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भारत हेवी इलेक्ट्रिकल्स लिमिटेड

BHARAT HEAVY ELECTRICALS LIMITED

कोड टाइप शंट प्रतिघातक

शीतन प्रकार	ONAN
TYPE OF COOLING	
निर्धारित शक्ति (मे.वो.ए.आर.)	125
RATED POWER (MVAR)	
निर्धारित वोल्टता (कि. वो.)	420
RATED VOLTAGE (kV)	
निर्धारित धारा (रेम्पियर)	171.83
RATED CURRENT (A)	
फे.ज	3
PHASE	
आवृत्ति (हर्ट्ज)	50
FREQUENCY (Hz)	
संयोजक प्रतीक	YN
CONNECTION SYMBOL	
प्रतिबाधा ओहम/फे.ज	1411.2
IMPEDANCE OHM/PHASE	(+0, -10% TOL)
शून्य क्रम प्रतिबाधा	1269.9-1411
ZERO SEQUENCE IMPEDANCE	
ताप वृद्धि तेल (°से.)	40°C
TEMPERATURE RISE OIL (°C)	(OVER AMBIENT OF 50° C)
ताप वृद्धि कुंडलन (°से.)	50°C 45°C
TEMP. RISE WINDING (°C)	(OVER AMBIENT OF 50° C)
दल ओ ए संख्या	1311/ESD-8/126/III/400KV/SHAMLI D
L O A NO.	

भारतीय मानक 5553 और  
आई.ई.सी. : 60076-6 के अनुसार  
TO INDIAN STANDARD 5553  
AND IEC : 60076-6

### CORE TYPE SHUNT REACTOR

निर्माणात की कम संख्या	6007896
MAKER'S SERIAL NO.	
वेद्युत विनिर्देश संख्या	601376
ELEC. SPEC. NO.	
निर्माण वर्ष	2019
YEAR OF MANUFACTURE	
उत्प्रेषण ड्राईंग संख्या	3 469 00 02063
DIAGRAM DRG.NO.	
प्राथम्य ड्राईंग संख्या	3 469 00 02012
OGA DRG.NO.	
ग्रोड उत कुंडलन (कि.ग्रा.)	91700
CORE & WINDING (kg)	
तेल का भार (कि.ग्रा.)	47375
WEIGHT OF OIL (kg)	
पूर्व भार (कि.ग्रा.)	184000
TOTAL WEIGHT (kg)	
तेल मात्रा (लीटर)	54450
OIL QUANTITY (LITRE)	
परिवहन भार (कि.ग्रा.)	114000
TRANSPORT WEIGHT (kg)	
टँकी से निकालने का भार (कि.ग्रा.)	91700
UNTANKING WEIGHT (kg)	

निर्धारित विद्युत रोधन  
RATED INSULATION

SI 1050 LI 1300 - LI 550 AC 230		
	LINE	NEUTRAL
LIGHTNING IMPULSE	1300 kVp	550 kVp
POWER FREQ.	364 kV (rms)	230 kV(rms)
SWITCHING IMPULSE	1050 kVp	-

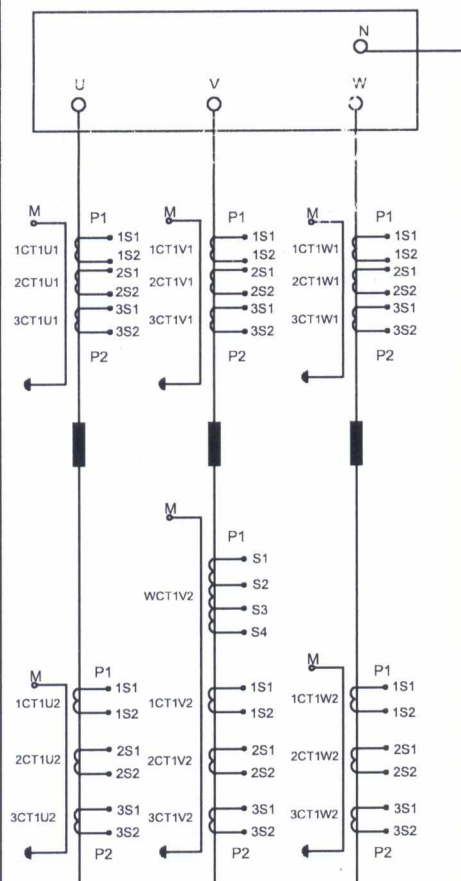
ग्राहक CUSTOMER	M/S UTTAR PRADESH POWER TRANSMISSION CORPORATION LTD (UPPTCL).
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○ टर्मिनल्स टैंकी द्रव्य के ऊपर  
TERMINALS ON TANK COVER

 \* PROJECT SPECIFIC.

## IMPORTANT

M- TERMINAL IS NOT TO BE EARTHED. TO BE USED ONLY FOR TESTING. MAX. CURRENT RATING 20 AMPS.



### CURRENT TRANSFORMER DETAILS

	NOMEN- CLATURE	TERMINALS	RATIO	ACCURACY CLASS	BURDEN (VA)	MIN.KNEE POINT VOLTAGE (V)	MAXIMUM CT RESISTA- NCE(OHMS)	MAXIMUM EXCITING CURRENT (mA)	PURPOSE
LINE SIDE	1CT1U1 1CT1V1 1CT1W1	1S1-1S2	200/1	PS	-	200	1.0	100 AT VK/2	REACTOR DIFFERENTIAL PROTECTION
	2CT1U1 2CT1V1 2CT1W1	2S1-2S2	200/1	PS	-	200	1.0	100 AT VK/2	RESTRICTED EARTH FAULT (REF)
	3CT1U1 3CT1V1 3CT1W1	3S1-3S2	200/1	5P20	15	-	-	-	REACTOR BACK-UP
NEUTRAL SIDE	WCT1V2	S1-S2-S3-S4	172/2.2- 1.8- 1.4	5	10	-	-	-	WTI+RID
	1CT1U2 1CT1V2 1CT1W2	1S1-1S2	200/1	PS	-	200	1.0	100 AT VK/2	DIFFERENTIAL PROTECTION
	2CT1U2 2CT1V2 2CT1W2	2S1-2S2	200/1	PS	-	200	1.0	100 AT VK/2	RESTRICTED EARTH FAULT (REF)
	3CT1U2 3CT1V2 3CT1W2	3S1-3S2	500/1	0.2 ISF<5	10	-	-	-	METERING

टिप्पणी :-

1. कोड टर्ईप शंट प्रतिघातक के आपेक्षिक टर्मिनल स्थान लगभग यहाँ दिखाये अनुसार है।

NOTE:-

1. THE RELATIVE TERMINAL POSITIONS ON THE CORE TYPE SHUNT REACTOR ARE APPROXIMATELY AS SHOWN.

MADE IN INDIA

NOTES TO CUSTOMER-

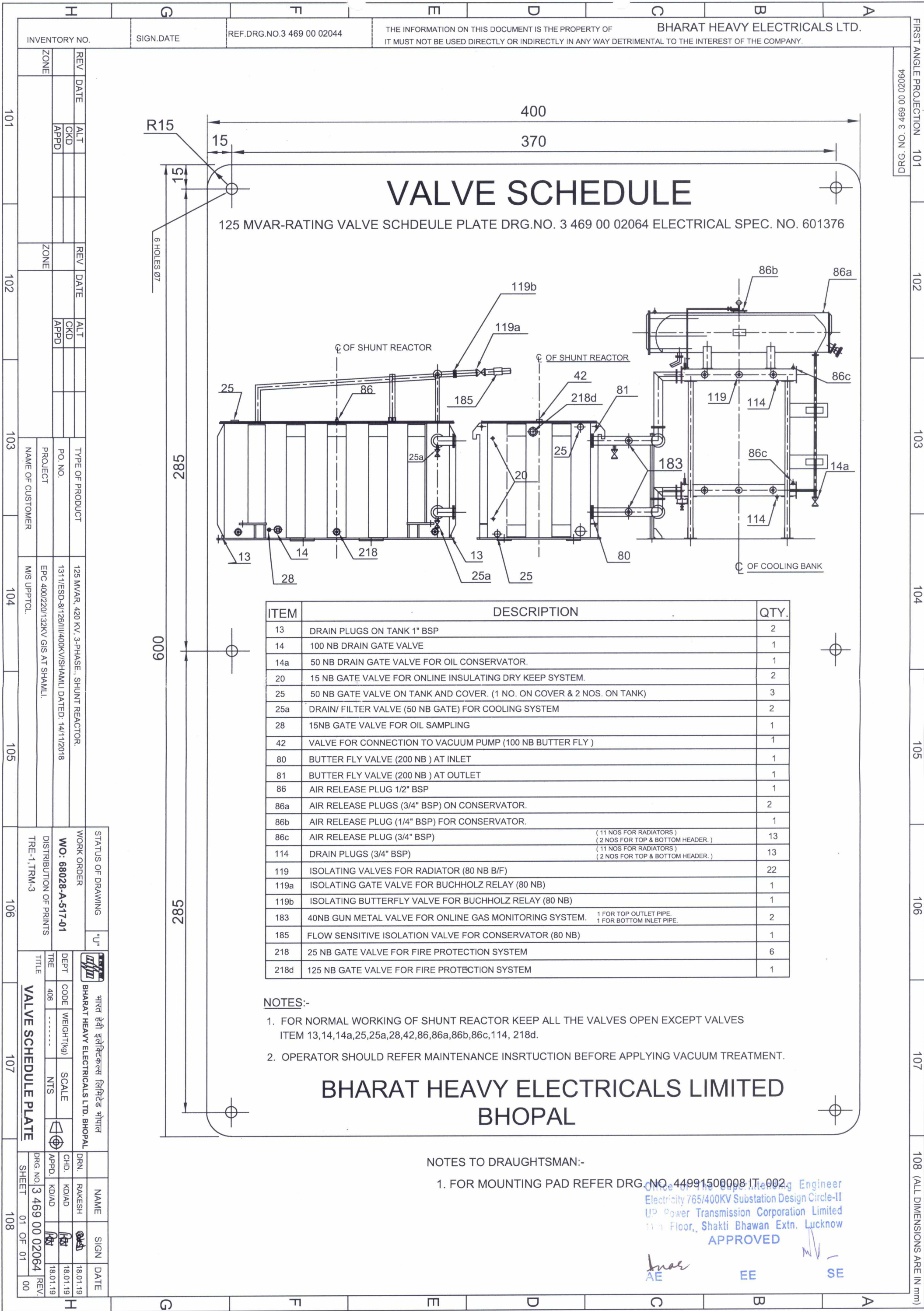
1. CUSTOMER IS REQUESTED TO QUOTE MAKER'S SL.NO. & ELEC.SPEC.NO. RATING & DIAGRAM PLATE DRG NO. WHILE REFERRING ANY PROBLEM TO BHEL FOR EASY IDENTIFICATION.
2. WEIGHTS & OIL QUANTITIES ARE APPROXIMATE.

Office of The Superintending Engineer  
Electricity 765/400KV Substation Design Circle-II  
UP Power Transmission Corporation Limited  
11th Floor., Shakti Bhawan Extn. Lucknow

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NOTES:-

1. WHEN REFERRING THIS DRAWING PLEASE QUOTE MVAR & W.O. NO.
2. 320 DIA. TWIN BI-DIRECTIONAL ROLLERS MOUNTED AT 1676 mm RAIL GAUGE IN BOTH DIRECTION ARE PROVIDED FOR MOVEMENT OF REACTOR AT SITE AND ROLLERS ARE TO BE REMOVED BEFORE ERECTION.
3. PAINTING AT OUTSIDE THE REACTOR TANK & COOLER CONTROL CABINET IS AS PER SHADE 631 OF IS:5 (LIGHT GRAY)
4. WIRING FROM INSTRUMENT CTS. ETC. ARE NOT SHOWN FOR CLARITY.
5. FOUNDATION BOLTS ARE IN THE SCOPE OF BHEL SUPPLY.
6. FOR PART LIST OF OGA REFER DRAWING NO. 3 469 00 02013
7. DIMENSIONS SHOWN THUS  ARE OVERALL SHIPPING DIMENSIONS EXCLUSIVE OF PACKING.
8. DIMENSIONS SHOWN ARE WITH REF. TO PLINTH LEVEL. PLEASE NOTE THAT PLINTH LEVEL IS 450 MM ABOVE THE GROUND LEVEL.
9. FOR TANK COVER BOLTED REFER DETAIL 'B' SHT. NO. 04.

IMPORTANT NOTE:-

1. THE DESIGN FEATURES SHOWN ON THIS DRAWING (GENERALLY INLINE WITH IS:5553 IEC : 60076-6 APPLICABLE STANDARD & AGREED CUSTOMER SPECIFICATION) MEETS THE STATUTORY, REGULATORY & SAFETY REQUIREMENTS WITH RESPECT TO EARTHING ARRANGEMENT, DANGER & OTHER LABELS, CLEARANCES IN AIR, PROVISION FOR PRESSURE RELIEF DEVICE, GAS ACTUATED RELAY AND ANTI-EARTHQUAKE CLAMPING ARRANGEMENT.

APPROVED, subject to the condition that the approval shall not relieve the contractor of any part of his obligation of meeting all the requirements of IEC/BIS specifications for the correctness of the technical particulars given by him and the contractor shall also rectify the defects, whenever detected, at his own cost without delaying the scheduled completion of the work

AE EE SE

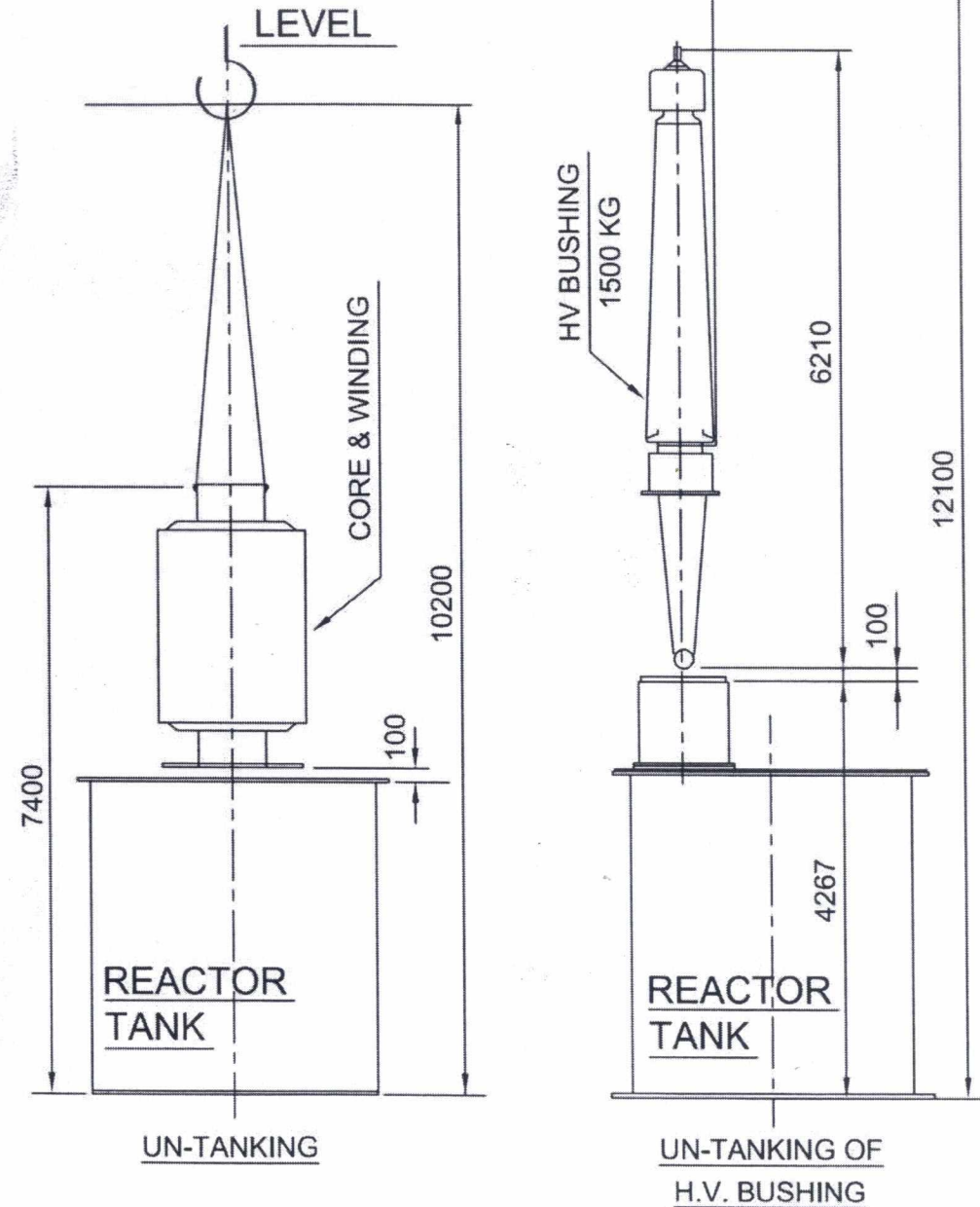
MIN. AIR CLEARANCES

	420 KV	145 KV
PHASE TO PHASE	4000	NA
PHASE TO EARTH	3500	1050

TABLE

SUB ASSY. MK NOS.

SUB ASSY	MK01	MK02	MK03	MK04	MK05	MK06	MK07	MK08	MK09	MK10	MK11	MK12	MK13	MK14	MK15	MK16	MK17	MK18	MK19	MK20	MK21	MK22	MK23	MK24	MK25
QTY.	004	005	006	007	008	060	010	014	015	016	013	027	028	062	029	030	031	039	044	043	052	053	054	058	061



STATUS OF DRAWING	U	भारत हेवी इलेक्ट्रिकल्स लिमिटेड भोपाल	NAME	SIGN	DATE
WORK ORDER	W.O. 68015-A-517-01	BHARAT HEAVY ELECTRICALS LTD. BHOPAL	DRN.	RAKESH	20.10.18
DISTRIBUTION OF PRINTS	TRE-1, TRM-3	DEPT	CODE	WEIGHT(kg)	SCALE
		TRE	406	-----	NTS
		TITLE	OUTLINE GENERAL ARRANGEMENT		
		DRG. NO.	3 469 00 02012	REV.	00
		SHEET	01 OF 04		

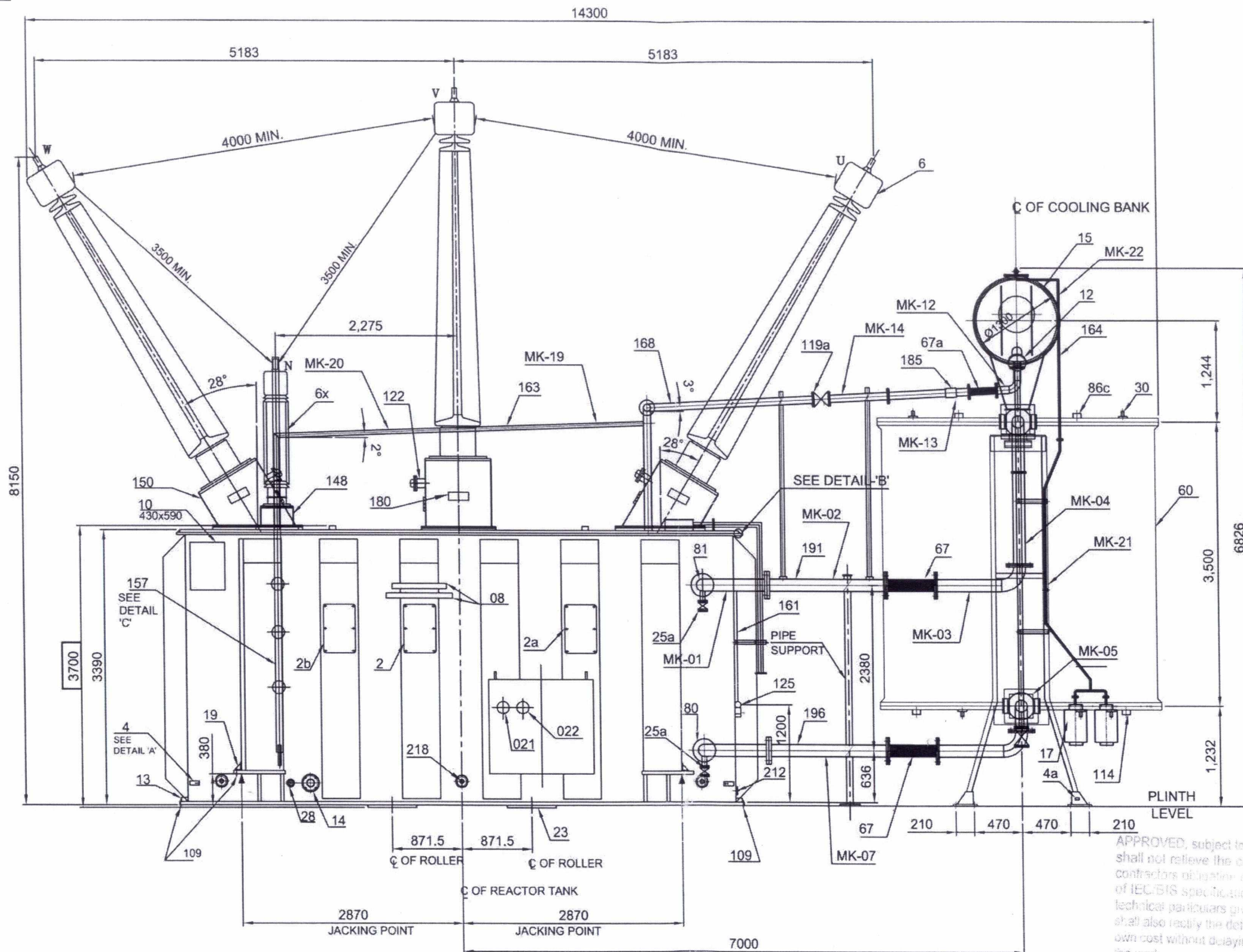
DRG. NO. 3 469 00 02012

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REF. DRG. NO. 3 469 00 01374

SIGN. DATE

INVENTORY NO.



APPROVED, subject to the condition that the approval shall not relieve the contractor of any part or c... contractors obligation of meeting all the requirements of IEC/BIS specifications for the correctness of the technical particulars given by him & the contractors shall also rectify the defects, whenever detected, at his own cost without delaying the scheduled completion of the work

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STATUS OF DRAWING		"U"		भारत हेवी इलेक्ट्रिकल्स लिमिटेड भोपाल		NAME		SIGN		DATE	
WORK ORDER		W.O. 68015-A-517-01		BHARAT HEAVY ELECTRICALS LTD. BHOPAL		DRN. RAKESH		20.10.18			
DISTRIBUTION OF PRINTS		TRE-1, TRM-3		DEPT. CODE WEIGHT(kg) SCALE		CHD. KD/AD		24.10.18			
				TRE 406 NTS		APPD. KD/AD		24.10.18			
				TITLE OUTLINE GENERAL ARRANGEMENT ELEVATION		DRG. NO. 3 469 00 02012		REV. 00			
						SHEET 02 OF 04					

REV	DATE	ALT	REV	DATE	ALT
		CKD			CKD
		APPD			APPD

TYPE OF PRODUCT	125 MVAR, 420 KV, 3-PHASE., SHUNT REACTOR.
PO. NO.	336/ESD-765KV/10/RASARA/VOL-3 DATED: 03/07/18
PROJECT	400/220/132KV (GIS) RASARA SUBSTATION
NAME OF CUSTOMER	M/S UPPTCL.

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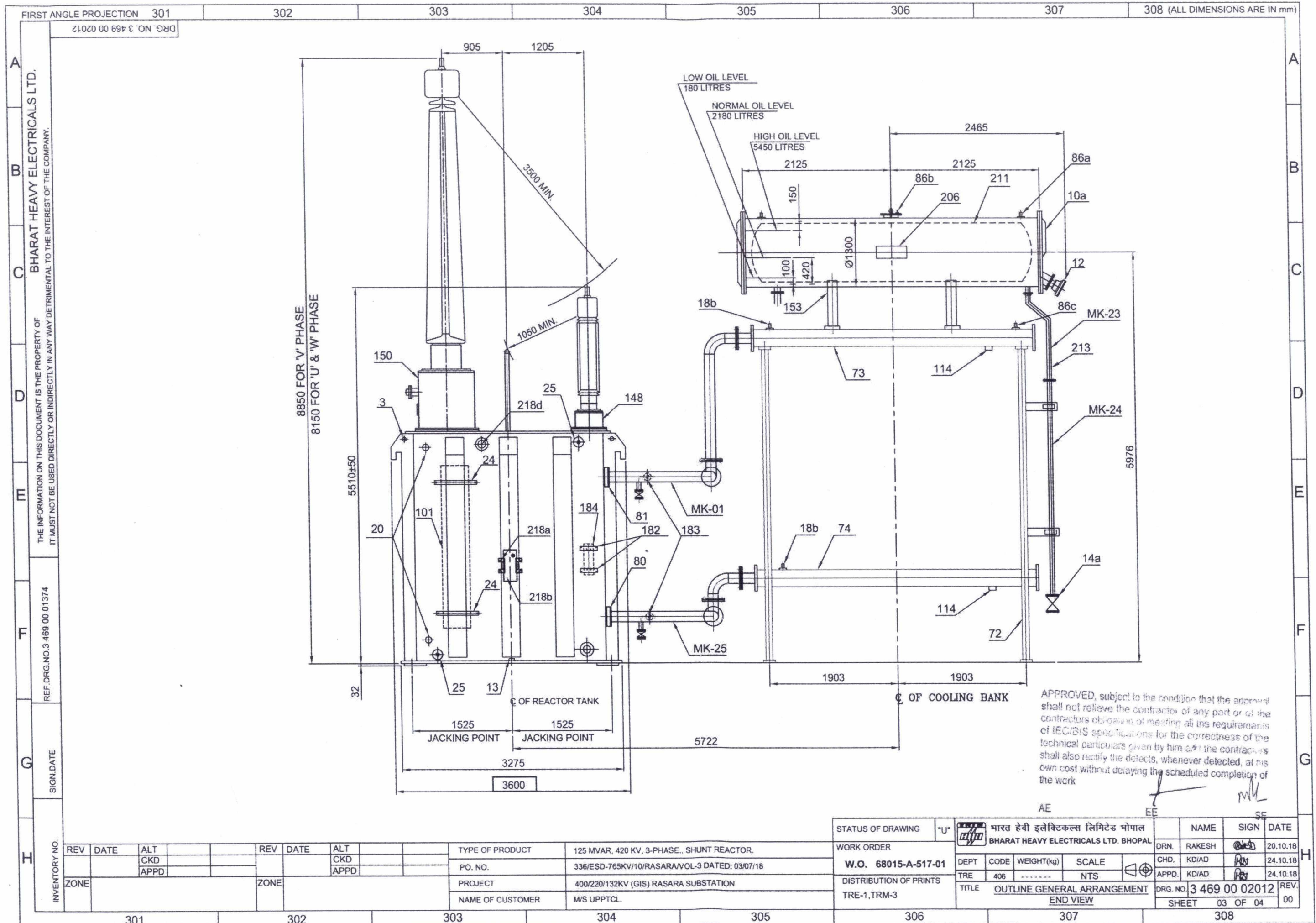
204

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7500 (INCLUDING GAS CYL. MTG.)



DRG. NO.	3 469 00 02012	REV.
SHEET	04 OF 04	00

FIRST ANGLE PROJECTION 101

102

103

104

105

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107

108 (ALL DIMENSIONS ARE IN mm)

DRG. NO. 3 469 00 02013

## LIST OF REFERENCE DRAWINGS

DESCRIPTION	DRG. NO.
1 OUTLINE GENERAL ARGMT	3 469 00 02012
2 O.G.A. PART LIST	3 469 00 02013
3 FOUNDATION PLAN	3 469 00 02014
4 SHIPPING DIAGRAM	3 469 00 02015
5 420 KV, 1250 AMPS, LINE BUSHING	3 469 00 02016
6 145 KV, 1250 AMPS, NEUTRAL BUSHING	3 469 00 02017
7 320 DIA BI-DIRECTIONAL ROLLERS	3 469 00 02018
8 INTERNAL DETAILS	3 469 00 02019
9 RATING AND DIAGRAM PLATE	3 469 00 02020
10 VOLTAGE AMPERE CURVE	4 469 00 02022

## APPROXIMATE WEIGHT &amp; OIL QTY.

DESCRIPTION	WT. IN KG	OIL (L)
CORE AND WINDING	91700	
TANK & FITTINGS	23705	47040
BUSHINGS	4700	
RADIATOR BANK & DRG.	16020	7410
CONTROL CABINET	500	
TOTAL OIL	47375	54450
TOTAL WEIGHT	184000	

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## NOTES :-

- WEIGHTS & OIL QUANTITIES ARE APPROXIMATE.
- TOLERANCE IS  $\pm 3\%$  OR 100MM, WHICHEVER IS HIGHER ON DIMENSION WHERE TOLERANCE ARE NOT INDICATED.
- PROVISION FOR INSTALLATION OF NIFPS ARE SHOWN IN DRAWING.

COOLING SYSTEM

4a	EARTHING TERMINAL (20 TK X 50 X 110 LG.)	(FOR RADIATOR SUPPORT)	2	206-F
25a	DRAIN/FILTER VALVE (50 NB GATE) FOR COOLING SYSTEM		2	205-F 205-E
30	LIFTING LUGS FOR RADIATORS	(LIFTING CAPACITY 1100 KG EACH)	22	207-D
60	RADIATOR BANK (NO OF INDIVIDUAL UNITS = 10+1 SPARES)		11	207-D
67	FLEXIBLE HOSE PIPE (200 NB)	(TOP & BOTTOM)	2	206-D
72	"A" FRAME SUPPORTS (BEARING CAPACITY = 30 TONNES)		2	307-F
73	TOP HEADER		1	306-D
74	BOTTOM HEADER		1	306-E
86c	AIR RELEASE PLUGS (3/4"BSP)	11 NOS FOR RADIATORS 2 NOS FOR TOP & BOTTOM HEADER	13	207-C 307-C
114	DRAIN PLUGS (3/4"BSP)	11 NOS FOR RADIATORS 2 NOS FOR TOP & BOTTOM HEADER	13	306-D/F
119	ISOLATING VALVES FOR RADIATORS (80 NB BUTTERFLY)		22	407-D
161	GAS COLLECTING DEVICE PIPE (6 NB)		1	205-E
163	EQUALISING PIPE (50NB)		1	204-C 403-B
163a	EQUALISING PIPE (25NB) FOR TURRETS		4	403-B
183	40NB GUN METAL VALVE FOR ON LINE GAS MONITORING SYSTEM	1 FOR TOP OUTLET PIPE 1 FOR BOTTOM INLET PIPE.	2	304-E
191	TOP OIL PIPE 200 NB (RADIATOR BANK)		1	205-E
196	BOTTOM OIL PIPE 200 NB (RADIATOR BANK)		1	205-F

CONSERVATOR AND PIPE WORK

10a	INSPECTION COVER FOR OIL CONSERVATOR (BOLTED) 20 KG		1	307-B
12	OIL GAUGE MAGNETIC TYPE WITH LOLA		1	307-C
14a	50 NB DRAIN GATE VALVE FOR OIL CONSERVATOR		1	307-F
15	OIL CONSERVATOR 1300 DIA (ATMOSEAL TYPE)		1	207-C
17	DEHYDRATING BREATHER WITH SILICAGEL (2 IN PARALLEL)		1	206-F
26	BUCHHOLZ RELAY (80 NB)		1	404-D
67a	FLEXIBLE HOSE PIPE (80 NB)		1	406-C 206-C
86a	AIR RELEASE PLUG (3/4"BSP) ON CONSERVATOR		2	307-B
86b	AIR RELEASE PLUG (1/4"BSP) FOR CONSERVATOR.		1	306-B
119a	ISOLATING GATE VALVE FOR BUCHHOLZ RELAY(80 NB)		1	405-D
119b	ISOLATING BUTTERFLY VALVE FOR BUCHHOLZ RELAY(80 NB)		1	405-C
125	GAS COLLECTING DEVICE		1	205-E
153	CONSERVATOR SUPPORTS		2	305-C
164	BREATHER PIPE (15 NB)		1	207-C
168	CONSERVATOR PIPE (80 NB)		1	204-D
185	FLOW SENSITIVE ISOLATION VALVE FOR CONSERVATOR (80 NB)		1	206-C
206	BHEL MONOGRAM		1	306-C
211	ATMOSEAL ARRANGEMENT (INSIDE THE CONSERVATOR)		1	307-B
213	CONSERVATOR DRAIN PIPE (50 NB)		1	307-D

TURRETS &amp; BUSHINGS

6	HV LINE BUSHINGS 420 KV 1250A		3	206-B
6X	HV NEUTRAL BUSHING 145 KV 1250A		1	203-D
122	CONNECTION BOX FOR C T TERMINAL (HV TURRET)		3	203-D
122a	CONNECTION BOX FOR C T TERMINAL (HVN) ON COVER		4	403-C
122b	CONNECTION BOX FOR C T TERMINAL (HVN TURRET)		1	403-B
157	NEUTRAL GROUNDING ARRGT.		1	202-E
148	NEUTRAL TURRET		1	203-D
150	HV TURRETS		3	202-D
180	TERMINAL MARKING PLATE		4	203-D

## TABLE OF FITTINGS

ITEM NO	DESCRIPTION	QTY	ZONE
2	RATING AND DIAGRAM PLATE	1	203-E
2a	DO'S & DONT'S INSTRUCTION PLATE	1	204-E
2b	VALVE SCHEDULE PLATE	1	203-E
3	LIFTING LUGS (60000 KG. EACH)	4	303-D
3a	LIFTING LUGS FOR TANK COVER	6	404-B
4	EARTHING TERMINAL (SIZE 20 TK X 50 X 120 LG.)	2	202-F
8	NAME PLATES (ENGLISH & HINDI)	1+1	204-E
10	INSPECTION COVERS (25 Kgs EACH)	6 NOS. ON TANK COVER 1 NO. ON TANK	7 404-A 404-C 202-D
13	DRAIN PLUGS ON TANK 1"BSP	2	202-F
14	100 NB DRAIN GATE VALVE	1	203-F
28	15NB GATE VALVE FOR OIL SAMPLING	1	203-F
18	POCKET FOR OTI	1	404-C
18a	POCKET FOR WTI	1	404-C
18b	ORDINARY THERMOMETER WITH POCKET	1 NO ON TANK COVER 2 NO ON HEADER	2+1 305-C 404-C
18c	RTD POCKET	1	404-C
18d	POLARITY DISC FOR OTI	1	404-C
18e	POLARITY DISC FOR WTI	1	404-C
18f	POLARITY DISC FOR RTD	1	404-C
19	JACKING PADS 60000 KG EACH	4	202-F
20	15 NB GATE VALVE FOR ONLINE INSULATING DRY KEEP SYTEM	2	303-D/F
21	OIL TEMPERATURE INDICATOR.	1	204-F
22	WINDING TEMPERATURE INDICATOR DIAL TYPE WITH REPEATER	1	204-F
23	MOUNTING PAD FOR 320 DIA TWIN BI-DIRECTIONAL ROLLERS. ROLLERS ONLY FOR REACTOR MOVEMENT AT SITE.	4	204-F
24	MTG BRACKET FOR ONLINE INSULATING OIL DRY KEEP SYSTEM.	1	304-E/F
25	50 NB GATE VALVE ON TANK AND COVER	[ 2 NOS ON TANK 1 NO ON COVER ]	2+1 303-F 304-D 402-B
27	PRESSURE RELIEF DEVICE WITH OIL COLLECTOR ASSY.	1	405-C
34	COOLER CONTROL CABINET (TANK MOUNTED)	1	404-D
42	VALVE FOR CONNECTION TO VACUUM PUMP(100 NB BUTTERFLY)	1	405-B
79	LADDER WITH LOCKING DEVICE	1	402-C
80	BUTTERFLY VALVE (200 NB) AT INLET.	1	304-F
81	BUTTERFLY VALVE (200 NB) AT OUTLET.	1	304-E
86	AIR RELEASE PLUG 1/2"BSP.	1	403-B
101	ONLINE INSULATING OIL DRYING SYSTEM.	1	303-E
109	PULLING HOLE DIA 64	8	205-G
182	BRACKET FOR ON LINE GAS MONITORING SYSTEM.	1	304-F
184	ON LINE GAS MONITORING SYSTEM.	1	304-F
212	COVER EARTHING OF CORE AND CORE CLAMPS.	1	205-F
218	25 NB GATE VALVE FOR FIRE PROTECTION SYSTEM	6	204-B
218a	MTG. BRACKET FOR FIRE PROTECTION SYSTEM BOX	1	403-C
218b	SIGNAL BOX FOR FIRE PROTECTION SYSTEM	1	403-C
218c	PAD FOR FIRE PROTECTION DETECTION SYSTEM	8	303-E
218d	125 NB GATE VALVE FOR FIRE PROTECTION SYSTEM	1	404-D

APPROVED under the condition that the approval shall not relieve the contractor of any part or of the contractors obligation of meeting all the requirements of IEC/BIS specifications for the correctness of the technical particulars given by him and the contractors shall also rectify the defects, whenever detected, at his own cost without delaying the scheduled completion of the work

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WORK ORDER	W.O. 68015-A-517-01	BHARAT HEAVY ELECTRICALS LTD. BHOPAL	DRN.	RAKESH	20.10.18
DISTRIBUTION OF PRINTS	TRE-1, TRM-3	DEPT	CODE	WEIGHT(kg)	SCALE
		TRE	406	-----	NTS
		TITLE	OGA PART LIST		
		DRG. NO.	3 469 00 02013	REV.	00
		SHEET	01 OF 01		

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REF.DRG.NO.3 469 00 01374

SIGN DATE

INVENTORY NO.

REV	DATE	ALT	REV	DATE	ALT
		CKD			CKD
		APPD			APPD
ZONE			ZONE		

TYPE OF PRODUCT	125 MVAR, 420 KV, 3-PHASE., SHUNT REACTOR.
P.O. NO.	336/ESD-765KV/10/RASARA/VOL-3 DATED: 03/07/18
PROJECT	400/220/132KV (GIS) RASARA SUBSTATION
NAME OF CUSTOMER	M/S UPPTCL.

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102

103

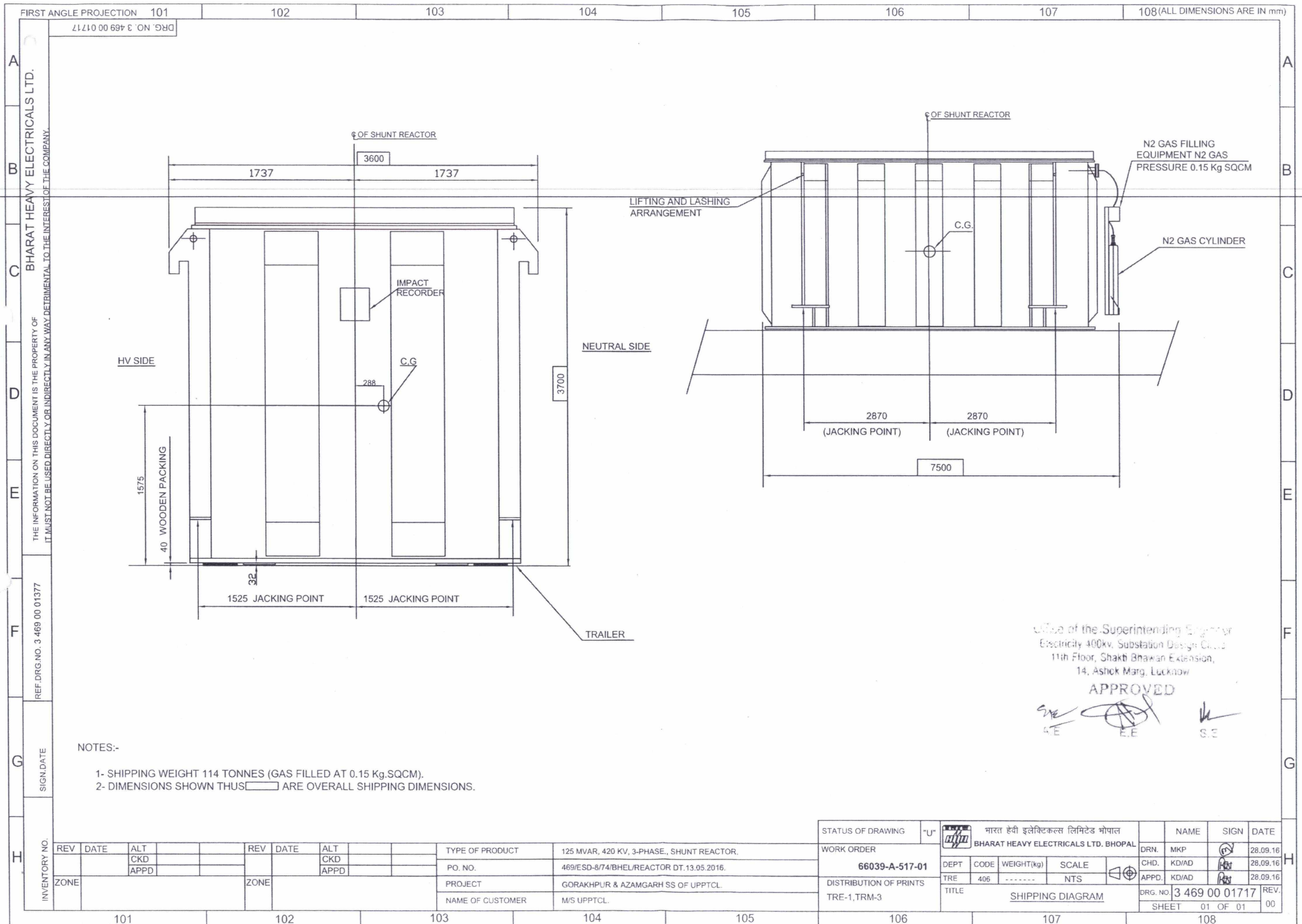
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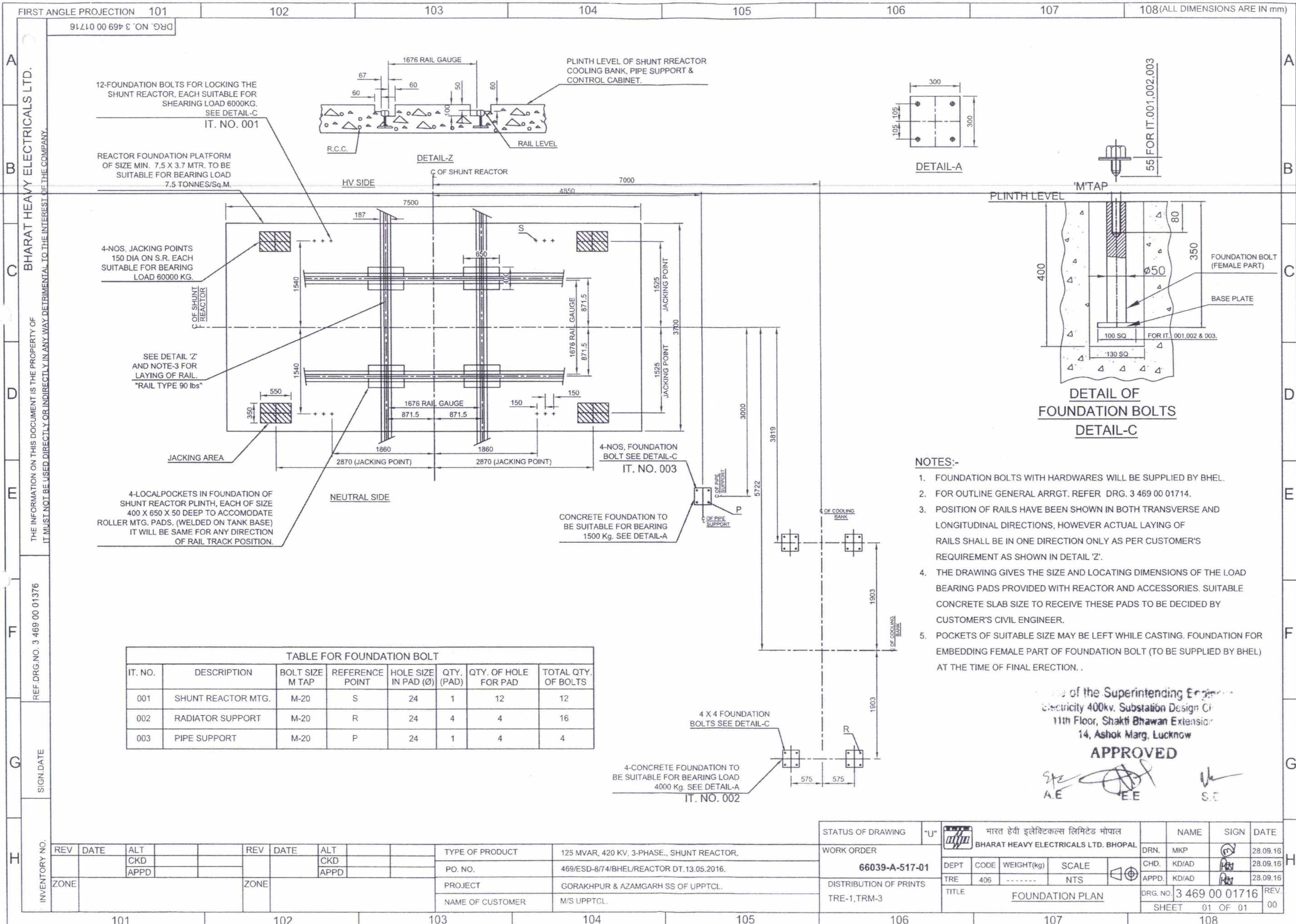
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12-FOUNDATION BOLTS FOR LOCKING THE SHUNT REACTOR, EACH SUITABLE FOR SHEARING LOAD 6000KG. SEE DETAIL-C IT. NO. 001

REACTOR FOUNDATION PLATFORM OF SIZE MIN. 7.5 X 3.7 MTR. TO BE SUITABLE FOR BEARING LOAD 7.5 TONNES/Sq.M.

4-NOS. JACKING POINTS 150 DIA ON S.R. EACH SUITABLE FOR BEARING LOAD 60000 KG.

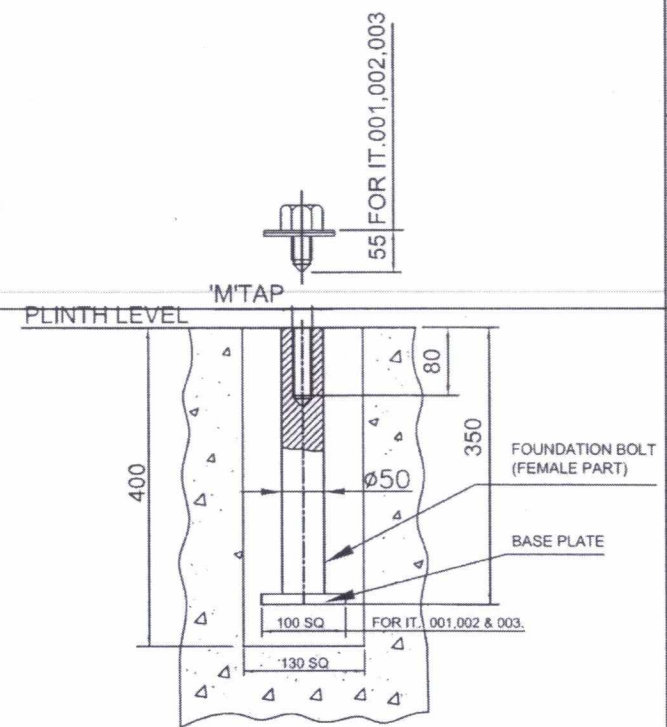
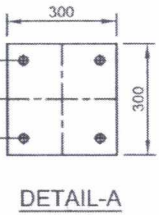
SEE DETAIL 'Z' AND NOTE-3 FOR LAYING OF RAIL. "RAIL TYPE 90 lbs"

4-LOCALPOCKETS IN FOUNDATION OF SHUNT REACTOR PLINTH, EACH OF SIZE 400 X 650 X 50 DEEP TO ACCOMODATE ROLLER MTG. PADS. (WELDED ON TANK BASE) IT WILL BE SAME FOR ANY DIRECTION OF RAIL TRACK POSITION.

PLINTH LEVEL OF SHUNT REACTOR COOLING BANK, PIPE SUPPORT & CONTROL CABINET.

CONCRETE FOUNDATION TO BE SUITABLE FOR BEARING 1500 Kg. SEE DETAIL-A

4-CONCRETE FOUNDATION TO BE SUITABLE FOR BEARING LOAD 4000 Kg. SEE DETAIL-A IT. NO. 002



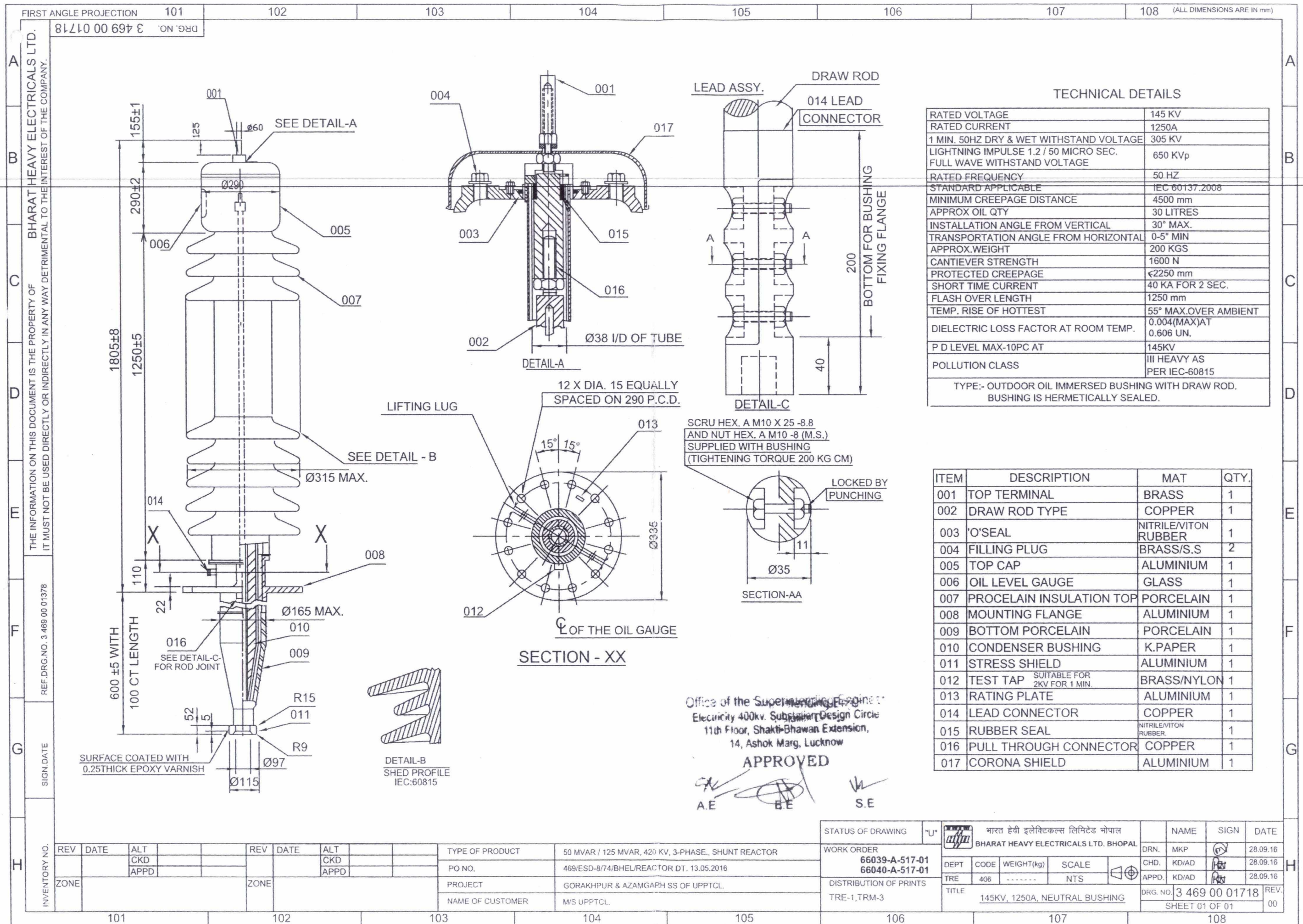
DETAIL OF FOUNDATION BOLTS DETAIL-C

- NOTES:-
- 1. FOUNDATION BOLTS WITH HARDWARES WILL BE SUPPLIED BY BHEL.
  - 2. FOR OUTLINE GENERAL ARRGT. REFER DRG. 3 469 00 01714.
  - 3. POSITION OF RAILS HAVE BEEN SHOWN IN BOTH TRANSVERSE AND LONGITUDINAL DIRECTIONS, HOWEVER ACTUAL LAYING OF RAILS SHALL BE IN ONE DIRECTION ONLY AS PER CUSTOMER'S REQUIREMENT AS SHOWN IN DETAIL 'Z'.
  - 4. THE DRAWING GIVES THE SIZE AND LOCATING DIMENSIONS OF THE LOAD BEARING PADS PROVIDED WITH REACTOR AND ACCESSORIES. SUITABLE CONCRETE SLAB SIZE TO RECEIVE THESE PADS TO BE DECIDED BY CUSTOMER'S CIVIL ENGINEER.
  - 5. POCKETS OF SUITABLE SIZE MAY BE LEFT WHILE CASTING. FOUNDATION FOR EMBEDDING FEMALE PART OF FOUNDATION BOLT (TO BE SUPPLIED BY BHEL) AT THE TIME OF FINAL ERECTION.

Signature of the Superintending Engineer  
Electricity 400kv. Substation Design Cell  
11th Floor, Shakti Bhawan Extension  
14, Ashok Marg, Lucknow  
**APPROVED**  
S.E. A.E. S.E.

TABLE FOR FOUNDATION BOLT							
IT. NO.	DESCRIPTION	BOLT SIZE M TAP	REFERENCE POINT	HOLE SIZE IN PAD (Ø)	QTY. (PAD)	QTY. OF HOLE FOR PAD	TOTAL QTY. OF BOLTS
001	SHUNT REACTOR MTG.	M-20	S	24	1	12	12
002	RADIATOR SUPPORT	M-20	R	24	4	4	16
003	PIPE SUPPORT	M-20	P	24	1	4	4

STATUS OF DRAWING		"U"		भारत हेवी इलेक्ट्रिकल्स लिमिटेड भोपाल		NAME	SIGN	DATE
WORK ORDER		66039-A-517-01		BHARAT HEAVY ELECTRICALS LTD. BHOPAL		DRN.	MKP	28.09.16
DISTRIBUTION OF PRINTS		TRE-1,TRM-3		DEPT	CODE	WEIGHT(kg)	SCALE	CHD.
				TRE	406	-----	NTS	KD/AD
				TITLE		FOUNDATION PLAN		APPD.
						DRG. NO. 3 469 00 01716		KD/AD
						SHEET 01 OF 01		REV.
						00		








ALL DIMENSIONS ARE IN mm.

Chief of the Superintending Engineer  
Electricity 400kv. Substation Design Cell  
1st Floor, Shakti Bhawan Extension,  
14, Ashok Marg, Lucknow

APPROVED

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TYPE OF PRODUCT	50 MVAR / 125 MVAR, 420 KV, 3-PHASE., SHUNT REACTOR.
PO NO.	469/ESD-8/74/BHEL/REACTOR DT. 13.05.2016.
PROJECT	GORAKHPUR & AZAMGARH SS OF UPPTCL.
NAME OF CUSTOMER	M/S UPPTCL.

