

# Table of contents

Page	Page description
1	Table of contents
2	Table of contents
Page	Page description
3	230VAC Voltage Distribution - Cabinet Heating and Lighting
4	220DC Voltage Distribution - DC-1
5	220DC Voltage Distribution - DC-2
6	Send trip - D01
7	Send trip - D02
8	Send trip - D03
9	Send trip - D05
10	Send trip - D07
11	Send trip - D08
12	Send trip - D09
13	Send trip - D10
14	Binary inputs - 220BB_DIFF-A Alarms
15	Binary inputs - 220BB_DIFF-B Alarms
16	Binary inputs - 220BB_DIFF-A Receive Breaker Failure - D01
17	Binary inputs - 220BB_DIFF-B Receive Breaker Failure - D01
18	Binary inputs - 220BB_DIFF-A Receive Breaker Failure - D02&D03
19	Binary inputs - 220BB_DIFF-B Receive Breaker Failure - D02&D03
20	Binary inputs - 220BB_DIFF-A Receive Breaker Failure - D05
21	Binary inputs - 220BB_DIFF-B Receive Breaker Failure - D05
22	Binary inputs - 220BB_DIFF-A Receive Breaker Failure - D07
23	Binary inputs - 220BB_DIFF-B Receive Breaker Failure - D07
24	Binary inputs - 220BB_DIFF-A Receive Breaker Failure - D08
25	Binary inputs - 220BB_DIFF-B Receive Breaker Failure - D08
26	Binary inputs - 220BB_DIFF-A Receive Breaker Failure - D09
27	Binary inputs - 220BB_DIFF-B Receive Breaker Failure - D09
28	Binary inputs - 220BB_DIFF-A Receive Breaker Failure - D10
29	Binary inputs - 220BB_DIFF-B Receive Breaker Failure - D10
30	Current Transformers - D01 and D02
31	Current Transformers - D03 and D05
32	Current Transformers - D07 and D08
33	Current Transformers - D09 and D10
34	Device connection diagram - 220BB_DIFF-A
35	Device connection diagram - 220BB_DIFF-B
Page	Page description
36	Terminal connection diagram: =D00+KU-220-5-X01
37	Terminal connection diagram: =D00+KU-220-5-X04
38	Terminal connection diagram: =D00+KU-220-5-X04
39	Terminal connection diagram: =D00+KU-220-5-X05A

NOTES:

CODE	DEFINITION	REMARKS
<input type="checkbox"/> 01.	ACCEPTED FOR DESIGN PHASE	No further submission is required prior to Novation. Final review and approval shall be by CONTRACTOR after Novation.
<input type="checkbox"/> 02.	ACCEPTED FOR DESIGN PHASE EXCEPT AS NOTED	Supplier may proceed with Design but must ensure Identified comments are incorporated and document resubmitted.
<input type="checkbox"/> 03.	NOT ACCEPTED	Engineering may not proceed until document has been resubmitted and reviewed again.
<input type="checkbox"/> 04.	FOR INFORMATION ONLY	Document is accepted where Purchaser deems a full technical review is not necessary during the Design Phase. Further review and approval shall be by CONTRACTOR after Novation.

NAME: \_\_\_\_\_  
SIGNATURE: \_\_\_\_\_  
DATE: \_\_\_\_\_

REV. NO.	DATE	DESCRIPTION	CHK.
04	08.10.2014.	AS BUILT (SITE MARK-UP)	MMa
03	23.12.2013.	AS BUILT	MMa/ZM
02	10.11.2013.	APPROVED BY GSE	GSE

CUSTOMER:  
**Georgian State Electrosystem**  
**Substation Kutaisi 220/110kV**

DESCRIPTION:  
**Schematic diagram for 220kV BusBar Protection**

Table of contents	=	
	+	

DRAWING NUMBER: <b>GSE-SSKU-KU-2-KU-220-5</b>	DATE: 16.09.13	SHEET NO.: 1/46	REV NO.: 04
--	-------------------	--------------------	----------------

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

# Table of contents


Page	Page description
40	Terminal connection diagram: =D00+KU-220-5-X05B
41	Terminal connection diagram: =D00+KU-220-5-X08
42	Terminal connection diagram: =D00+KU-220-5-X13A
43	Terminal connection diagram: =D00+KU-220-5-X13B
44	Terminal connection diagram: =D00+KU-220-5-X16
Page	Page description
45	Cable overview : =D00+KU-220-5-CAB-2/CAB-3 - =D07+KU-220-6-WD07-D00.3
46	Cable overview : =D08+KU-220-8-WD08-D00.3 - =NK+DB-DB-F18/CAB-2.DC-2

NOTES:

CODE	DEFINITION	REMARKS
<input type="checkbox"/> 01.	ACCEPTED FOR DESIGN PHASE	No further submission is required prior to Novation. Final review and approval shall be by CONTRACTOR after Novation.
<input type="checkbox"/> 02.	ACCEPTED FOR DESIGN PHASE EXCEPT AS NOTED	Supplier may proceed with Design but must ensure Identified comments are incorporated and document resubmitted.
<input type="checkbox"/> 03.	NOT ACCEPTED	Engineering may not proceed until document has been resubmitted and reviewed again.
<input type="checkbox"/> 04.	FOR INFORMATION ONLY	Document is accepted where Purchaser deems a full technical review is not necessary during the Design Phase. Further review and approval shall be by CONTRACTOR after Novation.

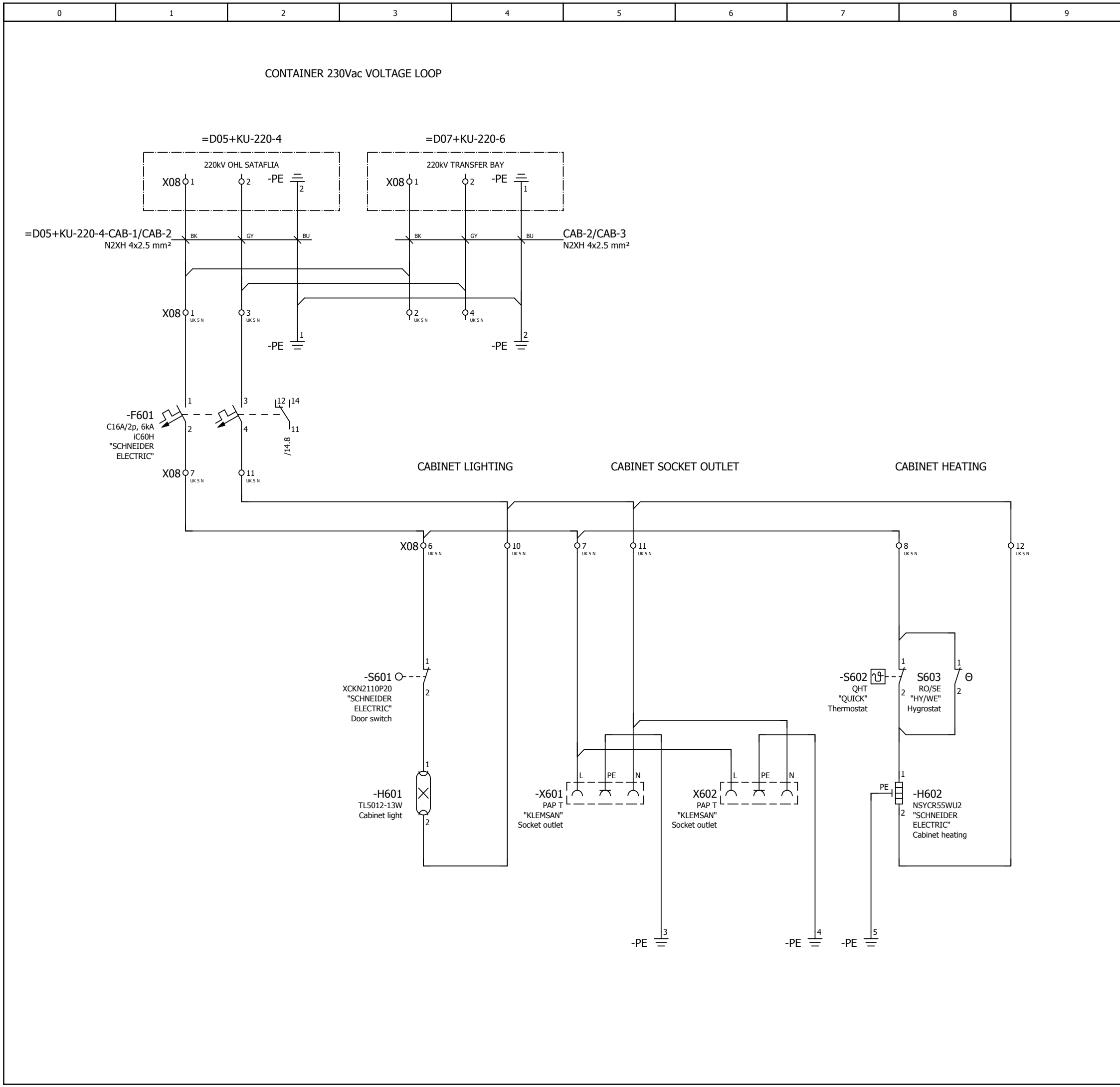
NAME: \_\_\_\_\_  
SIGNATURE: \_\_\_\_\_  
DATE: \_\_\_\_\_

04	08.10.2014.	AS BUILT (SITE MARK-UP)	MMa
03	23.12.2013.	AS BUILT	MMa/ZM
02	10.11.2013.	APPROVED BY GSE	GSE
REV. NO.	DATE	DESCRIPTION	CHK.

CUSTOMER:  
 **Georgian State Electrosystem**  
**Substation Kutaisi 220/110kV**

DESCRIPTION:  
**Schematic diagram for 220kV BusBar Protection**

Table of contents			=
			+
DRAWING NUMBER: <b>GSE-SSKU-KU-2-KU-220-5</b>	DATE: <b>16.09.13</b>	SHEET NO.: <b>2/46</b>	REV NO.: <b>04</b>



**NOTES:**

CODE	DEFINITION	REMARKS
<input type="checkbox"/> 01.	ACCEPTED FOR DESIGN PHASE	No further submission is required prior to Novation. Final review and approval shall be by CONTRACTOR after Novation.
<input type="checkbox"/> 02.	ACCEPTED FOR DESIGN PHASE EXCEPT AS NOTED	Supplier may proceed with Design but must ensure Identified comments are incorporated and document resubmitted.
<input type="checkbox"/> 03.	NOT ACCEPTED	Engineering may not proceed until document has been resubmitted and reviewed again.
<input type="checkbox"/> 04.	FOR INFORMATION ONLY	Document is accepted where Purchaser deems a full technical review is not necessary during the Design Phase. Further review and approval shall be by CONTRACTOR after Novation.

NAME: \_\_\_\_\_  
 SIGNATURE: \_\_\_\_\_  
 DATE: \_\_\_\_\_

REV. NO.	DATE	DESCRIPTION	CHK.
04	08.10.2014.	AS BUILT (SITE MARK-UP)	MMa
03	23.12.2013.	AS BUILT	MMa/ZM
02	10.11.2013.	APPROVED BY GSE	GSE

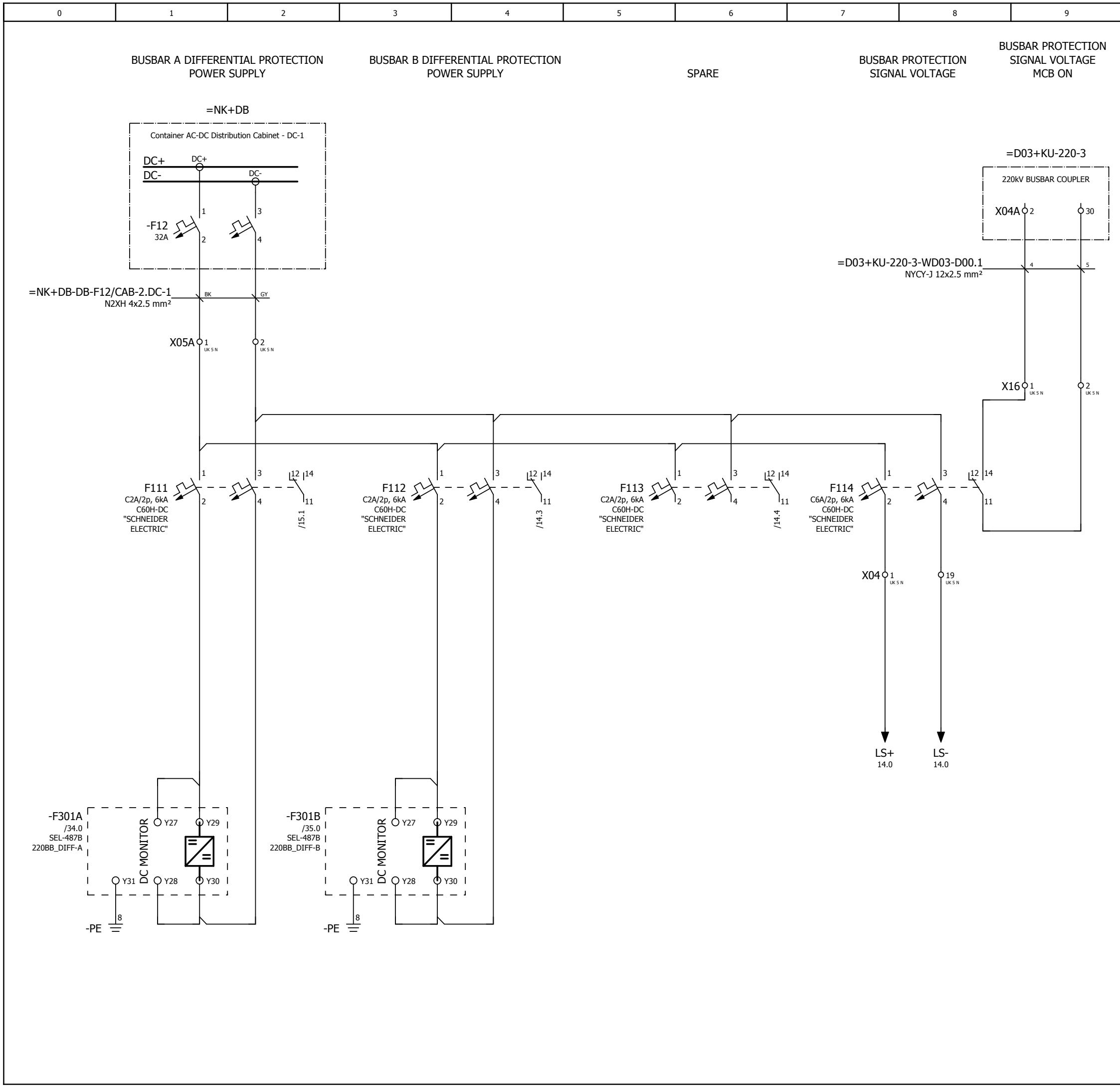
CUSTOMER:  
 **Georgian State Electrosystem**  
**Substation Kutaisi 220/110kV**

DESCRIPTION:  
**Schematic diagram for 220kV BusBar Protection**  
 230VAC Voltage Distribution - Cabinet Heating and Lighting  
 = D00  
 + KU-220-5

DRAWING NUMBER: **GSE-SSKU-KU-2-KU-220-5**      DATE: **16.09.13**      SHEET NO.: **3/46**      REV NO.: **04**



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




**NOTES:**

CODE	DEFINITION	REMARKS
<input type="checkbox"/> 01.	ACCEPTED FOR DESIGN PHASE	No further submission is required prior to Novation. Final review and approval shall be by CONTRACTOR after Novation.
<input type="checkbox"/> 02.	ACCEPTED FOR DESIGN PHASE EXCEPT AS NOTED	Supplier may proceed with Design but must ensure Identified comments are incorporated and document resubmitted.
<input type="checkbox"/> 03.	NOT ACCEPTED	Engineering may not proceed until document has been resubmitted and reviewed again.
<input type="checkbox"/> 04.	FOR INFORMATION ONLY	Document is accepted where Purchaser deems a full technical review is not necessary during the Design Phase. Further review and approval shall be by CONTRACTOR after Novation.

NAME: \_\_\_\_\_  
SIGNATURE: \_\_\_\_\_  
DATE: \_\_\_\_\_

REV. NO.	DATE	DESCRIPTION	CHK.
04	08.10.2014.	AS BUILT (SITE MARK-UP)	MMa
03	23.12.2013.	AS BUILT	MMa/ZM
02	10.11.2013.	APPROVED BY GSE	GSE

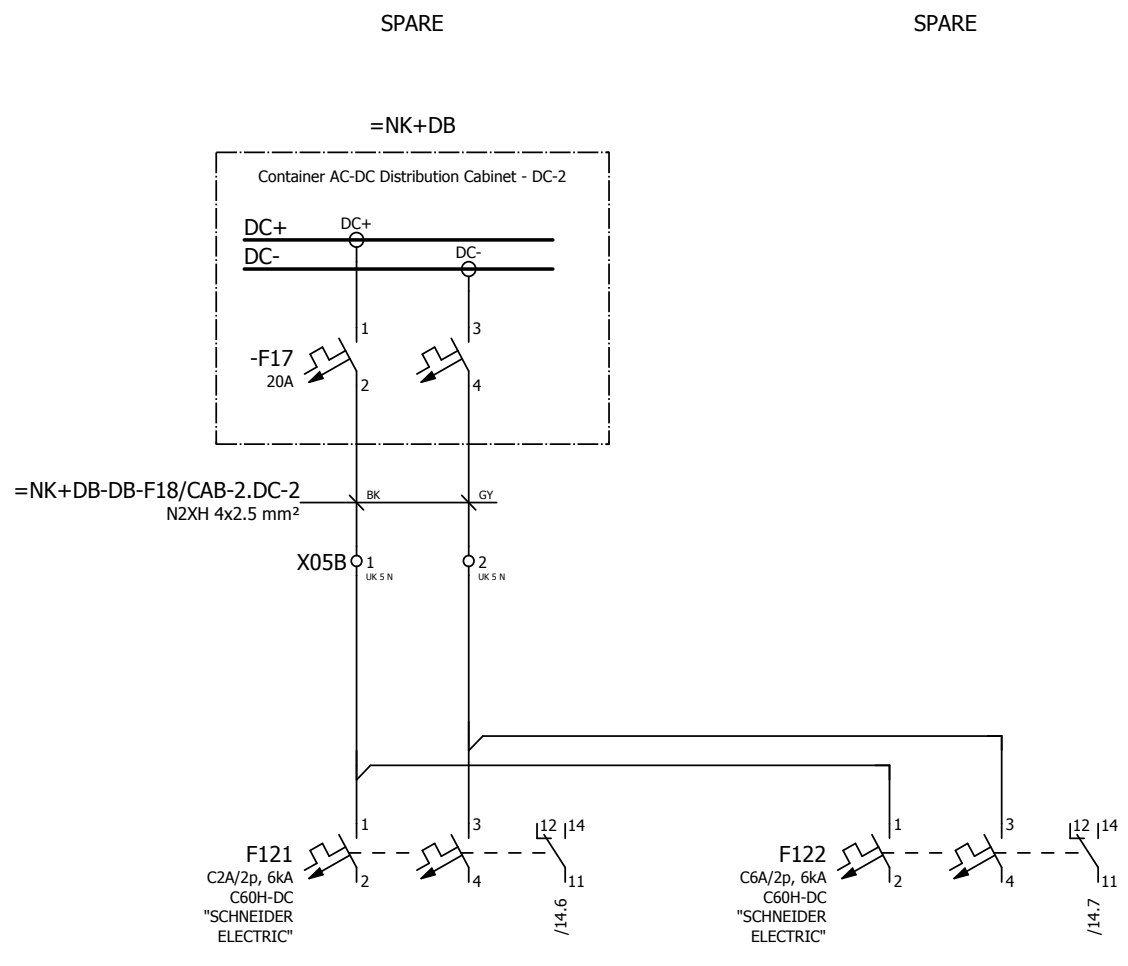
CUSTOMER:  
 **Georgian State Electrosystem**  
**Substation Kutaisi 220/110kV**

DESCRIPTION:  
**Schematic diagram for 220kV BusBar Protection**  
220DC Voltage Distribution - DC-1

DRAWING NUMBER: <b>GSE-SSKU-KU-2-KU-220-5</b>	DATE: 16.09.13	SHEET NO.: 4/46	REV NO.: 04
--	-------------------	--------------------	----------------



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



NOTES:

CODE	DEFINITION	REMARKS
<input type="checkbox"/> 01.	ACCEPTED FOR DESIGN PHASE	No further submission is required prior to Novation. Final review and approval shall be by CONTRACTOR after Novation.
<input type="checkbox"/> 02.	ACCEPTED FOR DESIGN PHASE EXCEPT AS NOTED	Supplier may proceed with Design but must ensure Identified comments are incorporated and document resubmitted.
<input type="checkbox"/> 03.	NOT ACCEPTED	Engineering may not proceed until document has been resubmitted and reviewed again.
<input type="checkbox"/> 04.	FOR INFORMATION ONLY	Document is accepted where Purchaser deems a full technical review is not necessary during the Design Phase. Further review and approval shall be by CONTRACTOR after Novation.

NAME: \_\_\_\_\_  
 SIGNATURE: \_\_\_\_\_  
 DATE: \_\_\_\_\_

04	08.10.2014.	AS BUILT (SITE MARK-UP)	MMa
03	23.12.2013.	AS BUILT	MMa/ZM
02	10.11.2013.	APPROVED BY GSE	GSE
REV. NO.	DATE	DESCRIPTION	CHK.

CUSTOMER:  
 **Georgian State Electrosystem**  
**Substation Kutaisi 220/110kV**

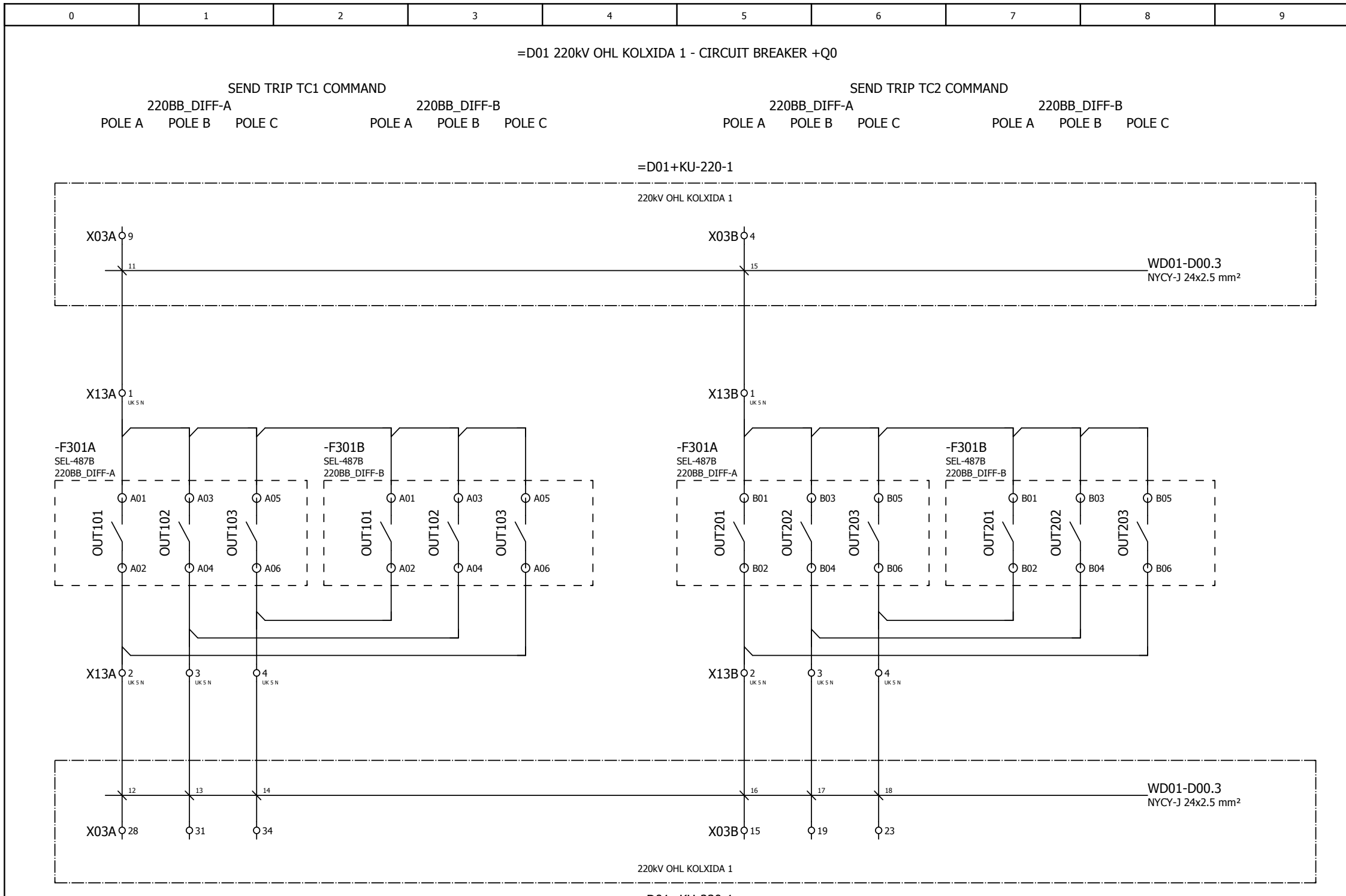
DESCRIPTION:  
**Schematic diagram for 220kV BusBar Protection**

220DC Voltage Distribution - DC-2 = D00  
+ KU-220-5

DRAWING NUMBER: <b>GSE-SSKU-KU-2-KU-220-5</b>	DATE: 16.09.13	SHEET NO.: 5/46	REV NO.: 04
--	-------------------	--------------------	----------------

 **SCHWEITZER ENGINEERING LABORATORIES**

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



**NOTES:**

CODE	DEFINITION	REMARKS
<input type="checkbox"/> 01.	ACCEPTED FOR DESIGN PHASE	No further submission is required prior to Novation. Final review and approval shall be by CONTRACTOR after Novation.
<input type="checkbox"/> 02.	ACCEPTED FOR DESIGN PHASE EXCEPT AS NOTED	Supplier may proceed with Design but must ensure Identified comments are incorporated and document resubmitted.
<input type="checkbox"/> 03.	NOT ACCEPTED	Engineering may not proceed until document has been resubmitted and reviewed again.
<input type="checkbox"/> 04.	FOR INFORMATION ONLY	Document is accepted where Purchaser deems a full technical review is not necessary during the Design Phase. Further review and approval shall be by CONTRACTOR after Novation.

NAME: \_\_\_\_\_  
SIGNATURE: \_\_\_\_\_  
DATE: \_\_\_\_\_

04	08.10.2014.	AS BUILT (SITE MARK-UP)	MMa
03	23.12.2013.	AS BUILT	MMa/ZM
02	10.11.2013.	APPROVED BY GSE	GSE
REV. NO.	DATE	DESCRIPTION	CHK.

CUSTOMER: **Georgian State Electrosystem**  
**GSE** Substation Kutaisi 220/110kV

DESCRIPTION: Schematic diagram for 220kV BusBar Protection

Send trip - D01 = D00  
+ KU-220-5

DRAWING NUMBER: GSE-SSKU-KU-2-KU-220-5	DATE: 16.09.13	SHEET NO.: 6/46	REV NO.: 04
---	-------------------	--------------------	----------------

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

=D02 220kV AUTOTRANSFORMER AT1 - CIRCUIT BREAKER +Q0

SEND TRIP TC1 COMMAND

SEND TRIP TC2 COMMAND

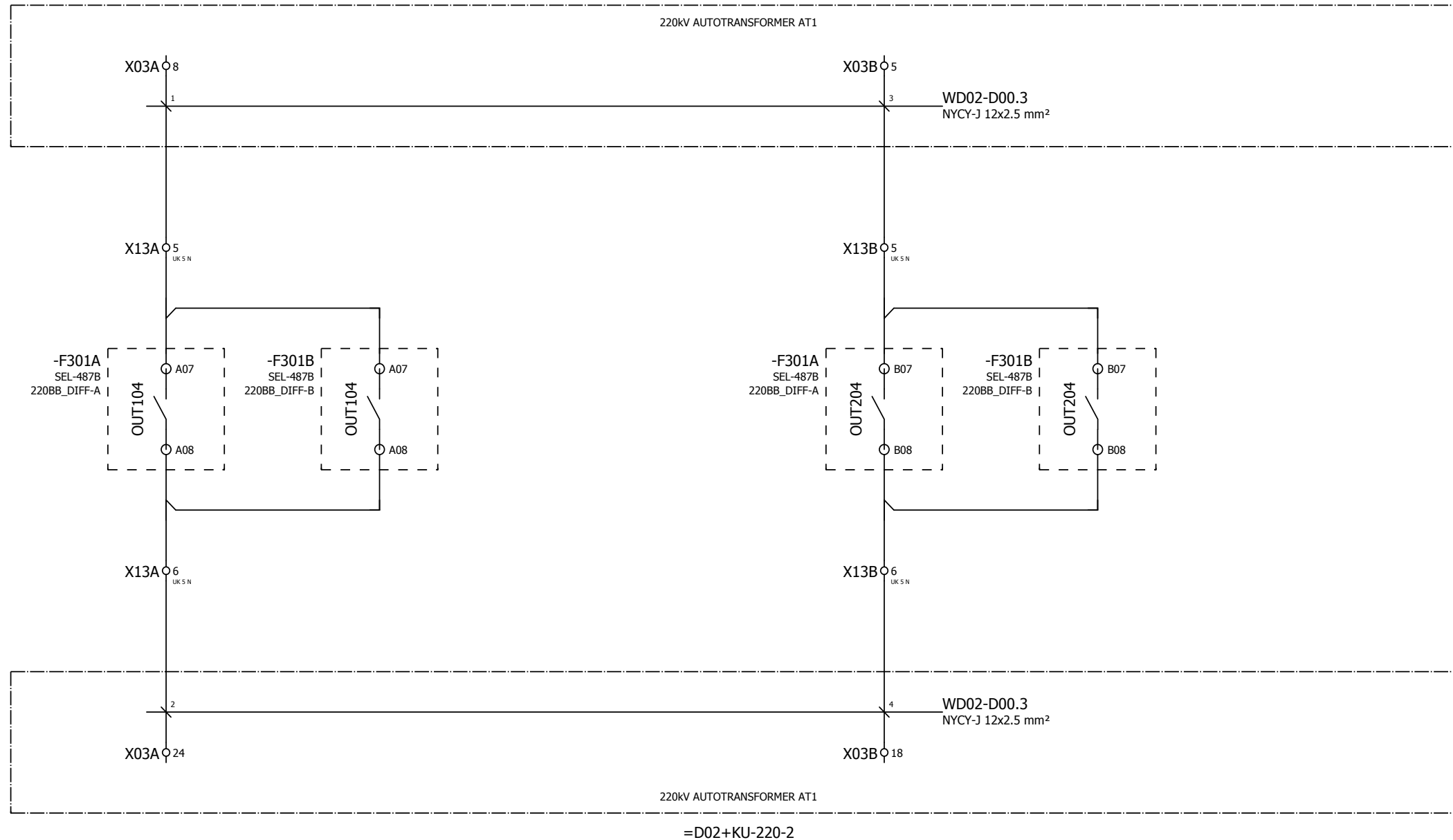
220BB\_DIFF-A

220BB\_DIFF-B

220BB\_DIFF-A

220BB\_DIFF-B

=D02+KU-220-2



NOTES:

CODE	DEFINITION	REMARKS
<input type="checkbox"/> 01.	ACCEPTED FOR DESIGN PHASE	No further submission is required prior to Novation. Final review and approval shall be by CONTRACTOR after Novation.
<input type="checkbox"/> 02.	ACCEPTED FOR DESIGN PHASE EXCEPT AS NOTED	Supplier may proceed with Design but must ensure Identified comments are incorporated and document resubmitted.
<input type="checkbox"/> 03.	NOT ACCEPTED	Engineering may not proceed until document has been resubmitted and reviewed again.
<input type="checkbox"/> 04.	FOR INFORMATION ONLY	Document is accepted where Purchaser deems a full technical review is not necessary during the Design Phase. Further review and approval shall be by CONTRACTOR after Novation.

NAME: \_\_\_\_\_  
 SIGNATURE: \_\_\_\_\_  
 DATE: \_\_\_\_\_

04	08.10.2014.	AS BUILT (SITE MARK-UP)	MMa
03	23.12.2013.	AS BUILT	MMa/ZM
02	10.11.2013.	APPROVED BY GSE	GSE
REV. NO.	DATE	DESCRIPTION	CHK.

CUSTOMER: **Georgian State Electrosystem**  
**GSE** Substation Kutaisi 220/110kV

DESCRIPTION: Schematic diagram for 220kV BusBar Protection

Send trip - D02 = D00  
+ KU-220-5

DRAWING NUMBER: **GSE-SSKU-KU-2-KU-220-5** DATE: 16.09.13 SHEET NO.: 7/46 REV NO.: 04

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

=D03 220kV BUSBAR COUPLER - CIRCUIT BREAKER +Q0

SEND TRIP TC1 COMMAND

SEND TRIP TC2 COMMAND

220BB\_DIFF-A

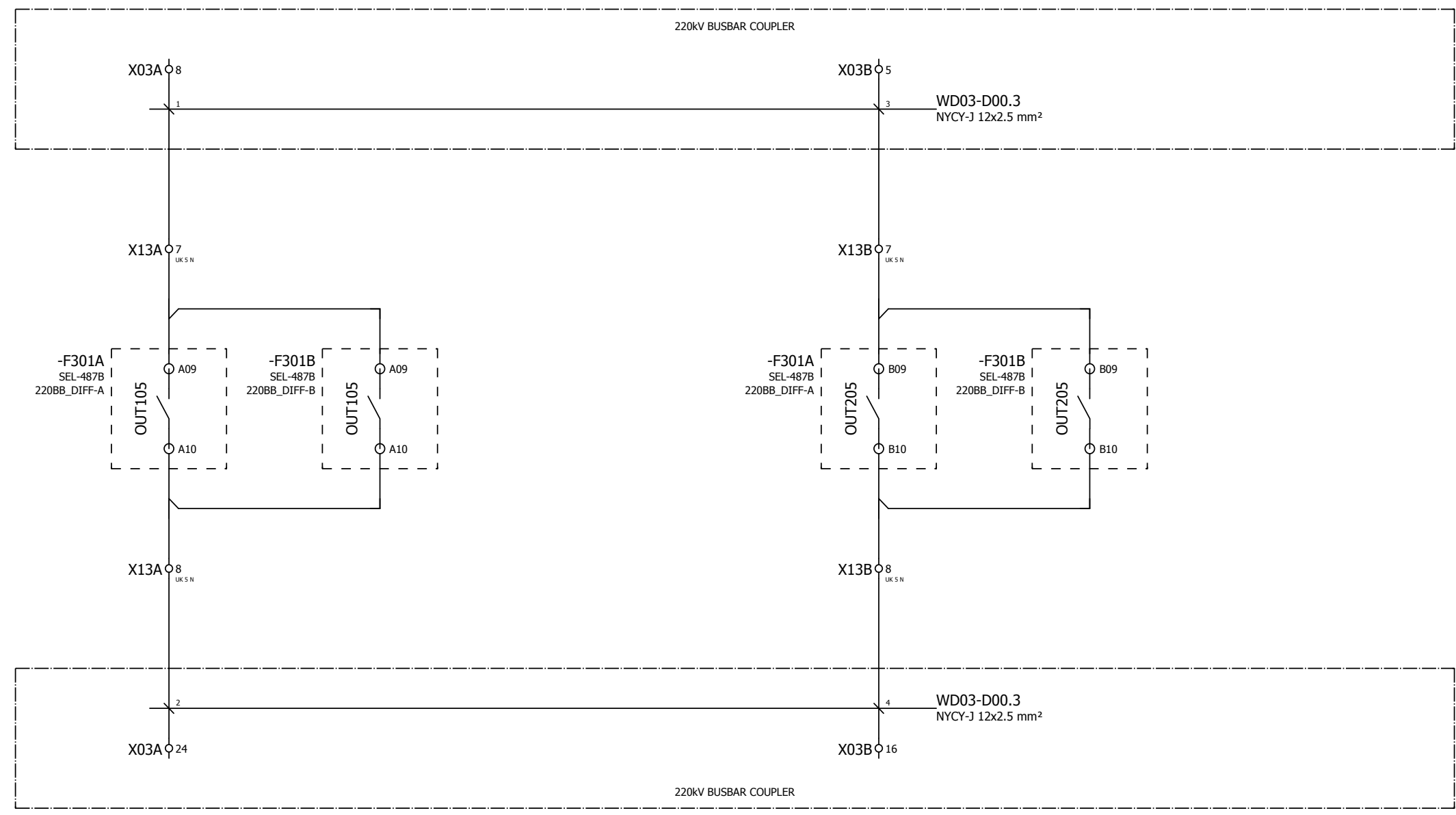
220BB\_DIFF-B

220BB\_DIFF-A

220BB\_DIFF-B

=D03+KU-220-3

220kV BUSBAR COUPLER



NOTES:

CODE	DEFINITION	REMARKS
<input type="checkbox"/> 01.	ACCEPTED FOR DESIGN PHASE	No further submission is required prior to Novation. Final review and approval shall be by CONTRACTOR after Novation.
<input type="checkbox"/> 02.	ACCEPTED FOR DESIGN PHASE EXCEPT AS NOTED	Supplier may proceed with Design but must ensure Identified comments are incorporated and document resubmitted.
<input type="checkbox"/> 03.	NOT ACCEPTED	Engineering may not proceed until document has been resubmitted and reviewed again.
<input type="checkbox"/> 04.	FOR INFORMATION ONLY	Document is accepted where Purchaser deems a full technical review is not necessary during the Design Phase. Further review and approval shall be by CONTRACTOR after Novation.

NAME: \_\_\_\_\_  
 SIGNATURE: \_\_\_\_\_  
 DATE: \_\_\_\_\_

04	08.10.2014.	AS BUILT (SITE MARK-UP)	MMa
03	23.12.2013.	AS BUILT	MMa/ZM
02	10.11.2013.	APPROVED BY GSE	GSE
REV. NO.	DATE	DESCRIPTION	CHK.

CUSTOMER: **Georgian State Electrosystem**  
**GSE** Substation Kutaisi 220/110kV

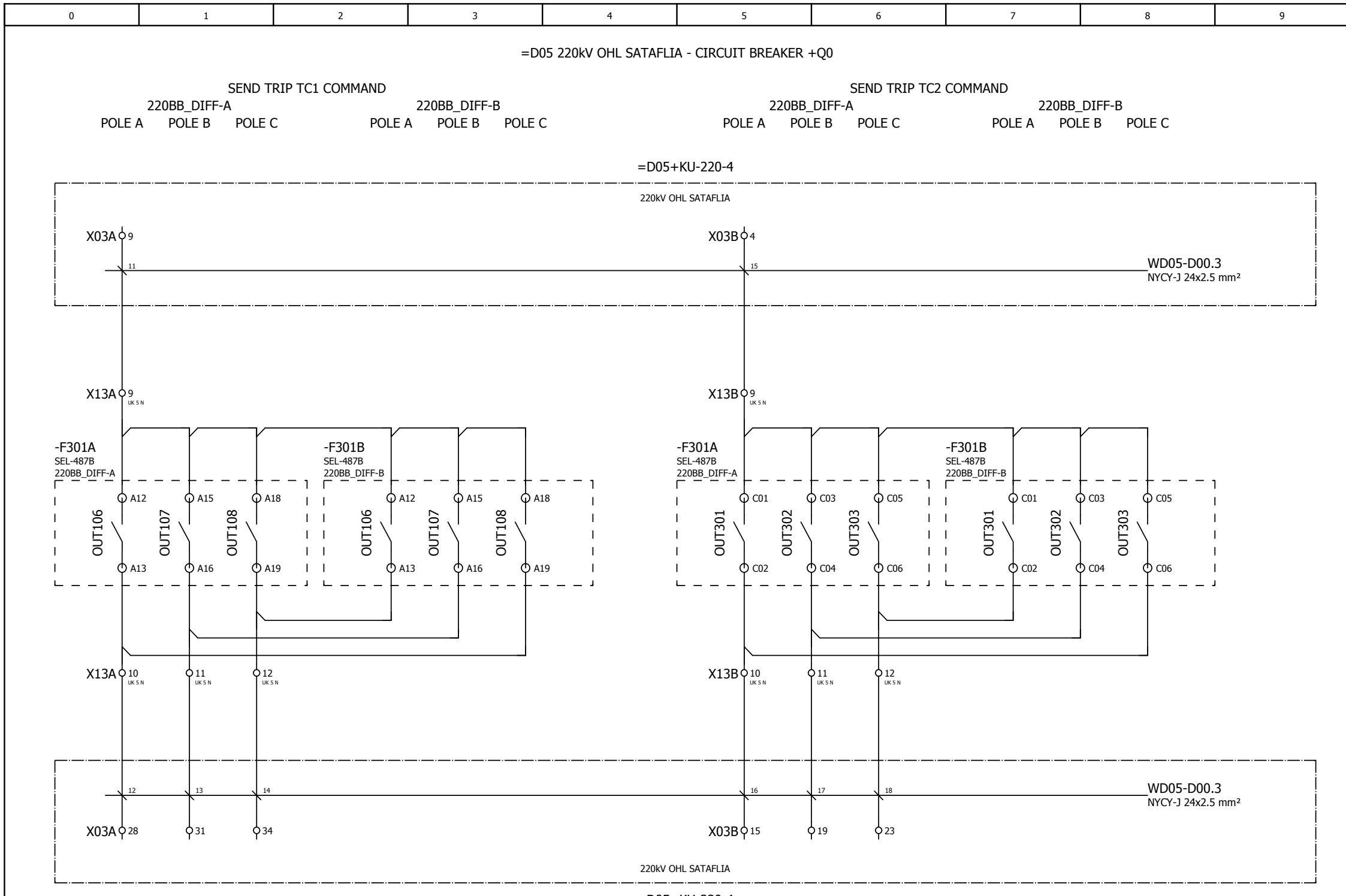
DESCRIPTION: Schematic diagram for 220kV BusBar Protection

Send trip - D03 = D00  
 + KU-220-5

DRAWING NUMBER: GSE-SSKU-KU-2-KU-220-5 DATE: 16.09.13 SHEET NO.: 8/46 REV NO.: 04

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





**NOTES:**

CODE	DEFINITION	REMARKS
<input type="checkbox"/> 01.	ACCEPTED FOR DESIGN PHASE	No further submission is required prior to Novation. Final review and approval shall be by CONTRACTOR after Novation.
<input type="checkbox"/> 02.	ACCEPTED FOR DESIGN PHASE EXCEPT AS NOTED	Supplier may proceed with Design but must ensure Identified comments are incorporated and document resubmitted.
<input type="checkbox"/> 03.	NOT ACCEPTED	Engineering may not proceed until document has been resubmitted and reviewed again.
<input type="checkbox"/> 04.	FOR INFORMATION ONLY	Document is accepted where Purchaser deems a full technical review is not necessary during the Design Phase. Further review and approval shall be by CONTRACTOR after Novation.

NAME: \_\_\_\_\_  
SIGNATURE: \_\_\_\_\_  
DATE: \_\_\_\_\_

04	08.10.2014.	AS BUILT (SITE MARK-UP)	MMa
03	23.12.2013.	AS BUILT	MMa/ZM
02	10.11.2013.	APPROVED BY GSE	GSE
REV. NO.	DATE	DESCRIPTION	CHK.

CUSTOMER:  
**Georgian State Electrosystem**  
**Substation Kutaisi 220/110kV**

DESCRIPTION:  
**Schematic diagram for 220kV BusBar Protection**

Send trip - D05 = D00  
+ KU-220-5

DRAWING NUMBER: <b>GSE-SSKU-KU-2-KU-220-5</b>	DATE: 16.09.13	SHEET NO.: 9/46	REV NO.: 04
--	-------------------	--------------------	----------------

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

=D07 220kV TRANSFER BAY - CIRCUIT BREAKER +Q0

SEND TRIP TC1 COMMAND

SEND TRIP TC2 COMMAND

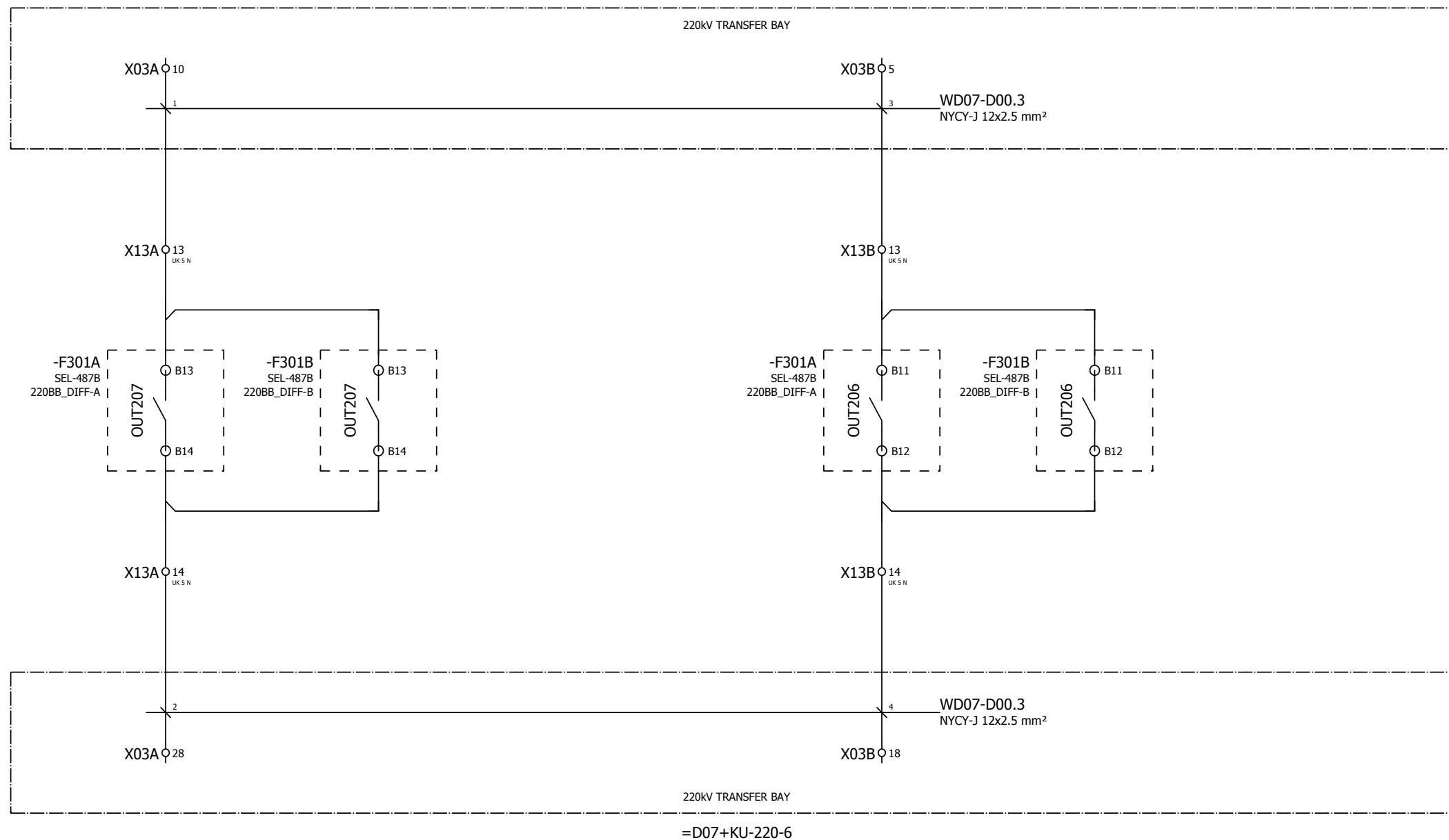
220BB\_DIFF-A

220BB\_DIFF-B

220BB\_DIFF-A

220BB\_DIFF-B

=D07+KU-220-6



NOTES:

CODE	DEFINITION	REMARKS
<input type="checkbox"/> 01.	ACCEPTED FOR DESIGN PHASE	No further submission is required prior to Novation. Final review and approval shall be by CONTRACTOR after Novation.
<input type="checkbox"/> 02.	ACCEPTED FOR DESIGN PHASE EXCEPT AS NOTED	Supplier may proceed with Design but must ensure Identified comments are incorporated and document resubmitted.
<input type="checkbox"/> 03.	NOT ACCEPTED	Engineering may not proceed until document has been resubmitted and reviewed again.
<input type="checkbox"/> 04.	FOR INFORMATION ONLY	Document is accepted where Purchaser deems a full technical review is not necessary during the Design Phase. Further review and approval shall be by CONTRACTOR after Novation.

NAME: \_\_\_\_\_  
 SIGNATURE: \_\_\_\_\_  
 DATE: \_\_\_\_\_

04	08.10.2014.	AS BUILT (SITE MARK-UP)	MMa
03	23.12.2013.	AS BUILT	MMa/ZM
02	10.11.2013.	APPROVED BY GSE	GSE
REV. NO.	DATE	DESCRIPTION	CHK.

CUSTOMER:  
 **Georgian State Electrosystem**  
**Substation Kutaisi 220/110kV**

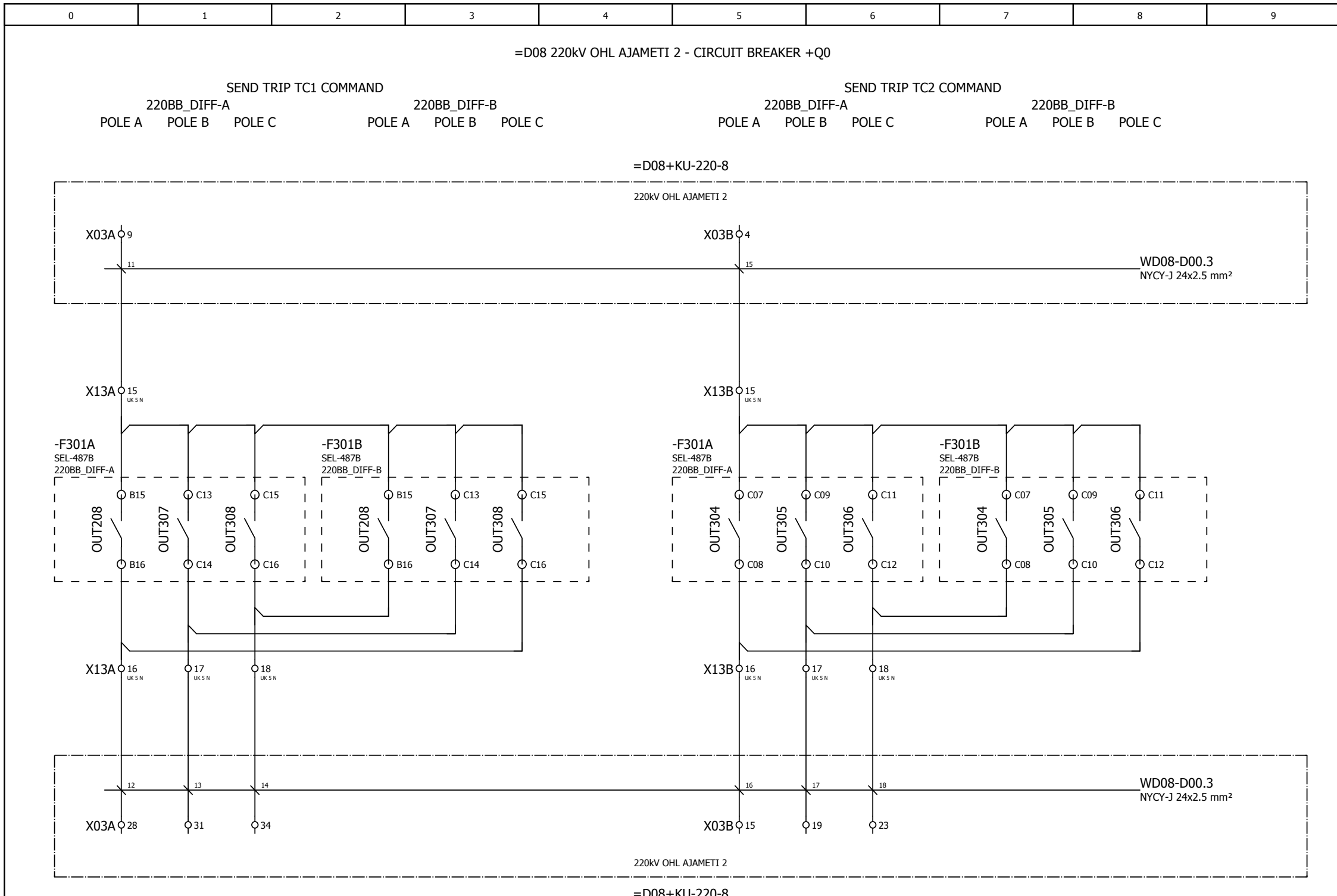
DESCRIPTION:  
**Schematic diagram for 220kV BusBar Protection**

Send trip - D07  
 = D00  
 + KU-220-5

DRAWING NUMBER: **GSE-SSKU-KU-2-KU-220-5**      DATE: **16.09.13**      SHEET NO.: **10/46**      REV NO.: **04**



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



**NOTES:**

CODE	DEFINITION	REMARKS
<input type="checkbox"/> 01.	ACCEPTED FOR DESIGN PHASE	No further submission is required prior to Novation. Final review and approval shall be by CONTRACTOR after Novation.
<input type="checkbox"/> 02.	ACCEPTED FOR DESIGN PHASE EXCEPT AS NOTED	Supplier may proceed with Design but must ensure Identified comments are incorporated and document resubmitted.
<input type="checkbox"/> 03.	NOT ACCEPTED	Engineering may not proceed until document has been resubmitted and reviewed again.
<input type="checkbox"/> 04.	FOR INFORMATION ONLY	Document is accepted where Purchaser deems a full technical review is not necessary during the Design Phase. Further review and approval shall be by CONTRACTOR after Novation.

NAME: \_\_\_\_\_  
SIGNATURE: \_\_\_\_\_  
DATE: \_\_\_\_\_

04	08.10.2014.	AS BUILT (SITE MARK-UP)	MMa
03	23.12.2013.	AS BUILT	MMa/ZM
02	10.11.2013.	APPROVED BY GSE	GSE
REV. NO.	DATE	DESCRIPTION	CHK.

CUSTOMER: **Georgian State Electrosystem**  
**GSE** Substation Kutaisi 220/110kV

DESCRIPTION: Schematic diagram for 220kV BusBar Protection

Send trip - D08 = D00  
+ KU-220-5

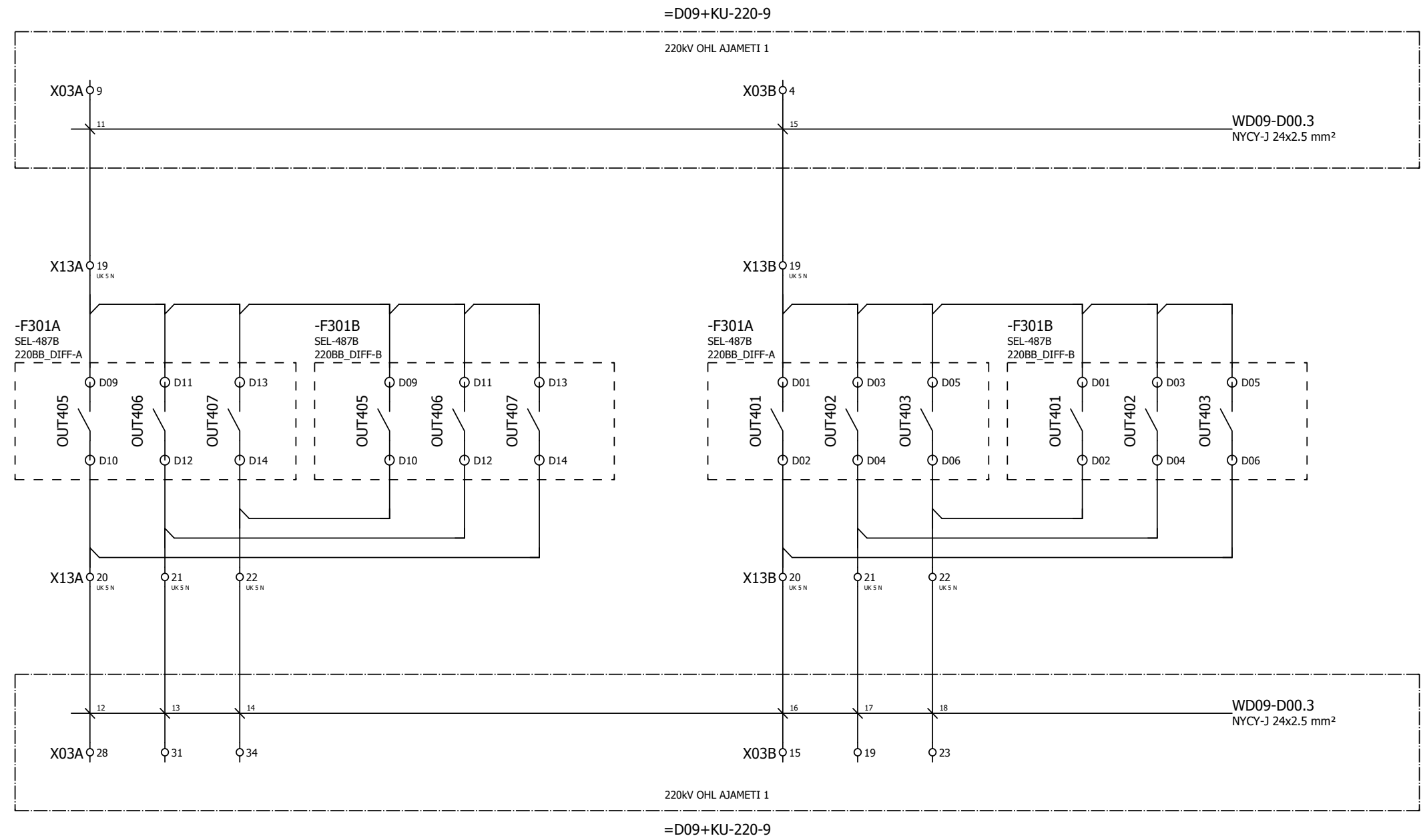
DRAWING NUMBER: GSE-SSKU-KU-2-KU-220-5	DATE: 16.09.13	SHEET NO.: 11/46	REV NO.: 04
---	-------------------	---------------------	----------------



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

=D09 220kV OHL AJAMETI 1 - CIRCUIT BREAKER +Q0

SEND TRIP TC1 COMMAND      SEND TRIP TC2 COMMAND  
 220BB\_DIFF-A      220BB\_DIFF-B      220BB\_DIFF-A      220BB\_DIFF-B  
 POLE A   POLE B   POLE C      POLE A   POLE B   POLE C      POLE A   POLE B   POLE C



NOTES:

CODE	DEFINITION	REMARKS
<input type="checkbox"/> 01.	ACCEPTED FOR DESIGN PHASE	No further submission is required prior to Novation. Final review and approval shall be by CONTRACTOR after Novation.
<input type="checkbox"/> 02.	ACCEPTED FOR DESIGN PHASE EXCEPT AS NOTED	Supplier may proceed with Design but must ensure Identified comments are incorporated and document resubmitted.
<input type="checkbox"/> 03.	NOT ACCEPTED	Engineering may not proceed until document has been resubmitted and reviewed again.
<input type="checkbox"/> 04.	FOR INFORMATION ONLY	Document is accepted where Purchaser deems a full technical review is not necessary during the Design Phase. Further review and approval shall be by CONTRACTOR after Novation.

NAME: \_\_\_\_\_  
 SIGNATURE: \_\_\_\_\_  
 DATE: \_\_\_\_\_

04	08.10.2014.	AS BUILT (SITE MARK-UP)	MMa
03	23.12.2013.	AS BUILT	MMa/ZM
02	10.11.2013.	APPROVED BY GSE	GSE
REV. NO.	DATE	DESCRIPTION	CHK.

CUSTOMER: **Georgian State Electrosystem**  
**GSE** Substation Kutaisi 220/110kV

DESCRIPTION: Schematic diagram for 220kV BusBar Protection

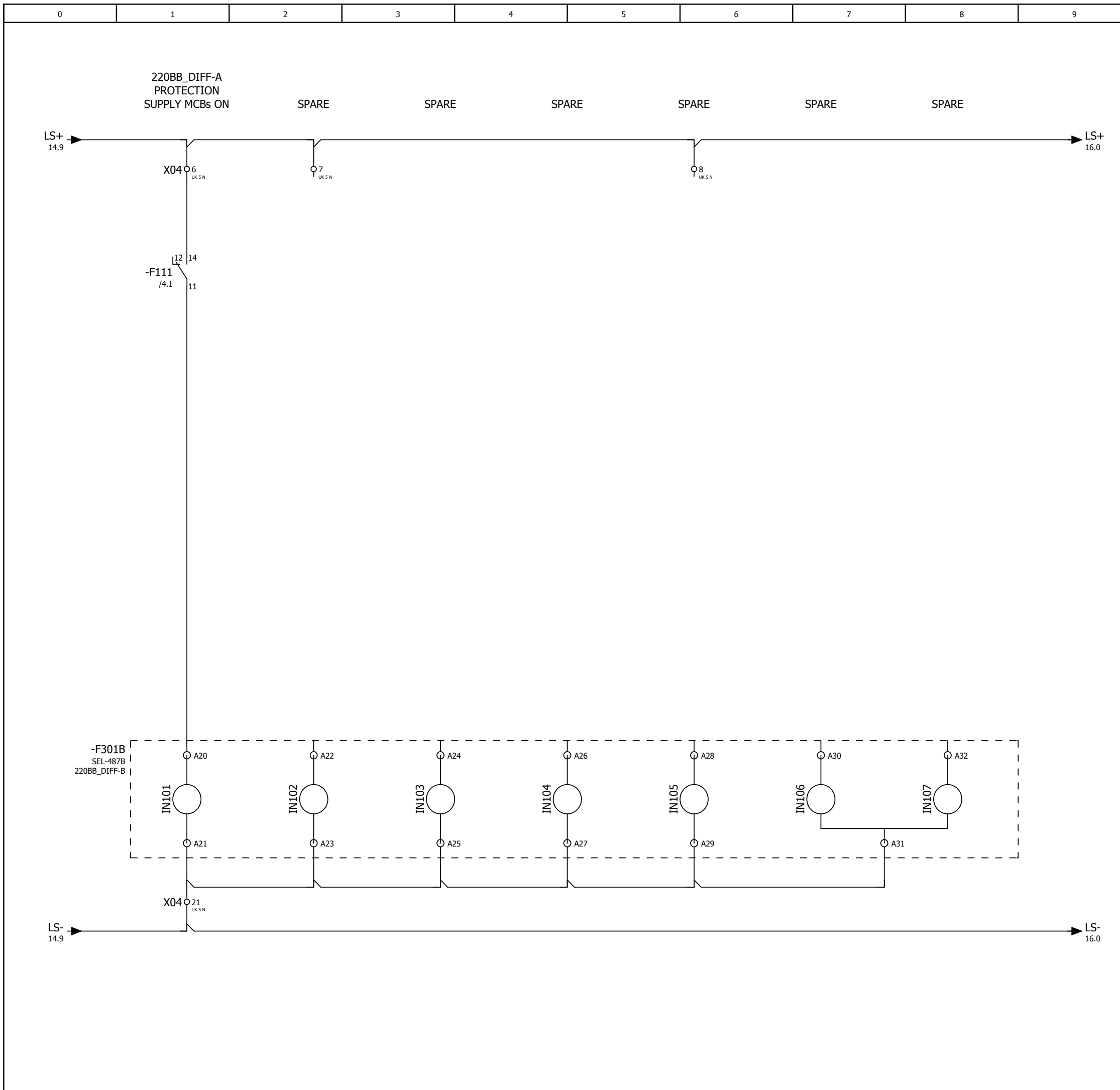
Send trip - D09      = D00  
 + KU-220-5

DRAWING NUMBER: GSE-SSKU-KU-2-KU-220-5      DATE: 16.09.13      SHEET NO.: 12/46      REV NO.: 04

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







NOTES:

CODE	DEFINITION	REMARKS
<input type="checkbox"/> 01.	ACCEPTED FOR DESIGN PHASE	No further submission is required prior to Novation. Final review and approval shall be by CONTRACTOR after Novation.
<input type="checkbox"/> 02.	ACCEPTED FOR DESIGN PHASE EXCEPT AS NOTED	Supplier may proceed with Design but must ensure Identified comments are incorporated and document resubmitted.
<input type="checkbox"/> 03.	NOT ACCEPTED	Engineering may not proceed until document has been resubmitted and reviewed again.
<input type="checkbox"/> 04.	FOR INFORMATION ONLY	Document is accepted where Purchaser deems a full technical review is not necessary during the Design Phase. Further review and approval shall be by CONTRACTOR after Novation.

NAME: \_\_\_\_\_  
 SIGNATURE: \_\_\_\_\_  
 DATE: \_\_\_\_\_

REV. NO.	DATE	DESCRIPTION	CHK.
04	08.10.2014.	AS BUILT (SITE MARK-UP)	MMa
03	23.12.2013.	AS BUILT	MMa/ZM
02	10.11.2013.	APPROVED BY GSE	GSE

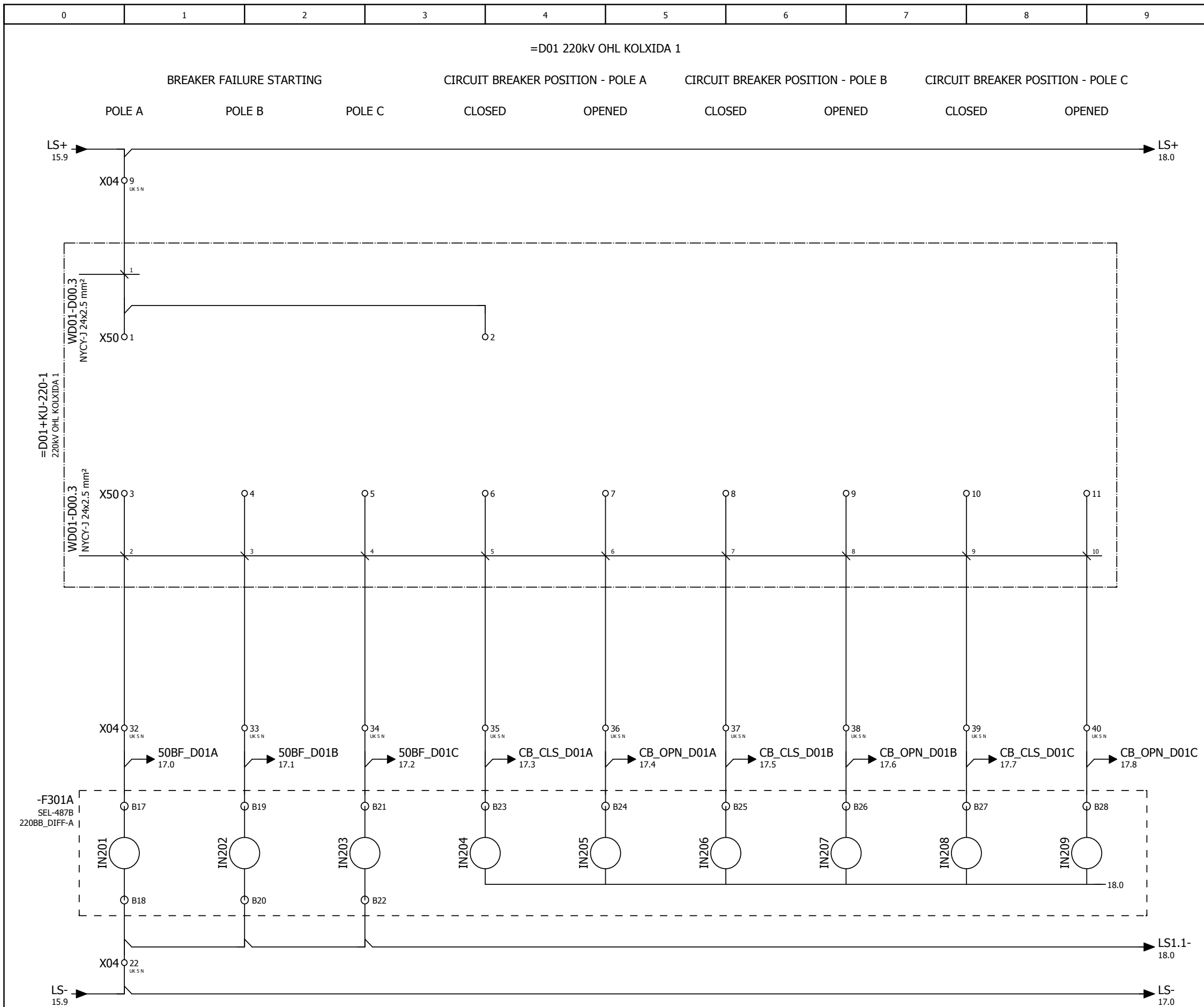
CUSTOMER:  
 **Georgian State Electrosystem**  
**Substation Kutaisi 220/110kV**

DESCRIPTION:  
**Schematic diagram for 220kV BusBar Protection**  
 Binary inputs - 220BB\_DIFF-B = D00  
 Alarms + KU-220-5

DRAWING NUMBER: <b>GSE-SSKU-KU-2-KU-220-5</b>	DATE: 16.09.13	SHEET NO.: 15/46	REV NO.: 04
--	-------------------	---------------------	----------------



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



**NOTES:**

CODE	DEFINITION	REMARKS
<input type="checkbox"/> 01.	ACCEPTED FOR DESIGN PHASE	No further submission is required prior to Novation. Final review and approval shall be by CONTRACTOR after Novation.
<input type="checkbox"/> 02.	ACCEPTED FOR DESIGN PHASE EXCEPT AS NOTED	Supplier may proceed with Design but must ensure Identified comments are incorporated and document resubmitted.
<input type="checkbox"/> 03.	NOT ACCEPTED	Engineering may not proceed until document has been resubmitted and reviewed again.
<input type="checkbox"/> 04.	FOR INFORMATION ONLY	Document is accepted where Purchaser deems a full technical review is not necessary during the Design Phase. Further review and approval shall be by CONTRACTOR after Novation.

NAME: \_\_\_\_\_  
 SIGNATURE: \_\_\_\_\_  
 DATE: \_\_\_\_\_

REV. NO.	DATE	DESCRIPTION	CHK.
04	08.10.2014.	AS BUILT (SITE MARK-UP)	MMa
03	23.12.2013.	AS BUILT	MMa/ZM
02	10.11.2013.	APPROVED BY GSE	GSE

CUSTOMER: **Georgian State Electrosystem**  
**GSE Substation Kutaisi 220/110kV**

DESCRIPTION: **Schematic diagram for 220kV BusBar Protection**  
 Binary inputs - 220BB\_DIFF-A = D00  
 Receive Breaker Failure - D01 + KU-220-5

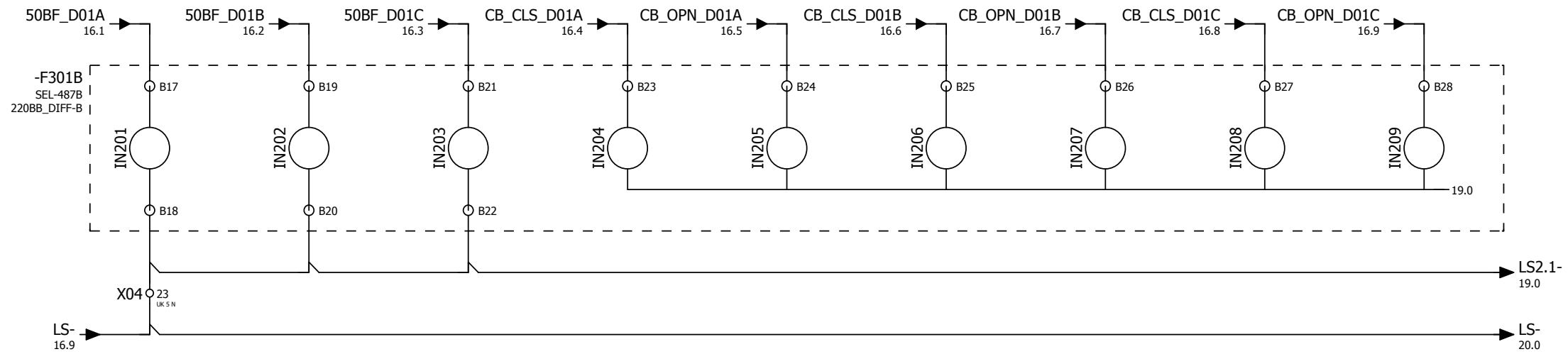
DRAWING NUMBER: <b>GSE-SSKU-KU-2-KU-220-5</b>	DATE: <b>16.09.13</b>	SHEET NO.: <b>16/46</b>	REV NO.: <b>04</b>
---	-----------------------	-------------------------	--------------------

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



=D01 220kV OHL KOLXIDA 1

BREAKER FAILURE STARTING  
 POLE A POLE B POLE C  
 CIRCUIT BREAKER POSITION - POLE A  
 CLOSED OPENED  
 CIRCUIT BREAKER POSITION - POLE B  
 CLOSED OPENED  
 CIRCUIT BREAKER POSITION - POLE C  
 CLOSED OPENED




NOTES:

CODE	DEFINITION	REMARKS
<input type="checkbox"/> 01.	ACCEPTED FOR DESIGN PHASE	No further submission is required prior to Novation. Final review and approval shall be by CONTRACTOR after Novation.
<input type="checkbox"/> 02.	ACCEPTED FOR DESIGN PHASE EXCEPT AS NOTED	Supplier may proceed with Design but must ensure Identified comments are incorporated and document resubmitted.
<input type="checkbox"/> 03.	NOT ACCEPTED	Engineering may not proceed until document has been resubmitted and reviewed again.
<input type="checkbox"/> 04.	FOR INFORMATION ONLY	Document is accepted where Purchaser deems a full technical review is not necessary during the Design Phase. Further review and approval shall be by CONTRACTOR after Novation.

NAME: \_\_\_\_\_  
 SIGNATURE: \_\_\_\_\_  
 DATE: \_\_\_\_\_

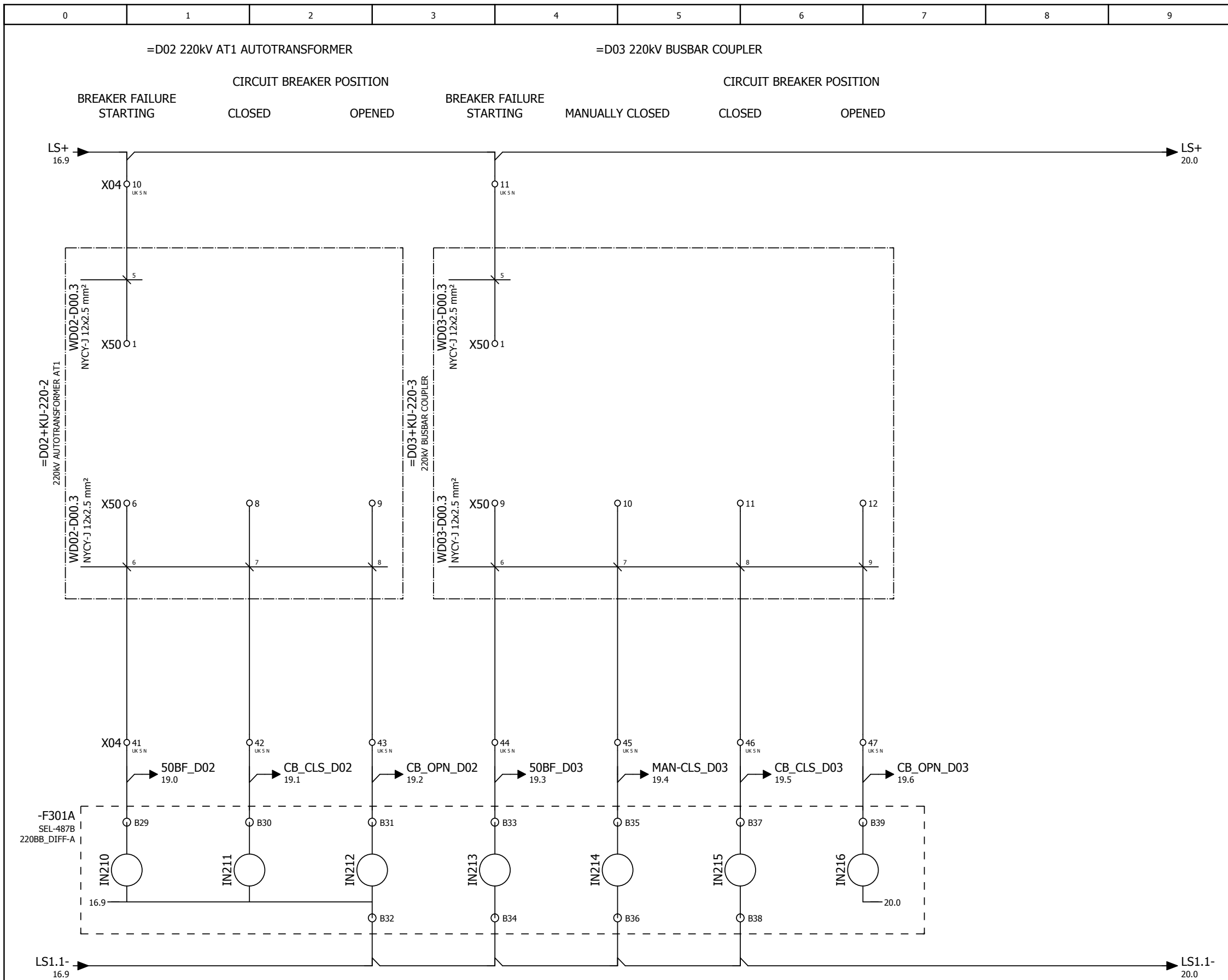
REV. NO.	DATE	DESCRIPTION	CHK.
04	08.10.2014.	AS BUILT (SITE MARK-UP)	MMa
03	23.12.2013.	AS BUILT	MMa/ZM
02	10.11.2013.	APPROVED BY GSE	GSE

CUSTOMER:  
 **Georgian State Electrosystem**  
**Substation Kutaisi 220/110kV**

DESCRIPTION:  
**Schematic diagram for 220kV BusBar Protection**  
 Binary inputs - 220BB\_DIFF-B = D00  
 Receive Breaker Failure - D01 + KU-220-5  
 DRAWING NUMBER: GSE-SSKU-KU-2-KU-220-5 DATE: 16.09.13 SHEET NO.: 17/46 REV NO.: 04



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



NOTES:

CODE	DEFINITION	REMARKS
<input type="checkbox"/> 01.	ACCEPTED FOR DESIGN PHASE	No further submission is required prior to Novation. Final review and approval shall be by CONTRACTOR after Novation.
<input type="checkbox"/> 02.	ACCEPTED FOR DESIGN PHASE EXCEPT AS NOTED	Supplier may proceed with Design but must ensure Identified comments are incorporated and document resubmitted.
<input type="checkbox"/> 03.	NOT ACCEPTED	Engineering may not proceed until document has been resubmitted and reviewed again.
<input type="checkbox"/> 04.	FOR INFORMATION ONLY	Document is accepted where Purchaser deems a full technical review is not necessary during the Design Phase. Further review and approval shall be by CONTRACTOR after Novation.

NAME: \_\_\_\_\_  
SIGNATURE: \_\_\_\_\_  
DATE: \_\_\_\_\_

REV. NO.	DATE	DESCRIPTION	CHK.
04	08.10.2014.	AS BUILT (SITE MARK-UP)	MMa
03	23.12.2013.	AS BUILT	MMa/ZM
02	10.11.2013.	APPROVED BY GSE	GSE

CUSTOMER: **Georgian State Electrosystem**  
**GSE** Substation Kutaisi 220/110kV

DESCRIPTION:  
Schematic diagram for 220kV BusBar Protection

Binary inputs - 220BB\_DIFF-A = D00  
Receive Breaker Failure - D02&D03 + KU-220-5

DRAWING NUMBER: GSE-SSKU-KU-2-KU-220-5 DATE: 16.09.13 SHEET NO.: 18/46 REV NO.: 04

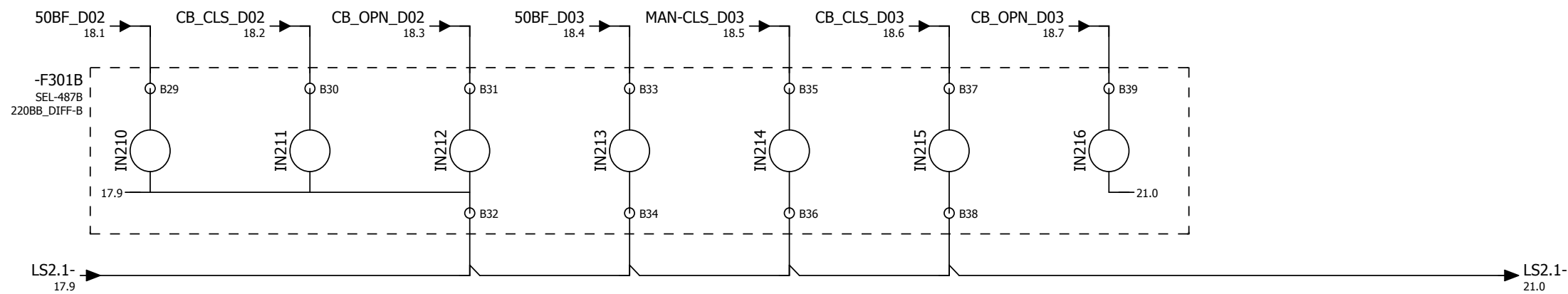
SEL Middle East B.S.C  
1504 Tiffany Tower  
Jumeira Lakes Tower  
9926 Dubai UAE

=D02 220kV AT1 AUTOTRANSFORMER

=D03 220kV BUSBAR COUPLER

BREAKER FAILURE STARTING      CIRCUIT BREAKER POSITION  
 CLOSED      OPENED

BREAKER FAILURE STARTING      MANUALLY CLOSED      CIRCUIT BREAKER POSITION  
 CLOSED      OPENED




**NOTES:**

CODE	DEFINITION	REMARKS
<input type="checkbox"/> 01.	ACCEPTED FOR DESIGN PHASE	No further submission is required prior to Novation. Final review and approval shall be by CONTRACTOR after Novation.
<input type="checkbox"/> 02.	ACCEPTED FOR DESIGN PHASE EXCEPT AS NOTED	Supplier may proceed with Design but must ensure Identified comments are incorporated and document resubmitted.
<input type="checkbox"/> 03.	NOT ACCEPTED	Engineering may not proceed until document has been resubmitted and reviewed again.
<input type="checkbox"/> 04.	FOR INFORMATION ONLY	Document is accepted where Purchaser deems a full technical review is not necessary during the Design Phase. Further review and approval shall be by CONTRACTOR after Novation.

NAME: \_\_\_\_\_  
 SIGNATURE: \_\_\_\_\_  
 DATE: \_\_\_\_\_

REV. NO.	DATE	DESCRIPTION	CHK.
04	08.10.2014.	AS BUILT (SITE MARK-UP)	MMa
03	23.12.2013.	AS BUILT	MMa/ZM
02	10.11.2013.	APPROVED BY GSE	GSE

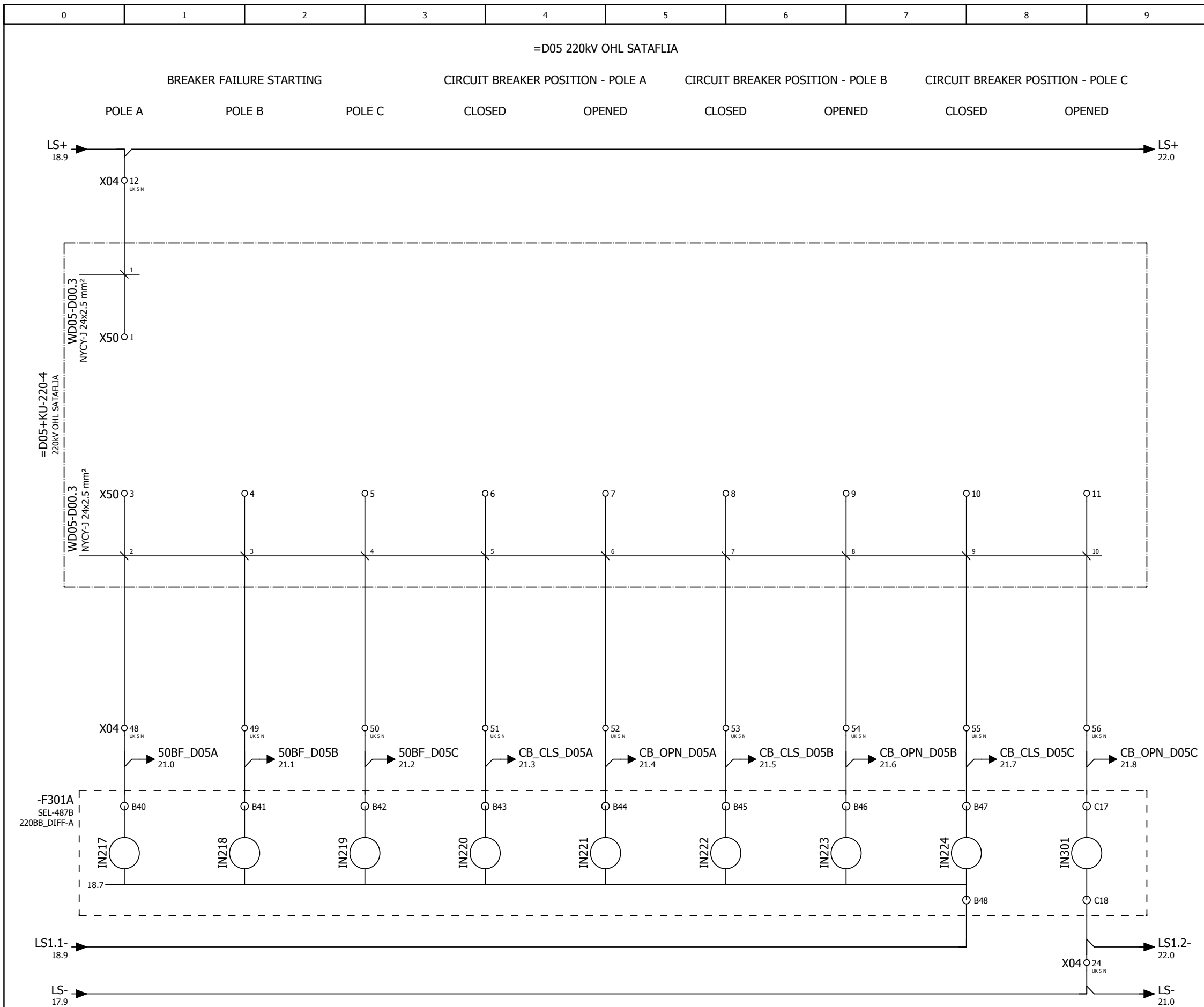
CUSTOMER:  
 **Georgian State Electrosystem**  
**Substation Kutaisi 220/110kV**

DESCRIPTION:  
**Schematic diagram for 220kV BusBar Protection**  
 Binary inputs - 220BB\_DIFF-B      = D00  
 Receive Breaker Failure - D02&D03      + KU-220-5

DRAWING NUMBER: <b>GSE-SSKU-KU-2-KU-220-5</b>	DATE: 16.09.13	SHEET NO.: 19/46	REV NO.: 04
--	-------------------	---------------------	----------------



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



NOTES:

CODE	DEFINITION	REMARKS
<input type="checkbox"/> 01.	ACCEPTED FOR DESIGN PHASE	No further submission is required prior to Novation. Final review and approval shall be by CONTRACTOR after Novation.
<input type="checkbox"/> 02.	ACCEPTED FOR DESIGN PHASE EXCEPT AS NOTED	Supplier may proceed with Design but must ensure Identified comments are incorporated and document resubmitted.
<input type="checkbox"/> 03.	NOT ACCEPTED	Engineering may not proceed until document has been resubmitted and reviewed again.
<input type="checkbox"/> 04.	FOR INFORMATION ONLY	Document is accepted where Purchaser deems a full technical review is not necessary during the Design Phase. Further review and approval shall be by CONTRACTOR after Novation.

NAME: \_\_\_\_\_

SIGNATURE: \_\_\_\_\_

DATE: \_\_\_\_\_

REV. NO.	DATE	DESCRIPTION	CHK.
04	08.10.2014.	AS BUILT (SITE MARK-UP)	MMa
03	23.12.2013.	AS BUILT	MMa/ZM
02	10.11.2013.	APPROVED BY GSE	GSE

CUSTOMER: **Georgian State Electrosystem**  
**GSE Substation Kutaisi 220/110kV**

DESCRIPTION: **Schematic diagram for 220kV BusBar Protection**

Binary inputs - 220BB\_DIFF-A      = D00  
 Receive Breaker Failure - D05      + KU-220-5

DRAWING NUMBER: **GSE-SSKU-KU-2-KU-220-5**      DATE: **16.09.13**      SHEET NO.: **20/46**      REV NO.: **04**

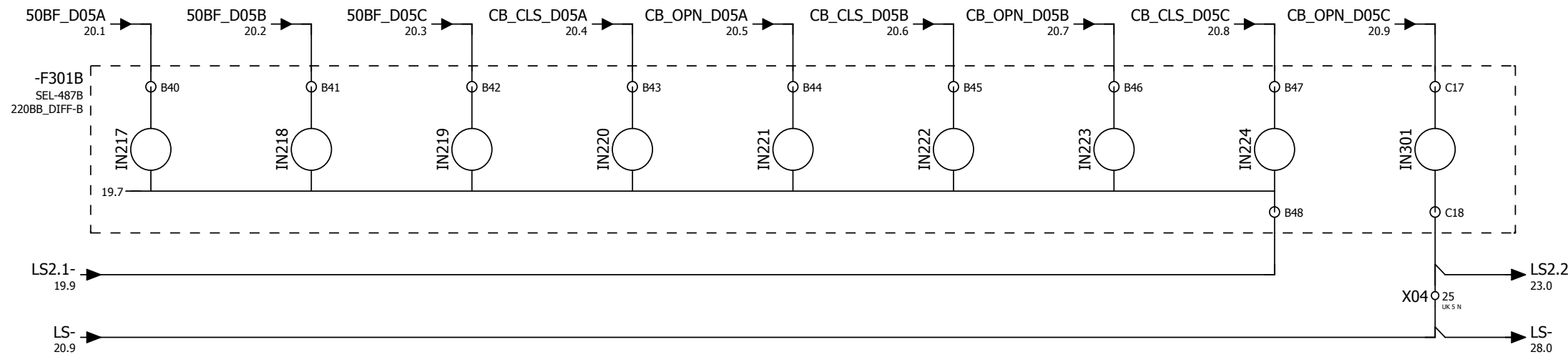
**SEL SCHWEITZER ENGINEERING LABORATORIES**

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

=D05 220kV OHL SATAFLIA

BREAKER FAILURE STARTING      CIRCUIT BREAKER POSITION - POLE A      CIRCUIT BREAKER POSITION - POLE B      CIRCUIT BREAKER POSITION - POLE C

POLE A      POLE B      POLE C      CLOSED      OPENED      CLOSED      OPENED      CLOSED      OPENED



NOTES:

CODE	DEFINITION	REMARKS
<input type="checkbox"/> 01.	ACCEPTED FOR DESIGN PHASE	No further submission is required prior to Novation. Final review and approval shall be by CONTRACTOR after Novation.
<input type="checkbox"/> 02.	ACCEPTED FOR DESIGN PHASE EXCEPT AS NOTED	Supplier may proceed with Design but must ensure Identified comments are incorporated and document resubmitted.
<input type="checkbox"/> 03.	NOT ACCEPTED	Engineering may not proceed until document has been resubmitted and reviewed again.
<input type="checkbox"/> 04.	FOR INFORMATION ONLY	Document is accepted where Purchaser deems a full technical review is not necessary during the Design Phase. Further review and approval shall be by CONTRACTOR after Novation.

NAME: \_\_\_\_\_  
 SIGNATURE: \_\_\_\_\_  
 DATE: \_\_\_\_\_

REV. NO.	DATE	DESCRIPTION	CHK.
04	08.10.2014.	AS BUILT (SITE MARK-UP)	MMa
03	23.12.2013.	AS BUILT	MMa/ZM
02	10.11.2013.	APPROVED BY GSE	GSE

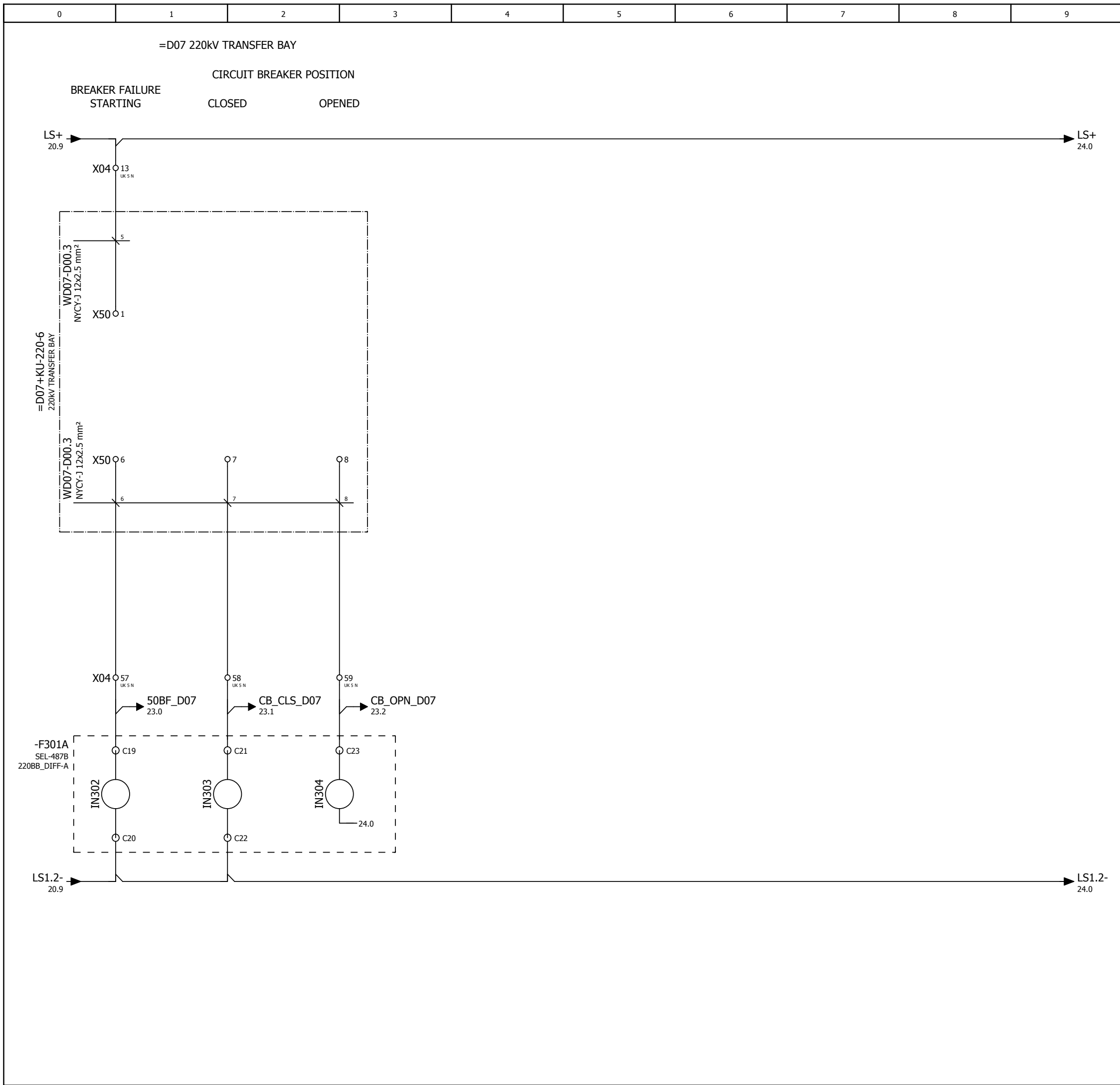
CUSTOMER:  
 **Georgian State Electrosystem**  
**Substation Kutaisi 220/110kV**

DESCRIPTION:  
**Schematic diagram for 220kV BusBar Protection**  
 Binary inputs - 220BB\_DIFF-B = D00  
 Receive Breaker Failure - D05 + KU-220-5

DRAWING NUMBER: <b>GSE-SSKU-KU-2-KU-220-5</b>	DATE: 16.09.13	SHEET NO.: 21/46	REV NO.: 04
--	-------------------	---------------------	----------------



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



NOTES:

CODE	DEFINITION	REMARKS
<input type="checkbox"/> 01.	ACCEPTED FOR DESIGN PHASE	No further submission is required prior to Novation. Final review and approval shall be by CONTRACTOR after Novation.
<input type="checkbox"/> 02.	ACCEPTED FOR DESIGN PHASE EXCEPT AS NOTED	Supplier may proceed with Design but must ensure Identified comments are incorporated and document resubmitted.
<input type="checkbox"/> 03.	NOT ACCEPTED	Engineering may not proceed until document has been resubmitted and reviewed again.
<input type="checkbox"/> 04.	FOR INFORMATION ONLY	Document is accepted where Purchaser deems a full technical review is not necessary during the Design Phase. Further review and approval shall be by CONTRACTOR after Novation.

NAME: \_\_\_\_\_  
SIGNATURE: \_\_\_\_\_  
DATE: \_\_\_\_\_

REV. NO.	DATE	DESCRIPTION	CHK.
04	08.10.2014.	AS BUILT (SITE MARK-UP)	MMa
03	23.12.2013.	AS BUILT	MMa/ZM
02	10.11.2013.	APPROVED BY GSE	GSE

CUSTOMER: **Georgian State Electrosystem**  
**GSE** Substation Kutaisi 220/110kV

DESCRIPTION: Schematic diagram for 220kV BusBar Protection

Binary inputs - 220BB\_DIFF-A = D00  
Receive Breaker Failure - D07 + KU-220-5

DRAWING NUMBER: GSE-SSKU-KU-2-KU-220-5      DATE: 16.09.13      SHEET NO.: 22/46      REV NO.: 04

**SEL SCHWEITZER ENGINEERING LABORATORIES**

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

=D07 220kV TRANSFER BAY

BREAKER FAILURE STARTING      CIRCUIT BREAKER POSITION  
 CLOSED      OPENED




NOTES:

CODE	DEFINITION	REMARKS
<input type="checkbox"/> 01.	ACCEPTED FOR DESIGN PHASE	No further submission is required prior to Novation. Final review and approval shall be by CONTRACTOR after Novation.
<input type="checkbox"/> 02.	ACCEPTED FOR DESIGN PHASE EXCEPT AS NOTED	Supplier may proceed with Design but must ensure Identified comments are incorporated and document resubmitted.
<input type="checkbox"/> 03.	NOT ACCEPTED	Engineering may not proceed until document has been resubmitted and reviewed again.
<input type="checkbox"/> 04.	FOR INFORMATION ONLY	Document is accepted where Purchaser deems a full technical review is not necessary during the Design Phase. Further review and approval shall be by CONTRACTOR after Novation.

NAME: \_\_\_\_\_  
 SIGNATURE: \_\_\_\_\_  
 DATE: \_\_\_\_\_

REV. NO.	DATE	DESCRIPTION	CHK.
04	08.10.2014.	AS BUILT (SITE MARK-UP)	MMa
03	23.12.2013.	AS BUILT	MMa/ZM
02	10.11.2013.	APPROVED BY GSE	GSE

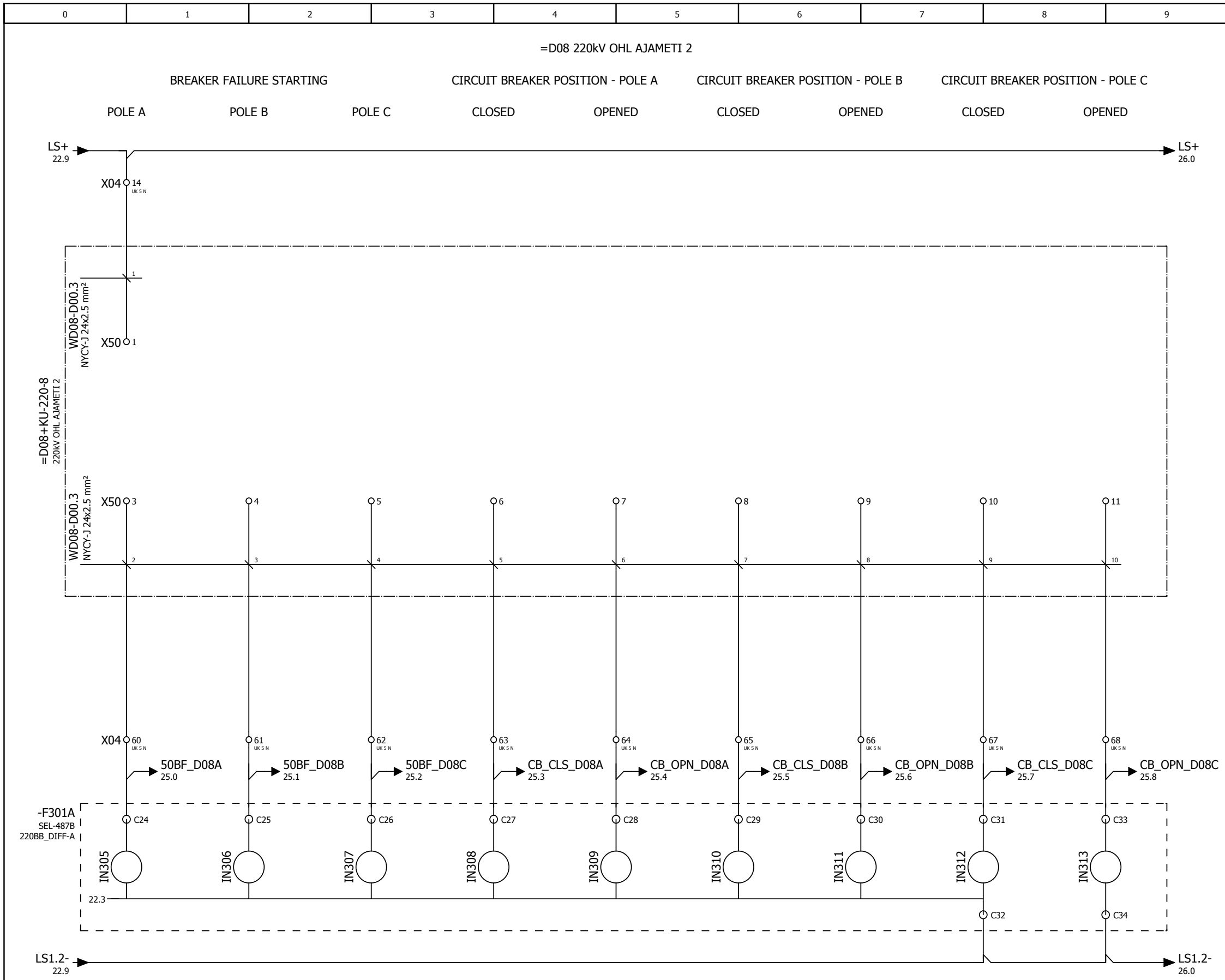
CUSTOMER:  
 **Georgian State Electrosystem**  
**Substation Kutaisi 220/110kV**

DESCRIPTION:  
 Schematic diagram for 220kV BusBar Protection  
 Binary inputs - 220BB\_DIFF-B = D00  
 Receive Breaker Failure - D07 + KU-220-5

DRAWING NUMBER: GSE-SSKU-KU-2-KU-220-5	DATE: 16.09.13	SHEET NO.: 23/46	REV NO.: 04
---	-------------------	---------------------	----------------



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



**NOTES:**

CODE	DEFINITION	REMARKS
<input type="checkbox"/> 01.	ACCEPTED FOR DESIGN PHASE	No further submission is required prior to Novation. Final review and approval shall be by CONTRACTOR after Novation.
<input type="checkbox"/> 02.	ACCEPTED FOR DESIGN PHASE EXCEPT AS NOTED	Supplier may proceed with Design but must ensure Identified comments are incorporated and document resubmitted.
<input type="checkbox"/> 03.	NOT ACCEPTED	Engineering may not proceed until document has been resubmitted and reviewed again.
<input type="checkbox"/> 04.	FOR INFORMATION ONLY	Document is accepted where Purchaser deems a full technical review is not necessary during the Design Phase. Further review and approval shall be by CONTRACTOR after Novation.

NAME: \_\_\_\_\_  
SIGNATURE: \_\_\_\_\_  
DATE: \_\_\_\_\_

REV. NO.	DATE	DESCRIPTION	CHK.
04	08.10.2014.	AS BUILT (SITE MARK-UP)	MMA
03	23.12.2013.	AS BUILT	MMA/ZM
02	10.11.2013.	APPROVED BY GSE	GSE

CUSTOMER: **Georgian State Electrosystem**  
**GSE** Substation Kutaisi 220/110kV

DESCRIPTION: Schematic diagram for 220kV BusBar Protection  
Binary inputs - 220BB\_DIFF-A = D00  
Receive Breaker Failure - D08 + KU-220-5

DRAWING NUMBER: <b>GSE-SSKU-KU-2-KU-220-5</b>	DATE: 16.09.13	SHEET NO.: 24/46	REV NO.: 04
--	-------------------	---------------------	----------------

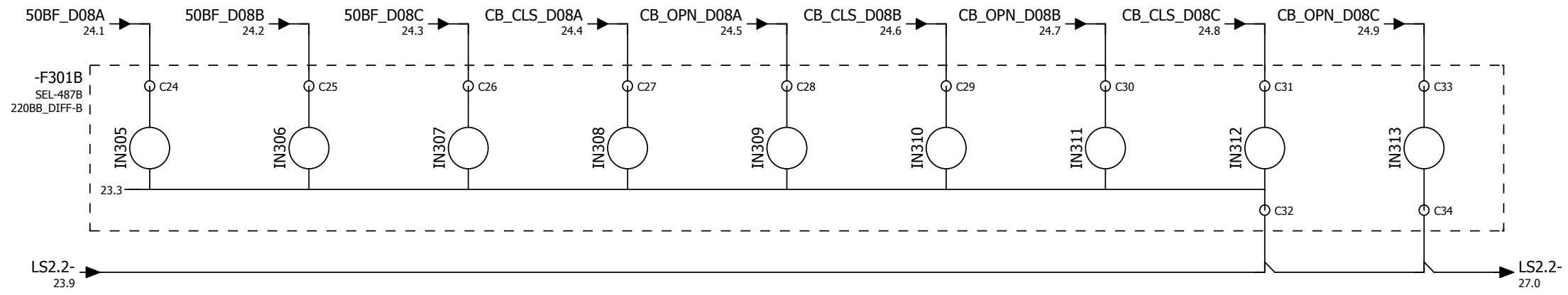
SEL Middle East B.S.C  
1504 Tiffany Tower  
Jumeira Lakes Tower  
9926 Dubai UAE



=D08 220kV OHL AJAMETI 2

BREAKER FAILURE STARTING      CIRCUIT BREAKER POSITION - POLE A      CIRCUIT BREAKER POSITION - POLE B      CIRCUIT BREAKER POSITION - POLE C

POLE A      POLE B      POLE C      CLOSED      OPENED      CLOSED      OPENED      CLOSED      OPENED



NOTES:

CODE	DEFINITION	REMARKS
<input type="checkbox"/> 01.	ACCEPTED FOR DESIGN PHASE	No further submission is required prior to Novation. Final review and approval shall be by CONTRACTOR after Novation.
<input type="checkbox"/> 02.	ACCEPTED FOR DESIGN PHASE EXCEPT AS NOTED	Supplier may proceed with Design but must ensure Identified comments are incorporated and document resubmitted.
<input type="checkbox"/> 03.	NOT ACCEPTED	Engineering may not proceed until document has been resubmitted and reviewed again.
<input type="checkbox"/> 04.	FOR INFORMATION ONLY	Document is accepted where Purchaser deems a full technical review is not necessary during the Design Phase. Further review and approval shall be by CONTRACTOR after Novation.

NAME: \_\_\_\_\_  
 SIGNATURE: \_\_\_\_\_  
 DATE: \_\_\_\_\_

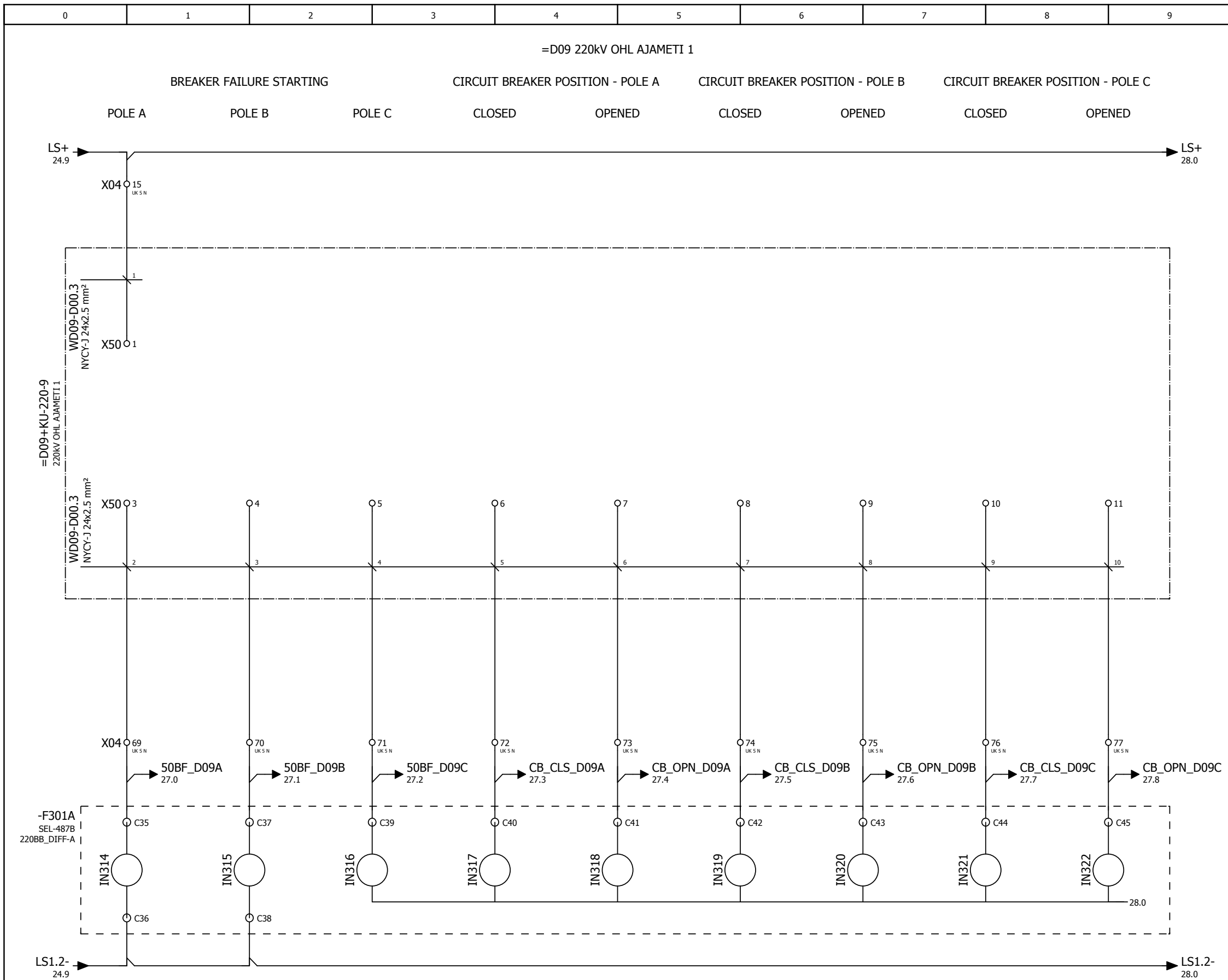
REV. NO.	DATE	DESCRIPTION	CHK.
04	08.10.2014.	AS BUILT (SITE MARK-UP)	MMa
03	23.12.2013.	AS BUILT	MMa/ZM
02	10.11.2013.	APPROVED BY GSE	GSE

CUSTOMER: **Georgian State Electrosystem**  
**GSE** Substation Kutaisi 220/110kV

DESCRIPTION: Schematic diagram for 220kV BusBar Protection

Binary inputs - 220BB\_DIFF-B = D00  
 Receive Breaker Failure - D08 + KU-220-5

DRAWING NUMBER: GSE-SSKU-KU-2-KU-220-5	DATE: 16.09.13	SHEET NO.: 25/46	REV NO.: 04
---	-------------------	---------------------	----------------



**NOTES:**

CODE	DEFINITION	REMARKS
<input type="checkbox"/> 01.	ACCEPTED FOR DESIGN PHASE	No further submission is required prior to Novation. Final review and approval shall be by CONTRACTOR after Novation.
<input type="checkbox"/> 02.	ACCEPTED FOR DESIGN PHASE EXCEPT AS NOTED	Supplier may proceed with Design but must ensure Identified comments are incorporated and document resubmitted.
<input type="checkbox"/> 03.	NOT ACCEPTED	Engineering may not proceed until document has been resubmitted and reviewed again.
<input type="checkbox"/> 04.	FOR INFORMATION ONLY	Document is accepted where Purchaser deems a full technical review is not necessary during the Design Phase. Further review and approval shall be by CONTRACTOR after Novation.

NAME: \_\_\_\_\_  
 SIGNATURE: \_\_\_\_\_  
 DATE: \_\_\_\_\_

REV. NO.	DATE	DESCRIPTION	CHK.
04	08.10.2014.	AS BUILT (SITE MARK-UP)	MMa
03	23.12.2013.	AS BUILT	MMa/ZM
02	10.11.2013.	APPROVED BY GSE	GSE

CUSTOMER: **Georgian State Electrosystem**  
**GSE** Substation Kutaisi 220/110kV

DESCRIPTION: Schematic diagram for 220kV BusBar Protection

Binary inputs - 220BB\_DIFF-A = D00  
 Receive Breaker Failure - D09 + KU-220-5

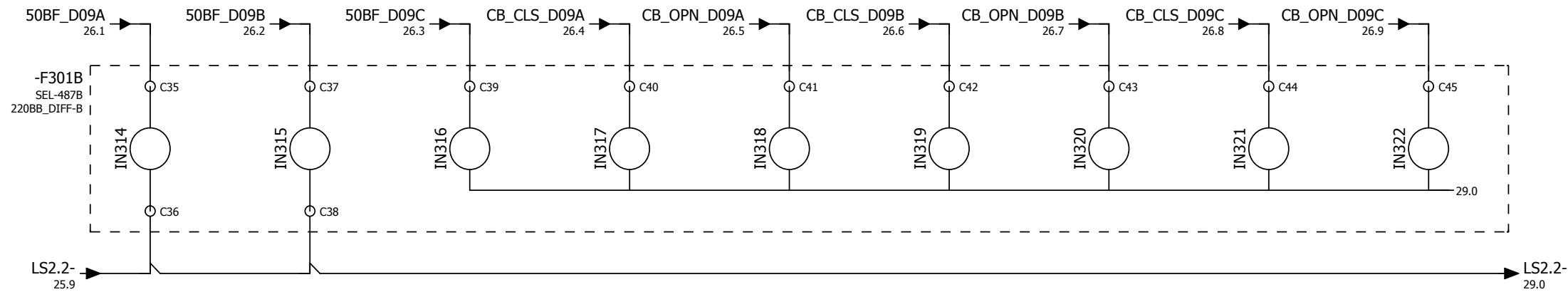
DRAWING NUMBER: GSE-SSKU-KU-2-KU-220-5    DATE: 16.09.13    SHEET NO.: 26/46    REV NO.: 04

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

=D09 220kV OHL AJAMETI 1

BREAKER FAILURE STARTING                      CIRCUIT BREAKER POSITION - POLE A                      CIRCUIT BREAKER POSITION - POLE B                      CIRCUIT BREAKER POSITION - POLE C

POLE A                      POLE B                      POLE C                      CLOSED                      OPENED                      CLOSED                      OPENED                      CLOSED                      OPENED



NOTES:

CODE	DEFINITION	REMARKS
<input type="checkbox"/> 01.	ACCEPTED FOR DESIGN PHASE	No further submission is required prior to Novation. Final review and approval shall be by CONTRACTOR after Novation.
<input type="checkbox"/> 02.	ACCEPTED FOR DESIGN PHASE EXCEPT AS NOTED	Supplier may proceed with Design but must ensure Identified comments are incorporated and document resubmitted.
<input type="checkbox"/> 03.	NOT ACCEPTED	Engineering may not proceed until document has been resubmitted and reviewed again.
<input type="checkbox"/> 04.	FOR INFORMATION ONLY	Document is accepted where Purchaser deems a full technical review is not necessary during the Design Phase. Further review and approval shall be by CONTRACTOR after Novation.

NAME: \_\_\_\_\_  
 SIGNATURE: \_\_\_\_\_  
 DATE: \_\_\_\_\_

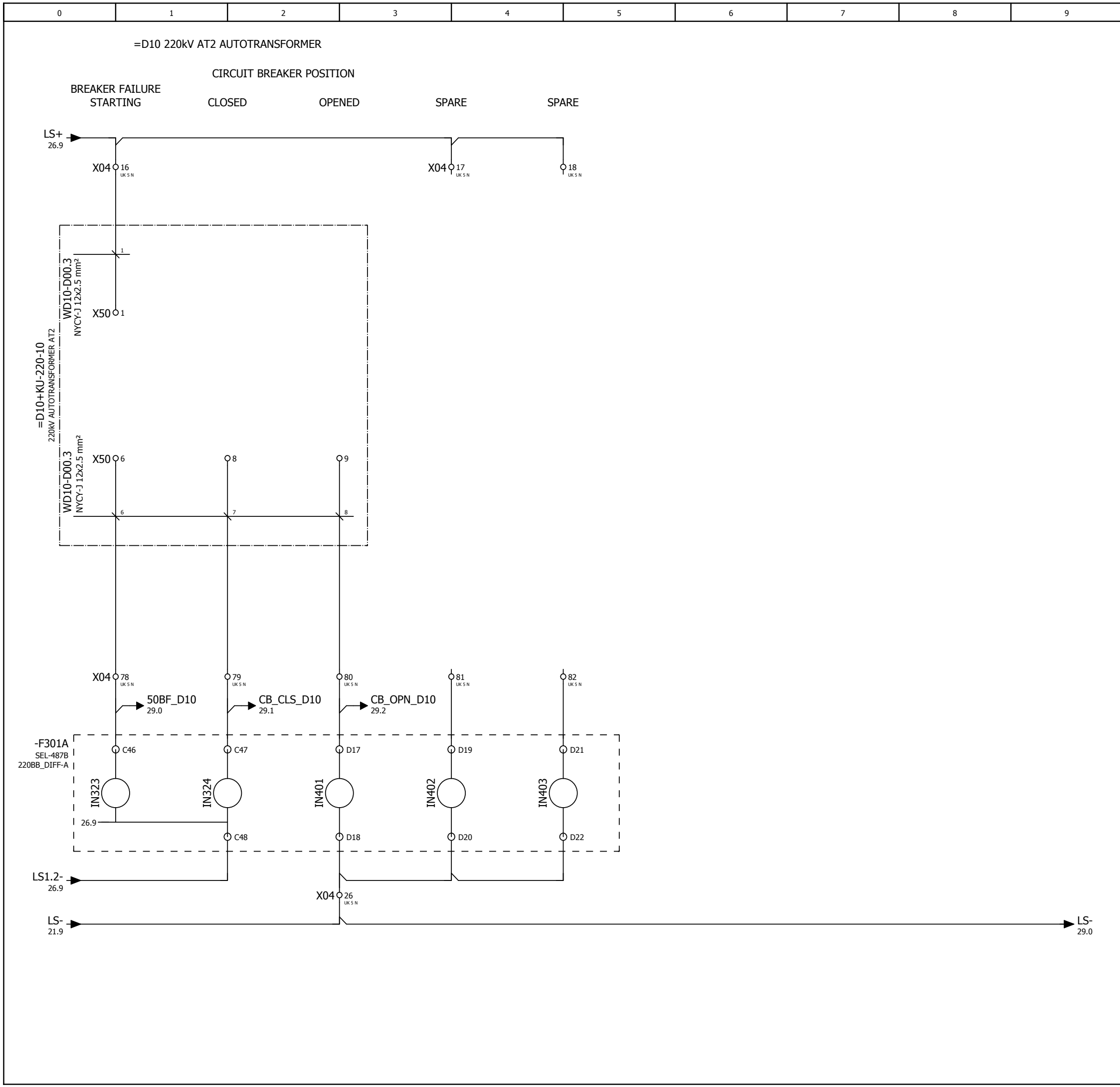
REV. NO.	DATE	DESCRIPTION	CHK.
04	08.10.2014.	AS BUILT (SITE MARK-UP)	MMa
03	23.12.2013.	AS BUILT	MMa/ZM
02	10.11.2013.	APPROVED BY GSE	GSE

CUSTOMER: **Georgian State Electrosystem**  
**GSE** Substation Kutaisi 220/110kV

DESCRIPTION: Schematic diagram for 220kV BusBar Protection  
 Binary inputs - 220BB\_DIFF-B = D00  
 Receive Breaker Failure - D09 + KU-220-5

DRAWING NUMBER: GSE-SSKU-KU-2-KU-220-5	DATE: 16.09.13	SHEET NO.: 27/46	REV NO.: 04
---	-------------------	---------------------	----------------

**SEL SCHWEITZER ENGINEERING LABORATORIES**  
 SEL Middle East B.S.C  
 1504 Tiffany Tower  
 Jumeira Lakes Tower  
 9926 Dubai UAE



NOTES:

CODE	DEFINITION	REMARKS
<input type="checkbox"/> 01.	ACCEPTED FOR DESIGN PHASE	No further submission is required prior to Novation. Final review and approval shall be by CONTRACTOR after Novation.
<input type="checkbox"/> 02.	ACCEPTED FOR DESIGN PHASE EXCEPT AS NOTED	Supplier may proceed with Design but must ensure Identified comments are incorporated and document resubmitted.
<input type="checkbox"/> 03.	NOT ACCEPTED	Engineering may not proceed until document has been resubmitted and reviewed again.
<input type="checkbox"/> 04.	FOR INFORMATION ONLY	Document is accepted where Purchaser deems a full technical review is not necessary during the Design Phase. Further review and approval shall be by CONTRACTOR after Novation.

NAME: \_\_\_\_\_  
SIGNATURE: \_\_\_\_\_  
DATE: \_\_\_\_\_

REV. NO.	DATE	DESCRIPTION	CHK.
04	08.10.2014.	AS BUILT (SITE MARK-UP)	MMA
03	23.12.2013.	AS BUILT	MMA/ZM
02	10.11.2013.	APPROVED BY GSE	GSE

CUSTOMER:  
**Georgian State Electrosystem**  
**Substation Kutaisi 220/110kV**

DESCRIPTION:  
**Schematic diagram for 220kV BusBar Protection**  
Binary inputs - 220BB\_DIFF-A = D00  
Receive Breaker Failure - D10 + KU-220-5

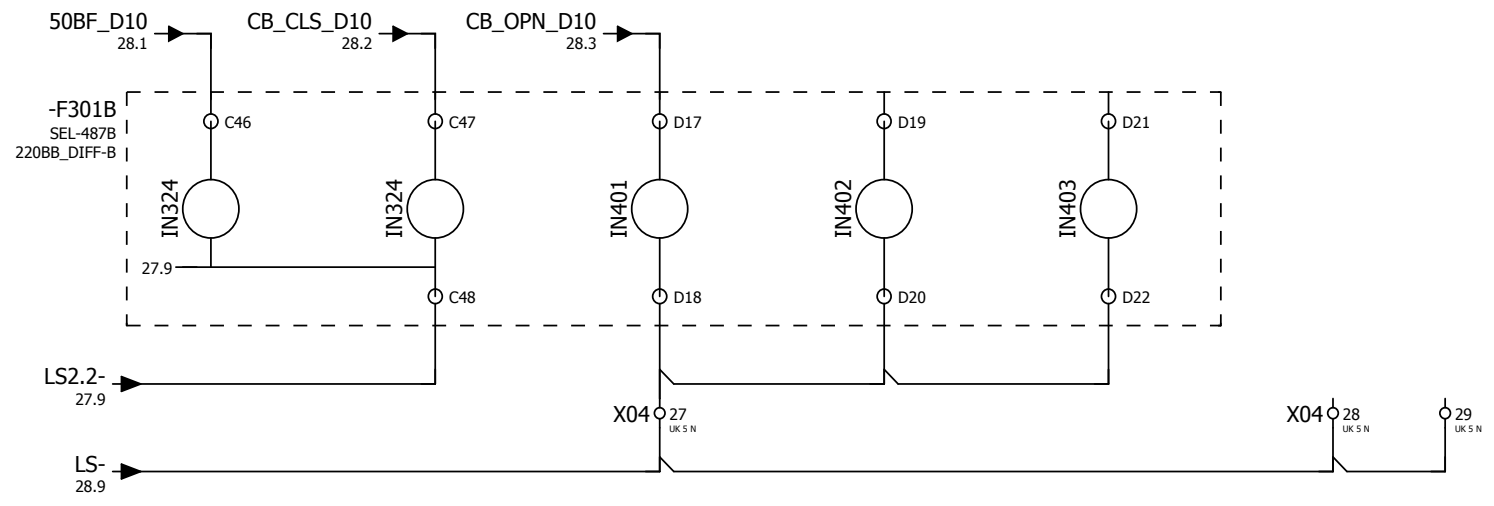
DRAWING NUMBER: <b>GSE-SSKU-KU-2-KU-220-5</b>	DATE: 16.09.13	SHEET NO.: 28/46	REV NO.: 04
--	-------------------	---------------------	----------------

**SCHWEITZER  
ENGINEERING  
LABORATORIES**

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

=D10 220kV AT2 AUTOTRANSFORMER

BREAKER FAILURE STARTING      CIRCUIT BREAKER POSITION  
 CLOSED      OPENED      SPARE      SPARE



NOTES:

CODE	DEFINITION	REMARKS
<input type="checkbox"/> 01.	ACCEPTED FOR DESIGN PHASE	No further submission is required prior to Novation. Final review and approval shall be by CONTRACTOR after Novation.
<input type="checkbox"/> 02.	ACCEPTED FOR DESIGN PHASE EXCEPT AS NOTED	Supplier may proceed with Design but must ensure Identified comments are incorporated and document resubmitted.
<input type="checkbox"/> 03.	NOT ACCEPTED	Engineering may not proceed until document has been resubmitted and reviewed again.
<input type="checkbox"/> 04.	FOR INFORMATION ONLY	Document is accepted where Purchaser deems a full technical review is not necessary during the Design Phase. Further review and approval shall be by CONTRACTOR after Novation.

NAME: \_\_\_\_\_  
 SIGNATURE: \_\_\_\_\_  
 DATE: \_\_\_\_\_

REV. NO.	DATE	DESCRIPTION	CHK.
04	08.10.2014.	AS BUILT (SITE MARK-UP)	MMa
03	23.12.2013.	AS BUILT	MMa/ZM
02	10.11.2013.	APPROVED BY GSE	GSE

CUSTOMER: **Georgian State Electrosystem**  
**GSE** Substation Kutaisi 220/110kV

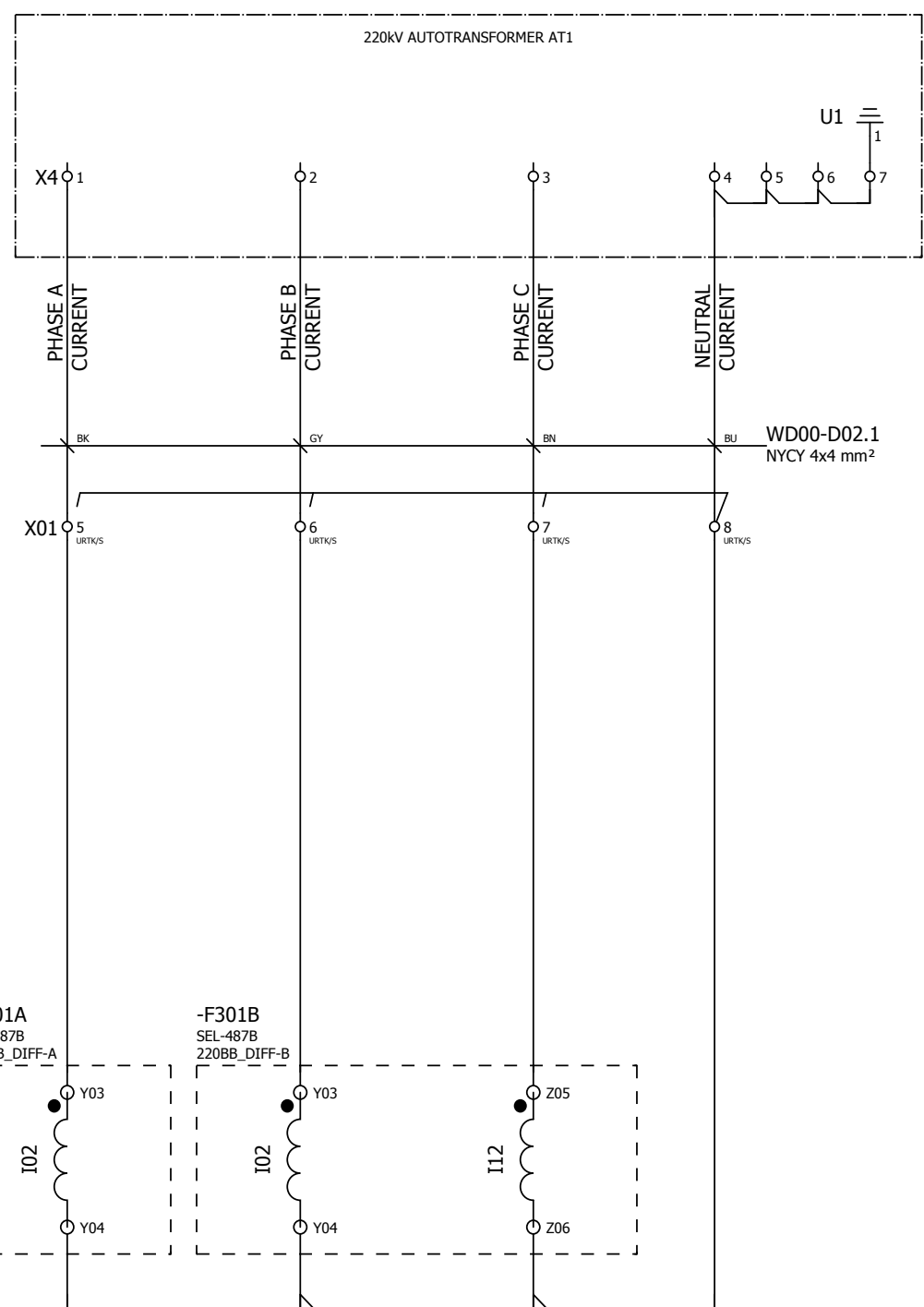
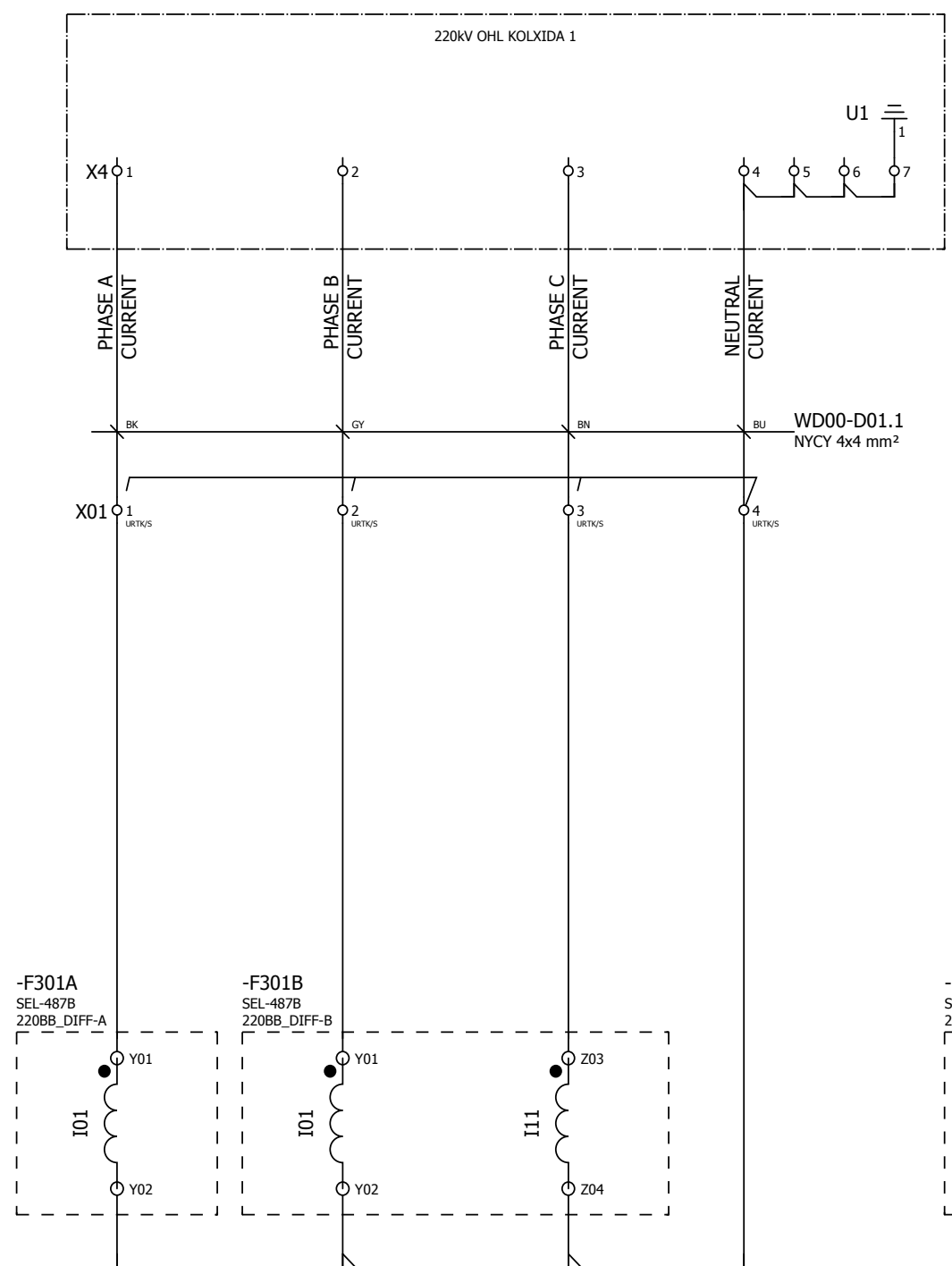
DESCRIPTION: Schematic diagram for 220kV BusBar Protection  
 Binary inputs - 220BB\_DIFF-B = D00  
 Receive Breaker Failure - D10 + KU-220-5

DRAWING NUMBER: GSE-SSKU-KU-2-KU-220-5	DATE: 16.09.13	SHEET NO.: 29/46	REV NO.: 04
---	-------------------	---------------------	----------------

**SEL SCHWEITZER ENGINEERING LABORATORIES**  
 SEL Middle East B.S.C  
 1504 Tiffany Tower  
 Jumeira Lakes Tower  
 9926 Dubai UAE

=D01 220kV OHL KOLXIDA 1  
CT BOX  
=D01+T1

=D02 220kV AUTOTRANSFORMER AT1  
CT BOX  
=D02+T1



NOTES:

CODE	DEFINITION	REMARKS
<input type="checkbox"/> 01.	ACCEPTED FOR DESIGN PHASE	No further submission is required prior to Novation. Final review and approval shall be by CONTRACTOR after Novation.
<input type="checkbox"/> 02.	ACCEPTED FOR DESIGN PHASE EXCEPT AS NOTED	Supplier may proceed with Design but must ensure Identified comments are incorporated and document resubmitted.
<input type="checkbox"/> 03.	NOT ACCEPTED	Engineering may not proceed until document has been resubmitted and reviewed again.
<input type="checkbox"/> 04.	FOR INFORMATION ONLY	Document is accepted where Purchaser deems a full technical review is not necessary during the Design Phase. Further review and approval shall be by CONTRACTOR after Novation.

NAME: \_\_\_\_\_  
SIGNATURE: \_\_\_\_\_  
DATE: \_\_\_\_\_

REV. NO.	DATE	DESCRIPTION	CHK.
04	08.10.2014.	AS BUILT (SITE MARK-UP)	MMa
03	23.12.2013.	AS BUILT	MMa/ZM
02	10.11.2013.	APPROVED BY GSE	GSE

CUSTOMER: **Georgian State Electrosystem**  
**GSE** Substation Kutaisi 220/110kV

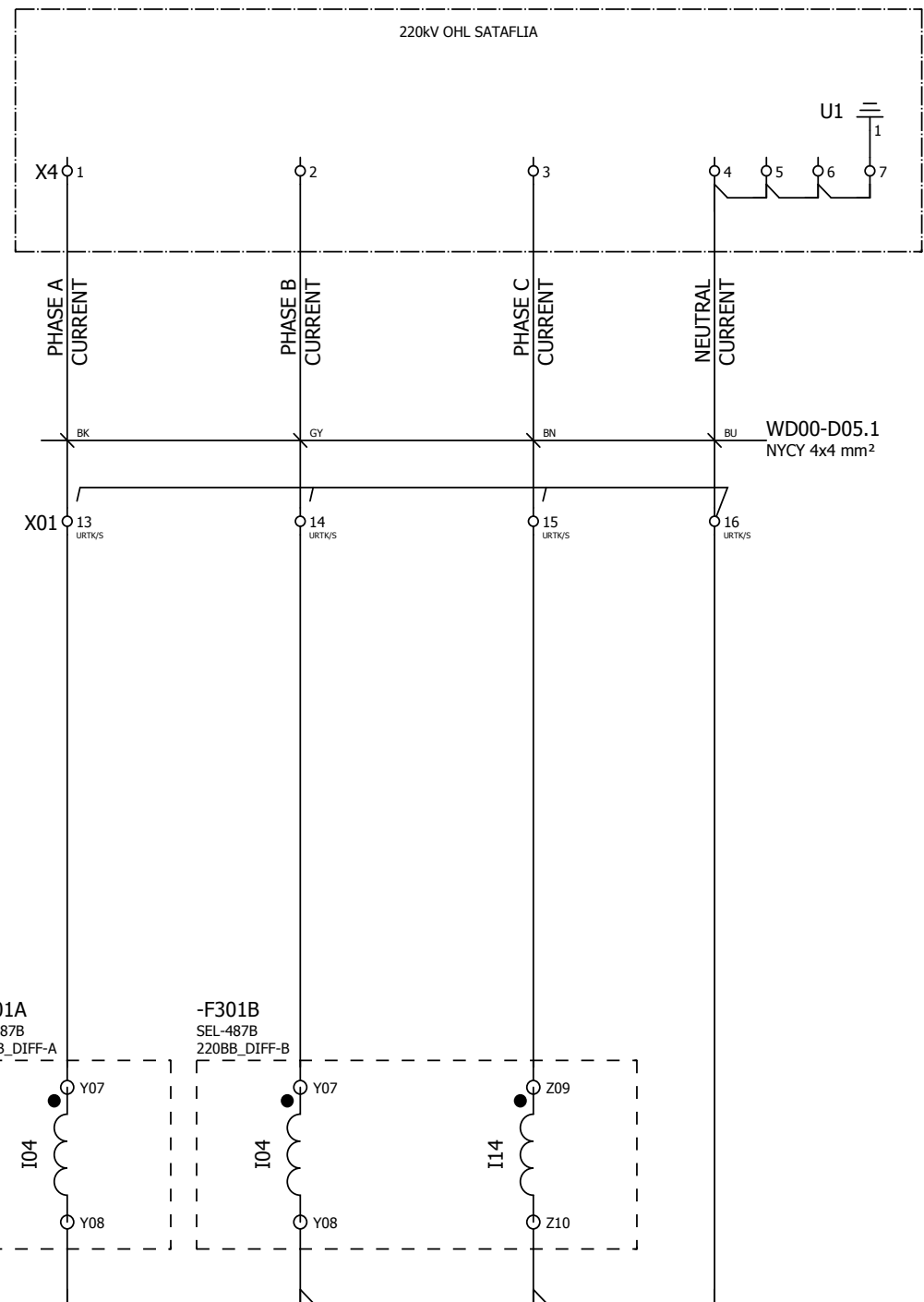
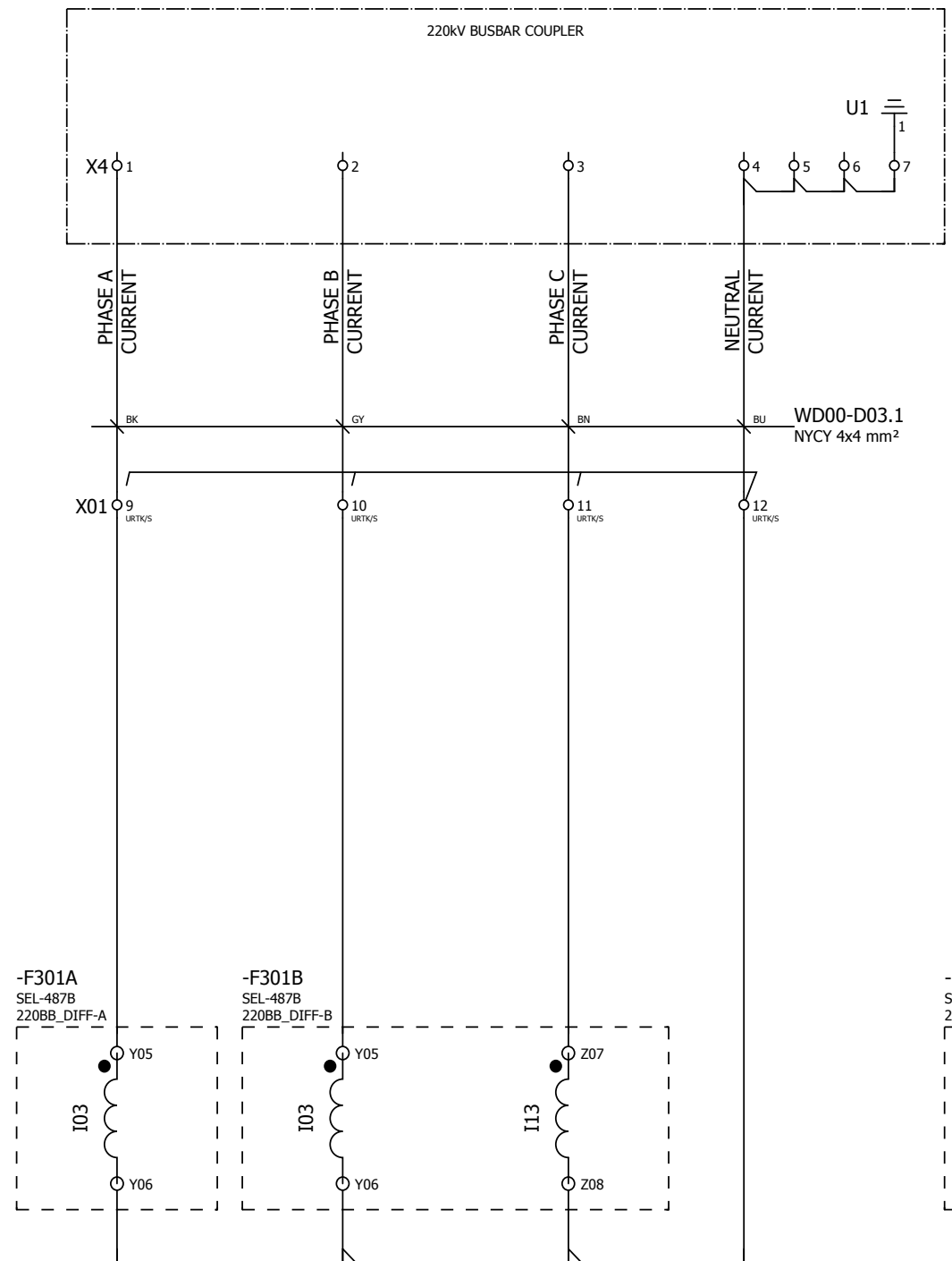
DESCRIPTION: Schematic diagram for 220kV BusBar Protection  
Current Transformers - D01 and D02

DRAWING NUMBER: GSE-SSKU-KU-2-KU-220-5 DATE: 16.09.13 SHEET NO.: 30/46 REV NO.: 04

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

=D03 220kV BUSBAR COUPLER  
CT BOX  
=D03+T1

=D05 220kV OHL SATAFLIA  
CT BOX  
=D05+T1



NOTES:

CODE	DEFINITION	REMARKS
<input type="checkbox"/> 01.	ACCEPTED FOR DESIGN PHASE	No further submission is required prior to Novation. Final review and approval shall be by CONTRACTOR after Novation.
<input type="checkbox"/> 02.	ACCEPTED FOR DESIGN PHASE EXCEPT AS NOTED	Supplier may proceed with Design but must ensure Identified comments are incorporated and document resubmitted.
<input type="checkbox"/> 03.	NOT ACCEPTED	Engineering may not proceed until document has been resubmitted and reviewed again.
<input type="checkbox"/> 04.	FOR INFORMATION ONLY	Document is accepted where Purchaser deems a full technical review is not necessary during the Design Phase. Further review and approval shall be by CONTRACTOR after Novation.

NAME: \_\_\_\_\_  
SIGNATURE: \_\_\_\_\_  
DATE: \_\_\_\_\_

04	08.10.2014.	AS BUILT (SITE MARK-UP)	MMa
03	23.12.2013.	AS BUILT	MMa/ZM
02	10.11.2013.	APPROVED BY GSE	GSE
REV. NO.	DATE	DESCRIPTION	CHK.

CUSTOMER:  
**Georgian State Electrosystem**  
**GSE Substation Kutaisi 220/110kV**

DESCRIPTION:  
Schematic diagram for 220kV BusBar Protection

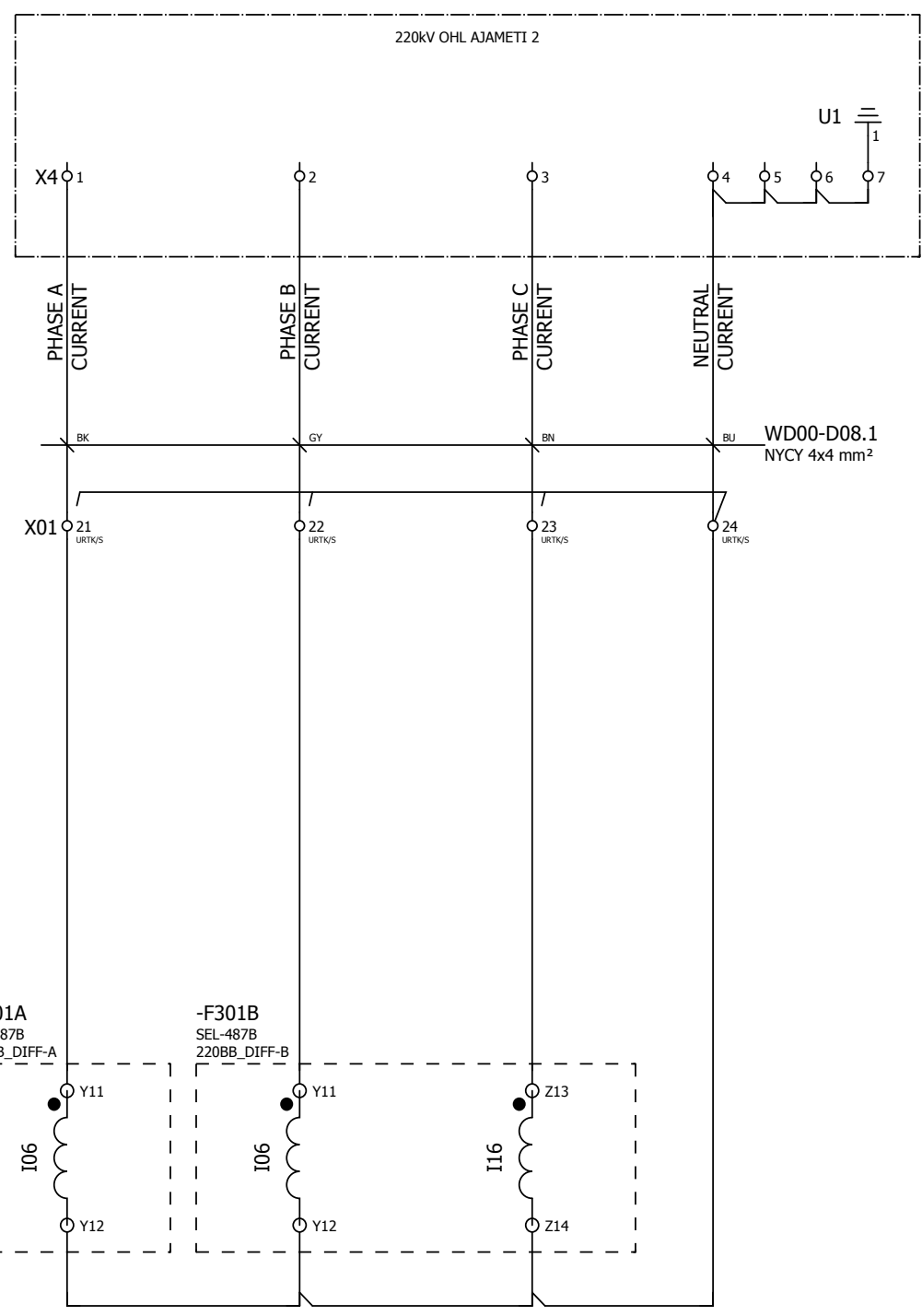
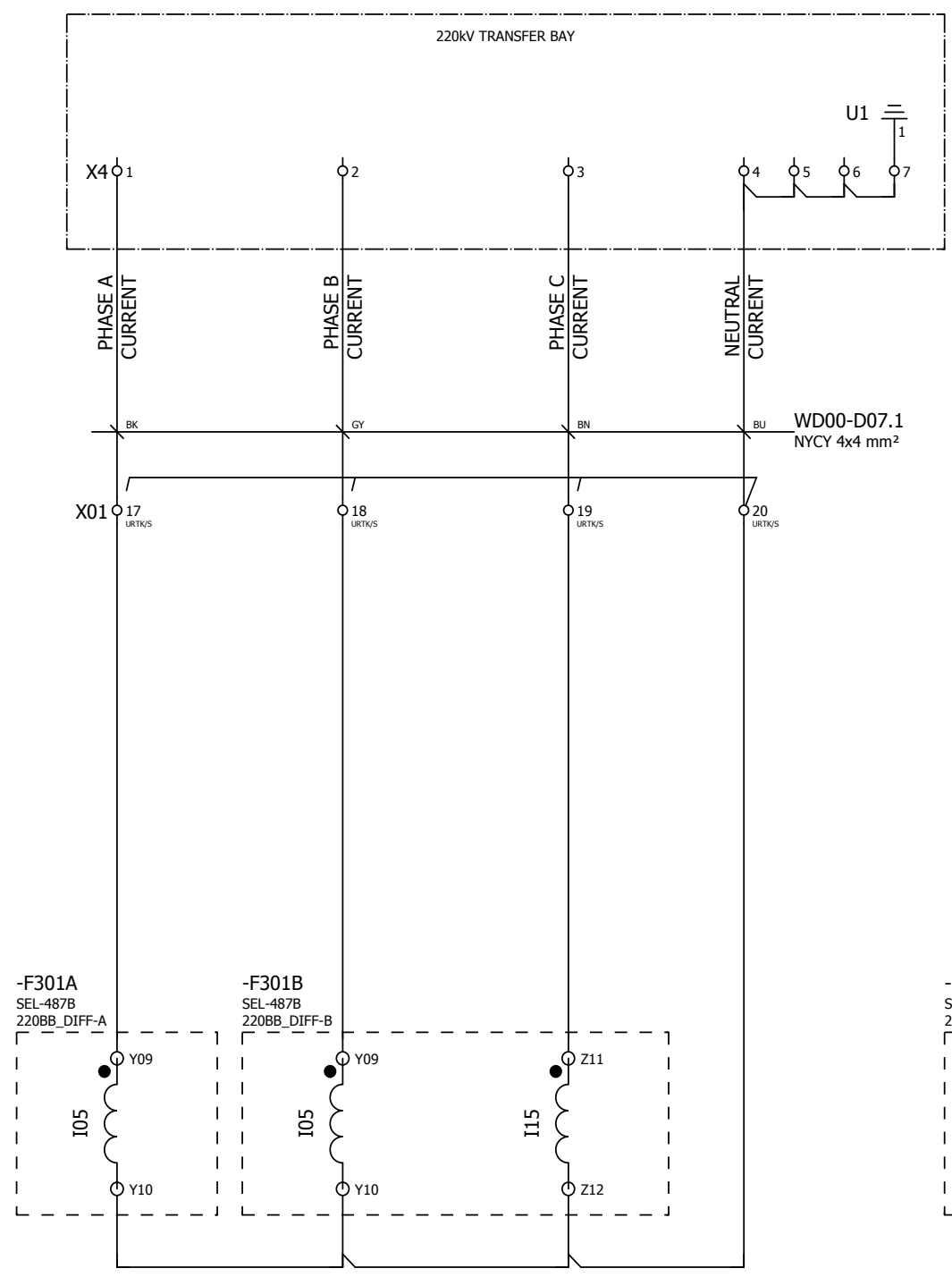
Current Transformers - D03 and D05  
= D00  
+ KU-220-5

DRAWING NUMBER: GSE-SSKU-KU-2-KU-220-5	DATE: 16.09.13	SHEET NO.: 31/46	REV NO.: 04
---	-------------------	---------------------	----------------

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

=D07 220kV TRANSFER BAY  
CT BOX  
=D07+T1

=D08 220kV OHL AJAMETTI 2  
CT BOX  
=D08+T1



NOTES:

CODE	DEFINITION	REMARKS
<input type="checkbox"/> 01.	ACCEPTED FOR DESIGN PHASE	No further submission is required prior to Novation. Final review and approval shall be by CONTRACTOR after Novation.
<input type="checkbox"/> 02.	ACCEPTED FOR DESIGN PHASE EXCEPT AS NOTED	Supplier may proceed with Design but must ensure Identified comments are incorporated and document resubmitted.
<input type="checkbox"/> 03.	NOT ACCEPTED	Engineering may not proceed until document has been resubmitted and reviewed again.
<input type="checkbox"/> 04.	FOR INFORMATION ONLY	Document is accepted where Purchaser deems a full technical review is not necessary during the Design Phase. Further review and approval shall be by CONTRACTOR after Novation.

NAME: \_\_\_\_\_  
SIGNATURE: \_\_\_\_\_  
DATE: \_\_\_\_\_

REV. NO.	DATE	DESCRIPTION	CHK.
04	08.10.2014.	AS BUILT (SITE MARK-UP)	MMa
03	23.12.2013.	AS BUILT	MMa/ZM
02	10.11.2013.	APPROVED BY GSE	GSE

CUSTOMER:  
**Georgian State Electrosystem**  
Substation Kutaisi 220/110kV

DESCRIPTION:  
Schematic diagram for 220kV BusBar Protection

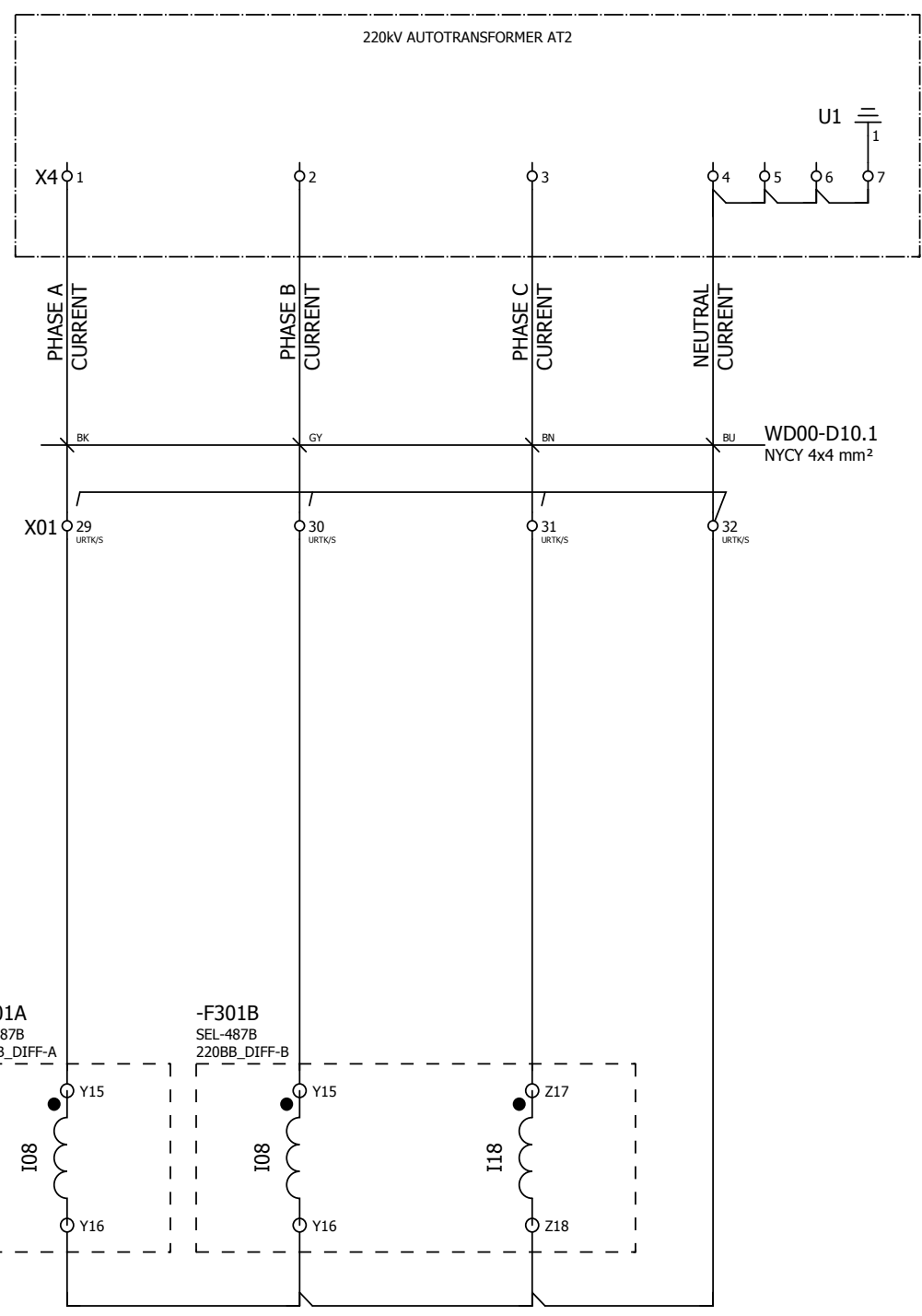
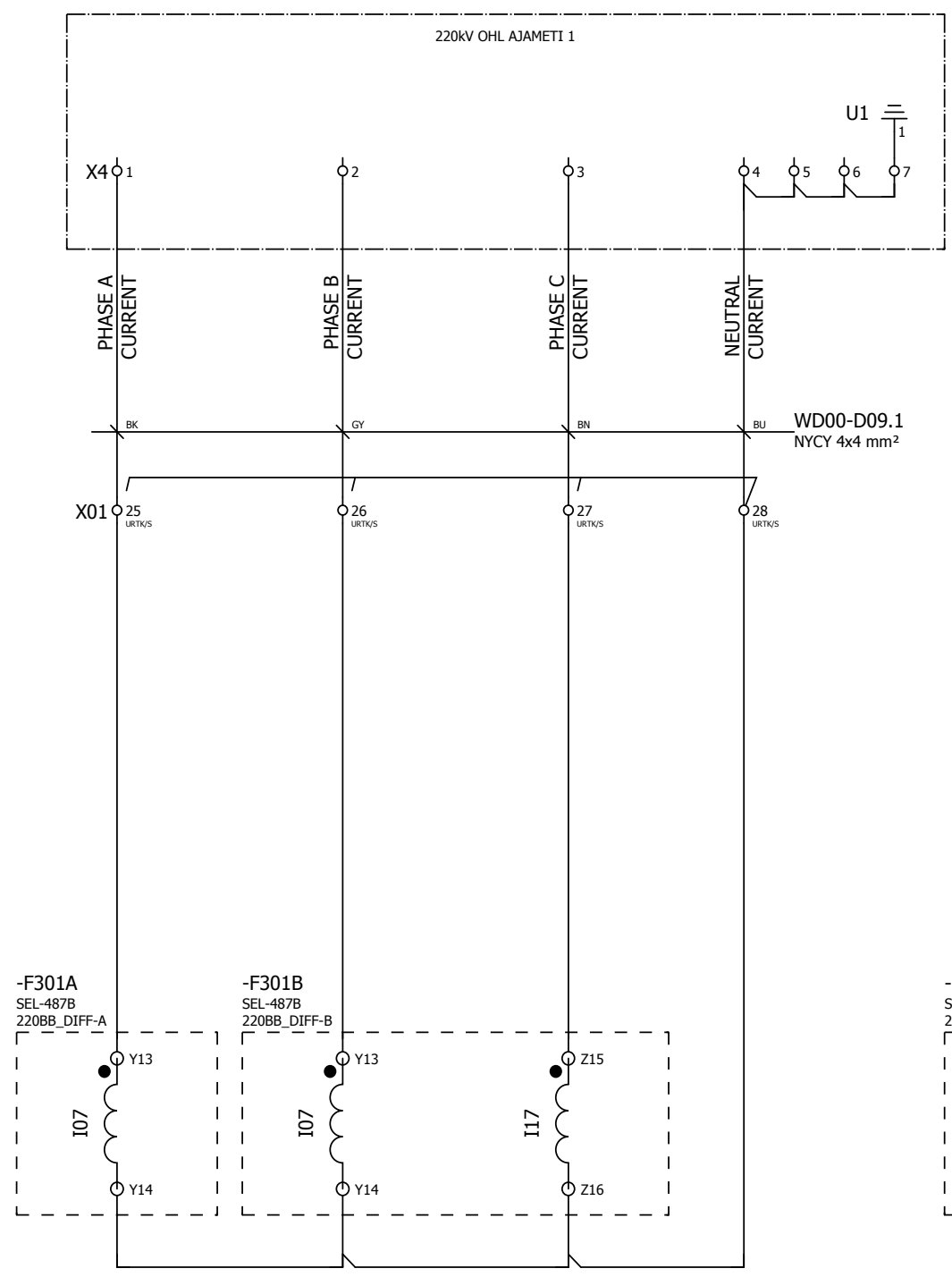
Current Transformers - D07 and D08  
= D00  
+ KU-220-5

DRAWING NUMBER: GSE-SSKU-KU-2-KU-220-5  
DATE: 16.09.13  
SHEET NO.: 32/46  
REV NO.: 04



=D09 220kV OHL AJAMETI 1  
CT BOX  
=D09+T1

=D10 220kV AUTOTRANSFORMER AT2  
CT BOX  
=D10+T1



NOTES:

CODE	DEFINITION	REMARKS
<input type="checkbox"/> 01.	ACCEPTED FOR DESIGN PHASE	No further submission is required prior to Novation. Final review and approval shall be by CONTRACTOR after Novation.
<input type="checkbox"/> 02.	ACCEPTED FOR DESIGN PHASE EXCEPT AS NOTED	Supplier may proceed with Design but must ensure Identified comments are incorporated and document resubmitted.
<input type="checkbox"/> 03.	NOT ACCEPTED	Engineering may not proceed until document has been resubmitted and reviewed again.
<input type="checkbox"/> 04.	FOR INFORMATION ONLY	Document is accepted where Purchaser deems a full technical review is not necessary during the Design Phase. Further review and approval shall be by CONTRACTOR after Novation.

NAME: \_\_\_\_\_  
SIGNATURE: \_\_\_\_\_  
DATE: \_\_\_\_\_

REV. NO.	DATE	DESCRIPTION	CHK.
04	08.10.2014.	AS BUILT (SITE MARK-UP)	MMa
03	23.12.2013.	AS BUILT	MMa/ZM
02	10.11.2013.	APPROVED BY GSE	GSE

CUSTOMER: **Georgian State Electrosystem**  
**GSE** Substation Kutaisi 220/110kV

DESCRIPTION: Schematic diagram for 220kV BusBar Protection  
Current Transformers - D09 and D10  
= D00  
+ KU-220-5  
DRAWING NUMBER: GSE-SSKU-KU-2-KU-220-5 DATE: 16.09.13 SHEET NO.: 33/46 REV NO.: 04





		TERMINAL STRIP =D00+KU-220-5-X01 Current Transformer - 220BB_DIFF															
		WD00-D10.1	WD00-D09.1	WD00-D08.1	WD00-D07.1	WD00-D05.1	WD00-D03.1	WD00-D02.1	WD00-D01.1	CABLE DESIGNATION							
		NYCY 4x4 mm <sup>2</sup>	NYCY 4x4 mm <sup>2</sup>	NYCY 4x4 mm <sup>2</sup>	NYCY 4x4 mm <sup>2</sup>	NYCY 4x4 mm <sup>2</sup>	NYCY 4x4 mm <sup>2</sup>	NYCY 4x4 mm <sup>2</sup>	NYCY 4x4 mm <sup>2</sup>	CABLE TYPE	LOWER SIDE CONNECTION DESTINATION	JUMPERS	TERMINAL NUMBER	UPPER SIDE CONNECTION DESTINATION	CABLE TYPE	TERMINAL TYPE	TERMINAL PLACEMENT
									BK	=D01+T1-X4	1	•	1	-F301A	Y01	URTK/S	=D00+KU-220-5/30
									GY	=D01+T1-X4	2	•	2	-F301B	Y01	URTK/S	=D00+KU-220-5/30
									BN	=D01+T1-X4	3	•	3	-F301B	Z03	URTK/S	=D00+KU-220-5/30
									BU	=D01+T1-X4	4	•	4	-F301B	Z04	URTK/S	=D00+KU-220-5/30
									BK	=D02+T1-X4	1	•	5	-F301A	Y03	URTK/S	=D00+KU-220-5/30
									GY	=D02+T1-X4	2	•	6	-F301B	Y03	URTK/S	=D00+KU-220-5/30
									BN	=D02+T1-X4	3	•	7	-F301B	Z05	URTK/S	=D00+KU-220-5/30
									BU	=D02+T1-X4	4	•	8	-F301B	Z06	URTK/S	=D00+KU-220-5/30
									BK	=D03+T1-X4	1	•	9	-F301A	Y05	URTK/S	=D00+KU-220-5/31
									GY	=D03+T1-X4	2	•	10	-F301B	Y05	URTK/S	=D00+KU-220-5/31
									BN	=D03+T1-X4	3	•	11	-F301B	Z07	URTK/S	=D00+KU-220-5/31
									BU	=D03+T1-X4	4	•	12	-F301B	Z08	URTK/S	=D00+KU-220-5/31
									BK	=D05+T1-X4	1	•	13	-F301A	Y07	URTK/S	=D00+KU-220-5/31
									GY	=D05+T1-X4	2	•	14	-F301B	Y07	URTK/S	=D00+KU-220-5/31
									BN	=D05+T1-X4	3	•	15	-F301B	Z09	URTK/S	=D00+KU-220-5/31
									BU	=D05+T1-X4	4	•	16	-F301B	Z10	URTK/S	=D00+KU-220-5/31
									BK	=D07+T1-X4	1	•	17	-F301A	Y09	URTK/S	=D00+KU-220-5/32
									GY	=D07+T1-X4	2	•	18	-F301B	Y09	URTK/S	=D00+KU-220-5/32
									BN	=D07+T1-X4	3	•	19	-F301B	Z11	URTK/S	=D00+KU-220-5/32
									BU	=D07+T1-X4	4	•	20	-F301B	Z12	URTK/S	=D00+KU-220-5/32
									BK	=D08+T1-X4	1	•	21	-F301A	Y11	URTK/S	=D00+KU-220-5/32
									GY	=D08+T1-X4	2	•	22	-F301B	Y11	URTK/S	=D00+KU-220-5/32
									BN	=D08+T1-X4	3	•	23	-F301B	Z13	URTK/S	=D00+KU-220-5/32
									BU	=D08+T1-X4	4	•	24	-F301B	Z14	URTK/S	=D00+KU-220-5/32
									BK	=D09+T1-X4	1	•	25	-F301A	Y13	URTK/S	=D00+KU-220-5/33
									GY	=D09+T1-X4	2	•	26	-F301B	Y13	URTK/S	=D00+KU-220-5/33
									BN	=D09+T1-X4	3	•	27	-F301B	Z15	URTK/S	=D00+KU-220-5/33
									BU	=D09+T1-X4	4	•	28	-F301B	Z16	URTK/S	=D00+KU-220-5/33
									BK	=D10+T1-X4	1	•	29	-F301A	Y15	URTK/S	=D00+KU-220-5/33
									GY	=D10+T1-X4	2	•	30	-F301B	Y15	URTK/S	=D00+KU-220-5/33
									BN	=D10+T1-X4	3	•	31	-F301B	Z17	URTK/S	=D00+KU-220-5/33
									BU	=D10+T1-X4	4	•	32	-F301B	Z18	URTK/S	=D00+KU-220-5/33

NOTES:

CODE	DEFINITION	REMARKS
<input type="checkbox"/> 01.	ACCEPTED FOR DESIGN PHASE	No further submission is required prior to Novation. Final review and approval shall be by CONTRACTOR after Novation.
<input type="checkbox"/> 02.	ACCEPTED FOR DESIGN PHASE EXCEPT AS NOTED	Supplier may proceed with Design but must ensure Identified comments are incorporated and document resubmitted.
<input type="checkbox"/> 03.	NOT ACCEPTED	Engineering may not proceed until document has been resubmitted and reviewed again.
<input type="checkbox"/> 04.	FOR INFORMATION ONLY	Document is accepted where Purchaser deems a full technical review is not necessary during the Design Phase. Further review and approval shall be by CONTRACTOR after Novation.

NAME: \_\_\_\_\_  
SIGNATURE: \_\_\_\_\_  
DATE: \_\_\_\_\_

04	08.10.2014.	AS BUILT (SITE MARK-UP)	MMa
03	23.12.2013.	AS BUILT	MMa/ZM
02	10.11.2013.	APPROVED BY GSE	GSE
REV. NO.	DATE	DESCRIPTION	CHK.

CUSTOMER:  
**Georgian State Electrosystem**  
**GSE Substation Kutaisi 220/110kV**

DESCRIPTION:  
Schematic diagram for 220kV BusBar Protection

Terminal connection diagram: =D00+KU-220-5-X01  
= D00  
+ KU-220-5T

DRAWING NUMBER: GSE-SSKU-KU-2-KU-220-5      DATE: 16.09.13      SHEET NO.: 36/46      REV NO.: 04

CABLE DESIGNATION		TERMINAL STRIP =D00+KU-220-5-X04 Signal Voltage - 220BB_DIFF				CABLE DESIGNATION		TERMINAL TYPE		TERMINAL PLACEMENT						
WD10-D00.3	WD09-D00.3	WD08-D00.3	WD07-D00.3	WD05-D00.3	WD03-D00.3	WD02-D00.3	WD01-D00.3	=D03+KU-220-3-WD03-D00.1	CABLE TYPE	LOWER SIDE CONNECTION DESTINATION	JUMPERS	TERMINAL NUMBER	UPPER SIDE CONNECTION DESTINATION	CABLE TYPE	TERMINAL TYPE	TERMINAL PLACEMENT
NYCY-J 12x2.5 mm <sup>2</sup>	NYCY-J 24x2.5 mm <sup>2</sup>	NYCY-J 24x2.5 mm <sup>2</sup>	NYCY-J 12x2.5 mm <sup>2</sup>	NYCY-J 24x2.5 mm <sup>2</sup>	NYCY-J 12x2.5 mm <sup>2</sup>	NYCY-J 12x2.5 mm <sup>2</sup>	NYCY-J 24x2.5 mm <sup>2</sup>	NYCY-J 12x2.5 mm <sup>2</sup>				1	-F114	2	UK 5 N	=D00+KU-220-5/4
								1		=D03+KU-220-3-X16	1	2		UK 5 N	=D00+KU-220-5/14	
												3	-F112	14	UK 5 N	=D00+KU-220-5/14
												4	-F113	14	UK 5 N	=D00+KU-220-5/14
												5	-F601	14	UK 5 N	=D00+KU-220-5/14
												6	-F111	14	UK 5 N	=D00+KU-220-5/15
												7			UK 5 N	=D00+KU-220-5/15
								1		=D01+KU-220-1-X50	1	9		UK 5 N	=D00+KU-220-5/16	
						5				=D02+KU-220-2-X50	1	10		UK 5 N	=D00+KU-220-5/18	
							5			=D03+KU-220-3-X50	1	11		UK 5 N	=D00+KU-220-5/18	
				1						=D05+KU-220-4-X50	1	12		UK 5 N	=D00+KU-220-5/20	
			5							=D07+KU-220-6-X50	1	13		UK 5 N	=D00+KU-220-5/22	
		1								=D08+KU-220-8-X50	1	14		UK 5 N	=D00+KU-220-5/24	
	1									=D09+KU-220-9-X50	1	15		UK 5 N	=D00+KU-220-5/26	
1										=D10+KU-220-10-X50	1	16		UK 5 N	=D00+KU-220-5/28	
												17		UK 5 N	=D00+KU-220-5/28	
												18		UK 5 N	=D00+KU-220-5/28	
												19	-F114	4	UK 5 N	=D00+KU-220-5/4
												20	-F301A	A21	UK 5 N	=D00+KU-220-5/14
												21	-F301B	A21	UK 5 N	=D00+KU-220-5/15
												22	-F301A	B18	UK 5 N	=D00+KU-220-5/16
												23	-F301B	B18	UK 5 N	=D00+KU-220-5/17
												24	-F301A	C18	UK 5 N	=D00+KU-220-5/20
												25	-F301B	C18	UK 5 N	=D00+KU-220-5/21
												26	-F301A	D18	UK 5 N	=D00+KU-220-5/28
												27	-F301B	D18	UK 5 N	=D00+KU-220-5/29
												28			UK 5 N	=D00+KU-220-5/29
								2		=D03+KU-220-3-X16	3	30	-F301A	A20	UK 5 N	=D00+KU-220-5/14
								3		=D03+KU-220-3-X16	4	31	-F301A	A22	UK 5 N	=D00+KU-220-5/14
							2			=D01+KU-220-1-X50	3	32	-F301A	B17	UK 5 N	=D00+KU-220-5/16
							3			=D01+KU-220-1-X50	4	33	-F301A	B19	UK 5 N	=D00+KU-220-5/16
							4			=D01+KU-220-1-X50	5	34	-F301A	B21	UK 5 N	=D00+KU-220-5/16
							5			=D01+KU-220-1-X50	6	35	-F301A	B23	UK 5 N	=D00+KU-220-5/16
							6			=D01+KU-220-1-X50	7	36	-F301A	B24	UK 5 N	=D00+KU-220-5/16
							7			=D01+KU-220-1-X50	8	37	-F301A	B25	UK 5 N	=D00+KU-220-5/16
							8			=D01+KU-220-1-X50	9	38	-F301A	B26	UK 5 N	=D00+KU-220-5/16
							9			=D01+KU-220-1-X50	10	39	-F301A	B27	UK 5 N	=D00+KU-220-5/16
							10			=D01+KU-220-1-X50	11	40	-F301A	B28	UK 5 N	=D00+KU-220-5/16
						6				=D02+KU-220-2-X50	6	41	-F301A	B29	UK 5 N	=D00+KU-220-5/18
						7				=D02+KU-220-2-X50	8	42	-F301A	B30	UK 5 N	=D00+KU-220-5/18
						8				=D02+KU-220-2-X50	9	43	-F301A	B31	UK 5 N	=D00+KU-220-5/18
							6			=D03+KU-220-3-X50	9	44	-F301A	B33	UK 5 N	=D00+KU-220-5/18
							7			=D03+KU-220-3-X50	10	45	-F301A	B35	UK 5 N	=D00+KU-220-5/18
							8			=D03+KU-220-3-X50	11	46	-F301A	B37	UK 5 N	=D00+KU-220-5/18
							9			=D03+KU-220-3-X50	12	47	-F301A	B39	UK 5 N	=D00+KU-220-5/18
			2							=D05+KU-220-4-X50	3	48	-F301A	B40	UK 5 N	=D00+KU-220-5/20
			3							=D05+KU-220-4-X50	4	49	-F301A	B41	UK 5 N	=D00+KU-220-5/20
			4							=D05+KU-220-4-X50	5	50	-F301A	B42	UK 5 N	=D00+KU-220-5/20
			5							=D05+KU-220-4-X50	6	51	-F301A	B43	UK 5 N	=D00+KU-220-5/20
			6							=D05+KU-220-4-X50	7	52	-F301A	B44	UK 5 N	=D00+KU-220-5/20
			7							=D05+KU-220-4-X50	8	53	-F301A	B45	UK 5 N	=D00+KU-220-5/20
			8							=D05+KU-220-4-X50	9	54	-F301A	B46	UK 5 N	=D00+KU-220-5/20

NOTES:

CODE	DEFINITION	REMARKS
<input type="checkbox"/> 01.	ACCEPTED FOR DESIGN PHASE	No further submission is required prior to Novation. Final review and approval shall be by CONTRACTOR after Novation.
<input type="checkbox"/> 02.	ACCEPTED FOR DESIGN PHASE EXCEPT AS NOTED	Supplier may proceed with Design but must ensure Identified comments are incorporated and document resubmitted.
<input type="checkbox"/> 03.	NOT ACCEPTED	Engineering may not proceed until document has been resubmitted and reviewed again.
<input type="checkbox"/> 04.	FOR INFORMATION ONLY	Document is accepted where Purchaser deems a full technical review is not necessary during the Design Phase. Further review and approval shall be by CONTRACTOR after Novation.

NAME: \_\_\_\_\_  
SIGNATURE: \_\_\_\_\_  
DATE: \_\_\_\_\_

REV. NO.	DATE	DESCRIPTION	CHK.
04	08.10.2014.	AS BUILT (SITE MARK-UP)	MMa
03	23.12.2013.	AS BUILT	MMa/ZM
02	10.11.2013.	APPROVED BY GSE	GSE

CUSTOMER: **Georgian State Electrosystem**  
**GSE Substation Kutaisi 220/110kV**

DESCRIPTION: **Schematic diagram for 220kV BusBar Protection**

Terminal connection diagram: =D00+KU-220-5-X04

DRAWING NUMBER: <b>GSE-SSKU-KU-2-KU-220-5</b>	DATE: 16.09.13	SHEET NO.: 37/46	REV NO.: 04
--	-------------------	---------------------	----------------



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

CABLE DESIGNATION		TERMINAL STRIP =D00+KU-220-5-X04 Signal Voltage - 220BB_DIFF				CABLE DESIGNATION		TERMINAL TYPE		TERMINAL PLACEMENT	
CABLE TYPE	LOWER SIDE CONNECTION DESTINATION	JUMPERS	TERMINAL NUMBER	UPPER SIDE CONNECTION DESTINATION	CABLE TYPE	TERMINAL TYPE	TERMINAL PLACEMENT				
WD10-D00.3	WD09-D00.3	WD08-D00.3	WD07-D00.3	WD05-D00.3							
NYCY-J 12x2.5 mm <sup>2</sup>	NYCY-J 24x2.5 mm <sup>2</sup>	NYCY-J 24x2.5 mm <sup>2</sup>	NYCY-J 12x2.5 mm <sup>2</sup>	NYCY-J 24x2.5 mm <sup>2</sup>							
			9	=D05+KU-220-4-X50	10	•	55 -F301A B47 UK 5 N =D00+KU-220-5/20				
			10	=D05+KU-220-4-X50	11	•	56 -F301A C17 UK 5 N =D00+KU-220-5/20				
		6		=D07+KU-220-6-X50	6	•	57 -F301A C19 UK 5 N =D00+KU-220-5/22				
		7		=D07+KU-220-6-X50	7	•	58 -F301A C21 UK 5 N =D00+KU-220-5/22				
		8		=D07+KU-220-6-X50	8	•	59 -F301A C23 UK 5 N =D00+KU-220-5/22				
		2		=D08+KU-220-8-X50	3	•	60 -F301A C24 UK 5 N =D00+KU-220-5/24				
		3		=D08+KU-220-8-X50	4	•	61 -F301A C25 UK 5 N =D00+KU-220-5/24				
		4		=D08+KU-220-8-X50	5	•	62 -F301A C26 UK 5 N =D00+KU-220-5/24				
		5		=D08+KU-220-8-X50	6	•	63 -F301A C27 UK 5 N =D00+KU-220-5/24				
		6		=D08+KU-220-8-X50	7	•	64 -F301A C28 UK 5 N =D00+KU-220-5/24				
		7		=D08+KU-220-8-X50	8	•	65 -F301A C29 UK 5 N =D00+KU-220-5/24				
		8		=D08+KU-220-8-X50	9	•	66 -F301A C30 UK 5 N =D00+KU-220-5/24				
		9		=D08+KU-220-8-X50	10	•	67 -F301A C31 UK 5 N =D00+KU-220-5/24				
		10		=D08+KU-220-8-X50	11	•	68 -F301A C33 UK 5 N =D00+KU-220-5/24				
		2		=D09+KU-220-9-X50	3	•	69 -F301A C35 UK 5 N =D00+KU-220-5/26				
		3		=D09+KU-220-9-X50	4	•	70 -F301A C37 UK 5 N =D00+KU-220-5/26				
		4		=D09+KU-220-9-X50	5	•	71 -F301A C39 UK 5 N =D00+KU-220-5/26				
		5		=D09+KU-220-9-X50	6	•	72 -F301A C40 UK 5 N =D00+KU-220-5/26				
		6		=D09+KU-220-9-X50	7	•	73 -F301A C41 UK 5 N =D00+KU-220-5/26				
		7		=D09+KU-220-9-X50	8	•	74 -F301A C42 UK 5 N =D00+KU-220-5/26				
		8		=D09+KU-220-9-X50	9	•	75 -F301A C43 UK 5 N =D00+KU-220-5/26				
		9		=D09+KU-220-9-X50	10	•	76 -F301A C44 UK 5 N =D00+KU-220-5/26				
		10		=D09+KU-220-9-X50	11	•	77 -F301A C45 UK 5 N =D00+KU-220-5/26				
		6		=D10+KU-220-10-X50	6	•	78 -F301A C46 UK 5 N =D00+KU-220-5/28				
		7		=D10+KU-220-10-X50	8	•	79 -F301A C47 UK 5 N =D00+KU-220-5/28				
		8		=D10+KU-220-10-X50	9	•	80 -F301A D17 UK 5 N =D00+KU-220-5/28				
						•	81 -F301A D19 UK 5 N =D00+KU-220-5/28				
						•	82 -F301A D21 UK 5 N =D00+KU-220-5/28				

NOTES:

CODE	DEFINITION	REMARKS
<input type="checkbox"/> 01.	ACCEPTED FOR DESIGN PHASE	No further submission is required prior to Novation. Final review and approval shall be by CONTRACTOR after Novation.
<input type="checkbox"/> 02.	ACCEPTED FOR DESIGN PHASE EXCEPT AS NOTED	Supplier may proceed with Design but must ensure Identified comments are incorporated and document resubmitted.
<input type="checkbox"/> 03.	NOT ACCEPTED	Engineering may not proceed until document has been resubmitted and reviewed again.
<input type="checkbox"/> 04.	FOR INFORMATION ONLY	Document is accepted where Purchaser deems a full technical review is not necessary during the Design Phase. Further review and approval shall be by CONTRACTOR after Novation.

NAME: \_\_\_\_\_  
SIGNATURE: \_\_\_\_\_  
DATE: \_\_\_\_\_

04	08.10.2014.	AS BUILT (SITE MARK-UP)	MMa
03	23.12.2013.	AS BUILT	MMa/ZM
02	10.11.2013.	APPROVED BY GSE	GSE
REV. NO.	DATE	DESCRIPTION	CHK.

CUSTOMER:  
**Georgian State Electrosystem**  
**GSE Substation Kutaisi 220/110kV**

DESCRIPTION:  
Schematic diagram for 220kV BusBar Protection

Terminal connection diagram: =D00+KU-220-5-X04  
= D00  
+ KU-220-5T

DRAWING NUMBER: GSE-SSKU-KU-2-KU-220-5    DATE: 16.09.13    SHEET NO.: 38/46    REV NO.: 04


		TERMINAL STRIP =D00+KU-220-5-X05A 220Vdc Voltage Distribution - DC-1							
		CABLE DESIGNATION					CABLE DESIGNATION		
		N2XH 4x2.5 mm <sup>2</sup>	LOWER SIDE CONNECTION DESTINATION	JUMPERS	TERMINAL NUMBER	UPPER SIDE CONNECTION DESTINATION	CABLE TYPE	TERMINAL TYPE	TERMINAL PLACEMENT
		BK	=NK+DB-F12	2	•	1 -F111	1	UK 5 N	=D00+KU-220-5/4
		GY	=NK+DB-F12	4	•	2 -F111	3	UK 5 N	=D00+KU-220-5/4

NOTES:

CODE	DEFINITION	REMARKS
<input type="checkbox"/> 01.	ACCEPTED FOR DESIGN PHASE	No further submission is required prior to Novation. Final review and approval shall be by CONTRACTOR after Novation.
<input type="checkbox"/> 02.	ACCEPTED FOR DESIGN PHASE EXCEPT AS NOTED	Supplier may proceed with Design but must ensure Identified comments are incorporated and document resubmitted.
<input type="checkbox"/> 03.	NOT ACCEPTED	Engineering may not proceed until document has been resubmitted and reviewed again.
<input type="checkbox"/> 04.	FOR INFORMATION ONLY	Document is accepted where Purchaser deems a full technical review is not necessary during the Design Phase. Further review and approval shall be by CONTRACTOR after Novation.

NAME: \_\_\_\_\_  
SIGNATURE: \_\_\_\_\_  
DATE: \_\_\_\_\_

04	08.10.2014.	AS BUILT (SITE MARK-UP)	MMa
03	23.12.2013.	AS BUILT	MMa/ZM
02	10.11.2013.	APPROVED BY GSE	GSE
REV. NO.	DATE	DESCRIPTION	CHK.

CUSTOMER:  
 **Georgian State Electrosystem**  
**Substation Kutaisi 220/110kV**

DESCRIPTION:  
Schematic diagram for 220kV BusBar Protection

Terminal connection diagram: =D00+KU-220-5-X05A  
= D00  
+ KU-220-5T

DRAWING NUMBER: GSE-SSKU-KU-2-KU-220-5      DATE: 16.09.13      SHEET NO.: 39/46      REV NO.: 04



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


		TERMINAL STRIP =D00+KU-220-5-X05B 220Vdc Voltage Distribution - DC-2								
		CABLE DESIGNATION					CABLE DESIGNATION			
		N2XH 4x2.5 mm <sup>2</sup>	CABLE TYPE	LOWER SIDE CONNECTION DESTINATION	JUMPERS	TERMINAL NUMBER	UPPER SIDE CONNECTION DESTINATION	CABLE TYPE	TERMINAL TYPE	TERMINAL PLACEMENT
		BK		=NK+DB-F17	2	•	1 -F121	1	UK 5 N	=D00+KU-220-5/5
		GY		=NK+DB-F17	4	•	2 -F121	3	UK 5 N	=D00+KU-220-5/5

NOTES:

CODE	DEFINITION	REMARKS
<input type="checkbox"/> 01.	ACCEPTED FOR DESIGN PHASE	No further submission is required prior to Novation. Final review and approval shall be by CONTRACTOR after Novation.
<input type="checkbox"/> 02.	ACCEPTED FOR DESIGN PHASE EXCEPT AS NOTED	Supplier may proceed with Design but must ensure Identified comments are incorporated and document resubmitted.
<input type="checkbox"/> 03.	NOT ACCEPTED	Engineering may not proceed until document has been resubmitted and reviewed again.
<input type="checkbox"/> 04.	FOR INFORMATION ONLY	Document is accepted where Purchaser deems a full technical review is not necessary during the Design Phase. Further review and approval shall be by CONTRACTOR after Novation.

NAME: \_\_\_\_\_  
SIGNATURE: \_\_\_\_\_  
DATE: \_\_\_\_\_

04	08.10.2014.	AS BUILT (SITE MARK-UP)	MMa
03	23.12.2013.	AS BUILT	MMa/ZM
02	10.11.2013.	APPROVED BY GSE	GSE
REV. NO.	DATE	DESCRIPTION	CHK.

CUSTOMER:  
 **Georgian State Electrosystem**  
**Substation Kutaisi 220/110kV**

DESCRIPTION:  
Schematic diagram for 220kV BusBar Protection

Terminal connection diagram: =D00+KU-220-5-X05B  
= D00  
+ KU-220-5T

DRAWING NUMBER: GSE-SSKU-KU-2-KU-220-5	DATE: 16.09.13	SHEET NO.: 40/46	REV NO.: 04
---	-------------------	---------------------	----------------



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



TERMINAL STRIP = D00+KU-220-5-X08 230Vac Voltage Distribution											
CABLE DESIGNATION		CABLE TYPE		LOWER SIDE CONNECTION DESTINATION	JUMPERS	TERMINAL NUMBER	UPPER SIDE CONNECTION DESTINATION	CABLE TYPE	CABLE DESIGNATION	TERMINAL TYPE	TERMINAL PLACEMENT
CAB-2/CAB-3	N2XH 4x2.5 mm <sup>2</sup>	BK	=D05+KU-220-4-X08	1	1	-F601	1			UK 5 N	=D00+KU-220-5/3
		BK	=D07+KU-220-6-X08	1	2					UK 5 N	=D00+KU-220-5/3
		GY	=D05+KU-220-4-X08	2	3	-F601	3			UK 5 N	=D00+KU-220-5/3
		GY	=D07+KU-220-6-X08	2	4					UK 5 N	=D00+KU-220-5/3
					7	-F601	2			UK 5 N	=D00+KU-220-5/3
					6	-S601	1			UK 5 N	=D00+KU-220-5/3
					7	-X601	L			UK 5 N	=D00+KU-220-5/3
					8	-S602	1			UK 5 N	=D00+KU-220-5/3
					11	-F601	4			UK 5 N	=D00+KU-220-5/3
					10	-H601	2			UK 5 N	=D00+KU-220-5/3
					11	-X601	N			UK 5 N	=D00+KU-220-5/3
					12	-H602	2			UK 5 N	=D00+KU-220-5/3

NOTES:

CODE	DEFINITION	REMARKS
<input type="checkbox"/> 01.	ACCEPTED FOR DESIGN PHASE	No further submission is required prior to Novation. Final review and approval shall be by CONTRACTOR after Novation.
<input type="checkbox"/> 02.	ACCEPTED FOR DESIGN PHASE EXCEPT AS NOTED	Supplier may proceed with Design but must ensure Identified comments are incorporated and document resubmitted.
<input type="checkbox"/> 03.	NOT ACCEPTED	Engineering may not proceed until document has been resubmitted and reviewed again.
<input type="checkbox"/> 04.	FOR INFORMATION ONLY	Document is accepted where Purchaser deems a full technical review is not necessary during the Design Phase. Further review and approval shall be by CONTRACTOR after Novation.

NAME: \_\_\_\_\_  
SIGNATURE: \_\_\_\_\_  
DATE: \_\_\_\_\_

04	08.10.2014.	AS BUILT (SITE MARK-UP)	MMa
03	23.12.2013.	AS BUILT	MMa/ZM
02	10.11.2013.	APPROVED BY GSE	GSE
REV. NO.	DATE	DESCRIPTION	CHK.

CUSTOMER:  
**Georgian State Electrosystem**  
**GSE Substation Kutaisi 220/110kV**

DESCRIPTION:  
Schematic diagram for 220kV BusBar Protection

Terminal connection diagram: =D00+KU-220-5-X08  
= D00  
+ KU-220-5T

DRAWING NUMBER: GSE-SSKU-KU-2-KU-220-5	DATE: 16.09.13	SHEET NO.: 41/46	REV NO.: 04
---	-------------------	---------------------	----------------



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

		TERMINAL STRIP =D00+KU-220-5-X13A Send TRIP TC1																			
		WD10-D00.3	WD09-D00.3	WD08-D00.3	WD07-D00.3	WD05-D00.3	WD03-D00.3	WD02-D00.3	WD01-D00.3	CABLE DESIGNATION											
		NYCY-J 12x2.5 mm <sup>2</sup>	NYCY-J 24x2.5 mm <sup>2</sup>	NYCY-J 24x2.5 mm <sup>2</sup>	NYCY-J 12x2.5 mm <sup>2</sup>	NYCY-J 24x2.5 mm <sup>2</sup>	NYCY-J 12x2.5 mm <sup>2</sup>	NYCY-J 24x2.5 mm <sup>2</sup>	NYCY-J 12x2.5 mm <sup>2</sup>	NYCY-J 24x2.5 mm <sup>2</sup>	CABLE TYPE	LOWER SIDE CONNECTION DESTINATION	JUMPERS	TERMINAL NUMBER	UPPER SIDE CONNECTION DESTINATION	CABLE TYPE				TERMINAL TYPE	TERMINAL PLACEMENT
											11	=D01+KU-220-1-X03A	9	•	1	-F301A	A01			UK 5 N	=D00+KU-220-5/6
											12	=D01+KU-220-1-X03A	28	•	2	-F301A	A02			UK 5 N	=D00+KU-220-5/6
											13	=D01+KU-220-1-X03A	31	•	3	-F301A	A04			UK 5 N	=D00+KU-220-5/6
											14	=D01+KU-220-1-X03A	34	•	4	-F301A	A06			UK 5 N	=D00+KU-220-5/6
										1	=D02+KU-220-2-X03A	8	•	5	-F301A	A07			UK 5 N	=D00+KU-220-5/7	
										2	=D02+KU-220-2-X03A	24	•	6	-F301A	A08			UK 5 N	=D00+KU-220-5/7	
										1	=D03+KU-220-3-X03A	8	•	7	-F301A	A09			UK 5 N	=D00+KU-220-5/8	
										2	=D03+KU-220-3-X03A	24	•	8	-F301A	A10			UK 5 N	=D00+KU-220-5/8	
											11	=D05+KU-220-4-X03A	9	•	9	-F301A	A12			UK 5 N	=D00+KU-220-5/9
											12	=D05+KU-220-4-X03A	28	•	10	-F301A	A13			UK 5 N	=D00+KU-220-5/9
											13	=D05+KU-220-4-X03A	31	•	11	-F301A	A16			UK 5 N	=D00+KU-220-5/9
											14	=D05+KU-220-4-X03A	34	•	12	-F301A	A19			UK 5 N	=D00+KU-220-5/9
											1	=D07+KU-220-6-X03A	10	•	13	-F301A	B13			UK 5 N	=D00+KU-220-5/10
											2	=D07+KU-220-6-X03A	28	•	14	-F301A	B14			UK 5 N	=D00+KU-220-5/10
											11	=D08+KU-220-8-X03A	9	•	15	-F301A	B15			UK 5 N	=D00+KU-220-5/11
											12	=D08+KU-220-8-X03A	28	•	16	-F301A	B16			UK 5 N	=D00+KU-220-5/11
											13	=D08+KU-220-8-X03A	31	•	17	-F301A	C14			UK 5 N	=D00+KU-220-5/11
											14	=D08+KU-220-8-X03A	34	•	18	-F301A	C16			UK 5 N	=D00+KU-220-5/11
											11	=D09+KU-220-9-X03A	9	•	19	-F301A	D09			UK 5 N	=D00+KU-220-5/12
											12	=D09+KU-220-9-X03A	28	•	20	-F301A	D10			UK 5 N	=D00+KU-220-5/12
											13	=D09+KU-220-9-X03A	31	•	21	-F301A	D12			UK 5 N	=D00+KU-220-5/12
											14	=D09+KU-220-9-X03A	34	•	22	-F301A	D14			UK 5 N	=D00+KU-220-5/12
											1	=D10+KU-220-10-X03A	8	•	23	-F301A	D15			UK 5 N	=D00+KU-220-5/13
											2	=D10+KU-220-10-X03A	24	•	24	-F301A	D16			UK 5 N	=D00+KU-220-5/13

NOTES:

CODE	DEFINITION	REMARKS
<input type="checkbox"/> 01.	ACCEPTED FOR DESIGN PHASE	No further submission is required prior to Novation. Final review and approval shall be by CONTRACTOR after Novation.
<input type="checkbox"/> 02.	ACCEPTED FOR DESIGN PHASE EXCEPT AS NOTED	Supplier may proceed with Design but must ensure Identified comments are incorporated and document resubmitted.
<input type="checkbox"/> 03.	NOT ACCEPTED	Engineering may not proceed until document has been resubmitted and reviewed again.
<input type="checkbox"/> 04.	FOR INFORMATION ONLY	Document is accepted where Purchaser deems a full technical review is not necessary during the Design Phase. Further review and approval shall be by CONTRACTOR after Novation.

NAME: \_\_\_\_\_  
SIGNATURE: \_\_\_\_\_  
DATE: \_\_\_\_\_

04	08.10.2014.	AS BUILT (SITE MARK-UP)	MMa
03	23.12.2013.	AS BUILT	MMa/ZM
02	10.11.2013.	APPROVED BY GSE	GSE
REV. NO.	DATE	DESCRIPTION	CHK.

CUSTOMER:  
**Georgian State Electrosystem**  
**GSE Substation Kutaisi 220/110kV**

DESCRIPTION:  
Schematic diagram for 220kV BusBar Protection

Terminal connection diagram: =D00+KU-220-5-X13A  
= D00  
+ KU-220-5T

DRAWING NUMBER: GSE-SSKU-KU-2-KU-220-5	DATE: 16.09.13	SHEET NO.: 42/46	REV NO.: 04
---	-------------------	---------------------	----------------

**SEL SCHWEITZER ENGINEERING LABORATORIES**  
SEL Middle East B.S.C  
1504 Tiffany Tower  
Jumeira Lakes Tower  
9926 Dubai UAE

		TERMINAL STRIP =D00+KU-220-5-X13B Send TRIP TC2																
		WD10-D00.3	WD09-D00.3	WD08-D00.3	WD07-D00.3	WD05-D00.3	WD03-D00.3	WD02-D00.3	WD01-D00.3	CABLE DESIGNATION								
		NYCY-J 12x2.5 mm <sup>2</sup>	NYCY-J 24x2.5 mm <sup>2</sup>	NYCY-J 24x2.5 mm <sup>2</sup>	NYCY-J 12x2.5 mm <sup>2</sup>	NYCY-J 24x2.5 mm <sup>2</sup>	NYCY-J 12x2.5 mm <sup>2</sup>	NYCY-J 24x2.5 mm <sup>2</sup>	NYCY-J 12x2.5 mm <sup>2</sup>	NYCY-J 24x2.5 mm <sup>2</sup>	CABLE TYPE	LOWER SIDE CONNECTION DESTINATION	JUMPERS	TERMINAL NUMBER	UPPER SIDE CONNECTION DESTINATION	CABLE TYPE	TERMINAL TYPE	TERMINAL PLACEMENT
										15	=D01+KU-220-1-X03B	4	•	1	-F301A	B01	UK 5 N	=D00+KU-220-5/6
										16	=D01+KU-220-1-X03B	15	•	2	-F301A	B02	UK 5 N	=D00+KU-220-5/6
										17	=D01+KU-220-1-X03B	19	•	3	-F301A	B04	UK 5 N	=D00+KU-220-5/6
										18	=D01+KU-220-1-X03B	23	•	4	-F301A	B06	UK 5 N	=D00+KU-220-5/6
								3			=D02+KU-220-2-X03B	5	•	5	-F301A	B07	UK 5 N	=D00+KU-220-5/7
								4			=D02+KU-220-2-X03B	18	•	6	-F301A	B08	UK 5 N	=D00+KU-220-5/7
								3			=D03+KU-220-3-X03B	5	•	7	-F301A	B09	UK 5 N	=D00+KU-220-5/8
								4			=D03+KU-220-3-X03B	16	•	8	-F301A	B10	UK 5 N	=D00+KU-220-5/8
								15			=D05+KU-220-4-X03B	4	•	9	-F301A	C01	UK 5 N	=D00+KU-220-5/9
								16			=D05+KU-220-4-X03B	15	•	10	-F301A	C02	UK 5 N	=D00+KU-220-5/9
								17			=D05+KU-220-4-X03B	19	•	11	-F301A	C04	UK 5 N	=D00+KU-220-5/9
								18			=D05+KU-220-4-X03B	23	•	12	-F301A	C06	UK 5 N	=D00+KU-220-5/9
								3			=D07+KU-220-6-X03B	5	•	13	-F301A	B11	UK 5 N	=D00+KU-220-5/10
								4			=D07+KU-220-6-X03B	18	•	14	-F301A	B12	UK 5 N	=D00+KU-220-5/10
								15			=D08+KU-220-8-X03B	4	•	15	-F301A	C07	UK 5 N	=D00+KU-220-5/11
								16			=D08+KU-220-8-X03B	15	•	16	-F301A	C08	UK 5 N	=D00+KU-220-5/11
								17			=D08+KU-220-8-X03B	19	•	17	-F301A	C10	UK 5 N	=D00+KU-220-5/11
								18			=D08+KU-220-8-X03B	23	•	18	-F301A	C12	UK 5 N	=D00+KU-220-5/11
								15			=D09+KU-220-9-X03B	4	•	19	-F301A	D01	UK 5 N	=D00+KU-220-5/12
								16			=D09+KU-220-9-X03B	15	•	20	-F301A	D02	UK 5 N	=D00+KU-220-5/12
								17			=D09+KU-220-9-X03B	19	•	21	-F301A	D04	UK 5 N	=D00+KU-220-5/12
								18			=D09+KU-220-9-X03B	23	•	22	-F301A	D06	UK 5 N	=D00+KU-220-5/12
								3			=D10+KU-220-10-X03B	5	•	23	-F301A	D07	UK 5 N	=D00+KU-220-5/13
								4			=D10+KU-220-10-X03B	8	•	24	-F301A	D08	UK 5 N	=D00+KU-220-5/13

NOTES:

CODE	DEFINITION	REMARKS
<input type="checkbox"/> 01.	ACCEPTED FOR DESIGN PHASE	No further submission is required prior to Novation. Final review and approval shall be by CONTRACTOR after Novation.
<input type="checkbox"/> 02.	ACCEPTED FOR DESIGN PHASE EXCEPT AS NOTED	Supplier may proceed with Design but must ensure Identified comments are incorporated and document resubmitted.
<input type="checkbox"/> 03.	NOT ACCEPTED	Engineering may not proceed until document has been resubmitted and reviewed again.
<input type="checkbox"/> 04.	FOR INFORMATION ONLY	Document is accepted where Purchaser deems a full technical review is not necessary during the Design Phase. Further review and approval shall be by CONTRACTOR after Novation.

NAME: \_\_\_\_\_  
SIGNATURE: \_\_\_\_\_  
DATE: \_\_\_\_\_

04	08.10.2014.	AS BUILT (SITE MARK-UP)	MMa
03	23.12.2013.	AS BUILT	MMa/ZM
02	10.11.2013.	APPROVED BY GSE	GSE
REV. NO.	DATE	DESCRIPTION	CHK.

CUSTOMER:  
**Georgian State Electrosystem**  
**GSE Substation Kutaisi 220/110kV**

DESCRIPTION:  
Schematic diagram for 220kV BusBar Protection

Terminal connection diagram: =D00+KU-220-5-X13B  
= D00  
+ KU-220-5T

DRAWING NUMBER: GSE-SSKU-KU-2-KU-220-5	DATE: 16.09.13	SHEET NO.: 43/46	REV NO.: 04
---	-------------------	---------------------	----------------

**SEL SCHWEITZER ENGINEERING LABORATORIES**  
SEL Middle East B.S.C  
1504 Tiffany Tower  
Jumeira Lakes Tower  
9926 Dubai UAE



# Cable overview

Cable designation	from	to	Cable type	Number of Conductors	Conductor Cross-Section	Used Conductors	Unused Conductors
CAB-2/CAB-3	+KU-220-5-X08	=D07+KU-220-6-X08	N2XH	4	2.5	3	2
	+KU-220-5-PE	=D07+KU-220-6-PE					
WD00-D01.1	+KU-220-5-X01	=D01+T1-X4	NYCY	4	4	4	0
WD00-D02.1	+KU-220-5-X01	=D02+T1-X4	NYCY	4	4	4	0
WD00-D03.1	+KU-220-5-X01	=D03+T1-X4	NYCY	4	4	4	0
WD00-D05.1	+KU-220-5-X01	=D05+T1-X4	NYCY	4	4	4	0
WD00-D07.1	+KU-220-5-X01	=D07+T1-X4	NYCY	4	4	4	0
WD00-D08.1	+KU-220-5-X01	=D08+T1-X4	NYCY	4	4	4	0
WD00-D09.1	+KU-220-5-X01	=D09+T1-X4	NYCY	4	4	4	0
WD00-D10.1	+KU-220-5-X01	=D10+T1-X4	NYCY	4	4	4	0
WD01-D00.3	=D01+KU-220-1-X03A	+KU-220-5-X13A	NYCY-J	24	2.5	18	6
	=D01+KU-220-1-X03B	+KU-220-5-X13B					
	=D01+KU-220-1-X50	+KU-220-5-X04					
WD02-D00.3	=D02+KU-220-2-X03A	+KU-220-5-X13A	NYCY-J	12	2.5	8	4
	=D02+KU-220-2-X03B	+KU-220-5-X13B					
	=D02+KU-220-2-X50	+KU-220-5-X04					
=D03+KU-220-3-WD03-D00.1	=D03+KU-220-3-X04A	+KU-220-5-X16	NYCY-J	12	2.5	5	7
	=D03+KU-220-3-X16	+KU-220-5-X04					
WD03-D00.3	=D03+KU-220-3-X03A	+KU-220-5-X13A	NYCY-J	12	2.5	9	3
	=D03+KU-220-3-X03B	+KU-220-5-X13B					
	=D03+KU-220-3-X50	+KU-220-5-X04					
=D05+KU-220-4-CAB-1/CAB-2	=D05+KU-220-4-X08	+KU-220-5-X08	N2XH	4	2.5	3	2
	=D05+KU-220-4-PE	+KU-220-5-PE					
WD05-D00.3	=D05+KU-220-4-X03A	+KU-220-5-X13A	NYCY-J	24	2.5	18	6
	=D05+KU-220-4-X03B	+KU-220-5-X13B					
	=D05+KU-220-4-X50	+KU-220-5-X04					
WD07-D00.3	=D07+KU-220-6-X03A	+KU-220-5-X13A	NYCY-J	12	2.5	8	4
	=D07+KU-220-6-X03B	+KU-220-5-X13B					
	=D07+KU-220-6-X50	+KU-220-5-X04					


NOTES:

SEL\_001

CODE	DEFINITION	REMARKS
<input type="checkbox"/> 01.	ACCEPTED FOR DESIGN PHASE	No further submission is required prior to Novation. Final review and approval shall be by CONTRACTOR after Novation.
<input type="checkbox"/> 02.	ACCEPTED FOR DESIGN PHASE EXCEPT AS NOTED	Supplier may proceed with Design but must ensure Identified comments are incorporated and document resubmitted.
<input type="checkbox"/> 03.	NOT ACCEPTED	Engineering may not proceed until document has been resubmitted and reviewed again.
<input type="checkbox"/> 04.	FOR INFORMATION ONLY	Document is accepted where Purchaser deems a full technical review is not necessary during the Design Phase. Further review and approval shall be by CONTRACTOR after Novation.

NAME: \_\_\_\_\_  
SIGNATURE: \_\_\_\_\_  
DATE: \_\_\_\_\_

REV. NO.	DATE	DESCRIPTION	CHK.
04	08.10.2014.	AS BUILT (SITE MARK-UP)	MMa
03	23.12.2013.	AS BUILT	MMa/ZM
02	10.11.2013.	APPROVED BY GSE	GSE

CUSTOMER:  
 **Georgian State Electrosystem**  
**Substation Kutaisi 220/110kV**

DESCRIPTION:  
Schematic diagram for 220kV BusBar Protection

Cable overview : =D00+KU-220-5-CAB-2/CAB-3 - =D07+  
KU-220-6-WD07-D00.3

DRAWING NUMBER: GSE-SSKU-KU-2-KU-220-5 DATE: 16.09.13 SHEET NO.: 45/46 REV NO.: 04

 **SCHWEITZER ENGINEERING LABORATORIES**  
SEL Middle East B.S.C  
1504 Tiffany Tower  
Jumeira Lakes Tower  
9926 Dubai UAE

# Cable overview

Cable designation	from	to	Cable type	Number of Conductors	Conductor Cross-Section	Used Conductors	Unused Conductors
WD08-D00.3	=D08+KU-220-8-X03A	+KU-220-5-X13A	NYCY-J	24	2.5	18	6
	=D08+KU-220-8-X03B	+KU-220-5-X13B					
	=D08+KU-220-8-X50	+KU-220-5-X04					
WD09-D00.3	=D09+KU-220-9-X03A	+KU-220-5-X13A	NYCY-J	24	2.5	18	6
	=D09+KU-220-9-X03B	+KU-220-5-X13B					
	=D09+KU-220-9-X50	+KU-220-5-X04					
WD10-D00.3	=D10+KU-220-10-X03A	+KU-220-5-X13A	NYCY-J	12	2.5	8	5
	=D10+KU-220-10-X03B	+KU-220-5-X13B					
	=D10+KU-220-10-X50	+KU-220-5-X04					
=NK+DB-DB-F12/CAB-2.DC-1	=NK+DB-F12	+KU-220-5-X05A	N2XH	4	2.5	2	2
=NK+DB-DB-F18/CAB-2.DC-2	=NK+DB-F17	+KU-220-5-X05B	N2XH	4	2.5	2	2


NOTES:

SEL\_001

CODE	DEFINITION	REMARKS
<input type="checkbox"/> 01.	ACCEPTED FOR DESIGN PHASE	No further submission is required prior to Novation. Final review and approval shall be by CONTRACTOR after Novation.
<input type="checkbox"/> 02.	ACCEPTED FOR DESIGN PHASE EXCEPT AS NOTED	Supplier may proceed with Design but must ensure Identified comments are incorporated and document resubmitted.
<input type="checkbox"/> 03.	NOT ACCEPTED	Engineering may not proceed until document has been resubmitted and reviewed again.
<input type="checkbox"/> 04.	FOR INFORMATION ONLY	Document is accepted where Purchaser deems a full technical review is not necessary during the Design Phase. Further review and approval shall be by CONTRACTOR after Novation.

NAME: \_\_\_\_\_  
SIGNATURE: \_\_\_\_\_  
DATE: \_\_\_\_\_

04	08.10.2014.	AS BUILT (SITE MARK-UP)	MMa
03	23.12.2013.	AS BUILT	MMa/ZM
02	10.11.2013.	APPROVED BY GSE	GSE
REV. NO.	DATE	DESCRIPTION	CHK.

CUSTOMER:  
 **Georgian State Electrosystem**  
**Substation Kutaisi 220/110kV**

DESCRIPTION:  
**Schematic diagram for 220kV BusBar Protection**

Cable overview : =D08+KU-220-8-WD08-D00.3 - =NK+D  
B-DB-F18/CAB-2.DC-2 = D00  
+ KU-220-5C

DRAWING NUMBER: GSE-SSKU-KU-2-KU-220-5	DATE: 16.09.13	SHEET NO.: 46/46	REV NO.: 04
---	-------------------	---------------------	----------------

 **SCHWEITZER ENGINEERING LABORATORIES**

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