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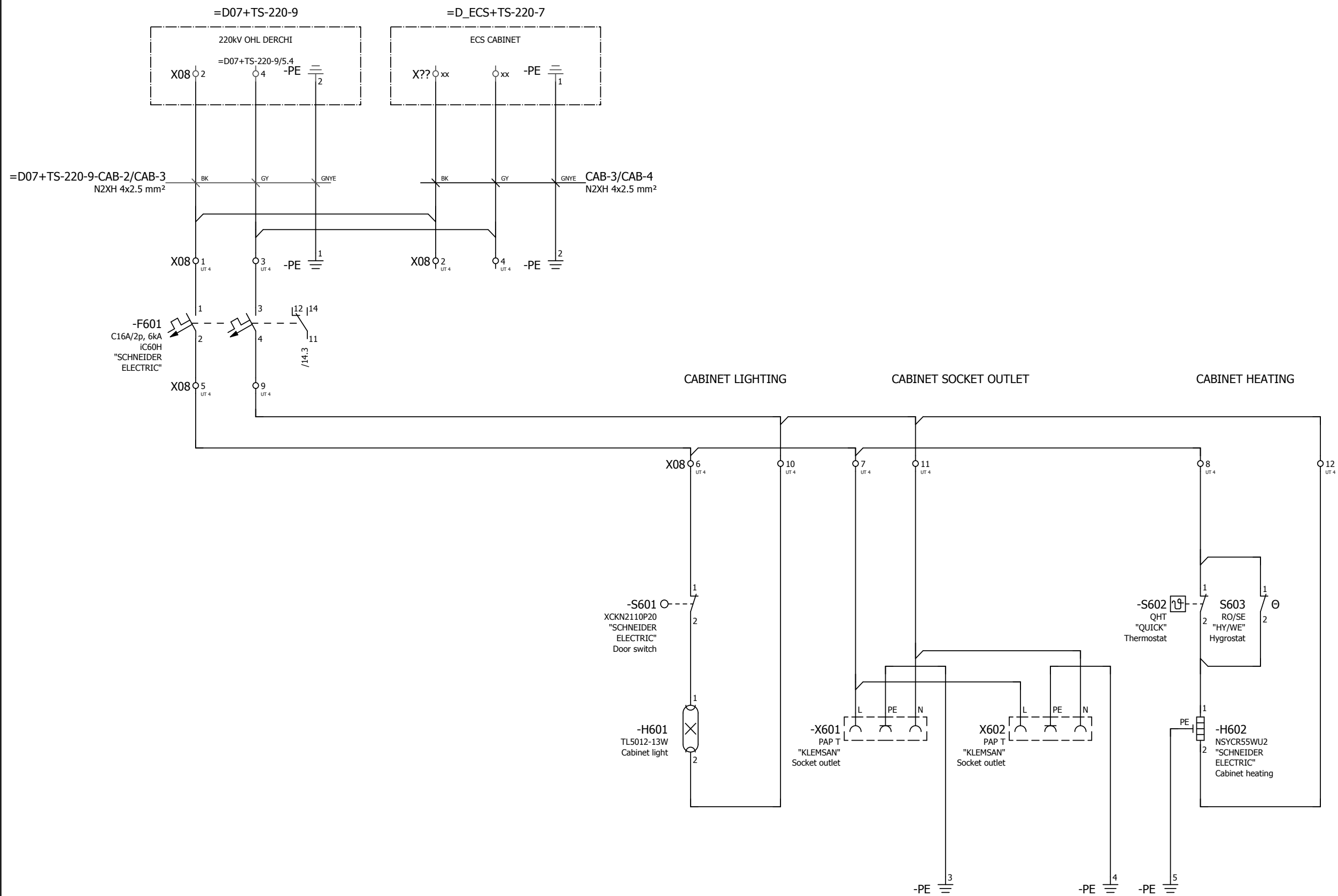
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CONTAINER 230Vac VOLTAGE LOOP



Rev	Date	Remarks	Name
02	15.07.2014.	PER GSE COMMENTS	MMa
01	22.05.2014.	FOR PANEL ASSEMBLY	MMa



SEL Middle East B.S.C.
1504 Tiffany Tower
Jumeira Lakes Tower
9926 Dubai UAE

Customer: **Georgian State Electrosystem**

Project Descript.: Substation Tskaltubo 220/110kV Schematic diagram for 220kV Busbar Protection
Sheet Descript.: 230VAC Voltage Distribution - Cabinet Heating and Lighting

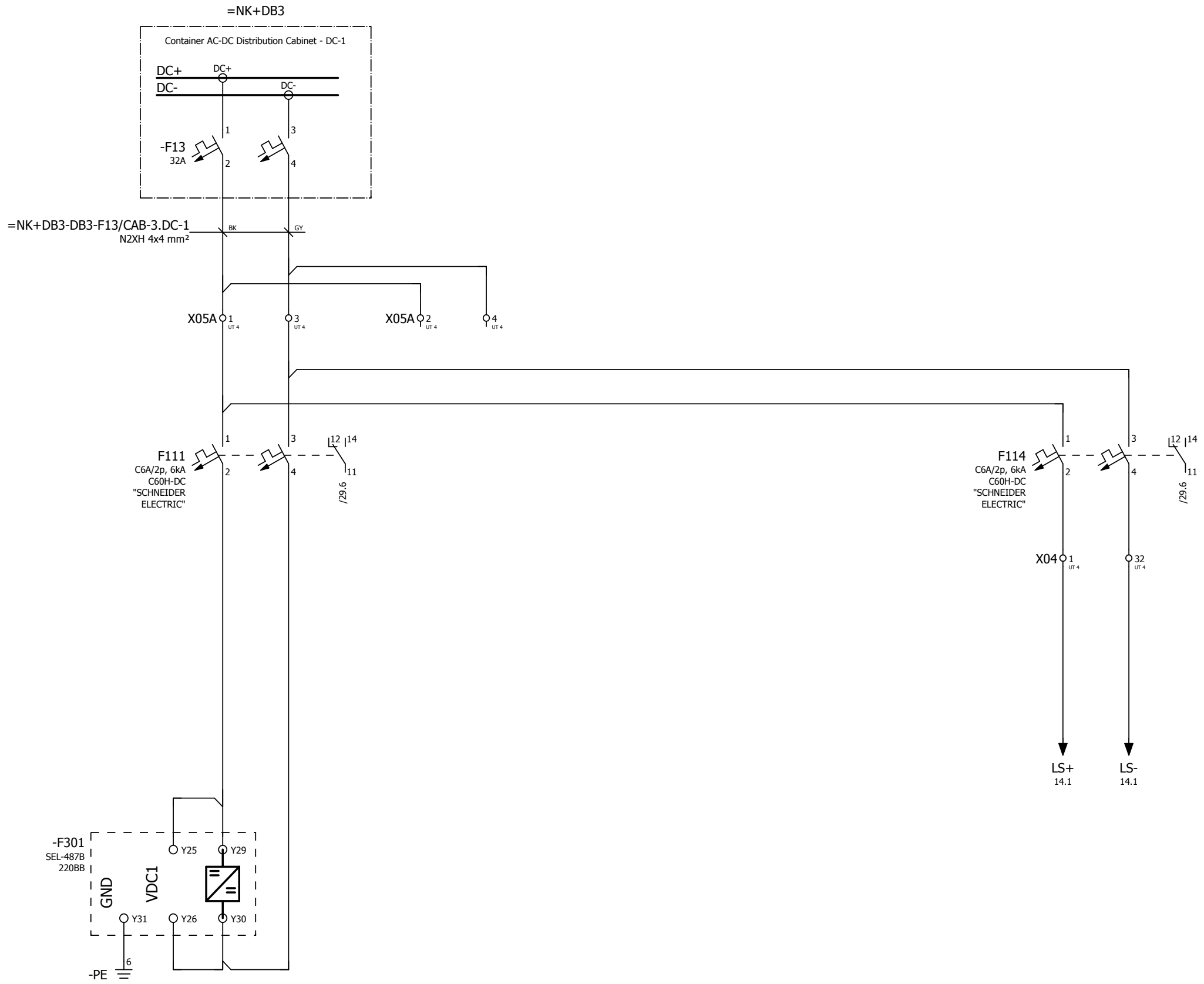
Job number: GSE-SSTS-TS-3-TS-220-6



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BUSBAR AB DIFFERENTIAL PROTECTION
POWER SUPPLY

BUSBAR C DIFFERENTIAL PROTECTION
POWER SUPPLY

BUSBAR PROTECTION
SIGNAL VOLTAGE



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=D01+TS-220-3 220kV OHL SENAKI 1 CONTROL PANEL

SEND TRIP TC1 COMMAND

SEND TRIP TC2 COMMAND

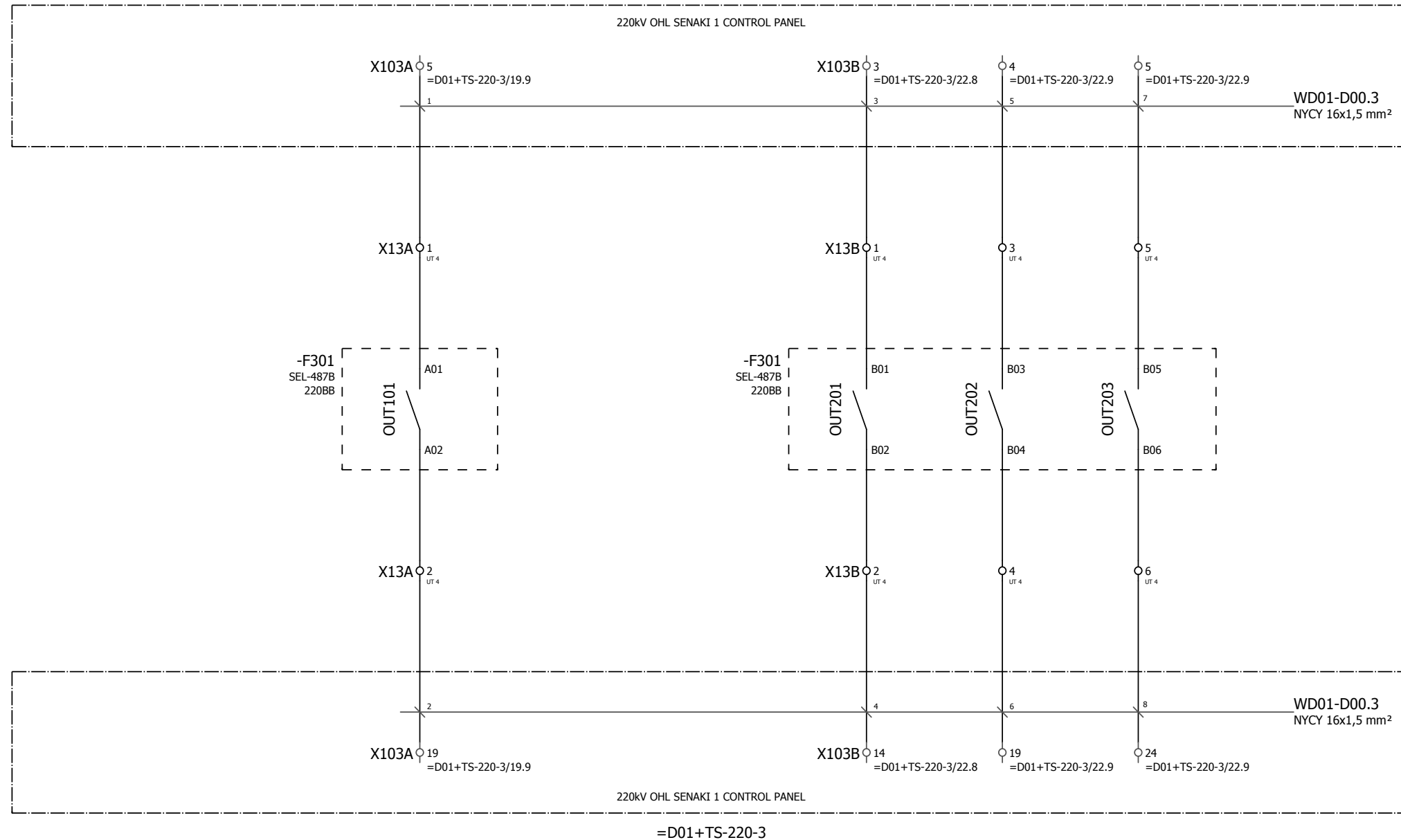
TRIPLE POLE

POLE A

POLE B

POLE C

=D01+TS-220-3



02	15.07.2014.	PER GSE COMMENTS	MMA	SEL Middle East B.S.C. 1504 Tiffany Tower Jumeira Lakes Tower 9926 Dubai UAE	Customer: Georgian State Electrosystem	Project Descript.	Substation Tskaltubo 220/110kV Schematic diagram for 220kV Busbar Protection	Job number:	GSE-SSTS-TS-3-TS-220-6	Function	=D00
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Rev	Date	Remarks	Name							Sheet / Sheets	6 / 44

=D02+TS-220-3 220kV OHL SENAKI 2 CONTROL PANEL

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SEND TRIP TC2 COMMAND

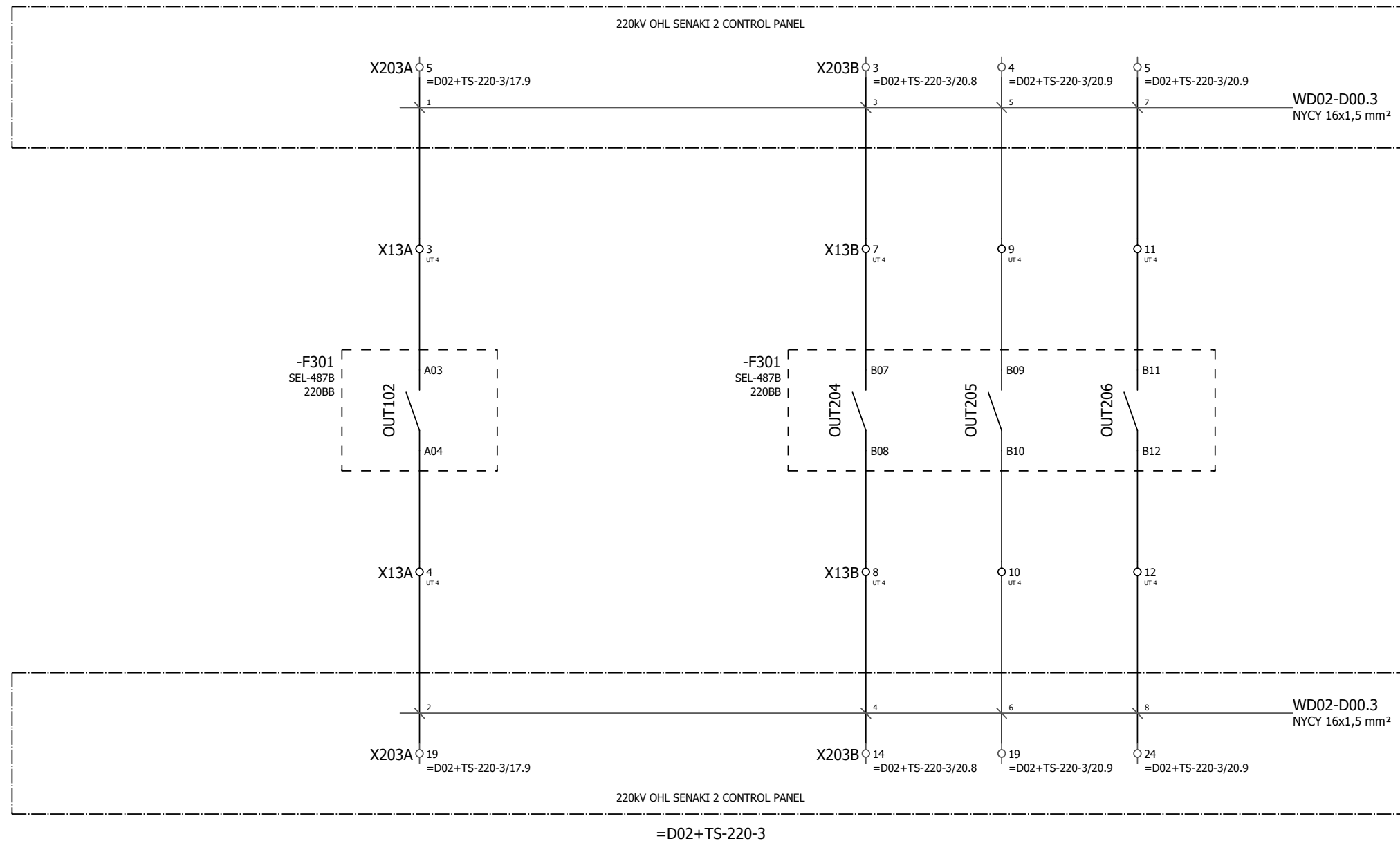
TRIPLE POLE

POLE A

POLE B

POLE C

=D02+TS-220-3



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								Date:	15.07.14	Revision:	02

=D03+TS-220-4 220kV AUTOTRANSFORMER AT1

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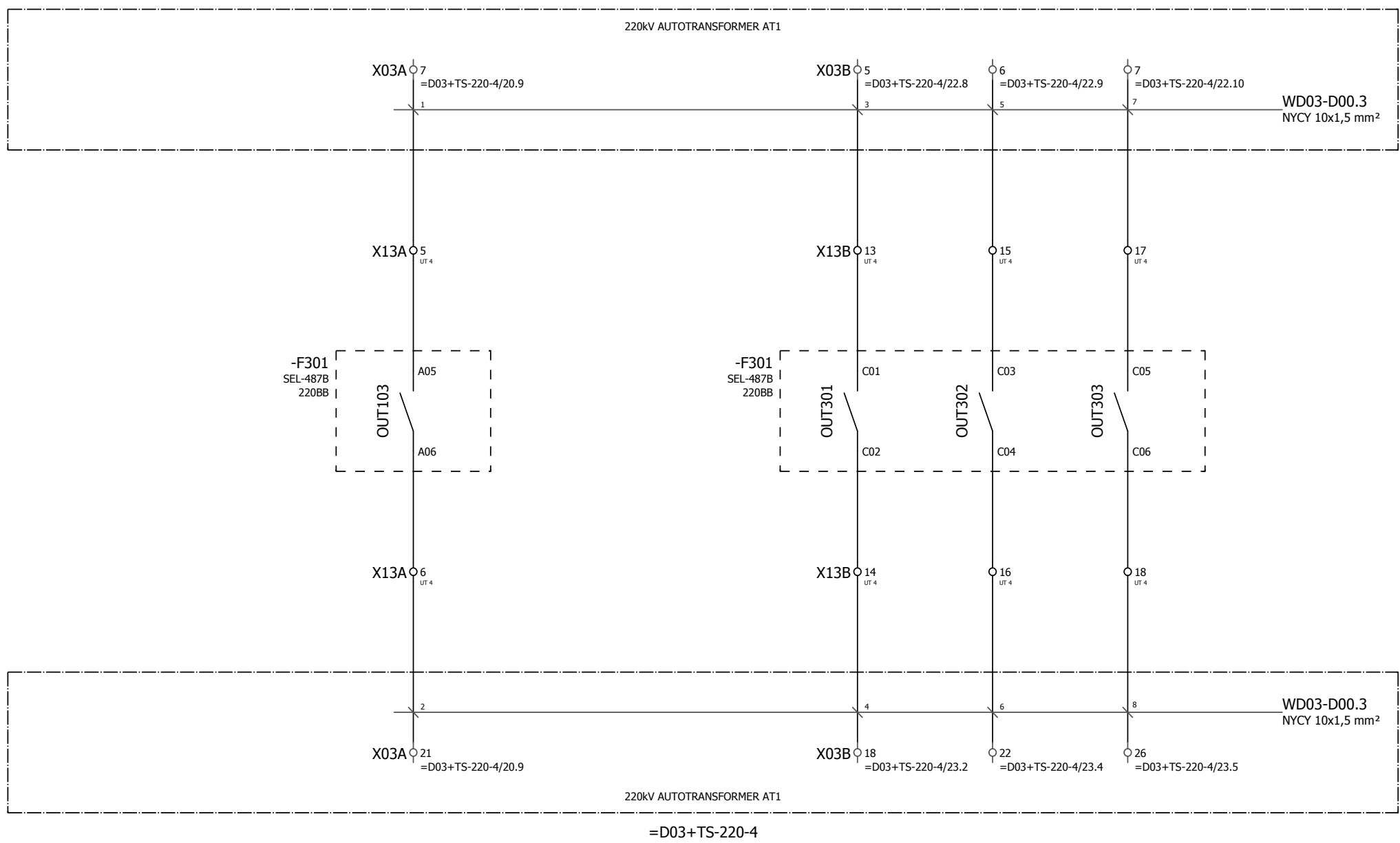
TRIPLE POLE

POLE A

POLE B

POLE C

=D03+TS-220-4



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=D04+TS-220-5 220KV BUSBAR COUPLER

SEND TRIP TC1 COMMAND

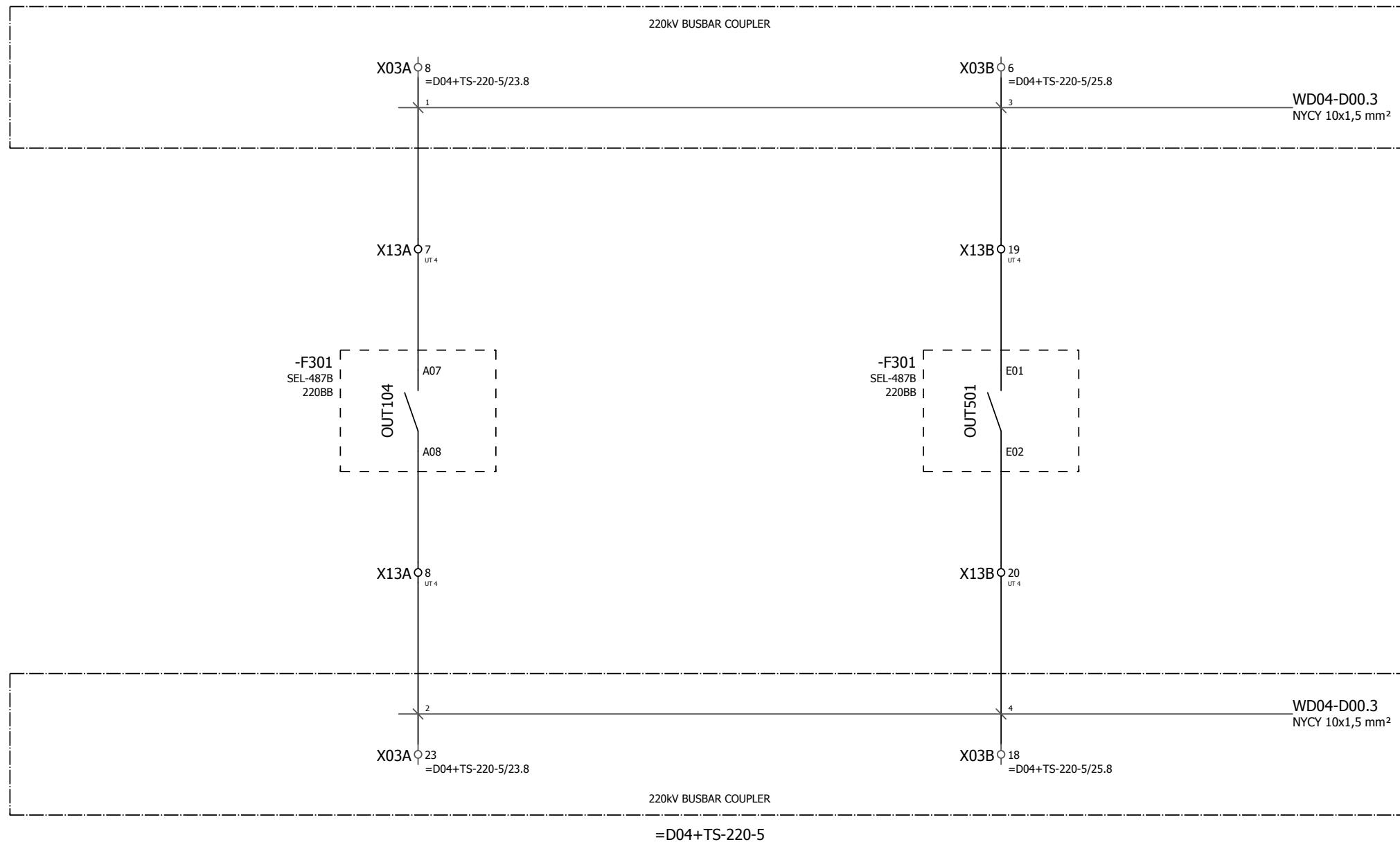
SEND TRIP TC2 COMMAND

TRIPLE POLE

TRIPLE POLE

=D04+TS-220-5

220KV BUSBAR COUPLER



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Rev	Date	Remarks	Name



SEL Middle East B.S.C
1504 Tiffany Tower
Jumeira Lakes Tower
9926 Dubai UAE

Customer:



Project Descript.

Substation Tskaltubo 220/110kV
Schematic diagram for 220kV Busbar Protection

Sheet Descript.

Send trip - D04

Job number:

GSE-SSTS-TS-3-TS-220-6

Function

=D00

Mnt. Location

+TS-220-6

Sheet / Sheets

9 / 44

Date: 15.07.14

Revision: 02

=D06+TS-220-8 220kV TRANSFER BAY

SEND TRIP TC1 COMMAND

SEND TRIP TC2 COMMAND

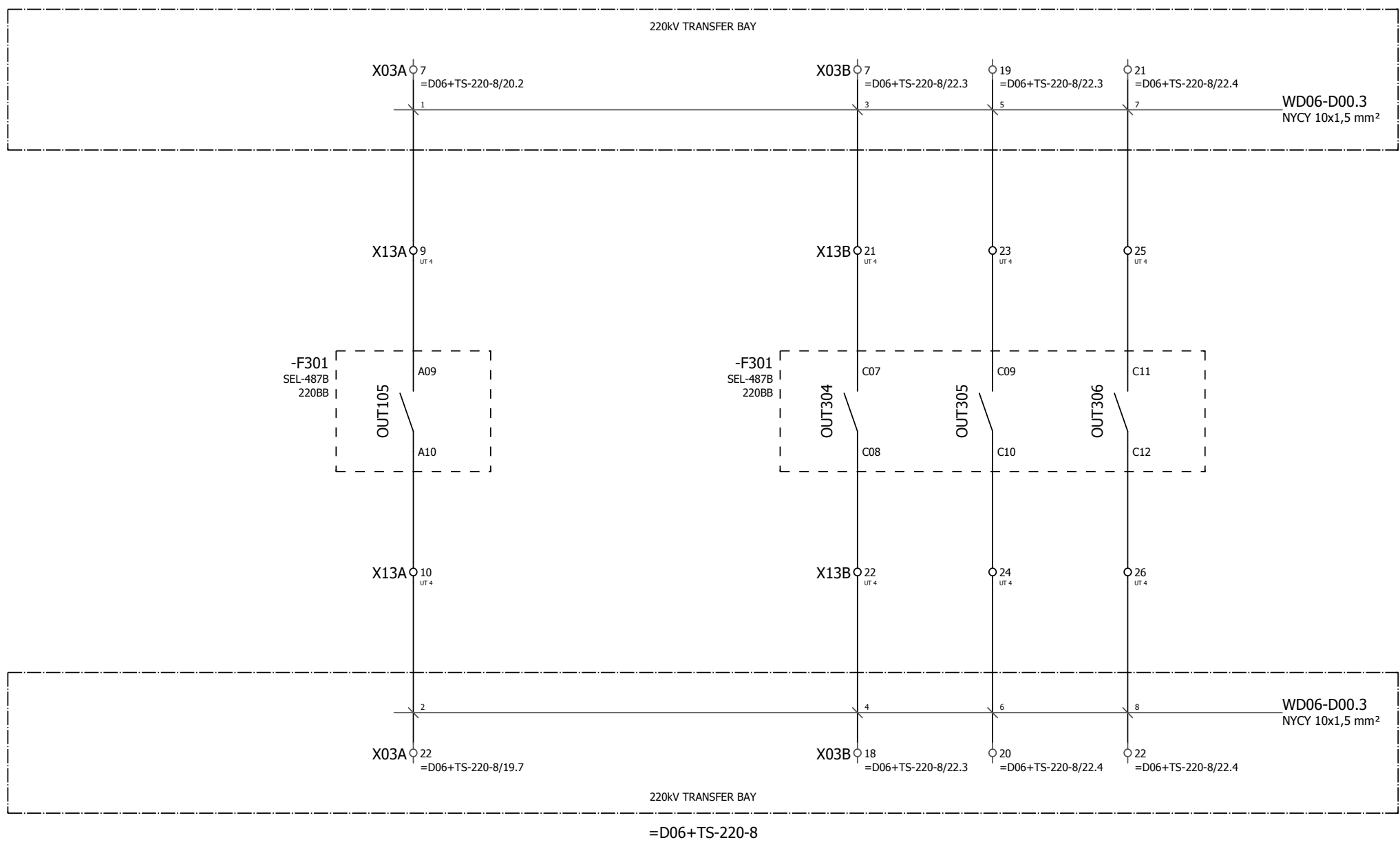
TRIPLE POLE

POLE A

POLE B

POLE C

=D06+TS-220-8



02	15.07.2014.	PER GSE COMMENTS	MMa	SEL Middle East B.S.C. 1504 Tiffany Tower Jumeira Lakes Tower 9926 Dubai UAE	Customer: Georgian State Electrosystem	Project Descript.	Substation Tskaltubo 220/110kV Schematic diagram for 220kV Busbar Protection	Job number:	GSE-SSTS-TS-3-TS-220-6	Function	=D00
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Rev	Date	Remarks	Name			Date:	15.07.14	Revision:	02		

=D07+TS-220-9 220kV OHL DERCHI

SEND TRIP TC1 COMMAND

SEND TRIP TC2 COMMAND

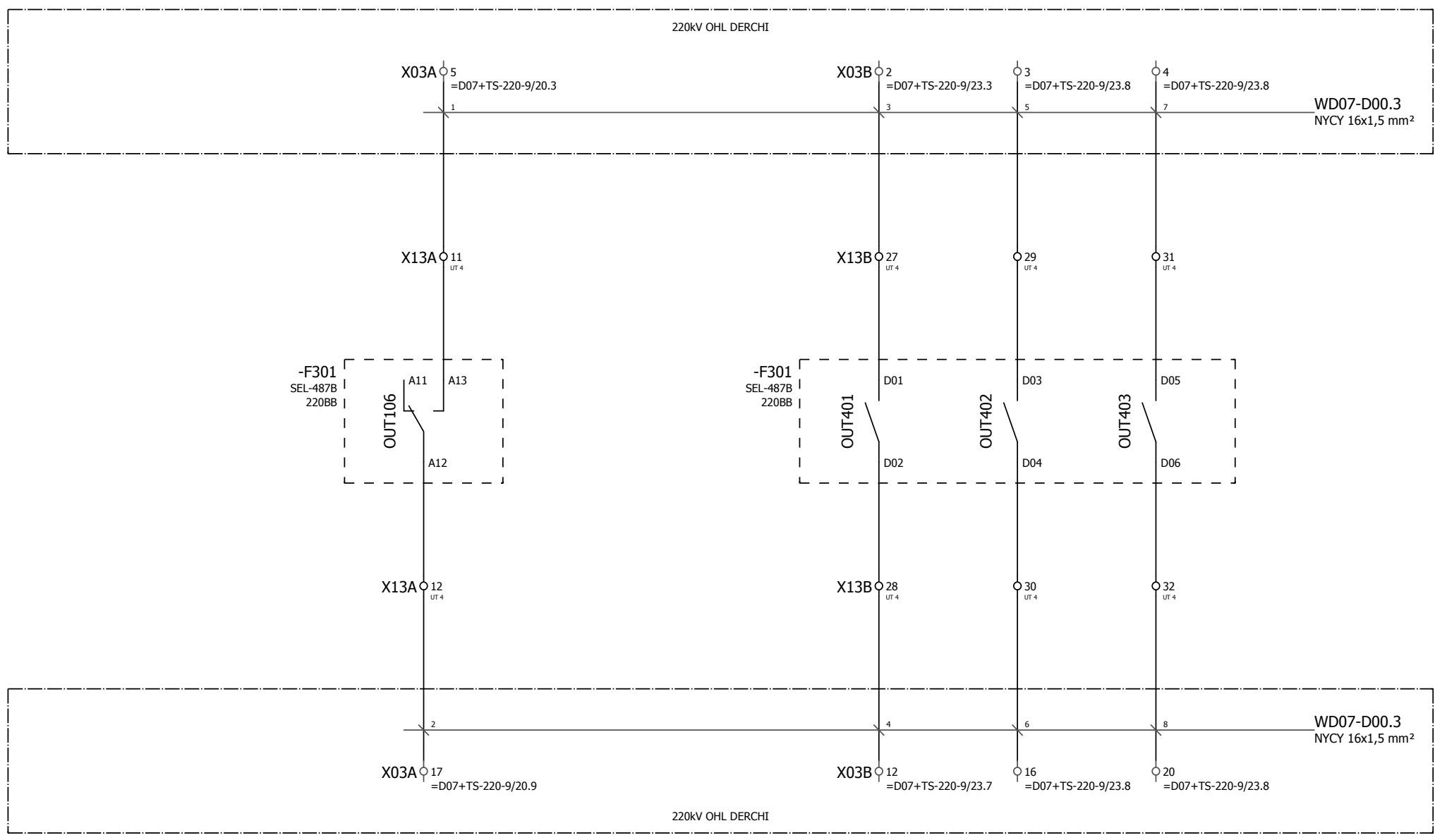
TRIPLE POLE



POLE A

POLE B

POLE C

=D07+TS-220-9



02	15.07.2014.	PER GSE COMMENTS	MMa	 SCHWEITZER ENGINEERING LABORATORIES SEL Middle East B.S.C. 1504 Tiffany Tower Jumeira Lakes Tower 9926 Dubai UAE	Customer:  Georgian State Electrosystem	Project Descript.	Substation Tskaltubo 220/110kV Schematic diagram for 220kV Busbar Protection	Job number:	GSE-SSTS-TS-3-TS-220-6	Function	=D00		
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=E08+TS-110-7 110kV AUTOTRANSFORMER AT1

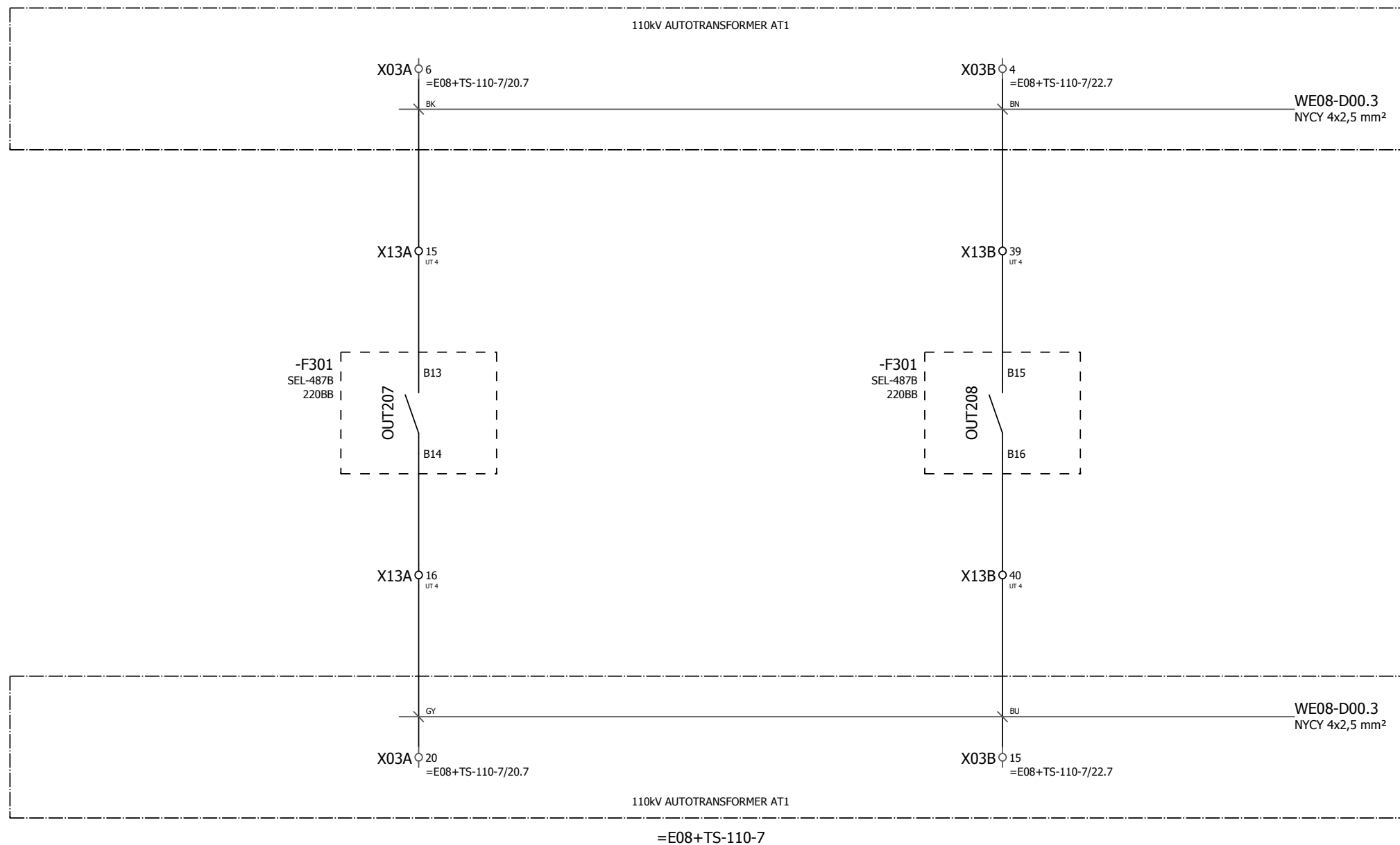
SEND TRIP TC1 COMMAND

SEND TRIP TC2 COMMAND

TRIPLE POLE

TRIPLE POLE

=E08+TS-110-7



02	15.07.2014.	PER GSE COMMENTS	MMa
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Rev	Date	Remarks	Name



SEL Middle East B.S.C
 1504 Tiffany Tower
 Jumeira Lakes Tower
 9926 Dubai UAE

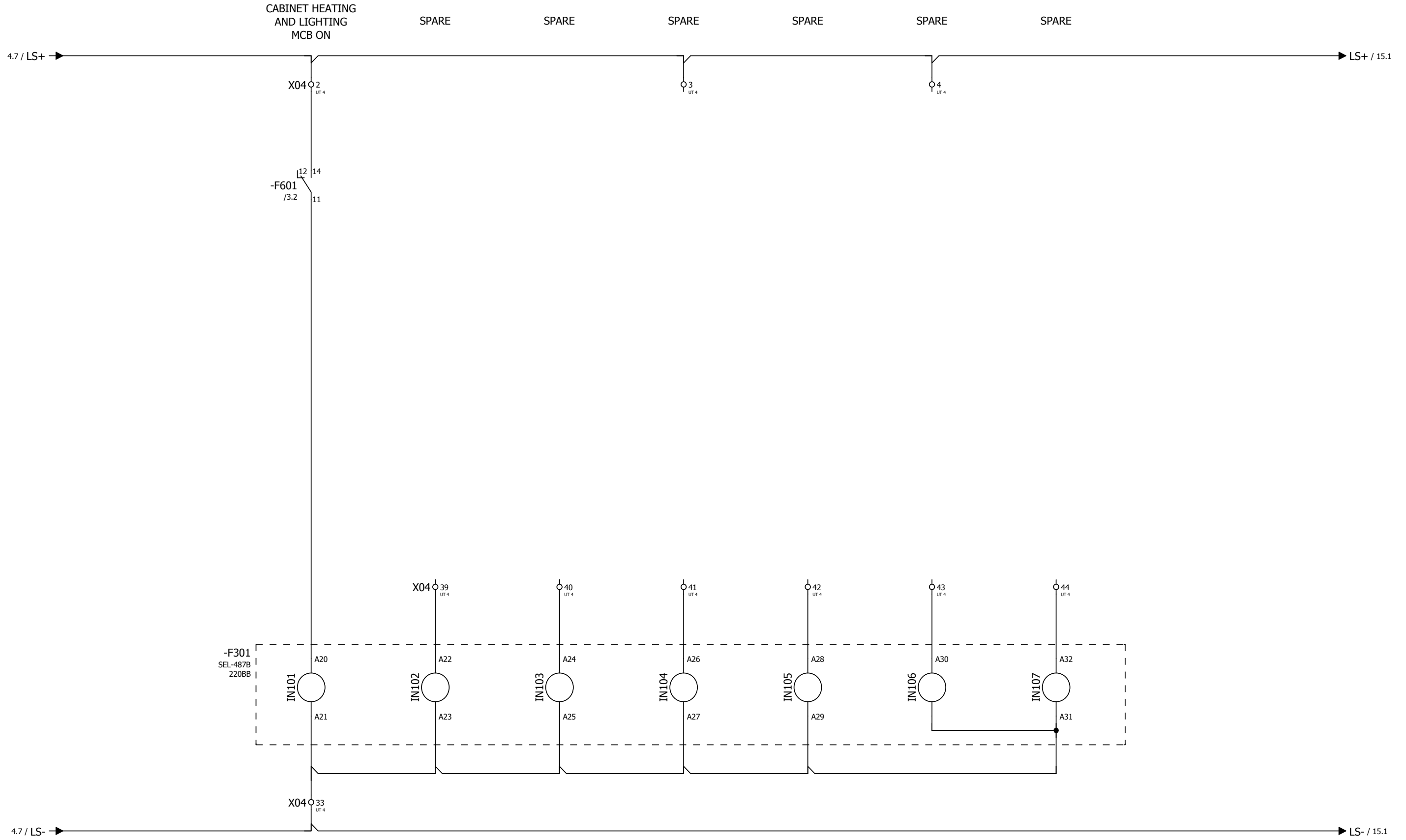


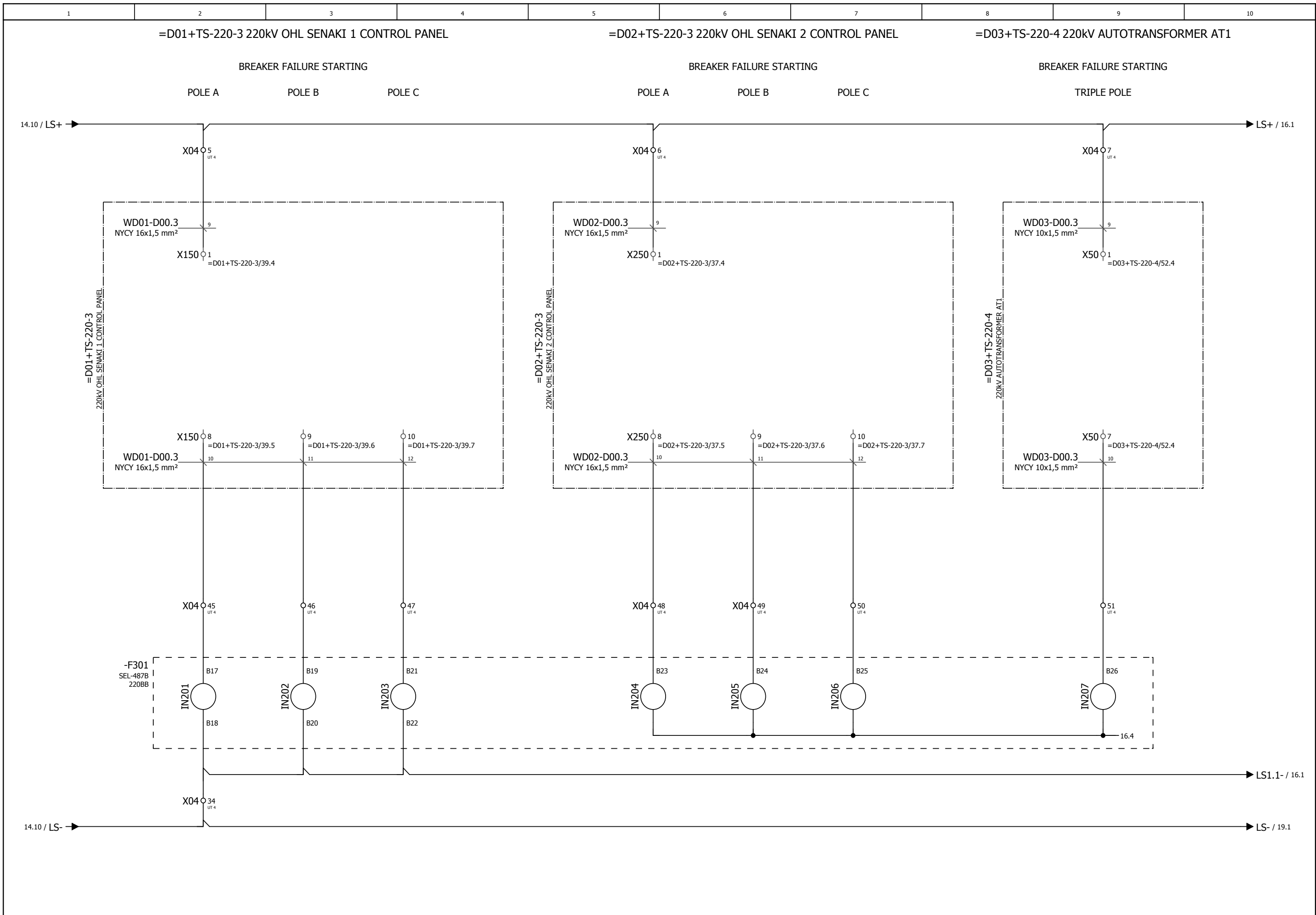
Customer:
**Georgian State
 Electrosystem**

Project Descript.: Substation Tskaltubo 220/110kV
 Schematic diagram for 220kV Busbar Protection
 Sheet Descript.: Send trip - E08

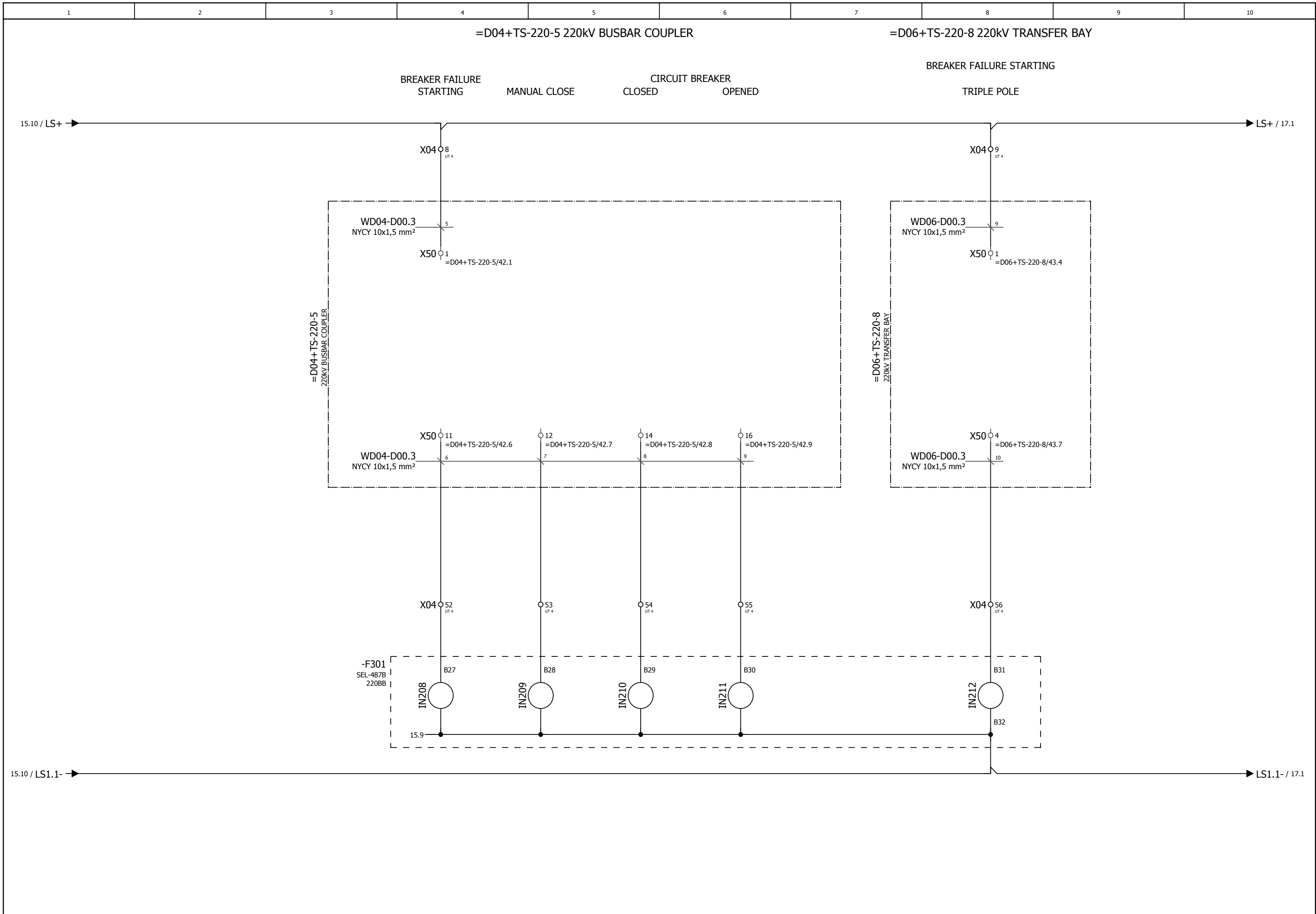
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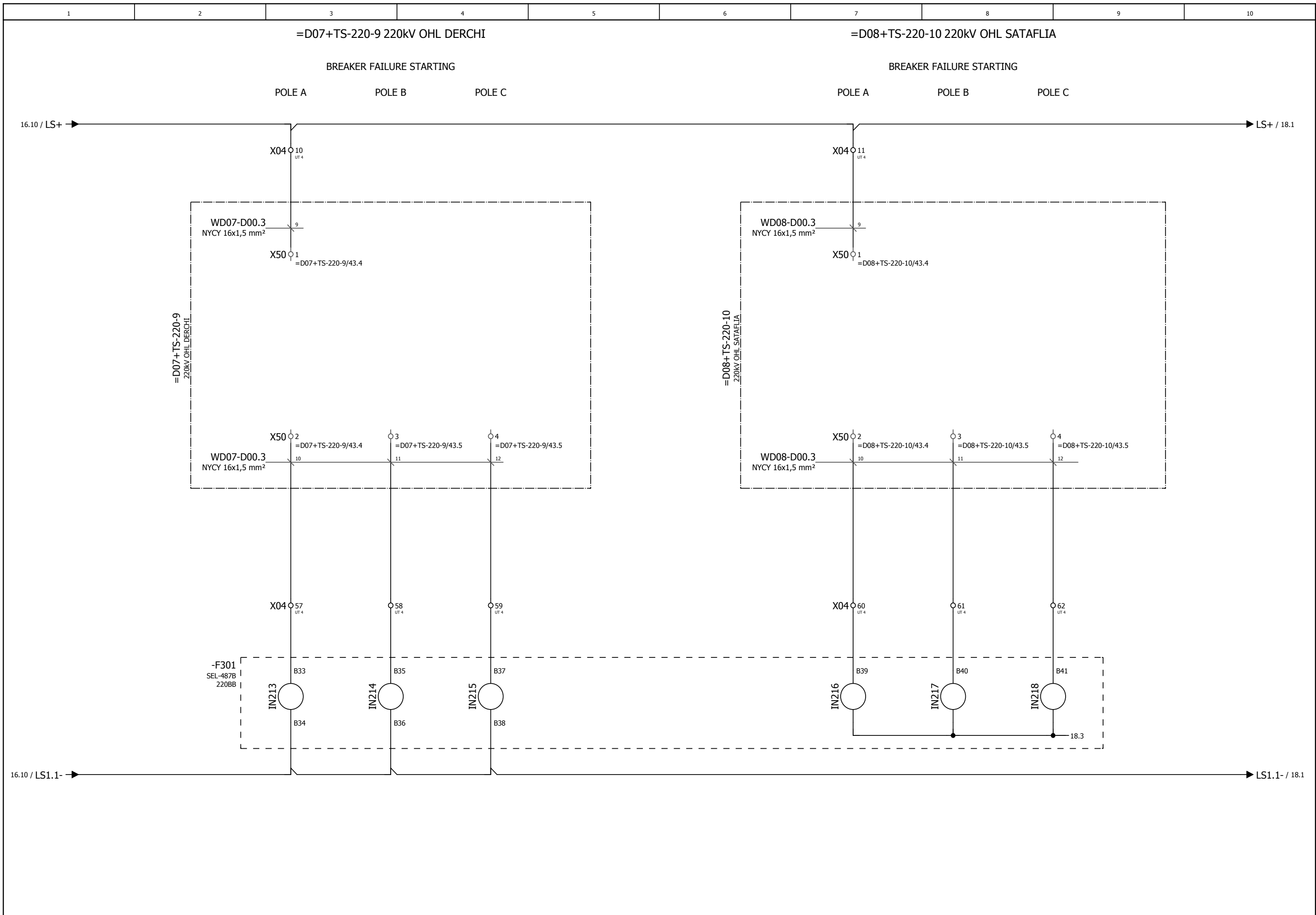




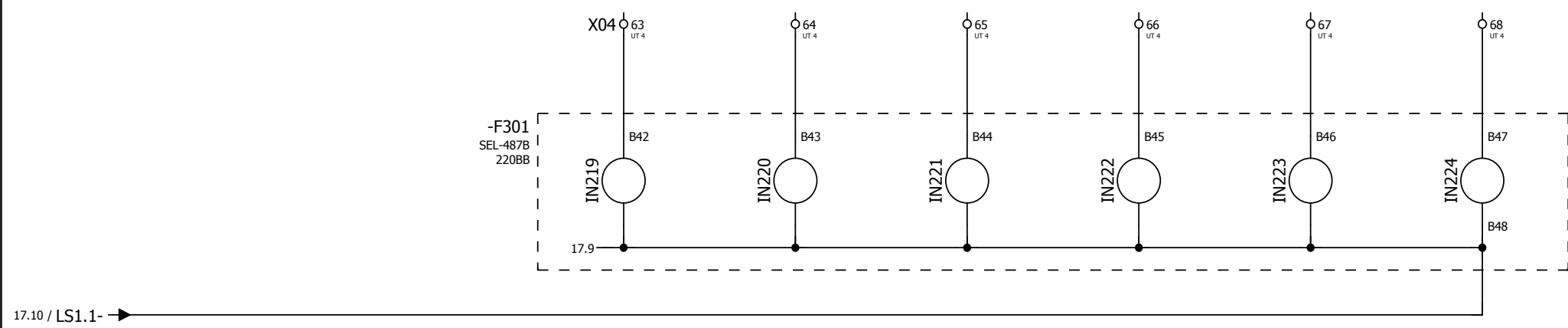
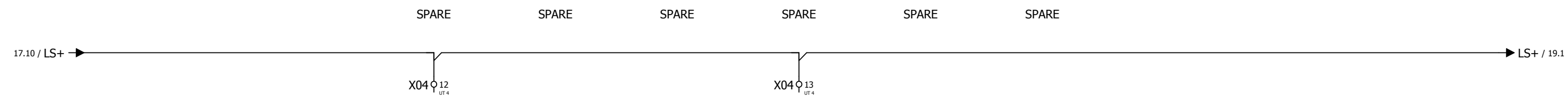
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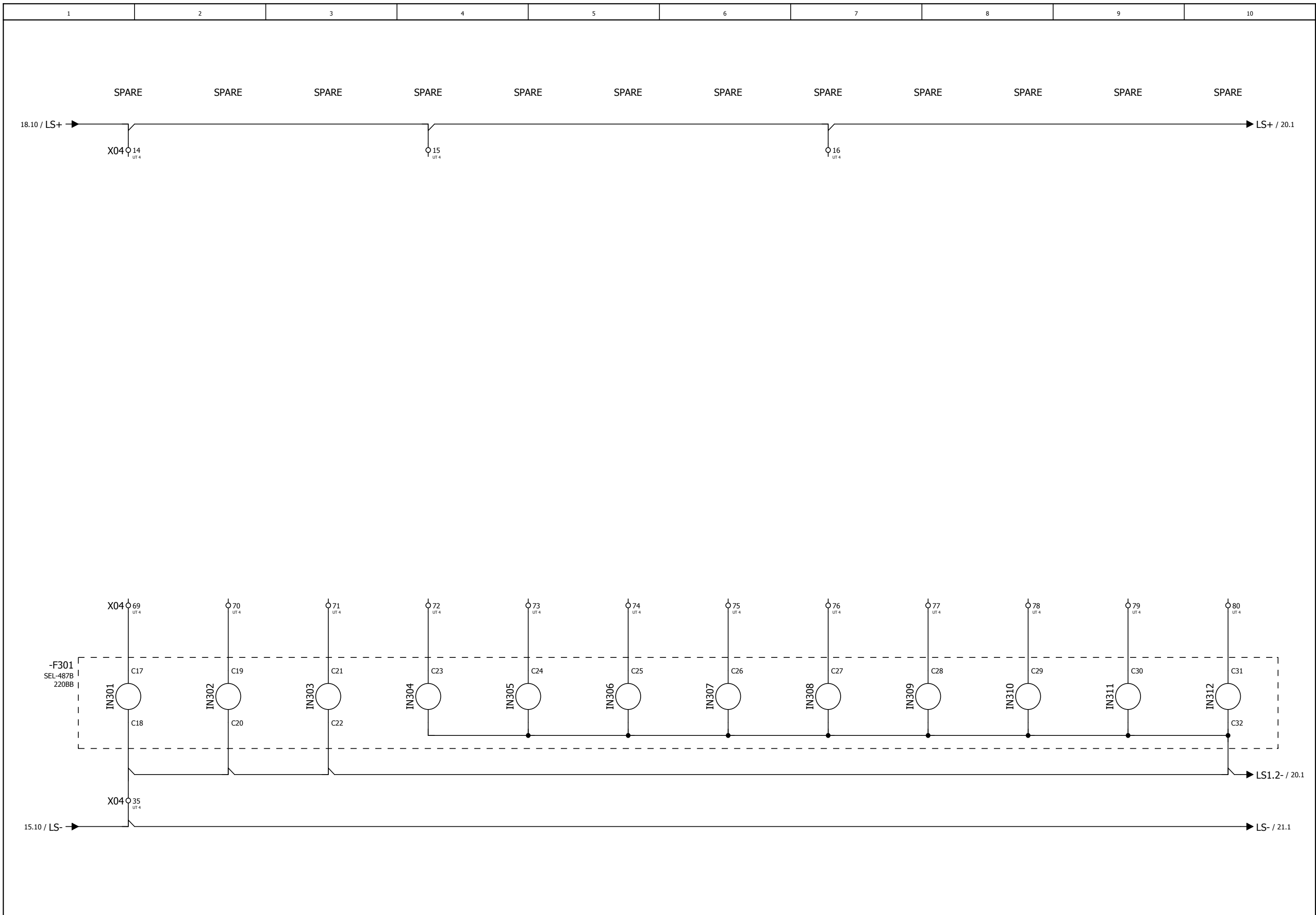




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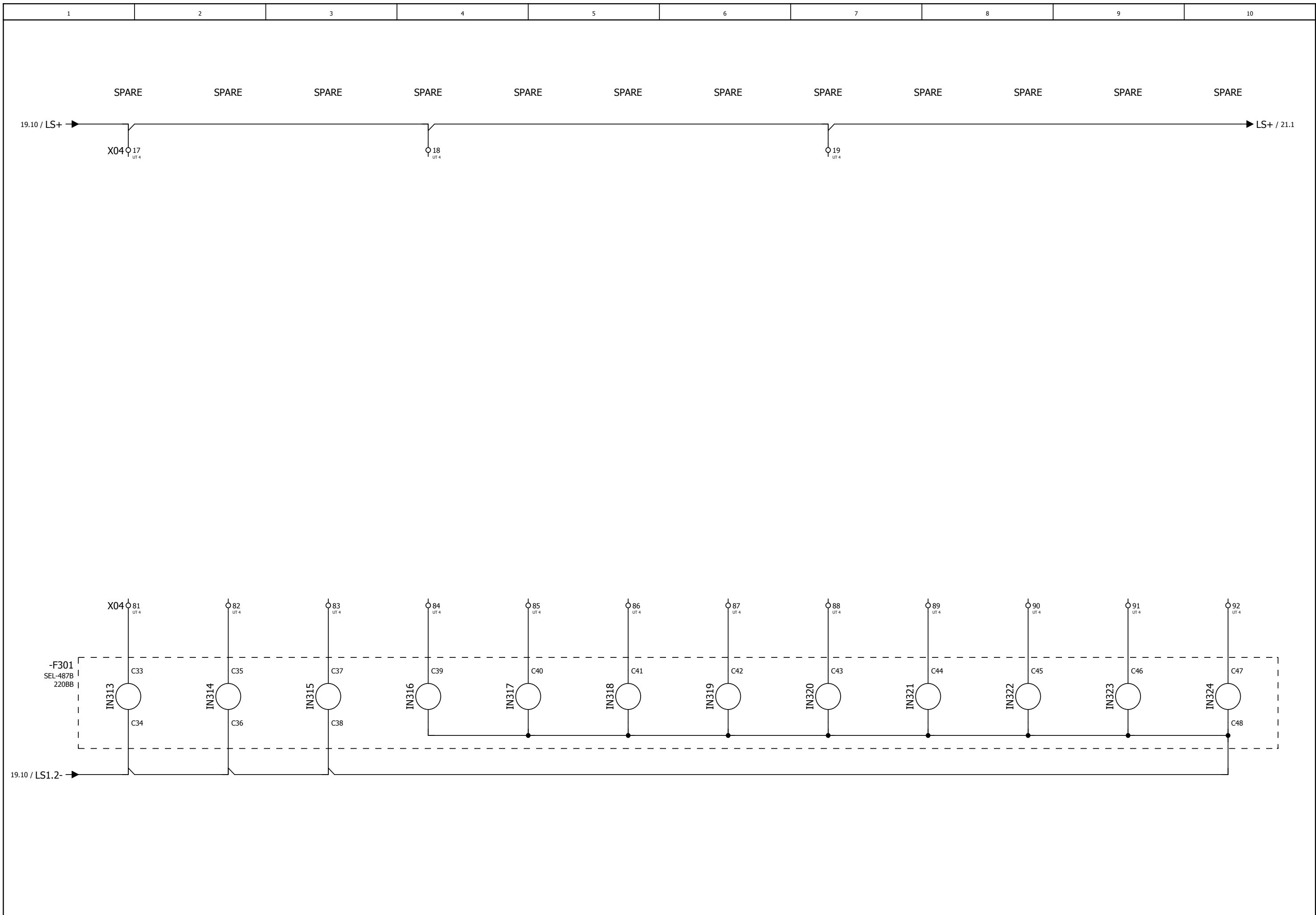




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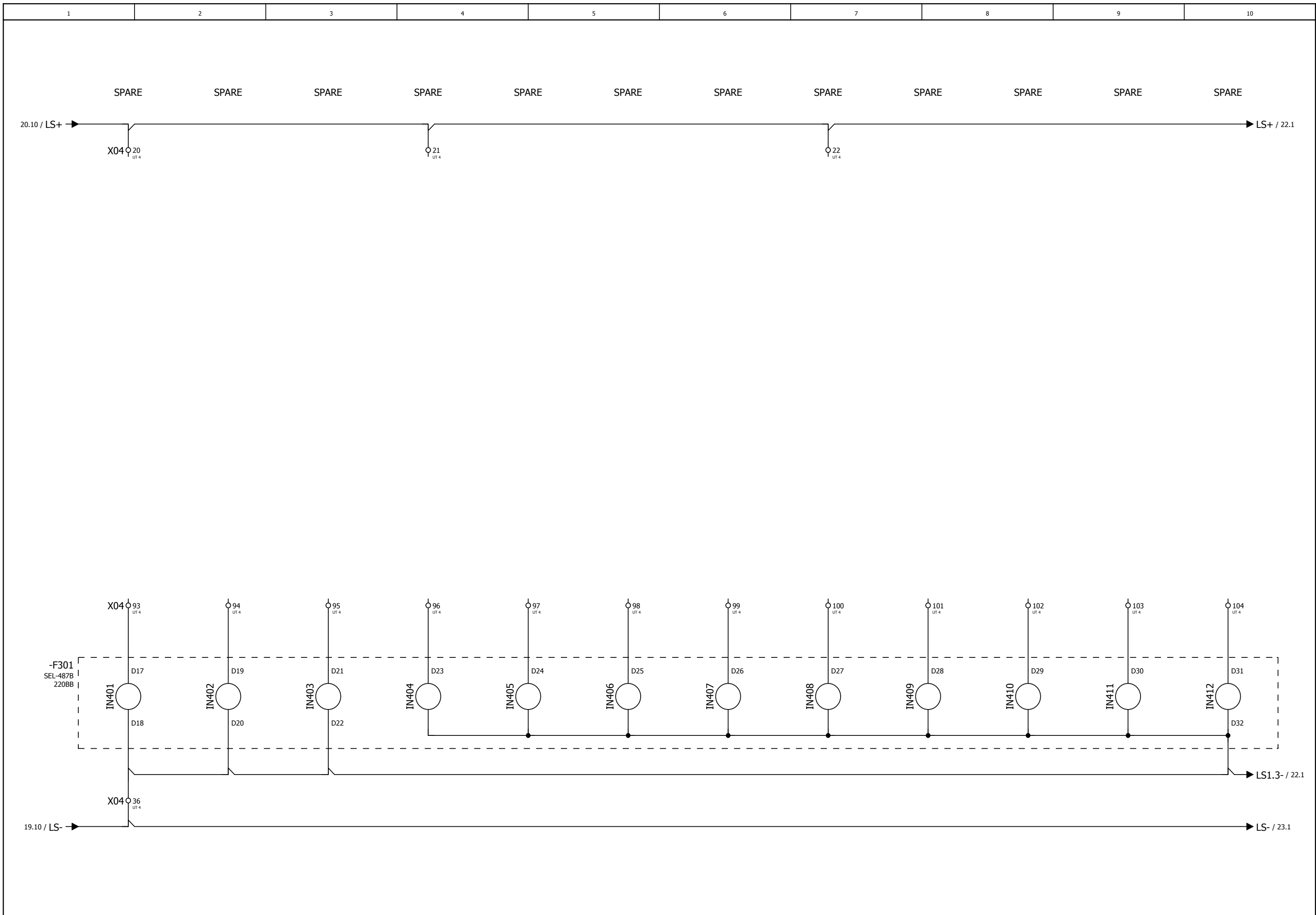
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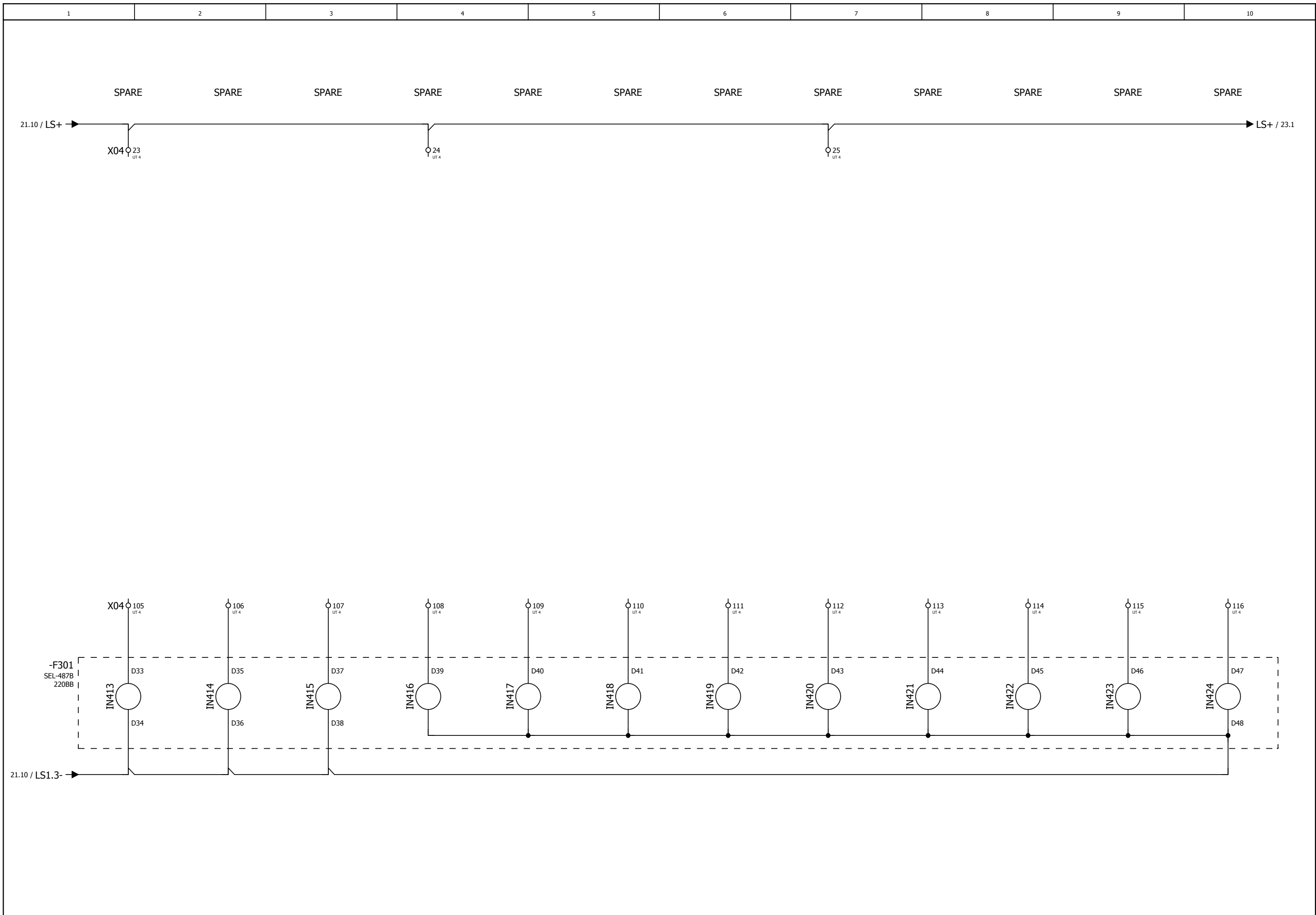
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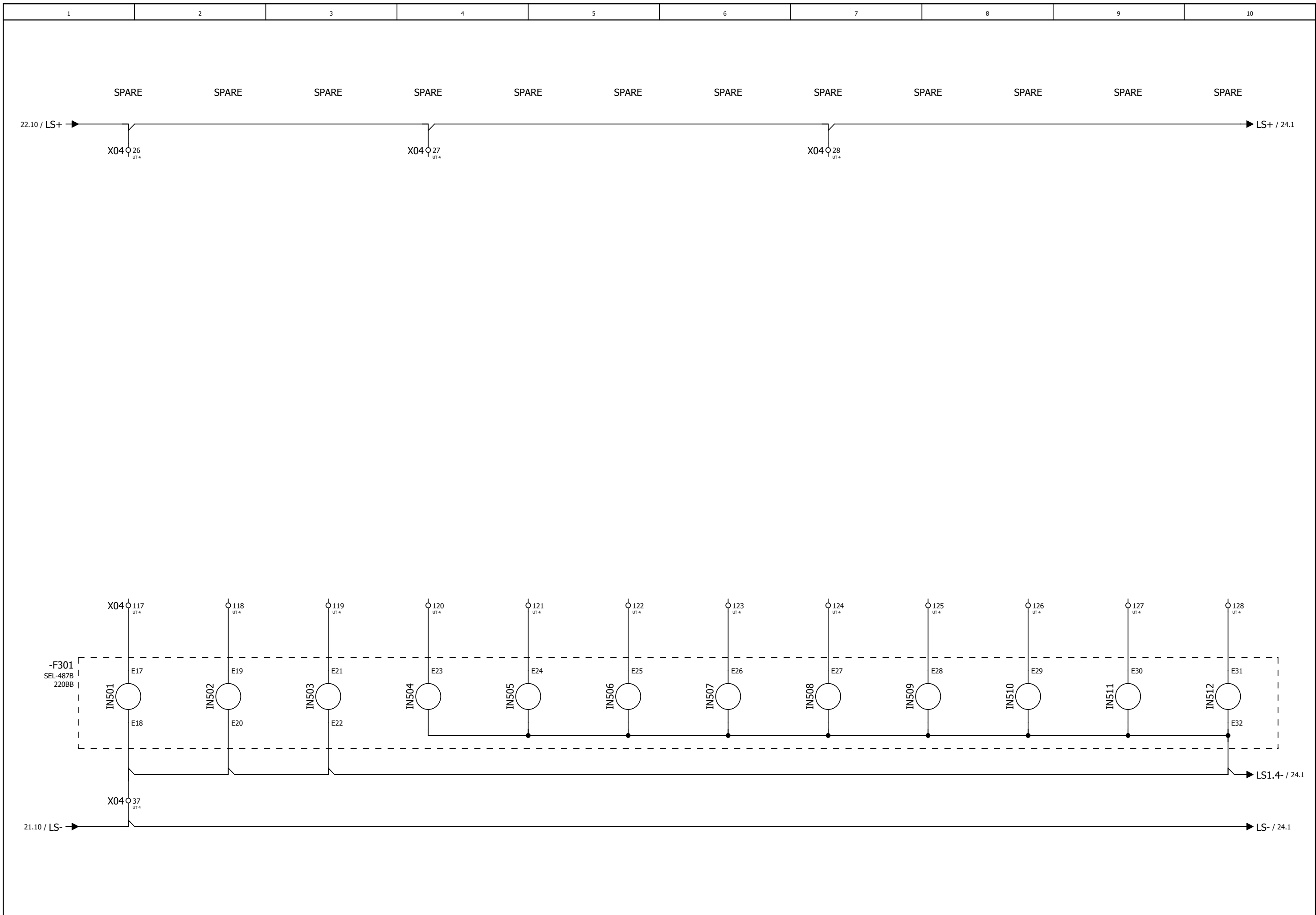
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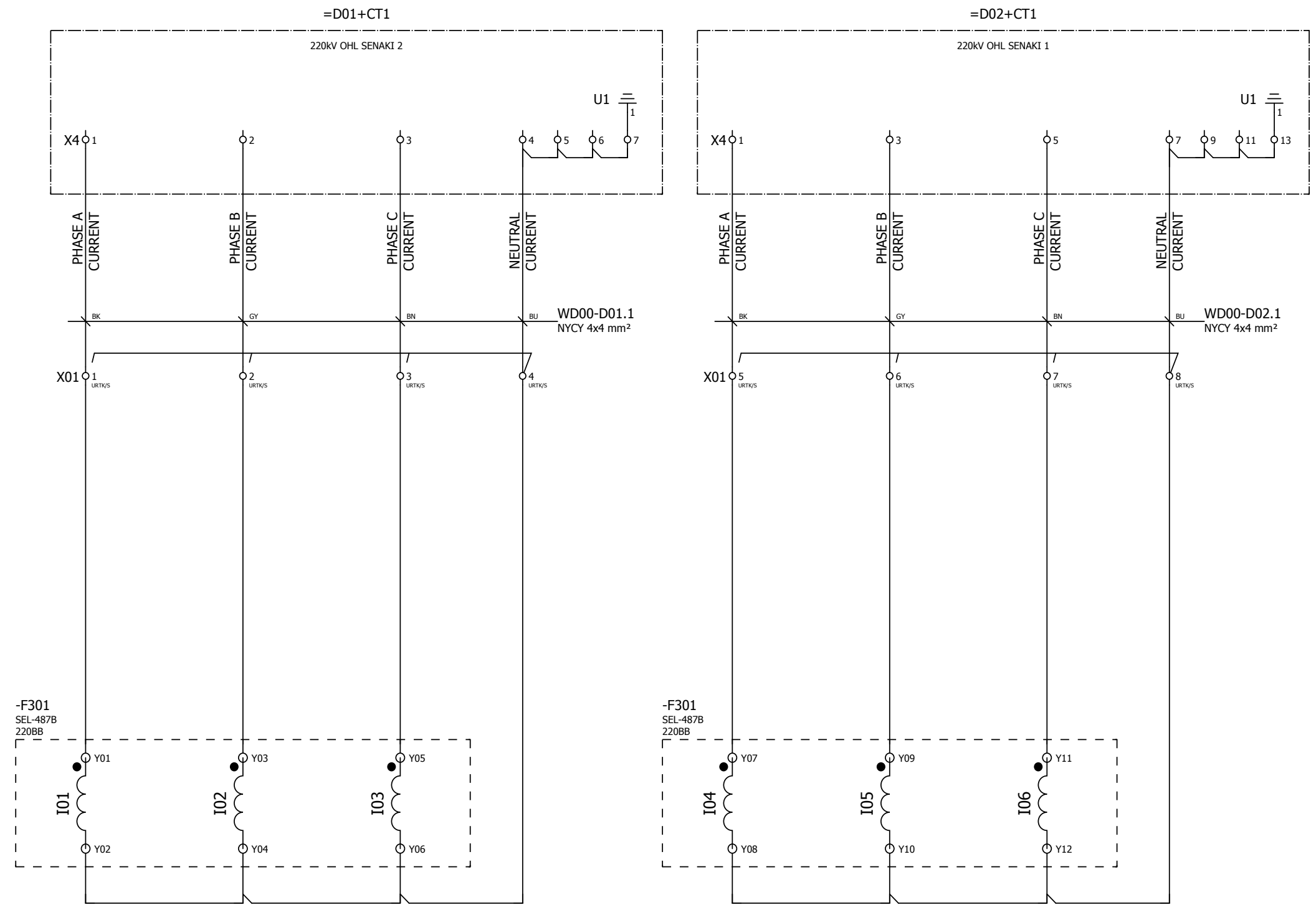
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=D01+CT1 220kV OHL SENAKI 2

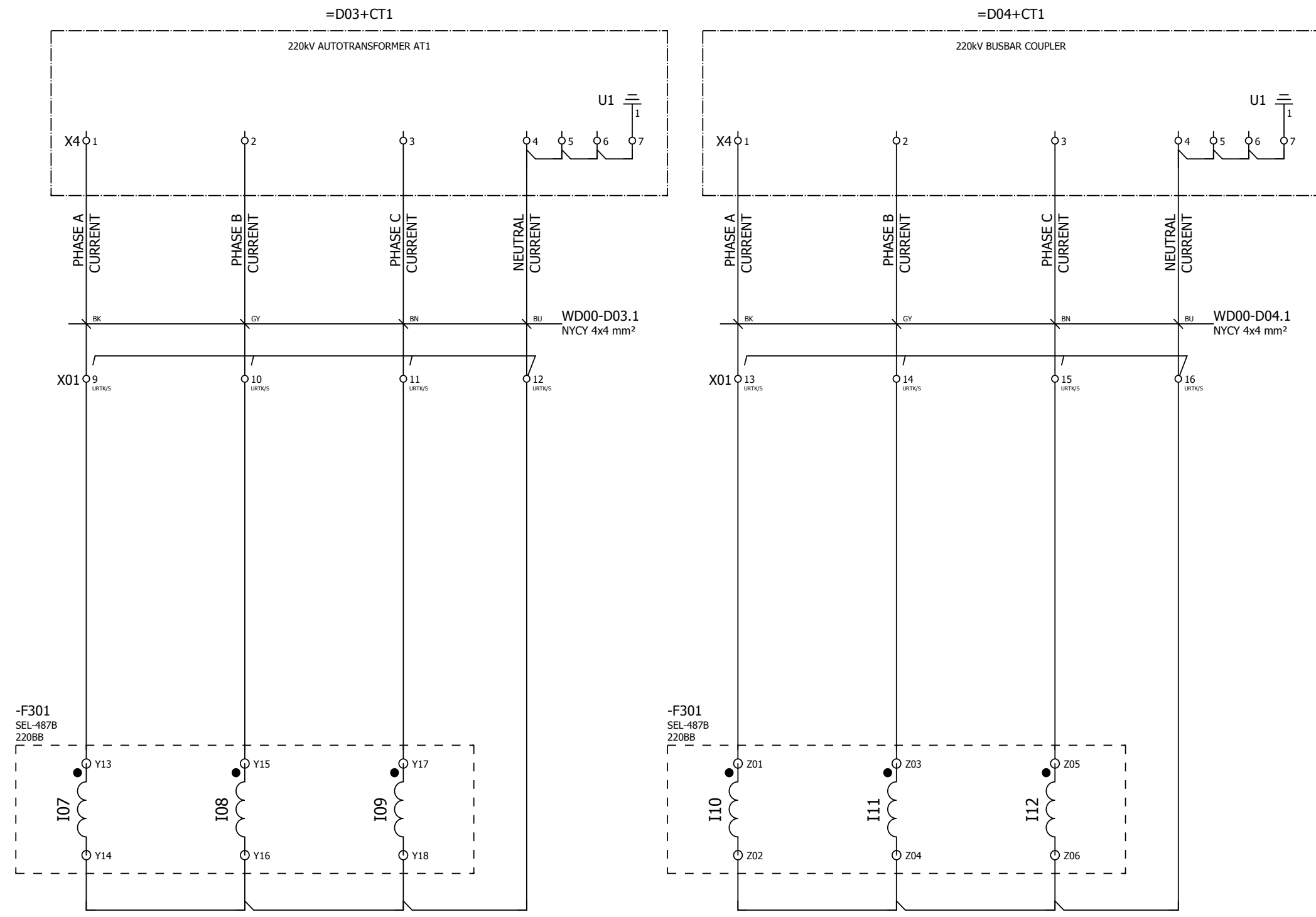
=D02+CT1 220kV OHL SENAKI 1



02	15.07.2014.	PER GSE COMMENTS	MMa	SEL Middle East B.S.C. 1504 Tiffany Tower Jumeira Lakes Tower 9926 Dubai UAE	Customer: Georgian State Electrossystem	Project Descript. Substation Tskaltubo 220/110kV Schematic diagram for 220kV Busbar Protection	Job number: GSE-SSTS-TS-3-TS-220-6	Function	=D00
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=D03+CT1 220kV AUTOTRANSFORMER AT1

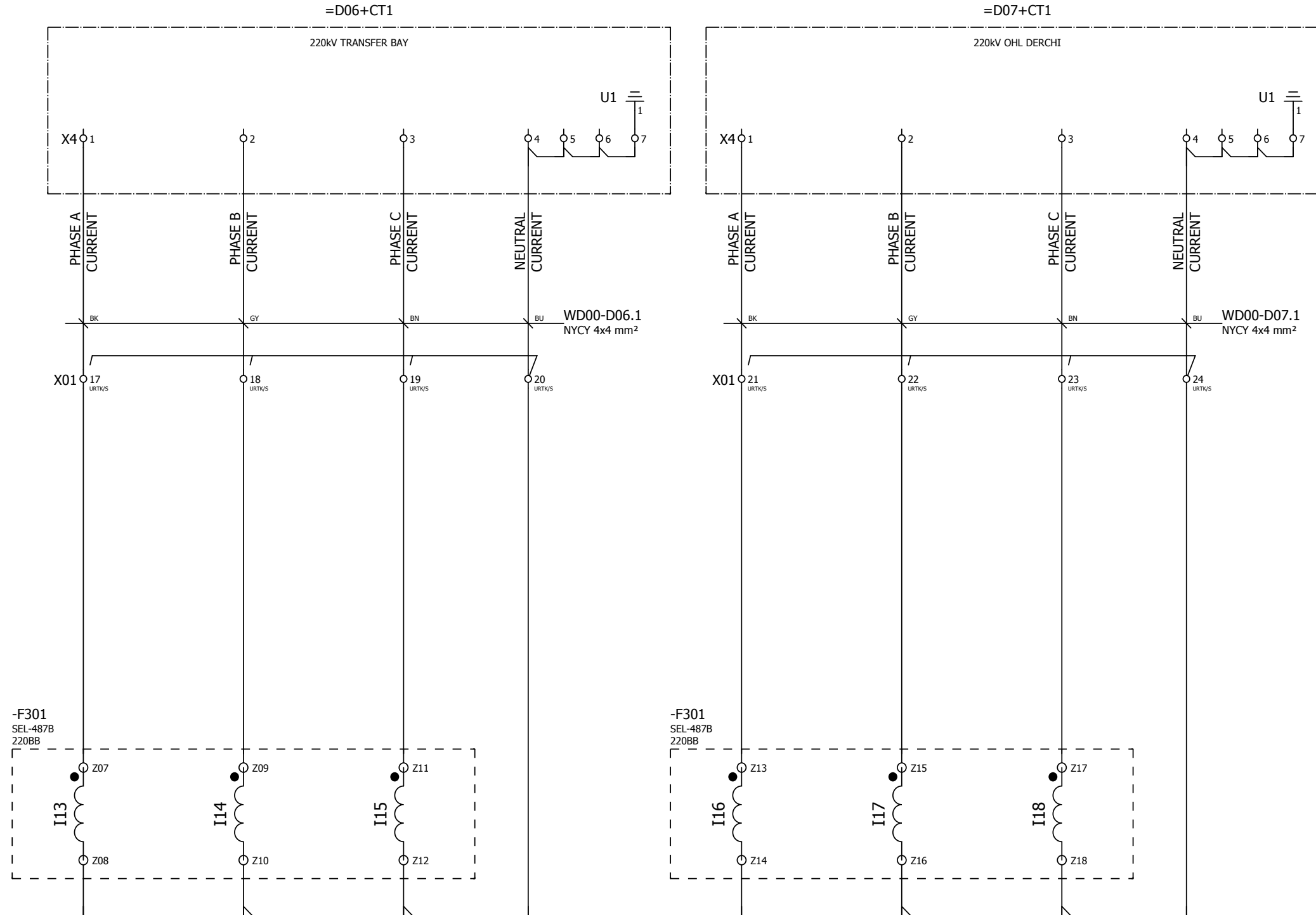
=D04+CT1 220kV BUSBAR COUPLER



02	15.07.2014.	PER GSE COMMENTS	MMa	SEL Middle East B.S.C 1504 Tiffany Tower Jumeira Lakes Tower 9926 Dubai UAE	Customer: Georgian State Electrosystem	Project Descript. Substation Tskaltubo 220/110kV Schematic diagram for 220kV Busbar Protection	Job number: GSE-SSTS-TS-3-TS-220-6	Function	=D00
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=D06+CT1 220kV TRANSFER BAY

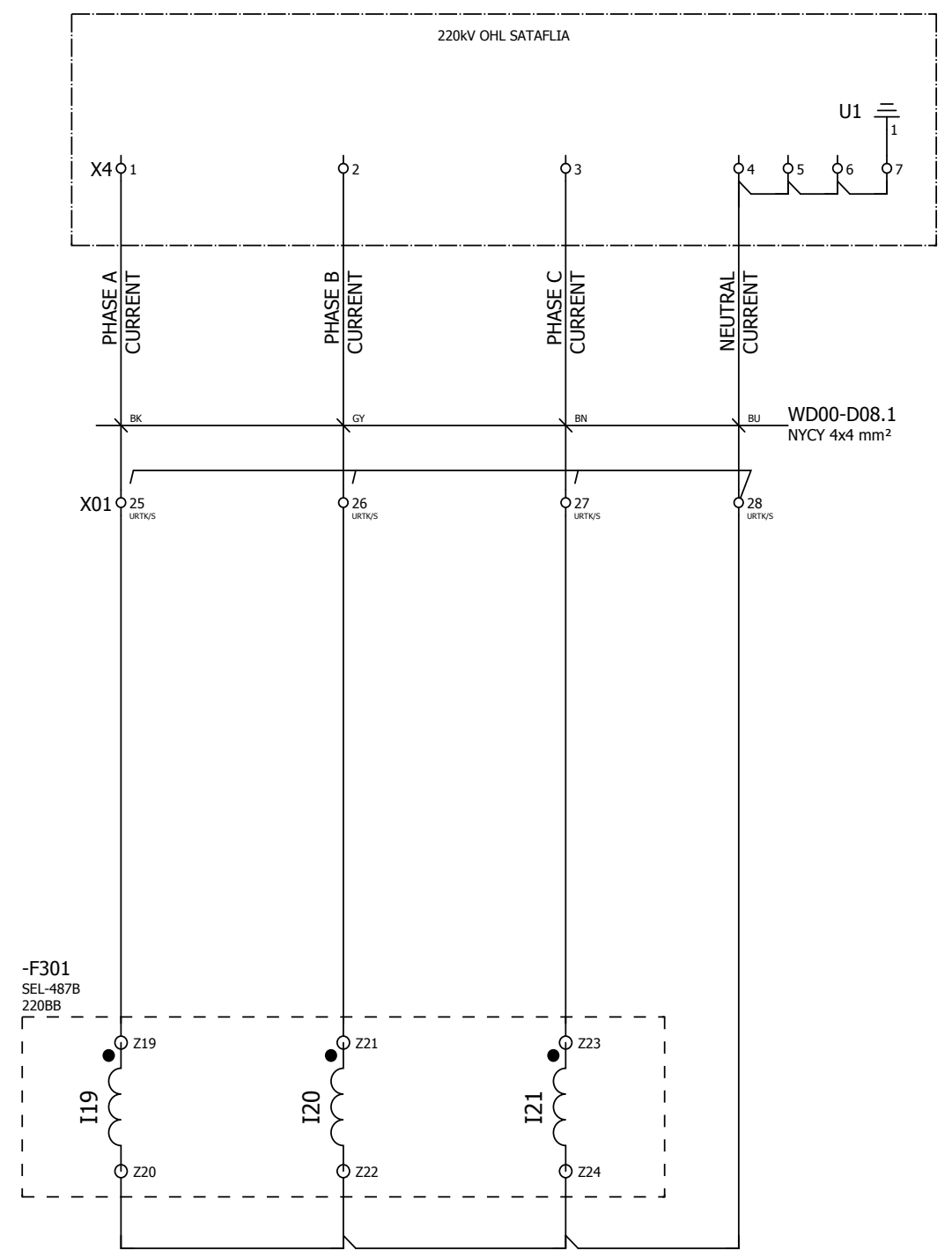
=D07+CT1 220kV OHL DERCHI



02	15.07.2014.	PER GSE COMMENTS	MMa	SEL Middle East B.S.C. 1504 Tiffany Tower Jumeira Lakes Tower 9926 Dubai UAE	Customer: Georgian State Electrosystem	Project Descript. Substation Tskaltubo 220/110kV Schematic diagram for 220kV Busbar Protection	Job number: GSE-SSTS-TS-3-TS-220-6	Function	=D00
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Rev	Date	Remarks	Name	Sheet Descript. Current Transformers - D06 and D07		Date: 15.07.14		Revision:	02

=D08+CT1 220kV OHL SATAFLIA

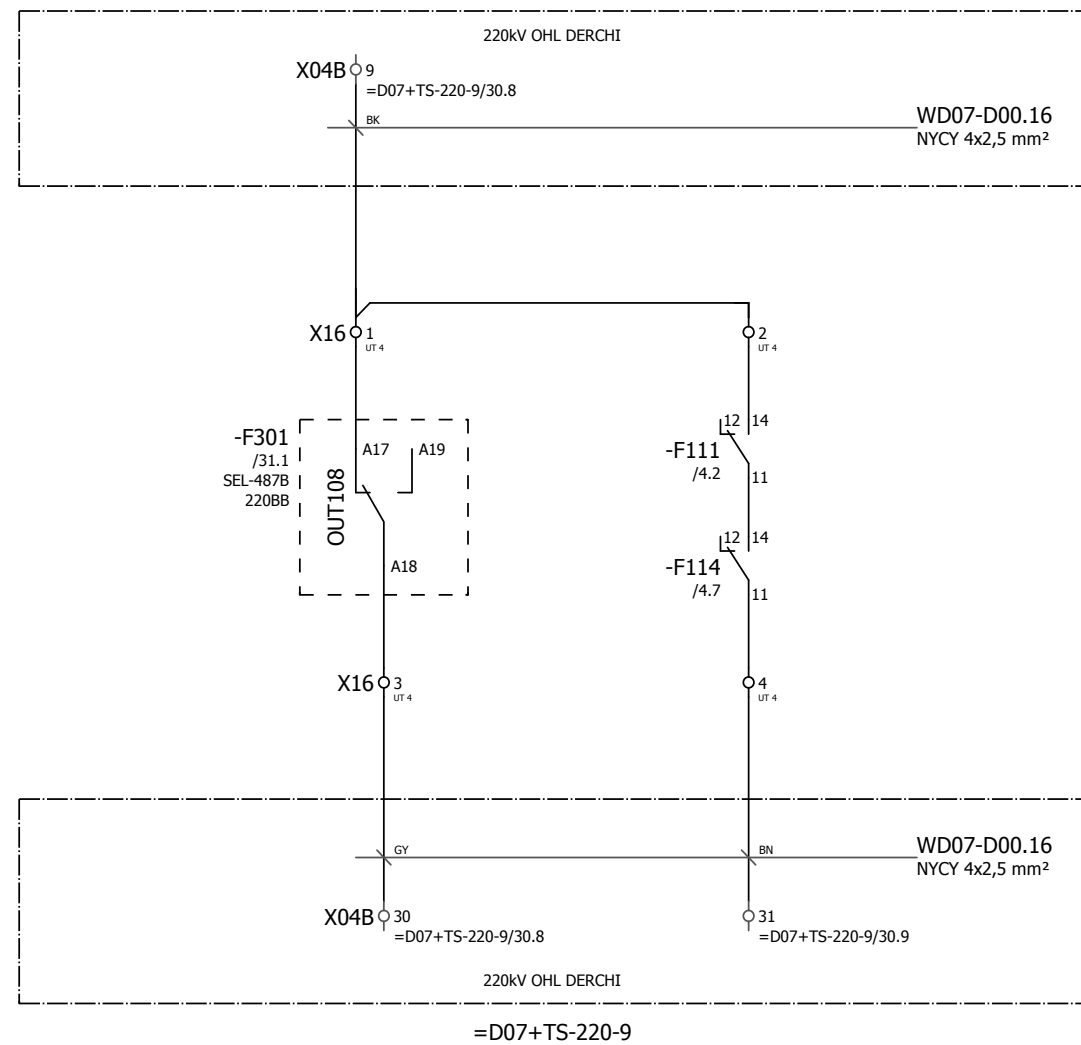
=D08+CT1



02	15.07.2014.	PER GSE COMMENTS	MMa	SEL Middle East B.S.C 1504 Tiffany Tower Jumeira Lakes Tower 9926 Dubai UAE	Customer: Georgian State Electrosystem	Project Descript. Substation Tskaltubo 220/110kV Schematic diagram for 220kV Busbar Protection	Job number: GSE-SSTS-TS-3-TS-220-6	Function	=D00		
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Rev	Date	Remarks	Name					Sheet / Sheets	28 / 44		
								Date:	15.07.14	Revision:	02

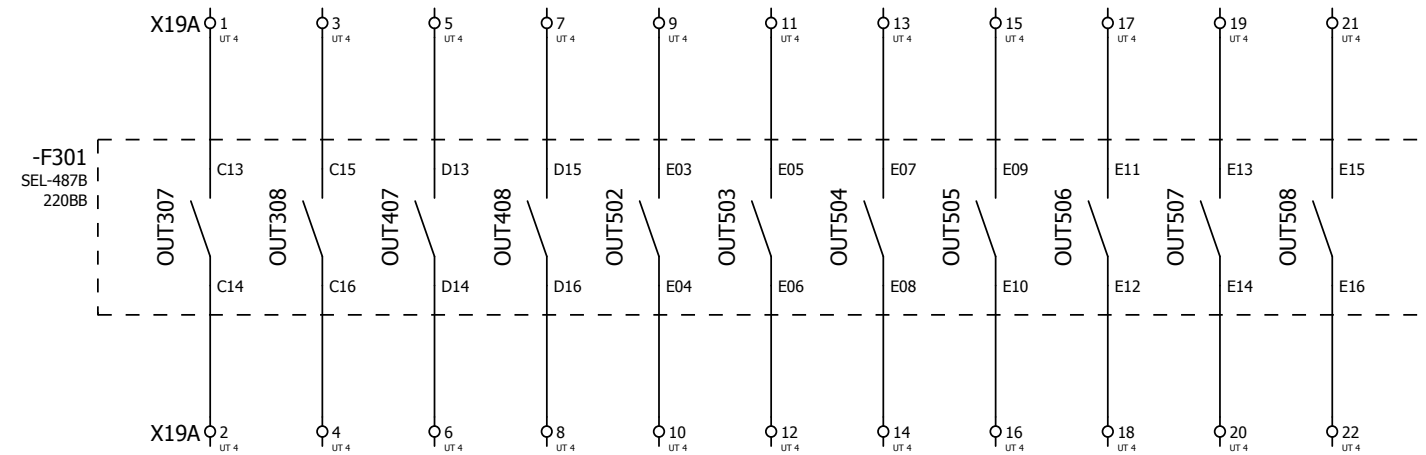
SEND TO =D07+TS-220-9
220kV OHL DERCHI



PROTECTION FAIL SUPPLY AND SIGNAL
VOLTAGE MCBs ON
=D07+TS-220-9



02	15.07.2014.	PER GSE COMMENTS	MMa	SEL Middle East B.S.C. 1504 Tiffany Tower Jumeira Lakes Tower 9926 Dubai UAE	Customer: Georgian State Electrossystem	Project Descript. Substation Tskaltubo 220/110kV Schematic diagram for 220kV Busbar Protection	Job number: GSE-SSTS-TS-3-TS-220-6	Function	=D00
01	22.05.2014.	FOR PANEL ASSEMBLY	MMa					Mnt. Location	+TS-220-6
Rev	Date	Remarks	Name					Sheet / Sheets	29 / 44

SPARE OUTPUTS
- 220BB -

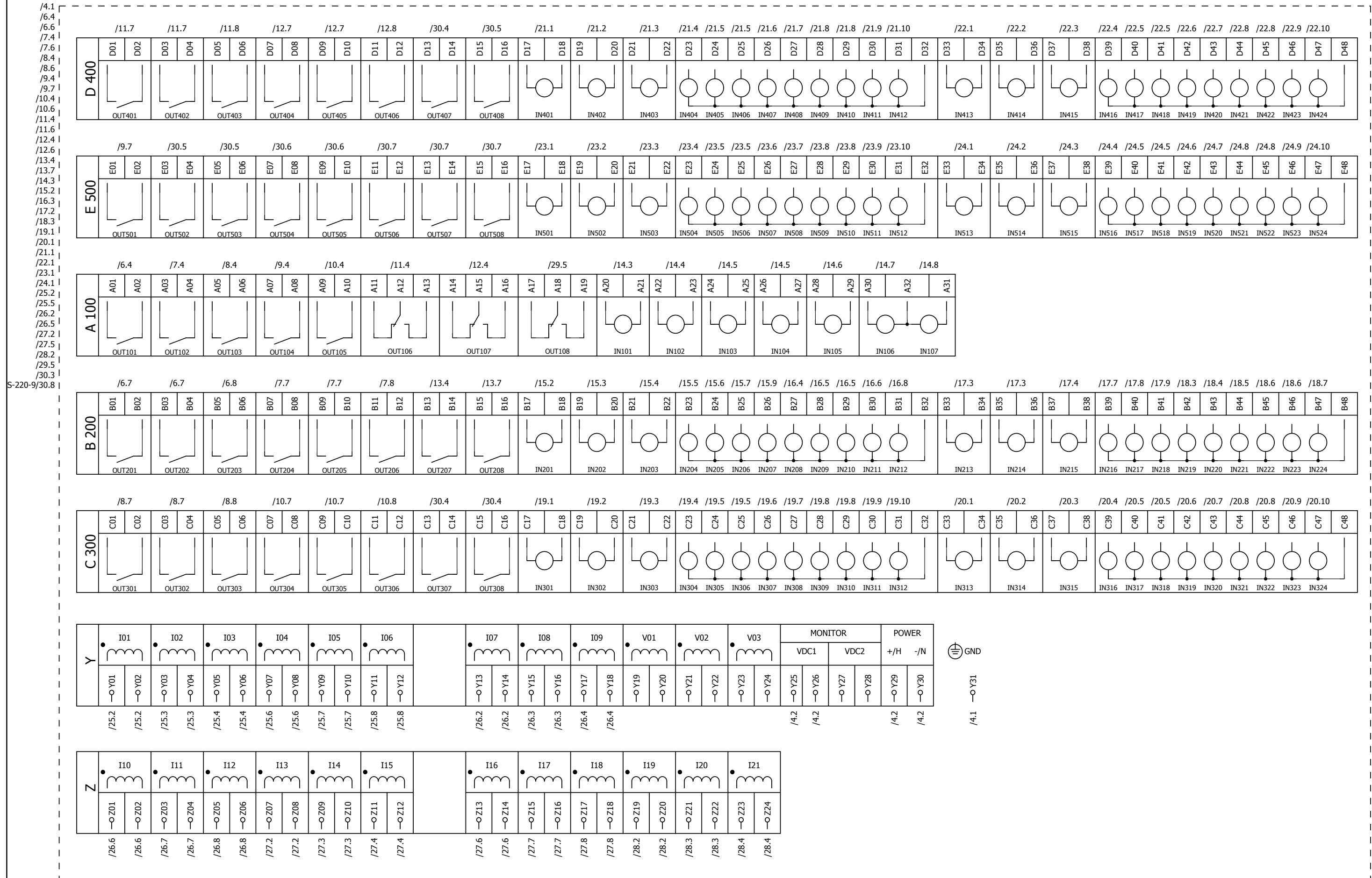


02	15.07.2014.	PER GSE COMMENTS	MMa	 SCHWEITZER ENGINEERING LABORATORIES SEL Middle East B.S.C. 1504 Tiffany Tower Jumeira Lakes Tower 9926 Dubai UAE	Customer:  Georgian State Electrosystem	Project Descript.	Substation Tskaltubo 220/110kV Schematic diagram for 220kV Busbar Protection	Job number: GSE-SSTS-TS-3-TS-220-6	Function	=D00
01	22.05.2014.	FOR PANEL ASSEMBLY	MMa			Sheet Descript.	Spare Binary Outputs		Mnt. Location	+TS-220-6
Rev	Date	Remarks	Name						Sheet / Sheets	30 / 44
									Date:	15.07.14
									Revision:	02

SEL-487B

0487B1X6X12XC0XGHAGGGGX

-F301



02	15.07.2014.	PER GSE COMMENTS	MMa	SEL Middle East B.S.C. 1504 Tiffany Tower Jumeira Lakes Tower 9926 Dubai UAE	Customer: Georgian State Electrosystem	Project Descript.: Substation Tskaltubo 220/110kV Schematic diagram for 220kV Busbar Protection Sheet Descript.: Device connection diagram - 220BB	Job number: GSE-SSTS-TS-3-TS-220-6	Function	=D00
01	22.05.2014.	FOR PANEL ASSEMBLY	MMa					Mnt. Location	+TS-220-6
Rev	Date	Remarks	Name					Sheet / Sheets	31 / 44
								Date:	15.07.14
								Revision:	02

		WD00-D08.1		WD00-D07.1		WD00-D06.1		WD00-D04.1		WD00-D03.1		WD00-D02.1		WD00-D01.1		CABLE DESIGNATION	TERMINAL STRIP =D00+TS-220-6-X01 Current Transformer - 220BB				CABLE DESIGNATION					TERMINAL TYPE	TERMINAL PLACEMENT
		NYCY 4x4 mm ²	NYCY 4x4 mm ²	NYCY 4x4 mm ²	NYCY 4x4 mm ²	NYCY 4x4 mm ²	NYCY 4x4 mm ²	NYCY 4x4 mm ²	NYCY 4x4 mm ²	CABLE TYPE	LOWER SIDE CONNECTION DESTINATION	JUMPERS	TERMINAL NUMBER	UPPER SIDE CONNECTION DESTINATION	CABLE TYPE												
										BK	=D01+CT1-X4	1	•	1	-F301	Y01							URTK/S	=D00+TS-220-6/25			
										GY	=D01+CT1-X4	2	•	2	-F301	Y03							URTK/S	=D00+TS-220-6/25			
										BN	=D01+CT1-X4	3	•	3	-F301	Y05							URTK/S	=D00+TS-220-6/25			
										BU	=D01+CT1-X4	4	•	4	-F301	Y06							URTK/S	=D00+TS-220-6/25			
										BK	=D02+CT1-X4	1	•	5	-F301	Y07							URTK/S	=D00+TS-220-6/25			
										GY	=D02+CT1-X4	3	•	6	-F301	Y09							URTK/S	=D00+TS-220-6/25			
										BN	=D02+CT1-X4	5	•	7	-F301	Y11							URTK/S	=D00+TS-220-6/25			
										BU	=D02+CT1-X4	7	•	8	-F301	Y12							URTK/S	=D00+TS-220-6/25			
										BK	=D03+CT1-X4	1	•	9	-F301	Y13							URTK/S	=D00+TS-220-6/26			
										GY	=D03+CT1-X4	2	•	10	-F301	Y15							URTK/S	=D00+TS-220-6/26			
										BN	=D03+CT1-X4	3	•	11	-F301	Y17							URTK/S	=D00+TS-220-6/26			
										BU	=D03+CT1-X4	4	•	12	-F301	Y18							URTK/S	=D00+TS-220-6/26			
										BK	=D04+CT1-X4	1	•	13	-F301	Z01							URTK/S	=D00+TS-220-6/26			
										GY	=D04+CT1-X4	2	•	14	-F301	Z03							URTK/S	=D00+TS-220-6/26			
										BN	=D04+CT1-X4	3	•	15	-F301	Z05							URTK/S	=D00+TS-220-6/26			
										BU	=D04+CT1-X4	4	•	16	-F301	Z06							URTK/S	=D00+TS-220-6/26			
										BK	=D06+CT1-X4	1	•	17	-F301	Z07							URTK/S	=D00+TS-220-6/27			
										GY	=D06+CT1-X4	2	•	18	-F301	Z09							URTK/S	=D00+TS-220-6/27			
										BN	=D06+CT1-X4	3	•	19	-F301	Z11							URTK/S	=D00+TS-220-6/27			
										BU	=D06+CT1-X4	4	•	20	-F301	Z12							URTK/S	=D00+TS-220-6/27			
										BK	=D07+CT1-X4	1	•	21	-F301	Z13							URTK/S	=D00+TS-220-6/27			
										GY	=D07+CT1-X4	2	•	22	-F301	Z15							URTK/S	=D00+TS-220-6/27			
										BN	=D07+CT1-X4	3	•	23	-F301	Z17							URTK/S	=D00+TS-220-6/27			
										BU	=D07+CT1-X4	4	•	24	-F301	Z18							URTK/S	=D00+TS-220-6/27			
										BK	=D08+CT1-X4	1	•	25	-F301	Z19							URTK/S	=D00+TS-220-6/28			
										GY	=D08+CT1-X4	2	•	26	-F301	Z21							URTK/S	=D00+TS-220-6/28			
										BN	=D08+CT1-X4	3	•	27	-F301	Z23							URTK/S	=D00+TS-220-6/28			
										BU	=D08+CT1-X4	4	•	28	-F301	Z24							URTK/S	=D00+TS-220-6/28			

		CABLE DESIGNATION							TERMINAL STRIP =D00+TS-220-6-X04 Signal Voltage - 220BB				CABLE DESIGNATION					
		WD08-D00.3	WD07-D00.3	WD06-D00.3	WD04-D00.3	WD03-D00.3	WD02-D00.3	WD01-D00.3	CABLE TYPE	LOWER SIDE CONNECTION DESTINATION	JUMPERS	TERMINAL NUMBER	UPPER SIDE CONNECTION DESTINATION	CABLE TYPE			TERMINAL TYPE	TERMINAL PLACEMENT
		NYCY 16x1,5 mm ²										1 -F114	2				UT 4	=D00+TS-220-6/4
		NYCY 16x1,5 mm ²										2 -F601	14				UT 4	=D00+TS-220-6/14
		NYCY 16x1,5 mm ²										3					UT 4	=D00+TS-220-6/14
		NYCY 16x1,5 mm ²										4					UT 4	=D00+TS-220-6/14
								9	=D01+TS-220-3-X150	1		5					UT 4	=D00+TS-220-6/15
							9	=D02+TS-220-3-X250	1			6					UT 4	=D00+TS-220-6/15
							9	=D03+TS-220-4-X50	1			7					UT 4	=D00+TS-220-6/15
						5		=D04+TS-220-5-X50	1			8					UT 4	=D00+TS-220-6/16
				9				=D06+TS-220-8-X50	1			9					UT 4	=D00+TS-220-6/16
			9					=D07+TS-220-9-X50	1			10					UT 4	=D00+TS-220-6/17
		9						=D08+TS-220-10-X50	1			11					UT 4	=D00+TS-220-6/17
												12					UT 4	=D00+TS-220-6/18
												13					UT 4	=D00+TS-220-6/18
												14					UT 4	=D00+TS-220-6/19
												15					UT 4	=D00+TS-220-6/19
												16					UT 4	=D00+TS-220-6/19
												17					UT 4	=D00+TS-220-6/20
												18					UT 4	=D00+TS-220-6/20
												19					UT 4	=D00+TS-220-6/20
												20					UT 4	=D00+TS-220-6/21
												21					UT 4	=D00+TS-220-6/21
												22					UT 4	=D00+TS-220-6/21
												23					UT 4	=D00+TS-220-6/22
												24					UT 4	=D00+TS-220-6/22
												25					UT 4	=D00+TS-220-6/22
												26					UT 4	=D00+TS-220-6/23
												27					UT 4	=D00+TS-220-6/23
												28					UT 4	=D00+TS-220-6/23
												29					UT 4	=D00+TS-220-6/24
												30					UT 4	=D00+TS-220-6/24
												31					UT 4	=D00+TS-220-6/24
												32 -F114	4				UT 4	=D00+TS-220-6/4
												33 -F301	A21				UT 4	=D00+TS-220-6/14
												34 -F301	B18				UT 4	=D00+TS-220-6/15
												35 -F301	C18				UT 4	=D00+TS-220-6/19
												36 -F301	D18				UT 4	=D00+TS-220-6/21
												37 -F301	E18				UT 4	=D00+TS-220-6/23
												38					UT 4	=D00+TS-220-6/24
												39 -F301	A22				UT 4	=D00+TS-220-6/14
												40 -F301	A24				UT 4	=D00+TS-220-6/14
												41 -F301	A26				UT 4	=D00+TS-220-6/14
												42 -F301	A28				UT 4	=D00+TS-220-6/14
												43 -F301	A30				UT 4	=D00+TS-220-6/14
												44 -F301	A32				UT 4	=D00+TS-220-6/14
								10	=D01+TS-220-3-X150	8		45 -F301	B17				UT 4	=D00+TS-220-6/15
								11	=D01+TS-220-3-X150	9		46 -F301	B19				UT 4	=D00+TS-220-6/15
								12	=D01+TS-220-3-X150	10		47 -F301	B21				UT 4	=D00+TS-220-6/15
								10	=D02+TS-220-3-X250	8		48 -F301	B23				UT 4	=D00+TS-220-6/15
								11	=D02+TS-220-3-X250	9		49 -F301	B24				UT 4	=D00+TS-220-6/15
								12	=D02+TS-220-3-X250	10		50 -F301	B25				UT 4	=D00+TS-220-6/15

		CABLE DESIGNATION						TERMINAL STRIP =D00+TS-220-6-X04 Signal Voltage - 220BB					CABLE DESIGNATION						TERMINAL TYPE	TERMINAL PLACEMENT
		NYCY 16x1,5 mm ²	NYCY 16x1,5 mm ²	NYCY 10x1,5 mm ²	NYCY 10x1,5 mm ²	NYCY 10x1,5 mm ²	NYCY 10x1,5 mm ²	CABLE TYPE	LOWER SIDE CONNECTION DESTINATION	JUMPERS	TERMINAL NUMBER	UPPER SIDE CONNECTION DESTINATION	CABLE TYPE	TERMINAL TYPE	TERMINAL PLACEMENT					
							10	=D03+TS-220-4-X50	7	•	51	-F301	B26			UT 4	=D00+TS-220-6/15			
							6	=D04+TS-220-5-X50	11	•	52	-F301	B27			UT 4	=D00+TS-220-6/16			
							7	=D04+TS-220-5-X50	12	•	53	-F301	B28			UT 4	=D00+TS-220-6/16			
							8	=D04+TS-220-5-X50	14	•	54	-F301	B29			UT 4	=D00+TS-220-6/16			
							9	=D04+TS-220-5-X50	16	•	55	-F301	B30			UT 4	=D00+TS-220-6/16			
							10	=D06+TS-220-8-X50	4	•	56	-F301	B31			UT 4	=D00+TS-220-6/16			
							10	=D07+TS-220-9-X50	2	•	57	-F301	B33			UT 4	=D00+TS-220-6/17			
							11	=D07+TS-220-9-X50	3	•	58	-F301	B35			UT 4	=D00+TS-220-6/17			
							12	=D07+TS-220-9-X50	4	•	59	-F301	B37			UT 4	=D00+TS-220-6/17			
							10	=D08+TS-220-10-X50	2	•	60	-F301	B39			UT 4	=D00+TS-220-6/17			
							11	=D08+TS-220-10-X50	3	•	61	-F301	B40			UT 4	=D00+TS-220-6/17			
							12	=D08+TS-220-10-X50	4	•	62	-F301	B41			UT 4	=D00+TS-220-6/17			
										•	63	-F301	B42			UT 4	=D00+TS-220-6/18			
										•	64	-F301	B43			UT 4	=D00+TS-220-6/18			
										•	65	-F301	B44			UT 4	=D00+TS-220-6/18			
										•	66	-F301	B45			UT 4	=D00+TS-220-6/18			
										•	67	-F301	B46			UT 4	=D00+TS-220-6/18			
										•	68	-F301	B47			UT 4	=D00+TS-220-6/18			
										•	69	-F301	C17			UT 4	=D00+TS-220-6/19			
										•	70	-F301	C19			UT 4	=D00+TS-220-6/19			
										•	71	-F301	C21			UT 4	=D00+TS-220-6/19			
										•	72	-F301	C23			UT 4	=D00+TS-220-6/19			
										•	73	-F301	C24			UT 4	=D00+TS-220-6/19			
										•	74	-F301	C25			UT 4	=D00+TS-220-6/19			
										•	75	-F301	C26			UT 4	=D00+TS-220-6/19			
										•	76	-F301	C27			UT 4	=D00+TS-220-6/19			
										•	77	-F301	C28			UT 4	=D00+TS-220-6/19			
										•	78	-F301	C29			UT 4	=D00+TS-220-6/19			
										•	79	-F301	C30			UT 4	=D00+TS-220-6/19			
										•	80	-F301	C31			UT 4	=D00+TS-220-6/19			
										•	81	-F301	C33			UT 4	=D00+TS-220-6/20			
										•	82	-F301	C35			UT 4	=D00+TS-220-6/20			
										•	83	-F301	C37			UT 4	=D00+TS-220-6/20			
										•	84	-F301	C39			UT 4	=D00+TS-220-6/20			
										•	85	-F301	C40			UT 4	=D00+TS-220-6/20			
										•	86	-F301	C41			UT 4	=D00+TS-220-6/20			
										•	87	-F301	C42			UT 4	=D00+TS-220-6/20			
										•	88	-F301	C43			UT 4	=D00+TS-220-6/20			
										•	89	-F301	C44			UT 4	=D00+TS-220-6/20			
										•	90	-F301	C45			UT 4	=D00+TS-220-6/20			
										•	91	-F301	C46			UT 4	=D00+TS-220-6/20			
										•	92	-F301	C47			UT 4	=D00+TS-220-6/20			
										•	93	-F301	D17			UT 4	=D00+TS-220-6/21			
										•	94	-F301	D19			UT 4	=D00+TS-220-6/21			
										•	95	-F301	D21			UT 4	=D00+TS-220-6/21			
										•	96	-F301	D23			UT 4	=D00+TS-220-6/21			
										•	97	-F301	D24			UT 4	=D00+TS-220-6/21			
										•	98	-F301	D25			UT 4	=D00+TS-220-6/21			
										•	99	-F301	D26			UT 4	=D00+TS-220-6/21			
										•	100	-F301	D27			UT 4	=D00+TS-220-6/21			

CABLE DESIGNATION										TERMINAL STRIP =D00+TS-220-6-X04 Signal Voltage - 220BB				CABLE DESIGNATION				TERMINAL TYPE	TERMINAL PLACEMENT	
CABLE TYPE										LOWER SIDE CONNECTION DESTINATION	JUMPERS	TERMINAL NUMBER	UPPER SIDE CONNECTION DESTINATION	CABLE TYPE						
											•	101	-F301	D28					UT 4	=D00+TS-220-6/21
											•	102	-F301	D29					UT 4	=D00+TS-220-6/21
											•	103	-F301	D30					UT 4	=D00+TS-220-6/21
											•	104	-F301	D31					UT 4	=D00+TS-220-6/21
											•	105	-F301	D33					UT 4	=D00+TS-220-6/22
											•	106	-F301	D35					UT 4	=D00+TS-220-6/22
											•	107	-F301	D37					UT 4	=D00+TS-220-6/22
											•	108	-F301	D39					UT 4	=D00+TS-220-6/22
											•	109	-F301	D40					UT 4	=D00+TS-220-6/22
											•	110	-F301	D41					UT 4	=D00+TS-220-6/22
											•	111	-F301	D42					UT 4	=D00+TS-220-6/22
											•	112	-F301	D43					UT 4	=D00+TS-220-6/22
											•	113	-F301	D44					UT 4	=D00+TS-220-6/22
											•	114	-F301	D45					UT 4	=D00+TS-220-6/22
											•	115	-F301	D46					UT 4	=D00+TS-220-6/22
											•	116	-F301	D47					UT 4	=D00+TS-220-6/22
											•	117	-F301	E17					UT 4	=D00+TS-220-6/23
											•	118	-F301	E19					UT 4	=D00+TS-220-6/23
											•	119	-F301	E21					UT 4	=D00+TS-220-6/23
											•	120	-F301	E23					UT 4	=D00+TS-220-6/23
											•	121	-F301	E24					UT 4	=D00+TS-220-6/23
											•	122	-F301	E25					UT 4	=D00+TS-220-6/23
											•	123	-F301	E26					UT 4	=D00+TS-220-6/23
											•	124	-F301	E27					UT 4	=D00+TS-220-6/23
											•	125	-F301	E28					UT 4	=D00+TS-220-6/23
											•	126	-F301	E29					UT 4	=D00+TS-220-6/23
											•	127	-F301	E30					UT 4	=D00+TS-220-6/23
											•	128	-F301	E31					UT 4	=D00+TS-220-6/23
											•	129	-F301	E33					UT 4	=D00+TS-220-6/24
											•	130	-F301	E35					UT 4	=D00+TS-220-6/24
											•	131	-F301	E37					UT 4	=D00+TS-220-6/24
											•	132	-F301	E39					UT 4	=D00+TS-220-6/24
											•	133	-F301	E40					UT 4	=D00+TS-220-6/24
											•	134	-F301	E41					UT 4	=D00+TS-220-6/24
											•	135	-F301	E42					UT 4	=D00+TS-220-6/24
											•	136	-F301	E43					UT 4	=D00+TS-220-6/24
											•	137	-F301	E44					UT 4	=D00+TS-220-6/24
											•	138	-F301	E45					UT 4	=D00+TS-220-6/24
											•	139	-F301	E46					UT 4	=D00+TS-220-6/24
											•	140	-F301	E47					UT 4	=D00+TS-220-6/24

										TERMINAL STRIP =D00+TS-220-6-X05A 220Vdc Voltage Distribution - DC-1													
										CABLE DESIGNATION						CABLE DESIGNATION							
										NZXH 4x4 mm ²	CABLE TYPE	LOWER SIDE CONNECTION DESTINATION	JUMPERS	TERMINAL NUMBER	UPPER SIDE CONNECTION DESTINATION	CABLE TYPE						TERMINAL TYPE	TERMINAL PLACEMENT
										BK	=NK+DB3-F13	2	↓	1	-F111	1						UT 4	=D00+TS-220-6/4
													↓	2								UT 4	=D00+TS-220-6/4
										GY	=NK+DB3-F13	4	↓	3	-F111	3						UT 4	=D00+TS-220-6/4
													↓	4								UT 4	=D00+TS-220-6/4

										TERMINAL STRIP =D00+TS-220-6-X05B 220Vdc Voltage Distribution - DC-2														
										CABLE DESIGNATION						CABLE DESIGNATION								
										NZXH 4x4 mm ²	CABLE TYPE	LOWER SIDE CONNECTION DESTINATION	JUMPERS	TERMINAL NUMBER	UPPER SIDE CONNECTION DESTINATION	CABLE TYPE						TERMINAL TYPE	TERMINAL PLACEMENT	
										BK	=NK+DB3-F19	2	↓	1									UT 4	=D00+TS-220-6/5
													↓	2									UT 4	=D00+TS-220-6/5
										GY	=NK+DB3-F19	4	↓	3									UT 4	=D00+TS-220-6/5
													↓	4									UT 4	=D00+TS-220-6/5

								TERMINAL STRIP =D00+TS-220-6-X08 230Vac Voltage Distribution									
		CAB-3/CAB-4	CAB-2/CAB-3	CABLE DESIGNATION												TERMINAL TYPE	TERMINAL PLACEMENT
		NZXH 4x2.5 mm²	NZXH 4x4 mm²	CABLE TYPE	LOWER SIDE CONNECTION DESTINATION	JUMPERS	TERMINAL NUMBER	UPPER SIDE CONNECTION DESTINATION	CABLE TYPE								
				BK	=D07+TS-220-9-X08	2	1	-F601	1						UT 4	=D00+TS-220-6/3	
				BK	=D_ECS+TS-220-7-X??	xx	2								UT 4	=D00+TS-220-6/3	
				GY	=D07+TS-220-9-X08	4	3	-F601	3						UT 4	=D00+TS-220-6/3	
				GY	=D_ECS+TS-220-7-X??	xx	4								UT 4	=D00+TS-220-6/3	
							5	-F601	2						UT 4	=D00+TS-220-6/3	
							6	-S601	1						UT 4	=D00+TS-220-6/3	
							7	-X601	L						UT 4	=D00+TS-220-6/3	
							8	-S602	1						UT 4	=D00+TS-220-6/3	
							9	-F601	4						UT 4	=D00+TS-220-6/3	
							10	-H601	2						UT 4	=D00+TS-220-6/3	
							11	-X601	N						UT 4	=D00+TS-220-6/3	
							12	-H602	2						UT 4	=D00+TS-220-6/3	

										TERMINAL STRIP =D00+TS-220-6-X13A Send TRIP TC1									
		WE08-D00.3	WD08-D00.3	WD07-D00.3	WD06-D00.3	WD04-D00.3	WD03-D00.3	WD02-D00.3	WD01-D00.3	CABLE DESIGNATION									
		NYCY 4x2,5 mm ²	NYCY 16x1,5 mm ²	NYCY 16x1,5 mm ²	NYCY 10x1,5 mm ²	NYCY 10x1,5 mm ²	NYCY 10x1,5 mm ²	NYCY 16x1,5 mm ²	NYCY 16x1,5 mm ²	CABLE TYPE	LOWER SIDE CONNECTION DESTINATION	JUMPERS	TERMINAL NUMBER	UPPER SIDE CONNECTION DESTINATION	CABLE TYPE			TERMINAL TYPE	TERMINAL PLACEMENT
									1		=D01+TS-220-3-X103A	5	•	1	-F301	A01		UT 4	=D00+TS-220-6/6
									2		=D01+TS-220-3-X103A	19	•	2	-F301	A02		UT 4	=D00+TS-220-6/6
									1		=D02+TS-220-3-X203A	5	•	3	-F301	A03		UT 4	=D00+TS-220-6/7
									2		=D02+TS-220-3-X203A	19	•	4	-F301	A04		UT 4	=D00+TS-220-6/7
									1		=D03+TS-220-4-X03A	7	•	5	-F301	A05		UT 4	=D00+TS-220-6/8
									2		=D03+TS-220-4-X03A	21	•	6	-F301	A06		UT 4	=D00+TS-220-6/8
									1		=D04+TS-220-5-X03A	8	•	7	-F301	A07		UT 4	=D00+TS-220-6/9
									2		=D04+TS-220-5-X03A	23	•	8	-F301	A08		UT 4	=D00+TS-220-6/9
									1		=D06+TS-220-8-X03A	7	•	9	-F301	A09		UT 4	=D00+TS-220-6/10
									2		=D06+TS-220-8-X03A	22	•	10	-F301	A10		UT 4	=D00+TS-220-6/10
									1		=D07+TS-220-9-X03A	5	•	11	-F301	A13		UT 4	=D00+TS-220-6/11
									2		=D07+TS-220-9-X03A	17	•	12	-F301	A12		UT 4	=D00+TS-220-6/11
									1		=D08+TS-220-10-X03A	5	•	13	-F301	A16		UT 4	=D00+TS-220-6/12
									2		=D08+TS-220-10-X03A	17	•	14	-F301	A15		UT 4	=D00+TS-220-6/12
									BK		=E08+TS-110-7-X03A	6	•	15	-F301	B13		UT 4	=D00+TS-220-6/13
									GY		=E08+TS-110-7-X03A	20	•	16	-F301	B14		UT 4	=D00+TS-220-6/13



		CABLE DESIGNATION								TERMINAL STRIP =D00+TS-220-6-X13B Send TRIP TC2				CABLE DESIGNATION					TERMINAL TYPE	TERMINAL PLACEMENT		
		WED8-D00.3	WD08-D00.3	WD07-D00.3	WD06-D00.3	WD04-D00.3	WD03-D00.3	WD02-D00.3	WD01-D00.3	CABLE TYPE	LOWER SIDE CONNECTION DESTINATION	JUMPERS	TERMINAL NUMBER	UPPER SIDE CONNECTION DESTINATION	CABLE TYPE							
									3		=D01+TS-220-3-X103B	3	•	1	-F301	B01					UT 4	=D00+TS-220-6/6
									4		=D01+TS-220-3-X103B	14	•	2	-F301	B02					UT 4	=D00+TS-220-6/6
									5		=D01+TS-220-3-X103B	4	•	3	-F301	B03					UT 4	=D00+TS-220-6/6
									6		=D01+TS-220-3-X103B	19	•	4	-F301	B04					UT 4	=D00+TS-220-6/6
									7		=D01+TS-220-3-X103B	5	•	5	-F301	B05					UT 4	=D00+TS-220-6/6
									8		=D01+TS-220-3-X103B	24	•	6	-F301	B06					UT 4	=D00+TS-220-6/6
								3			=D02+TS-220-3-X203B	3	•	7	-F301	B07					UT 4	=D00+TS-220-6/7
								4			=D02+TS-220-3-X203B	14	•	8	-F301	B08					UT 4	=D00+TS-220-6/7
								5			=D02+TS-220-3-X203B	4	•	9	-F301	B09					UT 4	=D00+TS-220-6/7
								6			=D02+TS-220-3-X203B	19	•	10	-F301	B10					UT 4	=D00+TS-220-6/7
								7			=D02+TS-220-3-X203B	5	•	11	-F301	B11					UT 4	=D00+TS-220-6/7
								8			=D02+TS-220-3-X203B	24	•	12	-F301	B12					UT 4	=D00+TS-220-6/7
								3			=D03+TS-220-4-X03B	5	•	13	-F301	C01					UT 4	=D00+TS-220-6/8
								4			=D03+TS-220-4-X03B	18	•	14	-F301	C02					UT 4	=D00+TS-220-6/8
								5			=D03+TS-220-4-X03B	6	•	15	-F301	C03					UT 4	=D00+TS-220-6/8
								6			=D03+TS-220-4-X03B	22	•	16	-F301	C04					UT 4	=D00+TS-220-6/8
								7			=D03+TS-220-4-X03B	7	•	17	-F301	C05					UT 4	=D00+TS-220-6/8
								8			=D03+TS-220-4-X03B	26	•	18	-F301	C06					UT 4	=D00+TS-220-6/8
							3				=D04+TS-220-5-X03B	6	•	19	-F301	E01					UT 4	=D00+TS-220-6/9
							4				=D04+TS-220-5-X03B	18	•	20	-F301	E02					UT 4	=D00+TS-220-6/9
							3				=D06+TS-220-8-X03B	7	•	21	-F301	C07					UT 4	=D00+TS-220-6/10
							4				=D06+TS-220-8-X03B	18	•	22	-F301	C08					UT 4	=D00+TS-220-6/10
							5				=D06+TS-220-8-X03B	19	•	23	-F301	C09					UT 4	=D00+TS-220-6/10
							6				=D06+TS-220-8-X03B	20	•	24	-F301	C10					UT 4	=D00+TS-220-6/10
							7				=D06+TS-220-8-X03B	21	•	25	-F301	C11					UT 4	=D00+TS-220-6/10
							8				=D06+TS-220-8-X03B	22	•	26	-F301	C12					UT 4	=D00+TS-220-6/10
							3				=D07+TS-220-9-X03B	2	•	27	-F301	D01					UT 4	=D00+TS-220-6/11
							4				=D07+TS-220-9-X03B	12	•	28	-F301	D02					UT 4	=D00+TS-220-6/11
							5				=D07+TS-220-9-X03B	3	•	29	-F301	D03					UT 4	=D00+TS-220-6/11
							6				=D07+TS-220-9-X03B	16	•	30	-F301	D04					UT 4	=D00+TS-220-6/11
							7				=D07+TS-220-9-X03B	4	•	31	-F301	D05					UT 4	=D00+TS-220-6/11
							8				=D07+TS-220-9-X03B	20	•	32	-F301	D06					UT 4	=D00+TS-220-6/11
							3				=D08+TS-220-10-X03B	2	•	33	-F301	D07					UT 4	=D00+TS-220-6/12
							4				=D08+TS-220-10-X03B	12	•	34	-F301	D08					UT 4	=D00+TS-220-6/12
							5				=D08+TS-220-10-X03B	3	•	35	-F301	D09					UT 4	=D00+TS-220-6/12
							6				=D08+TS-220-10-X03B	16	•	36	-F301	D10					UT 4	=D00+TS-220-6/12
							7				=D08+TS-220-10-X03B	4	•	37	-F301	D11					UT 4	=D00+TS-220-6/12
							8				=D08+TS-220-10-X03B	20	•	38	-F301	D12					UT 4	=D00+TS-220-6/12
							BN				=E08+TS-110-7-X03B	4	•	39	-F301	B15					UT 4	=D00+TS-220-6/13
							BU				=E08+TS-110-7-X03B	15	•	40	-F301	B16					UT 4	=D00+TS-220-6/13

TERMINAL STRIP =D00+TS-220-6-X16 External signalization										CABLE DESIGNATION					TERMINAL TYPE		TERMINAL PLACEMENT						
LOWER SIDE CONNECTION DESTINATION										CABLE TYPE	CABLE DESIGNATION												
UPPER SIDE CONNECTION DESTINATION										CABLE TYPE	CABLE DESIGNATION												
										CABLE TYPE	CABLE DESIGNATION												
										BK	=D07+TS-220-9-X04B	9	•	1	-F301	A17						UT 4	=D00+TS-220-6/29
										GY	=D07+TS-220-9-X04B	30	•	2	-F111	14						UT 4	=D00+TS-220-6/29
										BN	=D07+TS-220-9-X04B	31	•	3	-F301	A18						UT 4	=D00+TS-220-6/29
													•	4	-F114	11						UT 4	=D00+TS-220-6/29

CABLE DESIGNATION		TERMINAL STRIP =D00+TS-220-6-X19A Spare Outputs - 220BBB				CABLE DESIGNATION		TERMINAL TYPE	TERMINAL PLACEMENT
CABLE TYPE	LOWER SIDE CONNECTION DESTINATION	JUMPERS	TERMINAL NUMBER	UPPER SIDE CONNECTION DESTINATION	CABLE TYPE				
		•	1	-F301 C13			UT 4	=D00+TS-220-6/30	
		•	2	-F301 C14			UT 4	=D00+TS-220-6/30	
		•	3	-F301 C15			UT 4	=D00+TS-220-6/30	
		•	4	-F301 C16			UT 4	=D00+TS-220-6/30	
		•	5	-F301 D13			UT 4	=D00+TS-220-6/30	
		•	6	-F301 D14			UT 4	=D00+TS-220-6/30	
		•	7	-F301 D15			UT 4	=D00+TS-220-6/30	
		•	8	-F301 D16			UT 4	=D00+TS-220-6/30	
		•	9	-F301 E03			UT 4	=D00+TS-220-6/30	
		•	10	-F301 E04			UT 4	=D00+TS-220-6/30	
		•	11	-F301 E05			UT 4	=D00+TS-220-6/30	
		•	12	-F301 E06			UT 4	=D00+TS-220-6/30	
		•	13	-F301 E07			UT 4	=D00+TS-220-6/30	
		•	14	-F301 E08			UT 4	=D00+TS-220-6/30	
		•	15	-F301 E09			UT 4	=D00+TS-220-6/30	
		•	16	-F301 E10			UT 4	=D00+TS-220-6/30	
		•	17	-F301 E11			UT 4	=D00+TS-220-6/30	
		•	18	-F301 E12			UT 4	=D00+TS-220-6/30	
		•	19	-F301 E13			UT 4	=D00+TS-220-6/30	
		•	20	-F301 E14			UT 4	=D00+TS-220-6/30	
		•	21	-F301 E15			UT 4	=D00+TS-220-6/30	
		•	22	-F301 E16			UT 4	=D00+TS-220-6/30	



Cable overview

Cable designation	from	to	Cable type	Number of Conductors	Conductor Cross-Section	Used Conductors	Unused Conductors
-CAB-3/CAB-4	-X08	=D_ECS+TS-220-7-X??	N2XH	4	2.5	3	1
	-PE	=D_ECS+TS-220-7-PE					
-WD00-D01.1	-X01	=D01+CT1-X4	NYCY	4	4	4	0
-WD00-D02.1	-X01	=D02+CT1-X4	NYCY	4	4	4	0
-WD00-D03.1	-X01	=D03+CT1-X4	NYCY	4	4	4	0
-WD00-D04.1	-X01	=D04+CT1-X4	NYCY	4	4	4	0
-WD00-D06.1	-X01	=D06+CT1-X4	NYCY	4	4	4	0
-WD00-D07.1	-X01	=D07+CT1-X4	NYCY	4	4	4	0
-WD00-D08.1	-X01	=D08+CT1-X4	NYCY	4	4	4	0

02	15.07.2014.	PER GSE COMMENTS	MMa	 SCHWEITZER ENGINEERING LABORATORIES SEL Middle East B.S.C. 1504 Tiffany Tower Jumeira Lakes Tower 9926 Dubai UAE	Customer:  Georgian State Electrossystem	Project Descript.	Substation Tskaltubo 220/110kV Schematic diagram for 220kV Busbar Protection	Job number:	GSE-SSTS-TS-3-TS-220-6	Function	=D00		
01	22.05.2014.	FOR PANEL ASSEMBLY	MMa			Sheet Descript.	Cable overview : =D00+TS-220-6-CAB-3/CAB-4 - =D00+TS-220-6-WD00-D08.1	Mnt. Location	+TS-220-6	Sheet / Sheets	43 / 44	Date:	15.07.14

Cable overview

Cable designation	from	to	Cable type	Number of Conductors	Conductor Cross-Section	Used Conductors	Unused Conductors
=D01+TS-220-3-WD01-D00.3	=D01+TS-220-3-X103A	-X13A	NYCY	16	1,5	12	4
	=D01+TS-220-3-X103B	-X13B					
	=D01+TS-220-3-X150	-X04					
=D02+TS-220-3-WD02-D00.3	=D02+TS-220-3-X203A	-X13A	NYCY	16	1,5	12	4
	=D02+TS-220-3-X203B	-X13B					
	=D02+TS-220-3-X250	-X04					
=D03+TS-220-4-WD03-D00.3	=D03+TS-220-4-X03A	-X13A	NYCY	10	1,5	10	0
	=D03+TS-220-4-X03B	-X13B					
	=D03+TS-220-4-X50	-X04					
=D04+TS-220-5-WD04-D00.3	=D04+TS-220-5-X03A	-X13A	NYCY	10	1,5	9	1
	=D04+TS-220-5-X03B	-X13B					
	=D04+TS-220-5-X50	-X04					
=D06+TS-220-8-WD06-D00.3	=D06+TS-220-8-X03A	-X13A	NYCY	10	1,5	10	0
	=D06+TS-220-8-X03B	-X13B					
	=D06+TS-220-8-X50	-X04					
=D07+TS-220-9-CAB-2/CAB-3	=D07+TS-220-9-X08	-X08	N2XH	4	4	3	1
	=D07+TS-220-9-PE	-PE					
=D07+TS-220-9-WD07-D00.3	=D07+TS-220-9-X03A	-X13A	NYCY	16	1,5	12	4
	=D07+TS-220-9-X03B	-X13B					
	=D07+TS-220-9-X50	-X04					
=D07+TS-220-9-WD07-D00.16	=D07+TS-220-9-X04B	-X16	NYCY	4	2,5	3	1
=D08+TS-220-10-WD08-D00.3	=D08+TS-220-10-X03A	-X13A	NYCY	16	1,5	12	4
	=D08+TS-220-10-X03B	-X13B					
	=D08+TS-220-10-X50	-X04					
=E08+TS-110-7-WE08-D00.3	=E08+TS-110-7-X03A	-X13A	NYCY	4	2,5	4	0
	=E08+TS-110-7-X03B	-X13B					
=NK+DB3-DB3-F13/CAB-3.DC-1	=NK+DB3-F13	-X05A	N2XH	4	4	2	2
=NK+DB3-DB3-F19/CAB-3.DC-2	=NK+DB3-F19	-X05B	N2XH	4	4	2	2

02	15.07.2014.	PER GSE COMMENTS	MMa	 SEL Middle East B.S.C. 1504 Tiffany Tower Jumeira Lakes Tower 9926 Dubai UAE	Customer:  Georgian State Electrosystem	Project Descript.: Substation Tskaltubo 220/110kV Schematic diagram for 220kV Busbar Protection	Job number: GSE-SSTS-TS-3-TS-220-6	Function	=D00
01	22.05.2014.	FOR PANEL ASSEMBLY	MMa					Mnt. Location	+TS-220-6
Rev	Date	Remarks	Name					Sheet / Sheets	44 / 44

Sheet Descript.: Cable overview : =D01+TS-220-3-WD01-D00.3 - =NK+DB3-DB3-F19/CAB-3.DC-2