

Project: MBari

				Date	17/11-2021	CNP Freire MBarí				Front page						
	Removed CP02	28.11.2022	ANP	User	GSK											
	Updated after adding WP03	21.11.2022	ANP	Approved	RAJ											
Status	Change	Date	Name	Standard		Origin	Repl. f.	Repl. by			10070 -	FP	Rev. G	Sheet 1	Next 2	

Customer:		CNP Freire	
Project:		MBari	

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1		2		3		4		5		6		7		8	
Document Type		Drawing number		Title				Location (+)		Function (=)		Sheet		Rev.	
				Pentagon Control Cabinet Deck Sheave, Traction Winch System Load Cell				+UH03		=WCS01		40			
				Pentagon Control Cabinet Emergency Control & Emergency Stop				+UH03		=WCS01		41			
				Pentagon Control Cabinet Control Panel, Traction Winch & Storage Drum				+UH03		=WCS01		42			
				Pentagon Control Cabinet Control Panel, CTD Winch				+UH03		=WCS01		43			
				Pentagon Control Cabinet Control Room Panels 24VDC				+UH03		=WCS01		44			
				PMS & System Alarms				+UH03		=WCS01		45			
				Pentagon Control Cabinet External Emergency Stop				+UH03		=WCS01		46			
				Outhauler Motor Encoder, PTC, Heat, References				+UH01		=WCS01		47			
Panel Layout		01-GA		Main VFD Cabinet Pentagon Panel Layout Panel Layout						=WCS01 =WCS01		1 2			
Part list		01-PL		Main VFD Cabinet Pentagon Part list Part list Part list Part list Part list						=WCS01 =WCS01 =WCS01 =WCS01 =WCS01		1 2 3 4 5			
Cable Diagram		02-CD		CTD Winch CTD Winch Connection Point Overview						=HW01 =HW01		1 2			
Circuit Diagram		02-CC		CTD Winch Winch Internal Connection Box Emergency Control				+UC01 +UC01		=HW01 =HW01		1 2			
Panel Layout		02-GA		CTD Winch Winch Internal Connection Box Winch Internal Connection Box				+UC01 +UC01		=HW01 =HW01		1 2			
Cable Diagram		03-CD		ROV Traction Winch ROV Traction Winch Connection Point Overview						=TRW01 =TRW01		1 2			
Circuit Diagram		03-CC		ROV Traction Winch Winch Connection Box				+UC01		=TRW01		1			
Panel Layout		03-GA		ROV Traction Winch Winch Connection Box Winch Connection Box				+UC01 +UC01		=TRW01 =TRW01		1 2			
Cable Diagram		04-CD		Levelwind & Slack Wire Compensator Levelwind & Slack Wire Compensator Connection Point Overview						=LEV01 =LEV01		1 2			
Circuit Diagram		04-CC		Levelwind & Slack Wire Compensator Level Wind Connection Box Internal Connection				+UC01		=LEV01		1			
Panel Layout		04-GA		Levelwind & Slack Wire Compensator Level Wind Connection Box Internal Connection Level Wind Connection Box Internal Connection				+UC01 +UC01		=LEV01 =LEV01		1 2			

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	1	2	3	4	5	6	7	8
A	Cable	Cable type	Connection A Item designation	Location	Connection B Item designation	Location	Comment	OD mm.
B	-WD23	FD 855 CP 7G0.75	=WCS01-X501	+UH02	=WP02-X400	+WP02		5 10,6
C	-WD24	FD 855 CP 3G1.5	=WCS01-X402	+UH03	=CP01-X1	+CP01		5 8,9
D	-WD25	FD 855 CP 3G1.5	=WCS01-X402	+UH03	=CP03-X1	+CP03		5 8,9
E	-WD26	2YSLCY-JB BK 4G1.5	=WCS01-X10	+UH03	=HPUBR01-MA1			5 11,4
F	-WD27	2YSLCY-JB BK 4G1.5	=WCS01-X10	+UH03	=HPUBR01-MA2			5 11,4
G	-WD28	2YSLCYK-JB 3x2.5+3x0.5	=WCS01-X10	+UH03	=HPUGC01-MA1			5 12,2
H	-WD29	2YSLCYK-JB 3x2.5+3x0.5	=WCS01-X10	+UH03	=HPUGC01-MA2			5 12,2
I	-WD30	FD 855 CP 3G1.5	=WCS01-X2	+UH03	=WP03-X1	+WP03		5 8,9
J	-WD31	FD 855 CP 3G1.5	=WCS01-X302	+UH03	=WP03-X300	+WP03		5 8,9
K	-WDS1	Supply Cable From Ship Supply 3X	=WCS01-QB1	+UH01	=SHIP-X1	+480VAC		5 6,7
L	-WDS2	Supply Cable From Ship Supply 2X	=WCS01-X3	+UH03	=SHIP-X4	+230VAC		5 6
M	-WDS3	Supply Cable From Ship Supply 2X	=WCS01-X2	+UH03	=SHIP-X3	+230VAC		5 6
N	-WF1	DeviceNet Unitronic Thick 1x2xAWG18+1x2xAWG15	=WCS01-X50	+UH03	=CP01-X50	+CP01		5 12,2
O	-WF2	EtherLine 4x2xAWG22 CAT7	=WCS01-RJ3	+UH03	=CP01-XG3	+CP01		5 8,7
P	-WF3	EtherLine 4x2xAWG22 CAT7	=WCS01-RJ4	+UH03	=CP01-XG4	+CP01		5 8,7
Q	-WF5	DeviceNet Unitronic Thick 1x2xAWG18+1x2xAWG15	=WCS01-X50	+UH03	=CP03-X50	+CP03		5 12,2
R	-WF6	EtherLine 4x2xAWG22 CAT7	=WCS01-RJ5	+UH03	=CP03-XG3	+CP03		5 8,7
S	-WF7	EtherLine 4x2xAWG22 CAT7	=WCS01-RJ6	+UH03	=CP03-XG4	+CP03		5 8,7
T	-WF8	DeviceNet Unitronic Thick 1x2xAWG18+1x2xAWG15	=CP04-X50	+CP04	=CP03-X50	+CP03		5 12,2
U	-WF9	DeviceNet Unitronic Thick 1x2xAWG18+1x2xAWG15	=CP04-X50	+CP04	=CP05-X50	+CP05		5 12,2
V	-WF13	EtherLine 4x2xAWG22 CAT7	=WCS01-RJ1	+UH03	=TRIP01-X91	+TRIP01		5 8,7
W	-WF14	EtherLine 4x2xAWG22 CAT7	=WCS01-RJ8	+UH03	=WP03-RJ1	+WP03		5 8,7
X								
		Date	17/11-2021	CNP Freire				
Updated Cables after CP02 removed		28.11.2022	ANP	User	GSK			
Updated after adding WP03		21.11.2022	ANP	Approved	RAJ			
Status	Change	Date	Name	Standard	Version	Index	Repl. by	
				Cable list		400209341		
						Rev. G		Sheet 2
						10070 - CD		Next 3
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Cable		Cable type Core		Connection A Item designation		Location		Connection B Item designation		Location		Instruction											
		TW2 SH1		EMC		11/1.E8		EMC		12/1.E7													
-WF13		EtherLine CAT7		=WCS01-RJ1		+UH03		=TRIP01-X91		+TRIP01		Cable shield to be connected in both ends of the cable. Connection by 360* connection to ground											
		WHBU BU TW1 WHOR OR TW2 WHGN GN TW3 WHBN BN TW4 SH1		=WCS01-RJ1:5 =WCS01-RJ1:4 =WCS01-RJ1:1 =WCS01-RJ1:2 =WCS01-RJ1:3 =WCS01-RJ1:6 =WCS01-RJ1:7 =WCS01-RJ1:8 =WCS01-RJ1:S		01/30.D1 01/30.D1 01/30.D1 01/30.D1 01/30.D1 01/30.D1 01/30.D1 01/30.D1 01/30.D1		=A-FRAME STERN-X91:5 =A-FRAME STERN-X91:4 =A-FRAME STERN-X91:1 =A-FRAME STERN-X91:2 =A-FRAME STERN-X91:3 =A-FRAME STERN-X91:6 =A-FRAME STERN-X91:7 =A-FRAME STERN-X91:8 =A-FRAME STERN-X91:S		18/1.D1 18/1.D1 18/1.D1 18/1.D2 18/1.D2 18/1.D2 18/1.D2 18/1.D2 18/1.D2													
-WF14		EtherLine CAT7		=WCS01-RJ8		+UH03		=WP03-RJ1		+WP03						Cable shield to be connected in both ends of the cable. Connection by 360* connection to ground							
		WHBU BU TW1 WHOR OR TW2 WHGN GN TW3 WHBN BN TW4 SH1		=WCS01-RJ8:5 =WCS01-RJ8:4 =WCS01-RJ8:1 =WCS01-RJ8:2 =WCS01-RJ8:3 =WCS01-RJ8:6 =WCS01-RJ8:7 =WCS01-RJ8:8 =WCS01-RJ8:S		01/30.D2 01/30.D2 01/30.D3 01/30.D3 01/30.D3 01/30.D3 01/30.D3 01/30.D3 01/30.D3		=WP03-RJ1:5 =WP03-RJ1:4 =WP03-RJ1:1 =WP03-RJ1:2 =WP03-RJ1:3 =WP03-RJ1:6 =WP03-RJ1:7 =WP03-RJ1:8 =WP03-RJ1:S		19/2.D6 19/2.D6 19/2.D6 19/2.D6 19/2.D6 19/2.D6 19/2.D6 19/2.D6 19/2.D6													
-WF15		EtherLine CAT7		=WCS01-RJ2		+UH03		=WP03-RJ2		+WP03										Cable shield to be connected in both ends of the cable. Connection by 360* connection to ground			
		WHBU BU TW1 WHOR OR TW2 WHGN GN TW3 WHBN BN TW4 SH1		=WCS01-RJ2:5 =WCS01-RJ2:4 =WCS01-RJ2:1 =WCS01-RJ2:2 =WCS01-RJ2:3 =WCS01-RJ2:6 =WCS01-RJ2:7 =WCS01-RJ2:8 =WCS01-RJ2:S		01/30.D1 01/30.D2 01/30.D2 01/30.D2 01/30.D2 01/30.D2 01/30.D2 01/30.D2 01/30.D2		=WP03-RJ2:5 =WP03-RJ2:4 =WP03-RJ2:1 =WP03-RJ2:2 =WP03-RJ2:3 =WP03-RJ2:6 =WP03-RJ2:7 =WP03-RJ2:8 =WP03-RJ2:S		19/2.D7 19/2.D8 19/2.D8 19/2.D8 19/2.D8 19/2.D8 19/2.D8 19/2.D8 19/2.D8													

Cable	Cable type Core	Connection A Item designation	Location	Connection B Item designation	Location	Instruction
	SH1	EMC	01/39.D4	EMC	02/1.D6	
-WG2	Unitronic Lapp Cable 4x2x0.25 WH BN TW1 GN YE TW2 GY PK TW3 BU RD TW4 SH1	=WCS01-TA3.KF2:X82 =WCS01-TA3.KF2:X82:5 =WCS01-TA3.KF2:X82:6 =WCS01-TA3.KF2:X82:3 =WCS01-TA3.KF2:X82:4 =WCS01-TA3.KF2:X82:2 =WCS01-TA3.KF2:X82:1 =WCS01-TA3.KF2:X81:5 =WCS01-TA3.KF2:X81:4 =WCS01-TA3.KF2:X82:7	+UH01 01/7.B4 01/7.B4 01/7.B4 01/7.B4 01/7.B4 01/7.B3 01/7.B3 01/7.B3 01/7.B4	=HW01-MA2 =HW01-MA2:7 =HW01-MA2:8 =HW01-MA2:5 =HW01-MA2:6 =HW01-MA2:4 =HW01-MA2:3 =HW01-MA2:2 =HW01-MA2:1 =HW01-MA2:9	 01/7.E4 01/7.E4 01/7.E4 01/7.E4 01/7.E4 01/7.E3 01/7.E3 01/7.E3 01/7.E4	Cable shield to be connected in both ends of the cable. Connected by 360° connection to ground
-WG3	Unitronic Lapp Cable 1x2x0.75 WH BN TW1 SH1	=WCS01-X70 =WCS01-X70:3 =WCS01-X70:4 EMC	+UH01 01/7.D7 01/7.D7 01/7.D7	=HW01-MA2 =HW01-MA2:PTC1 =HW01-MA2:PTC2 EMC	 01/7.F7 01/7.F7 01/7.F7	Cable shield to be connected in both ends of the cable. Connected by 360° connection to ground
-WG4	Unitronic Lapp Cable 4x2x0.25 WH BN TW1 GN YE TW2 GY PK TW3 BU RD TW4 SH1	=WCS01-TA7.KF2:X82 =WCS01-TA7.KF2:X82:5 =WCS01-TA7.KF2:X82:6 =WCS01-TA7.KF2:X82:3 =WCS01-TA7.KF2:X82:4 =WCS01-TA7.KF2:X82:2 =WCS01-TA7.KF2:X82:1 =WCS01-TA7.KF2:X81:5 =WCS01-TA7.KF2:X81:4 =WCS01-TA7.KF2:X82:7	+UH02 01/15.B7 01/15.B8 01/15.B7 01/15.B7 01/15.B7 01/15.B7 01/15.B7 01/15.B7 01/15.B8	=HW01-MA1 =HW01-MA1:4 =HW01-MA1:3 =HW01-MA1:6 =HW01-MA1:5 =HW01-MA1:7 =HW01-MA1:8 =HW01-MA1:1 =HW01-MA1:2 =HW01-MA1:PE	 01/15.E7 01/15.E8 01/15.E7 01/15.E7 01/15.E7 01/15.E7 01/15.E7 01/15.E7 01/15.E8	Cable shield to be connected in both ends of the cable. Connected by 360° connection to ground
-WG5	Unitronic Lapp Cable 1x2x0.75 WH BN TW1 SH1	=WCS01-X71 =WCS01-X71:7 =WCS01-X71:8 EMC	+UH02 01/16.D4 01/16.D4 01/16.D4	=HW01-MA1 =HW01-MA1:1TP1 =HW01-MA1:1TP2 EMC	 01/16.F4 01/16.F4 01/16.F4	Cable shield to be connected in both ends of the cable. Connected by 360° connection to ground

				Date	17/11-2021	CNP Freire MBar				Termination list					
	Updated Term. after CP02 removed	28.11.2022	ANP	User	GSK										
	Updated after adding WP03	21.11.2022	ANP	Approved	RAJ										
Status	Change	Date	Name	Standard		Version	Index	Repl. by			10070- TL	Rev. G	Sheet 11	Next 12	

[illegible]

General Installation Notes

Note 1!

Electrical installation to be installed according to
Rapp Marine Electrical Installation Procedure (Document ID: 4251),
Good craftsmanship and National regulations

Note 2!

Cable ID description:
WDS= Power cables, Ship power supply (Cable type, not specified by Rapp Marine)
WD= Power cables
WG= Signal cables
WGS= Signal cables, Ship signals (Cable type, not specified by Rapp Marine)
WF= Data cables / Communication Bus

Note 3!

Cable types to be evaluated by the yard
in accordance with aplicable regulations
and installation enviroment,
Cables have to be equal or better then Rapp Marine suggestions
All cables must be of screened type

Note 4!

Motor cabel conductor sizes are minimum sizes
Max cable length 40m, For lengths over 40m contact Rapp Marine

Note 5!

Distance between motor and high power cables to encoder and signal cables
to be MIN 500mm

Note 6!

Encoder plugs for encoders is
delivered by Rapp Marine
Must be Soldered by Yard under installation

Note 7!

Yard to supply all cables in cable list
Exceptions are indicated in the cabel list

Note 8!

Cables for main supply VFD cabinet & from VFD cabinet to motors
must be "Symetrical Cables with screen"
(3x Cables) (3x + 3xPE Cables)

Note 9!

Device Net / Can Bus Cables must be of approved type:
Unitronic DeviceNet (Thick) or Belden 3082

Note 10!

Standard cable entries in cabinets is from the bottom
Products are delivered without cable glands for
external / yard cables

Note 11!

All cable shields must be connected with 360 degree
connection to ground (PE), or suitable EMC connection
in both ends.
This is to reduce the EMI from the VFD cabinet

				Date	17/11-2021	CNP Freire MBari																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											</
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Location Overview System Equipment

- =WCS01 Main VFD Cabinet
- =HW01 CTD Winch
- =TRW01 ROV System Traction Winch
- =LEV01 ROV System Levelwinde/Slack Wire
- =RW01 ROV System Storage Drum
- =DS01 ROV System Load Cell
- =WP01 Local Control Panel CTD Winch
- =WP02 Local Control Panel Traction System
- =WP03 Hangar Control Panel
- =CP01 ROV Control Room Panel Winches
- =CP03 AFT Control Station Panel Winches
- =CP04 AFT Control Station Panel A-Frame Stern
- =CP05 AFT Control Station Panel CTD Davit
- =TRIP01 Triplex Communication
- =HPUBR01 Brake HPU
- =HPUGC01 Gear Cooling HPU

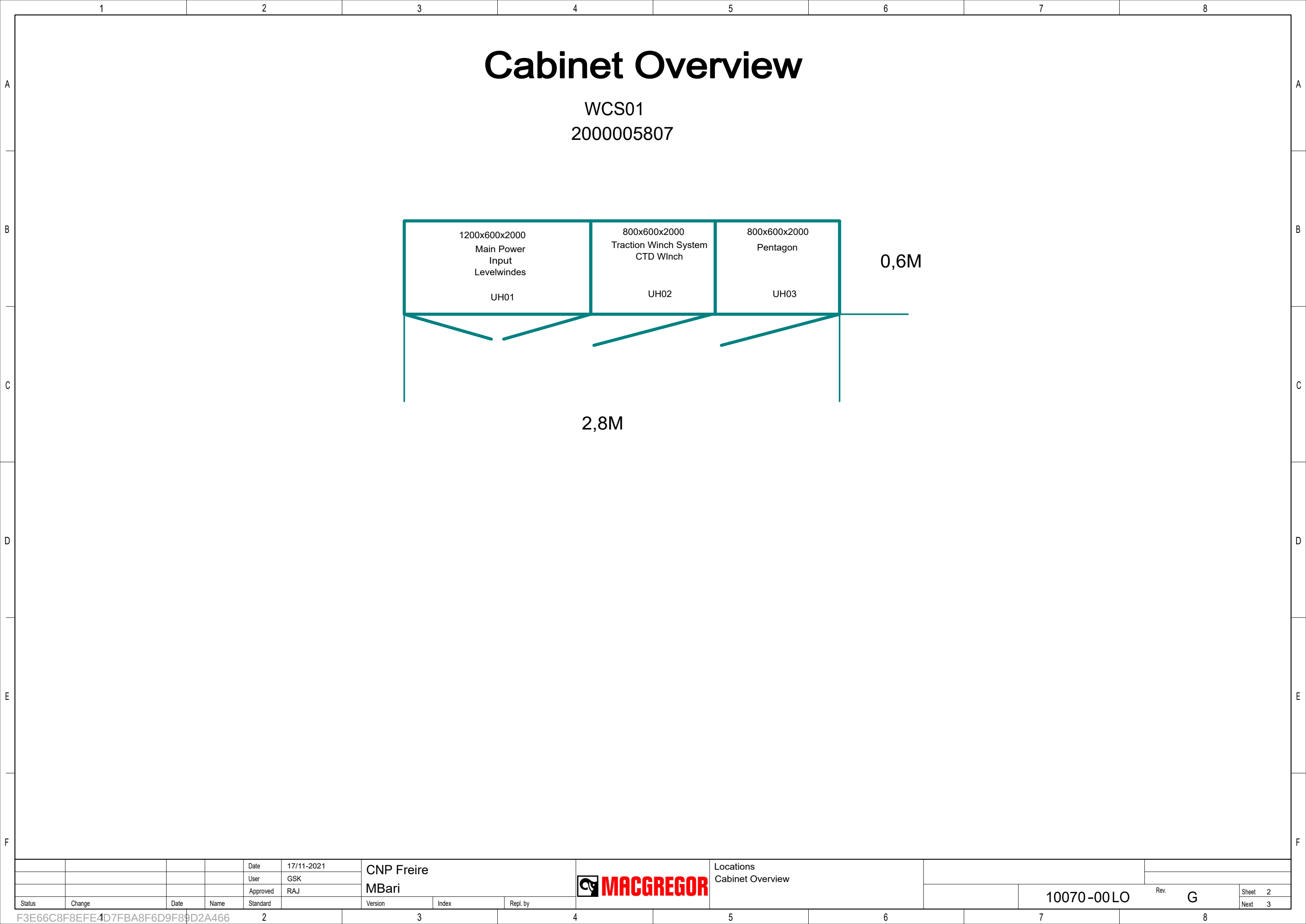
				Date	17/11-2021	CNP Freire MBari				Locations System Equipment Overview				
	Removed CP02	28.11.2022	ANP	User	GSK									
	Added WP03 panel	21.11.2022	ANP	Approved	RAJ									
Status	Change	Date	Name	Standard		Version	Index	Repl. by				10070-00LO	Rev. G	Sheet 1 Next 2

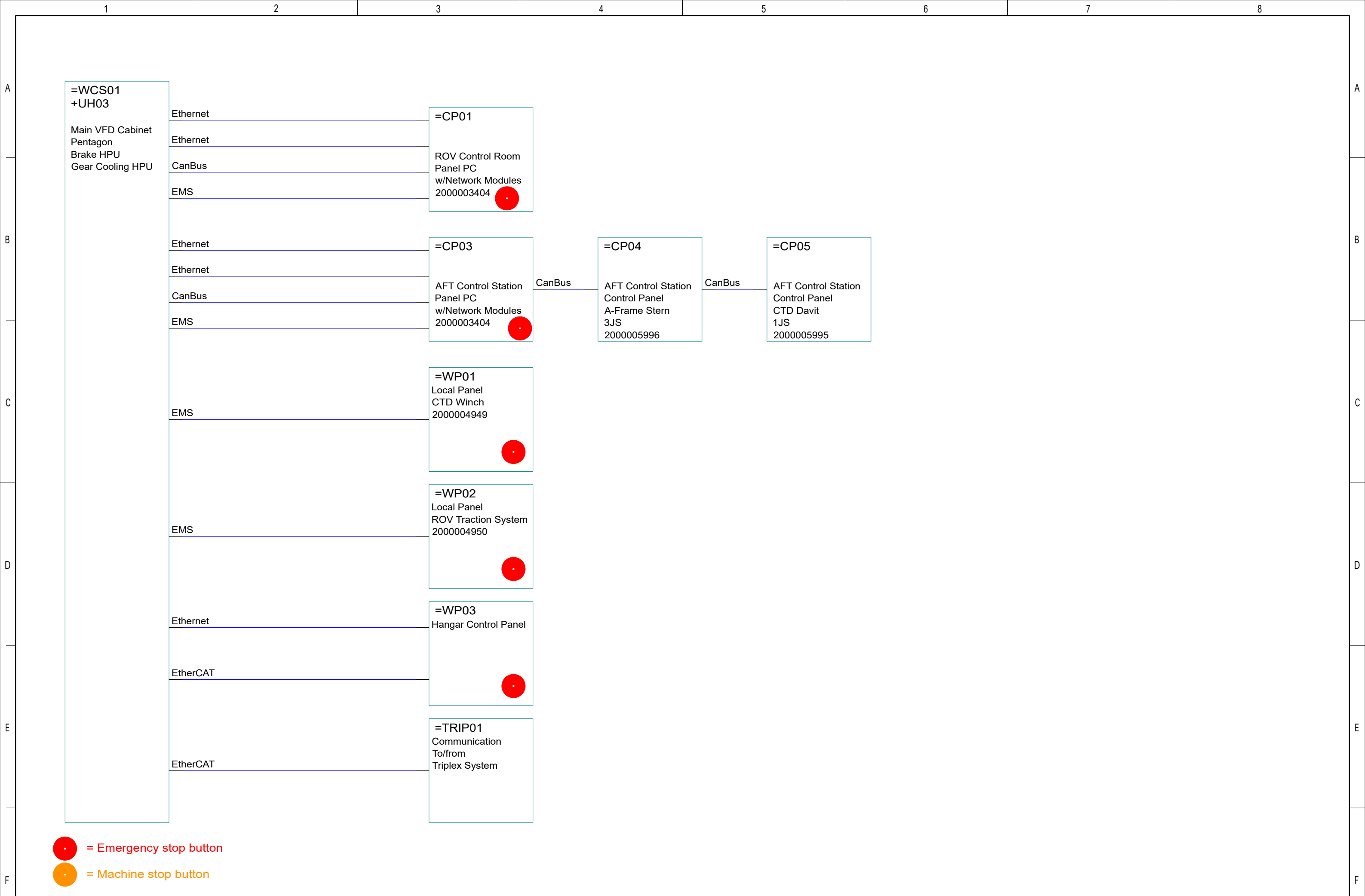
[illegible]

The diagram illustrates the layout of three electrical cabinets, labeled UH01, UH02, and UH03, arranged horizontally. The overall width of the arrangement is 2,8M, and the height of the cabinets is 0,6M.

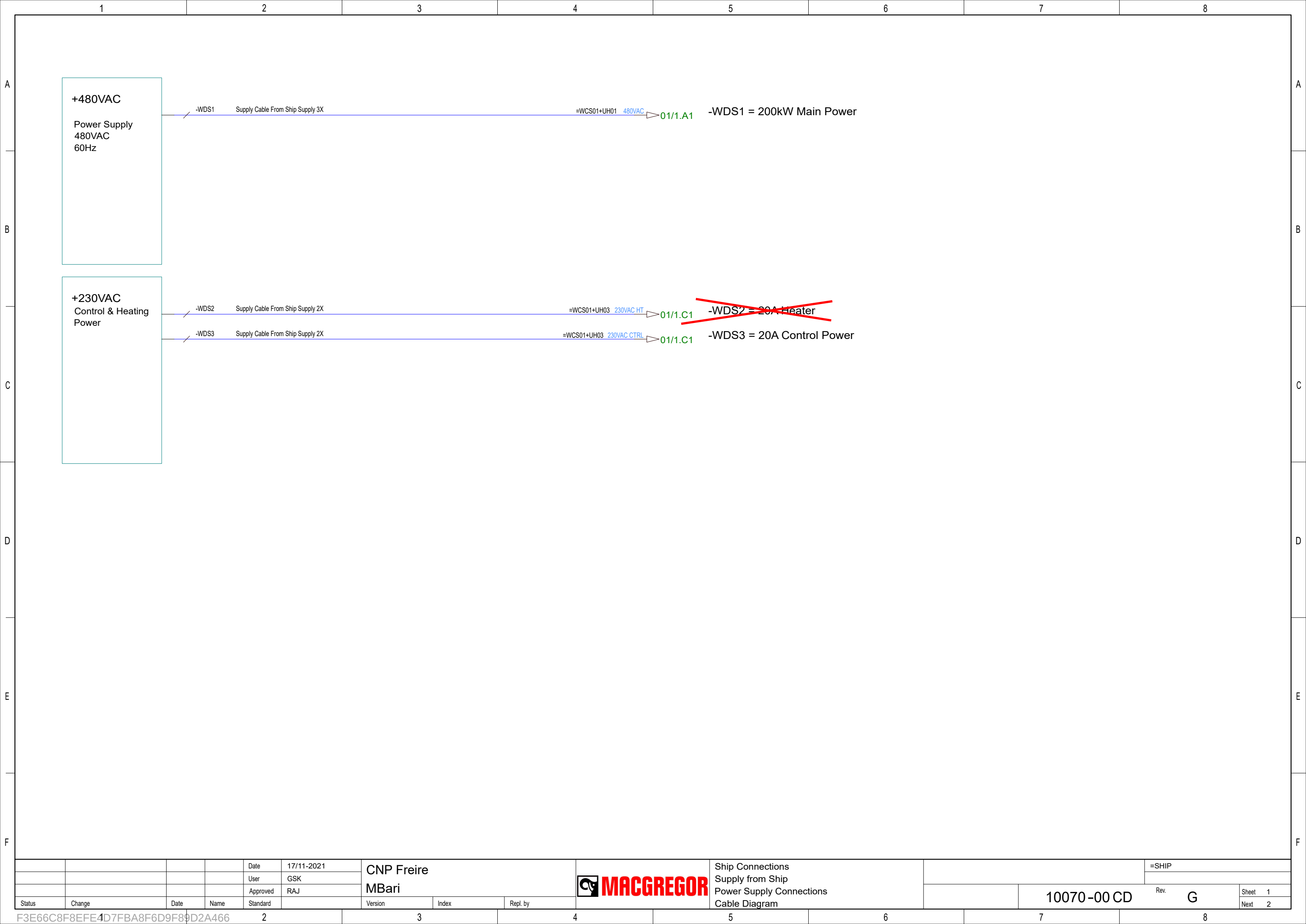
- UH01:** Dimensions 1200x600x2000. Components include Main Power, Input, and Levelwindes.
- UH02:** Dimensions 800x600x2000. Components include Traction Winch System and CTD Winch.
- UH03:** Dimensions 800x600x2000. Component is Pentagon.

The cabinets are connected by a horizontal line, and there are diagonal lines indicating connections or structural elements between the units.

[illegible]

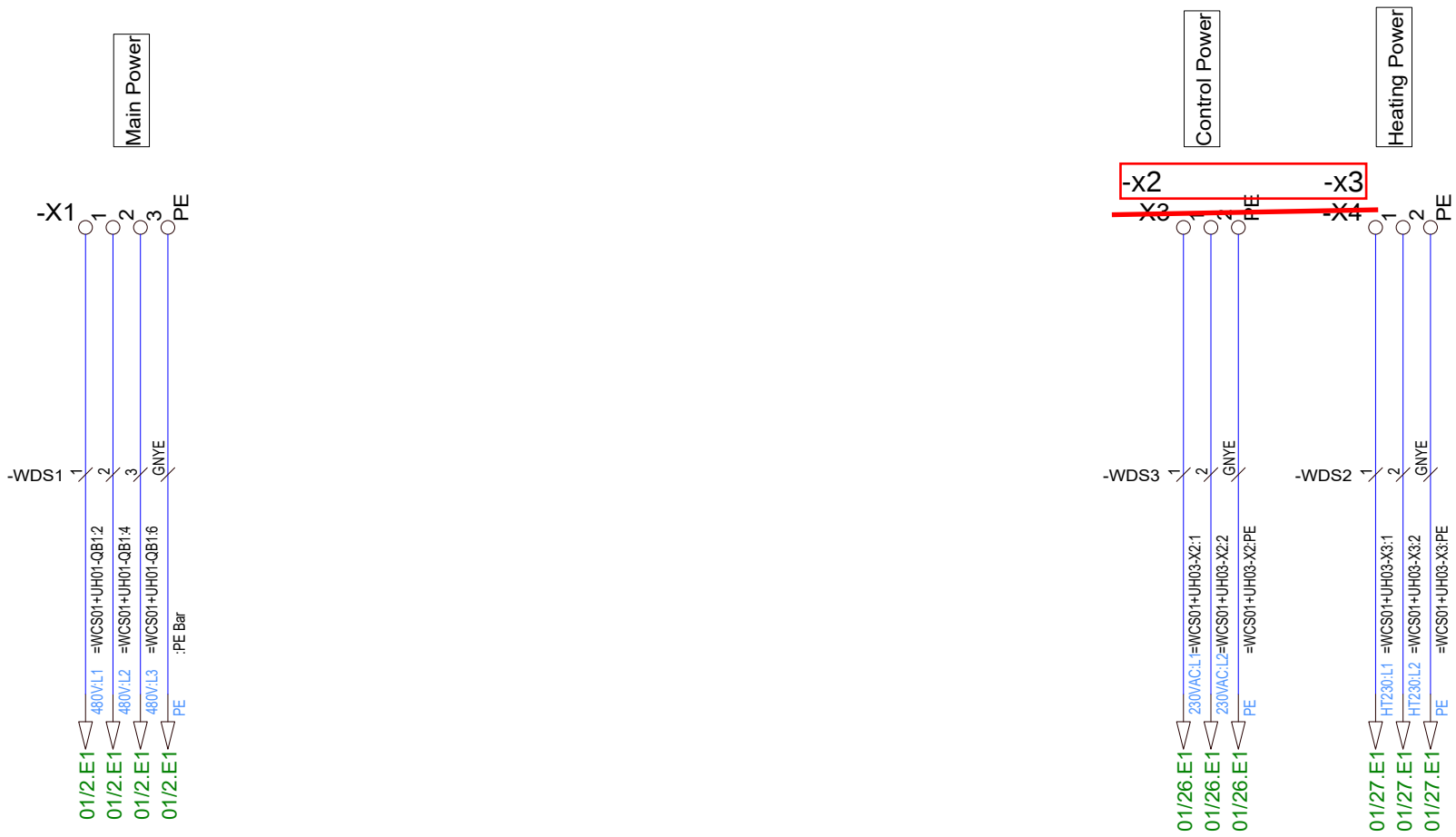


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	Removed CP02	28.11.2022	ANP	User	GSK													
	Added WP03 panel	21.11.2022	ANP	Approved	RAJ													
Status	Change	Date	Name	Standard		Version	Index	Repl. by					10070-00LO		Rev.	G	Sheet	3
																	Next	1



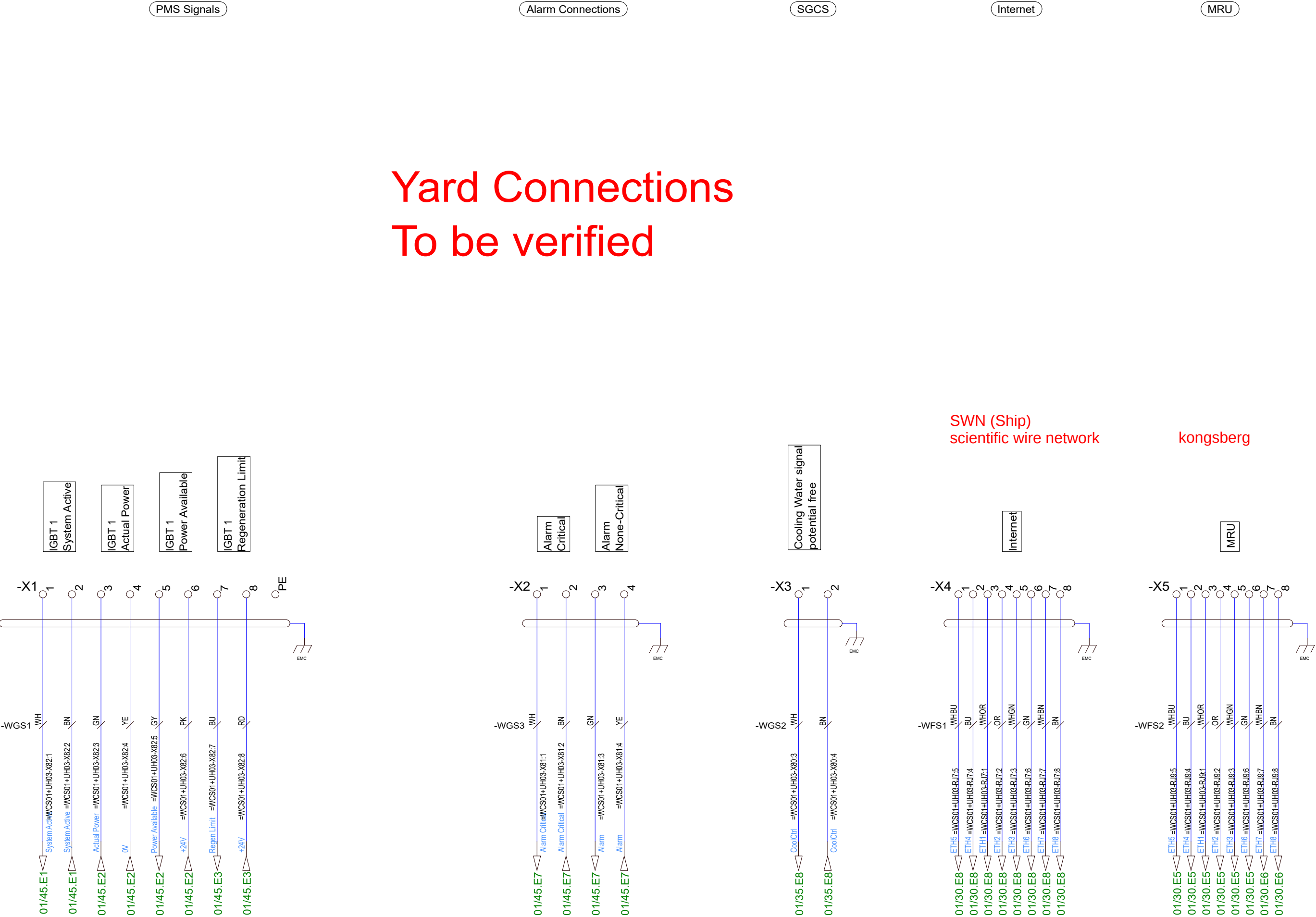
Yard Connections

Terminals not verified

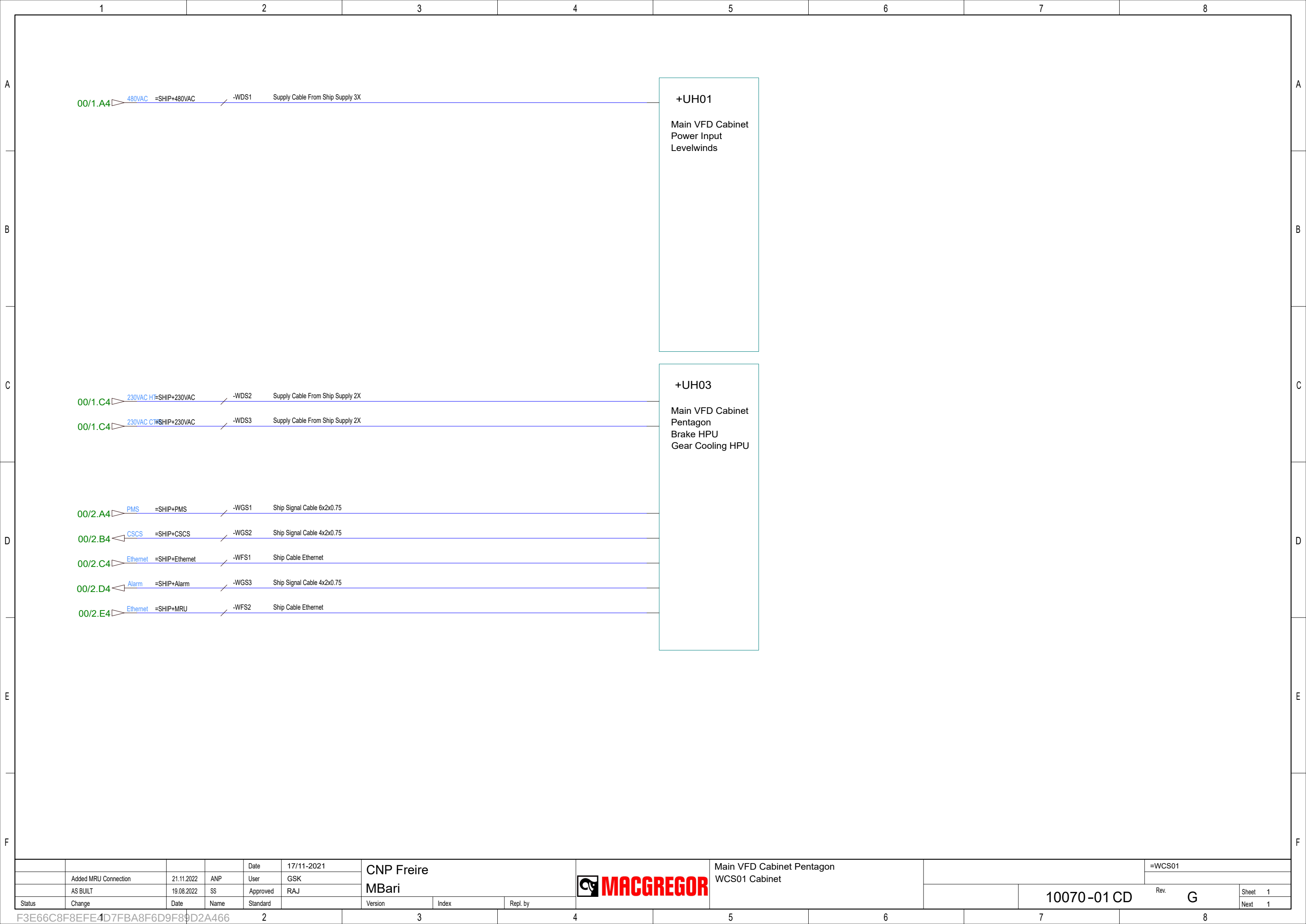


				Date	17/11-2021	CNP Freire				Ship Connections Power Connections 440VAC, 230VAC				=SHIP	
				User	GSK									+Power	
				Approved	RAJ						MBar			Rev. G	
Status	Change		Date	Name	Standard		Version	Index	Repl. by			10070-00 CC		G	Next 2

Yard Connections
To be verified



				Date	17/11-2021	CNP Freire				Ship Connections PMS, Alarm, Internet Optional Alarm			=SHIP		
				User	GSK								+Signal		
	Added MRU Connection	21.11.2022	ANP	Approved	RAJ	MBarí									
Status	Change	Date	Name	Standard		Version	Index	Repl. by				10070-00 CC		Rev. G	Sheet 2
															Next 1



				Date	17/11-2021	CNP Freire				Main VFD Cabinet Pentagon WCS01 Cabinet			=WCS01		
	Added MRU Connection	21.11.2022	ANP	User	GSK	MBari									
	AS BUILT	19.08.2022	SS	Approved	RAJ										
Status	Change	Date	Name	Standard		Version	Index	Repl. by			10070-01 CD		Rev.	G	Sheet 1
															Next 1

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1

2

3

4

5

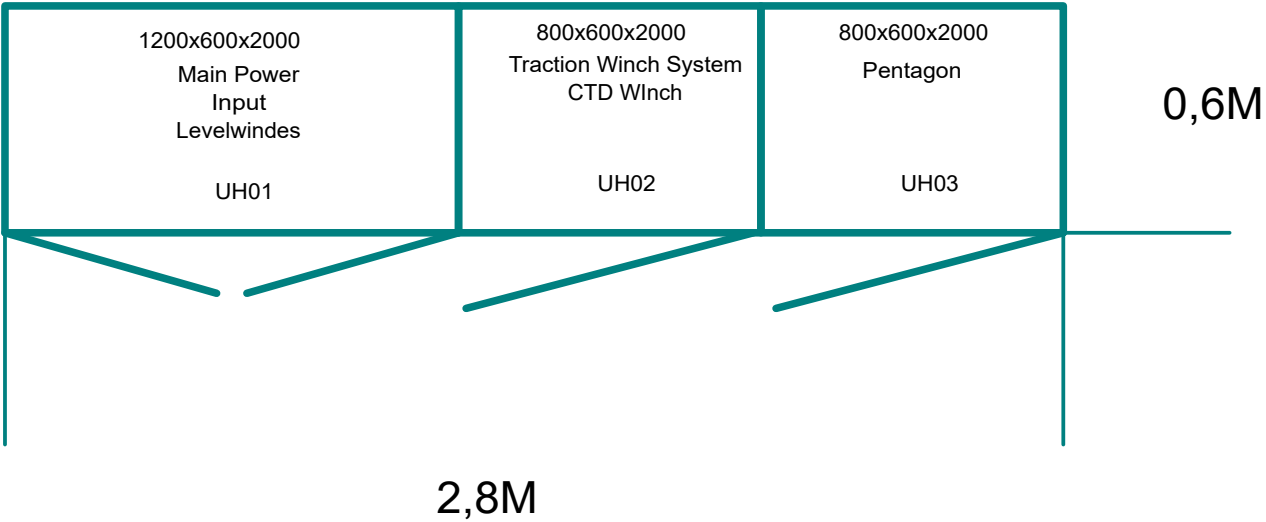
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7

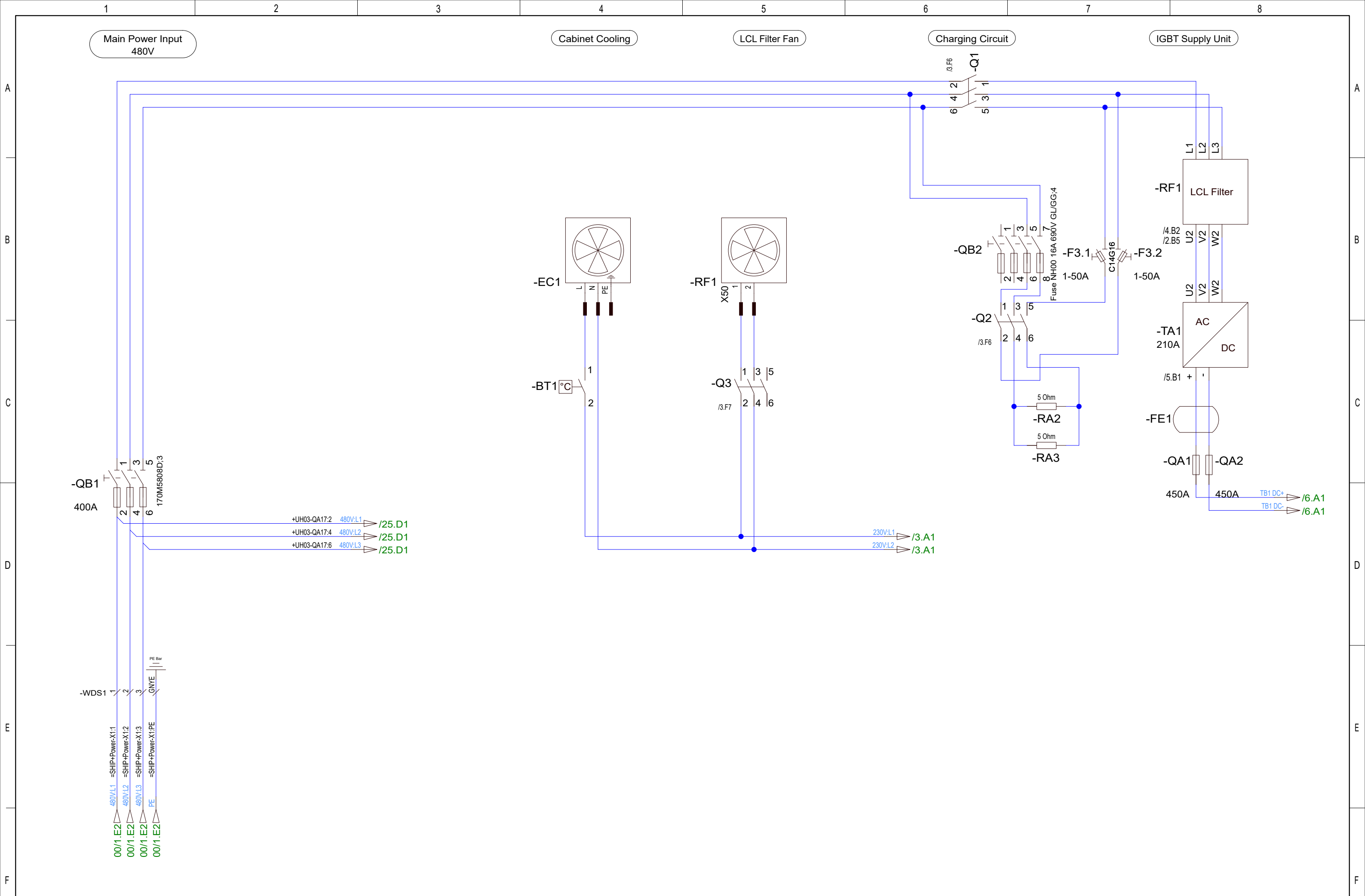
8

Cabinet Overview

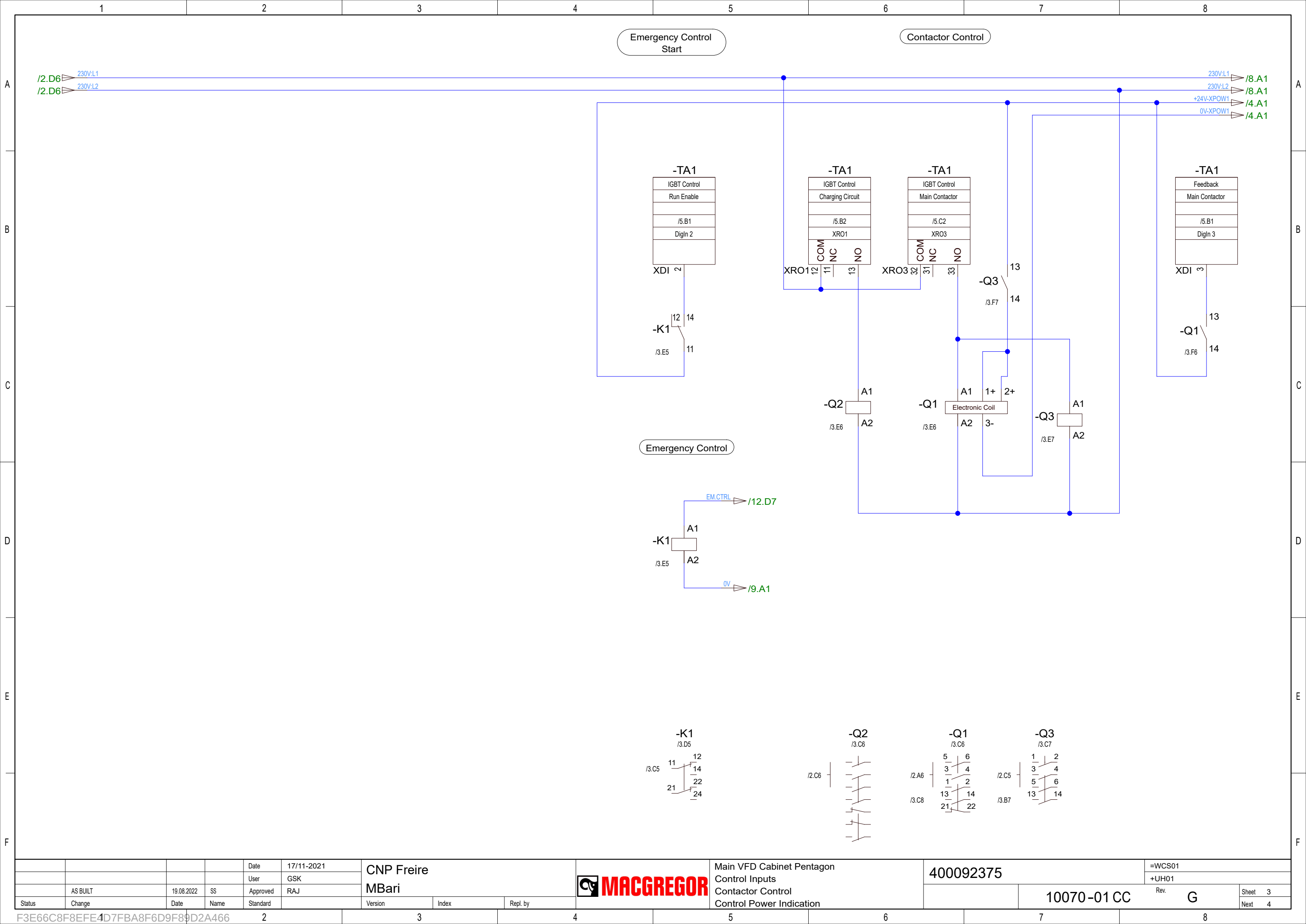
WCS01
2000005807

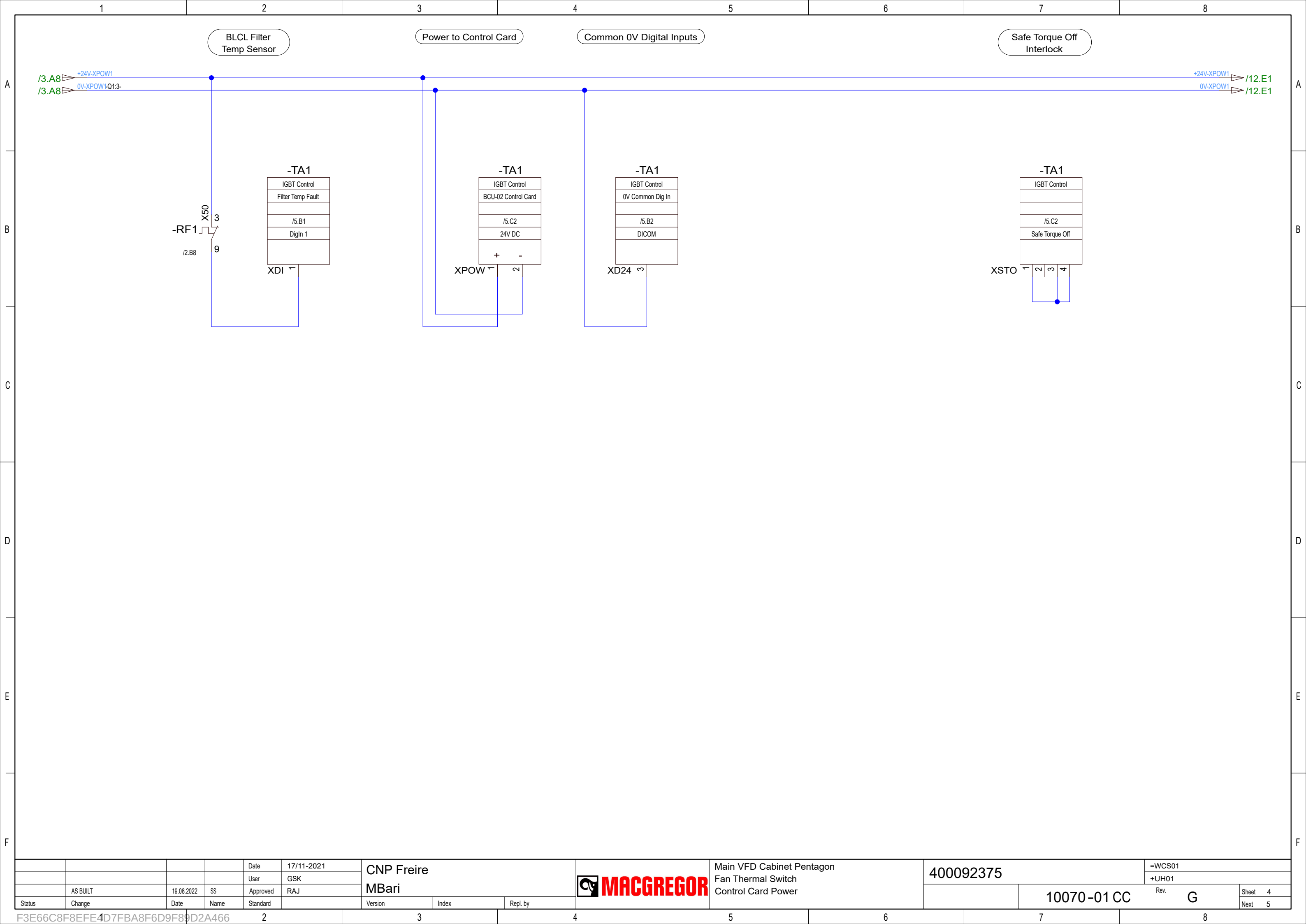


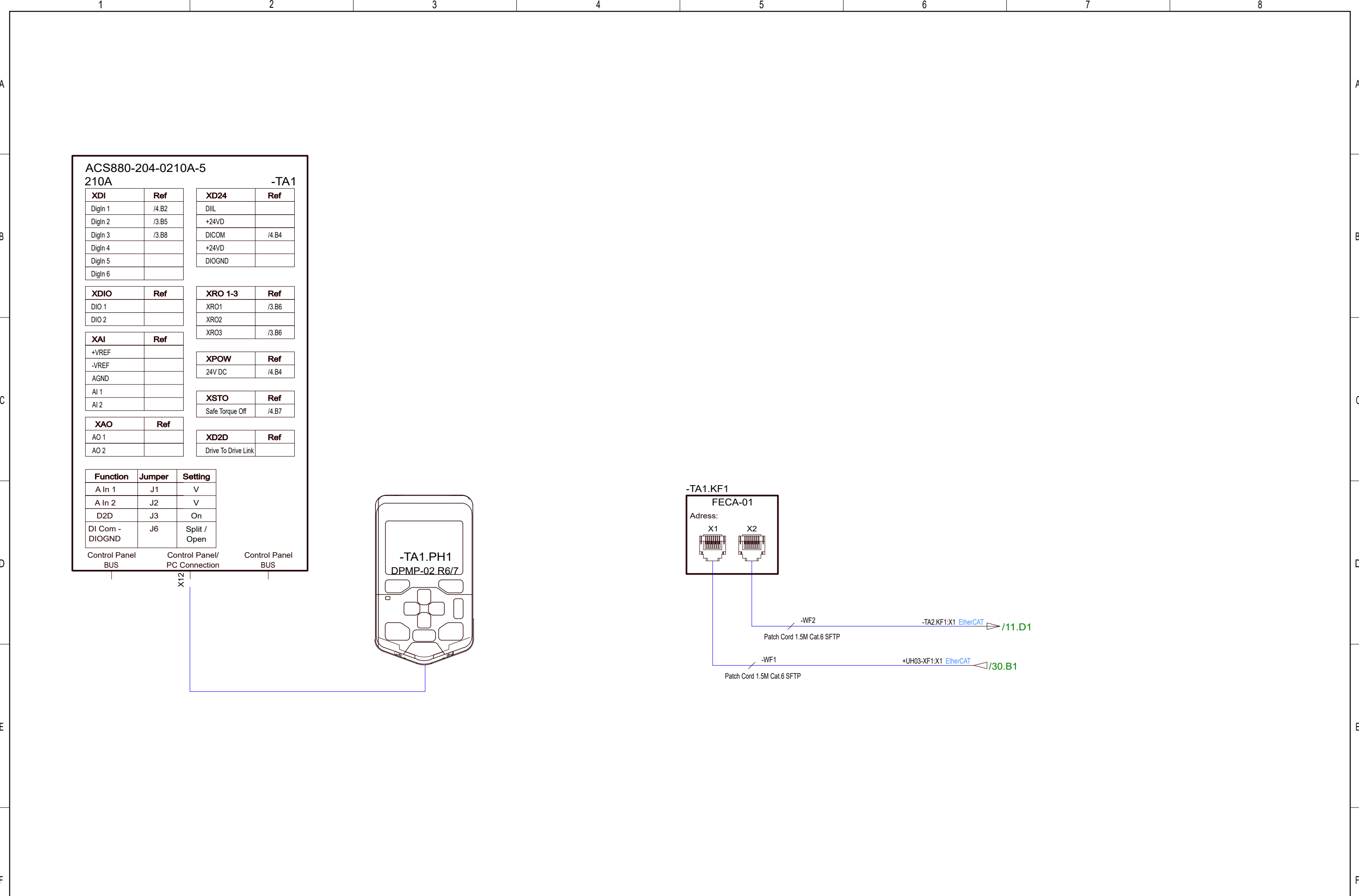
				Date	17/11-2021	CNP Freire MBari				Main VFD Cabinet Pentagon Cabinet Overview	400092375		=WCS01	
				User	GSK									
	AS BUILT	19.08.2022	SS	Approved	RAJ							10070-01 CC	Rev. G	Sheet 1
Status	Change	Date	Name	Standard		Version	Index	Repl. by						Next 2

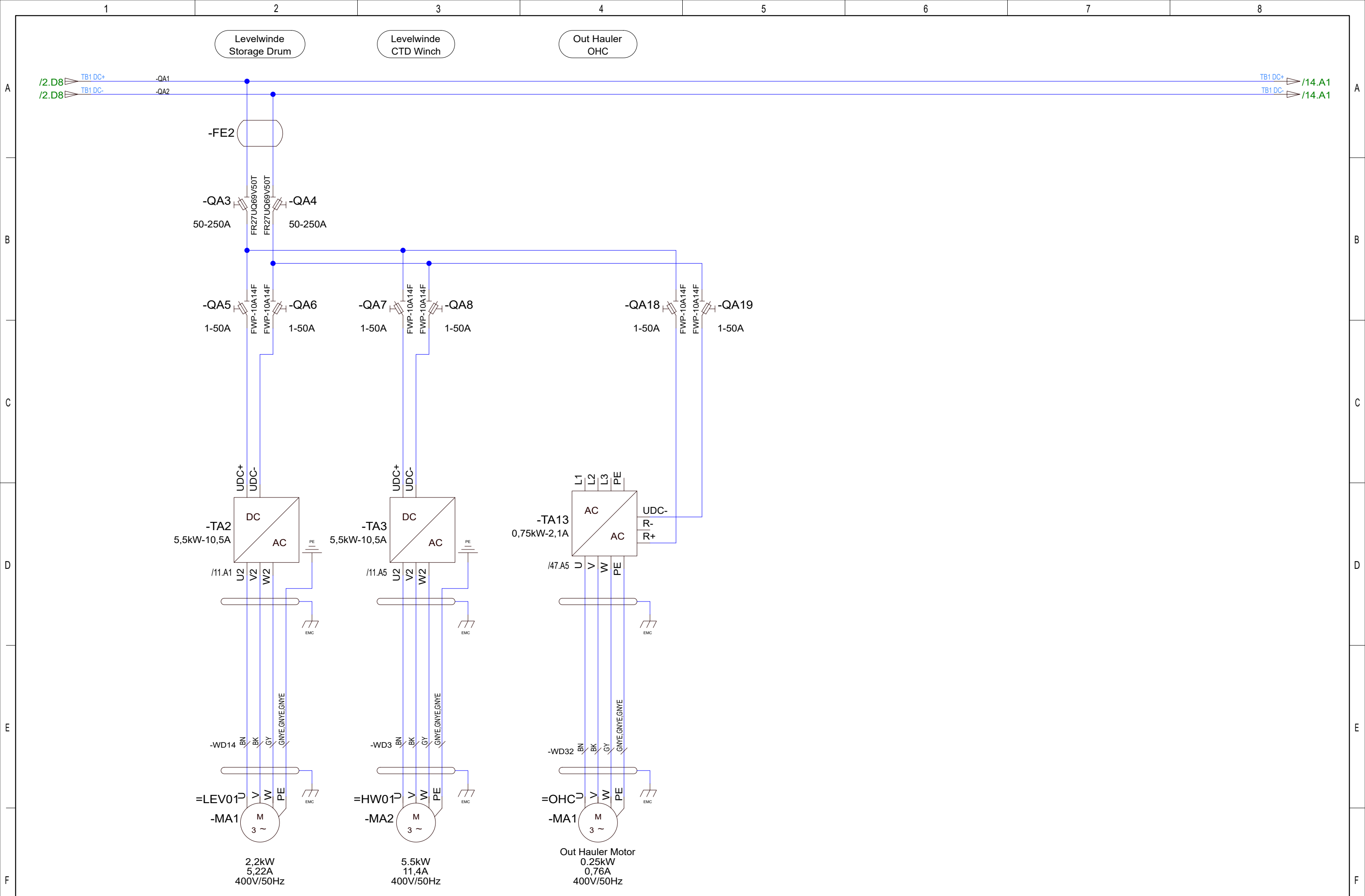


				Date	17/11-2021			CNP Freire MBarí 	Main VFD Cabinet Pentagon Main Power input 1 Control Power, Charging Circuit IGBT Modules	400092375		=WCS01	
			User	GSK			+UH01						
	AS BUILT	19.08.2022	SS	Approved	RAJ							Rev.	G
Status	Change	Date	Name	Standard		Version	Index	Repl. by		10070-01 CC			Next 3

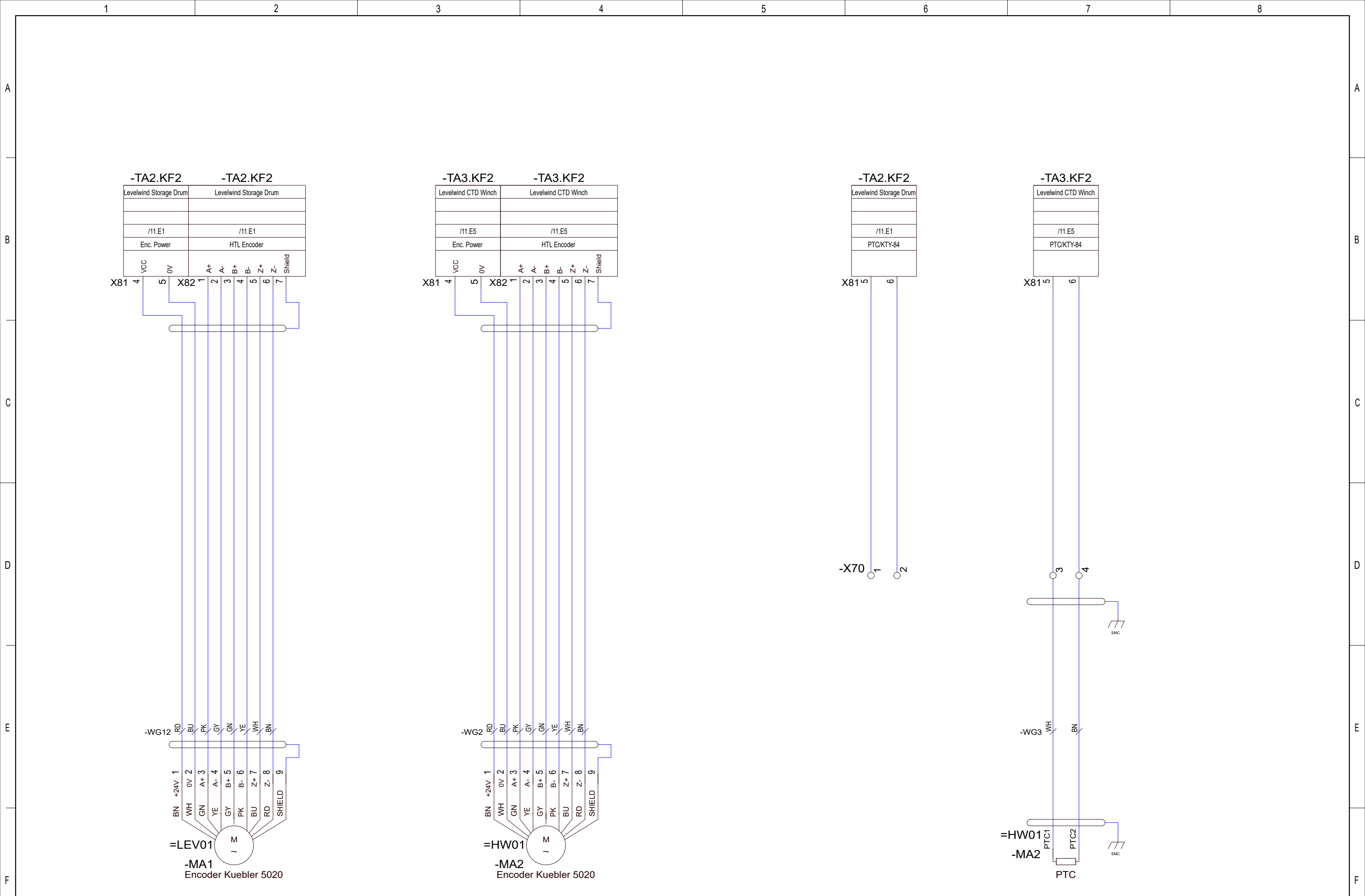


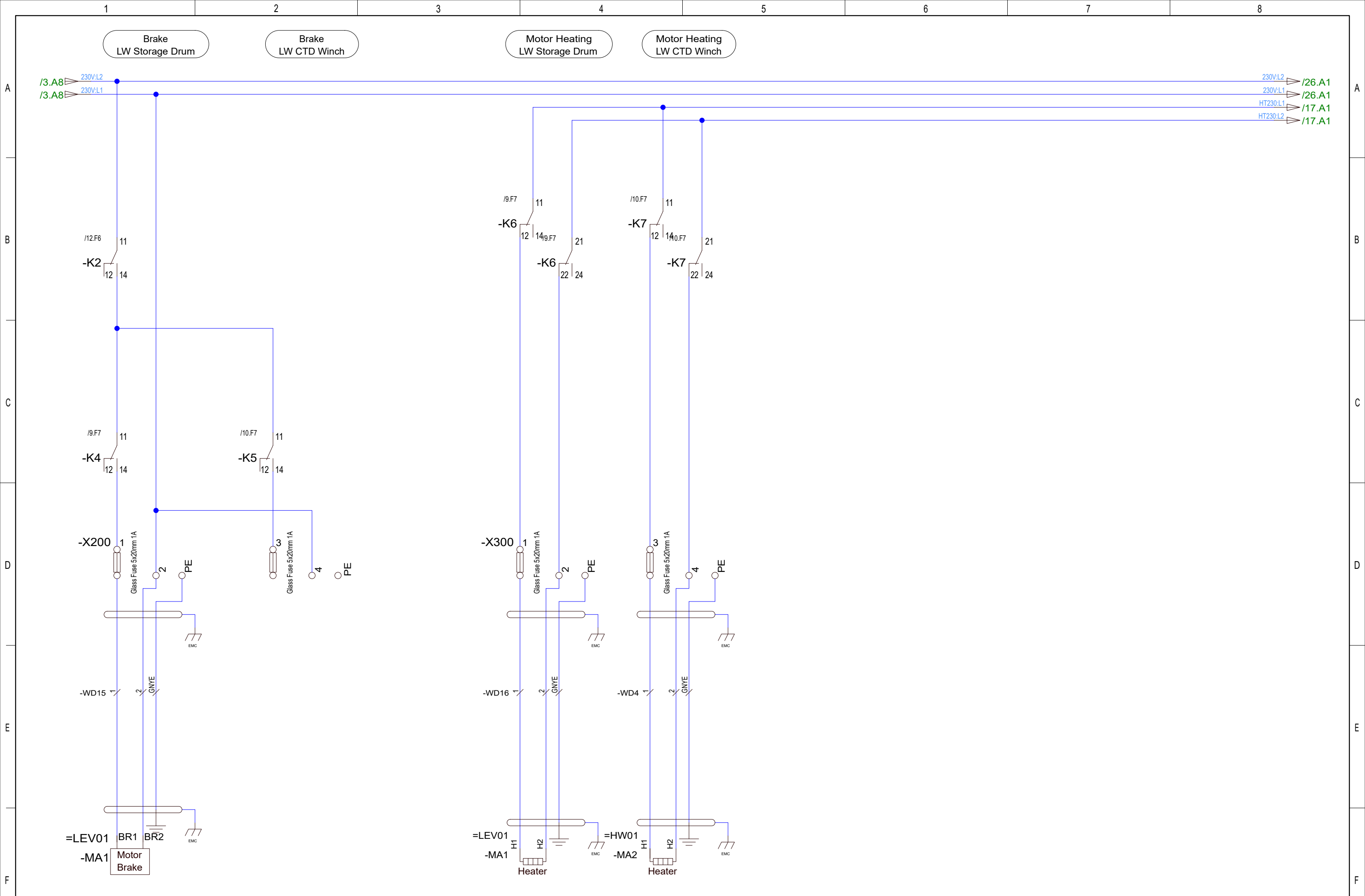






				Date	17/11-2021	CNP Freire MBarí			Main VFD Cabinet Pentagon Levelwindes Frequency Inverter		400092375		=WCS01	
				User	GSK								+UH01	
Status	AS BUILT	19.08.2022	SS	Approved	RAJ								Rev.	G
Change		Date	Name	Standard		Version	Index	Repl. by				10070-01 CC	Sheet	6
													Next	7





				Date	17/11-2021	CNP Freire MBarí				Main VFD Cabinet Pentagon Levelwindes Brakes & Heating	400092375		=WCS01	
				User	GSK								+UH01	
	AS BUILT	19.08.2022	SS	Approved	RAJ									
Status	Change	Date	Name	Standard		Version	Index	Repl. by				10070-01 CC	Rev. G	Sheet 8
														Next 9

Emergency JOG

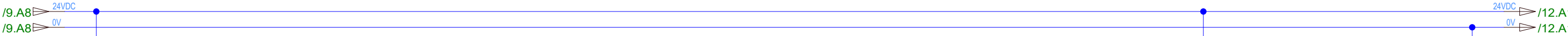
Brake Lift & Heating



				Date	17/11-2021	CNP Freire MBari			Main VFD Cabinet Pentagon Levelwind Storage Drum Emergency Control Connection Brake and Motor Heating Control			400092375		=WCS01	
				User	GSK									+UH01	
Status	AS BUILT	19.08.2022	SS	Approved	RAJ									Rev.	G
Change		Date	Name	Standard		Version	Index	Repl. by				10070-01 CC		Sheet	9
														Next	10

Emergency JOG

Brake Lift & Heating



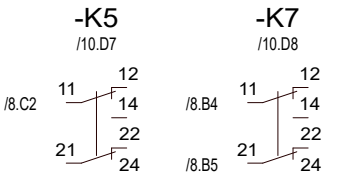
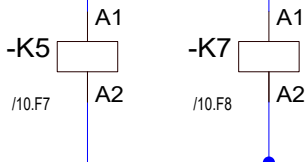
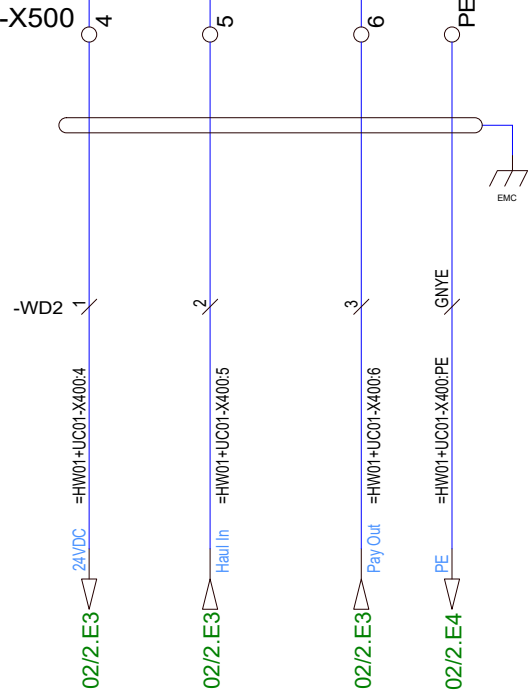
-TA3		-TA3	
Levelwind CTD Winch		Levelwind CTD Winch	
Spool Left		Spool Right	
/11.A5		/11.A5	
DigIn 1		DigIn 2	

XDI

XDI

-TA3	
Levelwind CTD Winch	
Brake Lift	
/11.B6	
XRO1	
COM	12
NC	11
NO	13

XRO1



				Date	17/11-2021	CNP Freire			 MACGREGOR	Main VFD Cabinet Pentagon Levelwind CTD Winch Emergency Control Connection Brake and Motor Heating Control	400092375		=WCS01			
			User	GSK	+UH01											
	AS BUILT	19.08.2022	SS	Approved	RAJ	MBar						10070-01 CC	Rev.	G	Sheet	10
Status	Change	Date	Name	Standard		Version	Index	Repl. by					Next	11		

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Levelwinde
Storage Drum

Levelwinde
CTD Winch

ACS880-104-0011A-5
5,5kW-10,5A

-TA2

XDI	Ref
DigIn 1	/9.B1
DigIn 2	/9.B2
DigIn 3	/12.B6
DigIn 4	
DigIn 5	
DigIn 6	

XD24	Ref
DIIL	
+24VD	
DICOM	/12.B1
+24VD	
DIOGND	

XDIO	Ref
DIO 1	
DIO 2	

XRO 1-3	Ref
XRO1	/9.B7
XRO2	
XRO3	

XAI	Ref
+VREF	
-VREF	
AGND	
AI 1	
AI 2	

XPOW	Ref
24V DC	/12.E1

XSTO	Ref
Safe Torque Off	/13.B1

XAO	Ref
AO 1	
AO 2	

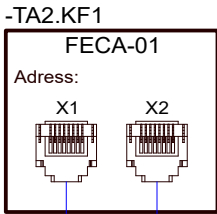
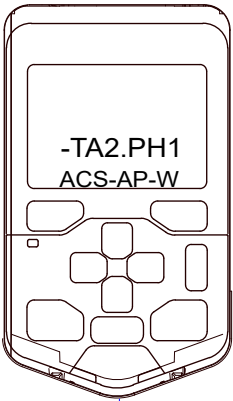
XD2D	Ref
Drive To Drive Link	

Function	Jumper	Setting
A In 1	J1	V
A In 2	J2	V
D2D	J3	On
DI Com - DIOGND	J6	Split / Open

Control Panel
BUS

Control Panel/
PC Connection

Control Panel
BUS



ACS880-104-0011A-5
5,5kW-10,5A

-TA3

XDI	Ref
DigIn 1	/10.B1
DigIn 2	/10.B2
DigIn 3	/12.B7
DigIn 4	
DigIn 5	
DigIn 6	

XD24	Ref
DIIL	
+24VD	
DICOM	/12.B2
+24VD	
DIOGND	

XDIO	Ref
DIO 1	
DIO 2	

XRO 1-3	Ref
XRO1	/10.B7
XRO2	
XRO3	

XAI	Ref
+VREF	
-VREF	
AGND	
AI 1	
AI 2	

XPOW	Ref
24V DC	/12.E2

XSTO	Ref
Safe Torque Off	/13.B3

XAO	Ref
AO 1	
AO 2	

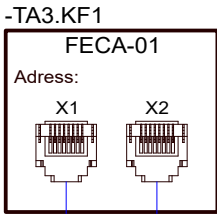
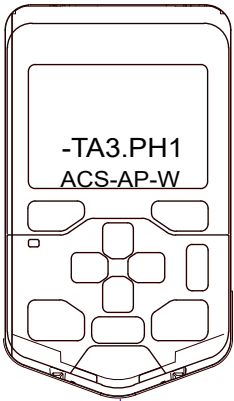
XD2D	Ref
Drive To Drive Link	

Function	Jumper	Setting
A In 1	J1	V
A In 2	J2	V
D2D	J3	On
DI Com - DIOGND	J6	Split / Open

Control Panel
BUS

Control Panel/
PC Connection

Control Panel
BUS



/5.D6 EtherCAT -TA1.KF1:X2

-WF2 Patch Cord 1.5M Cat.6 SFTP

-WF3 Patch Cord 1.5M Cat.6 SFTP

-TA13.KF1:X1 EtherCAT /47.D5
-WF4 Patch Cord 1.5M Cat.6 SFTP

FEN-31

-TA2.KF2

X81	Ref
Power Latch	/12.B4
Enc. Power	/7.B1
PTC/KTY-84	/7.B6

X22	Ref
TTL Encoder	

X82	Ref
HTL Encoder	/7.B2

X84	Ref
Power	
Dig In 1	
Dig In 2	

DIP Sw.	Pos
DIP 1	0
DIP 2	0
DIP 3	0
DIP 4	0

Internal Pull-Up Resistor
DIP Switches
Located under plastic cover
Default position 0

FEN-31

-TA3.KF2

X81	Ref
Power Latch	/12.B4
Enc. Power	/7.B3
PTC/KTY-84	/7.B7

X22	Ref
TTL Encoder	

X82	Ref
HTL Encoder	/7.B4

X84	Ref
Power	
Dig In 1	
Dig In 2	

DIP Sw.	Pos
DIP 1	0
DIP 2	0
DIP 3	0
DIP 4	0

Internal Pull-Up Resistor
DIP Switches
Located under plastic cover
Default position 0

				Date	17/11-2021
				User	GSK
	AS BUILT	19.08.2022	SS	Approved	RAJ
Status	Change	Date	Name	Standard	

CNP Freire
MBarí

Version	Index	Repl. by
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Main VFD Cabinet Pentagon
Levelwindes Storage Drum & CTD Winch
Frequency Inverter References

400092375

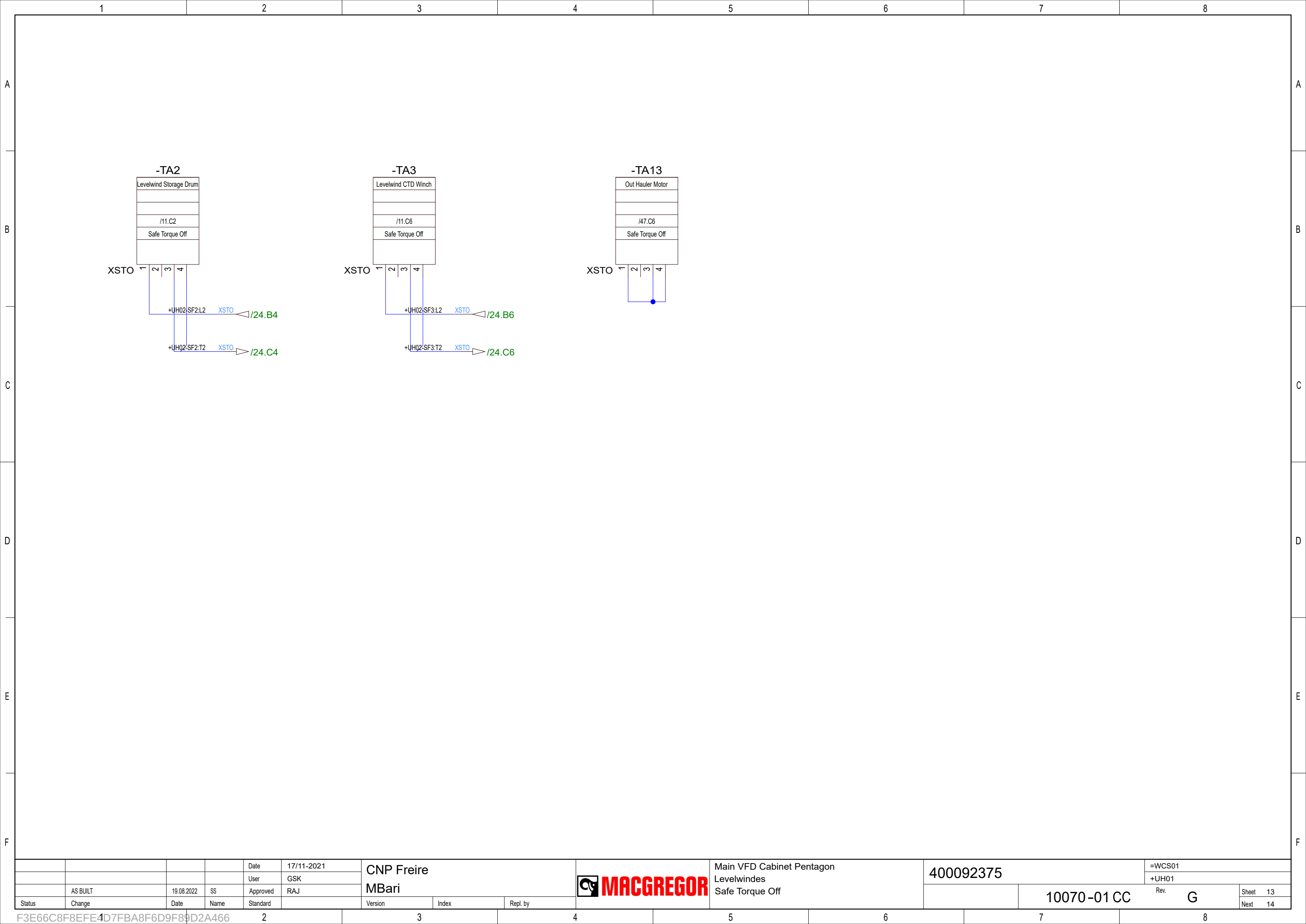
10070-01 CC

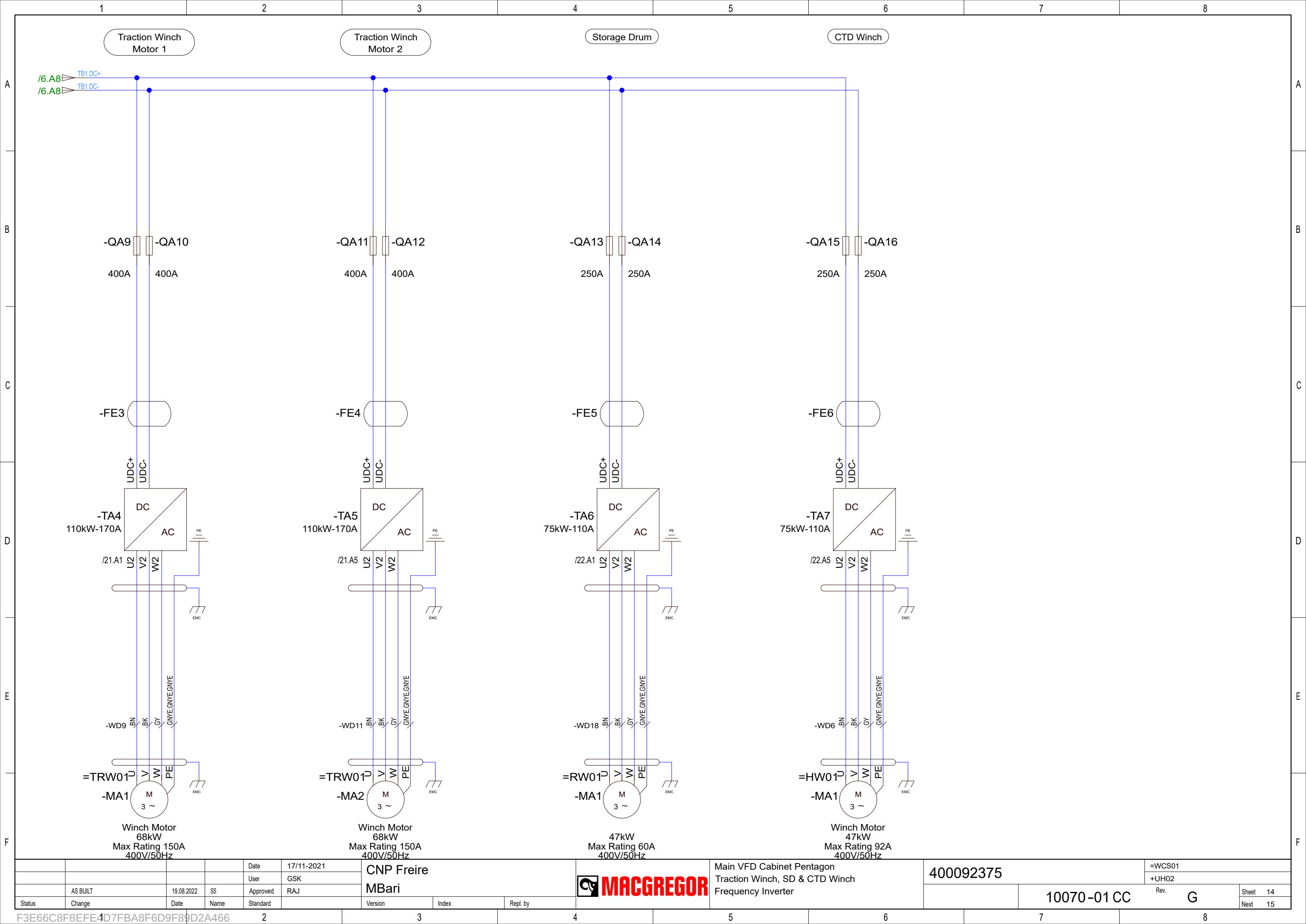
=WCS01
+UH01

Rev. G

Sheet 11
Next 12

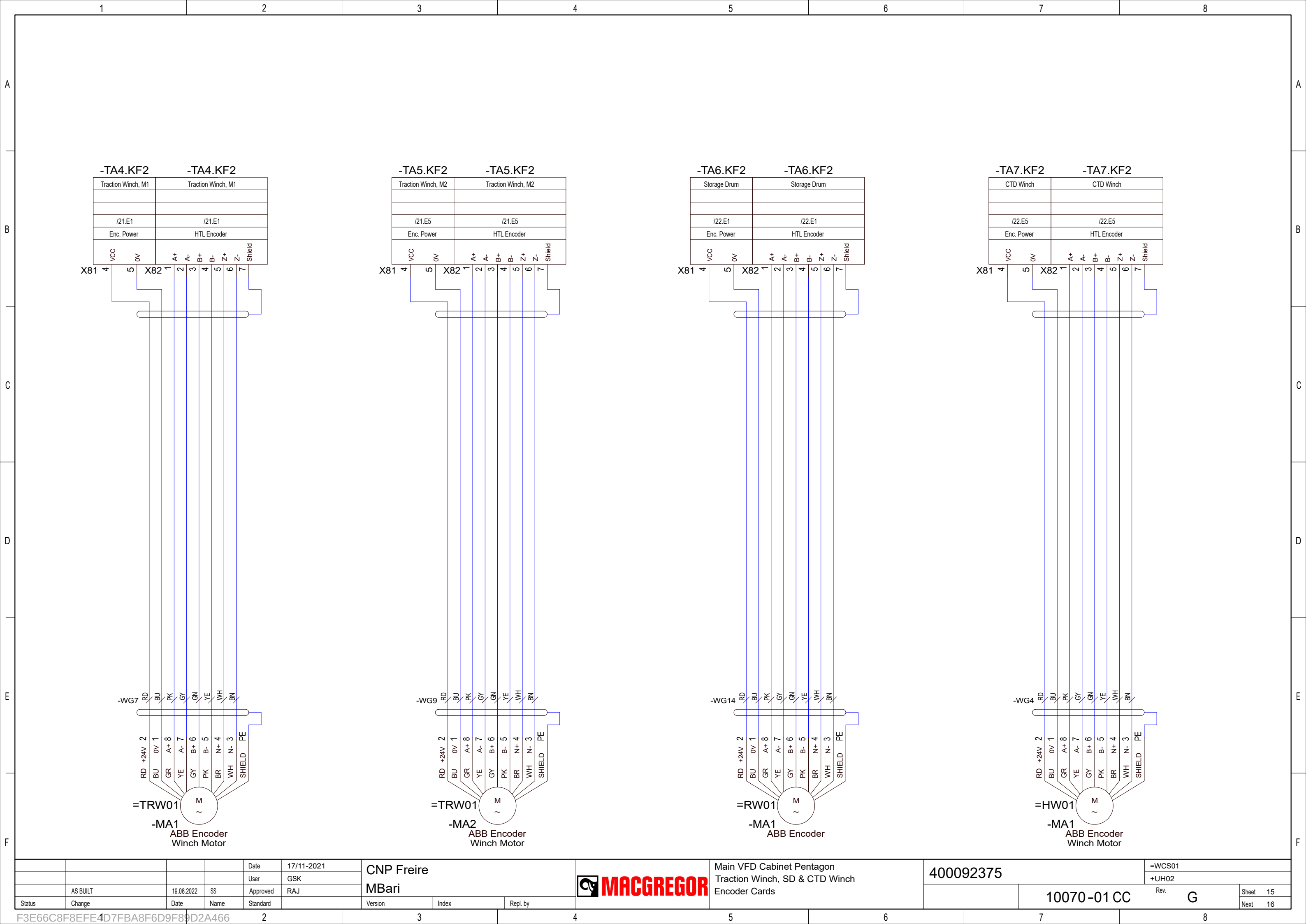


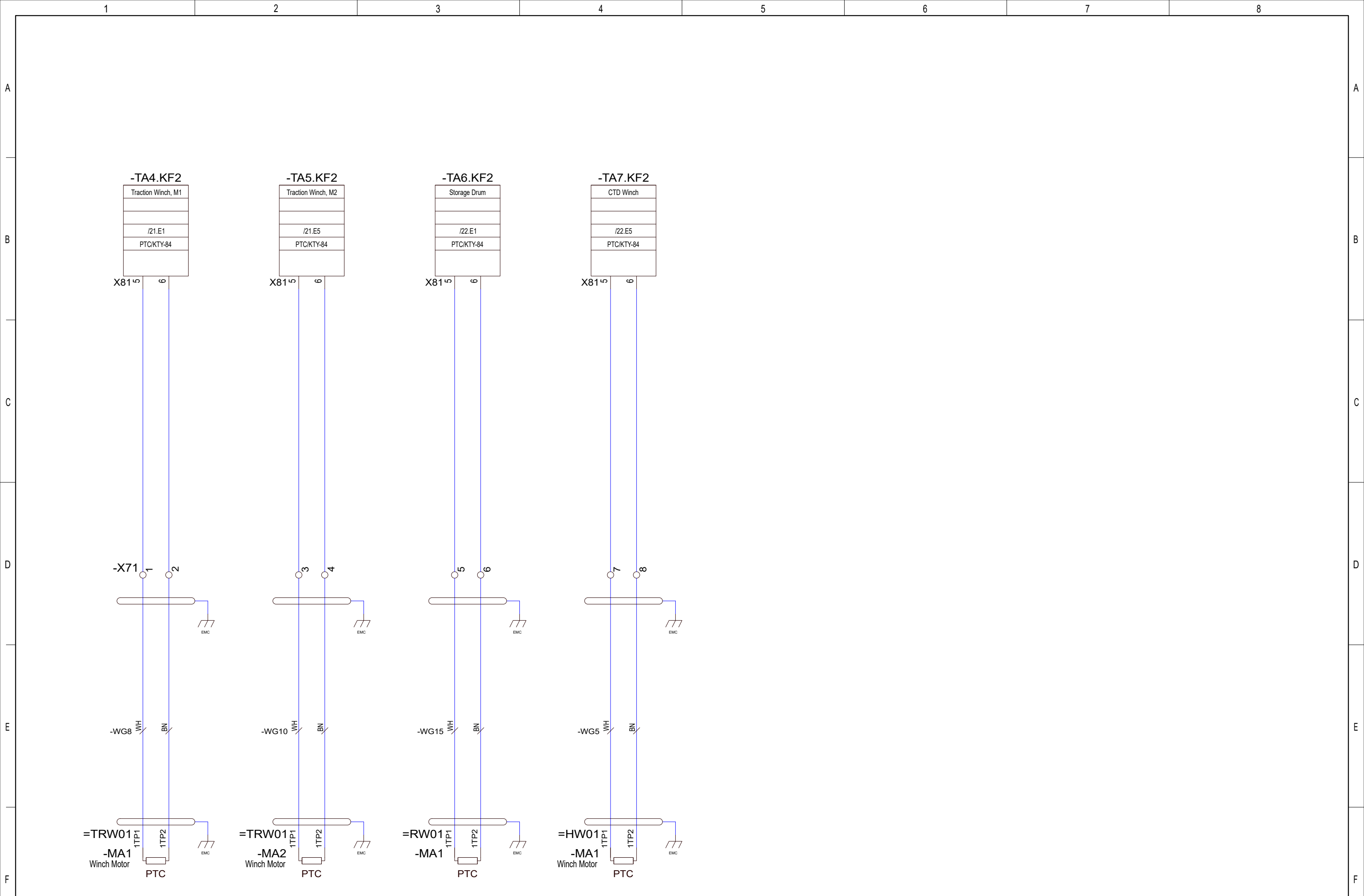




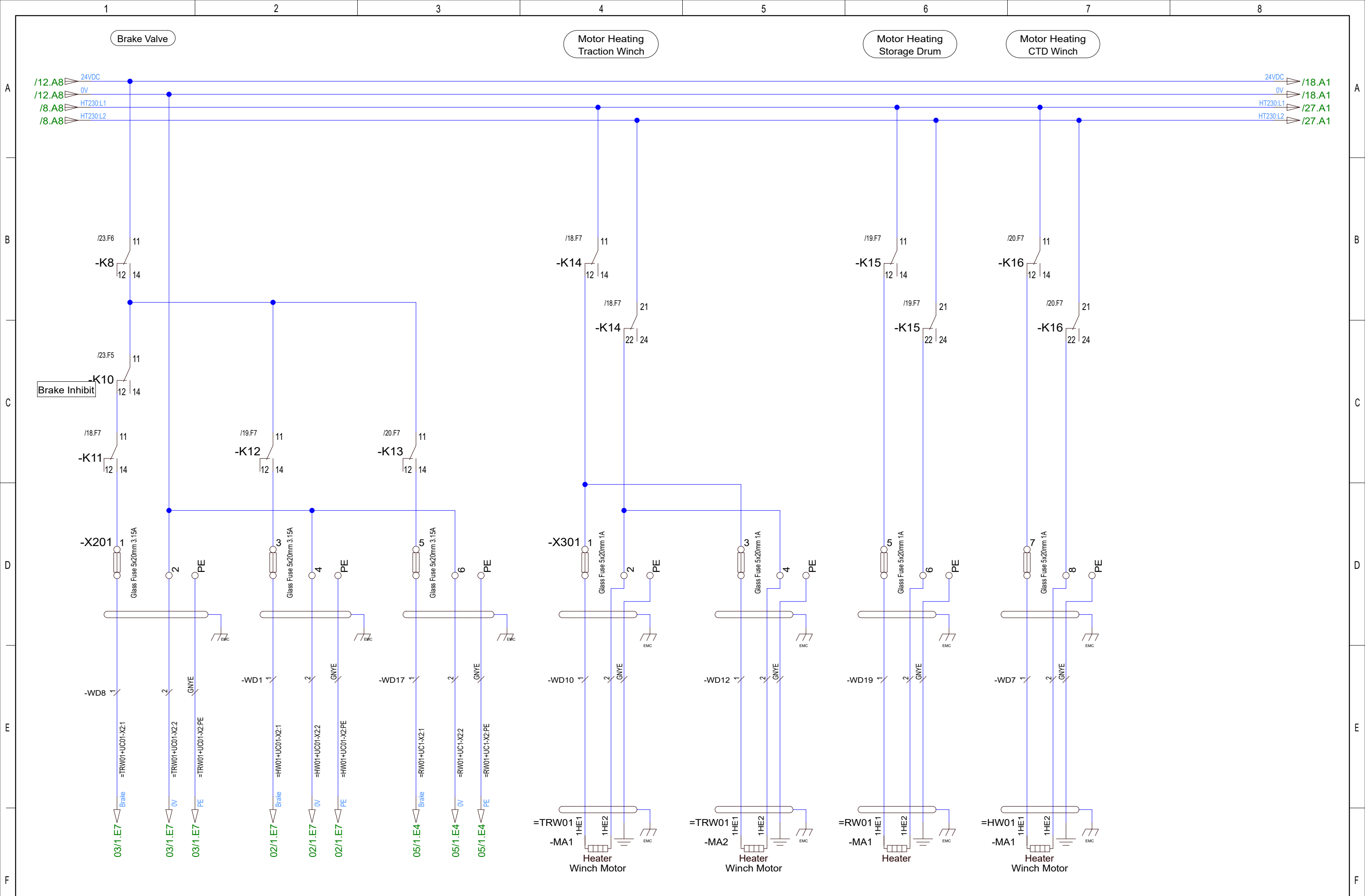
				Date	17/11-2021	CNP Freire				Main VFD Cabinet Pentagon Traction Winch, SD & CTD Winch Frequency Inverter	400092375		=WCS01	
				User	GSK								+UH02	
	AS BUILT	19.08.2022	SS	Approved	RAJ	MBarí							Rev. G	
Status	Change	Date	Name	Standard		Version	Index	Repl. by			10070-01 CC		Next 15	

F3E66C8F8EFE4D7FBA8F6D9F89D2A466

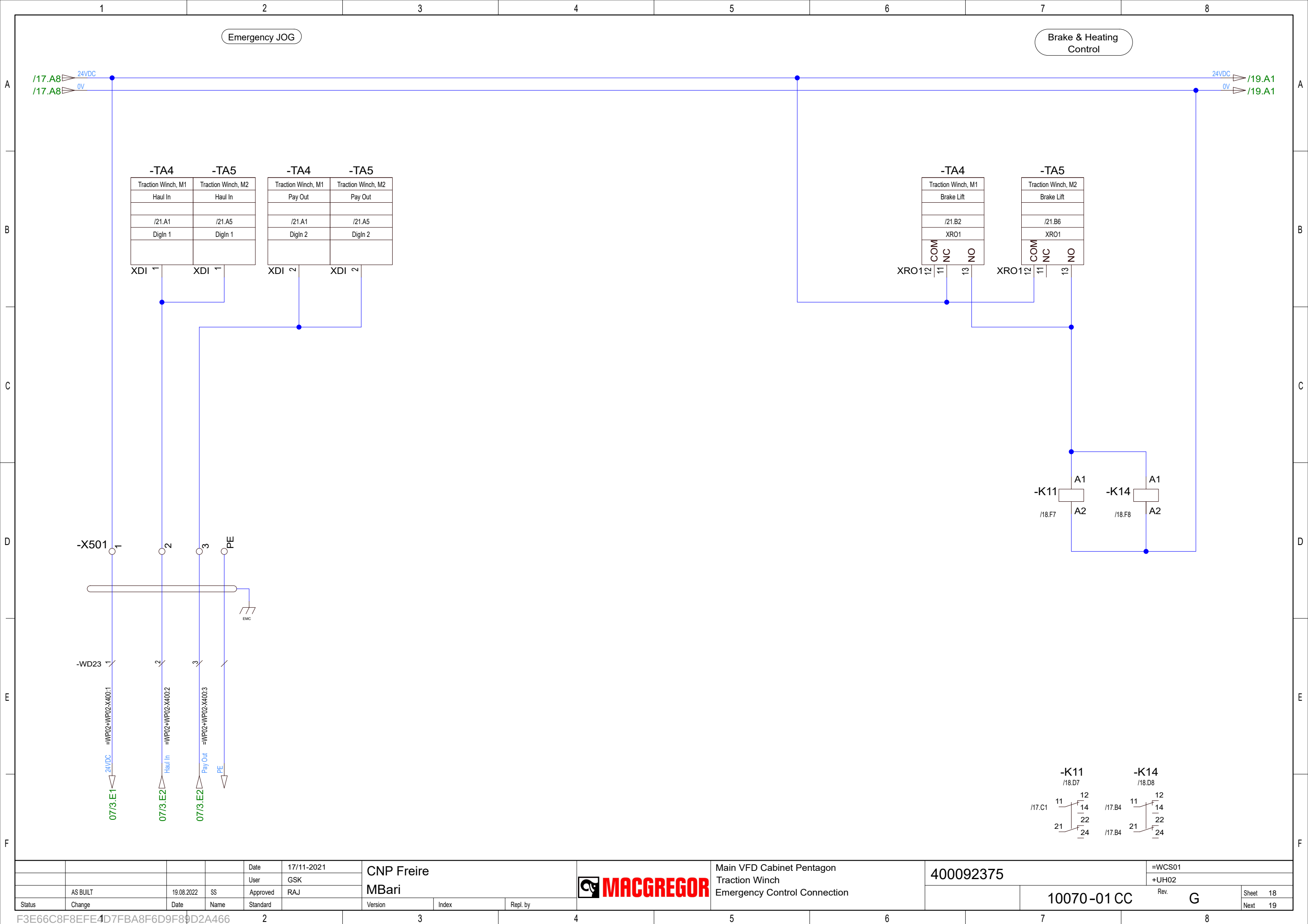




				Date	17/11-2021	CNP Freire MBar				Main VFD Cabinet Pentagon Traction Winch, SD & CTD Winch PTC Connections	400092375		=WCS01	
				User	GSK								+UH02	
	AS BUILT	19.08.2022	SS	Approved	RAJ								Rev. G	
Status	Change	Date	Name	Standard		Version	Index	Repl. by			10070-01 CC		Next 17	



				Date	17/11-2021	CNP Freire MBarí				Main VFD Cabinet Pentagon Traction Winch, SD & CTD Winch Brake & Heating	400092375		=WCS01	
			User	GSK	+UH02									
	AS BUILT	19.08.2022	SS	Approved	RAJ						Rev.		G	Sheet 17
Status	Change	Date	Name	Standard		Version	Index	Repl. by			10070-01 CC			Next 18



Emergency JOG

Brake & Heating
Control



				Date	17/11-2021	CNP Freire MBari				Main VFD Cabinet Pentagon Storage Drum Emergency Control Connection	400092375		=WCS01	
				User	GSK								+UH02	
Status	AS BUILT	19.08.2022	SS	Approved	RAJ								Rev. G	
Change		Date	Name	Standard		Version	Index	Repl. by				10070-01 CC	Sheet 19	Next 20

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Emergency JOG

Brake & Heating
Control



				Date	17/11-2021	CNP Freire MBari			Main VFD Cabinet Pentagon CTD Winch Emergency Control Connection		400092375		=WCS01	
				User	GSK								+UH02	
	AS BUILT	19.08.2022	SS	Approved	RAJ								Rev. G	
Status	Change	Date	Name	Standard		Version	Index	Repl. by			10070-01 CC		Sheet 20	Next 21

F3E66C8F8EFE4D7FBA8F6D9F89D2A466

Traction Winch Motor 1

Traction Winch Motor 2

ACS880-104-0170A-5
110kW-170A

-TA4

XDI	Ref	XD24	Ref
DigIn 1	/18.B1	DIIL	
DigIn 2	/18.B2	+24VD	
DigIn 3	/23.B6	DICOM	/23.B1
DigIn 4		+24VD	
DigIn 5		DIOGND	
DigIn 6			

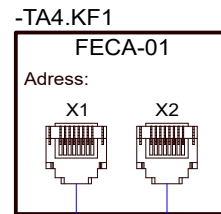
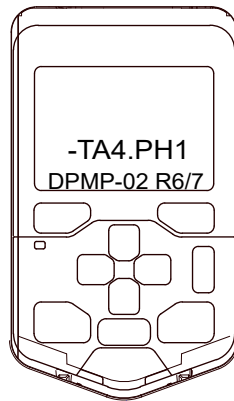
XDIO	Ref	XRO 1-3	Ref
DIO 1		XRO1	/18.B6
DIO 2		XRO2	
		XRO3	

XAI	Ref	XPOW	Ref
+VREF		24V DC	/23.D1
-VREF			
AGND			
AI 1			
AI 2			

XAO	Ref	XSTO	Ref
AO 1		Safe Torque Off	/24.B1
AO 2			

Function	Jumper	Setting
A In 1	J1	V
A In 2	J2	V
D2D	J3	On
DI Com - DIOGND	J6	Split / Open

Control Panel BUS Control Panel/ PC Connection Control Panel BUS



ACS880-104-0170A-5
110kW-170A

-TA5

XDI	Ref	XD24	Ref
DigIn 1	/18.B2	DIIL	
DigIn 2	/18.B3	+24VD	
DigIn 3	/23.B7	DICOM	/23.B2
DigIn 4		+24VD	
DigIn 5		DIOGND	
DigIn 6			

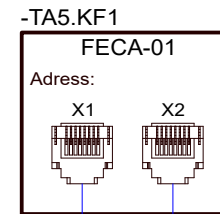
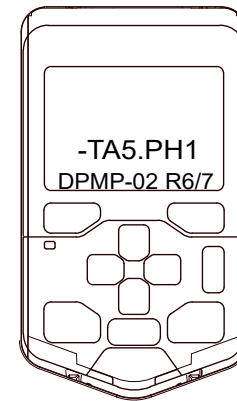
XDIO	Ref	XRO 1-3	Ref
DIO 1		XRO1	/18.B7
DIO 2		XRO2	
		XRO3	

XAI	Ref	XPOW	Ref
+VREF		24V DC	/23.D2
-VREF			
AGND			
AI 1			
AI 2			

XAO	Ref	XSTO	Ref
AO 1		Safe Torque Off	/24.B2
AO 2			

Function	Jumper	Setting
A In 1	J1	V
A In 2	J2	V
D2D	J3	On
DI Com - DIOGND	J6	Split / Open

Control Panel BUS Control Panel/ PC Connection Control Panel BUS



FEN-31

-TA4.KF2

X81	Ref	X22	Ref
Power Latch	/23.B3	TTL Encoder	
Enc. Power	/15.B1		
PTC/KTY-84	/16.B1		

X82	Ref	X84	Ref
HTL Encoder	/15.B2	Power	
		Dig In 1	
		Dig In 2	

DIP Sw.	Pos	
DIP 1	0	
DIP 2	0	
DIP 3	0	
DIP 4	0	

Internal Pull-Up Resistor
DIP Switches
Located under plastic cover
Default position 0

FEN-31

-TA5.KF2

X81	Ref	X22	Ref
Power Latch	/23.B4	TTL Encoder	
Enc. Power	/15.B3		
PTC/KTY-84	/16.B2		

X82	Ref	X84	Ref
HTL Encoder	/15.B4	Power	
		Dig In 1	
		Dig In 2	

DIP Sw.	Pos	
DIP 1	0	
DIP 2	0	
DIP 3	0	
DIP 4	0	

Internal Pull-Up Resistor
DIP Switches
Located under plastic cover
Default position 0

Storage Drum

CTD Winch

ACS880-104-0110A-5
75kW-110A

-TA6

XDI	Ref	XD24	Ref
DigIn 1	/19.B1	DIIL	
DigIn 2	/19.B2	+24VD	
DigIn 3	/23.B7	DICOM	/23.B2
DigIn 4		+24VD	
DigIn 5		DIOGND	
DigIn 6			

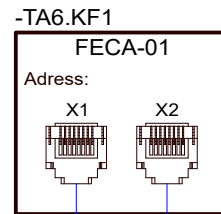
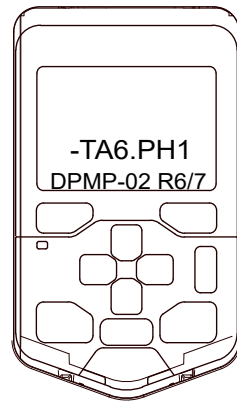
XDIO	Ref	XRO 1-3	Ref
DIO 1		XRO1	/19.B7
DIO 2		XRO2	
		XRO3	

XAI	Ref	XPOW	Ref
+VREF		24V DC	/23.D3
-VREF			
AGND			
AI 1			
AI 2			

XAO	Ref	XSTO	Ref
AO 1		Safe Torque Off	/24.B3
AO 2			

Function	Jumper	Setting
A In 1	J1	V
A In 2	J2	V
D2D	J3	On
DI Com - DIOGND	J6	Split / Open

Control Panel BUS Control Panel/ PC Connection Control Panel BUS



ACS880-104-0110A-5
75kW-110A

-TA7

XDI	Ref	XD24	Ref
DigIn 1	/20.B1	DIIL	
DigIn 2	/20.B2	+24VD	
DigIn 3	/23.B8	DICOM	/23.B3
DigIn 4		+24VD	
DigIn 5		DIOGND	
DigIn 6			

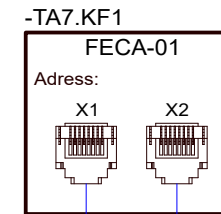
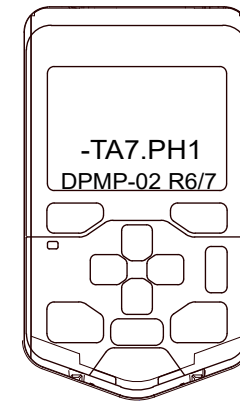
XDIO	Ref	XRO 1-3	Ref
DIO 1		XRO1	/20.B7
DIO 2		XRO2	
		XRO3	

XAI	Ref	XPOW	Ref
+VREF		24V DC	/23.D3
-VREF			
AGND			
AI 1			
AI 2			

XAO	Ref	XSTO	Ref
AO 1		Safe Torque Off	/24.B5
AO 2			

Function	Jumper	Setting
A In 1	J1	V
A In 2	J2	V
D2D	J3	On
DI Com - DIOGND	J6	Split / Open

Control Panel BUS Control Panel/ PC Connection Control Panel BUS



FEN-31

-TA6.KF2

X81	Ref	X22	Ref
Power Latch	/23.B4	TTL Encoder	
Enc. Power	/15.B5		
PTC/KTY-84	/16.B3		

X82	Ref	X84	Ref
HTL Encoder	/15.B5	Power	
		Dig In 1	
		Dig In 2	

DIP Sw.	Pos
DIP 1	0
DIP 2	0
DIP 3	0
DIP 4	0

Internal Pull-Up Resistor
DIP Switches
Located under plastic cover
Default position 0

FEN-31

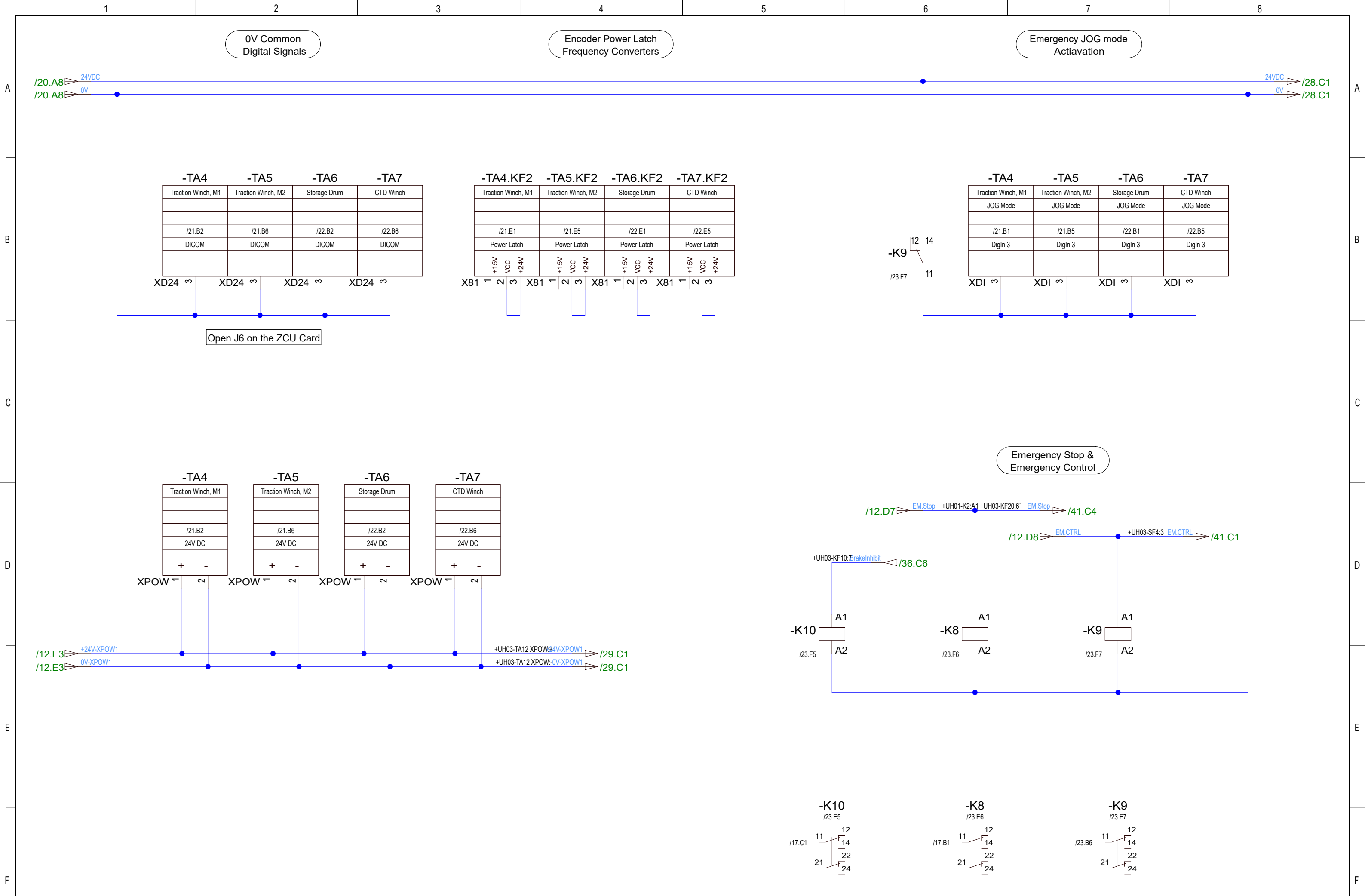
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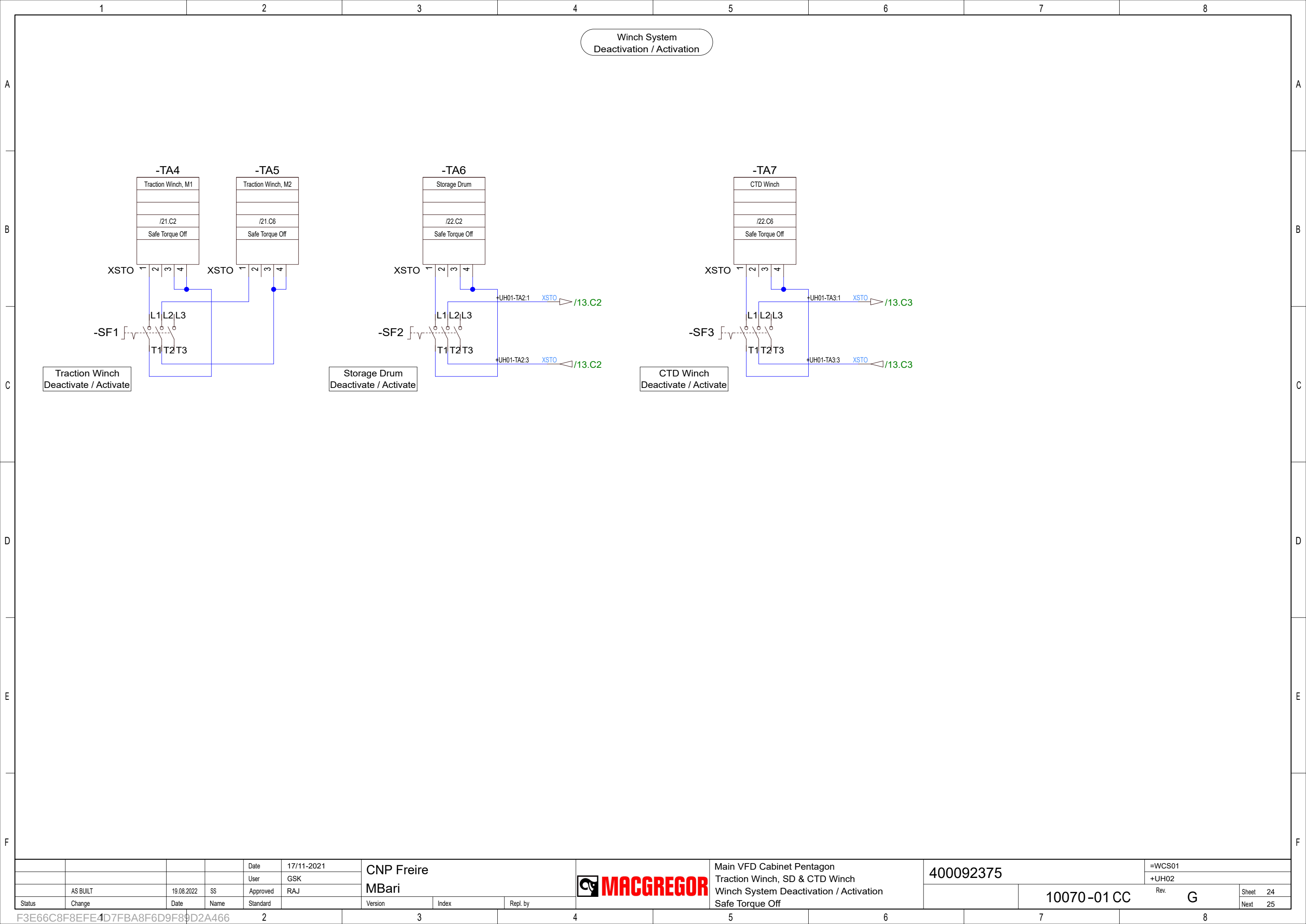
X81	Ref	X22	Ref
Power Latch	/23.B5	TTL Encoder	
Enc. Power	/15.B7		
PTC/KTY-84	/16.B4		

X82	Ref	X84	Ref
HTL Encoder	/15.B7	Power	
		Dig In 1	
		Dig In 2	

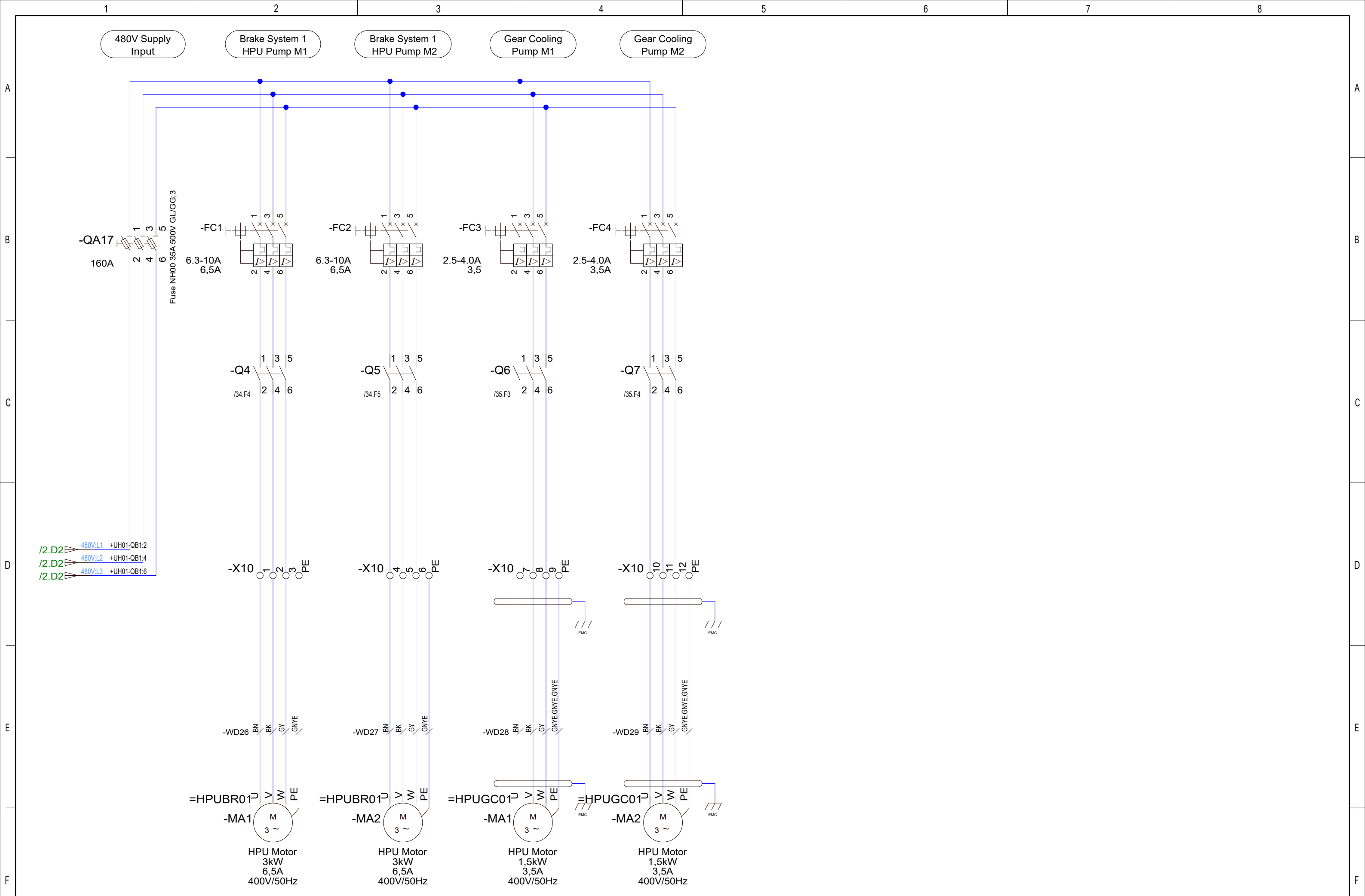
DIP Sw.	Pos
DIP 1	0
DIP 2	0
DIP 3	0
DIP 4	0

Internal Pull-Up Resistor
DIP Switches
Located under plastic cover
Default position 0

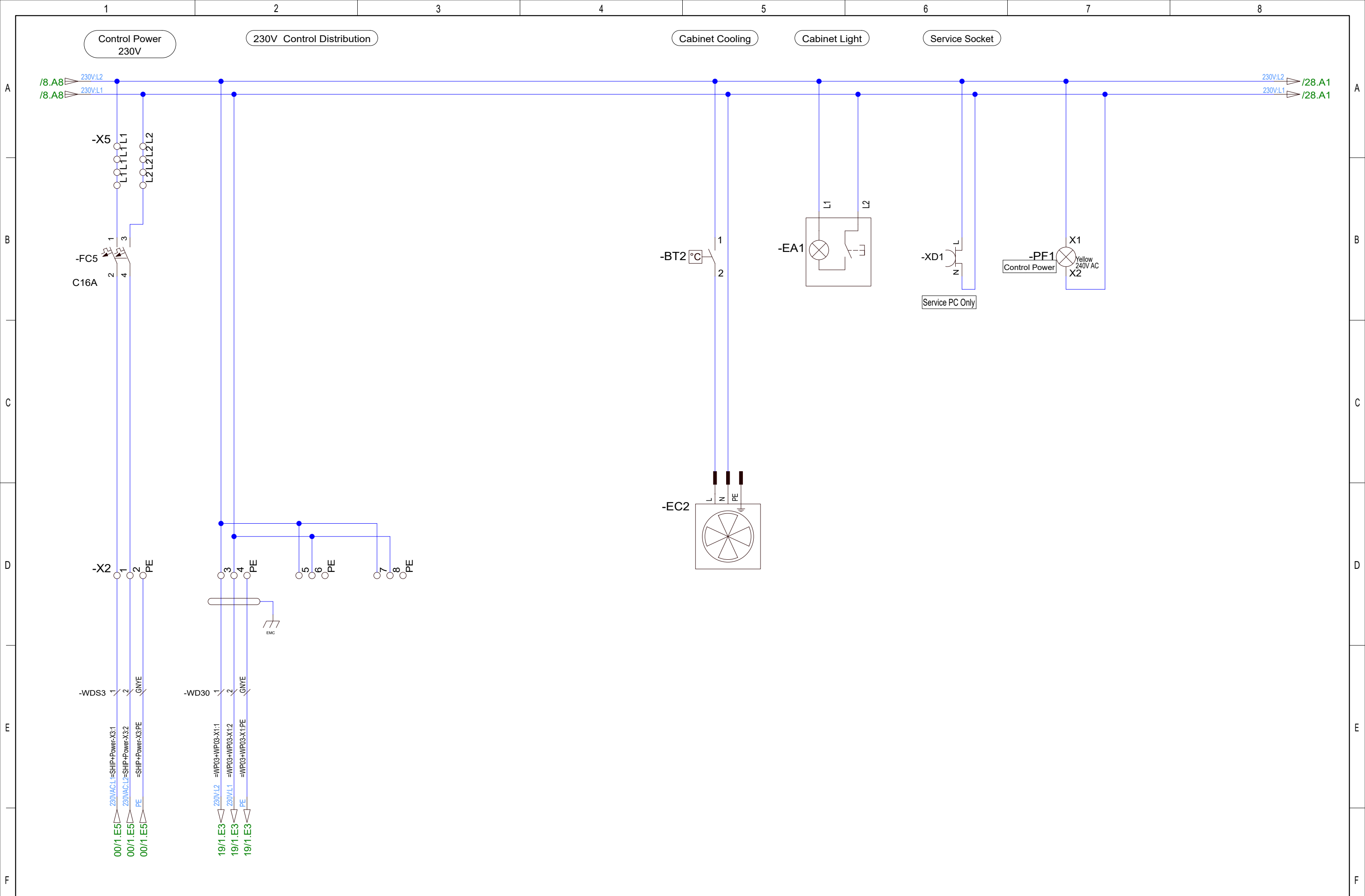




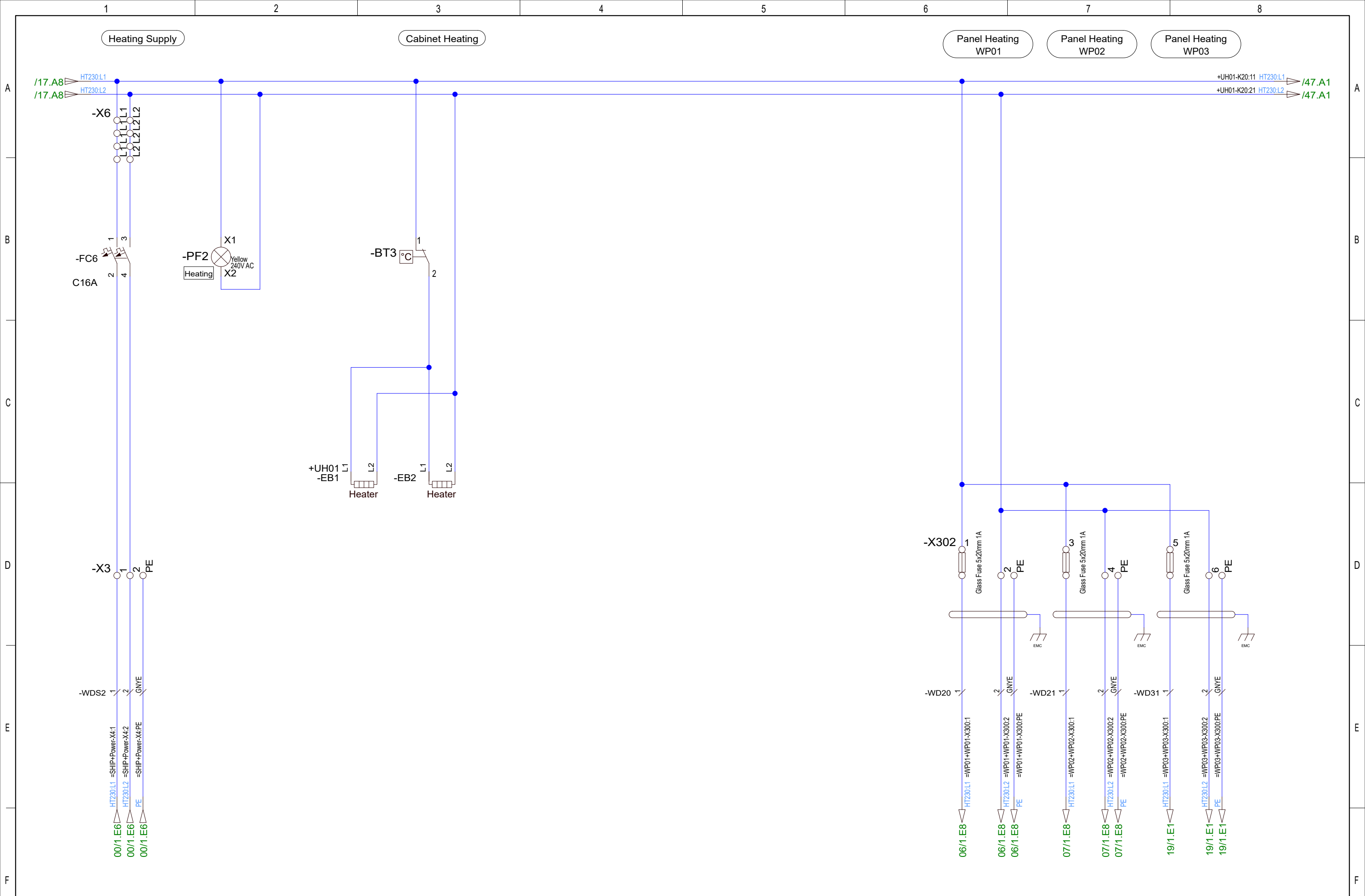
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				User	GSK								+UH02	
	AS BUILT	19.08.2022	SS	Approved	RAJ							10070-01 CC	Rev. G	Sheet 24
Status	Change	Date	Name	Standard		Version	Index	Repl. by						Next 25



				Date	17/11-2021	CNP Freire MBarí			Main VFD Cabinet Pentagon Pentagon Control Cabinet Main Power Connections			400092375		=WCS01	
				User	GSK									+UH03	
Status	AS BUILT	19.08.2022	SS	Approved	RAJ									Rev. G	
Change		Date	Name	Standard		Version	Index	Repl. by				10070-01 CC		Sheet 25	Next 26

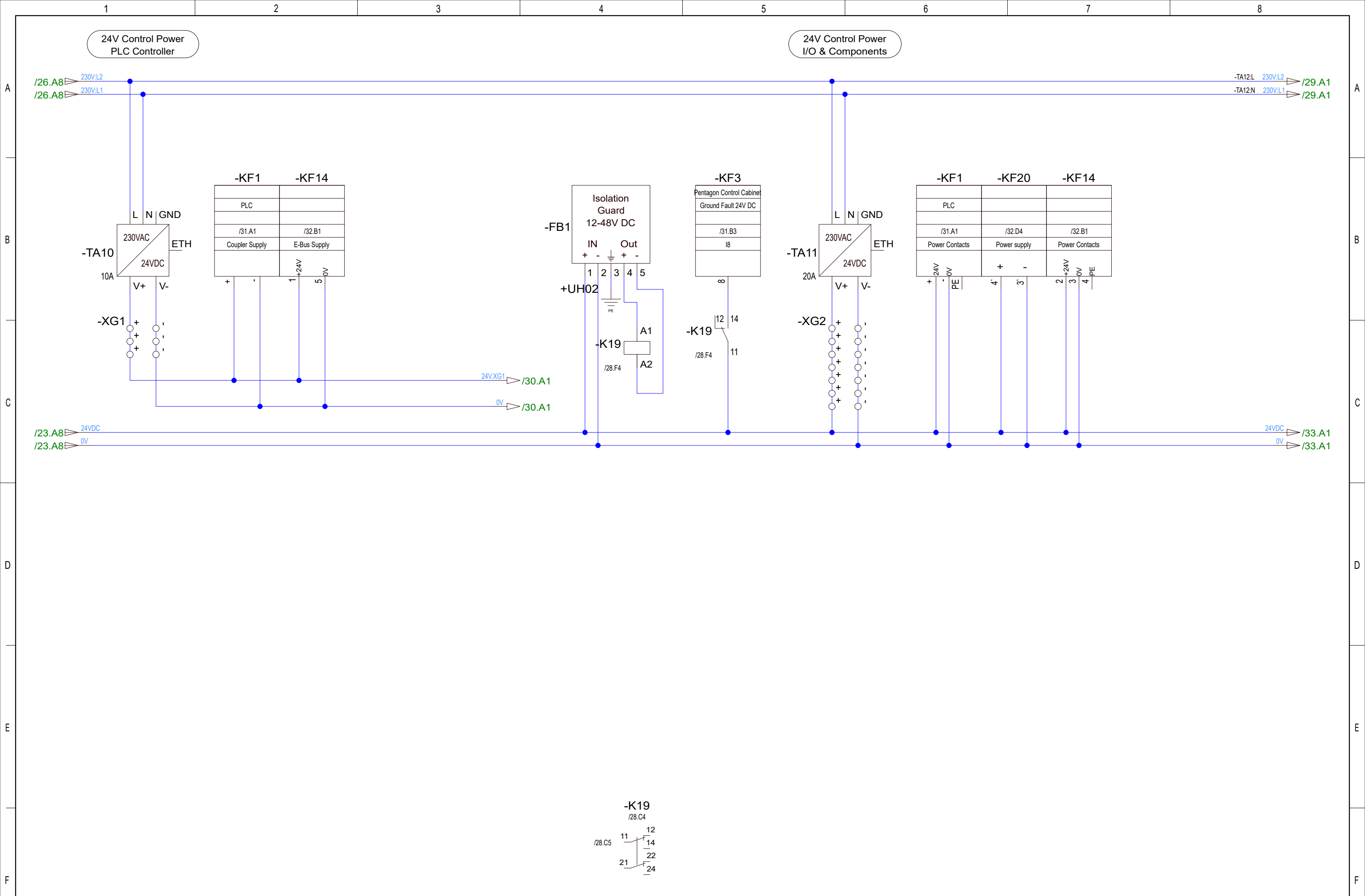


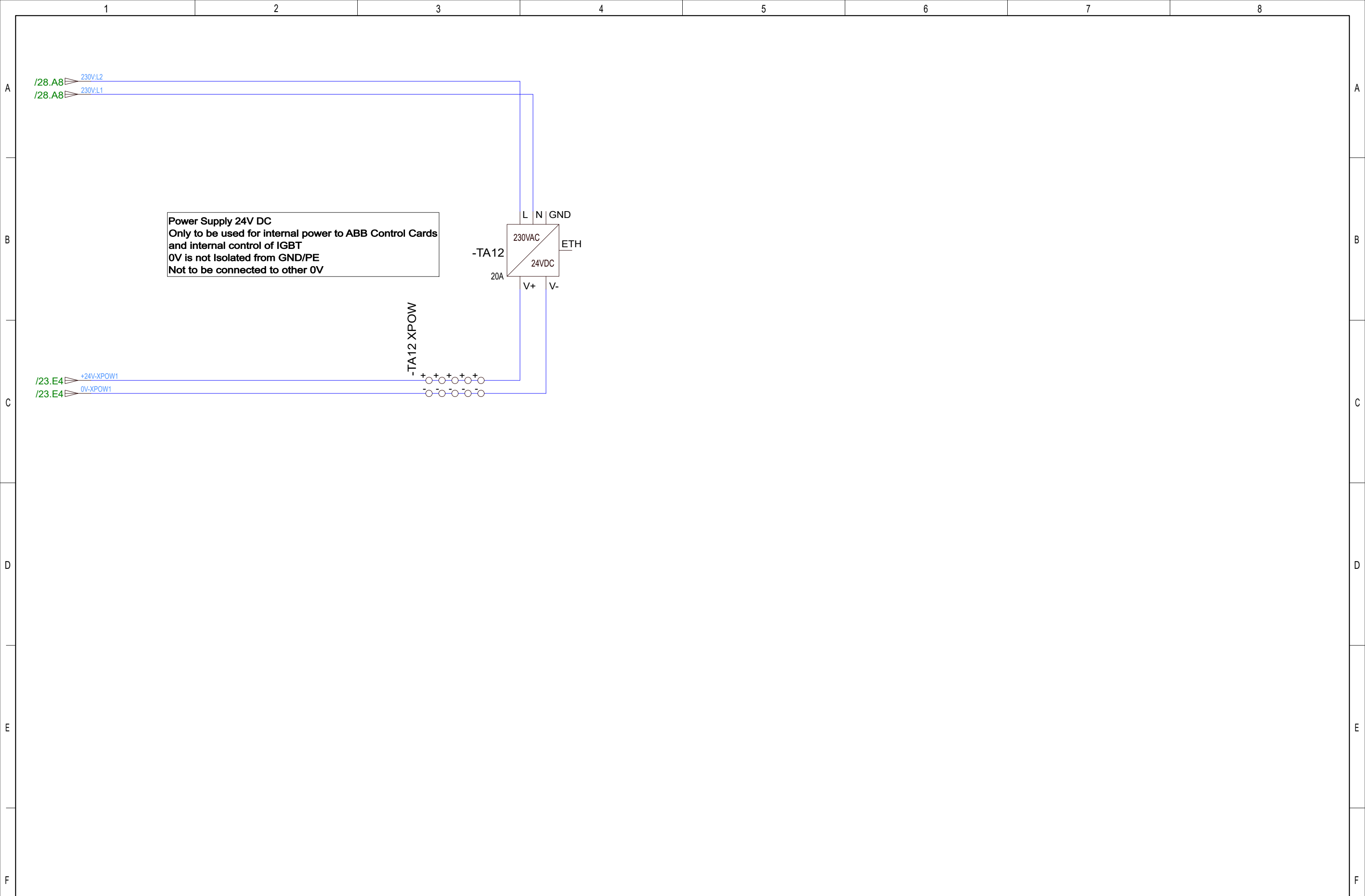
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	Added WP03 connections	21.11.2022	ANP	User	GSK										
	AS BUILT	19.08.2022	SS	Approved	RAJ									Rev. G	
Status	Change	Date	Name	Standard		Version	Index	Repl. by				10070-01 CC		Sheet 26	Next 27



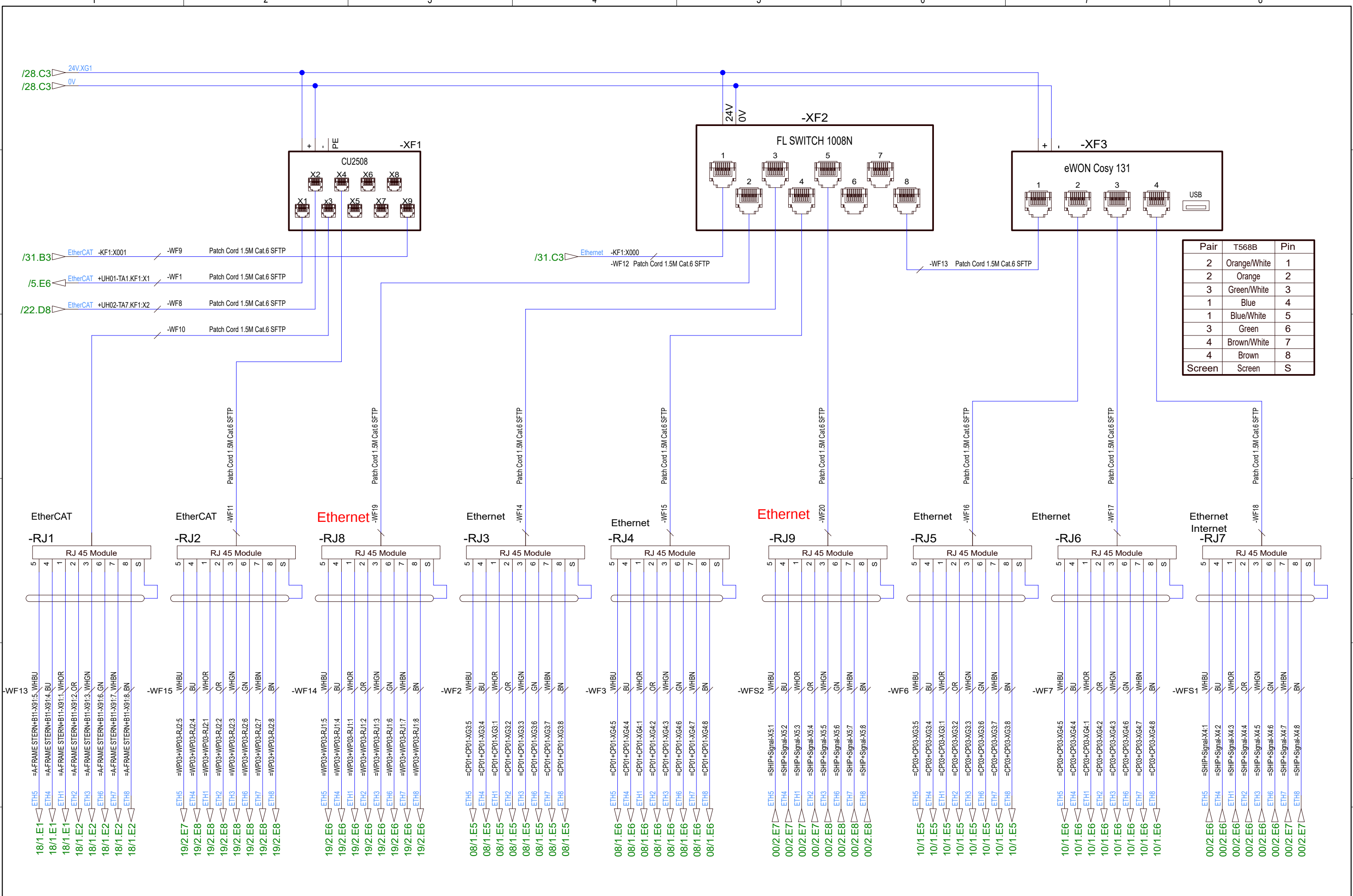
				Date	17/11-2021	CNP Freire MBarí				Main VFD Cabinet Pentagon Pentagon Control Cabinet Heating Distribution, Cabinet Heating Control Panel Heating	400092375		=WCS01	
	Added WP03 connections	21.11.2022	ANP	User	GSK								+UH03	
	AS BUILT	19.08.2022	SS	Approved	RAJ								Rev.	G
Status	Change	Date	Name	Standard		Version	Index	Repl. by	10070-01 CC		Next	28		

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				Date	17/11-2021	CNP Freire MBari				Main VFD Cabinet Pentagon Pentagon Control Cabinet VFD Controlcard Powersupply	400092375		=WCS01	
				User	GSK								+UH03	
	AS BUILT	19.08.2022	SS	Approved	RAJ							10070-01 CC	Rev. G	Sheet 29
Status	Change	Date	Name	Standard		Version	Index	Repl. by						Next 30

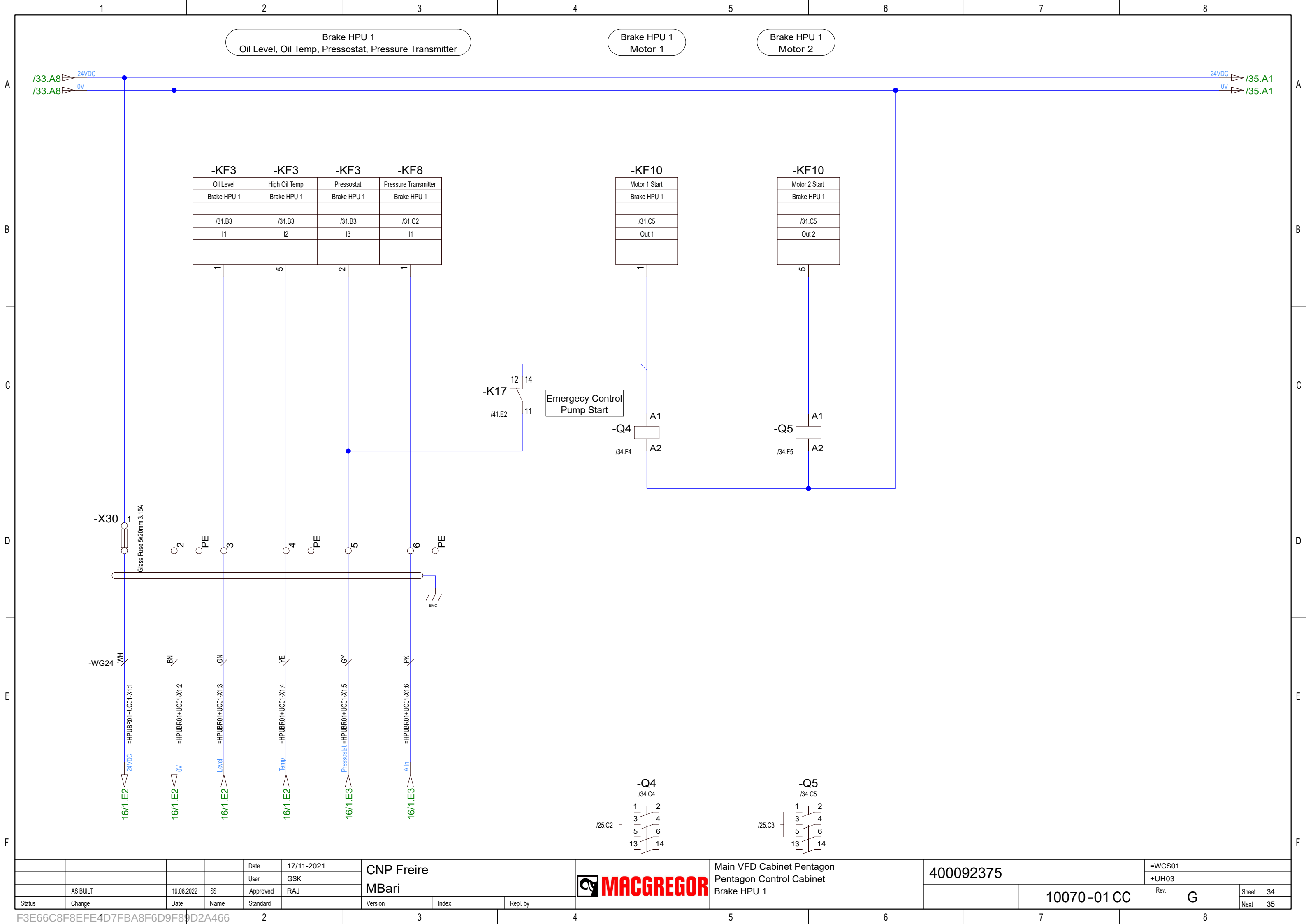


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	ETH Switch & Added WP03 conn.	21.11.2022	ANP	User	GSK								+UH03	
	AS BUILT	19.08.2022	SS	Approved	RAJ						10070-01 CC	Rev. G	Sheet 30	
Status	Change	Date	Name	Standard		Version	Index	Repl. by					Next 31	

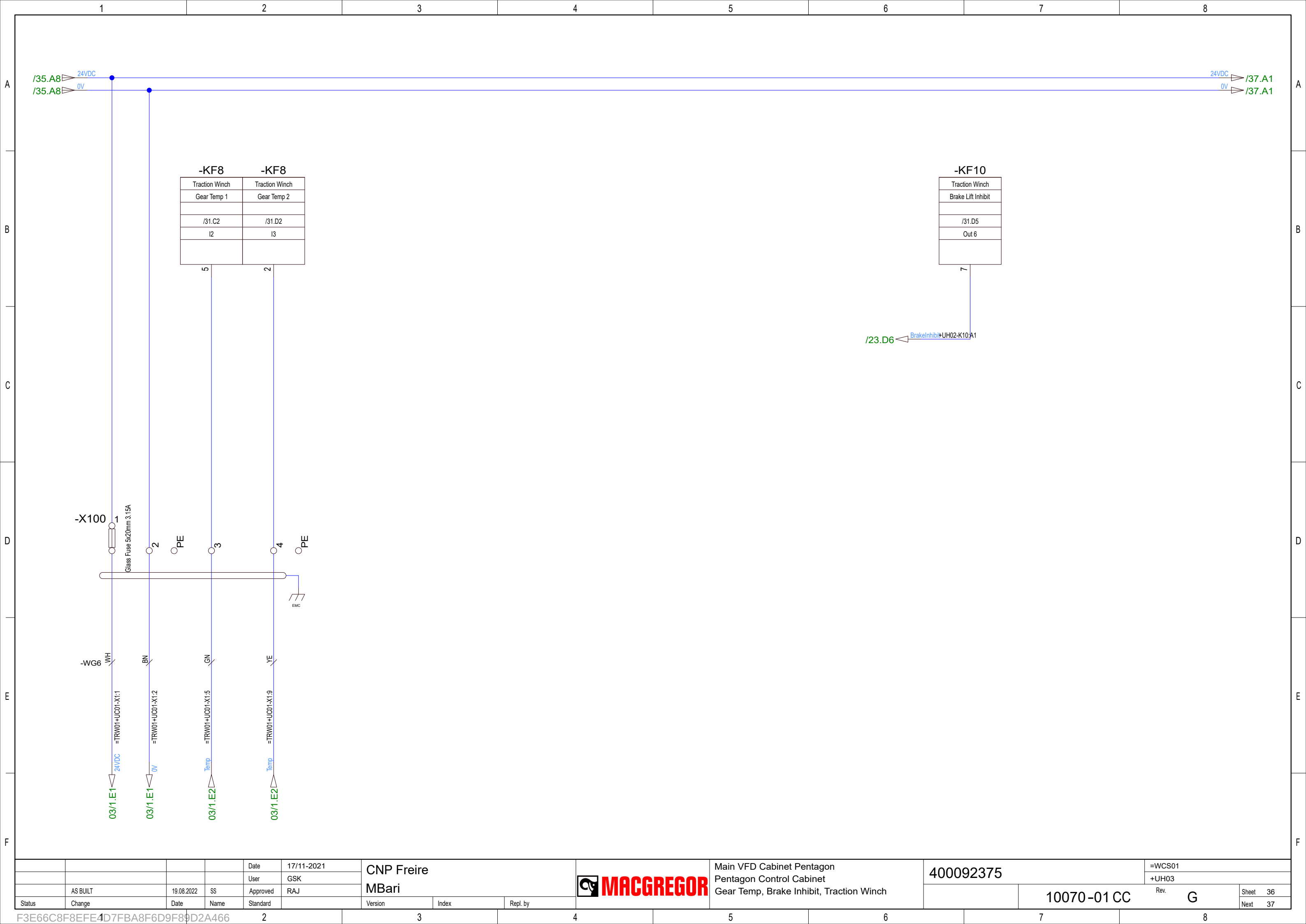
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EL9410	EL2535-0002 2 PWM Outputs	EL4024 4-ch analog out 4...20 mA	EL3054 4 Analog Inputs 4-20mA																																																														
<table><tr><td>E-Bus Supply</td></tr><tr><td>/28.B2</td></tr></table>	E-Bus Supply	/28.B2	<table><tr><th>I/O</th><th>Ref</th><th>Address</th><th>Description</th></tr><tr><td>PWM 1</td><td>/38.B6</td><td></td><td>SWC Valve</td></tr><tr><td>PWM 2</td><td></td><td></td><td></td></tr><tr><td>I1</td><td></td><td></td><td></td></tr><tr><td>I2</td><td></td><td></td><td></td></tr></table>	I/O	Ref	Address	Description	PWM 1	/38.B6		SWC Valve	PWM 2				I1				I2				<table><tr><th>Outputs</th><th>Ref</th><th>Address</th><th>Description</th></tr><tr><td>Output 1</td><td>/45.B2</td><td></td><td>Actual Power</td></tr><tr><td>Output 2</td><td></td><td></td><td></td></tr><tr><td>Output 3</td><td></td><td></td><td></td></tr><tr><td>Output 4</td><td></td><td></td><td></td></tr></table>	Outputs	Ref	Address	Description	Output 1	/45.B2		Actual Power	Output 2				Output 3				Output 4				<table><tr><th>A-In</th><th>Ref</th><th>Address</th><th>Description</th></tr><tr><td>I1</td><td>/45.B2</td><td></td><td>Power Available</td></tr><tr><td>I2</td><td>/45.B3</td><td></td><td>Regeneration Limit</td></tr><tr><td>I3</td><td></td><td></td><td></td></tr><tr><td>I4</td><td></td><td></td><td></td></tr></table>	A-In	Ref	Address	Description	I1	/45.B2		Power Available	I2	/45.B3		Regeneration Limit	I3				I4			
E-Bus Supply																																																																	
/28.B2																																																																	
I/O	Ref	Address	Description																																																														
PWM 1	/38.B6		SWC Valve																																																														
PWM 2																																																																	
I1																																																																	
I2																																																																	
Outputs	Ref	Address	Description																																																														
Output 1	/45.B2		Actual Power																																																														
Output 2																																																																	
Output 3																																																																	
Output 4																																																																	
A-In	Ref	Address	Description																																																														
I1	/45.B2		Power Available																																																														
I2	/45.B3		Regeneration Limit																																																														
I3																																																																	
I4																																																																	
<table><tr><td>Power Contacts</td></tr><tr><td>/28.B7</td></tr><tr><td></td></tr></table>	Power Contacts	/28.B7																																																															
Power Contacts																																																																	
/28.B7																																																																	

-KF18	-KF19	-KF20	-KF21	-KF22																																																																																																																				
EL1918 8xDI TwinSAFE		EL2911 4xDI, 1xOut TwinSAFE		EL6751 CANopen																																																																																																																				
Adress 1	Adress 2	Adress 3 (Target)		Bus End Cover																																																																																																																				
<table><tr><th>I/O</th><th>Ref</th><th>Adress</th><th>Description</th></tr><tr><td>I1</td><td>/42.B4</td><td></td><td>Emergency Stop</td></tr><tr><td>I2</td><td>/42.B4</td><td></td><td>Emergency Stop</td></tr><tr><td>I3</td><td>/43.B4</td><td></td><td>Emergency Stop</td></tr><tr><td>I4</td><td>/43.B4</td><td></td><td>Emergency Stop</td></tr><tr><td>I5</td><td></td><td></td><td>Emergency Stop</td></tr><tr><td>I6</td><td></td><td></td><td>Emergency Stop</td></tr><tr><td>I7</td><td></td><td></td><td>Emergency Stop</td></tr><tr><td>I8</td><td></td><td></td><td>Emergency Stop</td></tr></table>	I/O	Ref	Adress		Description	I1	/42.B4		Emergency Stop	I2	/42.B4		Emergency Stop	I3	/43.B4		Emergency Stop	I4	/43.B4		Emergency Stop	I5			Emergency Stop	I6			Emergency Stop	I7			Emergency Stop	I8			Emergency Stop	<table><tr><th>I/O</th><th>Ref</th><th>Adress</th><th>Description</th></tr><tr><td>I1</td><td>/46.B1</td><td></td><td>Emergency Stop</td></tr><tr><td>I2</td><td>/46.B2</td><td></td><td>Emergency Stop</td></tr><tr><td>I3</td><td>/46.B3</td><td></td><td>Emergency Stop</td></tr><tr><td>I4</td><td>/46.B3</td><td></td><td>Emergency Stop</td></tr><tr><td>I5</td><td>/46.B5</td><td></td><td>Emergency Stop</td></tr><tr><td>I6</td><td>/46.B5</td><td></td><td>Emergency Stop</td></tr><tr><td>I7</td><td></td><td></td><td>Emergency Stop</td></tr><tr><td>I8</td><td></td><td></td><td>Emergency Stop</td></tr></table>	I/O	Ref	Adress	Description	I1	/46.B1		Emergency Stop	I2	/46.B2		Emergency Stop	I3	/46.B3		Emergency Stop	I4	/46.B3		Emergency Stop	I5	/46.B5		Emergency Stop	I6	/46.B5		Emergency Stop	I7			Emergency Stop	I8			Emergency Stop	<table><tr><th>I/O</th><th>Ref</th><th>Adress</th><th>Description</th></tr><tr><td>I1</td><td></td><td></td><td></td></tr><tr><td>I2</td><td></td><td></td><td></td></tr><tr><td>I3</td><td></td><td></td><td></td></tr><tr><td>I4</td><td></td><td></td><td></td></tr><tr><td>Power supply</td><td>/28.B7</td><td></td><td></td></tr><tr><td>Power supply</td><td></td><td></td><td></td></tr><tr><td>Safe Output 1</td><td></td><td></td><td></td></tr><tr><td>Safe Output 1</td><td>/41.B4</td><td></td><td>Emergency Stop</td></tr></table>	I/O	Ref	Adress	Description	I1				I2				I3				I4				Power supply	/28.B7			Power supply				Safe Output 1				Safe Output 1	/41.B4		Emergency Stop	<table><tr><th>I/O</th><th>Ref</th><th>Adress</th><th>Description</th></tr><tr><td>CAN D-sub</td><td>/33.B2</td><td></td><td>CAN BUS</td></tr></table>	I/O	Ref	Adress	Description	CAN D-sub	/33.B2		CAN BUS
I/O	Ref	Adress	Description																																																																																																																					
I1	/42.B4		Emergency Stop																																																																																																																					
I2	/42.B4		Emergency Stop																																																																																																																					
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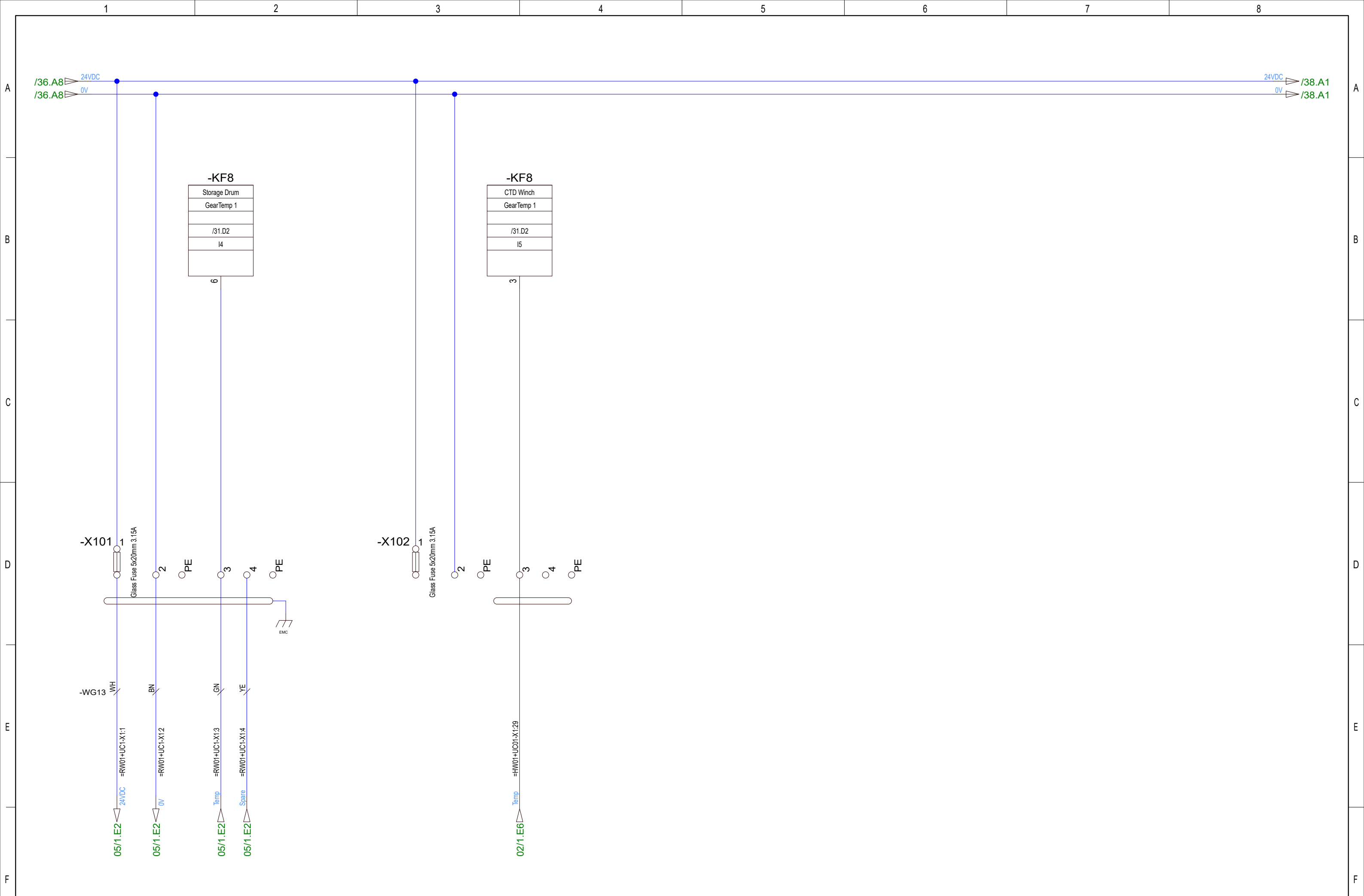




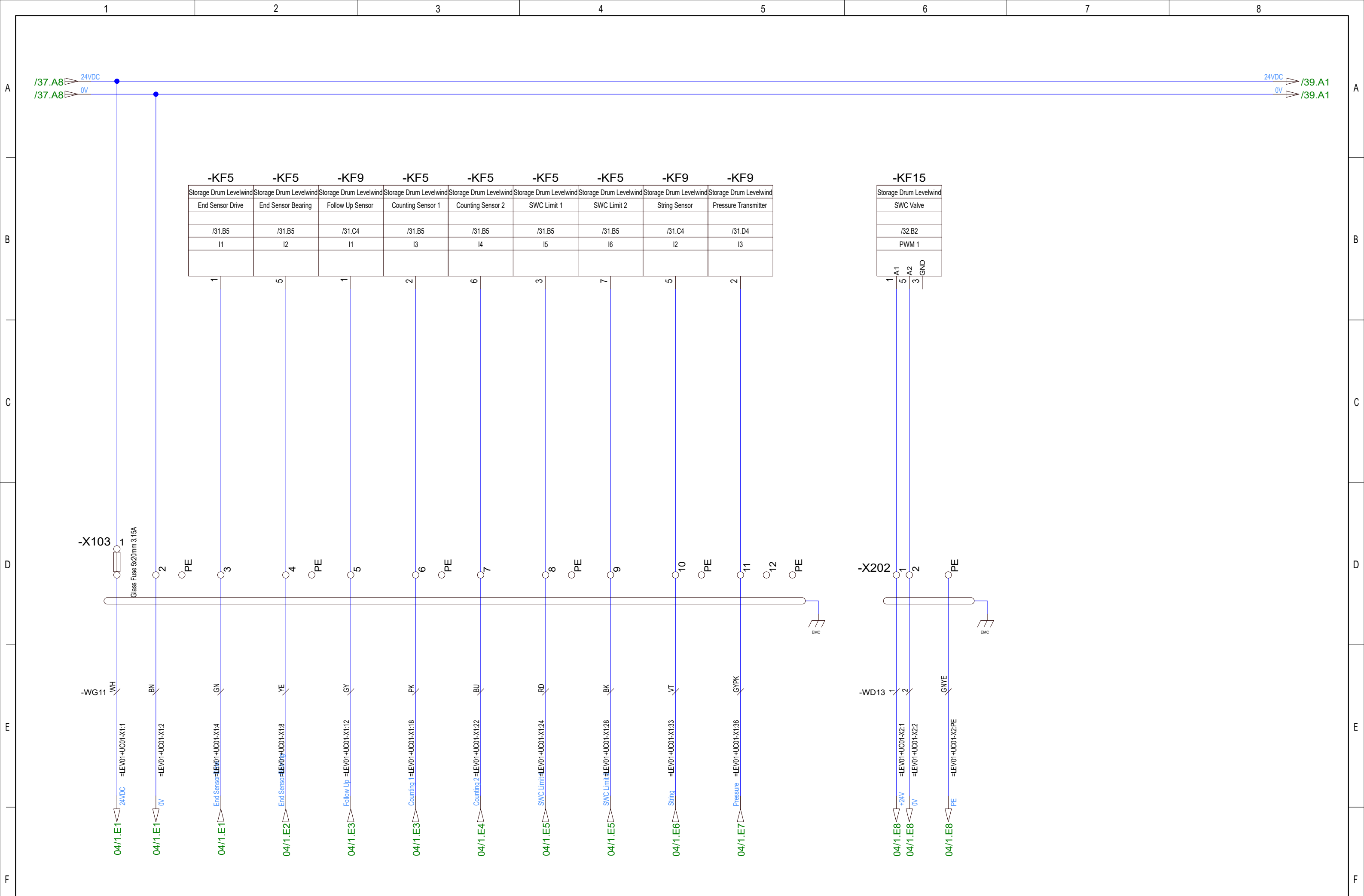


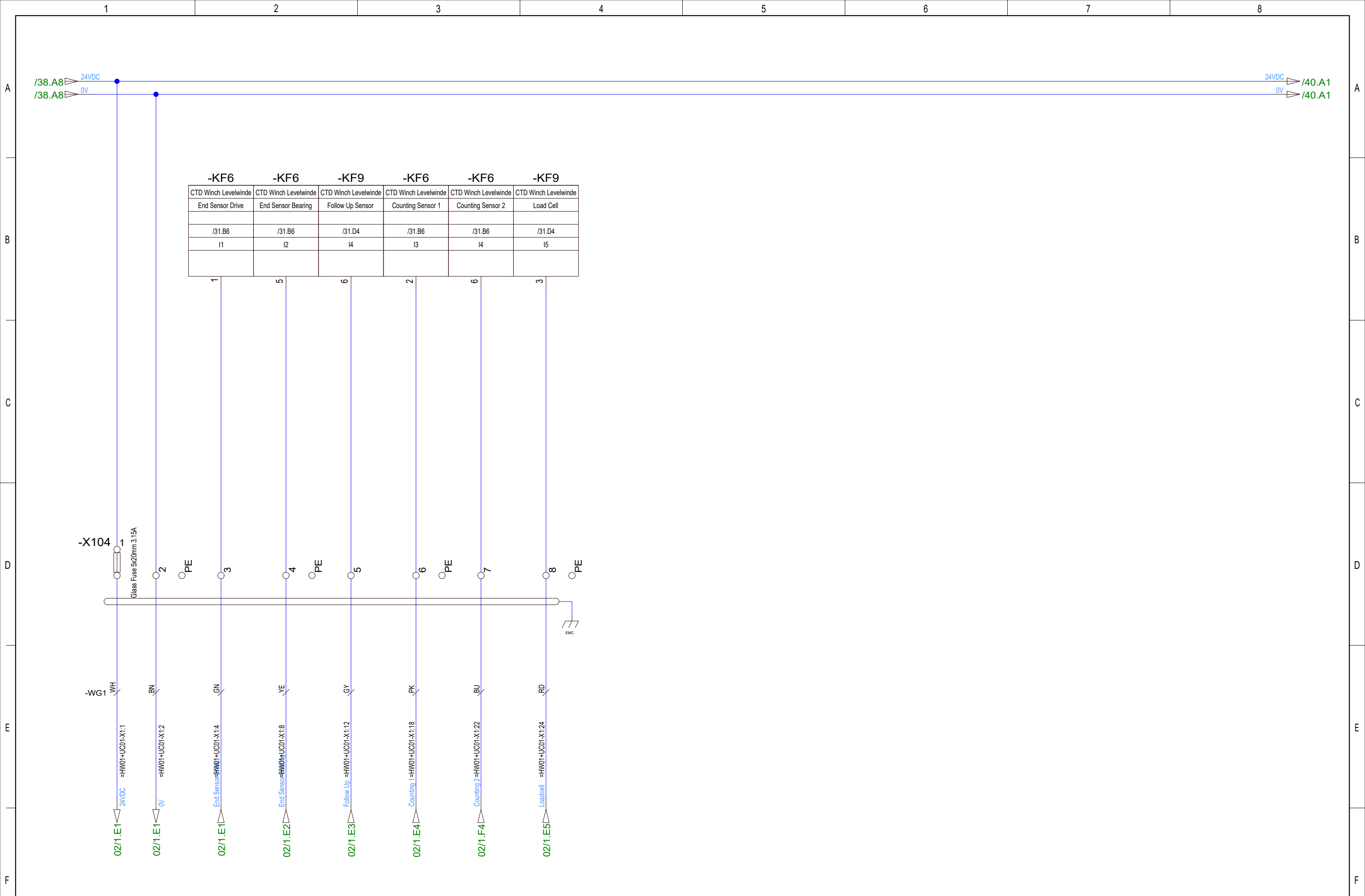


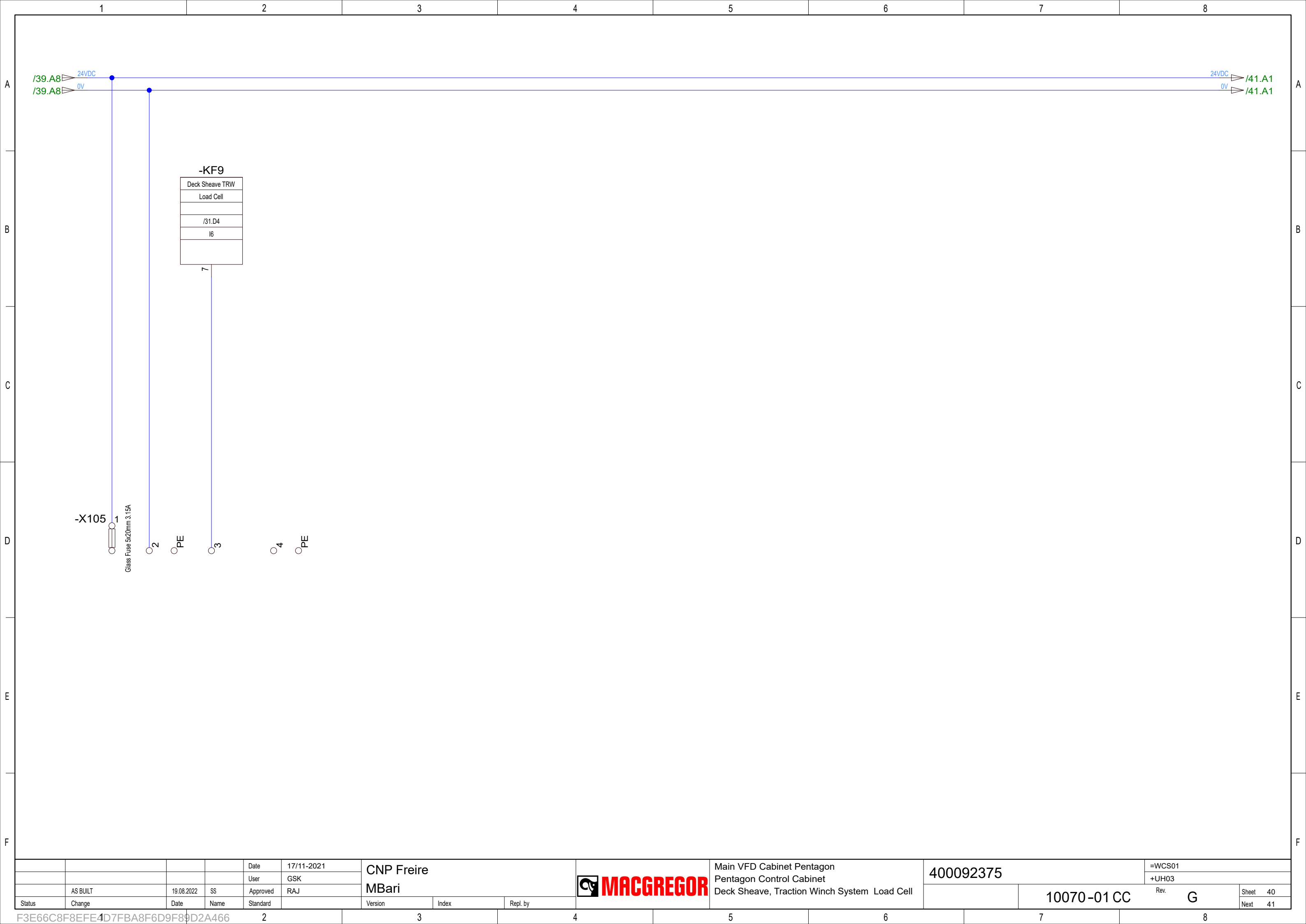
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				User	GSK								+UH03		
	AS BUILT	19.08.2022	SS	Approved	RAJ										
Status	Change	Date	Name	Standard		Version	Index	Repl. by				10070-01 CC	Rev.	G	Sheet 36
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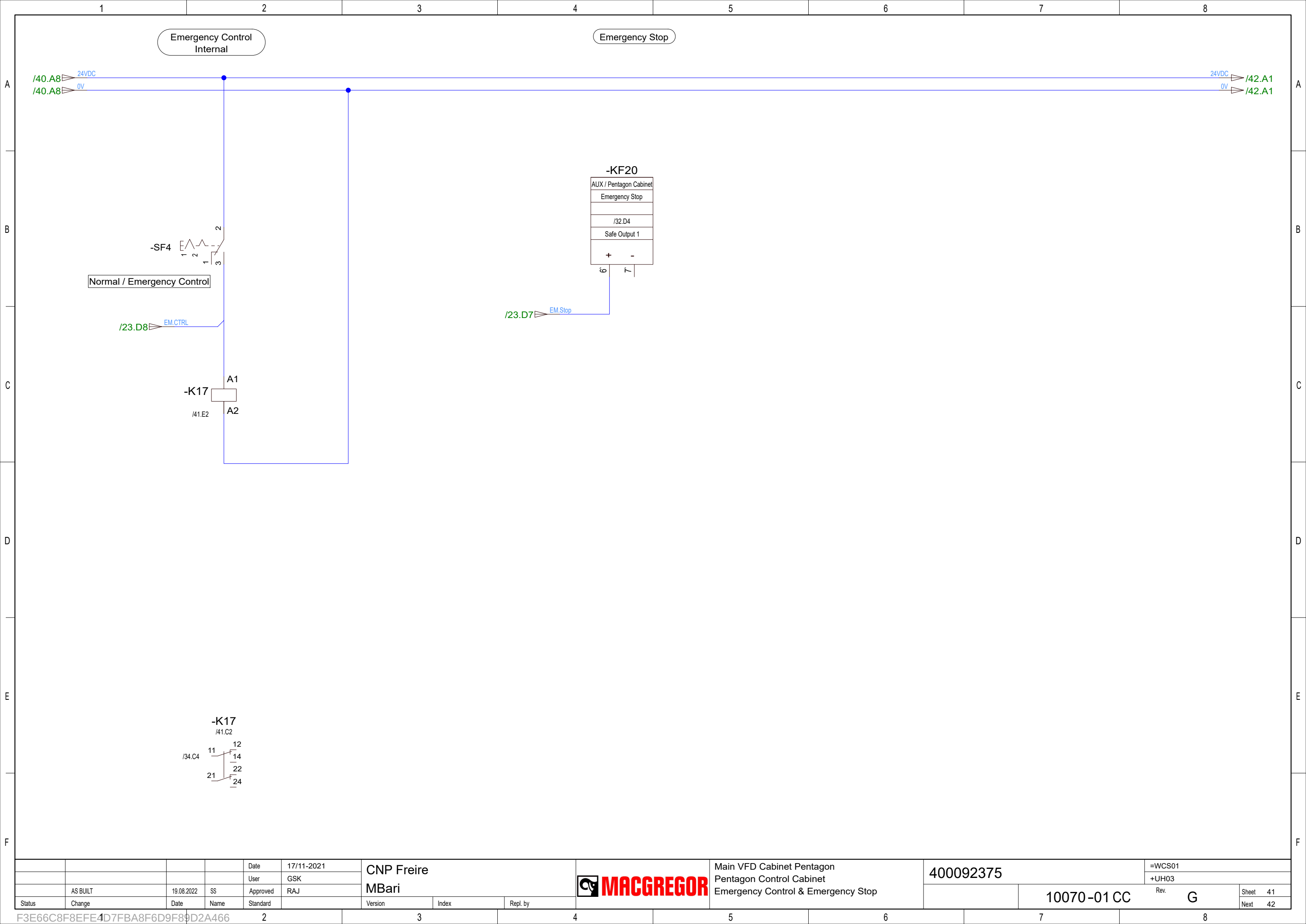
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Status	Change	Date	Name	Standard		Version	Index	Repl. by				10070-01 CC		Next 38



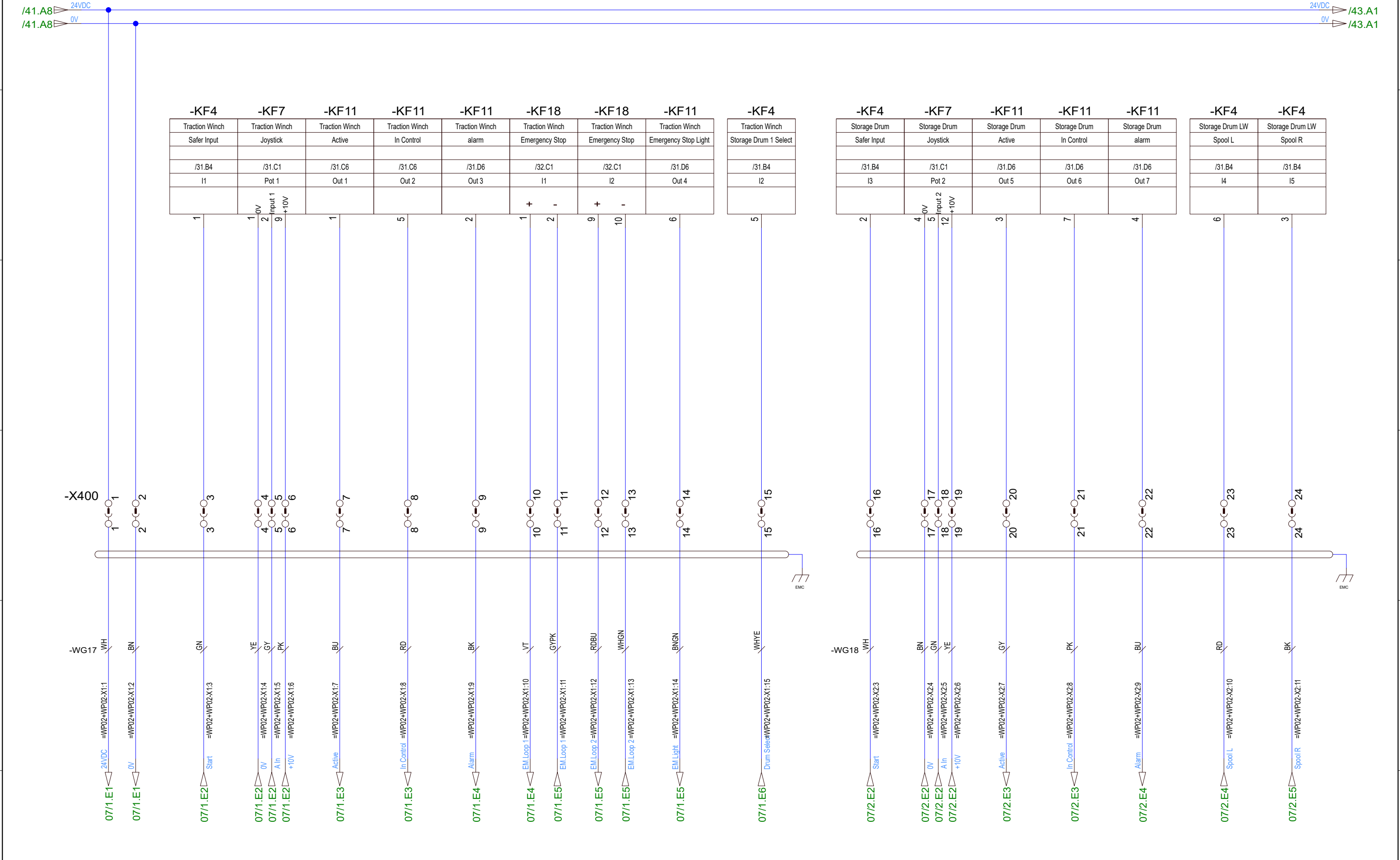


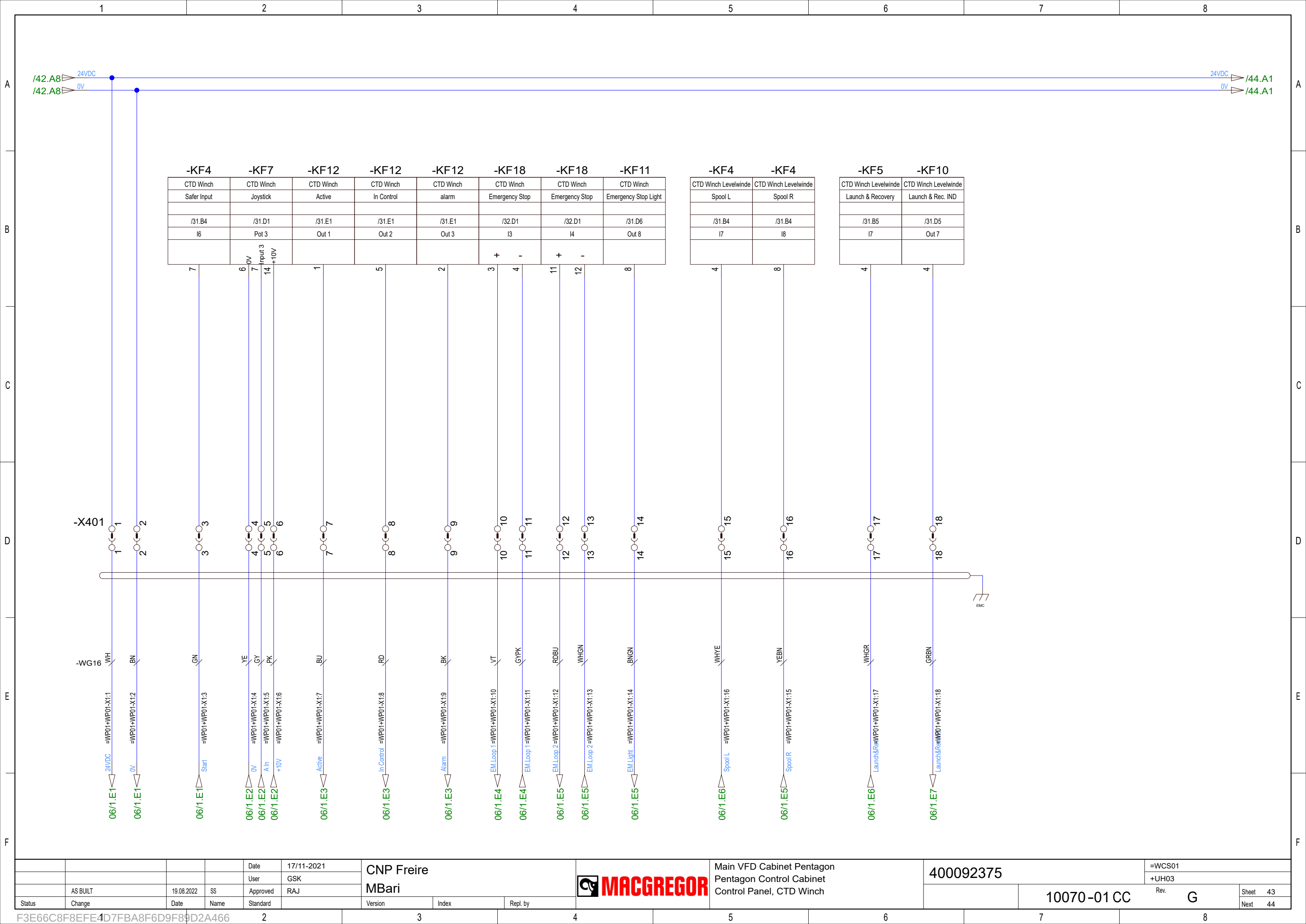


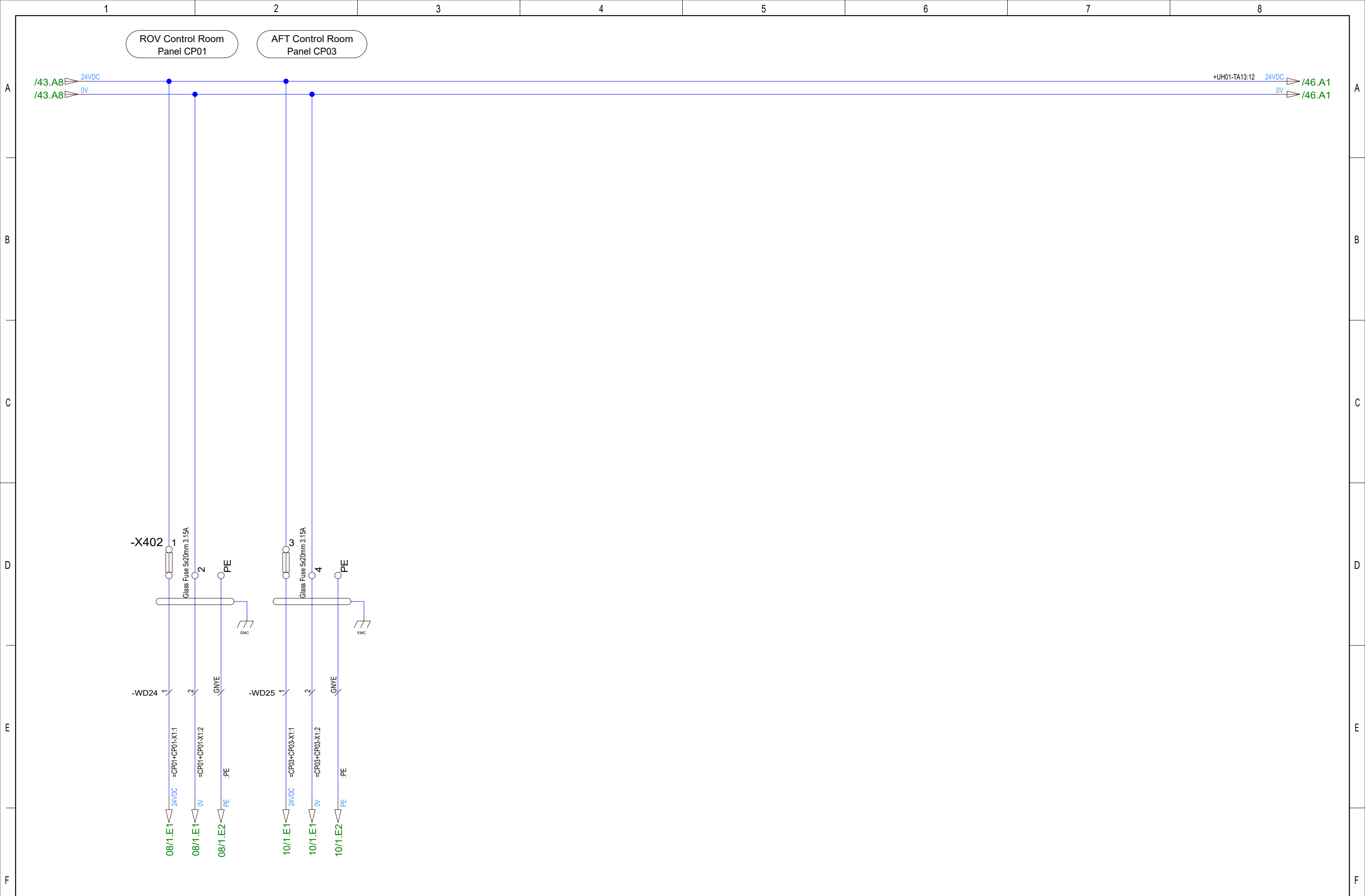
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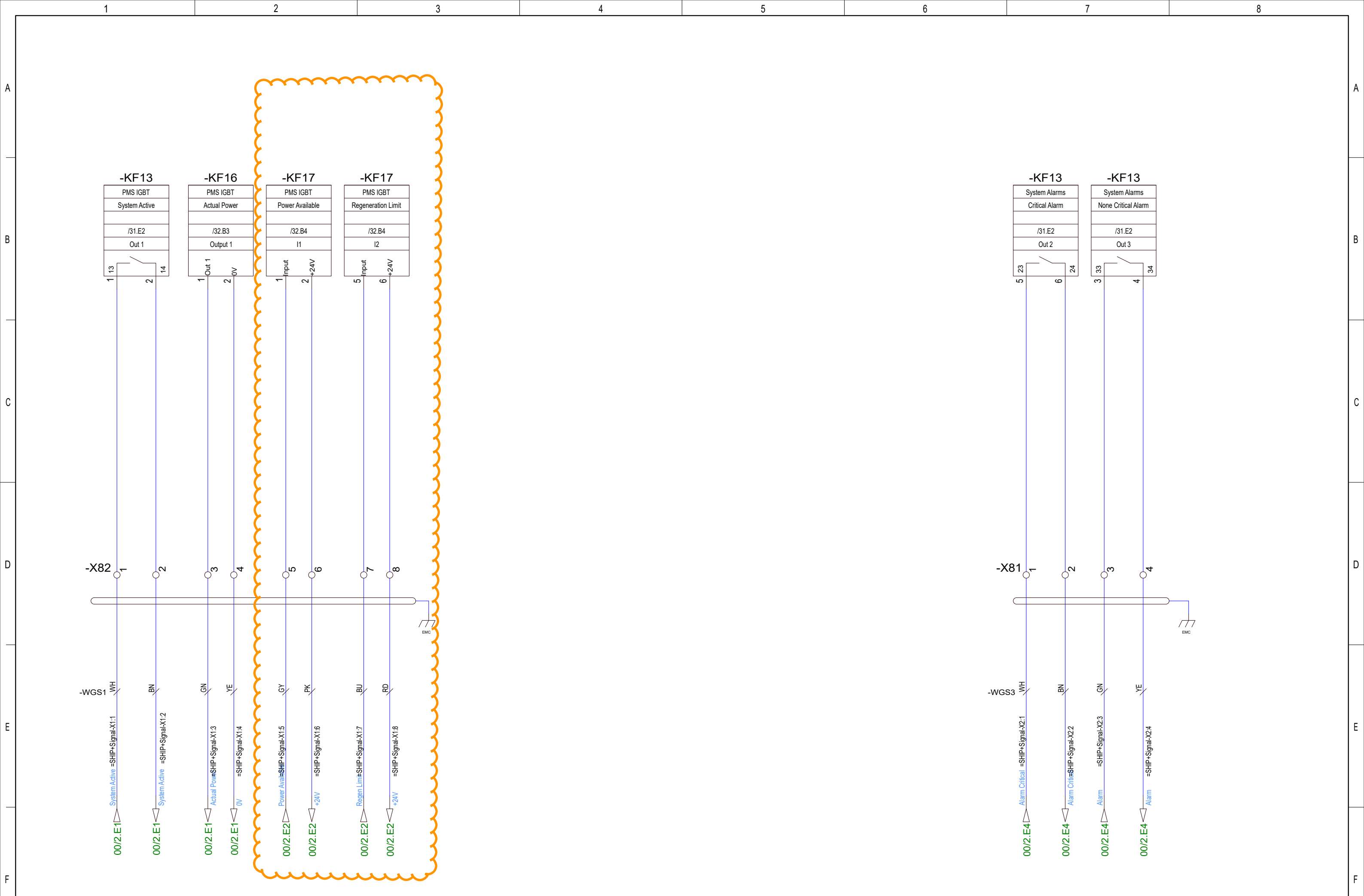
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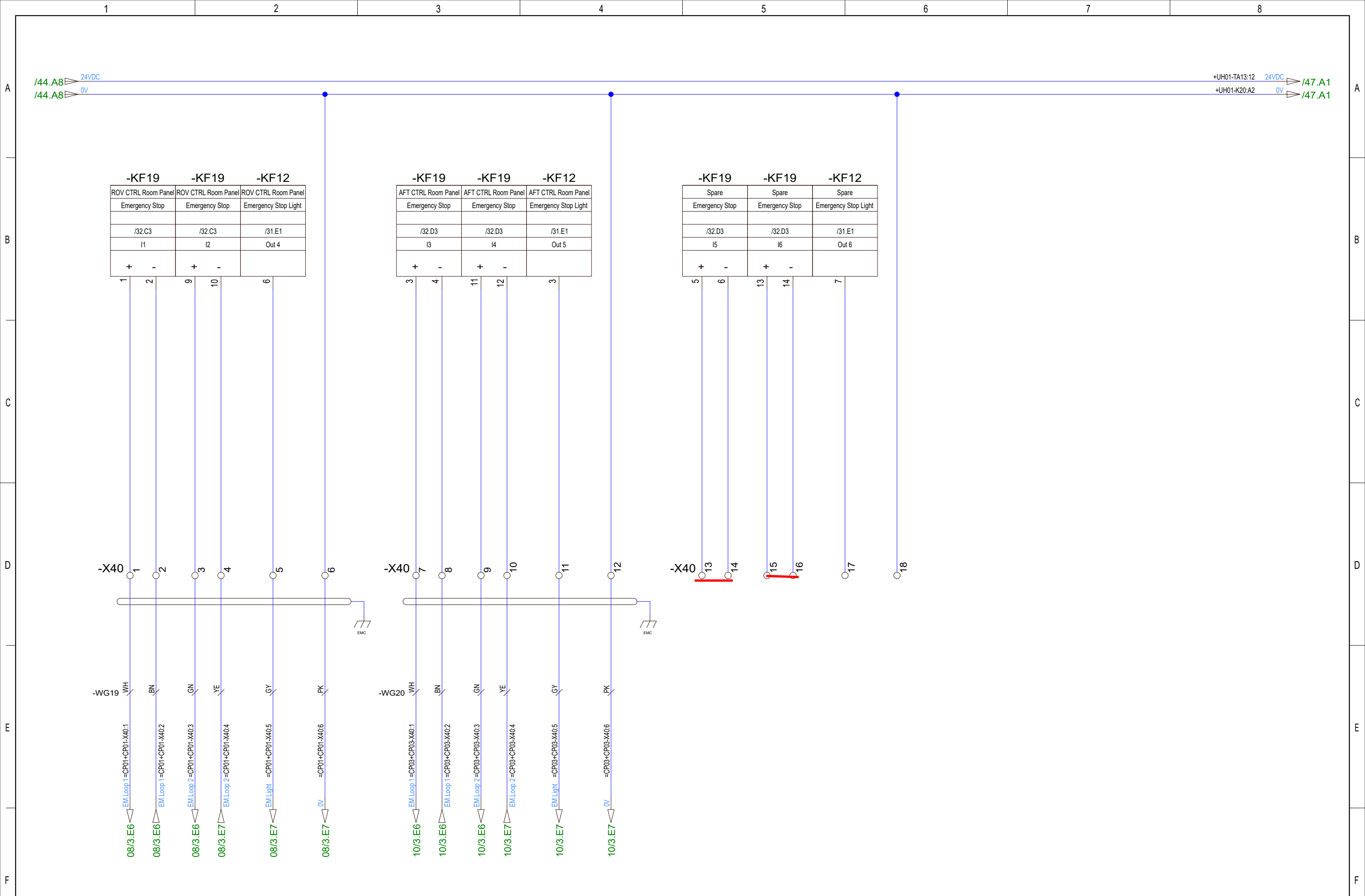


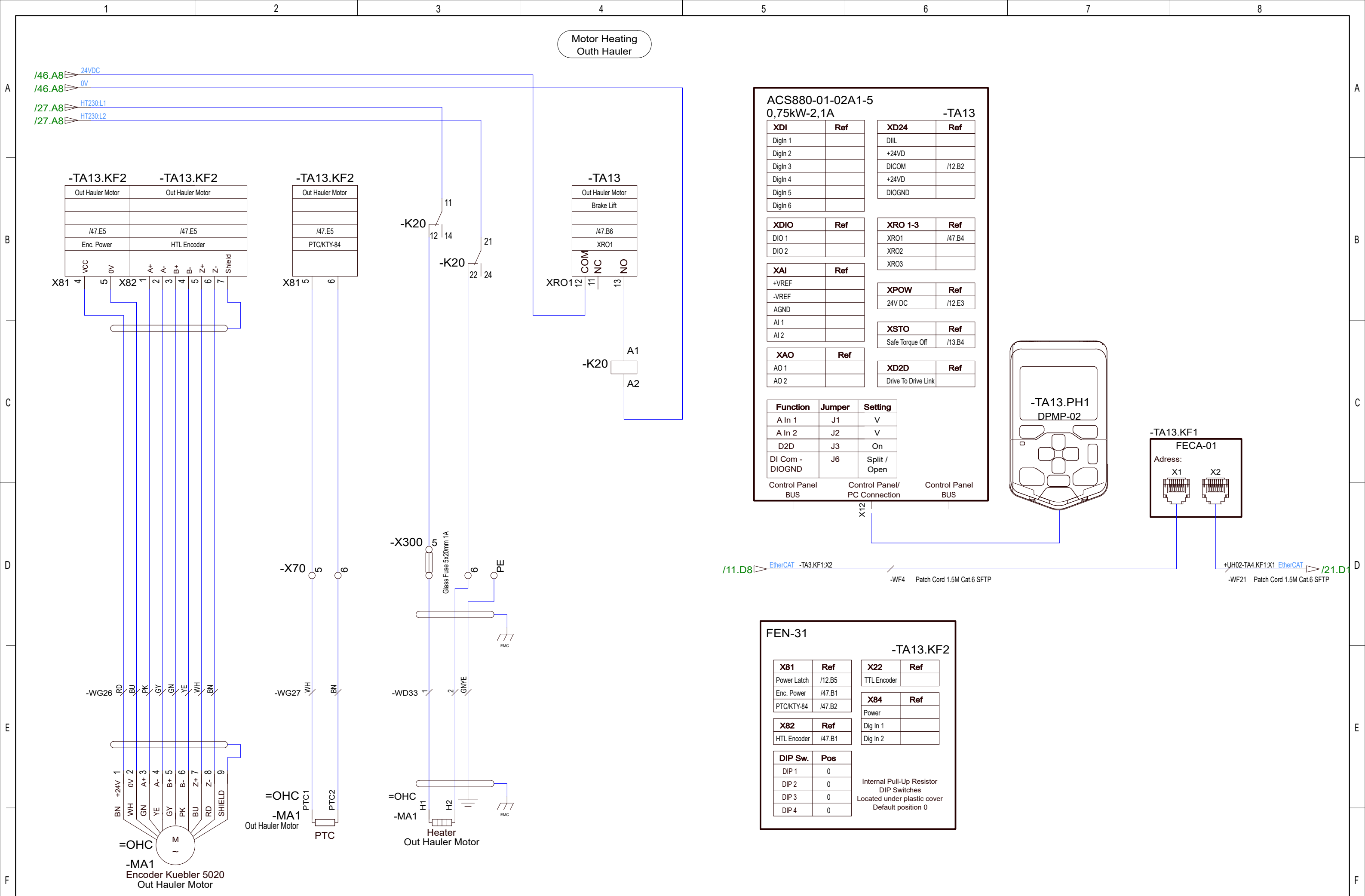


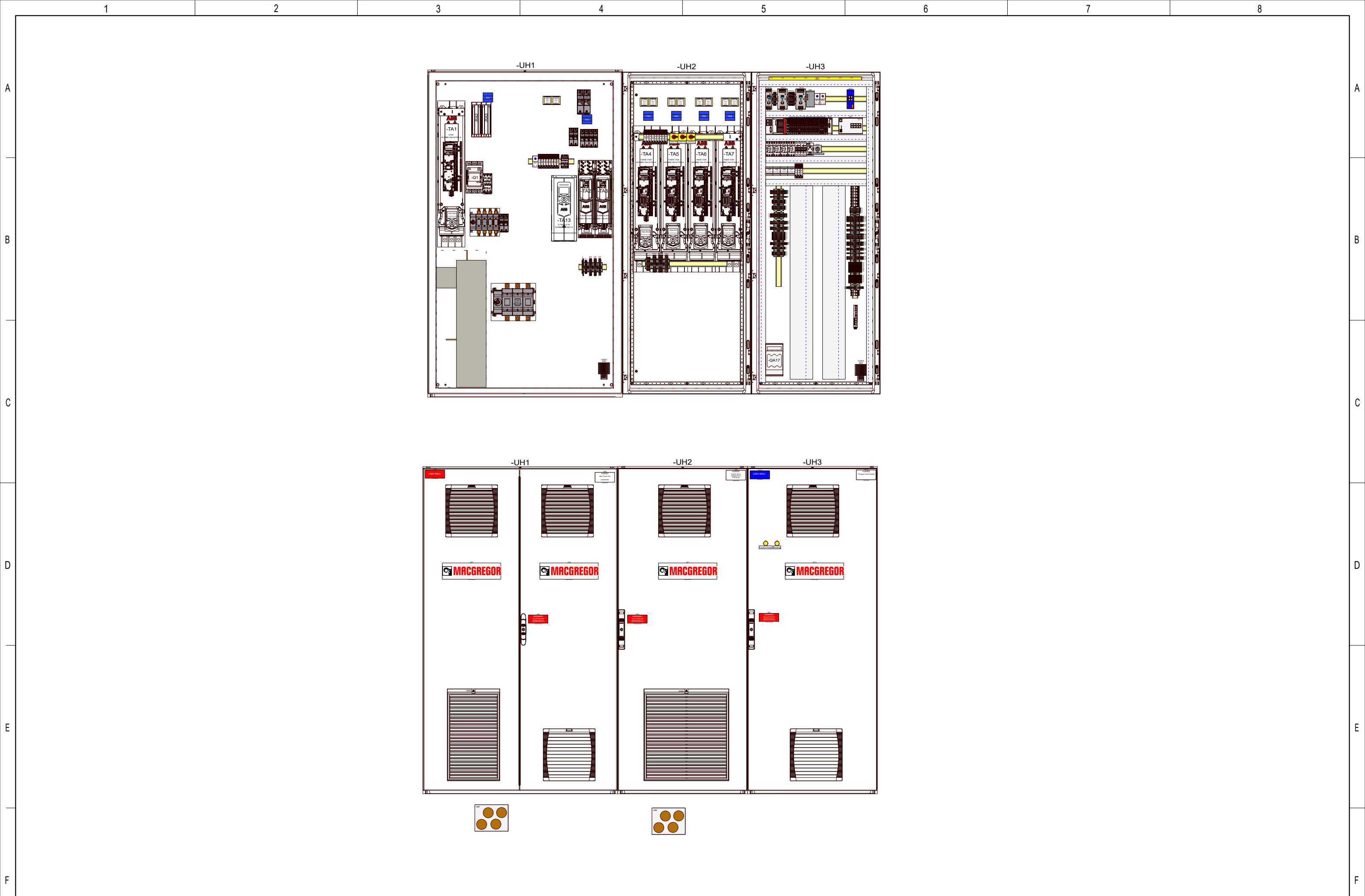


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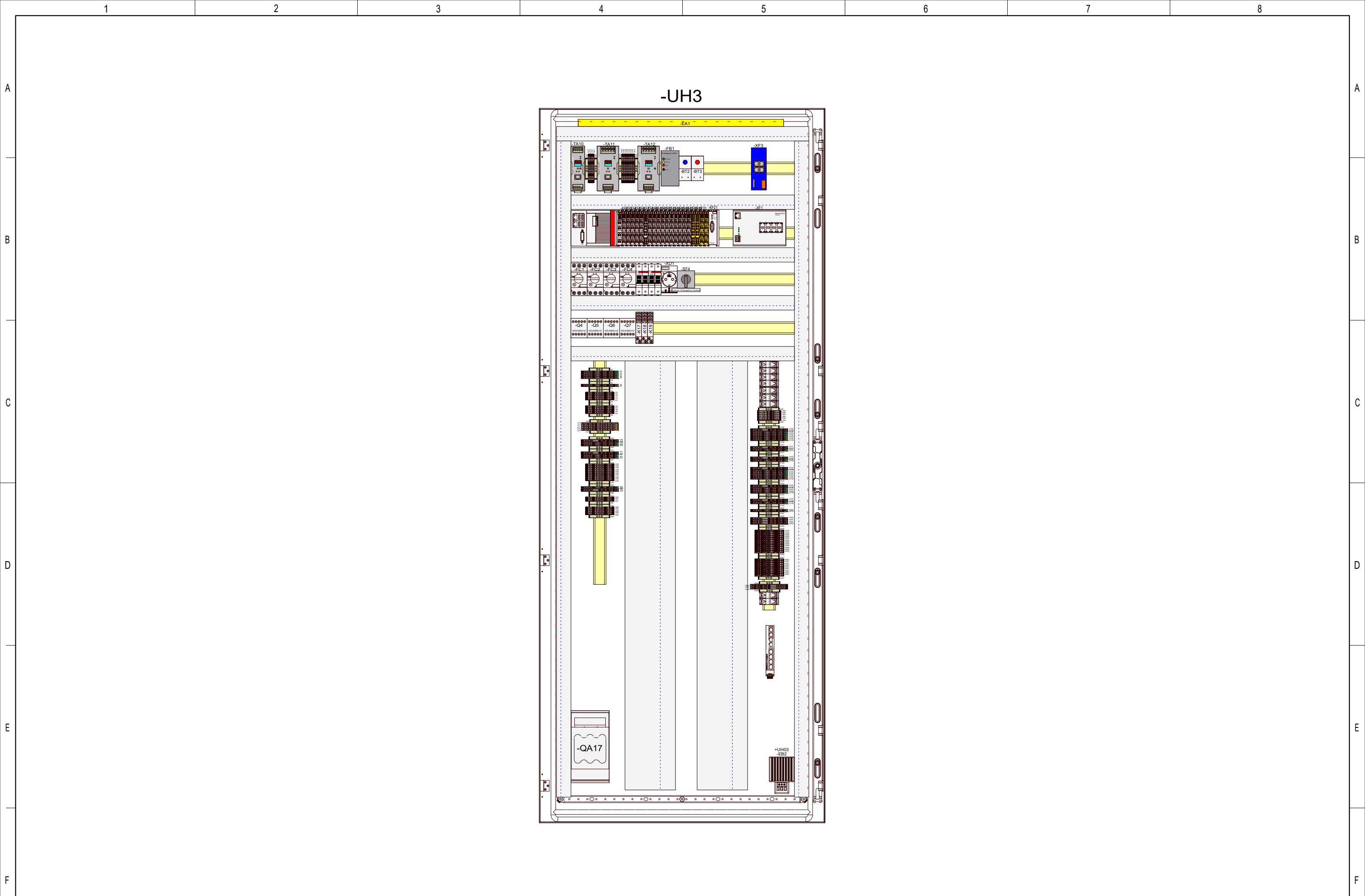








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Status	Change	Date	Name	Standard		Version	Index	Repl. by						10070-01 GA		Rev. G	Sheet 1
																Next 2	



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	Added WP03 connections	21.11.2022	ANP	User	GSK									
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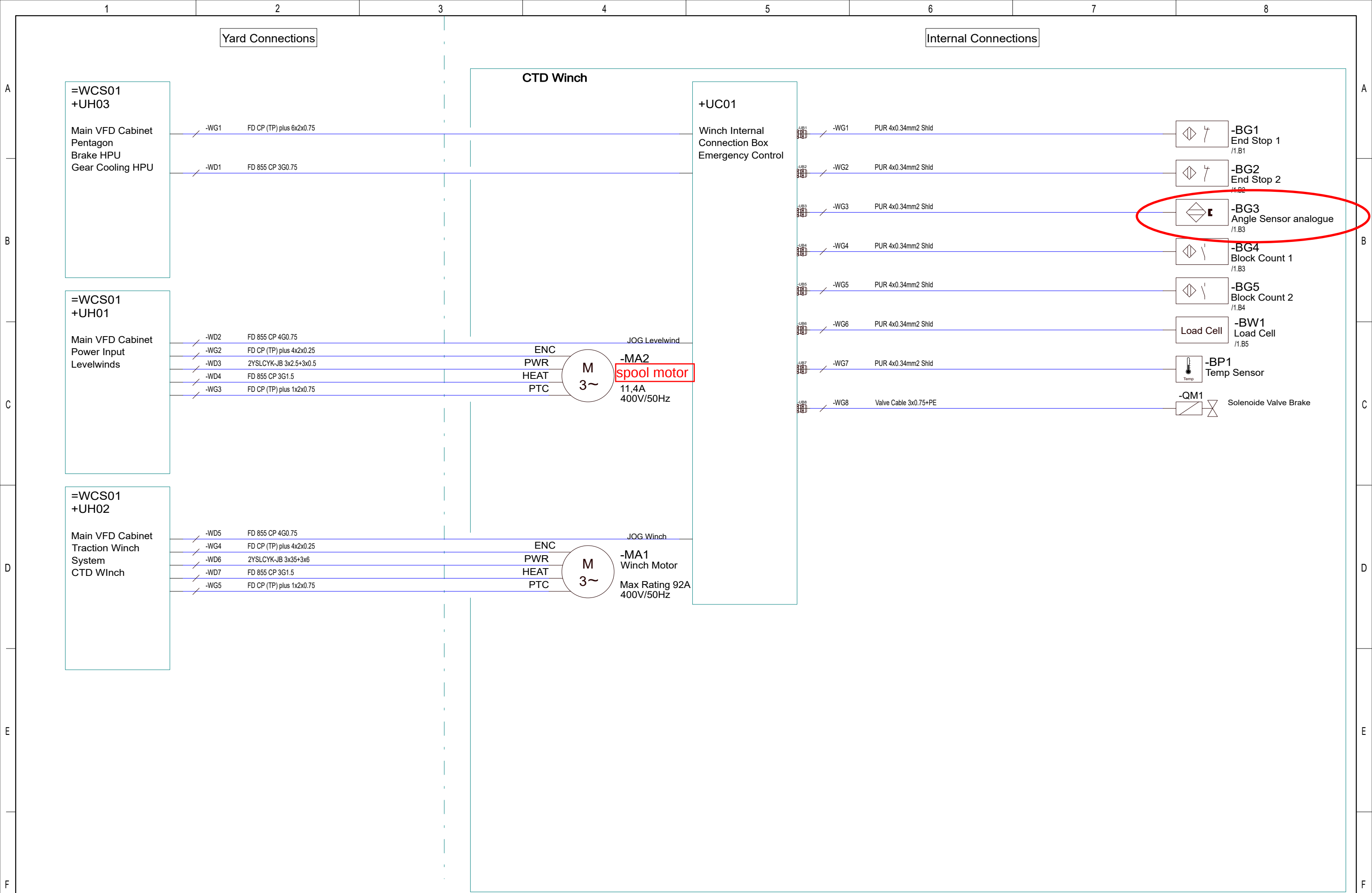
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			User			MBarí			Part list	400092375		
	AS BUILT	19.08.2022	SS	Approved								
Status	Change	Date	Name	Standard		Version	Index	Repl. by			10070-01 PL	G
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1		2		3		4		5		6		7		8				
Device ID		Device		Part Number		Qty	Unit	Description		Manufacturer		Datablad						
-KF2		EL6070		400092430		1	Pcs	License key terminal		Beckhoff		Documentation						
-KF2		TC1200-0240		400180043		1	Pcs	TwinCAT 3 TC3 PLC, platform 40 (Performance)		Beckhoff								
-KF2		TF6020-0240		400186110		1	Pcs	TwinCAT 3 JSON Data Interface		Beckhoff		Datasheet						
-KF2		TF6220-0240		400186111		1	Pcs	TwinCAT 3 EtherCAT Redundancy 250		Beckhoff		Datasheet						
-KF3..-KF6		EL1008		ECPPEB04		4	Pcs	8 Digital Inputs		Beckhoff		Datasheet						
-KF7		EL3255		ECPPEB16		1	Pcs	5-Ch Input Potentiometer		Beckhoff		Datasheet						
-KF8,-KF9		EL3058		ECPPEB14		2	Pcs	8 Analog Inputs 4-20mA		Beckhoff		Datasheet						
-KF10..-KF12		EL2008		ECPPEB06		3	Pcs	8 Digital Outputs		Beckhoff		Datasheet						
-KF13		EL2624		ECPPEB07		1	Pcs	4 Relay Outputs		Beckhoff		Datasheet						
-KF14		EL9410		ECPPEB18		1	Pcs	Power Supply Terminal fro E-bus		Beckhoff		Datasheet						
-KF15		EL2535-0002		ECPPEB08		1	Pcs	2 PWM Outputs, 2 Digtal Inputs		Beckhoff		Datasheet						
-KF16		EL4024		400090871		1	Pcs	4-channel analog output terminal 4...20 mA, 12 bit		Beckhoff		Datasheet						
-KF17		EL3054		ECPPEB13		1	Pcs	4 Analog Inputs 4-20mA		Beckhoff		Datasheet						
-KF18,-KF19		EL1918		ECPPEB09		2	Pcs	TwinSAFE 8 Digital Inputs		Beckhoff		Datasheet						
-KF20		EL2911		ECPPEB10		1	Pcs	TwinSAFE 4 Digital Inputs, 1x Output		Beckhoff		Datasheet						
-KF21		EL6751		400090873		1	Pcs	CANopen master/slave terminal		Beckhoff		Datasheet						
-KF22		EL9011		ECPPEB02		1	Pcs	Bus end cap		Beckhoff								
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-PF1,-PF2		800F-N7W		EACBU0094		2	Pcs	Led Module White 240V AC		Allen Bradley		800f-sg001_-en-p.pdf						
-PF1,-PF2		800FP-P5		EACSW0253		2	Pcs	Lamphead Yellow Ø22.5		Allen Bradley		800f-sg001_-en-p.pdf						
-PF1,-PF2		AB Indicator Lamp Yellow 240V AC		EACSW25		2	Pcs	Signal Lamp Yellow 240V AC		Allen Bradley		800f-sg001_-en-p.pdf						
-Q1		ABB AF205-30-11-33		ESTPA316		1	Pcs	Contactor 205A/350A AC3/AC1 230V Electronic PLC Coil		ABB		ABB\ABB AF Contactors. pdfDatasheet						
-Q3		ABB AF09-30-10-13		400090760		1	Pcs	Contactor 9A/25A AC3/AC1 100-250VAC Coil		ABB		ABB AF Contactors. pdf						
-Q4..-Q7		100-K09DJ10		ESTPA1123		4	Pcs	Mini Contactor 24V, 9A AC3, 20A AC1		Allen Bradley		100-K Mini Contactor.pdf						
-QA1,-QA2		Fuse SBFEC 450A 690V		400201775		2	Pcs	Square Body Flush End Size 1, 450A		Bussmann		BUS_Ele_SB_Flush_End _Contact.pdf						
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				User		MBarì						Part list						
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Status	Change	Date	Name	Standard		Version	Index	Repl. by						10070-01 PL	Rev.	G	Sheet 2	
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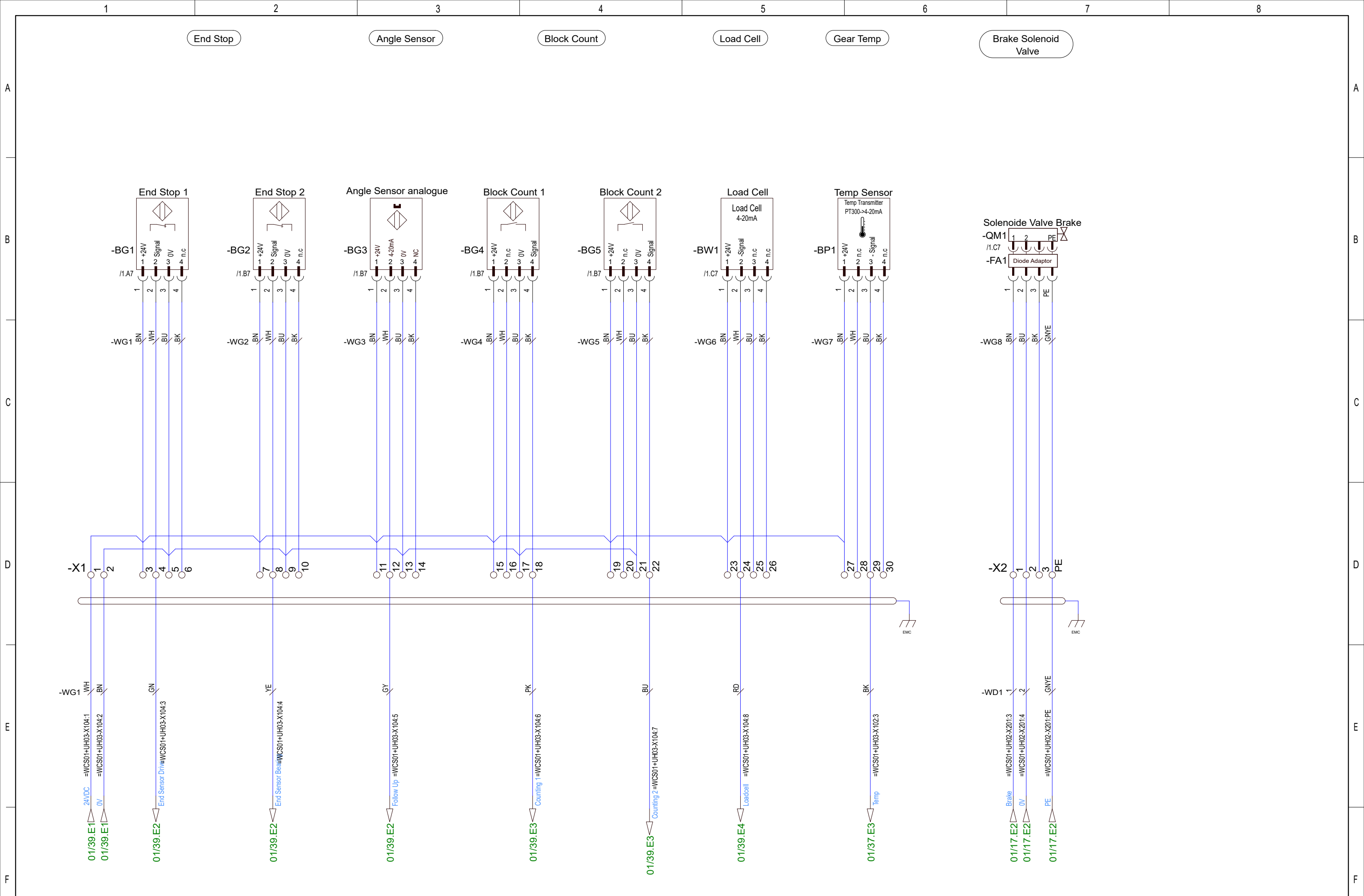
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	-TA1		ACS880-204-0210A-5		400182355		1		Pcs		IGBT Supply Unit 210A 500V		ABB		HW Manual		
B	-TA1.KF1,-TA2.KF1,-TA3.KF1,-TA4.KF1,-TA5.KF1,-TA6.KF1,-TA7.KF1		FECA-01		EFTRN7017		7		Pcs		EtherCAT Adaptor		ABB		Datasheet		
	-TA1.PH1,-TA2.PH1,-TA3.PH1,-TA4.PH1,-TA5.PH1,-TA6.PH1,-TA7.PH1		ACS-AP-W		EFTRN7001-1		7		Pcs		Control Panel Bluetooth		ABB		Datasheet		
C	-TA1.PH1,-TA4.PH1,-TA5.PH1,-TA6.PH1,-TA7.PH1		DPMP-02 R6/7 Mounting Plate		RHEFTRNABP-01		5		Pcs		Control Panel Mounting Kit, Bracket for R6/7 Modules		ABB		DPMP-02.pdf		
	-TA2.KF2,-TA3.KF2,-TA4.KF2,-TA5.KF2,-TA6.KF2,-TA7.KF2		FEN-31		EFTRN7002		6		Pcs		Encoder Card		ABB		FEN_31_UM_B_HTL_Encoder_Manual.pdf		
D	-TA2,-TA3		ACS880-104-0011A-5		EFTRN7104		2		Pcs		VFD 5,5kW /10,5A 500V		ABB		Control Card		
	-TA4,-TA5		ACS880-104-0170A-5		EFTRN7116		2		Pcs		VFD 110kW /170A 500V		ABB		Control Card		
E	-TA6,-TA7		ACS880-104-0110A-5		EFTRN7114		2		Pcs		VFD 75kW /110A 500V		ABB		Control Card		
	-TA10		S8VK-X24024A-EIP		EACTR035-10		1		Pcs		230/24V 10A Power Supply W/Display		Omron		S8VK-X.pdf		
F	-TA11,-TA12		S8VK-X48024A-EIP		EACTR036-10		2		Pcs		230/24V 20A Power Supply W/Display		Omron		S8VK-X.pdf		
	-TA12 XPOW (+,+,+,+,+),-XG1 (+,+,+),-XG2 (+,+,+,+,+,+)		ZDK 2.5 +/-		EACPL02055		15		Pcs		Terminal 2 Levels +/- Marking		Weidmüller		ZDK 2.5.pdf		
G	-U1..-U2,-U4,-U6,-U8,-U10..-U12						5,261		M		MOUNT						
	-U1..-U3,-U5,-U7,-U9,-U13..-U15						9,2		M		CABLE DUCT						
H	-UB1,-UB2		ABB EMC 4x Cable Entry		EACPGE500		2		Pcs		ABB EMC Cable entry for 4 Cables		ABB		3axd50000004817.pdf		
	-UH1		MCD20126R5		EACBO607		1		Pcs		Floor Cabinet		Eldon		MCD Datasheet.pdf		
I	-UH2,-UH3		MCS20086R5		EACBO550		2		Pcs		Floor Cabinet		Eldon		MCS Datasheet.pdf		
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J	-WM1..-WM2,-WM4..-WM5		Eldon EFA500-700R5		EFTRN000-0081		4		Pcs		Cabinet Cooling Fan Filter		Eldon		EFA500-700R5.pdf		
	-WM3		ABB Door Filter 400MM		EFTRN000-013-00		1		Pcs		Cabinet Cooling Fan Filter		ABB		3AUA0000116873.pdf		
K	-WM6		ABB Door Filter 600MM		EFTRN000-013-01		1		Pcs		Cabinet Cooling Fan Filter		ABB		3AUA0000116874.pdf		
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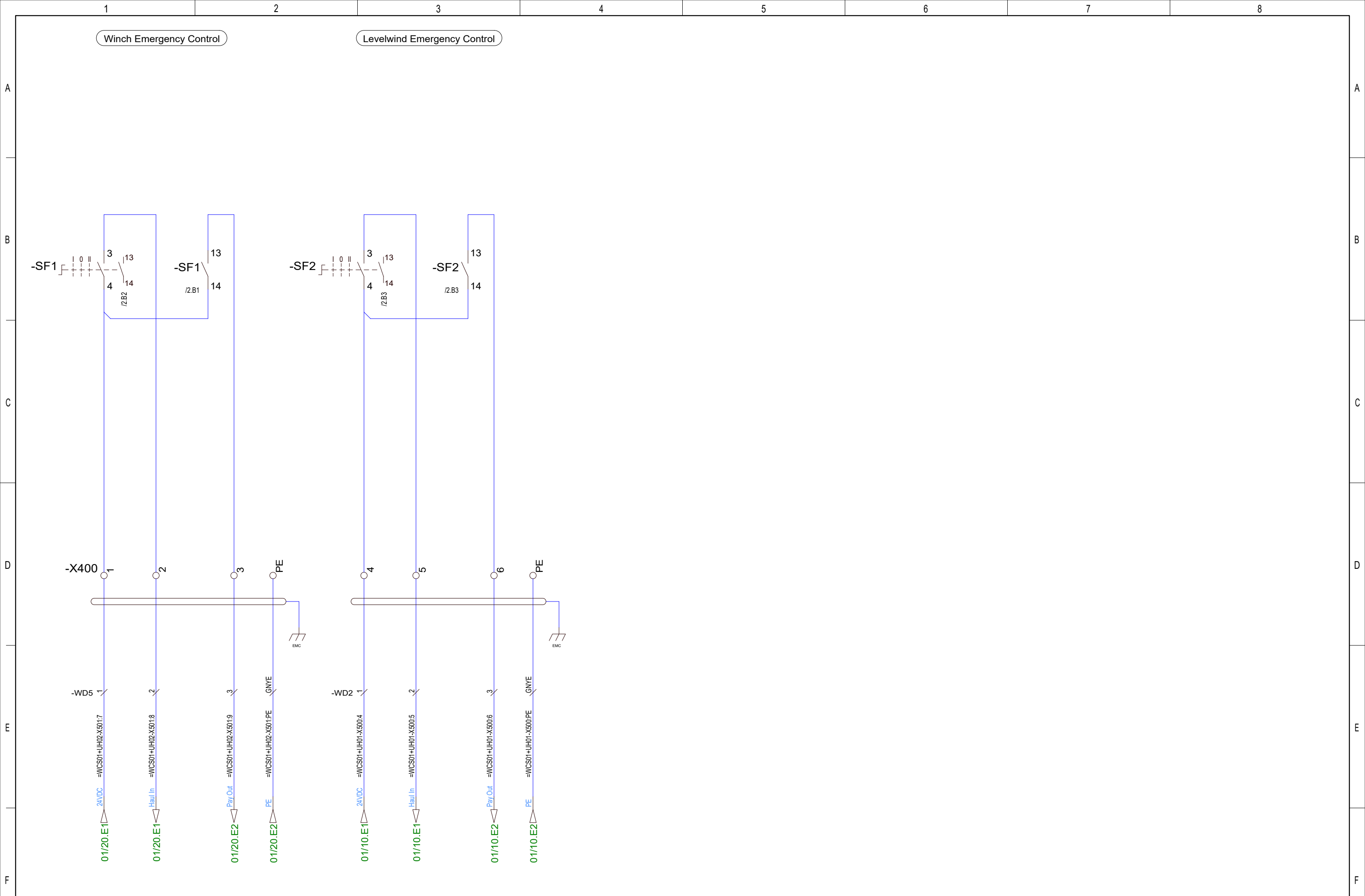
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				Date		CNP Freire				Main VFD Cabinet Pentagon Part list		400092375		=WCS01																																																																										
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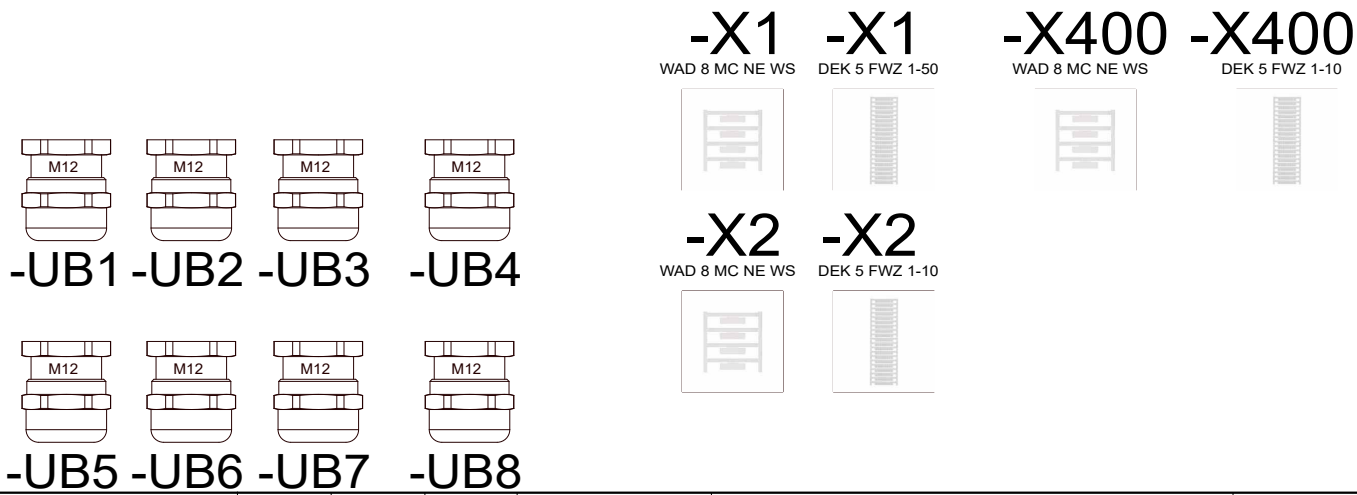
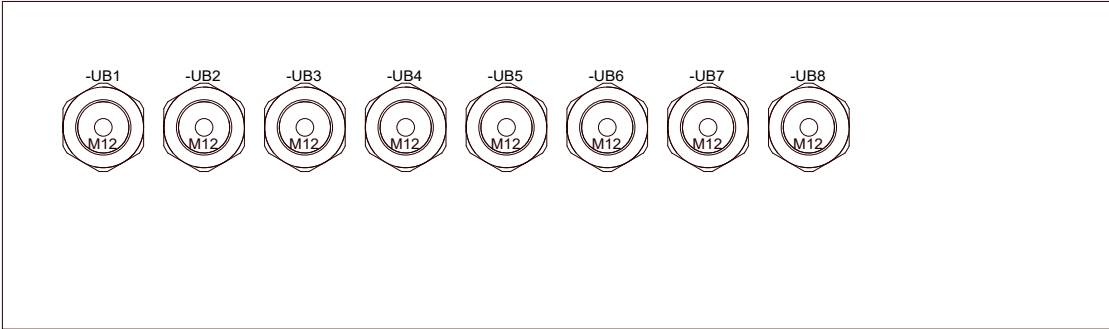
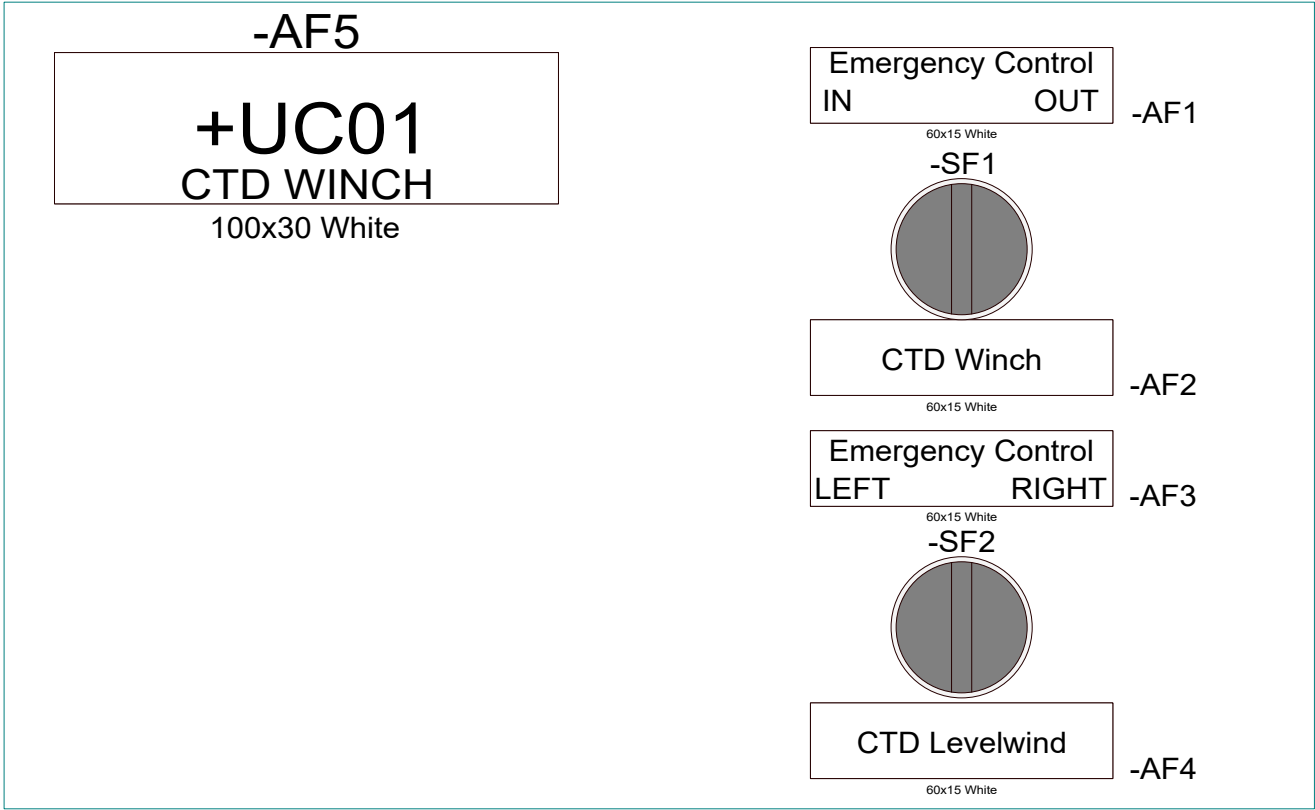
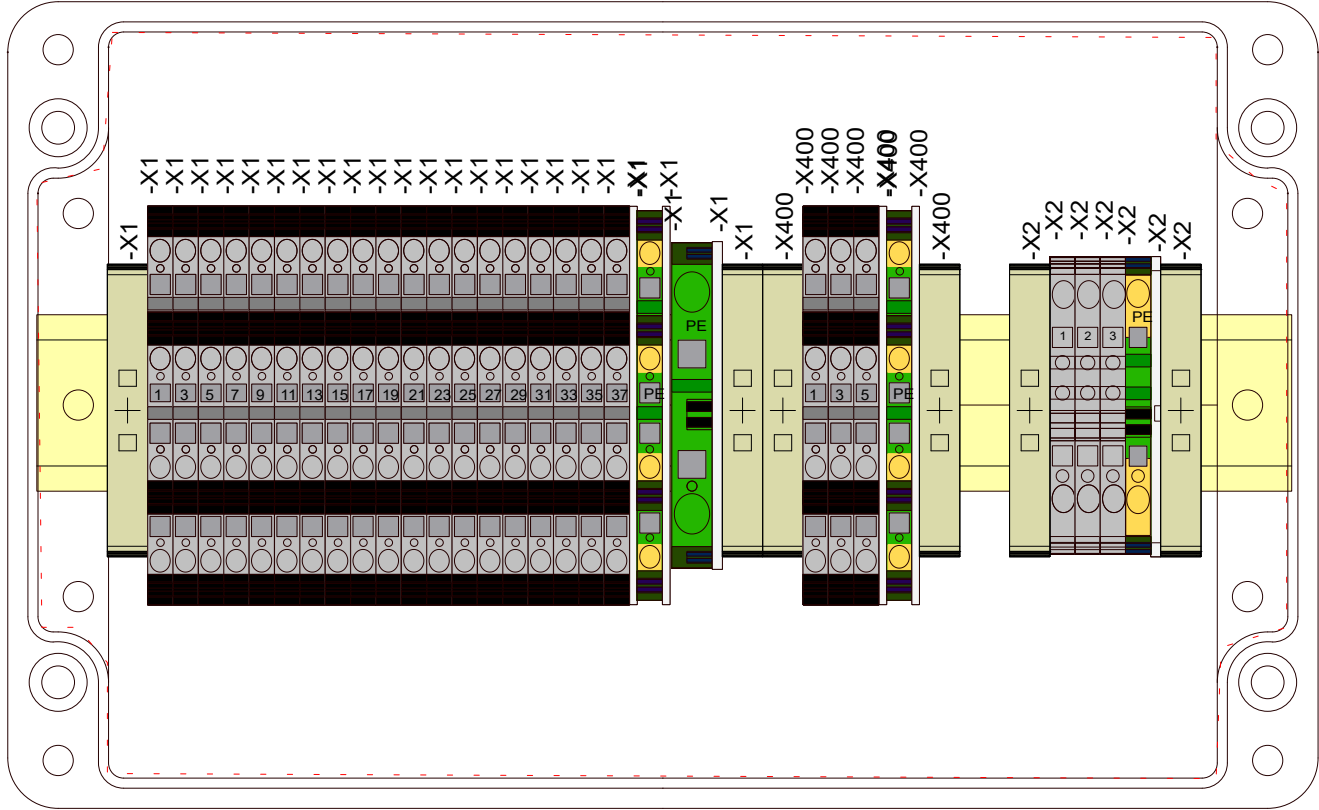
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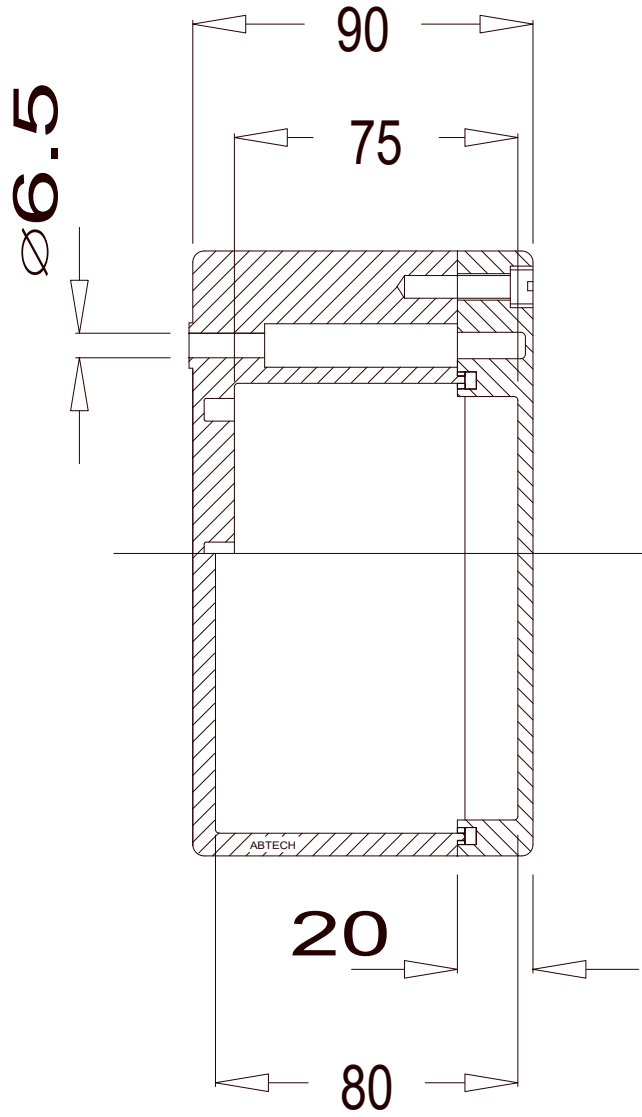
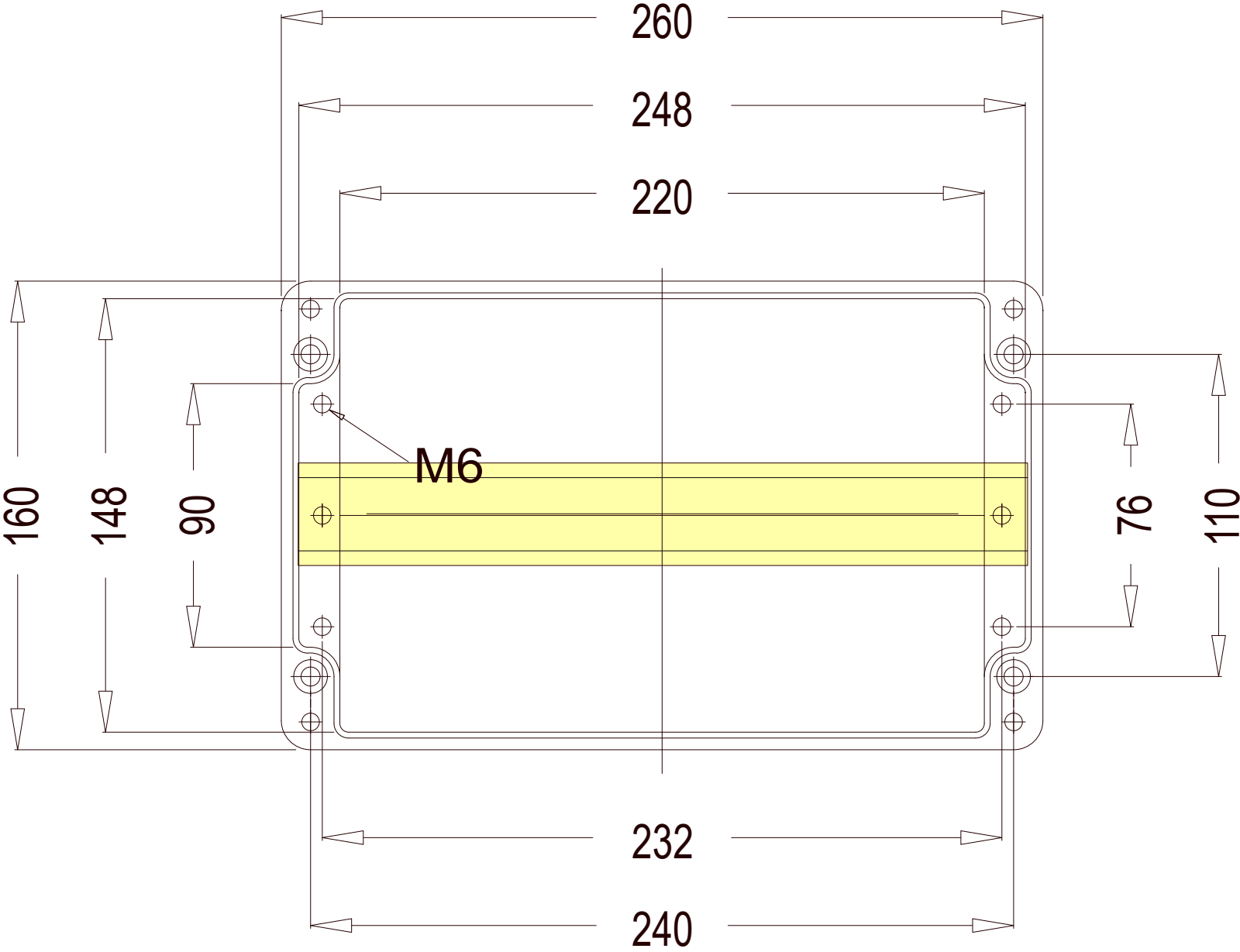
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		RAJ								Rev. G	
Status	Change	Date	Name	Standard	Version	Index	Repl. by	10070-02 CC		Sheet 1	Next 2



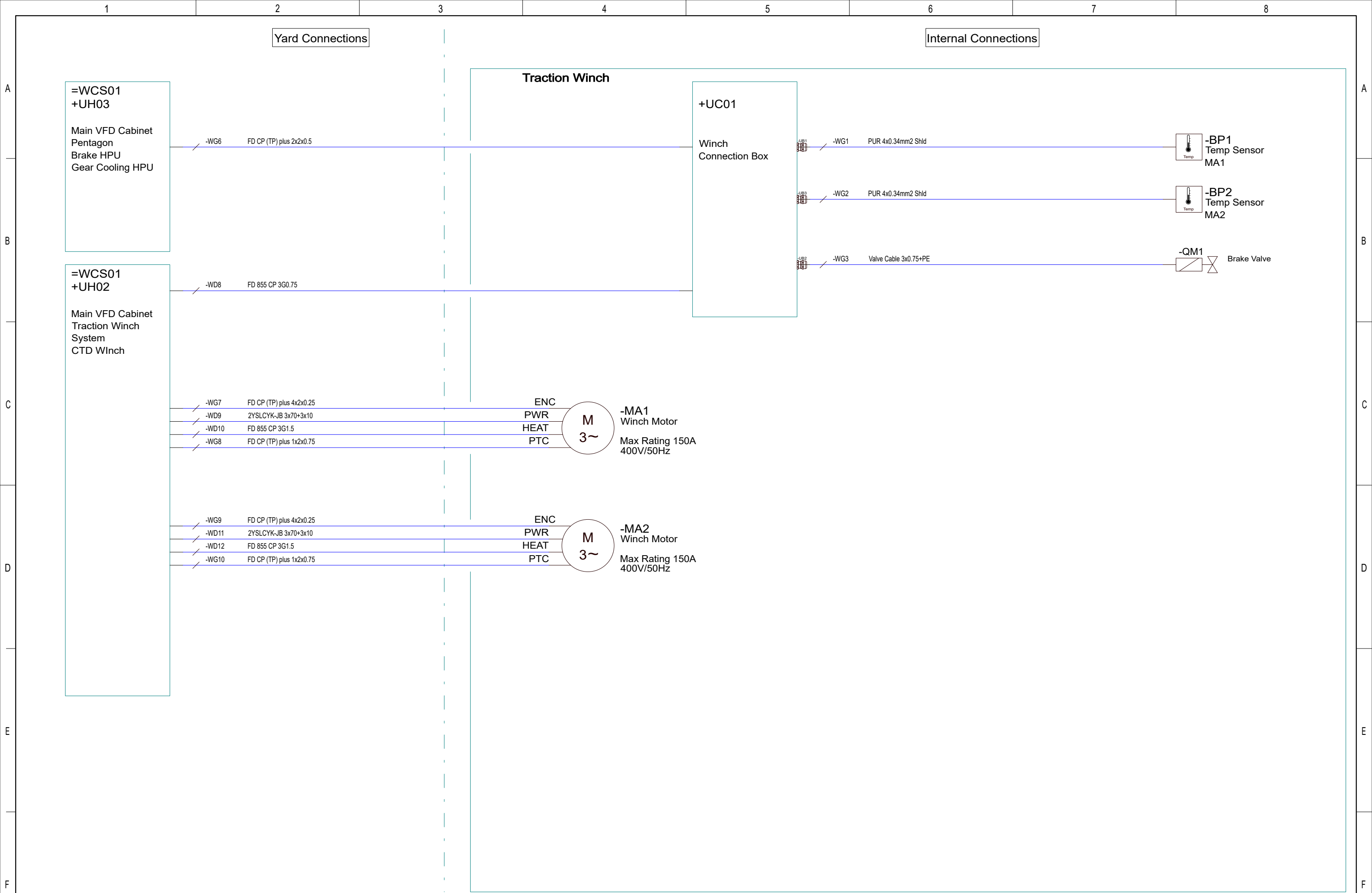
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				Approved	RAJ								Rev. G	
Status	Change	Date	Name	Standard		Version	Index	Repl. by			10070-02 CC		Sheet 2	Next 1



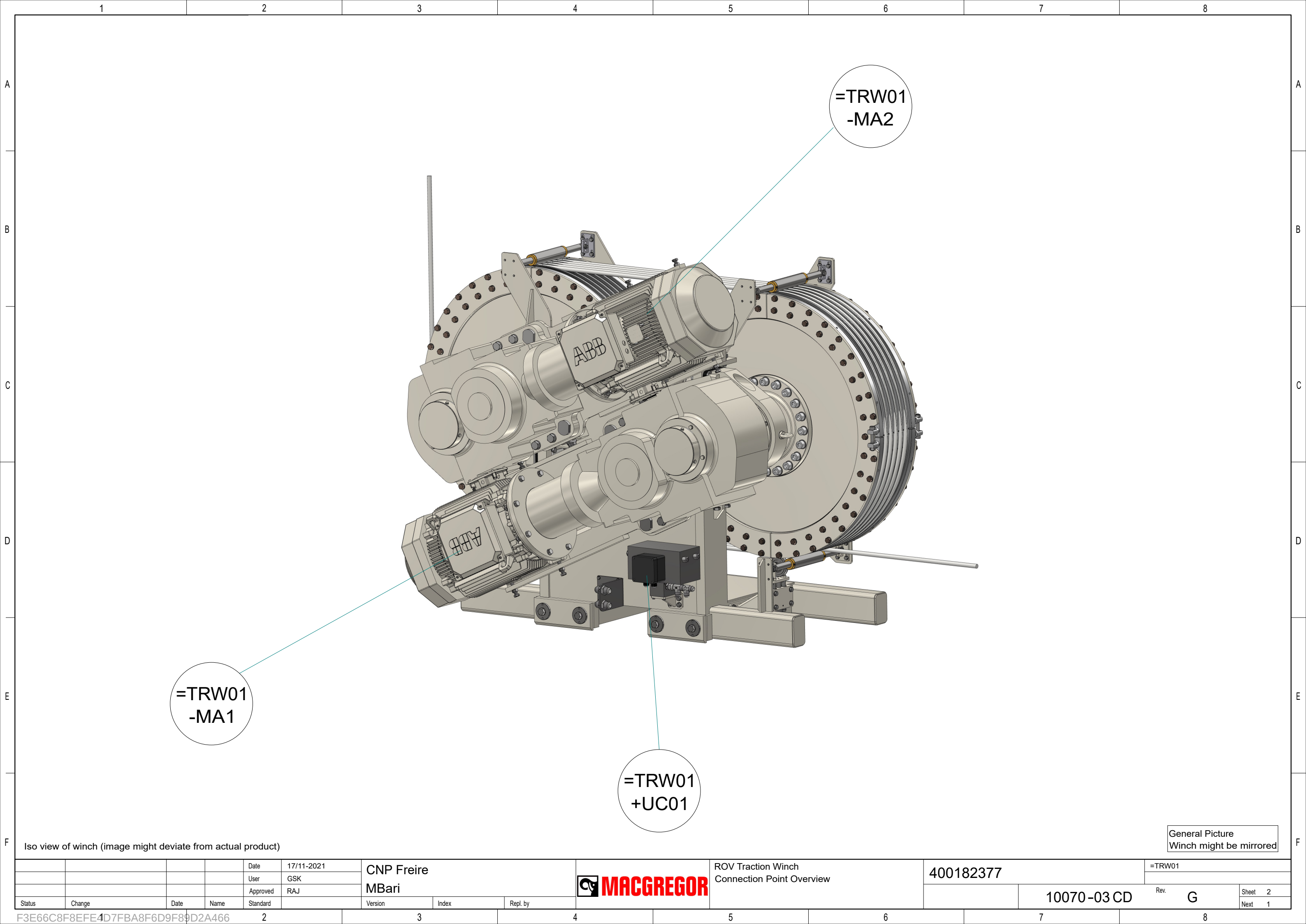
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				Approved	RAJ									Rev. G	
Status	Change	Date	Name	Standard	Version	Index	Repl. by					10070-02 GA		Sheet 1	Next 2



				Date	17/11-2021	CNP Freire MBar				CTD Winch Winch Internal Connection Box	400182376	=HW01			
				User	GSK							+UC01			
				Approved	RAJ										
Status	Change	Date	Name	Standard		Version	Index	Repl. by				10070-02 GA	Rev.	G	Sheet 2
															Next 1



				Date	17/11-2021	CNP Freire MBari				ROV Traction Winch ROV Traction Winch	400182377		=TRW01	
				User	GSK									
				Approved	RAJ									
Status	Change	Date	Name	Standard		Version	Index	Repl. by			10070-03 CD	Rev. G	Sheet 1	
													Next 2	



Iso view of winch (image might deviate from actual product)

General Picture
Winch might be mirrored

				Date	17/11-2021	CNP Freire MBar				ROV Traction Winch Connection Point Overview	400182377	=TRW01			
				User	GSK										
				Approved	RAJ										
Status	Change	Date	Name	Standard		Version	Index	Repl. by				10070-03 CD	Rev.	G	Sheet 2
															Next 1

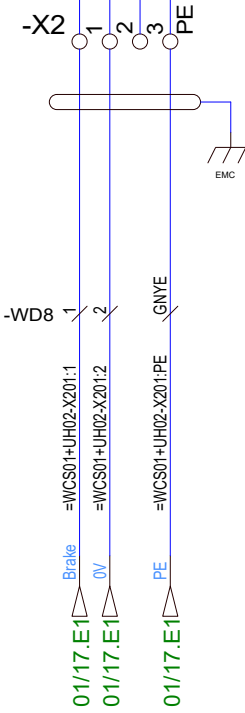
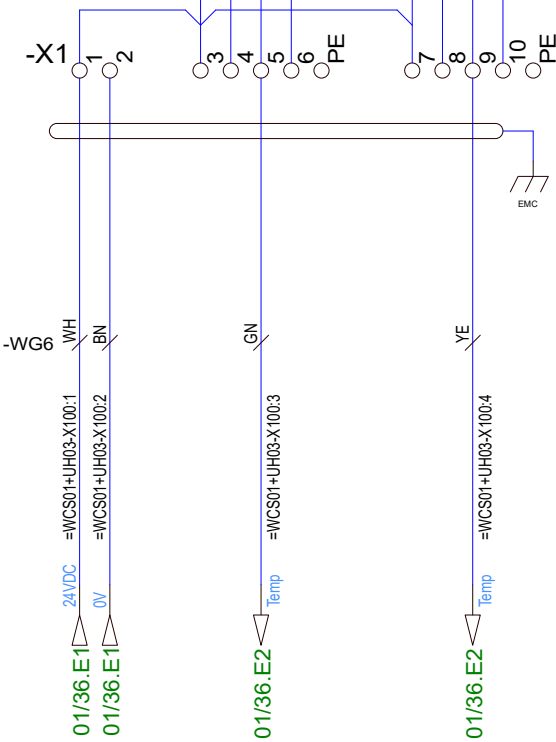
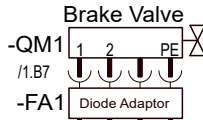
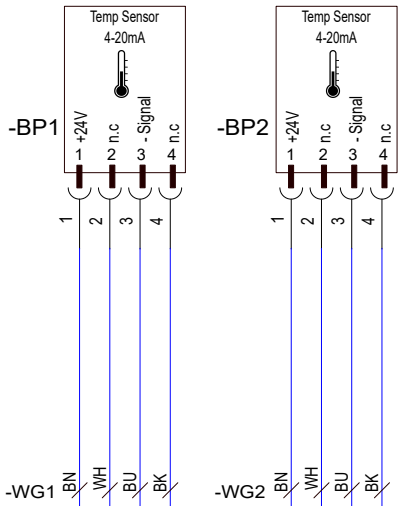
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Gear Temp

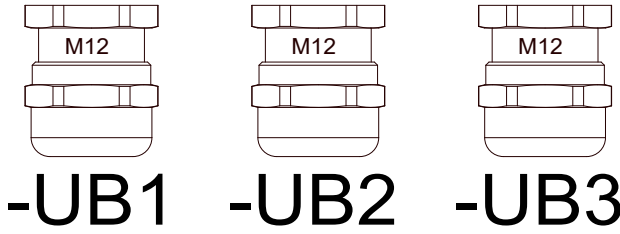
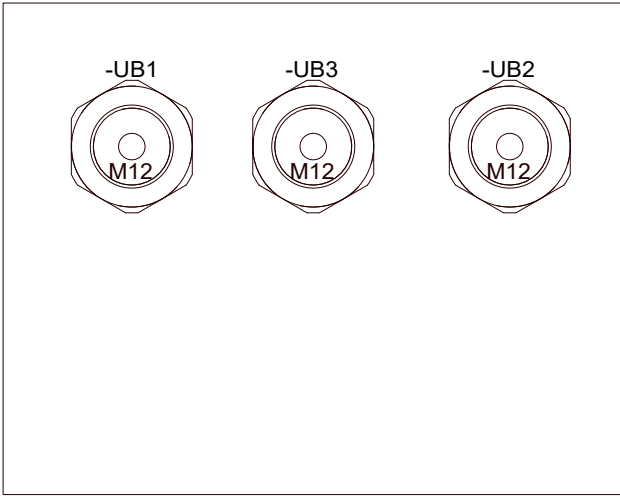
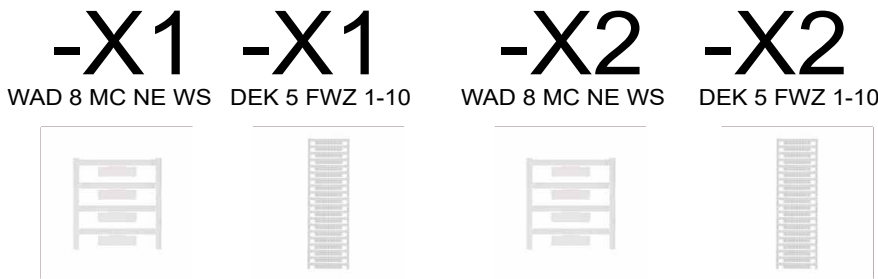
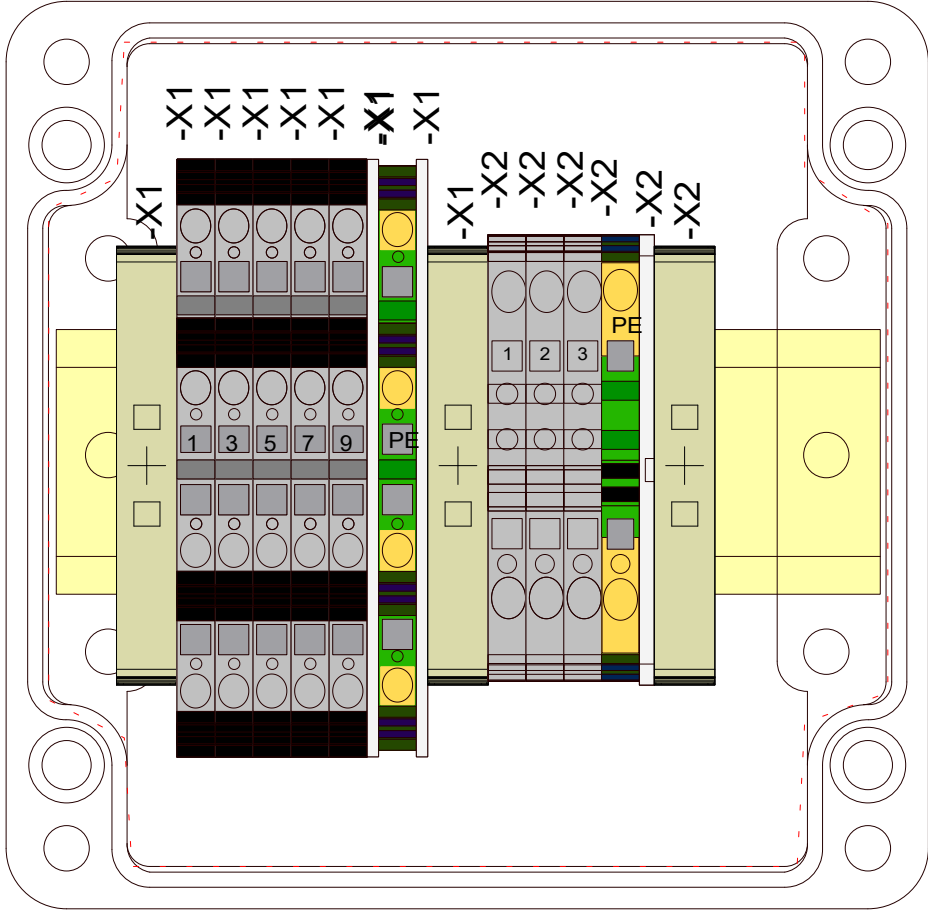
Brake Solenoid
Valve

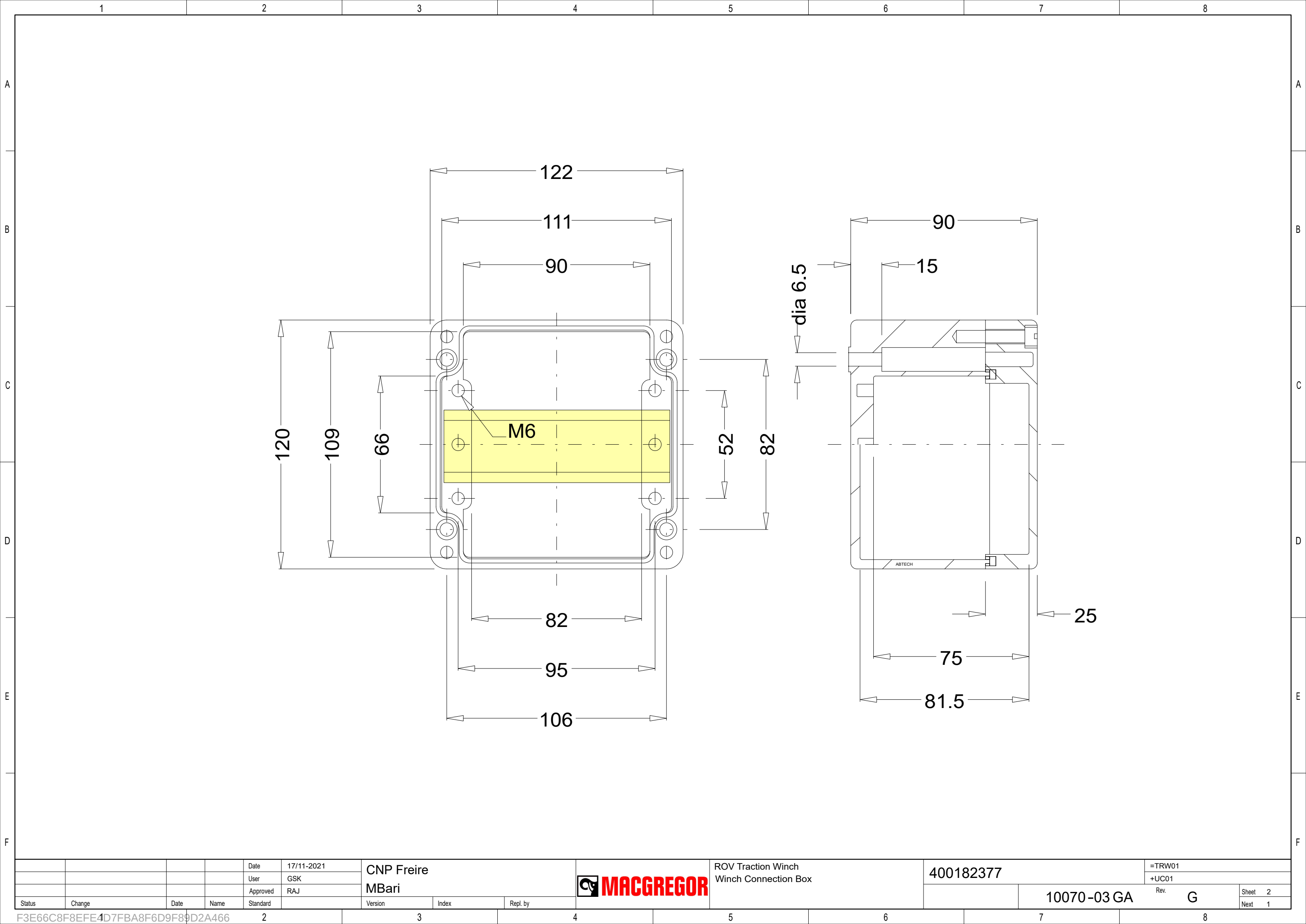
Temp Sensor
MA1

Temp Sensor
MA2

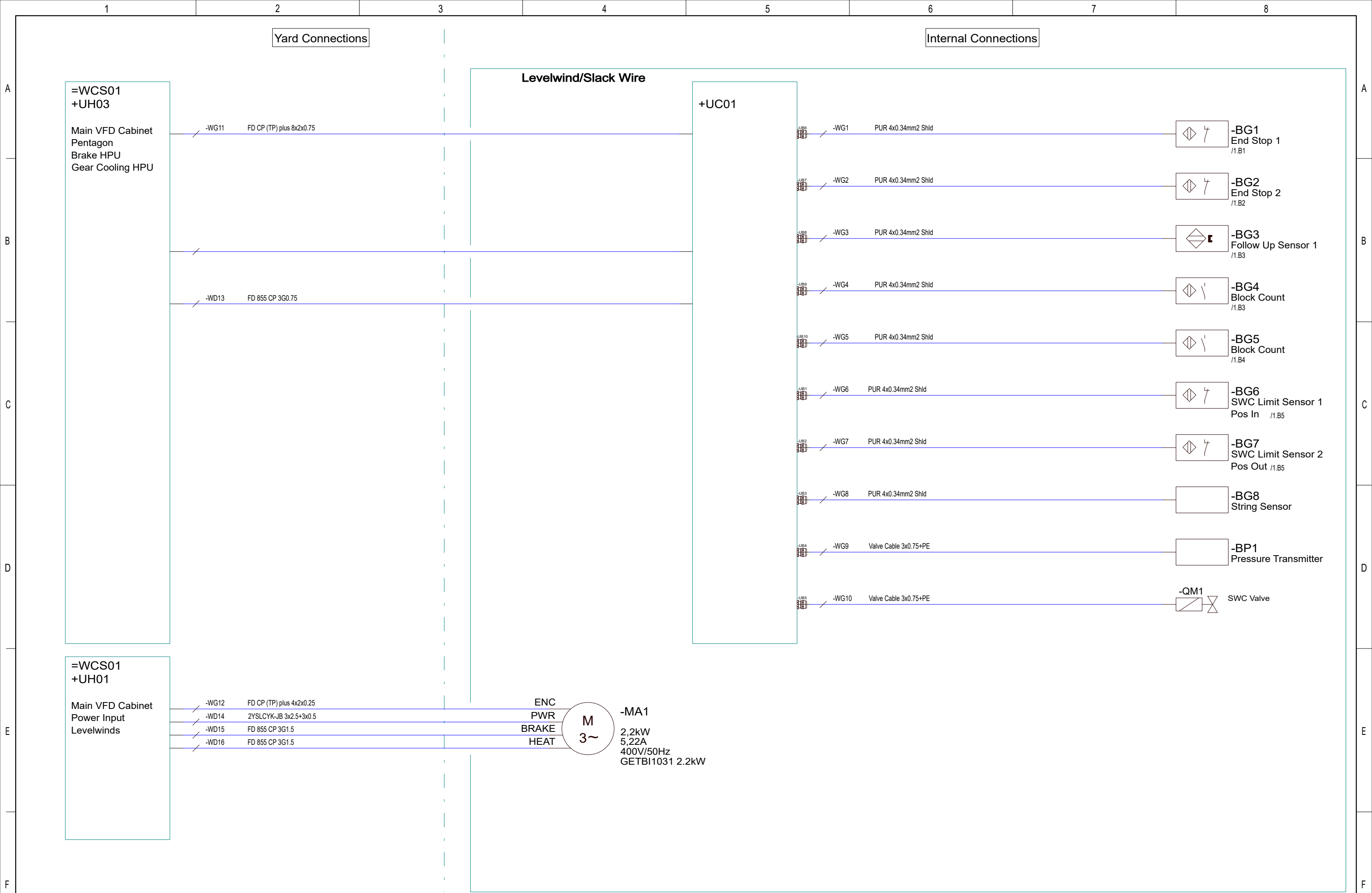


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				User	GSK							+UC01		
				Approved	RAJ							MBar		
Status	Change	Date	Name	Standard		Version	Index	Repl. by				10070-03 CC	Rev. G	Sheet 1
														Next 1

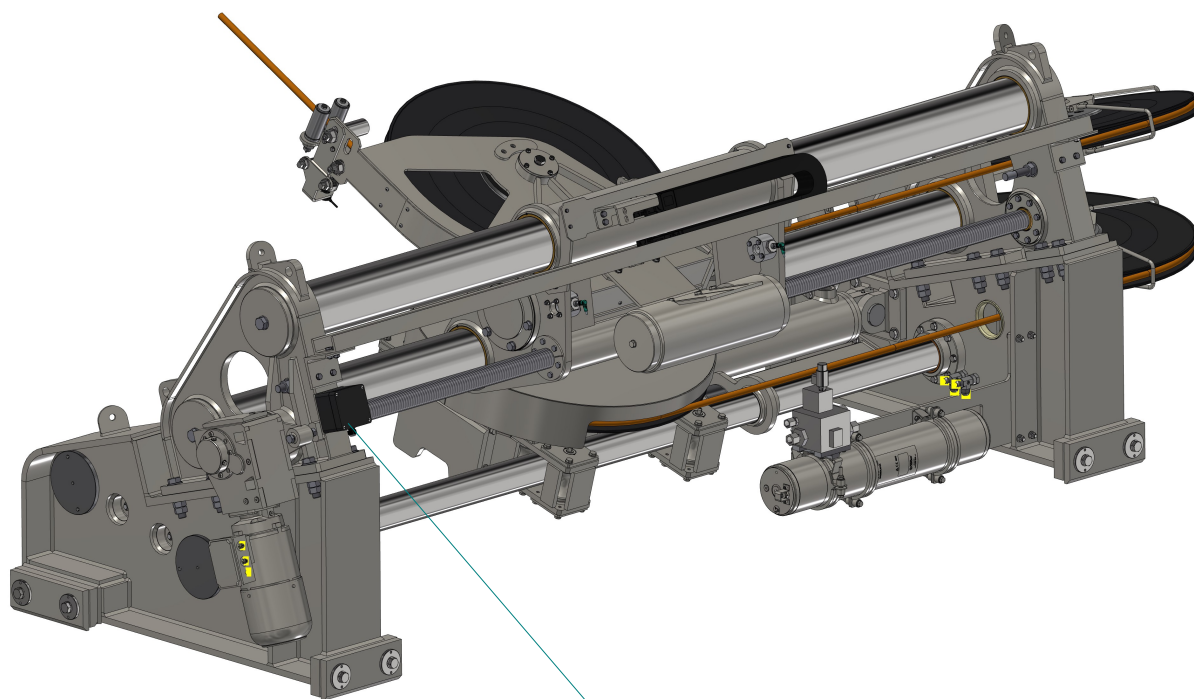




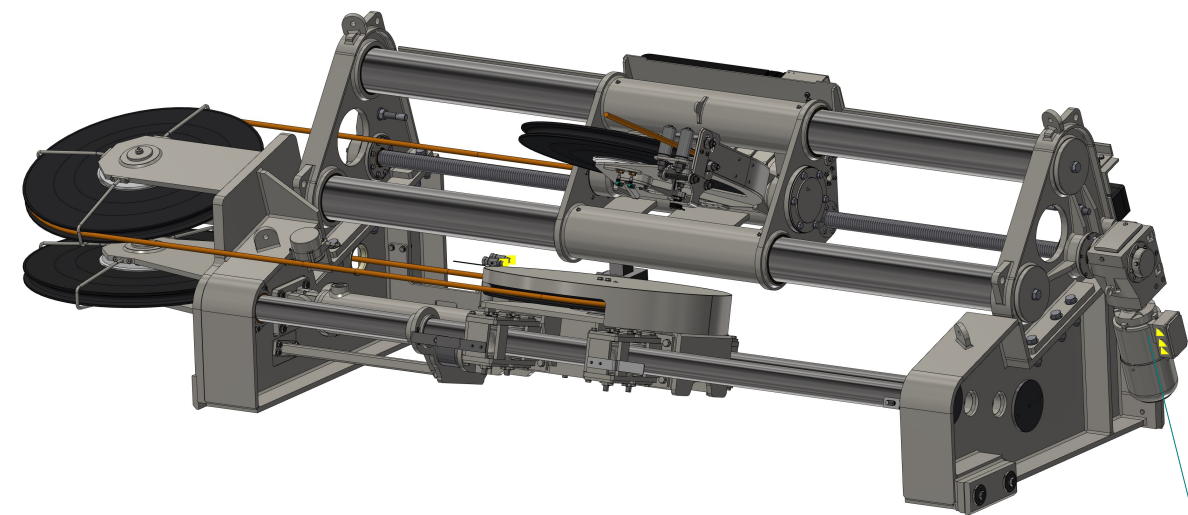
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				User	GSK							+UC01		
				Approved	RAJ							MBar		
Status	Change	Date	Name	Standard		Version	Index	Repl. by				10070-03 GA	Rev. G	Sheet 2
														Next 1



				Date	17/11-2021	CNP Freire MBarí				Levelwind & Slack Wire Compensator Levelwind & Slack Wire Compensator	400182378		=LEV01	
			User	GSK										
			Approved	RAJ										
Status	Change	Date	Name	Standard		Version	Index	Repl. by			10070-04 CD	Rev. G	Sheet 1 Next 2	



=LEV01
+UC01



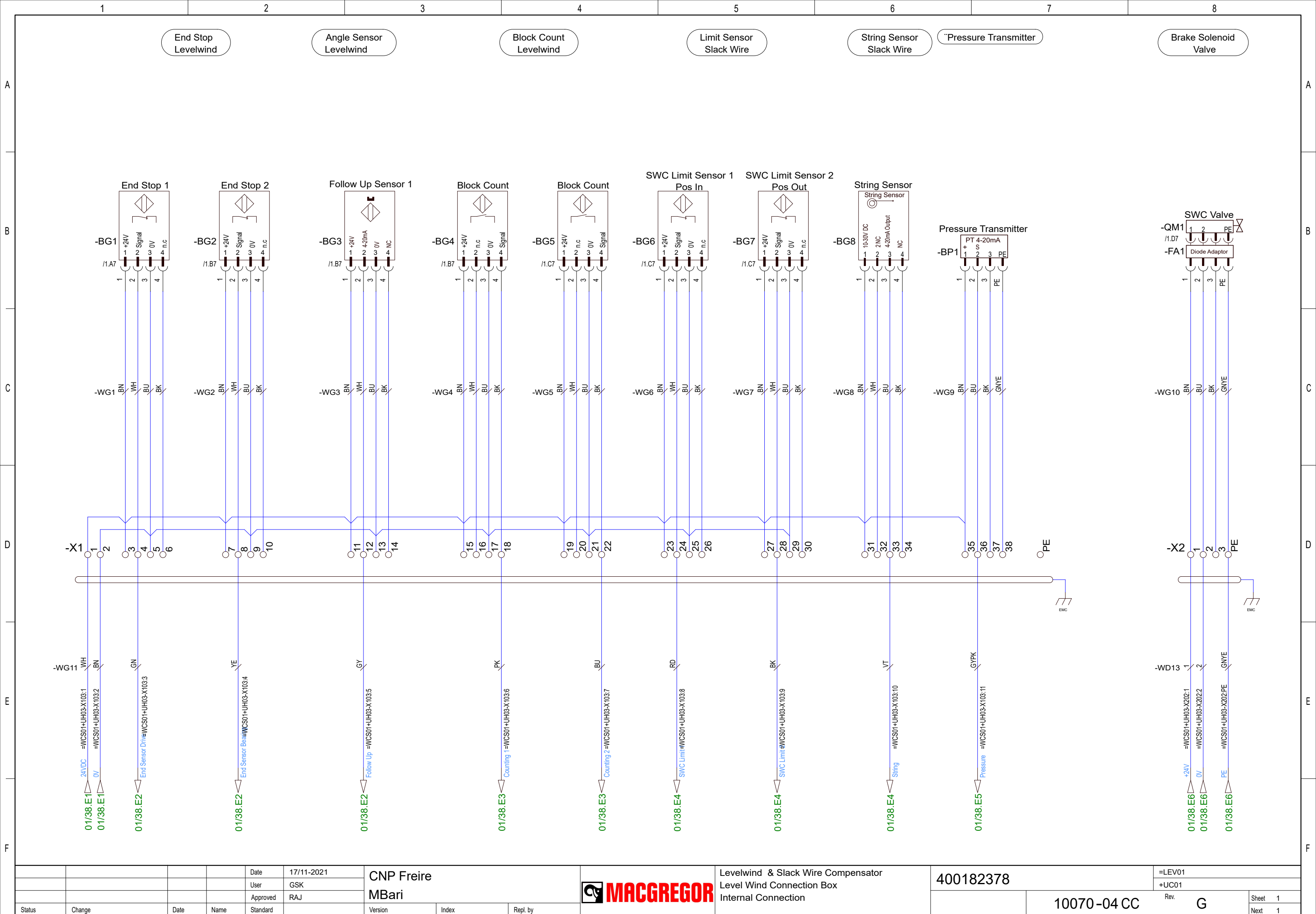
=LEV01
-MA1

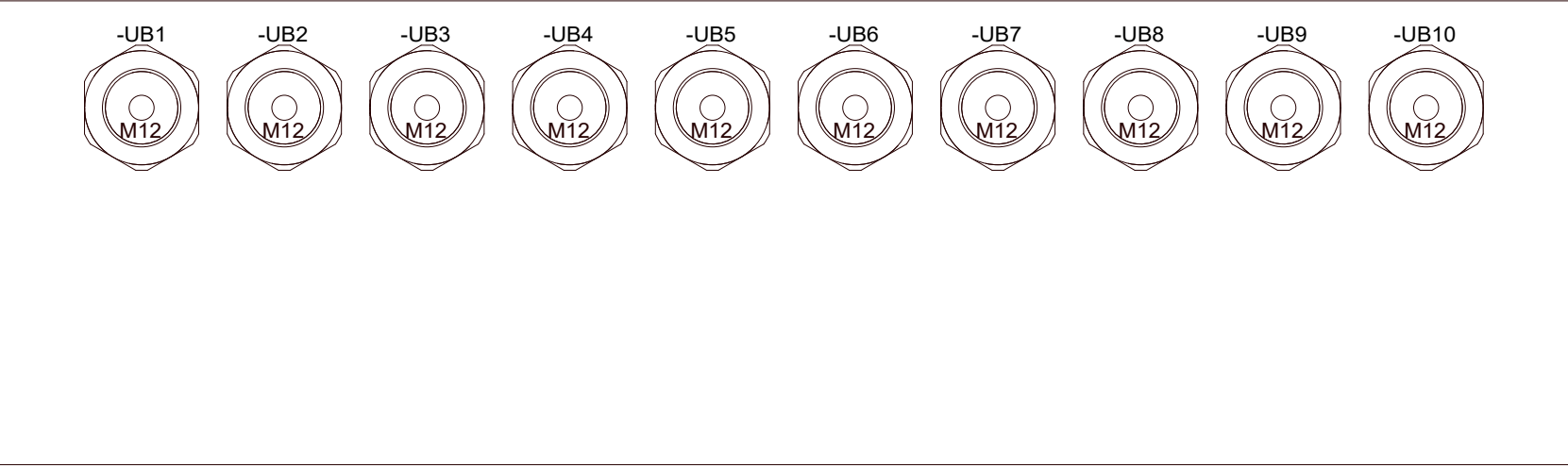
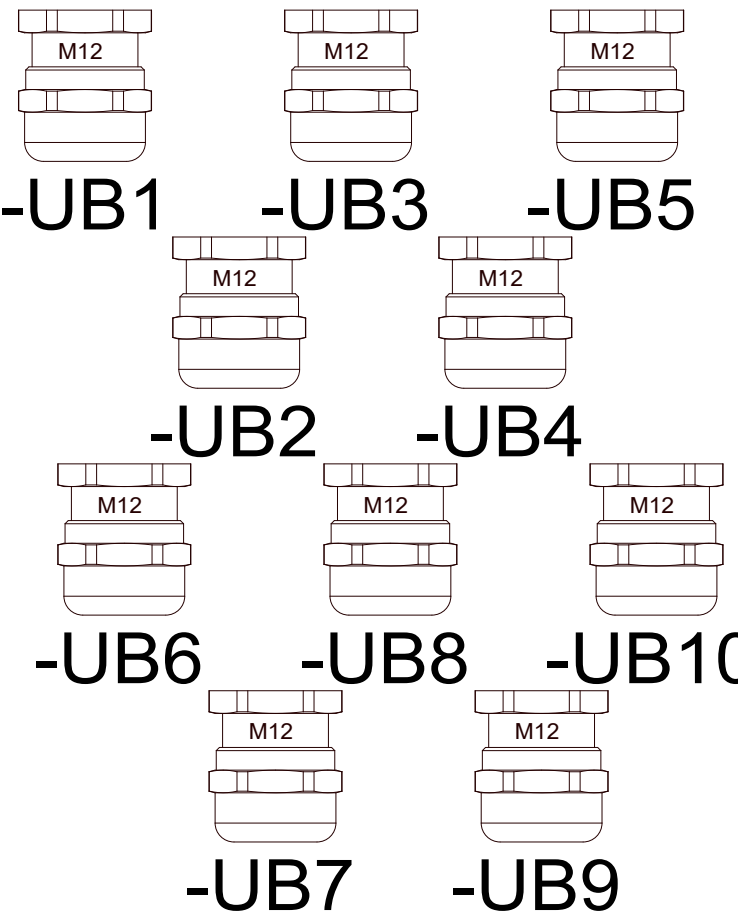
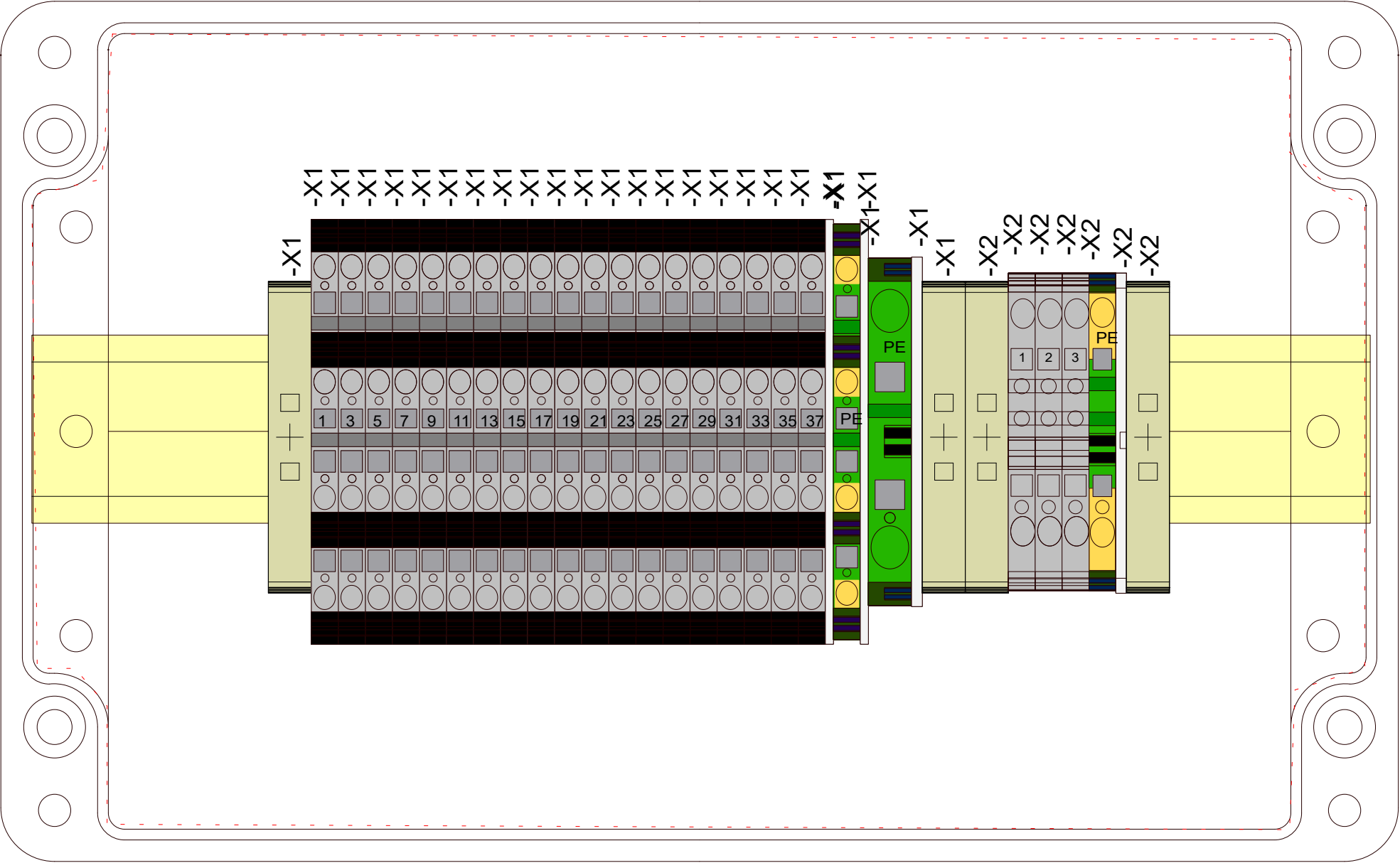
Iso view of winch (image might deviate from actual product)

General Picture
Winch might be mirrored

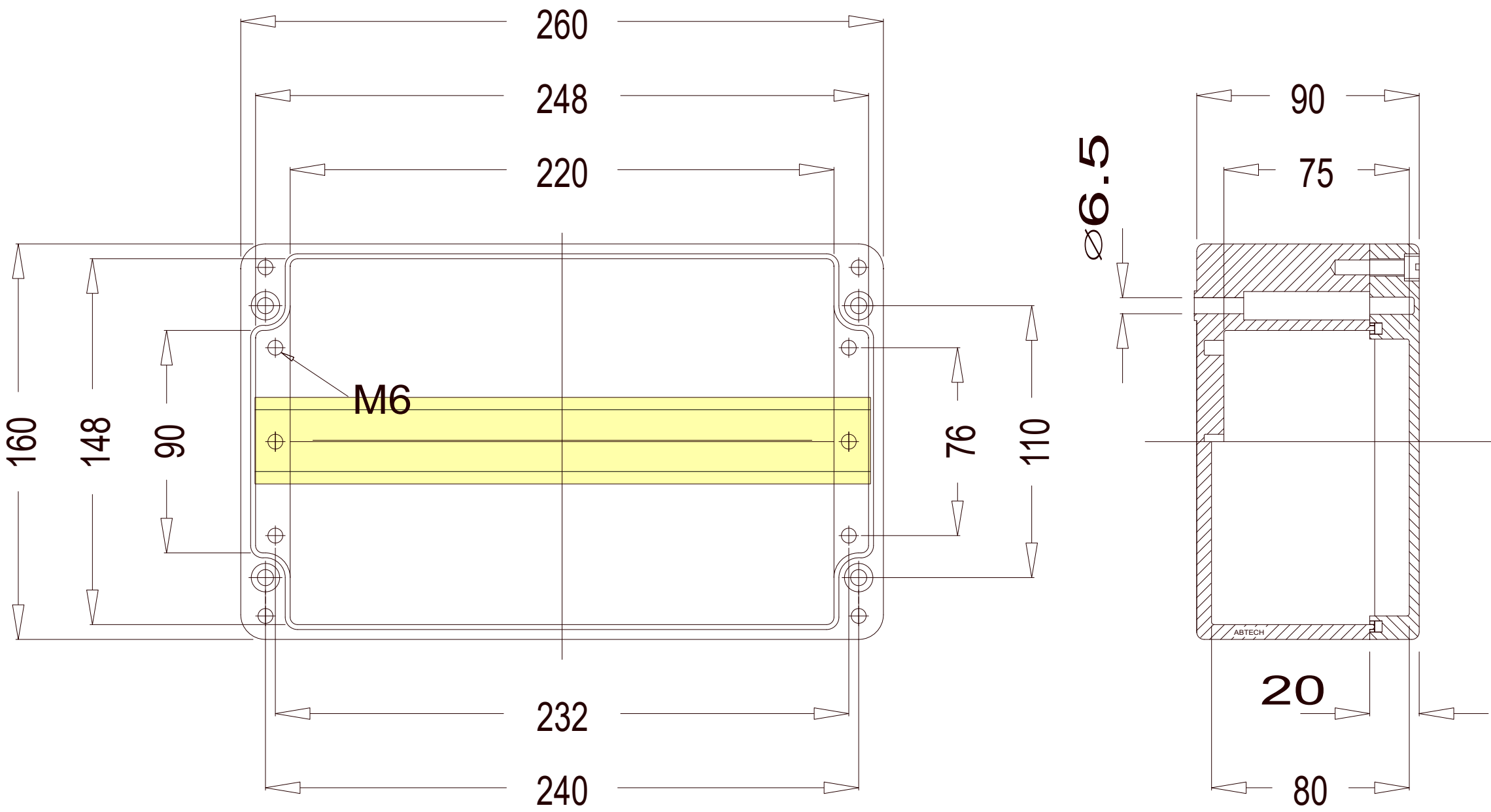
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				User	GSK									
				Approved	RAJ									
Status	Change	Date	Name	Standard		Version	Index	Repl. by			10070-04 CD	Rev.	G	Sheet 2
														Next 1

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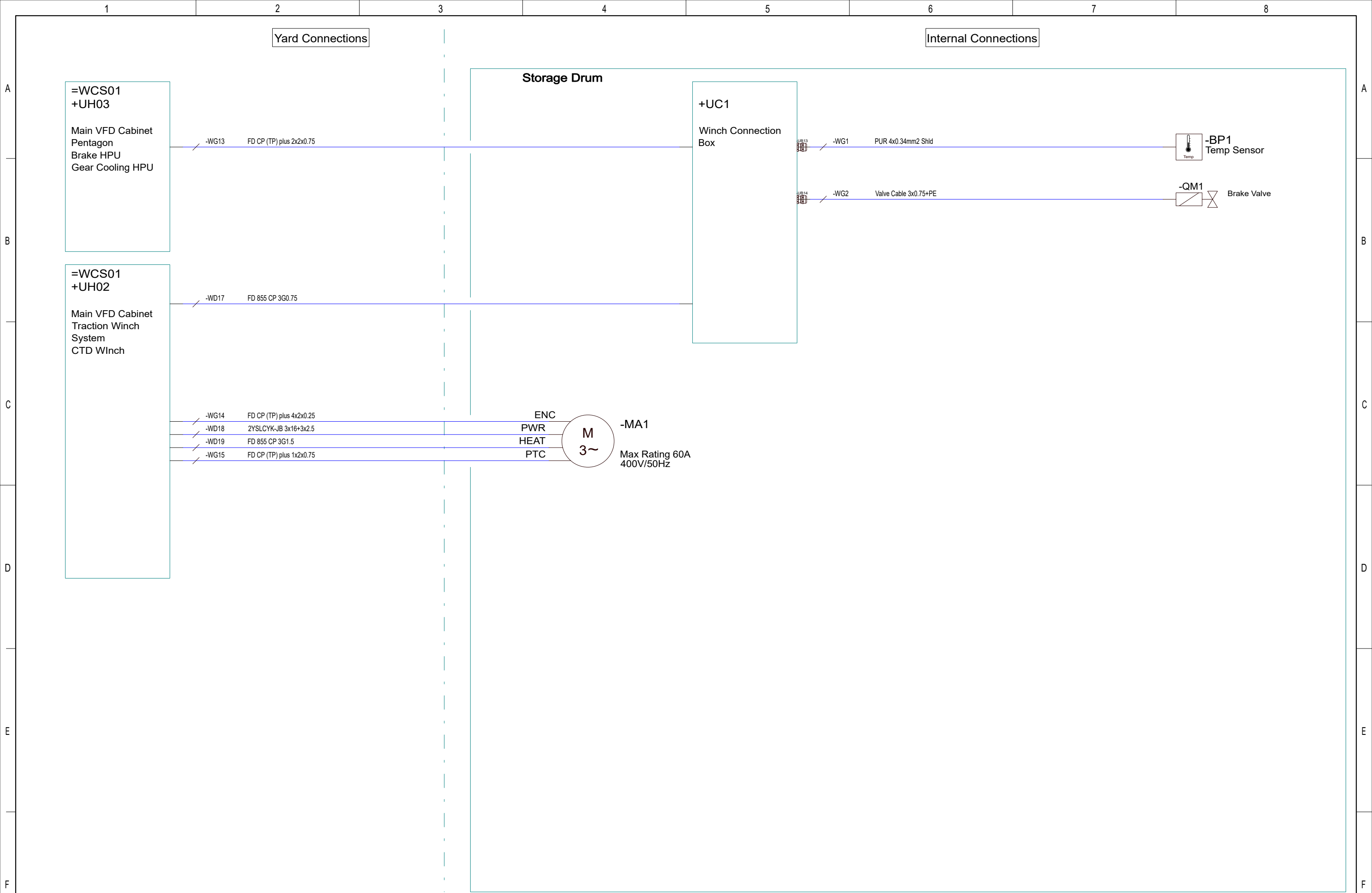




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			User	GSK	+UC01									
			Approved	RAJ	MBarí									
Status	Change	Date	Name	Standard		Version	Index	Repl. by			10070-04 GA	Rev.	G	Sheet 1
														Next 2

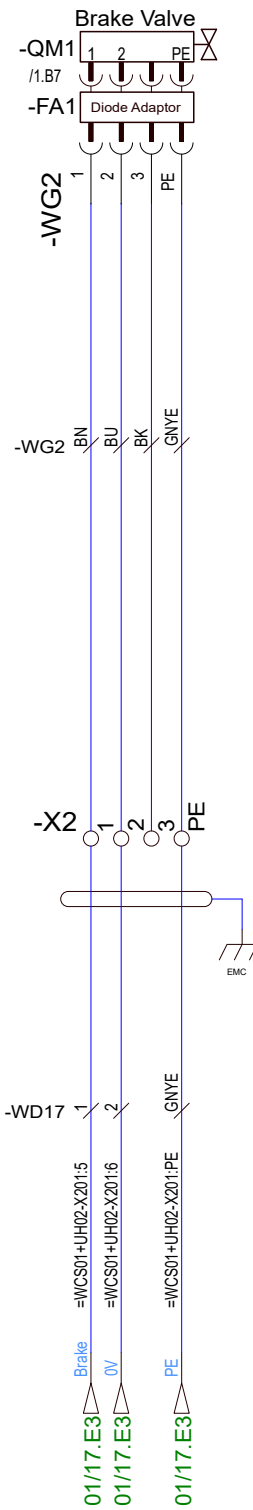
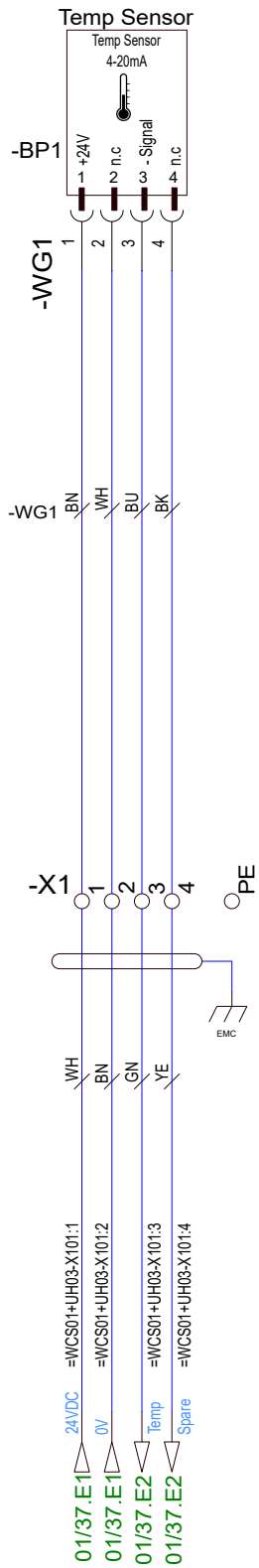


				Date	17/11-2021	CNP Freire				Levelwind & Slack Wire Compensator Level Wind Connection Box Internal Connection	400182378		=LEV01	
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				Approved	RAJ						MBarí			
Status	Change		Date	Name	Standard	Version	Index	Repl. by			10070-04 GA			Next 1

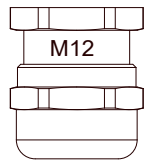
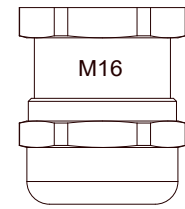
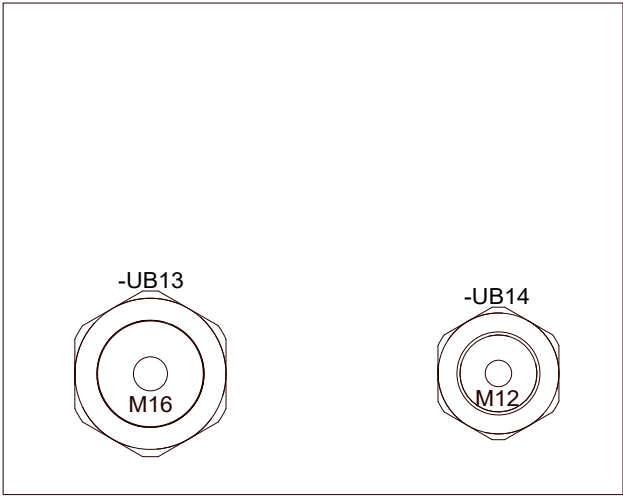
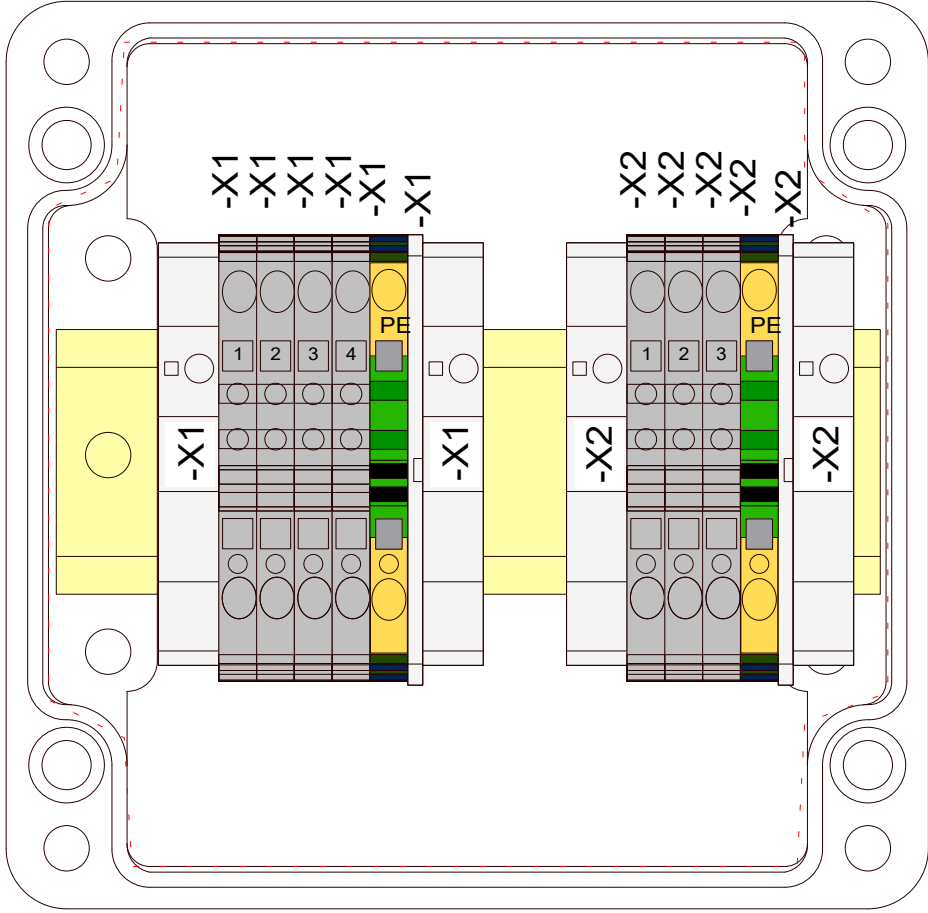


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				User	GSK									
				Approved	RAJ								Rev.	G
Status	Change	Date	Name	Standard		Version	Index	Repl. by			10070-05 CD		Sheet	1
													Next	2

Gear Temp



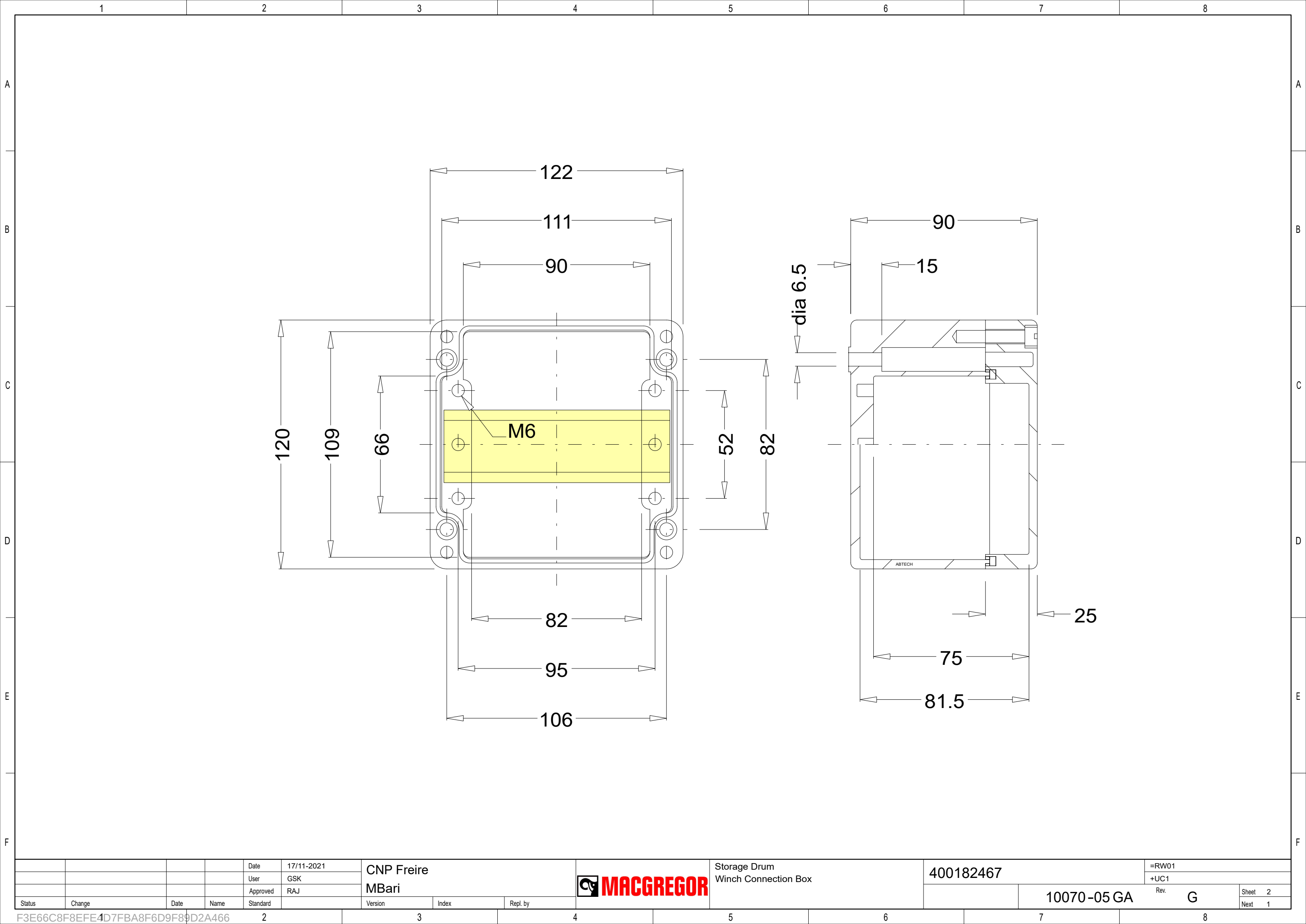
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				User	GSK								+UC1	
				Approved	RAJ								Rev.	G
Status	Change	Date	Name	Standard		Version	Index	Repl. by				10070-05 CC	Sheet	1
													Next	1



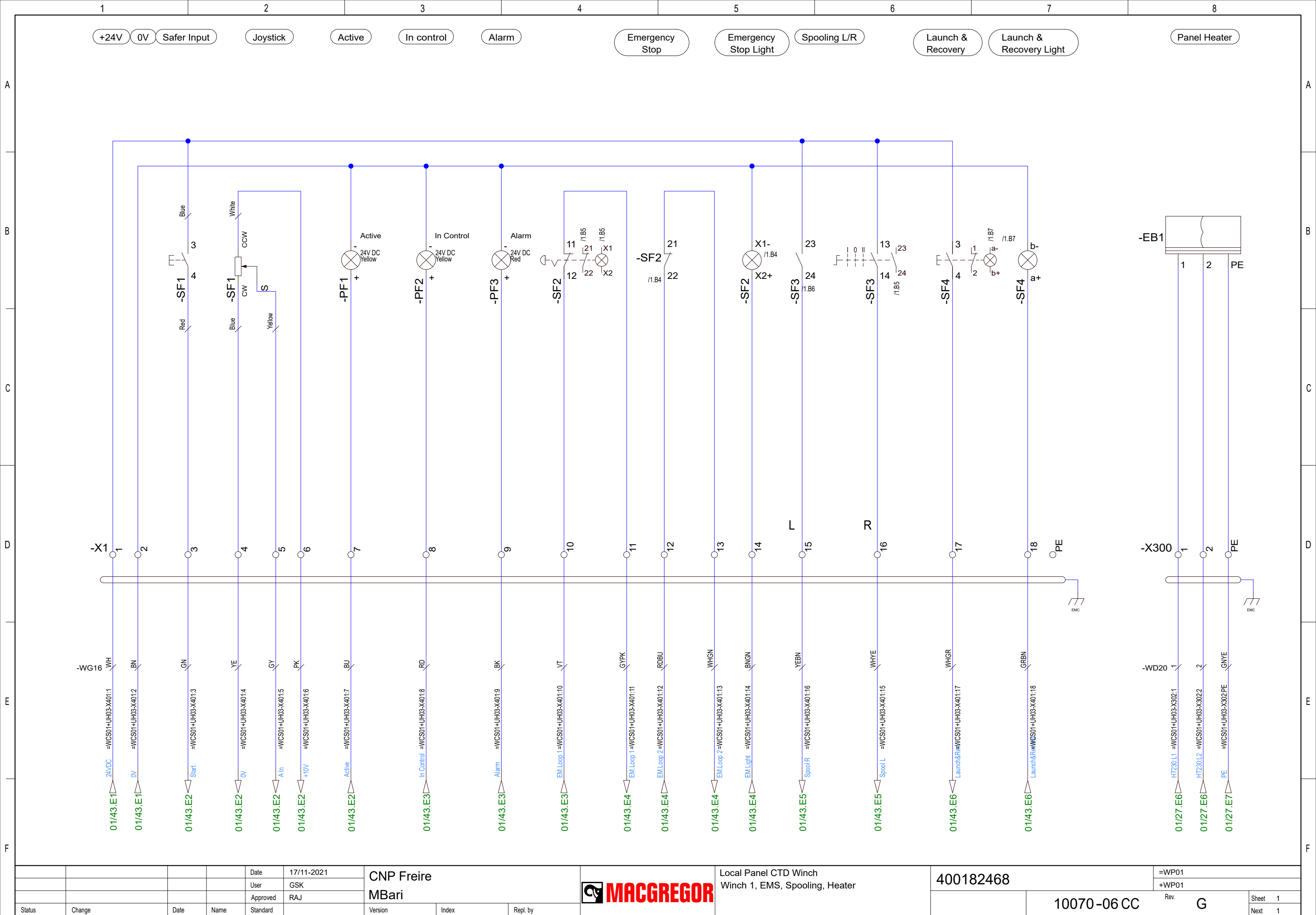
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-UB14

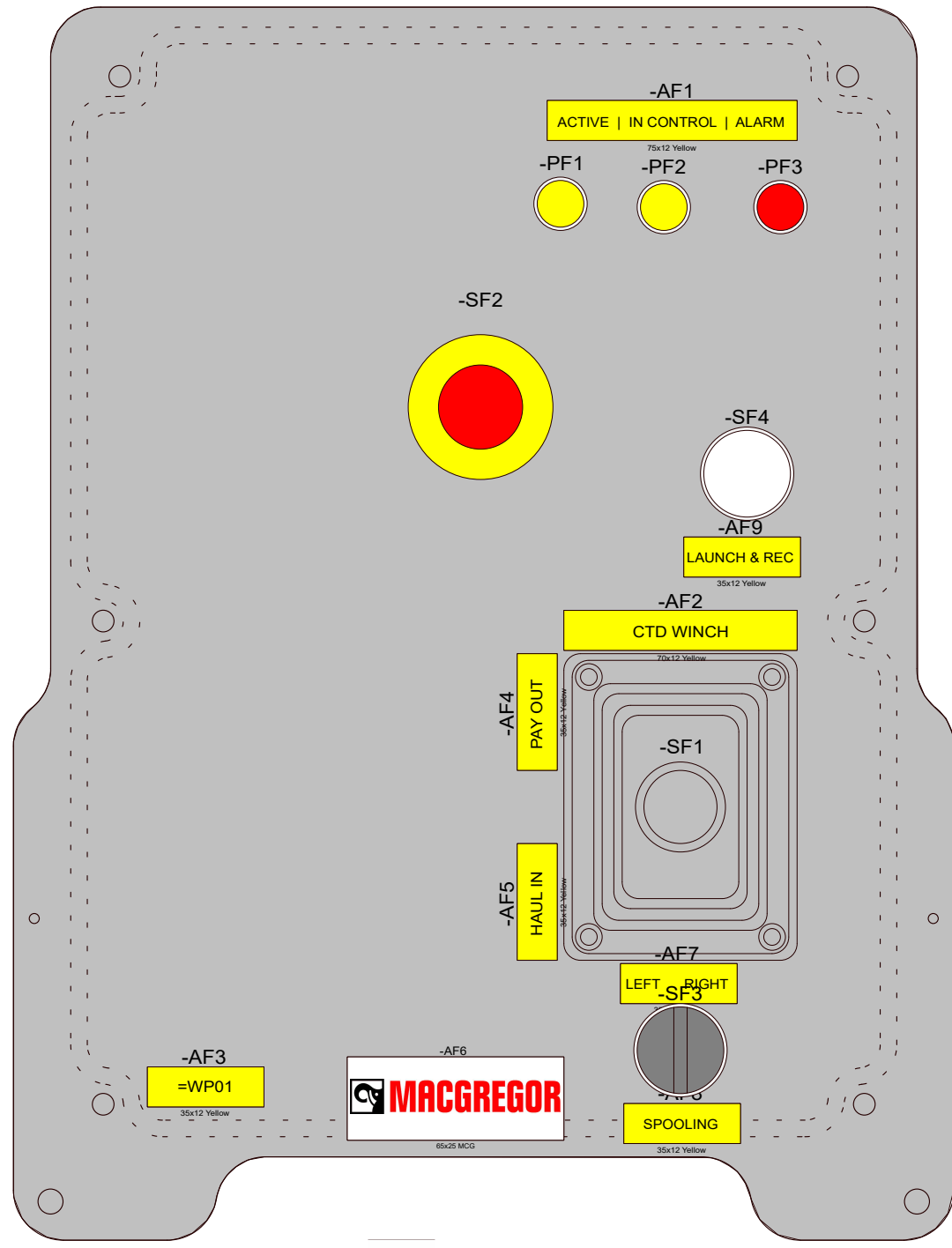
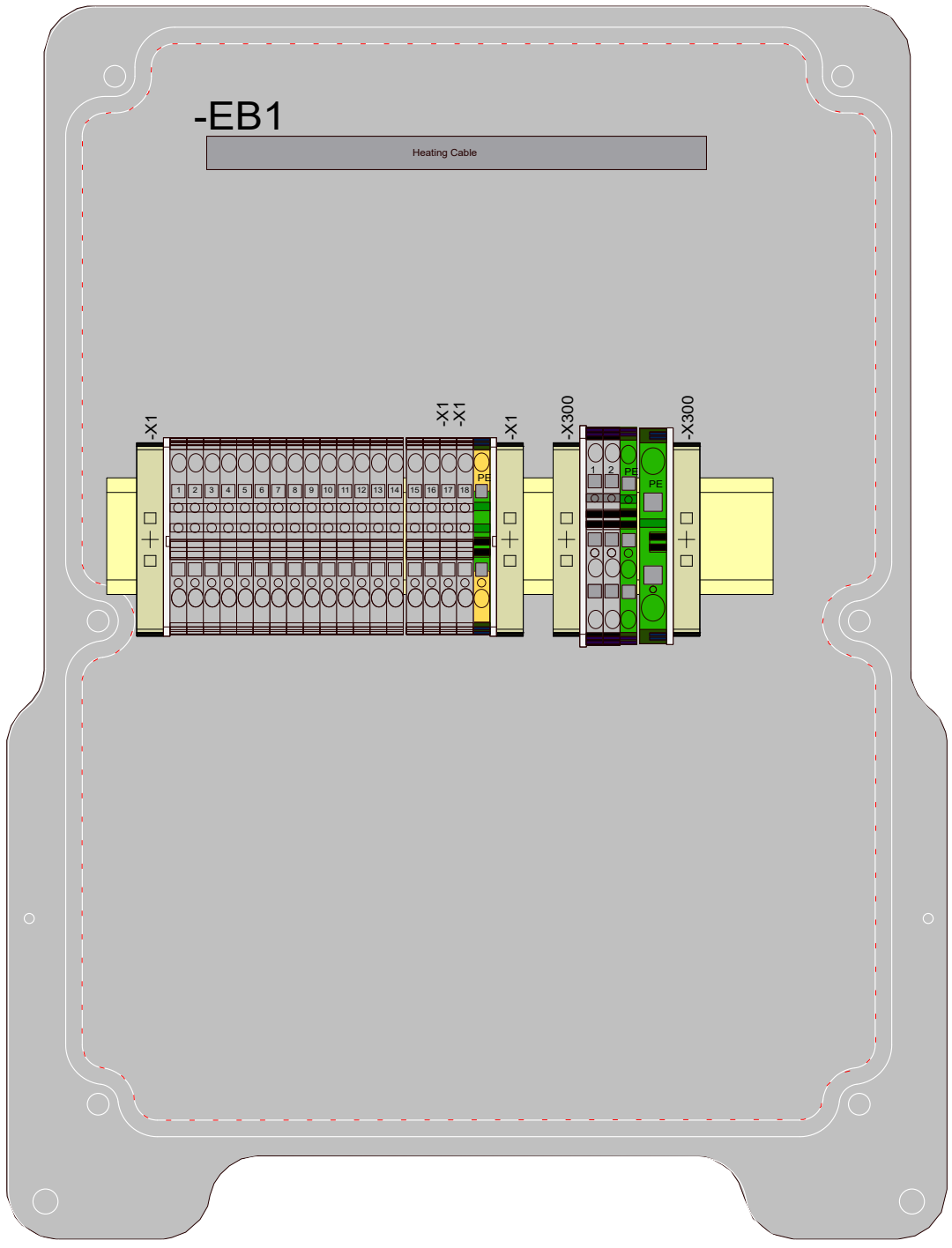
		Date	17/11-2021	CNP Freire MBar				Storage Drum Winch Connection Box		400182467		=RW01	
		User	GSK									+UC1	
		Approved	RAJ									Rev. G	
Status	Change	Date	Name	Standard	Version	Index	Repl. by			10070-05 GA		Sheet 1	Next 2



				Date	17/11-2021	CNP Freire MBari				Storage Drum Winch Connection Box	400182467	=RW01		
				User	GSK							+UC1		
				Approved	RAJ									
Status	Change	Date	Name	Standard		Version	Index	Repl. by			10070-05 GA	Rev.	G	Sheet 2
														Next 1



				Date	17/11-2021	CNP Freire MBarí				Local Panel CTD Winch Winch 1, EMS, Spooling, Heater	400182468		=WP01	
				User	GSK								+WP01	
				Approved	RAJ									
Status	Change	Date	Name	Standard		Version	Index	Repl. by			10070-06 CC		Rev. G	Sheet 1
														Next 1



Cables That Needs To Be Connected By Yard

=WCS01
+UH03

Main VFD Cabinet
Pentagon
Brake HPU
Gear Cooling HPU

+WP02

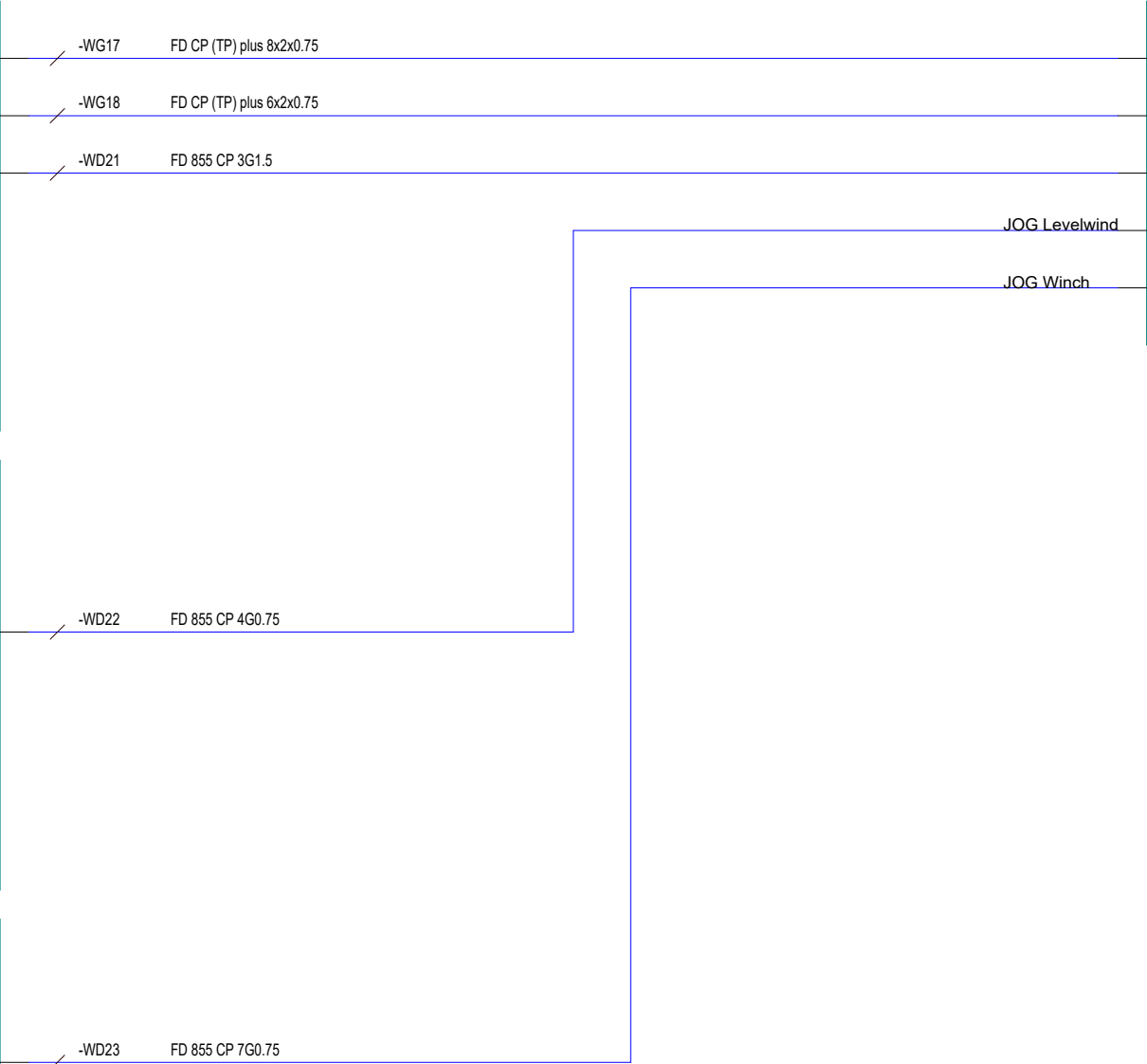
Local Panel
ROV Traction System
2000004950

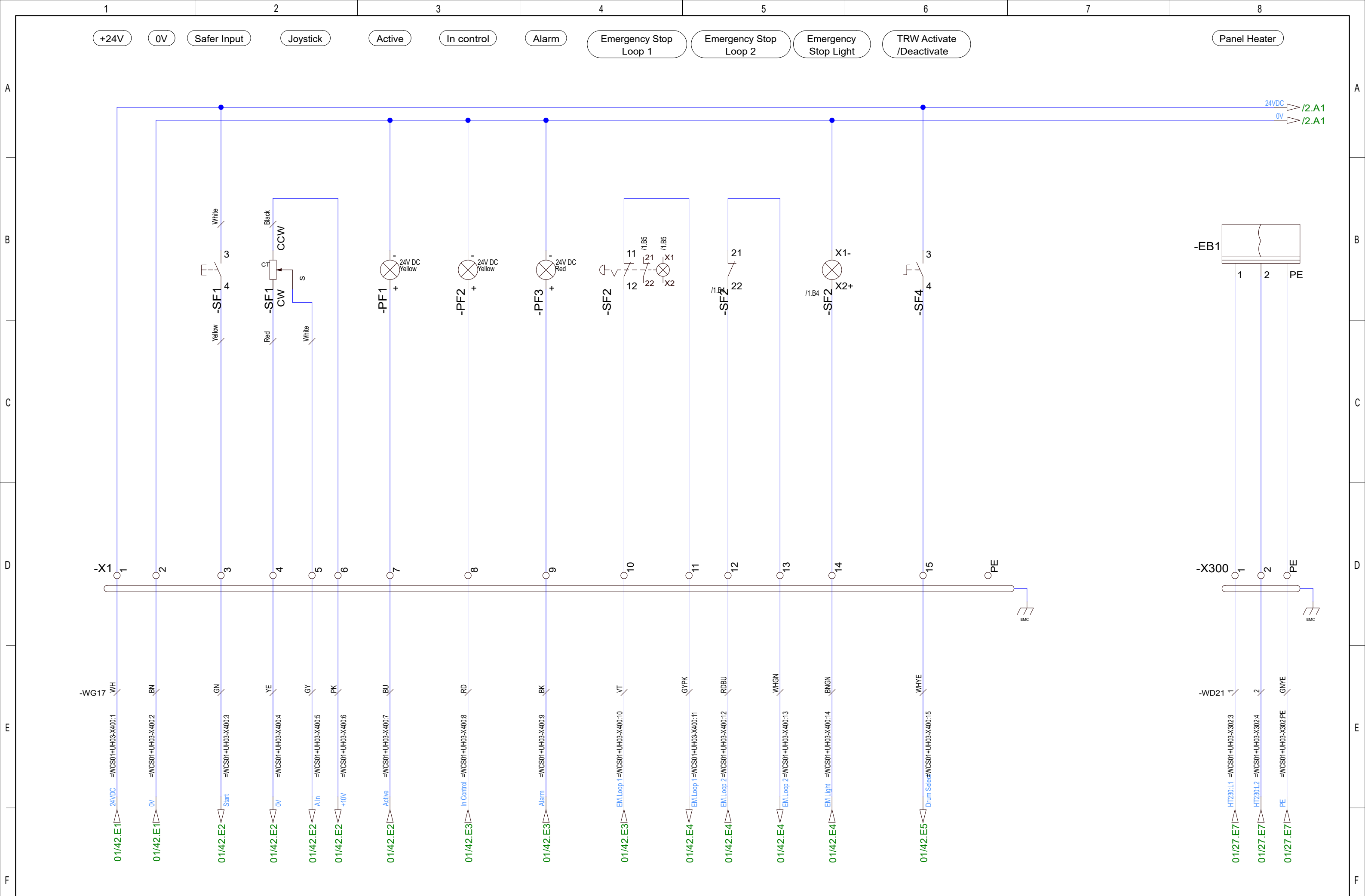
=WCS01
+UH01

Main VFD Cabinet
Power Input
Levelwinds

=WCS01
+UH02

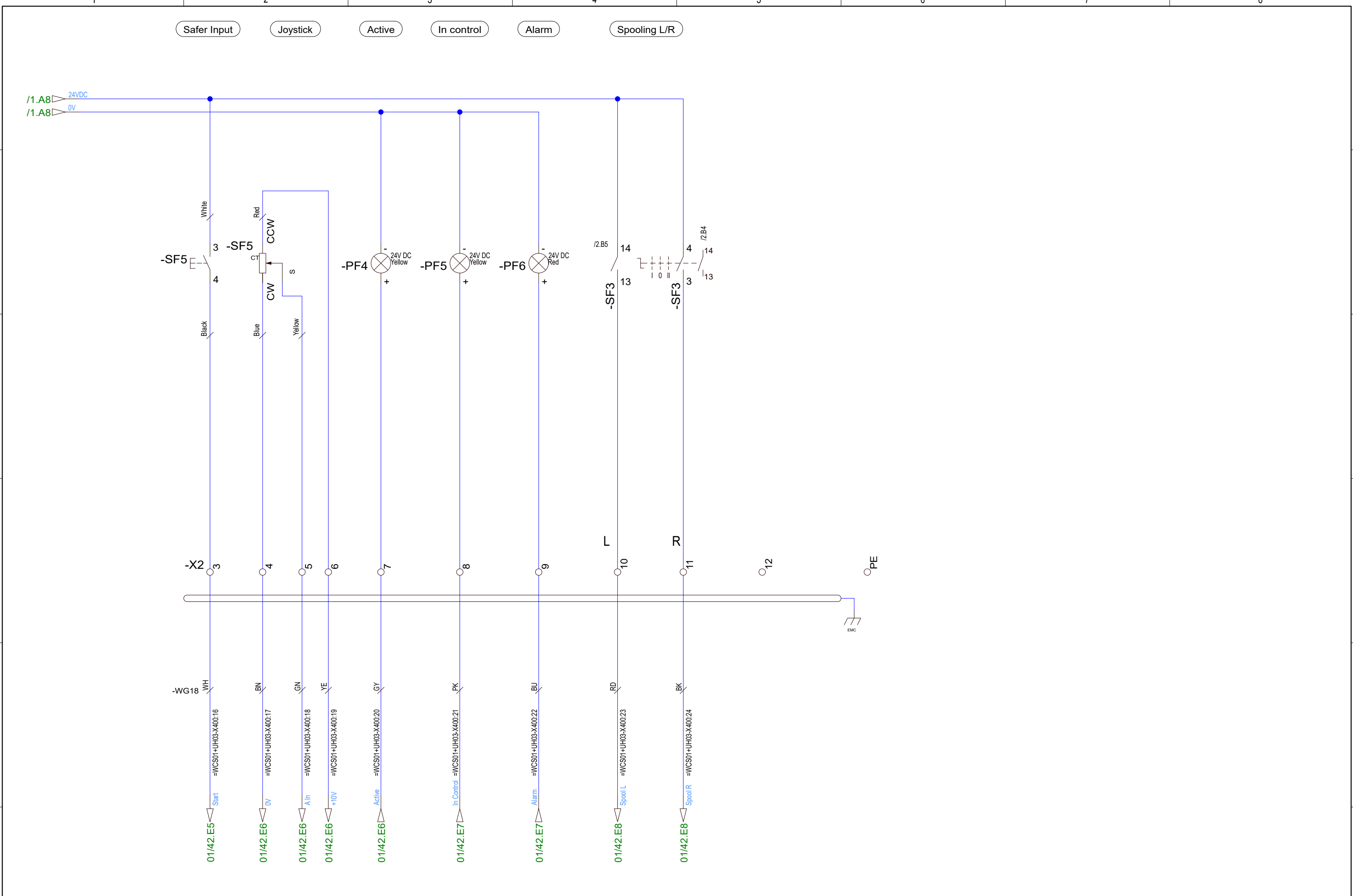
Main VFD Cabinet
Traction Winch
System
CTD Winch



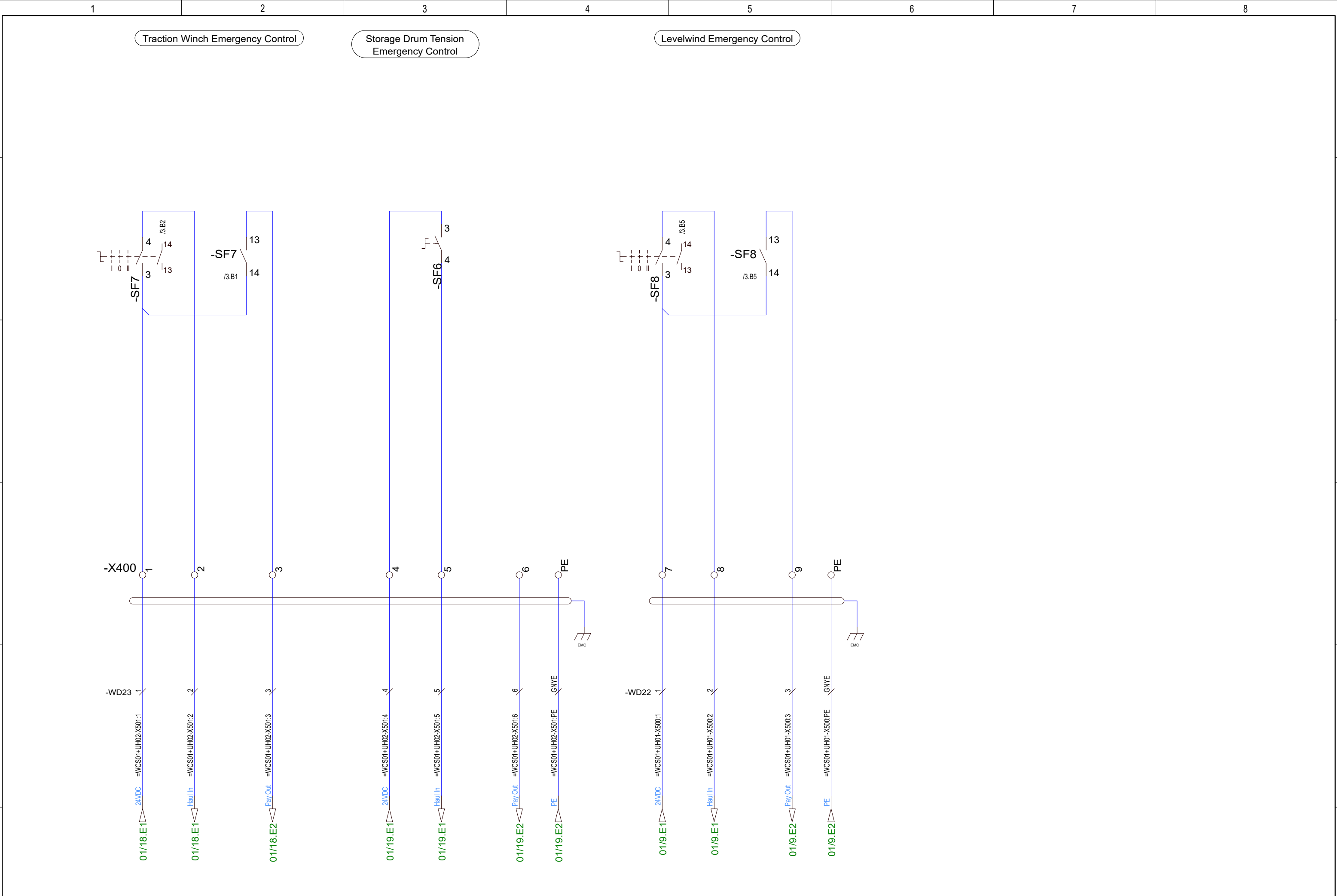


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				User	GSK								+WP02	
				Approved	RAJ						Rev.		G	Sheet 1
Status	Change	Date	Name	Standard		Version	Index	Repl. by			10070-07 CC		G	Next 2

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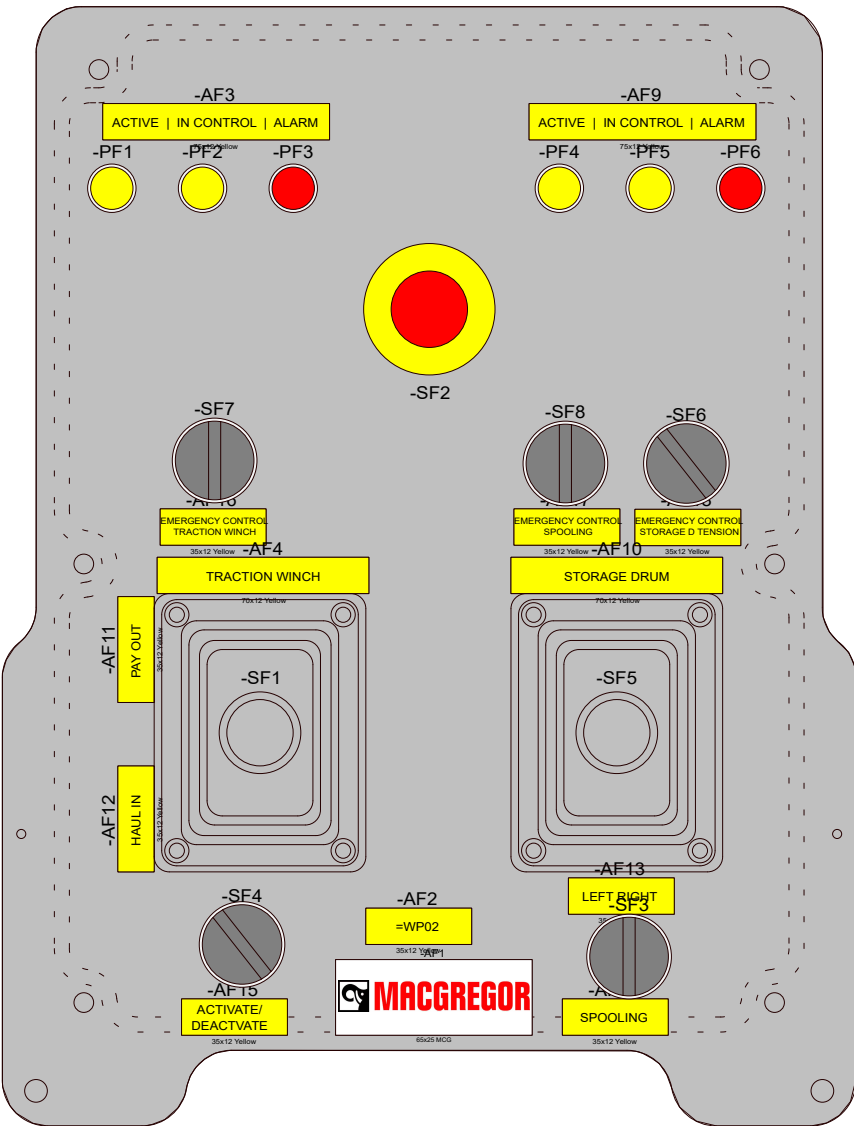
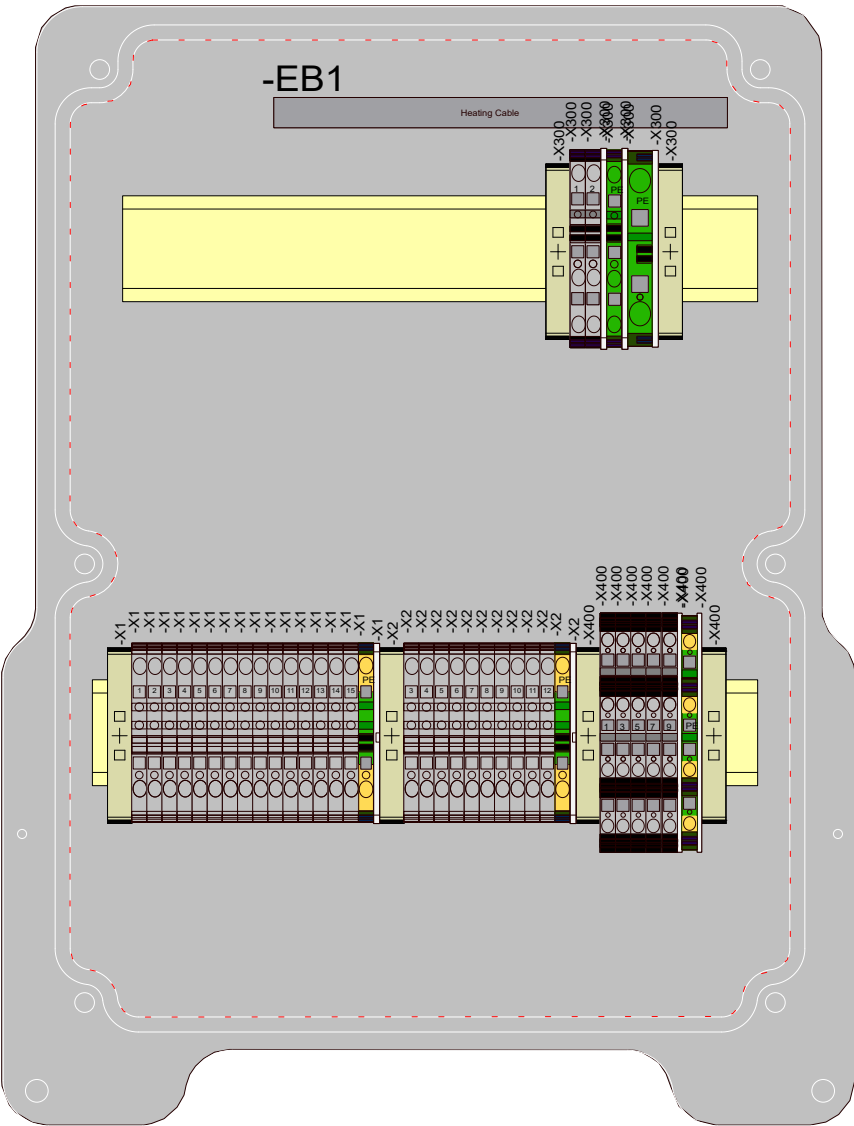


				Date	17/11-2021	CNP Freire MBarí				Deck Panel ROV Winch System Circuit Diagram Storage Drum	400182477		=WP02	
				User	GSK								+WP02	
				Approved	RAJ								Rev. G	
Status	Change	Date	Name	Standard		Version	Index	Repl. by			10070-07 CC		Next 3	

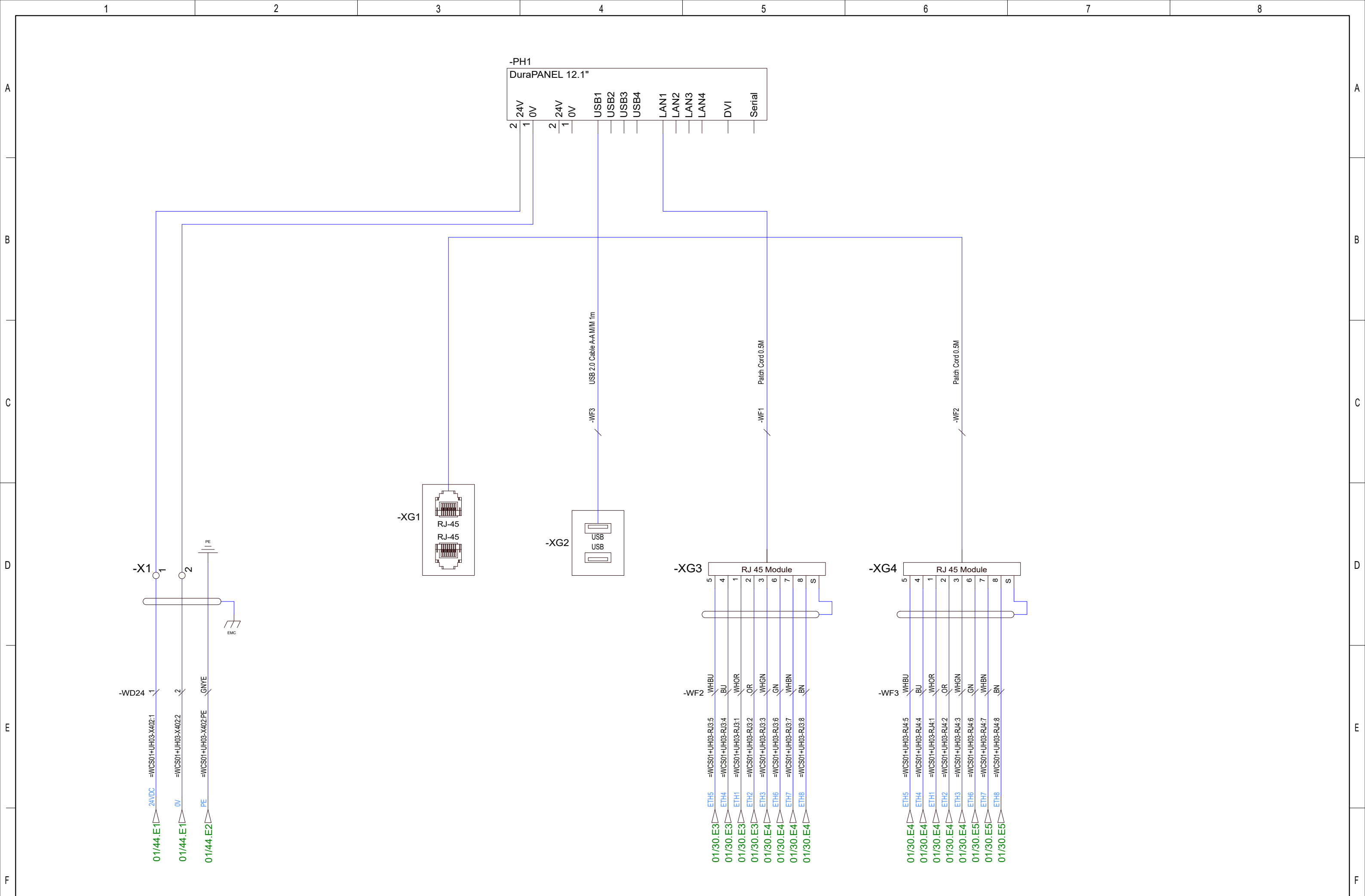


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				User	GSK								+WP02		
				Approved	RAJ								Rev. G		
Status	Change	Date	Name	Standard		Version	Index	Repl. by	Circuit Diagram			10070-07 CC		Sheet 3	
														Next 1	

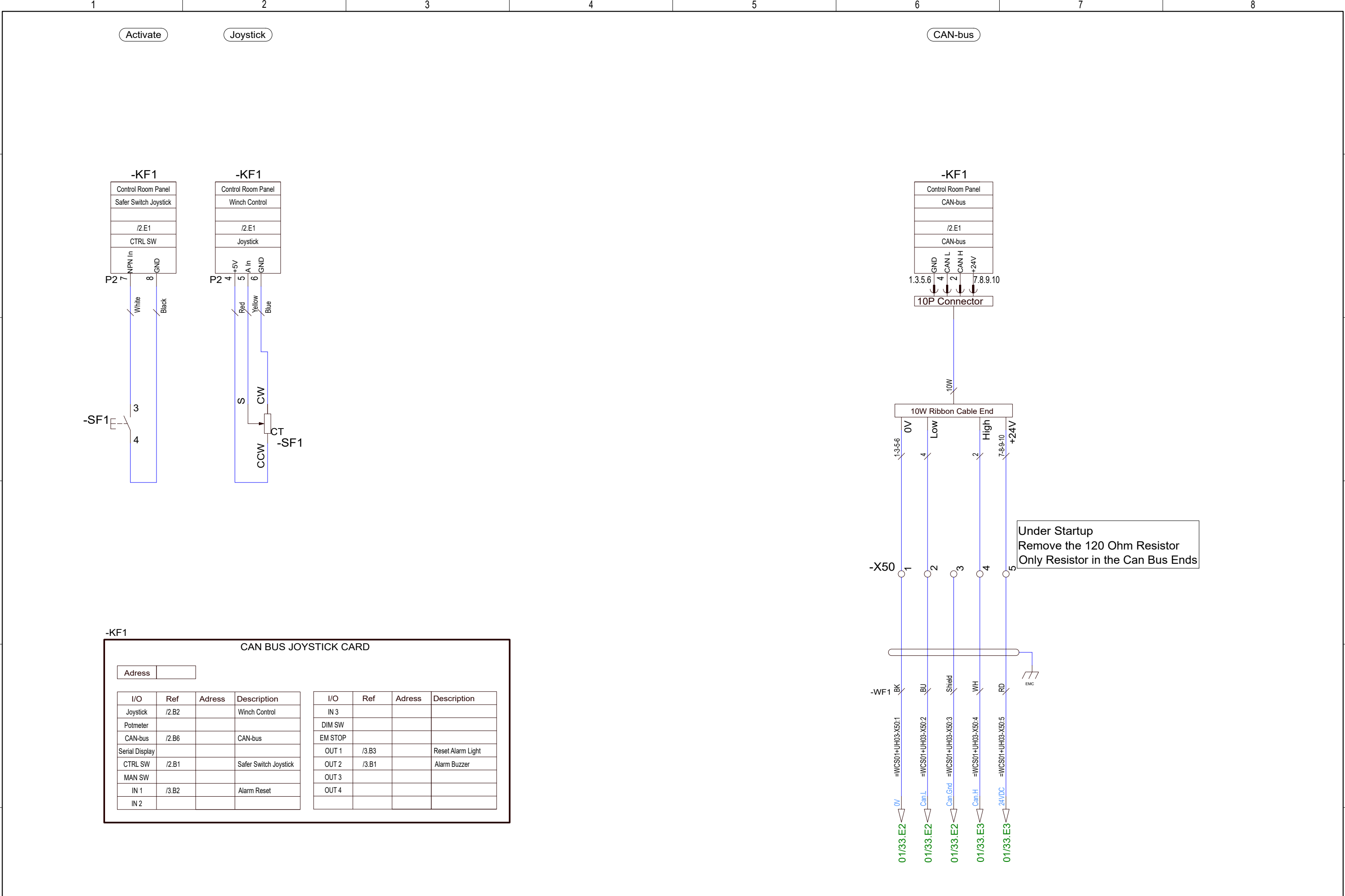
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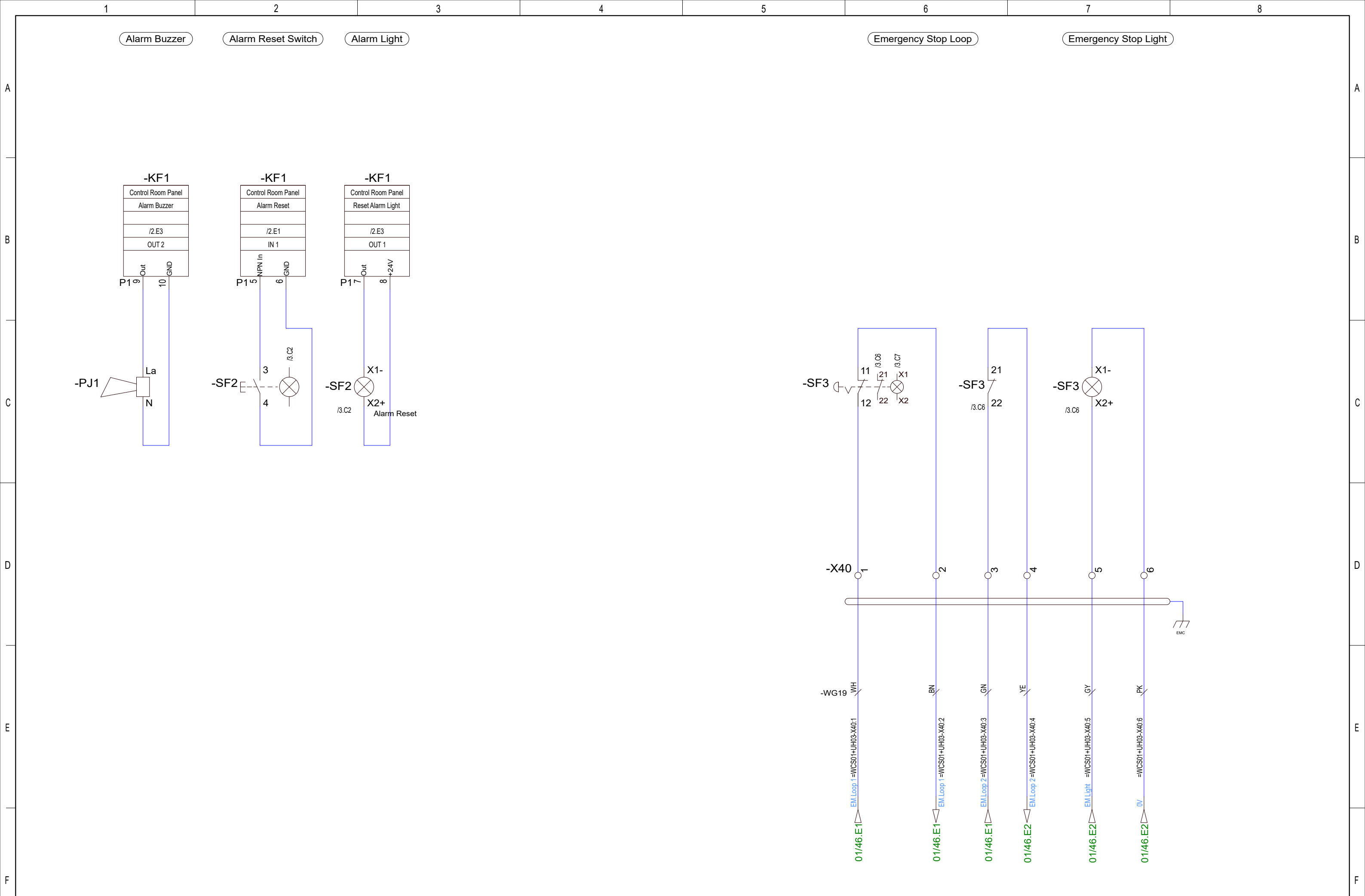


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				User	GSK							+WP02	
				Approved	RAJ								
Status	Change	Date	Name	Standard		Version	Index	Repl. by			10070-07 GA	Rev. G	Sheet 1
													Next 1

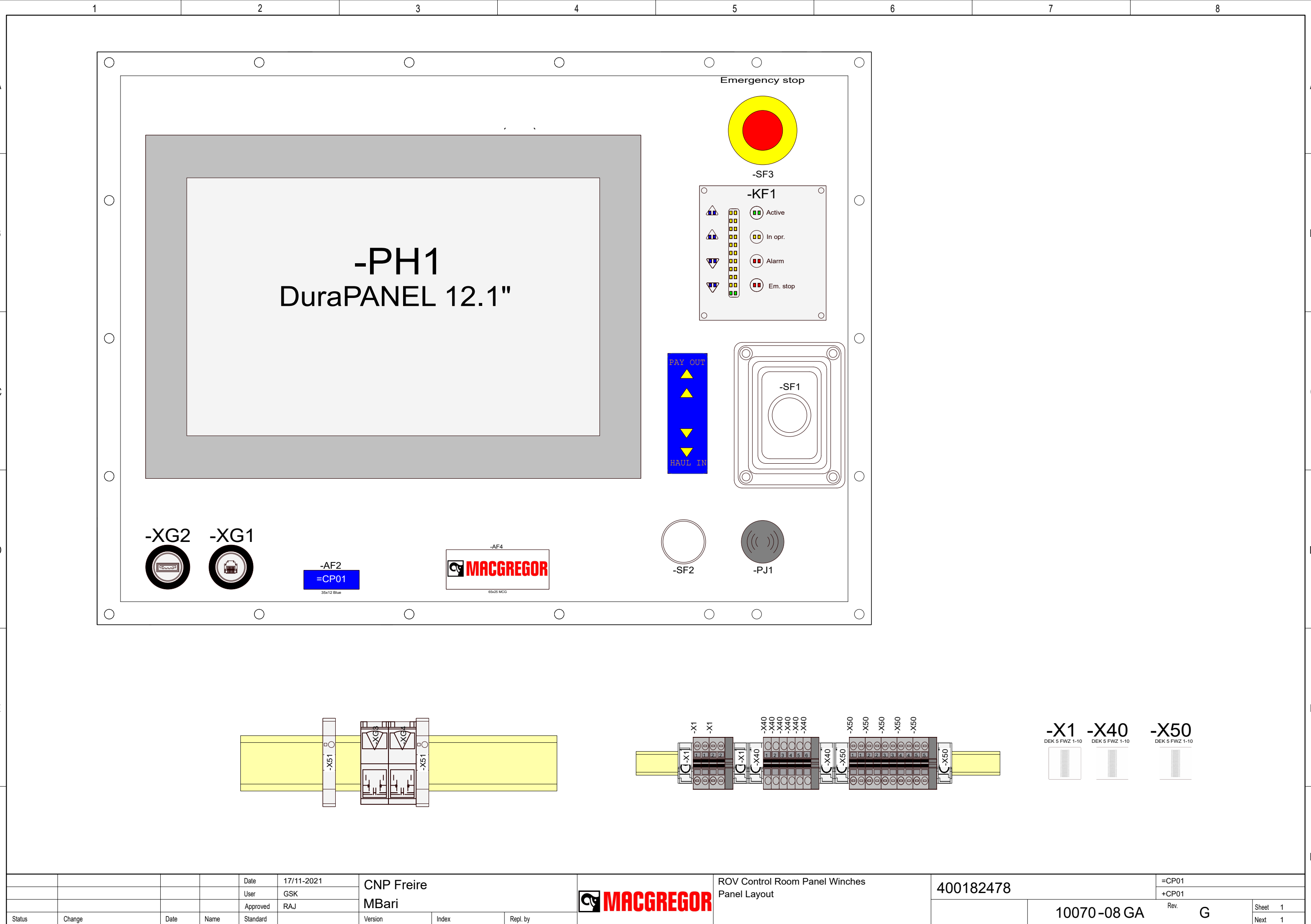


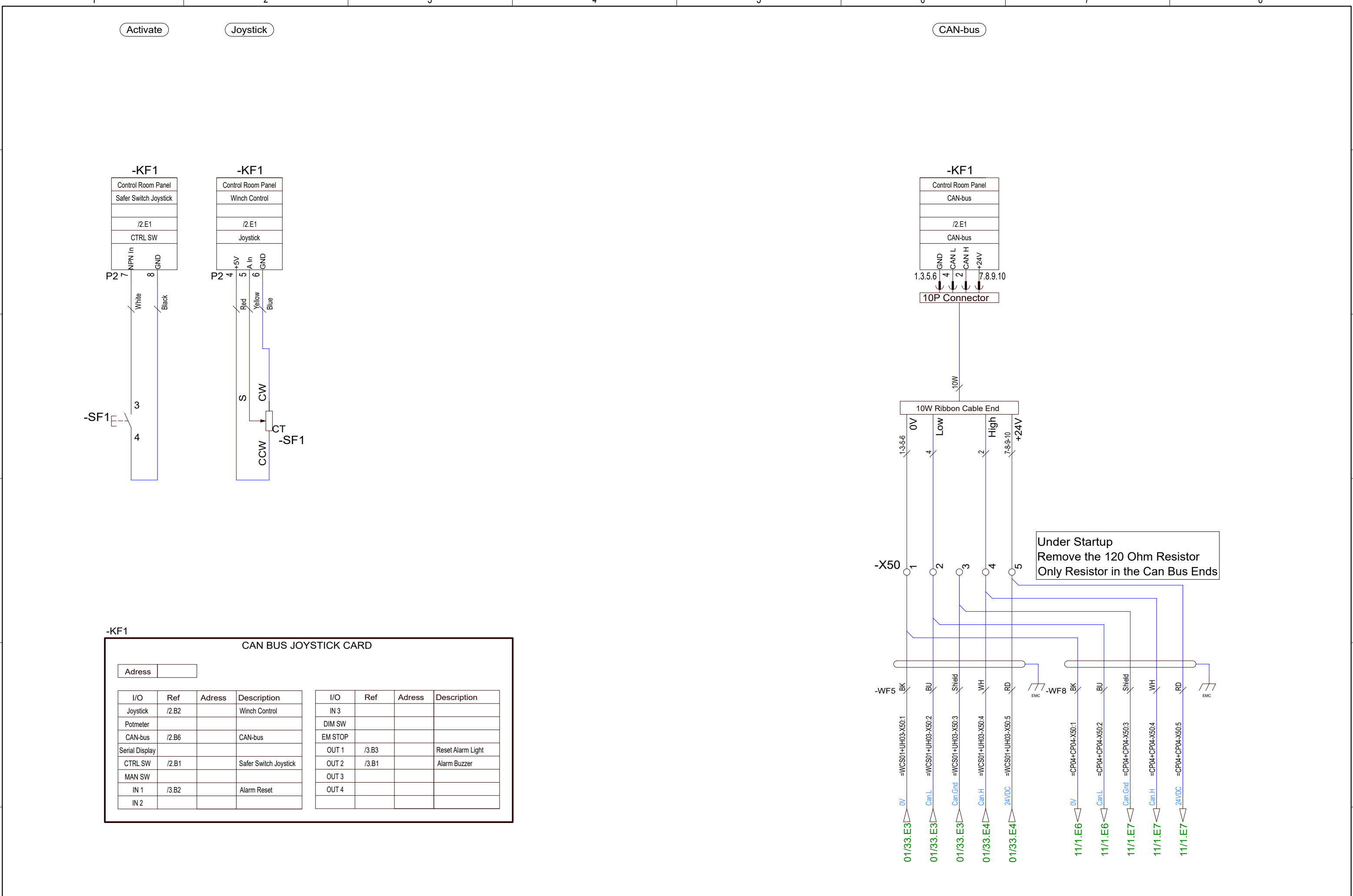
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			User	GSK	+CP01									
			Approved	RAJ	Rev.						G	Sheet 1		
Status	Change	Date	Name	Standard	Version	Index	Repl. by			10070-08 CC		Next 2		

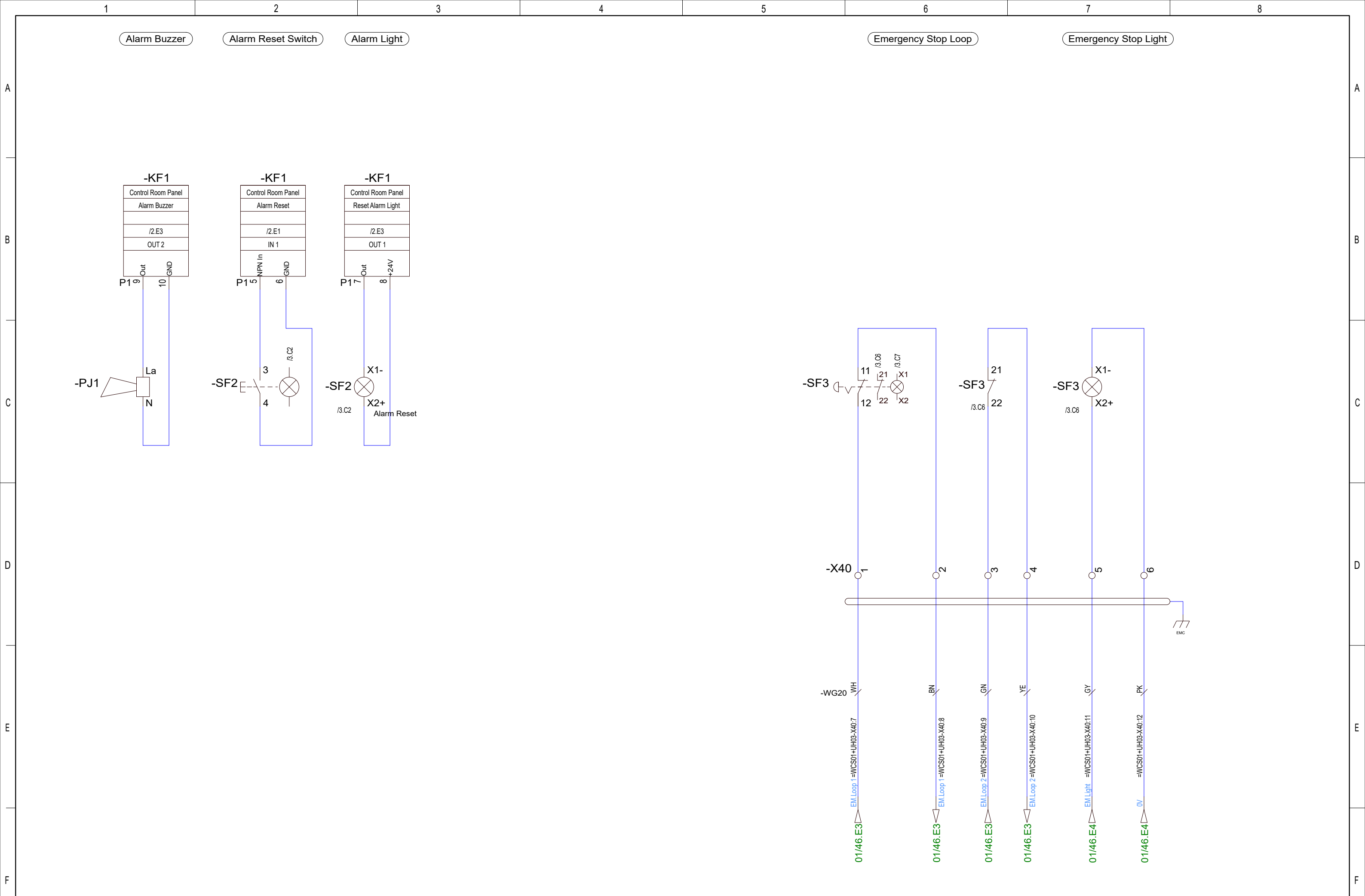




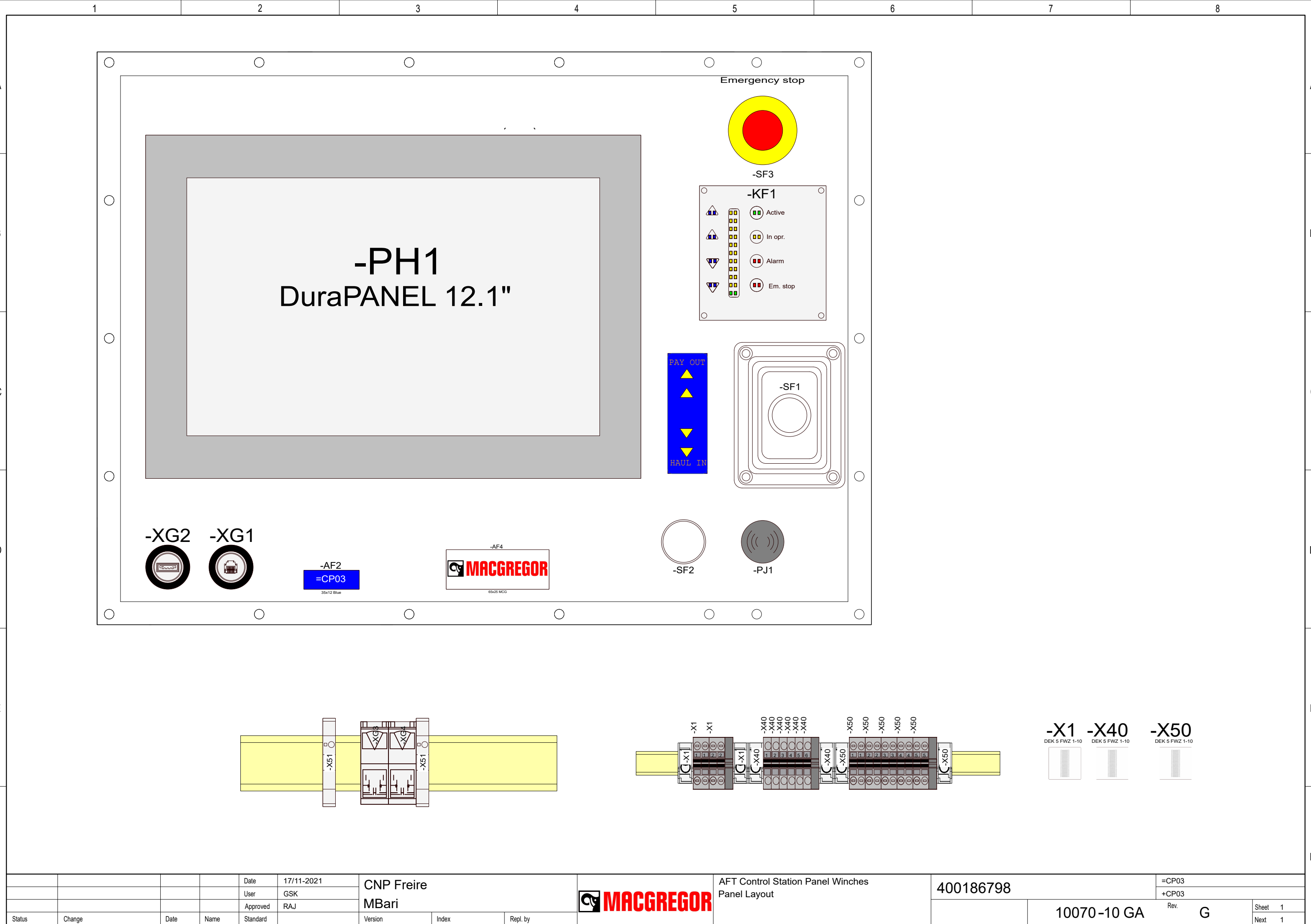
				Date	17/11-2021	CNP Freire MBari				ROV Control Room Panel Winches Panel PC, 1 Joystick	400182478		=CP01			
				User	GSK								+CP01			
				Approved	RAJ											
Status	Change	Date	Name	Standard		Version	Index	Repl. by					10070-08 CC	Rev.	G	Sheet 3
															Next 1	

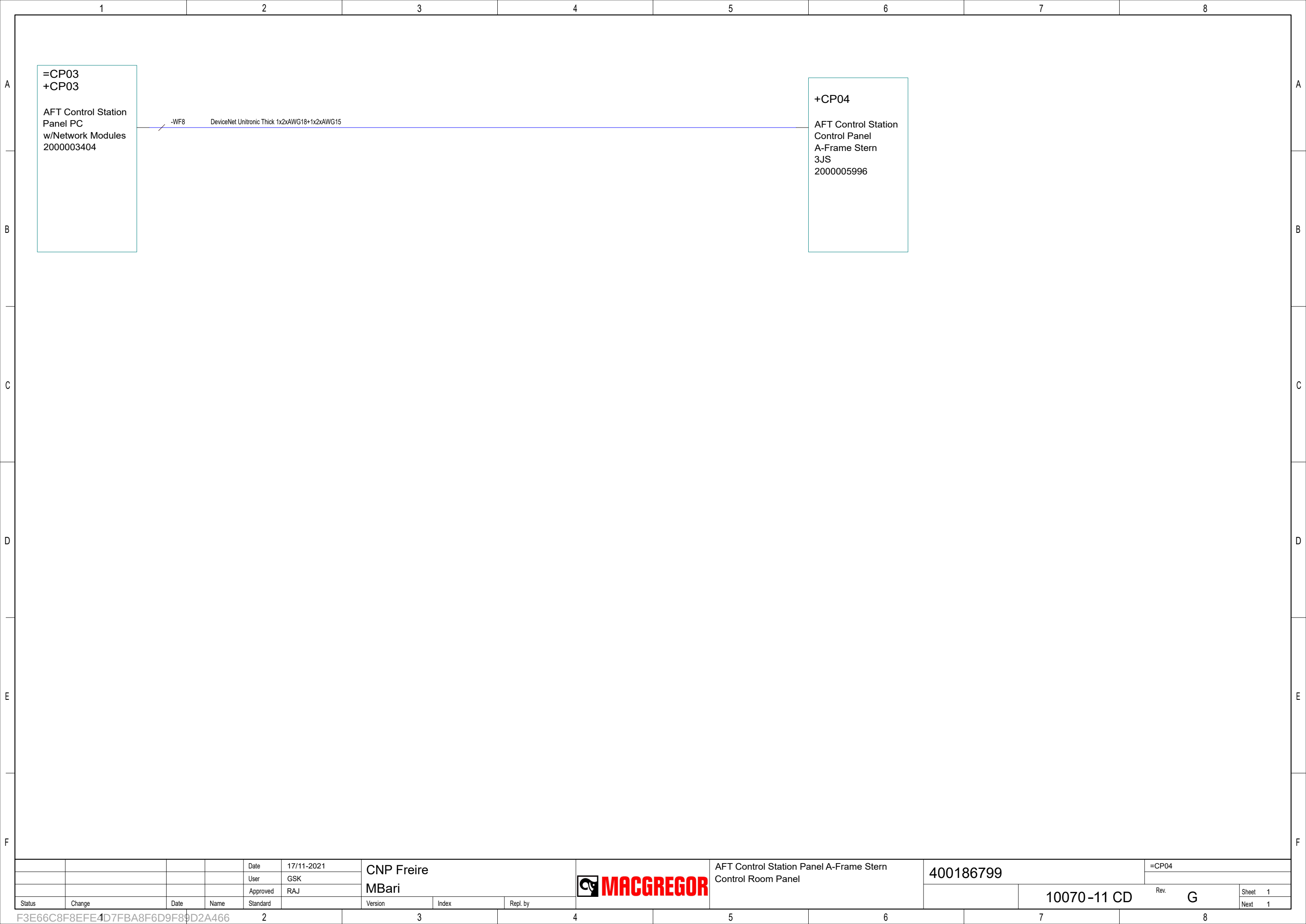


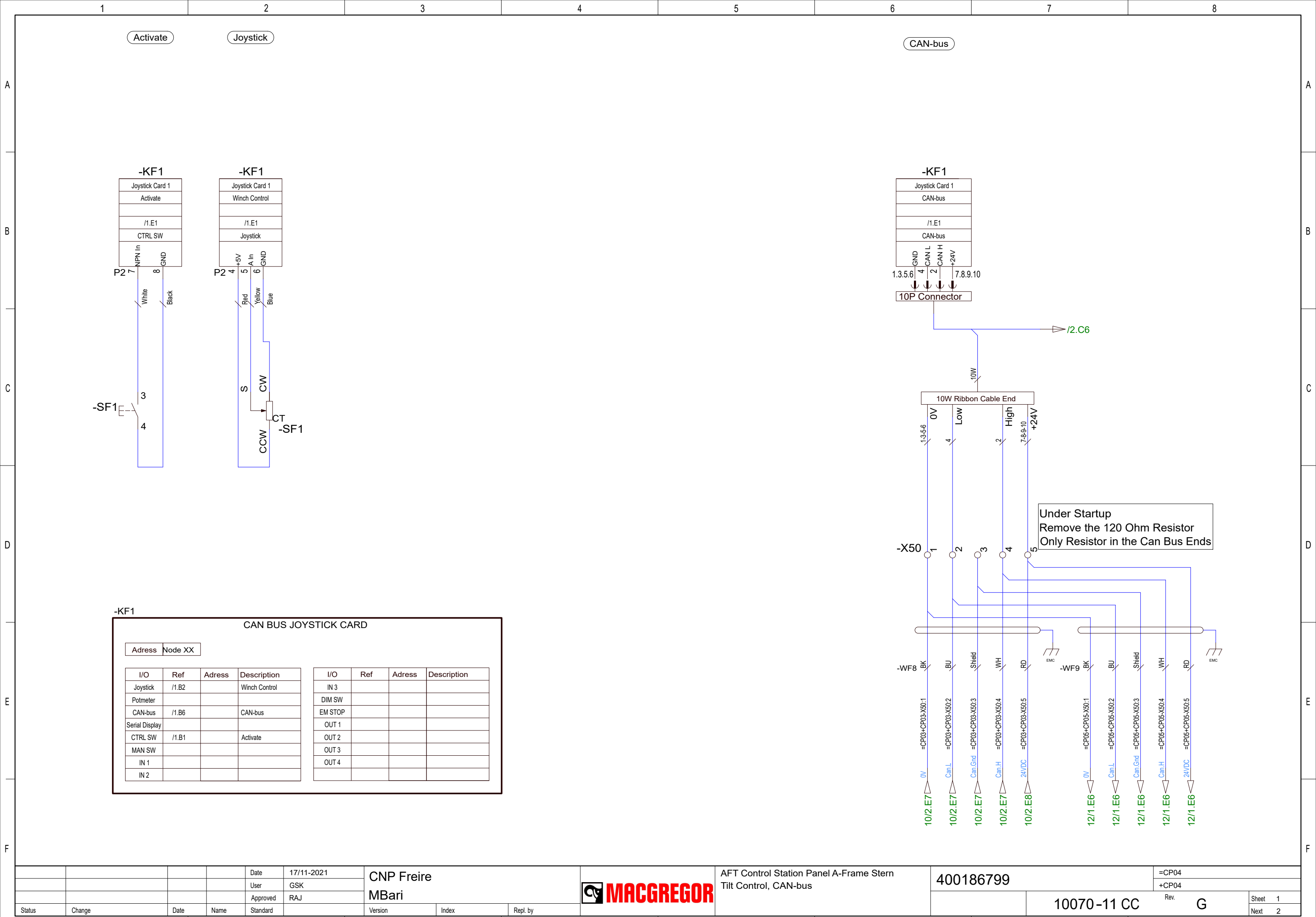


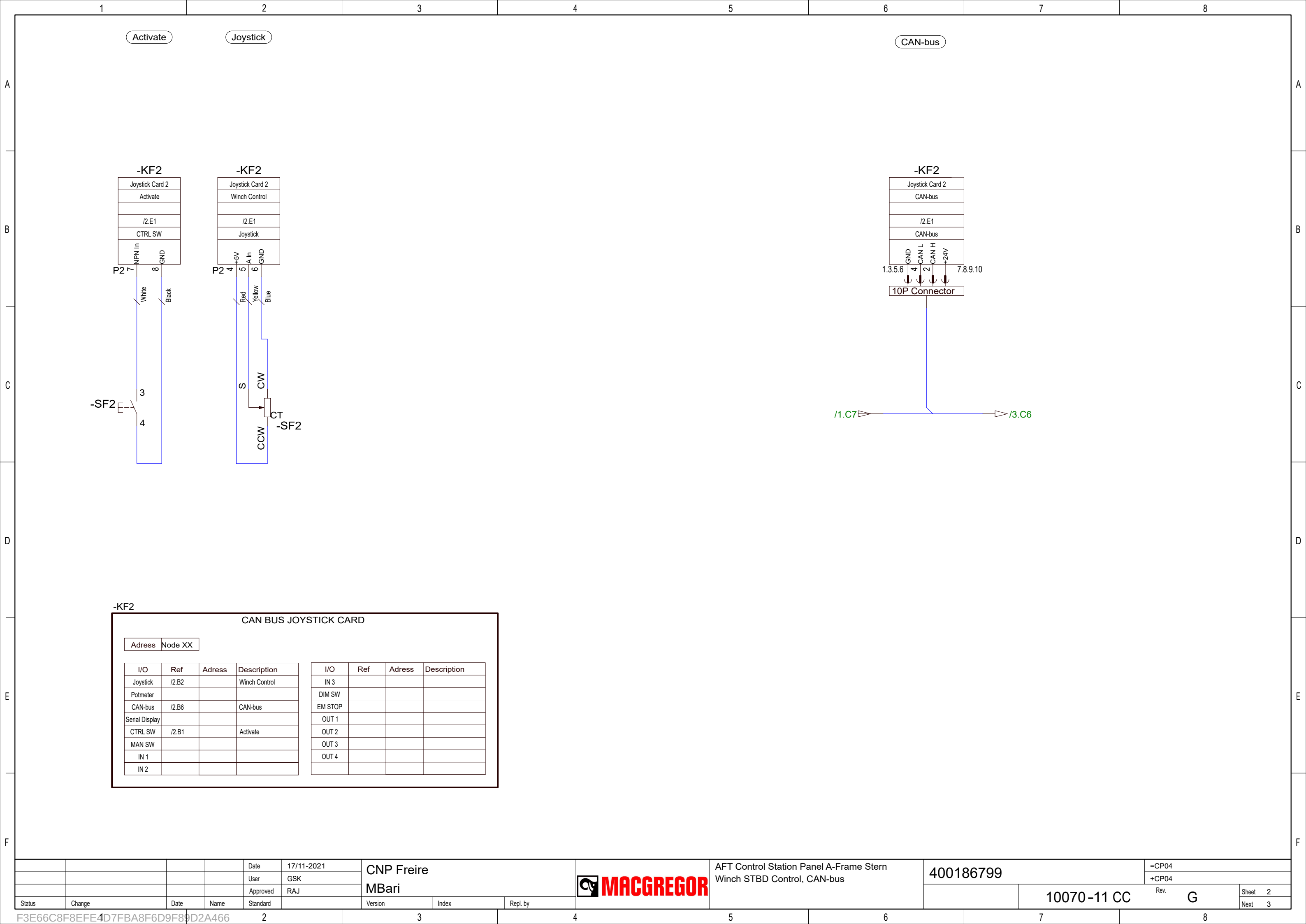


				Date	17/11-2021	CNP Freire MBari				AFT Control Station Panel Winches Panel PC, 1 Joystick	400186798		=CP03		
				User	GSK								+CP03		
				Approved	RAJ										
Status	Change	Date	Name	Standard		Version	Index	Repl. by				10070-10 CC	Rev.	G	Sheet 3 Next 1
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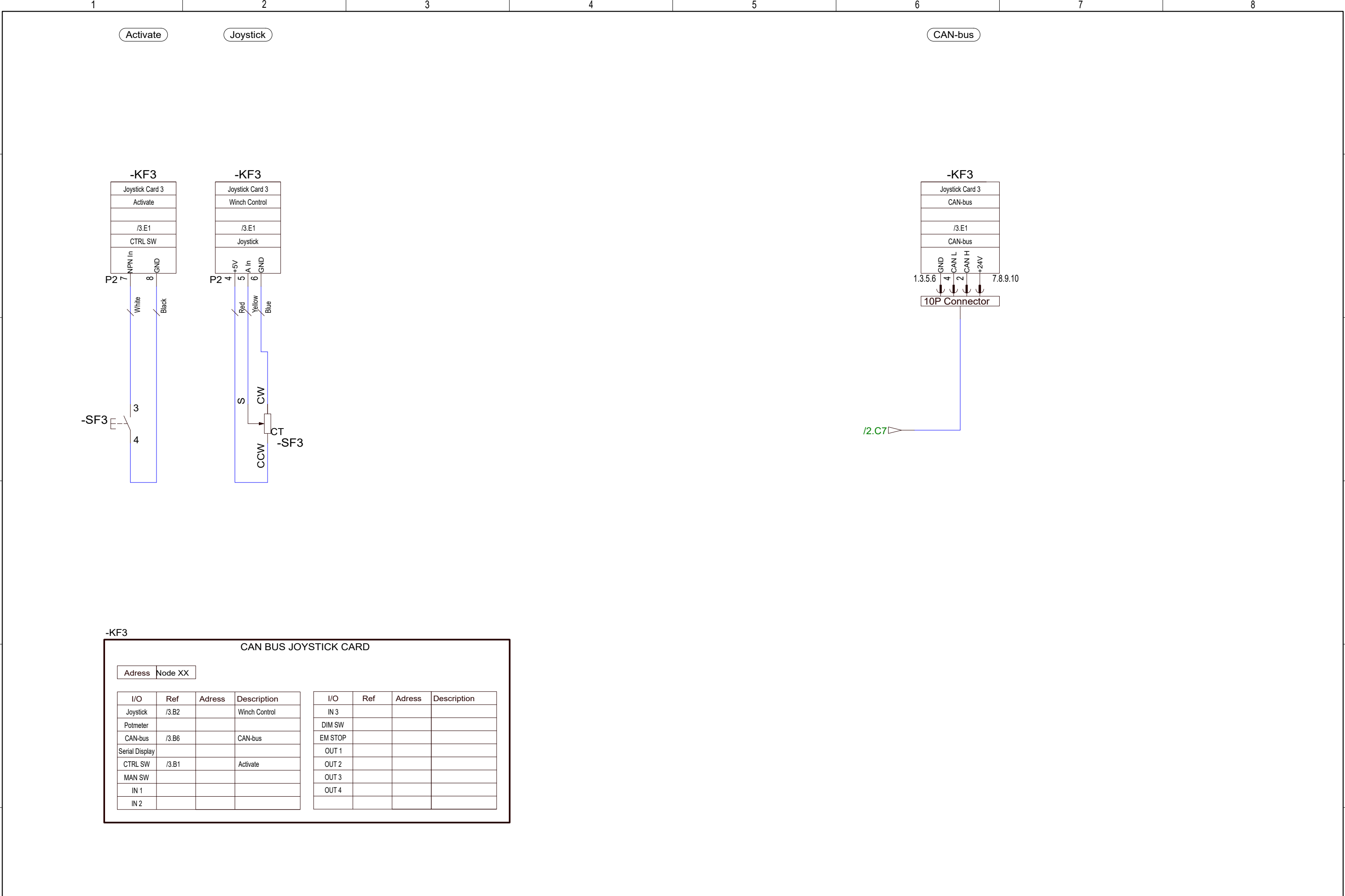




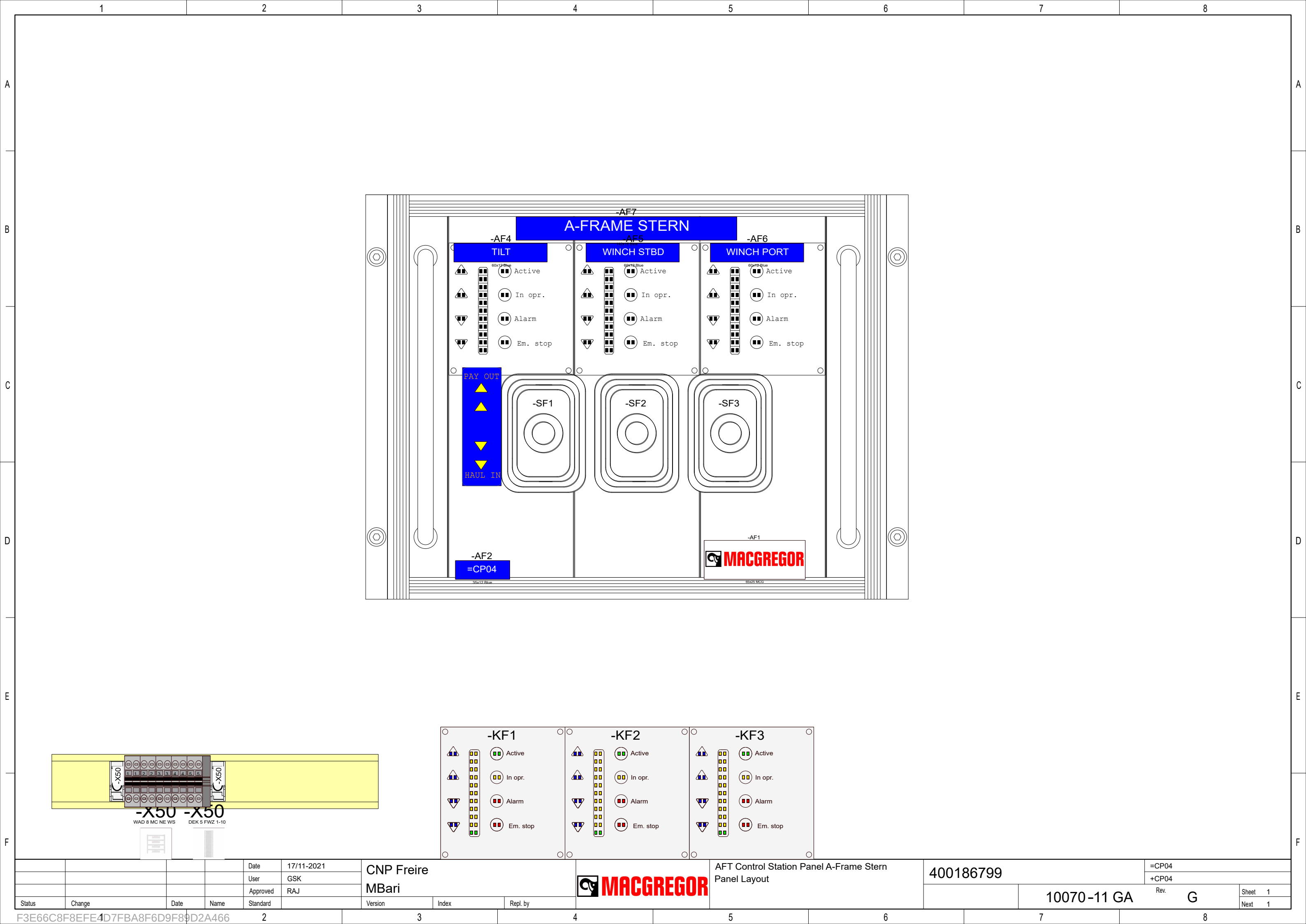


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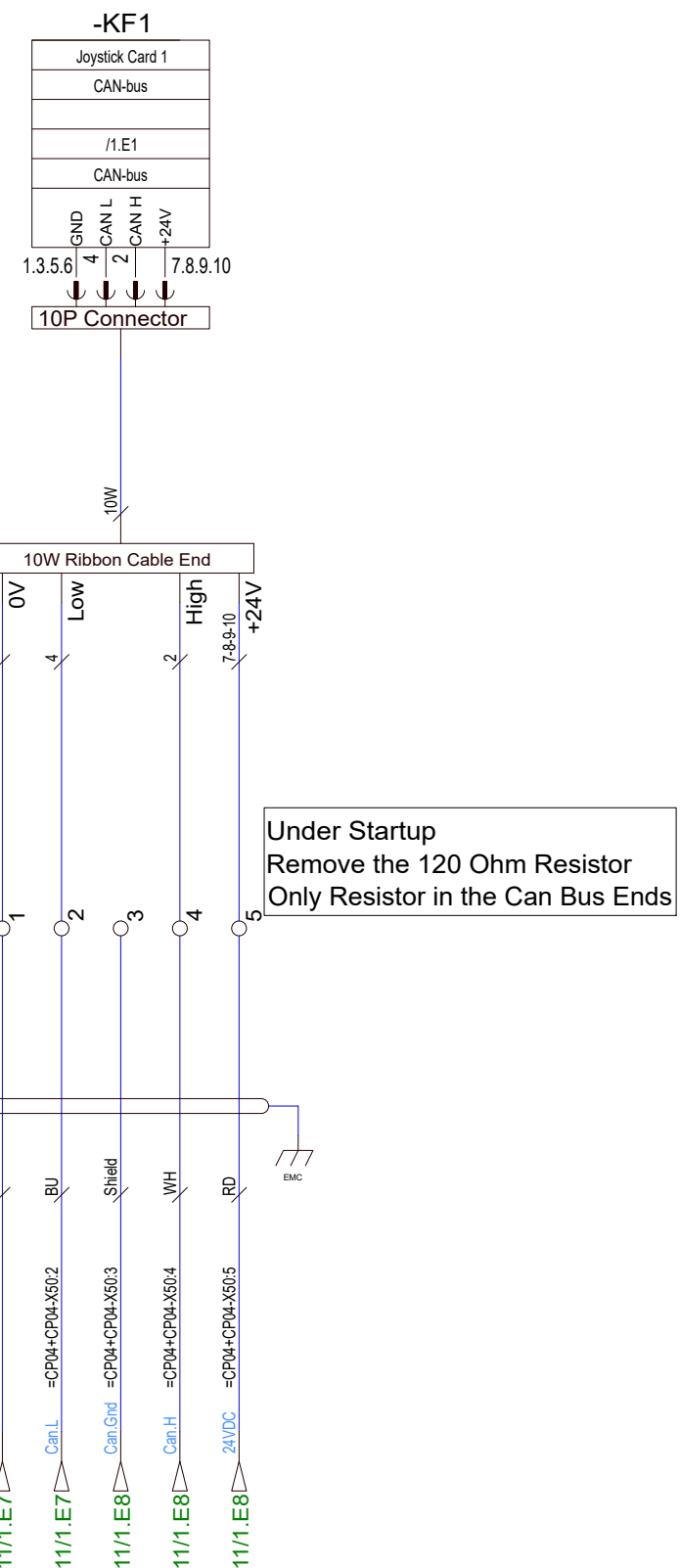
CAN BUS JOYSTICK CARD							
Address		Node XX					
I/O	Ref	Adress	Description	I/O	Ref	Adress	Description
Joystick	/2.B2		Winch Control	IN 3			
Potmeter				DIM SW			
CAN-bus	/2.B6		CAN-bus	EM STOP			
Serial Display				OUT 1			
CTRL SW	/2.B1		Activate	OUT 2			
MAN SW				OUT 3			
IN 1				OUT 4			
IN 2							

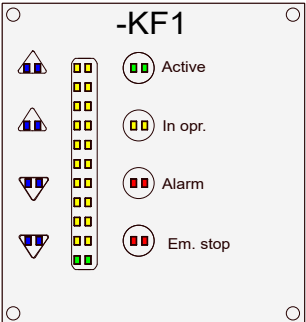
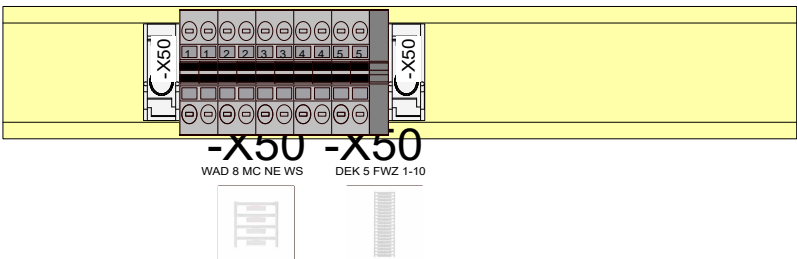
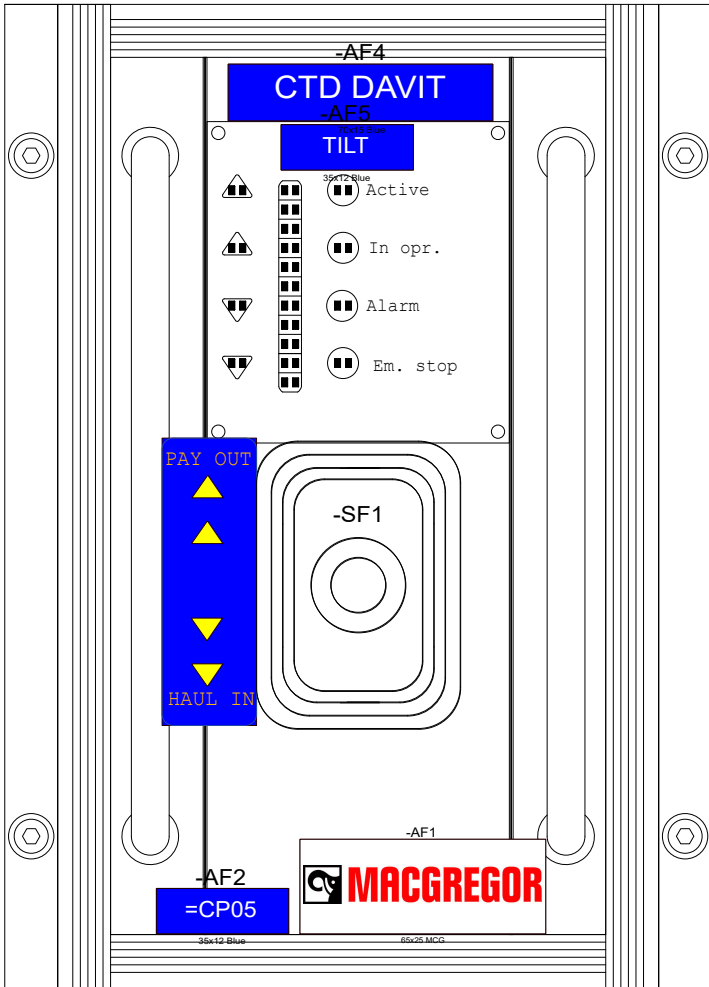


CAN BUS JOYSTICK CARD							
Address		Node XX					
I/O	Ref	Adress	Description	I/O	Ref	Adress	Description
Joystick	/3.B2		Winch Control	IN 3			
Potmeter				DIM SW			
CAN-bus	/3.B6		CAN-bus	EM STOP			
Serial Display				OUT 1			
CTRL SW	/3.B1		Activate	OUT 2			
MAN SW				OUT 3			
IN 1				OUT 4			
IN 2							

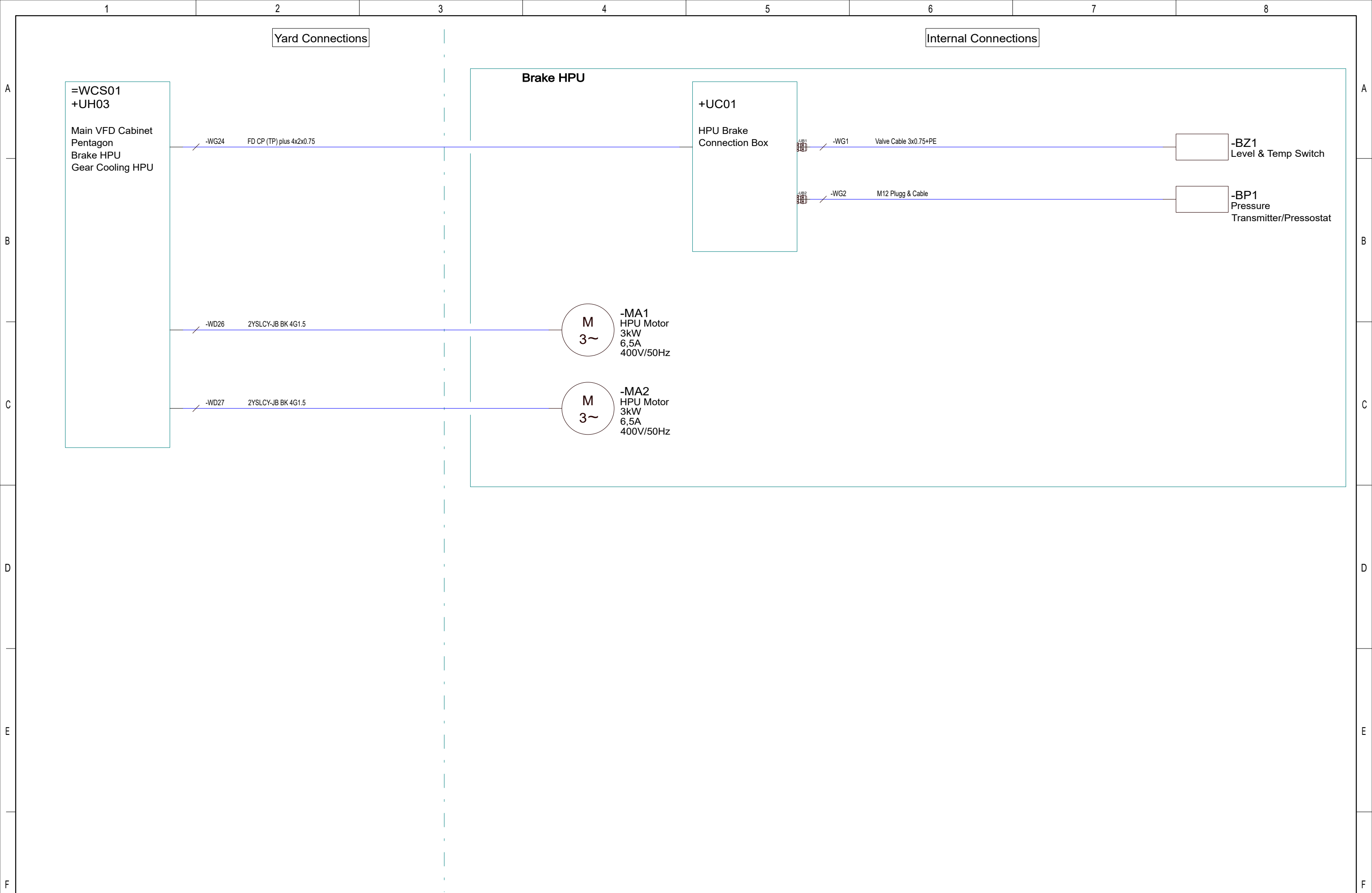


				Date	17/11-2021	CNP Freire MBarí				AFT Control Station Panel A-Frame Stern Panel Layout	400186799		=CP04	
				User	GSK								+CP04	
				Approved	RAJ									
Status	Change	Date	Name	Standard		Version	Index	Repl. by				10070-11 GA	Rev. G	Sheet 1
														Next 1

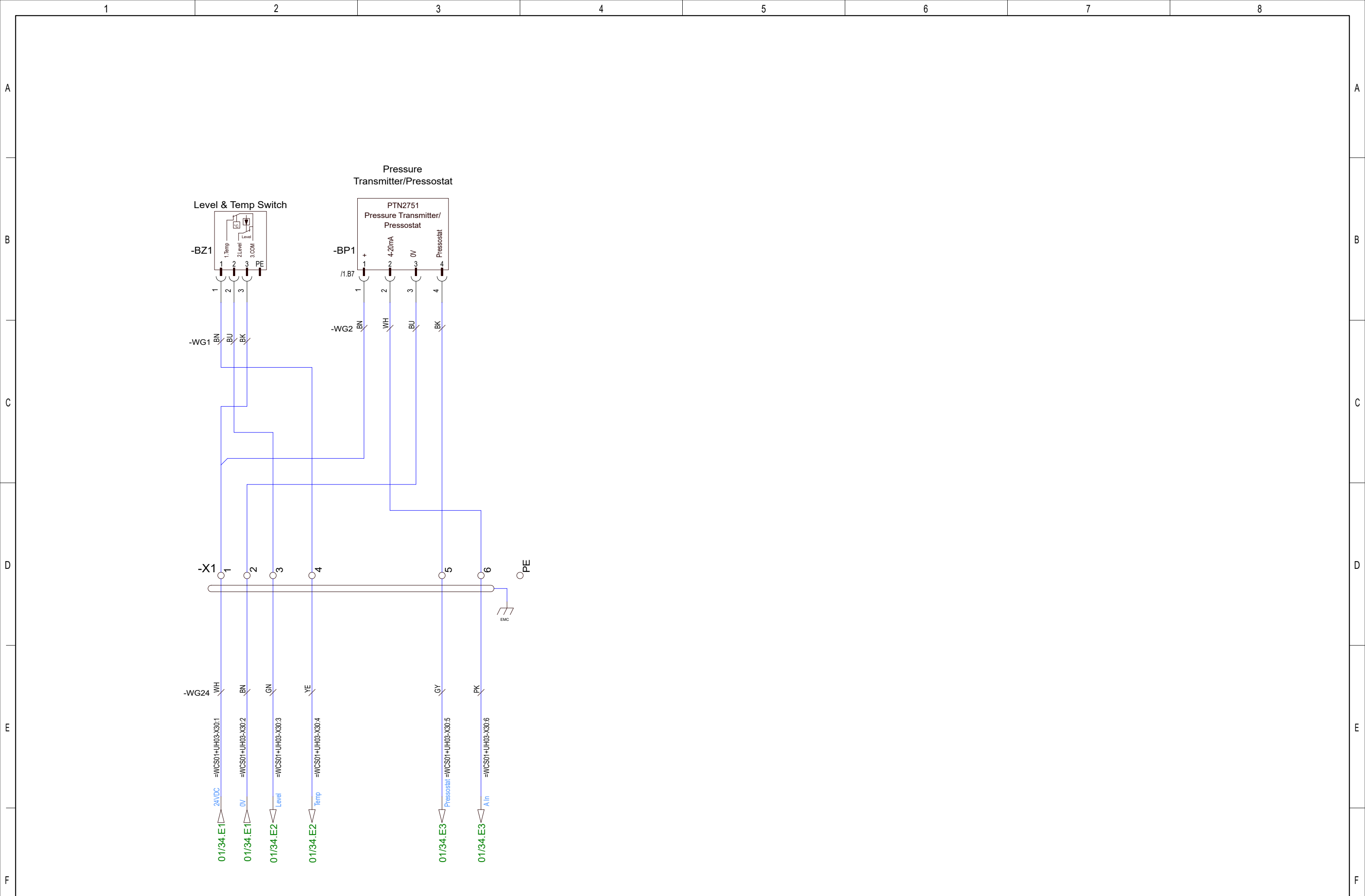




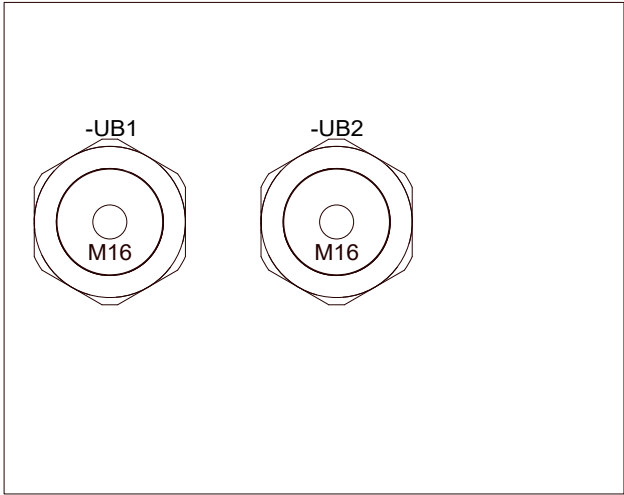
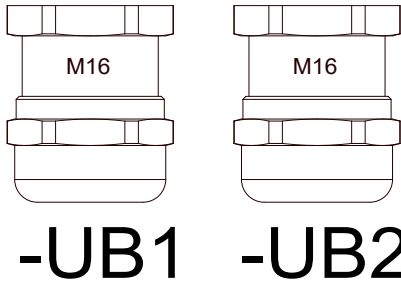
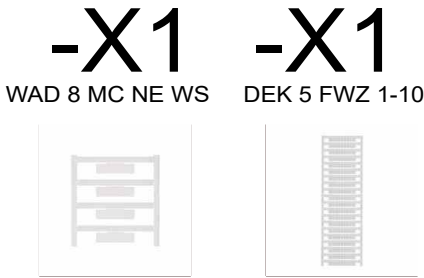
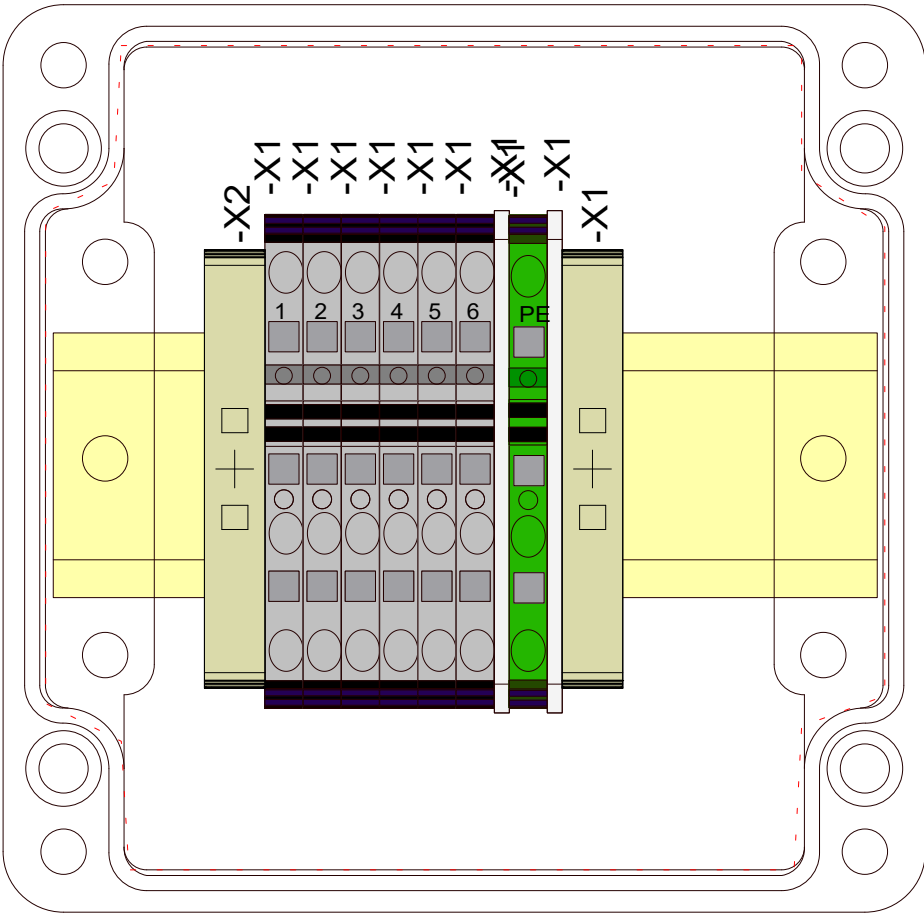
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				User	GSK								+CP05	
				Approved	RAJ									
Status	Change	Date	Name	Standard		Version	Index	Repl. by			10070-12 GA	Rev.	G	Sheet 1
														Next 1

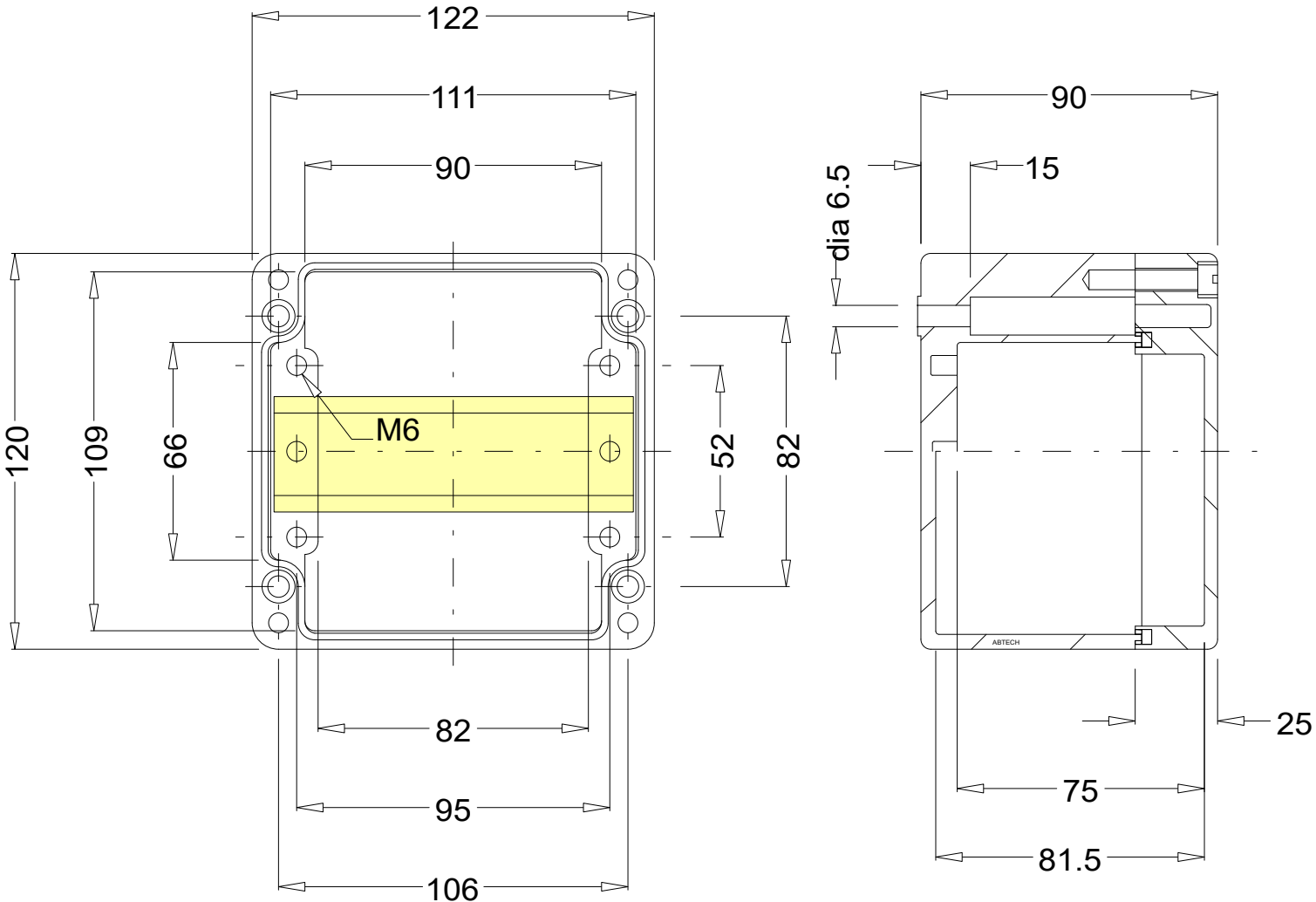


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				User	GSK									
				Approved	RAJ						MBarí			
Status	Change		Date	Name	Standard		Version	Index	Repl. by			10070-16 CD	Rev. G	Sheet 1
														Next 1

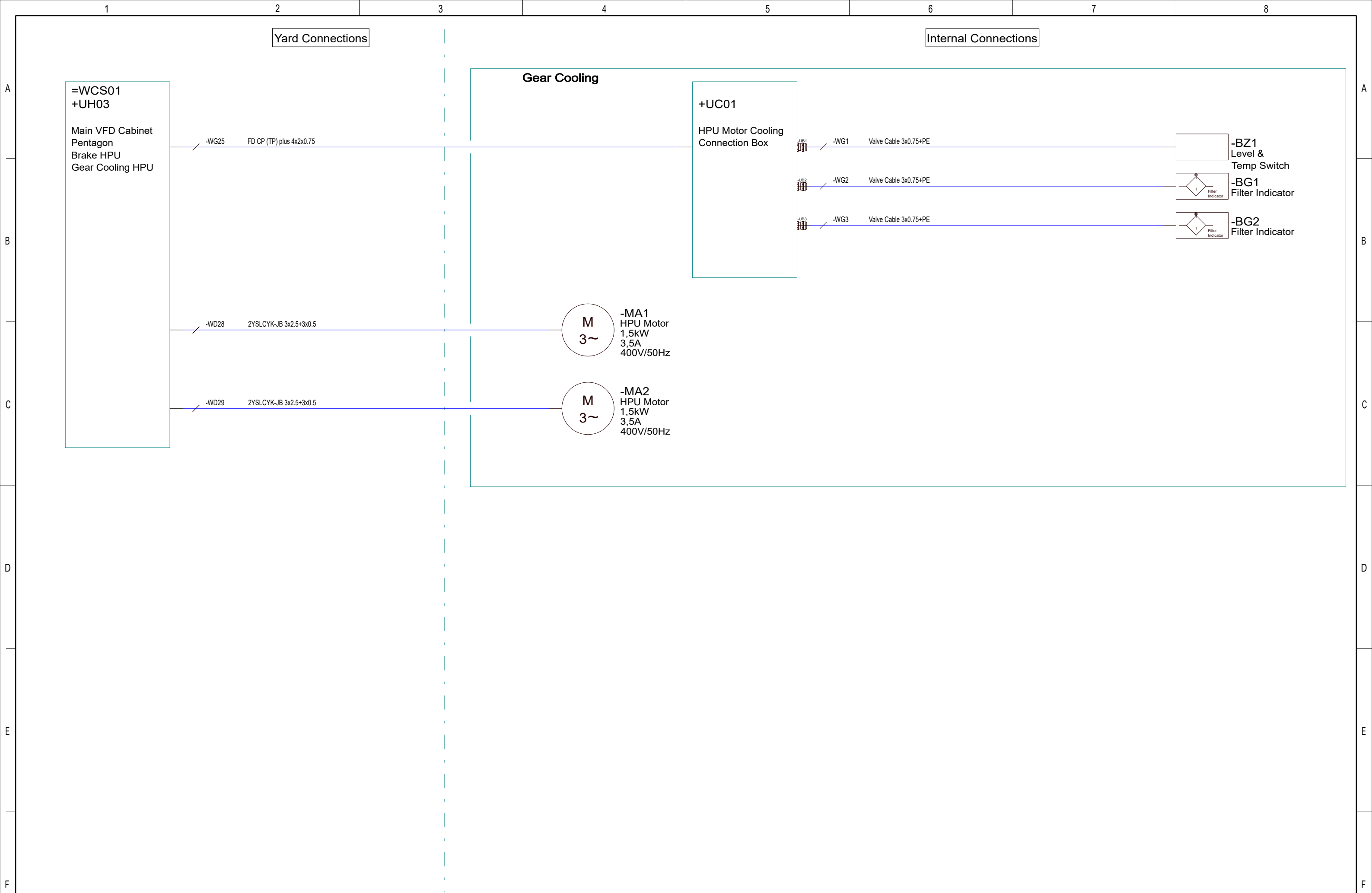


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				Approved	RAJ									
Status	Change	Date	Name	Standard		Version	Index	Repl. by				10070-16 CC	Rev. G	Sheet 1
														Next 1

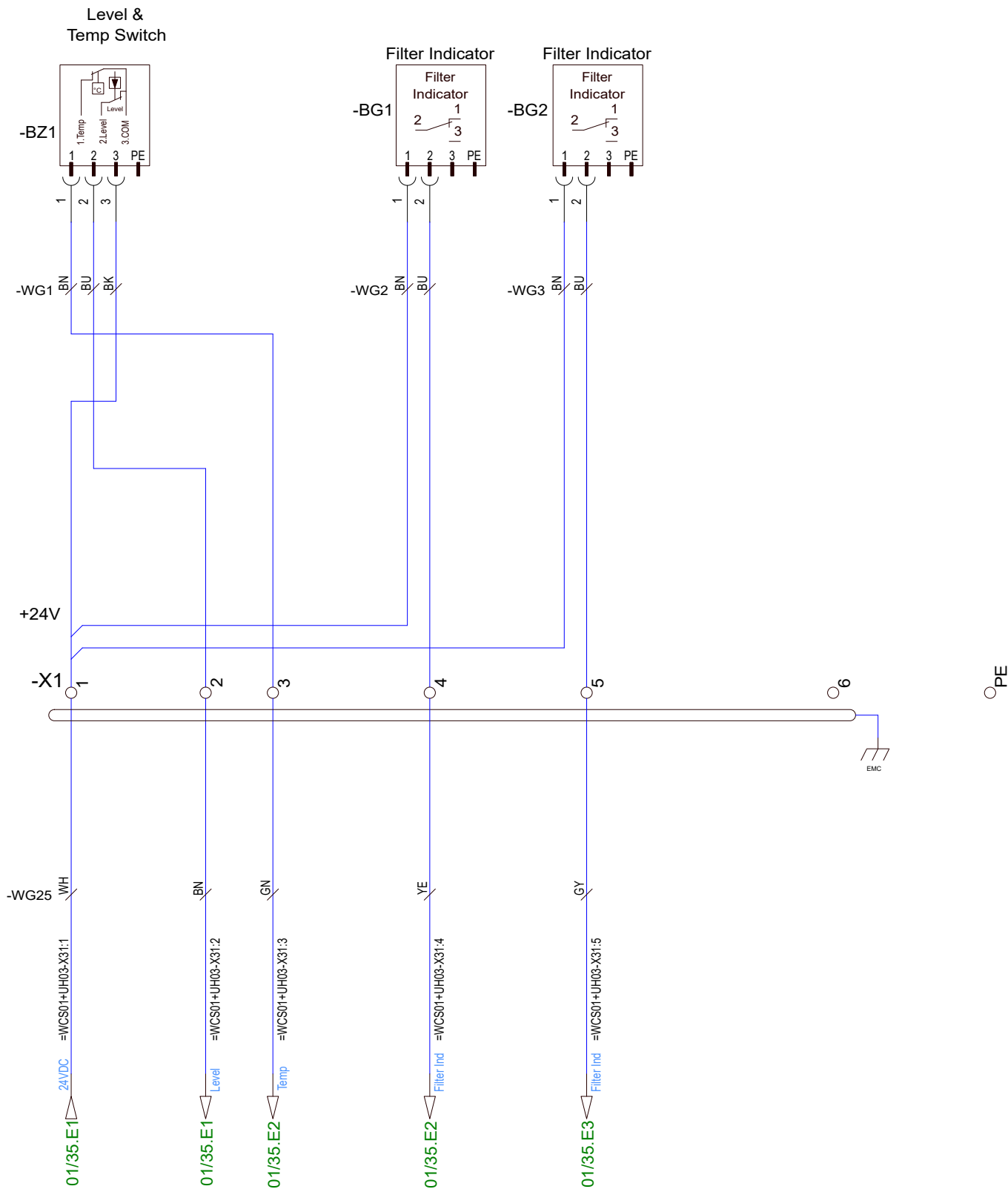




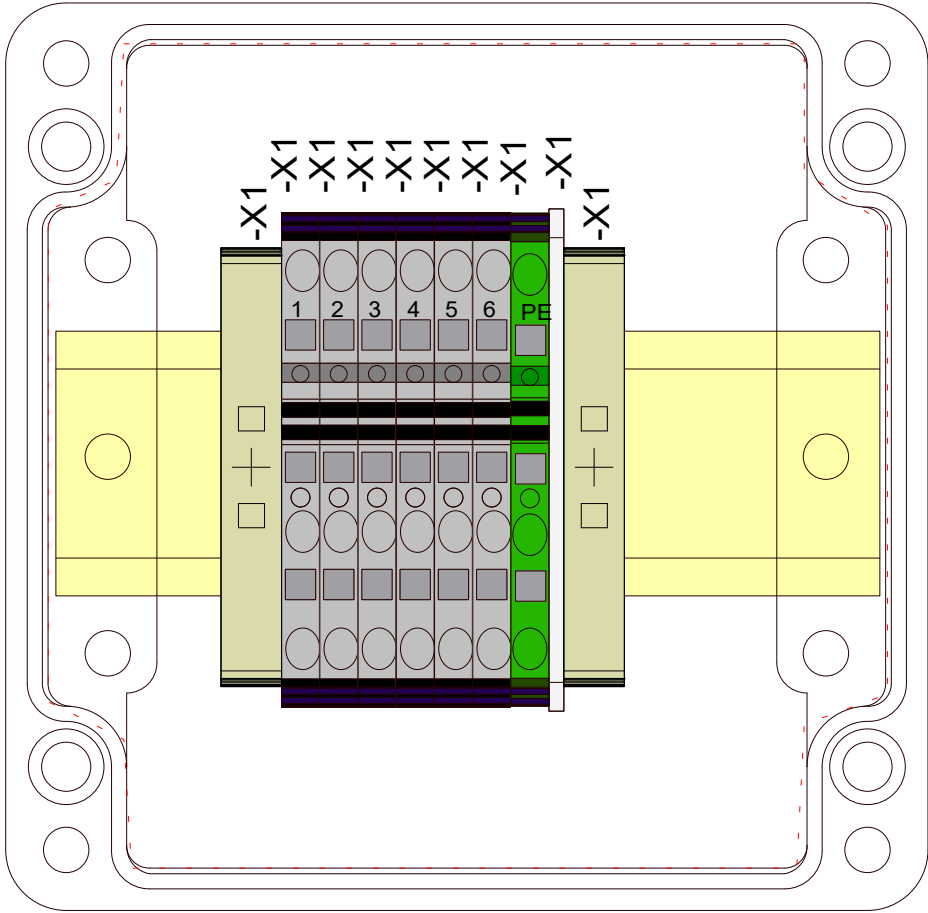
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				User	GSK								+UC01	
				Approved	RAJ						MBarí			
Status	Change		Date	Name	Standard	Version	Index	Repl. by			10070-16 GA			Next 1



				Date	17/11-2021	CNP Freire				Gear Cooling HPU System Gear Cooling HPU System	NA	=HPUGC01		
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				Approved	RAJ									
Status	Change	Date	Name	Standard		Version	Index	Repl. by				10070-17 CD	Rev. G	Sheet 1
														Next 1



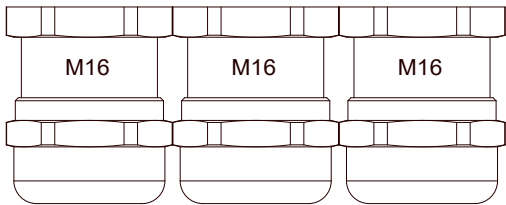
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Status	Change	Date	Name	Standard		Version	Index	Repl. by				10070-17 CC	Rev. G	Sheet 1
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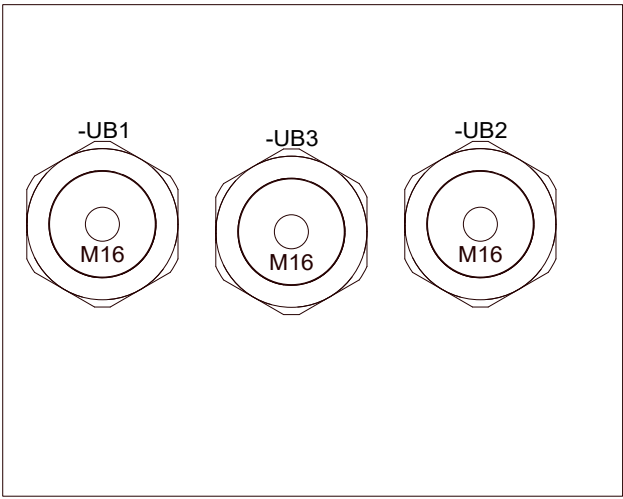
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WAD 8 MC NE WS



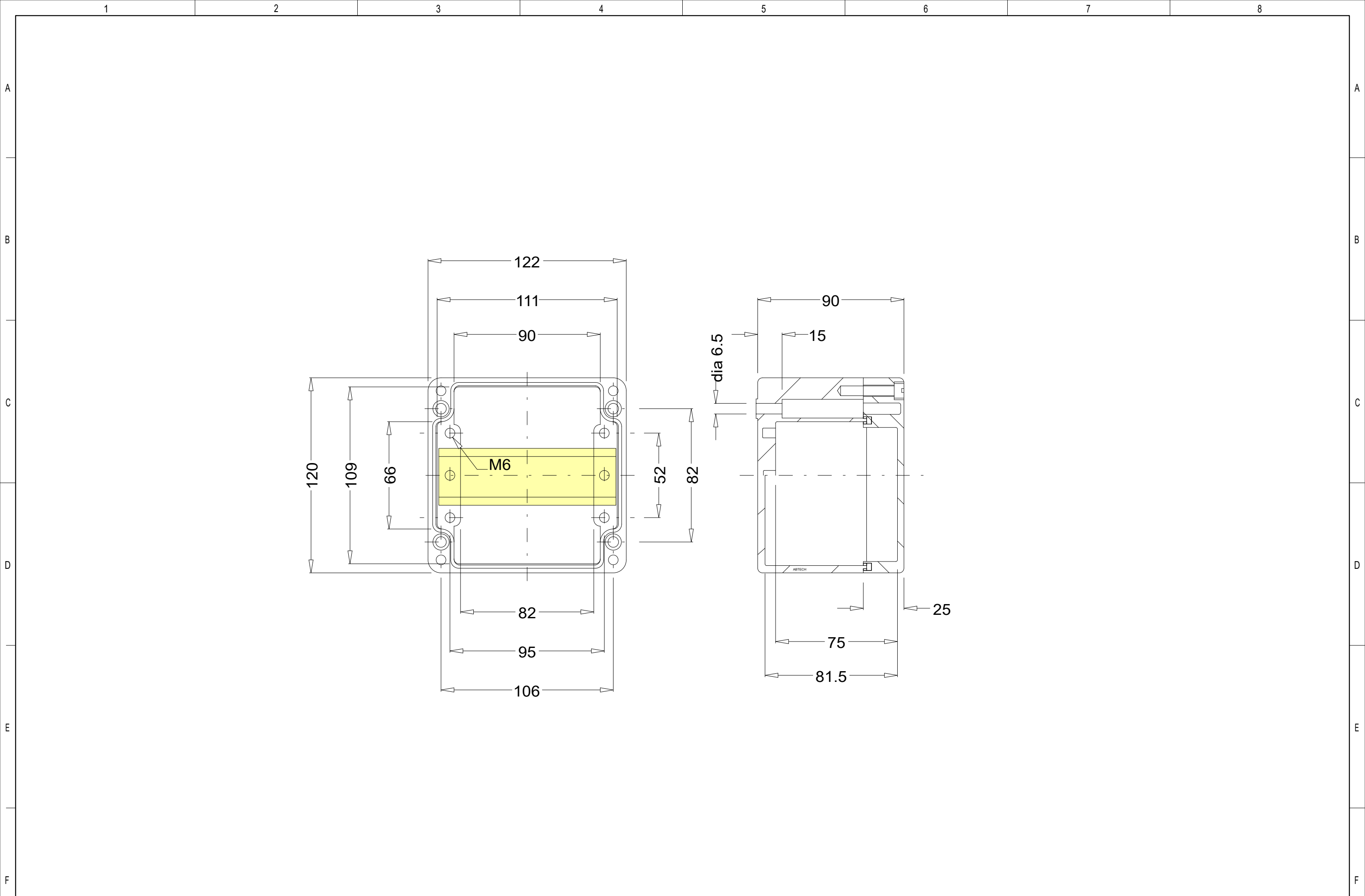
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DEK 5 FWZ 1-10



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				Date	17/11-2021	CNP Freire MBar			Gear Cooling HPU System HPU Gear Cooling Connection Box		NA		=HPUGC01	
				User	GSK								+UC01	
				Approved	RAJ									
Status	Change	Date	Name	Standard	Version	Index	Repl. by			10070-17 GA		Rev.	G	Sheet 1
														Next 2



				Date	17/11-2021	CNP Freire				Gear Cooling HPU System HPU Gear Cooling Connection Box	NA	=HPUGC01		
				User	GSK							+UC01		
				Approved	RAJ							MBarí		
Status	Change	Date	Name	Standard		Version	Index	Repl. by				10070-17 GA	Rev. G	Sheet 2
														Next 1

to TRIPLEX Handling System

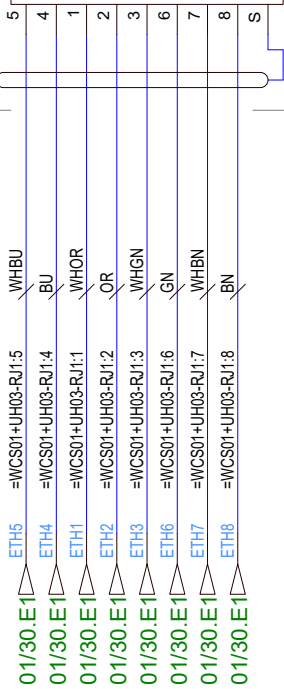
~~=A-FRAME STERN
+B11~~
Control Cabinet

HPU CC
+B41

EtherCAT

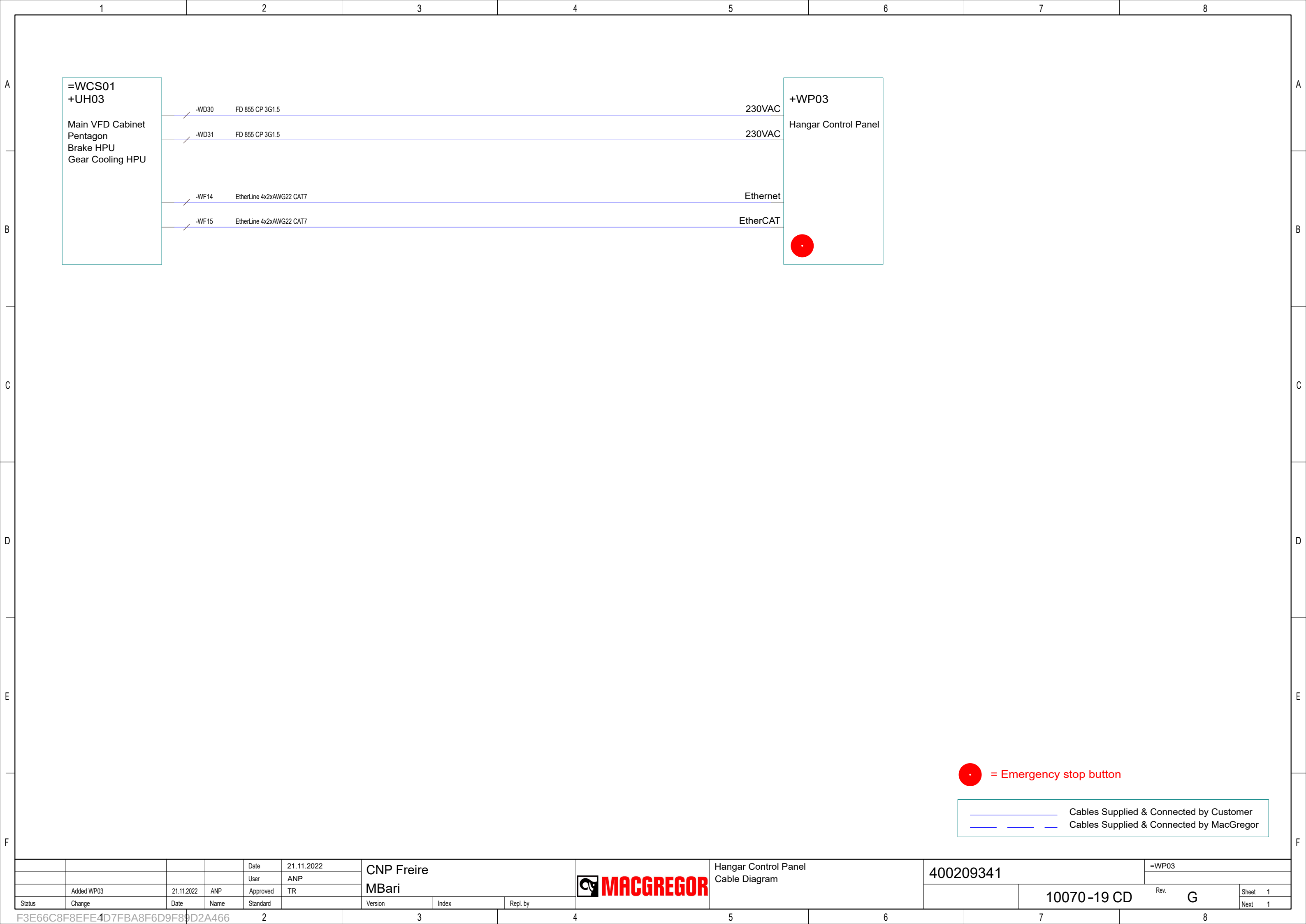
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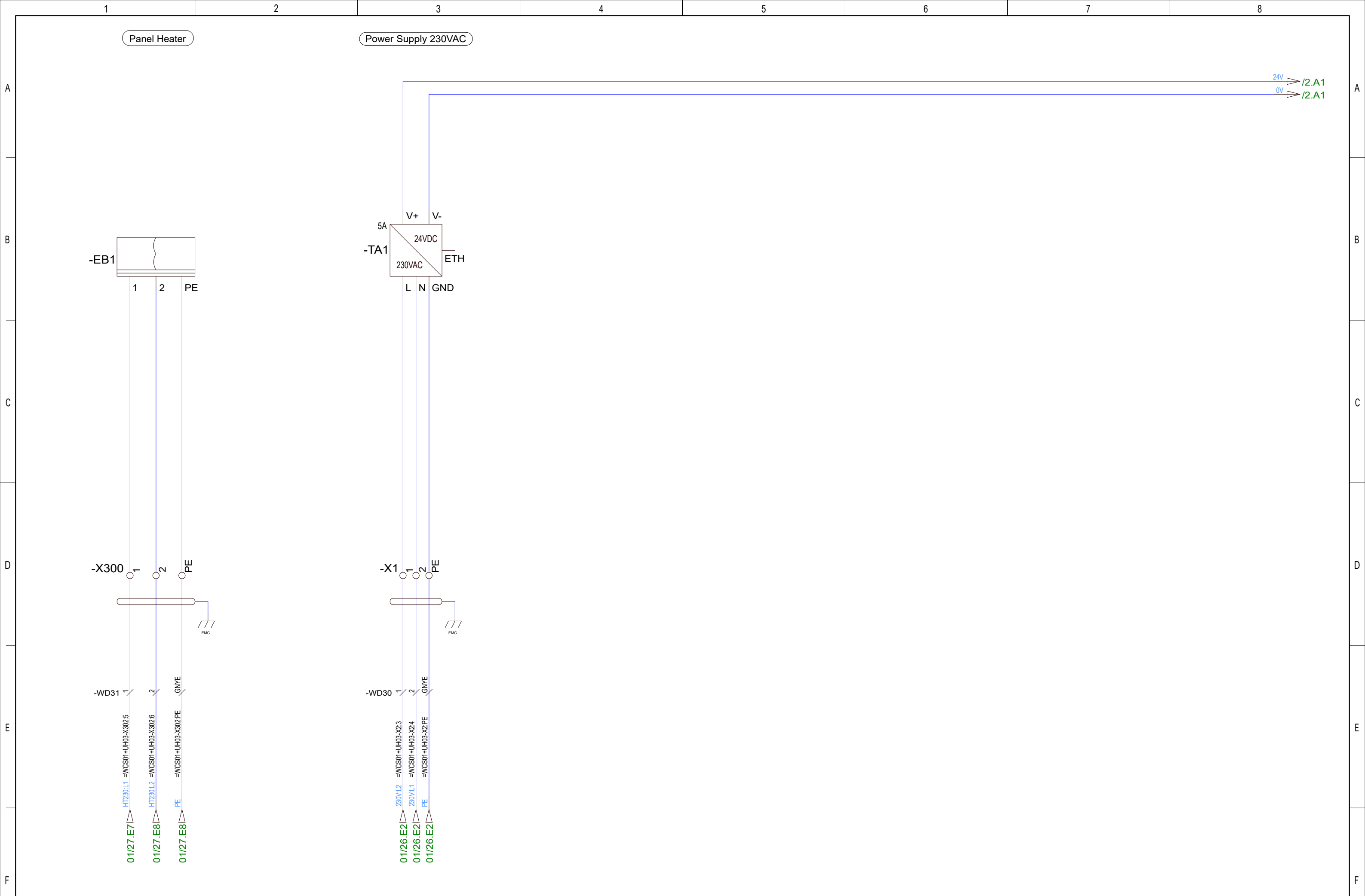
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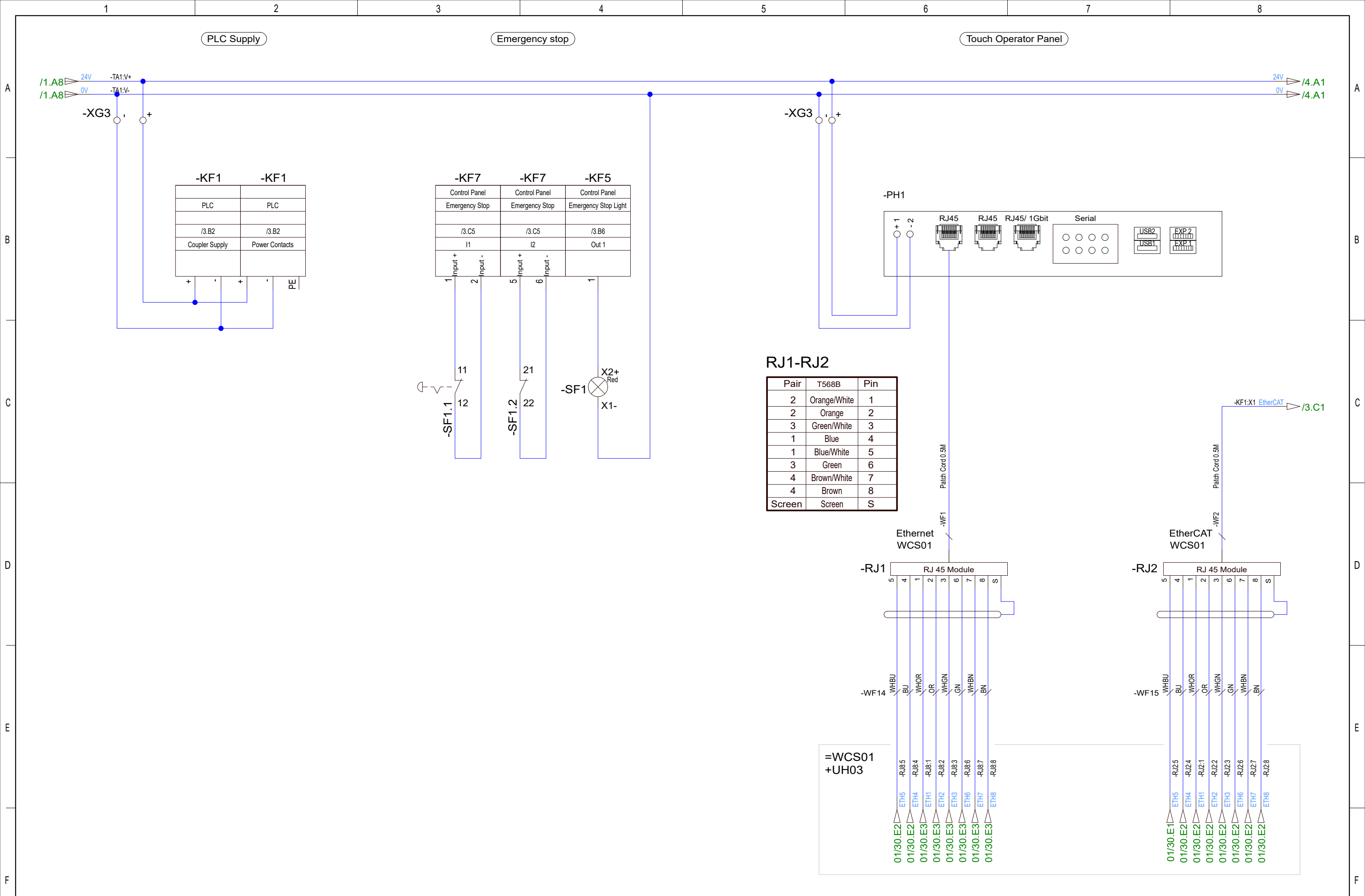
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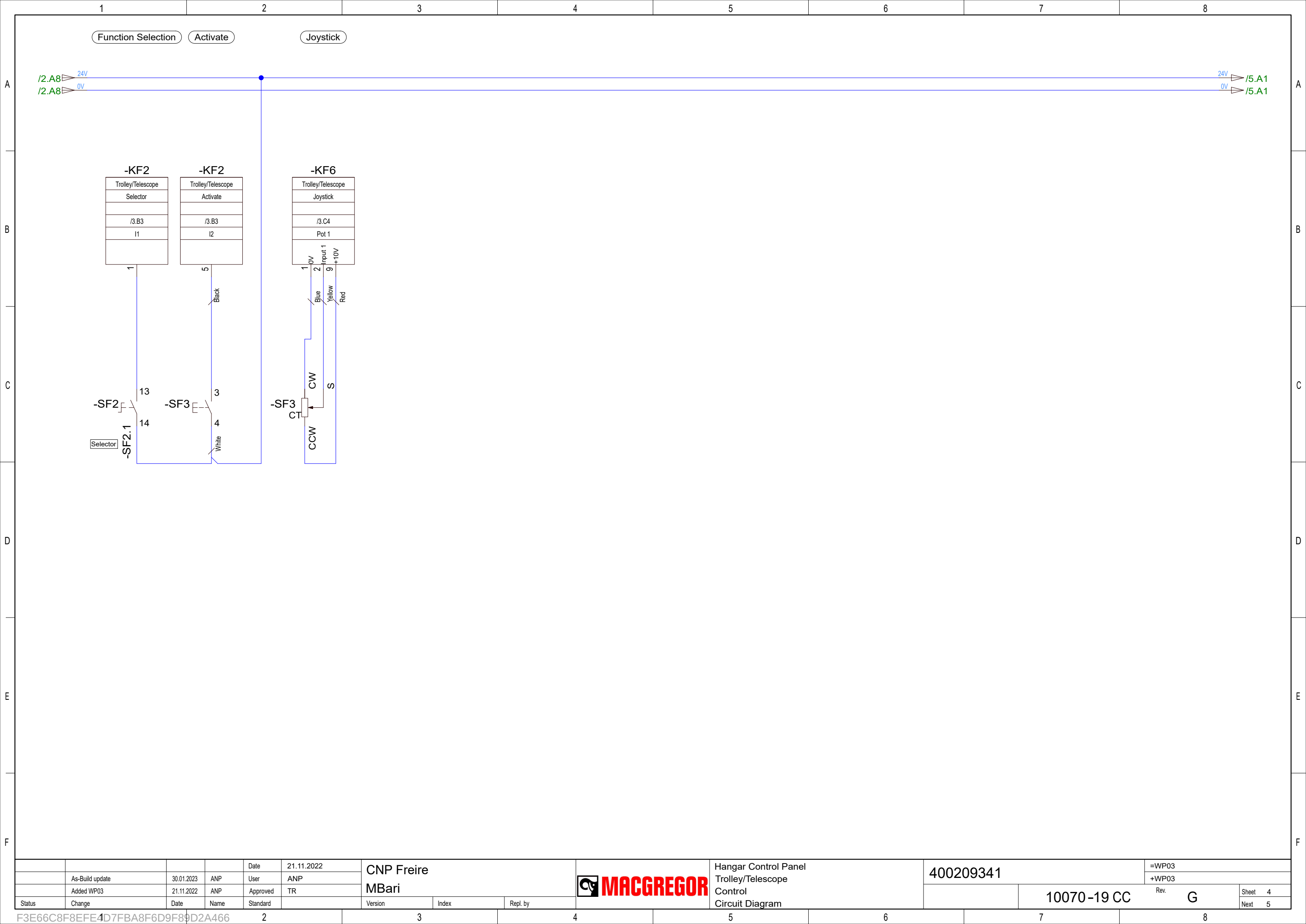
				Date	17/11-2021	CNP Freire MBarí			Signal Connections Systems Connection EtherCAT to TRIPLEX			NA		=TRIP01	
				User	GSK									+Signal	
	Updated acc. Triplex drawings	28.11.2022	ANP	Approved	RAJ									Rev.	G
Status	Change	Date	Name	Standard		Version	Index	Repl. by					10070-18 CC	Sheet	1
														Next	1





				Date	21.11.2022	CNP Freire MBarí			Hangar Control Panel Supply and Heating Circuit Diagram		400209341		=WP03	
				User	ANP								+WP03	
	Added WP03	21.11.2022	ANP	Approved	TR								Rev. G	
Status	Change	Date	Name	Standard		Version	Index	Repl. by				10070-19 CC		Sheet 1
														Next 2





		Date	21.11.2022	CNP Freire				Hangar Control Panel		400209341		=WP03	
	As-Build update	30.01.2023	ANP	User	ANP	Trolley/Telescope				+WP03			
	Added WP03	21.11.2022	ANP	Approved	TR	Control				Rev. G			
Status	Change	Date	Name	Standard	Version	Index	Repl. by	Circuit Diagram		10070-19 CC		Sheet 4	Next 5

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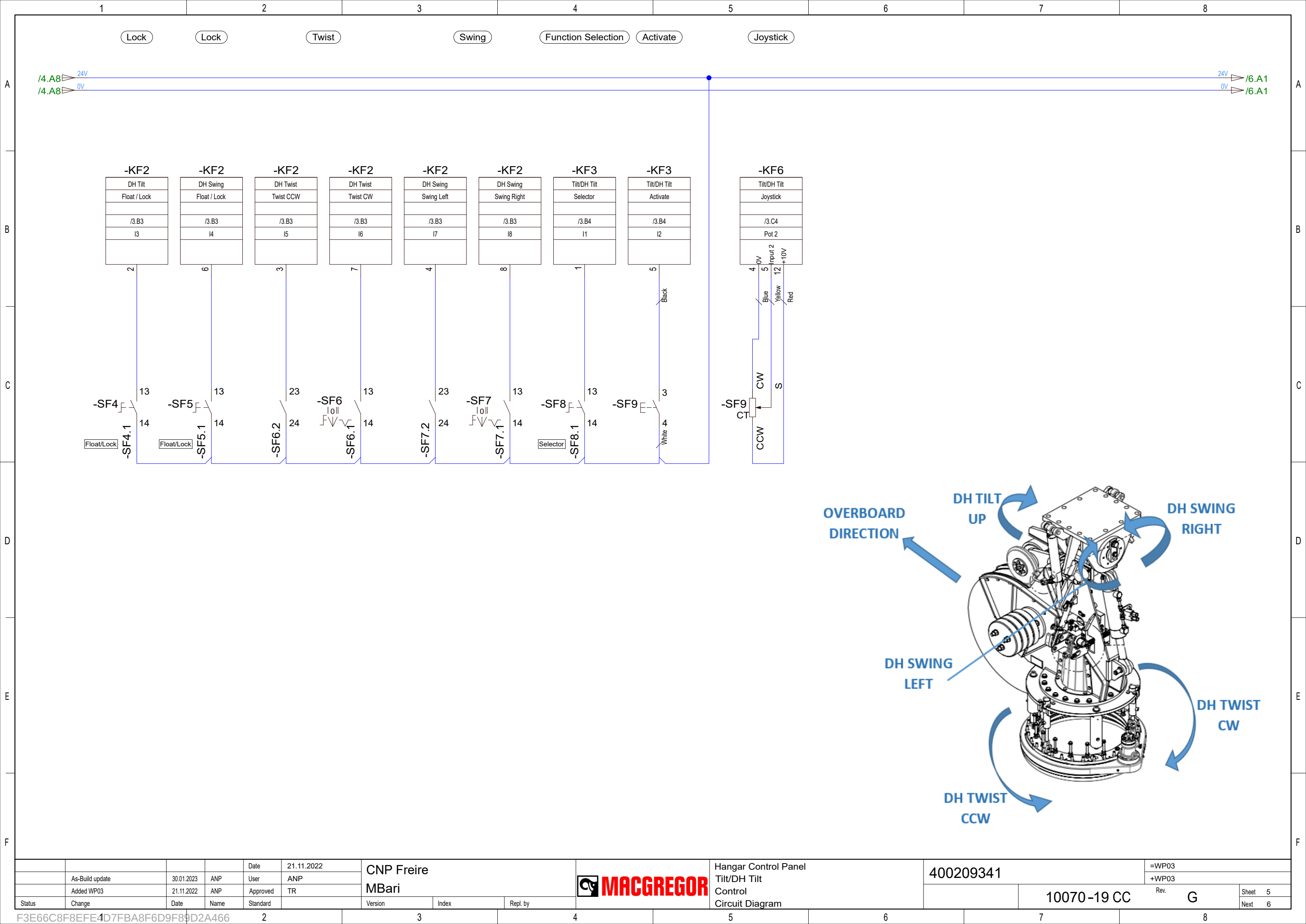
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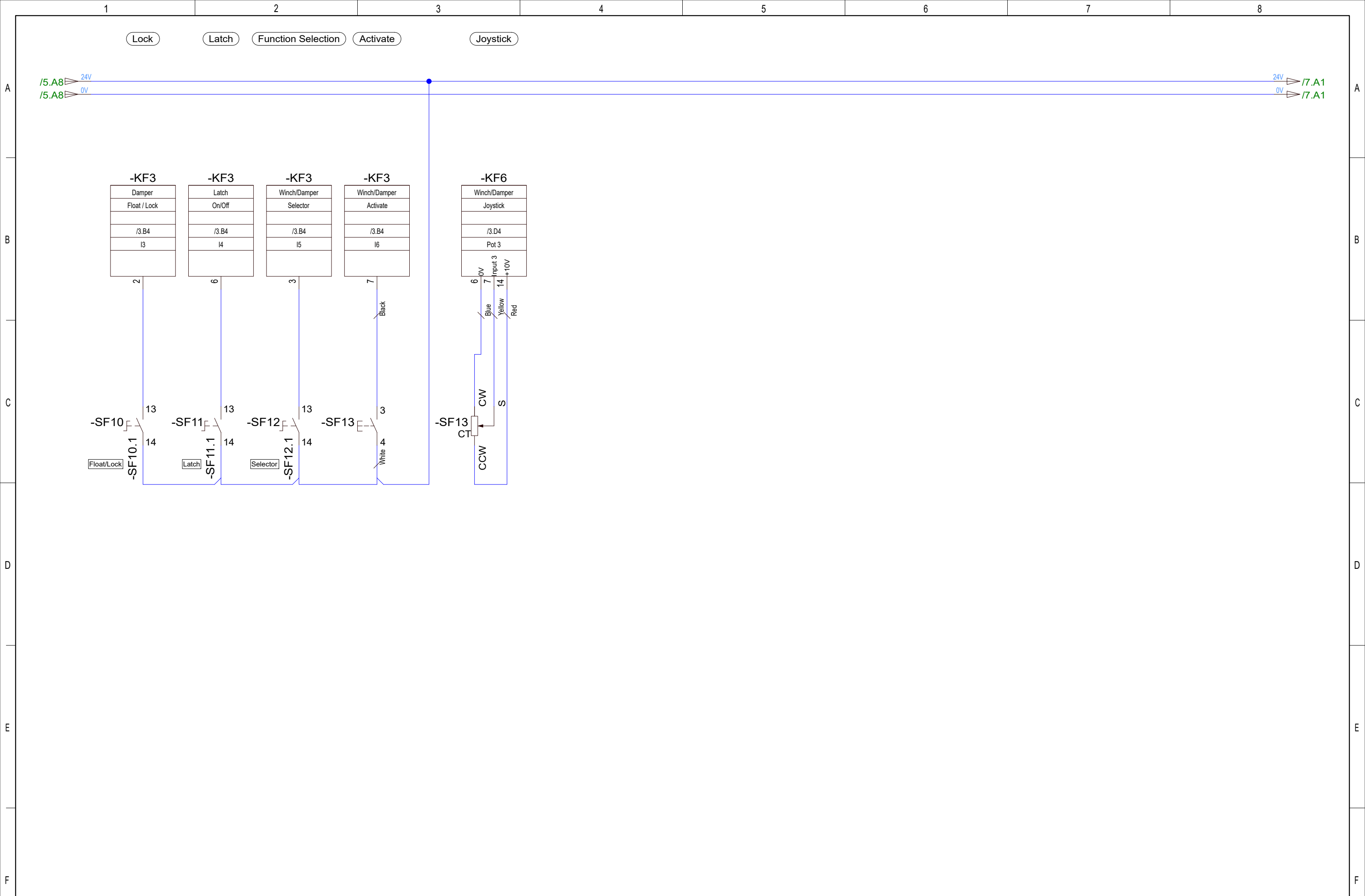
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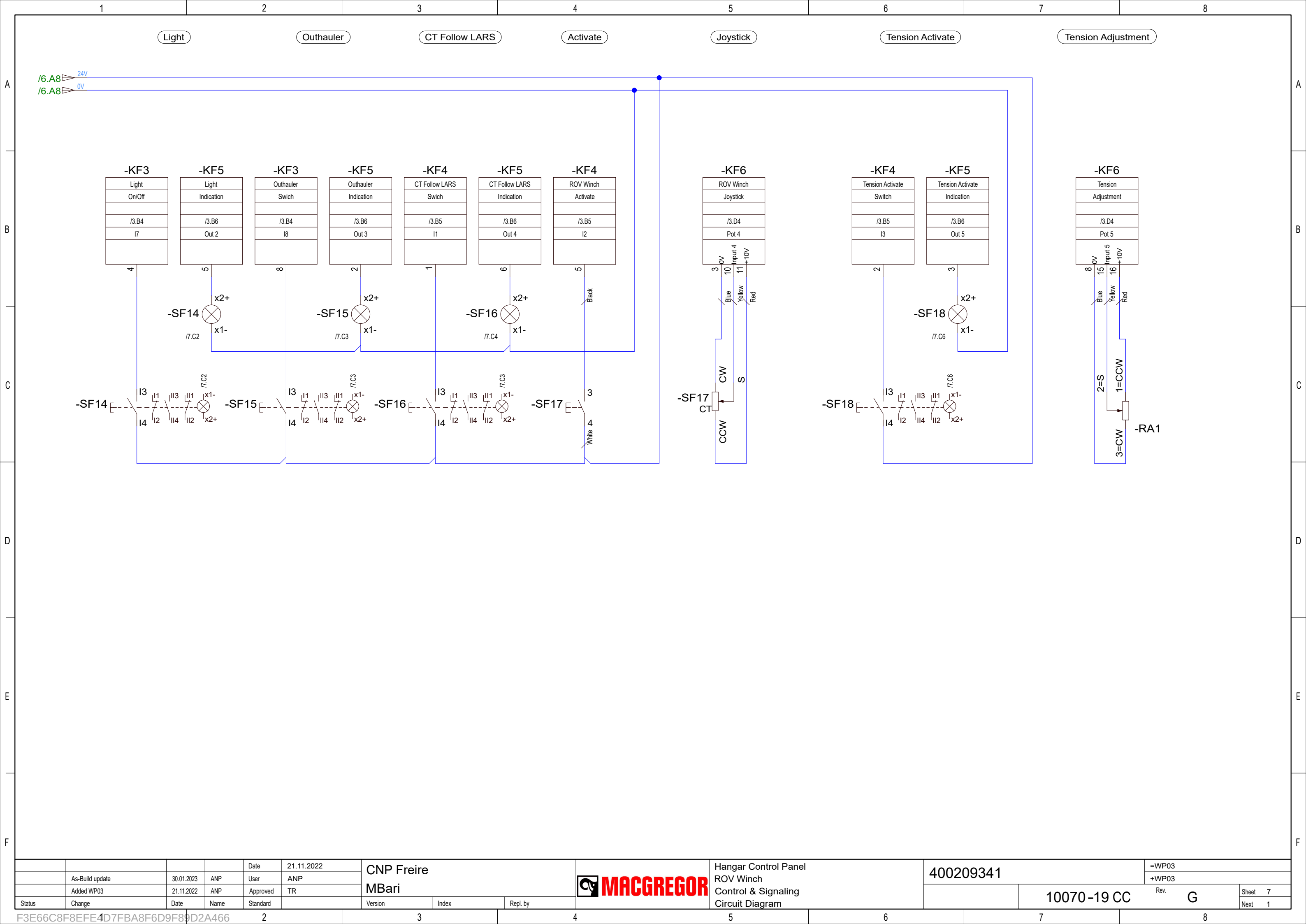
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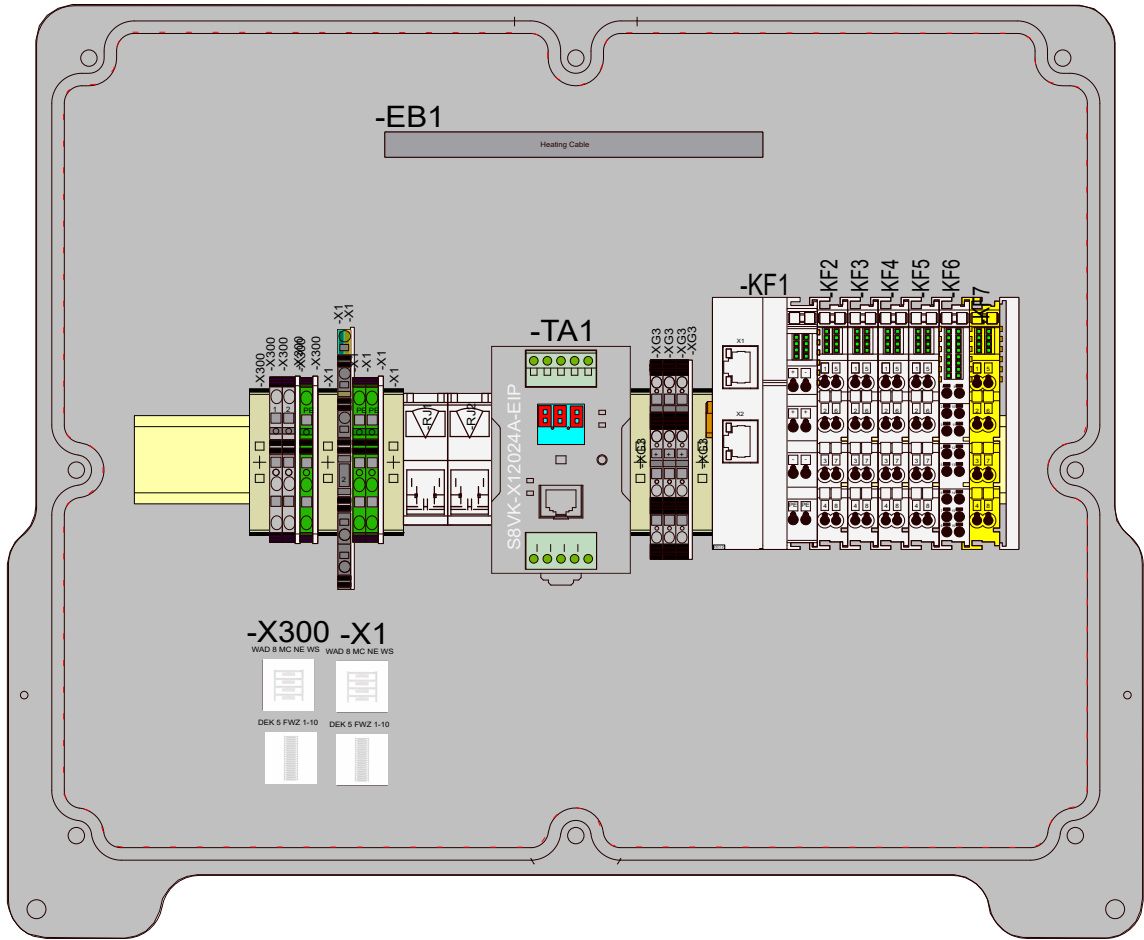




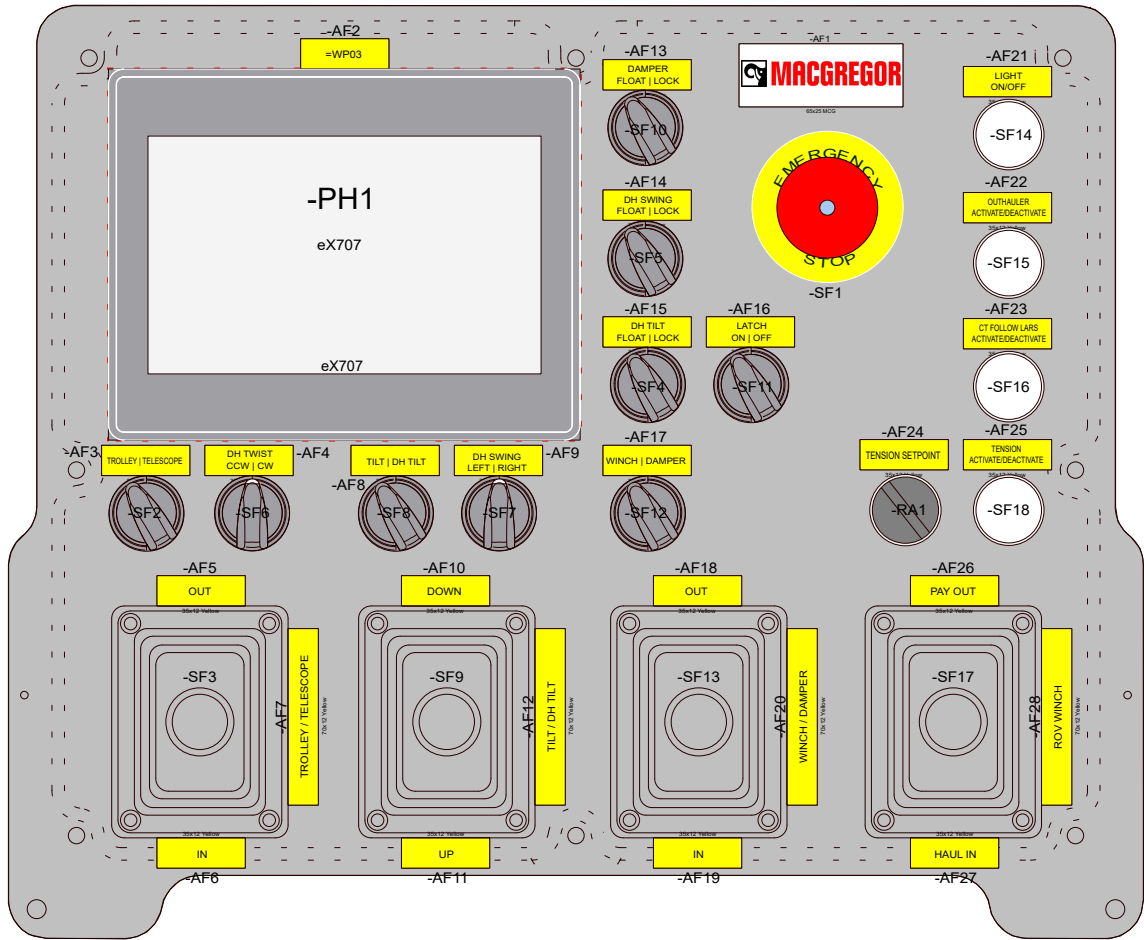


			Date	21.11.2022	CNP Freire MBari				Hangar Control Panel ROV Winch Control & Signaling Circuit Diagram	400209341	=WP03		
	As-Build update	30.01.2023	ANP	User							ANP	+WP03	
	Added WP03	21.11.2022	ANP	Approved							TR		
Status	Change	Date	Name	Standard		Version	Index	Repl. by		10070-19 CC	Rev. G	Sheet 7	
												Next 1	

INNER VIEW



FRONT VIEW



NOTE: Dimension Sketch - PLM No. 2000012940

				Date	21.11.2022	CNP Freire MBarí				Hangar Control Panel Panel Layout	400209341		=WP03	
				User	ANP									
	Added WP03	21.11.2022	ANP	Approved	TR									
Status	Change	Date	Name	Standard		Version	Index	Repl. by				10070-19 GA	Rev. G	Sheet 1
														Next 1

1		2		3		4		5		6		7		8	
Device ID		Device		Part Number		Qty	Unit	Description		Manufacturer		Datablad			
-AF1		65x25 MCG		CROMLOGO6		1	Pcs	65x25 Macgregor Logo							
-AF2..-AF6,-AF8..-AF11,-AF13.. -AF19,-AF21..-AF27		35x12 Yellow		400090866		23	Pcs	35x12 Yellow Engraved Sign plate							
-AF7,-AF12,-AF20,-AF28		70x12 Yellow		400090867		4	Pcs	70x12 Yellow Engraved Sign plate							
-EB1		Heating Cable 5BTV2-CT 15W/M V/+10GR Assy		RHEACHE032		1	Pcs	Heating Cable 5BTV2-CT 15W/M V/ +10GR Assy 60cm		Raychem		EN-RaychemBTVpipefre ezeProtection-DS- H51086_tcm432-26253. pdf			
-KF1		EK1101		ECPPEB01		1	Pcs	EtherCAT Coupler w ID settings		Beckhoff		Datasheet			
-KF2..-KF4		EL1008		ECPPEB04		3	Pcs	8 Digital Inputs		Beckhoff		Datasheet			
-KF5		EL2008		ECPPEB06		1	Pcs	8 Digital Outputs		Beckhoff		Datasheet			
-KF6		EL3255		ECPPEB16		1	Pcs	5-Ch Input Potentiometer		Beckhoff		Datasheet			
-KF7		EL1904		400209336		1	Pcs	4-channel digital input, 24 V DC, TwinSAFE		Beckhoff		Datasheet			
-KF8		EL9011		ECPPEB02		1	Pcs	Bus end cap		Beckhoff					
-PH1		eX707		EPECC120		1	Pcs	ExorI 7" Touch Panel		EXOR		ExorIeX700 Series. pdfManual			
-RA1		800FP-POT5A 5kohm IP66		EACPO012		1	Pcs	Potensiometre		Allen Bradley		800f-sg001_-en-p.pdf			
-RJ1,-RJ2		IE-XM-RJ45/IDC		400090935		2	Pcs	Mounting rail outlet, RJ45, RJ45 module, IP20, Cat.6A		Weidmuller		Datasheet			
-SF1		45-2D36.1920		EACSW0047		1	Pcs	E-Stop switch w/light IP69 Ø40mm		EAO		EAO_MC_45_Main- Catalogue_EN.pdf			
-SF1		45-320.1E16		400187718		1	Pcs	RED Illumination element 24 VAC/DC		EAO		Datasheet			
-SF1		45-2300.1000.000		400187718		1	Pcs	Holder for 3 elements EAO Serie 45		EAO		Datasheet			
-SF1		800F-15YE112		400187723		1	Pcs	Emergency Stop Lable Ø60mm		Allen Bradley		800f-sg001_-en-p.pdf			
-SF1.1,-SF1.2		45-312.1Z10		400187719		2	Pcs	Switching element NC 10A Front mounting		EAO		Datasheet			
-SF2.1,-SF4.1..-SF6.1,-SF6.2,- SF7.1,-SF7.2,-SF8.1,-SF10.1..- SF12.1		800F-X10		EACSW1142		11	Pcs	Contact Element NO		Allen Bradley		800f-sg001_-en-p.pdf			
-SF2,-SF4..-SF5,-SF8,-SF10..- SF12		800FP-SM22		EACSW114		7	Pcs	2-Pos Selector Switch 60*Maintained		Allen Bradley		800f-sg001_-en-p.pdf			
-SF2,-SF4..-SF8,-SF10..-SF12		800F-ALP		400188392		9	Pcs	Plastic Mounting Latch, Contact Block Holder		Allen Bradley		800f-sg001_-en-p. pdf"			
-SF3,-SF9,-SF13,-SF17		Joystick IP68+ w/ Topswitch Short		400212904		4	Pcs	Joystick IP68+ w/Topswitch Short Version							
-SF6,-SF7		800FP-SB32		400090891		2	Pcs	3-Pos Selector Switch, Spring Return		Allen Bradley		800f-sg001_-en-p.pdf			
As-Build New Joy.&Switch Types		18.01.2023	ANP	Date	21.11.2022		CNP Freire MBarí 		Hangar Control Panel Part list		400209341		=WP03		
Updated As-Build		28.11.2022	ANP	User	ANP										
Added WP03		21.11.2022	ANP	Approved	TR										Rev. G
Status	Change	Date	Name	Standard			Version	Index	Repl. by			10070-19 PL		Next 2	
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