

DRAWINGS/DOCUMENTS HAVE BEEN REVIEWED AND APPROVED BY BHEL, DATED 30.06.15

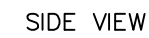
LIST OF DRAWINGS FOR GCB WITH & WITHOUT PIR WITHOUT CSD:

SR. NO.	LIST OF DRAWINGS/DOCUMENTS.	DRAWING NO.	TOTAL SHEET
1	LIST OF DRAWINGS	EH5-4342-40	1
2	GENERAL ARRANGEMENT	EH5-4342-41	5
3	SCHEMATIC DIAGRAM	EH5-4342-42	6
4	BILL OF MATERIAL	EH5-4342-43	1
5	RATING PLATE DETAILS (WITH & WITHOUT PIR)	EH5-4342-44	4
6	MECHANISM HOUSING ASSEMBLY R&Y	EH5-4342-45	1
7	MECHANISM HOUSING ASSEMBLY B	EH5-4342-46	1
8	AIR & GAS SYSTEM	EH5-4342-47	1
9	SECTIONAL VIEW OF POLE UNIT (WITH & WITHOUT PIR)	EH5-4342-48	2
10	MARSHALLING BOX DETAILS	EH5-4342-49	1
11	CABLE SCHEDULE	EH5-4342-50	1
12	SUPPORT STRUCTURE	EH5-4342-51	1
13	LADDER DETAILS	EH5-4342-52	1



REV.	DATE	REASONS FOR REVISION	DRN.	PREPARED BY	CHECKED BY	APPROVED BY
OWNER RAJASTHAN RAJYA VIDYUT UTPADAN NIGAM LIMITED						
PROJECT 2X660MW THERMAL POWER PLANT, SURAT GARH STAGE -V, UNIT 7 & 8 AT SURATGARH, RAJASTHAN						
OWNER'S ENGINEER TATA CONSULTING ENGINEERS LIMITED						
EPC CONTRACTOR BHARAT HEAVY ELECTRICALS LTD TRANSMISSION BUSINESS GROUP						
WORK ORDER NO: HS 4342		DEPT CODE		NAME	SIGN.	DATE
PRODUCT: FOR 400KV SP-PH		DRN	YBJ			05.03.15
TYPE: 400-SFM-40A		DESIN	MSK			05.03.15
		CHD	MSK			05.03.15
		APPO	HVS			05.03.15
TITLE LIST OF DRAWINGS						
PO NO: - 144P231 DTD 03.03.2015						
CV	WE	EL	I&C	DEPT. SCALE	BHEL/SUB VENDOR DRG NO.	
-	-	MSK	-	SIGN	EH5-4342-40	
-	-	-	-	DATE	SHT. No 1/1	REV.0





SR.N.O	COMPONENT	QTY/ GCB
1	SUPPORTING PORCELAIN	9
2	INTERRUPTING UNIT	6
3	SUPPORT STRUCTURE	3
4	OPERATING MECHANISM HOUSING EQUIPPED WITH AIR COMPRESSOR ONLY PH. R & Y	2
5	AIR RESERVOIR 160 LTRS	3
6	POSITION INDICATOR	3
7	SF6 GAS PRESS GAUGE ALL PHASE	3
8	OPERATION COUNTER	3
9	RATING PLATE (ENG) (ONLY Y PHASE)	1
10	AIR PRESS GAUGE (ONLY Y PHASE)	1
11	GROUNDING TERMINAL 75X10 FRONT SIDE	8
12	DRAIN VALVE	3
13	UNDRILLED GLAND PLATE(M.BOX)	1
14	MARSHALLING BOX	1
15	STOP VALVE FOR EMERGENCY EXTERNAL AIR SUPPLY	1
16	TERMINAL CONNECTOR SIDE	6
17	SHIELD RING	6
18	M24 ANCHOR BOLT FOR M BOX & LADDER	10
19	M30 ANCHOR BOLT FOR HSG	12
20	LADDER	3
21	UNDRILLED GLAND PLATE (HSG)	3
22	RATING PLATE (HIN) (ONLY R PHASE)	1

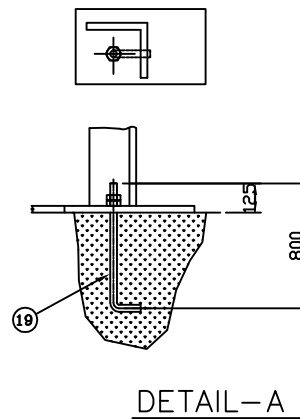
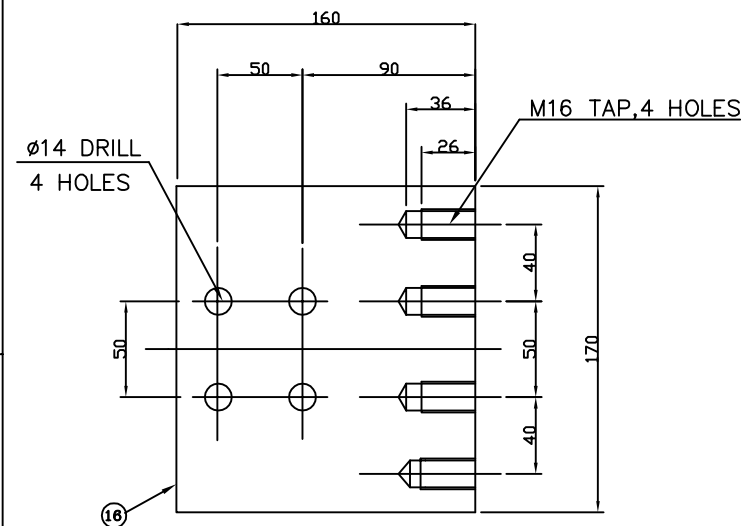
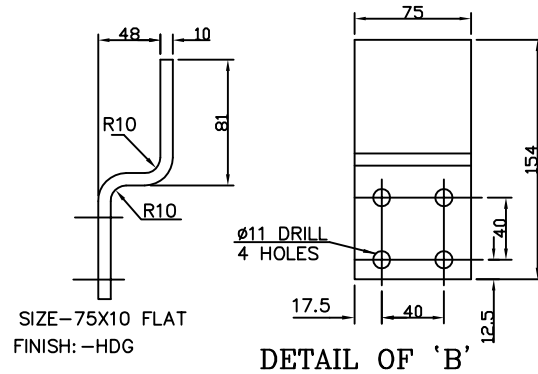
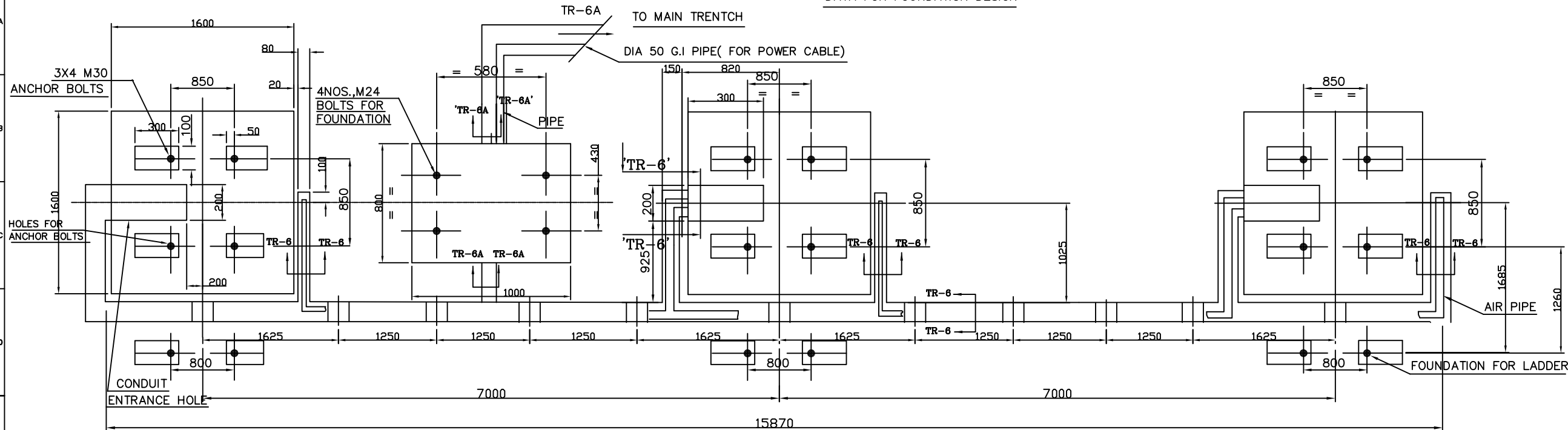


1.	25.05.15	REVISED AS PER CONSULTANT COMMENT	SDS	SDS	HVS	HVS	
REV.	DATE	REASONS FOR REVISION	DRN.	PREPARED BY	CHECKED BY	APPROVED	
OWNER							
RAJASTHAN RAJYA VIDYUT UTPADAN NIGAM LIMITED							
PROJECT							
2X660MW THERMAL POWER PLANT,SURAT GARH STAGE -V, UNIT 7 & 8 AT SURATGARH , RAJASTHAN							
OWNER'S ENGINEER							
 TATA CONSULTING ENGINEERS LIMITED							
EPC CONTRACTOR							
 BHARAT HEAVY ELECTRICALS LTD TRANSMISSION BUSINESS GROUP							
WORK ORDER NO: HS 4342			DEPT CODE		NAME	SIGN.	DATE
PRODUCT: FOR 400KV SP-PN				DRN	YBJ		05.03.
TYPE: 400-SFM-40A				DESN	MSK		05.03.
				CHD	MSK		05.03.
				APPD	HVS		05.03.
TITLE: - GENERAL ARRANGEMENT FOR 420KV SF6 GCB WITHOUT PIR							
PO NO: - 144P231 DTD 03.03.2015							
CV	ME	EL	I&C				
-	-	MSK	-				
-	-	05.03.15	-				
				DEPT.	SCALE	BHEL/SUB VENDOR DRG NO.	
				SIGN		EH5-4342-41-1	
				DATE		SHT. No 1/5	
					REV.1		

NOTES:

- 1) FOR DETAILS A, B REFER DRG EH5-4342-41-3
- 2) FOR DETAILS OF TERMINAL PAD REFER EH5-4342-41-3
- 3) FOR FOUNDATION ARRANGEMENT REFER EH5-4342-41-3
- 4) FOR STRUCTURE DETAIL REFER EH5-4342-51
- 5) FOR LADDER DETAIL REFER EH5-4342-52
- 6) ALL DIMENTIONS ARE IN MM, TOLERANCE ON OVERALL DIMENSION +/-2%.
- 7) GROUND TERMINAL SHALL BE HOT DIP GALVANIZED (SIZE 75X10 FLAT)
- 8) TEMPERATURE COMPENSATED DENSITY MONITOR SHALL BE PROVIDED IN EACH PHASE.

DRG NO:EH5-4342-41-3 R1



Crompton Greaves Ltd.
SWITCHGEAR DIVISION S3
AMBAD, NASHIK.

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REV.	DATE	REASONS FOR REVISION	DRN.	PREPARED BY	CHECKED BY	APPROVED BY

OWNER	RAJASTHAN RAJYA VIDYUT UTPADAN NIGAM LIMITED
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PROJECT	2X660MW THERMAL POWER PLANT,SURAT GARH STAGE -V, UNIT 7 & 8 AT SURATGARH , RAJASTHAN
---------	---

OWNER'S ENGINEER
 **TATA** CONSULTING ENGINEERS LIMITED

EPC CONTRACTOR

 **BHARAT HEAVY ELECTRICALS LTD**
TRANSMISSION BUSINESS GROUP

WORK ORDER NO: HS 4342 PRODUCT: FOR 400KV SP-PN TYPE: 400-SFM-40A	DEPT		NAME	SIGN.	DATE
	CODE	DRN	YBJ		05.03.15
		DESN	MSK		05.03.15
		CHD	MSK		05.03.15
		APPD	HVS		05.03.15

TITLE: - FOUNDATION ARRANGEMENT 400KV GCB WITH & WITHOUT PIR

PO NO: - 144P231 DTD 03.03.2015							BHEL/SUB VENDOR DRG NO.	
CV	ME	EL	I&C		DEPT.		EH5-4342-41	
-	-	MSK	-		SIGN			
-	-	05.03.15	-		DATE		SHT. No 3/5	REV.1

NOTES:-

1. WEIGHT OF EACH MECH HOUSING = 1000Kg (APPROX)
2. TOTAL WEIGHT (3 POLE) = 6950 Kg (APPROX)
3. SF6 GAS WEIGHT (3 POLE) = 54 Kg (APPROX)
4. IMPACT LOADING FOR FOUNDATION DESIGN INCUDING DEAD WEIGHT PLUS IMPACT VALUE IN OPENING AT MAXIMUM INTERRUPTING RATING EXPRESSED IN TERMS OF EQUIVALENT STATIC LOAD IN Kg. 15000/PHASE DOWNWARD 10000 Kg/ PHASE UPWARD.
5. ALL EXPOSED FERROUS HARDWARES ARE HOT DIP GLAV.
6. SUPPLY OF INTER PHASE CABLES UP TO MARSHALLING BOX IS IN CGL SCOPE. SAME SHALL BE PROVIDED ALONG WITH BREAKER.
7. UNITISED COMPRESSED AIR SYSTEM IS SUITABLE FOR 2-CO OPERATION.
8. CREEPAGE DISTANCE TO GROUND & ACROSS INTERRUPTER 13020mm
9. TYPE OF BREAKER : 400-SFM-40A
10. STD APPLICABLE : IEC-62271-100.
11. RATED VOLTAGE : 420 KV rms.
12. RATED CURRENT : 3150 Amps (AT 50°C.)
13. RATED OPERATING DUTY : 0-0.3 SEC-CO-3 MIN-CO
14. RATED AIR PRESSURE : 15.5Kg/cm²
15. RATED SF6 GAS PRESSURE : 7 Kg/cm²AT 20°C
16. FINISH COAT:- THE EXTERNAL SURFACE OF MECH. HOUSING & M BOX ARE PAINTED WITH SHADE 631 OF IS-5 AND THE INTERNAL SURFACES PAINTED IN GLOSSY WHITE
17. AIR RESERVOIR HOT DIP GALVANISED INSIDE AND OUTSIDE.
18. SUPPORT STRUCTURE HOT DIP GALVANISED
19. CABLE GLANDS & ANCHOR BOLTS ARE IN CGL SCOPE OF SUPPLY.
20. MAKE OF INSULATORS.:
BIRLA-NGK/MODERN/WS INSULATORS /IEC



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PROJECT 2X660MW THERMAL POWER PLANT,SURAT GARH STAGE -V, UNIT 7 & 8 AT SURATGARH , RAJASTHAN						
OWNER'S ENGINEER  TATA CONSULTING ENGINEERS LIMITED						
EPC CONTRACTOR  BHARAT HEAVY ELECTRICALS LTD TRANSMISSION BUSINESS GROUP						
WORK ORDER NO: HS 4342			DEPT CODE	NAME	SIGN.	DATE
PRODUCT: FOR 400KV SP-PN				DRN YBJ		05.03.15
TYPE: 400-SFM-40A				DESN MSK		05.03.15
				CHD MSK		05.03.15
				APPD HVS		05.03.15
TITLE GENERAL ARRANGEMENT FOR 400KV WO PIR						
PO NO: -- 144P231 DTD 03.03.2015						
CV	ME	EL	I&C		DEPT.	SCALE
-	-	MSK	-		SIGN	
-	-	05.03.15	-		DATE	
BHEL/SUB VENDOR DRG NO. EH5-4342-41						
SHT. No 4/5						REV.1

FIRST ANGLE PROJECTION

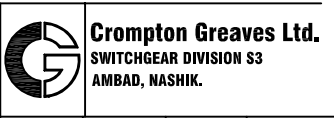
PRODUCED BY AN AUTODESK EDUCATIONAL PRODUCT

DRG NO:EH5-4342-41-5

NOTES:-

1. WEIGHT OF EACH MECH HOUSING = 1000Kg (APPROX)
2. TOTAL WEIGHT (3 POLE) = 8600 Kg (APPROX)
3. SF6 GAS WEIGHT (3 POLE) = 80 Kg (APPROX)
4. IMPACT LOADING FOR FOUNDATION DESIGN INCUDING DEAD WEIGHT PLUS IMPACT VALUE IN OPENING AT MAXIMUM INTERRUPTING RATING EXPRESSED IN TERMS OF EQUIVALENT STATIC LOAD IN Kg. 15000/PHASE DOWNWARD 10000 Kg/ PHASE UPWARD.
5. ALL EXPOSED FERROUS HARDWARES ARE HOT DIP GLAV.
6. SUPPLY OF INTER PHASE CABLE UP TO MARSHALLING BOX IS IN CGL SCOPE. SAME SHALL BE PROVIDED ALONG WITH BREAKER.
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10. STD APPLICABLE : IEC-62271-100.
11. RATED VOLTAGE : 420 KV rms.
12. RATED CURRENT : 3150 Amps (AT 50°C.)
13. RATED OPERATING DUTY : 0-0.3 SEC-CO-3 MIN-CO
14. RATED AIR PRESSURE : 15.5Kg/cm²
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19. CABLE GLANDS & ANCHOR BOLTS ARE IN CGL SCOPE OF SUPPLY.
20. MAKE OF INSULATORS.:
BIRLA-NGK/MODERN/WS INSULATORS /IEC

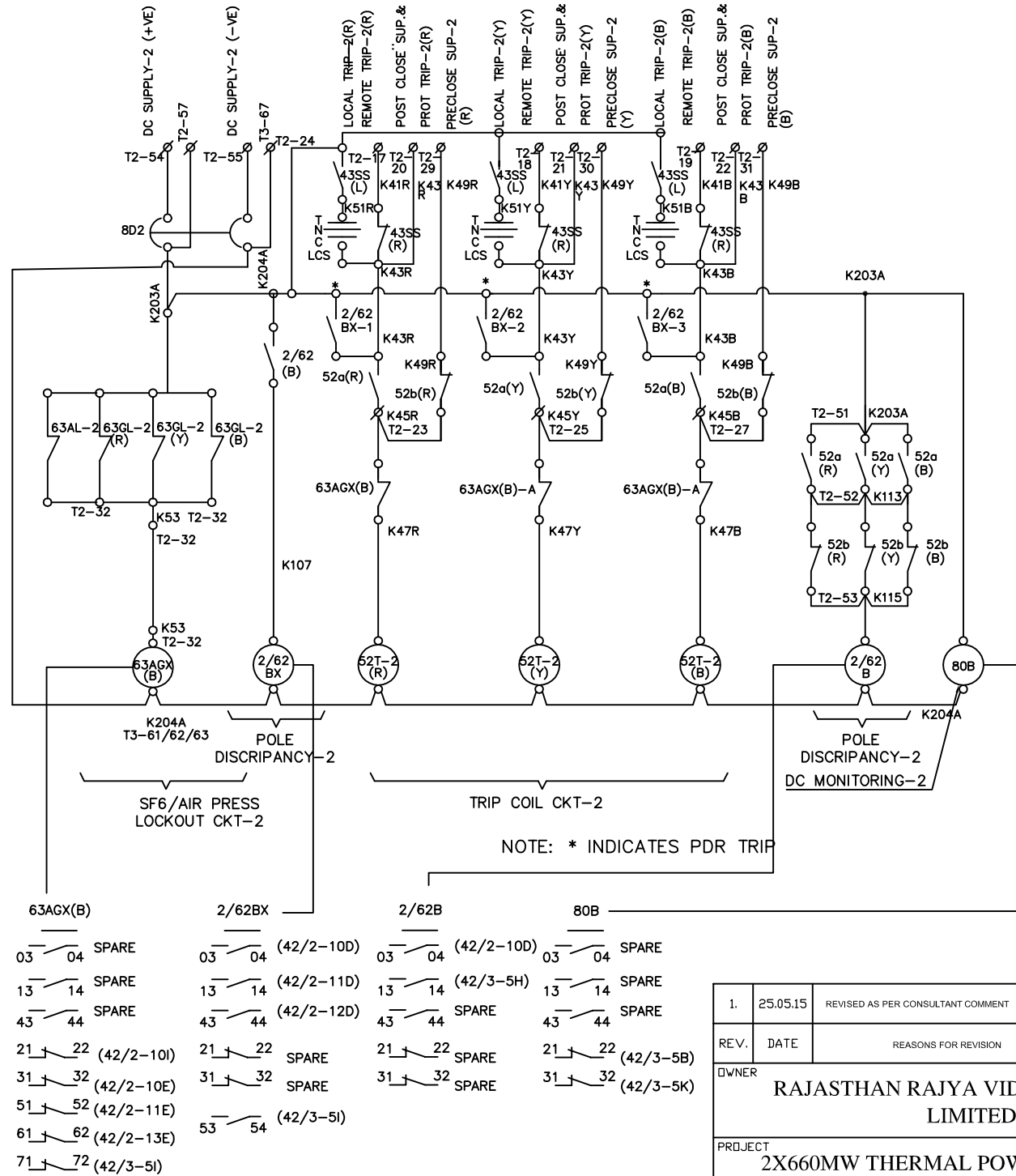
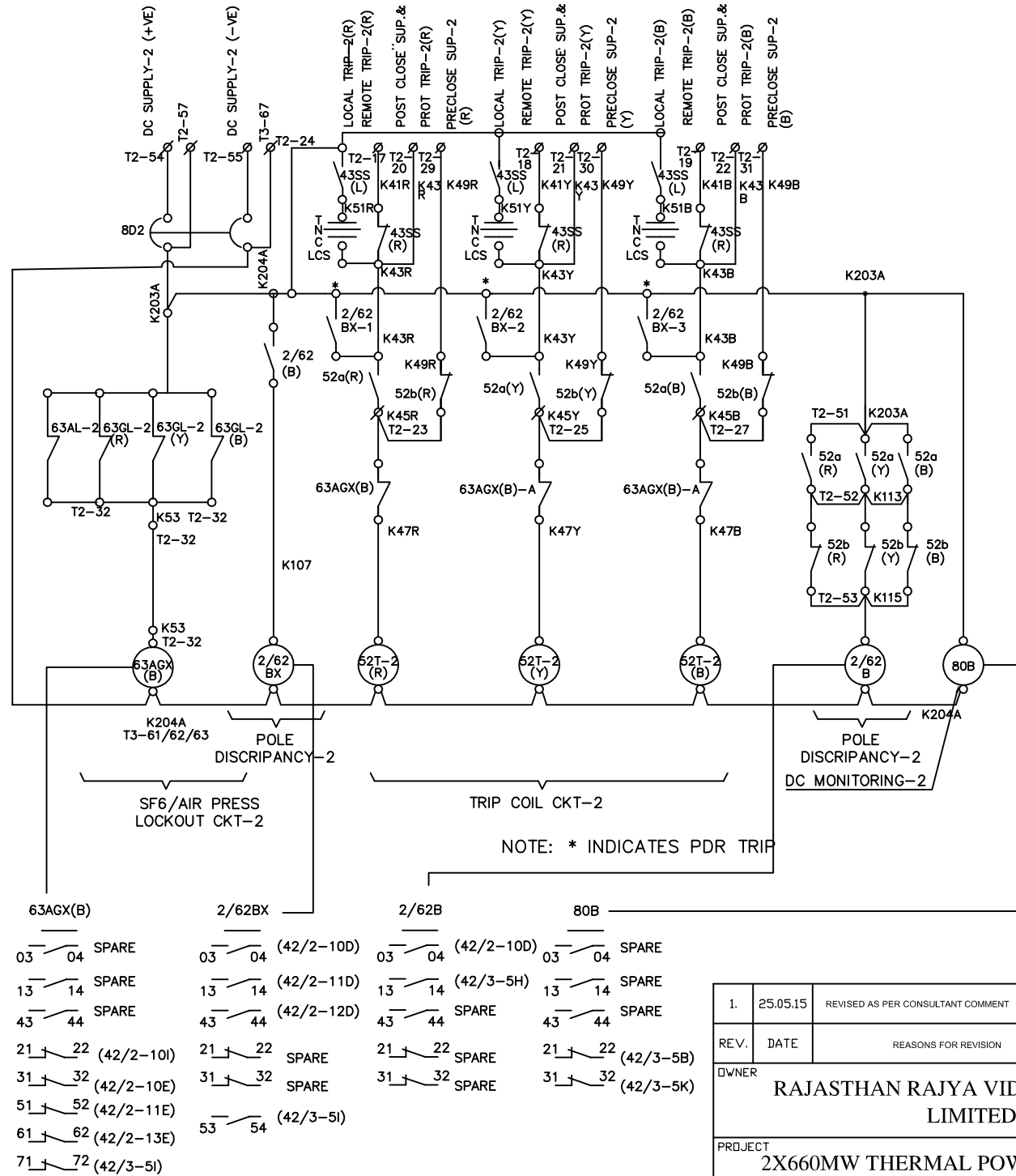
SR.N.O	COMPONENT	QTY/ GCB
1	SUPPORTING PORCELAIN	9
2	INTERRUPTING UNIT WPIR	12
3	SUPPORT STRUCTURE	3
4	OPERATING MECHANISM HOUSING EQUIPPED WITH AIR COMPRESSOR ONLY PHASE R & Y	3
5	AIR RESERVOIR 160 LTRS	3
6	POSITION INDICATOR	3
7	SF6 GAS PRESS GAUGE ALL PHASE	3
8	OPERATION COUNTER	3
9	RATING PLATE (ENG) (ONLY Y PHASE)	1
10	AIR PRESS GAUGE (ONLY Y PHASE)	1
11	GROUNDING TERMINAL 75X8 FRONT SIDE	8
12	DRAIN VALVE	3
13	UNDRILLED GLAND PLATE(M.BOX)	1
14	MARSHALLING BOX	1
15	STOP VALVE FOR EMERGENCY EXTERNAL AIR SUPPLY	1
16	TERMINAL CONNECTOR SIDE	6
17	SHIELD RINGWPIR	6
18	M24 ANCHOR BOLT FOR M BOX & LADDER	10
19	M30 ANCHOR BOLT FOR HSG	12
20	LADDER	3
21	UNDRILLED GLAND PLATE (HSG)	3
22	RATING PLATE (HIN) (ONLY R PHASE)	1



REV.	DATE	REASONS FOR REVISION	DRN.	PREPARED BY	CHECKED BY	APPROVED BY
OWNER RAJASTHAN RAJYA VIDYUT UTPADAN NIGAM LIMITED						
PROJECT 2X660MW THERMAL POWER PLANT,SURAT GARH STAGE -V, UNIT 7 & 8 AT SURATGARH , RAJASTHAN						
OWNER'S ENGINEER  TATA CONSULTING ENGINEERS LIMITED						
EPC CONTRACTOR  BHARAT HEAVY ELECTRICALS LTD TRANSMISSION BUSINESS GROUP						
WORK ORDER NO: HS 4342 PRODUCT: FOR 400KV SP-PN TYPE: 400-SFM-40A			DEPT CODE	NAME	SIGN.	DATE
				DRN	YBJ	05.03.15
				DESN	MSK	05.03.15
				CHD	MSK	05.03.15
				APPD	HVS	05.03.15
TITLE GENERAL ARRANGEMENT FOR 400KV WITH PIR						
PO NO :- 144P231 DTD 03.03.2015						
CV	ME	EL	I&C		DEPT.	SCALE
-	-	MSK	-		SIGN	
-	-	05.03.15	-		DATE	
BHEL/SUB VENDOR DRG NO. EH5-4342-41						SHT. No 5/5
REV.0						



1.	25.05.15	REVISED AS PER CONSULTANT COMMENT	SDS	SDS	HVS	HVS	
REV.	DATE	REASONS FOR REVISION	DRN.	PREPARED BY	CHECKED BY	APPROVED BY	
OWNER							
RAJASTHAN RAJYA VIDYUT UTPADAN NIGAM LIMITED							
PROJECT							
2X660MW THERMAL POWER PLANT,SURAT GARH STAGE -V, UNIT 7 & 8 AT SURATGARH , RAJASTHAN							
OWNER'S ENGINEER							
 TATA CONSULTING ENGINEERS LIMITED							
EPC CONTRACTOR							
 BHARAT HEAVY ELECTRICALS LTD TRANSMISSION BUSINESS GROUP							
WORK ORDER NO: HS 4342				DEPT CODE	NAME	SIGN.	DATE
PRODUCT: FOR 400KV SP-PN					DRN	YBJ	05.03.15
TYPE: 400-SFM-40A					DESN	MSK	05.03.15
					CHD	MSK	05.03.15
					APPD	HVS	05.03.15
TITLE: -- SCHEMATIC DIAGRAM FOR 420kV SP-PN SF6 GCB							
PO NO: -- 144P231 DTD 03.03.2015							
CV	ME	EL	I&C		DEPT.		BHEL/SUB VENDOR DRG NO. EH5-4342-42
-	-	MSK	-		SIGN		
-	-	05.03.15	-		DATE		
SHT. NO.1/4						REV. 1	



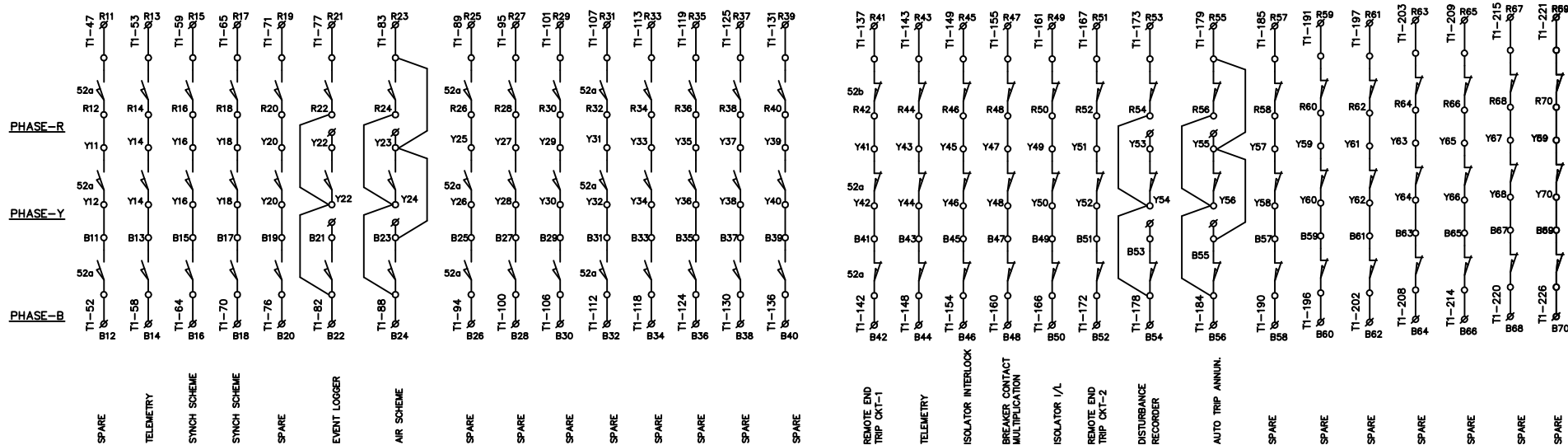
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PROJECT							
2X660MW THERMAL POWER PLANT,SURAT GARH STAGE -V, UNIT 7 & 8 AT SURATGARH , RAJASTHAN							
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PO NO: – 144P231 DTD 03.03.2015							
CV	ME	EL	I&C	DEPT.	SCALE	BHEL/SUB VENDOR DRG NO.	
–	–	MSK	–	SIGN		EH5-4342-42	
–	–	05.03.15	–	DATE		SHT. No 2/4	REV.1

PRODUCED BY AN AUTODESK EDUCATIONAL PRODUCT

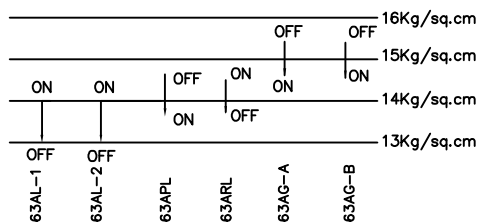
FIRST ANGLE PROJECTION

DRG NO: EH5-4342-21-1

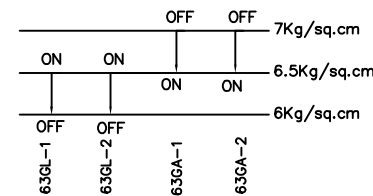
SPARE AUXILIARY SWITCHES OF PHASES R.Y.B. (15a-15b)



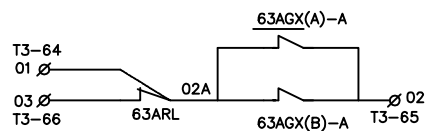
AIR PRESS. SWITCH SETTING



GAS PRESS SWITCH SETTING

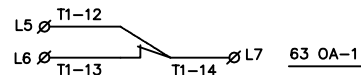


AUTO RECLOSE LOCK CONTACT

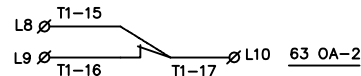


ALARM CONTACTS

LOW OIL LEVEL IN COMPRESSOR-1



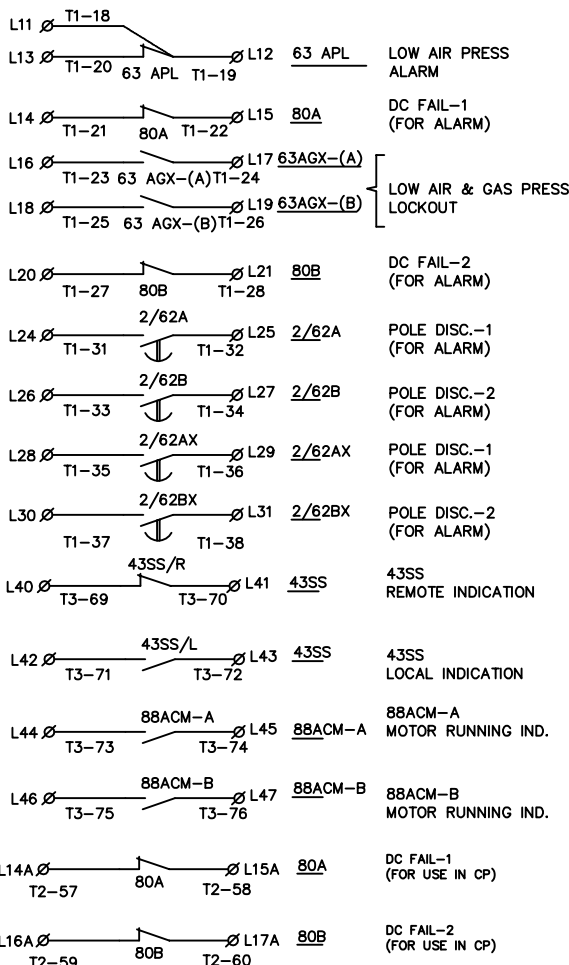
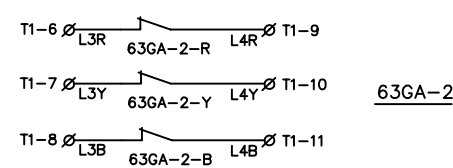
LOW OIL LEVEL IN COMPRESSOR-2



SF6 LOW GAS PRESSURE ALARM



SF6 LOW GAS PRESSURE ALARM



NOTE :

- AUXILIARY SWITCHES ARE SHOWN FOR OPEN BREAKER.
- AUXILIARY CONTACTOR'S CONTACT IN DEENERGIZED CONDITION.
- PRESSURE & OIL LEVEL SWITCHES ARE SHOWN WHEN NO SUPPLY & NO PRESSURE.
- REMOTE LOCAL OFF CHANGE OVER SWITCH IS SHOWN FOR REMOTE POSITION.
- RELAY C.B.
OPEN CONTACT
CLOSE CONTACT
OPEN CONTACT (TIME DELAYED CONTACT)
- SIZE OF CONTROL WIRE 2.5MM², 1100V GRADE STRANDED COPPER CONDUCTOR, PVC INSULATED,PVC INNER SHEATHE, UNARMoured.
- CONTROL WIRE INSIDE CABLE 2.5MM², 1100V GRADE STRANDED COPPER CONDUCTOR, FRLS INSULATED,PVC INNER SHEATHE, ARMoured.
- COLOUR OF WIRE : FOR AC CIRCUIT RED YELLOW BLUE & BLACK, FOR DC CIRCUIT GREY & FOR EARTHING GREEN.
- STUD TYPE (NON DISCONNECTABLE TYPE) TERMINAL BLOCKS TO BE USED.
- 630A-1 & 630A-2 CONTACTS SHOWN FOR NO OIL CONDITION.
- TRIP CIRCUIT TO BE IDENTIFIED BY RED FERRULES.
- CONTINUOUS CURRENT CARRYING OF TRIP COIL IS 50 MILLIAMPS. TO CATER FOR TRIP CKT SUPERVISION.

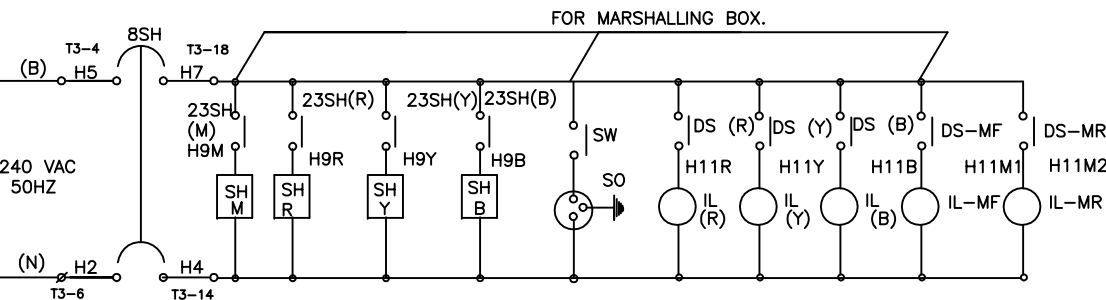
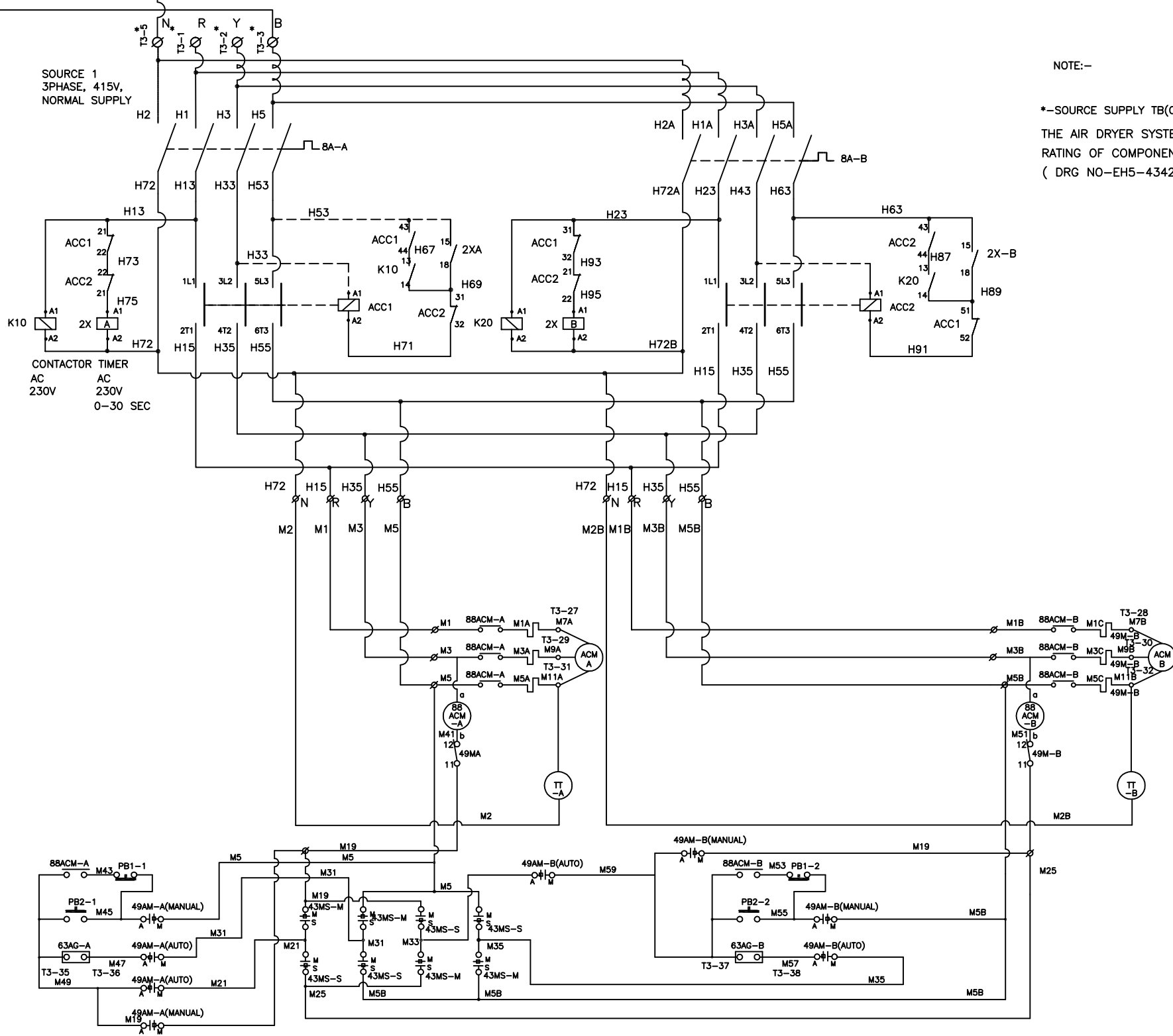


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TYPE: 400-SFM-40A			DESIN	MSK		05.03.15
			CHD	MSK		05.03.15
			APPD	HVS		05.03.15
TITLE: -- SCHEMATIC DIAGRAM FOR 420kv SP-PN SF6 GCB						
PO NO: -- 144P231 DTD 03.03.2015						
CV	ME	EL	I&C	DEPT.	SCALE	BHEL/SUB VENDOR DRG NO.
-	-	MSK	-	SIGN		EH5-4342-42
-	-	05.03.15	-	DATE		SHT. No 3/4
					REV.	1

FIRST ANGLE PROJECTION

DRG NO: EH5-4342-42

LEGENDS	
MARK	DESCRIPTION
8A-A/8A-B	MCB FOR COMPR. CKT.
ACM-A/B	MOTOR FOR COMPRESSOR
88ACM-A/B	CONTACTOR FOR COMPR. MOTOR.
49M-A/B	OVERLOAD RELAY FOR MOTOR
63AG-A/B	COPMR. GOVERNOR SWITCH
49AM	AUTO HAND MANUAL SW.
43MS	MAIN STANDBY SWITCH
PB1/2	PUSH BUTTON FOR COMPR.
TT A/B	TIME TOTALISER(PHASE R & Y)
K10/K20	230V AC AUX. CONTACTOR
2X-A/2X-B	230V AC TIMER (0 TO 30 sec.)
ACC1/ACC2	CONT. FOR MOTOR. SUPPLY C/O..



LEGENDS	
MARK	DESCRIPTION
8SH	MCB FOR HEATER CKT.
23SH	THERMOSTAT (R,Y,B & M.BOX.)
SH	SPACE HEAYER (R,Y,B & M.BOX.)
SO	SWITCH SOCKET UNIT
SW	PIANO SWITCH (R,Y,B & M.BOX)
IL	ILLUMINATION LAMP(R,Y,B & M.B)



1.	25.05.15	REVISED AS PER CONSULTANT COMMENT	SDS	SDS	HVS	HVS
REV.	DATE	REASONS FOR REVISION	DRN.	PREPARED BY	CHECKED BY	APPROVED BY
OWNER RAJASTHAN RAJYA VIDYUT UTPADAN NIGAM LIMITED						
PROJECT 2X660MW THERMAL POWER PLANT,SURAT GARH STAGE -V, UNIT 7 & 8 AT SURATGARH , RAJASTHAN						
OWNER'S ENGINEER TATA CONSULTING ENGINEERS LIMITED						
EPC CONTRACTOR BHARAT HEAVY ELECTRICALS LTD TRANSMISSION BUSINESS GROUP						
WORK ORDER NO: HS 4342			DEPT CODE	NAME	SIGN.	DATE
PRODUCT: FOR 400KV SP-PN			DRN	YBJ		05.03.15
TYPE: 400-SFM-40A			DESN	MSK		05.03.15
			CHD	MSK		05.03.15
			APPD	HVS		05.03.15
TITLE SCHEMATIC DIAGRAM						
PO NO: -- 144P231 DTD 03.03.2015						
CV	ME	EL	I&C	DEPT.	SCALE	BHEL/SUB VENDOR DRG NO.
-	-	MSK	-	SIGN		EH5-4342-42
-	-	05.03.15	-	DATE		SHT. No 4/4
					REV. 1	

FIRST ANGLE PROJECTION

DRG NO: EH5-4342-43

23

45

67

89

1011

1213

1415

16

A

B

C

D

E

F

G

H

I

J

K

L

12

34

56

78

910

1112

1314

1516

MARK

DESCRIPTION

QTY.

RATINGS

MAKE

52CC (RYB)

CLOSING COIL

3

220VDC 126 OHMS

CGL

52T1 (RYB)

TRIP COIL

3

220VDC 80 OHMS

CGL

52T2 (RYB)

TRIP COIL

3

220VDC 80 OHMS

CGL

63GA-1
63GA-2

LOW GAS PRESS ALARM SWITCH

3 EACH

ON 6.5 KG/CM²,OFF 7.0 KG/CM² AT 20°C,

REGENCY ELECTRIC/SAGINOMIYA/WIKA

63GL-1
63GL-2

LOW GAS PRESS LOCK OUT SWITCH

3 EACH

ON 6.5 KG/CM²,OFF 6 KG/CM² AT 20°C,

REGENCY ELECTRIC/SAGINOMIYA/WIKA

63AL-1 (R)
63AL-2 (Y)

LOW AIR PRESS LOCK OUT SWITCH

1 EACH

ON 13.0 KG/CM²,OFF 14.0 KG/CM²

DANFOSS/INDFOSS

63AG-A
63AG-B

COMPRESSOR GOVERNER SWITCH
COMPRESSOR GOVERNER SWITCH

1 EACH

ON 14.5 KG/CM²,OFF,15.2 KG/CM²
ON 14.3 KG/CM²,OFF,15.2 KG/CM²

DANFOSS/INDFOSS

63ARL

AIR PRESSURE SW FOR RECLOSING LOCK

1

ON 14.4 KG/CM²,OFF,13.9KG/CM²

DANFOSS/INDFOSS

63APL

LOW AIR PRESSURE ALARM SWITCH

1

ON 13.5KG/CM²,OFF,14.5KG/CM²

DANFOSS/INDFOSS

630A-1
630A-2

COMPRESSOR LOW OIL LEVEL SWITCH

1 EACH

240V AC, 5A.

INGERSOLL RAND/ ZEN AIRTECH/MICRO

63AGX-(A)

CONTACTOR FOR 63AL 1 & 63GL 1

1

220V DC,

SCHNEIDER/SIEMENS.

63AGX-(B)

CONTACTOR FOR 63AL 2 & 63GL 2

1

220V DC,

SCHNEIDER/SIEMENS.

2/62-A
2/62-B

POLE DISCREPANCY TIMER/RELAY

1 EACH

220V DC,(90V-270V) 0.1 sec-1200 hours

OMRON

2/62AX, 2/62BX

AUXILIARY CONTACTOR

1 EACH

220V DC

SCHNEIDER/SIEMENS.

RL/GL

RED/GREEN INDICATING LAMP

1 EACH

220V DC,

TEKNIC/D SQUARE/SIEMENS/CRAFTECH.

APR (RYB)

ANTIPUMPING CONTACTOR/RELAY

3

220V DC,

SCHNEIDER/SIEMENS/PLA.

LCS (11-52)

LOCAL CONTROL SWITCH(TNC)

1

250V DC, ROTORY SPRING RETURN TYPE

SWITRON/SHIRKE

43SS

LOCAL/REMOTE SELECTOR SWITCH

1

250V DC,STAY PUT TYPE

SWITRON/SHIRKE

80A,80B

CONTACTOR (DC SUPPLY SUPERVISION)

1 EACH

220V DC,

SCHNEIDER/SIEMENS.

8SH

CIRCUIT BREAKER

1

2 POLE, 240V AC, 16A AC MCB
STC RATING 10KA FOR 1sec

SCHNEIDER/SIEMENS.

23SH-M
23SH(RYB)

THERMOSTAT FOR MECH HOUSING/M BOX

1 EACH

240V AC, 15A (0°~60°C)/(30°~80°C)

APT/VELICO

SH(RYB)
SH-M

SPACE HEATER FOR MECH HOUSING
SPACE HEATER FOR M BOX

1 EACH
1

240V AC, 250W
240V AC, 100W

APT/VELICO

8A-A
8A-B

CIRCUIT BREAKER

1 EACH

4 POLE, 415V AC 16A AC MCB
STC RATING 10KA FOR 1sec

SCHNEIDER/SIEMENS.

52a
52b

AUXILIARY SWITCHES

21 EACH

ROTORY TYPE

TURNING POINT/SHIRKE

IL-M(F&R)
IL(RYB)

ILLUMINATION LAMP (FLUOROSENT TUBE)

1 EACH

240V AC, 9W

CGL/PHILLIPS

SW-MB
SW(RYB)

DOOR OPERATED SWITCH FOR IL

1 EACH

240V AC, 5A

KAYCEE/BRISK

SO
SW1

INDUSTRIAL SOCKET
ROTARY SWITCH FOR INDUSTRIAL SOCKET

1
1

240V AC, 20A,
240V AC, 25A STAY PUT TYPE

CGL
SWITRON

88ACM-A
88ACM-B

CONTACTOR

1 EACH

415V AC 10A,

SCHNEIDER/SIEMENS.

49M-A
49M-B

OVERCURRENT RELAY FOR ACM

1 EACH

4A~6A SETTING

SIEMENS/SCHNEIDER.

ACM-A
ACM-B

MOTOR FOR COMPRESSOR

1 EACH

3PH, 415V AC, 50HZ

CGL

TT-A
TT-B

TIME TOTALISER

1 EACH

4 DIGIT UP TO 9999 MIN. 240V.AC.

KAYCEE

43MS

MAIN STAND BY SELECTOR SWITCH

1

4 POLE, 415V.AC. STAY PUT

SWITRON

8D1 & 8D2

CIRCUIT BREAKER

1 EACH

2 POLE,16A DC MCB, 10KA FOR 1sec

SIEMENS/SCHNEIDER.

PB1
PB2

PUSH BUTTON RED
PUSH BUTTON GREEN

2 EACH

2NC, 415V AC,
2NO, 415V AC,

TEKNIC
TEKNIC

2X-A/B

TIMER FOR COMPR. CIRCUIT

2

240VAC, 0 TO 30 sec

SELEC

K10/K20

AUX. CONTACTOR FOR COMPR. CIRCUIT

2

240 VAC,

SCHNEIDER/SIEMENS

ACC1/2

COMPRESSOR SUPPLY C/O. CONTACTOR

2

415VAC, 10A, POWER CONTACTS

SCHNEIDER/SIEMENS

49AM

AUTO -OFF- HAND SWITCH

1

415V.AC, 3 POSITIONS 45°
ANGLE,16A STAY PUT TYPE.

SWITRON/SHIRKE

NOTES:-

1) AUXILIARY SWITCHES ARE SHOWN FOR OPEN BREAKER.

2) AUXILIARY CONTACTORS CONTACTS IN DE ENERGISED POSITION.

3) PRESSURE SWITCHES ARE SHOWN WHEN NO SUPPLY & NO PRESSURE.

4) LOCAL REMOTE CHANGEOVER SWITCH IS SHOWN IN REMOTE POSITION.

5)  &  OPEN CONTACTS
 &  CLOSE CONTACTS.

6) SIZE OF CONTROL WIRE =2.5mm² 1100V GRADE STRANDED COPPER CONDUCTOR, PVC INSULATED, PVC INNER SHEATHED.
CONTROL WIRE INSIDE CABLE 2.5MM² 1100V GRADE STRANDED COPPER CONDUCTOR, PVC INSULATED,PVC INNER SHEATHE, ARMOURED.

7) COLOUR OF WIRE FOR AC CIRCUIT -RYB BLACK, FOR DC CIRCUIT -GRAY & FOR EARTHING -GREEN.

8) STUD TYPE (NON DISCONNECTION TYPE) TERMINAL BLOCK ARE PROVIDED.

9) 630A CONTACT IS SHOWN FOR NO OIL IN COMPRESSOR CONDITION.

10) OVERLOAD RELAY IS SET IN MANUAL RESET POSITION.

11) CONTACT RATING FOR GAS PRESSURE SWITCHES (AIR) ARE 0.05A AT 220V DC.

12) CONTACT RATING FOR GAS PRESSURE SWITCHES ARE 0.05A AT 220VDC.

13) CONTACT RATING FOR 630A 0.25A AT 220V DC NON INDUCTIVE.

14) CONTINUOUS CURRENT CARRYING CAPACITY OF TRIP COIL IS 50mA TO CATER FOR TRIP COIL SUPERVISION.

15) 52a CONTACT ARE OPEN WHEN BREAKER IS OPEN.

16) 52b CONTACT ARE CLOSE WHEN BREAKER IS OPEN.

17) ϕ TERMINAL ARE WIRED UPTO TERMINAL BLOCKS FOR REMOTE CONTROL PANEL OF CIRCUIT BREAKER.

18) REFER SEQUENCE DIAGRAM NO : EH5-4342-42-1/4 TO 4/4

19) 20% SPARE TB PROVIDED AND SAME SHALL BE UNIFORM DISTRIBUTED ON EACH TB ROW.

20) GUAGE & SWITCH ARE COMBINED IN CASE OF REGENCY ELECTRIC & WIKA MAKE DENSITY SWITCHES

21) FOR SIEMENS MAKE CONTACTOR NO+NC COMBINATION MAY VARY



Crompton Greaves Ltd.
SWITCHGEAR DIVISION S3
AMBAD, NASHIK.

1	25.05.15	REVISED AS PER CONSULTANT COMMENT	SDS	SDS	HVS	HVS
REV.	DATE	REASONS FOR REVISION	DRN.	PREPARED BY	CHECKED BY	APPROVED BY

OWNER
RAJASTHAN RAJYA VIDYUT UTPADAN NIGAM
LIMITED

PROJECT
2X660MW THERMAL POWER PLANT,SURAT GARH
STAGE -V, UNIT 7 & 8 AT SURATGARH , RAJASTHAN

OWNER'S ENGINEER
 TATA CONSULTING ENGINEERS LIMITED

EPC CONTRACTOR
 BHARAT HEAVY ELECTRICALS LTD
TRANSMISSION BUSINESS GROUP

WORK ORDER NO: HS 4342

DEPT CODE

NAME	SIGN.	DATE
YBJ		05.03.15
MSK		05.03.15
MSK		05.03.15
HVS		05.03.15

PRODUCT: FOR 400KV SP-PN
TYPE: 400-SFM-40A

DRN	YBJ	05.03.15
DESN	MSK	05.03.15
CHD	MSK	05.03.15
APPD	HVS	05.03.15

TITLE:- BILL OF MATERIAL FOR 420kV SP-PN SF6 GCB

PO NO:- 144P231 DTD 03.03.2015

CV	ME	EL	I&C			DEPT. SCALE		BHEL/SUB VENDOR DRG NO. EH5-4342-43
-	-	MSK	-			SIGN		
-	-	05.03.15	-			DATE		

SHT. No 1/1	REV. 1
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PRODUCED BY AN AUTODESK EDUCATIONAL PRODUCT

DRG NO: EH5-4342-43

12345678910111213141516

A

B

C

D

E

F

G

H

I

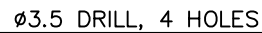
J

K

L

12345678910111213141516

PRODUCED BY AN AUTODESK EDUCATIONAL PRODUCT



**** CURRENT MANUFACTURING YEAR

* SERIAL NOS	QTY
46097C TO 46102C	6 NOS
46451C (Spare ph)	1 NOS



1.	25.05.15	REVISED AS PER CONSULTANT COMMENT	SDS	SDS	HVS	HVS
REV.	DATE	REASONS FOR REVISION	DRN.	PREPARED BY	CHECKED BY	APPROVED BY
OWNER RAJASTHAN RAJYA VIDYUT UTPADAN NIGAM LIMITED						
PROJECT 2X660MW THERMAL POWER PLANT,SURAT GARH STAGE -V, UNIT 7 & 8 AT SURATGARH , RAJASTHAN						
OWNER'S ENGINEER  TATA CONSULTING ENGINEERS LIMITED						
EPC CONTRACTOR  BHARAT HEAVY ELECTRICALS LTD TRANSMISSION BUSINESS GROUP						
WORK ORDER NO: HS 4342 PRODUCT: FOR 400KV SP-PN TYPE: 400-SFM-40A				DEPT CODE	NAME	SIGN. DATE
				DRN	YBJ	05.03.15
				DESN	MSK	05.03.15
				CHD	MSK	05.03.15
				APPD	HVS	05.03.15
TITLE RATING PLATE (WITH PIR WITHOUT CSD)						
PO NO: -- 144P231 DTD 03.03.2015						
CV	ME	EL	I&C	DEPT.	SCALE	
-	-	MSK	-	SIGN		
-	-	05.03.15	-	DATE		
					BHEL/SUB VENDOR DRG NO. EH5-4342-44	
					SHT. No 1/4	
					REV. 1	

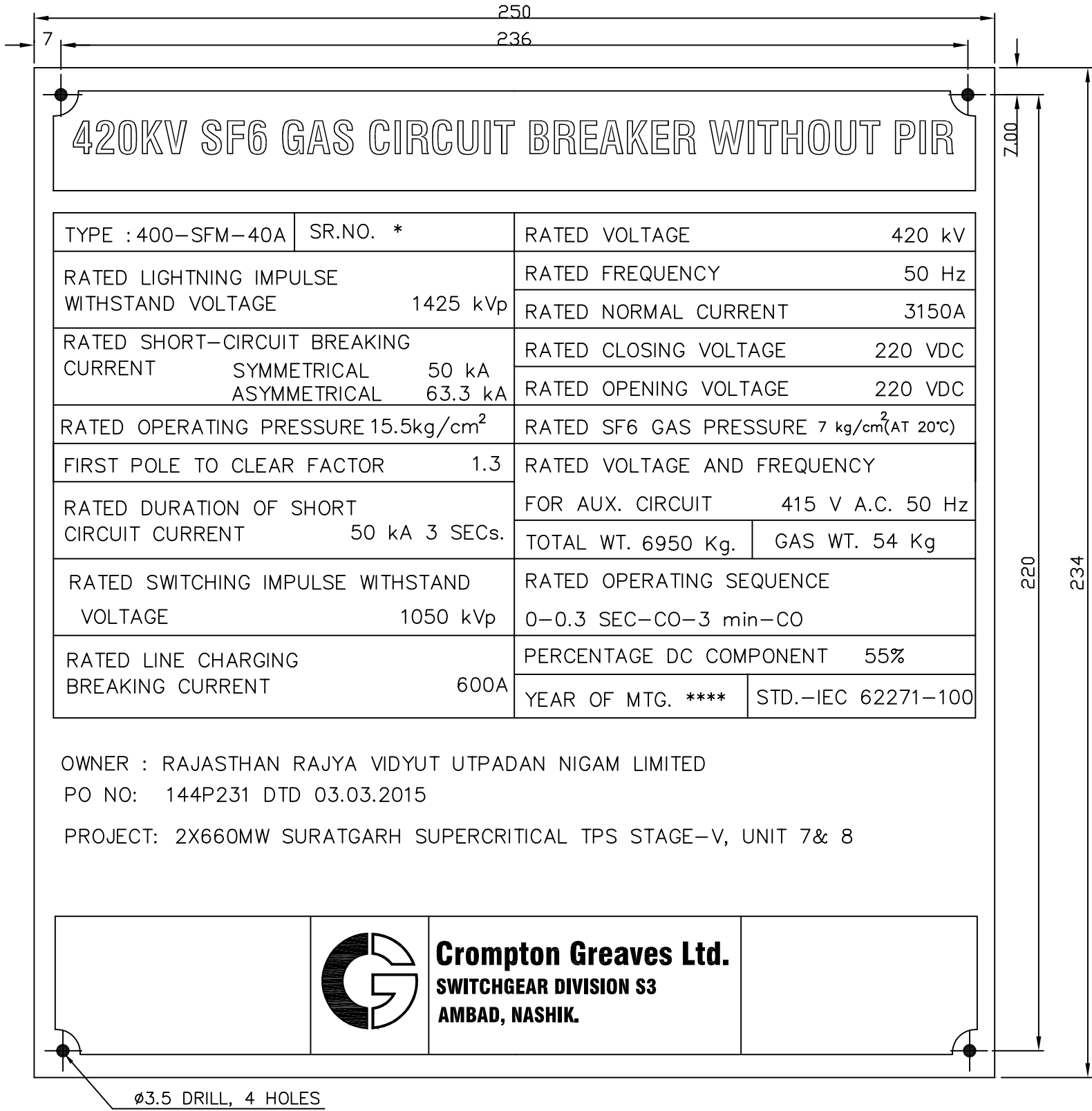
NOTE: –
MATERIAL : S.S. AISI : 304, 0.5 THK.
**** CURRENT MANUFACTURING YEAR

* SERIAL NOS	QTY
46097C TO 46102C	6 NOS
46451C (Spare ph)	1 NOS

						Crompton Greaves Ltd. SWITCHGEAR DIVISION S3 AMBAD, NASHIK.																										
REV.	DATE	REASONS FOR REVISION		DRN.	PREPARED BY	CHECKED BY	APPROVED BY																									
OWNER																																
RAJASTHAN RAJYA VIDYUT UTPADAN NIGAM LIMITED																																
PROJECT 2X660MW THERMAL POWER PLANT,SURAT GARH STAGE -V, UNIT 7 & 8 AT SURATGARH , RAJASTHAN																																
OWNER'S ENGINEER  TATA CONSULTING ENGINEERS LIMITED																																
EPC CONTRACTOR  BHARAT HEAVY ELECTRICALS LTD TRANSMISSION BUSINESS GROUP																																
WORK ORDER NO: HS 4342 PRODUCT: FOR 400KV SP-PN TYPE: 400-SFM-40A				<table><tr><td>DEPT CODE</td><td></td><td>NAME</td><td>SIGN.</td><td>DATE</td></tr><tr><td>DRN</td><td></td><td>YBJ</td><td></td><td>05.03.15</td></tr><tr><td>DESN</td><td></td><td>MSK</td><td></td><td>05.03.15</td></tr><tr><td>CHD</td><td></td><td>MSK</td><td></td><td>05.03.15</td></tr><tr><td>APPD</td><td></td><td>HVS</td><td></td><td>05.03.15</td></tr></table>				DEPT CODE		NAME	SIGN.	DATE	DRN		YBJ		05.03.15	DESN		MSK		05.03.15	CHD		MSK		05.03.15	APPD		HVS		05.03.15
DEPT CODE		NAME	SIGN.	DATE																												
DRN		YBJ		05.03.15																												
DESN		MSK		05.03.15																												
CHD		MSK		05.03.15																												
APPD		HVS		05.03.15																												
RATING PLATE (WITHOUT PIR WITHOUT CSD)																																
PO NO : — 144P231 DTD 03.03.2015																																
CV	ME	EL	I&C		DEPT	<table><tr><td>SCALE</td></tr><tr><td rowspan="2"></td></tr><tr><td></td></tr></table>		SCALE																								
SCALE																																
																																
—	—	MSK	—		SIGN																											
—	—	05.03.15	—		DATE																											
						BHEL/SUB VENDOR DRG NO. EH5-4342-44																										
						SHT. No 2/4																										
						REV.0																										

FIRST ANGLE PROJECTION

DRG NO: EH5-4342-44



NOTE: -
MATERIAL : S.S. AISI : 304, 0.5 THK.
**** CURRENT MANUFACTURING YEAR

* SERIAL NOS	QTY
46089C TO 46096C	8 NOS
46110C (Spare ph)	1 NOS



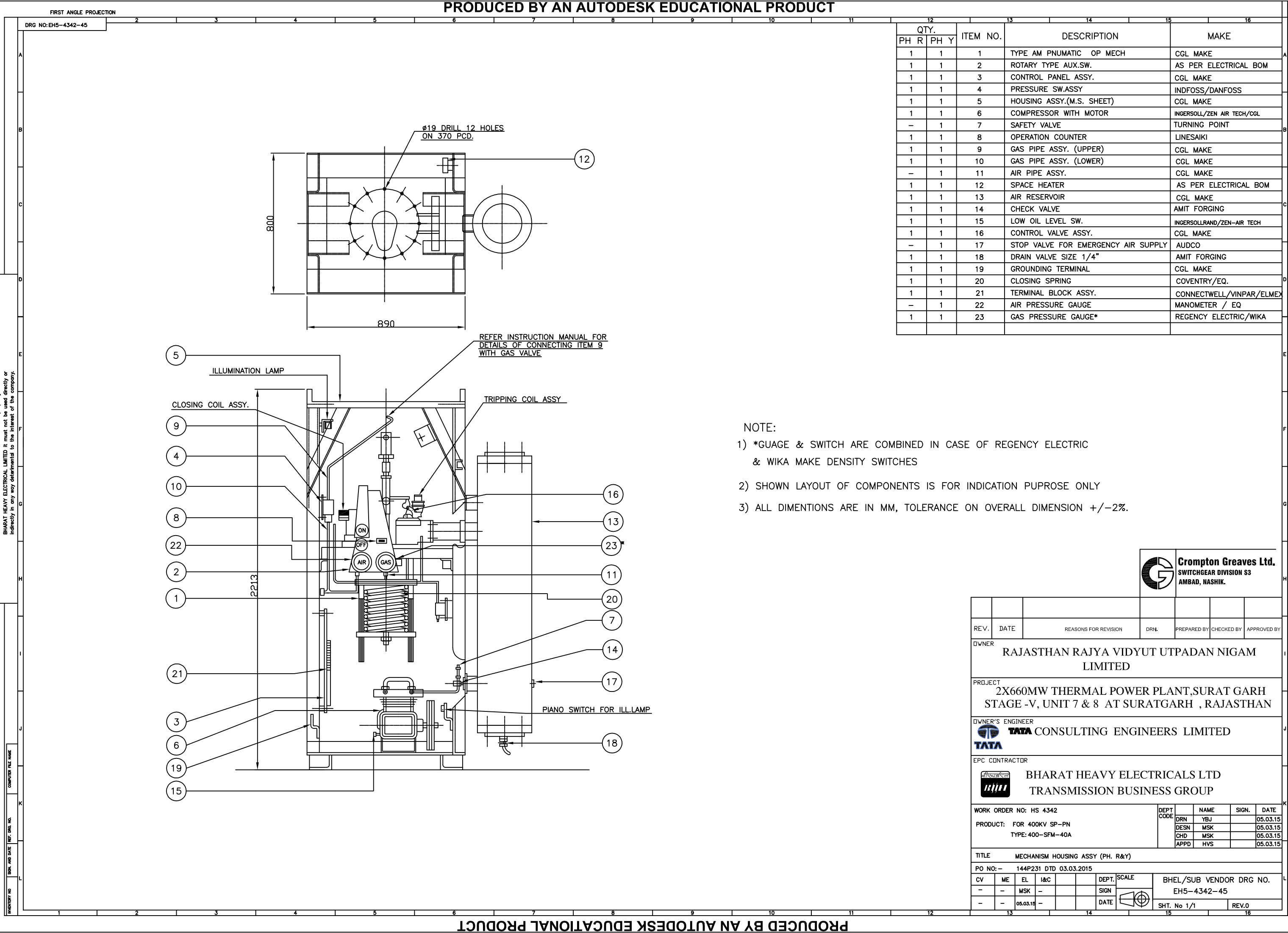
1.	25.05.15	REVISED AS PER CONSULTANT COMMENT	SDS	SDS	HVS	HVS
REV.	DATE	REASONS FOR REVISION	DRN.	PREPARED BY	CHECKED BY	APPROVED BY
OWNER RAJASTHAN RAJYA VIDYUT UTPADAN NIGAM LIMITED						
PROJECT 2X660MW THERMAL POWER PLANT,SURAT GARH STAGE -V, UNIT 7 & 8 AT SURATGARH , RAJASTHAN						
OWNER'S ENGINEER  TATA CONSULTING ENGINEERS LIMITED						
EPC CONTRACTOR  BHARAT HEAVY ELECTRICALS LTD TRANSMISSION BUSINESS GROUP						
WORK ORDER NO: HS 4342			DEPT CODE	NAME	SIGN.	DATE
PRODUCT: FOR 400KV SP-PN			DRN	YBJ		05.03.15
TYPE: 400-SFM-40A			CHD	MSK		05.03.15
			APPD	HVS		05.03.15
TITLE RATING PLATE DETAILS (WITHOUT PIR WITHOUT CSD)						
PO NO:- 144P231 DTD 03.03.2015						
CV	ME	EL	I&C		DEPT. SCALE	BHEL/SUB VENDOR DRG NO.
-	-	MSK	-		SIGN	EH5-4342-44
-	-	05.05.15	-		DATE	SHT. No 3/4
						REV. 1

**** CURRENT MANUFACTURING YEAR

* SERIAL NOS	QTY
46089C TO 46096C	8 NOS
46110C (Spare ph)	1 NOS



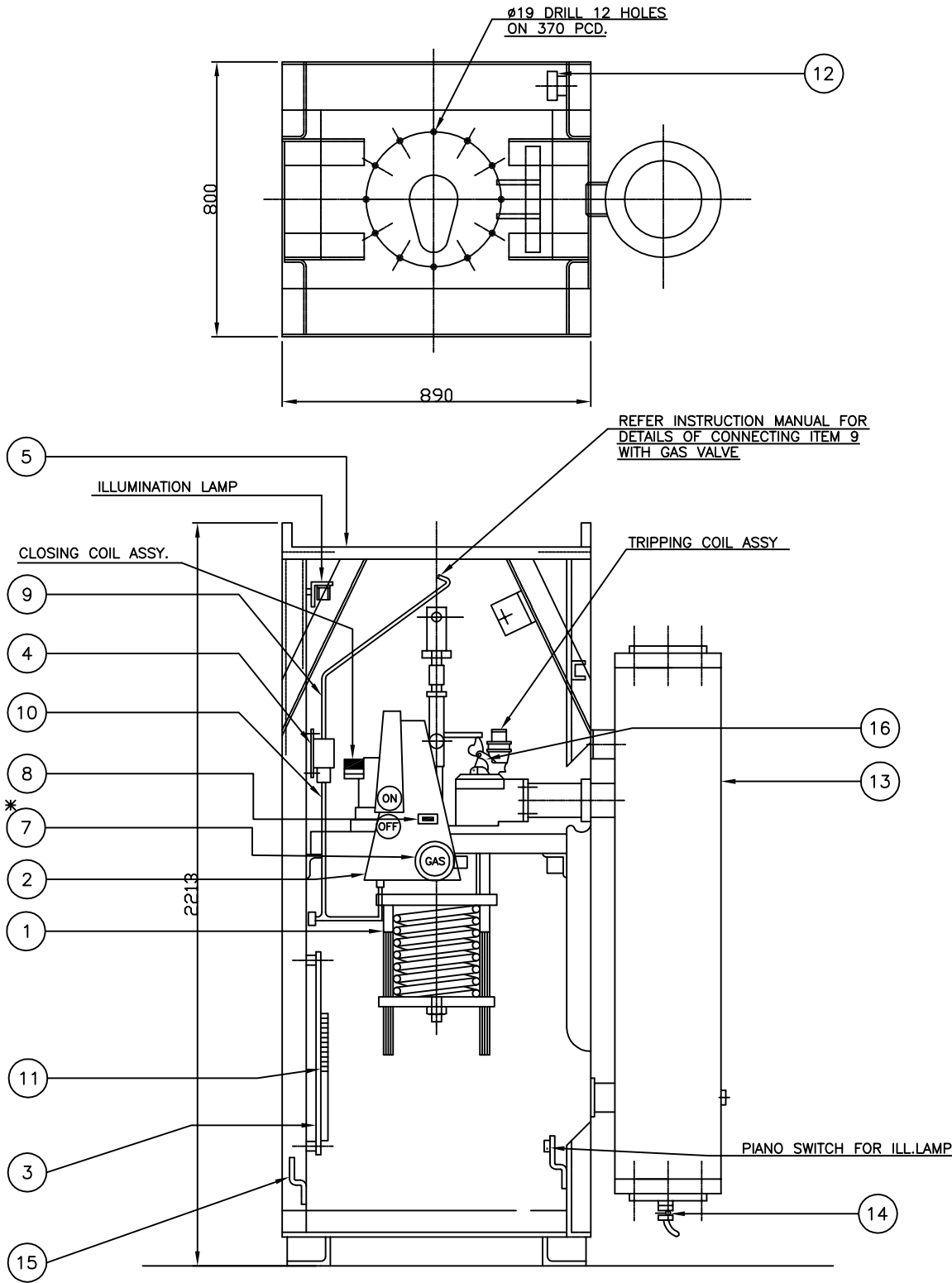
REV.	DATE	REASONS FOR REVISION			DRN.	PREPARED BY	CHECKED BY	APPROVED BY	
OWNER RAJASTHAN RAJYA VIDYUT UTPADAN NIGAM LIMITED									
PROJECT 2X660MW THERMAL POWER PLANT,SURAT GARH STAGE -V, UNIT 7 & 8 AT SURATGARH , RAJASTHAN									
OWNER'S ENGINEER  TATA CONSULTING ENGINEERS LIMITED									
EPC CONTRACTOR  BHARAT HEAVY ELECTRICALS LTD TRANSMISSION BUSINESS GROUP									
WORK ORDER NO: HS 4342					DEPT CODE	NAME	SIGN.	DATE	
PRODUCT: FOR 400KV SP-PN						DRN	YBJ		05.03.15
TYPE: 400-SFM-40A						DESN	MSK		05.03.15
						CHD	MSK		05.03.15
						APPD	HVS		05.03.15
TITLE RATING PLATE DETAILS (WITHOUT PIR WITHOUT CSD)									
PO NO :- 144P231 DTD 03.03.2015									
CV	ME	EL	I&C			DEPT.	SCALE 	BHEL/SUB VENDOR DRG NO.	
		MSK	-			SIGN		EH5-4342-44	
-	-	05.05.15	-			DATE		SHT. No 4/4	REV.0



FIRST ANGLE PROJECTION

PRODUCED BY AN AUTODESK EDUCATIONAL PRODUCT

DRG NO: EH5-4342-46



PHASE-B QTY.	ITEM NO.	DESCRIPTION	MAKE
1	1	TYPE AM PNUMATIC MECH.ASSY.	CGL MAKE
1	2	ROTARY TYPE AUX.SW.	AS PER ELECTRICAL BOM
1	3	CONTROL PANEL ASSY.	CGL MAKE
1	4	PRESSURE SW.ASSY	INDFOSS/DANFOSS
1	5	HOUSING ASSY.	CGL MAKE
1	6	CLOSING SPRING	COVENTRY/EQ.
1	7	GAS PRESSURE GAUGE*	REGENCY ELECTRIC/WIKA
1	8	OPERATION COUNTER	LINESAIKI
1	9	GAS PIPE ASSY. (UPPER)	CGL MAKE
1	10	GAS PIPE ASSY. (LOWER)	CGL MAKE
1	11	TERMINAL BLOCK ASSY.	CONNECTWELL/VINPAR/ELMEX
1	12	SPACE HEATER	AS PER ELECTRICAL BOM
1	13	AIR RESERVOIR	CGL MAKE
1	14	DRAIN VALVE SIZE 1/4"	AMIT FORGING
1	15	GROUNDING TERMINAL	CGL MAKE
1	16	CONTROL VALVE ASSY.	CGL MAKE

NOTE:

- 1) *GUAGE & SWITCH ARE COMBINED IN CASE OF REGENCY ELECTRIC
& WIKA MAKE DENSITY SWITCHES
- 2) SHOWN LAYOUT OF COMPONENTS IS FOR INDICATION PUPPOSE ONLY
- 3) ALL DIMENTIONS ARE IN MM, TOLERANCE ON OVERALL DIMENSION +/-2%.

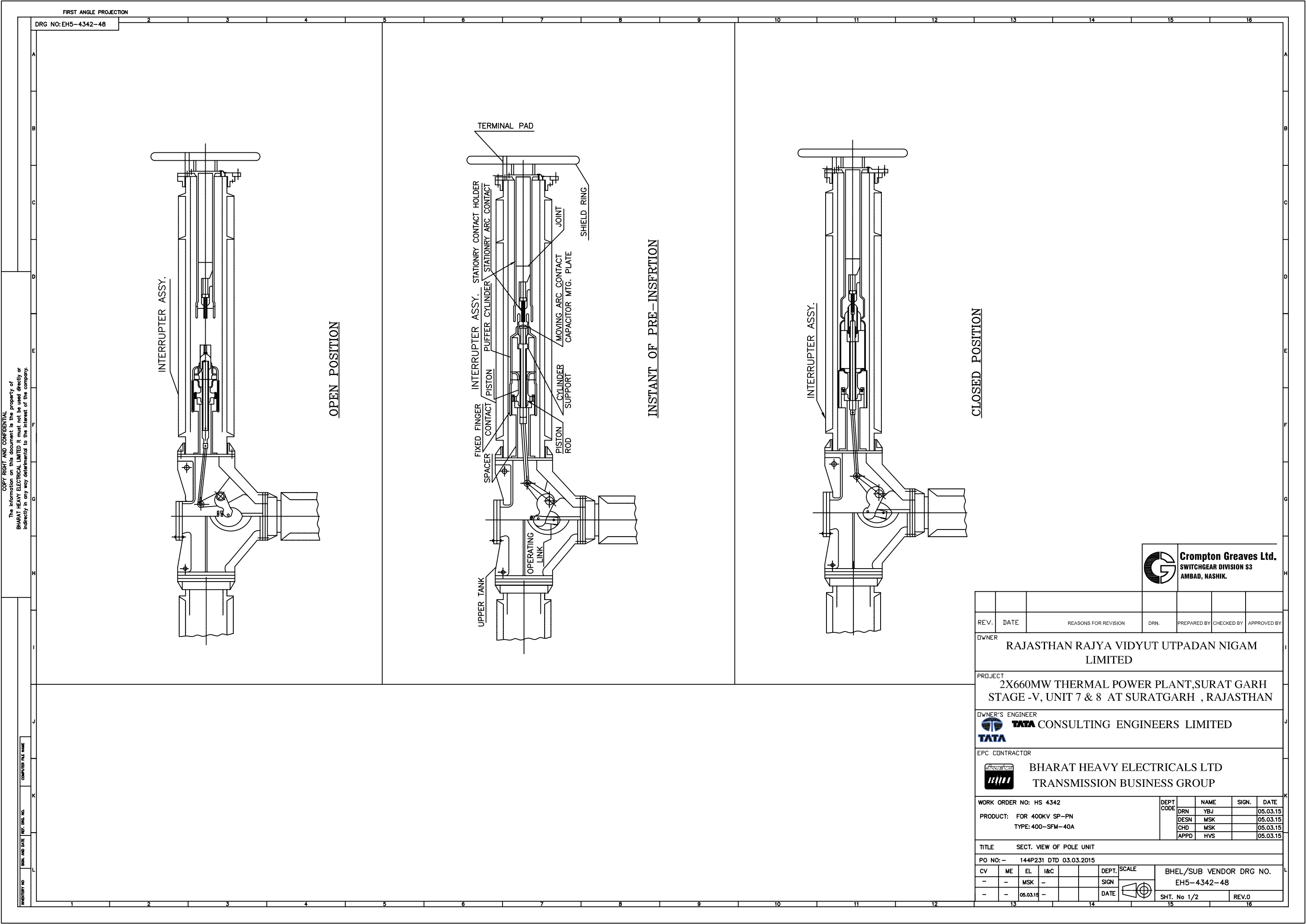


REV.	DATE	REASONS FOR REVISION	DRN.	PREPARED BY	CHECKED BY	APPROVED BY
OWNER RAJASTHAN RAJYA VIDYUT UTPADAN NIGAM LIMITED						
PROJECT 2X660MW THERMAL POWER PLANT,SURAT GARH STAGE -V, UNIT 7 & 8 AT SURATGARH , RAJASTHAN						
OWNER'S ENGINEER TATA CONSULTING ENGINEERS LIMITED						
EPC CONTRACTOR BHARAT HEAVY ELECTRICALS LTD TRANSMISSION BUSINESS GROUP						
WORK ORDER NO: HS 4342			DEPT CODE	NAME	SIGN.	DATE
PRODUCT: FOR 400KV SP-PN			DRN	YBJ		05.03.15
TYPE: 400-SFM-40A			DESN	MSK		05.03.15
			CHD	MSK		05.03.15
			APPD	HVS		05.03.15
TITLE MECHANISM HOUSING ASSY (PH.B.)						
PO NO: - 144P231 DTD 03.03.2015						
CV	ME	EL	I&C		DEPT.	SCALE
-	-	MSK	-		SIGN	BHEL/SUB VENDOR DRG NO. EH5-4342-46
-	-	05.03.15	-		DATE	SHT. No 1/1
			REV.0			



NOTES :

- | | | | | | | | |
|---|---------|-----------------------------------|------|-------------|------------|--|----------|
| 1. | 25.5.15 | REVISED AS PER CONSULTANT COMMENT | SDS | SDS | HVS | HVS | |
| REV. | DATE | REASONS FOR REVISION | DRN. | PREPARED BY | CHECKED BY | APPROVED BY | |
| OWNER
RAJASTHAN RAJYA VIDYUT UTPADAN NIGAM LIMITED | | | | | | | |
| PROJECT
2X660MW THERMAL POWER PLANT,SURAT GARH STAGE -V, UNIT 7 & 8 AT SURATGARH , RAJASTHAN | | | | | | | |
| OWNER'S ENGINEER
 TATA CONSULTING ENGINEERS LIMITED | | | | | | | |
| EPC CONTRACTOR
 BHARAT HEAVY ELECTRICALS LTD TRANSMISSION BUSINESS GROUP | | | | | | | |
| WORK ORDER NO: HS 4342
PRODUCT: FOR 400KV SP-PN
TYPE: 400-SFM-40A | | | | DEPT CODE | NAME | SIGN. | DATE |
| | | | | DRN | YBJ | | 05.03.15 |
| | | | | DESIN | MSK | | 05.03.15 |
| | | | | CHD | MSK | | 05.03.15 |
| | | | | APPD | HVS | | 05.03.15 |
| TITLE AIR AND GAS SYSTEM | | | | | | | |
| PO NO: -- 144P231 DTD 03.03.2015 | | | | | | | |
| CV | ME | EL | I&C | DEPT. | SCALE | BHEL/SUB VENDOR DRG NO.
EH5-4342-47 | |
| - | - | MSK | - | | SIGN | | |
| - | - | 05.03.15 | - | | DATE | | |
|  | | | | | | SHT. No 1/1 | |
| | | | | | | REV. 1 | |



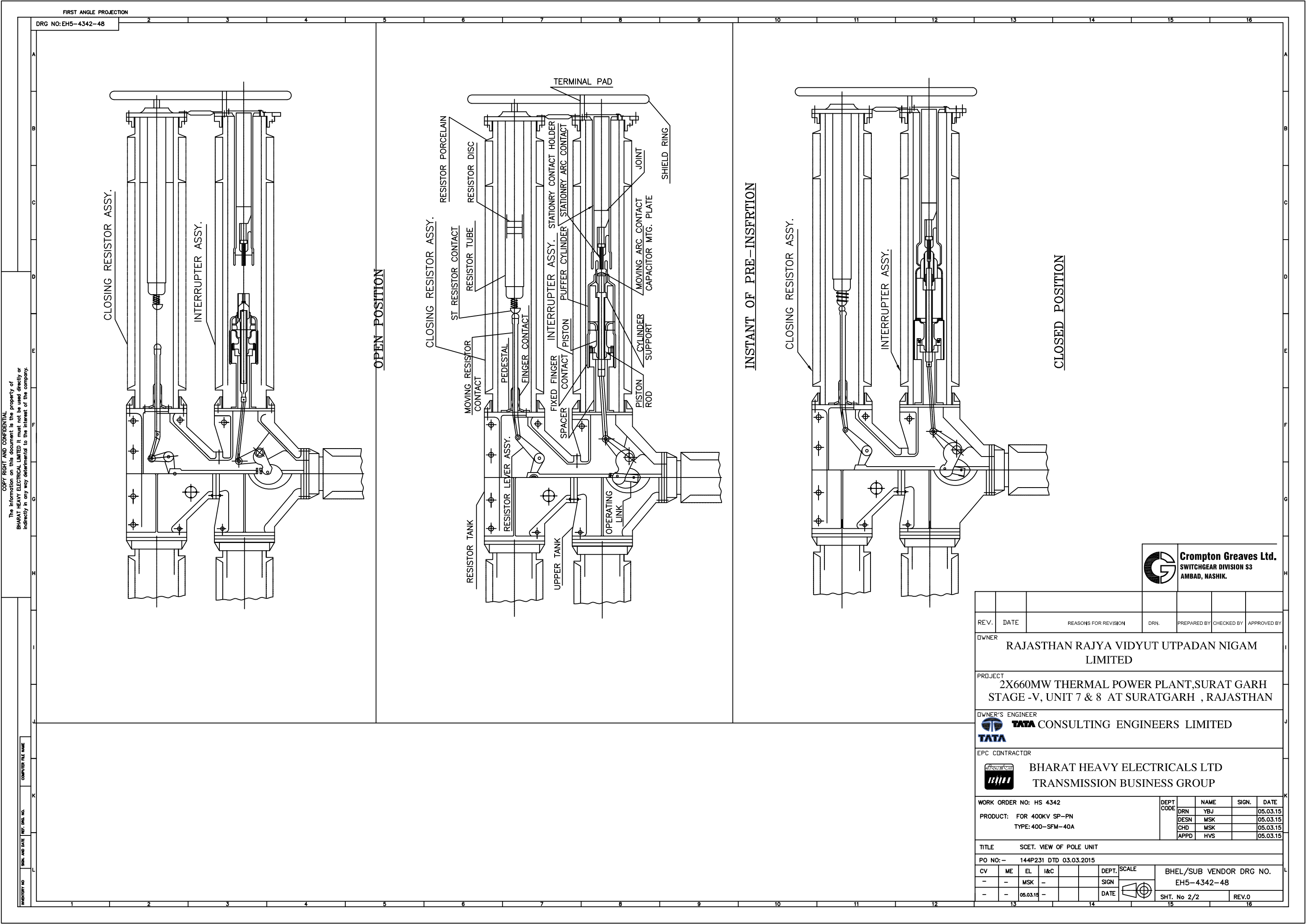
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Crompton Greaves Ltd.
SWITCHGEAR DIVISION S3
AMBAD, NASHIK.

REV.	DATE	REASONS FOR REVISION		DRN.	PREPARED BY	CHECKED BY	APPROVED BY	
OWNER RAJASTHAN RAJYA VIDYUT UTPADAN NIGAM LIMITED								
PROJECT 2X660MW THERMAL POWER PLANT,SURAT GARH STAGE -V, UNIT 7 & 8 AT SURATGARH , RAJASTHAN								
OWNER'S ENGINEER  TATA CONSULTING ENGINEERS LIMITED								
EPC CONTRACTOR  BHARAT HEAVY ELECTRICALS LTD TRANSMISSION BUSINESS GROUP								
WORK ORDER NO: HS 4342 PRODUCT: FOR 400KV SP-PN TYPE: 400-SFM-40A				DEPT CODE	NAME	SIGN.	DATE	
					DRN	YBJ		05.03.15
					DESN	MSK		05.03.15
					CHD	MSK		05.03.15
					APPD	HVS		05.03.15
TITLE SECT. VIEW OF POLE UNIT								
PO NO: - 144P231 DTD 03.03.2015								
CV	ME	EL	I&C		DEPT.	SCALE	BHEL/SUB VENDOR DRG NO. EH5-4342-48	
-	-	MSK	-		SIGN			
-	-	05.03.15	-		DATE			
					SHT. No 1/2		REV.0	
13		14		15		16		



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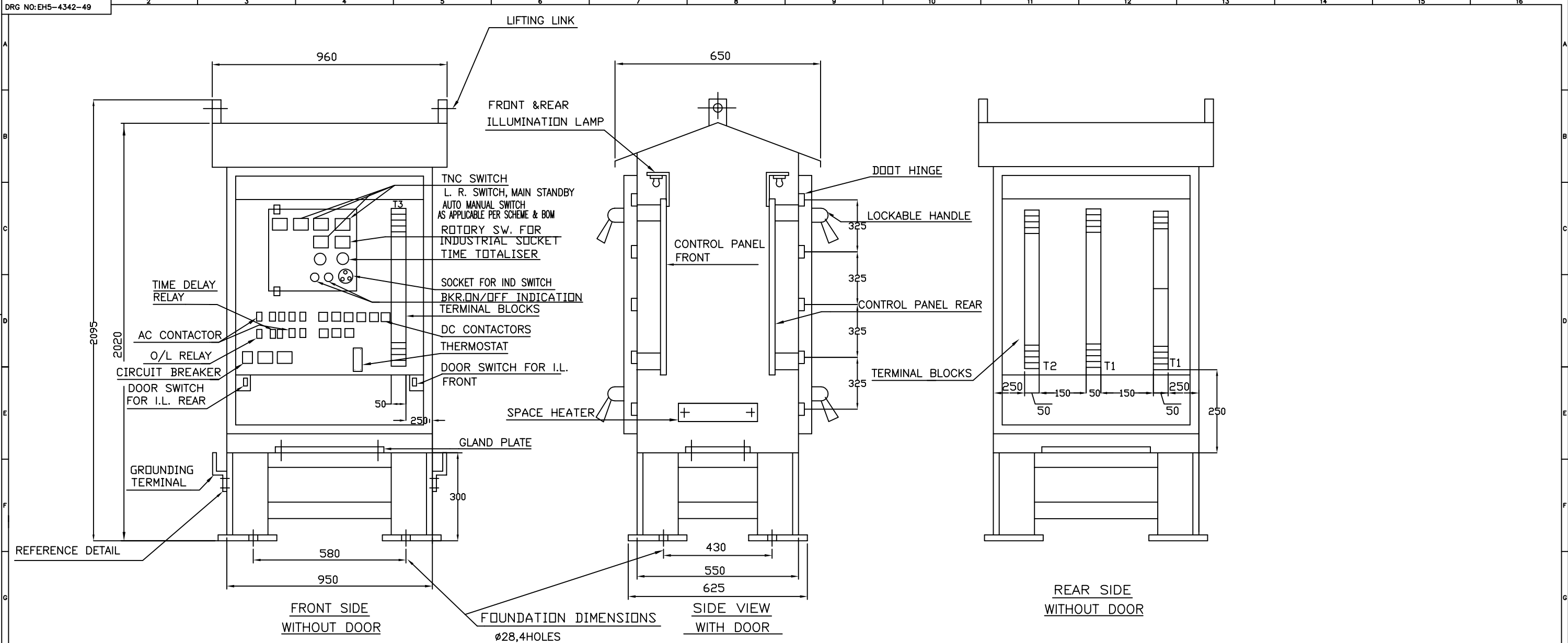


Crompton Greaves Ltd.
SWITCHGEAR DIVISION S3
AMBAD, NASHIK.

REV.	DATE	REASONS FOR REVISION		DRN.	PREPARED BY	CHECKED BY	APPROVED BY	
OWNER RAJASTHAN RAJYA VIDYUT UTPADAN NIGAM LIMITED								
PROJECT 2X660MW THERMAL POWER PLANT,SURAT GARH STAGE -V, UNIT 7 & 8 AT SURATGARH , RAJASTHAN								
OWNER'S ENGINEER  TATA CONSULTING ENGINEERS LIMITED								
EPC CONTRACTOR  BHARAT HEAVY ELECTRICALS LTD TRANSMISSION BUSINESS GROUP								
WORK ORDER NO: HS 4342 PRODUCT: FOR 400KV SP-PN TYPE: 400-SFM-40A					DEPT CODE	NAME	SIGN.	DATE
						DRN	YBJ	05.03.15
						DESN	MSK	05.03.15
						CHD	MSK	05.03.15
						APPD	HVS	05.03.15
TITLE SCET. VIEW OF POLE UNIT								
PO NO: - 144P231 DTD 03.03.2015								
CV	ME	EL	I&C			DEPT.	SCALE	BHEL/SUB VENDOR DRG NO. EH5-4342-48
-	-	MSK	-			SIGN		
-	-	05.03.15	-			DATE		
							SHT. No 2/2	REV.0
13		14		15		16		

FIRST ANGLE PROJECTION

DRG NO:EH5-4342-49



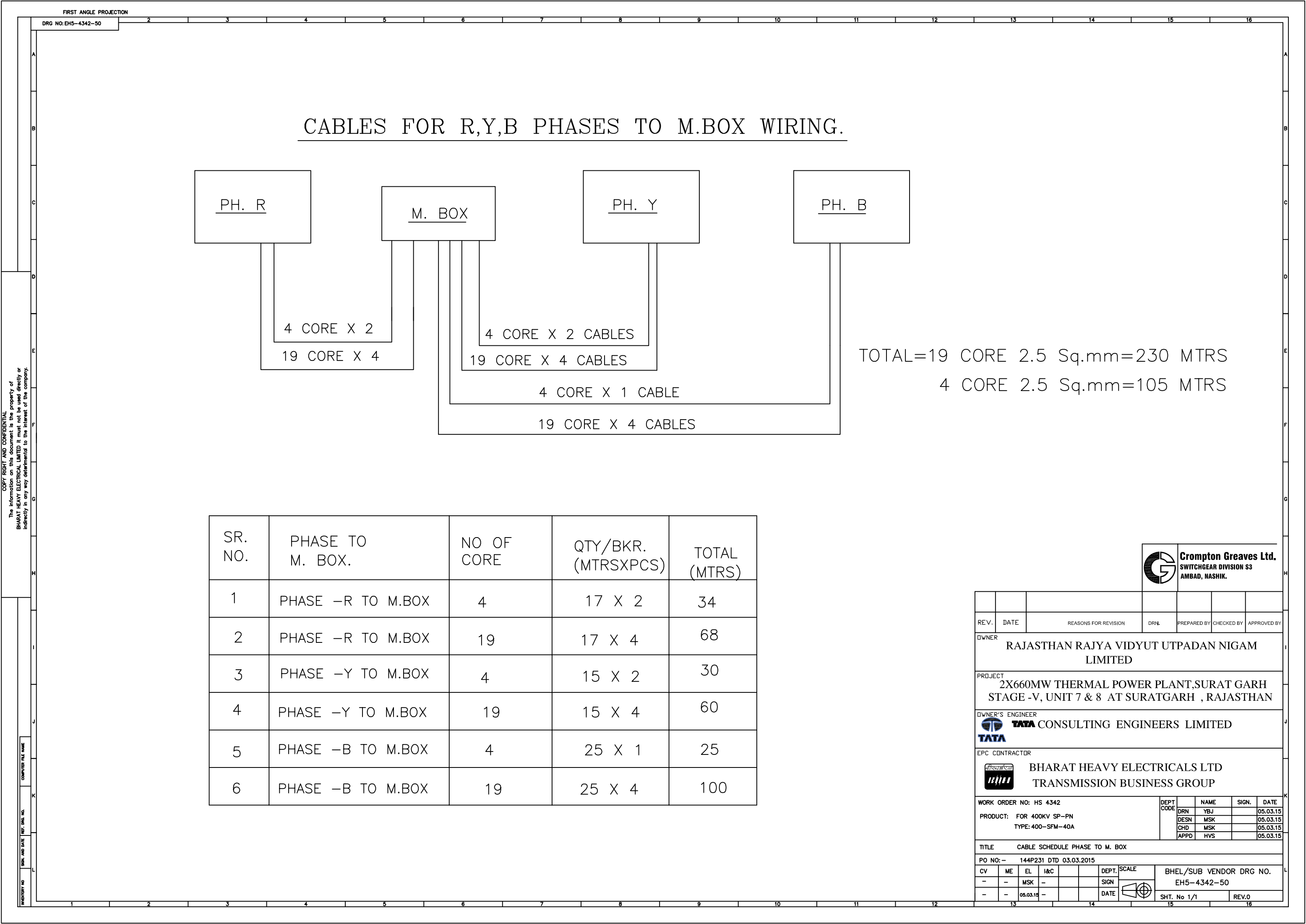
NOTES:

1. FRONT AND REAR VIEWS ARE SHOWN FOR OPEN DOORS.
2. SIDE VIEW IS SHOWN WITH DOORS.
3. MATERIAL : M.S./CRCA SHEET 3mm THICK, DOOR 2 THK
4. FINISH :- PAINTED AS PER SHADE 631 OF IS 5 (1994) EXTERNAL & INSIDE GLOSSY WHITE
5. WEIGHT : 125 Kg. (APPROX)
6. FOR DEATILED WIRING DIAGRAM REFER
A) WIRING DIAGRAM OF HOUSING
B) WIRING DIAGRAM OF M.B
7. COMPONAT LAYOUT SHOWN ON DRAWING IS FOR INDICATION PURPOSE.
8. IF ADDITIONAL TERMINAL BLOCK IS REQUIRED DEPENDING ON SCHEME SAME WILL BE ADDED SUITABLY INSIDE M. BOX
9. ALL DIMENTIONS ARE IN MM, TOLERANCE ON OVERALL DIMENSION +/-2%.

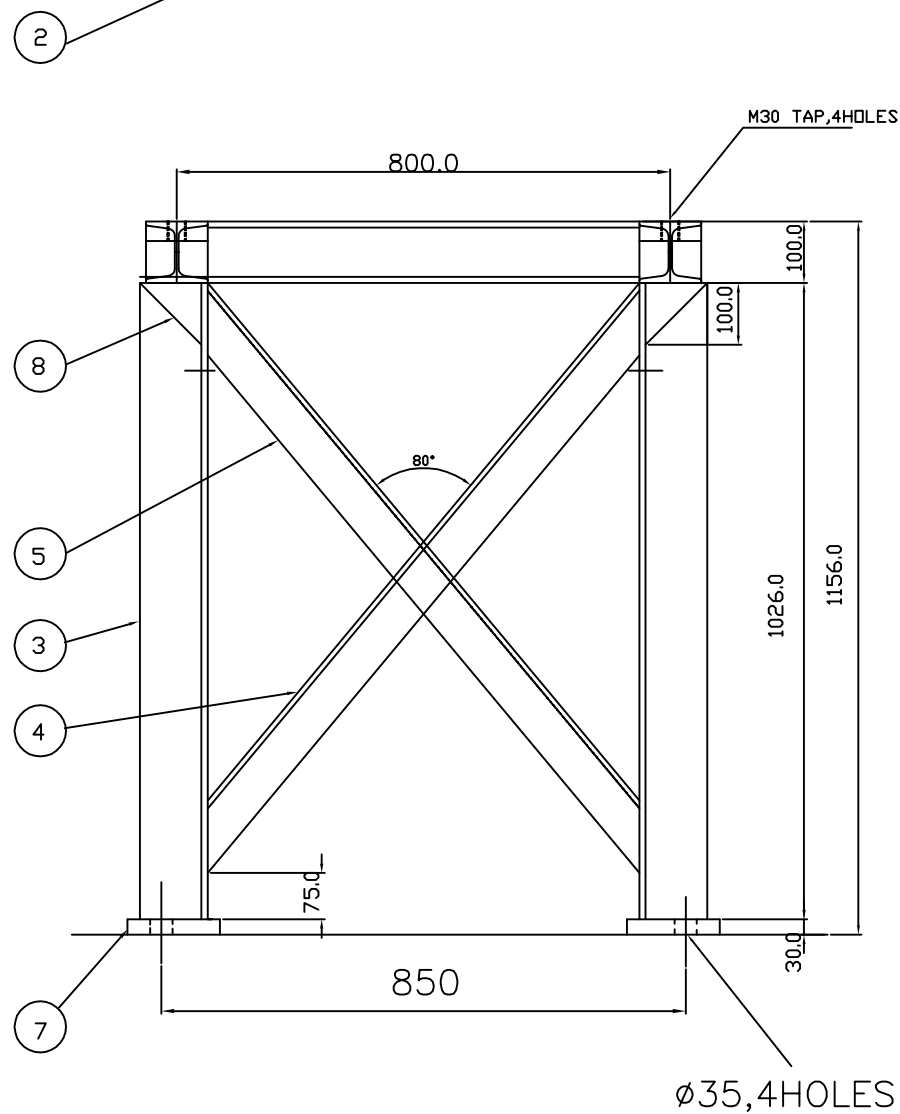


Crompton Greaves Ltd.
SWITCHGEAR DIVISION S3
AMBAD, NASHIK.

REV.	DATE	REASONS FOR REVISION	DRN.	PREPARED BY	CHECKED BY	APPROVED BY
OWNER RAJASTHAN RAJYA VIDYUT UTPADAN NIGAM LIMITED						
PROJECT 2X660MW THERMAL POWER PLANT,SURAT GARH STAGE -V, UNIT 7 & 8 AT SURATGARH , RAJASTHAN						
OWNER'S ENGINEER TATA CONSULTING ENGINEERS LIMITED						
EPC CONTRACTOR BHARAT HEAVY ELECTRICALS LTD TRANSMISSION BUSINESS GROUP						
WORK ORDER NO: HS 4342			DEPT CODE	NAME	SIGN.	DATE
PRODUCT: FOR 400KV SP-PN			DRN	YBJ		05.03.15
TYPE: 400-SFM-40A			DESN	MSK		05.03.15
			CHD	MSK		05.03.15
			APPD	HVS		05.05.15
TITLE MARSHLLING BOX						
PO NO:- 144P231 DTD 03.03.2015						
CV	ME	EL	I&C		DEPT. SCALE	BHEL/SUB VENDOR DRG NO.
-	-	MSK	-		SIGN	EH5-4342-49
-	-	05.03.15	-		DATE	SHT. No 1/1
						REV.0



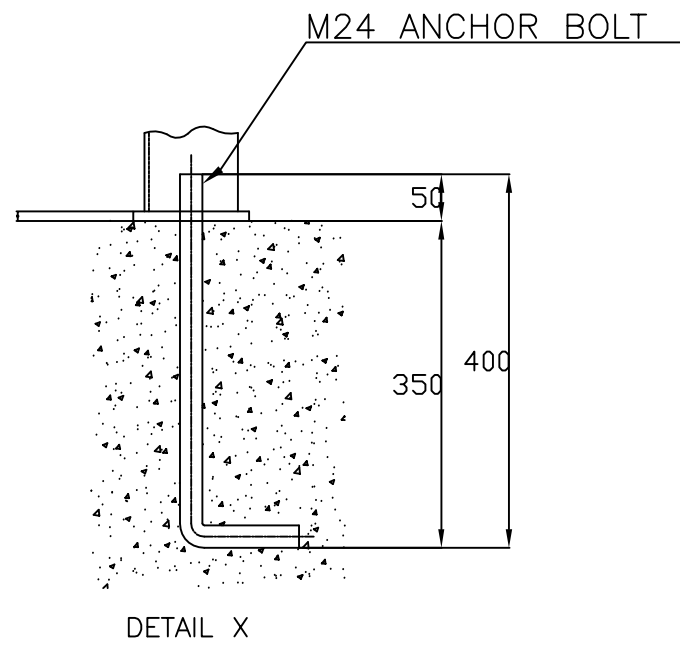
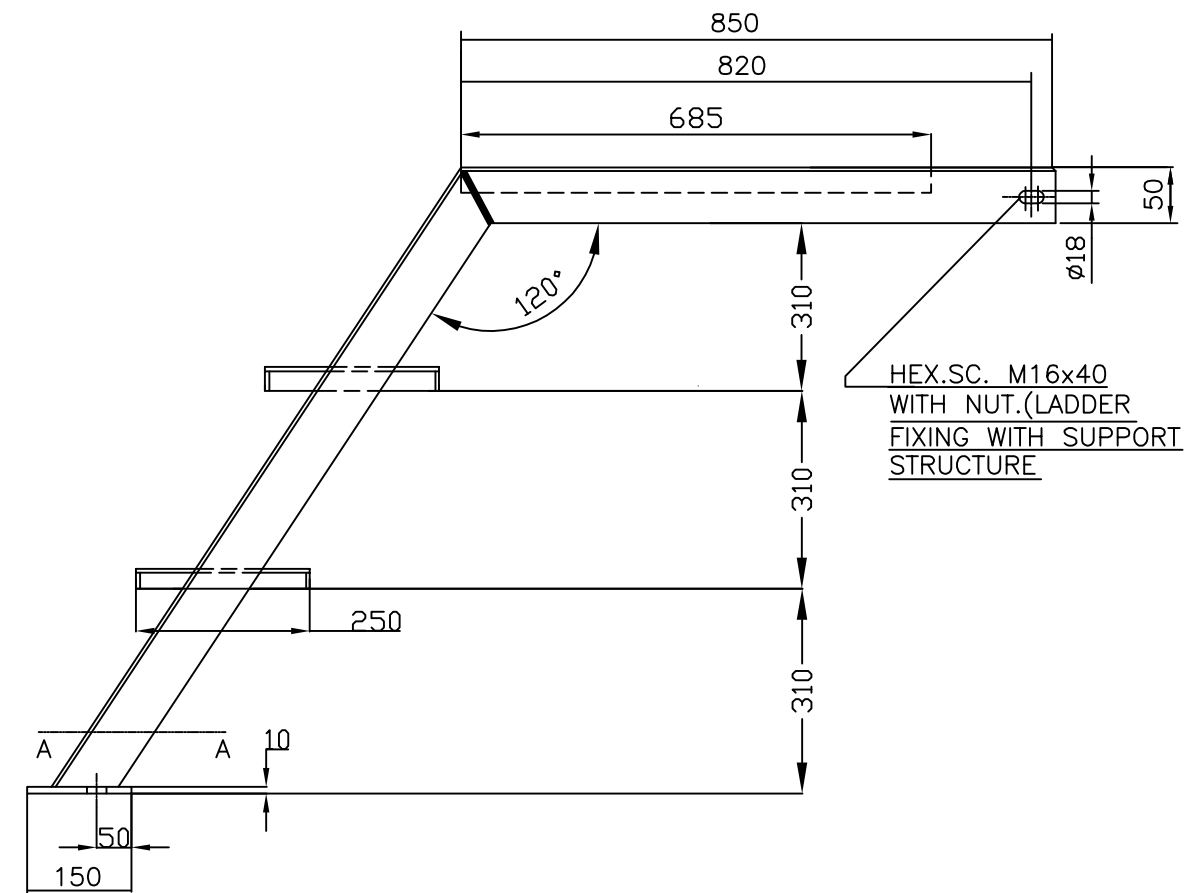
DRG NO: EH5-4342-51



- 1) FINISH: HOT DIP GALVANISED 610 g/m²
- 2) WEIGHT : 250 Kg.
- 3) ALL DIMENSIONS ARE IN MM, TOLERANCE ON OVERALL DIMENSION $\pm 2\%$.



			REASONS FOR REVISION	DRN.	PREPARED BY	CHECKED BY	APPROVED BY		
OWNER RAJASTHAN RAJYA VIDYUT UTPADAN NIGAM LIMITED									
PROJECT 2X660MW THERMAL POWER PLANT,SURAT GARH STAGE -V, UNIT 7 & 8 AT SURATGARH , RAJASTHAN									
OWNER'S ENGINEER  TATA CONSULTING ENGINEERS LIMITED									
EPC CONTRACTOR  BHARAT HEAVY ELECTRICALS LTD TRANSMISSION BUSINESS GROUP									
WORK ORDER NO: HS 4342					DEPT CODE				
PRODUCT: FOR 400KV SP-PN									
TYPE: 400-SFM-40A									
TITLE SUPPORT STRUCTURE									
PO NO: -- 144P231 DTD 03.03.2015									
CV	ME	EL	I&C		DEPT.	SCALE 	BHEL/SUB VENDOR DRG NO. EH5-4342-51		
		MSK	-		SIGN				
-	-	05.03.15	-		DATE				
						SHT. No 1/1	REV.0		



DETAIL X



			REASONS FOR REVISION	DRN.	PREPARED BY	CHECKED BY	APPROVED BY		
OWNER									
RAJASTHAN RAJYA VIDYUT UTPADAN NIGAM LIMITED									
PROJECT									
2X660MW THERMAL POWER PLANT,SURAT GARH STAGE -V, UNIT 7 & 8 AT SURATGARH , RAJASTHAN									
OWNER'S ENGINEER									
 TATA CONSULTING ENGINEERS LIMITED									
EPC CONTRACTOR									
 BHARAT HEAVY ELECTRICALS LTD TRANSMISSION BUSINESS GROUP									
WORK ORDER NO: HS 4342					DEPT CODE				
PRODUCT: FOR 400KV SP-PN									
TYPE: 400-SFM-40A									
TITLE LADDER DETAILS									
PO NO: -- 144P231 DTD 03.03.2015									
CV	ME	EL	I&C		DEPT.	SCALE 	BHEL/SUB VENDOR DRG NO. EH5-4342-52		
		MSK	-		SIGN				
-	-	05.03.15	-		DATE		SHT. No 1/1		REV.0

1) ALL DIMENSIONS ARE IN MM, TOLERANCE ON OVERALL DIMENSION $\pm 2\%$.