



Grid Solutions

A GE and Alstom joint venture

220kV/132kV GIS SUBSTATION GHAZI ROAD , LAHORE

220kV TRAFO RELAY SET-2 PANEL

=D04+R4

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

Scale NOT-TO-SCALE	Sheet size A3
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Client



NATIONAL TRANSMISSION &
DISPATCH COMPANY LIMITED
(NTDC-WAPDA)

Contractor



Grid Solutions

A GE and Alstom joint venture



EPESOL
71-B Garden Block,
New Garden Town,
Lahore, Pakistan

Project

220kV / 132kV GIS SUBSTATION GHAZI ROAD . LAHORE

Title

220kV TRAFO RELAY SET-2 PANEL SCHEMATIC DRAWINGS

DOC / DWG REVIEW CODE

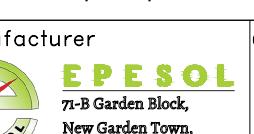
- A Approved, Issue IFC.
- B Approved with comments as noted, Issue IFC after incorporation of these comments.
- C Revise and re-submit for approval.
- D Rejected.

Signed

Date

Permission to proceed does not constitute acceptance of approval of design details, analysers, test methods or materials/
selected by the CONTRACTOR and does not relieve the CONTRACTOR from full compliance with AGREEMENT obligations.

**220kV TRAFO RELAY SET-2 PANEL
SCHEMATIC DRAWINGS**

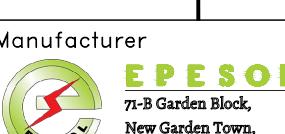
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A	PAGE NO.	SHEET NAME	SHEET DESCRIPTION			ISSUE / REVISION						
						A	B	C	D	E	F	01
All information contained in this document is the exclusive property of GE GRID SOLUTIONS and shall not be used, copied or communicated to third parties without its prior authorization.	01	A	Cover Sheet			X	X	X	X	X	X	
	02	AA1	List Of Contents			X	X	X	X	X	X	
	03	AA2	List Of Contents			X	X	X	X	X	X	
	04	AB	Symbol and Legends			X	X	X	X	X	X	
	05	AC1	Component List			X	X	X	X	X	X	
	06	AC2	Component List			X	X	X	X	X	X	
	07	AD	Panel View			X	X	X	X	X	X	
	08	AE	Bay Concept & Protection Logice			X	X	X	X	X	X	
	09	D	AC Supply Distribution Circuit			X	X	X	X	X	X	
	10	E	220DC Supply Distribution Circuit			X	X	X	X	X	X	
	11	E1	110DC Supply Distribution Circuit			X	X	X	X	X	X	
	12	F	AC/DC Supply Failure Circuit			X	X	X	X	X	X	
	13	G	Relay Control & Supply Circuit			X	X	X	X	X	X	
	14	H1	Overall Trafo Differential			X	X	X	X	X	X	
	15	H2	HV Connection Differential Protection Circuit			X	X	X	X	X	X	
	16	H3	LV Connection Differential Protection Circuit			X	X	X	X	X	X	
	17	H4	Tertiary OverCurrent & EarthFault Circuit			X	X	X	X	X	X	
	18	H5	Neutral OverCurrent Circuit			X	X	X	X	X	X	
	19	K1	Protection Trips			X	X	X	X	X	X	
	20	K2	Protection Trips			X	X	X	X	X	X	
	21	K11	Trip Circuit For Coil-1 (D04-Q0)			X	X	X	X	X	X	
	22	K12	Trip Circuit For Coil-1 (D04-Q0)			X	X	X	X	X	X	
	23	K13	Trip Circuit For Coil-1 (D04-Q0)			X	X	X	X	X	X	
	24	K21	Trip Circuit For Coil-2 (D04-Q0)			X	X	X	X	X	X	
	25	K22	Trip Circuit For Coil-2 (D04-Q0)			X	X	X	X	X	X	
	26	K23	Trip Circuit For Coil-2 (D04-Q0)			X	X	X	X	X	X	
	27	K31	Trip Circuit For Coil-1 (E08-Q0)			X	X	X	X	X	X	
	28	K32	Trip Circuit For Coil-1 (E08-Q0)			X	X	X	X	X	X	
	29	K41	Trip Circuit For Coil-2 (E08-Q0)			X	X	X	X	X	X	
	30	K42	Trip Circuit For Coil-2 (E08-Q0)			X	X	X	X	X	X	
	31	NA1	Protection Trips & Relay Faulty			X	X	X	X	X	X	
	32	NA2	Protection Trips & Relay Faulty			X	X	X	X	X	X	
0	AS BUILT	10.10.2018	ASJ	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 TRAFO RELAY SET-2 PANEL (=D04+R4) LIST OF CONTANTS	Drawing no. P60194-E-DTR-SC-002			
REV.	DESCRIPTION	DATE	DRAWER						Project no. P-60194	Sheet type AA1	Sheet no. 02	

	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	10.10.2018	ASJ	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 TRAFO RELAY SET-2 PANEL (=D04+R4) SYMBOLA AND LEGENDS	Drawing no. P60194-E-DTR-SC-002
REV.	DESCRIPTION	DATE	DRAWER						Project no. P-60194
									Sheet type AB
									Sheet no. 04

	1	2	3	4	5	6	7	8			
A	QTY.	DEVICE DESCRIPTION		DEVICE SPECIFICATIONS DEVICE TYPE ; TECHNICAL DATA / SPECIFICATIONS			DEVICE DESIGNITION		MANUFACTURER		
	01	OVERALL TRANSFORMER DIFFERENTIAL PROTECTION RELAY		AGILE P643, Cortec: P64391BA6M0060M Supply: 110-250VDC / 100-240VAC, 12 CT + 1 VT (Vn=100-120V),(In=1/5A) Inputs 16 Opto Inputs, 16 Relay Outputs			-F87T2		GE GRID SOLUTIONS		
B	02	HV CONNECTION DIFFERENTIAL PROTECTION RELAY		AGILE P642, Cortec: P64291BA6M0060P Supply: 110-250VDC / 100-240VAC, 1 VT + 8 CT (Vn=100-120V),(In=1/5A) Inputs			-F87CH, -F87CL		GE GRID SOLUTIONS		
C	01	LV CONNECTION DIFFERENTIAL PROTECTION RELAY		8 Opto Inputs, 8 Relay Outputs							
D	01	TERTIARY OVER CURRENT PROTECTION RELAY		AGILE P14N, Cortec: P14NB16A7C0570A Supply: 24-250VDC / 110-240VAC, 4 CT (In=1/5A) Inputs 8 Opto Inputs, 8 Relay Outputs			-F50TER		GE GRID SOLUTIONS		
E	01	NEUTRAL OVER CURRENT PROTECTION		AGILE P14N, Cortec: P14NB16A7C0570A Supply: 24-250VDC / 110-240VAC, 4 CT (In=1/5A) Inputs 8 Opto Inputs, 8 Relay Outputs			-F51N		GE GRID SOLUTIONS		
F	05	TEST BLOCK		MMLG01, Cortec: MMLG01-R1AA9002D			-XT87T2,-XT87CH,-XT87CL,-XT50TER,-XT51N		GE GRID SOLUTIONS		
G	16	TRIPPING RELAY (HAND/ELECTRICAL RESET)		MVAJ105, Cortec: MVAJ105-RA1002A Supply: 220-250VDC, 8 NO + 2 NC Contacts			-F86-1 ~ -F86-16		GE GRID SOLUTIONS		
H	02	CONTROL MCB - PANEL LIGHT & HEATER		G62C02+(CAH2),2-Pole, Ratings: 2A, 230VAC, 6kA @ 230VAC, 2 C/O Contacts			-F101, -102		GE		
I	01	CONTROL ELCB - PANEL SOCKET		DM100C216/030+(CAH2),2-Pole, Ratings: 16A, 30mA, 230VAC, 2 C/O Contacts			-F103		GE		
J	04	CONTROL MCB - DC DISTRIBUTION		EP102UCC04+(CAH2),2-Pole, Ratings: 4A, 220VDC, 10kA, 2 C/O Contacts			-F201 ~ - F204		GE		
K	01	CONTROL MCB - 110VDC DISTRIBUTION		EP102UCC04+(CAH2),2-Pole, Ratings: 4A, 110VDC, 10kA, 2 C/O Contacts			-F205		GE		
L	01	PUSHBUTTON - HAND TRIP RELAY RESET		YS-AP1-2-40-B-D-W, Black button, Spring return, 2-Pole, Ratings: 12A, 220VDC			-S86		YOUNGSUNG		
M	01	INDICATION LAMP - DC SUPPLY FAILURE		YS-PL-2-AL-22-R-W, Type: Integrated LED , Color : RED , Supply : 230VAC @ 50Hz			-H200		YOUNGSUNG		
N	19	AUXILIARY CONTACTOR		PRC4M40DCML, Coil Voltage: 220VDC, 4 C/O Contacts -K87T2, -K87T2F, -K87CH, -K87CHF, -K87CL, -K87CLF -K50TER, -K50TERF, -K51N, -K51NF, -KPRD, -KBOL -KBT, -KDCA, -KACA, -KDCM, -KAC, -KDC1, -KDC2			GE				
O	01	AUXILIARY CONTACTOR		MCRC022ATWN-B+MARN211AT, Coil Voltage: 220VDC, 3NO+3NC Contacts			-KCS		GE		
P	02	AUXILIARY CONTACTOR		PRC4M40ANL, Coil Voltage: 230VAC, 4 C/O Contacts			-KDC, -KACM		GE		
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0	AS BUILT		10.10.2018	ASJ	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 GAZI ROAD, LAHORE	Title 220kV TRAFO RELAY SET-2 PANEL (=D04+R4) COMPONENT LIST	Drawing no. P60194-E-DTR-SC-002	
REV.	DESCRIPTION		DATE	DRAWER					Project no. P-60194	Sheet type AC1	Sheet no. 05

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A	QTY.	DEVICE DESCRIPTION		DEVICE SPECIFICATIONS DEVICE TYPE ; TECHNICAL DATA / SPECIFICATIONS			DEVICE DESIGNITION		MANUFACTURER		
	01	PANEL LIGHT WITH DOOR SWITCH		YST8-30-5W+YSP315GWB, 230VAC @ 50Hz, 20W, with Door Limit Sw. 1 CO contact			-H100, -S100		YOUNGSUNG		
B	01	THREE PIN SOCKET		1N+PE, 16A, 230VAC @ 50Hz			-X100		LEAR		
C	01	PANEL HEATER		230VAC @ 50Hz, 50W			-R100		E-LABS		
D	01	HUMIDITY & TEMPERATURE CONTROLLER		THERMOSTAT AND HUMIDSTAT			-B100		E-LABS		
E	08	TERMINAL BLOCKS FOR CT WITH SHORTING ARRANGEMNT		Type: SCB-6			-X4		CABUR		
F	08	TERMINAL BLOCKS FOR CT WITH SHORTING ARRANGEMNT		Type: SCB-6			-X5		CABUR		
G	08	TERMINAL BLOCKS FOR CT WITH SHORTING ARRANGEMNT		Type: SCB-6			-X6		CABUR		
H	08	TERMINAL BLOCKS FOR CT WITH SHORTING ARRANGEMNT		Type: SCB-6			-X7		CABUR		
I	08	TERMINAL BLOCKS FOR CT WITH SHORTING ARRANGEMNT		Type: SCB-6			-X8		CABUR		
J	08	TERMINAL BLOCKS FOR CT WITH SHORTING ARRANGEMNT		Type: SCB-6			-X9		CABUR		
K	08	TERMINAL BLOCKS FOR CT WITH SHORTING ARRANGEMNT		Type: SCB-6			-X10		CABUR		
L	02	TERMINAL BLOCKS FOR CT WITH SHORTING ARRANGEMNT		Type: SCB-6			-X11		CABUR		
M	02	TERMINAL BLOCKS FOR CT WITH SHORTING ARRANGEMNT		Type: SCB-6			-X12		CABUR		
N	05	TERMINAL BLOCKS FOR AC SUPPLY		Type: CBD-4			-XAC		CABUR		
O	04	TERMINAL BLOCKS FOR 220VDC SUPPLY-1		Type: CBD-4			-XDC1		CABUR		
P	04	TERMINAL BLOCKS FOR 220VDC SUPPLY-2		Type: CBD-4			-XDC2		CABUR		
Q	04	TERMINAL BLOCKS FOR 110VDC SUPPLY		Type: CBD-4			-XDC3		CABUR		
R	02	TERMINAL BLOCKS FOR AC FAULTY CIRCUIT		Type: CBD-4			-X3		CABUR		
S	10	TERMINAL BLOCKS FOR LOR INITIATE		Type: CBD-4			-X15		CABUR		
T	05	TERMINAL BLOCKS FOR TRANSFORMER MECH. TRIP		Type: CBD-4			-X02		CABUR		
U	09	TERMINAL BLOCKS FOR 220KV CB TRIP CIRCUIT-1		Type: CBD-4			-XTC1		CABUR		
V	13	TERMINAL BLOCKS FOR 220KV CB TRIP CIRCUIT-2		Type: CBD-4			-XTC2		CABUR		
W	05	TERMINAL BLOCKS FOR 132KV CB TRIP CIRCUIT-1		Type: CBD-4			-XTC3		CABUR		
X	06	TERMINAL BLOCKS FOR 132KV CB TRIP CIRCUIT-2		Type: CBD-4			-XTC4		CABUR		
Y	03	TERMINAL BLOCKS FOR FAULT LOCATOR SIGNAL		Type: CBD-4			-X21		CABUR		
Z	11	TERMINAL BLOCKS FOR CLOSE BLOCK, BFI SIGNALS		Type: CBD-4			-X22		CABUR		
A	13	TERMINAL BLOCKS FOR ANNUNCIATION SIGNALS		Type: CBD-4			-XAN		CABUR		
B	13	TERMINAL BLOCKS FOR ER SIGNALS		Type: CBD-4			-XEV		CABUR		
C	13	TERMINAL BLOCKS FOR SCADA SIGNALS		Type: CBD-4			-XSC		CABUR		
D	03	TERMINAL BLOCKS FOR FR SIGNALS		Type: CBD-4			-XFR		CABUR		
E											
F	0	AS BUILT		10.10.2018	ASJ	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 TRAFO RELAY SET-2 PANEL (=D04+R4) COMPONENT LIST	Drawing no. P60194-E-DTR-SC-002
	REV.	DESCRIPTION		DATE	DRAWER				Project no. P-60194	Sheet type AC2	Sheet no. 06

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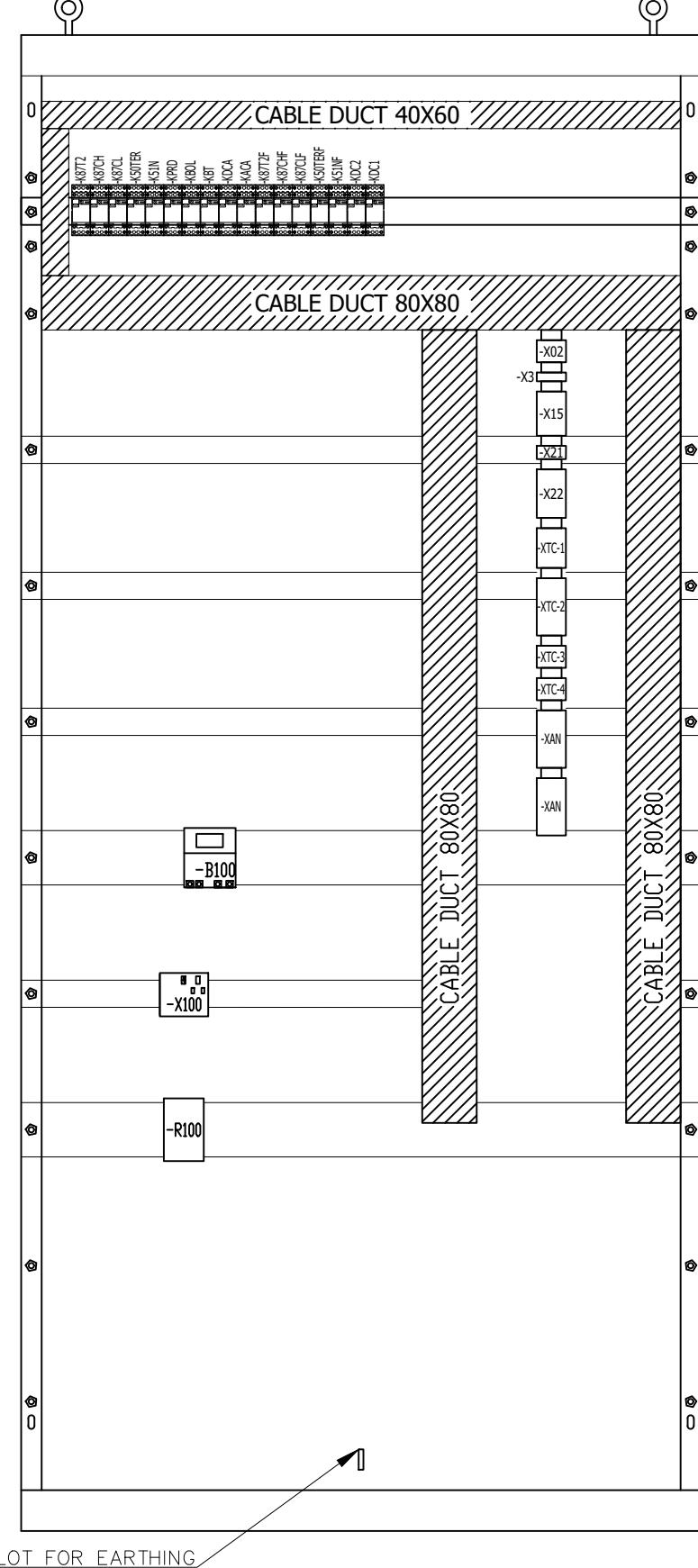
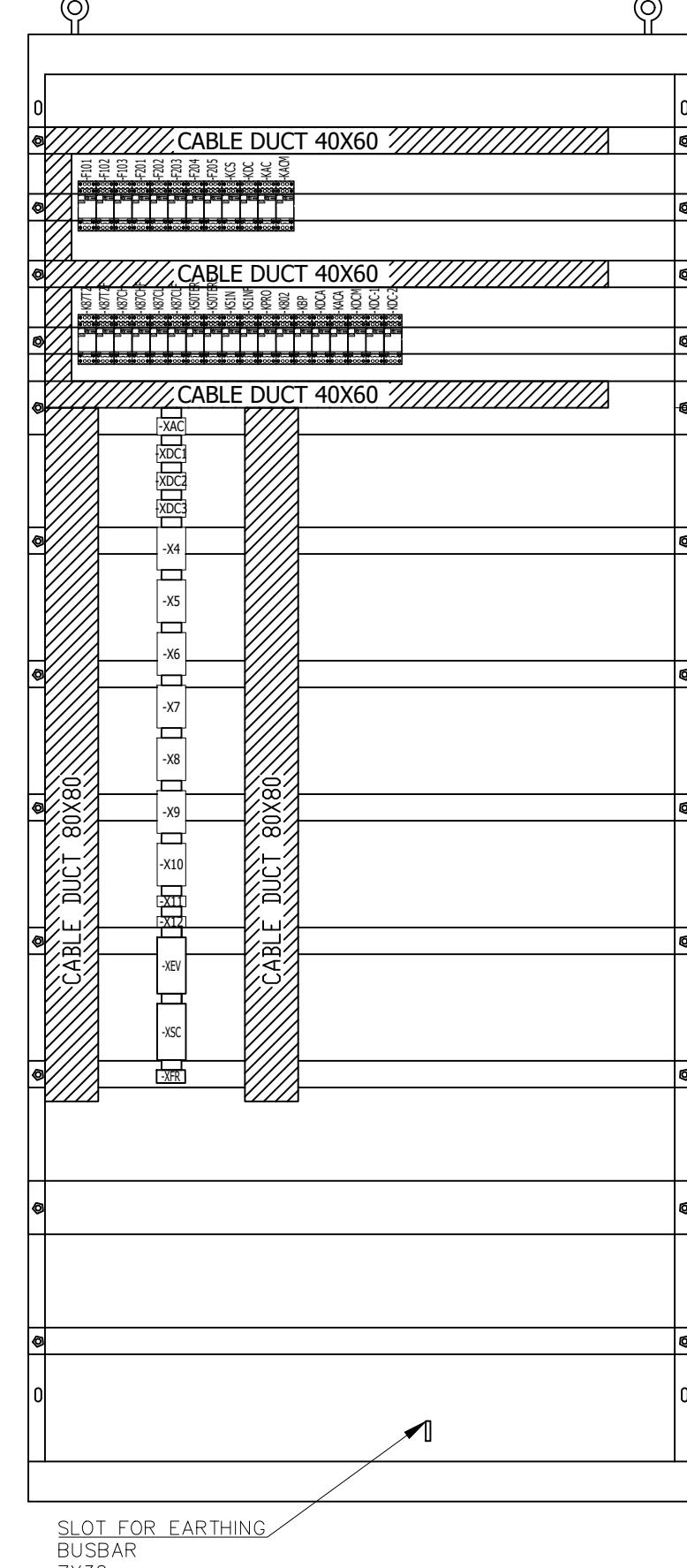
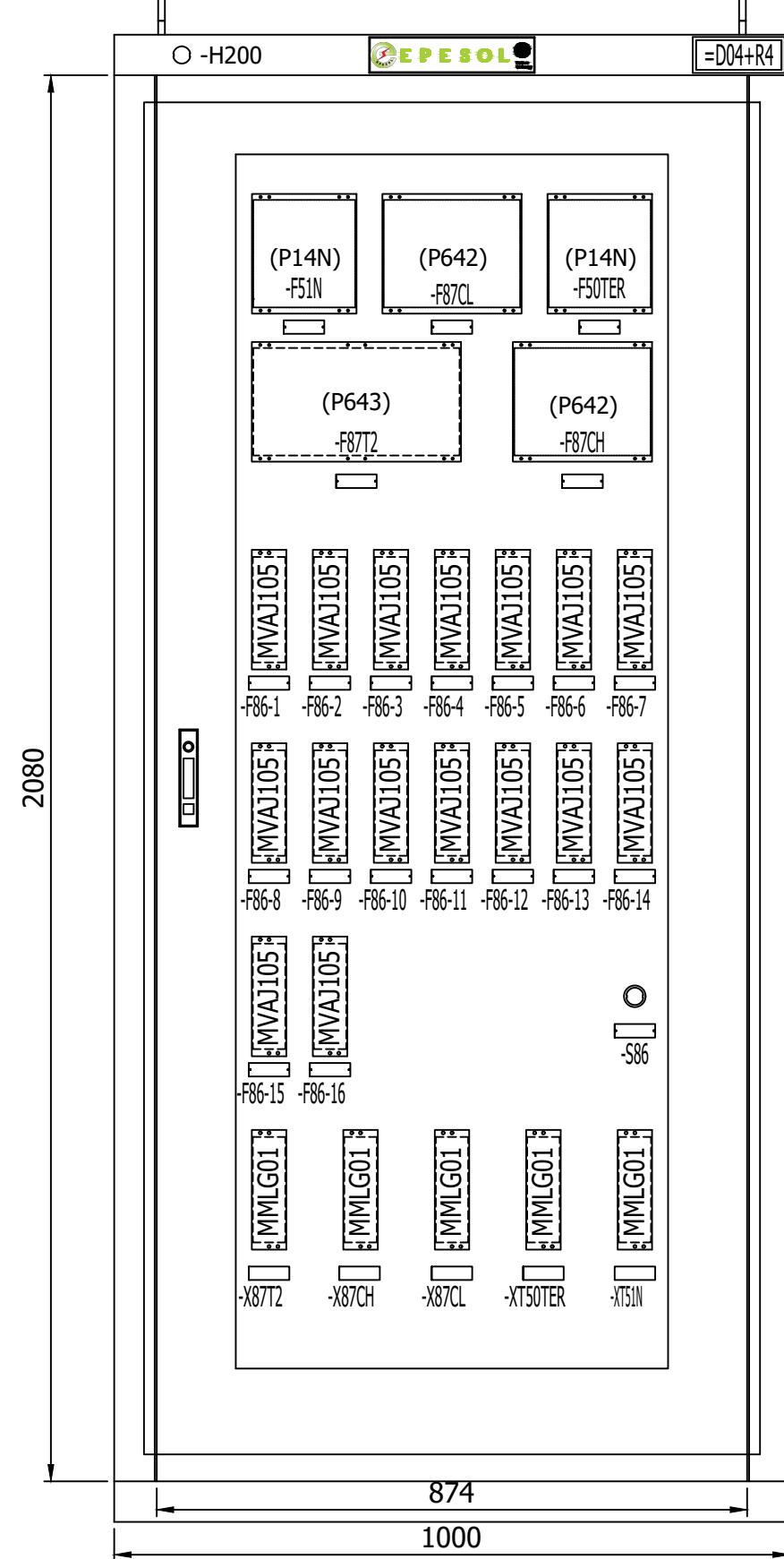
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7

8

FRONT VIEWLEFT SIDE VIEWRIGHT SIDE VIEW

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REV.	DESCRIPTION	DATE	DRAWER						Project no. P-60194
									Sheet type AD
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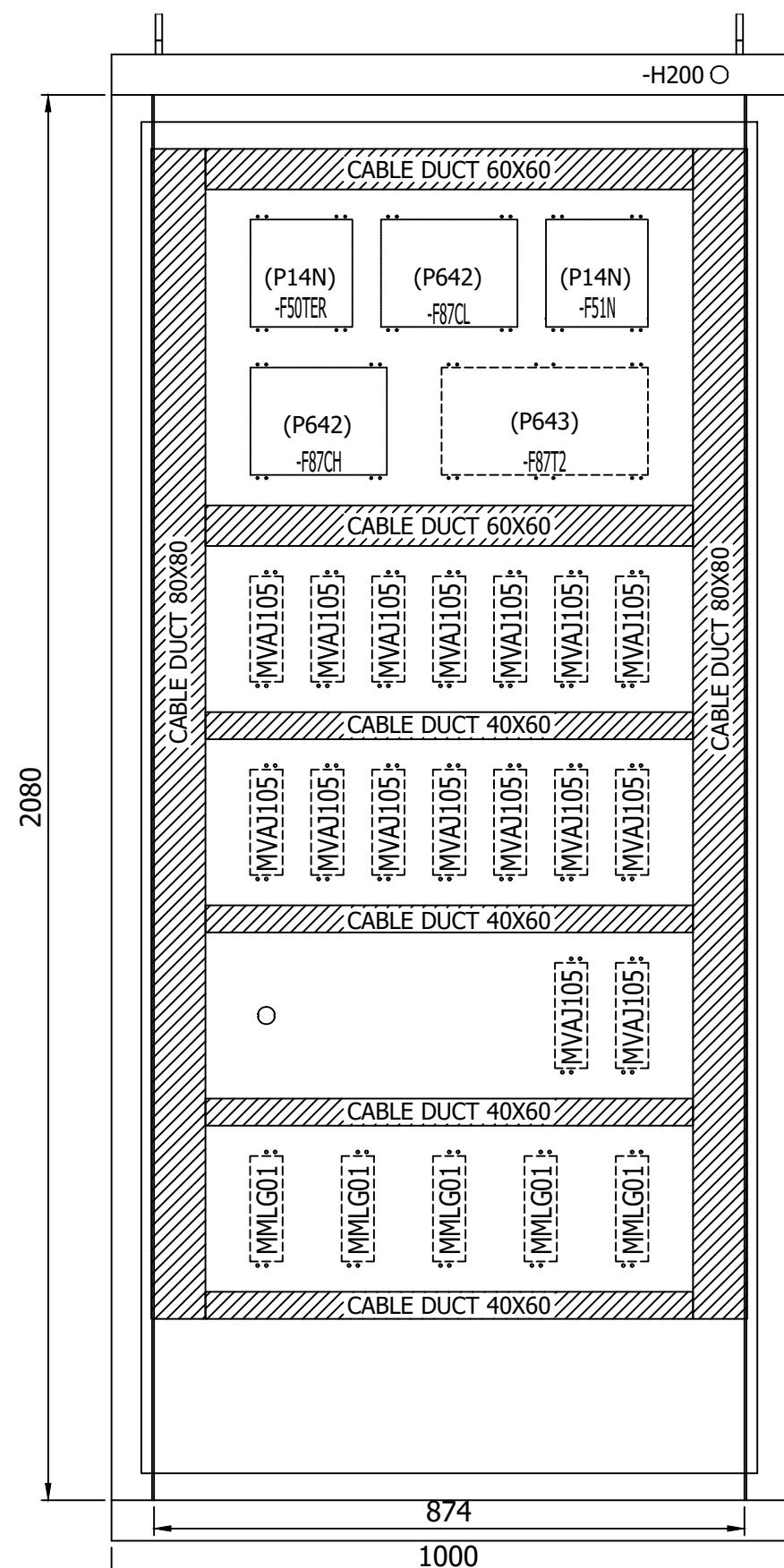
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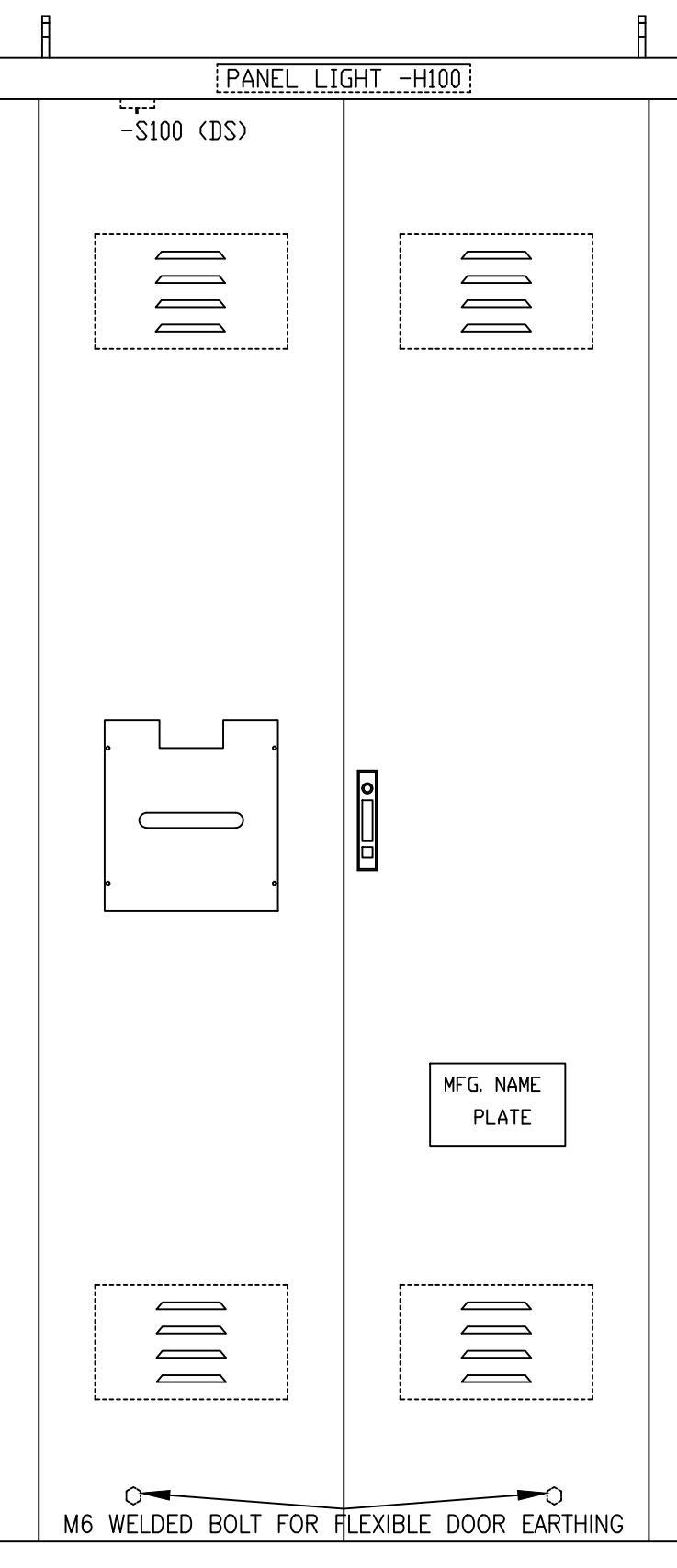
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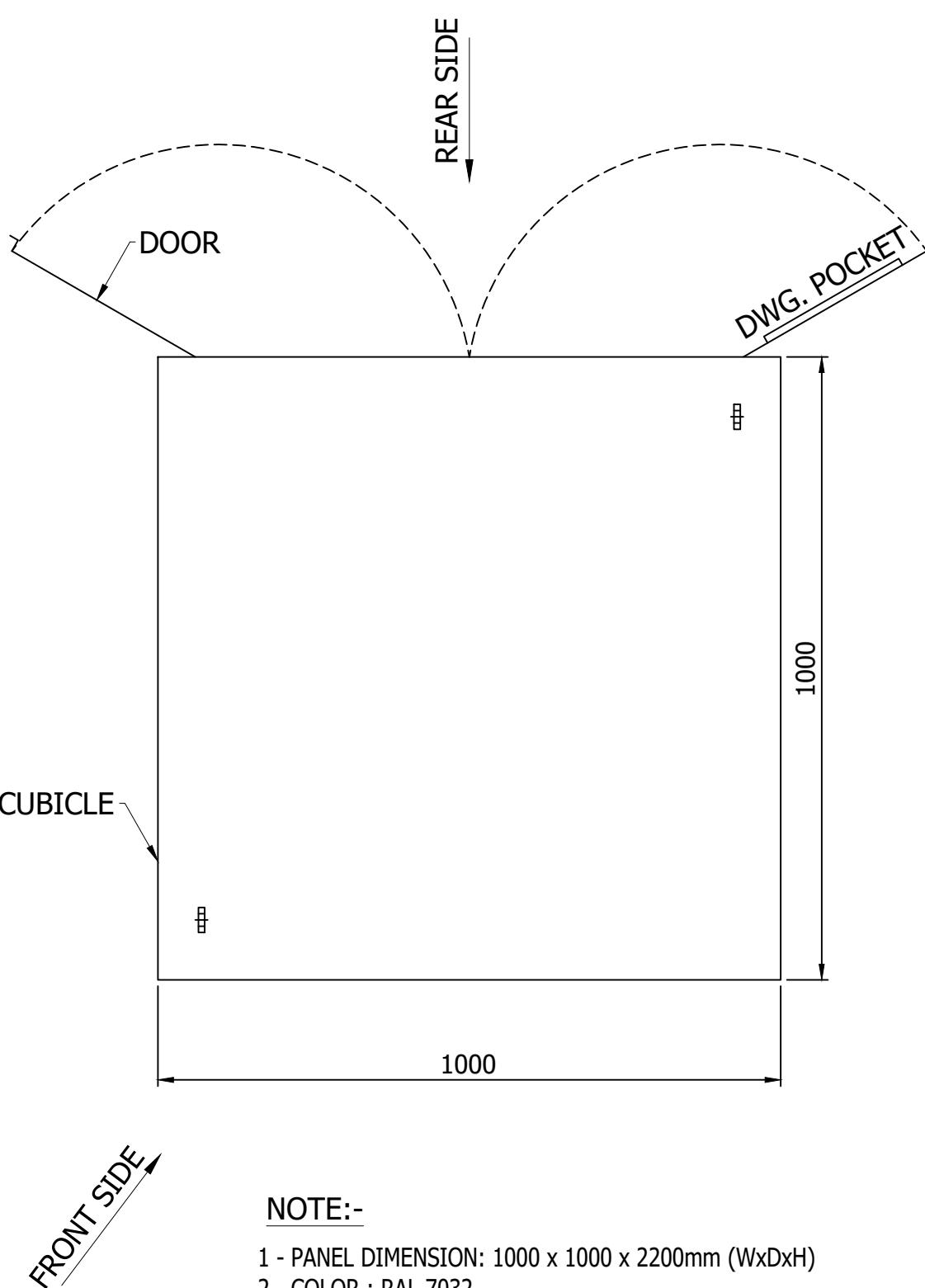
FRONT VIEW



BACK VIEW WITH DOOR



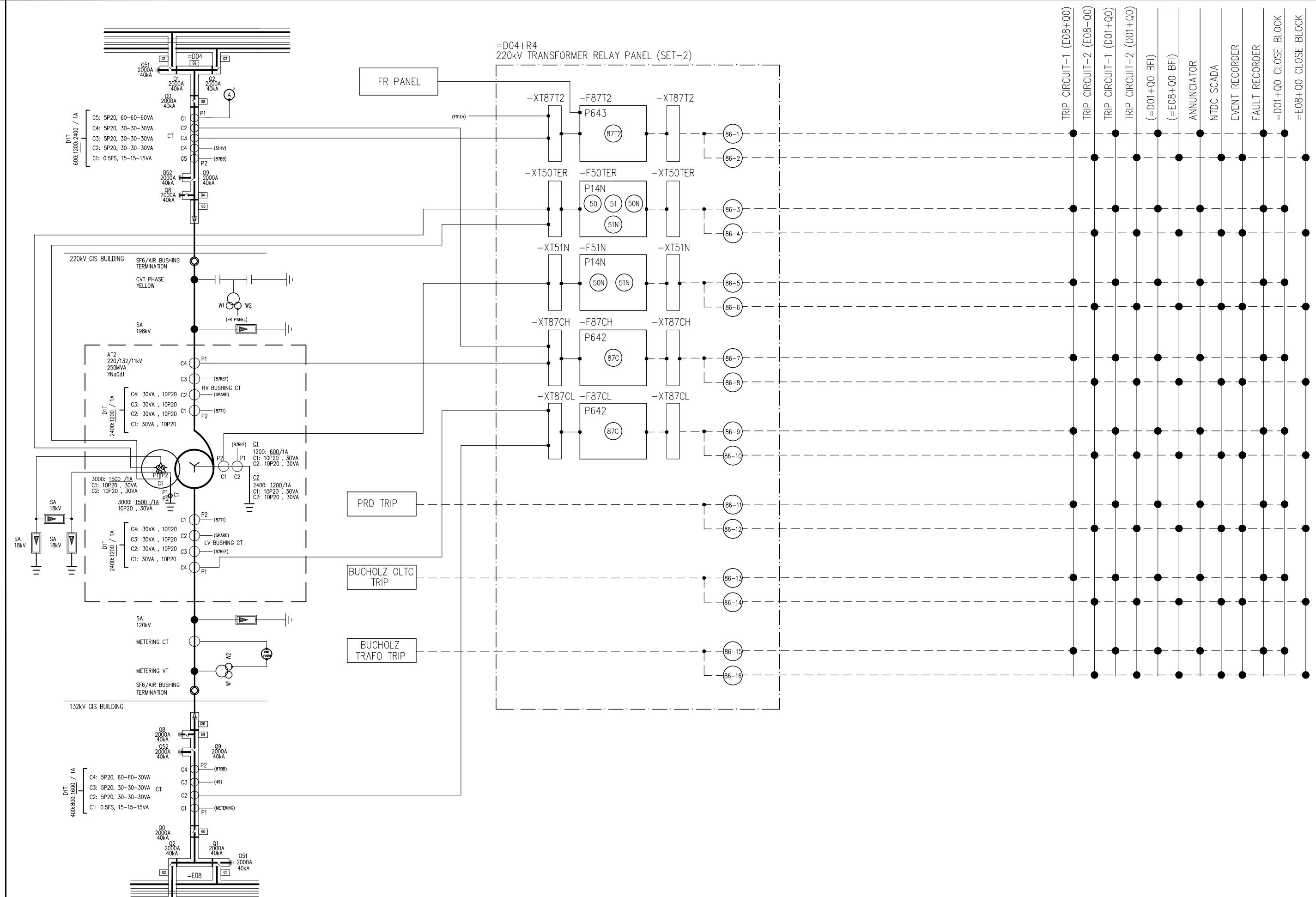
TOP VIEW



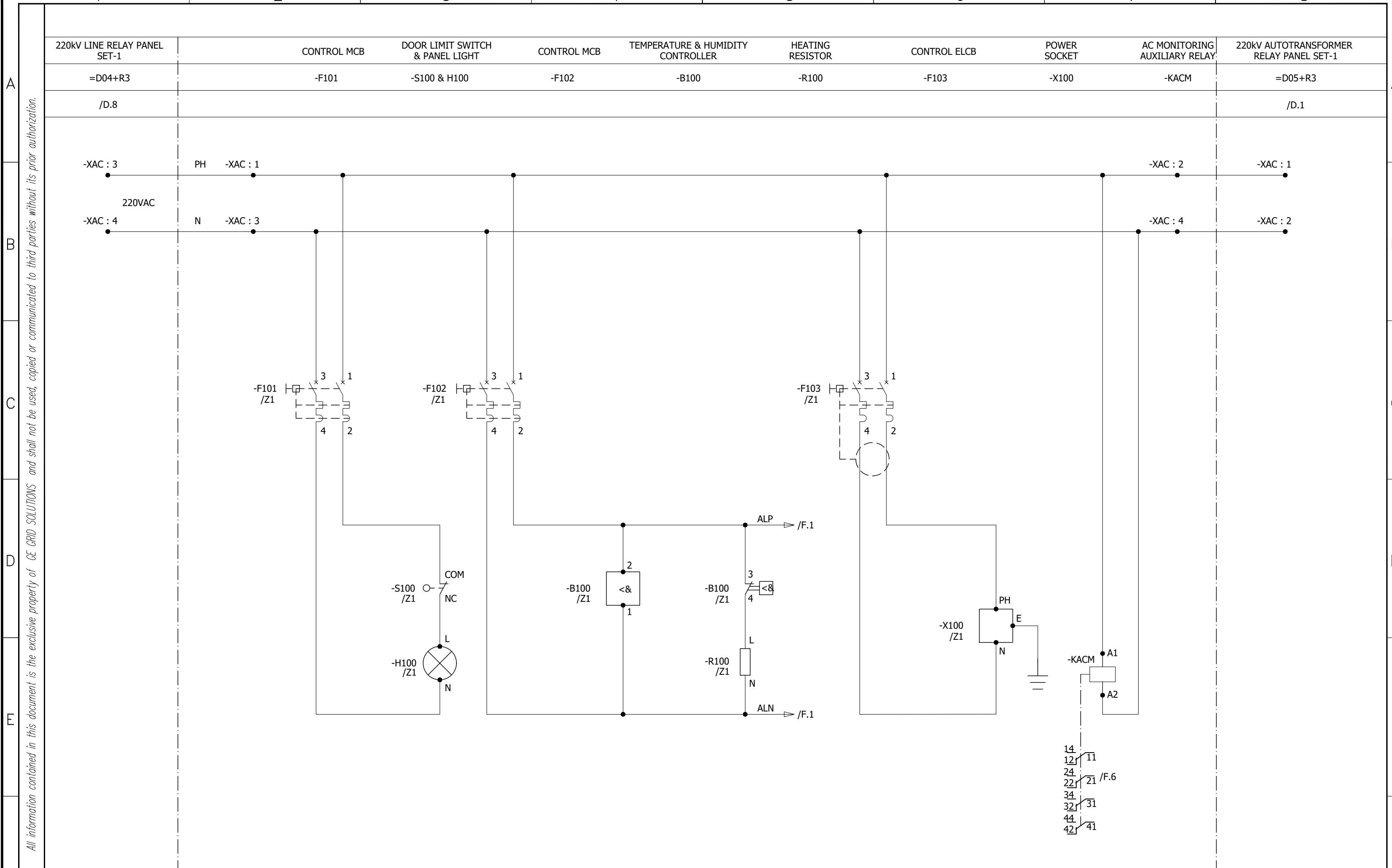
NOTE:-

- - 1 - PANEL DIMENSION: 1000 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.

1 2 3 4 5 6 7 8

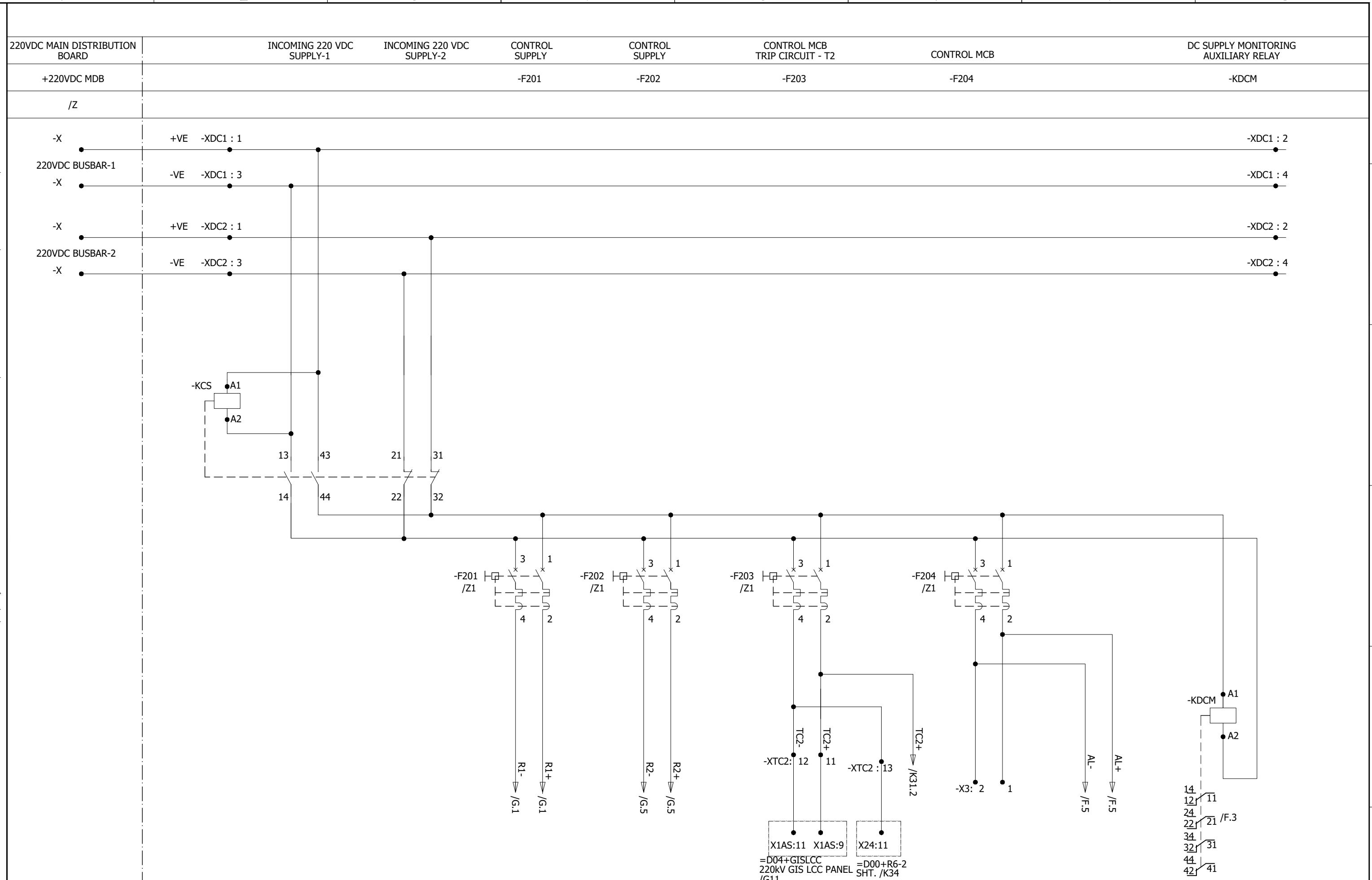


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REV.	DESCRIPTION	DATE	DRAWER						Project no. P-60194
									Sheet type AE
									Sheet no. 08

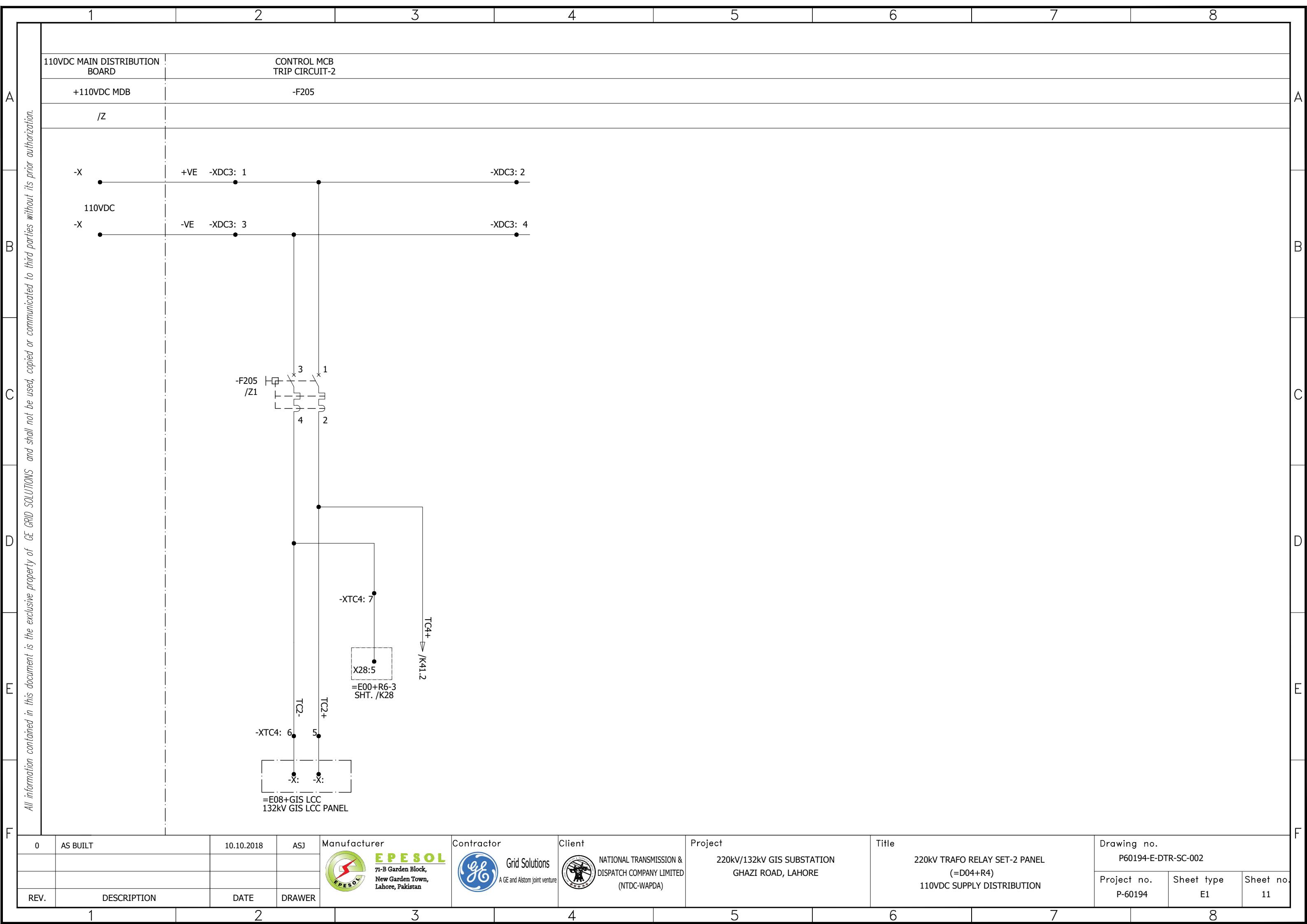


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REV.	DESCRIPTION	DATE	DRAWER						Project no. P-60194	Sheet type D	Sheet no. 09
1	2	3	4	5	6	7	8				

1 2 3 4 5 6 7 8



0	AS BUILT	10.10.2018	ASJ	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 TRAFO RELAY SET-2 PANEL (=D04+R4) 220VDC SUPPLY DISTRIBUTION	Drawing no. P60194-E-DTR-SC-002
									Project no. P-60194
REV.	DESCRIPTION	DATE	DRAWER						Sheet type E
1	2	3	4	5	6	7	8		Sheet no. 10



220V DC CIRCUIT FAULTY

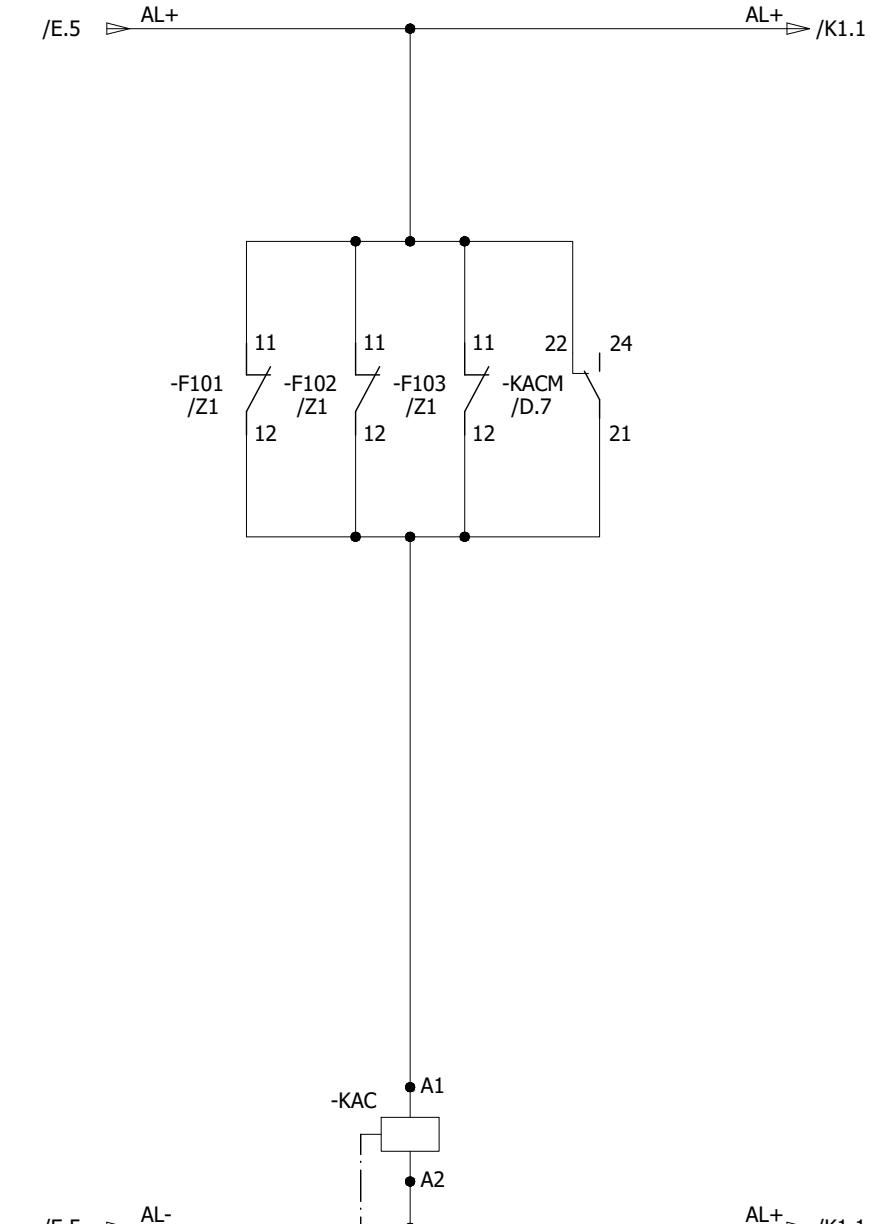
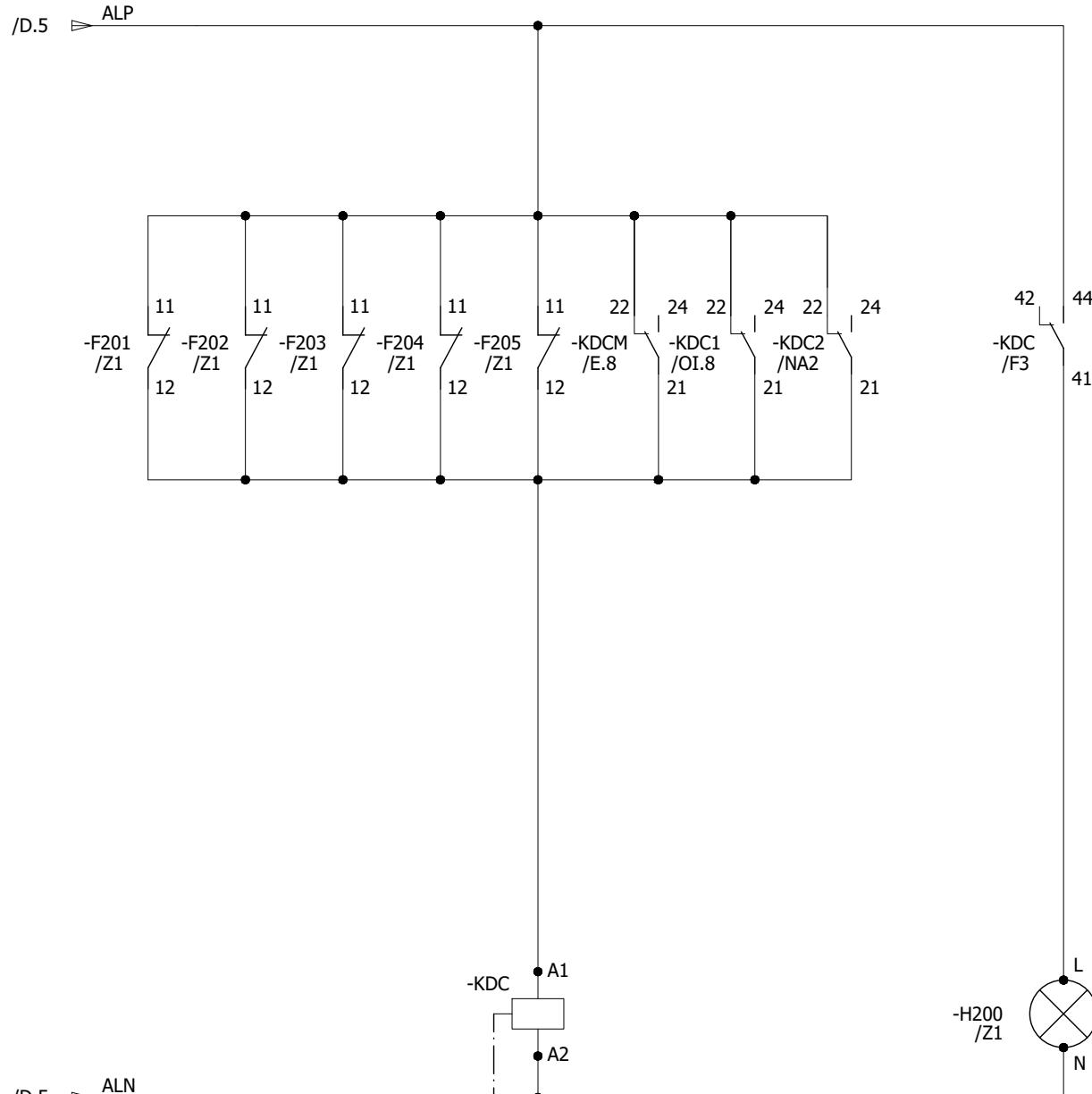
220V DC CIRCUIT FAULTY INDICATION

220V AC CIRCUIT FAULTY

-KDC

-H200

-KAC



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REV.	DESCRIPTION	DATE	DRAWER						Project no. P-60194
									Sheet type F
									Sheet no. 12

OVERALL DIFFERENTIAL PROT.

HV CONN CIRC PROT

LV CONN CIRC PROT

TERTIARY
OVERCURRENTTRAFO NEUTRAL
OVERCURRENT

RELAY SUPPLY

RELAY SUPPLY

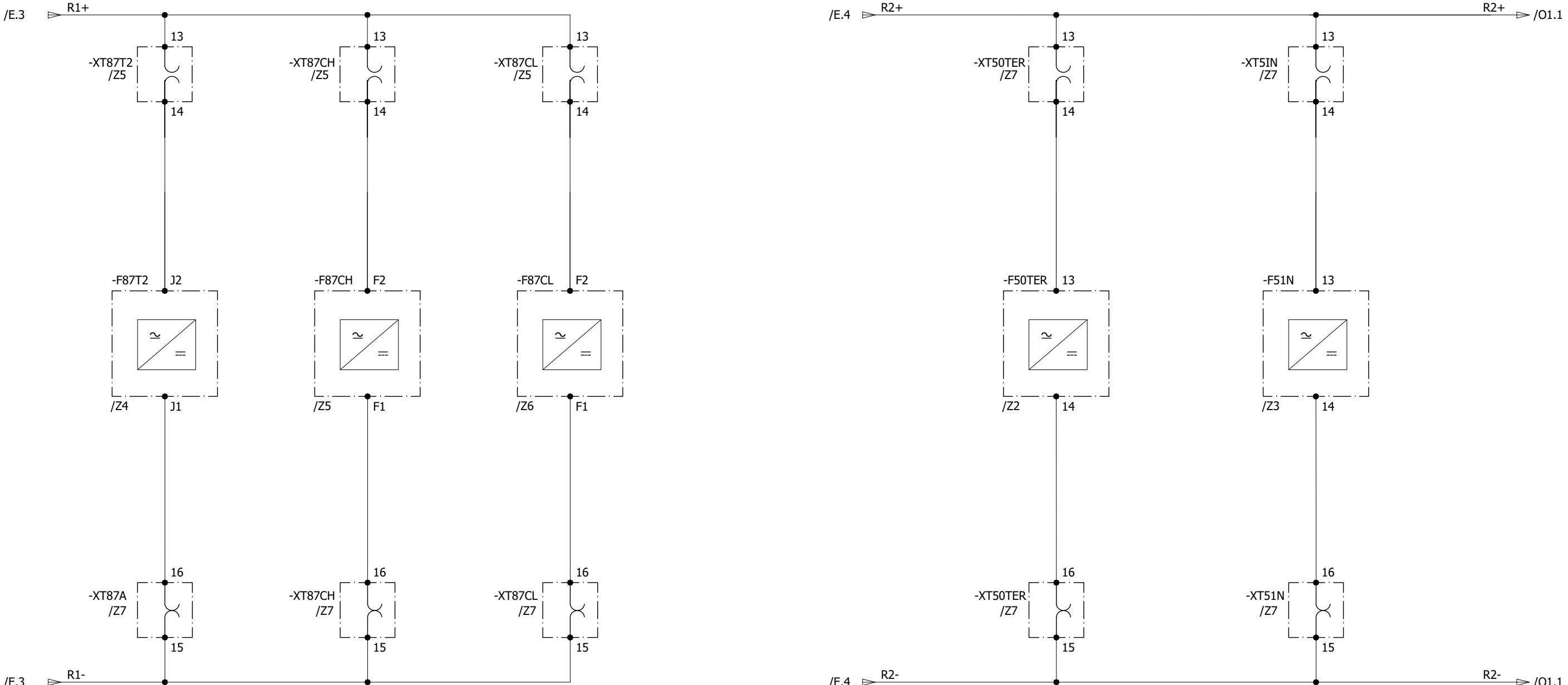
RELAY SUPPLY

RELAY SUPPLY

RELAY SUPPLY

A

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REV.	DESCRIPTION	DATE	DRAWER						Project no. P-60194
									Sheet type G
									Sheet no. 13

A

B

C

D

E

F

TEST BLOCK

OVERALL TRAFO DIFFERENTIAL PROTECTION RELAY

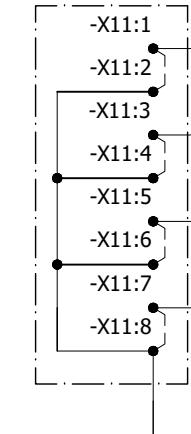
-XT87T2

-F87T2

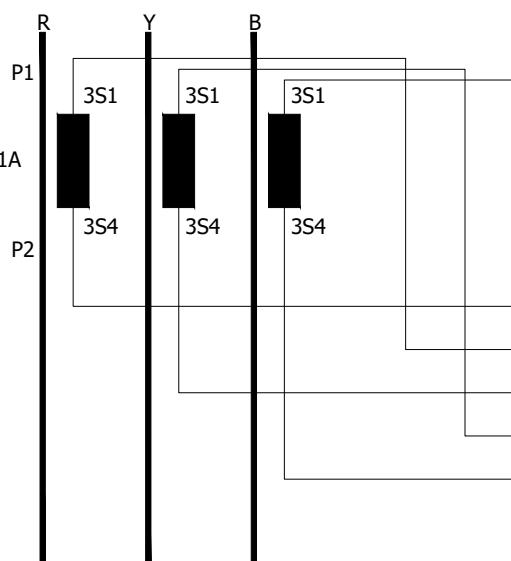
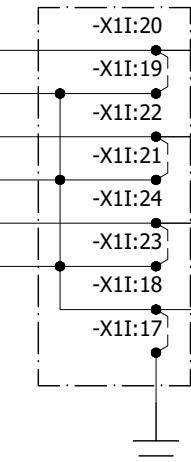
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/Z4

220kV GIS HALL

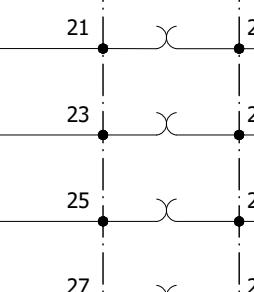
CONTROL ROOM
=SET-1CONTROL ROOM
=SET-2=D04+R3
220kV+D04
PROTECTION PANEL
SET-1

DIT CORE-3
600:1200:2400 / 1A
C3: 5P20,30VA

=D04+GISLCC
220kV GIS LCC PANEL
/S81

-XT87T2

-F87T2



TEST BLOCK

HV CONNECTION DIFFERENTIAL PROTECTION RELAY

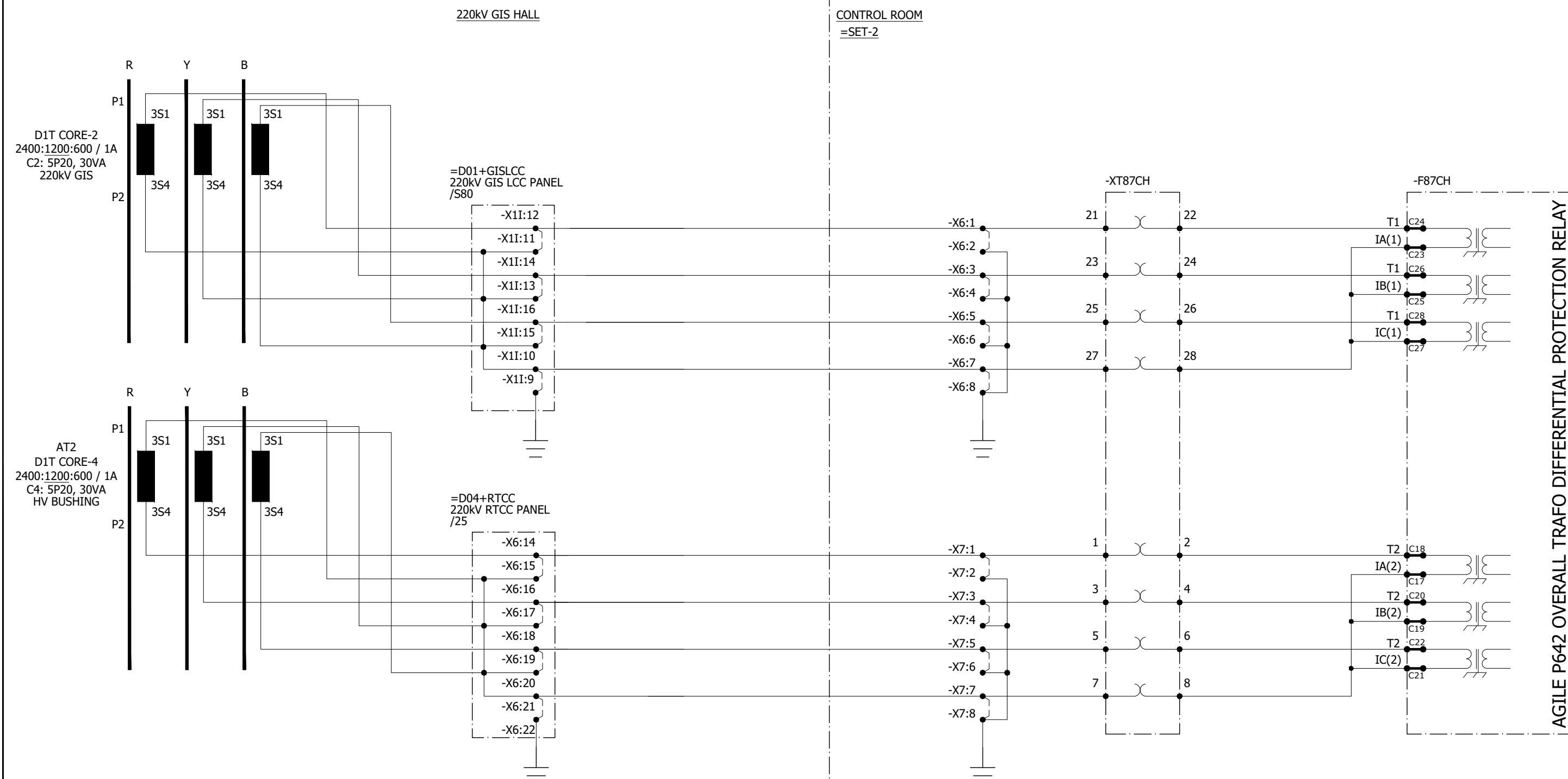
-XT87CH

-F87CH

/Z5

/Z4

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0	AS BUILT	10.10.2018	ASJ	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 TRAFO RELAY SET-2 PANEL (=D04+R4) HV CONNECTION DIFFERENTIAL PROTECTION CIRCUIT	Drawing no. P60194-E-DTR-SC-002		
								Project no. P-60194			
REV.	DESCRIPTION	DATE	DRAWER					Sheet type	H2	Sheet no.	15

TEST BLOCK

LV CONNECTION DIFFERENTIAL PROTECTION RELAY

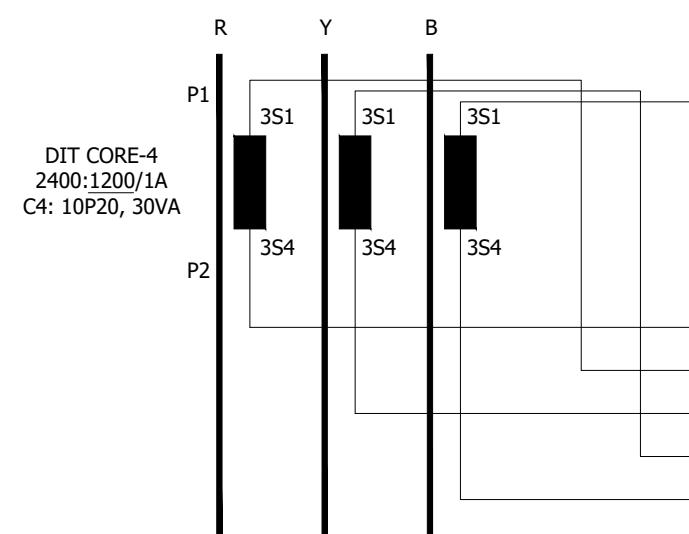
-XT87CL

-F87CL

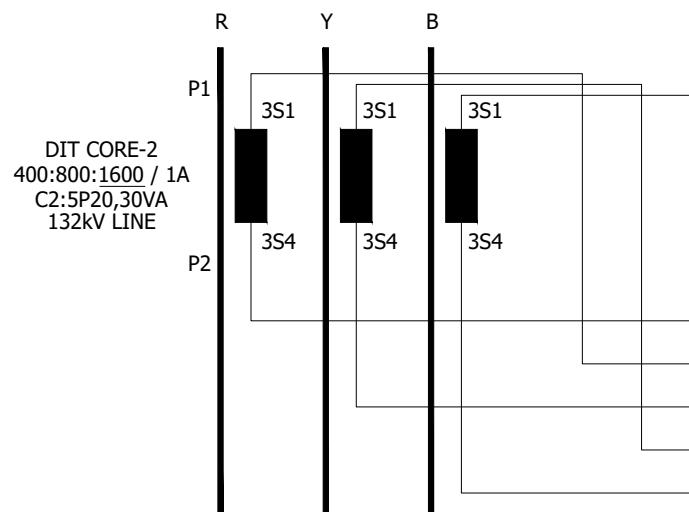
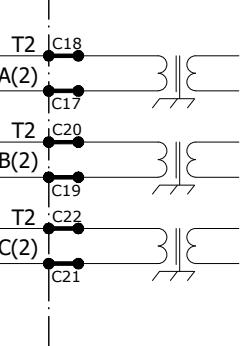
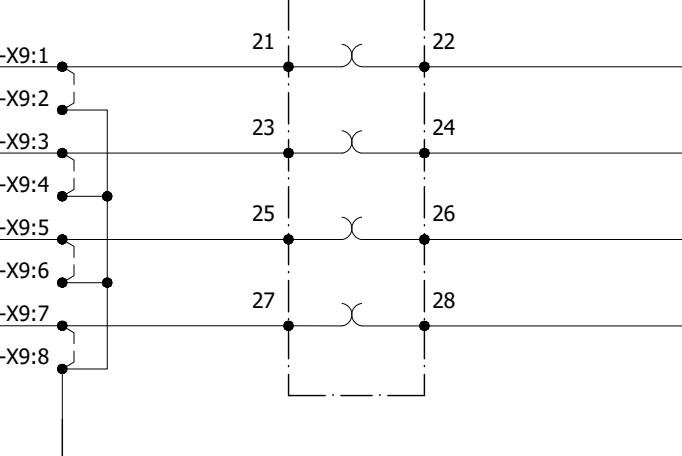
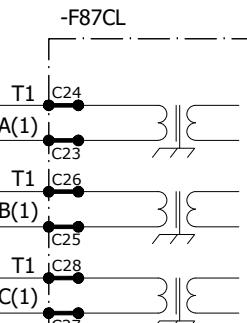
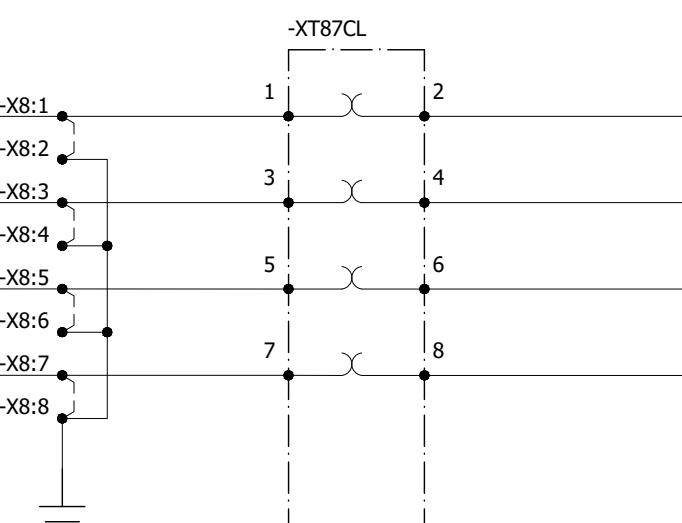
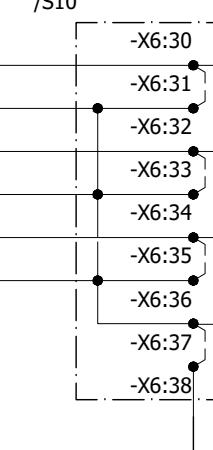
/Z5

/Z4

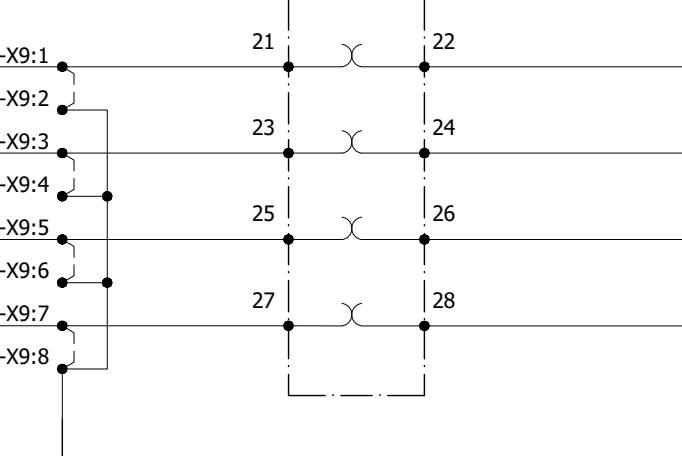
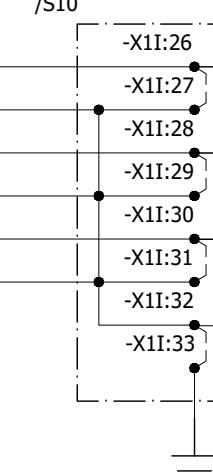
220kV GIS HALL

CONTROL ROOM
=SET-2

=D04+RTCC
220kV RTCC PANEL
/S10



=E08+GISLCC
132kV GIS LCC PANEL
/S10



AGILE P642 OVERALL TRAFO DIFFERENTIAL PROTECTION RELAY

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0	AS BUILT	10.10.2018	ASJ	Manufacturer  EPESOL 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 TRAFO RELAY SET-2 PANEL (=D04+R4) LV CONNECTION DIFFERENTIAL PROTECTION CIRCUIT	Drawing no. P60194-E-DTR-SC-002
REV.	DESCRIPTION	DATE	DRAWER					Project no. P-60194	Sheet type H3
								Sheet no. 16	

TEST BLOCK

TERTIARY OVERCURRENT & EARTHFAULT
PROTECTION RELAY

-XT50TER

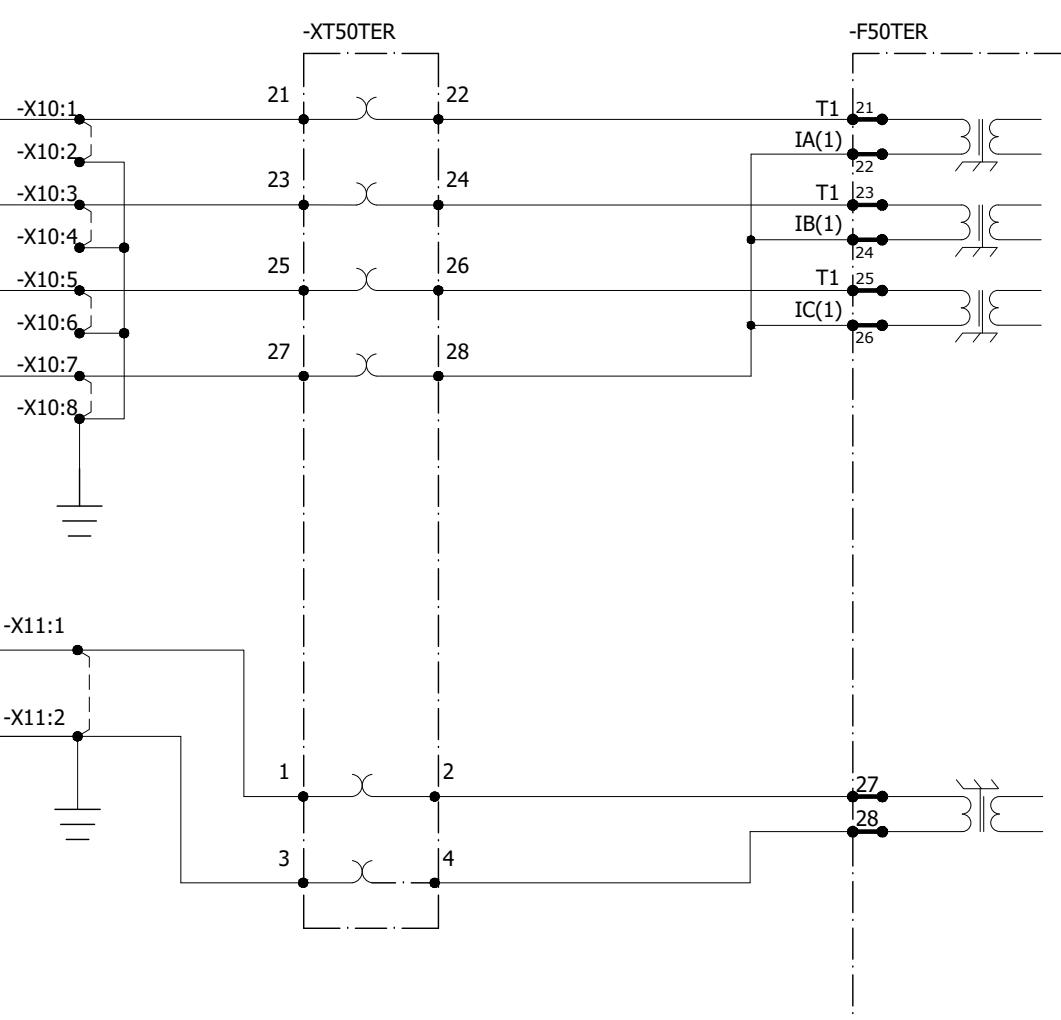
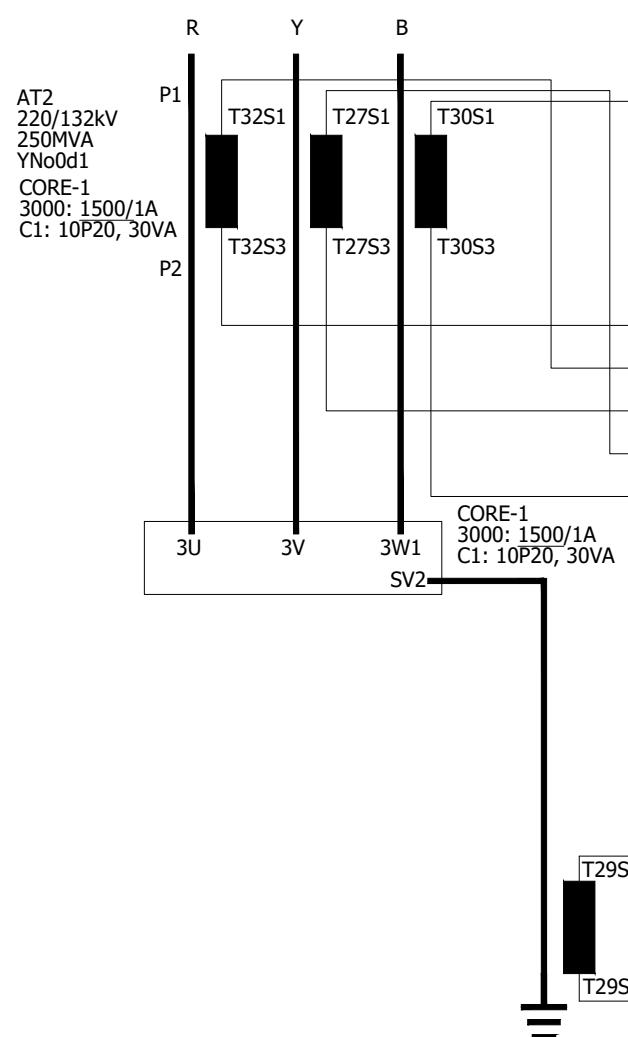
-F50TER

/Z5

/Z4

220KV GIS HALL

CONTROL ROOM



AGILE P14N OVERCURRENT & EARTHFAULT PROTECTION RELAY

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0	AS BUILT	10.10.2018	ASJ	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 LINE RELAY SET-2 PANEL (=D04+R4) TERTIARY OVERCURRENT & EARTHFAULT CIRCUIT	Drawing no. P60194-E-DTR-SC-002
REV.	DESCRIPTION	DATE	DRAWER					Project no. P-60194	Sheet type H4
								Sheet no. 17	

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A

B

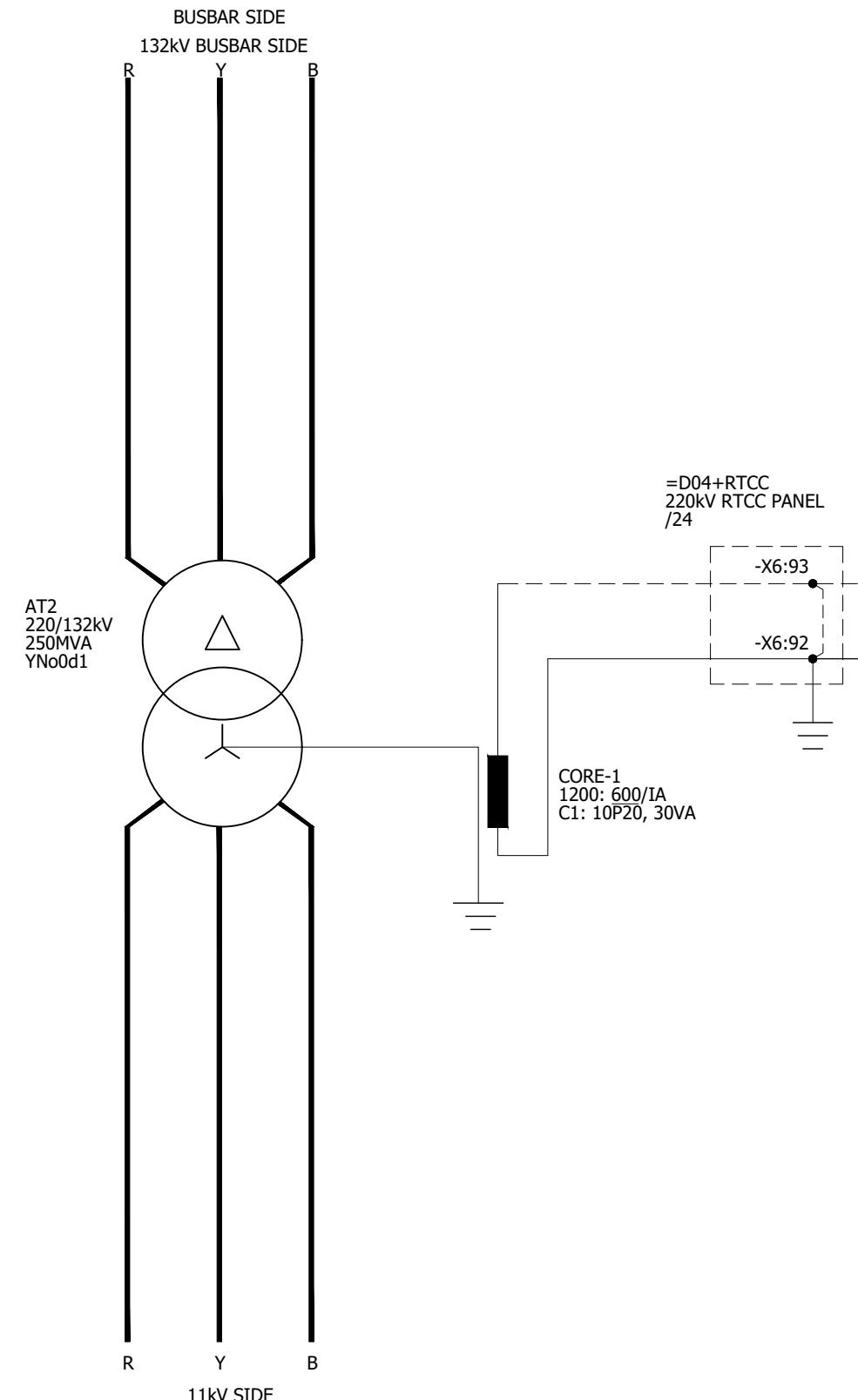
C

D

E

F

0	AS BUILT	10.10.2018	ASJ	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 LINE RELAY SET-2 PANEL (=D04+R4) NEUTRAL OVERCURRENT CIRCUIT	Drawing no. P60194-E-DTR-SC-002
REV.	DESCRIPTION	DATE	DRAWER						Project no. P-60194
									Sheet type H5
									Sheet no. 18



220kV GIS HALL

CONTROL ROOM

TEST BLOCK

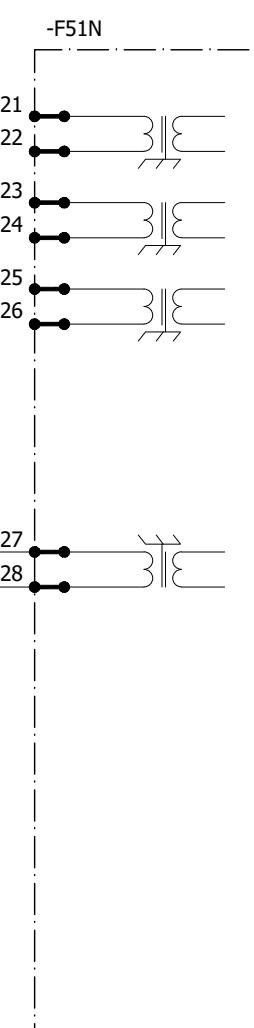
NEUTRAL OVERCURRENT
PROTECTION RELAY

-XT51N

-F51N

/Z5

/Z4



AGILE P14N OVERCURRENT & EARTHFAULT PROTECTION RELAY

OVERALL TRAFO DIFFERENTIAL

HV CONNECTION DIFFERENTIAL

LV CONNECTION DIFFERENTIAL

TERTIARY OVERCURRENT & EARTHFAULT

NEUTRAL OVERCURRENT

TRIP

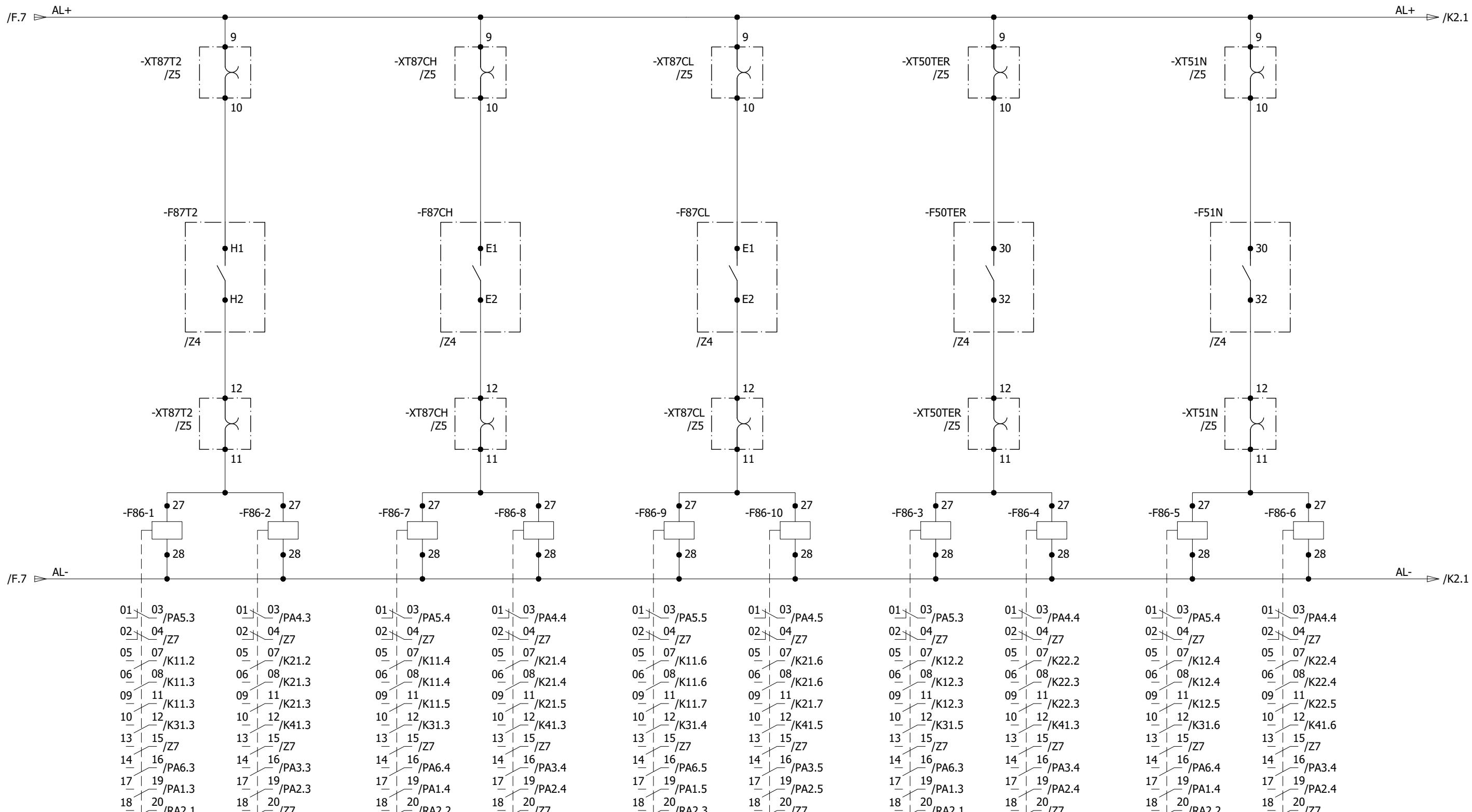
TRIP

TRIP

TRIP

TRIP

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0	AS BUILT	10.10.2018	ASJ	Manufacturer  EPEPSOL 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 TRAFO RELAY SET-2 PANEL (=D04+R4) PROTECTION TRIPS	Drawing no. P60194-E-DTR-SC-002
									Project no. P-60194
									Sheet type K1
REV.	DESCRIPTION	DATE	DRAWER						Sheet no. 19

PRESSURE RELIEF

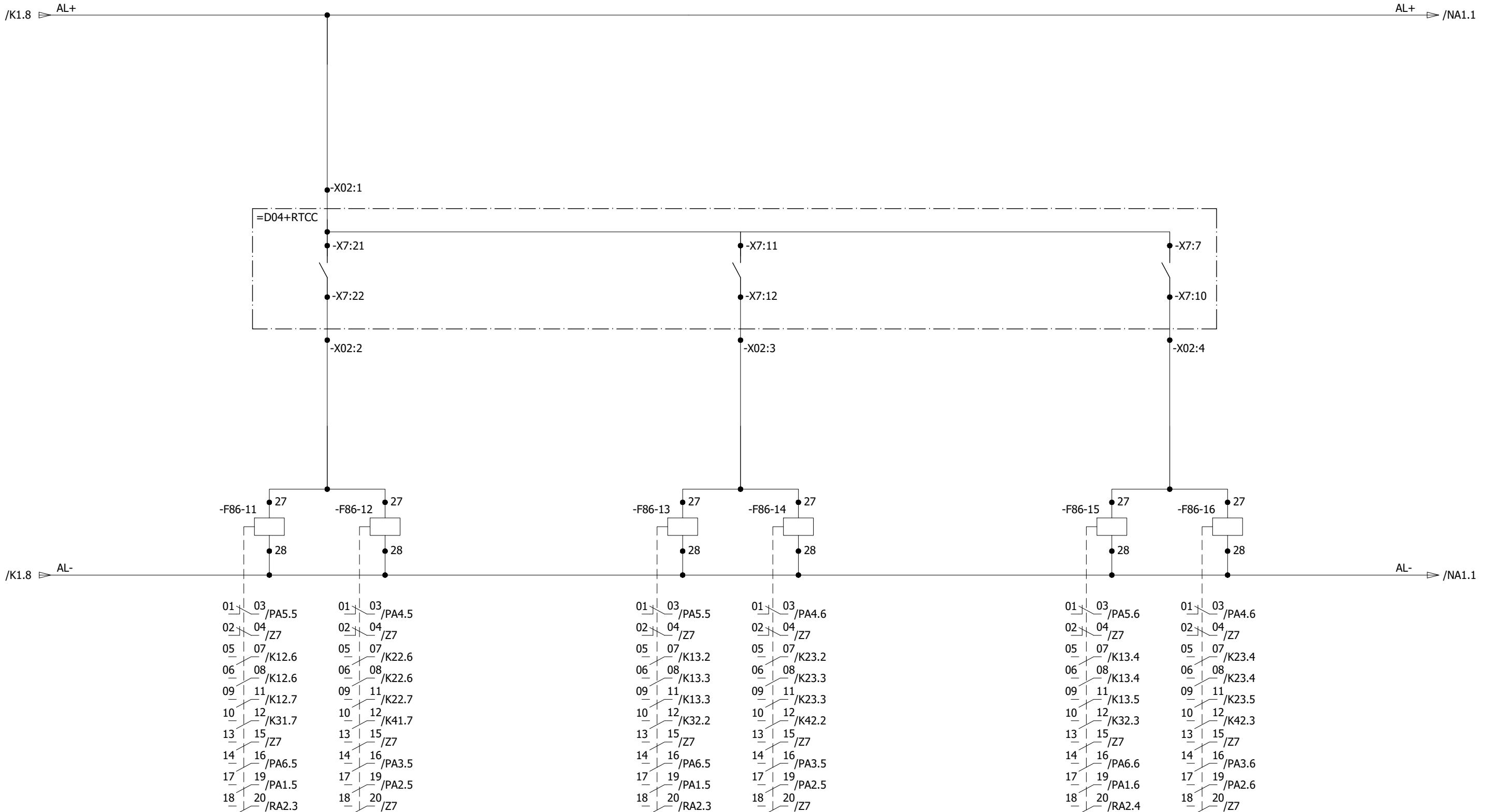
BUCHOLZ OLTC

BUCHOLZ TRAFO

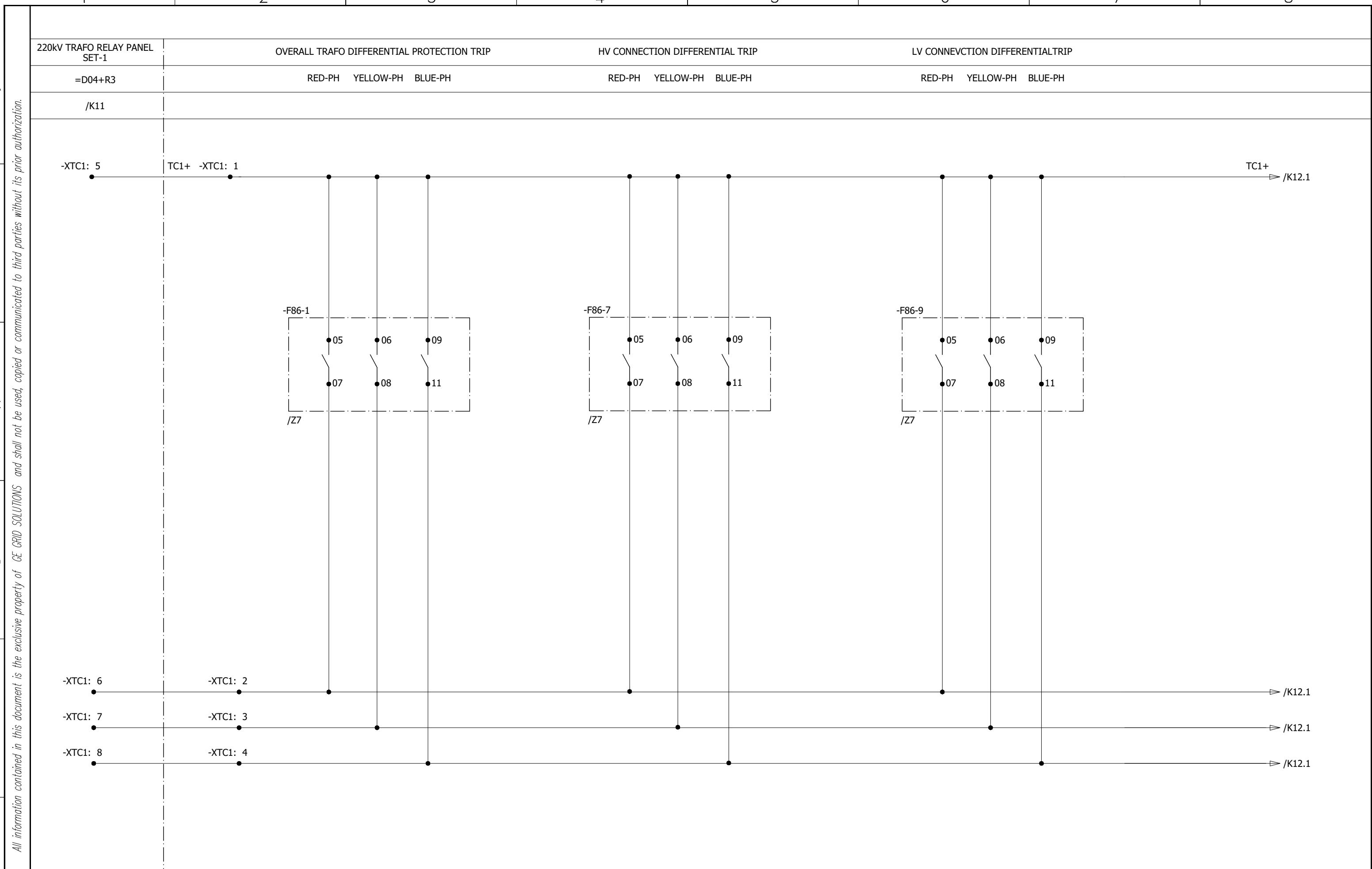
TRIP

TRIP

TRIP



0	AS BUILT	10.10.2018	ASJ	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)	Project 220kV/132kV GIS SUBSTATION GAZI ROAD, LAHORE	Title 220kV TRAFO RELAY SET-2 PANEL (=D04+R4) PROTECTION TRIPS	Drawing no. P60194-E-DTR-SC-002
REV.	DESCRIPTION	DATE	DRAWER						Project no. P-60194
									Sheet type K2
									Sheet no. 20



TERTIARY OVERCURRENT & EARTHFAULT TRIP

RED-PH YELLOW-PH BLUE-PH

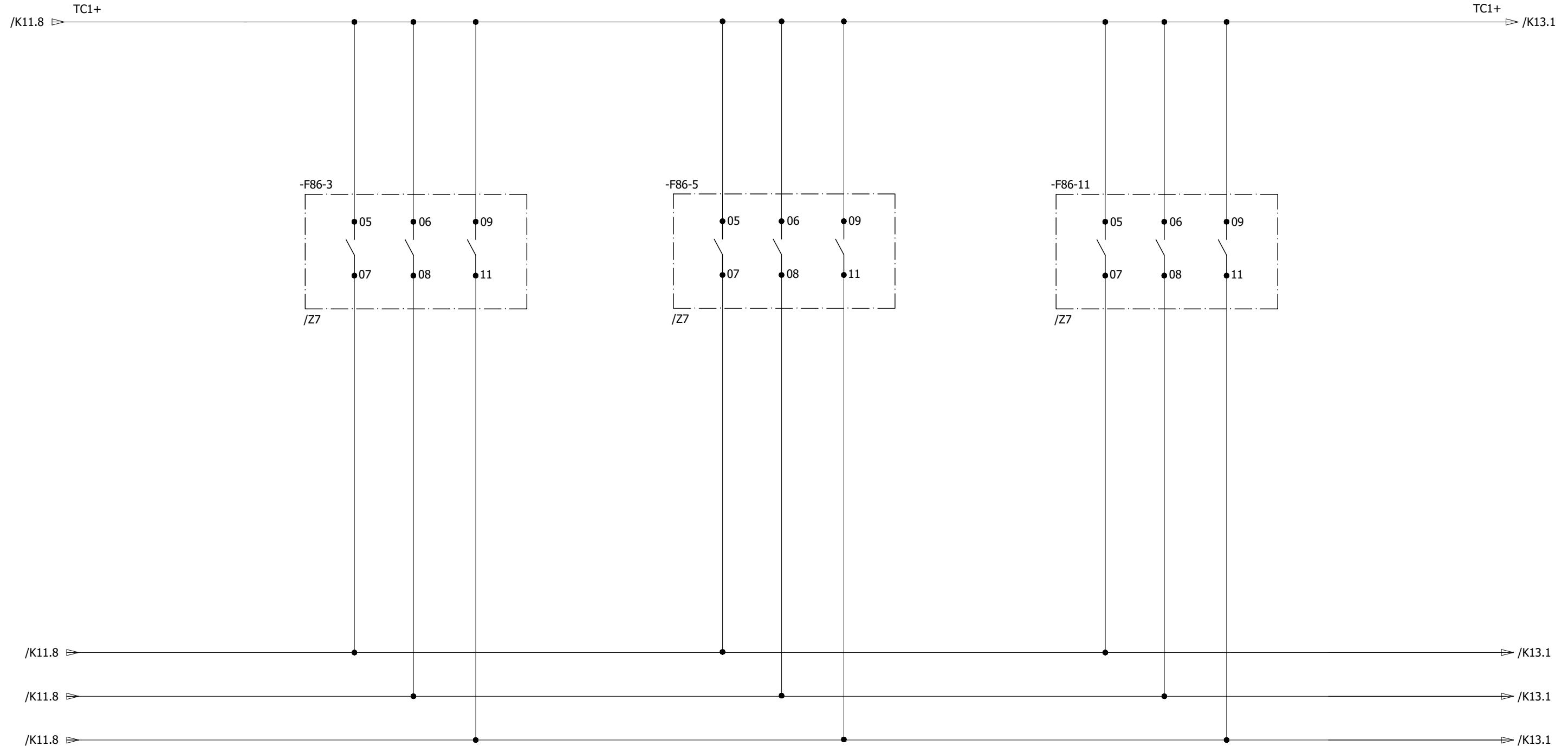
NEUTRAL OVERCURRENT TRIP

RED-PH YELLOW-PH BLUE-PH

PRESSURE RELIEF TRIP

RED-PH YELLOW-PH BLUE-PH

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0	AS BUILT	10.10.2018	ASJ	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 TRAFO RELAY SET-2 PANEL (=D04+R4) TRIP CIRCUIT FOR COIL - 1 (D04-Q0)	Drawing no. P60194-E-DTR-SC-002		
									Project no. P-60194	Sheet type K12	Sheet no. 22
REV.	DESCRIPTION	DATE	DRAWER								

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BUCHOLZ OLTC TRI

BUCHOLZ TRAFO TRIP

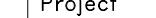
220kV CIRCUIT BREAKER FAILURE PANEL

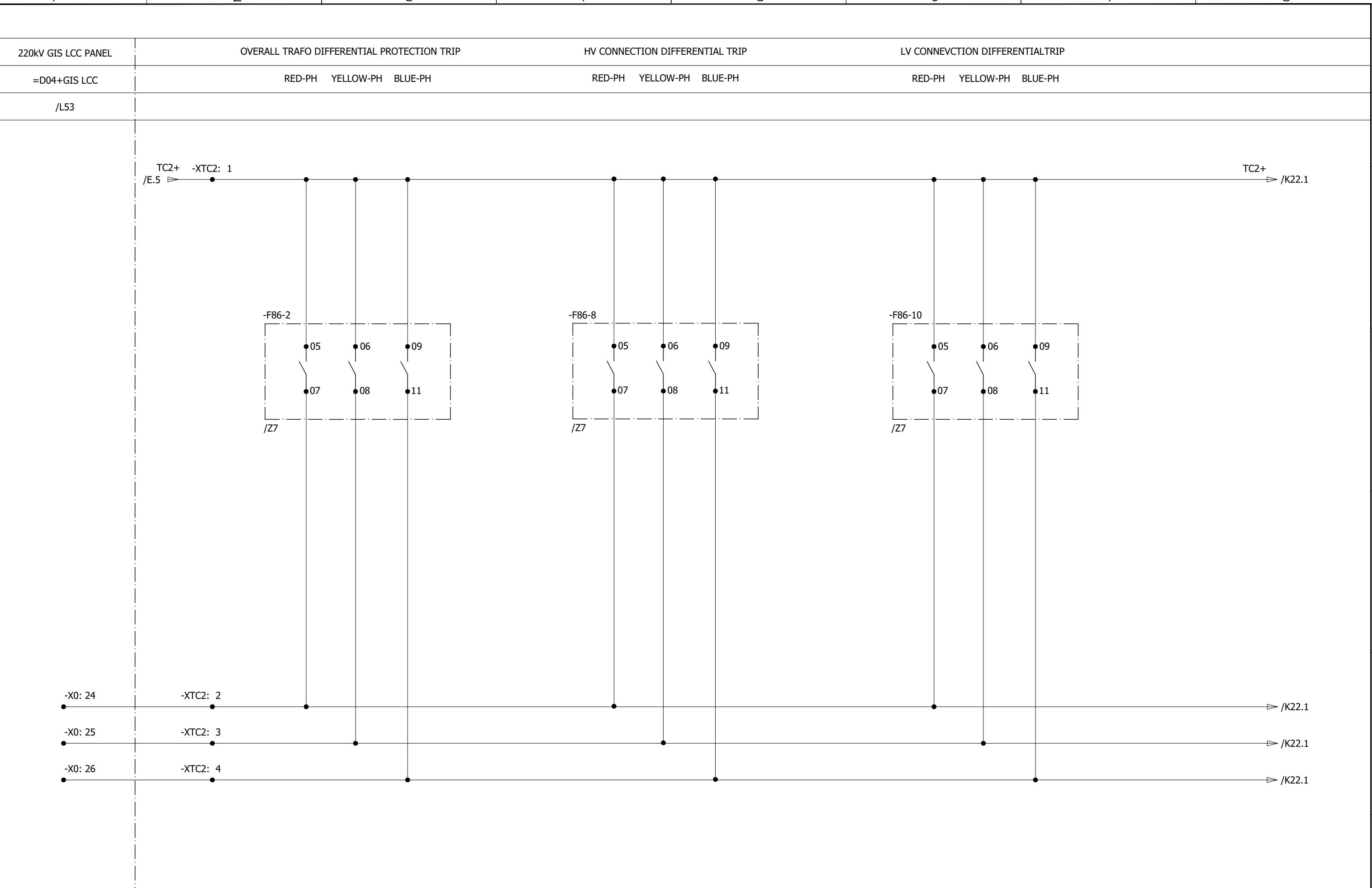
RED-PH YELLOW-PH BLUE-PH

RED-PH YELLOW-PH BLUE-PH

=D00+R5A

The diagram illustrates a particle beam line configuration. It features two vertical sections, labeled **-F86-13** and **-F86-15**, each containing three vertical lines with numbered points (05, 06, 09 at the top; 07, 08, 11 at the bottom). Horizontal lines connect the top and bottom points of each section. The entire assembly is connected to a horizontal beam line. Labels include **TC1+**, **-XTC1: 5**, **TC1+**, **-X**, **/K13.8**, **/Z7**, and **/K12.8**.

0	AS BUILT	10.10.2018	ASJ	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 TRAFO RELAY SET-2 PANEL (=D04+R4) TRIP CIRCUIT FOR COIL - 1 (D04-Q0)	Drawing no. P60194-E-DTR-SC-002		
									Project no.	Sheet type	
									P-60194	K13	
REV.	DESCRIPTION	DATE	DRAWER						Sheet no.	23	



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0	AS BUILT	10.10.2018	ASJ	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 TRAFO RELAY SET-2 PANEL (=D04+R4) TRIP CIRCUIT FOR COIL - 2 (D04-Q0)	Drawing no. P60194-E-DTR-SC-002		
									Project no. P-60194		
									Sheet type K21	Sheet no. 24	
REV.	DESCRIPTION	DATE	DRAWER								

TERTIARY OVERCURRENT & EARTHFAULT TRIP

RED-PH YELLOW-PH BLUE-PH

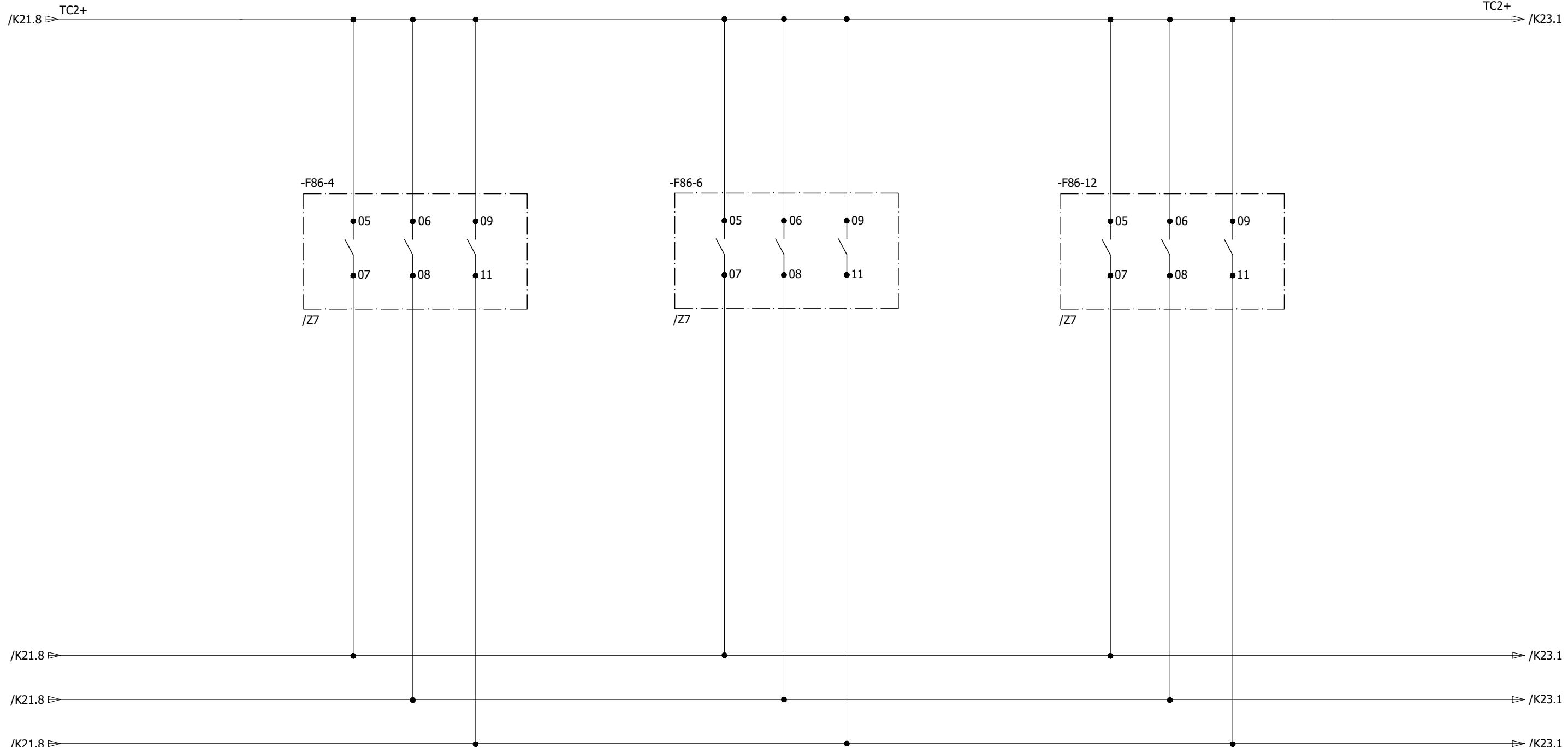
NEUTRAL OVERCURRENT TRIP

RED-PH YELLOW-PH BLUE-PH

PRESSURE RELIEF TRIP

RED-PH YELLOW-PH BLUE-PH

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0	AS BUILT	10.10.2018	ASJ	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 TRAFO RELAY SET-2 PANEL (=D04+R4) TRIP CIRCUIT FOR COIL - 2 (D04-Q0)	Drawing no. P60194-E-DTR-SC-002
									Project no. P-60194
REV.	DESCRIPTION	DATE	DRAWER						Sheet type K22
1	2	3	4	5	6	7	8		Sheet no. 25

BUCHOLZ OLTC TRIP

RED-PH YELLOW-PH BLUE-PH

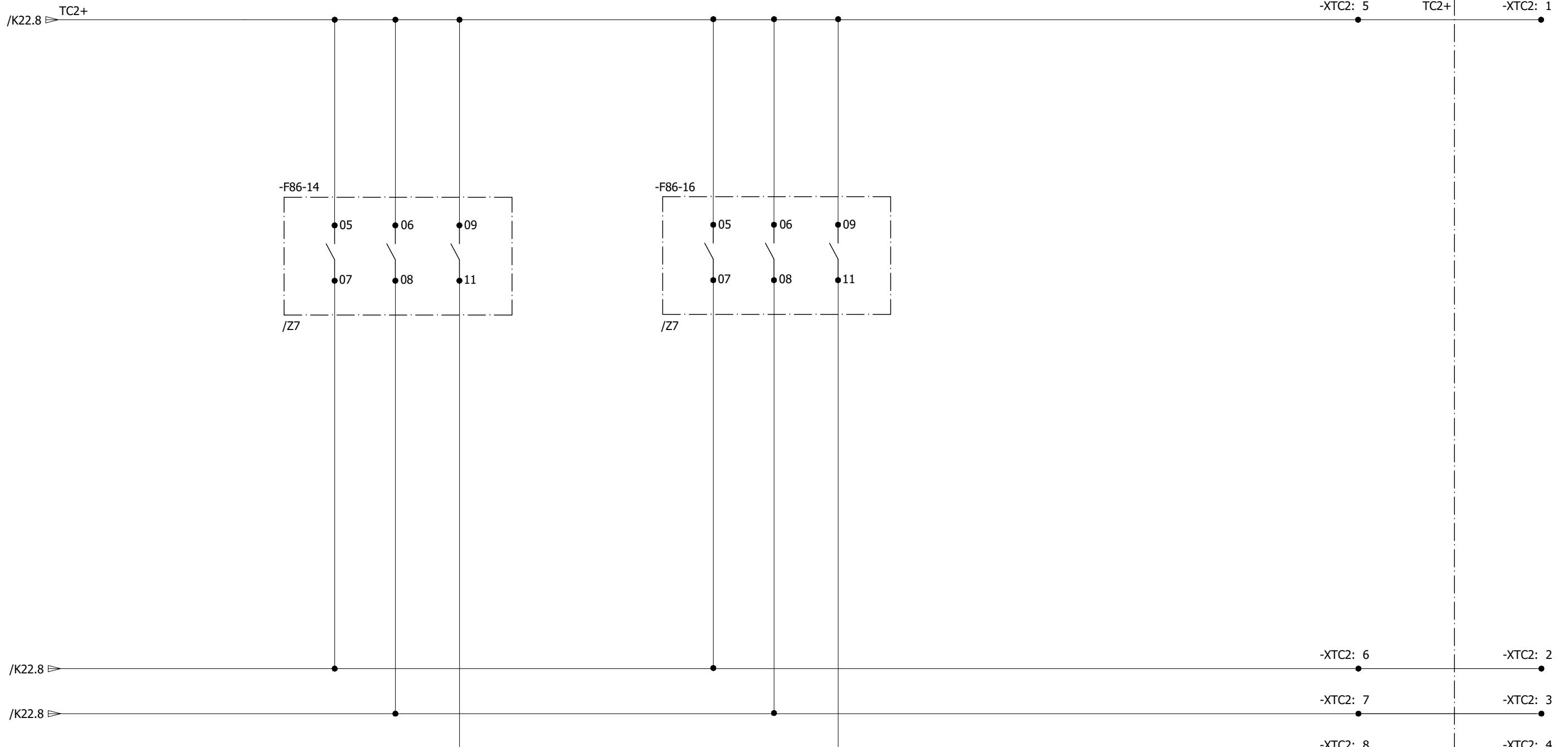
BUCHOLZ TRAFO TRIP

RED-PH YELLOW-PH BLUE-PH

220KV TRAFO RELAY PANEL
SET-1

=D04+R3

/K11



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0	AS BUILT	10.10.2018	ASJ	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 TRAFO RELAY SET-2 PANEL (=D04+R4) TRIP CIRCUIT FOR COIL - 2 (D04-Q0)	Drawing no. P60194-E-DTR-SC-002
REV.	DESCRIPTION	DATE	DRAWER						Project no. P-60194
									Sheet type K23
									Sheet no. 26

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220KV TRAFO RELAY PANEL
SET-1

OVERALL TRAFO DIFFERENTIAL
PROTECTION TRIP

HV CONNECTION
DIFFERENTIAL TRIP

LV CONNECTION
DIFFERENTIAL TRIP

TERTIARY OVERCURRENT &
EARTHFAULT TRIP

NEUTRAL OVERCURRENT TRIP

PRESSURE RELIEF TRIP

=D04+R3

TRIP COIL-1

TRIP COIL-1

TRIP COIL-1

TRIP COIL-1

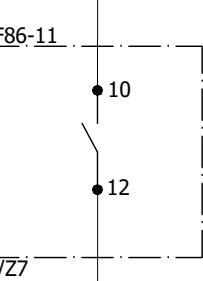
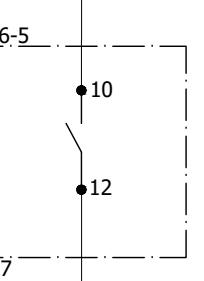
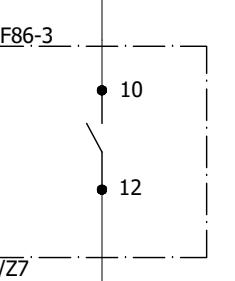
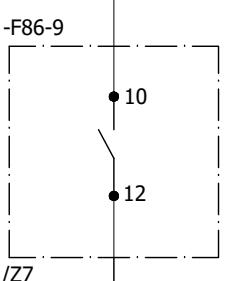
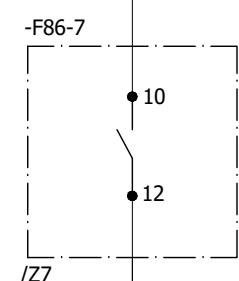
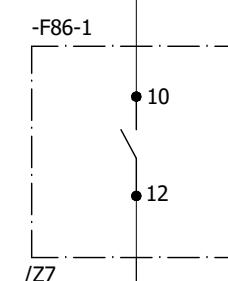
TRIP COIL-1

TRIP COIL-1

/K32

A A

-XTC3: 3 TC3+ -XTC3: 1 TC3+ /K32.1



-XTC3: 4

-XTC3: 2

/K32.1

0	AS BUILT	10.10.2018	ASJ	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 TRAFO RELAY SET-2 PANEL (=D04+R4) TRIP CIRCUIT FOR COIL - 1 (E08-Q0)	Drawing no. P60194-E-DTR-SC-002
REV.	DESCRIPTION	DATE	DRAWER						Project no. P-60194
									Sheet type K31
									Sheet no. 27

BUCHOLZ OLTC TRIP

BUCHOLZ TRAFO TRIP

132KV CIRCUIT BREAKER
FAILURE PANEL

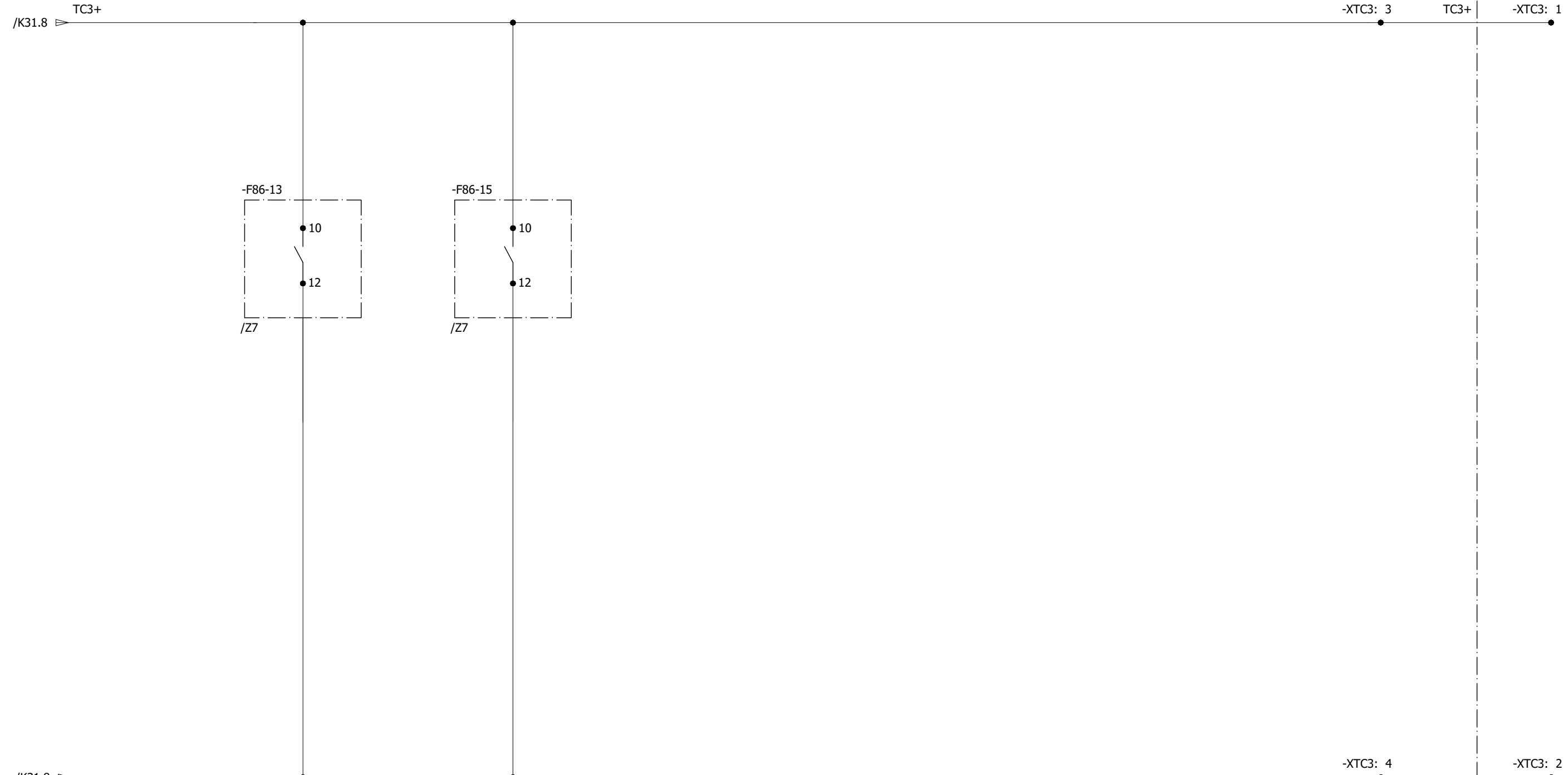
TRIP COIL-1

TRIP COIL-1

=D00+R5A

/Z

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A

A

B

B

C

C

D

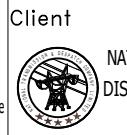
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E

E

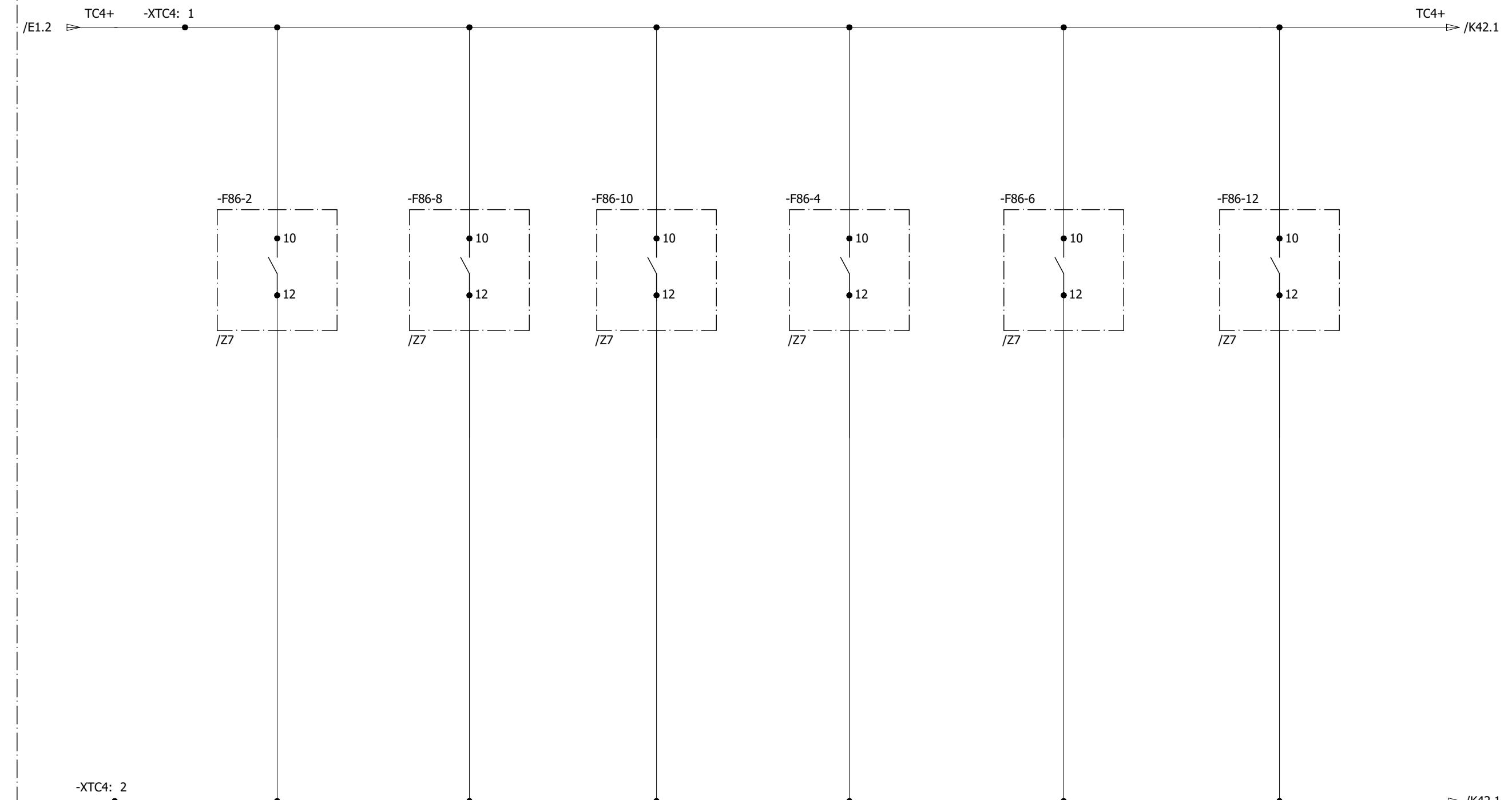
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0	AS BUILT	10.10.2018	ASJ	Manufacturer  71-B Garden Block, New Garden Town, Lahore, Pakistan	Contractor  A GE and Alstom joint venture	Client  NATIONAL TRANSMISSION & DISPATCH COMPANY LIMITED (NTDC-WAPDA)	Project 220KV/132KV GIS SUBSTATION GHAZI ROAD, LAHORE	Title 220KV TRAFO RELAY SET-2 PANEL (=D04+R4) TRIP CIRCUIT FOR COIL - 1 (E08-Q0)	Drawing no. P60194-E-DTR-SC-002		
REV.	DESCRIPTION	DATE	DRAWER						Project no. P-60194	Sheet type K32	Sheet no. 28

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132kV GIS LCC PANEL	OVERALL TRAFO DIFFERENTIAL PROTECTION TRIP	HV CONNECTION DIFFERENTIAL TRIP	LV CONNECTION DIFFERENTIAL TRIP	TERTIARY OVERCURRENT & EARTHFAULT TRIP	NEUTRAL OVERCURRENT TRIP	PRESSURE RELIEF TRIP
=E08+Q0	TRIP COIL-2	TRIP COIL-2	TRIP COIL-2	TRIP COIL-2	TRIP COIL-2	TRIP COIL-2
/L11						



0	AS BUILT	10.10.2018	ASJ	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 TRAFO RELAY SET-2 PANEL (=D04+R4) TRIP CIRCUIT FOR COIL - 2 (E08-Q0)	Drawing no. P60194-E-DTR-SC-002		
									Project no. P-60194		
									Sheet type K41	Sheet no. 29	
REV.	DESCRIPTION	DATE	DRAWER								

1 2 3 4 5 6 7 8

BUCHOLZ OLTC TRIP

BUCHOLZ TRAFO TRIP

220KV TRAFO RELAY PANEL
SET-1

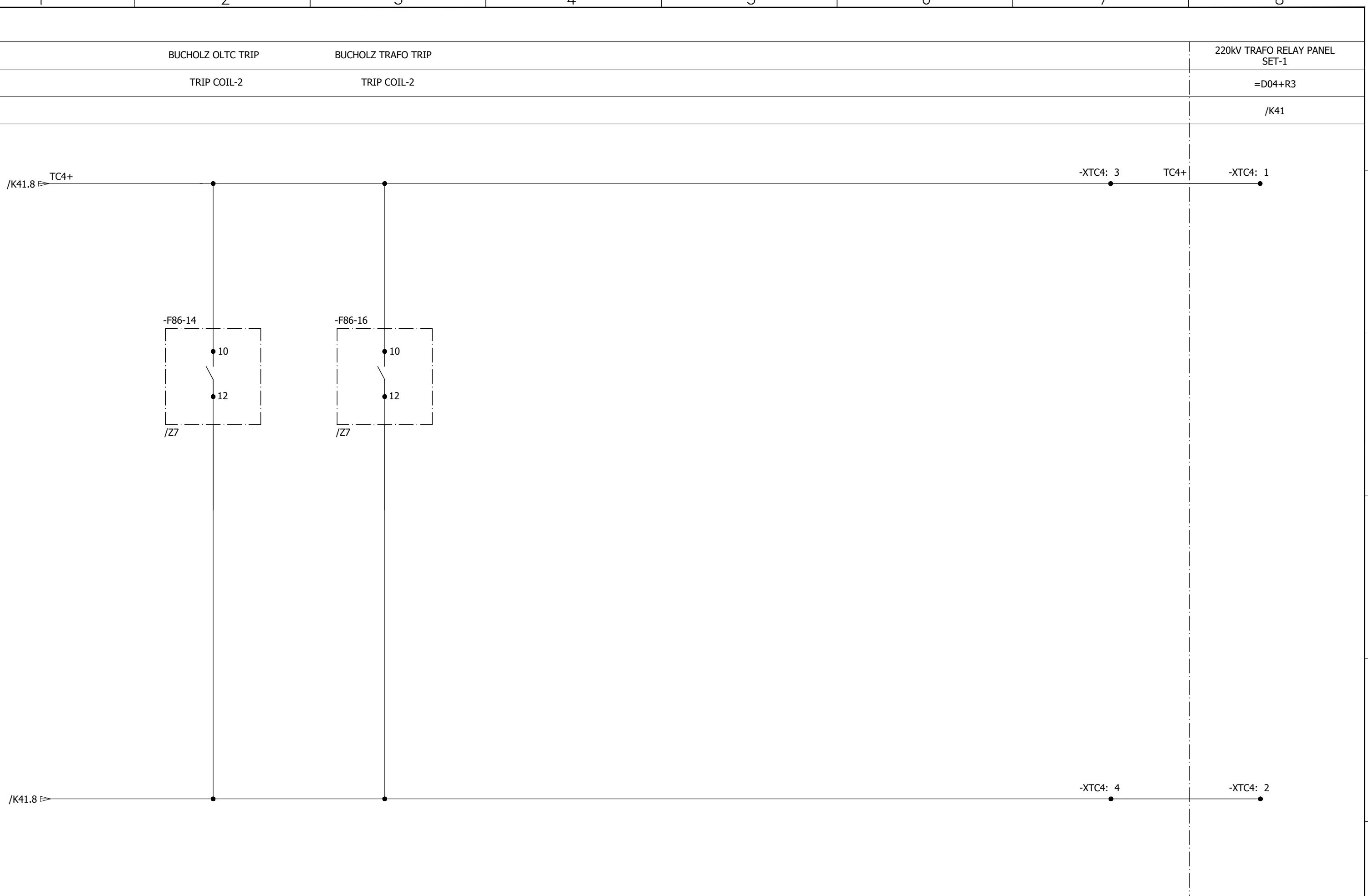
TRIP COIL-2

TRIP COIL-2

=D04+R3

/K41

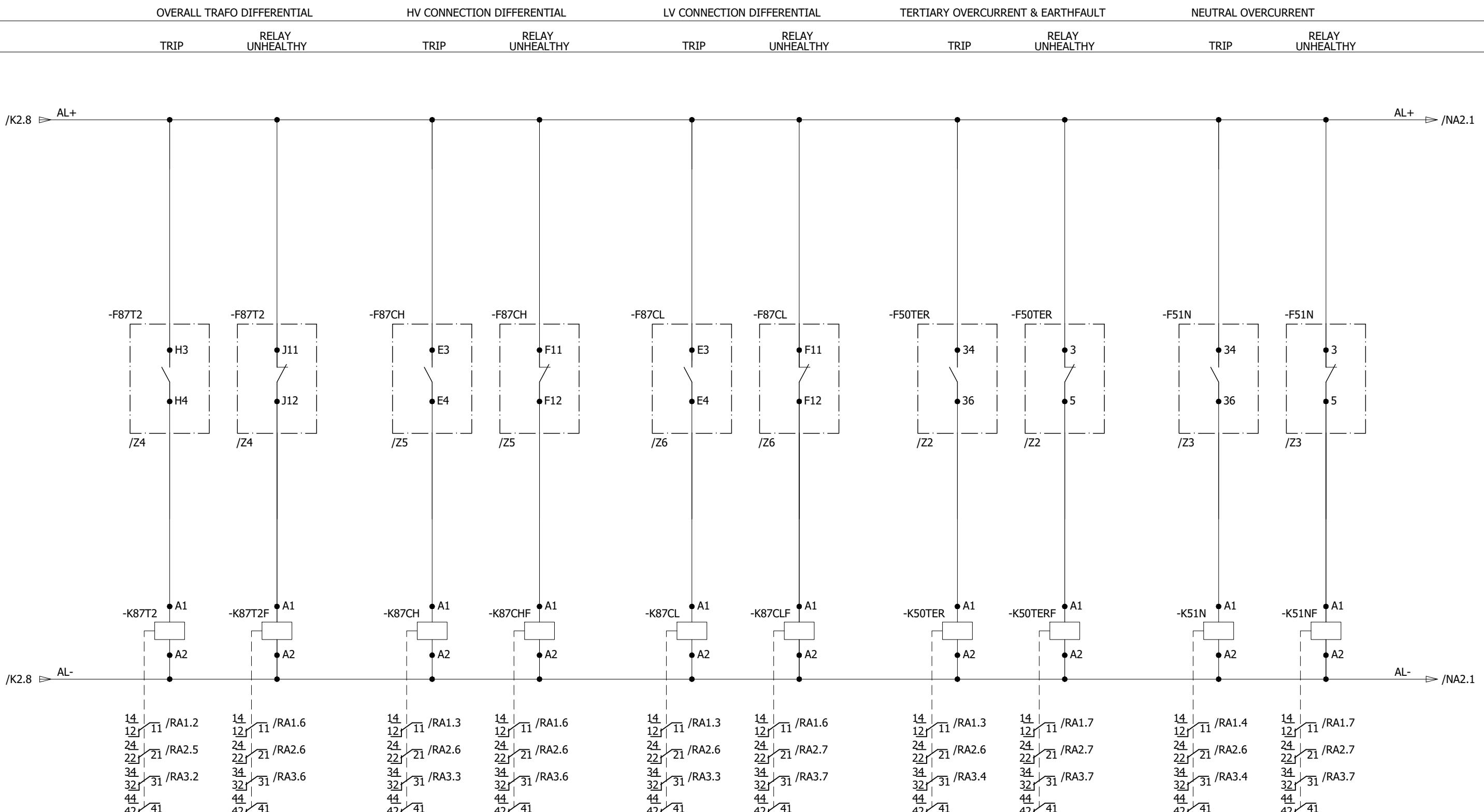
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0	AS BUILT	10.10.2018	ASJ	Manufacturer  EPESOL 71-B Garden Block, New Garden Town, Lahore, Pakistan	Contractor  Grid Solutions A GE and Alstom joint venture	Client  NATIONAL TRANSMISSION & DISPATCH COMPANY LIMITED (NTDC-WAPDA)	Project 220kV/132kV GIS SUBSTATION GHAZI ROAD, LAHORE	Title 220kV TRAFO RELAY SET-2 PANEL (=D04+R4) TRIP CIRCUIT FOR COIL - 2 (E08-Q0)	Drawing no. P60194-E-DTR-SC-002
REV.	DESCRIPTION	DATE	DRAWER						Project no. P-60194
									Sheet type K42
									Sheet no. 30

1 2 3 4 5 6 7 8

220kV TRAFO RELAY SET-2 PANEL ALARMS



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PRESSURE RELIEF

BUCHOLZ OLTC

BUCHOLZ TRAFO

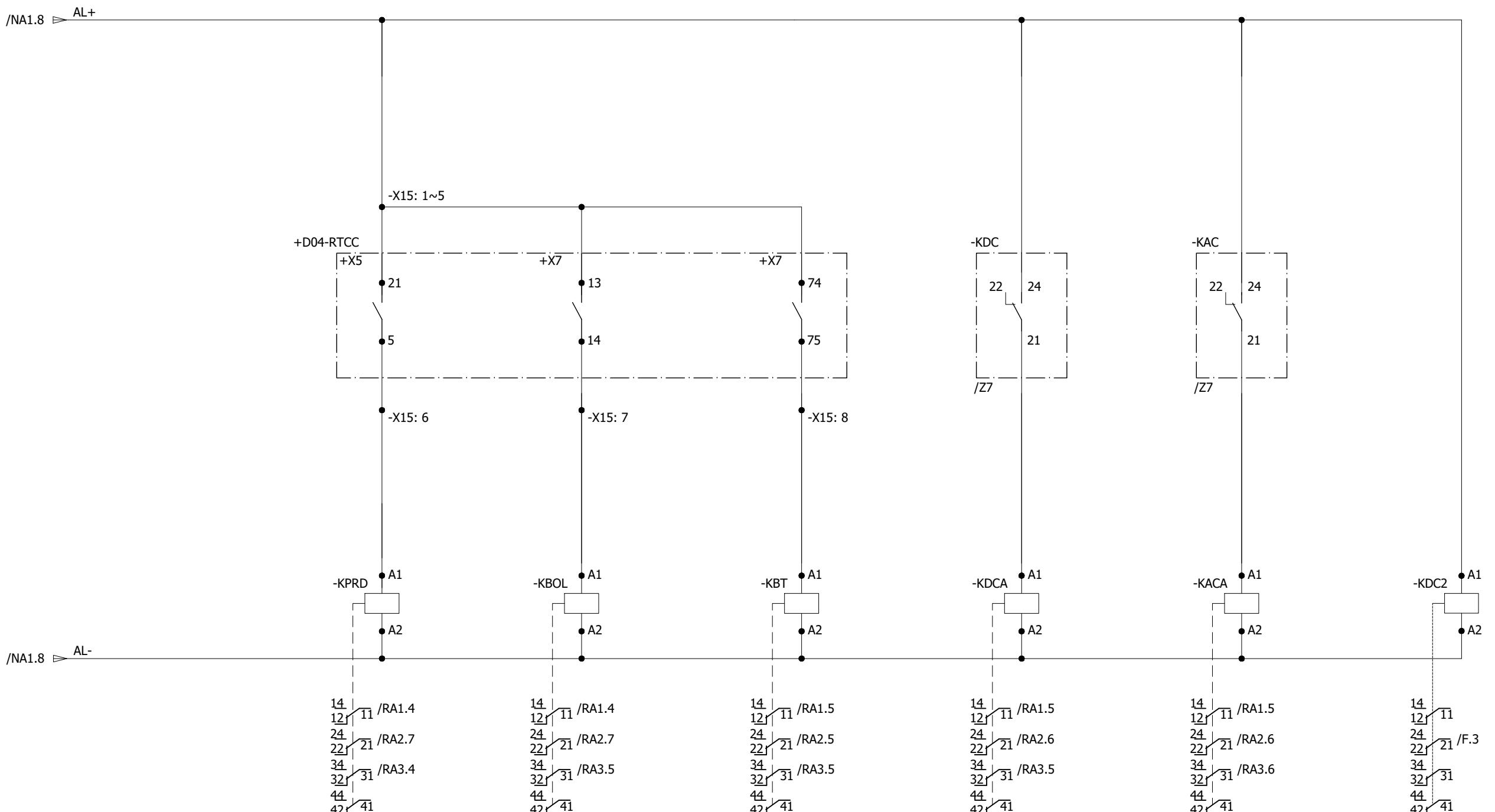
DC SUPPLY MONITORING

AC SUPPLY MONITORING

TRIP

TRIP

TRIP

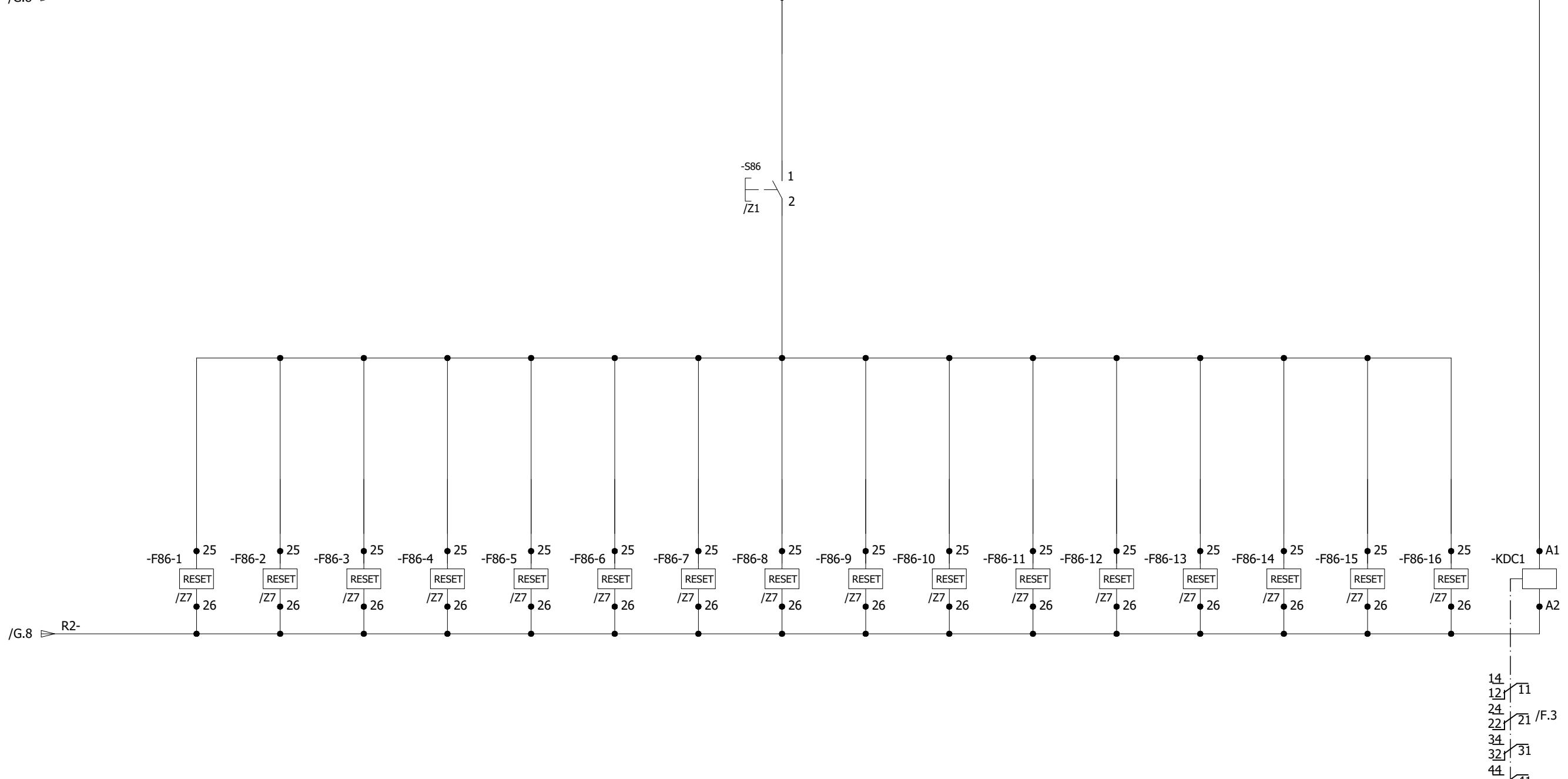


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0	AS BUILT	10.10.2018	ASJ	Manufacturer  EPE SOL 71-B Garden Block, New Garden Town, Lahore, Pakistan	Contractor  Grid Solutions A GE and Alstom joint venture	Client  NATIONAL TRANSMISSION & DISPATCH COMPANY LIMITED (NTDC-WAPDA)	Project 220KV/132KV GIS SUBSTATION GHAZI ROAD, LAHORE	Drawing no. P60194-E-DTR-SC-002
REV.	DESCRIPTION	DATE	DRAWER					Project no. P-60194
								Sheet type NA2
								Sheet no. 32

PUSH BUTTON

TRIP RELAY RESET



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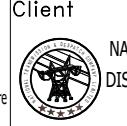
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0	AS BUILT	10.10.2018	ASJ	Manufacturer  EPESOL 71-B Garden Block, New Garden Town, Lahore, Pakistan	Contractor  Grid Solutions A GE and Alstom joint venture	Client  NATIONAL TRANSMISSION & DISPATCH COMPANY LIMITED (NTDC-WAPDA)	Project 220kV/132kV GIS SUBSTATION GAZI ROAD, LAHORE	Title 220kV TRAFO RELAY SET-2 PANEL (=D04+R4) HAND RESET OF TRIPPING RELAYS	Drawing no. P60194-E-DTR-SC-002	
REV.	DESCRIPTION	DATE	DRAWER					Project no. P-60194	Sheet type O1	Sheet no. 33

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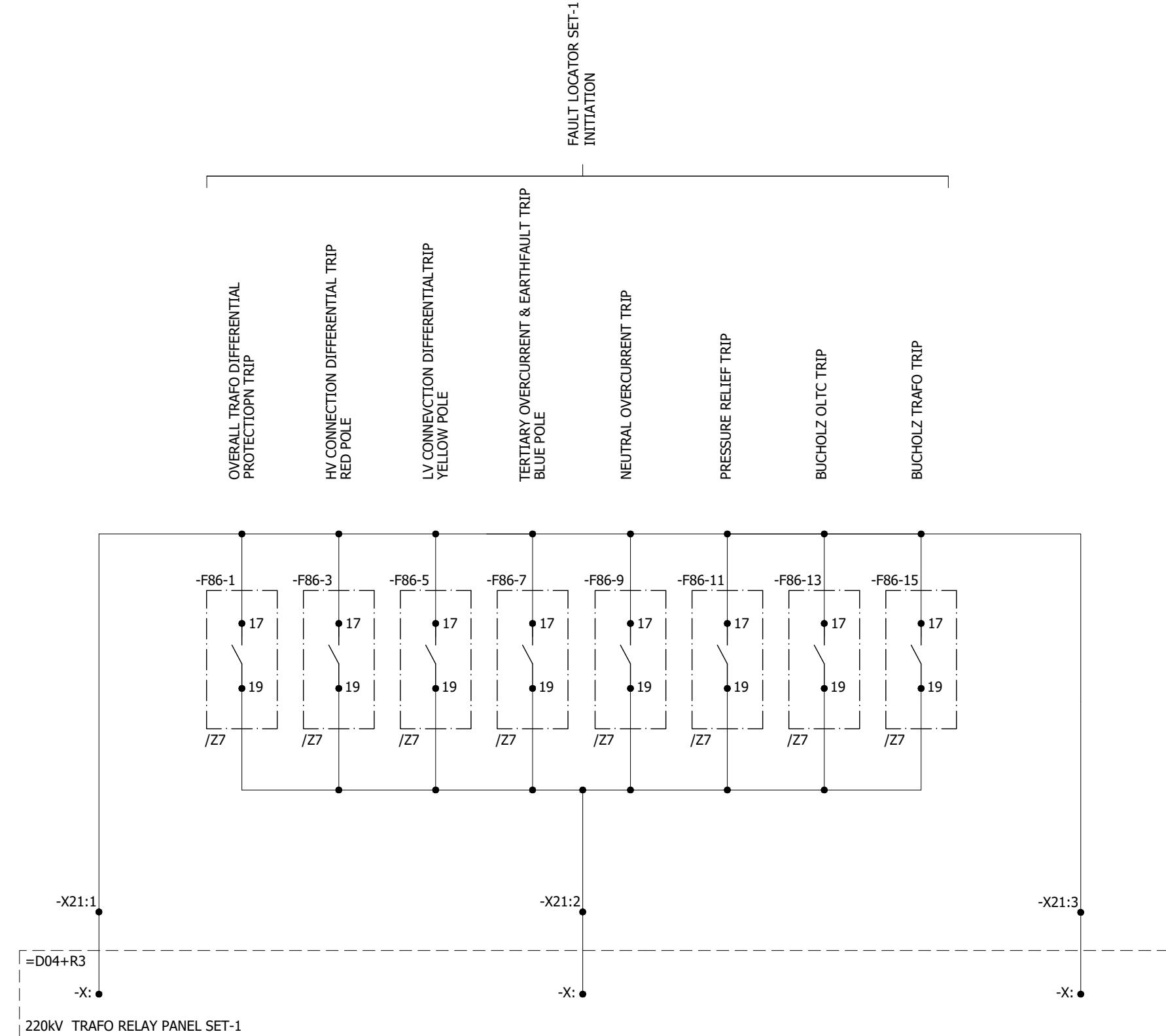
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0	AS BUILT	10.10.2018	ASJ	Manufacturer  EPESOL 71-B Garden Block, New Garden Town, Lahore, Pakistan	Contractor  Grid Solutions A GE and Alstom joint venture	Client  NATIONAL TRANSMISSION & DISPATCH COMPANY LIMITED (NTDC-WAPDA)	Project 220kV/132kV GIS SUBSTATION GHAZI ROAD, LAHORE	Title 220kV TRAFO RELAY SET-2 PANEL (=D04+R4) PROTECTION INTER-CIRCUITS	Drawing no. P60194-E-DTR-SC-002
REV.	DESCRIPTION	DATE	DRAWER						Project no. P-60194
									Sheet type PA1
									Sheet no. 34

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OVERALL TRAFO DIFFERENTIAL PROTECTIONN TRIP

HV CONNECTION DIFFERENTIAL TRIP
RED POLELV CONNEVCTION DIFFERENTIALTRIP
YELLOW POLETERTIARY OVERCURRENT & EARTHFAULT TRIP
BLUE POLE

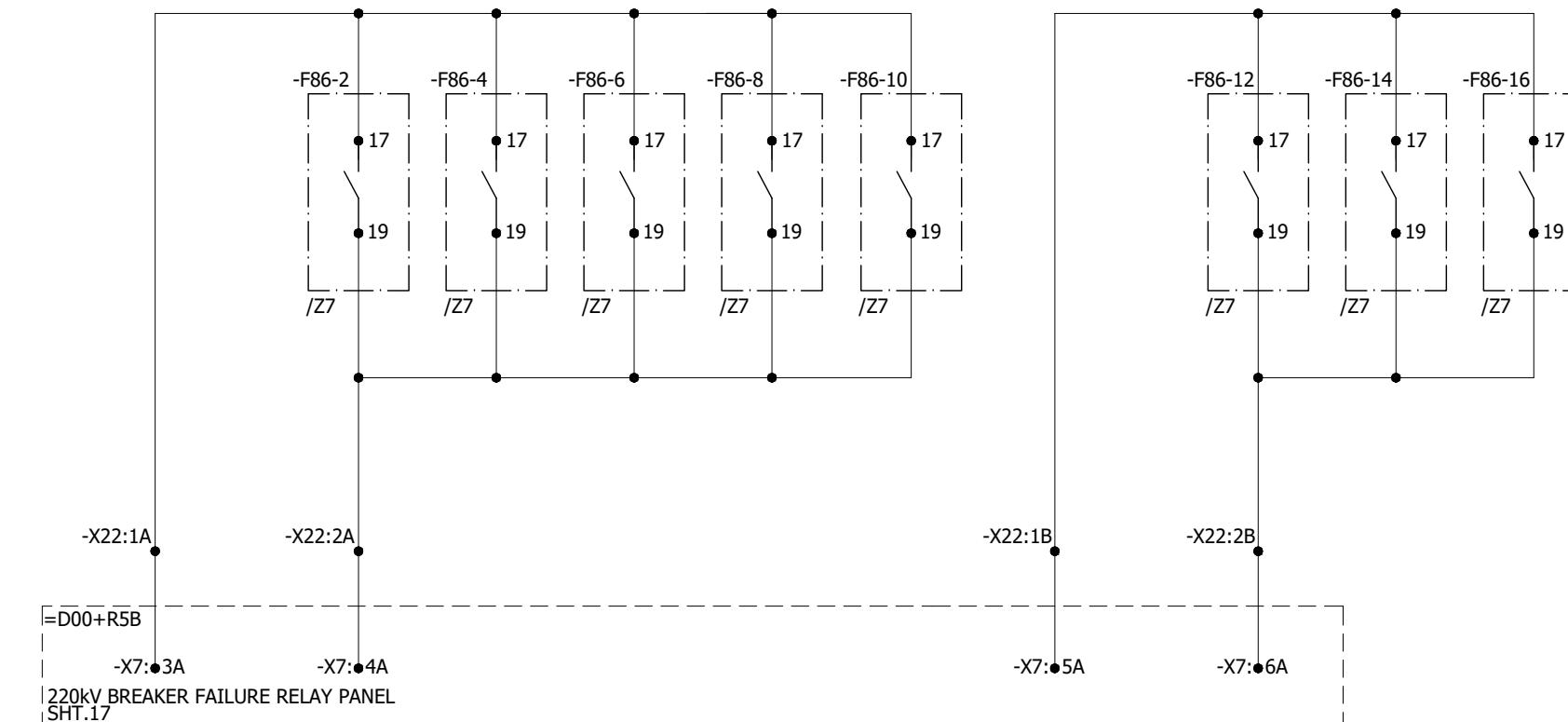
NEUTRAL OVERCURRENT TRIP

220 kV
CBF INITIATION

PRESSURE RELIEF TRIP

BUCHOLZ OLTC TRIP

BUCHOLZ TRAFO TRIP



0	AS BUILT	10.10.2018	ASJ	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 TRAFO RELAY SET-2 PANEL (=D04+R4) PROTECTION INTER-CIRCUITS	Drawing no. P60194-E-DTR-SC-002
REV.	DESCRIPTION	DATE	DRAWER						Project no. P-60194
									Sheet type PA2
									Sheet no. 35

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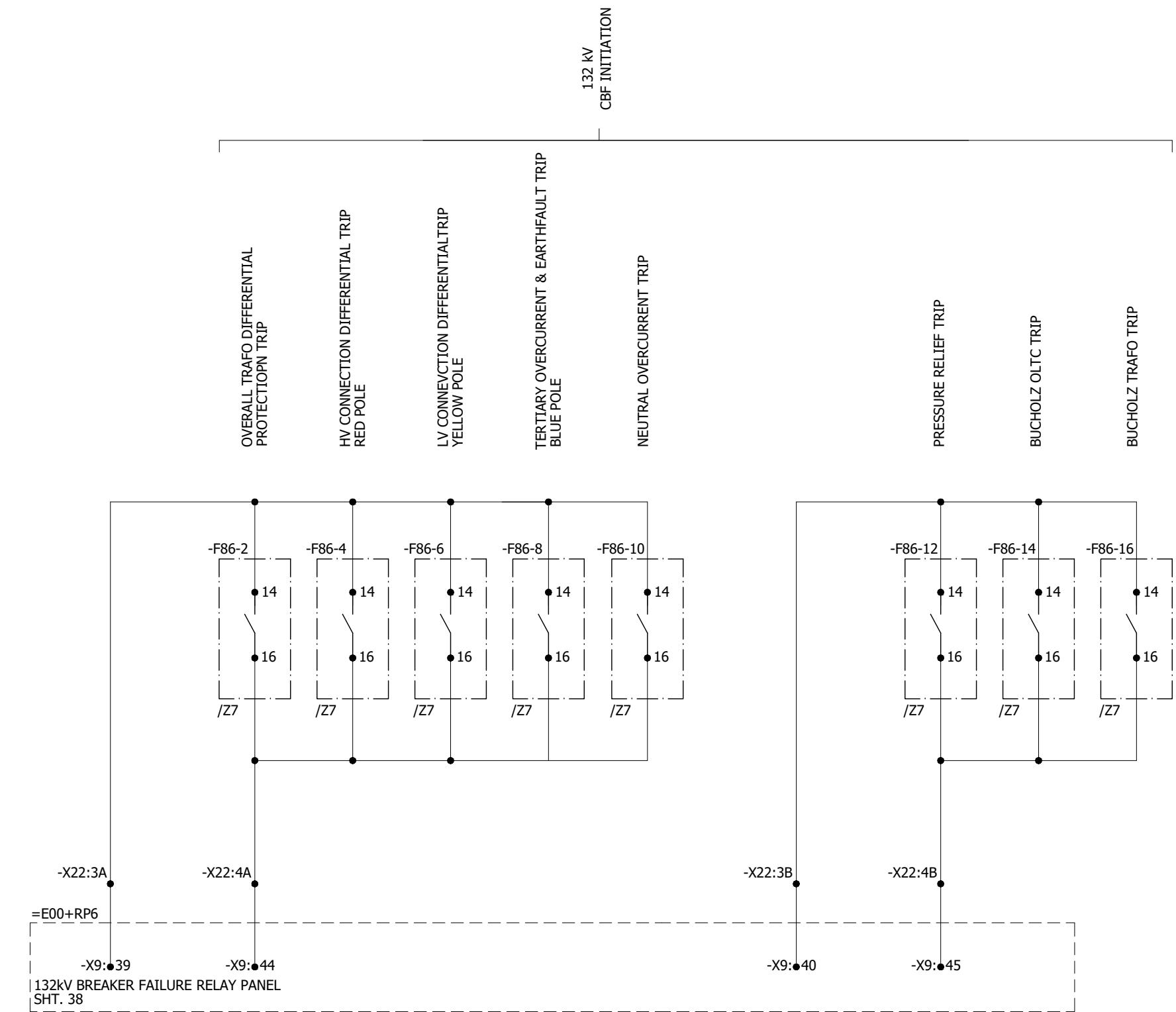
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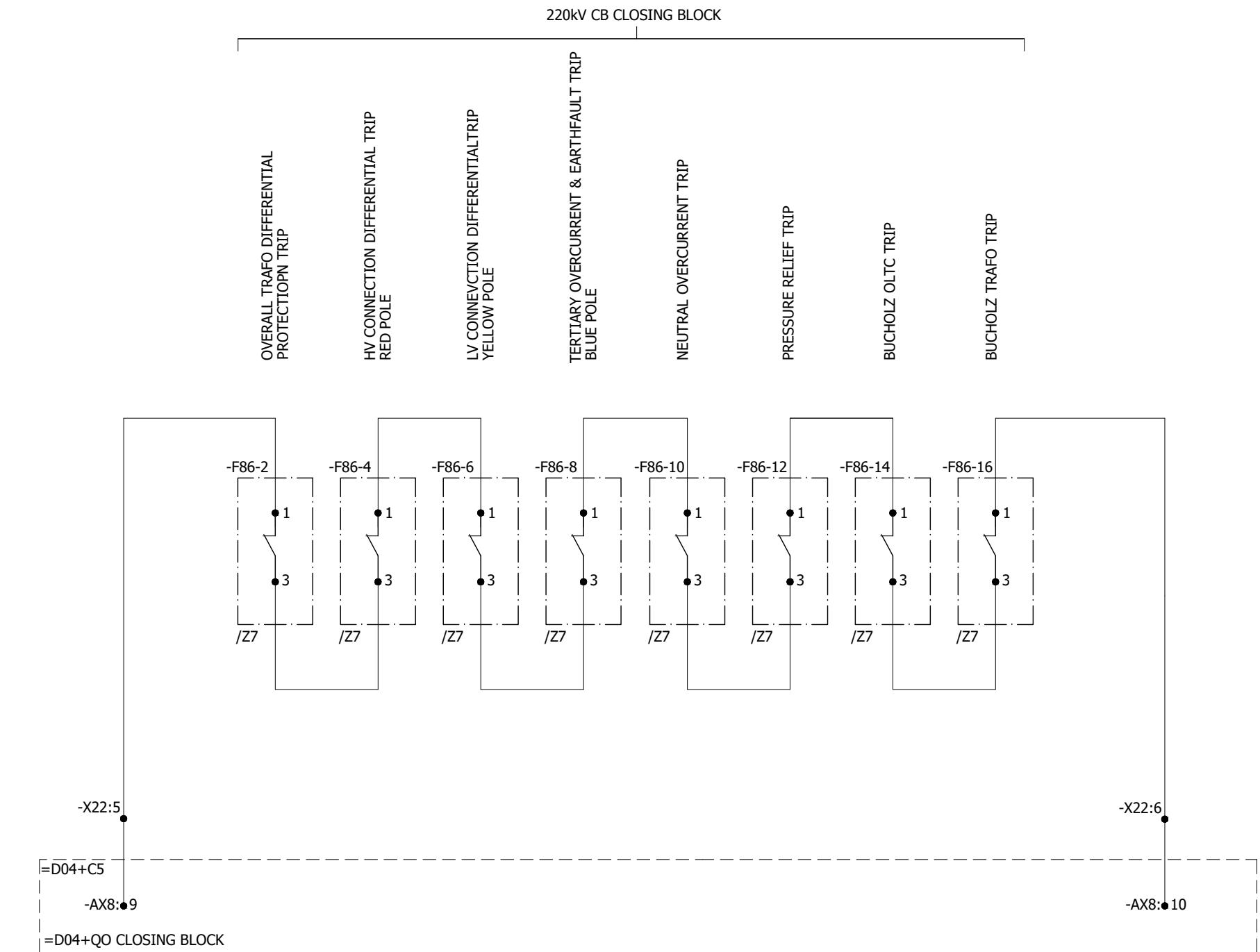
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REV.	DESCRIPTION	DATE	DRAWER						Project no. P-60194	Sheet type PA3	Sheet no. 36

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0	AS BUILT	10.10.2018	ASJ	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 TRAFO RELAY SET-2 PANEL (=D04+R4) =E08+Q0 CLOSING BLOCK	Drawing no. P60194-E-DTR-SC-002		
REV.	DESCRIPTION	DATE	DRAWER						Project no. P-60194	Sheet type PA4	Sheet no. 37
1		2		3	4	5	6	7	8		

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132KV CB CLOSING BLOCK

OVERALL TRAFO DIFFERENTIAL
PROTECTIONN TRIP

HV CONNECTION DIFFERENTIAL TRIP
RED POLE

LV CONNEVCTION DIFFERENTIAL TRIP
YELLOW POLE

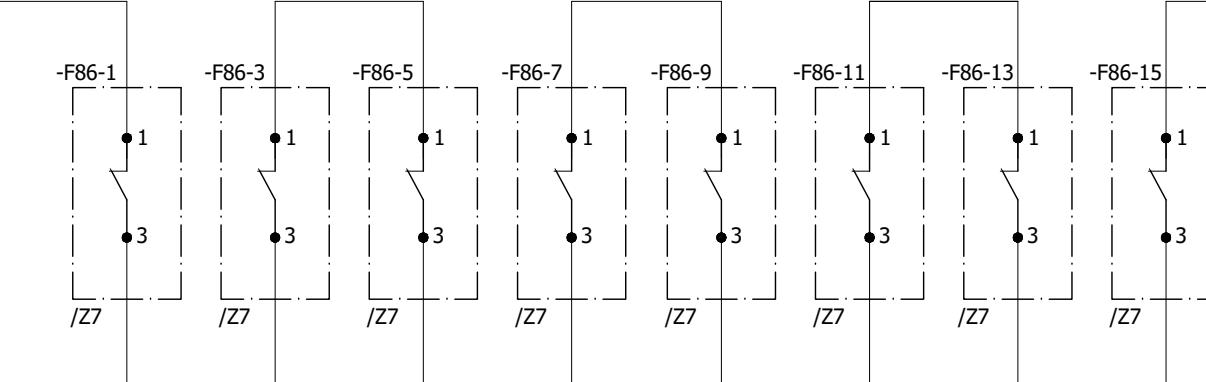
TERTIARY OVERCURRENT & EARTHFAULT TRIP
BLUE POLE

NEUTRAL OVERCURRENT TRIP

PRESSURE RELIEF TRIP

BUCHOLZ OLTC TRIP

BUCHOLZ TRAFO TRIP



-X22:7

=D04+C5
-BX:•9

-X22:8

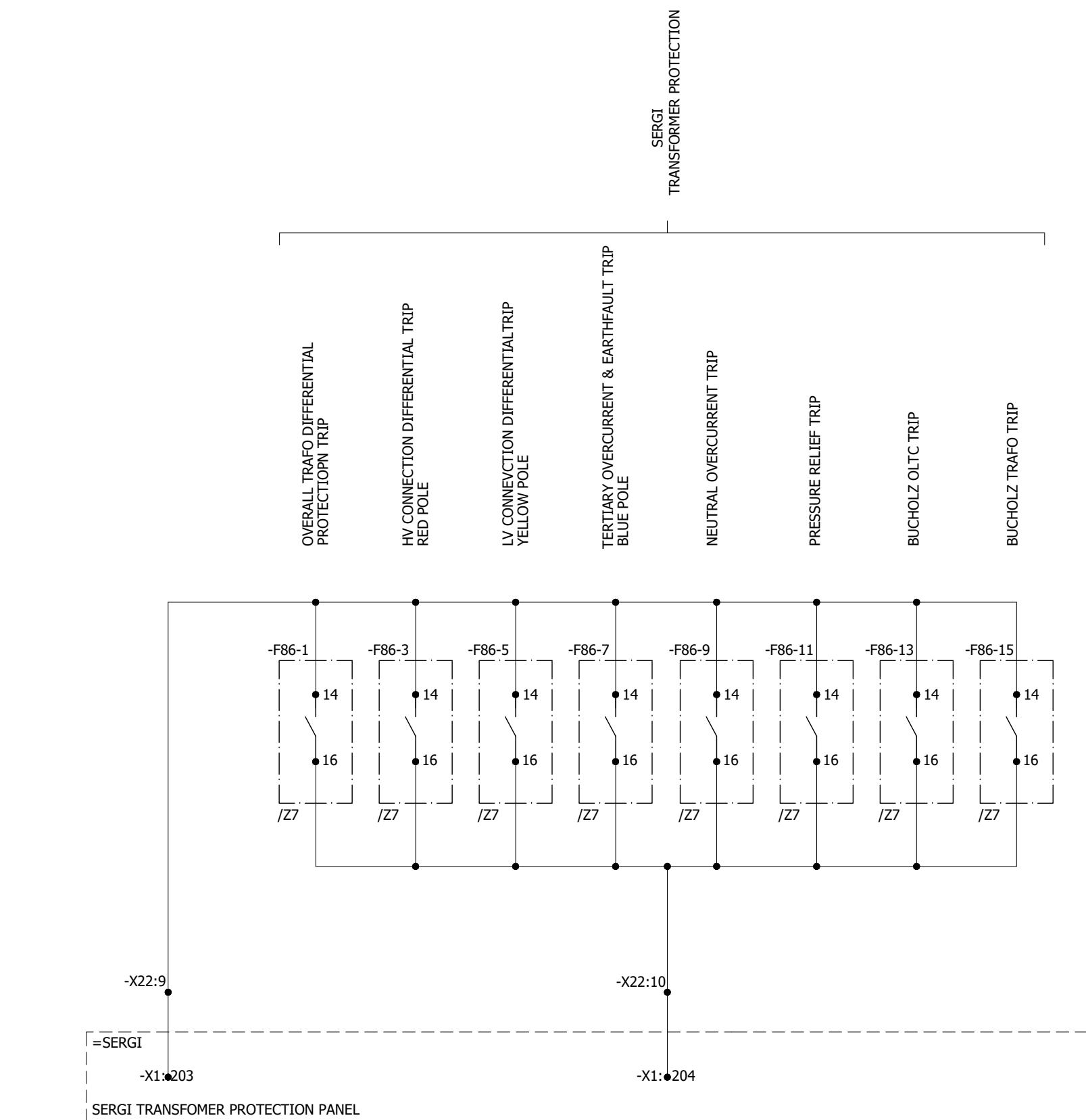
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=E08+Q0 CLOSING BLOCK

0	AS BUILT	10.10.2018	ASJ	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 TRAFO RELAY SET-2 PANEL (=D04+R4) =DO4+Q0 CLOSING BLOCK	Drawing no. P60194-E-DTR-SC-002
REV.	DESCRIPTION	DATE	DRAWER					Project no. P-60194	
								Sheet type PA5	
								Sheet no. 38	

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0	AS BUILT	10.10.2018	ASJ	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 TRAFO RELAY SET-2 PANEL (=D04+R4) PROTECTION INTER-CIRCUITS	Drawing no. P60194-E-DTR-SC-002
REV.	DESCRIPTION	DATE	DRAWER						Project no. P-60194
									Sheet type PA6
									Sheet no. 39

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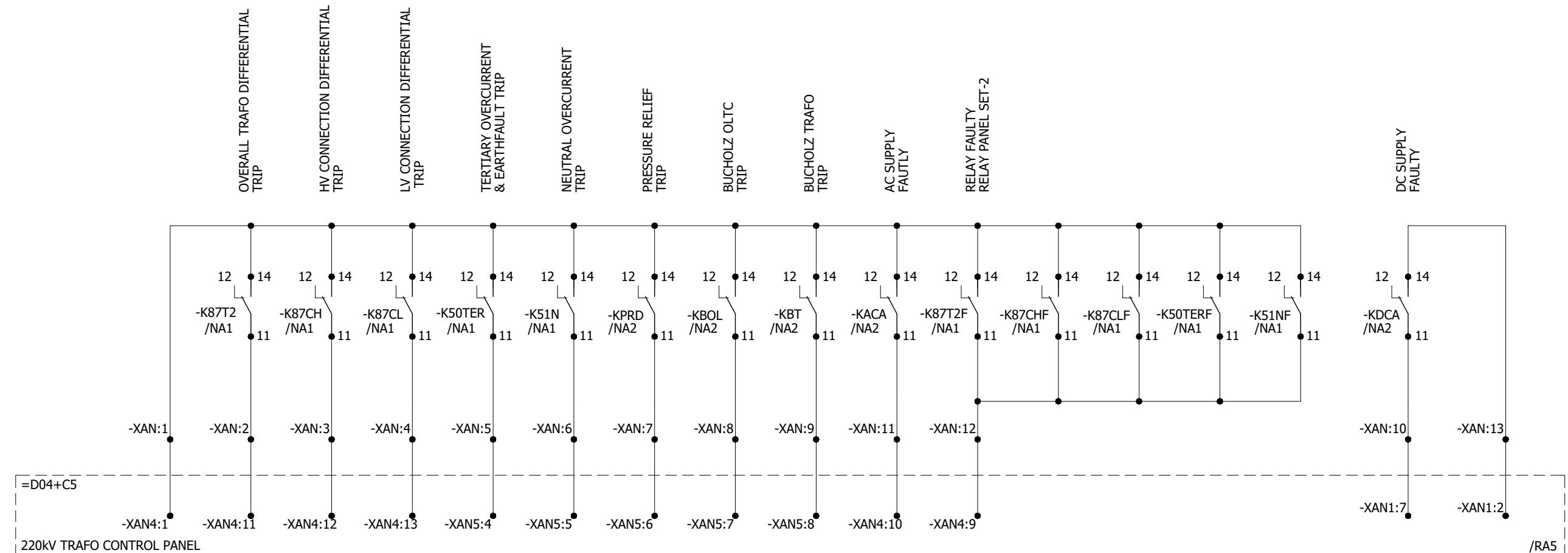
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REV.	DESCRIPTION	DATE	DRAWER						Project no. P-60194	Sheet type RA1	Sheet no. 40

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OVERALL TRAFO DIFFERENTIAL PROTECTION TRIP

HV CONNECTION DIFFERENTIAL TRIP RED POLE

LV CONNECCTION DIFFERENTIAL TRIP YELLOW POLE

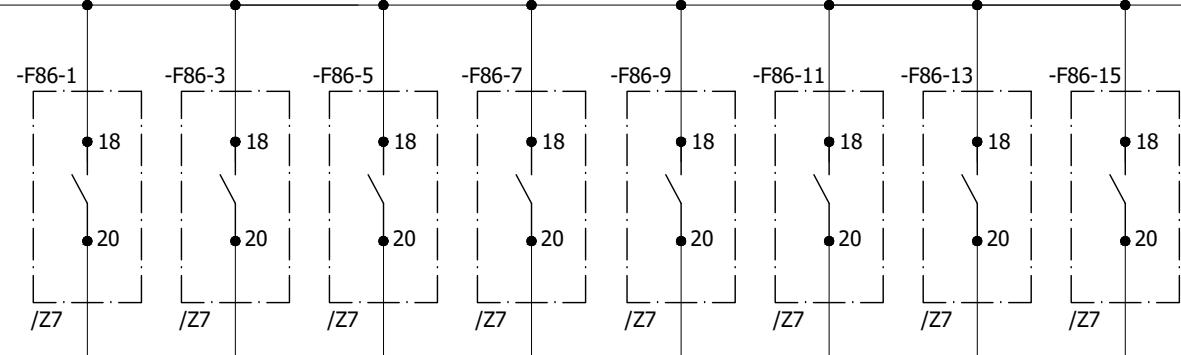
TERTIARY OVERCURRENT & EARTHFAULT TRIP BLUE POLE

NEUTRAL OVERCURRENT TRIP

PRESSURE RELIEF TRIP

BUCHOLZ OLTC TRIP

BUCHOLZ TRAFO TRIP



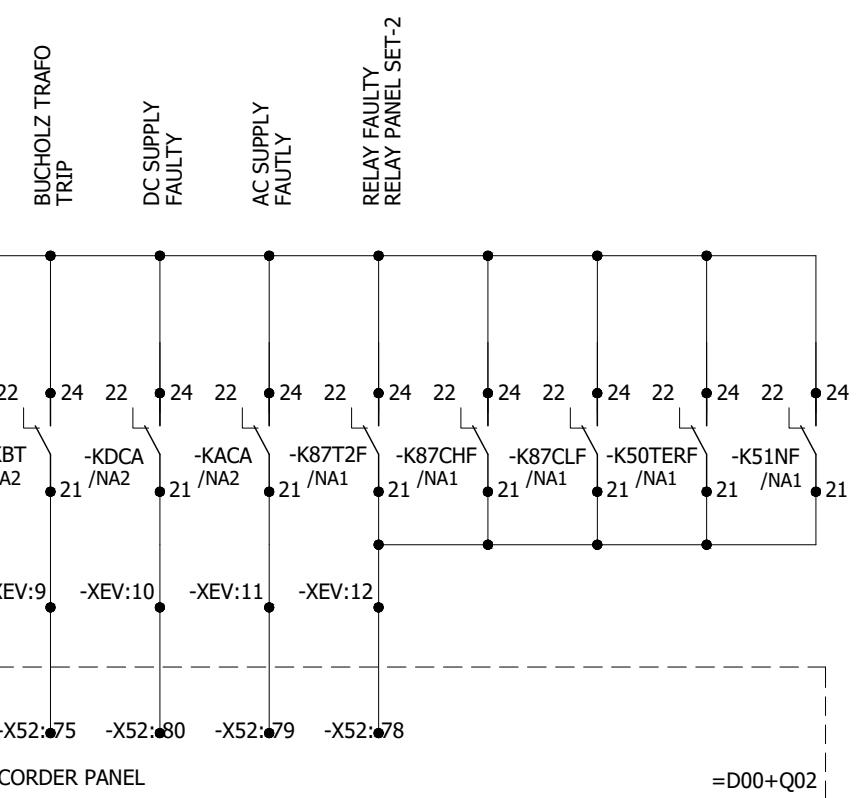
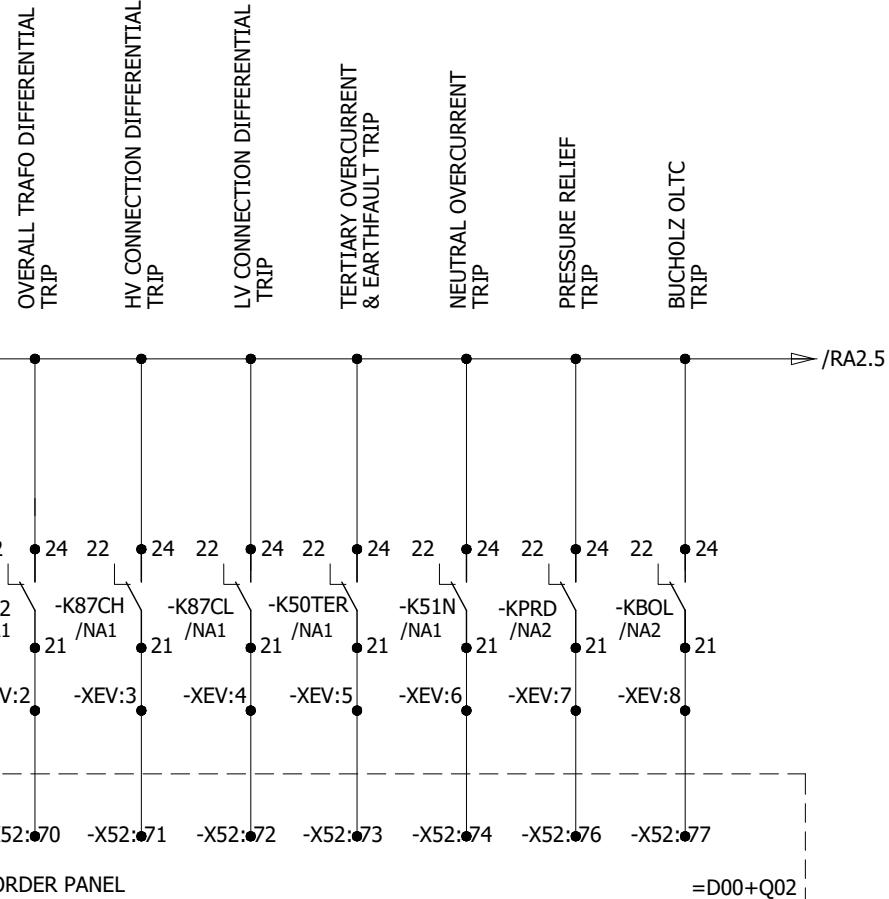
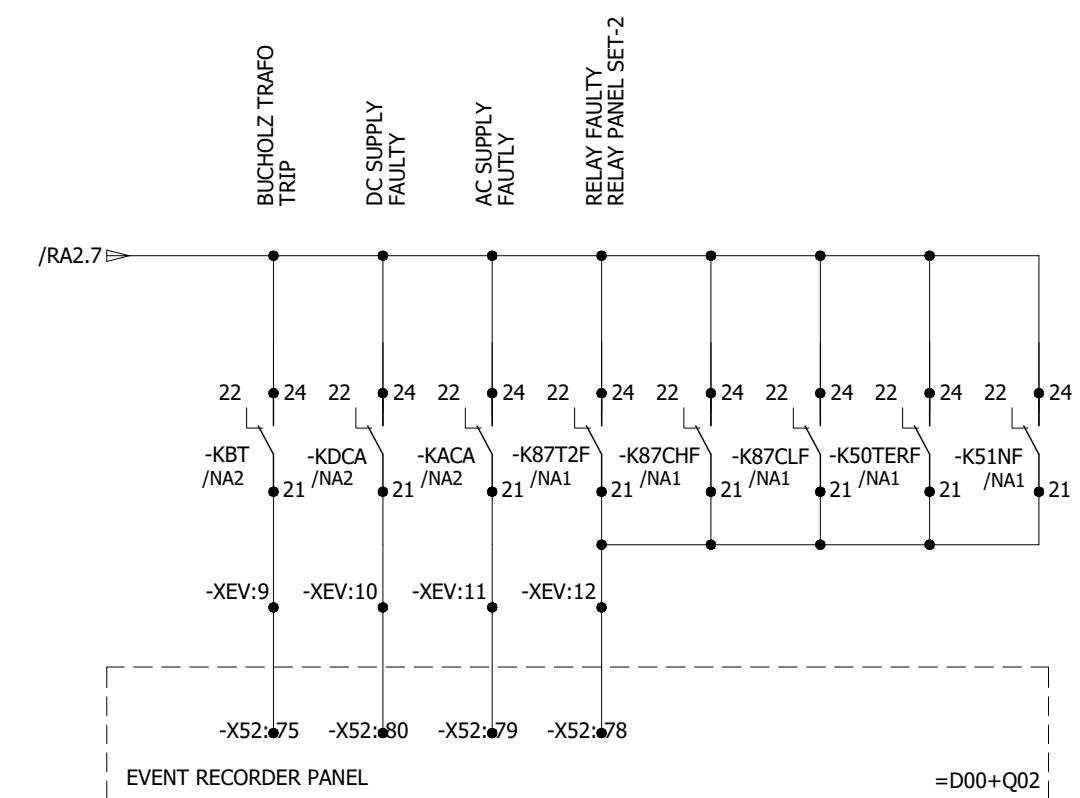
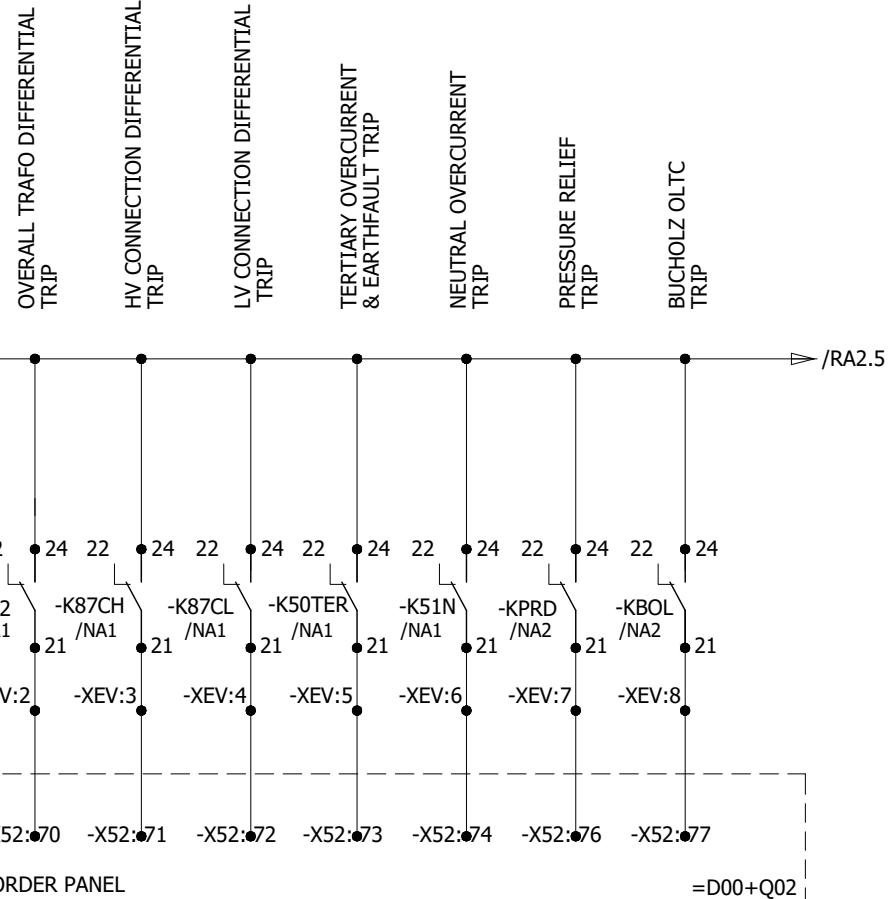
-XFR:1
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FAULT RECORDER PANEL



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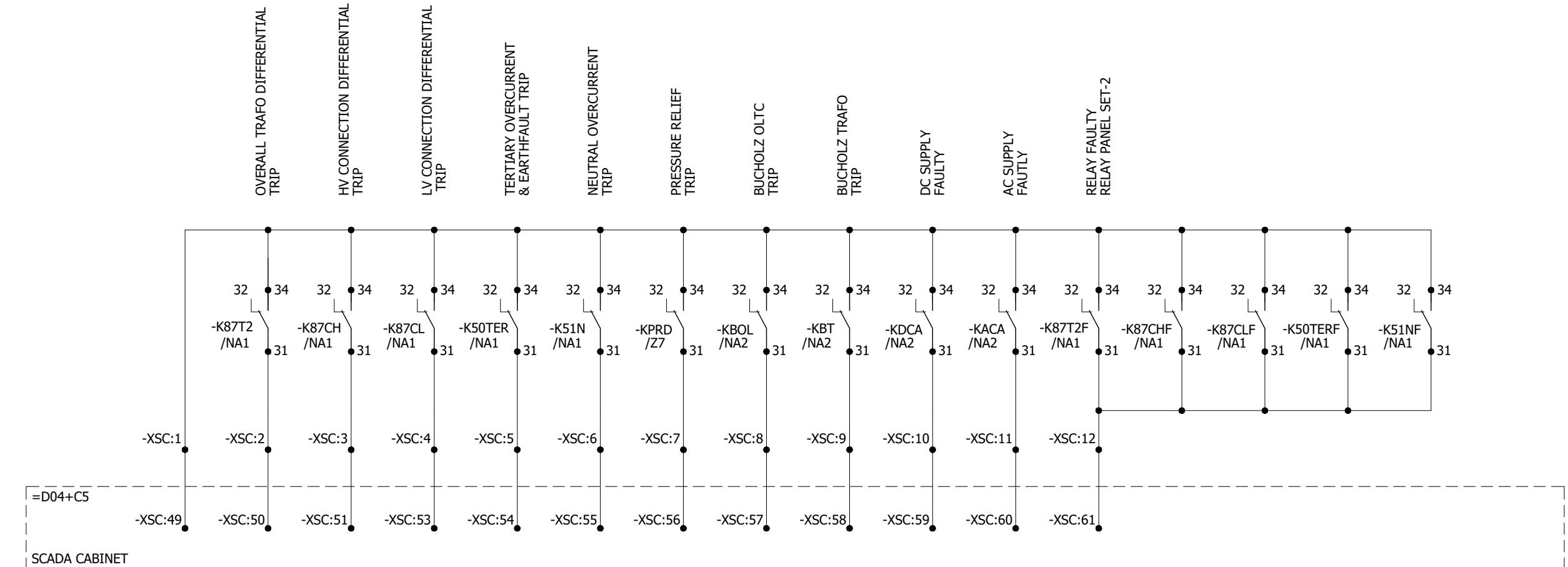
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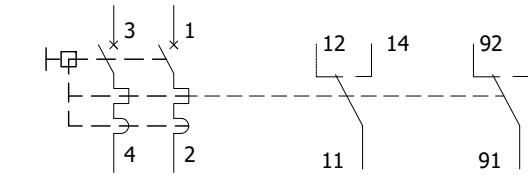
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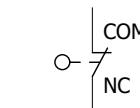
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REV.	DESCRIPTION		DATE	DRAWER						Project no. P-60194	Sheet type RA3	Sheet no. 42
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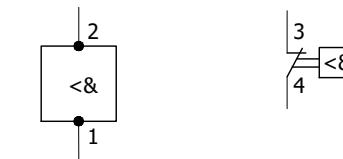
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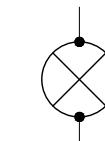
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-F102	D.4	F.6	
-F103	D.6	F.6	
-F201	E.2	F.2	
-F202	E.3	F.2	
-F203	E.4	F.2	
-F204	E.5	F.3	
-F205	E1.2	F.4	



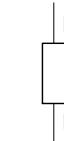
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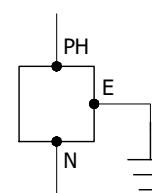
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-H100	D.3
-H200	F.4



-R100	D.5
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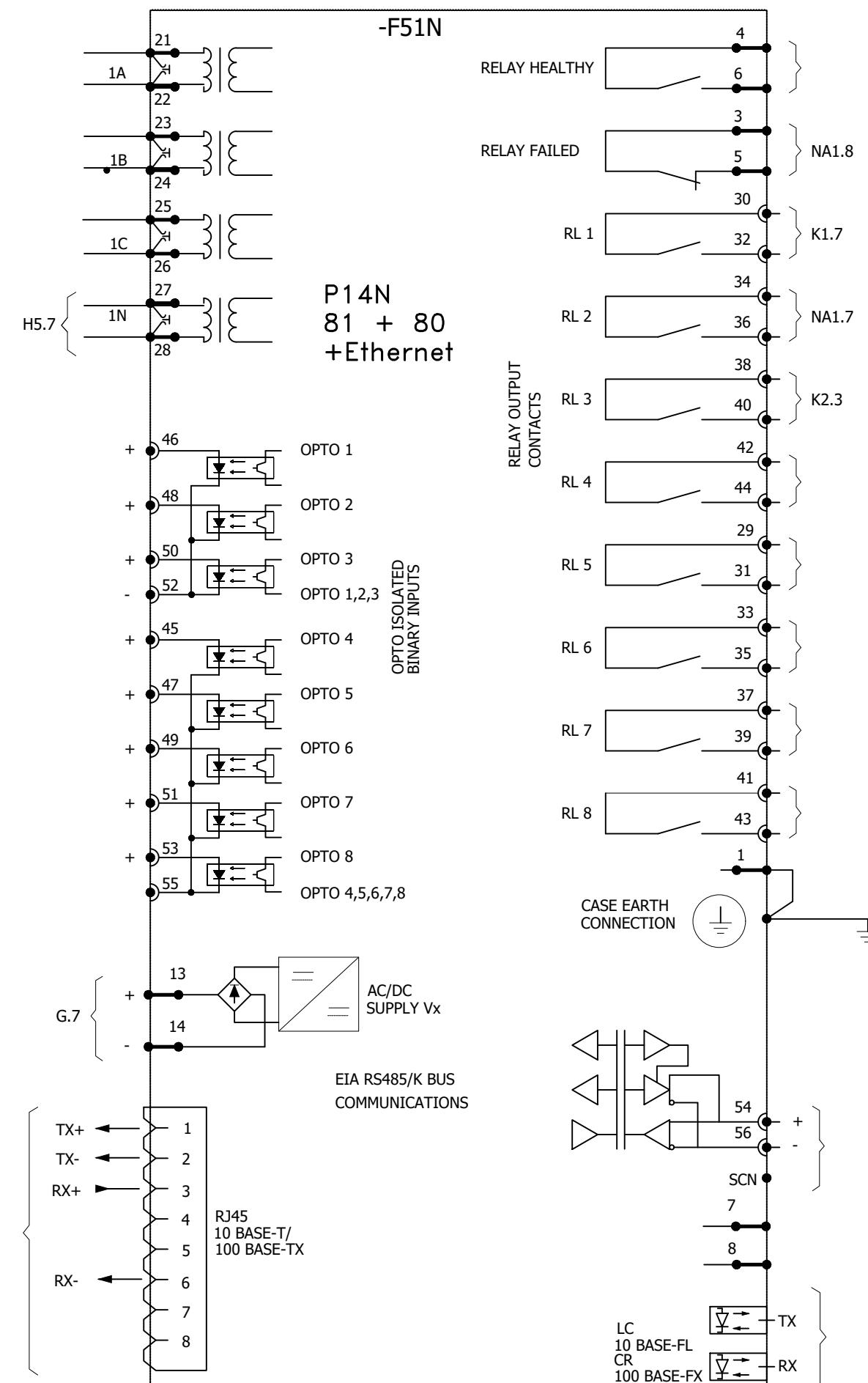
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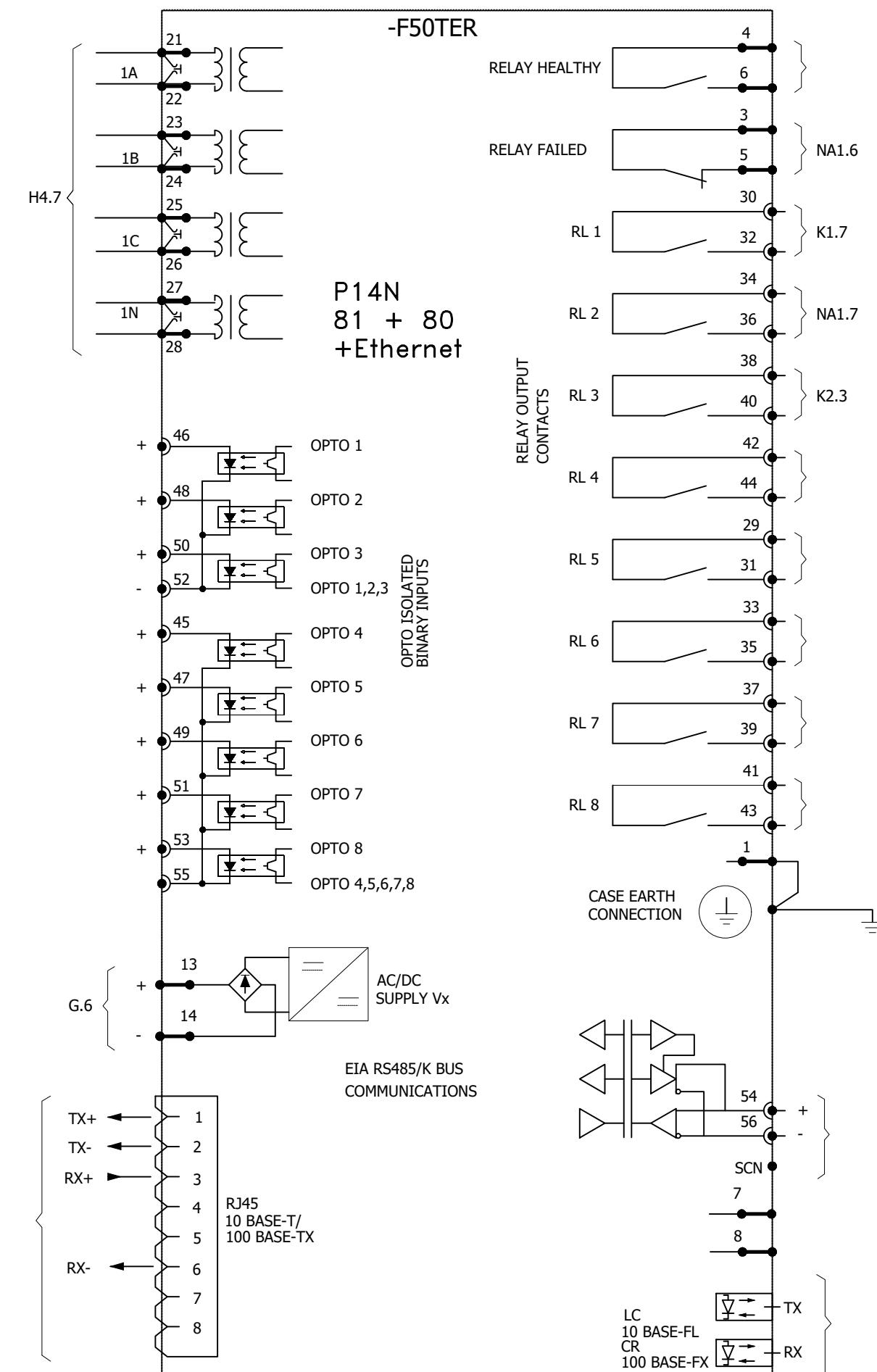
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				 EPESOL 7-B Garden Block, New Garden Town, Lahore, Pakistan	 Grid Solutions A GE and Alstom joint venture	 NATIONAL TRANSMISSION & DISPATCH COMPANY LIMITED (NTDC-WAPDA)	220kV/132kV GIS SUBSTATION GHAZI ROAD, LAHORE	220kV TRAFO RELAY SET-2 PANEL (=D04+R4) COMPONENT DIAGRAM	P60194-E-DTR-SC-002
REV.	DESCRIPTION	DATE	DRAWER						Project no. P-60194 Sheet type Z1 Sheet no. 43

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0	AS BUILT	10.10.2018	ASJ	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 TRAFO RELAY SET-2 PANEL (=D04+R4) COMPONENT DIAGRAM	P60194-E-DTR-SC-002
REV.	DESCRIPTION	DATE	DRAWER						Project no. P-60194
									Sheet type Z3
									Sheet no. 45

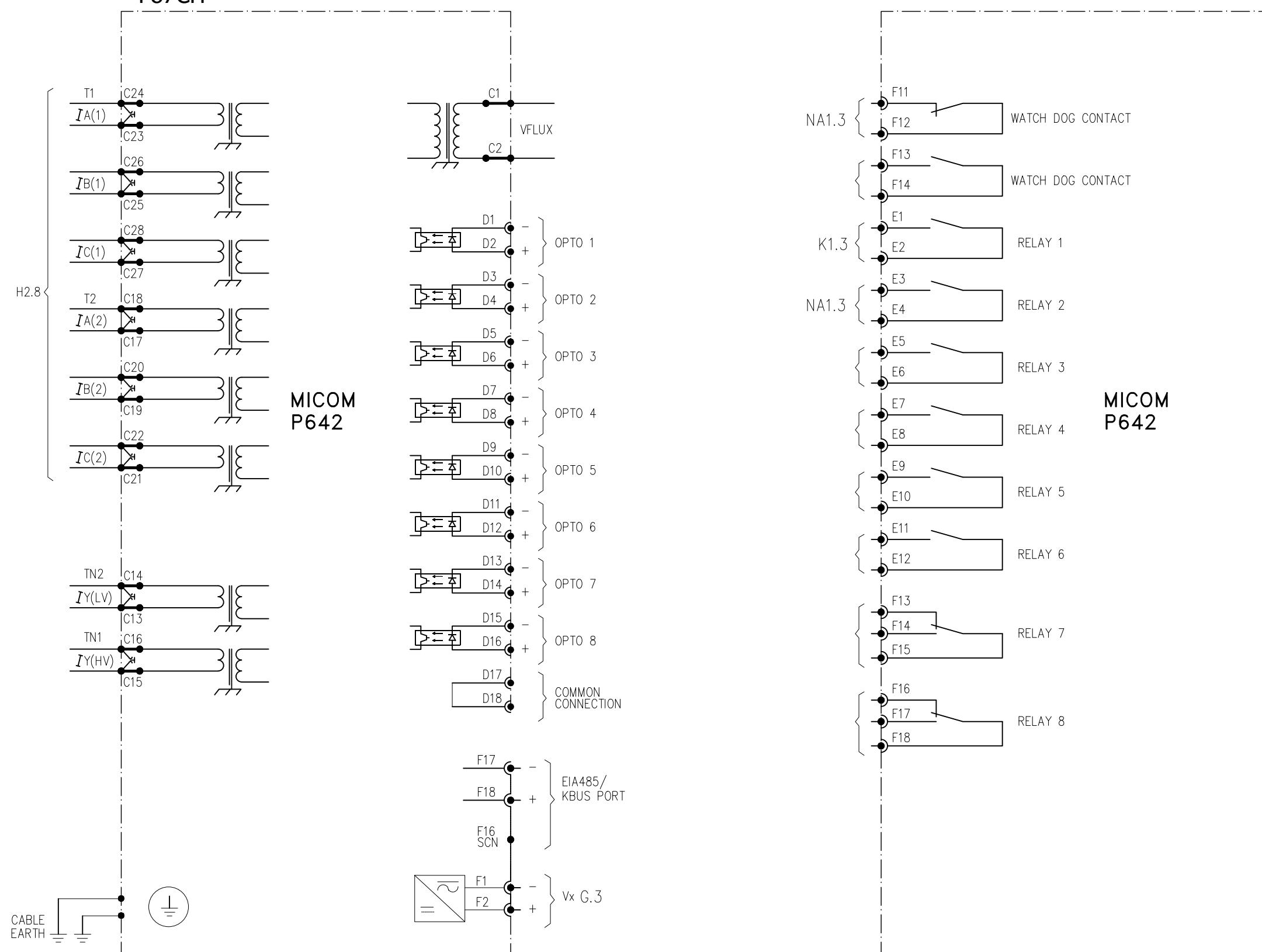
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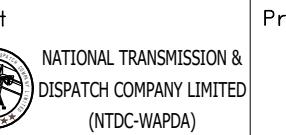


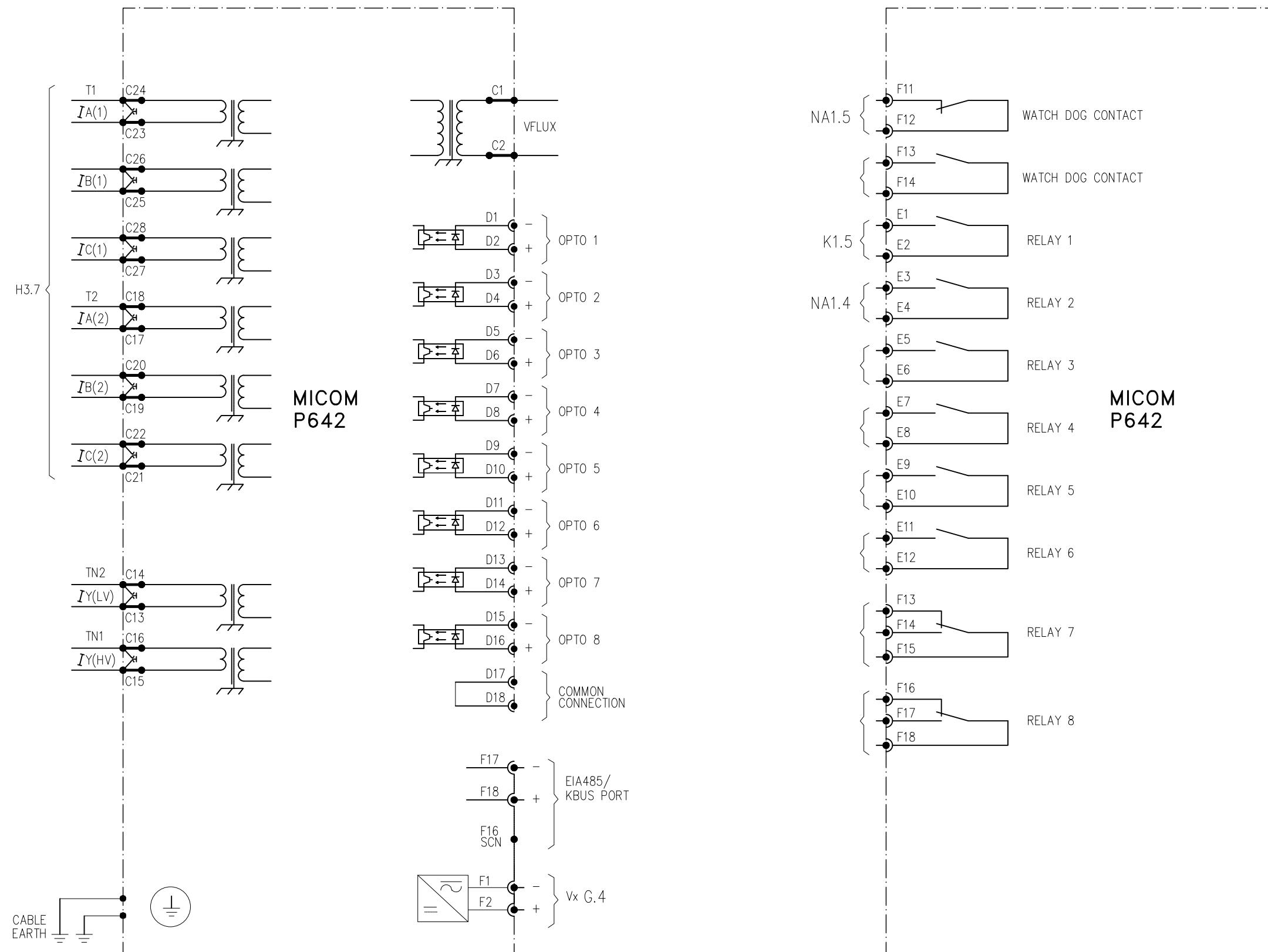
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				EPESOL 71-B Garden Block, New Garden Town, Lahore, Pakistan	Grid Solutions A GE and Alstom joint venture	NATIONAL TRANSMISSION & DISPATCH COMPANY LIMITED (NTDC-WAPDA)	220kV/132kV GIS SUBSTATION GHAZI ROAD, LAHORE	220kV TRAFO RELAY SET-2 PANEL (=D04+R4) COMPONENT DIAGRAM	P-60194-E-DTR-SC-002
REV.	DESCRIPTION	DATE	DRAWER						Project no. P-60194 Sheet type Z4 Sheet no. 46

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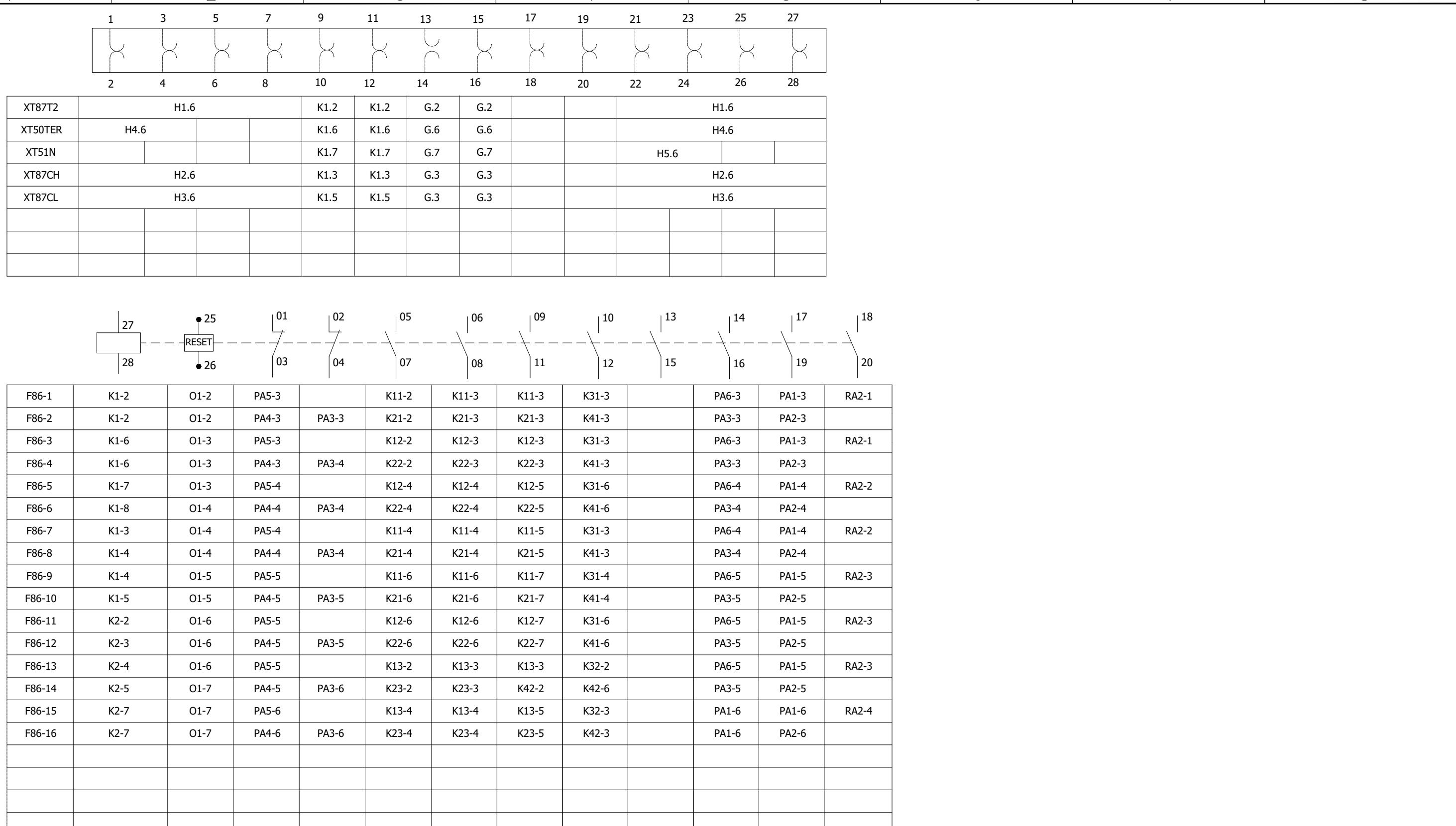


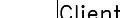
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				 EPESOL 71-B Garden Block, New Garden Town, Lahore, Pakistan	 Grid Solutions A GE and Alstom joint venture	 NATIONAL TRANSMISSION & DISPATCH COMPANY LIMITED (NTDC-WAPDA)	220KV/132KV GIS SUBSTATION GHAZI ROAD, LAHORE	220KV TRAFO RELAY SET-2 PANEL (=D04+R4) COMPONENT DIAGRAM	P60194-E-DTR-SC-002
REV.	DESCRIPTION	DATE	DRAWER						Project no. P-60194 Sheet type Z5 Sheet no. 47

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0	AS BUILT	10.10.2018	ASJ	Manufacturer EPE SOL 71-B Garden Block, New Garden Town, Lahore, Pakistan	Contractor GE Grid Solutions A GE and Alstom joint venture	Client NTDC-WAPDA NATIONAL TRANSMISSION & DISPATCH COMPANY LIMITED	Project 220KV/132KV GIS SUBSTATION GHAZI ROAD, LAHORE	Title 220KV TRAFO RELAY SET-2 PANEL (=D04+R4) COMPONENT DIAGRAM	Drawing no. P60194-E-DTR-SC-002
REV.	DESCRIPTION	DATE	DRAWER						Project no. P-60194



0	AS BUILT	10.10.2018	ASJ	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 TRAFO RELAY SET-2 PANEL (=D04+R4) COMPONENT DIAGRAM	Drawing no. P60194-E-DTR-SC-002
REV.	DESCRIPTION	DATE	DRAWER						Project no. P-60194