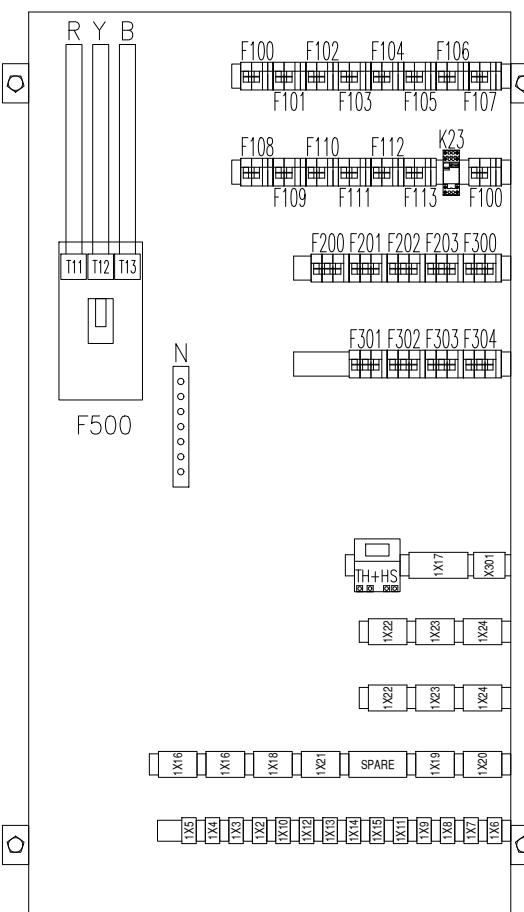
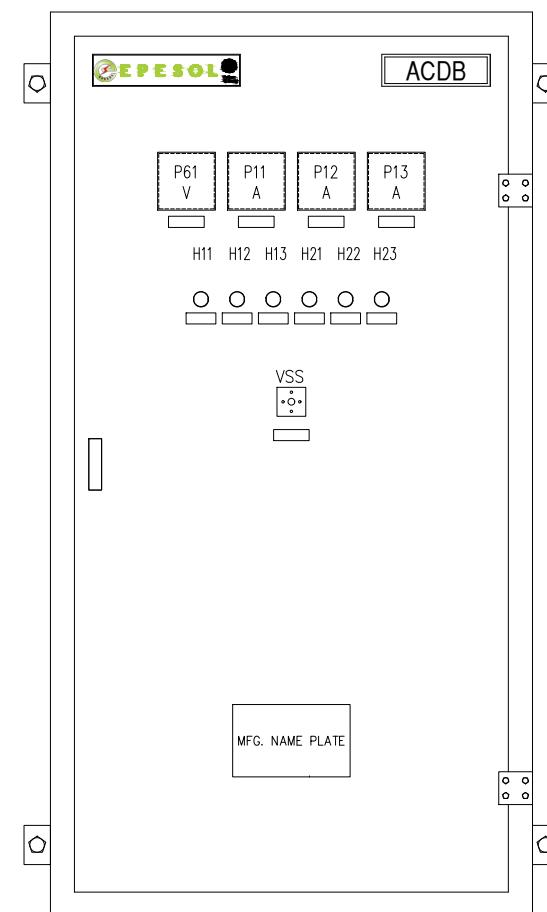


LAYOUT DRAWING OF 415 VAC AUXILIARY SUPPLY PANEL

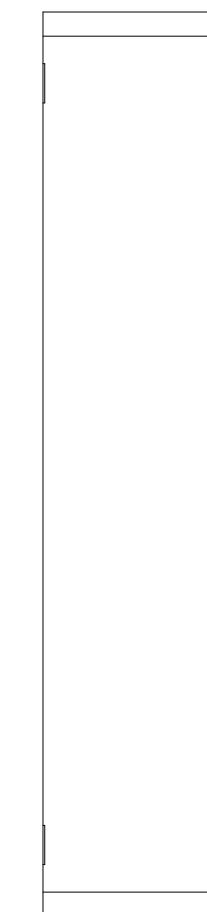
APPROVED	CHECKED	DRAWN	PROJECT:	TITLE:	DWG#	SHT: 01 OF 02
NAH 	MSSM 	MUR 	 EDUCATIONAL ORDER NTDC PO# CE/MP&M /M(P)/AM-VI/E0/9417-29 DATED 14.11.2018 FOR THE PROCUREMENT OF 220KV & 500KV RELAY& CONTROL PANELS	COVER SHEET 415 VAC AUXILIARY SUPPLY PANEL	EPE SOL Pvt Ltd 71-B Garden Block, New Garden Town, Lahore, Pakistan	EPE/ENU-18/P1596 DATE: 07.03.2019 AS BUILT REV: 0



415V AC PANEL WITHOUT DOOR
FRONT VIEW



415V AC PANEL WITH DOOR
FRONT VIEW



LEFT VIEW



RIGHT VIEW



415V AC PANEL TOP VIEW

NOTES

1. AC AUX. PANEL: 800Wx300Dx1500H mm
2. FACE SHEET: 800x1500 mm²
3. COLOR: RAL7032

APPROVED	CHECKED	DRAWN	PROJECT:	TITLE:	DWG#	SHT:02 OF 02
NAH	MSSM Sohail	MUR	 EDUCATIONAL ORDER NTDC PO# CE/MP&M /M(P)/AM-VI/E0/9417-29 DATED 14.11.2018 FOR THE PROCUREMENT OF 220KV & 500KV RELAY& CONTROL PANELS	GENERAL ARRANGEMENT 415 VAC AUXILIARY SUPPLY PANEL	EPE SOL Pvt Ltd 71-B Garden Block, New Garden Town, Lahore, Pakistan	DWG# EPE/ENU-18/P1596 DATE: 07.03.2019 AS BUILT REV: 0

LIST OF APPARATUS OF 415 VAC AUXILIARY SUPPLY PANEL

APPROVED	CHECKED	DRAWN	PROJECT:	TITLE:	COVER SHEET	DWG#	SHT:
NAH	MSS	MUR	EDUCATIONAL ORDER NTDC PO# CE/MP&M /M(P)/AM-VI/E0/9417-29 DATED 14.11.2018 FOR THE PROCUREMENT OF 220KV & 500KV RELAY& CONTROL PANELS	415 VAC AUXILIARY SUPPLY PANEL	EPESOL Pvt. Ltd. 71-B Garden Block, New Garden Town, Lahore, Pakistan	EPE/ENU-18/B61597	01 OF 02

1	2	3	4	5	6	7	8			
SR.	ITEM DESIGNATION		DESCRIPTION		QTY	TYPE	MAKE	COUNTRY OF ORIGIN	ORDERING INFORMATION	SHEET NO
A	F100 TO F113		AC MCB, DOUBLE POLE, 16A, 240 VAC, WITH 1 C/O CONTACT		14	G60	GE	HUNGARY/POLAND	G62C16 + CAH(1)	A
	F200 TO F203		AC MCB, TRIPLE POLE, 32A, 240 VAC, WITH 1 C/O CONTACT		4	G60	GE	HUNGARY/POLAND	G63C32 + CAH(1)	
	F300 TO F304		AC MCB, TRIPLE POLE, 63A, 240 VAC, WITH 1 C/O CONTACT		5	G60	GE	HUNGARY/POLAND	G63C63 + CAH(1)	
B	F400		ELCB, DOUBLE POLE, 16A, 30mA, 240 VAC, WITH 1 C/O CONTACT		1	DM100	GE	HUNGARY/POLAND	DM100C16/030 + CAH(1)	B
	F500		TRIPLE POLE MCCB RAETED CURRENT 320-400A WITH ONE NORMALLY CLOSED AUXILIARY CONTACT		1	FG400	GE	HUNGARY/POLAND	FGN37DD400LF+FAS01R	
			ONE NORMALLY OPRN TRIP CONTACT, AND 1NO+NC AUXILIARY CONTACTS						+FAS10L+FABAT	
C	IL		CUBICLE LIGHTING, 5W, 240VAC		1	YS-Y8	YONGSUNG	SOUTH KOREA	YS-T8-30-5W	C
	DS		DOOR SWITCH WITH COVER		1	YSP33+YSMS	YONGSUNG	SOUTH KOREA	YSP3315GWB+YSMS-C	
	TH+HS		THERMOSTAT AND HUMIDSTAT		1	ELH220	ELAB	PAKISTAN	ELH220	
D	SH		SPACE HEATER		1	ELH220	ELAB	PAKISTAN	ELH220	D
	1X2 TO 1X15		TERMINAL BLOCKS SUITABLE FOR 16mm ² CABLE		34	CBD	CABUR	ITLAY		
	1X16 TO 1X24		TERMINAL BLOCKS SUITABLE FOR 35mm ² CABLE		44	CBD	CABUR	ITLAY		
E	X17		TERMINAL BLOCKS FOR CONTROL/AC SUPPLY DISTRIBUTION CIRCUIT		15	CBD	CABUR	ITLAY		E
	X301		TERMINAL BLOCKS FOR CT CIRCUIT CIRCUIT		6	SCB-6	CABUR	ITLAY		
	T11, T12, T13		CURRENT TRANSFORMERS, 400/5 Amp. FOR EACH PHASE		3	GA	GE	CHINA		
F	P11, P12, P13		ANALOGUE AMPERE METER, QUADRANT SCALE (0-500A) CT RATIO 400/5A, CLASS 1.5, 96X96		3	IF96FA	FRER	ITLAY		F
	P61		ANALOGUE VOLT METER, QUADRANT SCALE (0-500V) AC 50Hz, CLASS 1.5, 96X96		1	IF96EV	FRER	ITLAY		
	H11, H21		INDICATION BULB FOR BREAKER ON POSITION AND RED PHASE COLOR RED 220VAC		2		YONGSUNG	SOUTH KOREA	YS-PL-2-AL-22-R-W	
G	H12, H23		INDICATION BULB FOR BREAKER TRIP POSITION AND YELLOW PHASE COLOR YELLOW 220VAC		2		YONGSUNG	SOUTH KOREA	YS-PL-2-AL-22-Y-W	G
	H22		INDICATION BULB FOR BREAKER OFF POSITION COLOR GREEN 220VAC		1		YONGSUNG	SOUTH KOREA	YS-PL-2-AL-22-G-W	
	H13		INDICATION BULB FOR BLUE PHASE COLOR BLUE 220VAC		1		YONGSUNG	SOUTH KOREA	YS-PL-2-AL-22-N-W	
H	VSS		SEVEN POSITION VOLT METER SELECTOR SWITCH POSITION MARKING R-N,Y-N,B-N,OFF,R-Y,Y-B,B-R		1	PO	GGT	ITLAY	PO-160023R001	H
	K23		AUXILIARY RELAY, 4 C/O CONTACTS, 240 VAC		1	PRC	GE	HUNGARY/POLAND	PRC4M40ANL	
APPROVED	CHECKED	DRAWN	PROJECT:	EDUCATIONAL ORDER NTDC PO# CE/MP&M /M(P)/AM-VI/E0/9417-29 DATED 14.11.2018 FOR THE PROCUREMENT OF 220KV & 500KV RELAY& CONTROL PANELS	TITLE:	LIST OF APPARATUS 415 VAC AUXILIARY SUPPLY PANEL	EPE SOL Pvt. Ltd. 71-B Garden Block, New Garden Town, Lahore, Pakistan	DWG# EPE/ENU-18/B61597 DATE: 07.03.2019	SHT: 02 OF 02 AS BUILT REV: 0	
NAH	MSS	MUR								

1	2	3	4	5	6	7	8	
SR.	ITEM DESIGNATION	DESCRIPTION	QTY	TYPE	MAKE	COUNTRY OF ORIGIN	ORDERING INFORMATION	SHEET NO
A 23	F410	DOUBLE POLE DC MCB RATED CURRENT 10 A, Icu = 10 kA.	1	EP-100	GE	HUNGARY/POLAND	EP102UCC10+CAH(1)	A
B								B
C								C
D								D
E								E
F								F
APPROVED	CHECKED	DRAWN	PROJECT:  EDUCATIONAL ORDER NTDC PO# CE/MP&M /M(P)/AM-VI/E0/9417-29 DATED 14.11.2018 FOR THE PROCUREMENT OF 220KV & 500KV RELAY& CONTROL PANELS	TITLE: LIST OF APPARATUS 415 VAC AUXILIARY SUPPLY PANEL	 EPESOL Pvt. Ltd. 71-B Garden Block, New Garden Town, Lahore, Pakistan	DWG# EPE/ENU-18/B61597 DATE: 07.03.2019	SHT: 02 OF 02 AS BUILT REV: 0	
NAH	MSS	MUR						

SCHEMATIC DIAGRAMS OF 415 VAC AUXILIARY SUPPLY PANEL

APPROVED	CHECKED	DRAWN	PROJECT:	TITLE:	DWG#	SHT:
NAH	MSS	MUR	 NTDC PO# CE/MP&M/M(P)/AM-VI/E0/ 9417-29 DATED 14.11.2018 FOR PROCUREMENT OF 220KV & 500KV PROTECTION & CONTROL PANELS	415 VAC AUXILIARY SUPPLY PANEL COVER SHEET	EPE SOL Pvt Ltd	EPE/ENU-18/B61598 01 OF 10
					71-B Garden Block, New Garden Town, Lahore, Pakistan	DATE: 07.03.2019 AS BUILT REV: 0

DESCRIPTION	SHEET NO
COVER SHEET	01
LIST OF CONTENTS	02
LIST OF SYMBOLS AND DESIGNATIONS	03
SINGLE LINE DIAGRAM	04
SINGLE LINE DIAGRAM	05
DETAILED SCHEMATIC DIAGRAM	06
DETAILED SCHEMATIC DIAGRAM	07
DETAILED SCHEMATIC DIAGRAM	08
DETAILED SCHEMATIC DIAGRAM	09
INDICATION AND AC SUPPLY DISTRIBUTION CIRCUIT	10
MCB TRIP STATUS CIRCUIT	10a

LIST OF SYMBOLS AND DESIGNATIONS

LIST OF SYMBOLS AND DESIGNATIONS

	RELAY PANEL TERMINAL BLOCK
	CONTROL PANEL TERMINAL BLOCK
	EARTH CONNECTION
	NORMALLY CLOSED CONTACT
	NORMALLY OPEN CONTACT
	CHANGE OVER CONTACT
	MINIATURE CIRCUIT BREAKER
	INDICATING BULB/LED/CUBICLE LIGHT
	220V SOCKET
	SPACE HEATER
	COIL
	EQUIPMENT WITHIN PANEL
_____ · _____ · _____	INDEPENDENT PANEL
_____ · · · _____	INDEPENDENT PANEL
X	TERMINAL BLOCKS
F	MINIATURE CIRCUIT BREAKER

PROJECT
TRANSMISSION & DESPATCH COMPANY LTD

PROJECT: NTDC PO# CE/MP&M/M(P)/AM-VI/EO/
9417-29 DATED 14.11.2018 FOR PROCUREMENT
OF 220KV & 500KV PROTECTION & CONTROL PANEL

TITLE

LIST OF SYMBOLS

415 VAC AUXILIARY SUPPLY PANEL



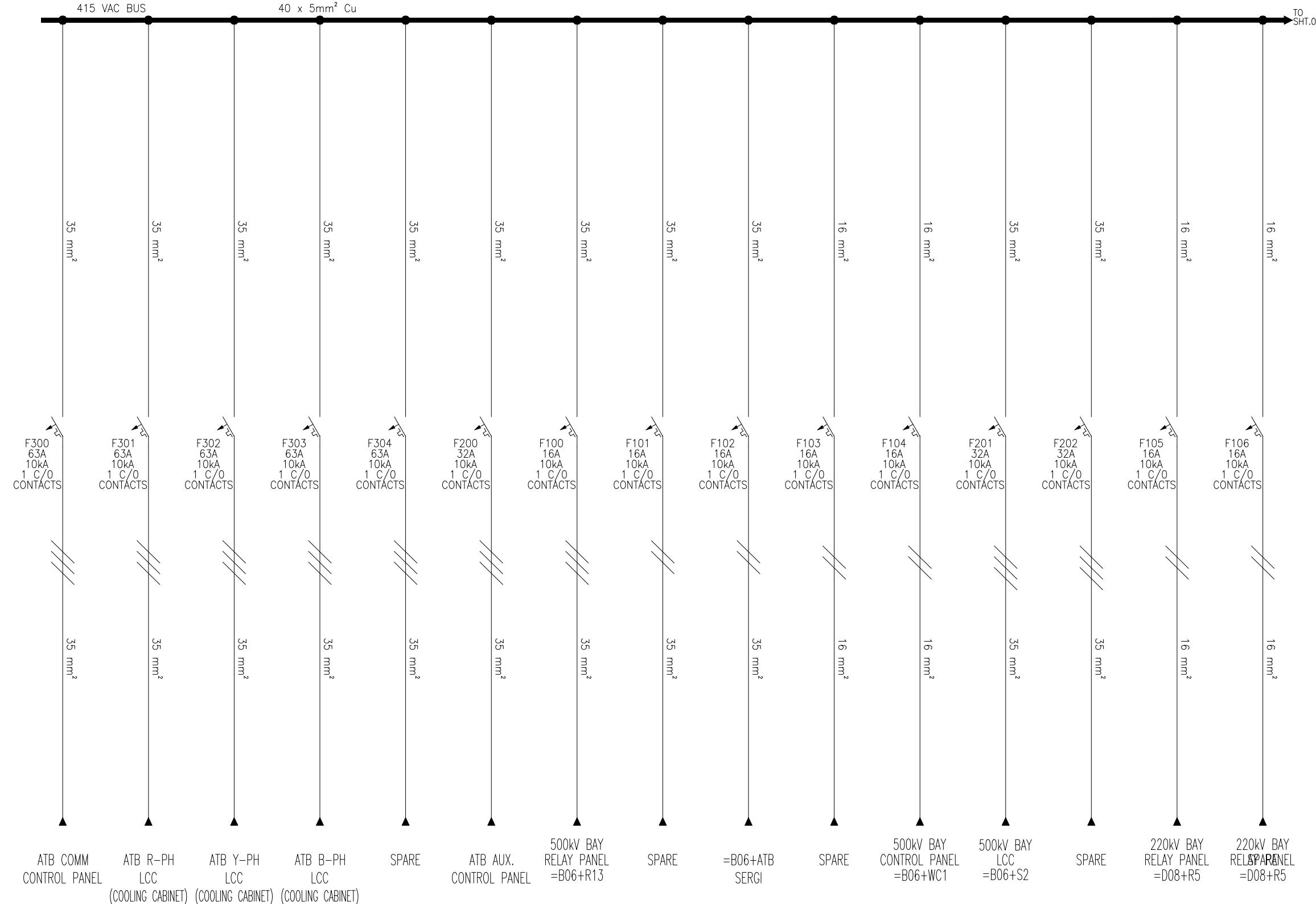
E P E S O L Pvt. Ltd.

DWG# EPF/FNUU-18/B61598

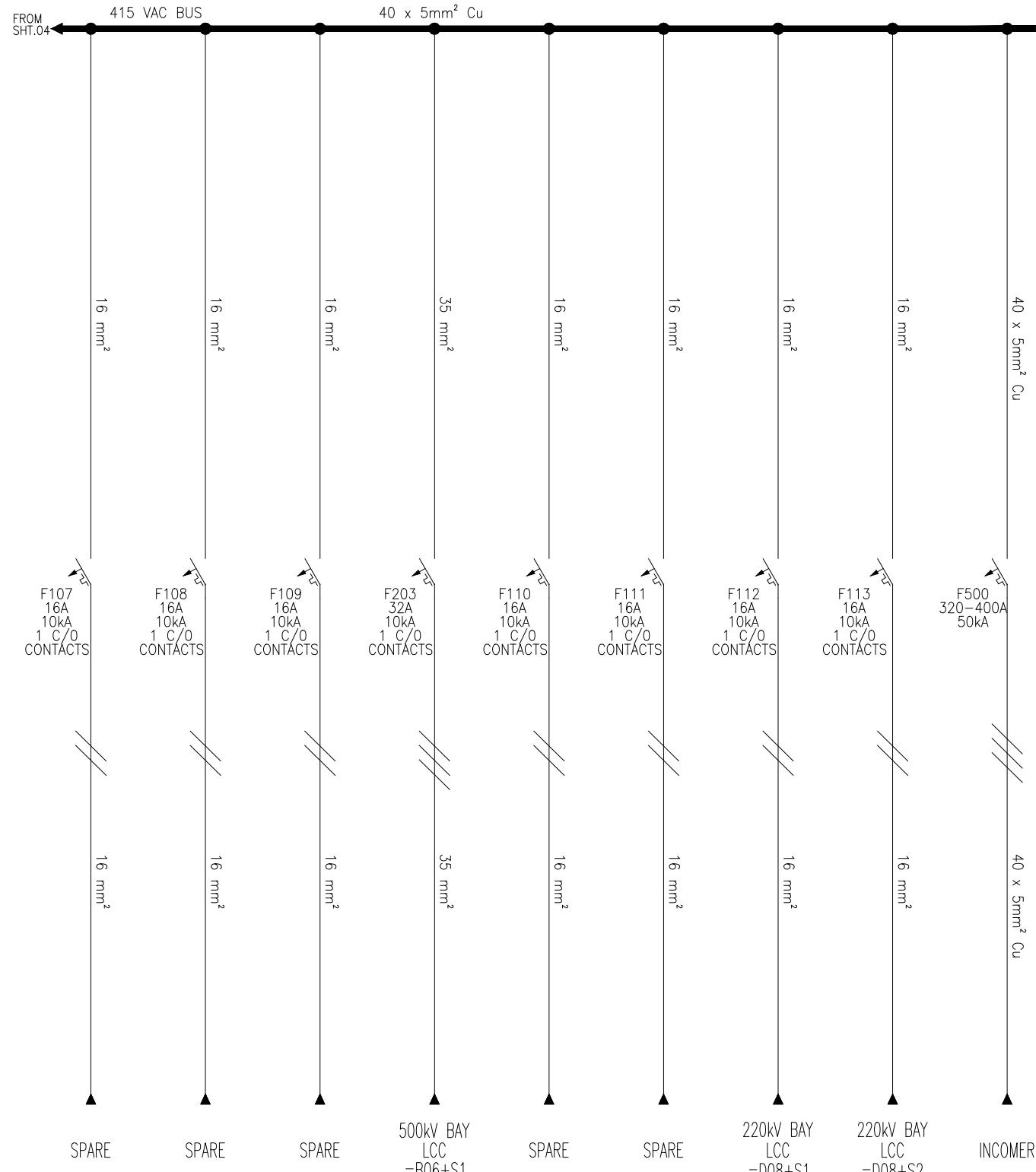
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3/ D01050

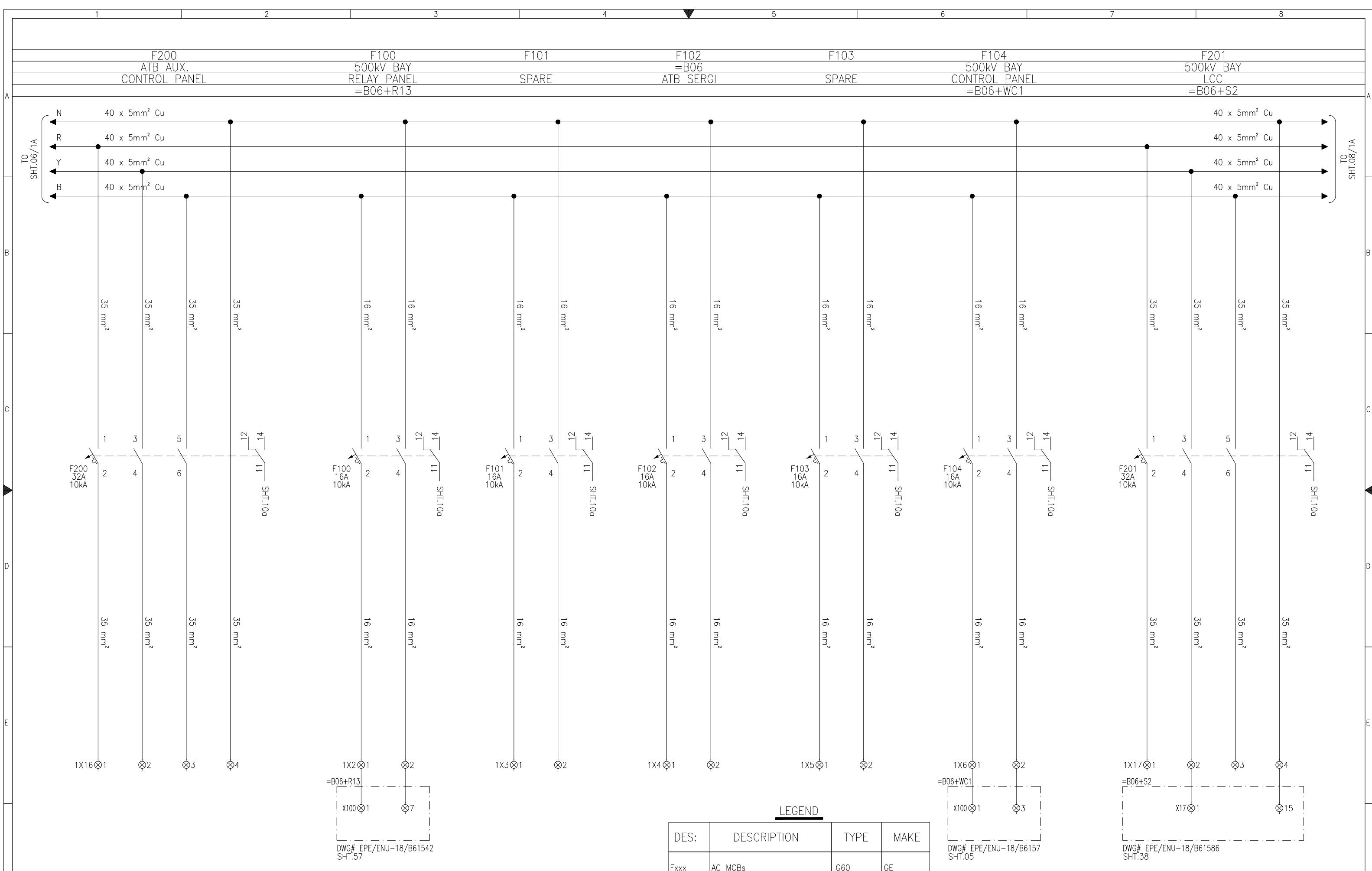
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APPROVED	CHECKED	DRAWN	PROJECT: NTDC PO# CE/MP&M/M(P)/AM-VI/E0/ 9417-29 DATED 14.11.2018 FOR PROCUREMENT OF 220KV & 500KV PROTECTION & CONTROL PANELS	TITLE: 415 VAC AUXILIARY SUPPLY PANEL	SINGLE LINE DIAGRAM	 EPESOL Pvt Ltd. 71-B Garden Block, New Garden Town, Lahore, Pakistan	DWG# EPE/ENU-18/B61598	SHT: 04 OF 10
NAH 	MSS 	MUR 					DATE: 07.03.2019	AS BUILT



APPROVED	CHECKED	DRAWN	PROJECT:	TITLE:	EPE SOL Pvt. Ltd.	DWG# EPE/ENU-18/B61598	SHT: 05 OF 10
NAH [Signature]	MSS [Signature]	MUR [Signature]	NTDC PO# CE/MP&M/M(P)/AM-VI/EO/ 9417-29 DATED 14.11.2018 FOR PROCUREMENT OF 220KV & 500KV PROTECTION & CONTROL PANELS	SINGLE LINE DIAGRAM 415 VAC AUXILIARY SUPPLY PANEL	 EPE SOL Pvt. Ltd. 71-B Garden Block, New Garden Town, Lahore, Pakistan	DATE: 07.03.2019	AS BUILT



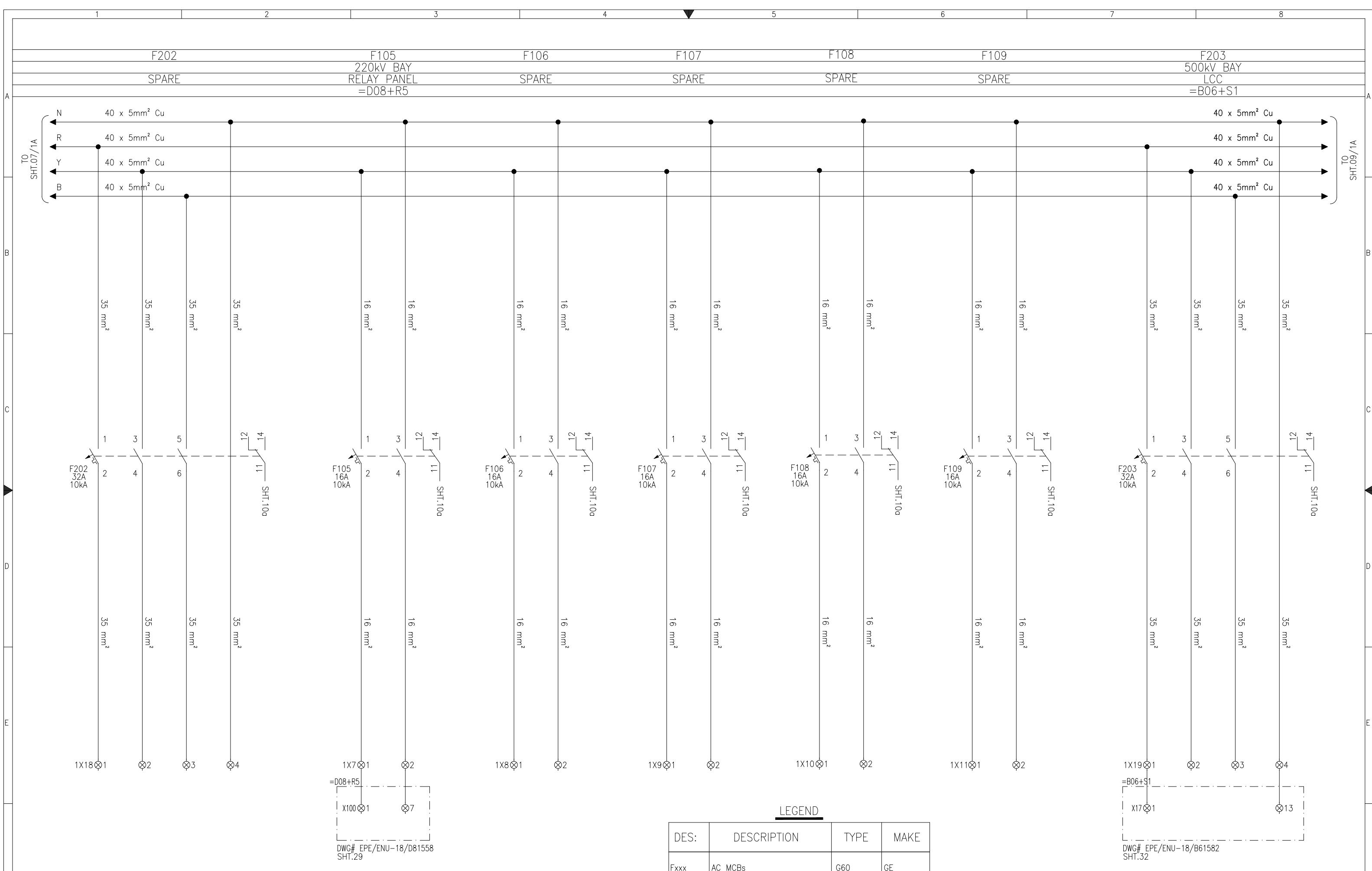
APPROVED	CHECKED	DRAWN	PROJECT:  NTDC PO# CE/MP&M/M(P)/AM-VI/EO/ 9417-29 DATED 14.11.2018 FOR PROCUREMENT OF 220KV & 500KV PROTECTION & CONTROL PANEL
NAH 	MSS M. Sohail 	MUR 	
1		2	3

TITLE: DETAILED SCHEMATIC DIAGRAM
415 VAC AUXILIARY SUPPLY PANEL



PESOL Pvt Ltd

G# EPE/ENU-18/B61598	SHT: 07 OF 10
EE: 07.03.2019	AC BWE T REV: 2



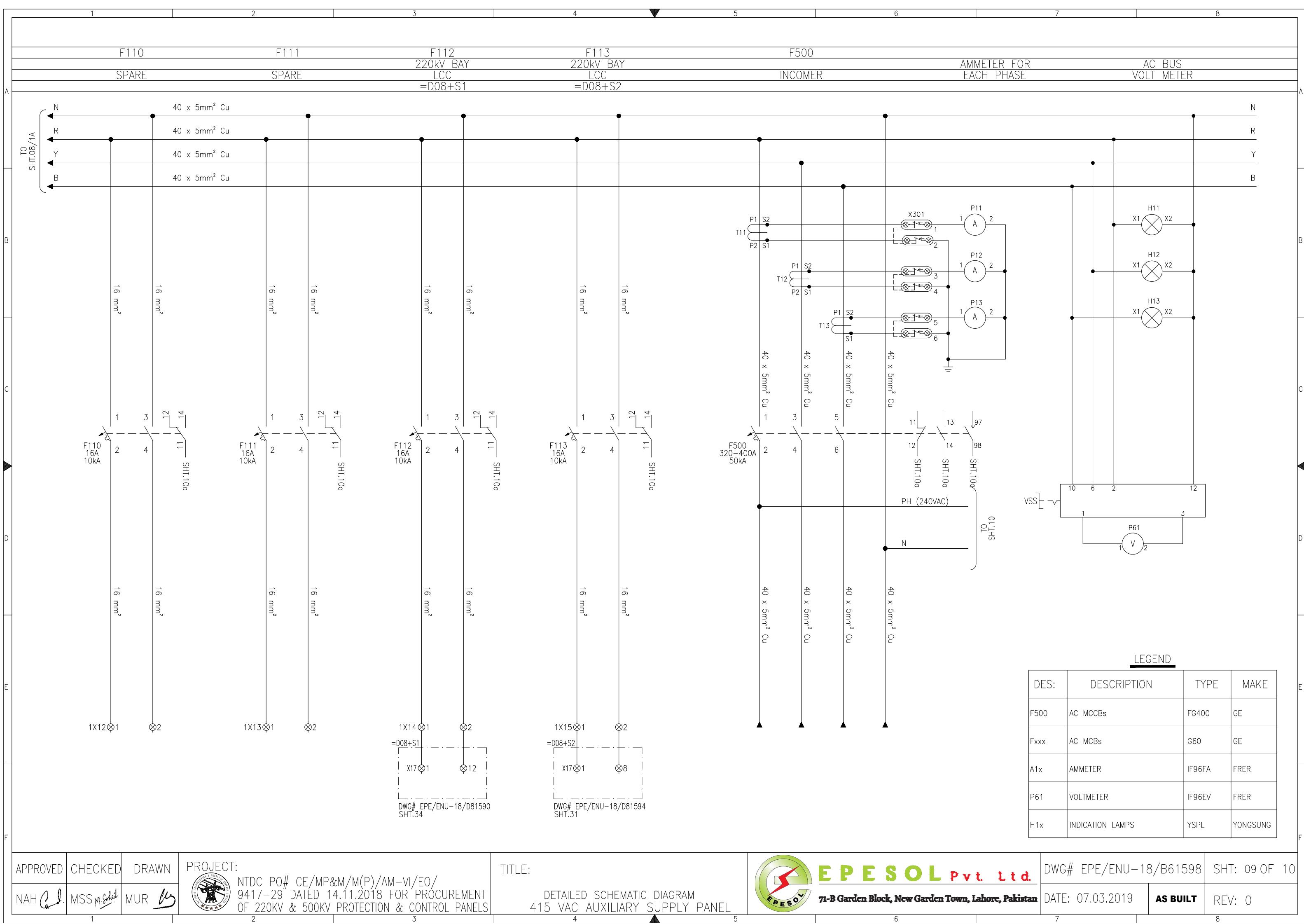
DES:	DESCRIPTION	TYPE	MAKE
Fxxx	AC MCBs	G60	GE



P E S O L Pvt. Ltd.

TITLE: DETAILED SCHEMATIC DIAGRAM
415 VAC AUXILIARY SUPPLY PANEL

APPROVED	CHECKED	DRAWN	PROJECT:
NAH 	MSS 	MUR 	 NTDC PO# CE/MP&M/M(P)/AM-VI/E0/ 9417-29 DATED 14.11.2018 FOR PROCUREMENT OF 220KV & 500KV PROTECTION & CONTROL PAN
1		2	3

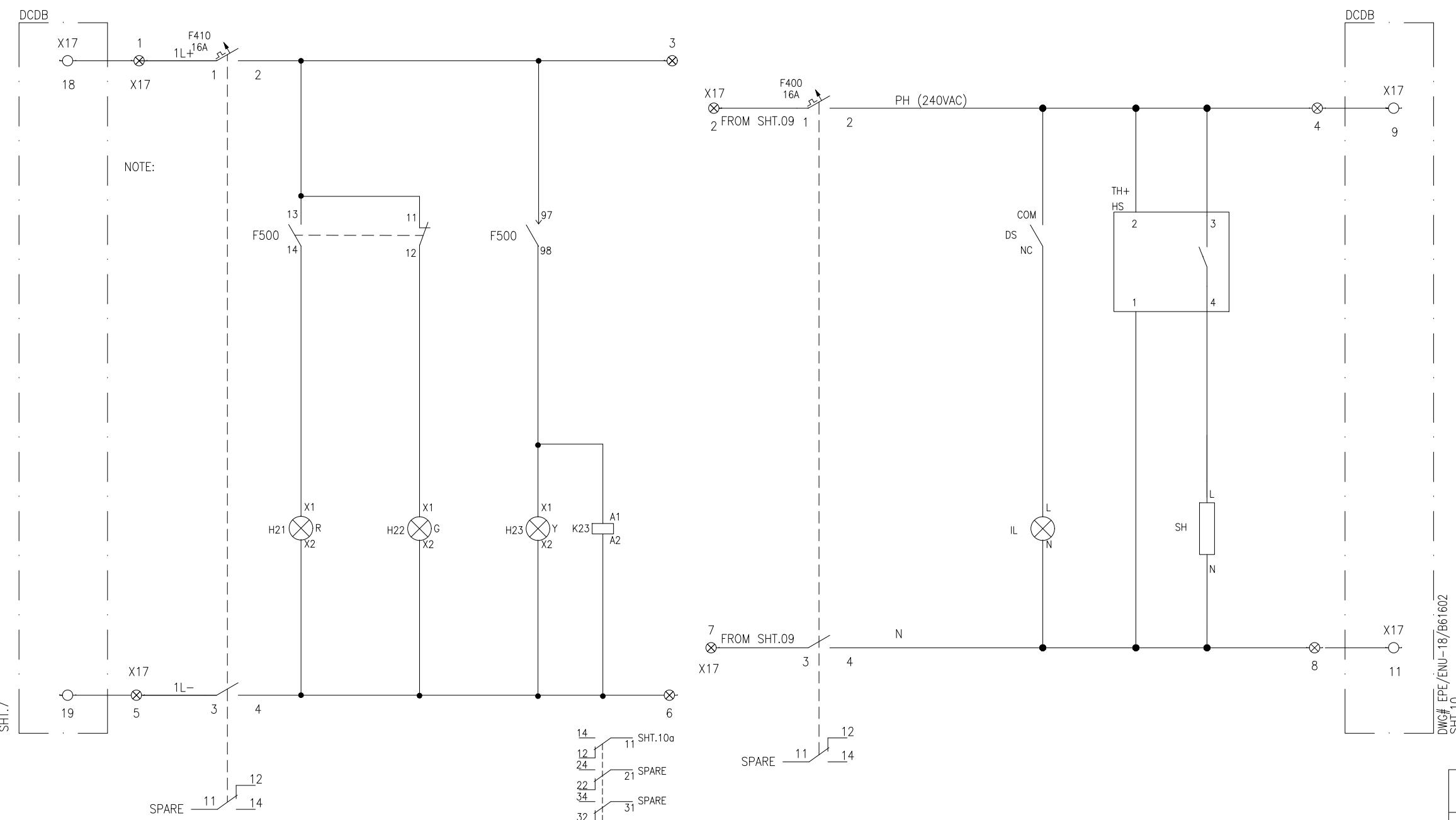


INCOMER

ON INDICATION OFF INDICATION TRIP INDICATION

AC SUPPLY DISTRIBUTION

DOOR SWITCH & CUBICLE LIGHT THERMOSTAT & HEATER

DWG# EPE/ENU-18/B61602
SHT.7DWG# EPE/ENU-18/B61602
SHT.10

LEGEND

DES:	DESCRIPTION	TYPE	MAKE
F4xx	AC ELCB	DM100	GE
IL	CUBICLE LIGHT	YST8	YONGSUNG
SH	SPACE HEATER	ELH220	ELABS
H21	INDICATION LAMP (GREEN)	YSPL	YONGSUNG
H22	INDICATION LAMP (RED)	YSPL	YONGSUNG
H23	INDICATION LAMP (YELLOW)	YSPL	YONGSUNG
DS	DOOR SWITCH	YSP22+YSMS	YONGSUNG

NOTE:
REVISED AS PER NTDC COMMENTS.

APPROVED	CHECKED	DRAWN
NAH	MSS	MUR



PROJECT:
NTDC PO# CE/MP&M/M(P)/AM-VI/EO/
9417-29 DATED 14.11.2018 FOR PROCUREMENT
OF 220KV & 500KV PROTECTION & CONTROL PANELS

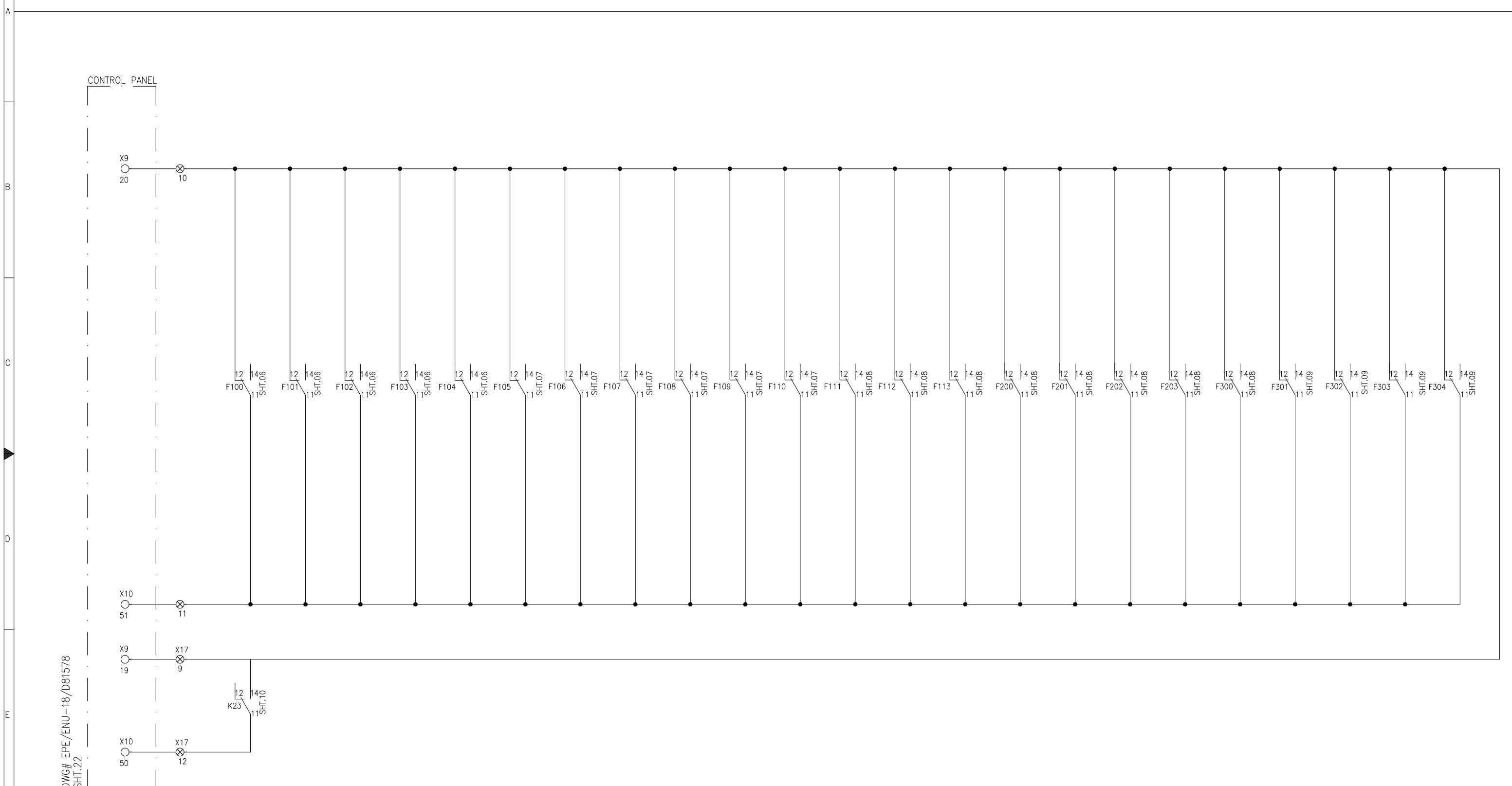
TITLE:

INDICATION AND AC SUPPLY DISTRIBUTION CIRCUIT
415 VAC AUXILIARY SUPPLY PANEL

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

DWG# EPE/ENU-18/B61598 SHT: 10 OF 10

DATE: 07.03.2019 AS BUILT REV: 0

INCOMER
STATUSMCB TRIP
STATUS

DWG# EPE/ENU-18/D81578

SHT.22

APPROVED	CHECKED	DRAWN
NAH	MSS	MUR



PROJECT:
NTDC PO# CE/MP&M/M(P)/AM-VI/EO/
9417-29 DATED 14.11.2018 FOR PROCUREMENT
OF 220KV & 500KV PROTECTION & CONTROL PANELS

TITLE:

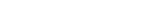
MCB TRIP STATUS CIRCUIT
415 VAC AUXILIARY SUPPLY PANEL

EPESOL Pvt. Ltd.
71-B Garden Block, New Garden Town, Lahore, Pakistan

DWG# EPE/ENU-18/B61598	SHT: 10a OF 10
DATE: 07.03.2019	AS BUILT

REV: 0

APPROVED	CHECKED	DRAWN	PROJECT: NTDC PO# CE/MP&M/M(P)/AM-VI/EO/ 9417-29 DATED 14.11.2018 FOR PROCUREMENT OF 220KV & 500KV PROTECTION & CONTROL PANELS	TITLE: 415 VAC TERMINAL DETAIL AUXILIARY SUPPLY PANEL	 EPE SOL Pvt. Ltd. 71-B Garden Block, New Garden Town, Lahore, Pakistan	DWG# EPE/ENU-18/B6599	SHT: 01 OF 05
NAH 	MSS 	MUR 				DATE: 07.03.2019	AS BUILT

APPROVED	CHECKED	DRAWN	PROJECT: NTDC PO# CE/MP&M/M(P)/AM-VI/EO/ 9417-29 DATED 14.11.2018 FOR PROCUREMENT OF 220KV & 500KV PROTECTION & CONTROL PANELS	TITLE: 415 VAC TERMINAL DETAIL AUXILIARY SUPPLY PANEL	 EPESOL Pvt. Ltd. 71-B Garden Block, New Garden Town, Lahore, Pakistan	DWG# EPE/ENU-18/B6599	SHT: 02 OF 05
NAH 	MSS 	MUR 				DATE: 07.03.2019	AS BUILT

Sr.	CABLE DESIGNATION	CORE CROSS SECTION	DESTINATION	LEGEND:												SCHEME DWG. REF: EPE/ENU-18/B6598														
A	1																													
A	2																													
A	3																													
A	4																													
A	5																													
A	6																													
B	7																													
B	8																													
B	9															TERMINATION B														
B	10																													
B	11																													
B	12																													
c	1	2	3	4	5	6	7	8	9	10	11	12																		
c																														
c																														
D																														
D																														
E																														
F																														
1	APPROVED	CHECKED	DRAWN	PROJECT: NTDC PO# CE/MP&M/M(P)/AM-VI/E0/9417-29 DATED 14.11.2018 FOR PROCUREMENT OF 220KV & 500KV PROTECTION & CONTROL PANELS												TITLE: TERMINAL DETAIL	DWG# EPE/ENU-18/B6599 SHT: 03 OF 05													
2	NAH	MSS	MUR													DATE: 07.03.2019 AS BUILT REV: 0														
3																														
4																														
5																														
6																														
7																														
8																														

LEGEND:



TEMPORARY SHORTENING LINK



PERMANENT LINK



END COVER

REMOTE DESTINATION

TERMINAL BLOCK
TERMINAL NO

TERMINAL STRIP
1X18, 1X7, 1X8, 1X9,
1X10, 1X11 & 1X19

LINK	REFERENCE		TERMINAL NO
	SHT	REF	
		1X18	
	08	/ 1E	1
	08	/ 1E	2
	08	/ 2E	3
	08	/ 2E	4
		1X7	
	08	/ 3E	1
	08	/ 3E	2
		1X8	
	08	/ 3E	1
	08	/ 4E	2
		1X9	
	08	/ 4E	1
	08	/ 5E	2
		1X10	
	08	/ 5E	1
	08	/ 6E	2
		1X11	
	08	/ 6E	1
	08	/ 6E	2
		1X19	
	08	/ 7E	1
	08	/ 7E	2
	08	/ 8E	3
	08	/ 8E	4



EPESOL Pvt. Ltd.
71-B Garden Block, New Garden Town, Lahore, Pakistan

Sr.	CABLE DESIGNATION	CORE CROSS SECTION	DESTINATION	LEGEND:												SCHEME DWG. REF: EPE/ENU-18/B6598					
A	1			REMOTE DESTINATION	TERMINAL BLOCK	TERMINAL NO		TERMINAL STRIP 1X12, 1X13, 1X14 & 1X15													
	2								LINK	REFERENCE		TERMINAL NO									
	3									SHT	/	REF									
	4								D-	1X12			TERMINATION B								
	5									09	/	1E									
	6								D-	1X13			B								
	7									09	/	1E									
	8								D-	1X14			ITEM DESIGNATION								
	9									09	/	2E									
	10								D-	1X15			TERMINAL NO								
	11									09	/	2E									
	12								D-	1X12			F110								
	1	2	3	4	5	6	7	8		09	/	3E									
									D-	1X13			F110								
										09	/	4E									
									D-	1X14			F111								
										09	/	4E									
									D-	1X15			F111								
										09	/	4E									
									D-	1X12			F12								
										09	/	1E									
									D-	1X13			F12								
										09	/	2E									
									D-	1X14			F13								
										09	/	3E									
									D-	1X15			F13								
										09	/	4E									
									D-	1X12			F14								
										09	/	1E									
									D-	1X13			F14								
										09	/	2E									
									D-	1X14			F15								
										09	/	3E									
									D-	1X15			F15								
										09	/	4E									
									D-	1X12			F16								
										09	/	1E									
									D-	1X13			F16								
										09	/	2E									
									D-	1X14			F17								
										09	/	3E									
									D-	1X15			F17								
										09	/	4E									
									D-	1X12			F18								

