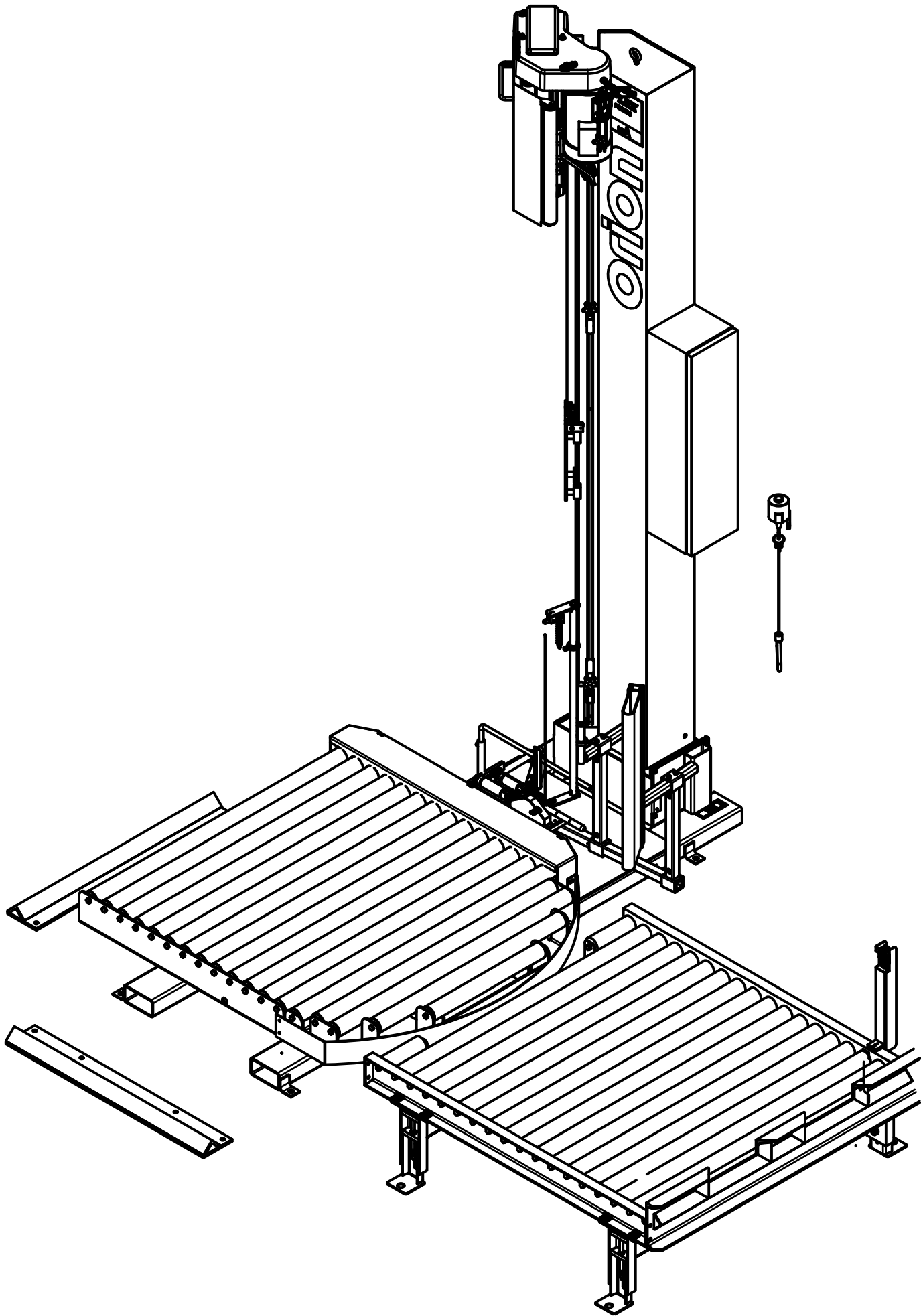




FILENAME	DWGDESC	DWGDESC2	DWGDESC3
PG1	COVER PAGE		
PG2	230 VAC POWER DROP	AND DISTRIBUTION	100/200
PG3	230 VAC VFD		300/400
PG4	230 VAC VFD		500/600
PG5	230 VAC VFD		700/800
PG6	24 VDC POWER	DISTRIBUTION	19900/20000
PG7	START/STOP CIRCUIT	AND REMOTE START	20100/20200
PG8	LIGHT CURTAINS		20300/20400
PG9	LIGHT CURTAINS		20500/20600
PG10	X20 I/O POWER /	INPUTS	30100/30200
PG11	X20 I/O OUTPUT /	POWER SUPPLY	30300/30400
PG12	X20 I/O POWER	OUTPUTS	30500/30600
PG13	X20 RS485 COMM		30700/30800
PG14	SPARE PAGE		30900/31000
PG15	X20 I/O POWER/	INPUTS	31100/31200
PG16	X20 INPUT/	OUTPUT	31300/31400
PG17	X20 OUTPUT		31500/31600
PG18	CARRIAGE I/O BLOCK		50100/50200
PG19	(CTS) PNEUMATIC	SCHEMATIC	60100
PG20	(RTC) PNEUMATIC	SCHEMATIC	60100
PG21	ENCLOSURES AND	PANEL AND BOM	
PG22	MACHINE FIELD AND	CARRIAGE BOM	
PG23	CP3 ENCLOSURE	LAYOUT	

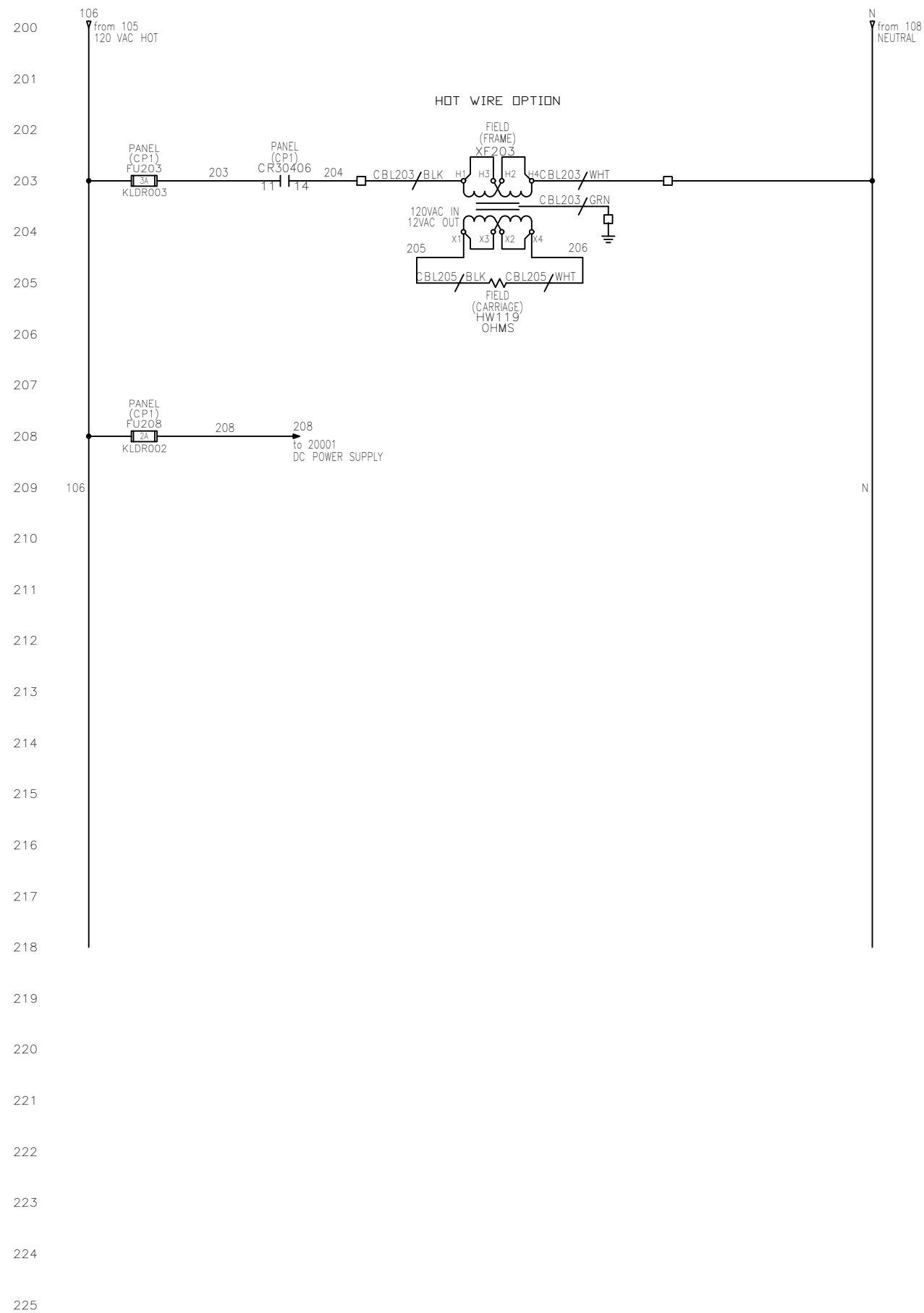
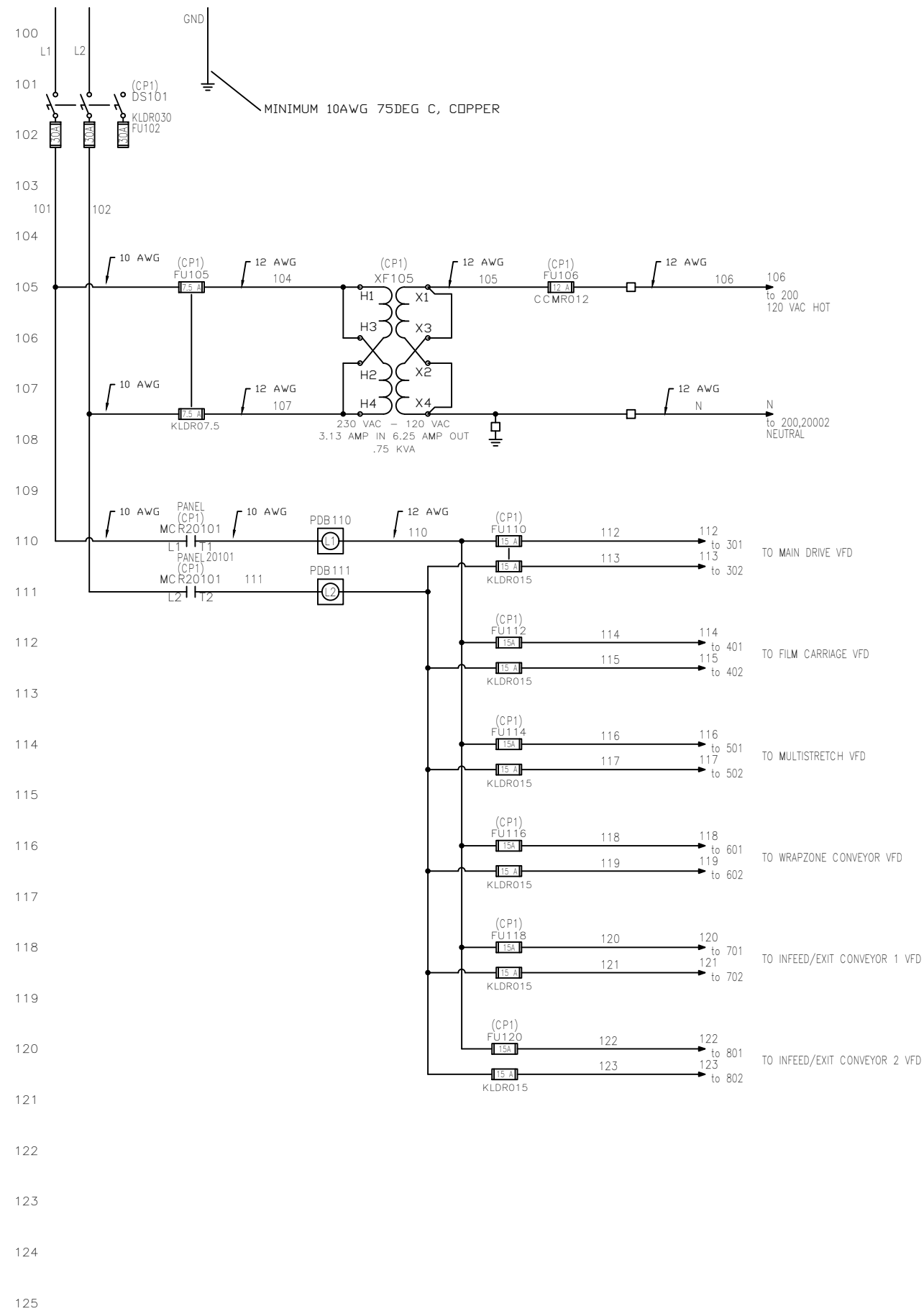
WIRING COLOR AND SIZE
115VAC (RED) 14 AWG MINIMUM
NEUTRAL (WHITE) 14 AWG MINIMUM
GND (GREEN/YELLOW) 14 AWG MINIMUM
+24VDC (BLUE) 18 AWG MINIMUM
DC COMMON (WHITE/BLUE) 18 AWG MINIMUM
CABLE COLORS AND GAUGE ARE LISTED IN PRINTS

- NOTES
1. SILICONE BASE PRODUCTS SHALL NOT BE USED ANYWHERE IN THIS ASSEMBLY.
 2. ALL FIELD CONTROL WIRE TO BE A MINIMUM 14 AWG 75C COPPER, UNLESS OTHERWISE NOTED.
 3. ALL CONDUIT HUB RATINGS MUST BE EQUAL TO OR SURPASS THE ASSEMBLY ENVIRONMENT RATING.
 4. WHEN ORDERING REPLACEMENT PARTS, PLEASE SUPPLY THE JOB NUMBER AS SHOWN INSIDE THE CONTROL PANEL DOOR.
 5. MANUFACTURES OF COMPONENTS USED IN THIS ASSEMBLY ARE SUBJECT TO CHANGE WITHOUT NOTICE.
 6. THIS DOCUMENT IS THE PROPERTY OF THE END USER, PLEASE DO NOT REMOVE FROM THE ELECTRICAL CONTROL ENCLOSURE.
 7. ALL WIRES CONNECTED TO THE B&R X20 IO MUST HAVE FERRULS.

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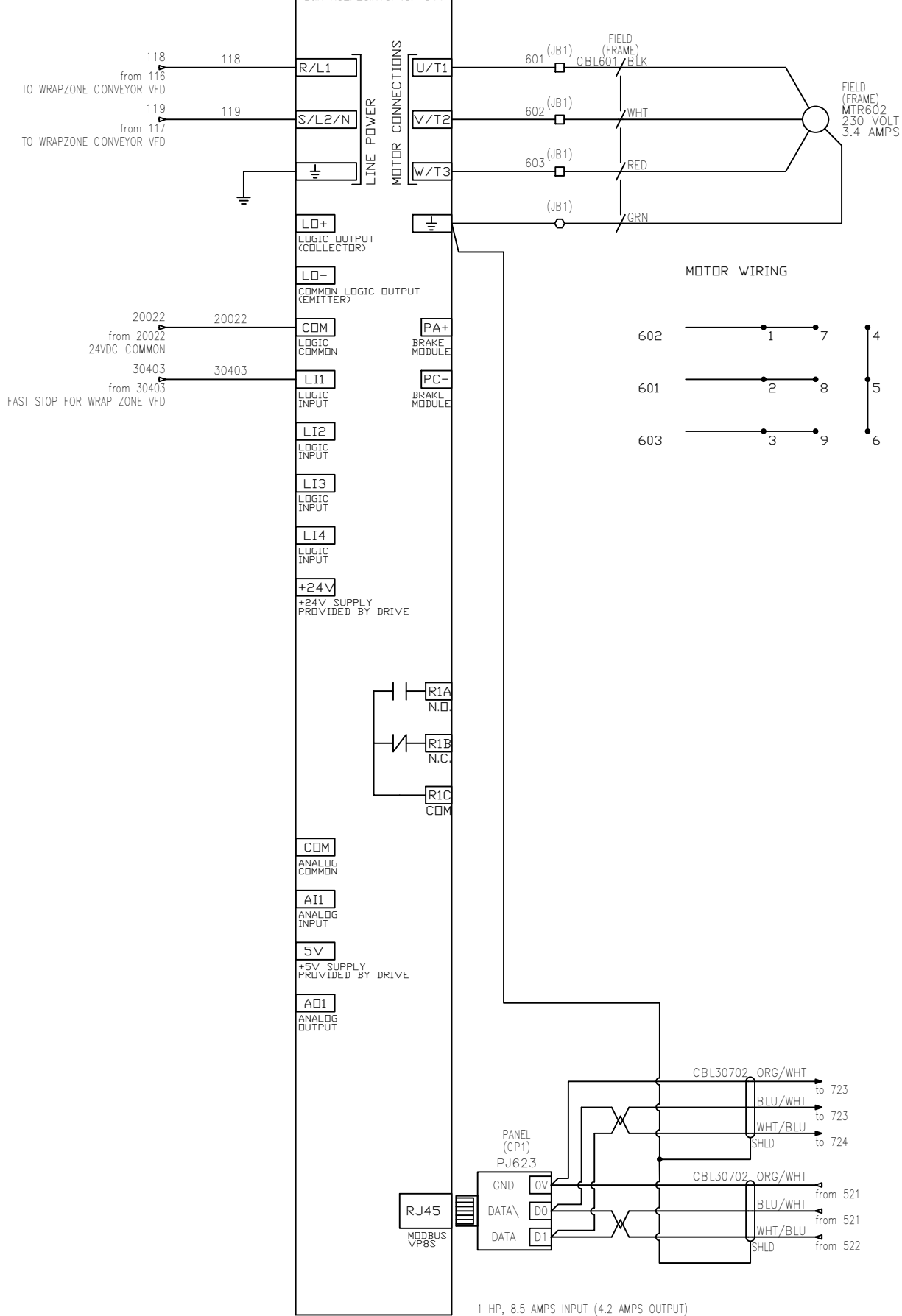
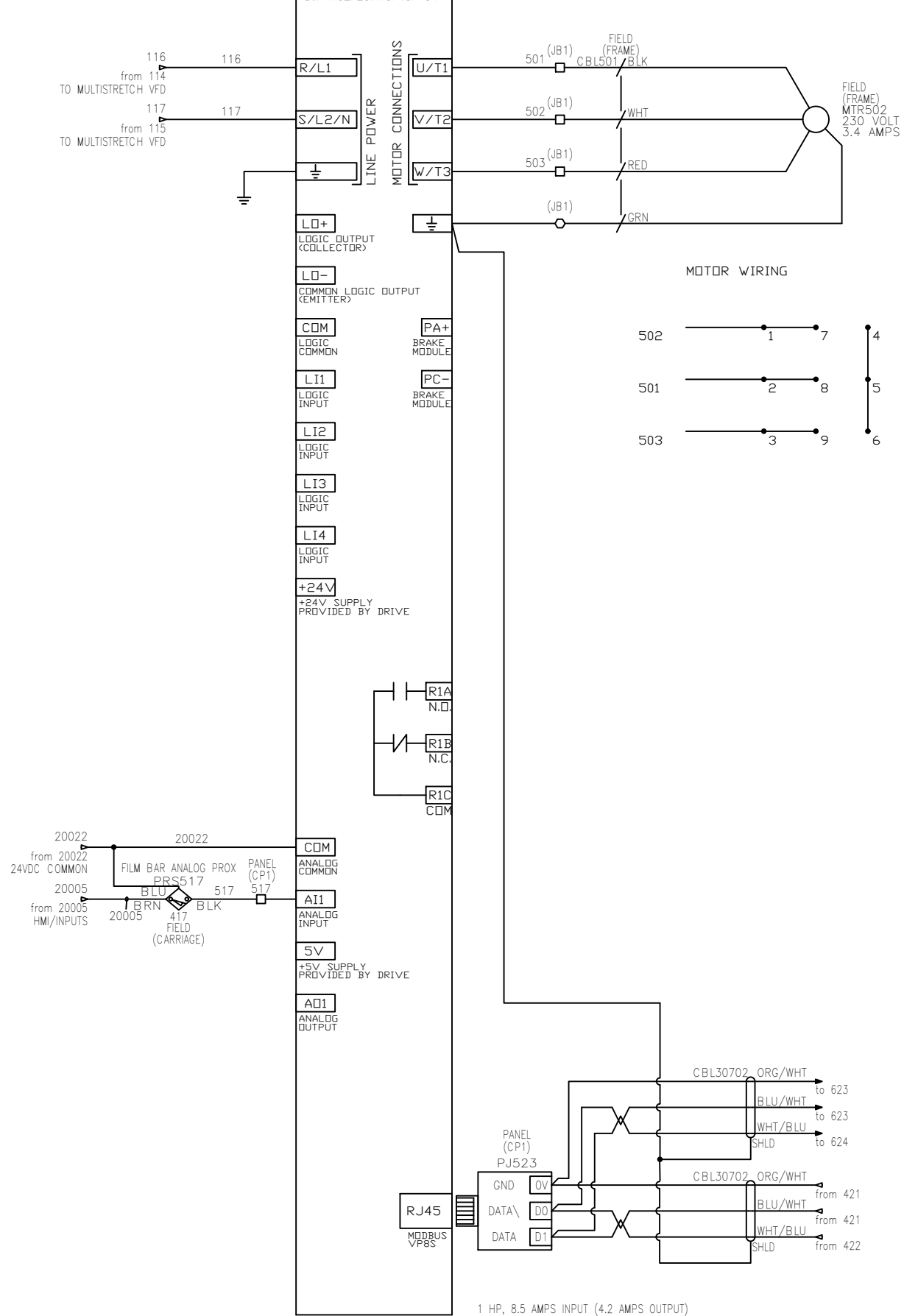
CUSTOMER DROP 230 VAC / 1 PHASE / 60 HZ

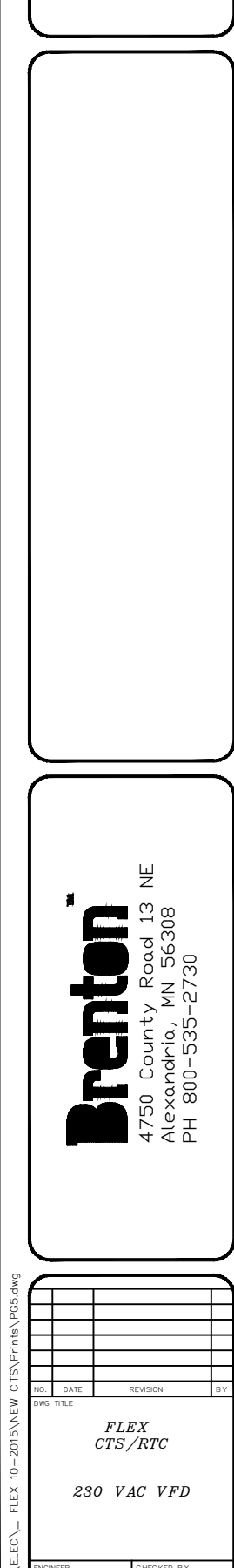
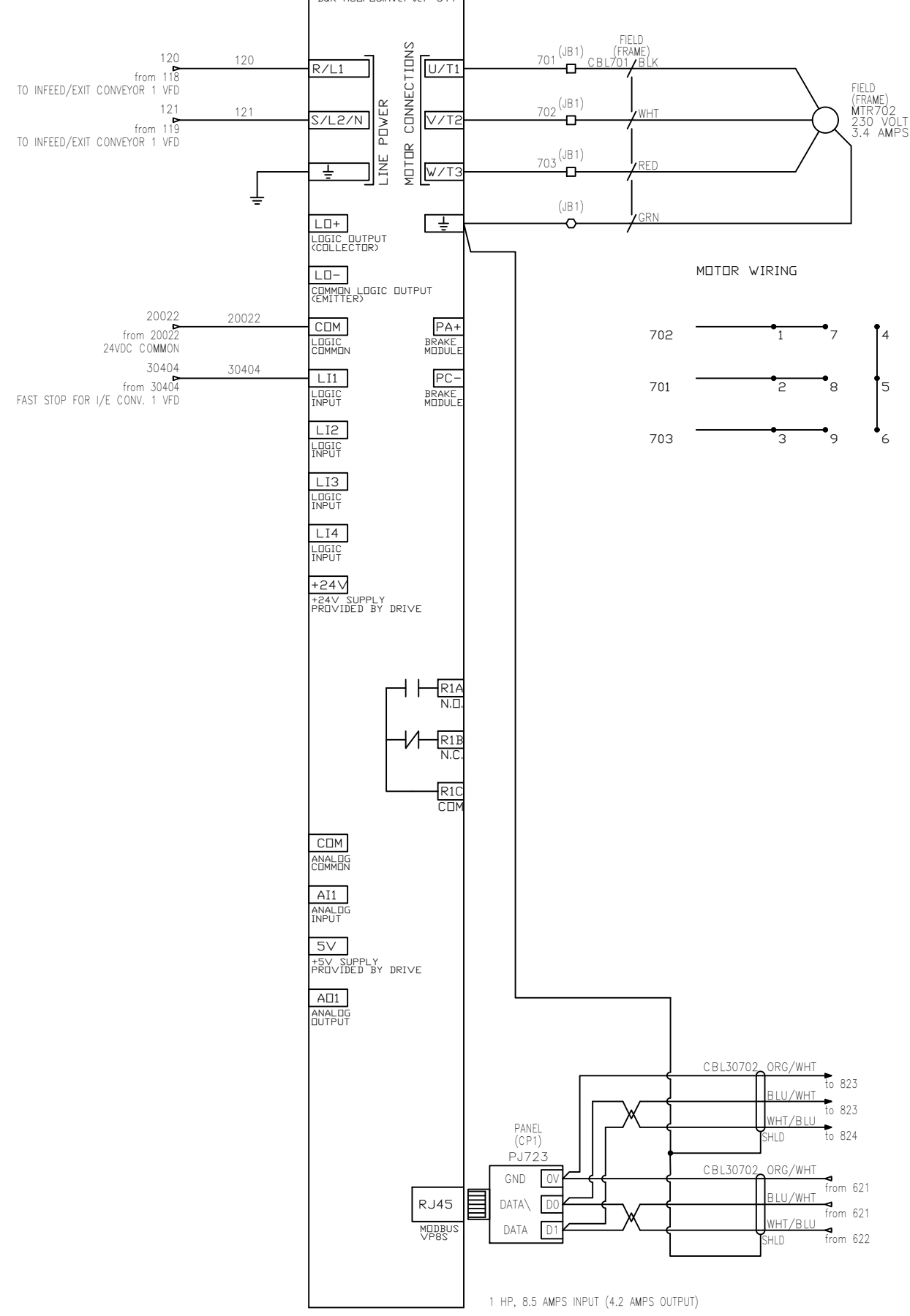


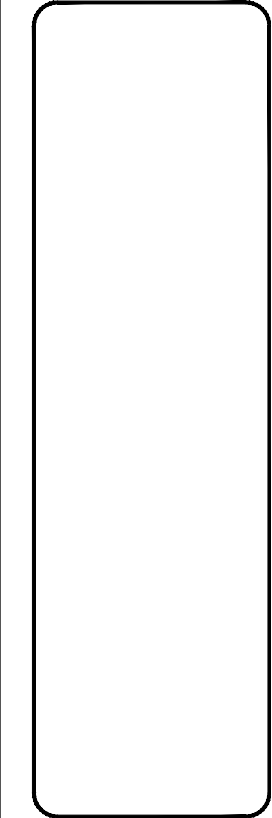
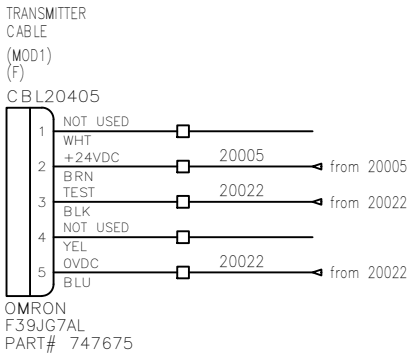
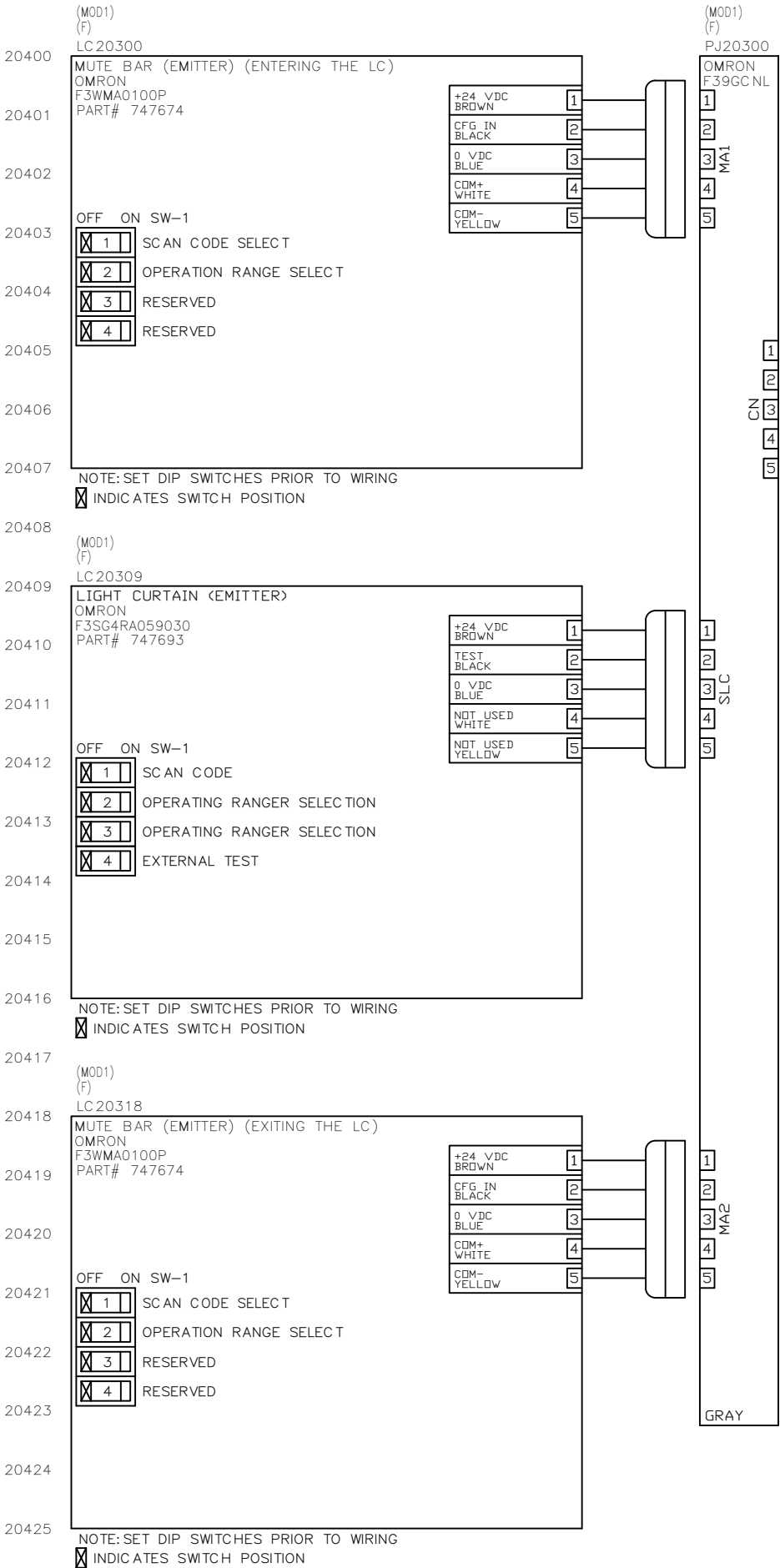
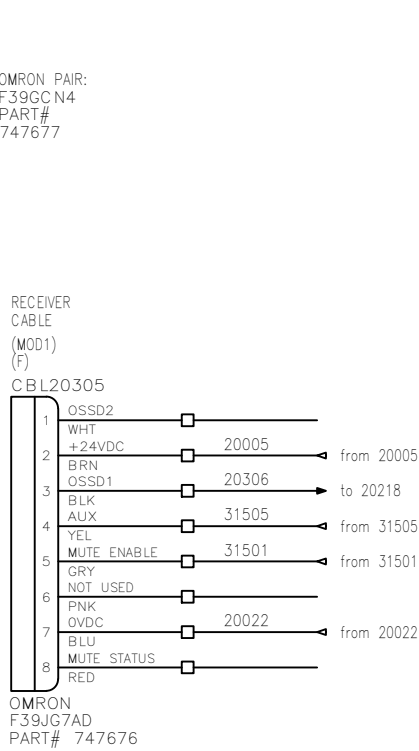
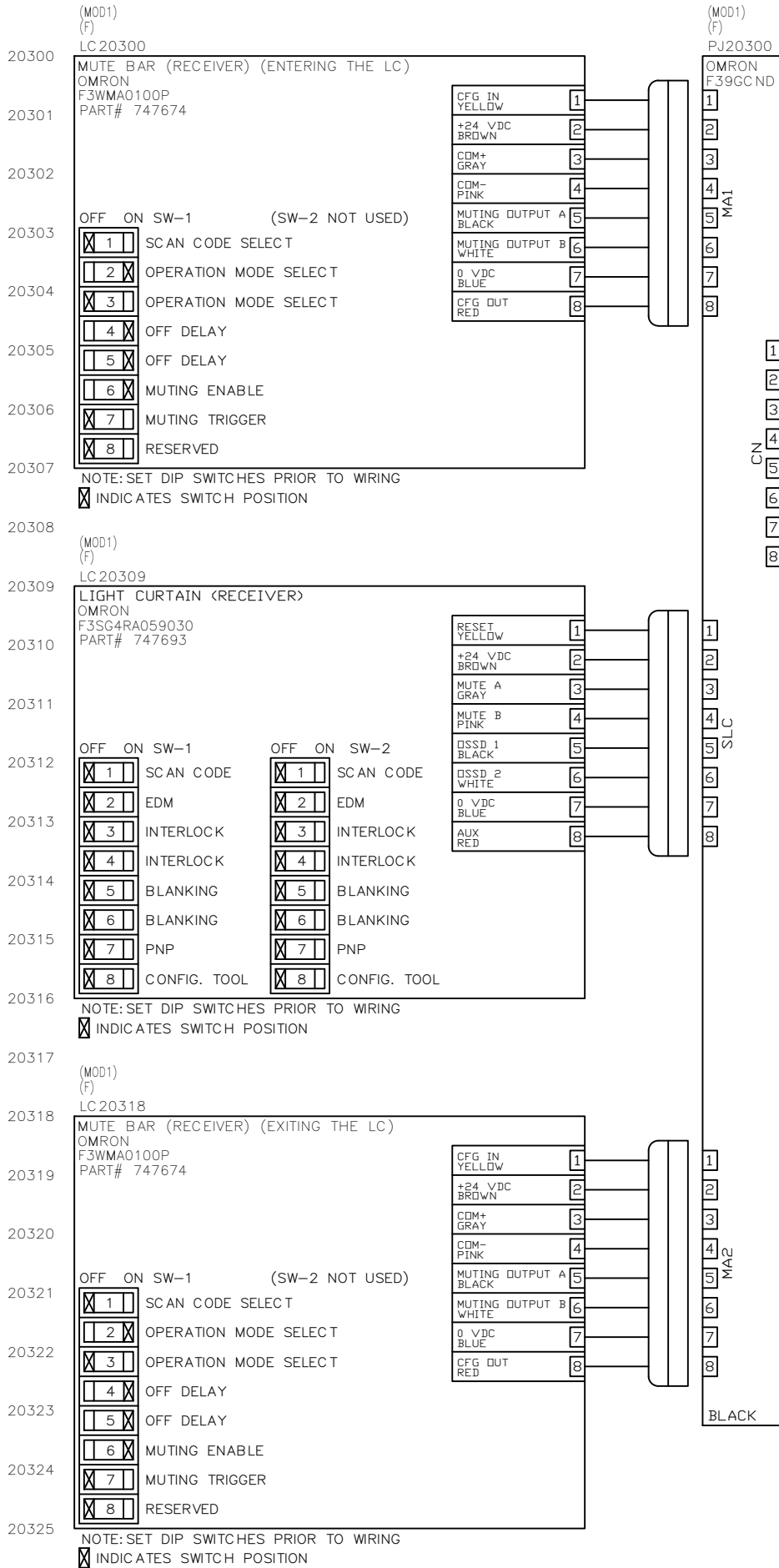
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Alexandria, MN 56308
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NO. _____ DATE _____				REVISION _____		BY _____	
DWG TITLE _____							
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ENGINEER _____				CHECKED BY _____			
JOB NO _____				DRAWN BY _____			
SCALE _____ NO SCALE _____				DATE 12/2018			
DWG NO 750717 (V1.0)							
SHEET NO _____							

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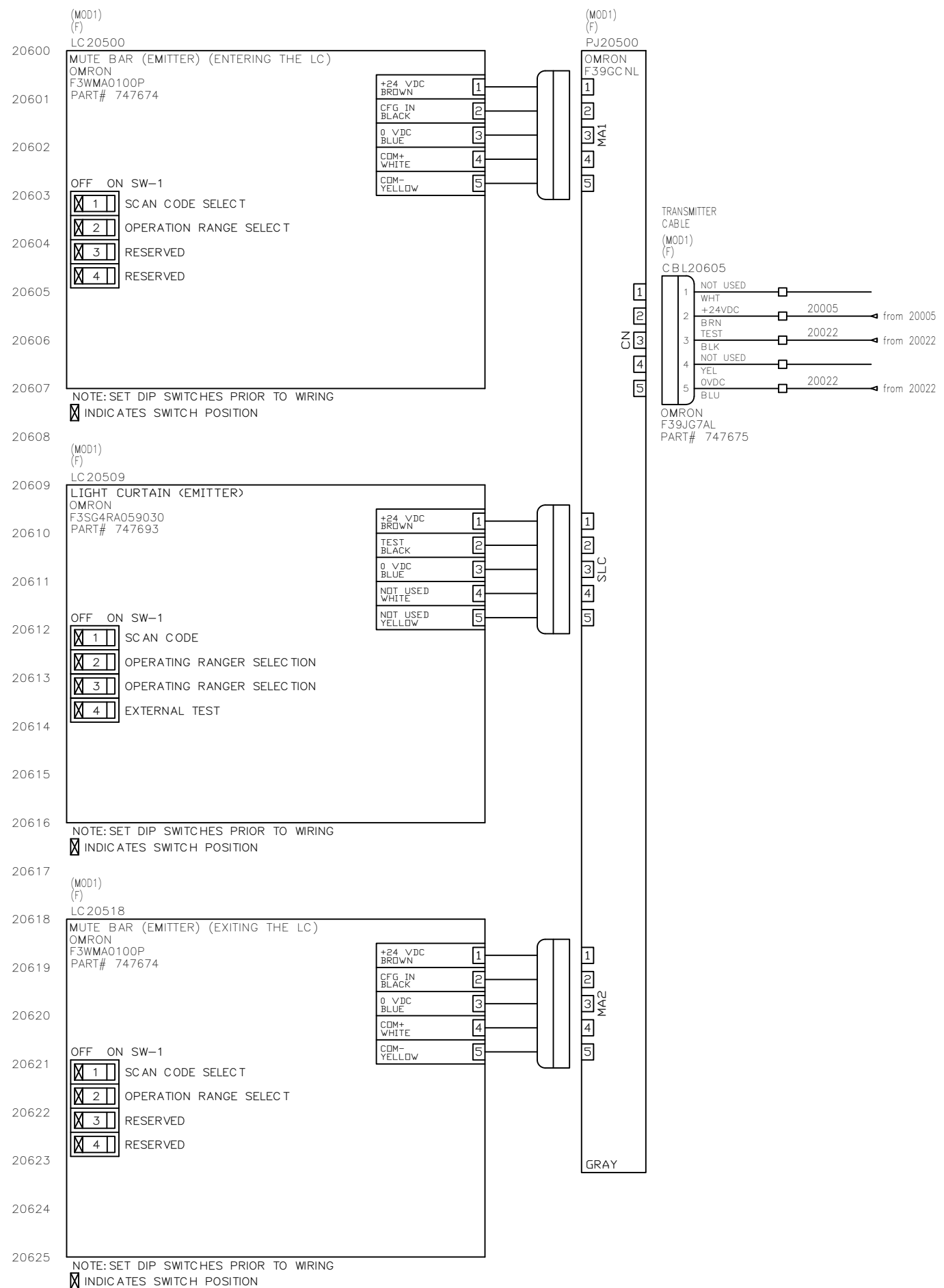
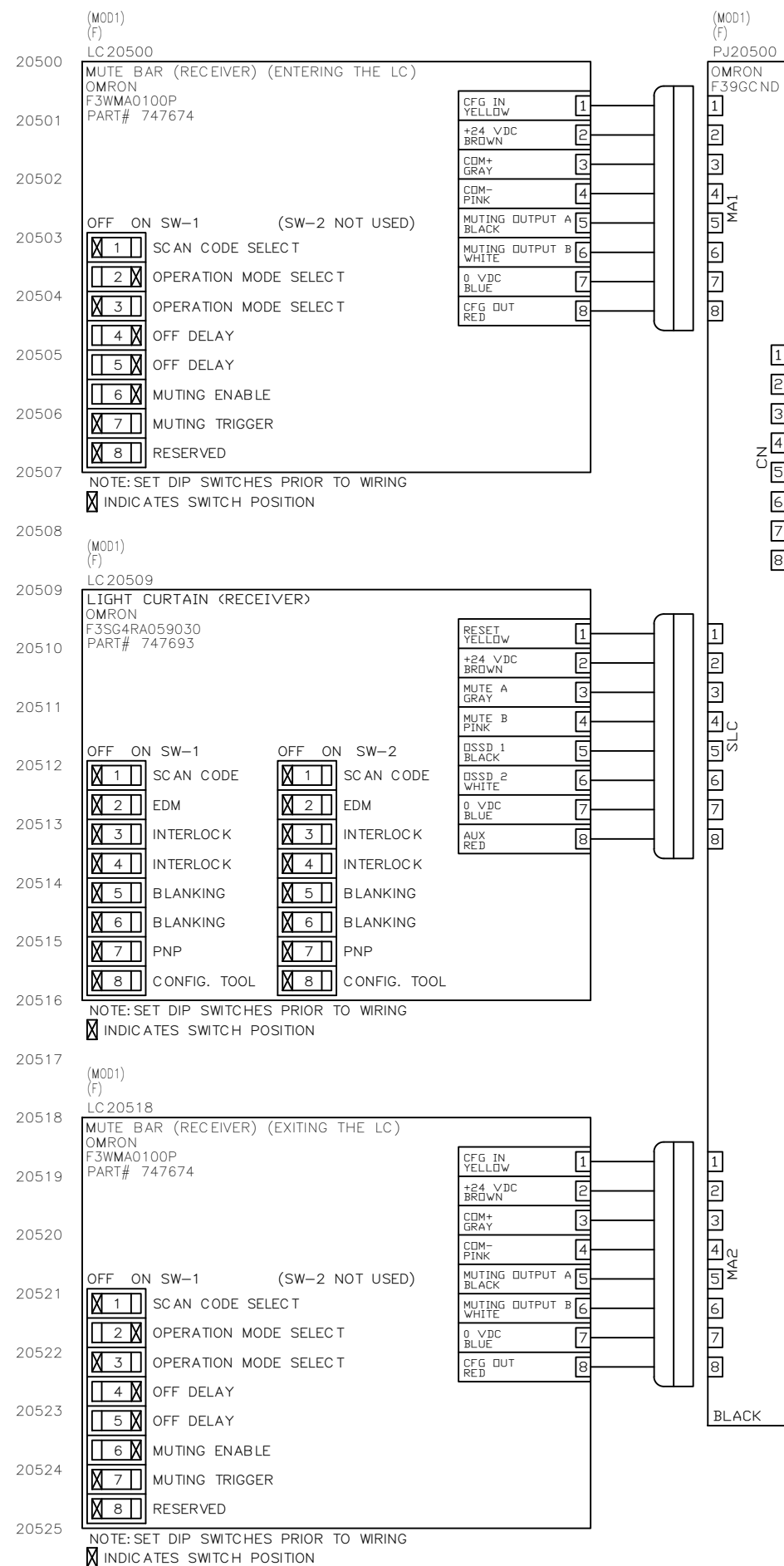


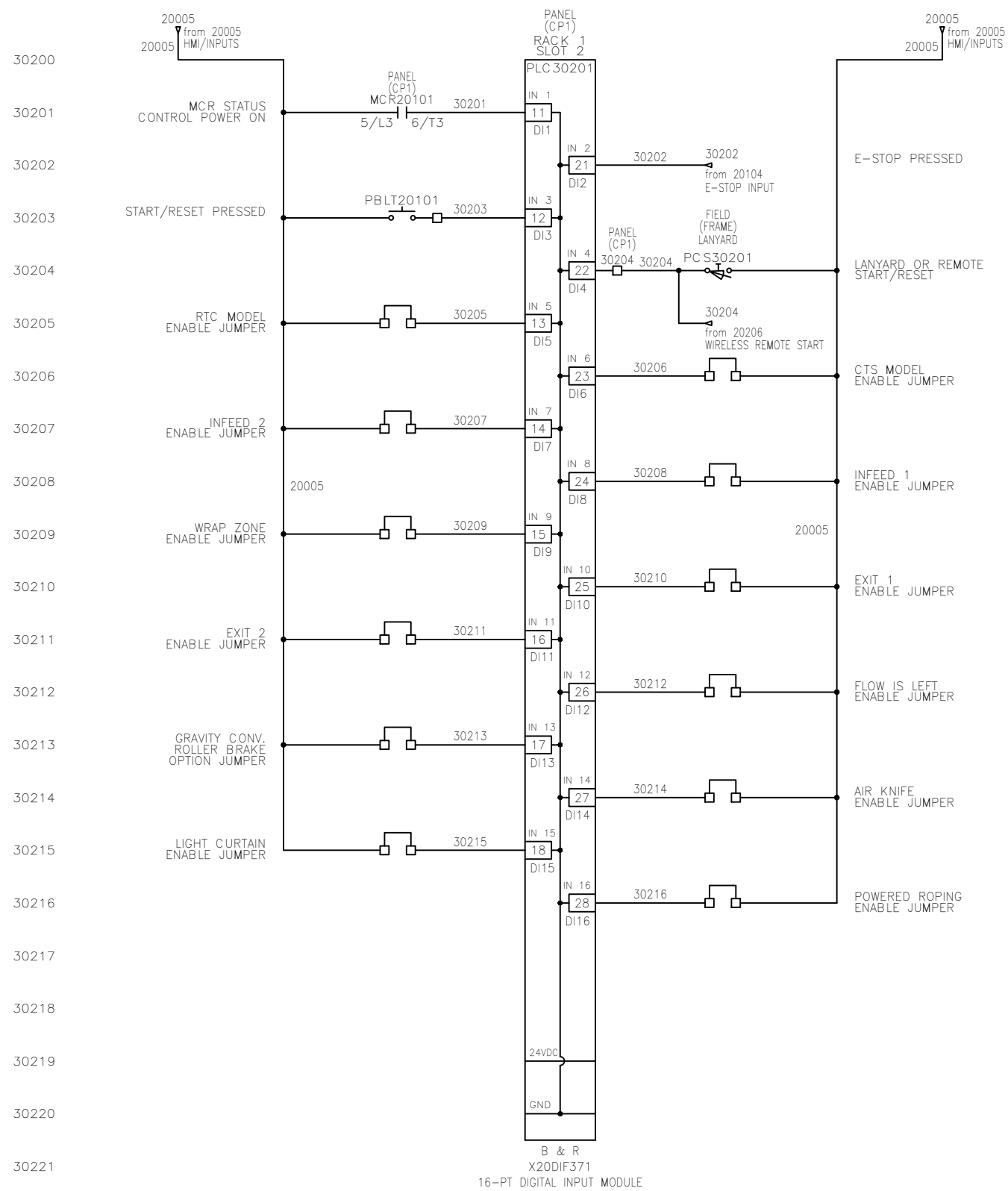
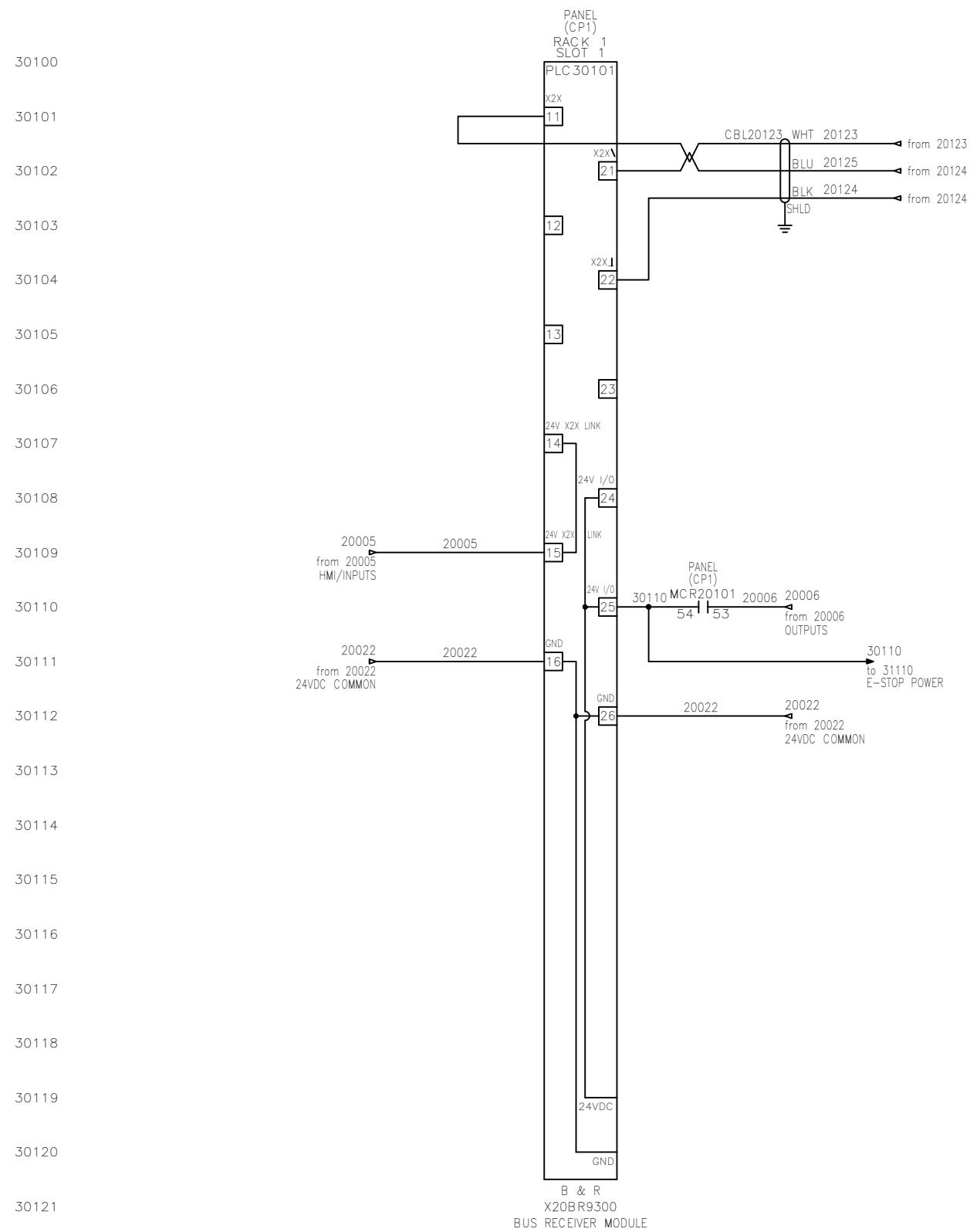


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NO.	DATE	REVISION	B.Y.
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FLEX CTS/RTC LIGHT CURTAINS			
ENGINEER	CHECKED BY		
JOB NO.	DRAWN BY		
SCALE	NO SCALE	DATE	12/2018
DWG. NO.			
750717 (V1.0)			
SHEET NO.			
8 OF 23			

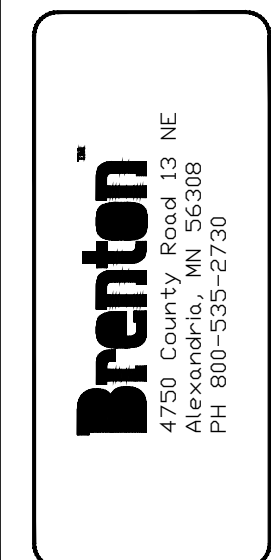
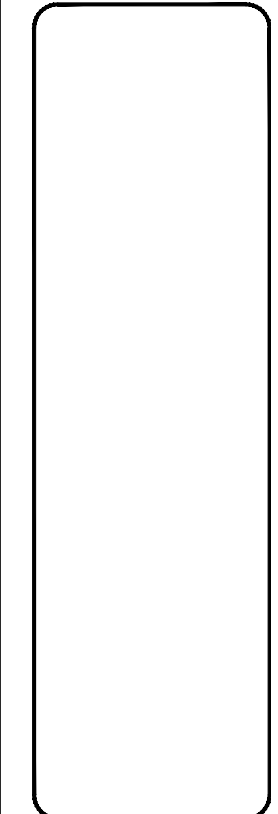
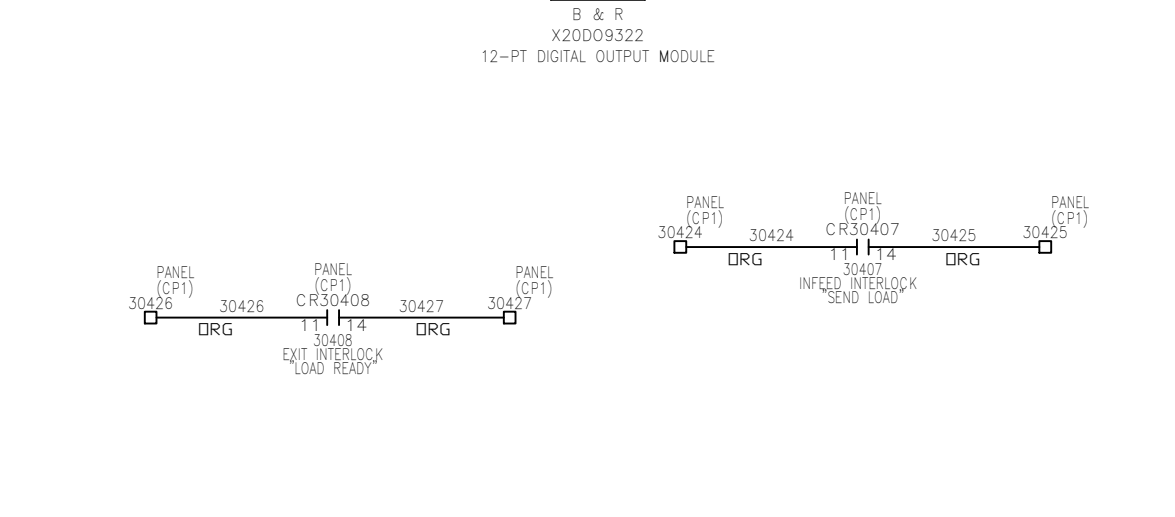
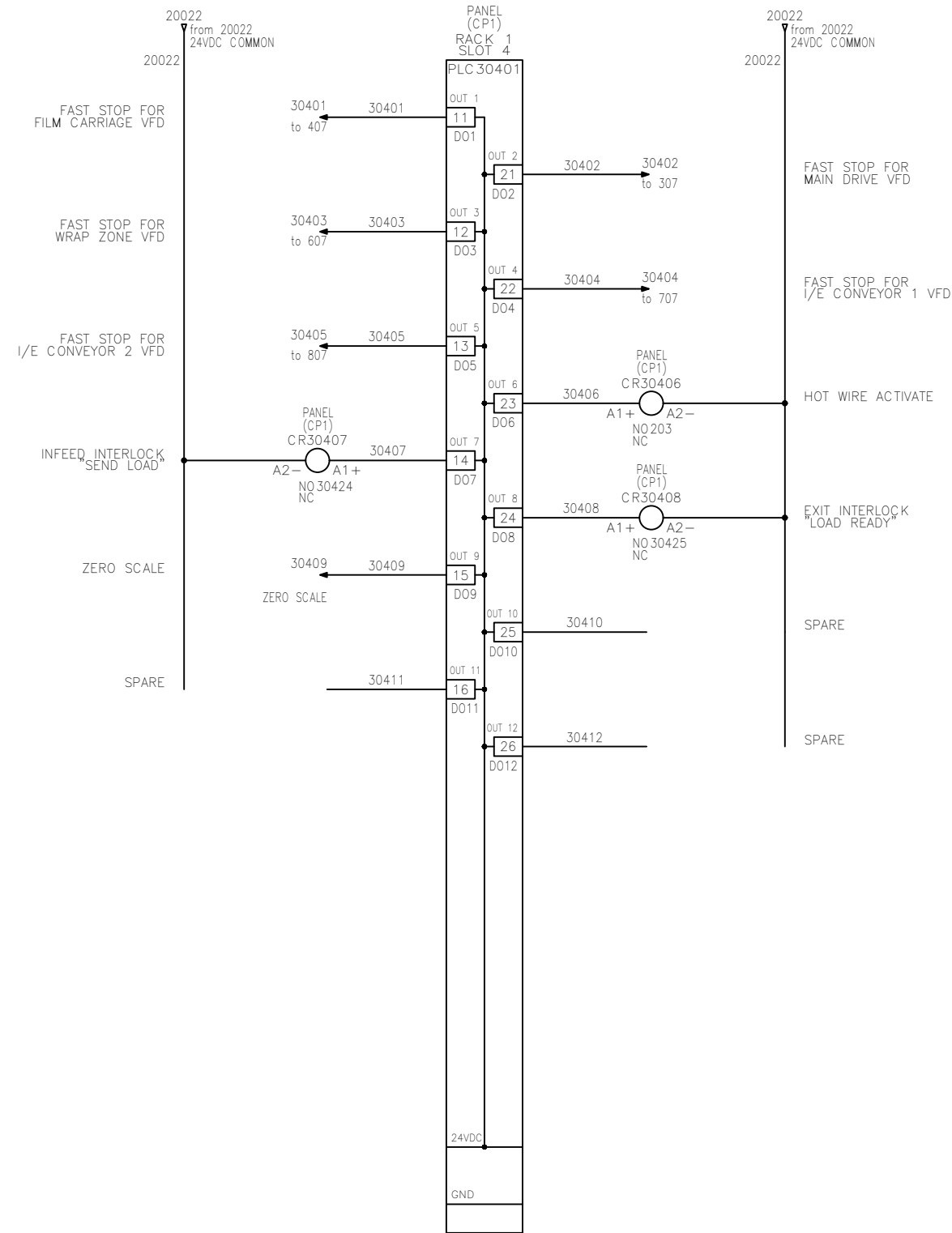
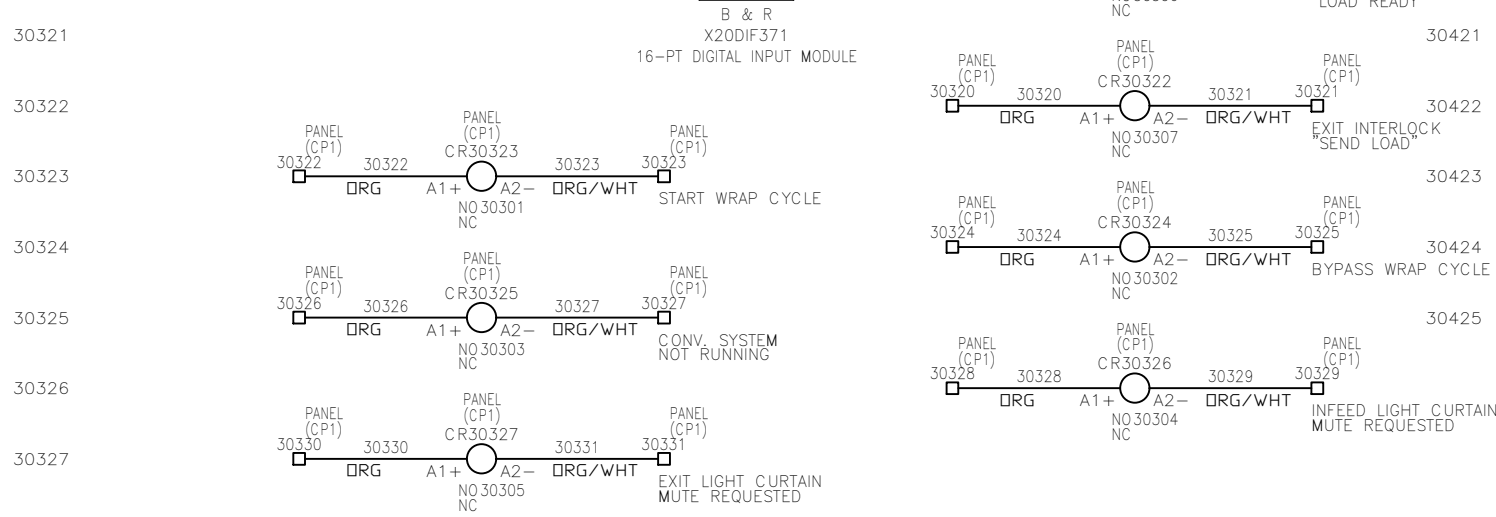
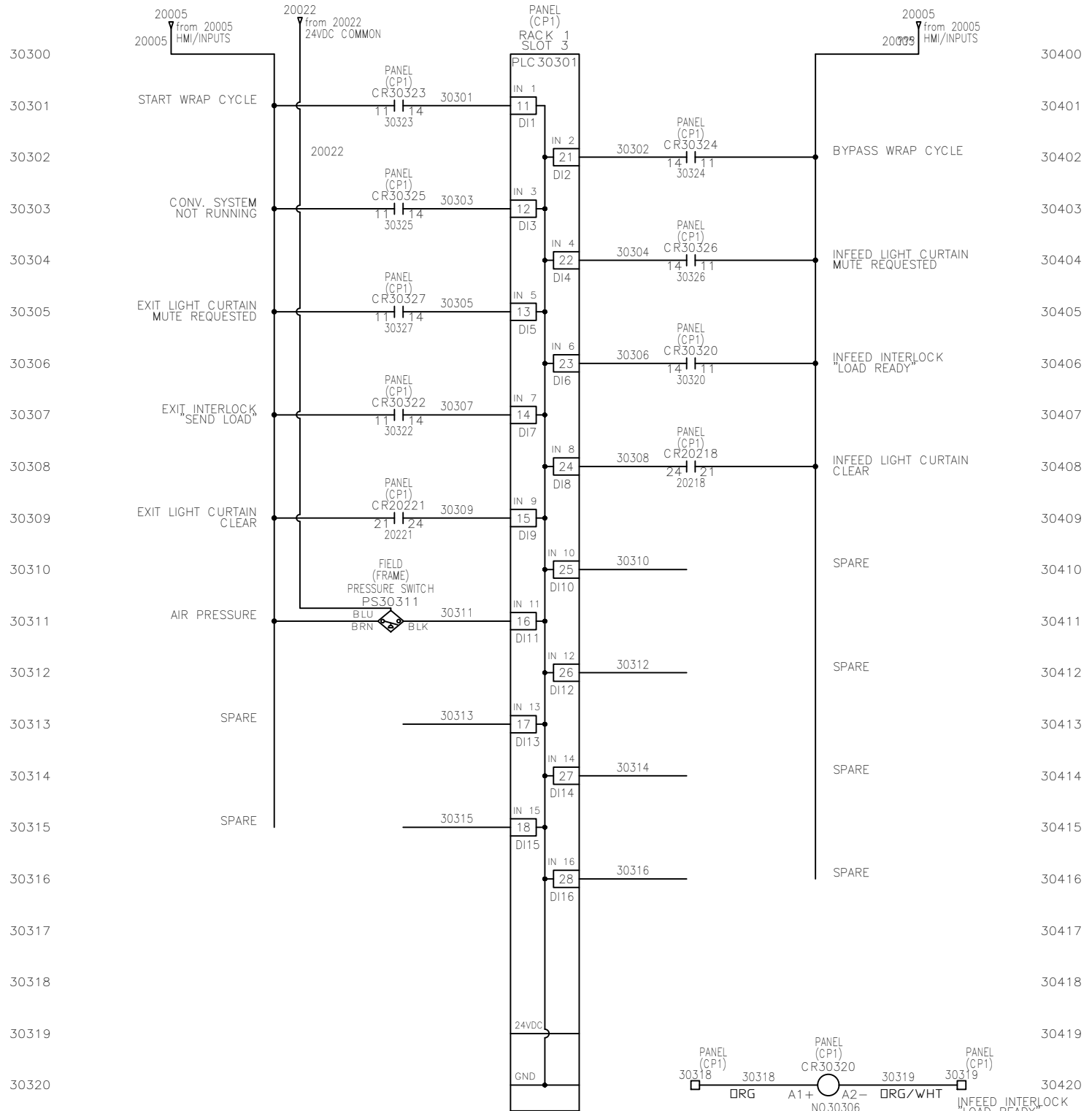
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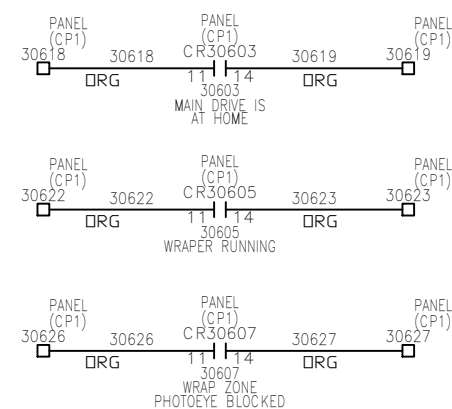
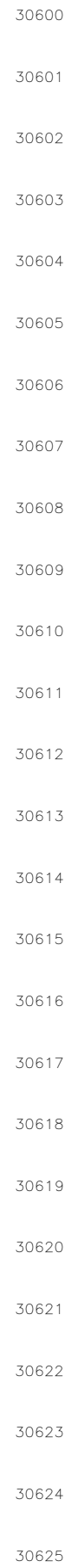
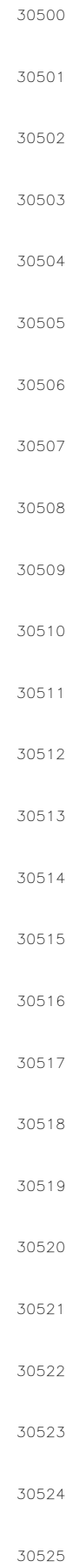


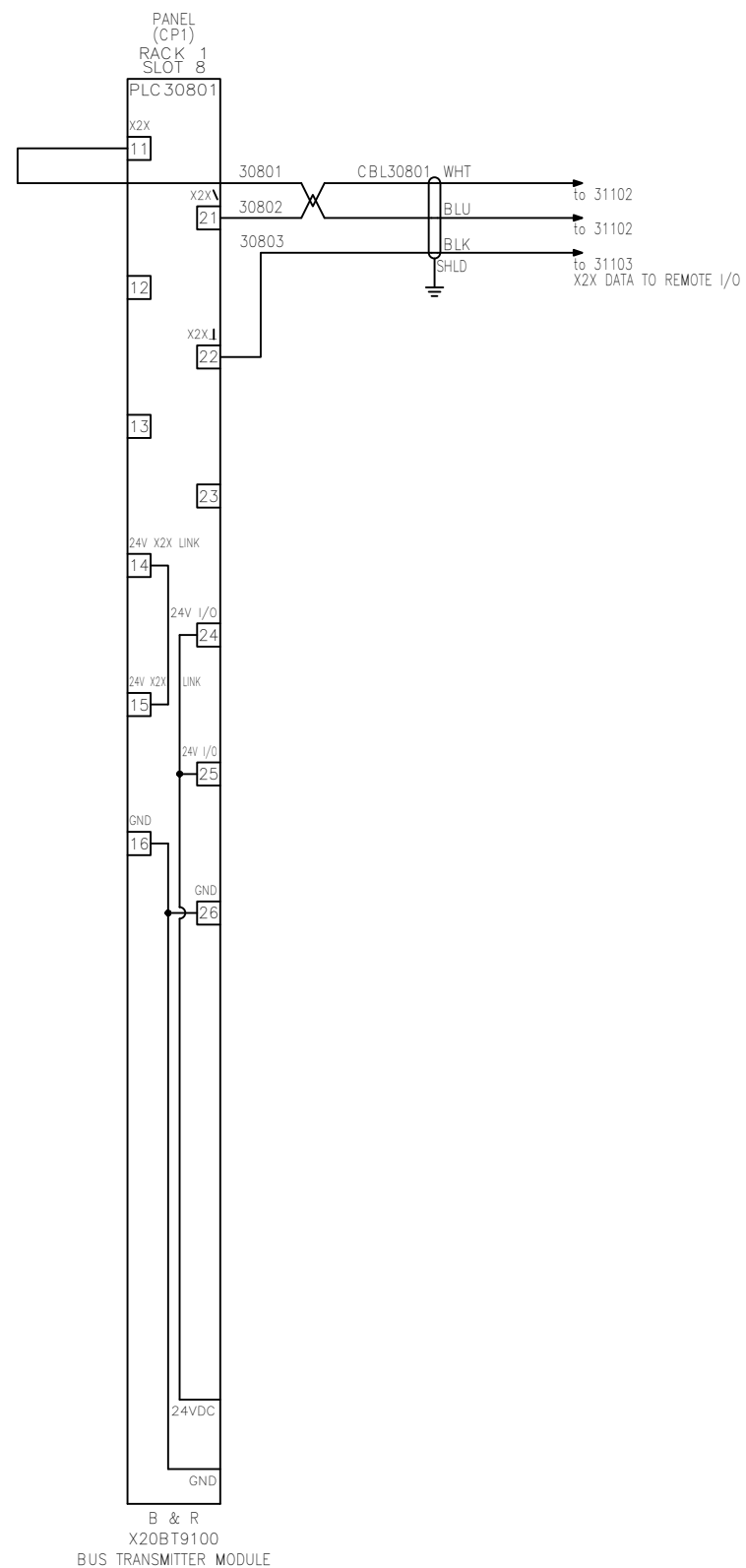
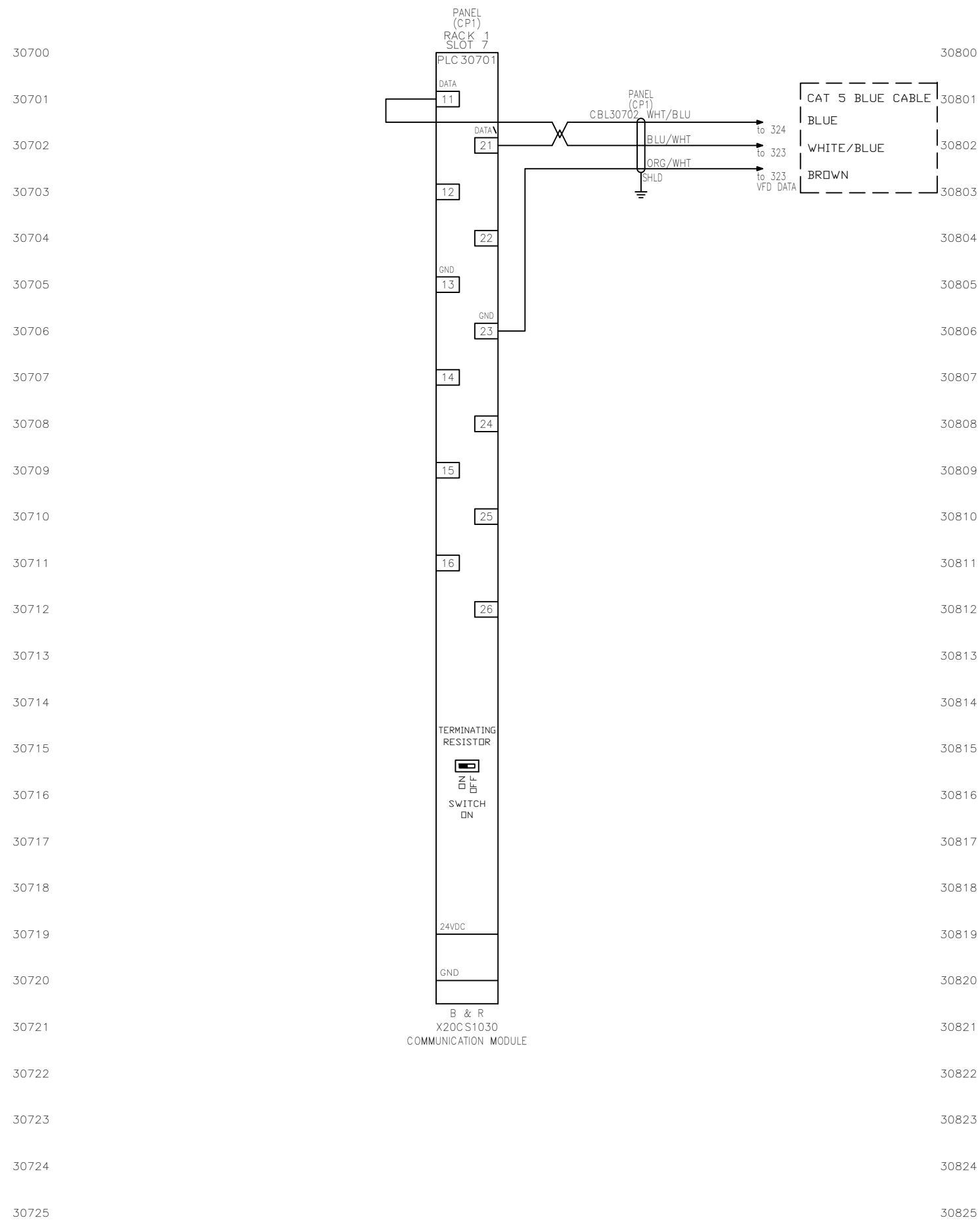
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NO.	DATE	REVISION			BY
DWG TITLE					
<i>FLEX CTS/RTC</i>					
<i>X20 I/O POWER / INPUTS</i>					
ENGINEER			CHECKED BY		
JOB NO			DRAWN BY		
SCALE		DATE			
NO SCALE		12/2018			
DWG NO					
<i>750717 (V1.0)</i>					
SHEET NO					
<i>10 OF 23</i>					



NO.	DATE	REVISION	BY
DWG TITLE			
FLEX CTS/RTC			
X20 I/O OUTPUT / POWER SUPPLY			
ENGINEER	CHECKED BY		
JOB NO	DRAWN BY		
SCALE	NO SCALE	DATE	12/2018
DWG NO 750717 (V1.0)			
SHEET NO 11 OF 23			





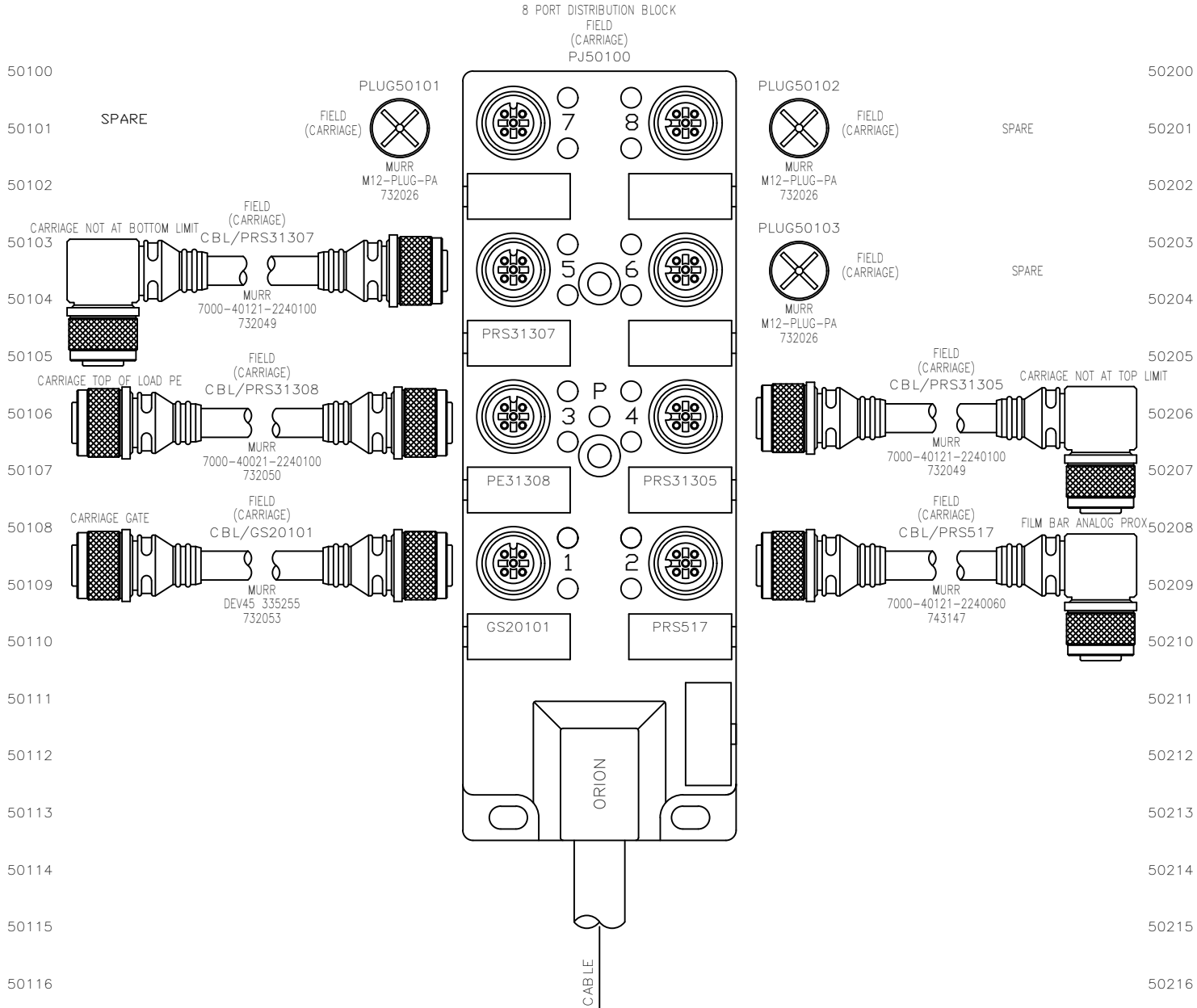
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JOB NO			DRAWN BY		
SCALE			DATE		
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DWG NO					
750717 (V1.0)					
SHEET NO					
12 OF 22					

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NO.	DATE	REVISION	BY
DWG TITLE			
<i>FLEX</i> <i>CTS/RTC</i> <i>X20 INPUT/ OUTPUT</i>			
ENGINEER		CHECKED BY	
JOB NO		DRAWN BY	
SCALE	DATE		
NO SCALE	12/2018		
DWG NO			
750717 (V1.0)			
SHEET NO			



WIRE COLOR	PORT#	PIN#	DEVICE TAG	WIRE#	DESCRIPTION	I/O ADDRESS
WHITE	1	4	GS20101	31301	CARRIAGE GATE OPEN	
GRY/PNK	1	2	GS20101	20101	CARRIAGE GATE CLOSED	
GREEN	2	4				
RED/BLU	2	2	PRS517	517	ANALOG PROX	
YELLOW	3	4	PE31308	31308	CARRIAGE AUTO HEIGHT	
WHT/GRN	3	2				
GRAY	4	4				
BRN/GRN	4	2	PRS31305	31305	CARRIAGE TOP LIMIT	
PINK	5	4				
WHT/YEL	5	2	PRS31307	31307	CARRIAGE BOTTOM LIMIT	
RED	6	4				
YEL/BRN	6	2				
BLACK	7	4				
WHT/GRY	7	2				
VIOLET	8	4				
GRY/BRN	8	2				
BROWN	1 - 8	1		20005	24VDC +	
BLUE	1 - 8	3		20022	0VDC -	
GRN/YEL	1 - 8	5		GND	GROUND	

SLIP RING (CTS)							
PORT	WIRE #	FIXE D SIDE	WIRE COLOR	ROTARY SIDE	WIRE #	DEVICE TAG	DEVICE NAME
1	GND	S1	WHITE	R1	GND	MTR602	GROUND
1	601	S2	WHITE	R2	601	MTR602	WRAPZONE
1	602	S3	WHITE	R3	602	MTR602	WRAPZONE
1	603	S4	WHITE	R4	603	MTR602	WRAPZONE
1	SPARE1	S5	WHITE	R5	SPARE1		
1	SPARE2	S6	WHITE	R6	SPARE2		
1	SPARE3	S7	WHITE	R7	SPARE3		
2		S8	WHITE	R8	SPARE11		
2	20022	S9	WHITE	R9	20022		DC COMMON
2	31402	S10	WHITE	R10	31402	SOL31402	FILM CLAMP 90
2	31404	S11	WHITE	R11	31404	SOL31404	FILM CLAMP 180
2	SPARE4	S12	WHITE	R12	SPARE4		
2	SPARE5	S13	WHITE	R13	SPARE5		
2	SPARE6	S14	WHITE	R14	SPARE6		
2	SPARE7	S15	WHITE	R15	SPARE7		
2	SPARE8	S16	WHITE	R16	SPARE8		
2	SPARE9	S17	WHITE	R17	SPARE9		
2	SPARE10	S18	WHITE	R18	SPARE10		

SLIP RING (RTC)							
PORT	WIRE #	FIXE D SIDE	WIRE COLOR	ROTARY SIDE	WIRE #	DEVICE TAG	DEVICE NAME
1	GND	S1	WHITE	R1	GND	MTR402	GROUND
1	401	S2	WHITE	R2	401	MTR402	CARRIAGE UP/DOWN
1	402	S3	WHITE	R3	402	MTR402	CARRIAGE UP/DOWN
1	403	S4	WHITE	R4	403	MTR402	CARRIAGE UP/DOWN
1	501	S5	WHITE	R5	501	MTR502	MULTISTRETCH
1	502	S6	WHITE	R6	502	MTR502	MULTISTRETCH
1	503	S7	WHITE	R7	503	MTR502	MULTISTRETCH
2	20005	S8	WHITE	R8	20005		+24 VDC
2	20022	S9	WHITE	R9	20022		DC COMMON
2	31305	S10	WHITE	R10	31305	PRS31305	CARRIAGE NOT AT TOP
2	31307	S11	WHITE	R11	31307	PRS31307	CARRIAGE NOT AT BOTTOM
2	31308	S12	WHITE	R12	31308	PE31308	CARRIAGE AUTO HEIGHT
2	517	S13	WHITE	R13	517	PRS517	FILM BAR ANALOG PROX
2	SPARE6	S14	WHITE	R14	SPARE6		
2	SPARE7	S15	WHITE	R15	SPARE7		
2	SPARE8	S16	WHITE	R16	SPARE8		
2	SPARE9	S17	WHITE	R17	SPARE9		
2	SPARE10	S18	WHITE	R18	SPARE10		

NO.

DATE

REVISION

B.Y.

DWG. TITLE

FLEX CTS/RTC

CARRIAGE I/O BLOCK

ENGINEER

CHECKED BY

JOB NO.

DRAWN BY

SCALE

DATE

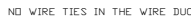
DWG. NO.

12/2018

SHEET NO.

750717 (V1.0)

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1

FIELD CARRIAGE BOMB

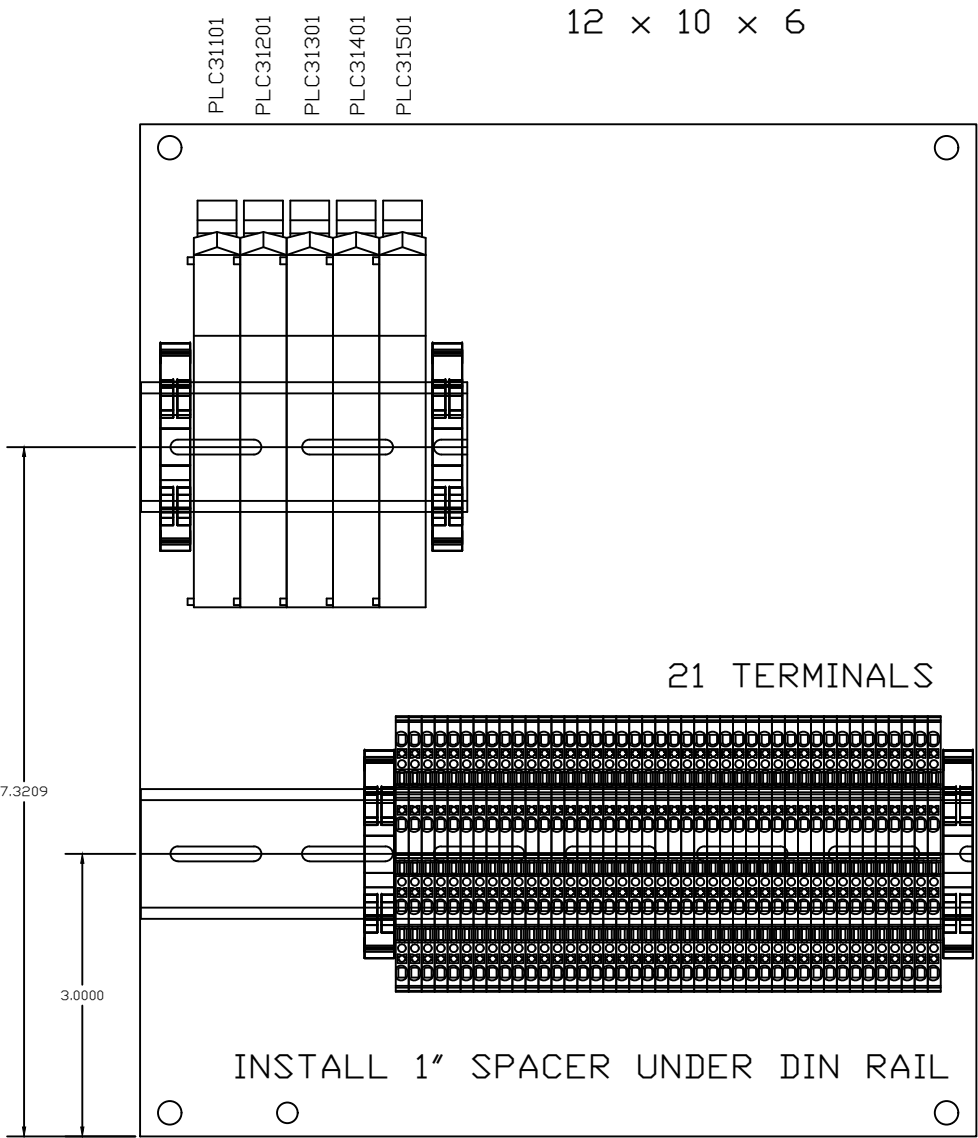
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FC60103C	2	*1	735512	SMC	AS2201F-N01-07SD	
		*1	743171	SMC	KQ2C-07W-B	
FC60102C	2	*1	735512	SMC	AS2201F-N01-07SD	
		*1	743170	SMC	KQ2C-07B-B	
FC60102 FC60102A FC60103B	8	*1	735512	SMC	AS2201F-N01-07SD	
		*1	743172	SMC	KQ2C-07R-B	
FC60101 FC60102B FC60103A	8	*1	735512	SMC	AS2201F-N01-07SD	
		*1	743169	SMC	KQ2C-07BU-B	
FR60108	2		728999	SMC	AW20-N02CE-CZ-B	
GS20101	1	*1	739147	SICK	1059505/RE21-SAC	MAGNETIC SAFETY SWITCH WITH ACTUATOR, 1ND 1NC, M8 QD
		*1	732053	MURR	DEV45 335255	PATCH-CABLE, 4 PIN, STRAIGHT M12 MALE TO M8 FEM, 0.6M, PINS 1 & 3 JUMPED
GS20107 GS20108	2		739147	SICK	1059505/RE21-SAC	MAGNETIC SAFETY SWITCH WITH ACTUATOR, 1ND 1NC, M8 QD
GS20107 GS20108 LS31309	3	*1	019340	TELEMECANIQUE	XCMD2145M12	LIMIT SWITCH XCM-D - ADJUSTABLE ROLLER LEVER - 1 DC
		*1	738870	MURR	7000-12221-0140500	
CYL60101 CYL60102A CYL60102B CYL60102C MTR302 MTR502 MTR602 MTR702 MTR802	15		SEE	MECHANICAL	BDM	
PCS30201	1		017065	REES	04958-100	
PE30202 PE30209 PE31201 PE31203 PE31204 PE31205 PE31208 PE31210 PE31211 PE31212 PE31213 PE31308	12	*1	730306	SICK	1029850/WL14-2P430S03	PHOTO EYE SENSOR, REFLEX, 0.5-5m RANGE, PNP, M12, LO/DO
		*1	730307	SICK	2039697/MB-M30-W14/18	ADAPTER BRACKET, W14/18 TO M30
		*1	716301	SICK	7022976/MB-W2000B	MOUNTING BRACKET, 30mm ROTATABLE
		*1	016103	SICK	7123555/P975M	REFLECTOR, 84mm ROUND, CENTER HOLE MOUNT, PLASTIC W/METAL BACK
		*2	738870	MURR	7000-12221-0140500	CABLE, 4 PIN, M12 FEMALE STRAIGHT, 5 METER, FLYING LEADS, YELLOW
PE31206 PE31207	2		017303	SICK	6020772/WT260-R280	PHOTO EYE SENSOR, DIFFUSE, ADJ 10-3500nm RANGE, PNP, LO/DO
PRS31304 PRS31306 PRS31310	3	*1	728707	SICK	1041046/IME30-20NPSZC0S	M30 PROX SENSOR, NON-SHLD, 20mm RANGE, PNP NO, M12
		*1	738870	MURR	7000-12221-0140500	
PS31303	1		721162	SMC	IS10-N01-6LP	
SOL31401 SOL31402 SOL31403 SOL31404 SOL31405 SOL31406 SOL31407 SOL31408 SOL31409 SOL31410 CBL20204	10		728593	SMC	SY5120-5WDZ-N7T	
CBL205	1	*10	098087	BELDEN	8489 18/4C	
CBL203	1	*0	743010	CABLE	18/2 SJDDW	
	1	*0	727500	CABLE	18/3 SJEDDW	
CBL401	1	*0	739676	LUTZE	111371	
CBL301 CBL501 CBL601 CBL701 CBL801	5	*0	730915	SOUTH WIRE	16/4 SLEDDW	
XF203	1		019387	SQUARE D	250SV43B	

TAGS	QTY	SUB	ASSYCODE	MFG	CATALOG	DESCRIPTION
CBL/GS20101	1		732053	MURR	DEV45 335255	PATCH-CABLE, 4 PIN, STRAIGHT M12 MALE TO M8 FEM, 0.6M, PINS 1 & 3 JUMPED
PLUG50101 PLUG50102 PLUG50103	3		732026	MURR	M12-PLUG-PA	
CBL/PRS31308	1		732050	MURR	7000-40021-2240100	PATCH-CABLE, 4 PIN, STRAIGHT M12 MALE TO FEMALE, 1M, GRAY
CBL/PRS517	1		743147	MURR	7000-40121-2240060	PATCH-CABLE, 4 PIN, STRAIGHT M12 MALE TO 90-DEG FEMALE, 0.6M, GRAY
CBL/PRS31305 CBL/PRS31307	2		732049	MURR	7000-40121-2240100	PATCH-CABLE, 4 PIN, STRAIGHT M12 MALE TO 90-DEG FEMALE, 1M, GRAY
PJ50100	1		732045	MURR	8000-88510-3980500	
GS20101	1		739147	SICK	1059505/RE21-SAC	MAGNETIC SAFETY SWITCH WITH ACTUATOR, 1NO 1NC, M8 QD
HW119 MTR402	2		SEE	MECHANICAL	BOM	
PRSS517	1		731785	IFM	IG6083	M18 PROX SENSOR, UN-SHIELDED, 0.8-8mm RANGE, 4-20mA ANALOG, 3-WIRE, M12
PRS31305 PRS31307	2		731955	SICK	1041033/IME30-15BPD-ZCOK	

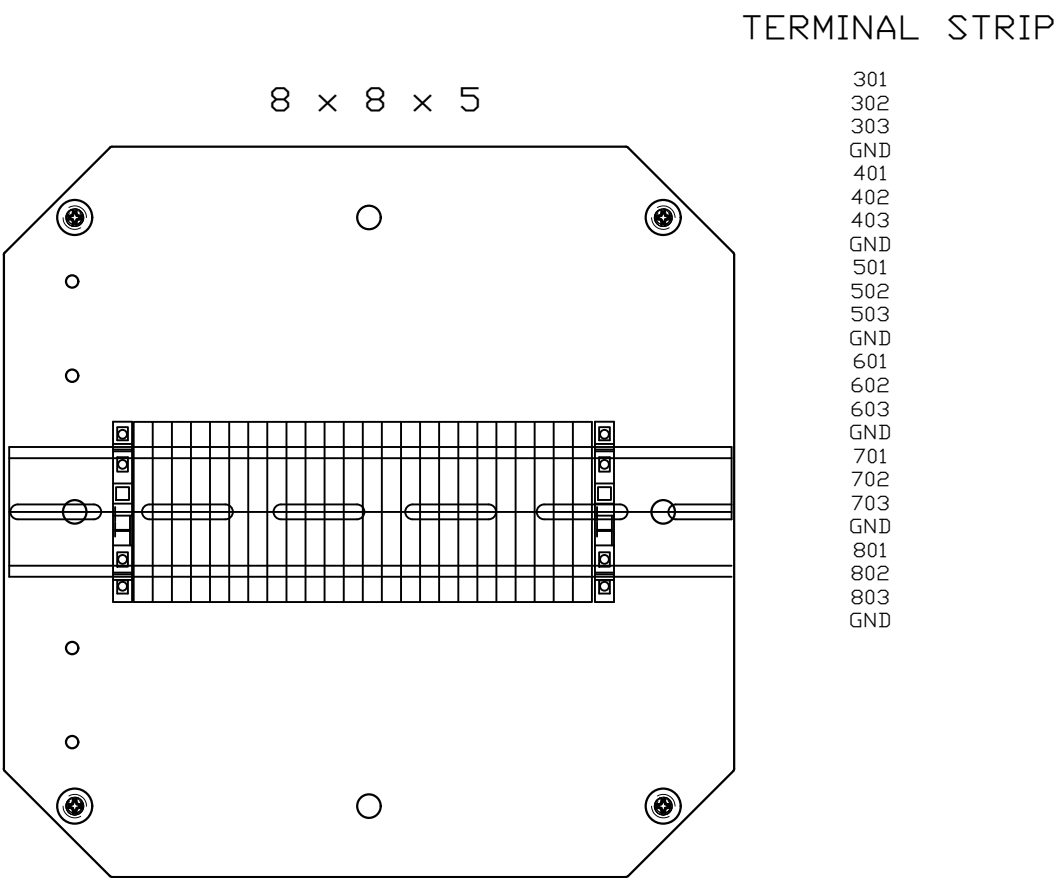
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<i>FLEX CTS /RTC</i> <i>MACHINE FIELD AND CARRIAGE BOM</i>					
ENGINEER			CHECKED BY		
JOB NO			DRAWN BY		
SCALE			DATE		
NO SCALE			12/2018		
DWG NO					
<i>705717 (V1.0)</i>					
SHEET NO					
<i>22 OF 23</i>					

TAGS	QTY	SUB	ASSYCODE	MFG	CATALOG	DESCRIPTION
PLC31101	1	*1	731535	B & R	X20BR9300	X20 BUS RECEIVER, X2X LINK BUS RECEIVER, 24VDC
		*1	742087	B & R	X20BM01	
		*1	742088	B & R	X20TB12	
		*1	750011	POLYCASE	YH-121006-03	NEMA HINGED ENCLOSURE, SCREW COVER
		*1	750012	POLYCASE	YX-1210K	ALUMINUM MOUNTING PANEL
		*1	749751	WAGO	2000-5352	3 CONDUCTOR SENSOR SUPPLY TERMINAL BLOCK
		*20	749752	WAGO	2000-5311	3 CONDUCTOR SENSOR TERMINAL BLOCK
		*1	749753	WAGO	2000-5391	END/INTERMEDIATE PLATE FOR 3 COND. TERMINALS
		*12	749754	WAGO	2000-402	PUSH IN 2 POLE JUMPER FOR 2000 SERIES
PLC31201	2	*1	742084	B & R	X20DIF371	16 POINT X20 INPUT MODULE
PLC31301		*1	742083	B & R	X20BM11	PLC B&R BUS MODULE
		*1	742082	B & R	X20TB1F	16 PIN TERMINAL BLOCK
PLC31501	1	*1	743726	B & R	X20DD6639	X20 OUTPUT MODULE, 6-PT NO RELAY, 240VAC 2A, 30VDC 2A,
		*1	743727	B & R	X20TB32	6 RELAY OUTPUT TERMINAL BLOCK
		*1	743728	B & R	X20BM12	PLC B&R BUS MODULE
PLC31401	1	*1	742996	B & R	X20DD9322	X20 OUTPUT MODULE, 12-PT DIGITAL SOURCE, 24VDC
		*1	742083	B & R	X20BM11	PLC B&R BUS MODULE
		*1	742088	B & R	X20TB12	

TAGS	QTY	SUB	ASSYCODE	MFG	CATALOG	DESCRIPTION
	18	*1	731619	WAGO	2002-1201	SERIES 2002 - 2-CONDUCTOR THROUGH TERMINAL BLOCK
		*1	749757	WAGO	2002-1291	END AND INTERMEDIATE PLATE, 0.8 mm THICKNESS
		*2	731625	WAGO	249-116	TERMINAL SMALL END STOP
	6		731624	WAGO	2002-1207	SERIES 2002 - 2-CONDUCTOR GROUND TERMINAL BLOCK
	1		750013	POLYCASE	YH-080804-03	NEMA HINGED ENCLOSURE, SCREW COVER
	1		750014	POLYCASE	YX-0808K	ALUMINUM MOUNTING PANEL



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NO.	DATE	REVISION	BY
FLEX CTS/RTC			
CP3 ENCLOSURE LAYOUT			
ENGINEER	CHECKED BY		
JOB NO	DRAWN BY		
SCALE	DATE		
DWG NO	12/2018		
750717 (V1.0)			
SHEET NO			
23 OF 23			