



**Grid Solutions**  
A GE and Alstom joint venture

# 220kV/132kV GIS SUBSTATION GHAZI ROAD , LAHORE

## 220kV TRIP CIRCUIT SUPERVISION PANEL (=D00+R6-2) SCHEMATIC DRAWINGS

REFERENCE DRAWINGS		
SR. NO.	DRAWING TITLE	DOCUMENT NO.
1.	220kV / 132kV Metering & Protection SLD	P60194-E-SLMP-001
2.	220kV GIS LCC Schematic Drawings	P60194-E-GISS-001

REVISION HISTORY					
REV	DATE	DRW. BY	CHK. BY	APR. BY	REVISION DESCRIPTION
0	18.08.2018	MUR	MFT	NAH	AS BUILT

Scale NOT-TO-SCALE	Sheet size A3
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Client	NATIONAL TRANSMISSION & DISPATCH COMPANY LIMITED (NTDC-WAPDA)
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Contractor	Manufacturer
Grid Solutions A GE and Alstom joint venture	EPESOL 21-B Garden Block, New Garden Town, Lahore, Pakistan

Project
220kV / 132kV GIS SUBSTATION GHAZI ROAD , LAHORE

Title
220kV TRIP CIRCUIT SUPERVISION PANEL (=D00+R6-2) SCHEMATIC DRAWINGS

Order no P-60194	Document no P60194-E-DST-SC-001
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Sheet type A	Total sheets 24	Sheet no 1
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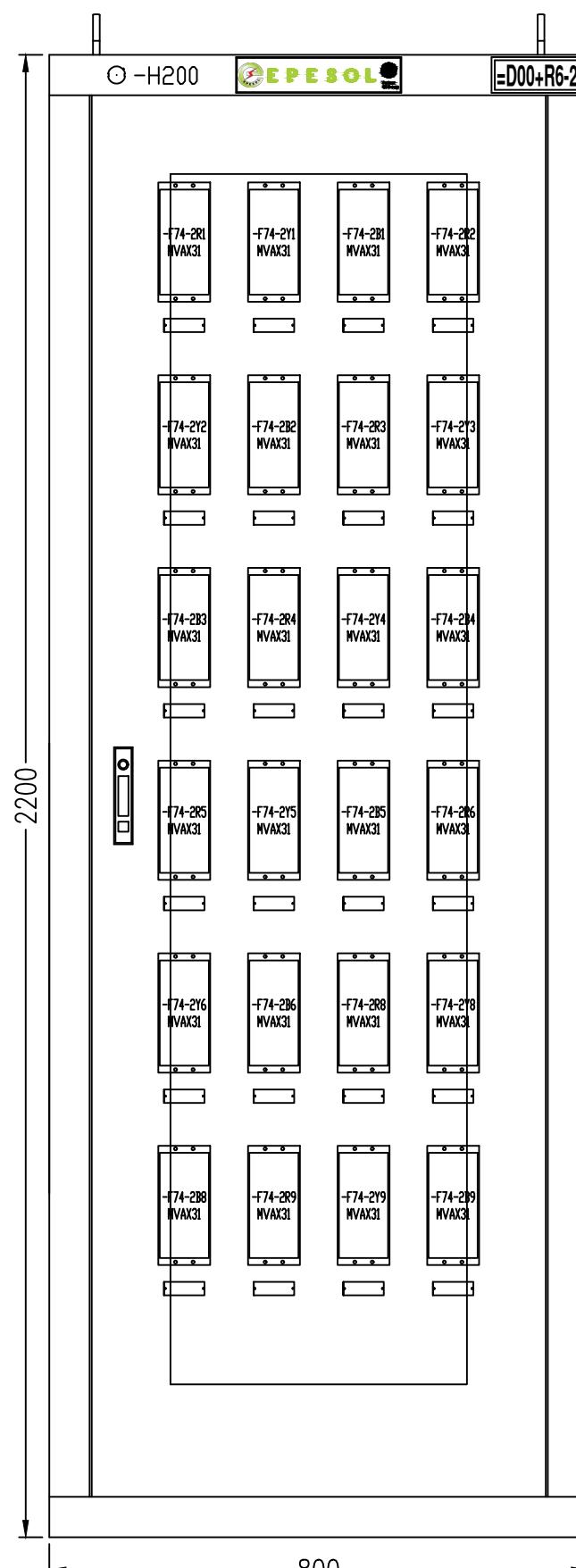
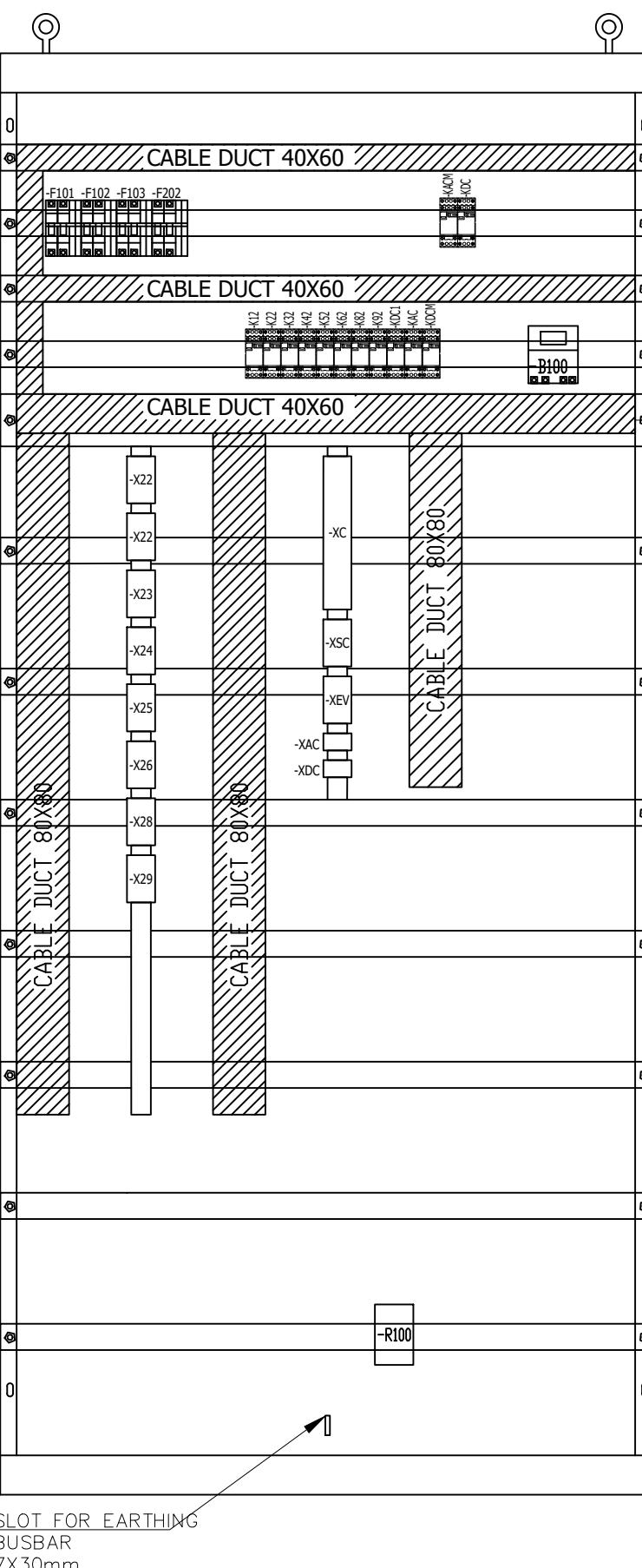
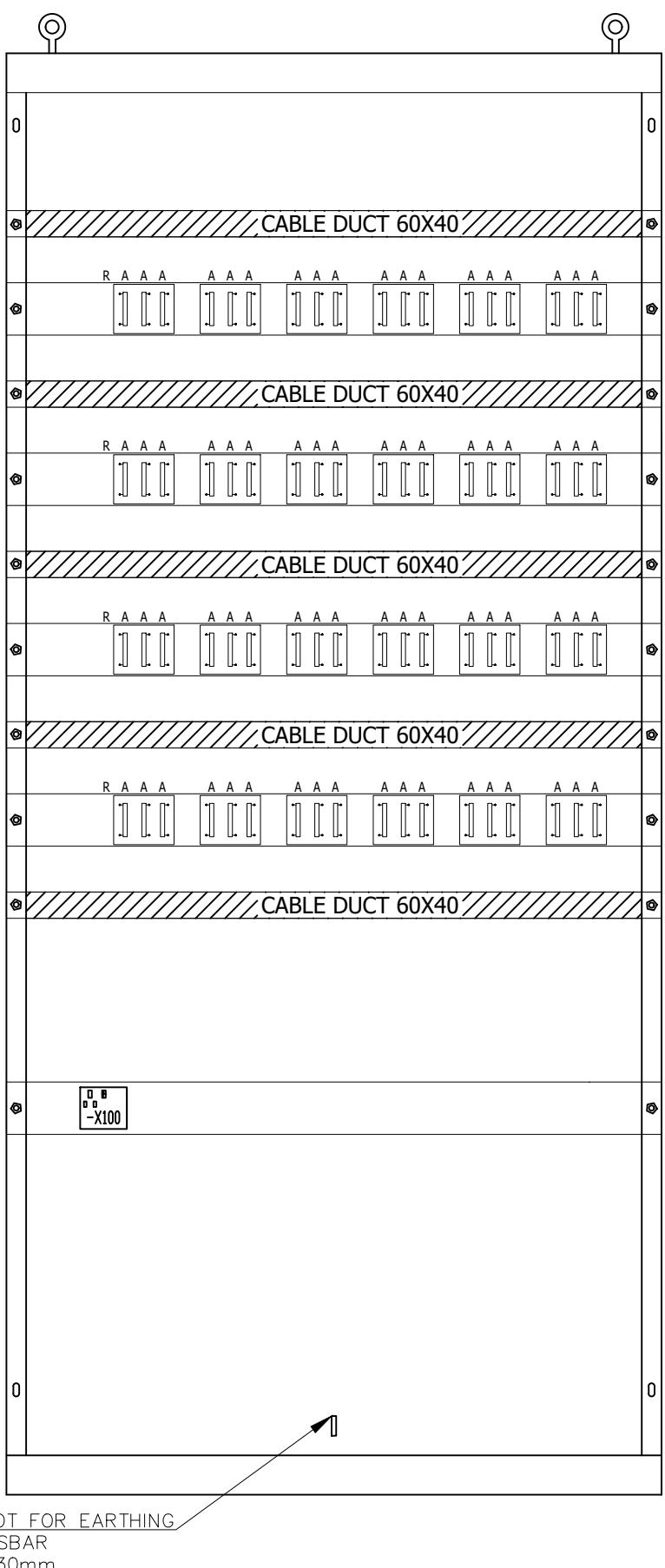


	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
A		CIRCUIT BREAKER		MINIATURE CIRCUIT BREAKER		AUXILIARY CONTACTOR NO+NC	21	DISTANCE
B		SWITCH/ISOLATOR		KEY OPERATED SELECTOR SWITCH		AMMETER	24	OVEREXCITATION
C		EARTHING		LIMITED SWITCH		VOLTmeter	25	SYNCHROCHECK
D		SF6 TO AIR BUSHING		HUMIDITY & TEMPERATURE CONTROLLER		POWER FACTOR METER	49	THERMAL OVERLOAD
E		LINE TRAP		PANEL HEATER		DIGITAL PANEL METER	50/51	PHASE INST./OVERCURRENT
F		SURGE ARRESTOR		THREE PIN SOCKET		ACTIVE POWER METER	50N/51N	EARTH INST./OVERCURRENT
G		CURRENT TRANSFORMER		INDICATION LIGHT		REACTIVE POWER METER	50BF	CIRCUIT BREAKER FAILURE
H		COUPLING CAPACITOR VOLTAGE TRANSFORMER		PUSH BUTTON		ENERGY METER	64	RESTRICTED EARTH FAULT
I		POWER TRANSFORMER		AUXILIARY CONTACTOR COIL			67N	DIRECTIONAL EARTH FAULT
J		AUTO TRANSFORMER		POWER SUPPLY AC/DC			68	POWER SWING BLOCKING
K				TERMINAL			78	OUT OF STEP
L				OPTO CONTACTS			79	AUTO-RECLOSING
M				RELAY CONTACTS			85	COMMUNICATION FAILURE
N				HOOTER			87T	TRAFO DIFFERENTIAL
O				AC BELL			87C	DIFFERENTIAL CONNECTION
P							87BB	DIFFERENTIAL BUSBAR

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0	AS BUILT	18.08.2018	MUR	Manufacturer  EPESOL 71-B Garden Block, New Garden Town, Lahore, Pakistan	Contractor  Grid Solutions A GE and Alstom joint venture	Client  NATIONAL TRANSMISSION & DISPATCH COMPANY LIMITED (NTDC-WAPDA)	Project 220kV/132kV GIS SUBSTATION GHAZI ROAD, LAHORE	Title 220kV TRIP CIRCUIT SUPERVISION PANEL (=D00+R6-2) SYMBOLA AND LEGENDS	Drawing no. P60194-E-DST-SC-001
REV.	DESCRIPTION	DATE	DRAWER						Project no. P-60194
									Sheet type AB
									Sheet no. 03

	1	2	3	4	5	6	7	8			
	QTY.	DEVICE DESCRIPTION	DEVICE SPECIFICATIONS DEVICE TYPE ; TECHNICAL DATA / SPECIFICATIONS			DEVICE DESIGNITION	MANUFACTURER				
A	24	TRIP CIRCUIT SUPERVISION RELAY	MVAX31, Cortec: MVAX31S1DD1005A Auxiliary Voltage: 220-250V DC Output Contact: 2 Make & 1 Break			-F74	GE				
B	24	EXTERNAL RESISTOR FOR MVAX31 RELAY - 4.1K	PART OF MVAX31				GE				
C	96	EXTERNAL RESISTOR FOR MVAX31 RELAY - 4.0K	PART OF MVAX31			R11, R14, R17, R21, R24, R27, R31, R34, R37, R41, R44, R47, R51, R54, R57, R61, R64, R67, R81, R84, R87, R91, R94, R97, R12, R12A, R13, R13A, R15, R15A, R16, R16A, R18, R18A, R19, R19A, R22, R22A, R23, R23A, R25, R25A, R26, R26A, R28, R28A, R29, R29A, R32, R32A, R33, R33A, R35, R35A, R36, R36A, R38, R38A, R39, R39A, R42, R42A, R43, R43A, R45, R45A, R46, R46A, R48, R48A, R49, R49A, R52, R52A, R53, R53A, R55, R55A, R56, R56A, R58, R58A, R59, R59A, R62, R62A, R63, R63A, R65, R65A, R66, R66A, R68, R68A, R69, R69A, R82, R82A, R83, R83A, R85, R85A, R86, R86A, R88, R88A, R89, R89A, R92, R92A, R93, R93A, R95, R95A, R96, R96A, R98, R98A, R99, R99A	GE				
	02	CONTROL MCB - PANEL LIGHT & HEATER	G62C02+CAH(2), 2-POLE, RATINGS: 2A, 230VAC, 6kA @ 230VAC, WITH 2 C/O CONTACTS			-F101, -F102	GE				
	01	CONTROL ELCB - PANEL SOCKET	DM100C16/030+CAH(2), 2-POLE, RATINGS: 16A, 30mA, 230VAC, WITH 2 C/O CONTACTS			-F103	GE				
	01	CONTROL MCB - DC DISTRIBUTION	EP102UCC04+CAH(2), 2-POLE, RATINGS: 4A, 220VDC, 10kA @ 220VDC, WITH 2 C/O CONTACTS			-F204	GE				
	11	AUXILIARY CONTACTOR	PRC4M40DCML, COIL VOLTAGE: 220VDC, WITH 4 C/O CONTACTS			-K12, -K22, -K32, -K42, -K52, -K62, -K82, -K92, -KDC1, -KAC, -KDCM	GE				
	02	AUXILIARY CONTACTOR	PRC4M40ANL, COIL VOLTAGE: 230VAC, WITH 4 C/O CONTACTS			-KACM, -KDC	GE				
	01	INDICATION LAMP - DC SUPPLY FAILURE	YS-PL-2-AL-22-R-W, TYPE: INTEGRATED LED , COLOR : RED , SUPPLY : 230VAC @ 50HZ			-H200	YONGSUNG				
	01	PANEL LIGHT WITH DOOR SWITCH	YST8-30-5W+YSP3315GW-B, 230VAC @ 50HZ, 5W, WITH DOOR LIMIT SWITCH			-S100, -H100	YONGSUNG				
	01	THREE PIN SOCKET	1N+PE, 16A, 230VAC @ 50Hz			-X100	LEAR				
	01	PANEL HEATER	ELH 220, 230VAC @ 50Hz, 50W			-R100	ELAB				
D	01	HUMIDITY & TEMPERATURE CONTROLLER	ELH 220, 40-90%RH, 25-50°C, 230VAC @ 50Hz			-B100	ELAB				
E	11	TERMINAL BLOCKS FOR TRIP CIRCUIT 2 (D01+Q0)	Type: CBD-4			-X21:1-11	CABUR				
	11	TERMINAL BLOCKS FOR TRIP CIRCUIT 2 (D02+Q0)	Type: CBD-4			-X22:1-11	CABUR				
	11	TERMINAL BLOCKS FOR TRIP CIRCUIT 2 (D03+Q0)	Type: CBD-4			-X23:1-11	CABUR				
	11	TERMINAL BLOCKS FOR TRIP CIRCUIT 2 (D04+Q0)	Type: CBD-4			-X24:1-11	CABUR				
	11	TERMINAL BLOCKS FOR TRIP CIRCUIT 2 (D05+Q0)	Type: CBD-4			-X25:1-11	CABUR				
	11	TERMINAL BLOCKS FOR TRIP CIRCUIT 2 (D06+Q0)	Type: CBD-4			-X26:1-11	CABUR				
	11	TERMINAL BLOCKS FOR TRIP CIRCUIT 2 (D08+Q0)	Type: CBD-4			-X28:1-11	CABUR				
	11	TERMINAL BLOCKS FOR TRIP CIRCUIT 2 (D09+Q0)	Type: CBD-4			-X29:1-11	CABUR				
	16	TERMINAL BLOCKS FOR CLOSE BLOCKING SIGNAL	Type: CBD-4			-XC:21-36	CABUR				
	20	TERMINAL BLOCKS FOR ANNUNCIATION ALARMS	Type: CBD-4			-XC:1-20	CABUR				
F	11	TERMINAL BLOCKS FOR SCADA INPUTS	Type: CBD-4			-XSC:1-11	CABUR				
	11	TERMINAL BLOCKS FOR EVENT RECORDER INPUTS	Type: CBD-4			-XEV:1-11	CABUR				
	04	TERMINAL BLOCKS FOR AC CIRCUIT	Type: CBD-4			-XAC:1-4	CABUR				
	04	TERMINAL BLOCKS FOR AC CIRCUIT	Type: CBD-4			-XDC:1-4	CABUR				
	02	TERMINAL BLOCKS FOR CONTROL	TYPE: CBD-4			-X3:1-2	CABUR				
	0	AS BUILT	18.08.2018	MUR	Manufacturer  <b>EPEPSOL</b> 71-B Garden Block, New Garden Town, Lahore, Pakistan	Contractor  Grid Solutions A GE and Alstom joint venture	Client  NATIONAL TRANSMISSION & DISPATCH COMPANY LIMITED (NTDC-WAPDA)	Project 220kV/132kV GIS SUBSTATION GAZI ROAD, LAHORE	Title 220kV TRIP CIRCUIT SUPERVISION PANEL (=D00+R6-2) COMPONENT LIST	Drawing no. P60194-E-DST-SC-001	
	REV.	DESCRIPTION	DATE	DRAWER					Project no. P-60194	Sheet type AC	Sheet no. 04

FRONT VIEW WITH DOORLEFT SIDE VIEWRIGHT SIDE VIEW

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				Contractor <b>Grid Solutions</b> A GE and Alstom joint venture
				Client <b>NATIONAL TRANSMISSION &amp; DISPATCH COMPANY LIMITED (NTDC-WAPDA)</b>

Project  
220kV/132kV GIS SUBSTATION  
GHAZI ROAD, LAHORE

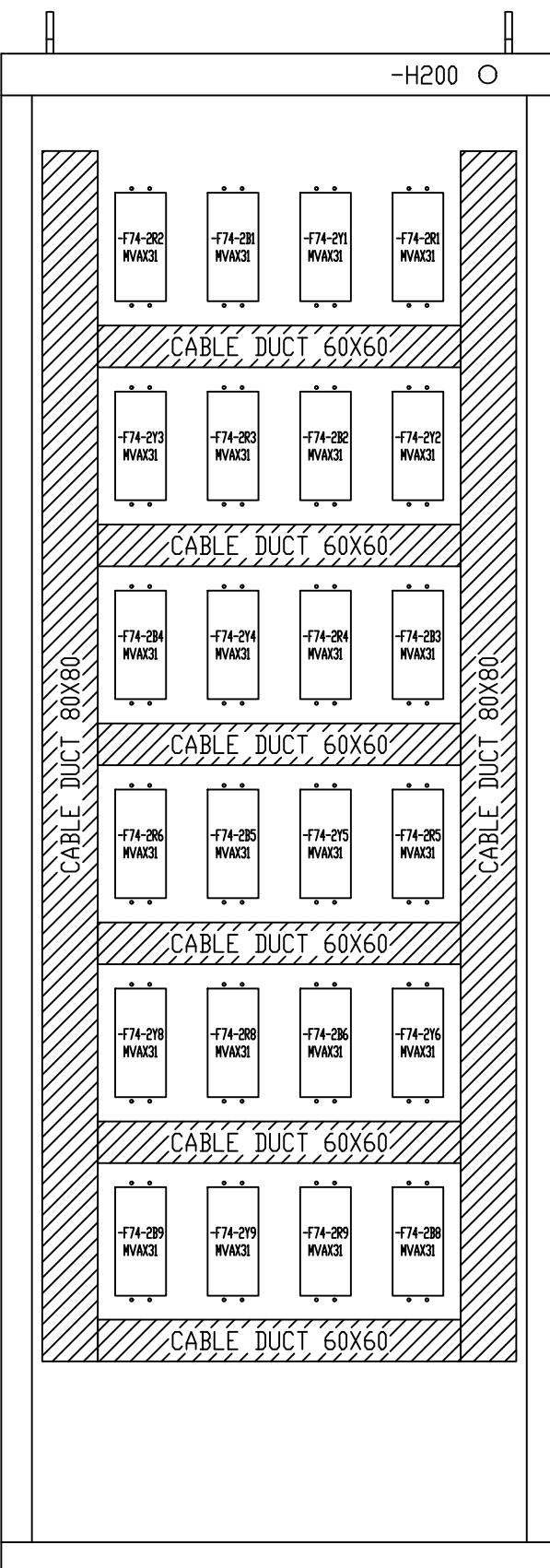
Title  
220kV TRIP CIRCUIT SUPERVISION PANEL  
(=D00+R6-2)  
PANEL VIEW

Drawing no. P60194-E-DST-SC-001	Project no. P-60194	Sheet type AD	Sheet no. 05
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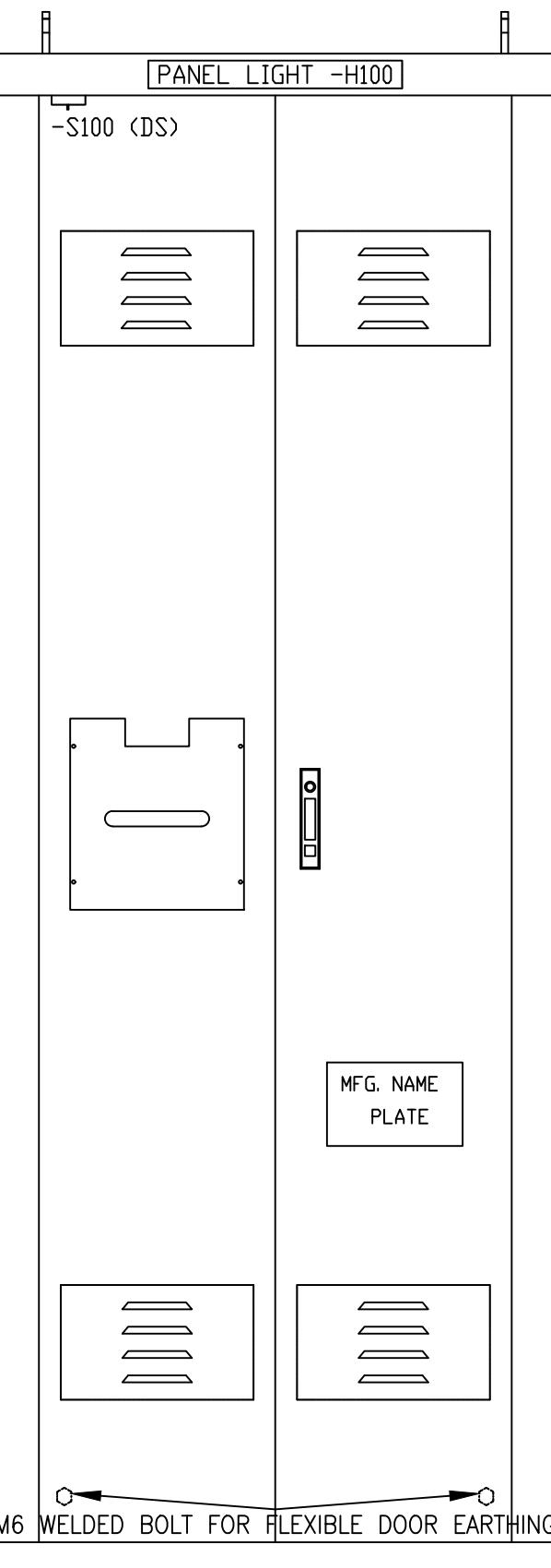
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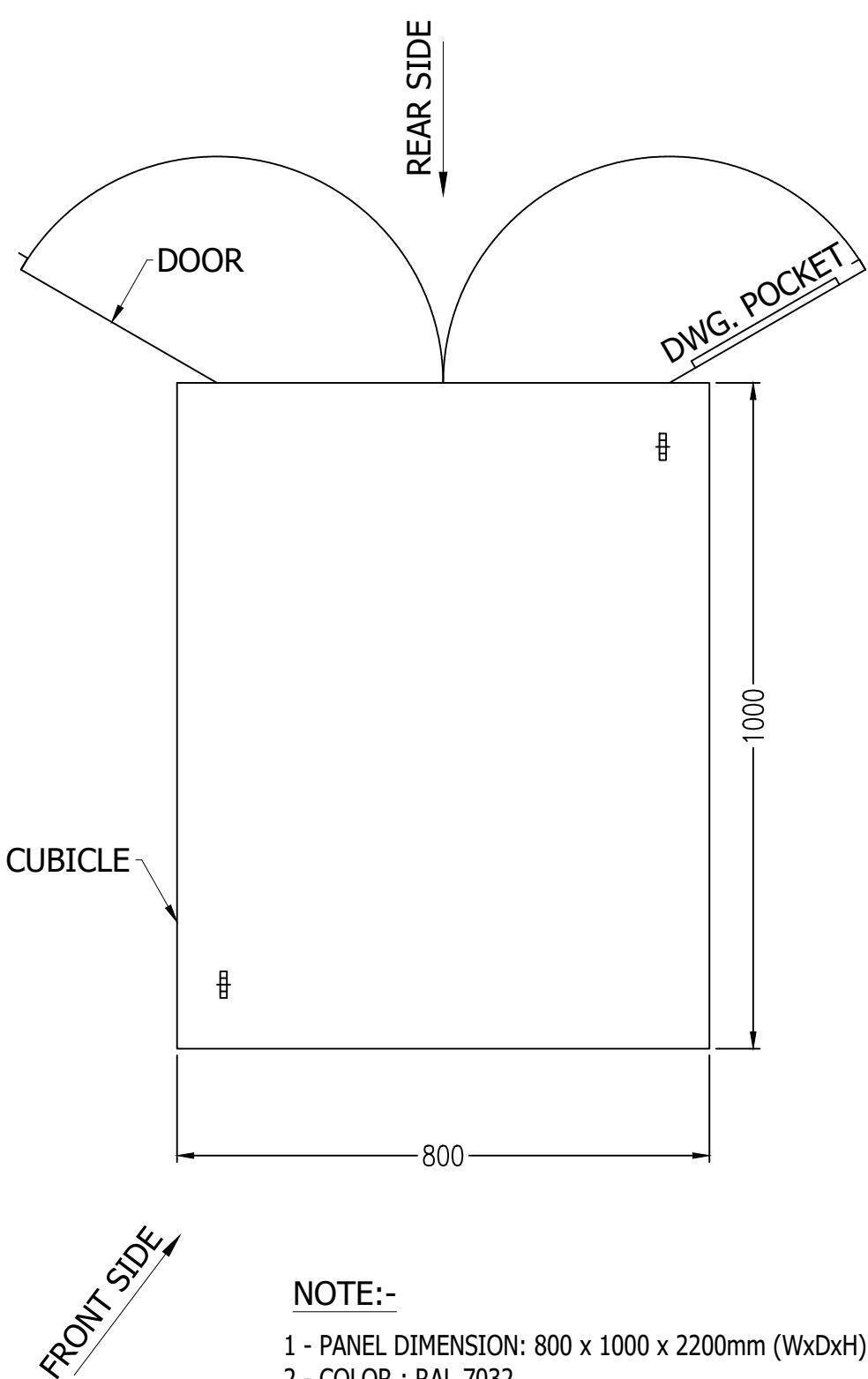
BACK VIEW WITHOUT DOOR



BACK VIEW WITH DOOR



TOP VIEW

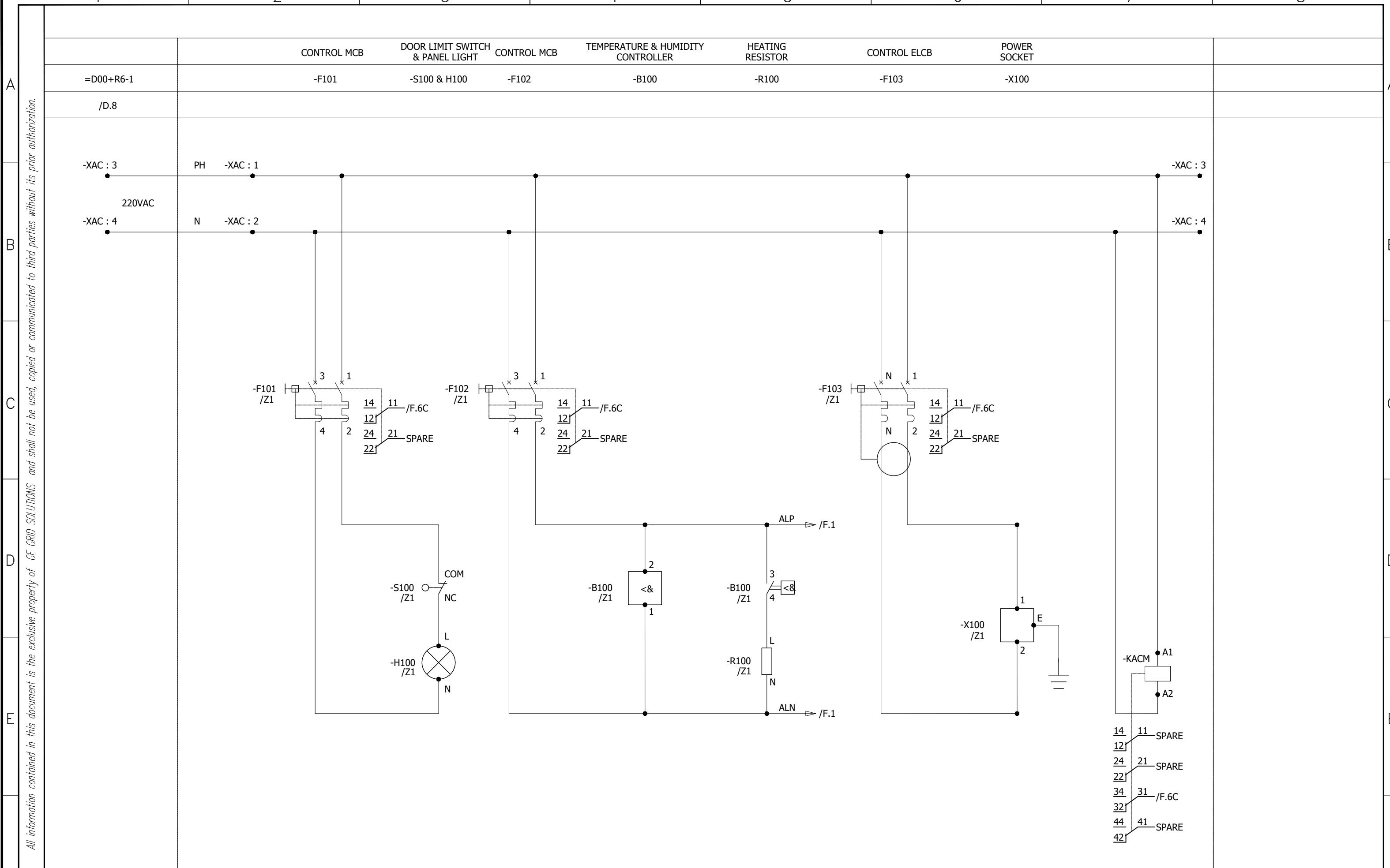


## NOTE:-

- 1 - PANEL DIMENSION: 800 x 1000 x 2200mm (WxDxH)
- 2 - COLOR : RAL 7032
- 3 - SHEET THICKNESS : 2-2.5 mm
- 4 - PROTECTION CLASS : IP-51 (INDOOR TYPE)
- 5 - ALL DOOR FITTED WITH 16mm EARTH STRAP & INSULATED WITH GREEN-YELLOW COLOUR.

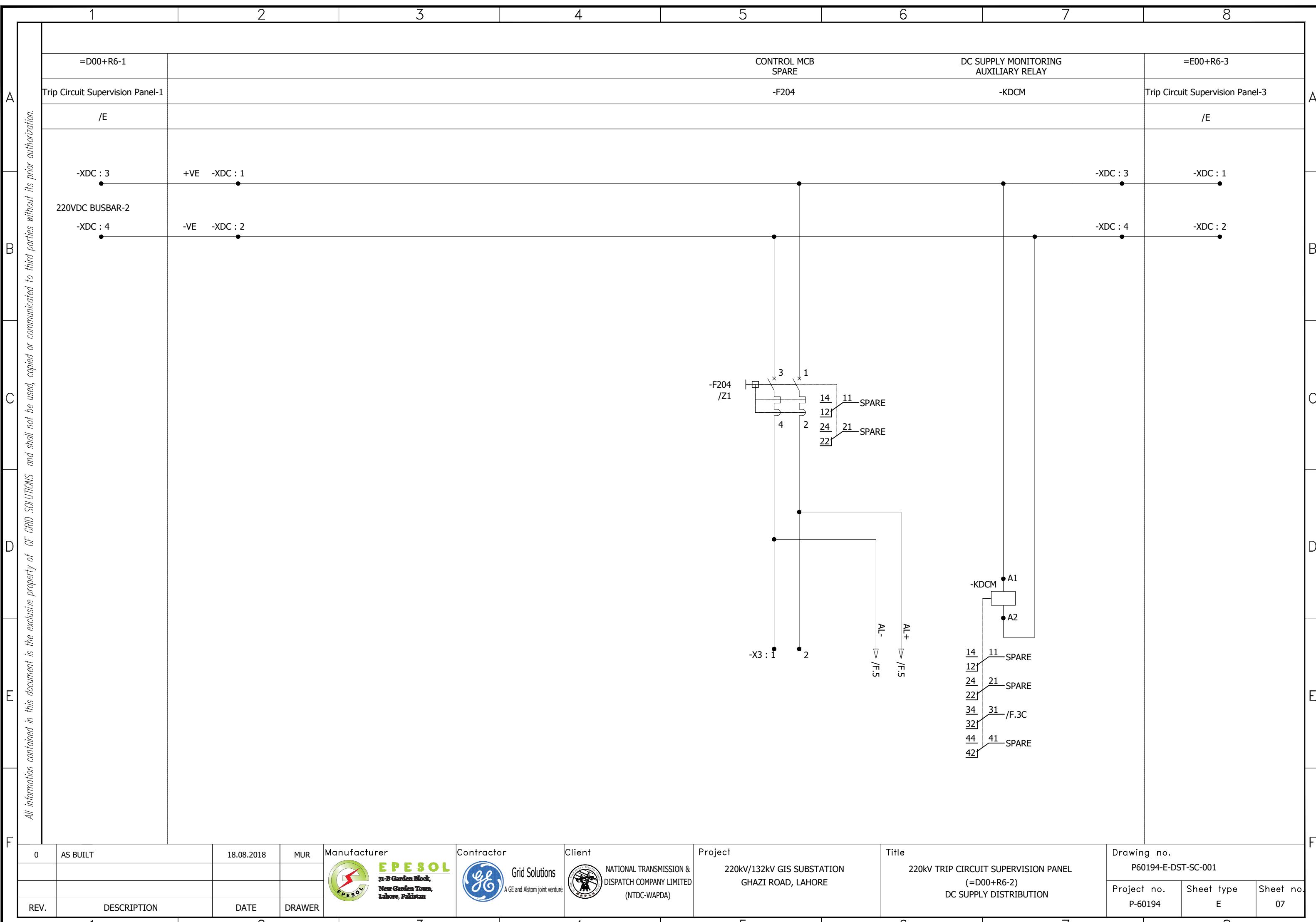
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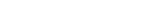
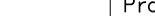
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REV.	DESCRIPTION	DATE	DRAWER						Project no. P-60194
									Sheet type AD1
									Sheet no. 05a



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REV.	DESCRIPTION	DATE	DRAWER					Project no. P-60194	Sheet type D	Sheet no. 06



0	AS BUILT	18.08.2018	MUR	Manufacturer  <b>EPESOL</b> 21-B Garden Block, New Garden Town, Lahore, Pakistan	Contractor  Grid Solutions A GE and Alstom joint venture	Client  NATIONAL TRANSMISSION & DISPATCH COMPANY LIMITED (NTDC-WAPDA)	Project 220kV/132kV GIS SUBSTATION GHAZI ROAD, LAHORE	Title 220KV TRIP CIRCUIT SUPERVISION PANEL (=D00+R6-2) DC SUPPLY DISTRIBUTION	Drawing no.		
								P60194-E-DST-SC-001			
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								P-60194	E	07	
REV.	DESCRIPTION	DATE	DRAWER								

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## 220V DC CIRCUIT FAULTY

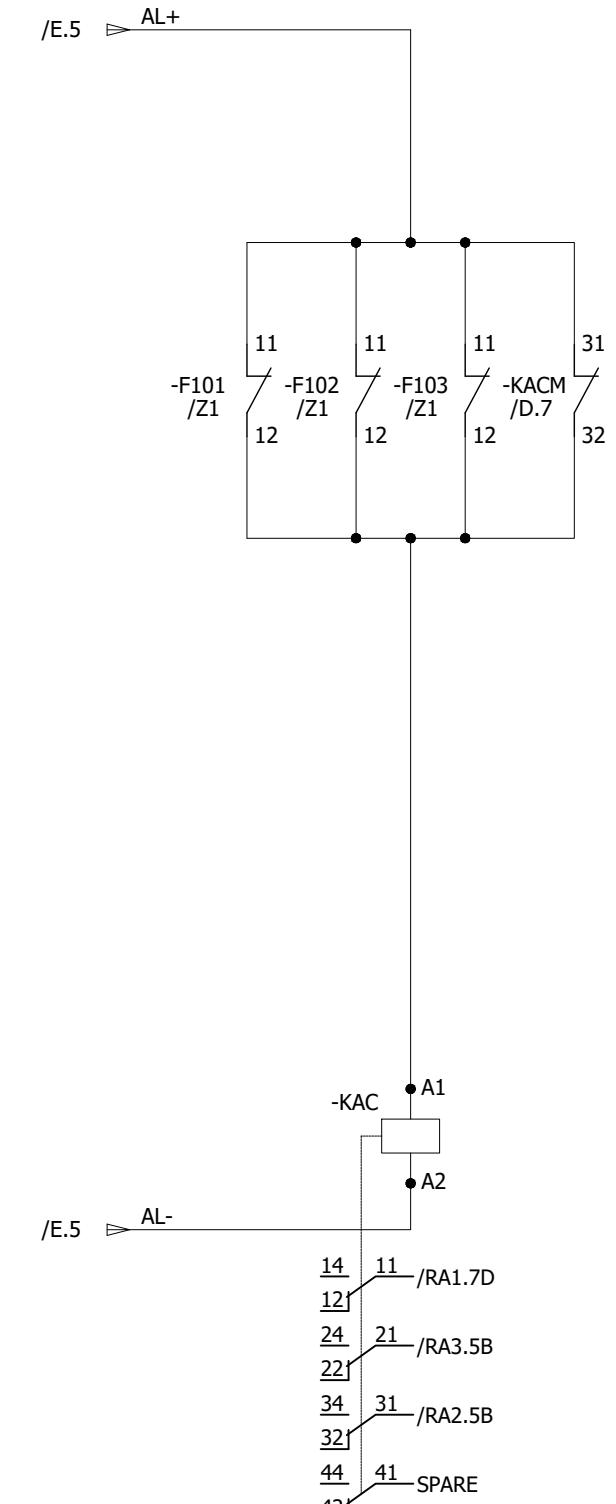
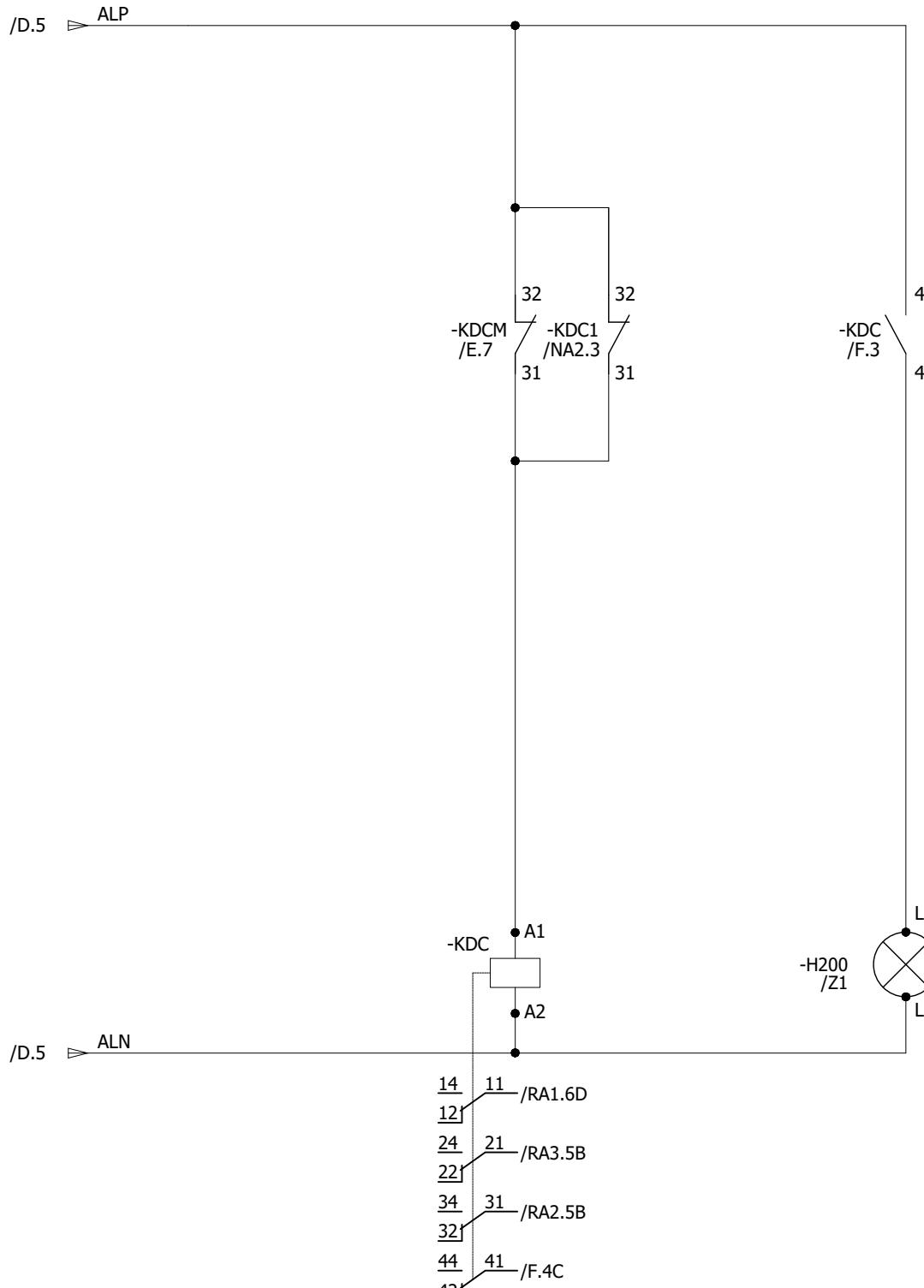
## 220V DC CIRCUIT FAULTY INDICATION

## 220V AC CIRCUIT FAULTY

-KDC

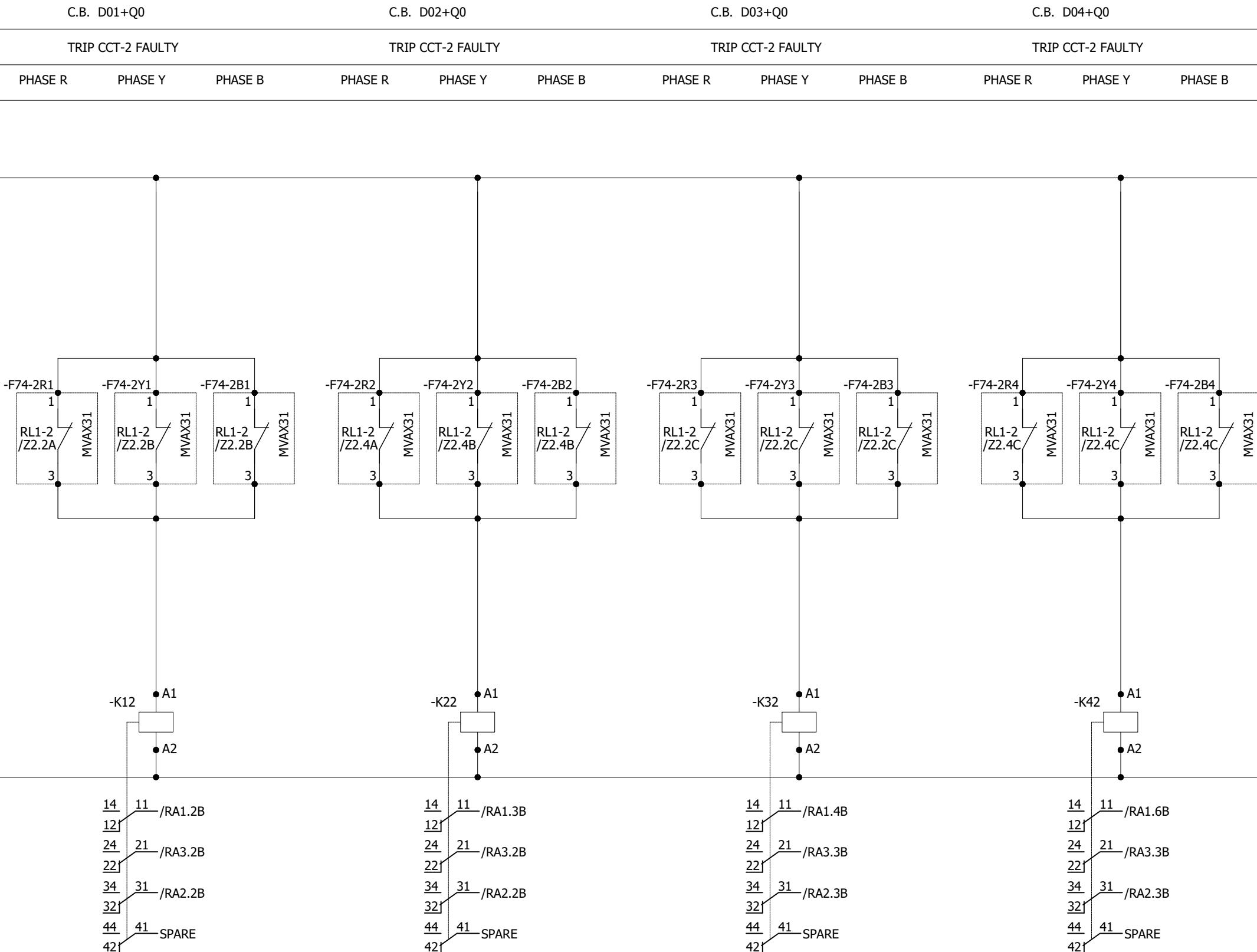
-H200

-KAC



0	AS BUILT	18.08.2018	MUR	Manufacturer  EPESOL 71-B Garden Block, New Garden Town, Lahore, Pakistan	Contractor  Grid Solutions A GE and Alstom joint venture	Client  NATIONAL TRANSMISSION & DISPATCH COMPANY LIMITED (NTDC-WAPDA)	Project 220kV/132kV GIS SUBSTATION GHAZI ROAD, LAHORE	Title 220kV TRIP CIRCUIT SUPERVISION PANEL (=D00+R6-2) AC/DC SUPPLY FAILURE CIRCUIT	Drawing no. P60194-E-DST-SC-001
REV.	DESCRIPTION	DATE	DRAWER					Project no. P-60194	Sheet type F
								Sheet no. 08	

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A

A

B

B

C

C

D

D

E

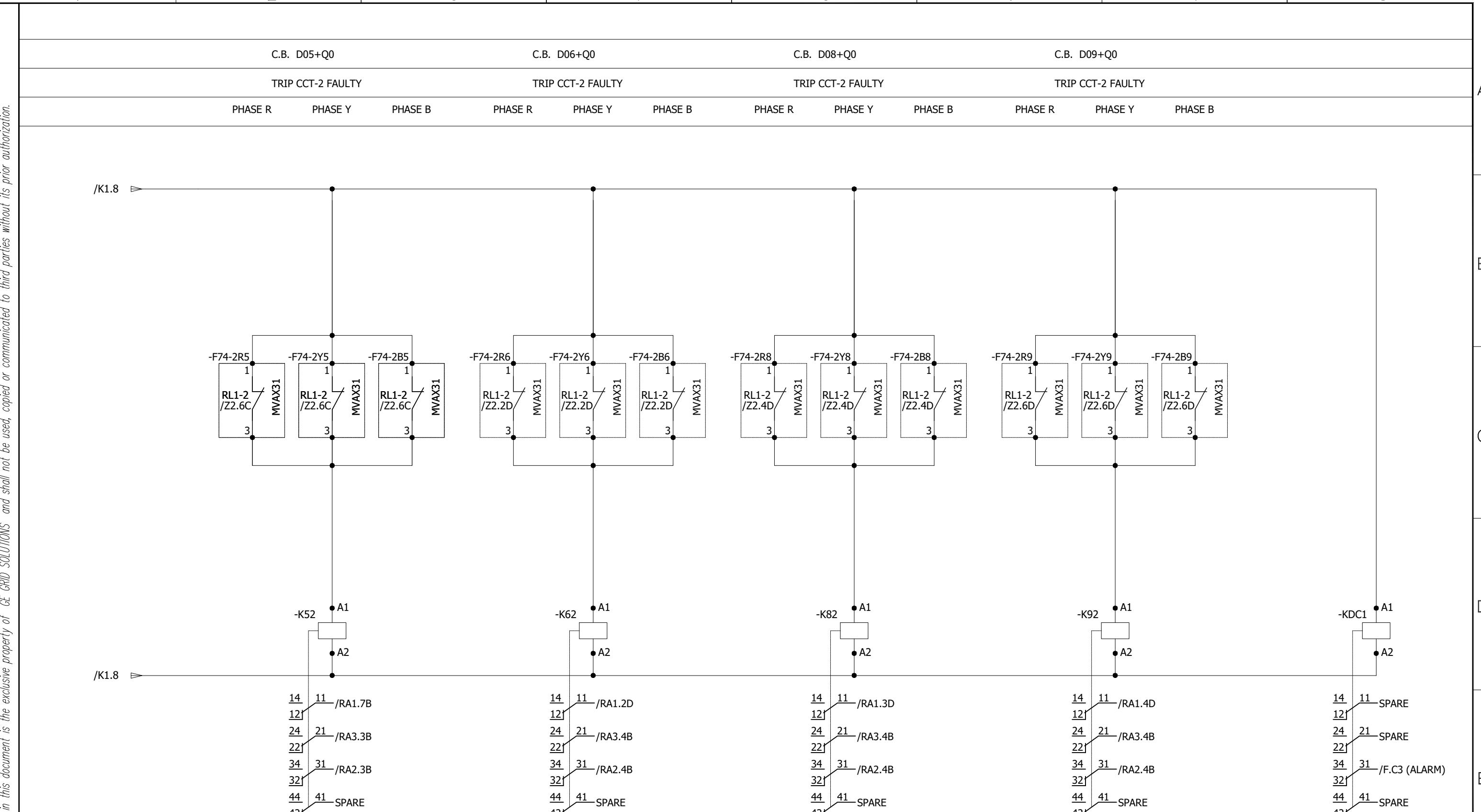
E

F

F

0	AS BUILT	18.08.2018	MUR	Manufacturer <b>EPE SOL</b> 71-B Garden Block, New Garden Town, Lahore, Pakistan	Contractor <b>GE</b> Grid Solutions A GE and Alstom joint venture	Client <b>NTDC-WAPDA</b> NATIONAL TRANSMISSION & DISPATCH COMPANY LIMITED	Project 220KV/132KV GIS SUBSTATION GHAZI ROAD, LAHORE	Title 220KV TRIP CIRCUIT SUPERVISION PANEL (=D00+R6-2) TRIP BUS	Drawing no. P60194-E-DST-SC-001
									Project no. P-60194 Sheet type K1 Sheet no. 09
REV.	DESCRIPTION	DATE	DRAWER						

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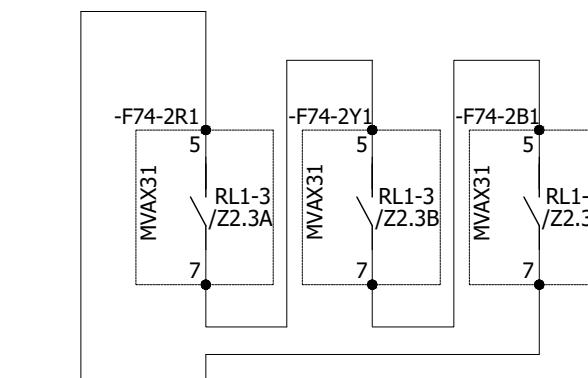
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									Project no. P-60194
REV.	DESCRIPTION	DATE	DRAWER						Sheet type K2

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A

TRIP CCT-2 HEALTHY  
CB D01+Q0

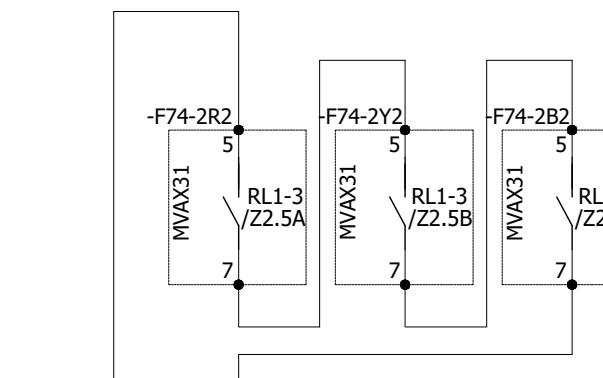
PHASE R PHASE Y PHASE B



-XC:● 21 -XC:● 22  
-AX:● 17 -AX:● 18  
/J1 =D01+C4

TRIP CCT-2 HEALTHY  
CB D02+Q0

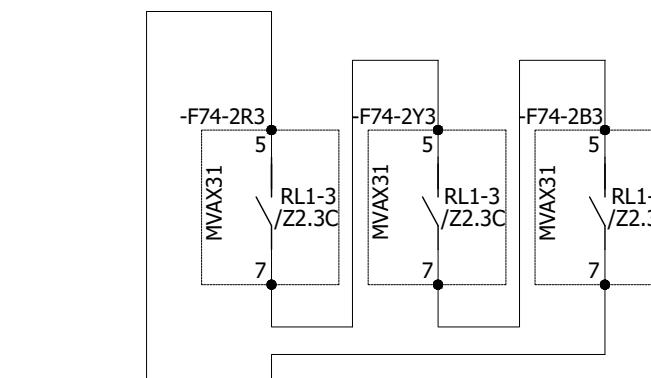
PHASE R PHASE Y PHASE B



-XC:● 23 -XC:● 24  
-AX:● 17 -AX:● 18  
/J1 =D02+C4

TRIP CCT-2 HEALTHY  
CB D03+Q0

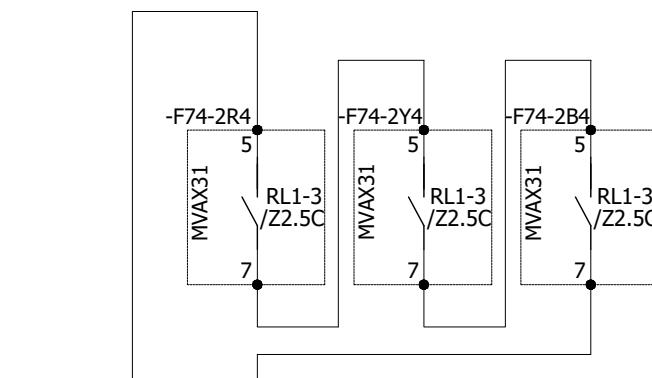
PHASE R PHASE Y PHASE B



-XC:● 25 -XC:● 26  
-X8:● 20 -X8:● 21  
/AJ1 =D03+C5

TRIP CCT-2 HEALTHY  
CB D04+Q0

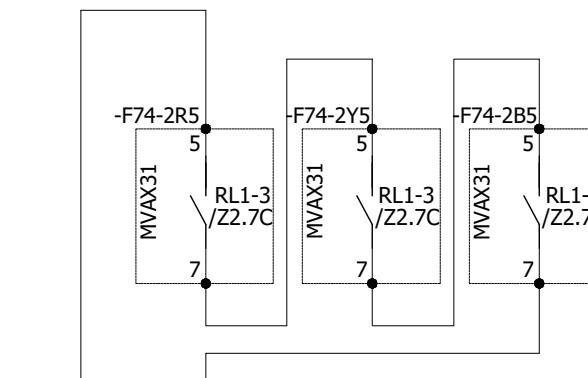
PHASE R PHASE Y PHASE B



-XC:● 27 -XC:● 28  
-X8:● 20 -X8:● 21  
/AJ1 =D04+C5

TRIP CCT-2 HEALTHY  
CB D05+Q0

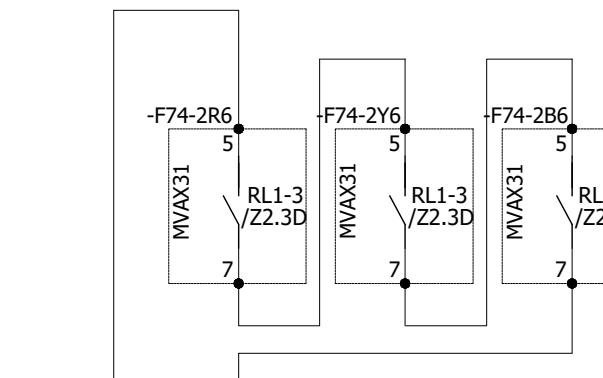
PHASE R PHASE Y PHASE B



-XC:● 29 -XC:● 30  
-AX:● 17 -AX:● 18  
/J1 =D05+C4

TRIP CCT-2 HEALTHY  
CB D06+Q0

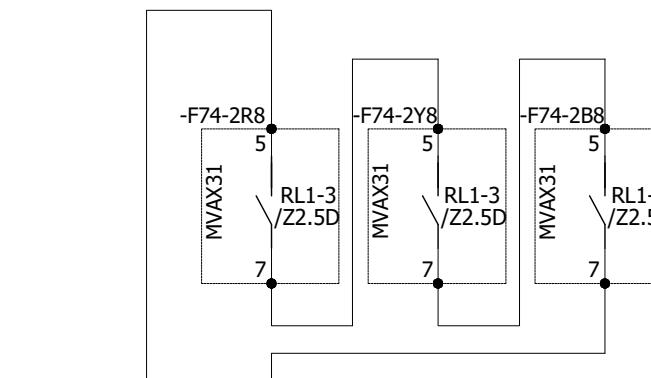
PHASE R PHASE Y PHASE B



-XC:● 31 -XC:● 32  
-X9:● 10 -X9:● 11  
/J1 =D06+C8

TRIP CCT-2 HEALTHY  
CB D08+Q0

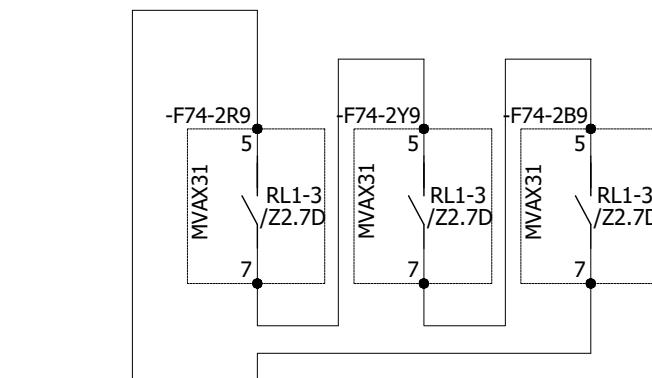
PHASE R PHASE Y PHASE B



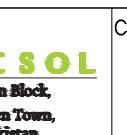
-XC:● 33 -XC:● 34  
-AX:● 17 -AX:● 18  
/J1 =D08+C4

TRIP CCT-2 HEALTHY  
CB D09+Q0

PHASE R PHASE Y PHASE B



-XC:● 35 -XC:● 36  
-X8:● 20 -X8:● 21  
/AJ1 =D09+C5

0	AS BUILT	18.08.2018	MUR	Manufacturer  EPEPSOL 72-B Garden Block, New Garden Town, Lahore, Pakistan	Contractor  Grid Solutions A GE and Alstom joint venture	Client  NATIONAL TRANSMISSION & DISPATCH COMPANY LIMITED (NTDC-WAPDA)	Project 220kV/132kV GIS SUBSTATION GAZI ROAD, LAHORE	Title 220kV TRIP CIRCUIT SUPERVISION PANEL (=D00+R6-2) CLOSE BLOCKING SIGNAL	Drawing no. P60194-E-DST-SC-001
REV.	DESCRIPTION	DATE	DRAWER						Project no. P-60194
									Sheet type K3
									Sheet no. 19

220kV GIS LCC PANEL

220kV LINE RELAY PANEL

220kV LINE RELAY PANEL

220kV CBF

BUSBAR PROTECTION

TRIP CIRCUIT-2 SUPERVISION RELAY

C.B. Aux Switch 52a

SET-2

SET-1

RELAY PANEL

RELAY PANEL

PHASE R

PHASE Y

PHASE B

=D01+GISLCC

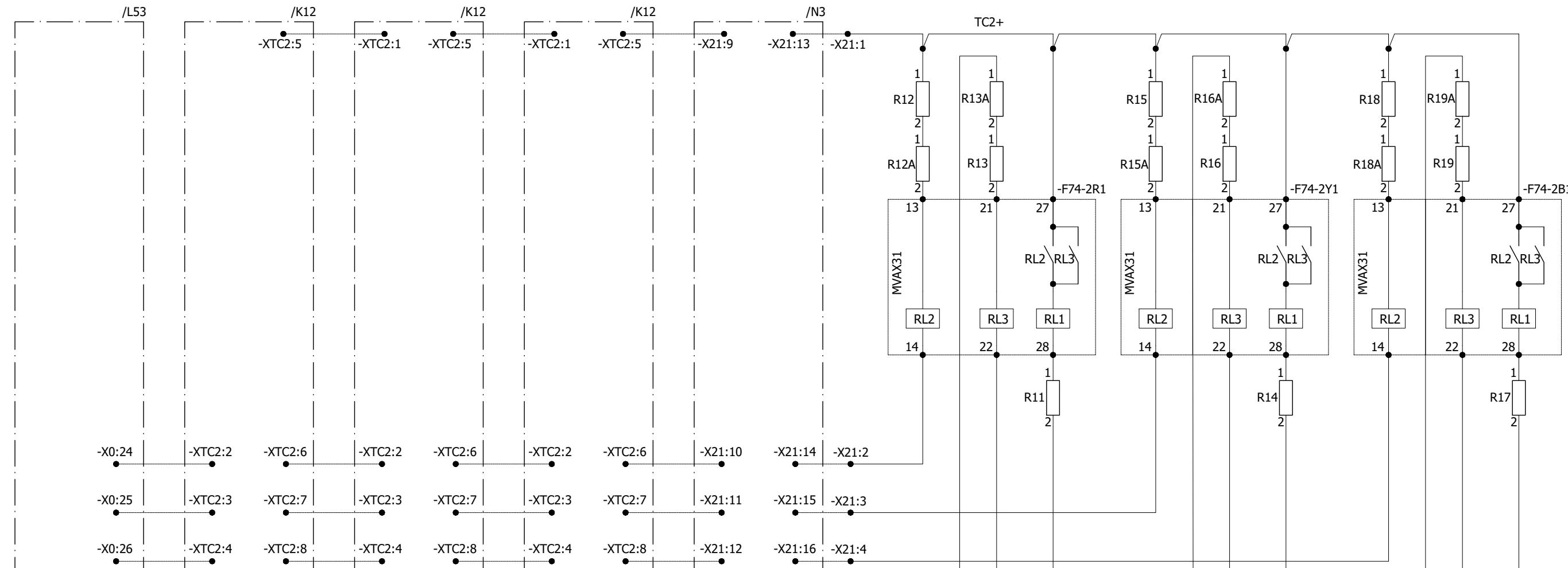
(=D01+R2)

(=D01+R1)

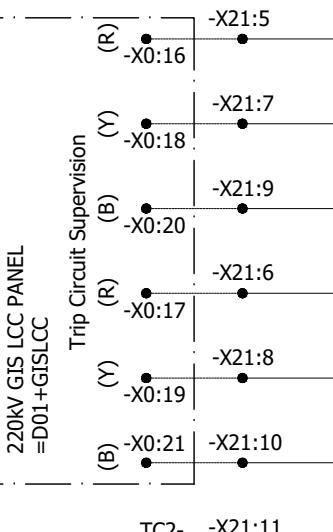
(=D00+R5A)

(=D00+R7)

=D01+Q0



DWG No. : F061802624 / SHEET No. L53  
220kV GIS LCC PANEL  
=D01+GISLCC



=D01+R2 TC2- X21:11

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0	AS BUILT	18.08.2018	MUR	Manufacturer	Contractor	Client	Project	Title	Drawing no.
				EPESOL 71-B Garden Block, New Garden Town, Lahore, Pakistan	Grid Solutions A GE and Alstom joint venture	NATIONAL TRANSMISSION & DISPATCH COMPANY LIMITED (NTDC-WAPDA)	220kV/132kV GIS SUBSTATION GHAZI ROAD, LAHORE	220kV TRIP CIRCUIT SUPERVISION PANEL (=D00+R6-2)	P60194-E-DST-SC-001
REV.	DESCRIPTION	DATE	DRAWER					CB D01+Q0 TRIP CCT-2 SUPERVISION	Project no. P-60194 Sheet type K31 Sheet no. 09

220kV GIS LCC PANEL

220kV LINE RELAY PANEL

220kV LINE RELAY PANEL

220kV CBF

BUSBAR PROTECTION

TRIP CIRCUIT-2 SUPERVISION RELAY

C.B. Aux Switch 52a

SET-2

SET-1

RELAY PANEL

RELAY PANEL

PHASE R

PHASE Y

PHASE B

=D02+GISLCC

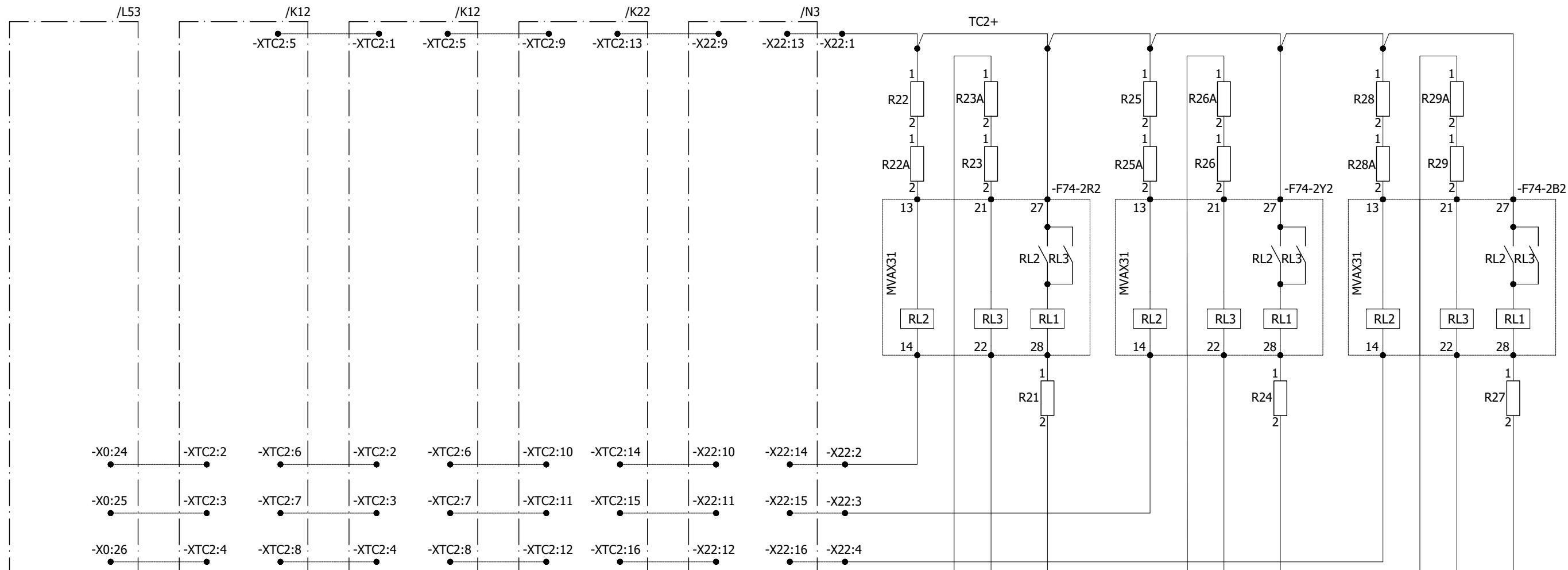
(=D02+R2)

(=D02+R1)

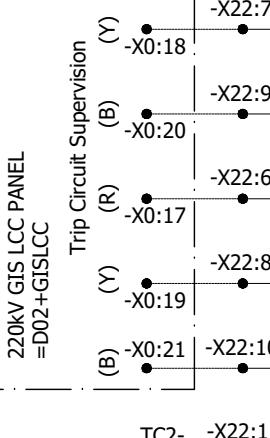
(=D00+R5A)

(=D00+R7)

=D02+Q0



DWG No. : F061802624 / SHEET No. L53  
220kV GIS LCC PANEL  
=D02+GISLCC



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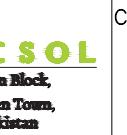
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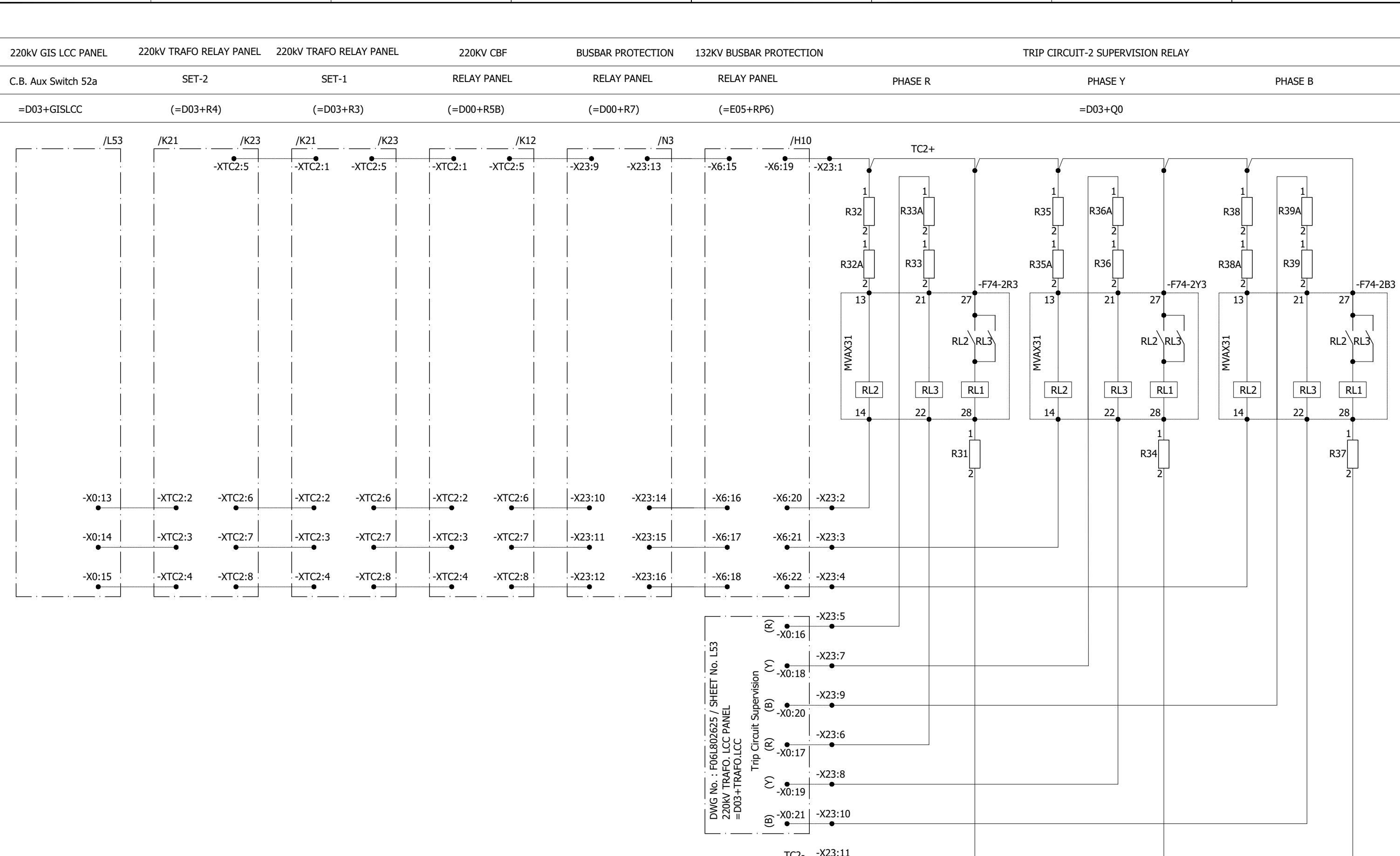
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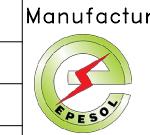
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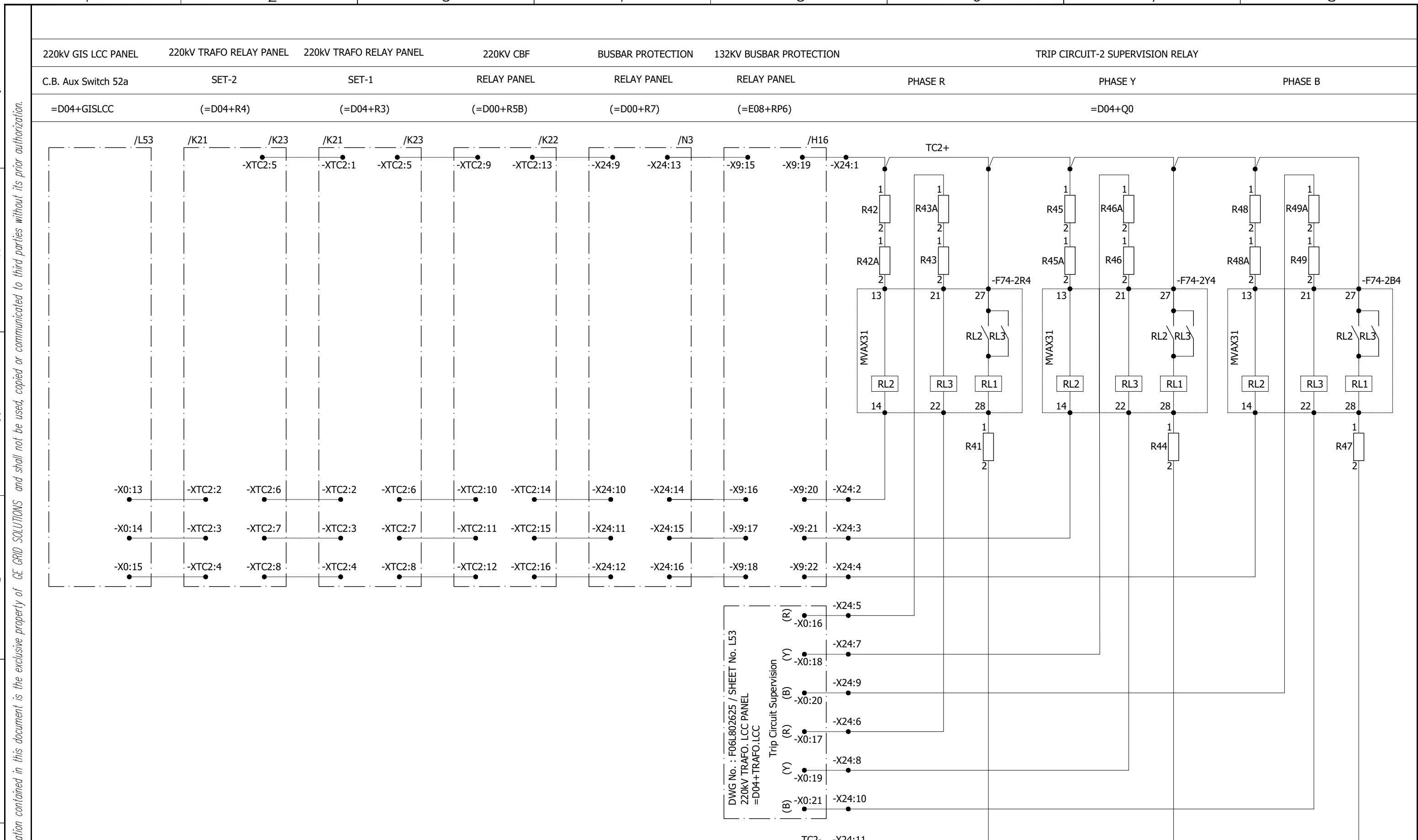
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0	AS BUILT	18.08.2018	MUR	Manufacturer  EPESOL 71-B Garden Block, New Garden Town, Lahore, Pakistan	Contractor  Grid Solutions A GE and Alstom joint venture	Client  NATIONAL TRANSMISSION & DISPATCH COMPANY LIMITED (NTDC-WAPDA)	Project 220kV/132kV GIS SUBSTATION GHAZI ROAD, LAHORE	Title 220kV TRIP CIRCUIT SUPERVISION PANEL (=D00+R6-2) CB D01+Q0 TRIP CCT-2 SUPERVISION	Drawing no. P60194-E-DST-SC-001
REV.	DESCRIPTION	DATE	DRAWER					Project no. P-60194	Sheet type K32
								Sheet no. 10	



0	AS BUILT	18.08.2018	MUR	Manufacturer  EPESOL 72-B Garden Block, New Garden Town, Lahore, Pakistan	Contractor  Grid Solutions A GE and Alstom joint venture	Client  NATIONAL TRANSMISSION & DISPATCH COMPANY LIMITED (NTDC-WAPDA)	Project 220kV/132kV GIS SUBSTATION GHAZI ROAD, LAHORE	Title 220kV TRIP CIRCUIT SUPERVISION PANEL (=D00+R6-2) CB D03+Q0 TRIP CCT-2 SUPERVISION	Drawing no. P60194-E-DST-SC-001	
REV.	DESCRIPTION	DATE	DRAWER					Project no. P-60194	Sheet type K33	Sheet no. 11



0	AS BUILT	18.08.2018	MUR	Manufacturer  71-B Garden Block, New Garden Town, Lahore, Pakistan	Contractor  Grid Solutions A GE and Alstom joint venture	Client  NATIONAL TRANSMISSION & DISPATCH COMPANY LIMITED (NTDC-WAPDA)	Project 220kV/132kV GIS SUBSTATION GHAZI ROAD, LAHORE	Title 220kV TRIP CIRCUIT SUPERVISION PANEL (=D00+R6-2) CB D04+Q0 TRIP CCT-2 SUPERVISION	Drawing no. P60194-E-DST-SC-001
REV.	DESCRIPTION	DATE	DRAWER					Project no. P-60194	Sheet type K34
								Sheet no. 12	

220KV GIS LCC PANEL

220KV LINE RELAY PANEL

220KV LINE RELAY PANEL

220KV CBF

BUSBAR PROTECTION

TRIP CIRCUIT-2 SUPERVISION RELAY

C.B. Aux Switch 52a

SET-2

SET-1

RELAY PANEL

RELAY PANEL

PHASE R

PHASE Y

PHASE B

=D05+GISLCC

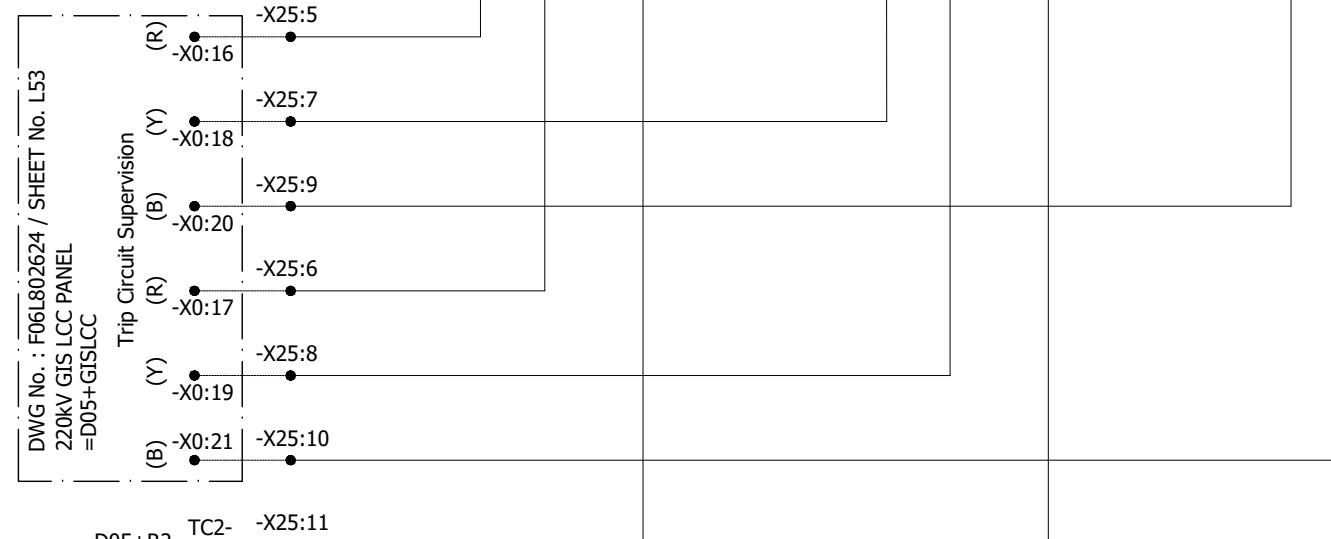
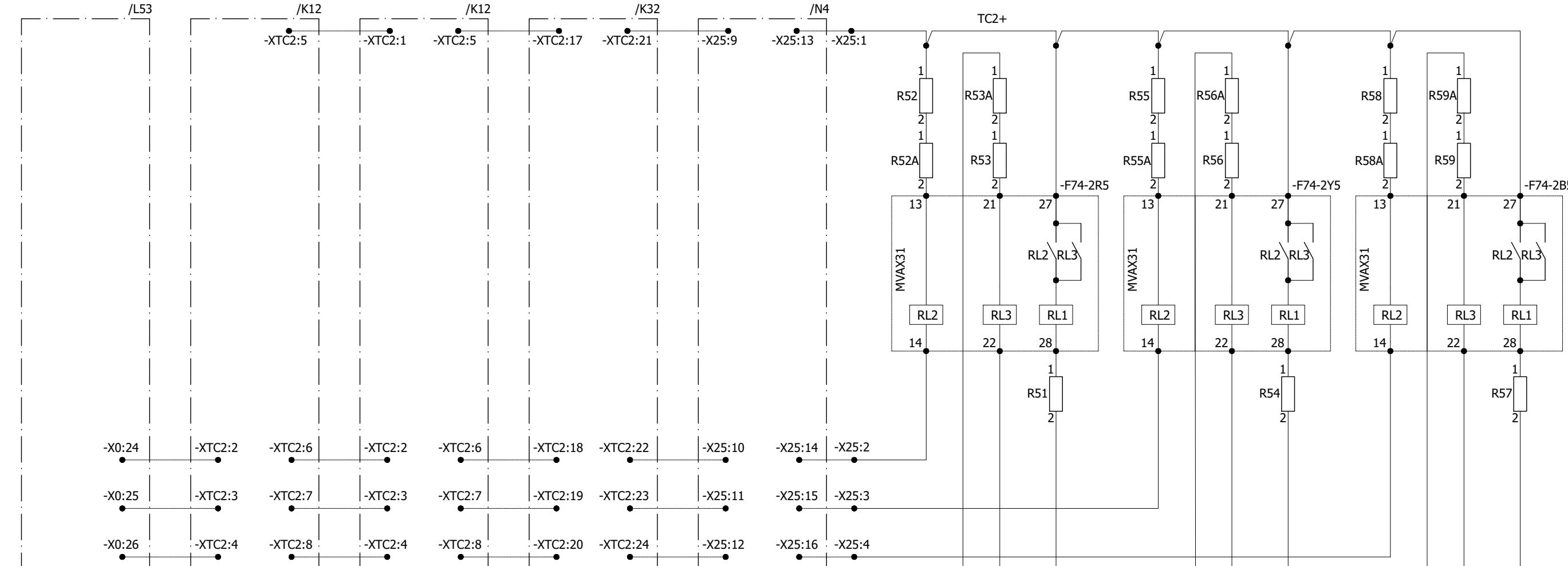
(=D05+R2)

(=D05+R1)

(=D00+R5A)

(=D00+R7)

=D05+Q0



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0	AS BUILT	18.08.2018	MUR	Manufacturer  EPE SOL 71-B Garden Block, New Garden Town, Lahore, Pakistan	Contractor  Grid Solutions A GE and Alstom joint venture	Client  NATIONAL TRANSMISSION & DISPATCH COMPANY LIMITED (NTDC-WAPDA) (NTDC-WAPDA)	Project 220KV/132KV GIS SUBSTATION GAZI ROAD, LAHORE	Title 220KV TRIP CIRCUIT SUPERVISION PANEL (=D00+R6-2) CB D05+Q0 TRIP CCT-2 SUPERVISION	Drawing no. P60194-E-DST-SC-001
REV.	DESCRIPTION	DATE	DRAWER					Project no. P-60194	Sheet type K35
								Sheet no. 13	

220kV GIS LCC PANEL

220kV BUS COUPLER BAY

220KV CBF

BUSBAR PROTECTION

TRIP CIRCUIT-2 SUPERVISION RELAY

C.B. Aux Switch 52a

RELAY PANEL

RELAY PANEL

RELAY PANEL

PHASE R

PHASE Y

PHASE B

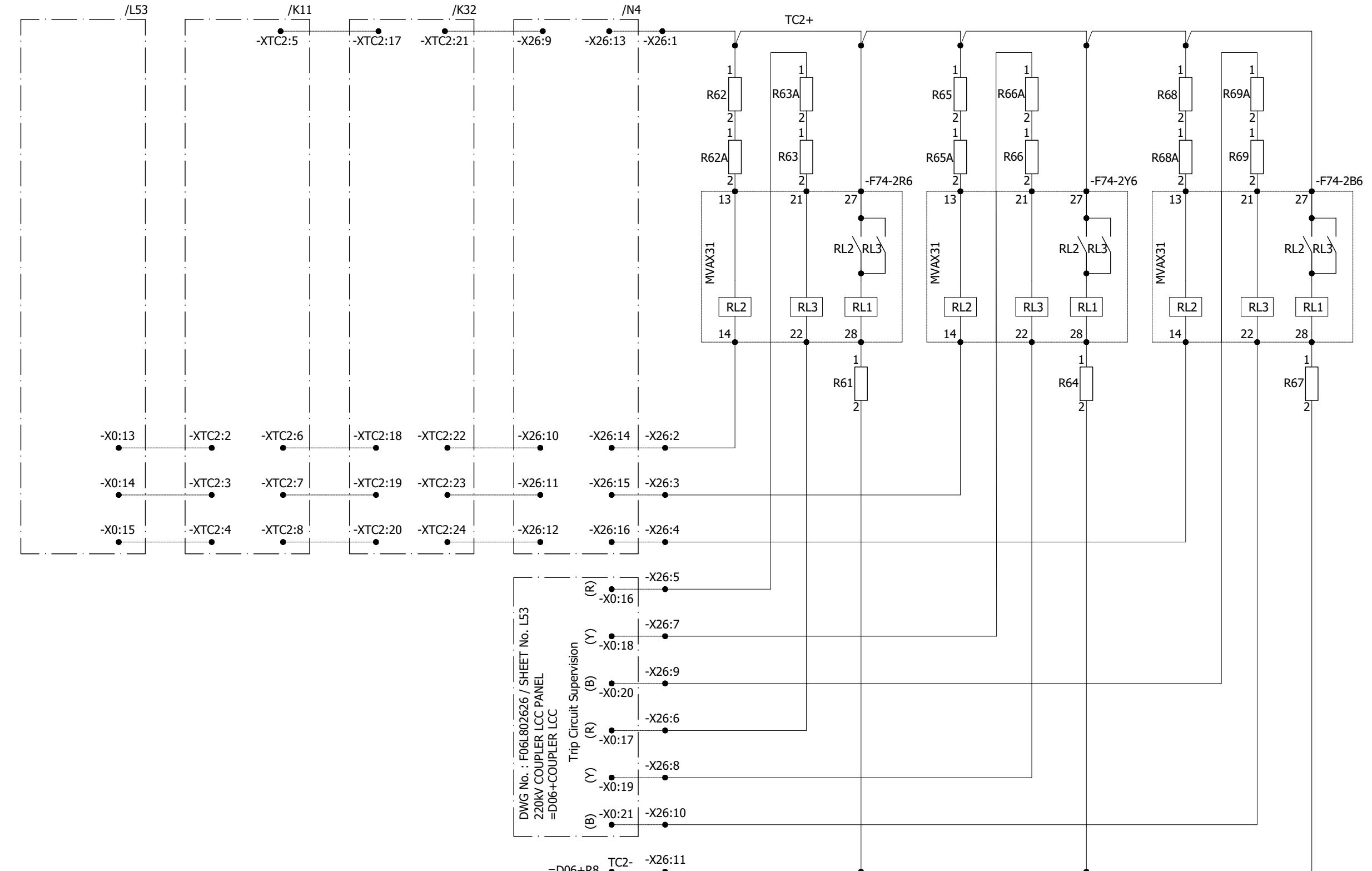
=D06+GISLCC

(=D06+R8 )

(=D00+R5B)

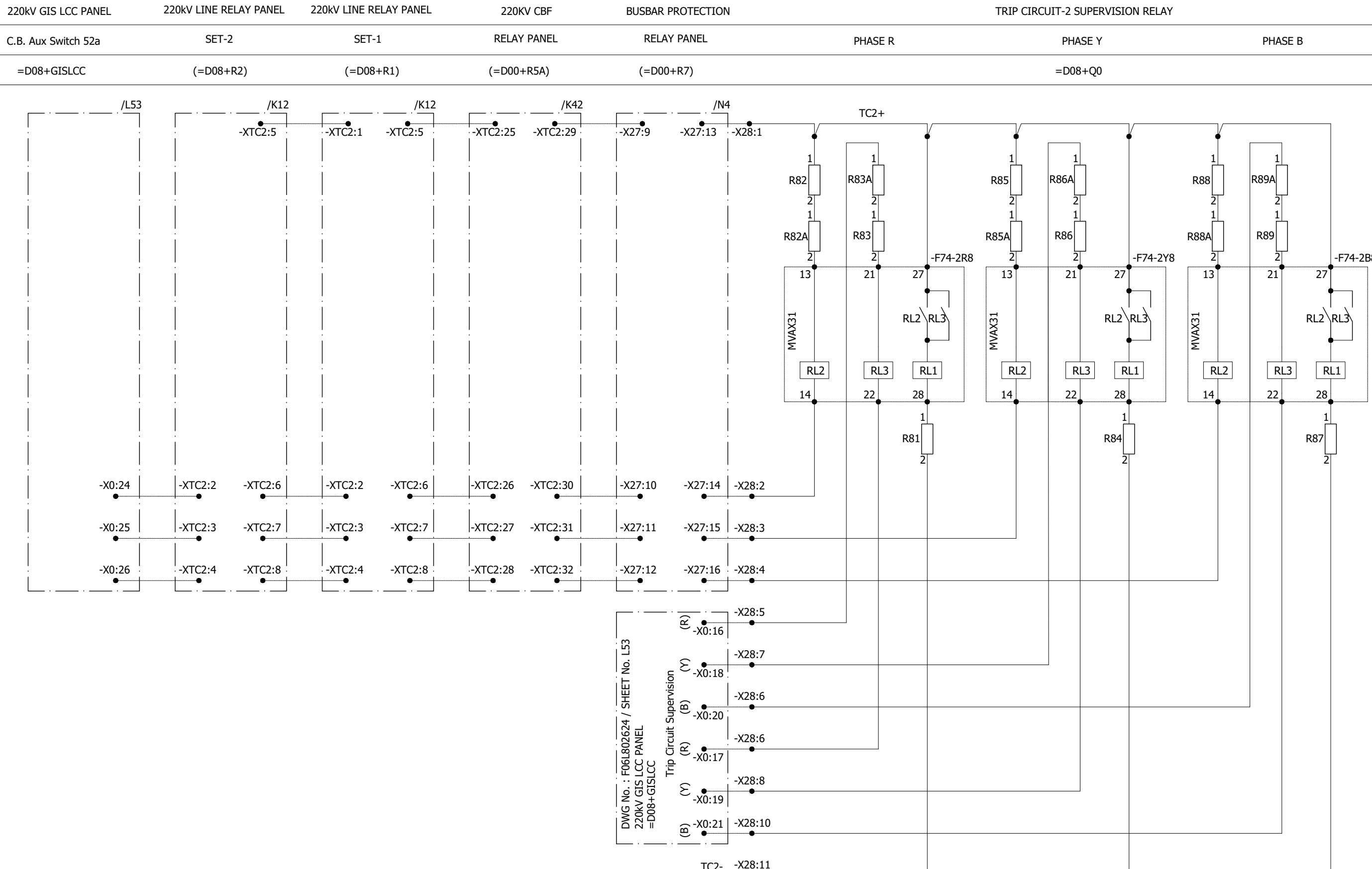
(=D00+R7)

=D06+Q0

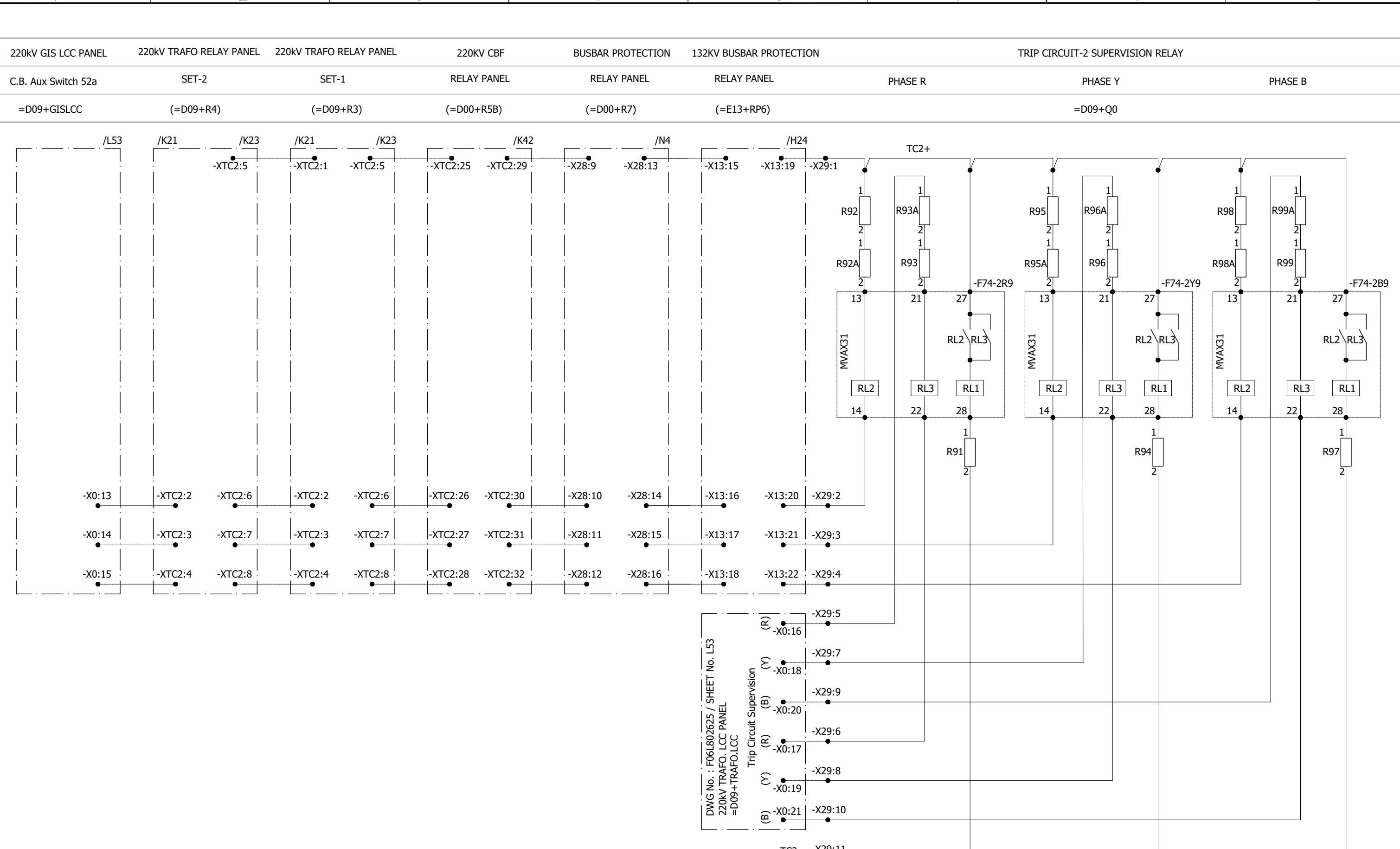


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0	AS BUILT	18.08.2018	MUR	Manufacturer  EPEPSOL 77-B Garden Block, New Garden Town, Lahore, Pakistan	Contractor  Grid Solutions A GE and Alstom joint venture	Client  NATIONAL TRANSMISSION & DISPATCH COMPANY LIMITED (NTDC-WAPDA)	Project 220kV/132kV GIS SUBSTATION GHAZI ROAD, LAHORE	Title 220kV TRIP CIRCUIT SUPERVISION PANEL (=D00+R6-2) CB D06+Q0 TRIP CCT-2 SUPERVISION	Drawing no. P60194-E-DST-SC-001
REV.	DESCRIPTION	DATE	DRAWER						Project no. P-60194
									Sheet type K36
									Sheet no. 14

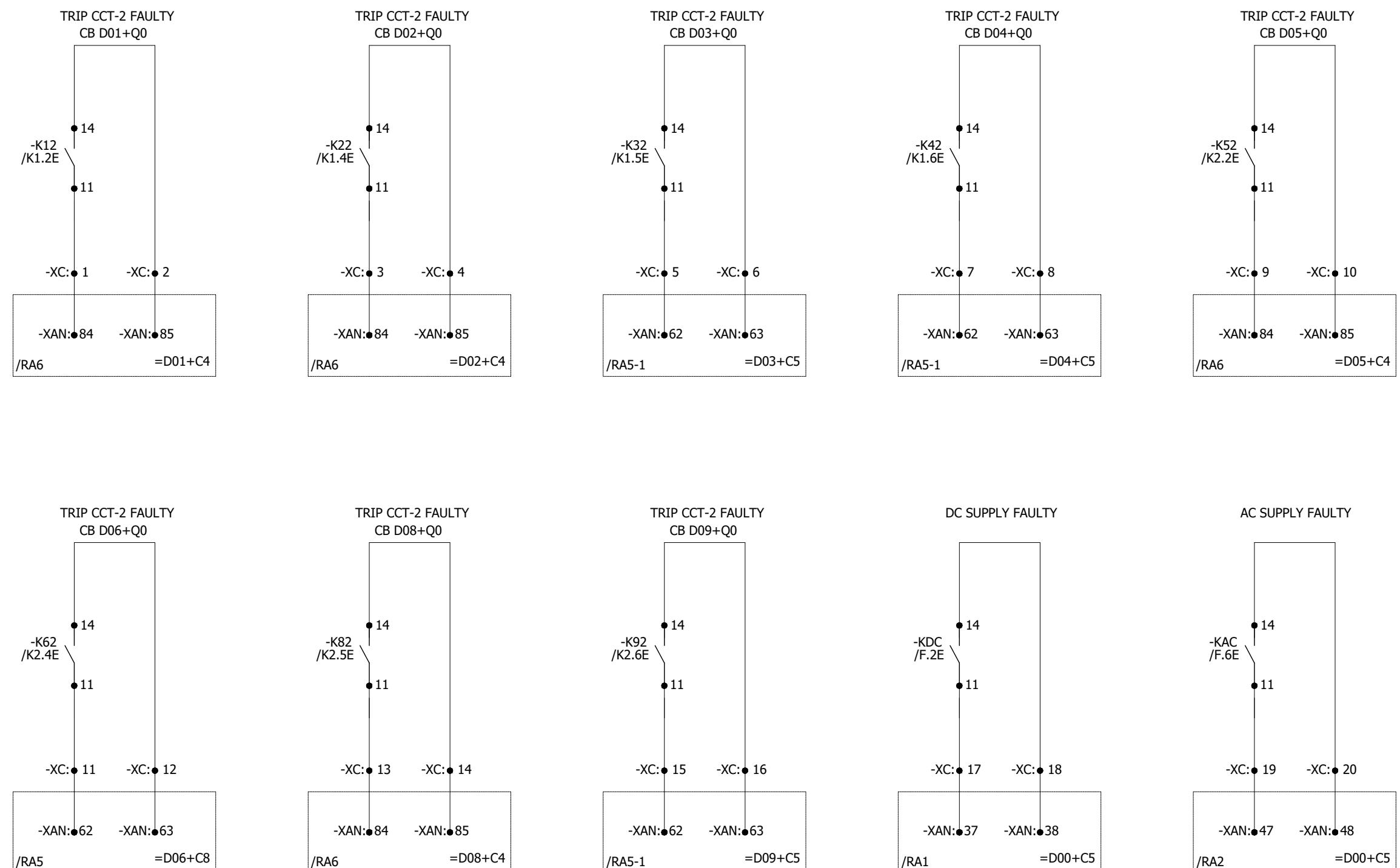


0	AS BUILT	18.08.2018	MUR	Manufacturer  EPESOL 71-B Garden Block, New Garden Town, Lahore, Pakistan	Contractor  Grid Solutions A GE and Alstom joint venture	Client  NATIONAL TRANSMISSION & DISPATCH COMPANY LIMITED (NTDC-WAPDA)	Project 220kV/132kV GIS SUBSTATION GHAZI ROAD, LAHORE	Title 220kV TRIP CIRCUIT SUPERVISION PANEL (=D00+R6-2) CB D08+Q0 TRIP CCT-2 SUPERVISION	Drawing no. P60194-E-DST-SC-001	
REV.	DESCRIPTION	DATE	DRAWER					Project no. P-60194	Sheet type K38	Sheet no. 15
1	2	3	4	5	6	7	8			



0	AS BUILT	18.08.2018	MUR	Manufacturer  EPESOL 72-B Garden Block, New Garden Town, Lahore, Pakistan	Contractor  Grid Solutions A GE and Alstom joint venture	Client  NATIONAL TRANSMISSION & DISPATCH COMPANY LIMITED (NTDC-WAPDA)	Project 220kV/132kV GIS SUBSTATION GHAZI ROAD, LAHORE	Title 220kV TRIP CIRCUIT SUPERVISION PANEL (=D00+R6-2) CB D09+Q0 TRIP CCT-2 SUPERVISION	Drawing no. P60194-E-DST-SC-001	
REV.	DESCRIPTION	DATE	DRAWER					Project no. P-60194	Sheet type K39	Sheet no. 16

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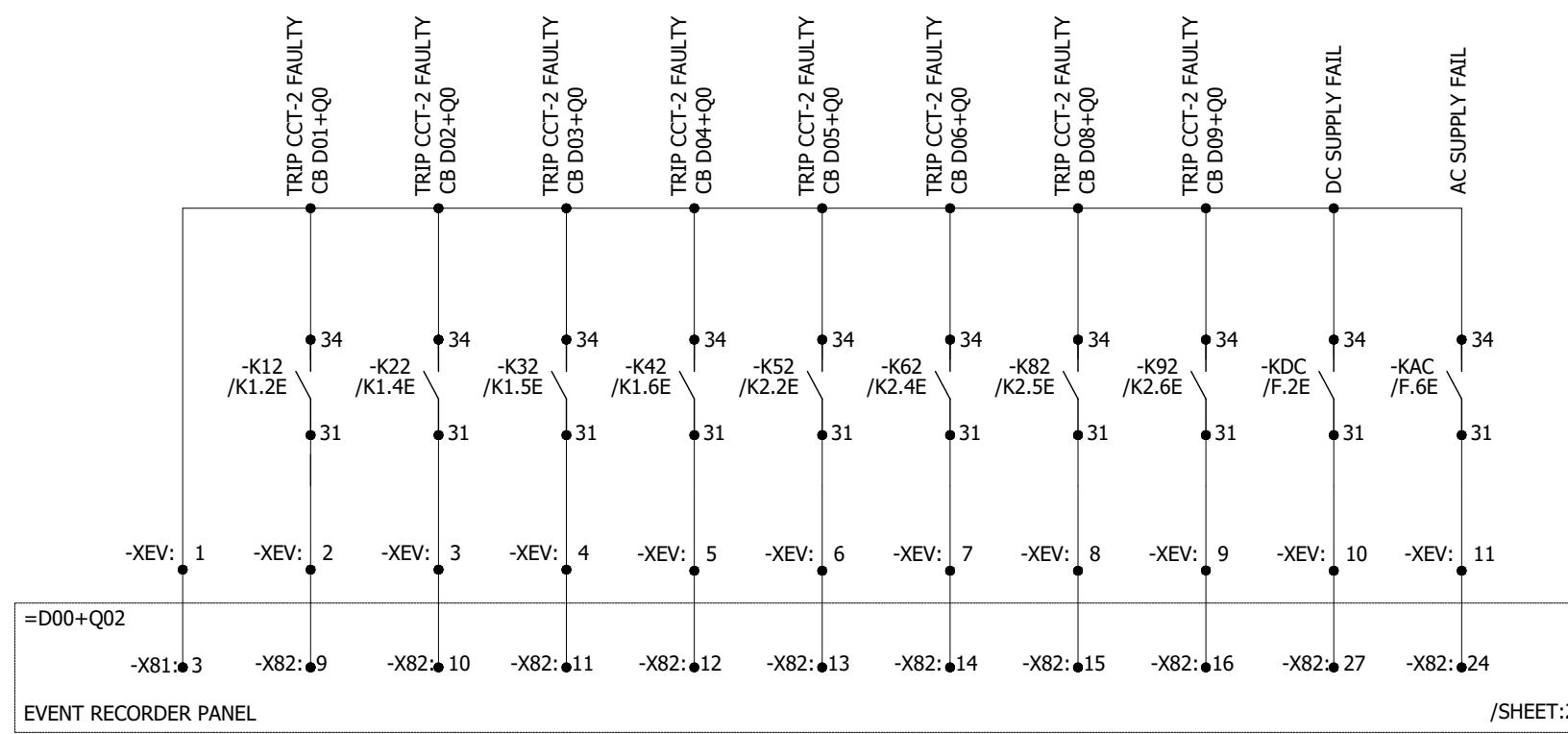


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0	AS BUILT	18.08.2018	MUR	Manufacturer  EPESOL 71-B Garden Block, New Garden Town, Lahore, Pakistan	Contractor  Grid Solutions A GE and Alstom joint venture	Client  NATIONAL TRANSMISSION & DISPATCH COMPANY LIMITED (NTDC-WAPDA)	Project 220kV/132kV GIS SUBSTATION GHAZI ROAD, LAHORE	Title 220kV TRIP CIRCUIT SUPERVISION PANEL (=D00+R6-2) ANNUNCIATION CIRCUIT	Drawing no. P60194-E-DST-SC-001		
REV.	DESCRIPTION	DATE	DRAWER						Project no. P-60194	Sheet type RA1	Sheet no. 20
1	2	3	4	5	6	7	8				

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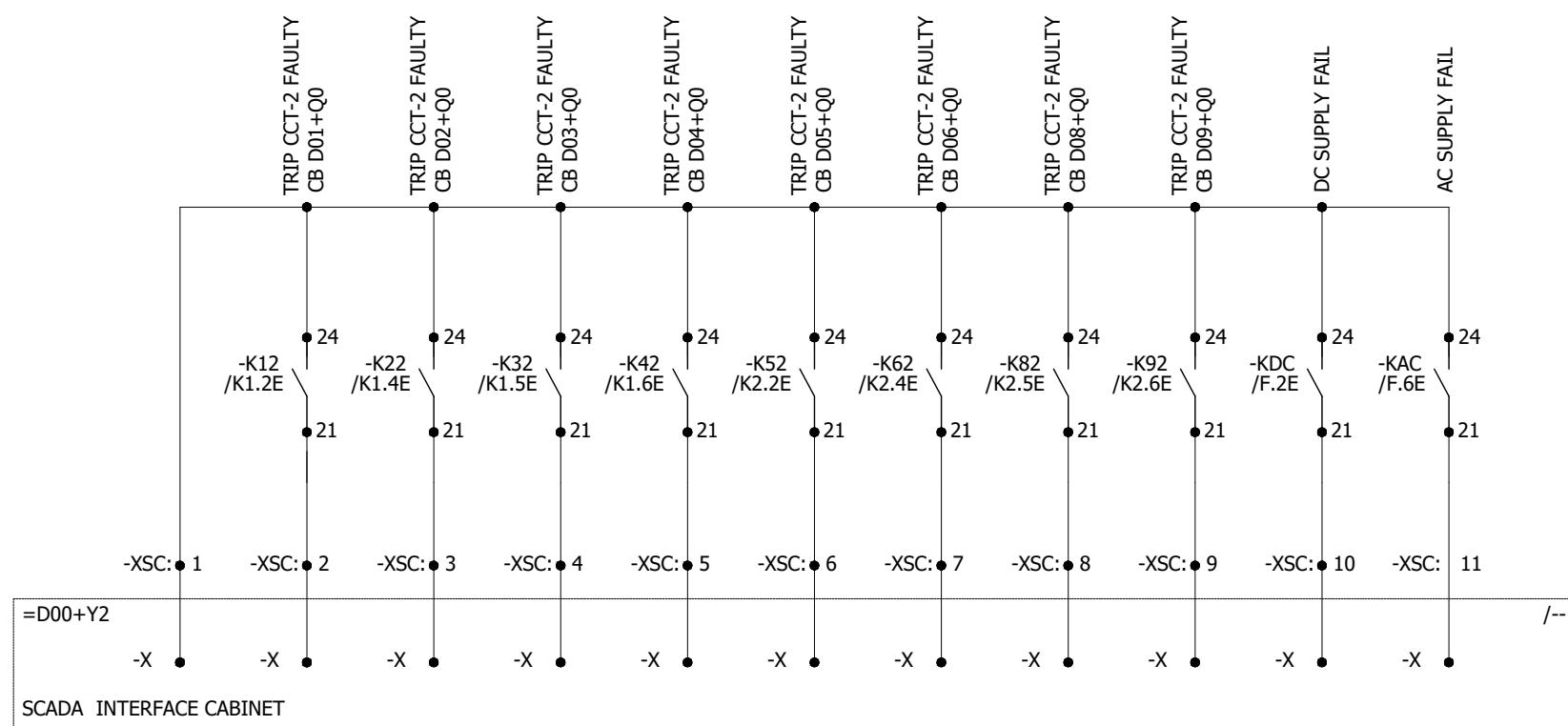
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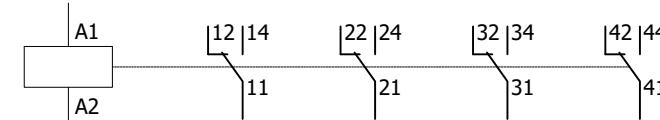
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REV.	DESCRIPTION	DATE	DRAWER						Project no. P-60194 Sheet type RA2 Sheet no. 21
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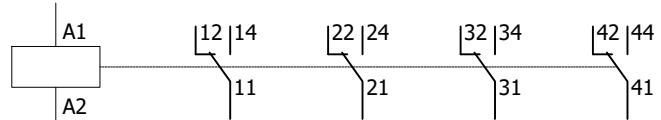


0	AS BUILT	18.08.2018	MUR	Manufacturer  <b>EPEPSOL</b> 72-B Garden Block, New Garden Town, Lahore, Pakistan	Contractor  <b>Grid Solutions</b> A GE and Alstom joint venture	Client  <b>NATIONAL TRANSMISSION &amp; DISPATCH COMPANY LIMITED (NTDC-WAPDA)</b>	Project 220kV/132kV GIS SUBSTATION GAZI ROAD, LAHORE	Title 220kV TRIP CIRCUIT SUPERVISION PANEL (=D00+R6-2) SCADA INTERFACE CABINET	Drawing no. P60194-E-DST-SC-001
REV.	DESCRIPTION	DATE	DRAWER						Project no. P-60194
									Sheet type RA3
									Sheet no. 22

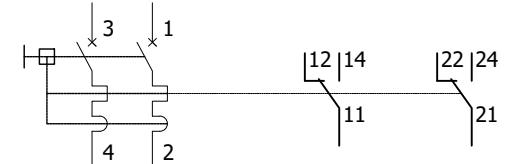
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-K12	RA1.2B	RA3.2B	RA2.2B		
-K22	RA1.3B	RA3.2B	RA2.2B		
-K32	RA1.4B	RA3.3B	RA2.3B		
-K42	RA1.6B	RA3.3B	RA2.3B		
-K52	RA1.7B	RA3.3B	RA2.3B		
-K62	RA1.2D	RA3.4B	RA2.4B		
-K82	RA1.3D	RA3.4B	RA2.4B		
-K92	RA1.4D	RA3.4B	RA2.4B		
-KDC1		F.3C			
-KAC	RA1.7D	RA3.5B	RA2.5B		
-KDCM		F.3C			



-KACM			F.6C		
-KDC	RA1.6D	RA3.5B	RA2.5B	F.4	



-F101	D.2	F.6	
-F102	D.4	F.6	
-F103	D.6	F.6	
-F204	E.5		

COM  
NC

-S100 | D.3

-H100	D.3
-H200	F.4

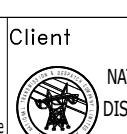
-X100	D.7
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-B100	D.4	D.5
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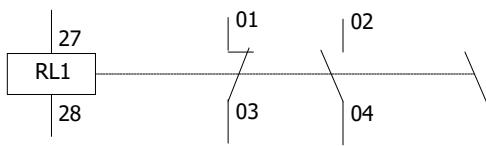
-R100	D.5
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-H200	F.4
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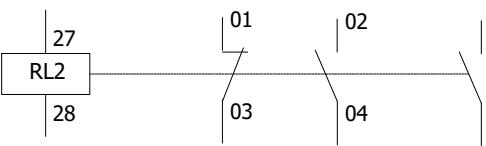
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0	AS BUILT	18.08.2018	MUR	Manufacturer  7-B Garden Block, New Garden Town, Lahore, Pakistan	Contractor  Grid Solutions A GE and Alstom joint venture	Client  NATIONAL TRANSMISSION & DISPATCH COMPANY LIMITED (NTDC-WAPDA)	Project 220kV/132kV GIS SUBSTATION GHAZI ROAD, LAHORE	Title 220kV TRIP CIRCUIT SUPERVISION PANEL (=D00+R6-2) COMPONENT DIAGRAM	Drawing no. P60194-E-DST-SC-001		
REV.	DESCRIPTION	DATE	DRAWER						Project no. P-60194	Sheet type Z1	Sheet no. 23
1	2	3	4	5	6	7	8				

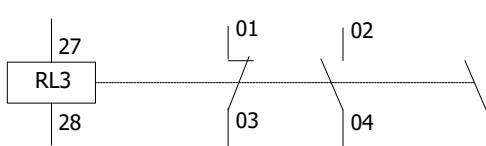
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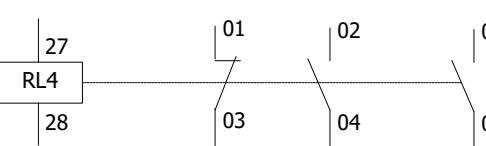
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-F74-2Y1	K31.6	K1.2C		K3.2B
-F74-2B1	K31.7	K1.3C		K3.2B



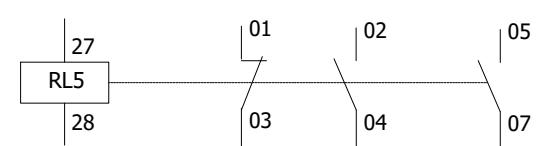
-F74-2R2	K32.5	K1.3C		K3.3B
-F74-2Y2	K32.6	K1.4C		K3.4B
-F74-2B2	K32.7	K1.4C		K3.4B



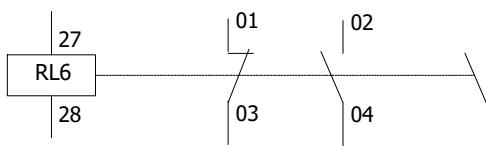
-F74-2R3	K33.5	K1.5C		K3.5B
-F74-2Y3	K33.6	K1.5C		K3.6B
-F74-2B3	K33.7	K1.6C		K3.6B



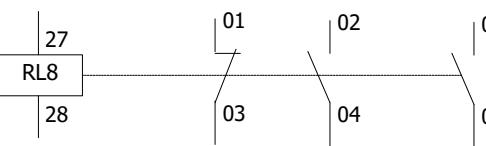
-F74-2R4	K34.5	K1.6C		K3.7B
-F74-2Y4	K34.6	K1.7C		K3.7B
-F74-2B4	K34.7	K1.7C		K3.8B



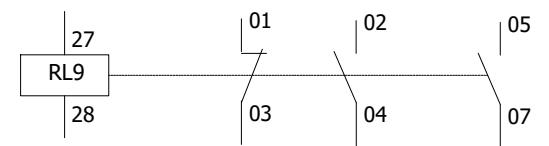
-F74-2R5	K35.5	K2.2C		K3.1E
-F74-2Y5	K35.6	K2.2C		K3.2E
-F74-2B5	K35.7	K2.3C		K3.2E



-F74-2R6	K36.5	K2.3C		K3.3E
-F74-2Y6	K36.6	K2.4C		K3.4E
-F74-2B6	K36.7	K2.4C		K3.4E



-F74-2R8	K38.5	K2.5C		K3.5E
-F74-2Y8	K38.6	K2.5C		K3.6E
-F74-2B8	K38.7	K2.6C		K3.6E



-F74-2R9	K39.5	K2.6C		K3.7E
-F74-2Y9	K39.6	K2.7C		K3.7E
-F74-2B9	K39.7	K2.7C		K3.8E

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E

E

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0	AS BUILT	18.08.2018	MUR	Manufacturer  EPESOL 71-B Garden Block, New Garden Town, Lahore, Pakistan	Contractor  Grid Solutions A GE and Alstom joint venture	Client  NATIONAL TRANSMISSION & DISPATCH COMPANY LIMITED (NTDC-WAPDA)	Project 220kV/132kV GIS SUBSTATION GHAZI ROAD, LAHORE	Title 220kV TRIP CIRCUIT SUPERVISION PANEL (=D00+R6-2) COMPONENT DIAGRAM	Drawing no. P60194-E-DST-SC-001
REV.	DESCRIPTION	DATE	DRAWER						Project no. P-60194
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									Sheet no. 24