

SHT.ND.	DESCRIPTION	REVISION ND.
02	AUX. SUPPLY, HEATING & LIGHTING CIRCUIT	02
03	MOTOR CIRCUIT	02
04	CONTROL CIRCUIT	02
05	SIGNALLING CIRCUIT	02
06	ALARM & TRIP CIRCUIT	02
07	CT CKT. & INDICATOR DIAGRAM	02
08	TERMINAL BLOCKS	02
09	TERMINAL BLOCKS	02
10	LIST OF PARTS	02
11	BOM OF MARSHALLING BOX	02
12	FRONT & PLAN OF M.BOX	02
13	SIDE VIEW OF M.BOX	02

NOTES:

1. WHERE POSSIBLE ALL GEAR SHOWN IN OPEN OR DE-ENERGISED POSITION.
2. THE COLOUR OF THE CABLE TO BE USED FOR EACH CONNECTION IS INDICATED BY ANY OF THE LETTERS MARKED AS FOLLOWS R-RED,Y-YELLOW,B-BLUE, N-BLACK,G-GREY,E-GREEN (FOR R,Y,B PHASE, DC SUPPLY, CONTROL SUPPLY AND EARTHING) SEPARATED FROM THE REMAINING WIRING.
3. CONNECTION WITH GREY AND GREEN WIRES SHOULD BE KEPT PHYSICALLY SEPARATED FROM THE REMAINING WIRING.
4. CABLES TO BE USED FOR WIRING R,Y,B MARKED THUS * 16ND, 10SQMM, MARKED THUS \$ 4SQMM AND REMAINING R,Y,B,N,G & E ARE 2.5 SQMM SIZE PVC INSULATED 1100 VOLTS GRADE STRANDED COPPER CABLE.
5. LEADS MARKED FOR TRIP CIRCUITS ARE TO BE PREFIXED WITH P.V.C. SLEEVING MARKED TRIP IN RED.
6. OVERLOAD RELAY SETTING FOR FAN 10 AMPS.
7. WIRE MARKING SHALL BE DONE WITH ENGRAVED INTERLOCKING TYPE FERRULES.
8. IF SIEMENS MAKE CONTACTORS & THERMAL RELAYS ARE USED INPLACE OF L&T MAKE THEN TERMINAL MARKING WILL BE USED AS PER SIEMENS.
9. MAKE OF EQUIPMENTS AS PER NTPC APPROVED VENDORS.
10. ALL T.B. SHALL BE STUDTYPE WITH RING TYPE LUGS FOR CABLE.
11. ALL CT CABLES SHALL BE 4 SQMM.
12. CT NOT IN USED SHALL BE KEPT SHORTED.

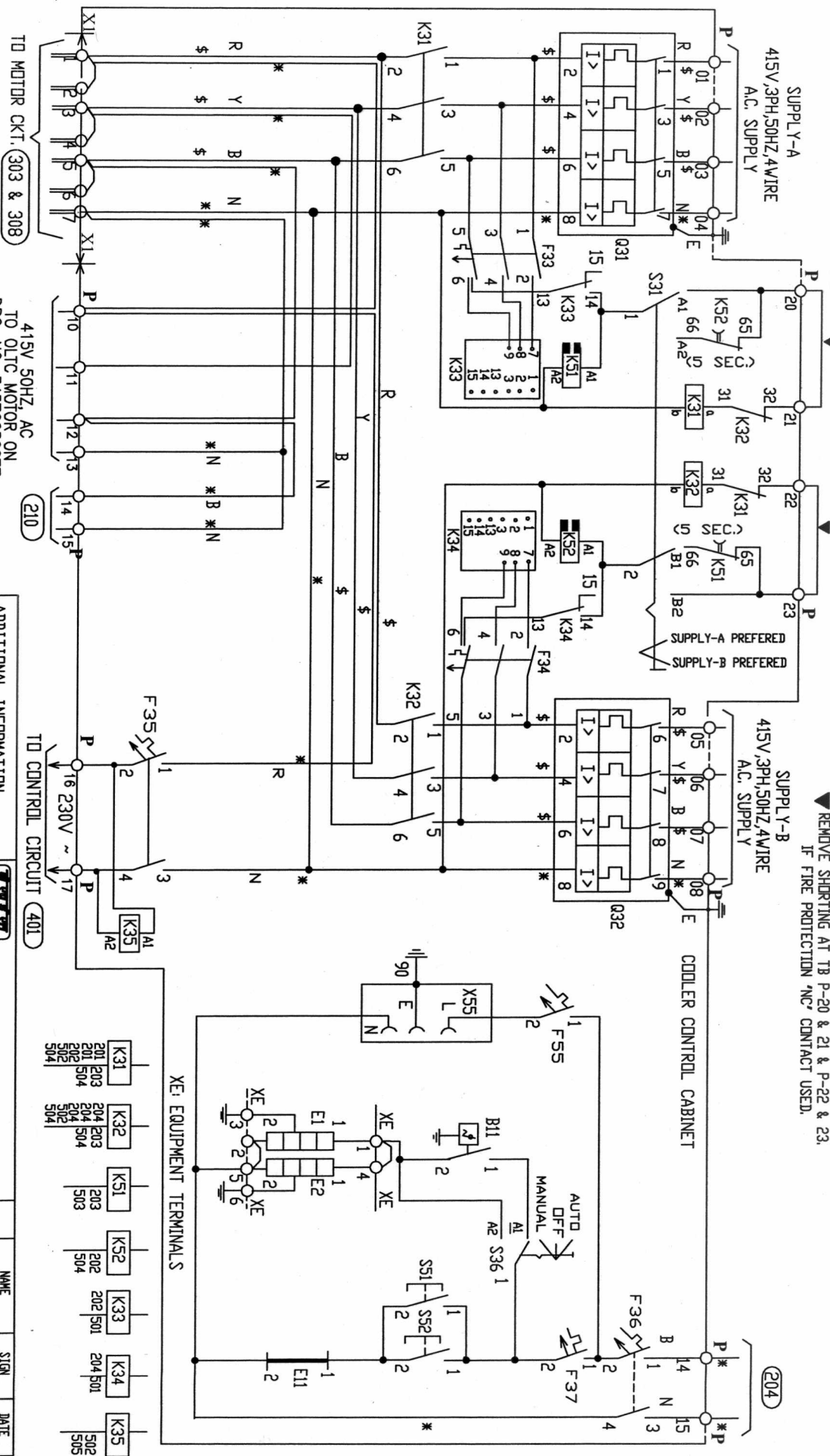
PJ - 140630 983

INVENTORY NO.	SIGN AND DATE	REF. DRG. NO.
---------------	---------------	---------------

REV	DATE	ALTERED CHECKED	REV	DATE	ALTERED CHECKED
ZONE		APPROVED	ZONE		APPROVED

NTPC DRG. NO. 9549-501-PVE-L-01		PD. NO. :- CS-9549-501-2-FC-NDA-6207	
ADDITIONAL INFORMATION W.D.NO.71190P17400		TYPE OF PRODUCT OR NAME OF CUSTOMER/PROJECT COOLED STATION TRANSFORMER	
STATUS OF DRAWING 'U'		110MVA, 132/11.5-11.5KV, 3PH, 50HZ, D.NAF/DNAN	
DISTRIBUTION OF PRINTS		M/S NTPC LTD DARLIPALLI SUPER THERMAL POWER PROJECT-2X600MW	
THE	REV	REV	REV
1	2	3	4
REV	DATE	ALTERED	BDST
02	17/11/2015	CHECKED	BDST
ZONE		APPROVED	DPRL
DRG REVISED AS PER CUSTOMER COMMENTS.			
TITLE G.A. DIAGRAM OF COOLER CONTROL & G.A.		DEPT-TRE UN. TOL. DIN. C/M/F	
DRAWING NO. 34576250076		SCALE	
SHT NO. 01		WEIGHT (KGS)	
NO OF SHT 13		REF. TO ASSY. NO.	
REV. 02		ITEM NO.	
		NO. OF	

▼ REMOVE SHORTING AT TB P-20 & 21 & P-22 & 23.
IF FIRE PROTECTION 'NCP' CONTACT USED.



TO MOTOR CKT. 303 & 308
415V 50HZ. AC
TO OLC MOTOR ON
DRG. NO. 34576250077
(502)

ADDITIONAL INFORMATION
W.D.ND.71190P17400



BHARAT HEAVY ELECTRICALS LTD.
JHANSI

NAME	SIGN	DATE
SNS1		29/04/2005
SNS1		29/04/2005
DRP1		03/07/2005

REV	DATE	ALTERED BY	APPROVED BY
02	17/11/2005	CHECKED	APPROVED
02	17/11/2005	CHECKED	APPROVED

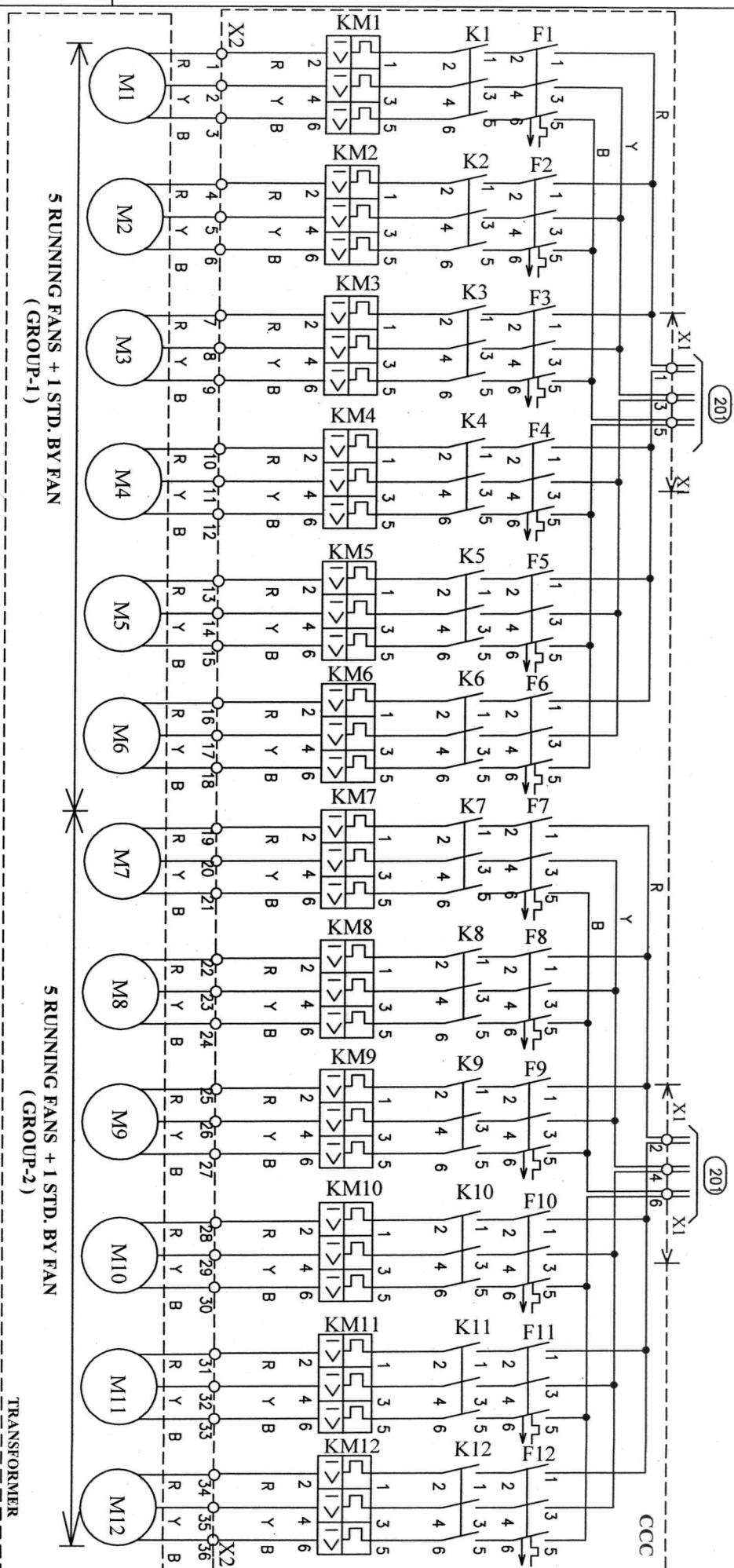
DEPT-TITLE	DATE	SCALE	WEIGHT	REF. TO ASSY. NO.	ITEM NO.	NO. OF
CODE-406	17/11/2005	N.A.	N.A.	N.A.	N.A.	N.A.

REV	DATE	ALTERED BY	APPROVED BY
02	17/11/2005	CHECKED	APPROVED
02	17/11/2005	CHECKED	APPROVED

DEPT-TITLE	DATE	SCALE	WEIGHT	REF. TO ASSY. NO.	ITEM NO.	NO. OF
CODE-406	17/11/2005	N.A.	N.A.	N.A.	N.A.	N.A.

TITLE
G.A. DIAGRAM OF COOLER CONTROL &
G.A. (AUXILIARY SUPPLY, HEATING
& LIGHTING CIRCUIT)

REV.	NO.	DATE
02	34576250076	02



INVENTORY NO.

SIGN AND DATE

REF. DRG. NO.

REV. DATE
CHECKED
APPROVEDREV. DATE
CHECKED
APPROVEDREV. DATE
CHECKED
APPROVED
02 17/11/2015
REVISION IN SHEET 05,06 & 09.ADDITIONAL INFORMATION
W.D.NO.71190P17400BHARAT HEAVY ELECTRICALS LTD.
JHANSIDEPT.-TBE
JUN. TOL.
C/M/FSCALE
N.A.WEIGHT (KG)
N.A.ITEM NO.
N.A.REV. NO.
N.A.DATE
29/04/2015
29/04/2015
03/07/2015NO. OF
ITEM
N.A.TITLE
G.A. DIAGRAM OF COOLER CONTROL & G.A.

MOTOR CIRCUIT

DRAWING NO.
34576250076

SHT NO 03 NO OF SHT 13

SIGNATURE NOT REQUIRED AS IT IS SYSTEM GENERATED DRAWING SIZE A3

92005296250076

403

404

405

406

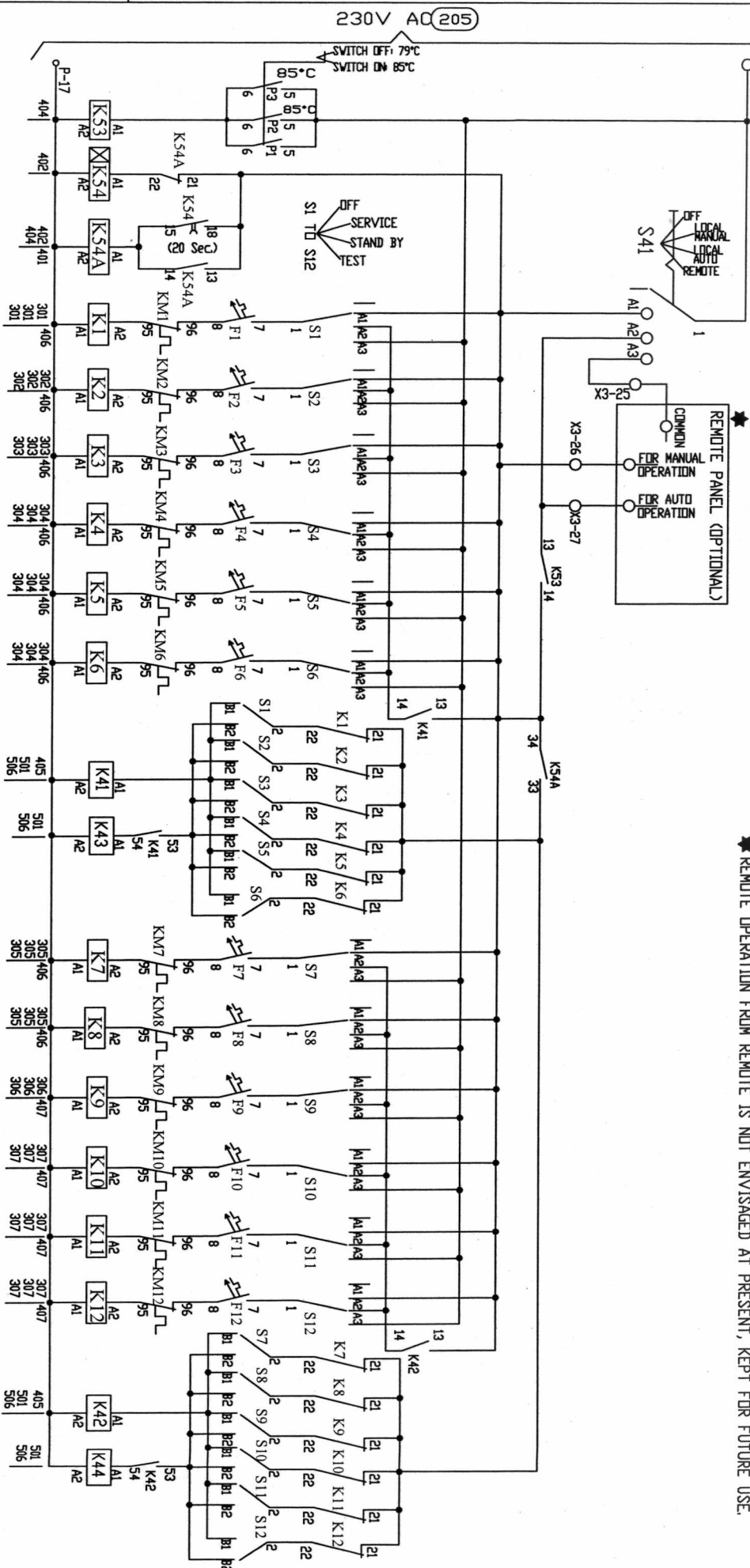
407

408

409

410

★ REMOTE OPERATION FROM REMOTE IS NOT ENVISAGED AT PRESENT, KEPT FOR FUTURE USE.



SIGN AND DATE

REF. DRG. NO.

S1 TO S8

0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

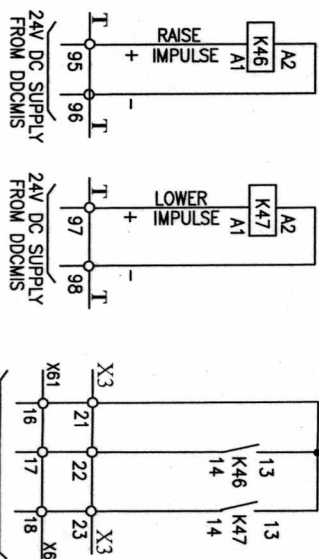
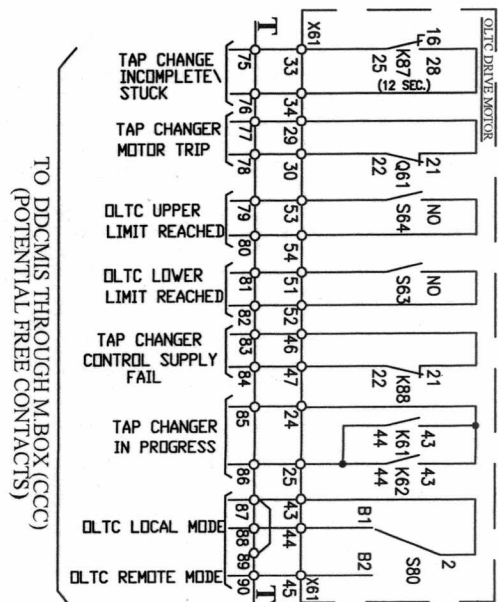
OFF SERVICE/STANDBY TEST

ADDITIONAL INFORMATION
W.D.ND.71190P17400BHARAT HEAVY ELECTRICALS LTD.
JHANSIDEPT.-TOL
DIN. C/M/FSCALE
N.A.

WEIGHT (KG) REF. TO ASSY. NO.

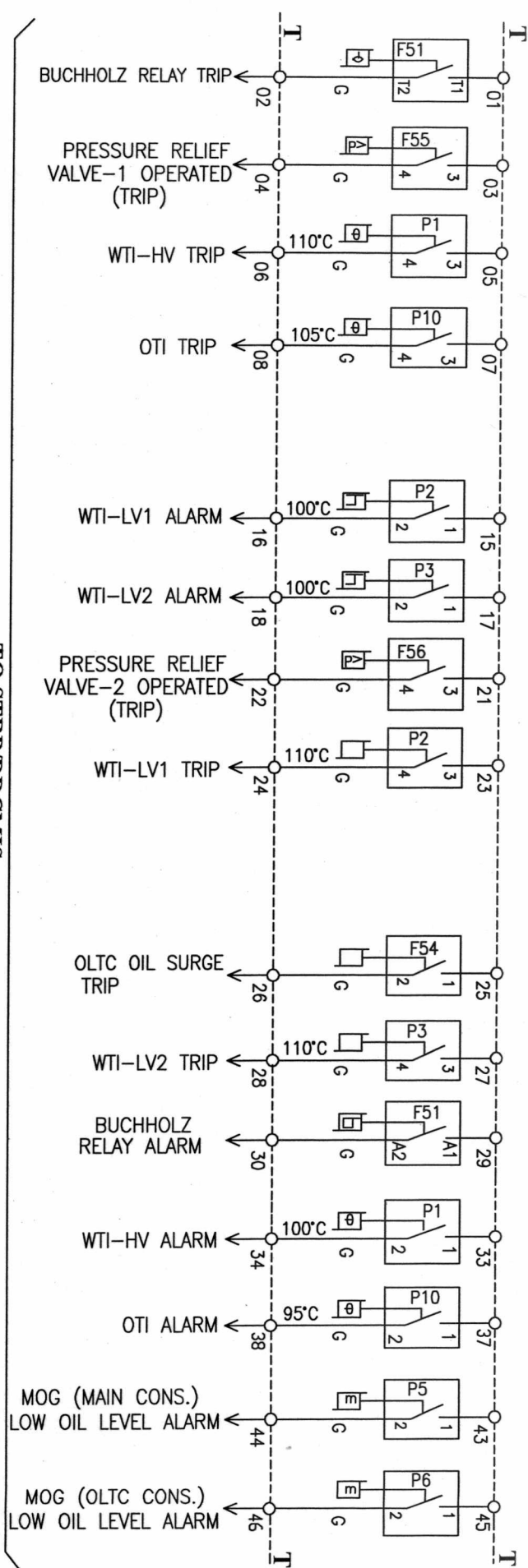
DATE
29/04/2005
29/04/2005
03/07/2005REV. NO.
N.A.TITLE
G.A. DIAGRAM OF COOLER CONTROL &
CONTROL CIRCUITDRAWING NO.
34576250076REV. NO.
02

SIGNATURE NOT REQUIRED AS IT IS SYSTEM GENERATED DRAWING SIZE A3

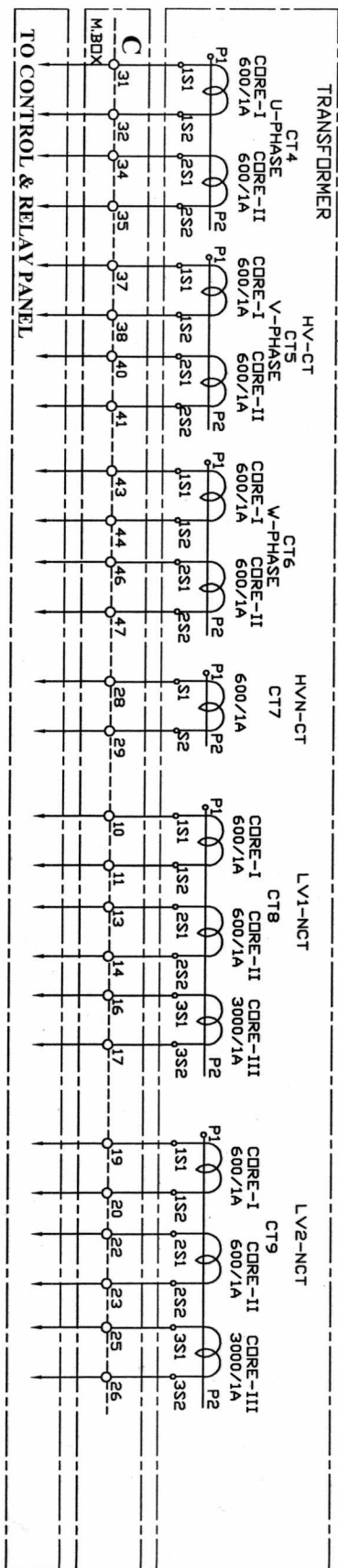


NO. 0	TEM	N.A.
-------	-----	------

REV.
02



TO STRP/DDCMIS



NOTE:- OTI & WTI SETTINGS ARE TENTATIVE AND SAME SHALL BE FINALISED AFTER TEMP. RISE TEST.

ADDITIONAL INFORMATION
W.D.NO.71190P17400



DIAGRAM OF COOLER CONTROL & ALARM, TRIP & CT CIRCUIT

DATE 29/04/2015
BY SSI
CHECKED SSI
APPROVED SSI
DATE 29/04/2015

DATE 17/11/2015
BY SSI
CHECKED SSI
APPROVED SSI
DATE 17/11/2015

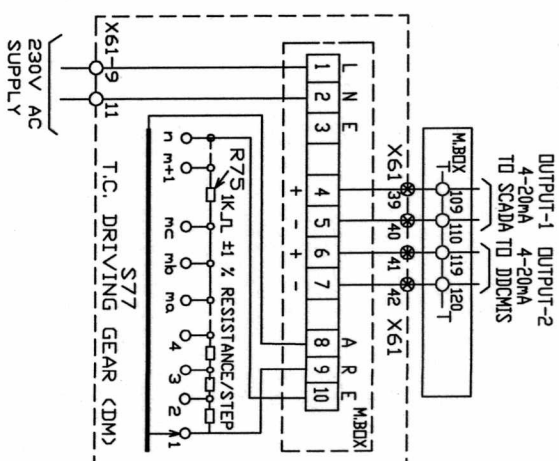
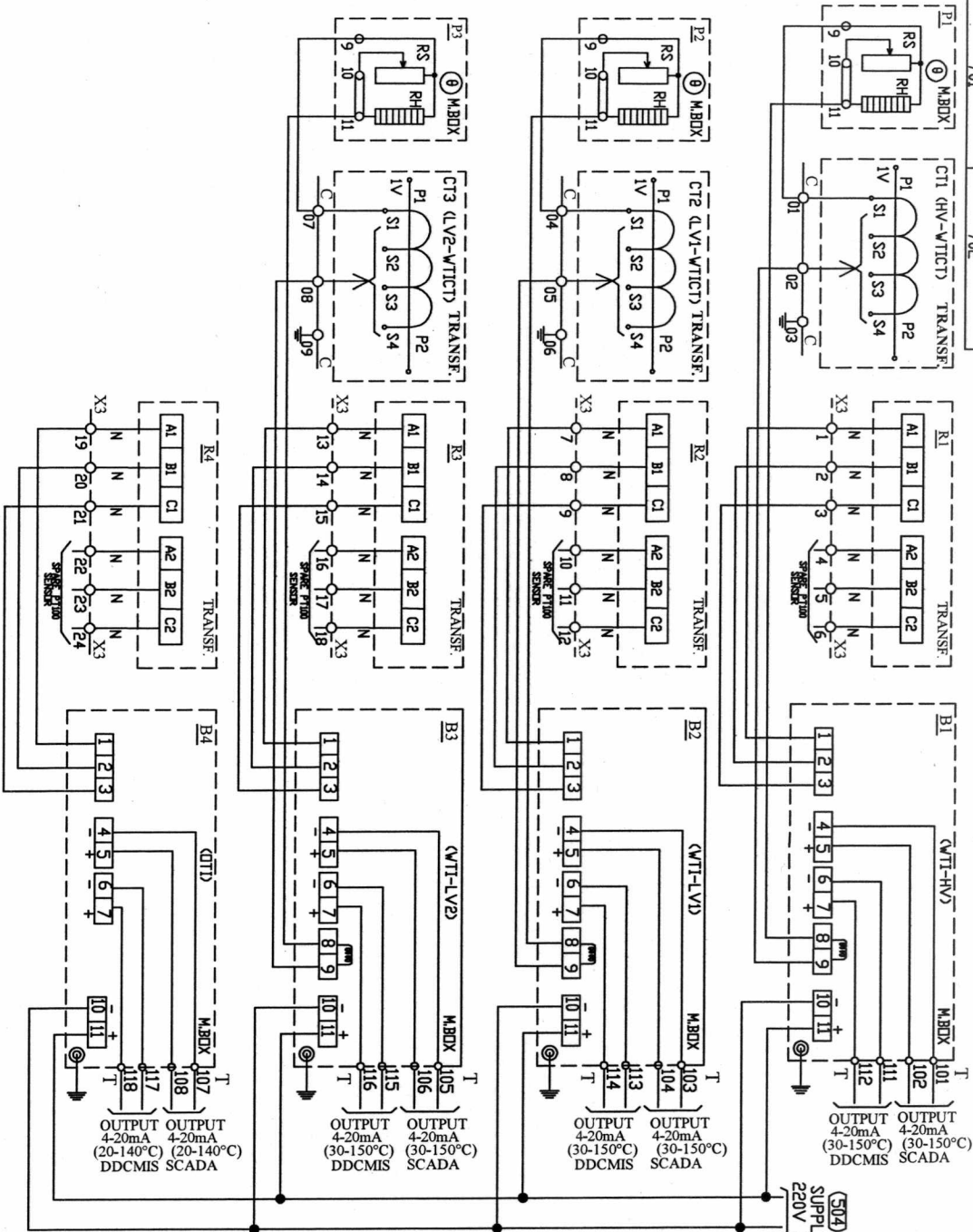
DATE 17/11/2015
BY SSI
CHECKED SSI
APPROVED SSI
DATE 17/11/2015

DATE 17/11/2015
BY SSI
CHECKED SSI
APPROVED SSI
DATE 17/11/2015

DATE 17/11/2015
BY SSI
CHECKED SSI
APPROVED SSI
DATE 17/11/2015

DATE 17/11/2015
BY SSI
CHECKED SSI
APPROVED SSI
DATE 17/11/2015

SIGNATURE NOT REQUIRED AS IT IS SYSTEM GENERATED DRAWING SIZE A3



NOTE:- 1. FOR CT PARAMETER REFER RATING & DIAGRAM PLATE

ADDITIONAL INFORMATION
W.D.NO.71190P17400



DIAGRAM OF COOLER CONTROL & CT CKT. & INDICATOR DIAGRAM

DATE: 29/04/2005
BY: SSI
CHECKED: SSI
APPROVED: SSI

REV. DATE ALTERED
02 17/11/2005 CHECKED BSI
02 17/11/2005 APPROVED DPR

DEPT. TITL. JHANSI
CODE-406

SCALE N.A.

WEIGHT (KG) REF. TO ASSY. NO.

ITEM NO. 13
REV. 02

INVENTORY NO.

REV. DATE

ALTERED
CHECKED
APPROVED

ZONE

DATE

ALTERED
CHECKED
APPROVED

ZONE

DATE

ALTERED
CHECKED
APPROVED

ZONE

REVISION IN SHEET 05/06 & 09.

DATE

ALTERED
CHECKED
APPROVED

ZONE

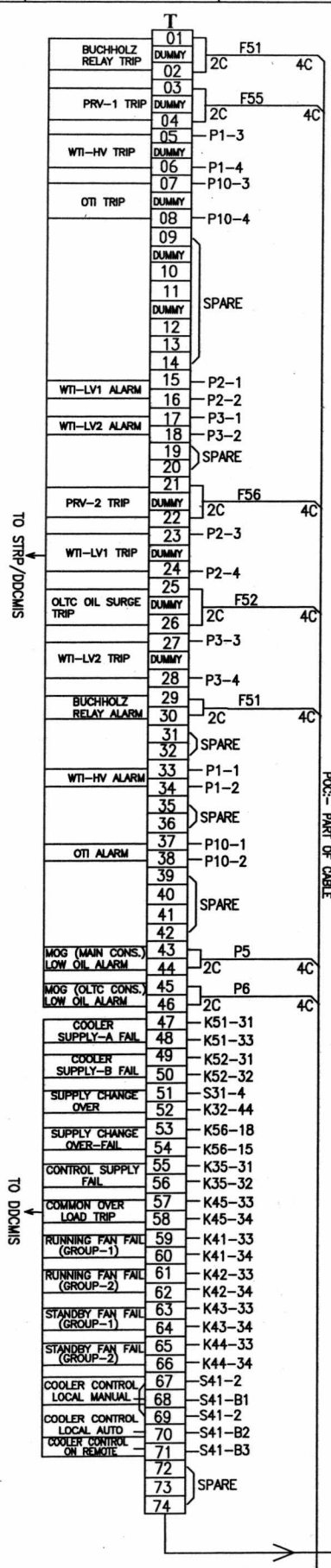
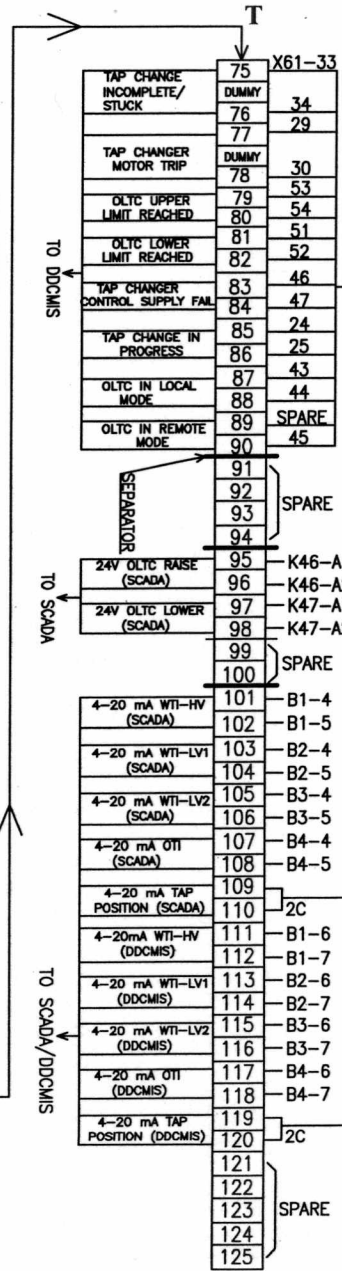
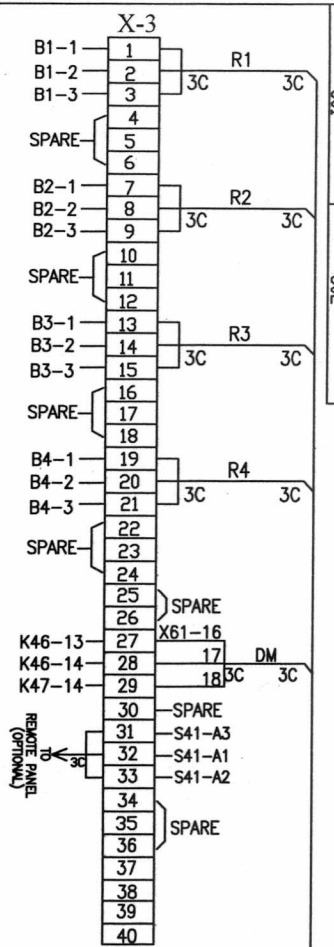
DATE

ALTERED
CHECKED
APPROVED

ZONE

DATE

ALTERED
CHECKED
APPROVED



TO TRANSF.

DUMMY-TERMINAL BLOCK WITH OUT NO.

ADDITIONAL INFORMATION
W.D.NO.71190P17400

BHARAT HEAVY ELECTRICALS LTD.
JHANSI

REV DATE ALTERED
CHECKED
APPROVED

REV DATE ALTERED
CHECKED
APPROVED

REV DATE ALTERED
CHECKED
APPROVED

DEPT-RE
JHANSI

SCALE
N.A.

WEIGHT (K.G.)
N.A.

TITLE
G.A. DIAGRAM OF COOLER CONTROL & TERMINAL BLOCKS

DRAWING NO.
34576250076

92005276250076.DWG

LOCATION	ITEM NO.	QTY	DEVICE	DESCRIPTION	TYPE	MAKE
MBOX	01	002	G31 & G32	MCCB (63A), 36KA, 4 POLE 415V AC	DM-100 DCM-2500	L&T/SIEMENS
MBOX	02	002	K31 & K32	AIR BREAK CONTACTOR 415V, COIL 240V, 70A	MX70- ST19002	L&T/SIEMENS
MBOX	03	002	K33 & K34	ASYMMETRY RELAY 415V AC UNDER VOLTAGE OPERATION AT 75% AUTO RESET	DHL S1	MOULTEC
MBOX	04	002	K31 & K32	CONTACTORS, 240V AC, 2ND+2NC WITH ADD ON TIMED BLOCK OFF DELAY TYPE 1-30 SEC.(IND+MCO)	DISCREET+ C3207P1	BOH
MBOX	05	001	F36	HEATER CKT. BREAKER 2P, 16A, 240V, AC	BR20160C	L&T/SIEMENS
MBOX	06	001	K35	AUX. CONTACTOR, 4A, 230V, 2ND+2NC	MX02EE- CS94020	L&T/SIEMENS
MBOX	07	001	F35	CONTROL CKT. BREAKER 2P, 6A, 240V, AC	BR20060D	L&T/SIEMENS
MBOX	08	001	S36	ROTARY SWITCH 2WAY WITH DFF, 6A, 440V	S5- 61025-B13	SALZER/ KAYCEE
MBOX	09	001	B11	THERMOSTAT SWITCH 30-85°C	STEM	GURISH/VIKAS
MBOX	10	002	E1 & E2	HEATERS, 75/80V, 240V		ASHOKA/EE/ EQUITY.
MBOX	11	002	S51 & S52	DODR SWITCH 0.25A, 240V	901	IEC/PI/ ESSEN
MBOX	12	001	E11	FLUORESCENT TUBE, 18V, 240V, WITH COVER		BAJAJ/PHILIPS/ CRIDPTON
MBOX	13	001	X55	PLUG AND SOCKET, 3PIN, 10A, 240V, AC, 2P+E	AP10+AS10	SCHINDER/ ANCHOR/B&C
MBOX	14	001	S31	SUPPLY SELECTOR, 2WAY-ND-OFF, 10A, 4P 440V	S10- 61040-B13	SALZER/ KAYCEE
MBOX	15	012	F1 TO F12	FAN CIRCUIT BREAKER, 4P, 6A, 415V	BB40060C	L&T/SIEMENS
MBOX	16	001	F38	SUPPLY CIRCUIT BREAKER, 6A, 2P, 220V DC	SSX520678C	SIEMENS/L&T
MBOX	17	002	F33 & F34	CIRCUIT BREAKER, 2A, 3P, 415V AC	BR30020C	L&T/SIEMENS
MBOX	18	001	F37	CIRCUIT BREAKER, 2A, 1P, 240V AC	BB10020C	L&T/SIEMENS
MBOX	19	001	S41	COOLER CONTROL SELECTOR, 10A, 4P, 440V 3WAY WITH DFF	S10-61100 -B13	SALZER/ KAYCEE
MBOX	20	002	K41 & K42	AUX. CONTACTOR, 230V, AC 4ND	MX004E- CS94042	L&T/SIEMENS
MBOX	21	012	S1 TO S12	ROTARY CAM SWITCH 3WAY, 3P WITH DFF 10A, 440V	S10- 61100-B13	SALZER/ KAYCEE
MBOX	22	012	K1 TO K12	FAN MOTOR CONTACTORS, 230V AC, 1NC, 12A, 415V	MX12 -CS94109	L&T/SIEMENS
MBOX	23	001	K54	TIME DELAY RELAY 230V, AC 0.1s-10h 2-CHANGE OVER CONTACTS	2A50T5	GIC (MANAGED BY L&T)
MBOX	24	004	K43, K44, K53 & K54	AUX. CONTACTOR, 230V, AC 3ND+1NC	MX03IE- CS94019	L&T/SIEMENS

FOR MAKE & TYPE ITEMS MOUNTED ON TRANSFORMER
PLEASE REFER TRANSFORMER DGA DRG.

SALZER MAKE MARKETED BY L&T

ADDITIONAL INFORMATION
W.D.NO.71190P17400



BHARAT HEAVY ELECTRICALS LTD.
JHANSI

NAME	SIGN	DATE	NO. OF
SNS1		29/04/2015	VAR
SNS1		29/04/2015	
DRP1		02/07/2015	

INVENTORY NO.	REV	DATE	ALTERED	REV	DATE	ALTERED
	CHECKED			CHECKED		
	APPROVED			APPROVED		
	ZONE			ZONE		

REV	DATE	ALTERED	BSI
02	17/11/2015	CHECKED	BSI
		APPROVED	DRP1
		REVISION IN SHEET	05.06 & 09.

TITLE	GA. DIAGRAM OF COOLER CONTROL & LIST OF PARTS	DRAWING NO.	34576250076	REV.	02
DEPT-THE	DM, C/M/F	SCALE	N.A.	WEIGHT (KGS)	REF. TO ASSY. NO.
CODE-406		N.A.	N.A.	N.A.	N.A.
SHT NO	10	NO OF SHT	13		

MBOX	25	001	P10	DIL TEMP. INDICATOR		PREC./ PERFECT
MBOX	26	003	P1 TO P3	WINDING TEMP. INDICATOR FOR HV, LV1 & LV2		PREC./ PERFECT
MBOX	27	004	X2, X3, P.1	TERMINAL BLOCKS (P1TO09-JPBB120) REMAINING DATE WITH COVER		ELMX/ CONNECTWELL
MBOX	28	001	XE	TERMINAL BLOCKS (1 TO 6)	DN16	ELMX/ CONNECTWELL
MBOX	29	001	X1	PHASE BAR TERMINAL BLOCK (1 TO 7)	JPB850	ELMX/ CONNECTWELL
MBOX	30	001	C	TERMINAL BLOCKS (C-01 TO 48-04T6/CDTS, EXCEPT C-03, 06, 08, 12, 15, 18, 21, 24, 27, 30, 33, 36, 39 & 42-E16)		ELMX/ CONNECTWELL
MBOX	31	003	B1 TO B3	CURRENT CONVERTER UNIT FOR R1 TO R3	ST605451	PREC./ PERFECT
MBOX	32	001	B4	CURRENT CONVERTER UNIT FOR R4	ST605730	PREC./ PERFECT
MBOX	33					
MBOX	34	011	H1 TO H11	SIGNAL LAMP RED FOR INDICATION SUITABLE FOR 220V DC.	ELLR2200	SIEMENS BOH/L&T
MBOX	35	012	KM1 TO KM12	FAN MOTOR THERMAL D/L RELAY (L1-L4A)	MR2-SS9414 100M0	L&T/SIEMENS
MBOX	36	002	K36 & K45	AUX. CONTACTOR, COIL 220V DC, 2ND+2NC	MX02EE- CS94029	L&T/SIEMENS
MBOX	37	001	K56	TIME DELAY RELAY 220V, DC 0.1s-10h 2-CHANGE OVER CONTACTS	2A50T5	GIC (MARKED BY L&T)
MBOX	38	001	F55	CIRCUIT BREAKER, 10A, 1P, 240V AC	BB10100C	L&T/SIEMENS
MBOX	39	002	K46 & K47	AUX. CONTACTOR, COIL 240V DC, 3ND+1NC	MX03IE- CS94028	L&T/SIEMENS
MBOX	40	002	ET	ENGRAVED TERMINAL DETAIL PLATE		
TRANSF.	41	001	F51	BLOCKHOLD DEVICE		#
TRANSF.	42	002	P5 & P6	L/DV DIL LEVEL INDICATORS		#
TRANSF.	43	002	F55 & F56	PRESSURE RELIEF VALVE		#
TRANSF.	44	003	R1 TO R3	DUPLEX PT 100 SENSOR UNITS FOR RV1		PREC./ PERFECT
TRANSF.	45	001	R4	DUPLEX PT 100 SENSOR UNITS FOR ROT1		PREC./ PERFECT
TRANSF.	46	012	M1 TO M12	FAN WITH MOTOR 0.50KW, 3PH, 50HZ, 415V AC		#
TRANSF.	47					
TRANSF.	48	003	CT1 TO CT3	VIT CURRENT TRANSFORMER ON HV, LV1 & LV2		BHEL
TRANSF.	49	001	F52	D/LTC DIL SURGE RELAY		#
TRANSF.	50	003	CT4 TO CT6	HV CURRENT TRANSFORMER ON U/V/W PHASE		BHEL
TRANSF.	51	001	CT7	HV-N-CURRENT TRANSFORMER		BHEL
TRANSF.	52	002	CT8 & CT9	LV-N-CURRENT TRANSFORMERS		BHEL

INSCRIPTION

REF.	INSCRIPTION	0	1	2	QTY
S36	HEATER SELECTOR (S36)	AUTO	DIFF	MANUAL	01

1. PANELS TO BE FLAT & FREE FROM HAMMER MARKS

- 7.M.BOX WEIGHT APPRDX. 375kg

ADDITIONAL INFORMATION	
W.DND/1190P17400	
REV	DATE
02	11/11/2015
APPROVED DWSI	
APPROVED DPRE	
ZONE REVISION IN SHEET 05.06 & 09.	

 BHARAT HEAVY ELECTRICALS LTD. JHANSI				
		NAME	STON	DATE
	MRN	SNS1		29/04/2015
	CID	SNS1		29/04/2015
	DPRI			03/07/2015

DEPT-TRE	IN. TO DIM. C/M/F		SCALE NTS	WEIGHT (KGS) 375KG APPROX	REF. TO ASSY. NO.	ITER NO	NO. OF ITER N/A
CODE-406							
TITLE G.A. DIAGRAM OF COOLER CONTROL & G.A. BOM OF MARSHALLING BOX					DRAWING NO. 34576250076		REV. 02
					SHT NO 11	NO OF SHT 13	

DRG.No.34576250076

INVENTORY NO.	SIGN AND DATE	REF. DRG. NO.
---------------	---------------	---------------

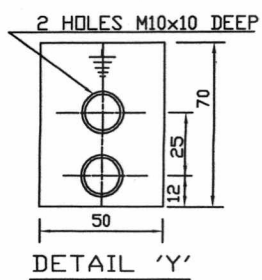
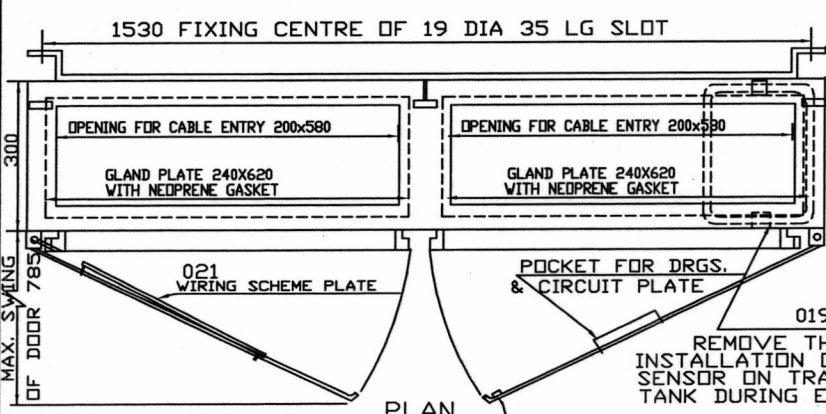
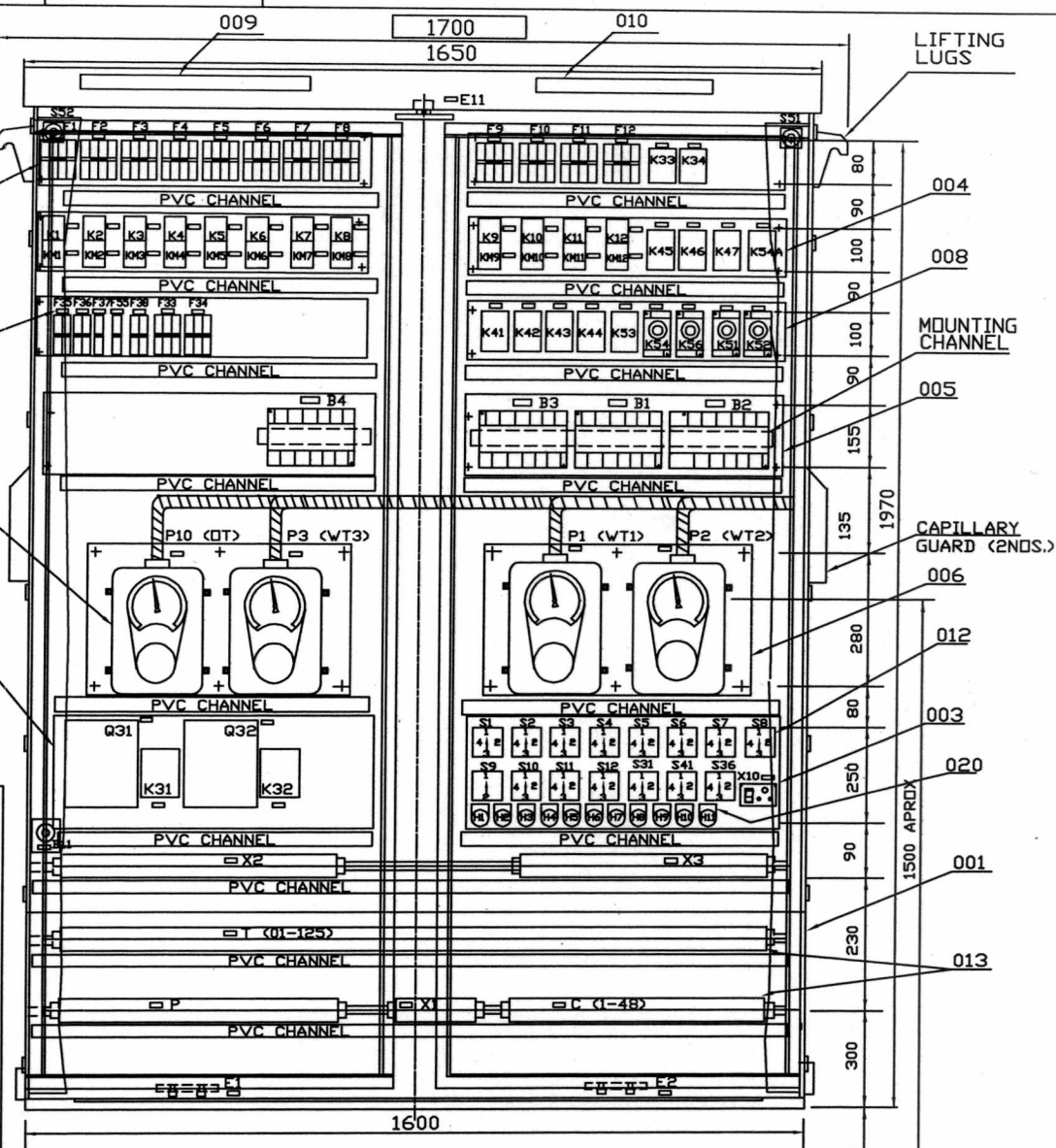
REV	DATE	ALTERED
01	17/11/2015	CHECKED
02	17/11/2015	APPROVED

REV	DATE	ALTERED
01	17/11/2015	CHECKED
02	17/11/2015	APPROVED

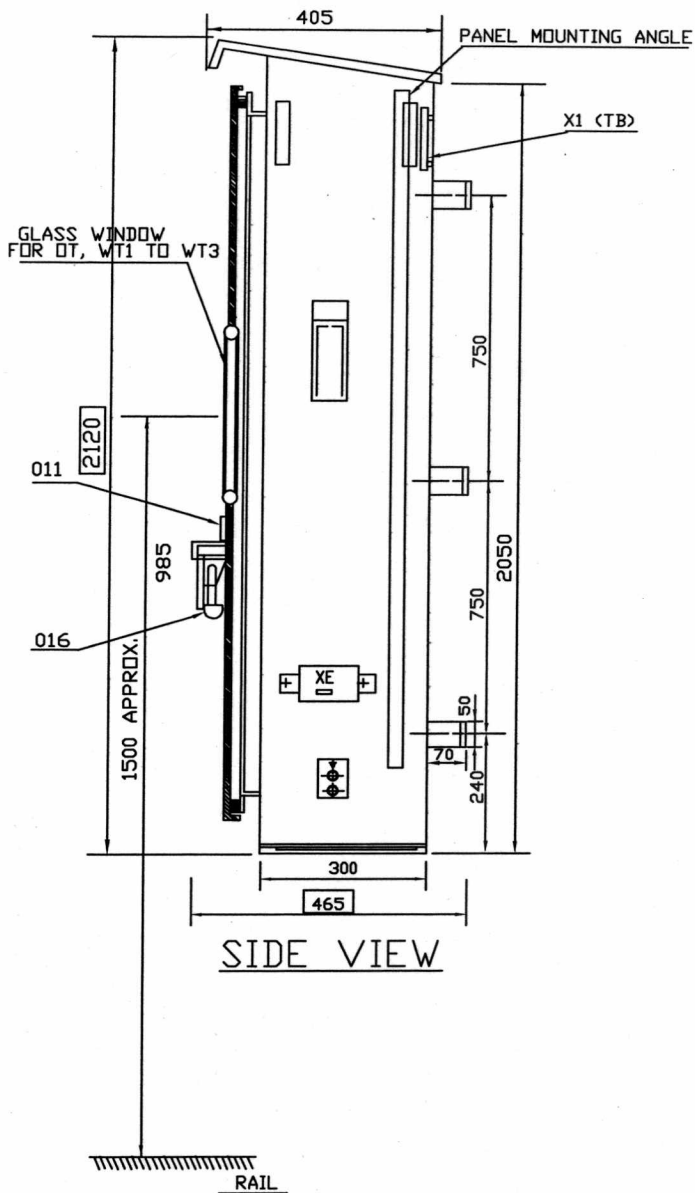
REV	DATE	ALTERED
01	17/11/2015	CHECKED
02	17/11/2015	APPROVED

ADDITIONAL INFORMATION
W.D.NO.7190P17400

DEPT-TRE	UN. TO	SCALE	WEIGHT	REF. TO ASSY. NO.	DATE
CODE-406	DIW. C/W/F	NTS	375KG	NA	29/04/2015



SIGNATURE NOT REQUIRED AS IT IS SYSTEM GENERATED DRAWING SIZE A3



SIDE VIEW

INVENTORY NO.	SIGN AND DATE	REF. DRG. NO.
---------------	---------------	---------------

REV	DATE	ALTERED
ZONE		CHECKED
		APPROVED

REV	DATE	ALTERED
02	17/11/2015	CHECKED
ZONE		APPROVED

ADDITIONAL INFORMATION
W.D.NO. 71190P17400

REVISION IN SHEET 05.06 & 09.



BHARAT HEAVY ELECTRICALS LTD.
JHANSI

DEPT-RE	UN. TO	SCALE	WEIGHT (KG)
CODE-406	DIW. C/W/F	NTS	375KG

NAME	SIGN	DATE
DRN		29/04/2015
SNSI		29/04/2015
DRP1		02/07/2015

TITLE
G.A. DIAGRAM OF COOLER CONTROL &
G.A. SIDE VIEW OF M.BOX

DRAWING NO.	REV.
34576250076	02