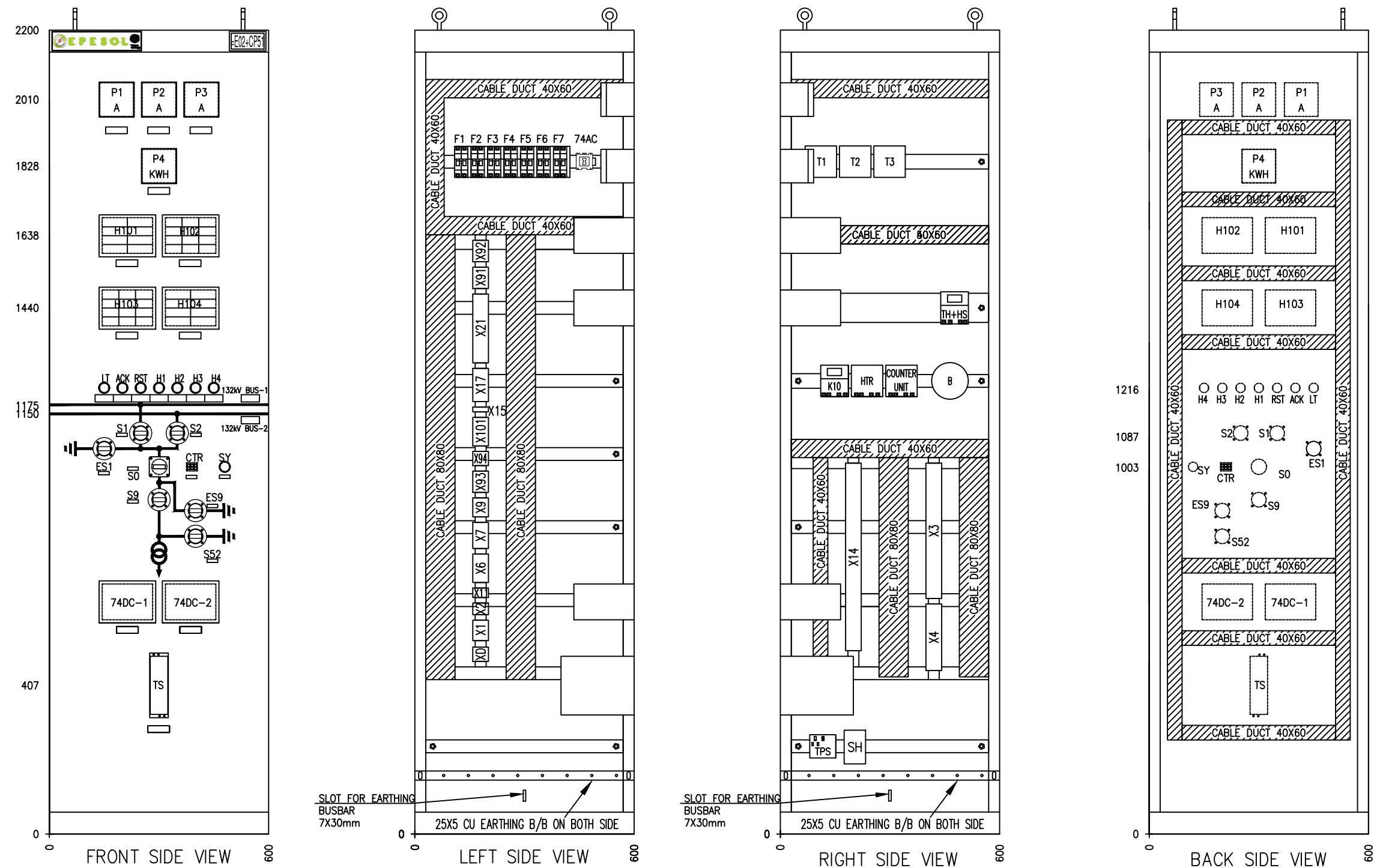


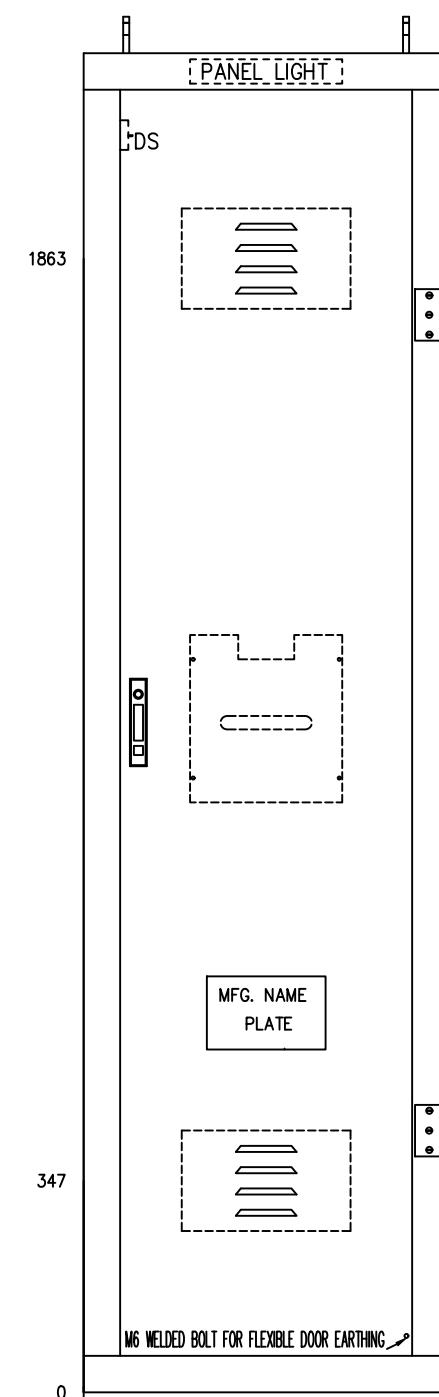
LAYOUT DRAWING

132/11kV TRANSFORMER CONTROL PANEL

TYPE CP51

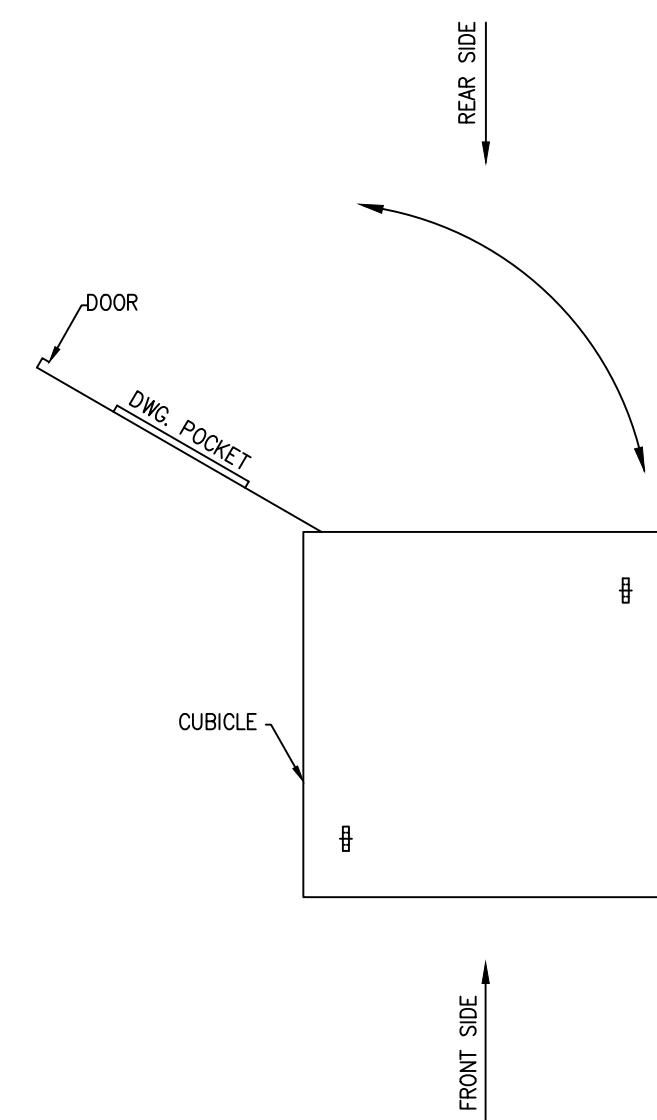
APPROVED	CHECKED	DRAWN	PROJECT: DESCON PO#45000100989 DATED 06.03.2018 PROCUREMENT OF 132kV RELAY, CONTROL PANELS	TITLE: COVER SHEET 132/11kV TRANSFORMER CONTROL PANEL TYPE CP51	DWG# EPE/ENU-18/P1419	SHT: 01 OF 03
NAH	RAA	MSC	 EPESOL Pvt Ltd 71-B Garden Block, New Garden Town, Lahore, Pakistan	 EPESOL Pvt Ltd 71-B Garden Block, New Garden Town, Lahore, Pakistan	DATE:15.02.2019 AS BUILT	REV: 0





[::PANEL LIGHT::]

[::PANEL LIGHT::]



APPROVED	CHECKED	DRAWN	PROJECT:  DESCN P0#45000100989 DATED 06.03.2018 PROCUREMENT OF 132KV RELAY, CONTROL PANELS	TITLE: GENERAL ARRANGEMENT 132/11KV TRANSFORMER CONTROL PANEL TYPE CP51	DWG# EPE/ENU-18/P1419	SHT: 03 OF 03
NAH	RAA	MSC			DATE:15.02.2019 AS BUILT	REV: 0

LIST OF APPARATUS

132/11kV TRANSFORMER CONTROL PANEL

TYPE CP51

APPROVED	CHECKED	DRAWN	PROJECT: DESCON PO#45000100989 DATED 06.03.2018 PROCUREMENT OF 132kV RELAY, CONTROL PANELS	TITLE: COVER SHEET 132/11kV TRANSFORMER CONTROL PANEL TYPE CP51	E P E S O L P v t . L t d . 71-B Garden Block, New Garden Town, Lahore, Pakistan	DWG# EPE/ENU-18/P1420 DATE:15.02.2019	SHT: 01 OF 04 AS BUILT REV: 0
NAH	ABA	MSC					

		1	2	3	4	5	6	7	8		
SR. #	ITEM DESIGNATION	DESCRIPTION				QTY	TYPE	MAKE	COUNTRY OF ORIGIN	ORDERING INFORMATION	SHEET NO
A											A
1	P1+T1, P3+T3	METER: 240 DEGREE TRANSDUCER OPERATED ANALOGUE AMPERE METER, INPUT 0...20/30mA, ACCURACY CLASS 1, SCALE1 0...200/300A SCALE2 0...400/600A CT RATIO 400:200/5A.		2	A96MMA+	FRER	ITALY	A96MMA+MCOEAQ	05		
		CURRENT TRANSDUCER: NOMINAL INPUT CURRENT 0...5/7.5 A, OUTPUT 0...20/30 mA, AUX. VOLTAGE 110 VDC, ACCURACY CLASS 1			MCOEAQ						
B	2	P2+T2	METER: TRANSDUCER OPERATED DIGITAL AMPERE METER, AUX. VOLTAGE 110 VDC, INPUT 0...20/30 mA ACCURACY CLASS 1, SCALE1 0...200/300 A SCALE2 0...400/600A CT RATIO 400:200/5A,	1	D96MMA+	FRER	ITALY	D96MMA+MCOEAQ	05		B
		CURRENT TRANSDUCER: NOMINAL INPUT CURRENT 0...5/7.5 A, OUTPUT 0...20/30 mA, AUX. VOLTAGE 110 VDC, ACCURACY CLASS 1			MCOEAQ						
B	3	P4	THREE PHASE DIGITAL POWER METER, ACCURACY CLASS 0.5s, INPUT NOMINAL CURRENT 1/5A, INPUT NOMINAL VOLTAGE 100–480 VAC, AUXILIARY VOLTAGE 110–375 VDC	1	ENERIUM 150	ENERDIS	FRANCE	ENERIUM 150	05		B
	4	H101	EIGHT WINDOW ANNUNCIATOR, RATED VOLTAGE 110 VDC	1	AM101	ELABS	PAKISTAN	AM-101	11		
	4a	H102, H103	TWELVE WINDOW ANNUNCIATOR, RATED VOLTAGE 110 VDC	2	AM101	ELABS	PAKISTAN	AM-101	12,13		
c	5	H104	EIGHT WINDOW ANNUNCIATOR, RATED VOLTAGE 240 VAC	1	AM101	ELABS	PAKISTAN	AM-101	14		c
	6	TS	TEST BLOCK (14 FINGER) FOR METERING CIRCUIT	1	sotech-TSB14	ARTECHE	SPAIN	TSB14-222211111AAAB-V	05,18		
	7	F1, F2, F3, F7	DC MCB, 2POLE, 10A, WITH ONE C/O CONTACT, 10kA	4	EP-100	GE	HUNGRY	EP102UCC10+(CAH1)	06		
	8	F4, F5	AC MCB, 2POLE, 10A, WITH ONE C/O CONTACT, 6kA	2	G60	GE	HUNGRY	G62C10+(CAH1)	16		
D	9	F6	AC ELCB, 2POLE, 16A, 30mA, WITH ONE C/O CONTACT	1	DM100	GE	HUNGRY	DM100C16/030+(CAH1)	16		D
	10	74DC-1, 74DC-2	DC SUPPLY SUPERVISION RELAY, RATED VOLTAGE 110 VDC	2	TS101	ELABS	PAKISTAN	TS101	10,13		
	11	74AC	AC SUPPLY SUPERVISION RELAY, RATED VOLTAGE 240 VAC, 3 C/O CONTACTS	1	MCR	GE	POLAND	MCRA022ATN	14		
	12	K10	FLASHER RELAY, 1 C/O CONTACT, RATED VOLTAGE 110 VDC	1		ELABS	PAKISTAN		09		
E	13	S0	CONTROL AND DISCREPANCY SWITCH FOR CIRCUIT BREAKER CONTROL AND INDICATION, SQUIRE TYPE FOUR CONTACTS FOR COMMAND AND FOUR CONTACTS FOR INDICATION	1	YS-IC-4456	YONGSUNG	KOREA	YS-IC-4456-S4(49)-PM-K-G-D11-G	07		E
	14	S1,S2,S9,S52,ES1,ES9	CONTROL AND DISCREPANCY SWITCH FOR ISOLATOR CONTROL AND INDICATION, ROUND TYPE FOUR CONTACTS FOR COMMAND AND FOUR CONTACTS FOR INDICATION	6	YS-IC-4450	YONGSUNG	SOUTH KOREA	YS-IC-4456-R4(49)-PM-K-G-D11-G	09		E
	15	TH+HS	THERMOSTAT AND HUMIDSTAT	1	ELH220	ELABS	PAKISTAN	ELH220	16		
	16	SH	SPACE HEATER	1	ELH220	ELABS	PAKISTAN	ELH220	16		
	17	DS	DOOR SWITCH	1	YSP+YSMS	YONGSUNG	SOUTH KOREA	YSP3315GW-B+YSMS-C	16		
F	18	IL	ILLUMINATION LIGHT, 5W, 260 VAC	1	YST8	YONGSUNG	SOUTH KOREA	YST8-30-5W	16		F
APPROVED	CHECKED	DRAWN	PROJECT:  DESCON PO#45000100989 DATED 06.03.2018 PROCUREMENT OF 132KV RELAY, CONTROL PANELS	TITLE: LIST OF APPARATUS 132/11KV TRANSFORMER CONTROL PANEL TYPE CP51	 EPE SOL Pvt. Ltd. 71-B Garden Block, New Garden Town, Lahore, Pakistan				DWG# EPE/ENU-18/P1420	SHT: 02 OF 04	
NAH	ABA	MSC							DATE:15.02.2019	AS BUILT	REV: 0



		1	2	3	4	5	6	7	8		
SR. #	ITEM DESIGNATION	DESCRIPTION				QTY	TYPE	MAKE	COUNTRY OF ORIGIN	ORDERING INFORMATION	SHEET NO
A 19	TPS	THREE PIN SOCKET OUTLET, 240 VAC, 16A				1		LEAR	CHINA		16
20	HI,H2,H3,H4	INDICATION LAMPS COLOURED RED				4	YSPL	YONGSUNG	SOUTH KOREA	YSPL2-DL12RW	09,10,13
21	LT, ACK, RST	PUSH BUTTON FOR ANNUNCIATORS LAMP TEST, ACKNOWLEDGE AND RESET, FOUR NO CONTACTS EACH				3	YSAP1	YONGSUNG	SOUTH KOREA	YSAP1240RDW+YSAP1240GDW +YSAP1240YDW	11
B 22	CTR	COUNTER FOR CIRCUIT BREAKER				1		ELABS	PAKISTAN		07
B 23	SY	KEY OPERATED SWITCH FOR BREAKER LOCAL-OFF-REMOTE CONTROL				1	YSAK	YONGSUNG	SOUTH KOREA	YSAK2344D	07
24	HTR	HOOTER, RATED VOLTAGE 110VDC				1	AH-101	ELABS	PAKISTAN		11
25	B	BELL, RATED VOLTAGE 240VAC				1	YSMB	YONGSUNG	SOUTH KOREA	YSMB-722A	14
26	X1	DISCONNECTING TERMINAL BLOCK (SCREW TYPE) FOR CT CIRCUIT WITH SHORTENING ARRANGEMENT				7	SCB-6	CABUR	ITALY		
c 27	X2	DISCONNECTING TERMINAL BLOCK (SCREW TYPE) FOR VT CIRCUIT				4	SCB-6	CABUR	ITALY		
28	X3	TERMINAL BLOCKS FOR CONTROL FUNCTION				68	CBD-4	CABUR	ITALY		
29	X6	TERMINAL BLOCKS FOR TRIP CIRCUIT-1				14	CBD-4	CABUR	ITALY		
30	X7	TERMINAL BLOCKS FOR TRIP CIRCUIT-2				11	CBD-4	CABUR	ITALY		
D 31	X9	TERMINAL BLOCKS FOR ANNUNCIATION SUPPLY DISTRIBUTION				8	CBD-4	CABUR	ITALY		
32	X11	TERMINAL BLOCKS FOR CURRENT METERING CIRCUIT				4	CBD-4	CABUR	ITALY		
33	X14	TERMINAL BLOCKS FOR SCADA/TELECOM				79	CBD-4	CABUR	ITALY		
34	X17	TERMINAL BLOCKS FOR AC SUPPLY DISTRIBUTION				16	CBD-4	CABUR	ITALY		
E 35	X21	TERMINAL BLOCKS FOR VOLTAGE METERING CIRCUIT				14	CBD-4	CABUR	ITALY		
35	X91	TERMINAL BLOCKS FOR ANNUNCIATION CIRCUIT				10	CBD-4	CABUR	ITALY		
35	X92	TERMINAL BLOCKS FOR ANNUNCIATION CIRCUIT				13	CBD-4	CABUR	ITALY		
35	X93	TERMINAL BLOCKS FOR ANNUNCIATION CIRCUIT				17	CBD-4	CABUR	ITALY		
F 36	X94	TERMINAL BLOCKS FOR ANNUNCIATION CIRCUIT				6	CBD-4	CABUR	ITALY		
APPROVED	CHECKED	DRAWN	PROJECT:  DESCON PO#45000100989 DATED 06.03.2018 PROCUREMENT OF 132KV RELAY, CONTROL PANELS	TITLE: LIST OF APPARATUS 132/11KV TRANSFORMER CONTROL PANEL TYPE CP51	 EPESOL Pvt. Ltd. 71-B Garden Block, New Garden Town, Lahore, Pakistan	DWG# EPE/ENU-18/P1420		SHT: 03 OF 04			
NAH	ABA	MSC							DATE:15.02.2019	AS BUILT	REV: 0

		1	2	3	4	5	6	7	8		
SR. #	ITEM DESIGNATION	DESCRIPTION				QTY	TYPE	MAKE	COUNTRY OF ORIGIN	ORDERING INFORMATION	SHEET NO
A											A
37	X101	TERMINAL BLOCKS FOR DC SUPPLY DISTRIBUTION				26	CBD-4	CABUR	ITALY		
38	XD	TERMINAL BLOCKS WITH DIODE TYPE IN-D4007, RATED MAXIMUM VOLTAGE 350VDC, RATED BREAK DOWN VOLTAGE 430VDC				7	DAS.4/6	CABUR	ITALY		
39	X4	SPARE TERMINAL BLOCKS				28	CBD-4	CABUR	ITALY		
B	40	X15	TERMINAL BLOCKS FOR RS485 COMMUNICATION			2	CBD-4	CABUR	ITALY		B
C											C
D											D
E											E
F											F
APPROVED	CHECKED	DRAWN	PROJECT:  DESCON PO#45000100989 DATED 06.03.2018 PROCUREMENT OF 132KV RELAY, CONTROL PANELS	TITLE: LIST OF APPARATUS 132/11KV TRANSFORMER CONTROL PANEL TYPE CP51	 EPESOL Pvt. Ltd. 71-B Garden Block, New Garden Town, Lahore, Pakistan				DWG# EPE/ENU-18/P1420	SHT: 04 OF 04	
NAH	ABA	MSC							DATE:15.02.2019	AS BUILT	REV: 0

SCHEMATIC DIAGRAMS

132/11kV TRANSFORMER CONTROL PANEL

TYPE CP51

APPROVED	CHECKED	DRAWN	PROJECT: DESCON PO#45000100989 DATED 06.03.2018 PROCUREMENT OF 132kV RELAY, CONTROL PANELS	TITLE: COVER SHEET 132/11kV TRANSFORMER CONTROL PANEL TYPE CP51	EPE SOL Pvt Ltd. 71-B Garden Block, New Garden Town, Lahore, Pakistan	DWG# EPE/ENU-18/P1421 DATE:15.02.2019 AS BUILT	SHT: 01 OF 18 REV: 0
NAH	ABA	MSC					

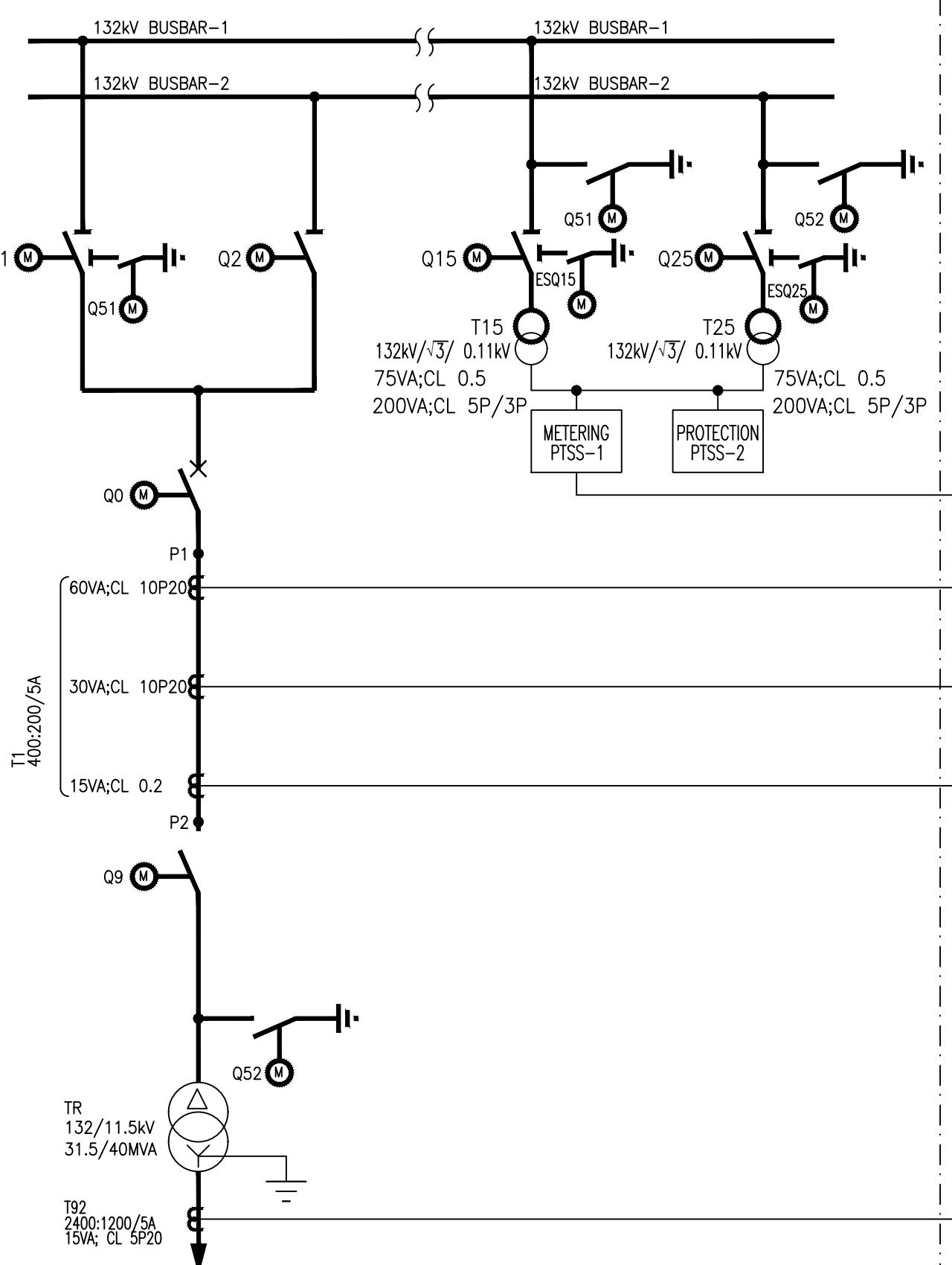
DESCRIPTION	SHEET NO
COVER SHEET	01
LIST OF CONTENTS	02
LIST OF SYMBOLS	03
SINGLE LINE DIAGRAM	04
AC SCHEMATIC DIAGRAM	05
DC SUPPLY DISTRIBUTION	06
CB CONTROL & TRIP CIRCUIT – 1	07
CB TRIP CIRCUIT – 2	08
DEVICE POSITION INDICATION	09
ISOLATOR & EARTH SWITCH INTERLOCKING	10
ANNUCIATOR UNIT – 1	11
ANNUCIATOR UNIT – 2	12
ANNUCIATOR UNIT – 3	13
ANNUCIATOR UNIT – 4	14
TERMINAL BLOCKS FOR SCADA/TELECOM	15
AC SUPPLY DISTRIBUTION	16
TEST BLOCK TYPE TSB14 DETAILS	17

LIST OF SYMBOLS

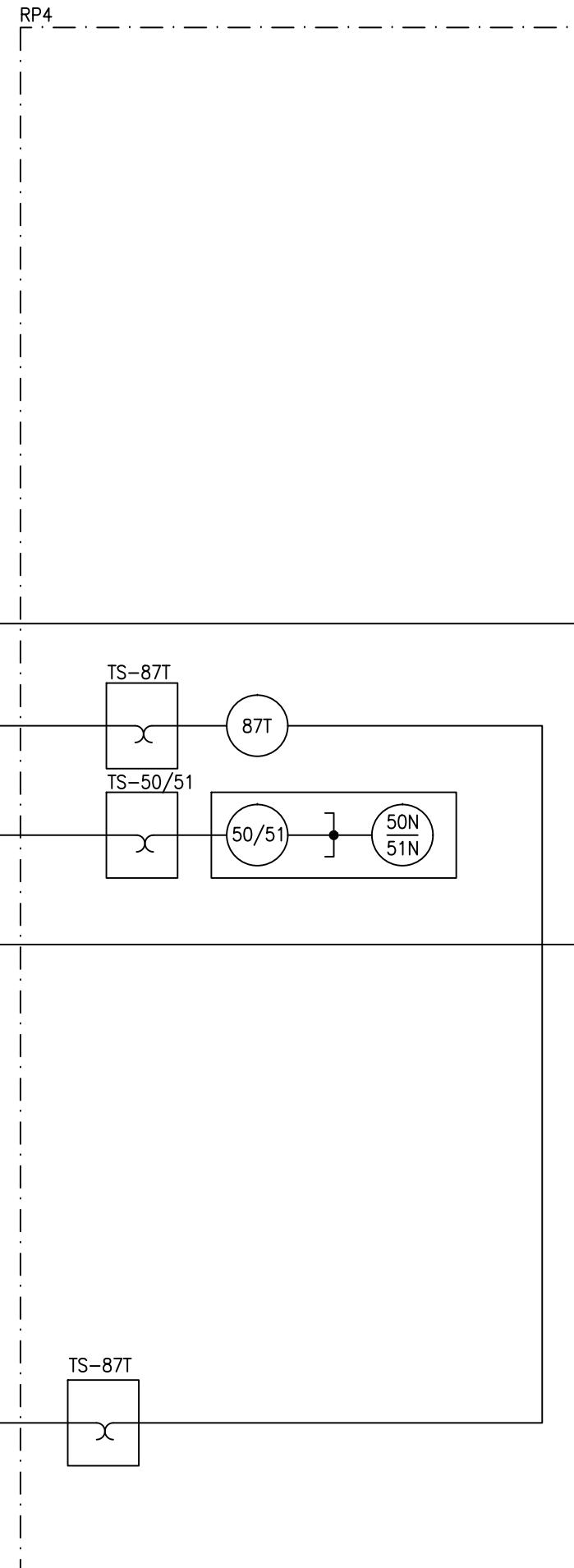
A		HV DISCONNECTOR		EQUIPMENT WITHIN PANEL
B		HV CIRCUIT BREAKER		INDEPENDENT PANEL
C		CURRENT TRANSFORMER		INDEPENDENT PANEL
D		POWER TRANSFORMER	87T	TRANSFORMER DIFFERENTIAL RELAY
E		RELAY PANEL TERMINAL BLOCK	50/51	OVER CURRENT & EARTH FAULT RELAY
F		CONTROL PANEL TERMINAL BLOCK	TS	TEST BLOCK
G		EARTH CONNECTION	74DC-1/2	DC SUPPLY SUPERVISION RELAY
H		TEST BLOCK TERMINAL	X	TERMINAL BLOCK
I		NORMALLY CLOSED CONTACT		ENERGY METER
J		NORMALLY OPEN CONTACT		VOLT METER
K		CHANGE OVER CONTACT		
L		MINIATURE CIRCUIT BREAKER		
M		INDICATING BULB/LED		
N		240 VAC SOCKET		
O		SPACE HEATER		
P		VOLTAGE SELECTOR SWITCH		
Q		COIL		
R		AMPERE METER		

1 2 3 4 5 6 7 8

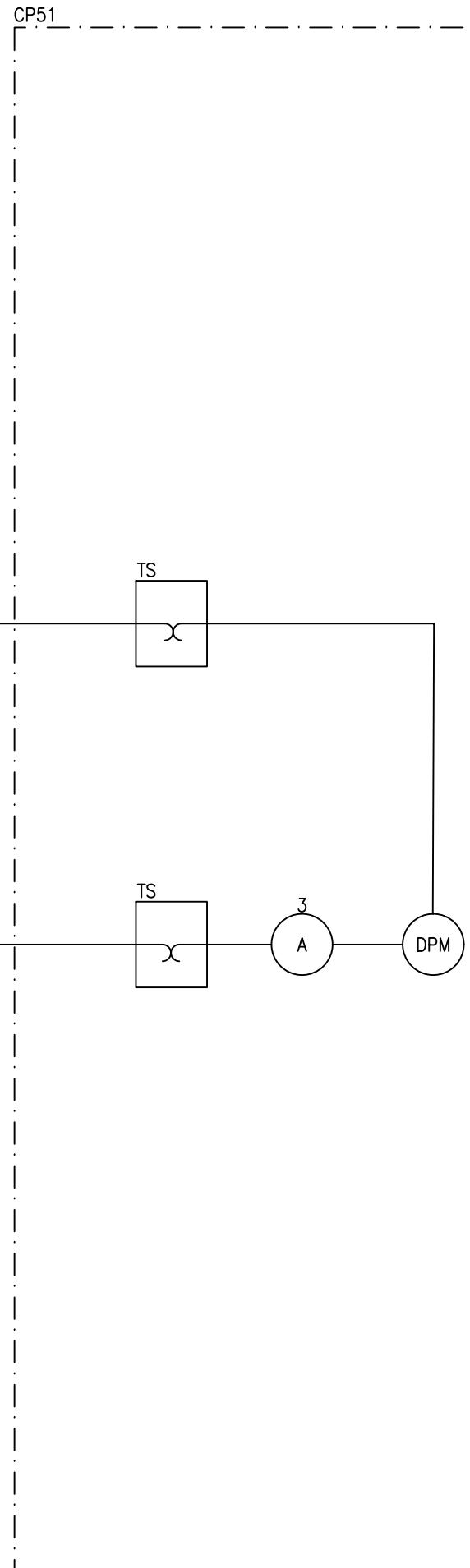
SWITCH YARD



RP4



CP51



NOTE:
THE SWITCH YARD AND THE RELAY PANEL PART OF THE DRAWING HAS BEEN
INCLUDED ONLY FOR CONCEPTUAL UNDERSTANDING OF AC SCHEME.

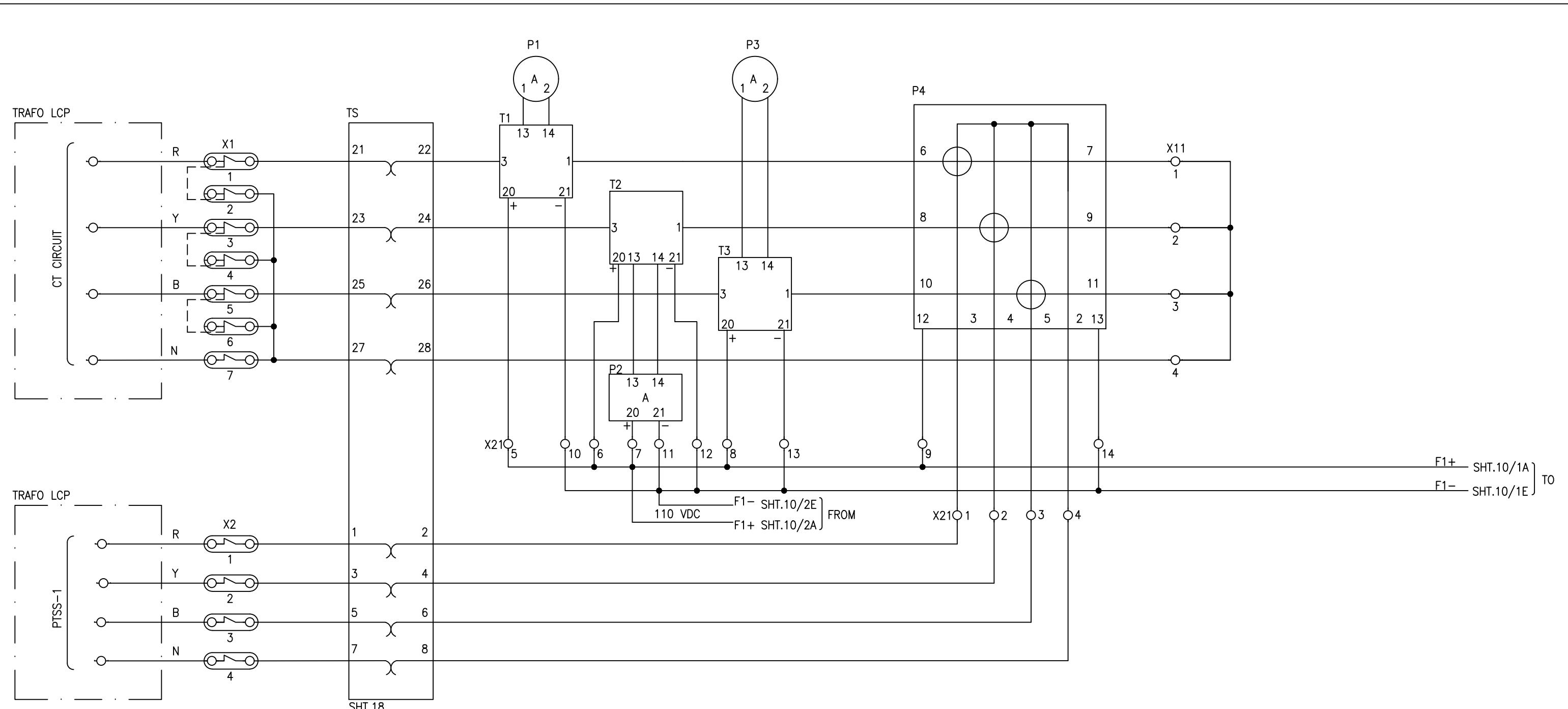
F

APPROVED	CHECKED	DRAWN	PROJECT: DESCON PO#45000100989 DATED 06.03.2018 PROCUREMENT OF 132kV RELAY, CONTROL PANELS	TITLE: NOTE SINGLE LINE DIAGRAM 132/11kV TRANSFORMER CONTROL PANEL TYPE CP51	EPE SOL Pvt Ltd. 71-B Garden Block, New Garden Town, Lahore, Pakistan	DWG# EPE/ENU-18/P1421	SHT: 04 OF 18
NAH	ABA	MSC				DATE:15.02.2019	AS BUILT

REV: 0

8

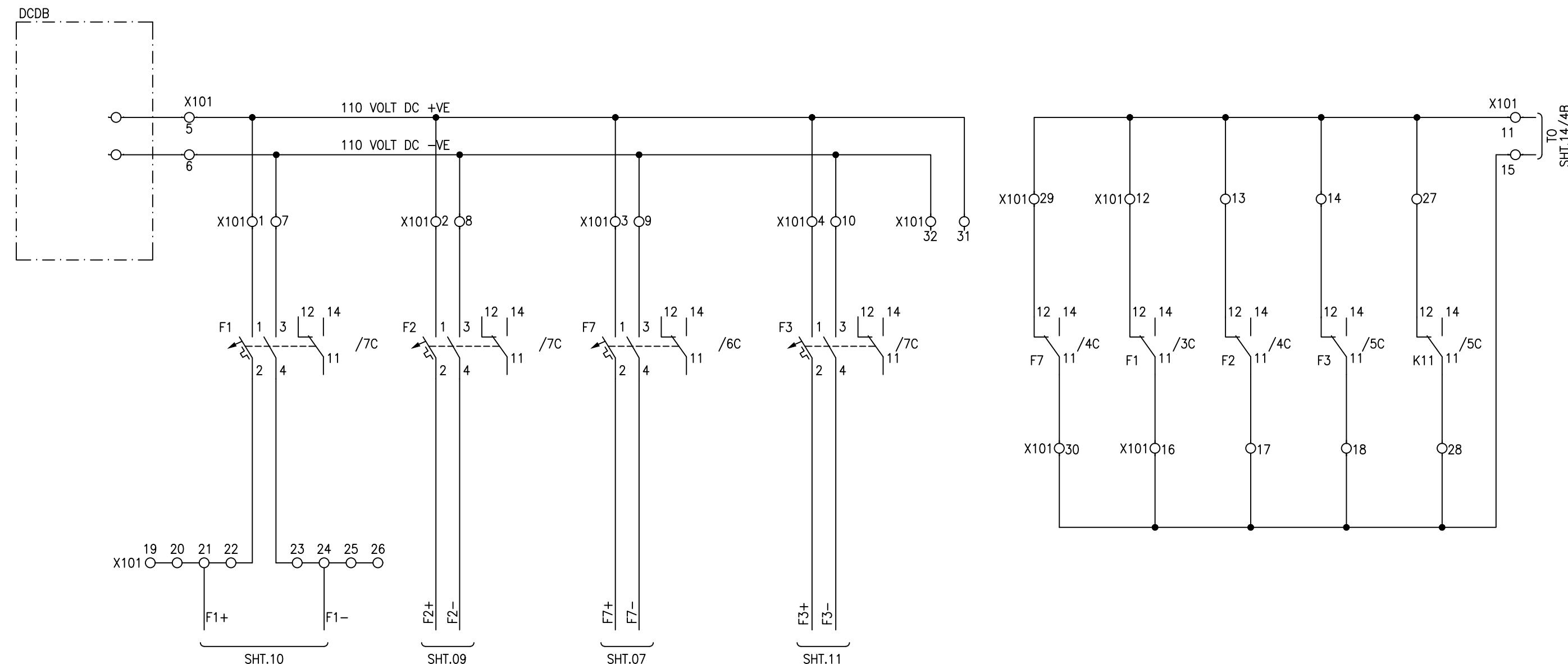
ANALOGUE AMMETER DIGITAL AMMETER ANALOGUE AMMETER DIGITAL POWER METER

LEGEND

DES.	DESCRIPTION	TYPE	MAKE
TS	TEST BLOCK	TSB14	ARTECHE
P1+T1, P3+T3	ANALOGUE AMMETER WITH TRANSDUCER	A96MMA+MCOEAQ	FRER
P2+T2	DIGITAL AMMETER WITH TRANSDUCER	D96MMA+MCOEAQ	FRER
P4	DIGITAL POWER METER	ENERIUM150	ENERDIS

NOTE:

1. CT CIRCUIT WIRE SIZE IS 4mm² (COLOURED RED, YELLOW, BLUE AND BLACK).
2. VT CIRCUIT WIRE SIZE IS 2.5mm² (COLOURED RED, YELLOW, BLUE AND BLACK).

TRANSDUCER AND
METER SUPPLYPOSITION INDICATION
& DEVICE SUPPLYCB COUNTER
SUPPLYANNUNCIATION
SUPPLYDC MCB's
TRIPLEGEND

DES:	DESCRIPTION	TYPE	MAKE
F1,F2, F3	DC MCB, 2P, 10A	EP-100	GE
K10	FLASHER RELAY	F101	E-LABS



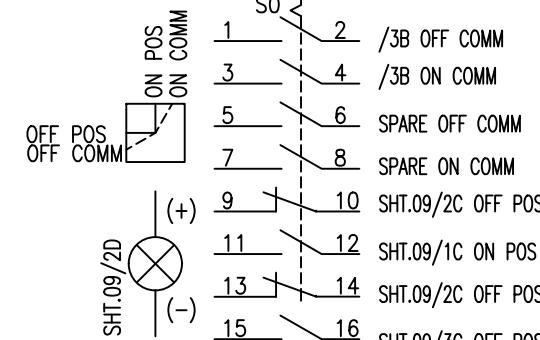
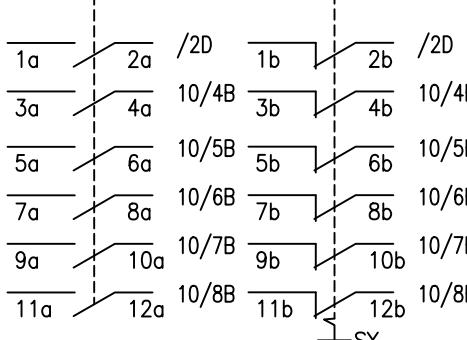
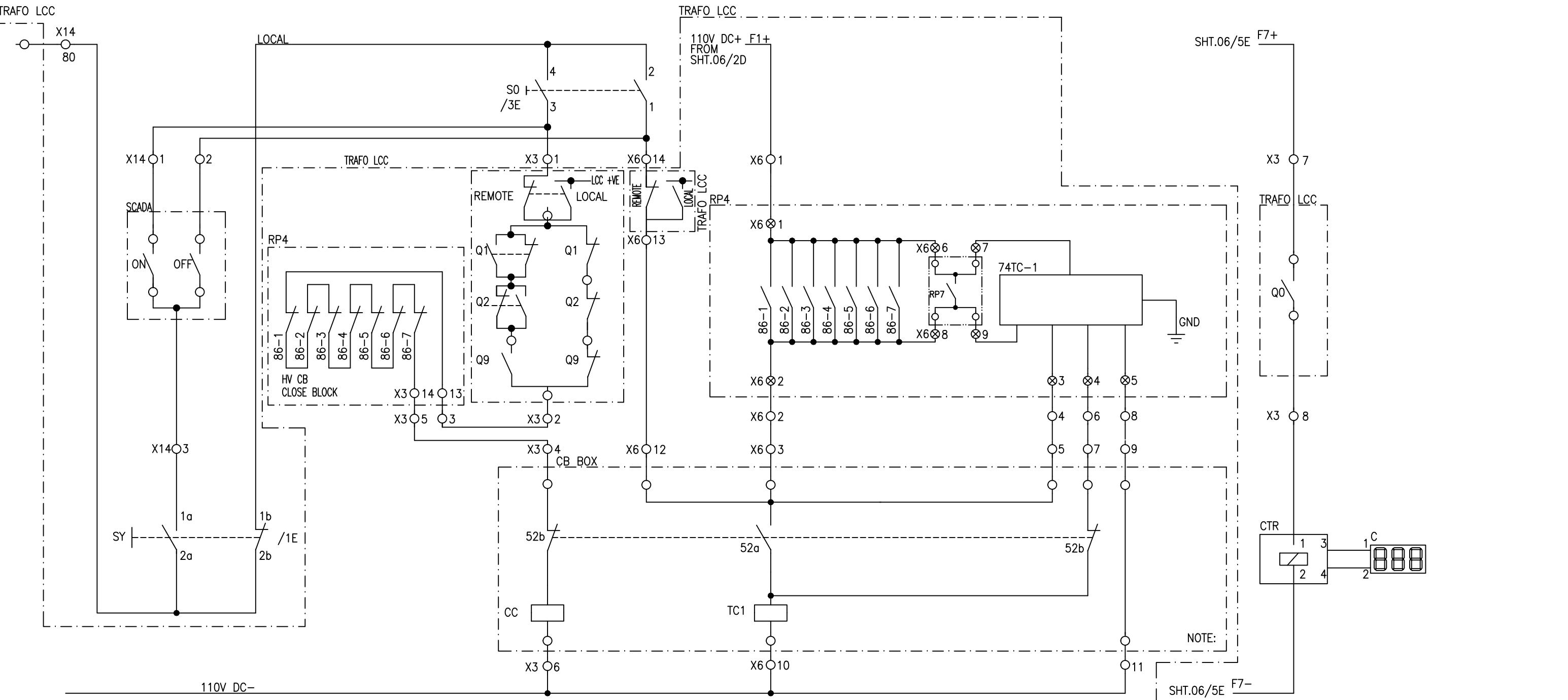
E P E S O L Pvt. Ltd.
71-B Garden Block, New Garden Town, Lahore, Pakistan

C.B Q0
ON OFF

PROTECTION TRIPPINGS

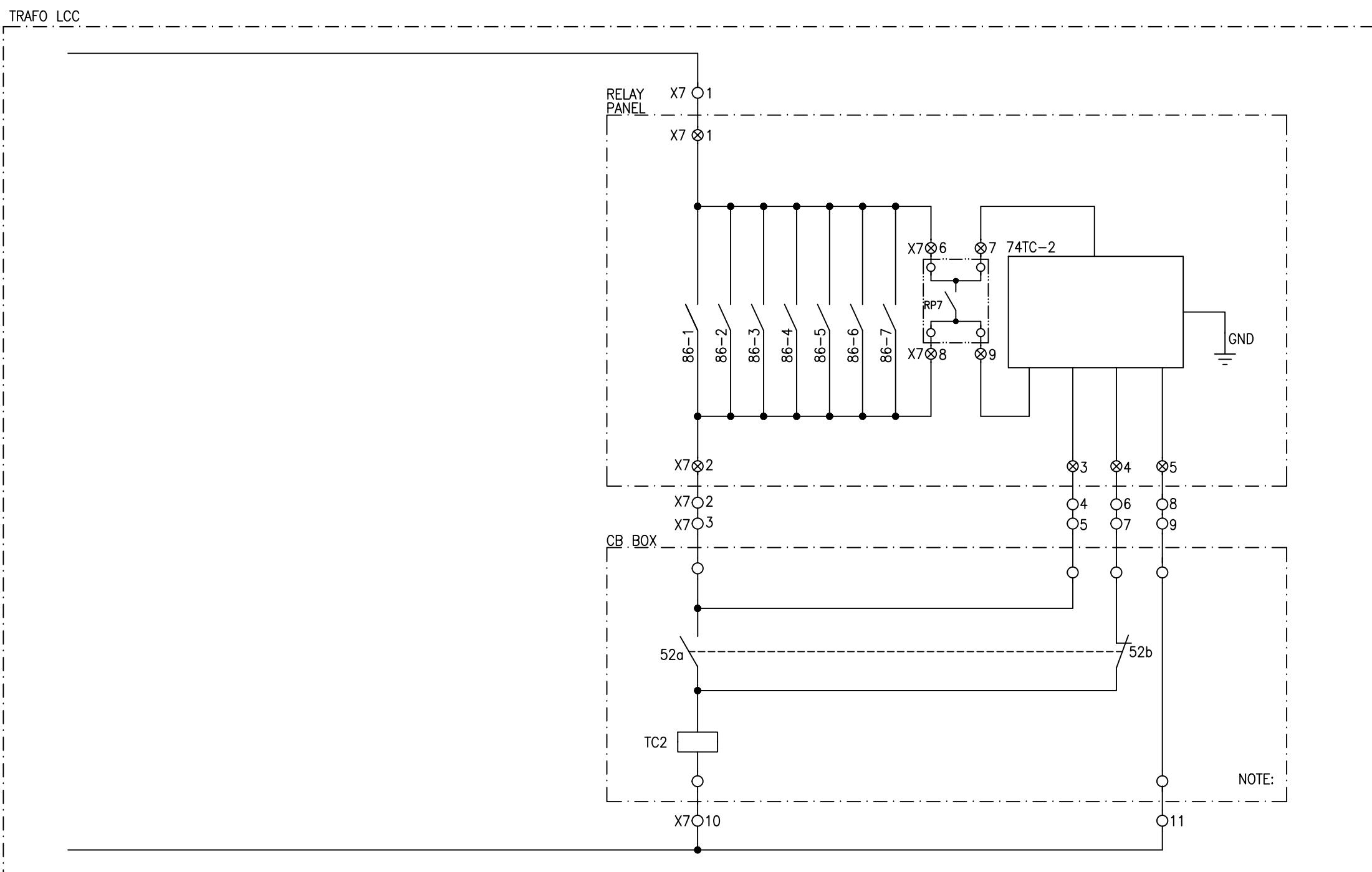
TRIP CIRCUIT-1

SUPERVISION

CB OPERATION
COUNTER
E P E S O L Pvt. Ltd.
 71-B Garden Block, New Garden Town, Lahore, Pakistan

DES.	DESCRIPTION	TYPE	MAKE
S0	CONTROL & DESCREPANCY SWITCH	YS-IC-4456	YONGSUNG
CTR	COUNTER	-	ELABS
SY	KEY OPERATED SWITCH FOR LOCAL/REMOTE	YSAK	YONSUNG

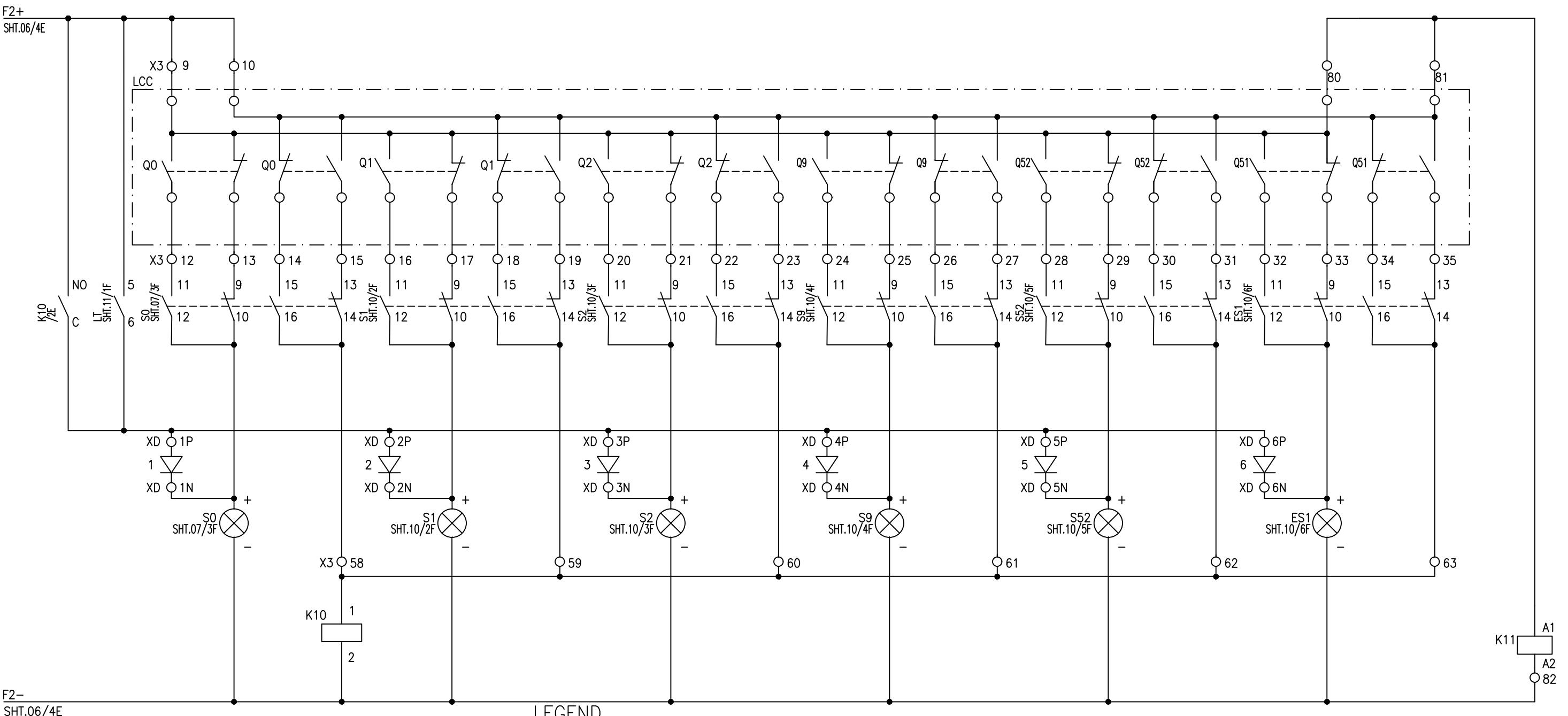
PROTECTION TRIPPINGS

TRIP CIRCUIT-2
SUPERVISION

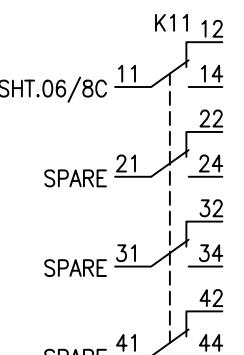
NOTE:
THE INTERNAL MECHANISM OF CIRCUIT BREAKER CONTROL
IS NOT THE PART OF CONTROL PANEL.
IT HAS BEEN SHOWN ONLY FOR CLARITY OF SCHEME.

APPROVED	CHECKED	DRAWN	PROJECT: DESCON PO#45000100989 DATED 06.03.2018 PROCUREMENT OF 132kV RELAY, CONTROL PANELS	TITLE: CB TRIP CIRCUIT-2 132/11kV TRANSFORMER CONTROL PANEL TYPE CP51	EPESOL Pvt Ltd 71-B Garden Block, New Garden Town, Lahore, Pakistan	DWG# EPE/ENU-18/P1421 DATE:15.02.2019 AS BUILT	SHT: 08 OF 18 REV: 0
NAH	ABA	MSC					

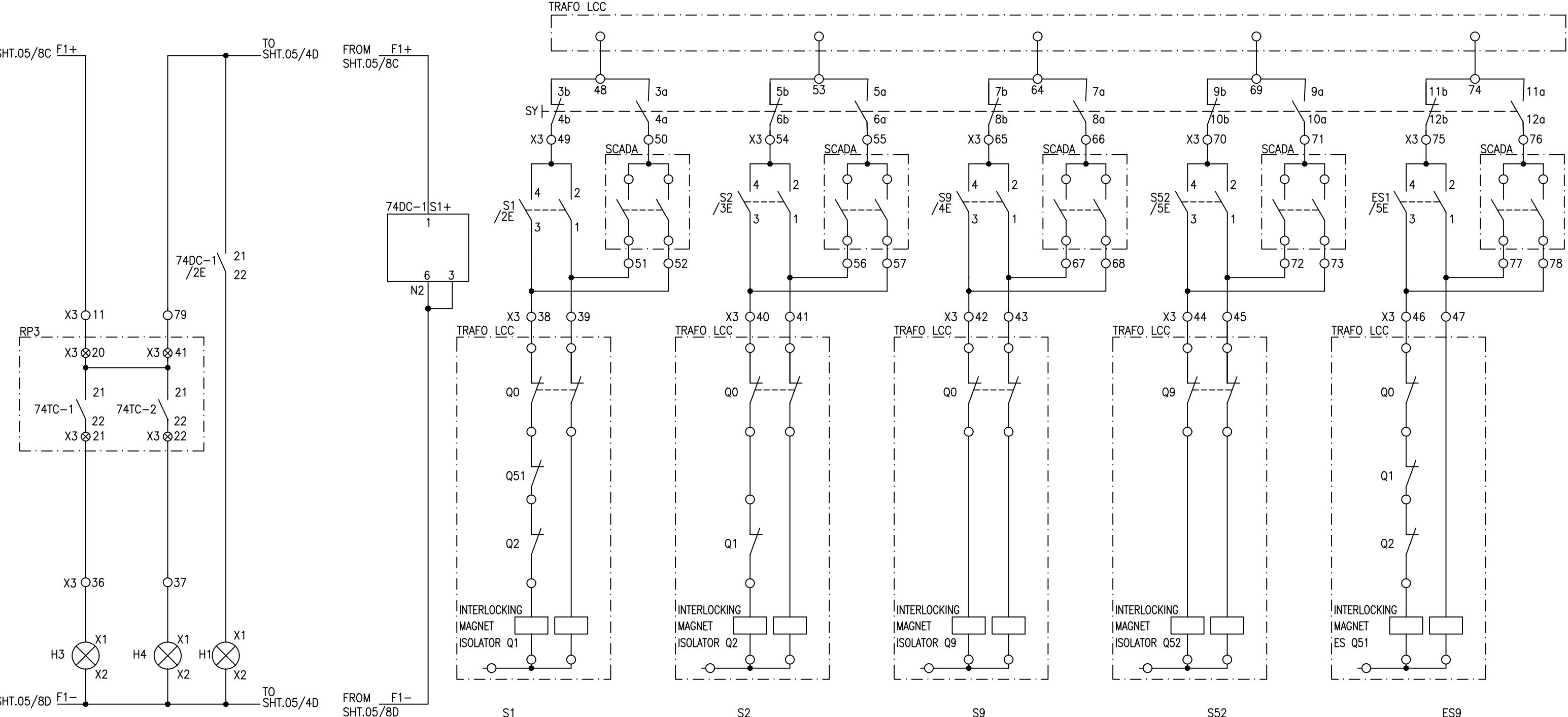
DESCREPANCY INITIATION CIRCUIT BREAKER Q0	DESCREPANCY INITIATION BUS-I ISOLATOR Q1	DESCREPANCY INITIATION BUS-II ISOLATOR Q2	DESCREPANCY INITIATION TRAFO. BAY ISOLATOR Q9	DESCREPANCY INITIATION EARTHING SWITCH Q52	DESCREPANCY INITIATION BUS-I ISOLATOR Q1 ES Q51
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LEGEND

DES.	DESCRIPTION	TYPE	MAKE
S0	CONTROL & DESCRENANCY SWITCH, SQUARE TYPE	YS-IC-4456	YONGSUNG
S1,S2, S9,S52,ES1	CONTROL & DESCRENANCY SWITCH, ROUND TYPE	YS-IC-4456	YONGSUNG



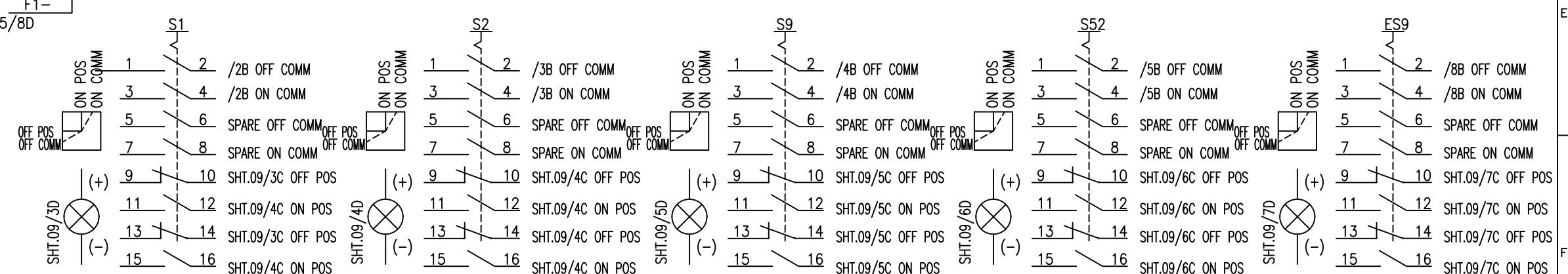
CIRCUIT BREAKER	INDICATION	INDICATION SUPPLY	BUS-I ISOLATOR	BUS-II ISOLATOR	LINE ISOLATOR	LINE EARTH SWITCH	EARTH SWITCH
TRIP CKT	HEALTHY	SUPPLY HEALTHY	INTERLOCKING Q1	INTERLOCKING Q2	INTERLOCKING Q9	INTERLOCKING Q52	INTERLOCKING Q51
TC-1	TC-2		ON	OFF	ON	OFF	ON



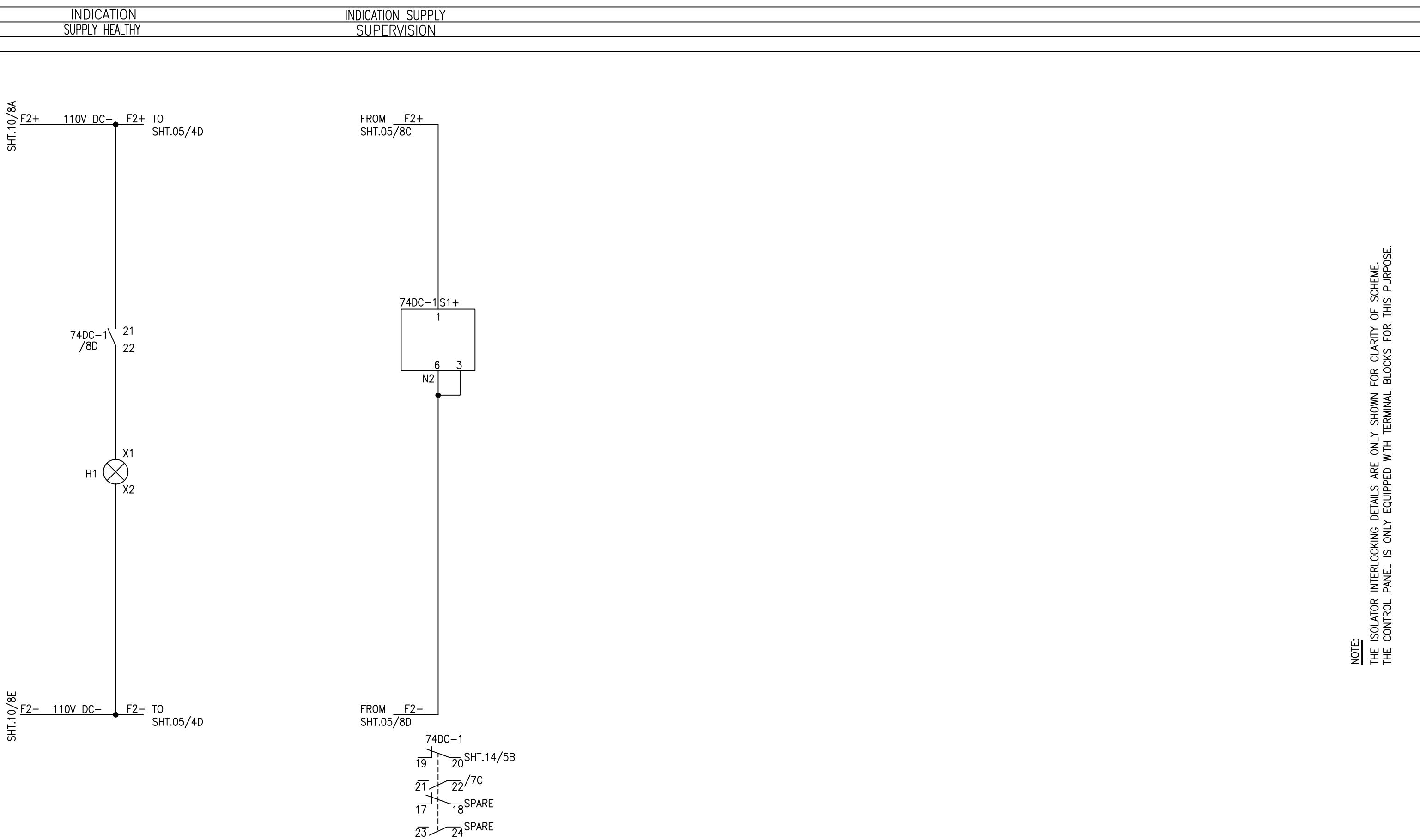
LEGEND

DES.	DESCRIPTION
H3,H4	INDICATION LAMP

7/4DC-1
19 20 SHT.14/5B
21 22 /2C
17 18 SPARE
23 24 SPARE



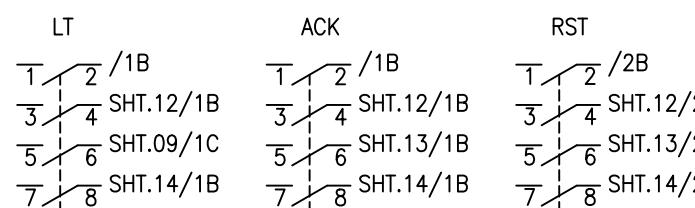
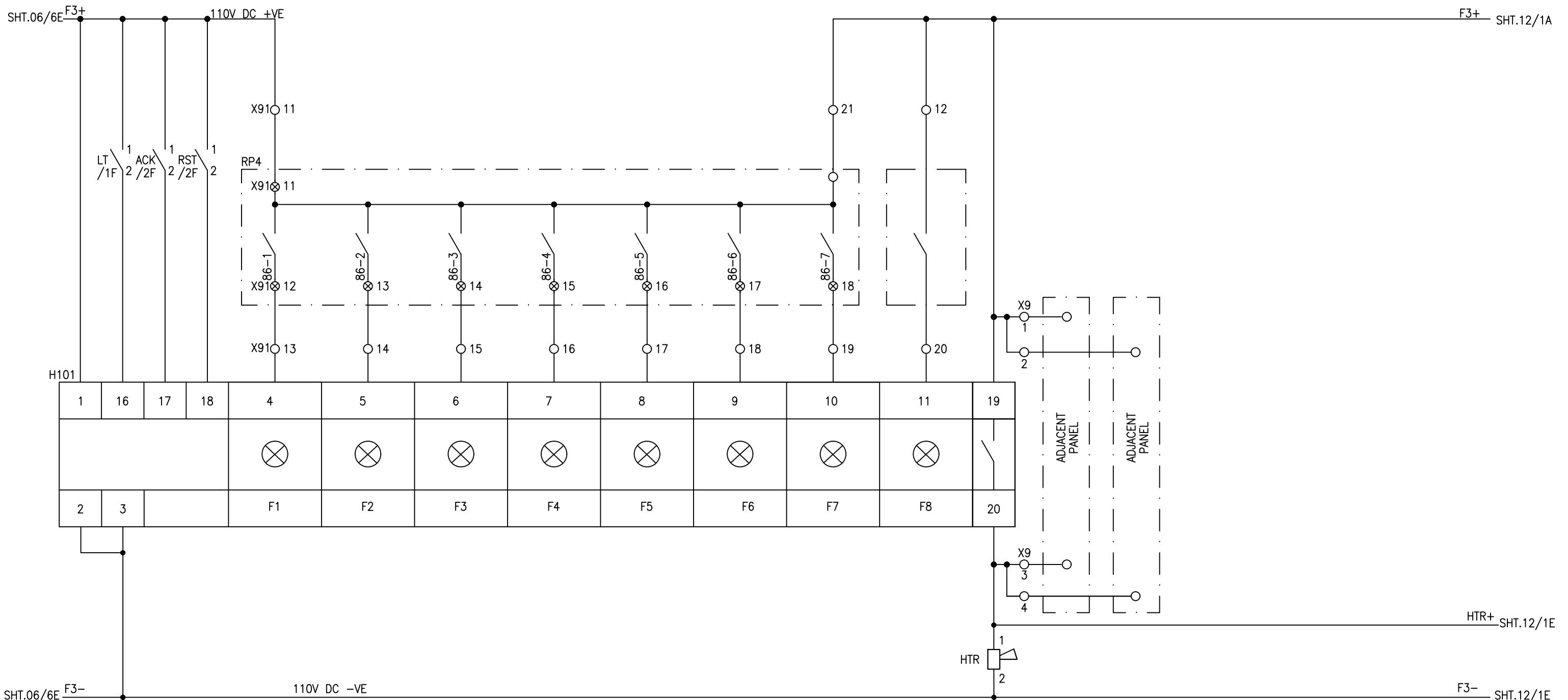
APPROVED	CHECKED	DRAWN	PROJECT: DESCON PO#45000100989 DATED 06.03.2018 PROCUREMENT OF 132kV RELAY, CONTROL PANELS	TITLE: ISOLATOR & EARTH SWITCH INTERLOCKING 132/11kV TRANSFORMER CONTROL PANEL TYPE CP51	 EPESOL Pvt Ltd 71-B Garden Block, New Garden Town, Lahore, Pakistan	DWG# EPE/ENU-18/P1421	SHT: 10 OF 18	
NAH	ABA	MSC				DATE:15.02.2019	AS BUILT	REV: 0



NOTE:
THE ISOLATOR INTERLOCKING DETAILS ARE ONLY SHOWN FOR CLARITY OF SCHEME.
THE CONTROL PANEL IS ONLY EQUIPPED WITH TERMINAL BLOCKS FOR THIS PURPOSE.

APPROVED	CHECKED	DRAWN	PROJECT: DESCON PO#45000100989 DATED 06.03.2018 PROCUREMENT OF 132kV RELAY, CONTROL PANELS	TITLE: ISOLATOR & EARTH SWITCH INTERLOCKING 132/11kV TRANSFORMER CONTROL PANEL TYPE CP51	EPE SOL Pvt. Ltd. 71-B Garden Block, New Garden Town, Lahore, Pakistan	DWG# EPE/ENU-18/P1421	SHT:10a OF 18
NAH	ABA	MSC				DATE:15.02.2019 AS BUILT	REV: 0

LAMP TEST	ACK RESET	87T RELAY TRIP	50/51 RELAY TRIP	T/F MAIN BUCH. TRIP	T/F T/C BUCH. TRIP	T/F OIL TEMP. TRIP	T/F WINDING TEMP. TRIP	T/F PRESSURE RELIEF VALVE TRIP	LV PROT. TRIP	HOOTER INITIATION
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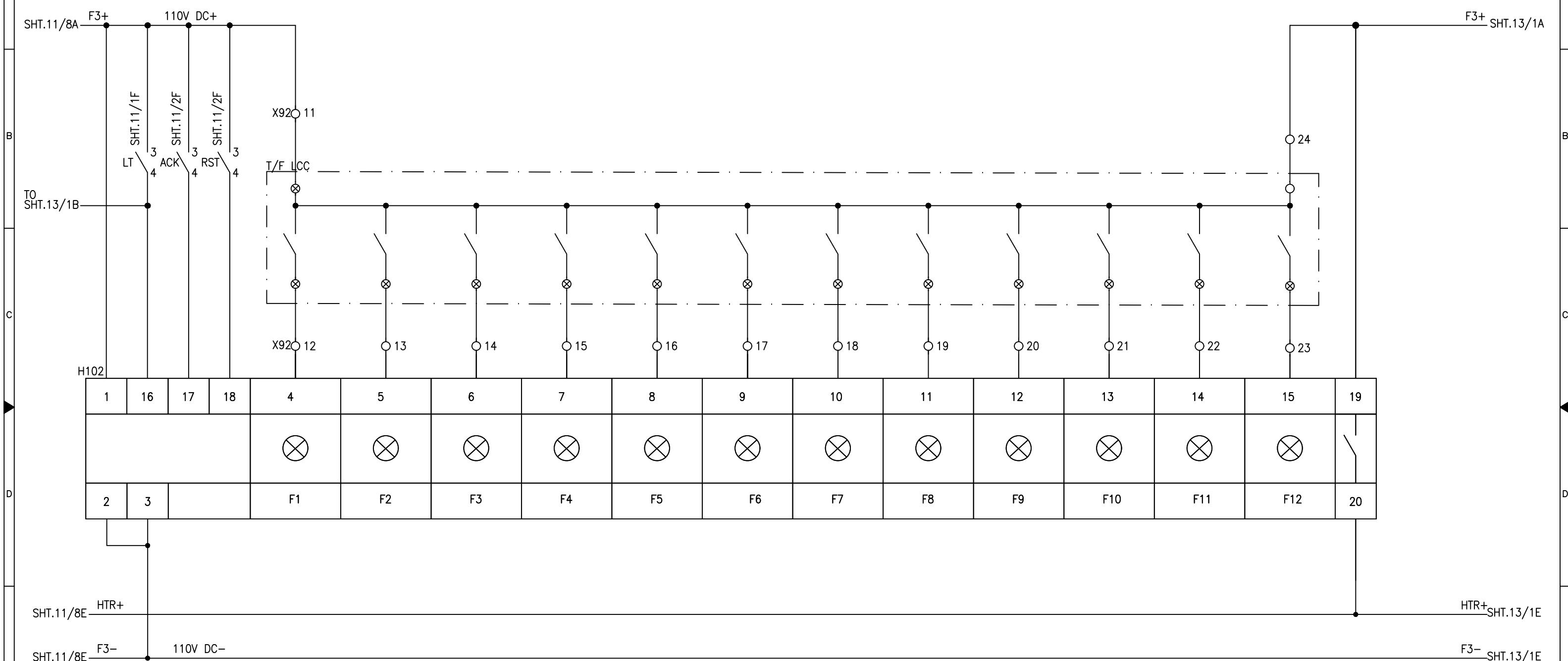


DES.	DESCRIPTION	TYPE	MAKE
LT,ACK RST	PUSH BUTTONS	YSAP1	YONGSUNG

DES.	DESCRIPTION	TYPE	MAKE
H101	DC ANNUNCIATOR	AM-101	ELABS

DES.	DESCRIPTION	TYPE	MAKE
HTR	HOOTER	AH-101	ELABS

	MECHANICAL ALARM SIGNALS								LCC ON		LCC				
	LAMP	ACK	RESET	T/F BUCH.	OLTC BUCH.	WIND. TEMP	OIL TEMP.	PRD	LOW OIL LEVEL	SF6 PRESSURE HIGH	LOCAL	REMOTE	AC SUPPLY	DC SUPPLY	Hooter
A	TEST			ALARM	ALARM	ALARM	ALARM	ALARM	ALARM	STAGE-1	STAGE-2	MODE	MODE	FAIL	FAIL

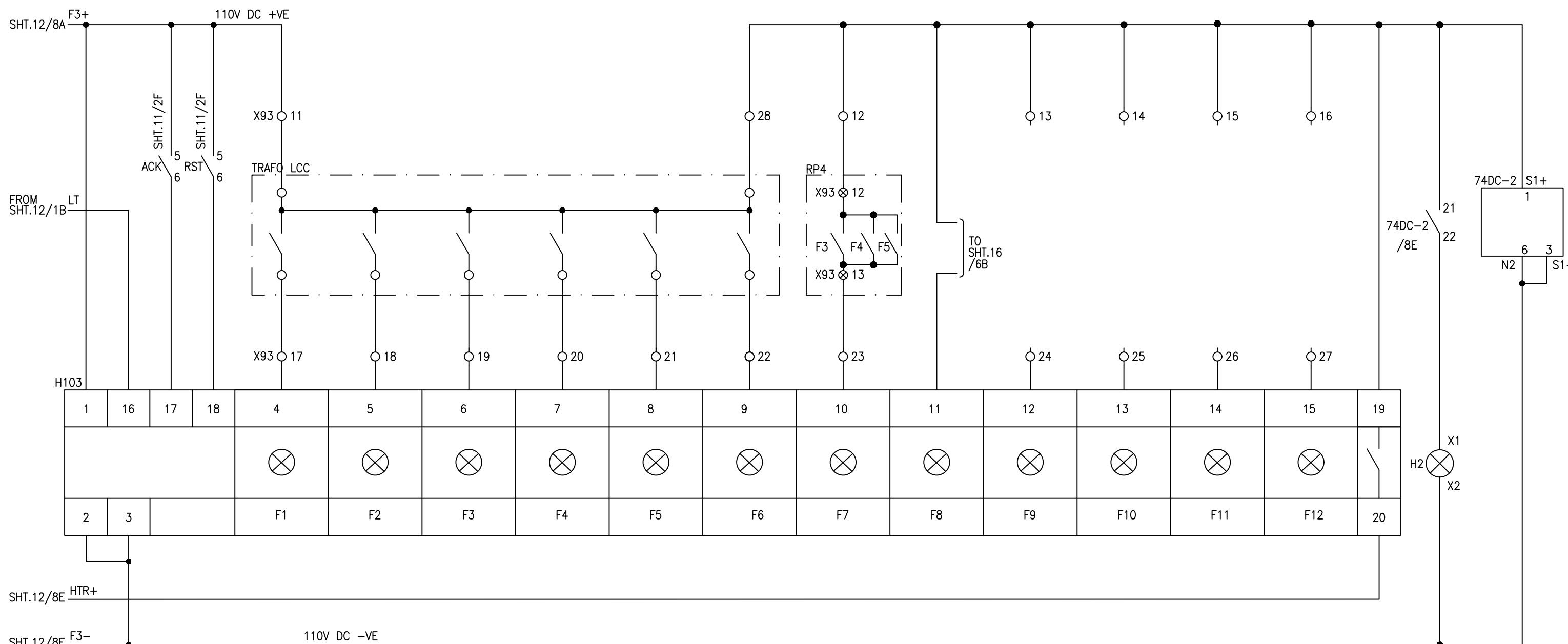


LEGEND

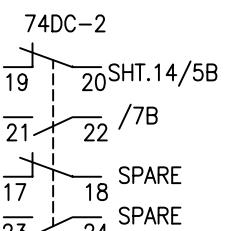
DES.	DESCRIPTION	TYPE	MAKE
H102	DC ANNUNCIATOR	AM-101	ELAB
LT,ACK RST	PUSH BUTTONS	YSAP1	YONGSUNG

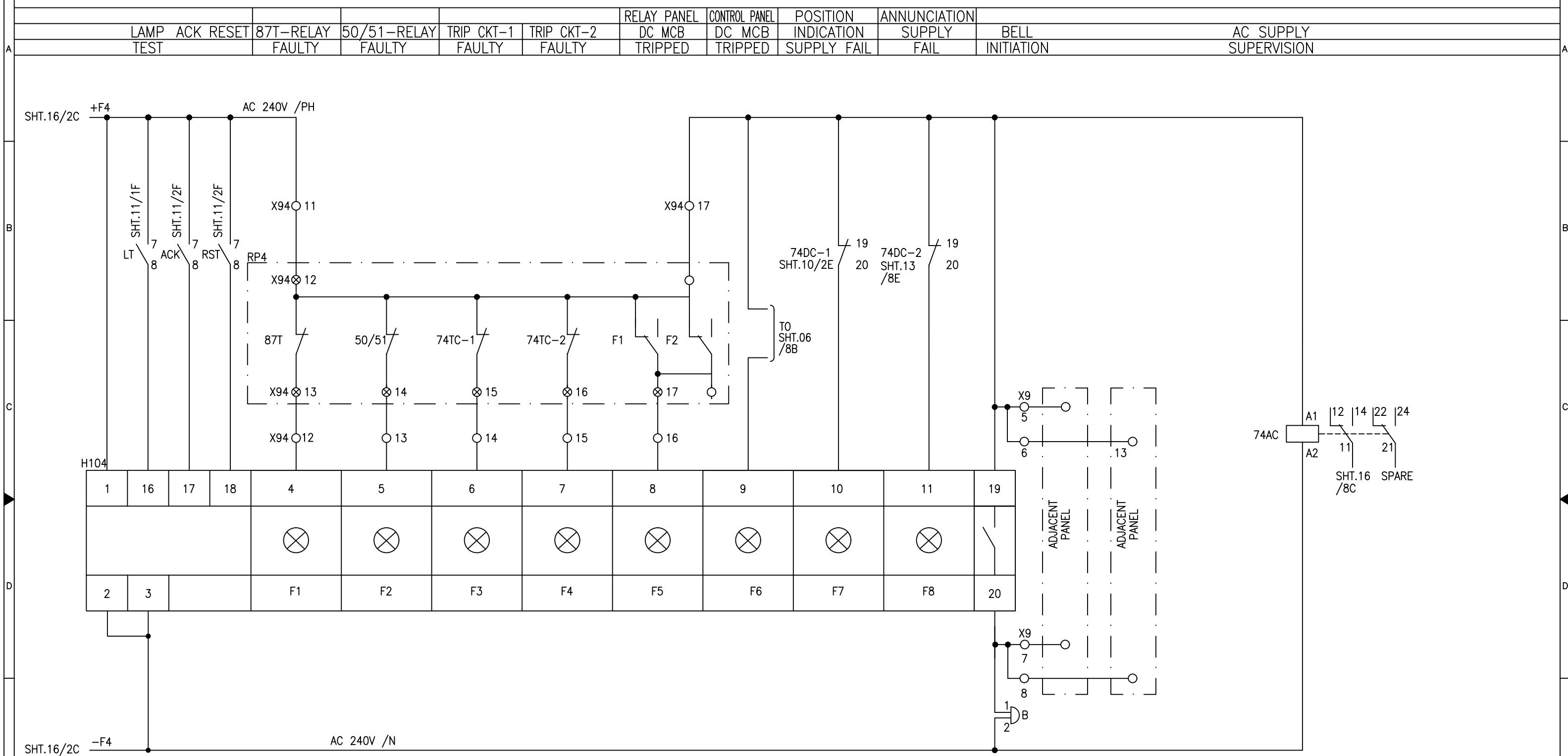
APPROVED	CHECKED	DRAWN	PROJECT:  DESCON PO#45000100989 DATED 06.03.2018 PROCUREMENT OF 132kV RELAY, CONTROL PANELS	TITLE: ANNUNCIATOR UNIT-2 132/11kV TRANSFORMER CONTROL PANEL TYPE CP51	 EPESOL Pvt Ltd 71-B Garden Block, New Garden Town, Lahore, Pakistan	DWG# EPE/ENU-18/P1421	SHT: 12 OF 18
NAH	ABA	MSC				DATE:15.02.2019	AS BUILT

	CIRCUIT BREAKER						RELAY PANEL	CONTROL PANEL	ANN	ANN	
A	LAMP TEST	ACK	RESET	OIL/AIR/SF6 PRES. LOW	MECHANICAL FAILURE	SPRING UNCHARGED	MOTOR SUPPLY FAIL	TRIP LOCK OUT	OIL/AIR/SF6 PRES. LOW STG-2	AC SUPPLY FAIL	AC SUPPLY FAIL

LEGEND

DES.	DESCRIPTION	TYPE	MAKE
74DC-2	DC SUPPLY SUPERVISION RELAY	TS101	ELABS
H103	DC ANNUNCIATOR	AM101	ELABS
H2	INDICATION LAMP	YSPL	YONGSUNG
LT,ACK RST	PUSH BUTTONS	YSAP1	YONGSUNG



LEGEND

DES.	DESCRIPTION	TYPE	MAKE
LT,ACK RST	PUSH BUTTONS	YSAP1	YONGSUNG
B	BELL	YSMB	YONGSUNG

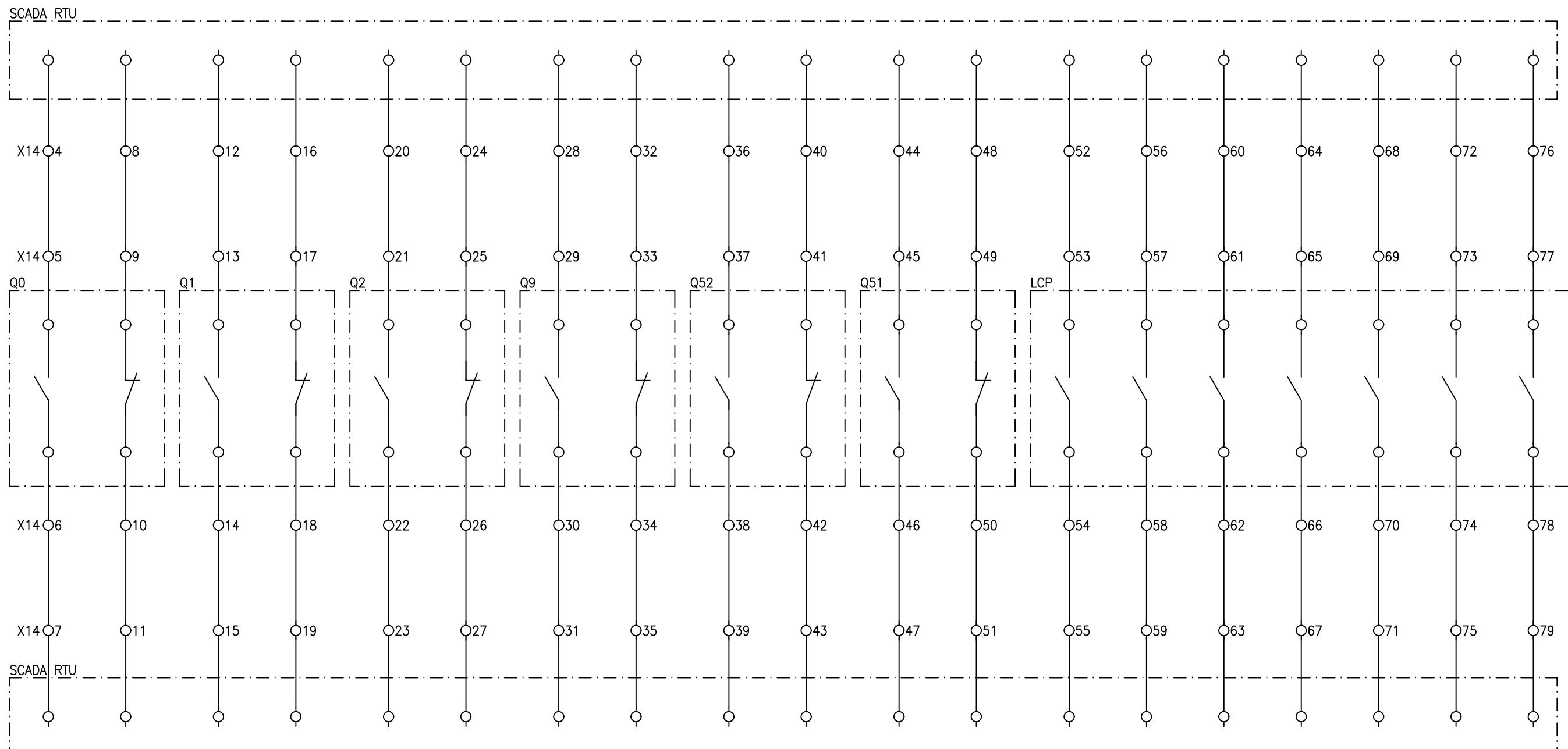
LEGEND

DES.	DESCRIPTION	TYPE	MAKE
H104	AC ANNUNCIATOR	AM-101	ELABS
74AC	AC SUPPLY SUPERVISION RELAY	MCR	GE

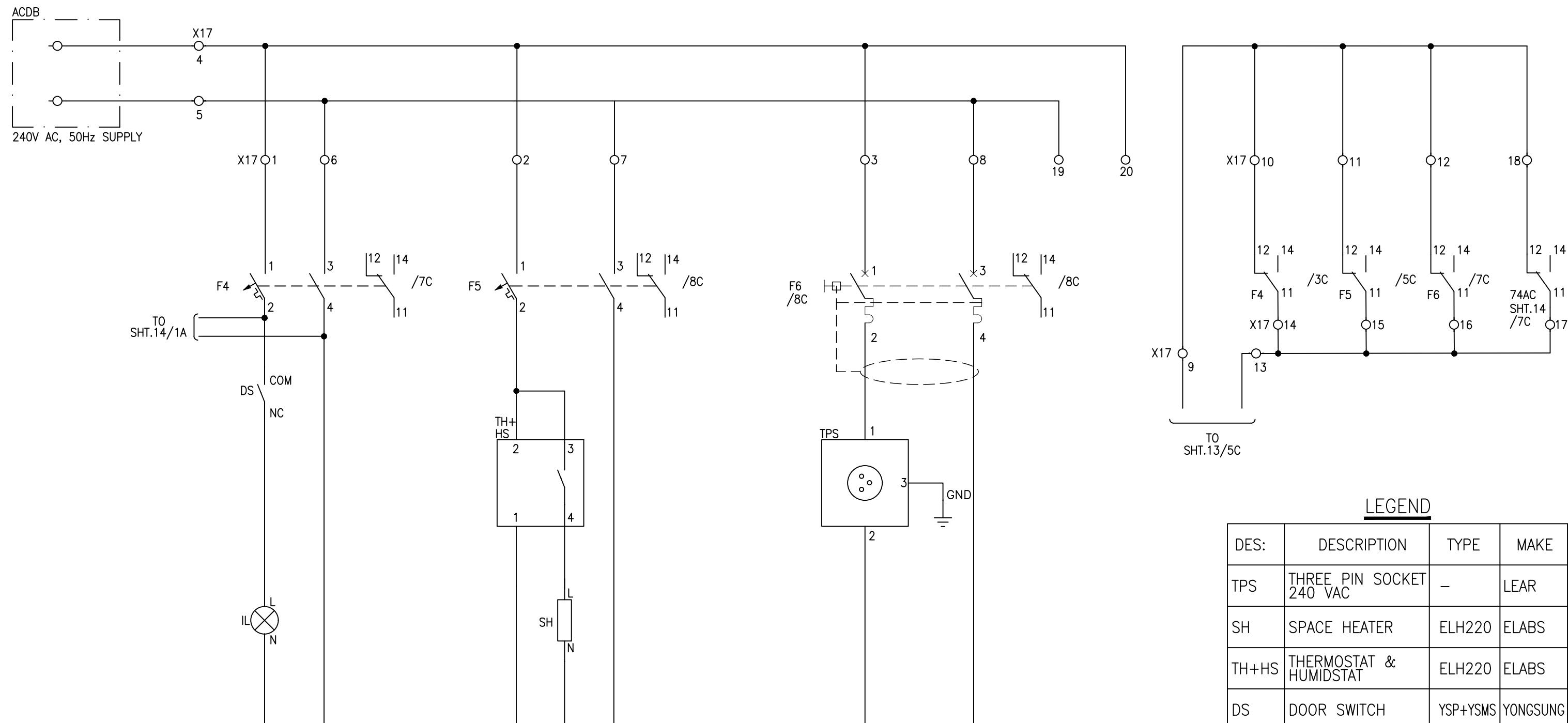
LEGEND

DES.	DESCRIPTION	TYPE	MAKE
74DC-1 74DC-2	DC SUPPLY SUPERVISION RELAY	TS101	ELABS

						CB GAS	CB GAS	CB GAS	CB MOTOR	CB MECH.	LCP AC	LCP DC
A	CIRCUIT BREAKER	BUS ISOLATOR	BUS-2 ISOLATOR	LINE ISOLATOR	EARTHING SWITCH	BUS-I ISO. Q1 ES	PRESSURE HIGH	PRESSURE LOW	PRESSURE LOW	SUPPLY FAIL	FAIL	SUPPLY FAIL
	Q0	Q1	Q2	Q9	Q52	Q51	STAGE-1	STAGE-2				

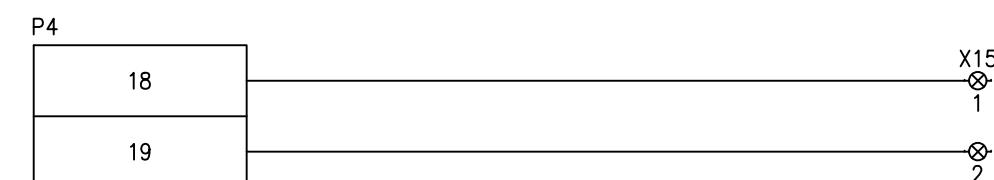


AC SUPPLY DISTRIBUTION

DOOR SWITCH &
CUBICLE LIGHTSPACE HEATER
THERMOSTATTHREE
PIN SOCKETAC SUPPLY FAIL
ANNUNCIATIONLEGEND

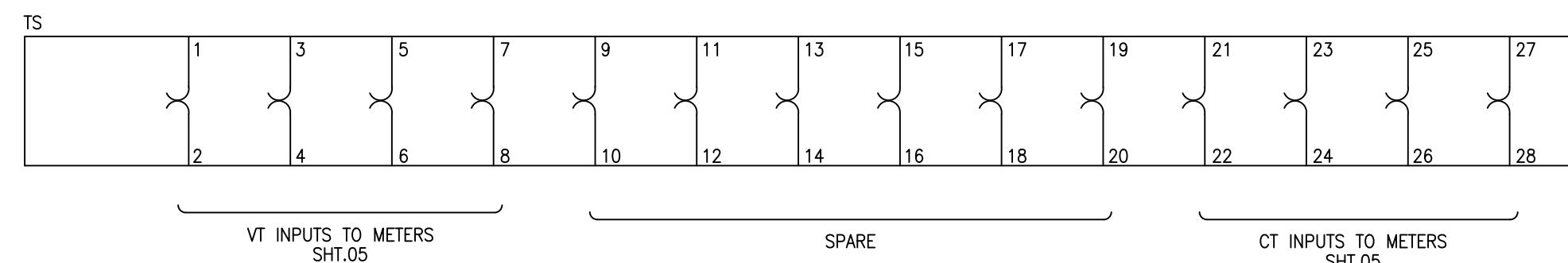
DES:	DESCRIPTION	TYPE	MAKE
TPS	THREE PIN SOCKET 240 VAC	-	LEAR
SH	SPACE HEATER	ELH220	ELABS
TH+HS	THERMOSTAT & HUMIDSTAT	ELH220	ELABS
DS	DOOR SWITCH	YSP+YSMS	YONGSUNG
F4,F5	AC MCB, 2P, 10A	G60	GE
IL	ILLUMINATION LIGHT	YST8	YONGSUNG
F6	ELCB	DM100	GE

P4 RS485

LEGEND

DES:	DESCRIPTION	TYPE	MAKE
P4	DIGITAL POWER METER	ENERIUM 150	ENERDIS

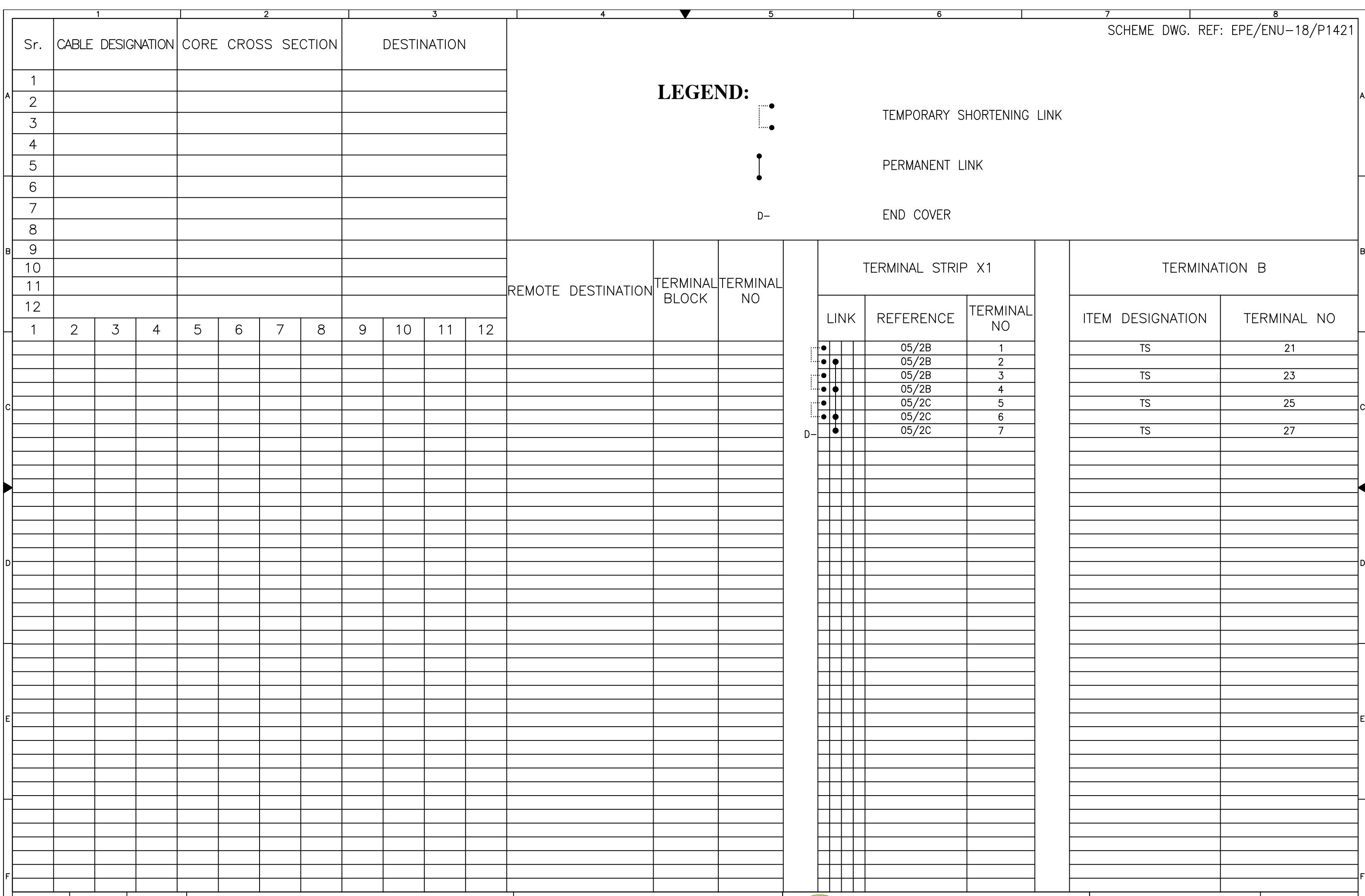
TS
TEST BLOCK TYPE TSB14-222211111AAAB-V



LEGEND

DES.	DESCRIPTION	TYPE	MAKE
TS-X	TEST BLOCK	TSB14	ARTECHE

APPROVED	CHECKED	DRAWN	PROJECT:  DESCN PO#45000100989 DATED 06.03.2018 PROCUREMENT OF 132KV RELAY, CONTROL PANELS	TITLE: TEST BLOCK TYPE TSB14 DETAILS 132/11KV TRANSFORMER CONTROL PANEL TYPE CP51	 EPESOL Pvt Ltd 71-B Garden Block, New Garden Town, Lahore, Pakistan	DWG# EPE/ENU-18/P1421 DATE:15.02.2019 AS BUILT	SHT: 18 OF 18 REV: 0
NAH	ABA	MSC					





E P E S O L Pvt. Ltd.

DWC# EPE /ENU 18 /P1422 SHT: 02 OF 18

DWG# E1 E/ ENR-18/1 1422 SHT. 0201 18

DATE:15.02.2019 AS BUILT REV: 0

APPROVED	CHECKED	DRAWN	P
NAH	ABA	MSC	

PROJECT:
 DESCON PO#45000100989
DATED 06.03.2018
PROCUREMENT OF 132kV RELAY, CONTROL PANEL

TITLE: TERMINAL DETAIL
132/11KV TRANSFORMER CONTROL PANEL TYPE CP51



E P E S O L Pvt. Ltd.

TITLE: TERMINAL DETAIL
172 / 11KV TRANSFORMER CONTROL PANEL TYPE GDE1

PROJECT: DESCON PO#45000100989
DATED 06.03.2018
PROCUREMENT 25.470LV RELAY

S2	3
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DWG# EPE/ENU-18/P1422 SHT: 030F 18

DATE 15-09-2010 AS BUILT PAGES 3

Sr.	CABLE DESIGNATION	CORE CROSS SECTION	DESTINATION	TERMINAL STRIP X3												TERMINATION B	
				REMOTE DESTINATION			TERMINAL BLOCK	TERMINAL NO	LINK	REFERENCE	TERMINAL NO	ITEM DESIGNATION	TERMINAL NO				
A	1									10/3B	41						
	2									10/4B	42						
	3									10/4B	43						
	4									10/5B	44						
	5									10/5B	45						
	6									10/6B	46						
	7									10/7B	47						
	8									10/4B	48						
B	9									10/3B	49						
	10									10/4B	50						
	11									10/4C	51						
	12									10/4C	52						
c	1	2	3	4	5	6	7	8	9	10	11	12					
D																	
E																	
F																	
APPROVED	CHECKED	DRAWN	PROJECT: DESCON PO#45000100989 DATED 06.03.2018 PROCUREMENT OF 132KV RELAY, CONTROL PANELS				TITLE: TERMINAL DETAIL 132/11KV TRANSFORMER CONTROL PANEL TYPE CP51		D-	09/7B	80	E P E S O L P v t . L t d. 71-B Garden Block, New Garden Town, Lahore, Pakistan	DWG# EPE/ENU-18/P1422	SHT:03a OF 18			
NAH	ABA	MSC							D-						DATE:15.02.2019	AS BUILT	REV: 0

Sr.	CABLE DESIGNATION	CORE CROSS SECTION		DESTINATION		
A	1					
	2					
	3					
	4					
	5					
B	6					
	7					
	8					
	9					
	10					
C	11					
	12					
	1	2	3	4	5	6
	7	8	9	10	11	12
D						
E						
F						

LEGEND:



TEMPORARY SHORTENING LINK

PERMANENT LINK

D-

END COVER



E P E S O L Pvt. Ltd.
71-B Garden Block, New Garden Town, Lahore, Pakistan

DWO // EDE /ENCL 10 /P1400

SUT 040E 10

DWG# EPE/ENU-18/P1422

SHI: 040F 18

DATE:15.02.2019 AS BUILT

RFV: 0

APPROVED	CHECKED	DRAWN	PROJECT:  DESCON PO#45000100989 DATED 06.03.2018 PROCUREMENT OF 132kV RELAY, CONTROL PANEL
NAH	ABA	MSC	



E P E S O L Pvt. Ltd.

DWS II_EDE/ENH_1.0 /P1402 QUT_2525_12

DWG# EPE/ENU-18/P1422 SH1: 050F 18

DATE:15.02.2019 AS BUILT REV: 0

APPROVED	CHECKED	DRAWN
NAH	ABA	MSC

PROJECT: DESCON PO#45000100989
DATED 06.03.2018
PROCUREMENT OF 132kV RELAY, CONTROL PANEL

TITLE: TERMINAL DETAIL
LS 132/11KV TRANSFORMER CONTROL PANEL TYPE CP51



E P E S O L P v t . L t d .
71-B Garden Block, New Garden Town, Lahore, Pakistan

DWC // EBE /ENCL 18 /D1422

SUT: 060E 18

DWG# EPE/ENU-18/P1422

SHI: 060F 18

APPROVED	CHECKED	DRAWN	P
NAH	ABA	MSC	

PROJECT:
 DESCON PO#45000100989
DATED 06.03.2018
PROCUREMENT OF 132kV RELAY, CONTROL PANEL

TITLE: TERMINAL DETAIL
S 132/11KV TRANSFORMER CONTROL PANEL TYPE CP51

LEGEND:

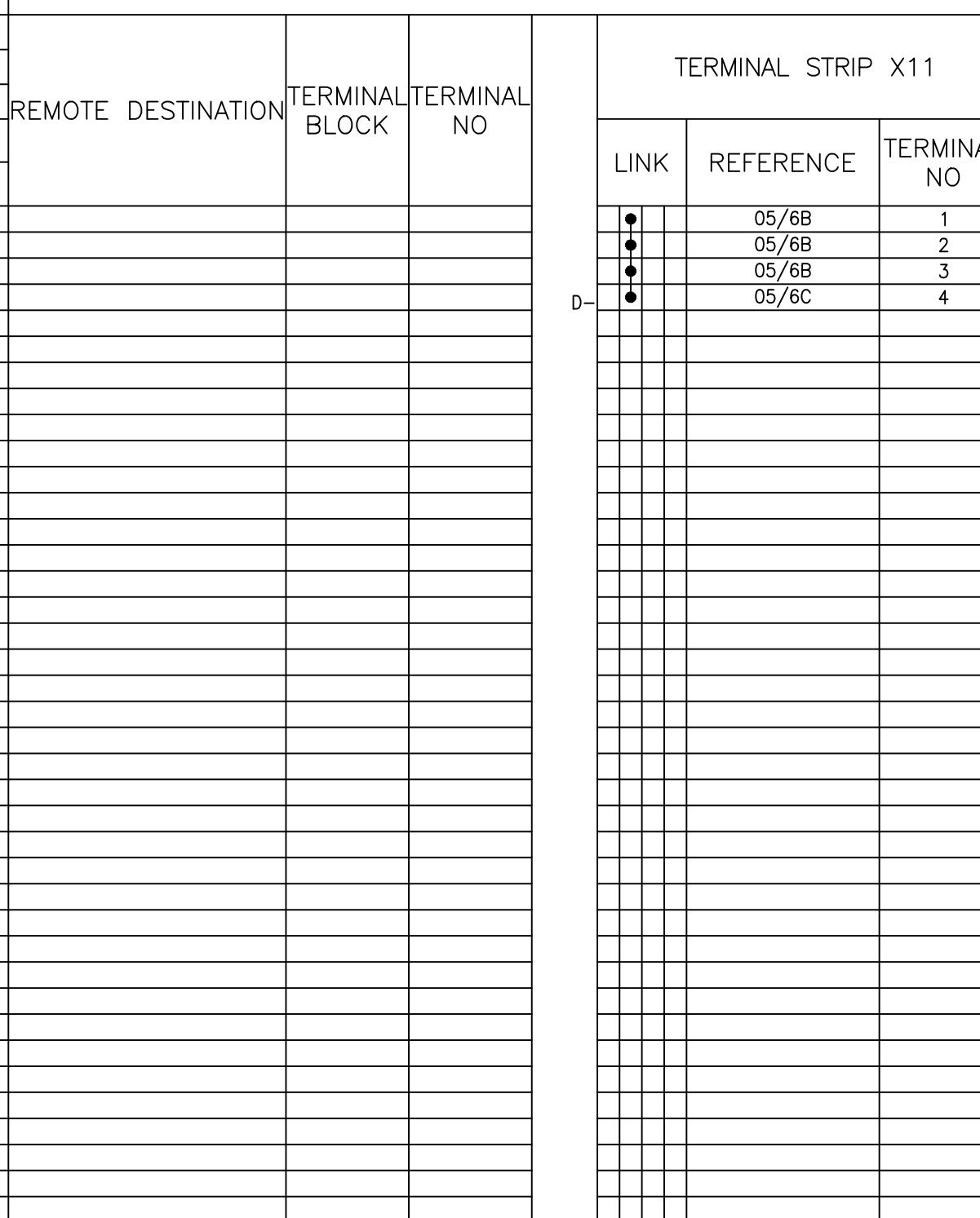


TEMPORARY SHORTENING LINK

PERMANENT LINK

D-

END COVER



APPROVED	CHECKED	DRAWN	PROJECT: DESCON PO#45000100989 DATED 06.03.2018 PROCUREMENT OF 132kV RELAY, CONTROL PANELS	TITLE: TERMINAL DETAIL 132/11kV TRANSFORMER CONTROL PANEL TYPE CP51	 EPESOL Pvt Ltd 71-B Garden Block, New Garden Town, Lahore, Pakistan	DWG# EPE/ENU-18/P1422	SHT: 07 OF 18	
NAH	ABA	MSC				DATE:15.02.2019	AS BUILT	REV: 0



E P E S O L P v t . L t d.
71-B Garden Block, New Garden Town, Lahore, Pakistan

Figure 1. The relationship between the number of species and the area of forest.

DWG# EPE/ENU-18/P1422 SHT: 08 OF 18

DATE:15.02.2019 AS BUILT REV: 0

BR 2.1E2T

PROJECT

DD

PROJECT:
 DESCON PO#45000100989
DATED 06.03.2018
PROCUREMENT OF 132kV RELAY, CONTROL PANE

	TITLE:	TERMINAL DETAIL
LS	132/11kV TRANSFORMER CONTROL PANEL TYPE CP51	

LEGEND:



TEMPORARY SHORTENING LINK



PERMANENT LINK



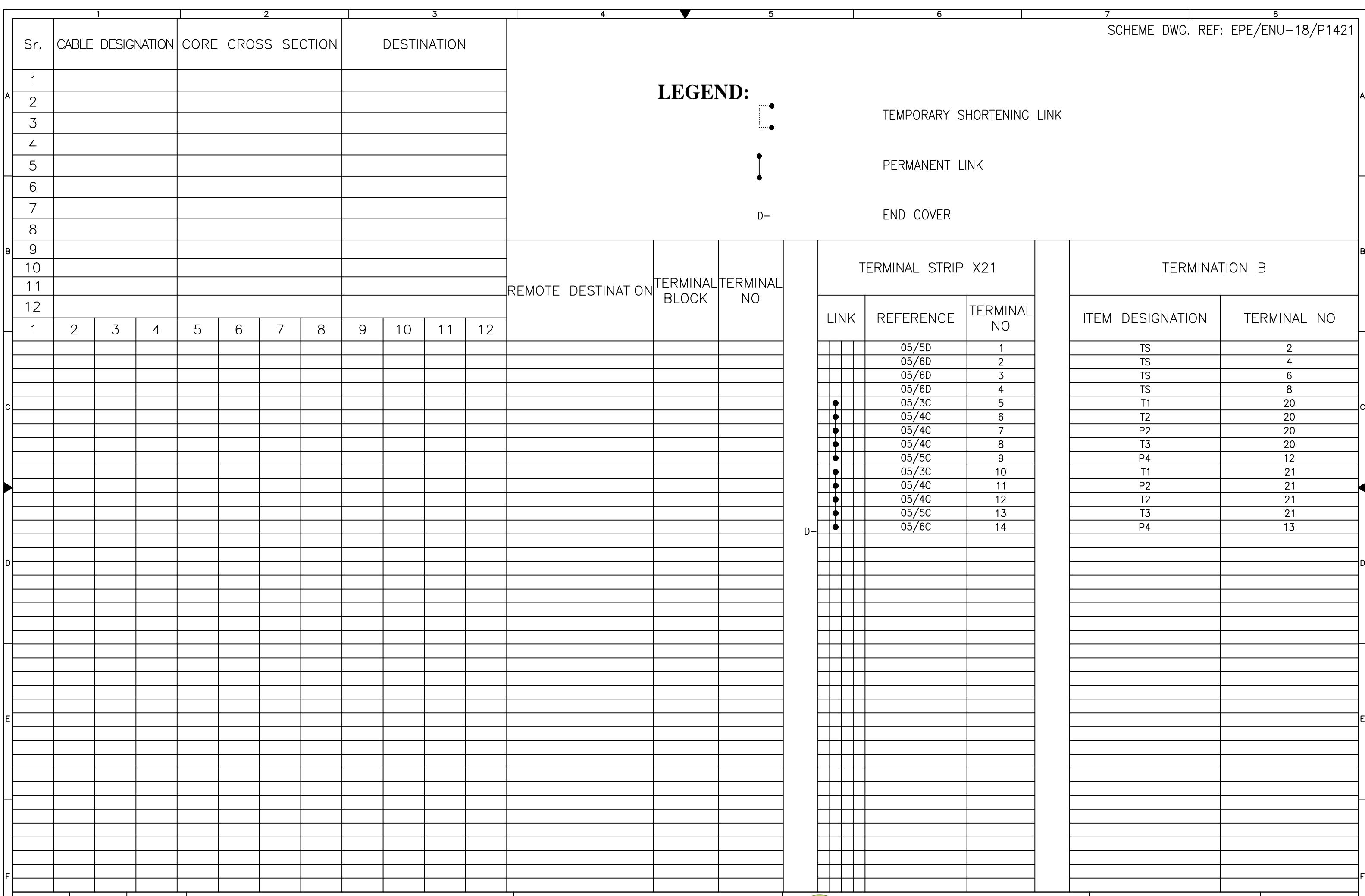
END COVER

REMOTE DESTINATION	TERMINAL BLOCK	TERMINAL NO	TERMINAL STRIP X17			ITEM DESIGNATION	TERMINAL NO
			LINK	REFERENCE	TERMINAL NO		
D-			●	16/2B	1	F4	1
			●	16/3B	2	F5	1
			●	16/5B	3	F6	1
			●	16/2B	4		
			●	16/2B	5		
			●	16/2B	6	F4	3
			●	16/4B	7	F5	3
			●	16/6B	8	F6	3
			●	16/6C	9		
			●	16/7B	10	F4	12
			●	16/7B	11	F5	12
			●	16/8B	12	F6	12
			●	16/7C	13		
			●	16/7C	14	F4	11
			●	16/7C	15	F5	11
			●	16/8C	16	F6	11
			●	16/8C	17	74AC	11
			●	16/8B	18	74AC	12
			●	16/6B	19		
			●	16/6B	20		



E P E S O L P v t . L t d .
71-B Garden Block, New Garden Town, Lahore, Pakistan

APPROVED	CHECKED	DRAWN	PROJECT: DESCON PO#45000100989 DATED 06.03.2018 PROCUREMENT OF 132kV RELAY, CONTROL PANELS	TITLE: TERMINAL DETAIL 132/11kV TRANSFORMER CONTROL PANEL TYPE CP51	 EPESOL PVT. LTD. 71-B Garden Block, New Garden Town, Lahore, Pakistan	DWG# EPE/ENU-18/P1422	SHT: 09 OF 18
NAH	ABA	MSC				DATE:15.02.2019	AS BUILT





E P E S O L P v t . L t d.
71-B Garden Block, New Garden Town, Lahore, Pakistan

10. The following table summarizes the results of the study.

DWG# EPE/ENU-18/P1422 SHT: 11 OF 18

DATE:15.02.2019 AS BUILT REV: 0

APPROVED	CHECKED	DRAWN	P
NAH	ABA	MSC	

PROJECT:
 DESCON PO#45000100989
DATED 06.03.2018
PROCUREMENT OF 132kV RELAY, CONTROL PANE

TITLE: TERMINAL DETAIL
LS 132/11KV TRANSFORMER CONTROL PANEL TYPE CP51



E P E S O L Pvt. Ltd.
77-B Garden Block, New Garden Town, Lahore, Pakistan

DWC // EBE /ENI 18/P142

SUT: 120E 18

DWG# EPE/ENU-18/P142

SHI: 120F 18

APPROVED	CHECKED	DRAWN	P
NALI	ABA	MSC	

PROJECT: DESCON PO#45000100989
DATED 06.03.2018
PROCUREMENT OF 132kV RELAY, CONTROL PANEL

TITLE: TERMINAL DETAIL
170 /11KV TRANSFORMER CONTROL PANEL TYPE CDE1



E P E S O L Pvt. Ltd.
77-B Garden Block, New Garden Town, Lahore, Pakistan

DWC // EBE /ENI 18/P142

SUT: 130E 18

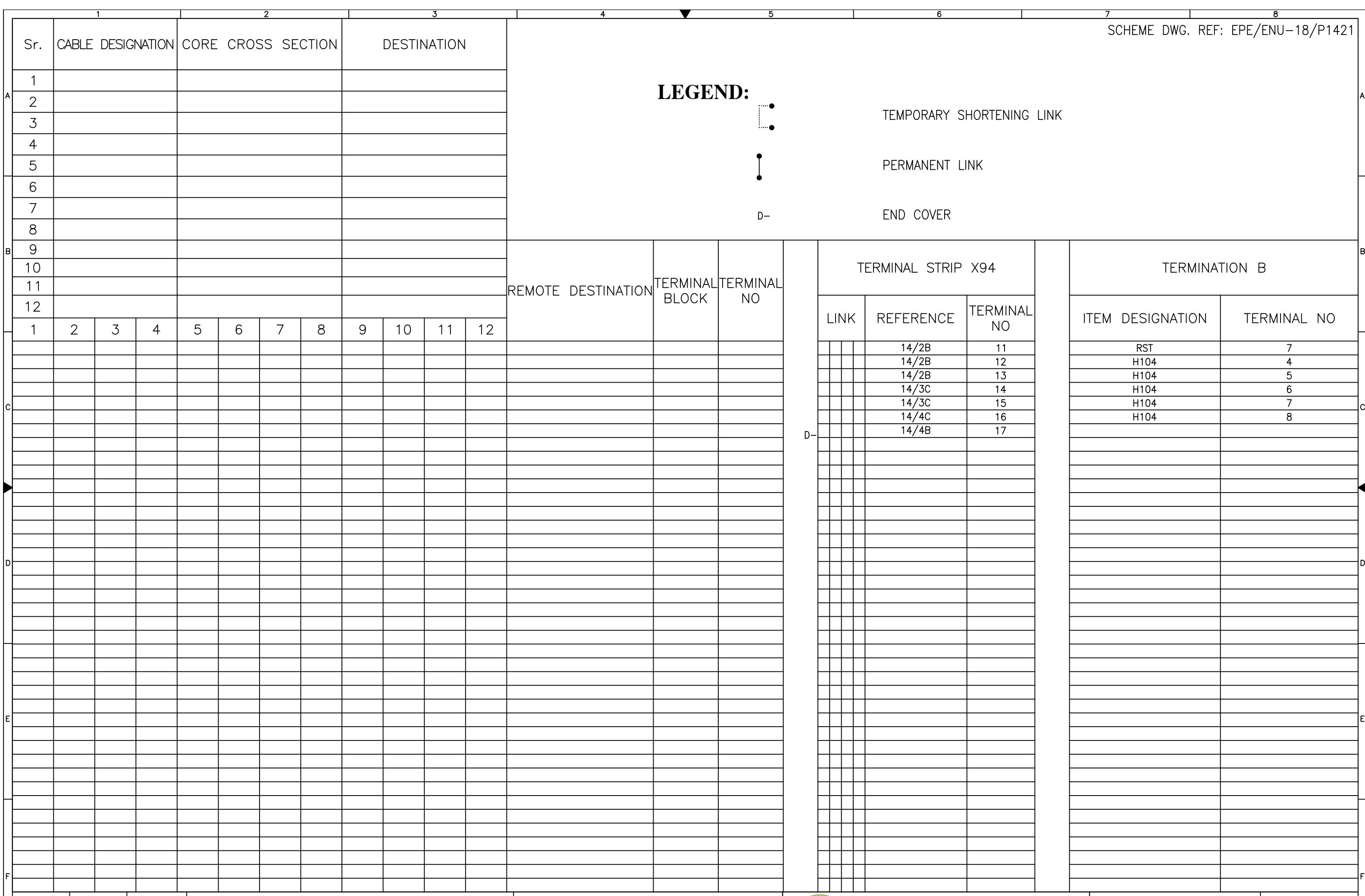
DWG# EPE/ENU-18/P142

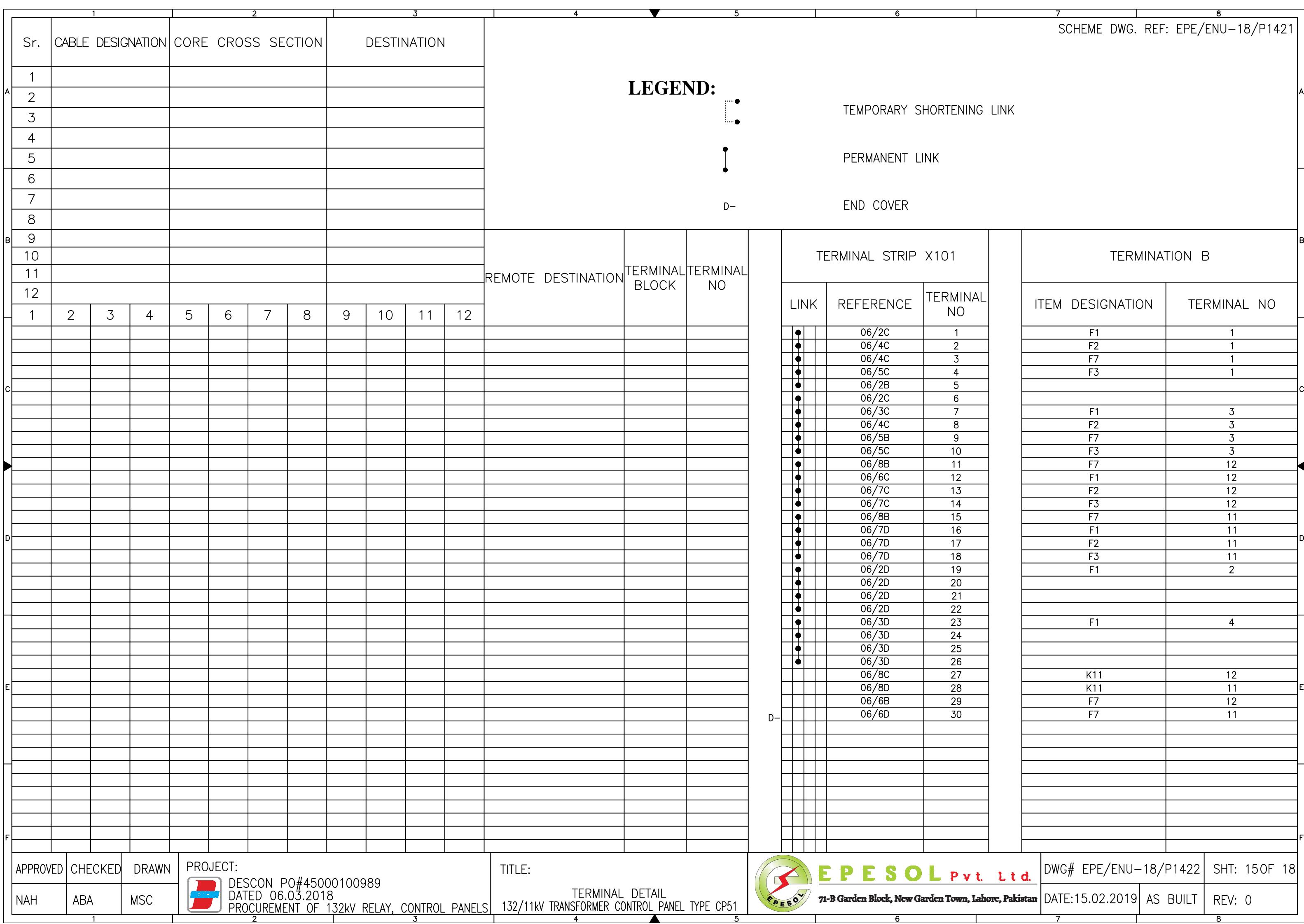
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APPROVED	CHECKED	DRAWN	P
NALI	ABA	MSC	

PROJECT: DESCON PO#45000100989
DATED 06.03.2018
PROCUREMENT OF 132kV RELAY, CONTROL PANEL

TITLE: TERMINAL DETAIL
170 /11KV TRANSFORMER CONTROL PANEL TYPE CDE1







E P E S O L Pvt. Ltd.

DWC# EPE /ENU 18 /P1422 SHT: 16 OF 18

DWG# E1 E/ ENR-18/1 1422 SHT. 1001 18

DATE:15.02.2019 AS BUILT REV: 0

APPROVED	CHECKED	DRAWN	P
NAH	ABA	MSC	

PROJECT: DESCON PO#45000100989
DATED 06.03.2018
PROCUREMENT OF 132kV RELAY, CONTROL PANEL

S TITLE: TERMINAL DETAIL
132/11KV TRANSFORMER CONTROL PANEL TYPE CP51



E P E S O L Pvt. Ltd.

DWC // EBE /ENU 18 /P143

SUT: 170E 18

DWG# EPE/ENU-18/P142

SHI: 170F 18

APPROVED	CHECKED	DRAWN	
NAL	ABA	MSC	



E P E S O L Pvt. Ltd.

DWC# EPE /ENU 18 /P1422 SHT: 18 OF 18

DWG# E1 E/ ENR-18/1 1422 SHT. 1801 18

DATE:15.02.2019 AS BUILT REV: 0

APPROVED	CHECKED	DRAWN	
NAH	ABA	MSC	

PROJECT:
 DESCON PO#45000100989
DATED 06.03.2018
PROCUREMENT OF 132kV RELAY, CONTROL PANEL

TITLE: TERMINAL DETAIL
132/11KV TRANSFORMER CONTROL PANEL TYPE CP51