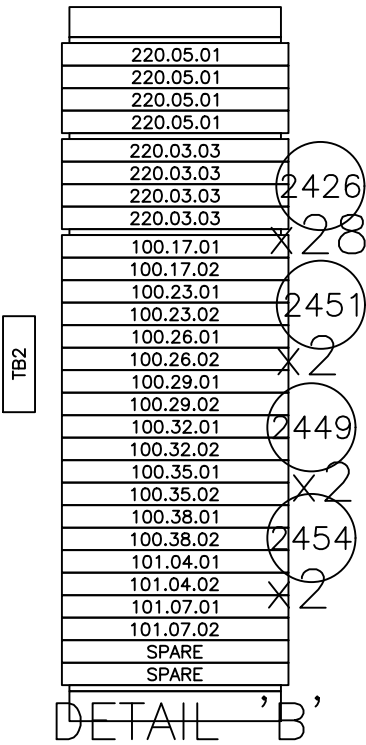
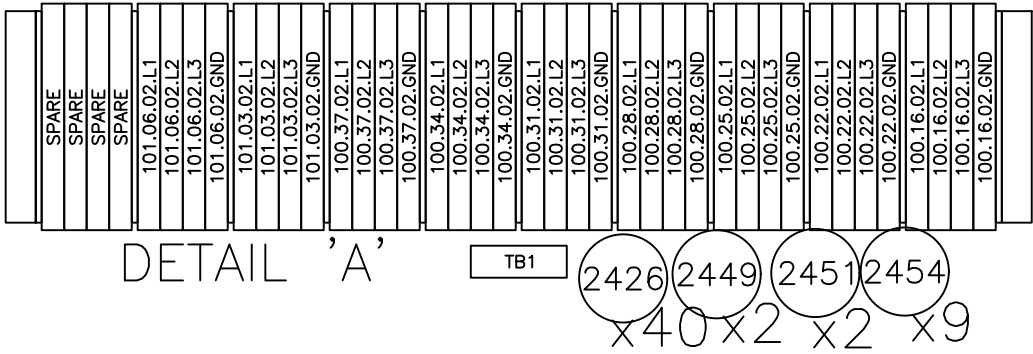
NOTES:

1. FOR PART NUMBERS, SEE BILL OF MATERIAL DWG. 020 & 021

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NOTES:
1. FOR PART NUMBERS, SEE BILL OF MATERIAL DWG. 020 & 021



NO.	DATE	BY	REVISION
A	08/15/2018	EJV	INITIAL RELEASE
B	08/24/2018	EJV	ISSUE FOR CONSTRUCTION
C	8/28/18	CHO	Design Update
D	9-12-18	CHO	Adit 25-144, ZS-244
E	9-24-18	CHO	Adit 6-Stop PLC Input
F	11-2-18	CHO	Design Changes - multiple valves, prov sw
G	3-6-19	CHO	Adit Inst Sht

DANONE	1900 CHERRY STREET, LOUISVILLE, CO 80027
CLIENT	FERMENTATION AND JUICE SKID
PROJECT	CP-FSP0 BACKPANEL LAYOUT
DRAWING TITLE	

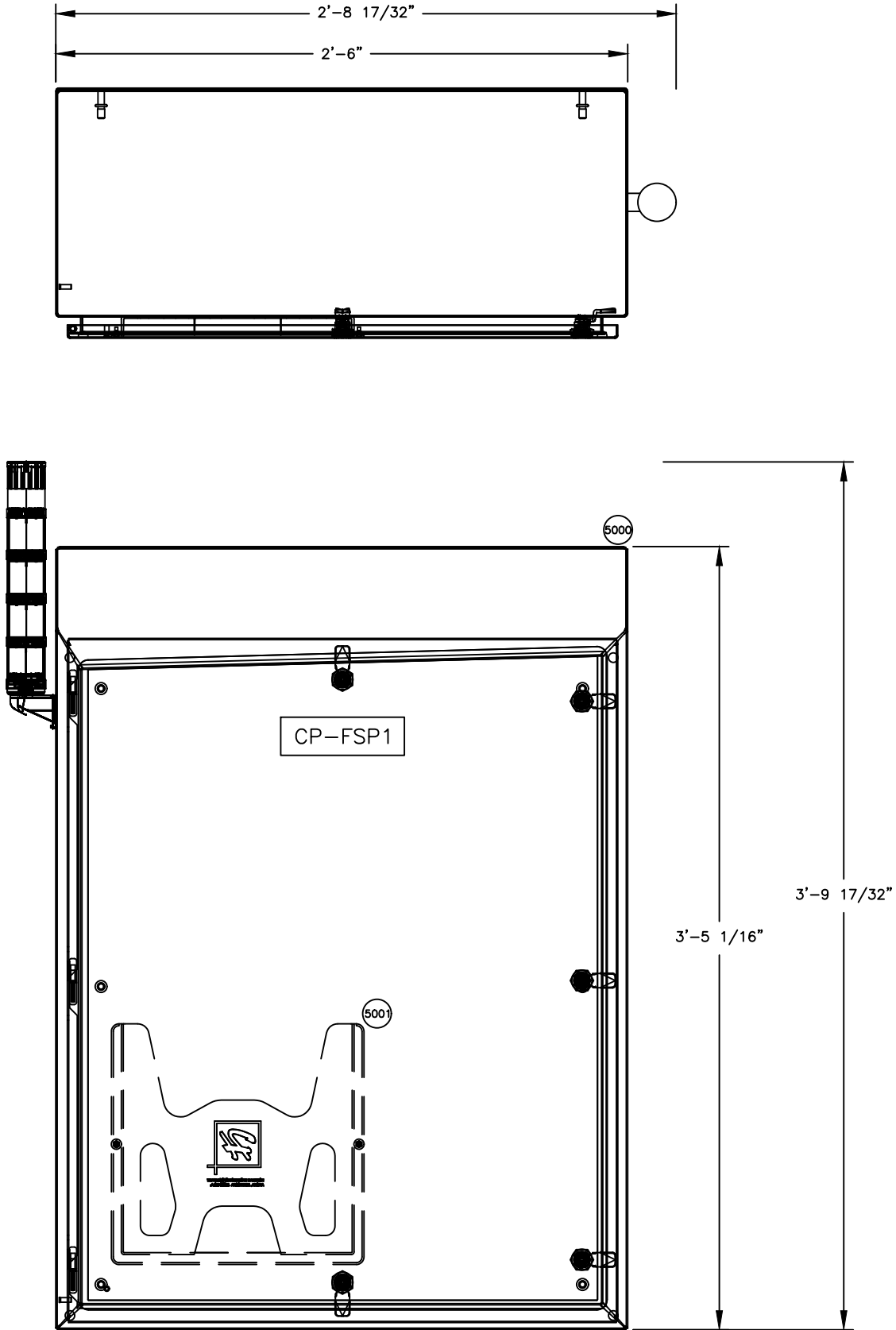
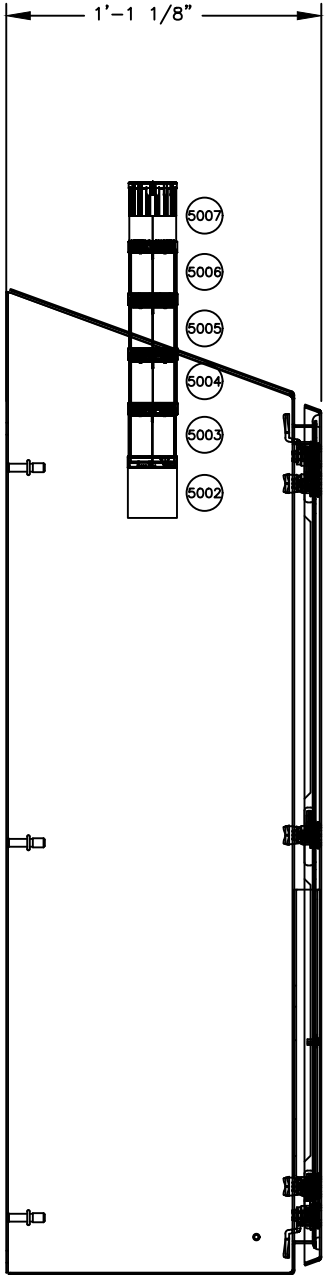
ISSUED FOR CONSTRUCTION

PROJECT NO.	1801824
ISSUED	08/15/2018
SCALE	5/32" = 1"
DRAWN BY	EJV
DRAWING NO.	

501

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All Cable Penetrations to be from Bottom

NOTES:

1. FOR PART NUMBERS, SEE BILL OF MATERIAL DWG. 022 & 023

**Design Group**

NO.	DATE	BY	REVISION
A	08/15/2018	EJV	INITIAL RELEASE
B	08/24/2018	EJV	ISSUE FOR CONSTRUCTION
C	8/28/18	CNO	Design Update
D	9-12-18	CNO	Adt 25-144, ZS-244
E	9-24-18	CNO	Adt 5-Stop PLC Input
F	11-2-18	CNO	Design Changes - multiple valves, prox sw
G	3-6-19	CNO	Adt Inst SH

**DANONE**
ONE PLANET. ONE HEALTH

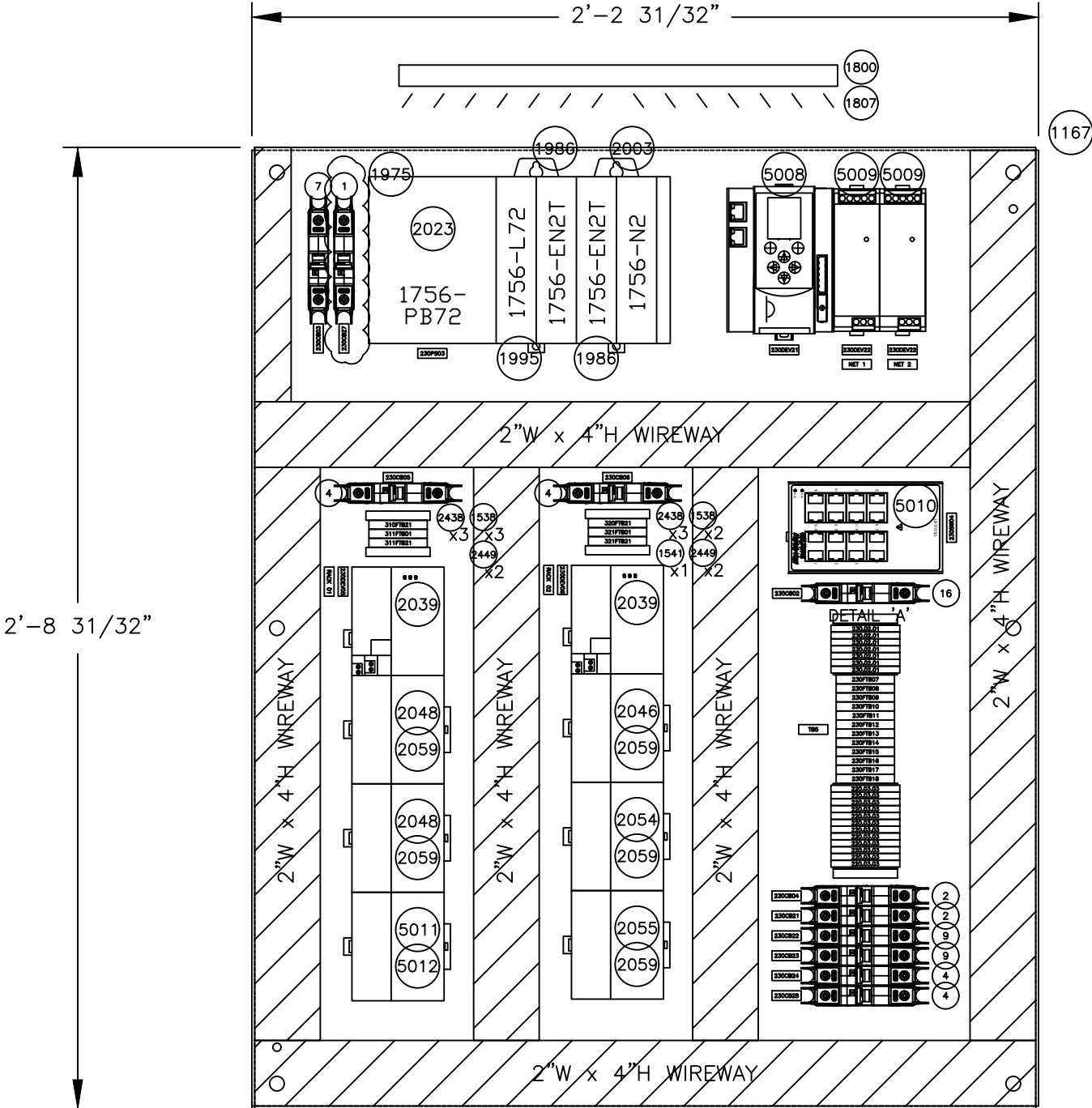
CLIENT	DANONE 1900 CHERRY STREET, LOUISVILLE, CO 80027
PROJECT	FERMENTATION AND JUICE SKID
DRAWING TITLE	CP-FSP1 ENCLOSURE LAYOUT

ISSUED FOR CONSTRUCTION

PROJECT NO.	1801824
ISSUED	08/15/2018
SCALE	1/8" = 1"
DRAWN BY	EJV
DRAWING NO.	510

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DETAIL 'A'

[illegible]

TB5

2426	2449
$\times 19$	$\times 2$
2451	2454
$\times 2$	$\times 2$
2438	1536
$\times 12$	$\times 12$
2448	

NOTES:

1. FOR PART NUMBERS, SEE BILL OF MATERIAL DWG. 022 & 023

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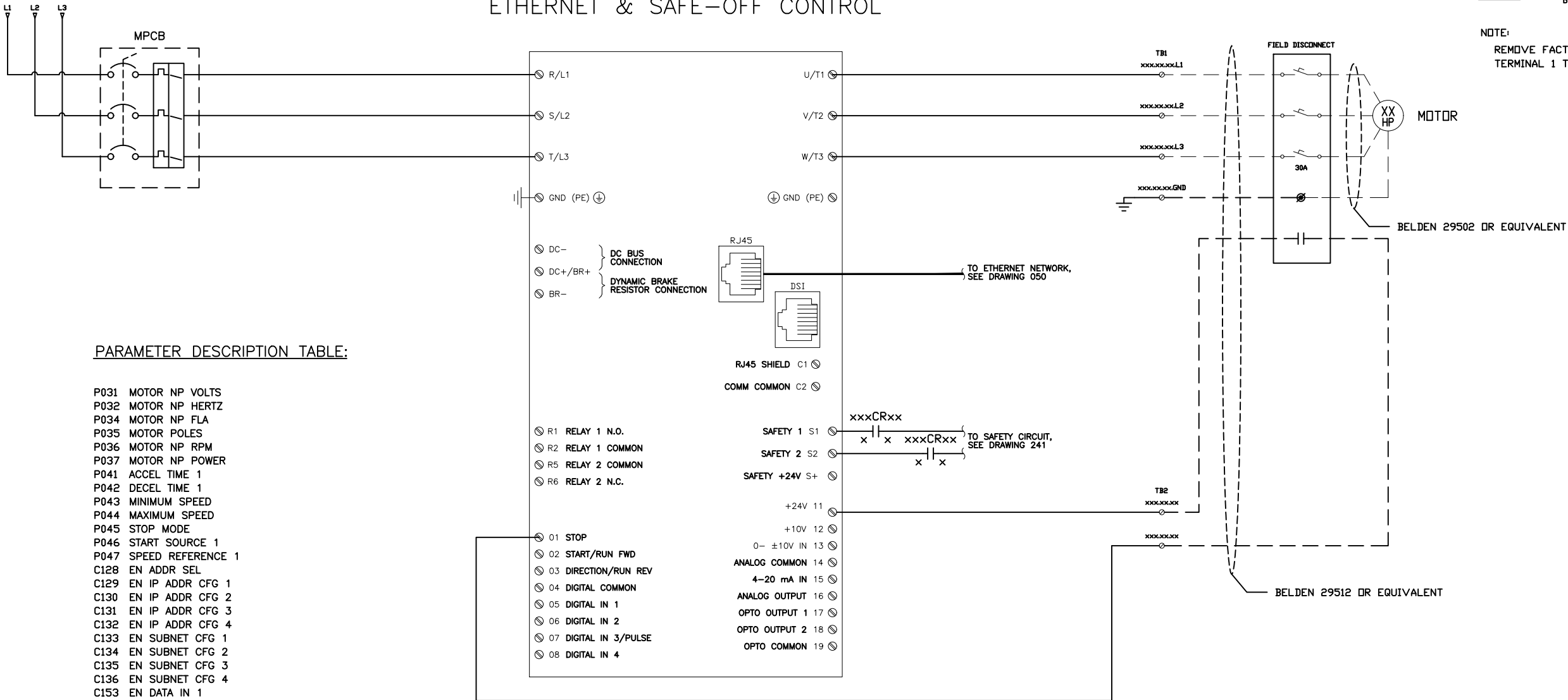
ALLEN-BRADLEY POWERFLEX 525
TYPICAL VFD WIRING WITH
ETHERNET & SAFE-OFF CONTROL

LEGEND:

— — FIELD WIRING
— — BY PANEL VENDOR

NOTE:

REMOVE FACTORY INSTALLED JUMPER
TERMINAL 1 TO 11



PARAMETER DESCRIPTION TABLE:

P031	MOTOR NP VOLTS
P032	MOTOR NP HERTZ
P034	MOTOR NP FLA
P035	MOTOR POLES
P036	MOTOR NP RPM
P037	MOTOR NP POWER
P041	ACCEL TIME 1
P042	DECEL TIME 1
P043	MINIMUM SPEED
P044	MAXIMUM SPEED
P045	STOP MODE
P046	START SOURCE 1
P047	SPEED REFERENCE 1
C128	EN ADDR SEL
C129	EN IP ADDR CFG 1
C130	EN IP ADDR CFG 2
C131	EN IP ADDR CFG 3
C132	EN IP ADDR CFG 4
C133	EN SUBNET CFG 1
C134	EN SUBNET CFG 2
C135	EN SUBNET CFG 3
C136	EN SUBNET CFG 4
C153	EN DATA IN 1
C154	EN DATA IN 2
C155	EN DATA IN 3

VFD	P031	P032	P034	P035	P036	P037	P041	P042	P043	P044	P045	P046	P047	C128	C129	C130	C131	C132	C133	C134	C135	C136	C153	C154	C155
100VFD16	460	60					10	10	10	90	4 (RAMP)	5 (ENET)	15 (ENET)	1	192	168	1	60	255	255	255	0	3 (OUT CURRENT)	7 (FAULT CODE)	13 (CONTRL IN STATUS)
100VFD22	460	60					10	10	10	90	4 (RAMP)	5 (ENET)	15 (ENET)	1	192	168	1	61	255	255	255	0	3 (OUT CURRENT)	7 (FAULT CODE)	13 (CONTRL IN STATUS)
100VFD25	460	60					10	10	10	90	4 (RAMP)	5 (ENET)	15 (ENET)	1	192	168	1	62	255	255	255	0	3 (OUT CURRENT)	7 (FAULT CODE)	13 (CONTRL IN STATUS)
100VFD28	460	60					10	10	10	90	4 (RAMP)	5 (ENET)	15 (ENET)	1	192	168	1	63	255	255	255	0	3 (OUT CURRENT)	7 (FAULT CODE)	13 (CONTRL IN STATUS)
100VFD31	460	60					10	10	10	90	4 (RAMP)	5 (ENET)	15 (ENET)	1	192	168	1	64	255	255	255	0	3 (OUT CURRENT)	7 (FAULT CODE)	13 (CONTRL IN STATUS)
100VFD34	460	60					10	10	10	90	4 (RAMP)	5 (ENET)	15 (ENET)	1	192	168	1	65	255	255	255	0	3 (OUT CURRENT)	7 (FAULT CODE)	13 (CONTRL IN STATUS)
100VFD37	460	60					10	10	10	90	4 (RAMP)	5 (ENET)	15 (ENET)	1	192	168	1	66	255	255	255	0	3 (OUT CURRENT)	7 (FAULT CODE)	13 (CONTRL IN STATUS)
101VFD03	460	60					10	10	10	90	4 (RAMP)	5 (ENET)	15 (ENET)	1	192	168	1	67	255	255	255	0	3 (OUT CURRENT)	7 (FAULT CODE)	13 (CONTRL IN STATUS)
101VFD06	460	60					10	10	10	90	4 (RAMP)	5 (ENET)	15 (ENET)	1	192	168	1	68	255	255	255	0	3 (OUT CURRENT)	7 (FAULT CODE)	13 (CONTRL IN STATUS)

NO	DATE	BY	REVISION
A	08/15/2018	EJV	INITIAL RELEASE
B	08/24/2018	EJV	ISSUE FOR CONSTRUCTION
C	08/28/18	CMO	Design Update
D	9-12-18	CMO	Add 25-144, 25-244
E	9-24-18	CMO	Add E-Stop PLC Input
F	11-2-18	CMO	Design Changes - Multiple valves, prox sw
G	3-5-19	CMO	Add 100135n



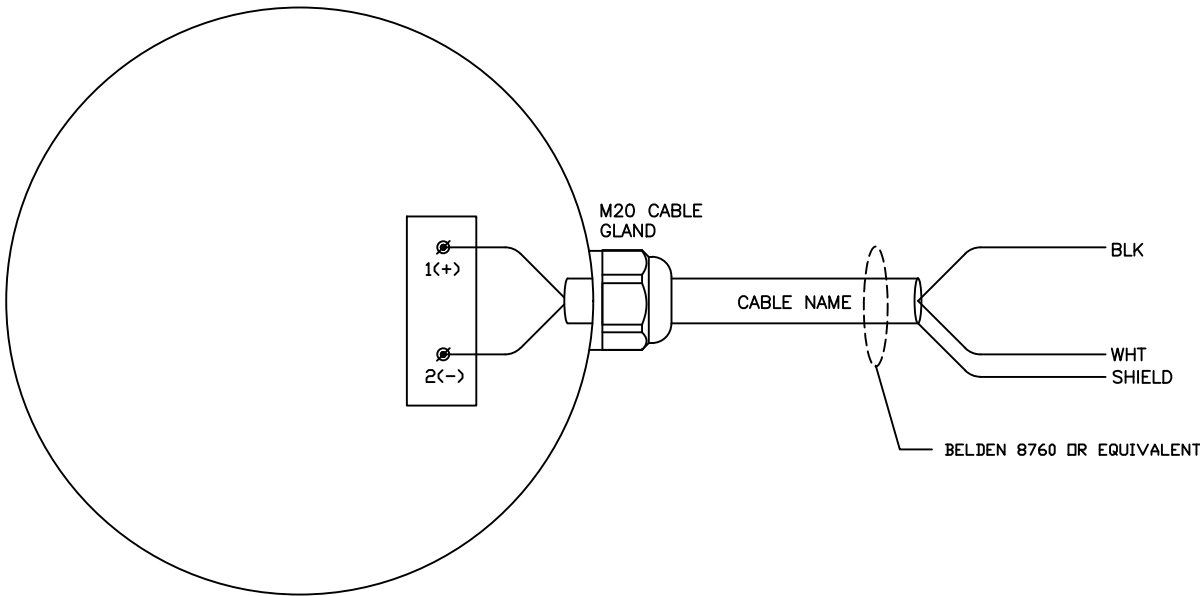
DANONE	1900 CHERRY STREET, LOUISVILLE, CO 80027
CLIENT	FERMENTATION AND JUICE SKID
PROJECT	TYPICAL WIRING DIAGRAM - AB POWERFLEX 525
DRAWING TITLE	

ISSUED FOR CONSTRUCTION

PROJECT NO.	1801824
ISSUED	08/15/2018
SCALE	NOT TO SCALE
DRAWN BY	EJV
DRAWING NO.	

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E&H TM412 and TH13 TEMPERATURE TRANSMITTER



DEVICE INSTANCES		
SHEET-LINE	DEVICE TAG	CABLE NAME
310-24	TT-105	I:01:00/00
310-28	TT-112	I:01:00/02
310-30	TT-113	I:01:00/03
310-34	TT-141	I:01:00/05
310-36	TT-142	I:01:00/06
310-38	TT-161	I:01:00/07
311-04	TT-205	I:01:01/00
311-08	TT-502	I:01:01/02
311-10	TT-602	I:01:01/03

**Design Group**

NO.	DATE	BY	REVISION
A	08/15/2018	EJV	INITIAL RELEASE
B	08/24/2018	EJV	ISSUE FOR CONSTRUCTION
C	02/28/18	CMO	Design Update
D	9-12-18	CMO	Add 2S-144, 2S-244
E	9-24-18	CMO	Add E-Stop PLC Input
F	11-2-18	CMO	Design Changes - Multiple valves, prox sw
G	3-5-19	CMO	Add 10S13P1

**DANONE**
ONE PLANET. ONE HEALTH.

CLIENT	DANONE 1900 CHERRY STREET, LOUISVILLE, CO 80027
PROJECT	FERMENTATION AND JUICE SKID
DRAWING TITLE	TYPICAL WIRING DIAGRAM - E&H TM412

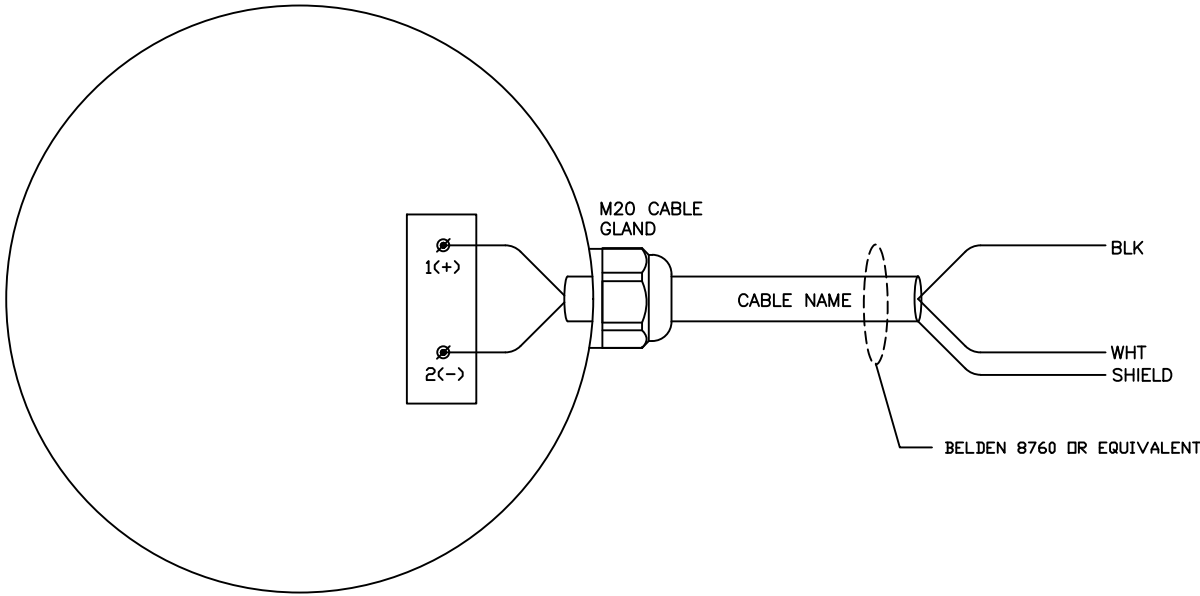
ISSUED FOR CONSTRUCTION

PROJECT NO.	1801824
ISSUED	08/15/2018
SCALE	NOT TO SCALE
DRAWN BY	EJV
DRAWING NO.	801

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E&H PMP51
PRESSURE TRANSMITTER



DEVICE INSTANCES		
SHEET-LINE	DEVICE TAG	CABLE NAME
310-26	PT-112	I:01:00/01
310-32	PT-141	I:01:00/04



Design Group

NO	DATE	BY	REVISION
A	08/15/2018	EJV	INITIAL RELEASE
B	08/24/2018	EJV	ISSUE FOR CONSTRUCTION
C	8/28/18	CMO	Design Update
D	9-12-18	CMO	Add 2S-144, 2S-244
E	9-24-18	CMO	Add E-Stop P.C. Input
F	11-2-18	CMO	Design Changes - Multiple valves, prox sw
G	3-5-19	CMO	Add IWS13P1



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ONE PLANET. ONE HEALTH

CLIENT	DANONE 1900 CHERRY STREET, LOUISVILLE, CO 80027
PROJECT	FERMENTATION AND JUICE SKID
DRAWING TITLE	TYPICAL WIRING DIAGRAM - E&H PMP51

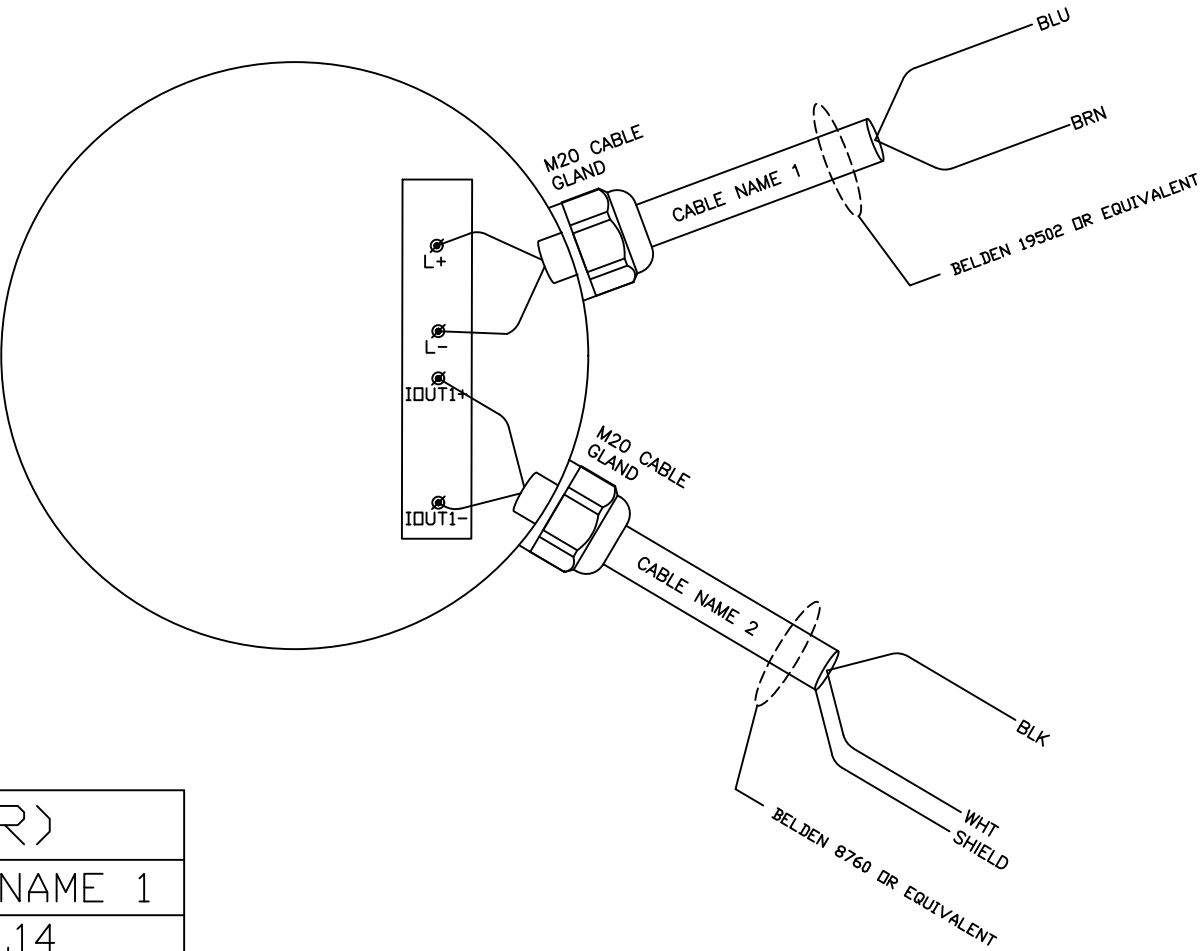
ISSUED FOR CONSTRUCTION

PROJECT NO.	1801824
ISSUED	08/15/2018
SCALE	NOT TO SCALE
DRAWN BY	EJV
DRAWING NO.	802

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E&H CLD18
CONDUCTIVITY TRANSMITTER



DEVICE INSTANCES (POWER)		
SHEET-LINE	DEVICE TAG	CABLE NAME 1
230-14	AT-502	230.14

DEVICE INSTANCES (SIGNAL)		
SHEET-LINE	DEVICE TAG	CABLE NAME 2
311-12	AT-502	I:01:01/04



NO.	DATE	BY	REVISION
A	08/15/2018	EJV	INITIAL RELEASE
B	08/24/2018	EJV	ISSUE FOR CONSTRUCTION
C	08/28/18	CMO	Design Update
D	9-12-18	CMO	Add 2S-144, 2S-244
E	9-24-18	CMO	Add E-Stop P.C. Input
F	11-2-18	CMO	Design Changes - Multiple valves, prox sw
G	3-5-19	CMO	Add IWS13Pin



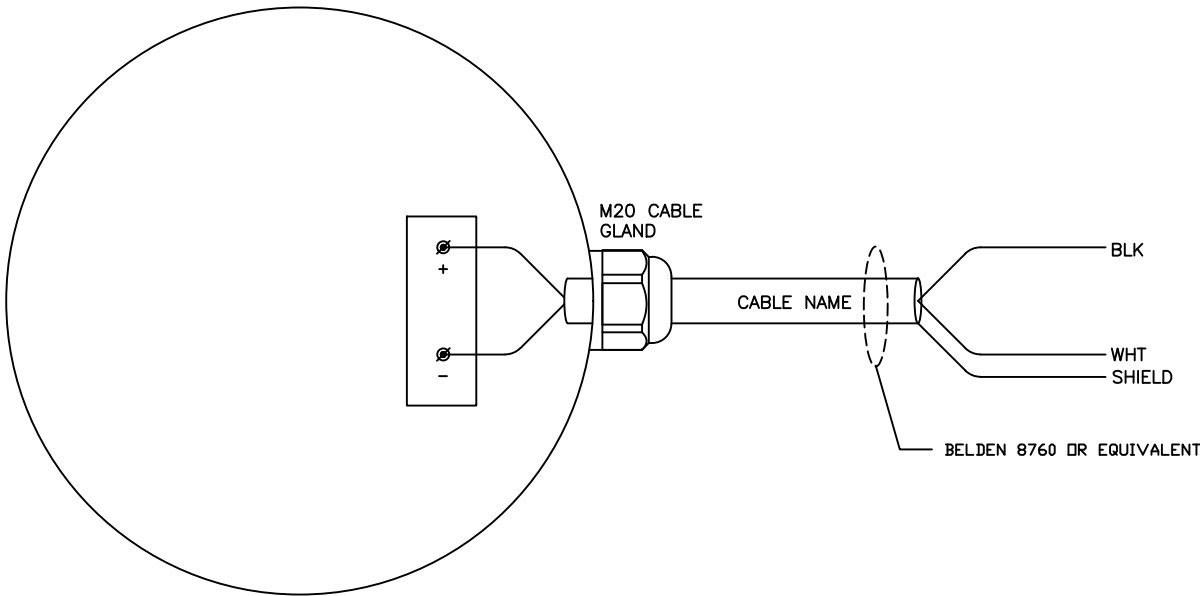
DANONE 1900 CHERRY STREET, LOUISVILLE, CO 80027	PROJECT FERMENTATION AND JUICE SKID	DRAWING TITLE E&H CLD18
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ISSUED FOR CONSTRUCTION

PROJECT NO.	1801824
ISSUED	08/15/2018
SCALE	NOT TO SCALE
DRAWN BY	EJV
DRAWING NO.	803

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E&H FMD78
LEVEL TRANSMITTER



DEVICE INSTANCES		
SHEET-LINE	DEVICE TAG	CABLE NAME
311-24	LT-102	I:01:02/00
311-26	LT-202	I:01:02/01

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NO	DATE	BY	REVISION
A	08/15/2018	EJV	INITIAL RELEASE
B	08/24/2018	EJV	ISSUE FOR CONSTRUCTION
C	02/28/18	CMD	Design Update
D	9-12-18	CMD	Add 2S-144, 2S-244
E	9-24-18	CMD	Add E-Stop PLC Input
F	11-2-18	CMD	Design Changes - Multiple valves, prox sw
G	3-5-19	CMD	Add I01S13H

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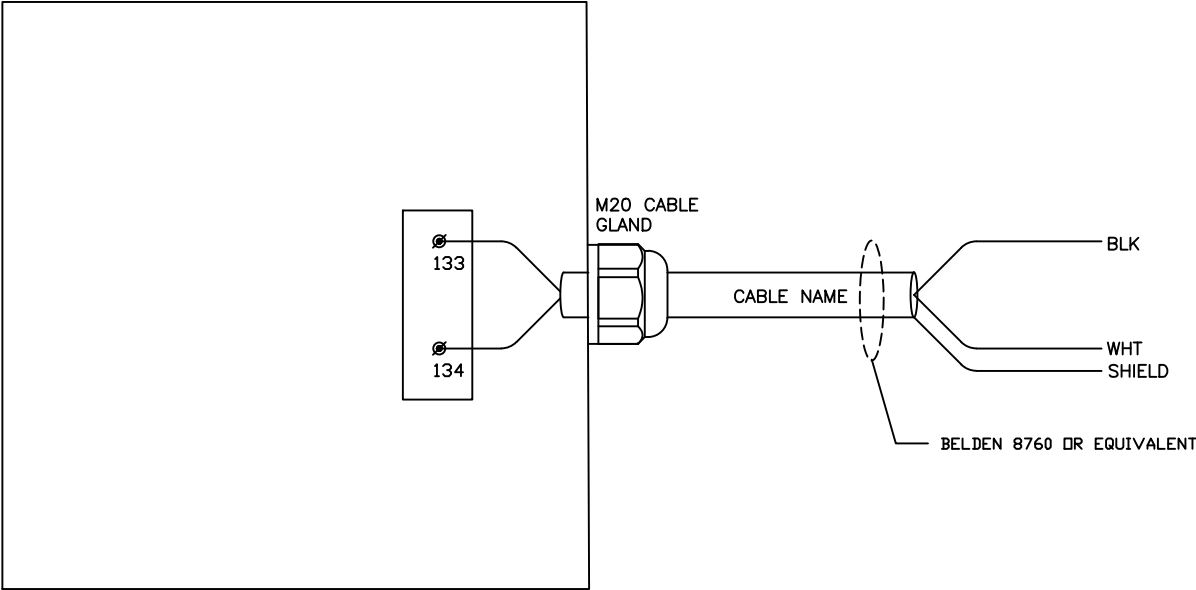
CLIENT	DANONE 1900 CHERRY STREET, LOUISVILLE, CO 80027
PROJECT	FERMENTATION AND JUICE SKID
DRAWING TITLE	TYPICAL WIRING DIAGRAM - E&H FMD78

ISSUED FOR CONSTRUCTION

PROJECT NO.	1801824
ISSUED	08/15/2018
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DRAWING NO.	804

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E&H CM42
PH TRANSMITTER



DEVICE INSTANCES		
SHEET-LINE	DEVICE TAG	CABLE NAME
311-30	AT-106	I:01:02/03
311-32	AT-206	I:01:02/04

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NO.	DATE	BY	REVISION
A	08/15/2018	EJV	INITIAL RELEASE
B	08/24/2018	EJV	ISSUE FOR CONSTRUCTION
C	08/28/18	CMO	Design Update
D	9-12-18	CMO	Add 7S-144, 7S-244
E	9-24-18	CMO	Add E-Stop PLC Input
F	11-2-18	CMO	Design Changes - Multiple valves, prox sw
G	3-5-19	CMO	Add 10S135H



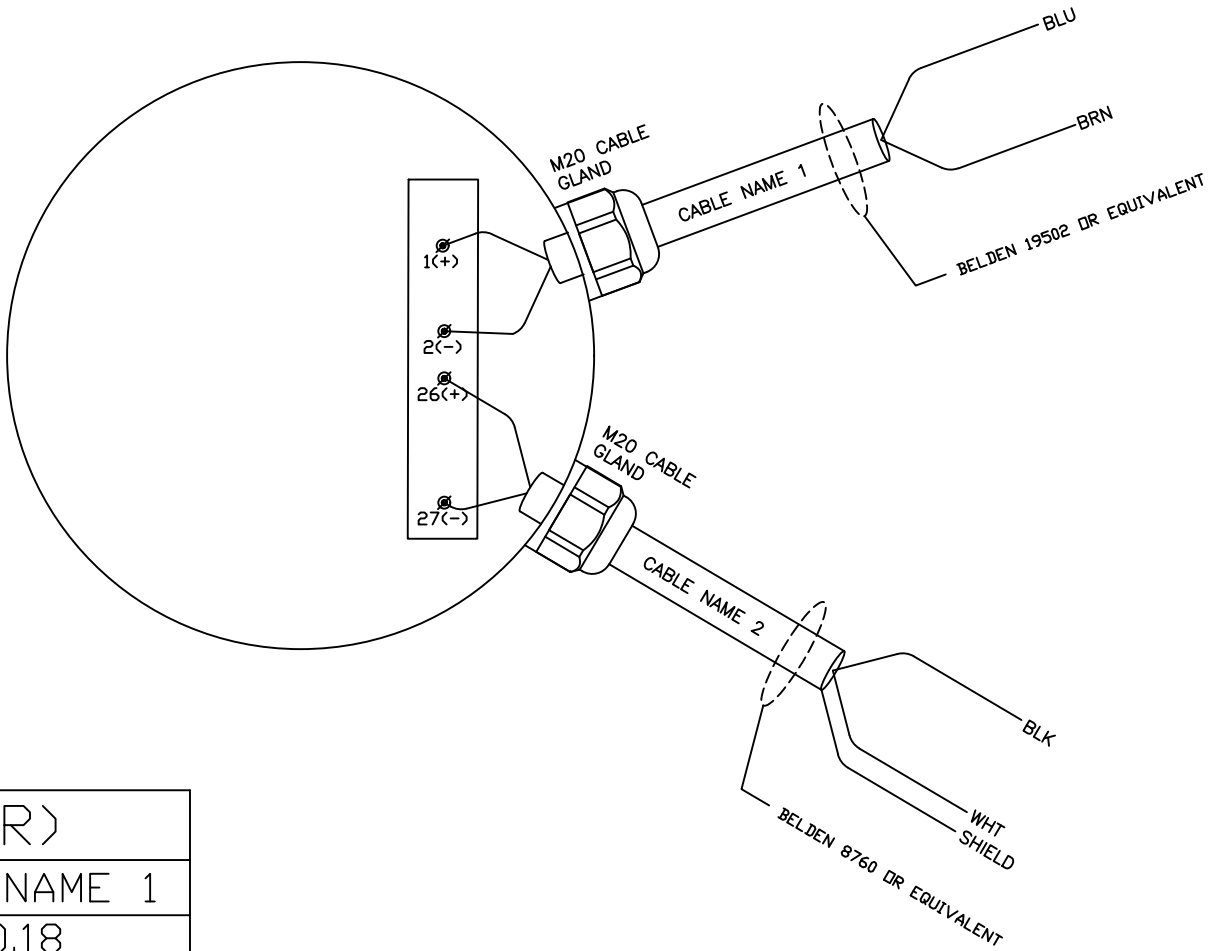
CLIENT	DANONE 1900 CHERRY STREET, LOUISVILLE, CO 80027
PROJECT	FERMENTATION AND JUICE SKID
DRAWING TITLE	TYPICAL WIRING DIAGRAM - E&H CM42

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PROJECT NO.	1801824
ISSUED	08/15/2018
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DRAWING NO.	805

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E&H PROMAG 300
FLOW TRANSMITTER



DEVICE INSTANCES (POWER)		
SHEET-LINE	DEVICE TAG	CABLE NAME 1
230-18	FT-501	230.18

DEVICE INSTANCES (SIGNAL)		
SHEET-LINE	DEVICE TAG	CABLE NAME 2
311-34	FT-501	I:01:02/05

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NO	DATE	BY	REVISION
A	08/15/2018	EJV	INITIAL RELEASE
B	08/24/2018	EJV	ISSUE FOR CONSTRUCTION
C	08/28/18	CIMC	Design Update
D	9-12-18	CIMC	Add 2S-144, 2S-244
E	9-24-18	CIMC	Add E-Stop P.I.C Input
F	11-2-18	CIMC	Design Changes - Multiple valves, prox sw
G	3-5-19	CIMC	Add I01S3H



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1900 CHERRY STREET, LOUISVILLE, CO 80027

PROJECT
FERMENTATION AND JUICE SKID

DRAWING
TITLE
TYPICAL WIRING DIAGRAM -
E&H PROMAG 300

ISSUED FOR CONSTRUCTION

PROJECT NO. 1801824

ISSUED 08/15/2018

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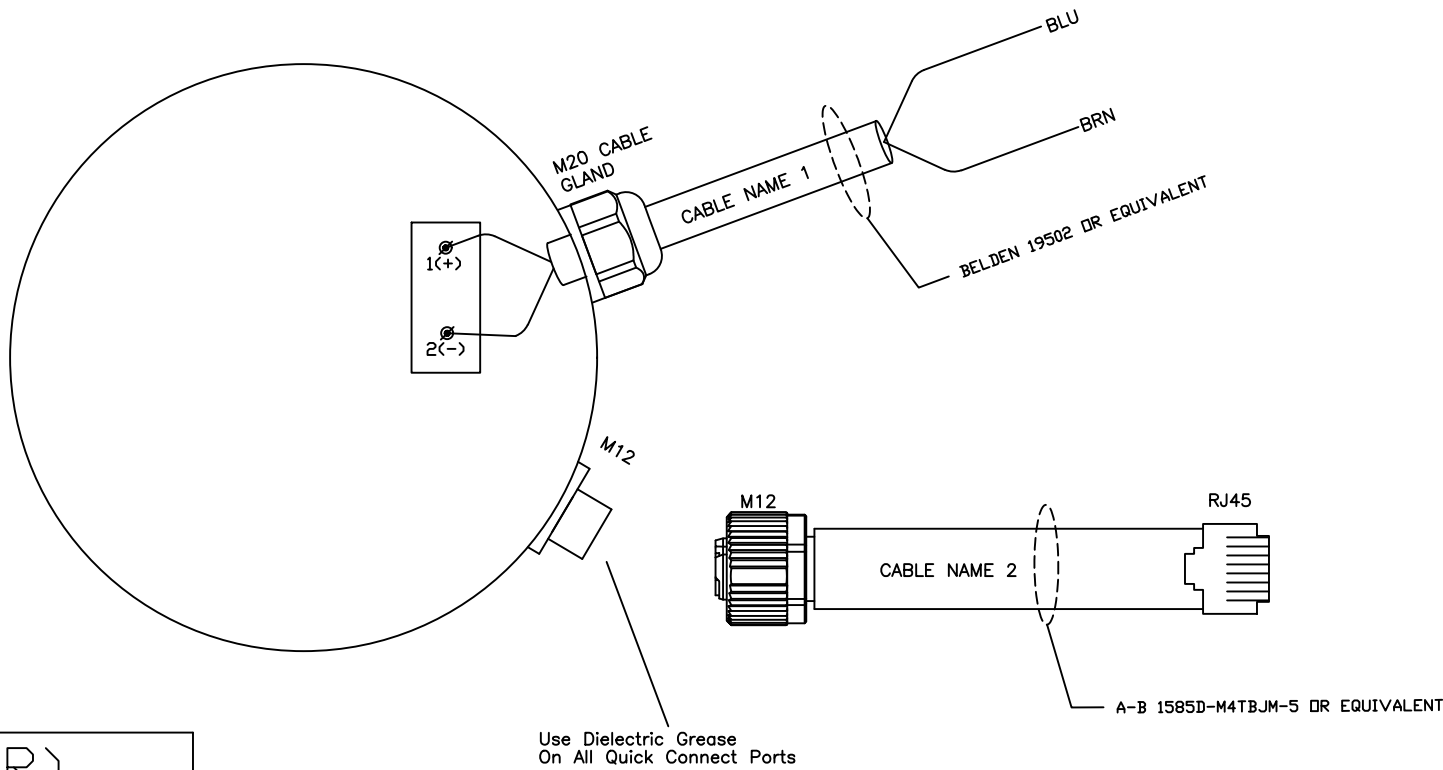
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E&H PROMASS 300
FLOW TRANSMITTER



DEVICE INSTANCES (POWER)		
SHEET-LINE	DEVICE TAG	CABLE NAME 1
230-15	FT-111	230.15
230-16	FT-311	230.16
230-17	FT-411	230.17

DEVICE INSTANCES (ETHERNET)		
SHEET	DEVICE TAG	CABLE NAME 2
050	FT-111	FT111-192.168.1.120
050	FT-311	FT311-192.168.1.121
050	FT-411	FT411-192.168.1.122

NO.	DATE	BY	REVISION
A	08/15/2018	EJV	INITIAL RELEASE
B	08/24/2018	EJV	ISSUE FOR CONSTRUCTION
C	08/28/18	CMO	Design Update
D	9-12-18	CMO	Add 7S-144, 7S-244
E	9-24-18	CMO	Add E-Stop P.I.C Input
F	11-2-18	CMO	Design Changes - Multiple valves, prox sw
G	3-6-19	CMO	Add prox 3pin

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PROJECT
FERMENTATION AND JUICE SKID

DRAWING
TITLE
TYPICAL WIRING DIAGRAM -
E&H PROMASS 300

ISSUED FOR CONSTRUCTION

PROJECT NO. 1801824

ISSUED 08/15/2018

SCALE NOT TO SCALE

DRAWN BY EJV

DRAWING NO.

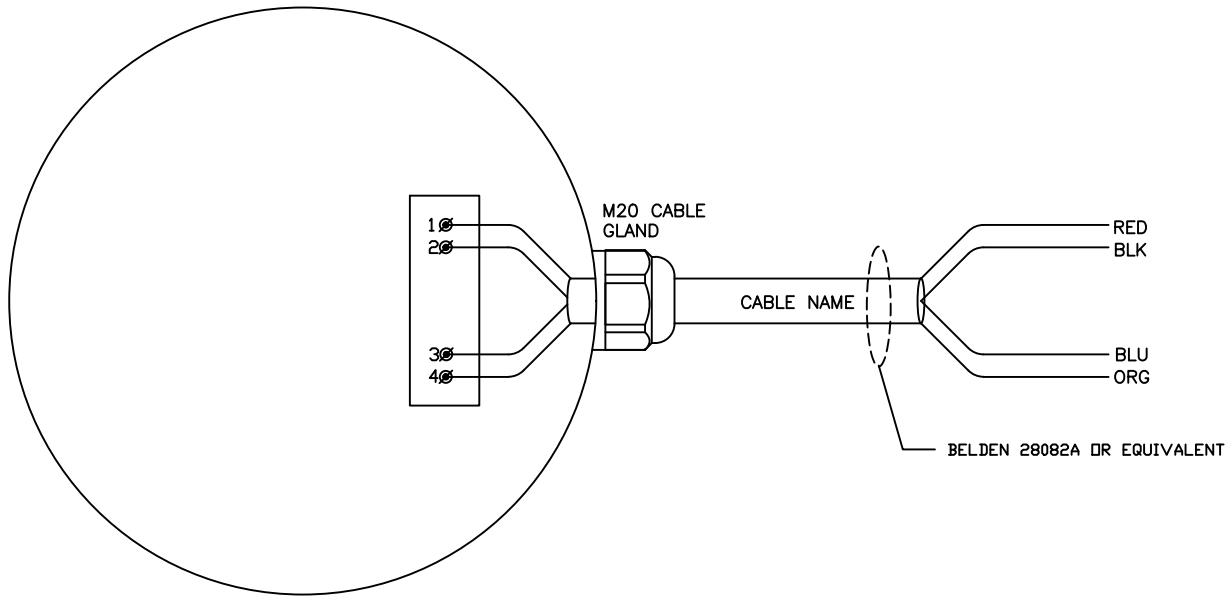
807

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E&H FEL54

LEVEL SWITCH



DEVICE INSTANCES			
POWER SHEET-LINE	SIGNAL SHEET-LINE	DEVICE TAG	CABLE NAME
230-07	320-24	LSH-103	LSH-103
230-08	320-25	LSL-104	LSL-104
230-09	320-26	LSH-203	LSH-203
230-10	320-27	LSL-204	LSL-204
230-13	320-30	LSL-404	LSL-404



Design Group

NO.	DATE	BY	REVISION
A	08/15/2018	EJV	INITIAL RELEASE
B	08/24/2018	EJV	ISSUE FOR CONSTRUCTION
C	08/28/18	CMD	Design Update
D	9-12-18	CMD	Add 25-144, 25-244
E	9-24-18	CMD	Add E-Stop PLC Input
F	11-2-18	CMD	Design Changes - Multiple valves, prox sw
G	3-5-19	CMD	Add 1001351



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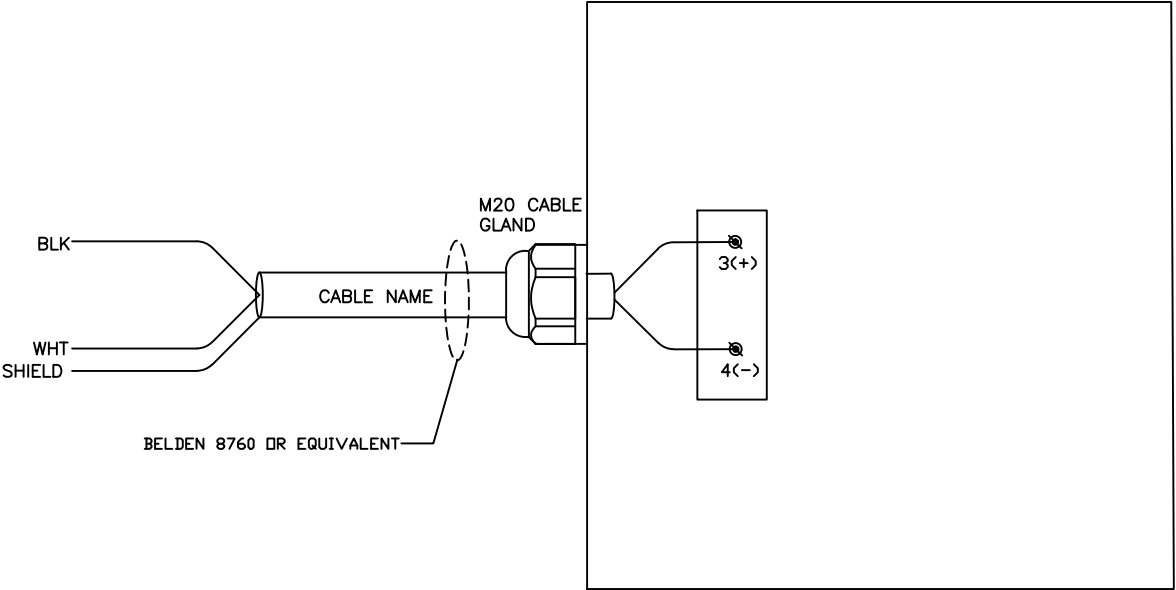
CLIENT	DANONE 1900 CHERRY STREET, LOUISVILLE, CO 80027
PROJECT	FERMENTATION AND JUICE SKID
DRAWING TITLE	TYPICAL WIRING DIAGRAM - E&H FEL54

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PROJECT NO.	1801824
ISSUED	08/15/2018
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DRAWING NO.	808

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SPIRAX SP500
VALVE POSITIONER



DEVICE INSTANCES		
SHEET-LINE	DEVICE TAG	CABLE NAME
321-24	TCV-112	I:02:02/00
321-28	TCV-611	I:02:02/01

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Design Group

NO.	DATE	BY	REVISION
A	08/15/2018	EJV	INITIAL RELEASE
B	08/24/2018	EJV	ISSUE FOR CONSTRUCTION
C	8/28/18	CMD	Design Update
D	9-12-18	CMD	ADD 2S-144, 2S-244
E	9-24-18	CMD	ADD E-Stop P.C. Input
F	11-2-18	CMD	Design Changes - Multiple valves, prox sw
G	3-5-19	CMD	ADD 110S13H



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CLIENT	DANONE 1900 CHERRY STREET, LOUISVILLE, CO 80027
PROJECT	FERMENTATION AND JUICE SKID
DRAWING TITLE	TYPICAL WIRING DIAGRAM - SPIRAX SP500

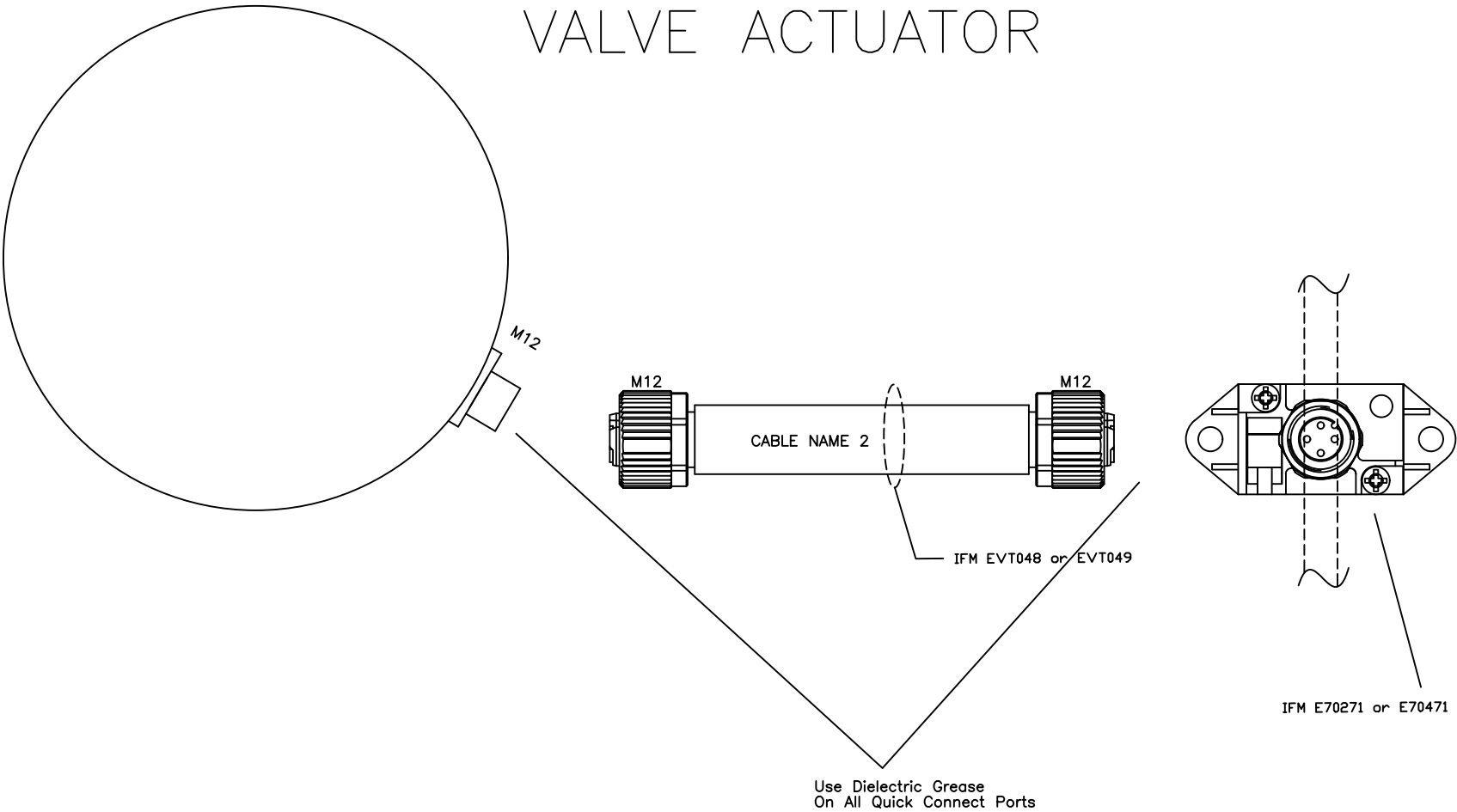
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PROJECT NO.	1801824
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Burkert 8691, GEA T.VIS
VALVE ACTUATOR



DEVICE INSTANCES (ASI)		
SHEET	DEVICE TAG	CABLE NAME 2
401	MPV-xxx	
401	XV-xxx	

**Design Group**

NO.	DATE	BY	REVISION
A	08/15/2018	EJV	INITIAL RELEASE
B	08/24/2018	EJV	ISSUE FOR CONSTRUCTION
C	08/28/18	CMD	Design Update
D	9-12-18	CMD	Add 7S-144, 7S-244
E	9-24-18	CMD	Add E-Stop P.C. Input
F	11-2-18	CMD	Design Changes - Multiple valves, prox sw
G	3-6-19	CMD	Add 10S13Pin

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CLIENT	DANONE 1900 CHERRY STREET, LOUISVILLE, CO 80027
PROJECT	FERMENTATION AND JUICE SKID
DRAWING TITLE	TYPICAL WIRING DIAGRAM - E&H PROMASS 300

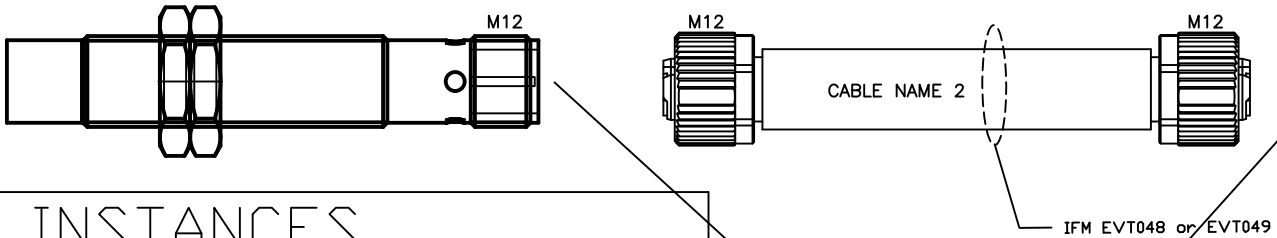
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PROJECT NO.	1801824
ISSUED	08/15/2018
SCALE	NOT TO SCALE
DRAWN BY	EJV
DRAWING NO.	810

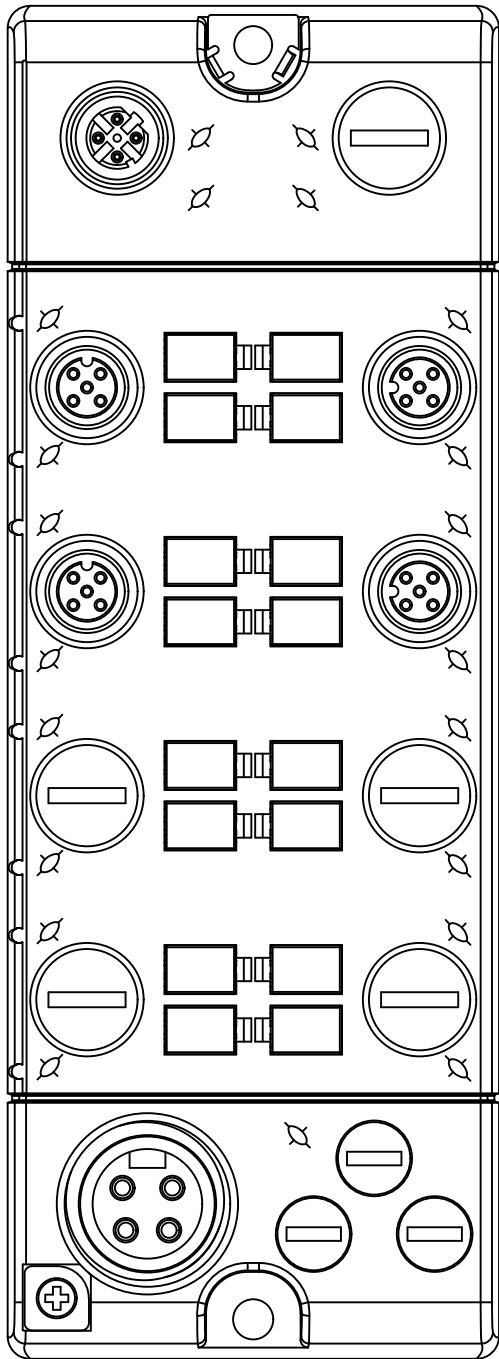
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IFM IFT245 to AB 1732E-IB16M12R
FLOW PANEL PROXIMITY SENSOR



DEVICE INSTANCES		
SHEET	DEVICE TAG	CABLE NAME 2
330	ZS-101	ZS-101
330	ZS-102	ZS-102
330	ZS-103	ZS-103
330	ZS-104	ZS-104
330	ZS-105	ZS-105
330	ZS-106	ZS-106
330	ZS-107	ZS-107
330	ZS-108	ZS-108
330	ZS-109	ZS-109
330	ZS-110	ZS-110
330	ZS-111	ZS-111
330	ZS-112	ZS-112
330	ZS-113	ZS-113
330	ZS-114	ZS-114
330	ZS-115	ZS-115
330	ZS-116	ZS-116
340	ZS-201	ZS-201
340	ZS-202	ZS-202
340	ZS-203	ZS-203
340	ZS-204	ZS-204
340	ZS-205	ZS-205
340	ZS-206	ZS-206
340	ZS-207	ZS-207
340	ZS-208	ZS-208



NO.	DATE	BY	REVISION
A	08/15/2018	EJV	INITIAL RELEASE
B	08/24/2018	EJV	ISSUE FOR CONSTRUCTION
C	08/28/18	CMD	Design Update
D	9-12-18	CMD	Add ZS-114, ZS-214
E	9-24-18	CMD	Add E-Stop P.C. Input
F	11-2-18	CMD	Design Changes - Multiple valves, prox sw
G	3-5-19	CMD	Add Hosi 3pin

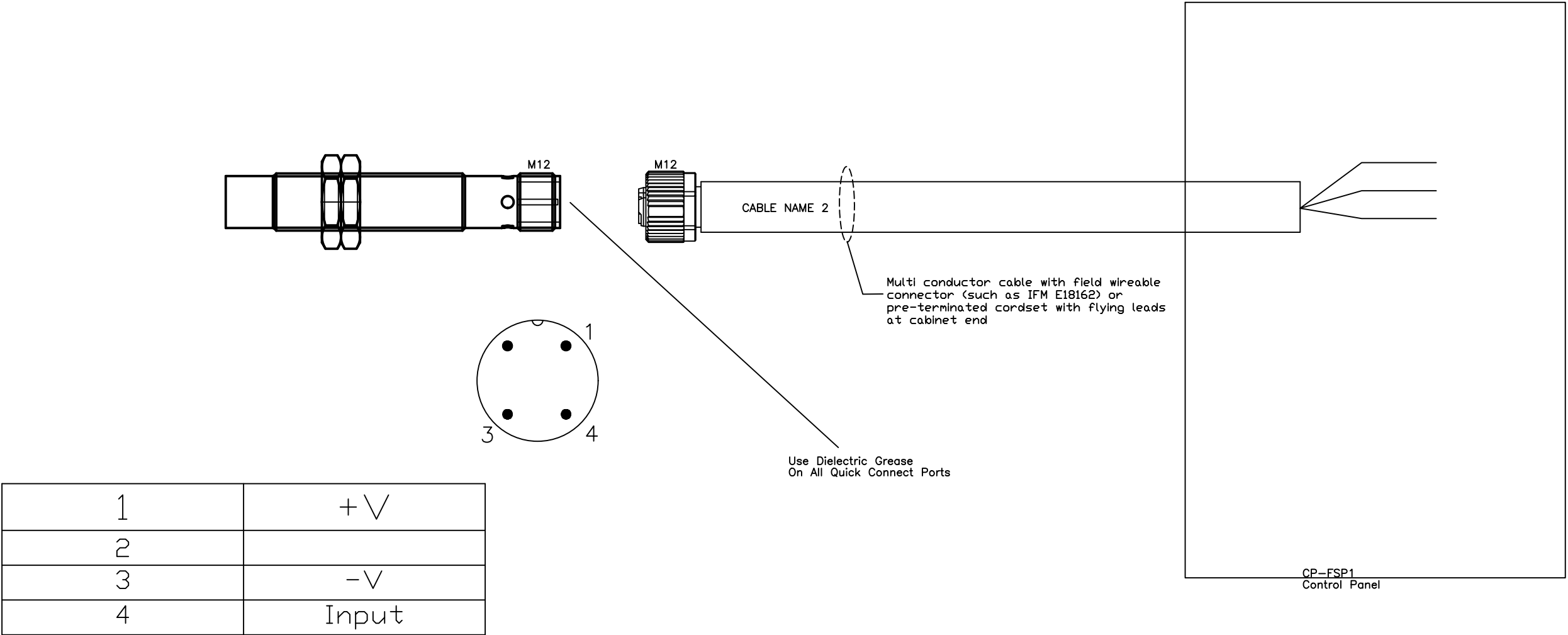
CLIENT	DANONE 1900 CHERRY STREET, LOUISVILLE, CO 80027
PROJECT	FERMENTATION AND JUICE SKID
DRAWING TITLE	TYPICAL WIRING DIAGRAM - E&H PROMASS 300

ISSUED FOR CONSTRUCTION

PROJECT NO.	1801824
ISSUED	08/15/2018
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DRAWN BY	EJV
DRAWING NO.	811

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1	+V
2	
3	-V
4	Input

DEVICE INSTANCES			
SHEET	DEVICE TAG	CABLE NAME 2	
320	ZS-145	ZS-145	
320	ZS-245	ZS-245	
320	ZS-345	ZS-345	FUTURE
320	ZS-144	ZS-144	
320	ZS-244	ZS-244	

**Design Group**

NO.	DATE	BY	REVISION
A	08/15/2018	EJV	INITIAL RELEASE
B	08/24/2018	EJV	ISSUE FOR CONSTRUCTION
C	8/28/18	CMD	Design Update
D	9-12-18	CMD	Add ZS-144, ZS-244
E	9-24-18	CMD	Add E-Stop PLC Input
F	11-2-18	CMD	Design Changes - Multiple valves, prox sw
G	3-5-19	CMD	Add I/Os 13pin

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CLIENT	DANONE 1900 CHERRY STREET, LOUISVILLE, CO 80027
PROJECT	FERMENTATION AND JUICE SKID
DRAWING TITLE	TYPICAL WIRING DIAGRAM - E&H PROMASS 300

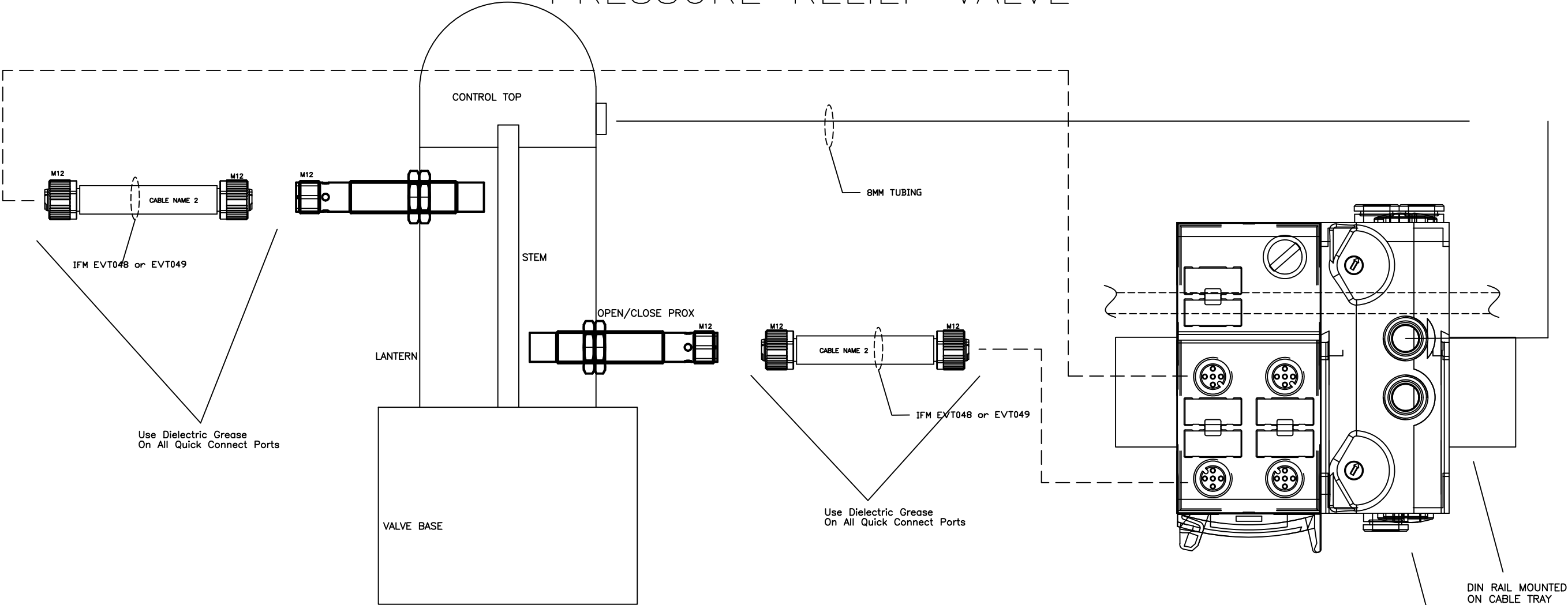
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PROJECT NO.	1801824
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DRAWN BY	EJV
DRAWING NO.	812

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GEA VARIVENT OVERFLOW VALVE Q
PRESSURE RELIEF VALVE



DEVICE INSTANCES			
SHEET	DEVICE TAG	CABLE NAME 2	I/O PORT
402	PRV-111	PRV-111-OPEN	I-1
402	PRV-111	PRV-111-CLOSED	I-2
402	PRV-111	PRV-111	Q-2
402	PRV-311	PRV-311-OPEN	I-3
402	PRV-311	PRV-311-CLOSED	I-4
402	PRV-311	PRV-311	Q-4
402	PRV-411	PRV-411-OPEN	I-1
402	PRV-411	PRV-411-CLOSED	I-2
402	PRV-411	PRV-411	Q-2

NO	DATE	BY	REVISION
A	08/15/2018	EJV	INITIAL RELEASE
B	08/24/2018	EJV	ISSUE FOR CONSTRUCTION
C	02/28/18	CMO	Design Update
D	01-12-18	CMO	ADD 75-144, 75-244
E	03-24-18	CMO	ADD E-Stop P.I.C Input
F	11-2-18	CMO	Design Changes - Multiple valves, prox sw
G	3-5-19	CMO	ADD 10013PH

DANONE
1900 CHERRY STREET, LOUISVILLE, CO 80027

CLIENT

PROJECT

FERMENTATION AND JUICE SKID

DRAWING
TITLE

TYPICAL WIRING DIAGRAM -
E&H PROMASS 300

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PROJECT NO.

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