

## **ANNEXURE: COOLING TOWER AREA MCC PANEL**

### **SPECIFICATION OF MCC PANEL FOR COOLING TOWER AREA MCC PANEL.**

The MCC Panel shall be made of 2mm thick CRCA sheet steel painted with POWDER COATING in SIEMENS GREY SHADE.

The Panel shall have BASE FRAME painted black enamel paint.

The offer shall include supply of MS STAND made of suitable size painted enamel black for mounting the panel. The ground clearance should be 750 mm.

The panel shall be provided with 3mm thick DETACHABLE GLAND PLATES for Incoming cable and Outgoing Cables.

The outgoing Motor Cables and Control and Remote Cables shall be taken through CABLE CHAMBER and terminated in the Terminal Blocks. The size of the Cable Chamber shall be of sufficient size for all the cables.

All the Doors of the MCC Feeders, Incoming SFU, Cable Chamber etc shall have individual doors which are lockable.

The panel shall be provided with EARTHING BOLTS on either side. Also, the Panel and the Frame ( STAND ) shall be earthed using 50 x 6 mm GI STRIP on either side.

DANGER BOARD of standard size made of MS Sheet with instructions in TELUGU, HINDI AND ENGLISH shall be fixed to the Panel.

The Control Transformer shall be placed in a separate CHAMBER. Control Bus Bars shall be of Copper of size 10mm x 5 mm ( P & N ).

The MAIN BUS BARS shall be of suitable size ALUMINIUM FOR R, Y, B AND N. The Connection from Incoming MCCB to the MAIN BUS BARS shall also be of suitable size ALUMINIUM.

The TYPICAL GA Drawing of the MCC Panels with SLD and Control Circuit are attached.

The BOM i.e COMPONENT LIST WITH PREFERRED MAKES is attached.

Anything required for correct operation of the system ( if not included in our specification and drawings ) may be added and intimated for approval.

NOTE : TB FOR MOTOR CABLES SHALL BE OF BOLTED TYPE WITH SEPARATORS, LINK TYPE FOR CT CONNECTIONS AND STACK TYPE SUITABLE FOR PIN TYPE LUGS FOR CONTROL CIRCUIT. ALL SHOULD BE OF SUITABLE RATING.

NOTE : ALL THE DRAWINGS AND BOM SHOULD BE GOT APPROVED BEFORE TAKING FOR MANUFACTURE

*Cooling Tower*  
BOM FOR MODIFICATION IN ~~Motor~~ AREA OF MILL

SR. NO	COMPONENT	MAIN INCOMER- 250 AMPS MCCB WITH O/C AND E/F PROTECTION ( Quantity1 No)	11 KW DOL STARTER (QUANTITY 4 NO'S)	3.7 KW DOL STARTER (QUANTITY 3 NOS )	63 AMPS MCCB (2 NOS)	REMARKS
1	MCCB/MPCB WITH OPERATING HANDLE MOUNTED ON THE DOOR.(EXTENDED OPERATION HANDLE COMPULSORY FOR MOTOR FEEDERS)	250 AMPS TPN MCCB WITH O/C, S/C AND E/F PROTECTION	63 AMPS MPCB (3POLE)	25 AMPS MPCB (3 POLE)	63 AMPS TPN MCCB WITH O/C, S/C AND E/F PROTECTION	SIEMENS / SCHNEIDER/ L&T
2	MAIN CONTACTOR WITH 230V AC COIL AND 4 NO AUX CONTACTS	x	80 AMPS WITH 230V AC COIL	32 AMPS WITH 230V AC COIL		SIEMENS / SCHNEIDER/ L&T
3	THERMAL OVER LOAD RELAY ( INDEPENDENT MOUNTING ) MAN / AUTO RESET	x	16-25 AMPS	6-10 AMPS		SIEMENS / SCHNEIDER/ L&T
4	AUXILIARY CONTACTOR WITH 230V AC COIL AND 4NO + 4 NC CONTACTS	x	YES	YES		SIEMENS / SCHNEIDER/ L&T
5	PVC INSULATED MULTI STRAND FLEXIBLE COPPER WIRE FROM MAIN BUS BARS TO MCCB/MPCB	x	10 SQMM	4 SQ MM	10 SQMM	POLYCAB / FINOLEX
6	PVC INSULATED MULTI STRAND FLEXIBLE COPPER WIRE FROM MCCB/MPCB TO CONTACTOR	x	10 SQMM	4 SQ MM		POLYCAB / FINOLEX
7	PVC INSULATED MULTI STRAND FLEXIBLE COPPER WIRE FROM CONTACTOR TO OVERLOAD RELAY	x	10 SQMM	4 SQ MM		POLYCAB / FINOLEX
8	PVC INSULATED MULTI STRAND FLEXIBLE COPPER WIRE FROM OVERLOAD RELAY TO MAIN TERMINAL BLOCK	x	10 SQMM	4 SQ MM		POLYCAB / FINOLEX
9	CAST RESIN TYPE TRANSFORMER KAPPA / KALPA / AE MAKE OF SUITABLE VA	x	50A/1A	30A/1A		KAPPA / KALPA / AE
10	2.5 SQ MM PVC INSULATED MULTI STRAND FLEXIBLE COPPER WIRE FOR ALL CONTROL WIRING INCLUDING METERING	YES	YES	YES		POLYCAB / FINOLEX
11	PVC INSULATED MULTI STRAND FLEXIBLE COPPER WIRE FROM OVERLOAD RELAY TO MAIN TERMINAL BLOCK	x	10 SQMM	4SQ MM	10SQMM FROM MCCB O/G TO TB	POLYCAB / FINOLEX
12	AMMETER	x	SUITABLE RANGE	SUITABLE RANGE	X	AE
13	AMMETER SELECTOR SWITCH	YES	X	X	X	VAISHNO / KAYCEE

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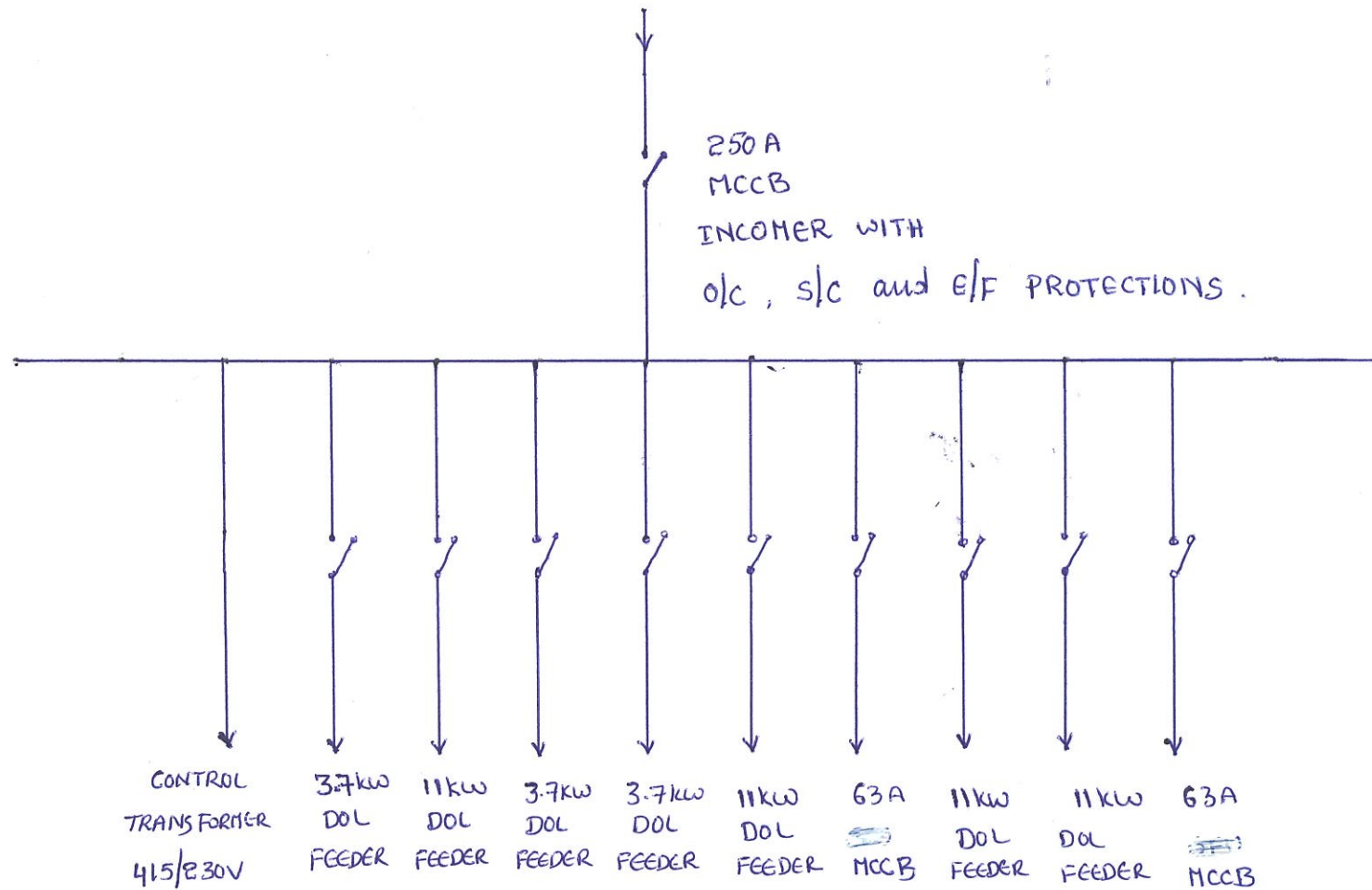
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14	VOLTMETER	0-600V	X	X	X	AE
15	VOLTMETER SELECTOR SWITCH	RY, YB, BR, CFF	X	X	X	VAISHNO / KAYCEE
16	MOTOR START ( GREEN ) AND STOP MUSHROOM TYPE SELF LOCKABLE ( RED ) PUSH BUTTON SWITCHES	X	YES	YES	X	VAISHNO / SIEMENS / ABB
17	MAIN R Y B LED TYPE INDICATING LAMPS	RED, YELLOW, BLUE	X	X	X	VAISHNO / SIEMENS /
18	MOTOR ON INDICATING LED LAMP RED	x	YES	YES	X	VAISHNO / SIEMENS /
19	MOTOR O / L TRIP LED INIDCATING LAMP	x	YES	YES	X	VAISHNO / SIEMENS /
20	LOCAL / OFF / REMOTE SELECTOR SWITCH 10 AMPS RATING	x	YES	YES	X	VAISHNO / KAYCEE
21	TERMINAL BLOCK FOR MOTOR CABLE OF SUITABLE RATING WITH SEPERATORS BETWEEN TERMINALS ( BOLTED TYPE )	X	YES	YES	YES	REPUTED
22	CONTROL FUSE	X	YES	YES	X	SIEMENS / ABB
23	TERMINAL BLOCK FOR CT CONNECTIONS TO AMMETER AND ASS WITH CT SHORTING PROVISION	YES	YES	YES	X	REPUTED
24	TERMINAL BLOCK FOR CONTROL AND REMOTE OPERATIONS	X	YES	YES	X	REPUTED
25	20A METAL CLAD 3 PIN SOCKET WITH 20A DP MCB WITH METAL CLAD 3 PIN PLUG	1 No				BHARATIA CUTTLER HAMMER
26	SINGLE PHASE PREVENTER	X	YES	YES		ABB/SIEMENS / L&T/GIC
27	COPPER CONTROL BUS BAR(P&N) 230V AC	COPPER BUS BAR OF SIZE 10MM X 5 MM( THE CONTROL WIRES SHOULD BE CONNECTED TO THE BUSBAR USING SCREWS. ROUND TYPE LUGS SHOULD BE USED				
28	CONTROL TRANSFORMER	1.5KVA CONTROL TRANSFORMER, 1 PHASE, CAST RESIN TYPE, PRIMARY VOLTAGE:415V AC WITH +/-2.5% & +/- 5% TAPS, SECONDARY VOLTAGE:240V AC, SHORT TIME RATING:1.5KVA, MAKE: PRECISE, QUANTITY:2NOS				
29	Current Transducer 1 -Ph, CT sec input 1A, Auxiliary supply: 230V AC, Dual DC O/P: 4-20 mA, Make: AE		YES	YES		AE

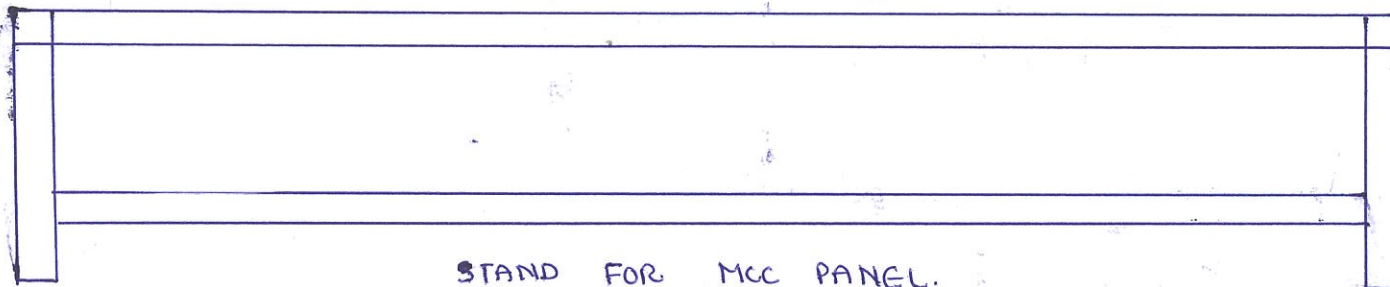
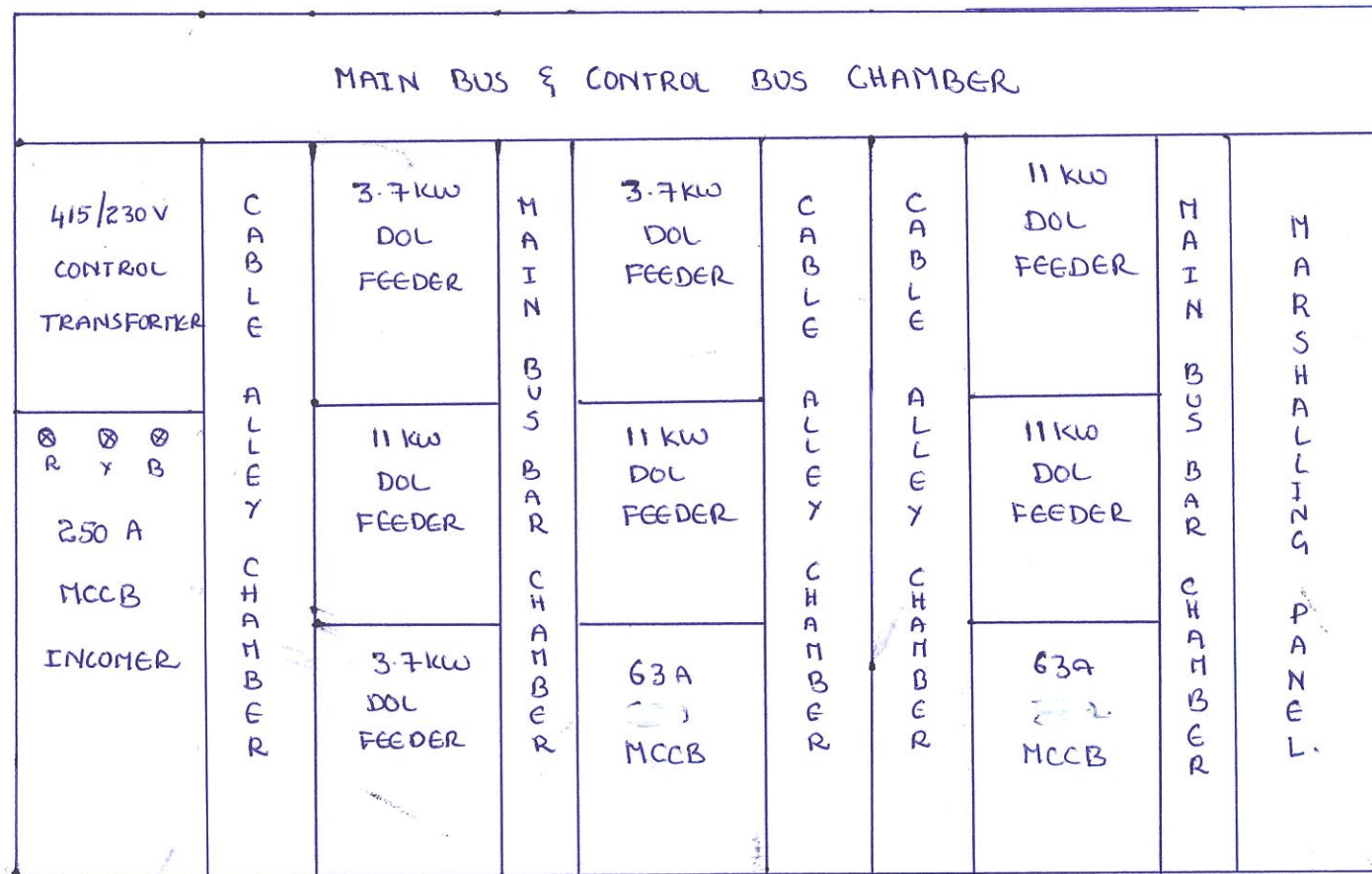
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# SLD OF MCC PANEL:



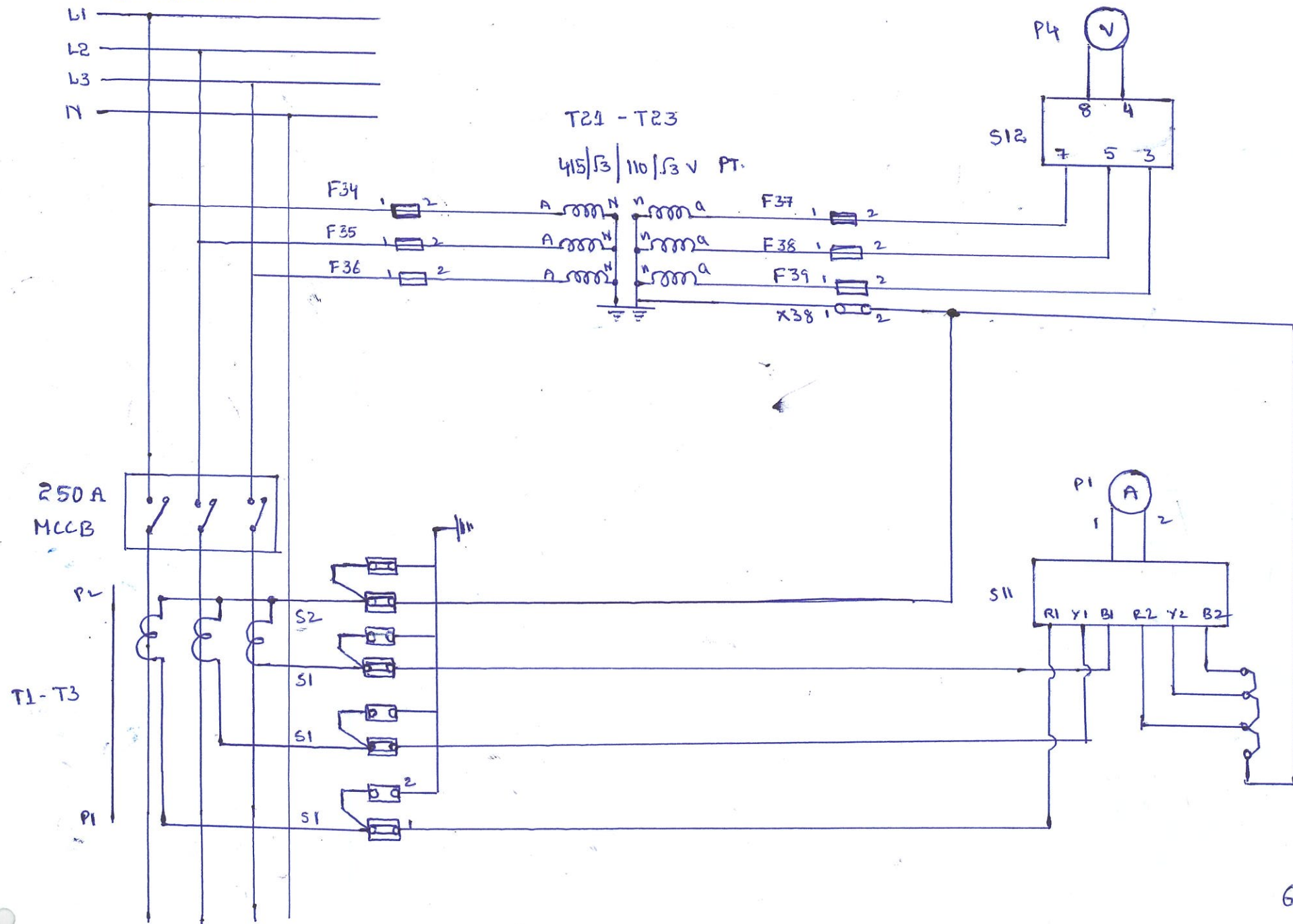
# GA DRAWING OF MCC PANEL



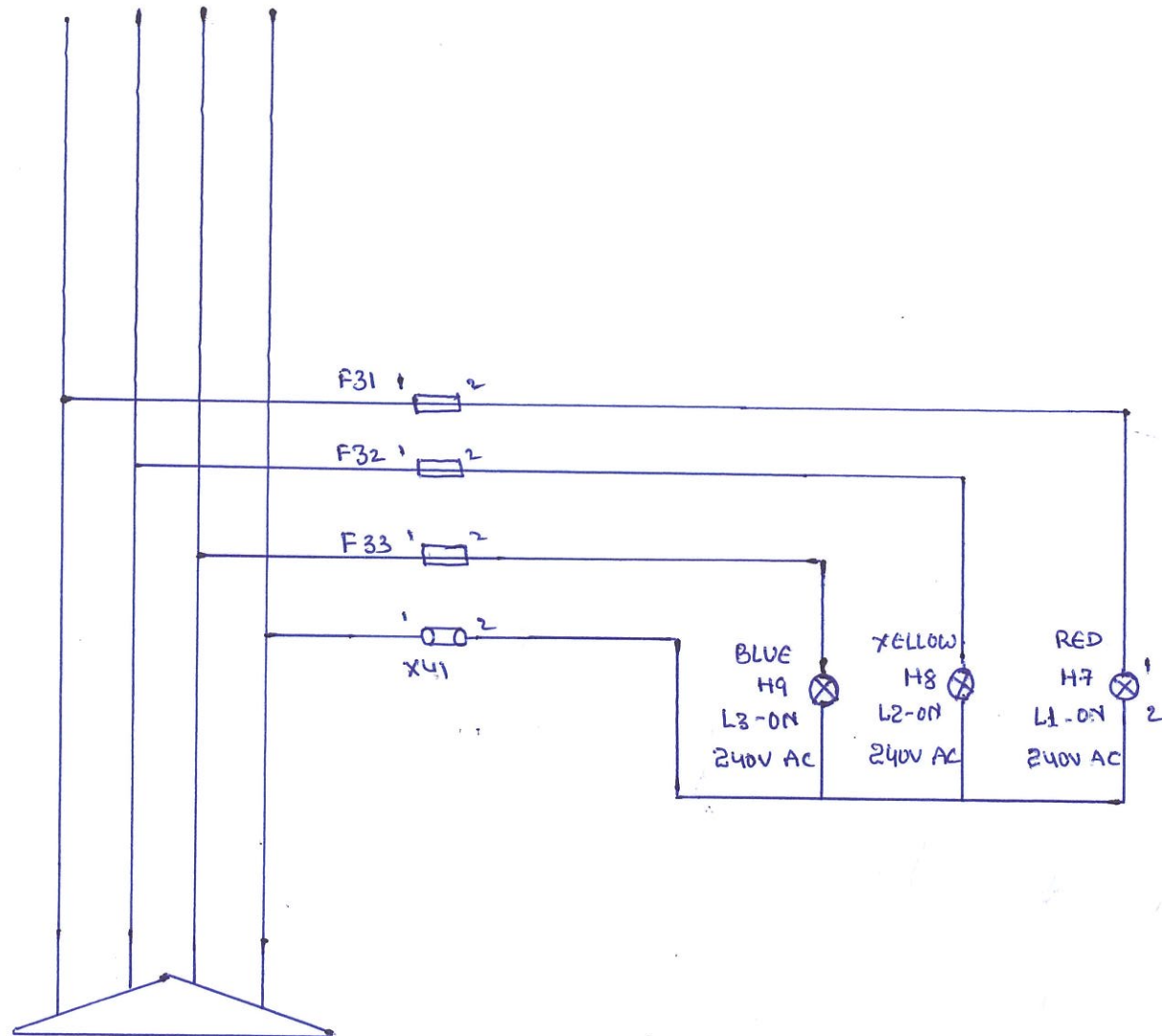


## 250A HCB INCOMER POWER CIRCUIT DIAGRAM

3~N, 50Hz, 415V



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250A MCCB INCOMER.

3~N, 50Hz, 415V



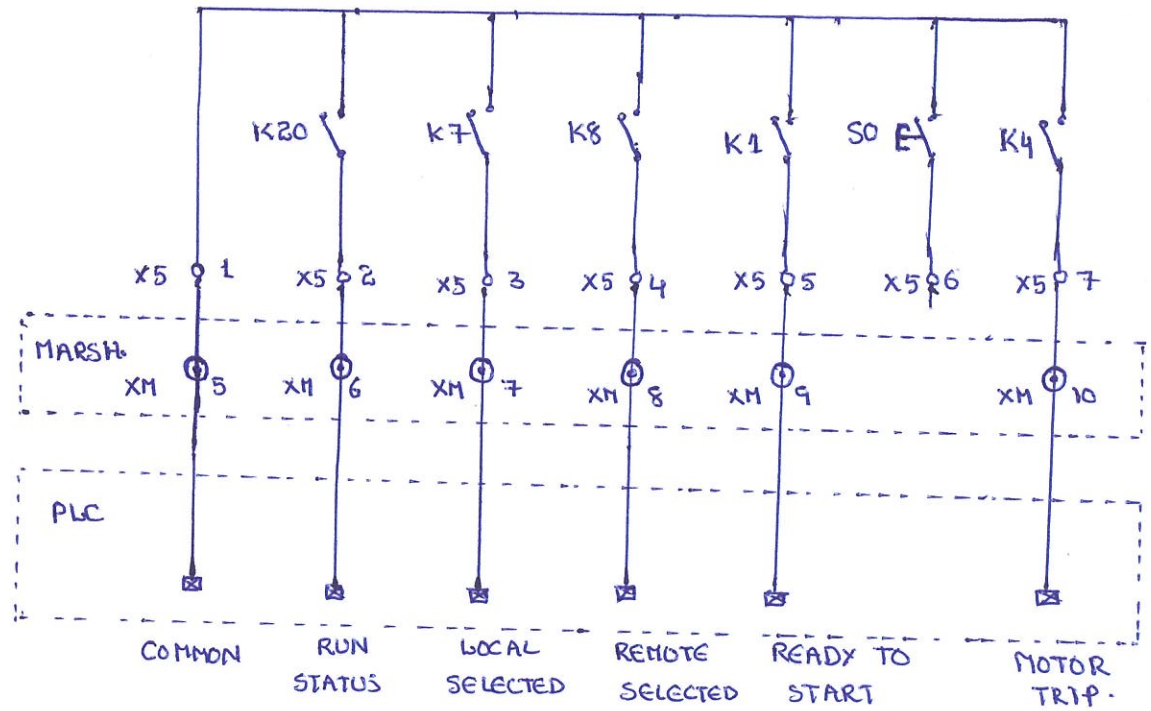
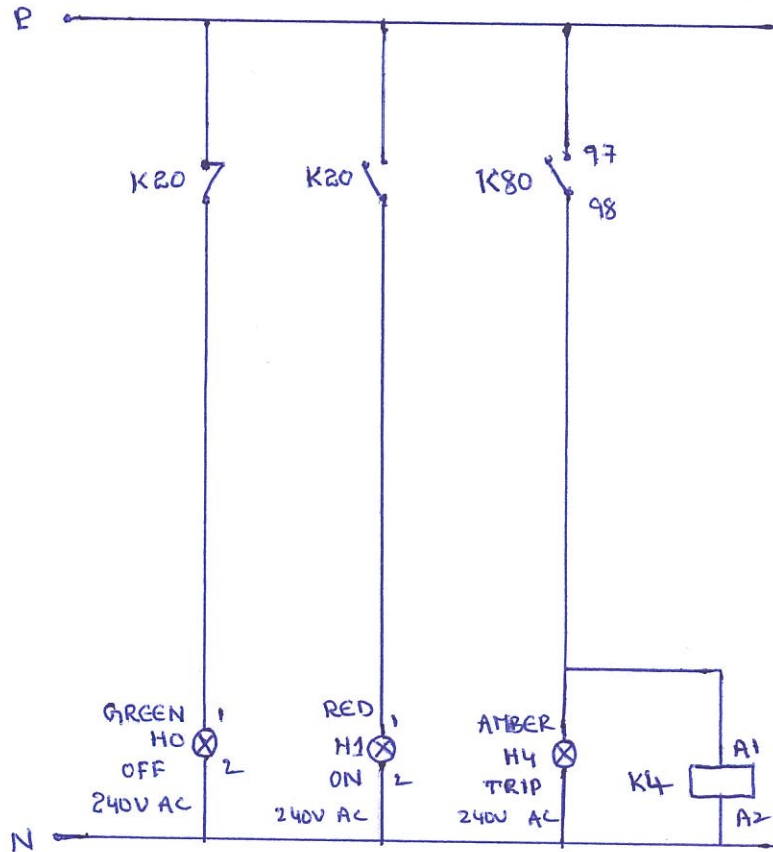


### CONTROL CIRCUIT DIAGRAM FOR DOL FEEDER

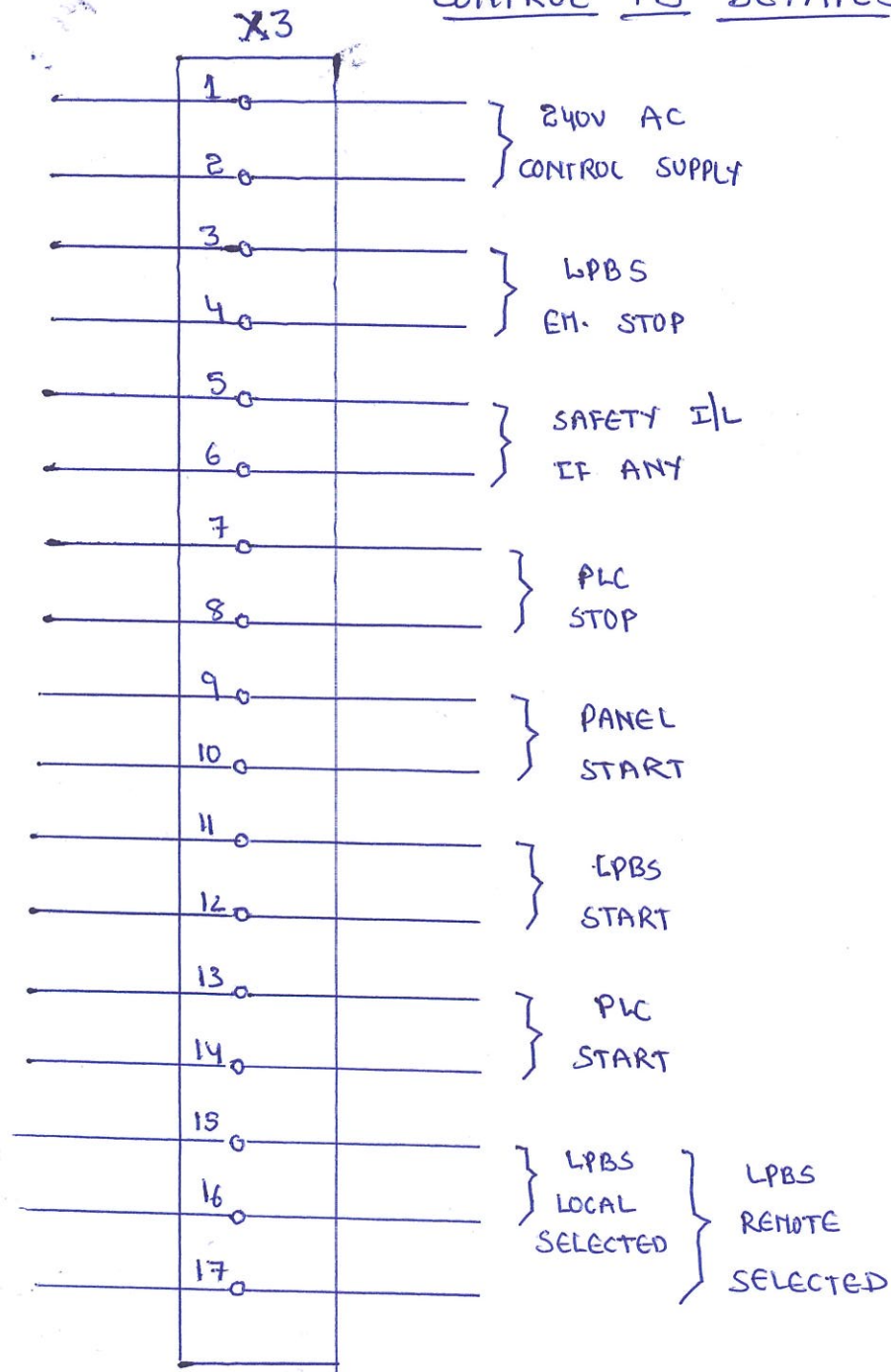


## INDICATION CIRCUIT FOR DOL FEEDER

## INTERFACING BETWEEN DOL FEEDER AND MARSHALLING



# CONTROL IO DETAILS



## TERMINAL GROUP

- X1 = CT TERMINALS
- X3 : 240V AC TERMINALS
- X5 : SPARE CONTACT TERMINALS
- : LPBS TERMINALS.
- ☒ : PLC TERMINALS.