

कार्यालय अधीक्षण अभियन्ता
विद्युत 765/400 के०वी० उपकेन्द्र परिकल्पना मंडल-द्वितीय
उ०प्र० पावर ट्रान्समिशन कारपोरेशन लिमिटेड
11 वां, तल, शक्ति भवन विस्तार
14, अशोक मार्ग लखनऊ- 226001
दूरभाष सं. - 0522-4001129, 2218683
E-mail - se400sdc@upptcl.org



Office of the Superintending Engineer
Electricity 765/400 KV S/S Design Circle-II
U.P. Power Transmission Corporation Ltd.,
11th Floor, Shakti Bhawan Extension,
14, Ashok Marg, Lucknow-226001
Telephone NO - 0522-4001129, 221 8683
E-mail - se400sdc@upptcl.org

No. 243 /ESD-8/126/GIS Shamli

Dated : 19 June, 2019

Sub: Approval of equipment drawings for 400/220/33 kV GIS Substation Shamli.

M/s Bharat Heavy Electricals Limited,
Regional Operations Division
B-2, 1st Floor, Picup Bhawan
Gomti Nagar, Lucknow

Dear Sirs,

In reference to the above subject, the following drawings have been approved and a copy of the same is being enclosed alongwith this letter for your reference and record:-

S.No.	Particulars	Drawing No.	Total number of pages
1.	200 MVA ICT	14630050036 14630050036 14631950090 24630050074	1 2 1 1
2.	General arrangement of control cabinet	34696200380 34696200382	1 1
3.	General arrangement of control cabinet for NGR	34746200105	1
4.	Schematic cum wiring diagram of shunt reactor	34696200381	6
5.	Schematic cum wiring diagram of NGR	34746200104	1
6.	Digram of cooler control gear	34646200249	16
7.	Genral arrangement of cooler control cabinet (Tank mounted)	34646200250	3
8.	Schematic diagram for simultaneous parallel automatic tap changer control	34646400107	15

The approval of the above documents does not absolve you of your responsibility to supply the equipment as per the technical specifications and relevant standards. You are not relieved of your contractual obligations and responsibilities towards weight, qualities, design, details, assembly fits, performance particulars and conformity of the supplies against tender specifications/contract.

Yours faithfully

(Nayyer Kamal)

SUPERINTENDING ENGINEER

5570

8X4 FOUNDATION BOLT M-20 FOR
PUMP SUPPORT EACH CONCRETE
FOUNDATION TO BE SUITABLE FOR
500 KG. LOAD

LV SIDE

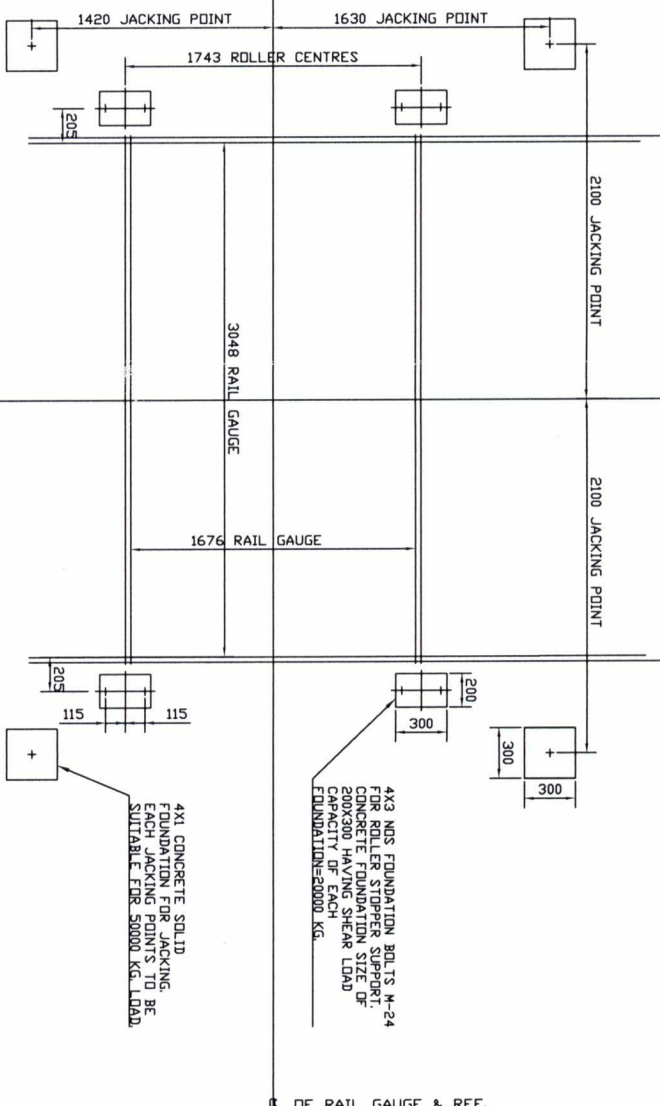
5006

5006

12X4 FOUNDATION BOLT M-20
FOR HEADER PIPE SUPPORT EACH
CONCRETE FOUNDATION TO BE
SUITABLE FOR 8000 KG. LOAD

1X4 FOUNDATION BOLTS M-12
FOR MARSHALLING KIOSK EACH
CONCRETE FOUNDATION TO BE
SUITABLE FOR 800 KG. LOAD

HV SIDE

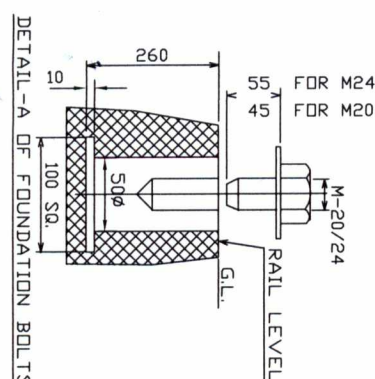


4X8 NOS FOUNDATION BOLTS M-24
FOR ROLLER SUPPORTS
CONCRETE FOUNDATION SIZE OF
200X300 HAVING SHEAR LOAD
CAPACITY OF EACH
FOUNDATION=20000 KG.

4X1 CONCRETE SOLID
FOUNDATION FOR JACKING.
EACH JACKING POINTS TO BE
SUITABLE FOR 50000 KG. LOAD

TABLE FOR BOLT SIZE FOR VARIOUS FITTINGS			
SYMBOL	FITTINGS	SIZE OF BOLTS	NOS OF BOLTS
+	ROLLER SUPPORT	M - 24	12
●	A-FRAME SUPPORT	M - 20	48
*	MARSHALLING KIOSK	M - 12	4
⊕	PUMP & PIPE SUPPORT	M - 20	56

- NOTES:-
1. FOUNDATION HARDWARES ARE IN THE B.H.E.L.SCOPE OF SUPPLY.
 2. ALL FOUNDATION HARDWARES ARE C.I.P.
 3. ALL CONCRETE FOUNDATION SHOULD BE IN LEVEL OF RAIL LEVEL. REFER DETAIL OF FOUNDATION BOLT ALSO.
 4. GROUTING OF FOUNDATION BOLTS SHOULD BE DONE AT THE TIME OF ERECTION.



Office of The Superintending Engineer
Electricity 766/400KV Substation Design Circle-3
UP Power Transmission Corporation Limited
11th Floor, Shakti Bhawan Extn. Lucknow
APPROVED
AE
EE
SE

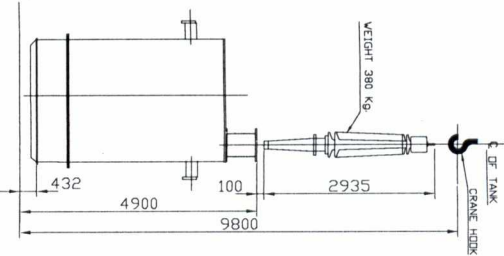
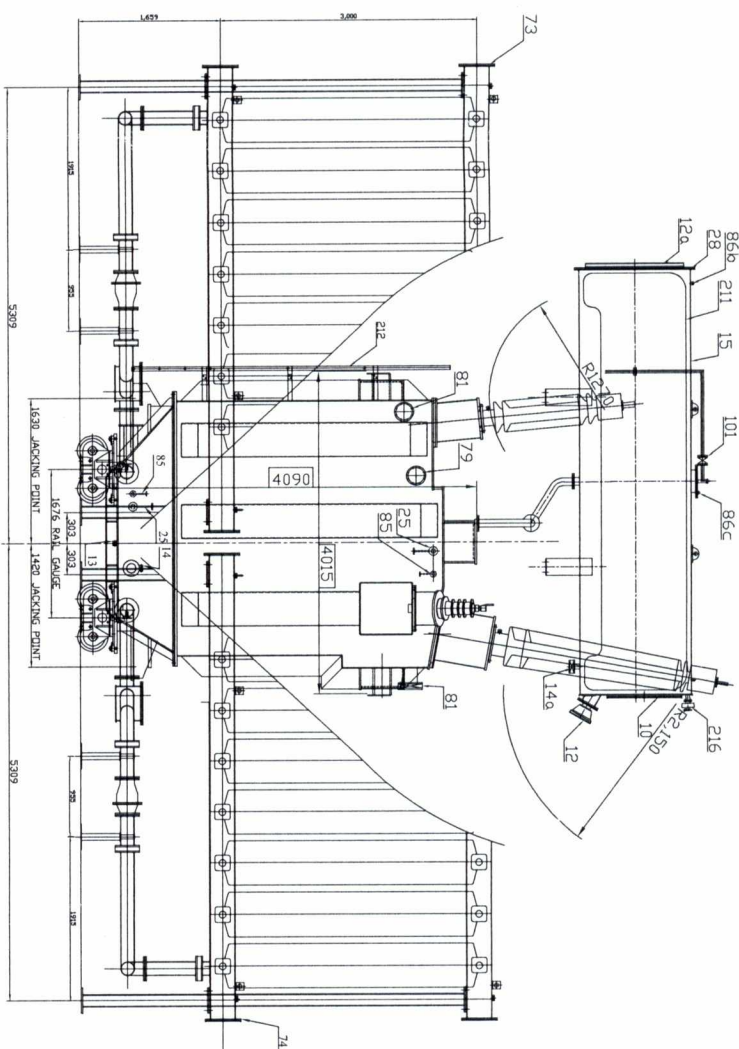
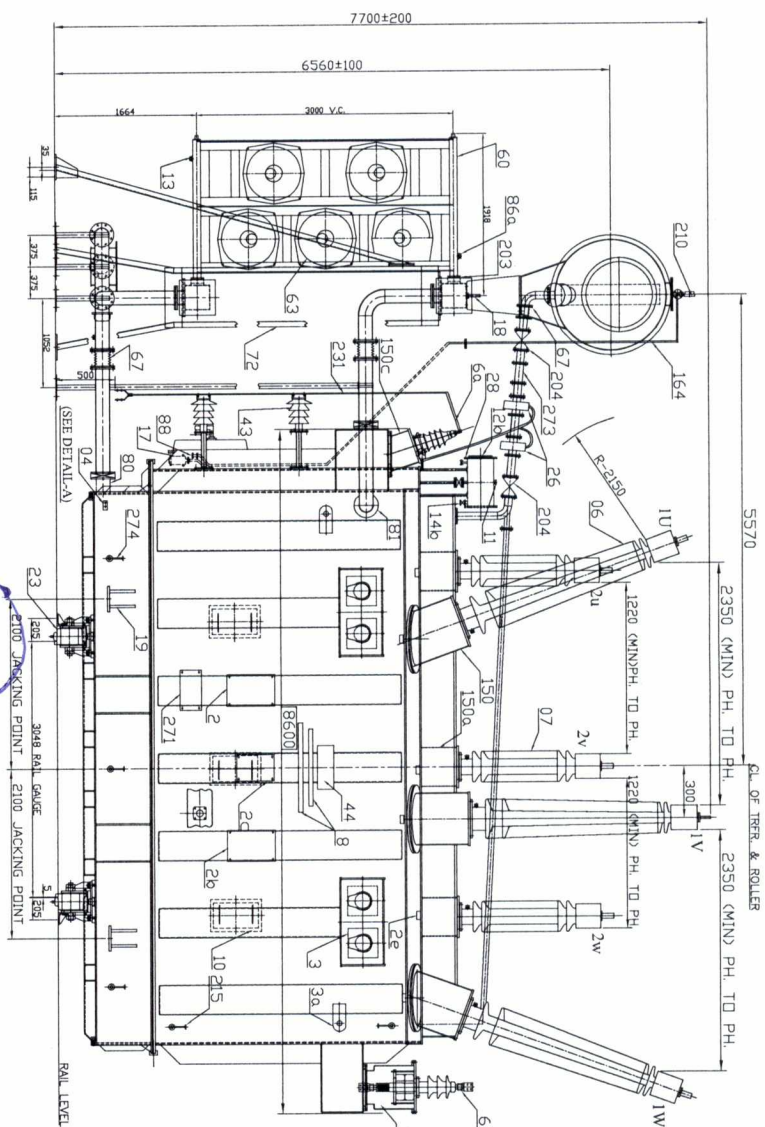
ADDITIONAL INFORMATION WO. 72313A17200		TYPE OF PRODUCT OR NAME OF CUSTOMER/PROJECT M/S:-UP POWER TRANSMISSION CORP.LTD.	
STATUS OF DRAWING U		2X200 MVA 220/132/11 KV 3-PHASE 50 HZ OF/AF/ONAF/ONAN COOLED AUTO TRANSFORMER	
DISTRIBUTION OF PRINTS TRE-1, TRP-1, BAY1&2-2, BAY9-4,		BHARAT HEAVY ELECTRICALS LTD. JHANSI	
REV	DATE	DEPT TRE	GRADE OF UN TOL DIM. GRANT
CHECKED			
REV	DATE	SCALE	WEIGHT (KG)
CHECKED			
REV	DATE	REF. TO ASSY. NO.	DATE
CHECKED			
REV	DATE	REF. TO ASSY. NO.	DATE
CHECKED			
REV	DATE	REF. TO ASSY. NO.	DATE
CHECKED			

TITLE FOUNDATION PLAN OF TRFR.		CARD CODE	DRAWING NO. 2 463 00 50 074	REV. 00
SHEET NO. 01		NO. OF SHEETS 01		SIZE A2

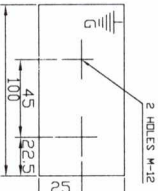
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REF. DRG. NO.
POW27000. DWG.

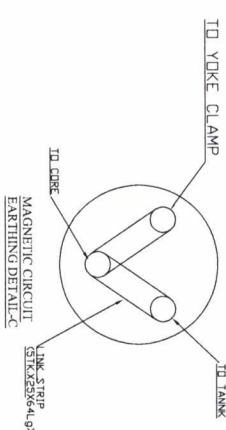
SIGN & DATE:



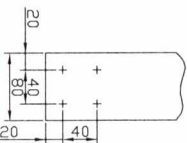
TANK PLATE THICKNESS.	
DESCRIPTION	TK.
TANK BASE	16TK.
BOTTOM TANK WALL	16TK.
TANK RIM	28TK.
TOP TANK WALL	10TK.
BOX STIFFENER	10TK.
TANK COVER	20TK.



DETAIL-A

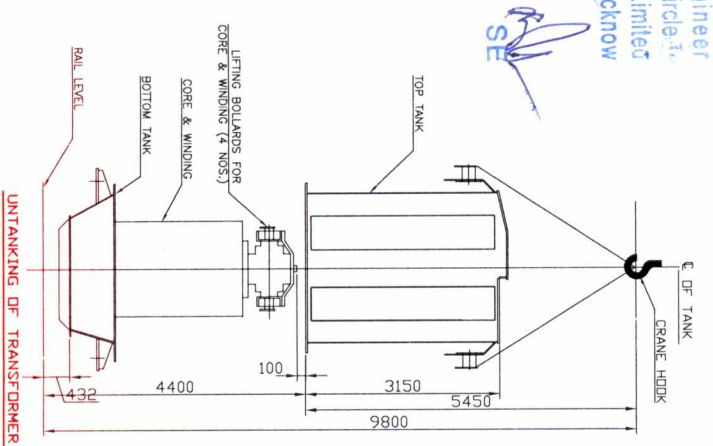


DETAIL-B




NOTE:-

1. FOR TABLE OF FITTING REF. DRG. NO. 1 463 00 50 036 SHEET-2.
2. TOP COVER SLOPING SO THAT THERE IS NO RETENTION OF WATER.
3. STIFFENERS SHOWN IN THE OGA ARE INDICATIVE, HOWEVER NOS. & SIZE OF SUCH STIFFENERS ARE TO BE INDICATED IN TANK TEST REPORT.
4. TABLE OF CLEARANCES, DIMNS, GENERAL NOTES, ARE COVERED IN TABLE OF FITTING TO DRG. NO. 14630050036 SHEET-2.



MIN. AIR CLEARANCES	
KV	PHASE TO PHASE
220	2'50
132	1270

ADDITIONAL INFORMATION
WO. 72313A17200
STATUS OF DRAWING
U
DISTRIBUTION OF PRINTS
TRE-1, TRP-1,
BAY1&2-2, BAY9-4,



NAME OF CUSTOMER/PROJECT

TYPE OF PRODUCT

DR

BHARAT HEAVY ELECTRICALS LTD.

JHANSI

2X200 MVA 220/132/11 KV 3-PHASE 50 HZ

OF&E/ON&E/ON&N COOLED AUTO TRANSFORMER

M/S:-U.P. POWER TRANSMISSION CORP. LTD.

NAME	SIGN	DATE
DRN	N.K	15.02.11
CHD	S.P.G	15.02.11
APPD	A.SINGH	15.02.11

OUT LINE GENERAL ARRG'T.

CARD	DRAWING NO.	REV
0000	1 463 00 50 036	00

WT, IN KG.
45000
95000
49800
40000
10000
205000

ITEM NO.	DESCRIPTION	QTY.
72	A-FRAME FOR MOUNTING OF HEADERS WITH SUPPORT BRACKET & LEG	04NDS.
73	TOP HEADERS	02NDS.
74	BOTTOM HEADERS	02NDS.
77	RADIATOR TIE BAR	24NDS.
79	150 NB DRAIN VALVE FOR NIPPS.	01ND.
80	OIL INLET VALVE (150NB BUTTERFLY) ON BOTTOM TANK	02NDS.
81	OIL OUTLET VALVE (150NB BUTTERFLY) ON TOP TANK	02ND.
85	SAMPLING VALVE (25 NB) ON TANK	02NDS.
86	AIR RELEASE VALVE (15 NB) ON COVER	02NDS.
86a	AIR RELEASE PLUG ON RADIATORS, HEADERS, PUMP & MOTORS/PIPE WORK, OIL REVERSE FLOW STOPPING DEVICE	24NDS.
86b	AIR RELEASE PLUGS (3/4" BSP) ON MAIN CONSERVATOR	02NDS.
86c	AIR RELEASE PLUG (1/4" BSP) ON MAIN CONSERVATOR	01ND.
88	BUCHHOLZ RELEASE COCK (6 NB)	01ND.
101	PRESSURE GAUGE ON MAIN CONSERVATOR (0-0.6KG/ CMSQ)	01ND.
115	LOCKING ARRGOT.	02NDS.
150	HV TURRET	03NDS.
150a	IV TURRET	03NDS.
150b	LV TURRET	03NDS.
150c	HVN TURRET	01ND.
157a	EARTHING CONNECTION BETWEEN CORE TO END FRAME & END FRAME TO TANK	01ND.
157b	EARTHING CONNECTION BETWEEN TOP TANK TO BOTTOM TANK	02NDS.
157c	EARTHING CONNECTION BETWEEN TAP CHANGER TO TANK COVER	03NDS.
160	OIL FLOW INDICATOR 150 MM. DIAL SIZE	04NDS.
161	BUCHHOLZ GAS RELEASE PIPE 6 NB	02NDS.
164	BREATHER PIPE (25 N.B. PIPE)	02NDS.
203	RADIATOR VALVE (80 NB BUTTERFLY)	28NDS.
204	CONSERVATOR VALVE (80 NB FOR MAIN CONS.)	2NDS.
204a	VALVE FOR DRAIN & SAMPLING OF DLTIC DIVERTOR 25 NB	03NDS.
206	VALVE FOR DISCONNECTING RADIATOR BANK (150 NB B/F)	04NDS.
209	VALVE FOR DISCONNECTING PUMP & MOTOR (150NB B/F)	08NDS.
210	VALVE (25 NB) FOR BREATHER CONNECTION ON MAIN CONSERVATOR	01ND.
211	FLEXIBLE SEPERATOR (AIR CELL)	01ND.
212	LADDER ASSY.	01ND.
213	OIL REVERSE FLOW STOPPING DEVICE (NOTABLE FOR 150 N.B. PIPE	02NDS.
215	VALVE FOR ONLINE DGA (25 NB)	02NDS.
216	AIRCELL RUPTURE INDICATING DEVICE	01ND.
217	VACUUM PIPE 100 NB ON COVER	01ND.
231	EARTHING STRIP FOR H.V.(ND) BUSHING (6 TK. X 50)	01ND.
271	FIBRE OPTIC TEMP. MONITORING SYSTEM	01ND.
272	FEED THROUGH PLATE FOR FIBRE OPTIC SENSORS	01ND.
273	PRE STRESSED NON RETURN VALVE FOR NIPPS IN CONSERVATOR PIPE WORK	01ND.
274	VALVE FOR NITROGEN INJECTION (25 NB GATE)	06NDS.

TABLE OF FITTINGS		
ITEM NO.	DESCRIPTION	QTY.
2	COMBINED RATING & DIAGRAM PLATE (HINDI & ENGLISH)	01ND.
2b	VALVE SCHEDULE PLATE	01ND.
2c	OIL FILLING INSTRUCTION PLATE	01ND.
2d	CAUTION PLATE FOR D.L.T.C	03ND.S.
2e	TERMINAL MAKING PLATE	10ND.S.
3	LIFTINGS BOLLARDS	04ND.S.
3a	LASHING LUGS	02ND.S.
4	EARTHING TERMINAL ON TANK	03ND.S.
6	H.V. BUSHING 245 KV, 1250 AMPS, 600 CT, DIP TYPE	01ND.
6a	H.V. NEUTRAL BUSHING 36 KV, 3150 AMPS. OIL COMMUNICATING TYPE	03ND.S.
6b	LV (TEERTERY) BUSHING 36 KV, 3150 AMPS. OIL COMMUNICATING TYPE	03ND.S.
7	1.V. BUSHING 145 KV, 1250 AMPS, 300CT, DIP TYPE.	1+1ND.
8	NAME PLATE (HINDI & ENGLISH)	17ND.S.
10	INSPECTION COVERS ON TANK, COVER & MAIN CONSERVATOR	01ND.
11	OIL FILLING HOLE ON CONSERVATOR FOR D.L.T.C	01ND.
12	MAGNETIC OIL GAUGE WITH LOW OIL LEVEL ALARM FOR MAIN CONSERVATOR	02ND.
12a	PRISMATIC OIL GAUGE FOR MAIN CONSERVATOR	01ND.
12b	DRAIN PLUG ON TANK, RADIATORS, PIPE WDK & OIL REVERSE FLOW STOPPING DEVICE	20ND.S.
13	DRAIN VALVE ON TANK (100 NB. B/F)	01ND.
14	DRAIN VALVE ON MAIN CONSERVATOR (50 NB. B/F)	01ND.
14a	DRAIN VALVE FOR D.L.T.C CONSERVATOR (15 NB.)	01ND.
15	OIL CONSERVATOR AIR CELL TYPE	01ND.
15a	D.L.T.C OIL CONSERVATOR FOR D.L.T.C.	01ND.
17	ONLINE TYPE MAINTENANCE FREE BREATHER FOR MAIN CONSERVATOR	01ND.
17a	MAINTENANCE FREE BREATHER FOR D.L.T.C CONSERVATOR	01ND.
18	THERMOMETER POCKETS WITH ORDINARY THERMOMETER ON TANK COVER & HEADERS (WITH CAPATIVE SCREW ON TOP)	1+4ND.S
19	JACKING LUGS	04ND.S.
21	DTI (150mm DIA. SIZE)	01ND.
22	WTI (150mm DIA. SIZE)	03ND.
23	ROLLER BI-DIRECTIONAL Ø 320 TWIN WITH STOPPER BRACKET ARRANGEMENT	04ND.S.
25	FILTER VALVE ON TANK & HEADERS (50 NB.)	2+4ND.
26	BUCHHOLZ RELAY (80NB)	02ND.S.
26a	OIL SURGE RELAY FOR D.L.T.C	03ND.
27	PRESSURE RELIEF DEVICE (150 NB)	02ND.S.
28	END COVER FOR MAIN & D.L.T.C CONSERVATOR	1+1ND.
43	33 KV, POST INSULATOR FOR HV NEUTRAL GROUNDING	2ND.S.
44	BILINGUAL COMPANY'S MONOGRAM CON TANK & MAIN CONSERVATOR)	1+1ND.
48	MOTOR DRIVING GEAR	01ND.
49	HAND OPERATING HANDLE	01ND.
50	ON LOAD TAP CHANGER WITH MOTOR DRIVING GEAR BOX	03ND.S.
57	MARSHALLING KIOSK FLOOR MOUNTED	01ND.
60	RADIATORS	14ND.S.
63	24" FAN WITH MOTOR AND MESH GUARD (4 NOS RUNNING + 1 STANDBY PER BANK)	10ND.S.
64	OIL PUMP & MOTOR (150NB) (1 NOS RUNNING + 1 STANDBY PER BANK)	04ND.S.
67	FLEXIBLE JOINT (150NB,80NB)	2+1ND.S.
70	FAN SUPPORT	02ND.S.

THE INFORMATION ON THIS DOCUMENT IS THE PROPERTY OF BHARAT HEAVY ELECTRICALS LIMITED. IT MUST NOT BE USED DIRECTLY OR INDIRECTLY IN ANY WAY DETRIMENTAL TO THE INTEREST OF THE COMPANY.

NOTES:-

1. WHEN REFERRING THIS DRG. STATE 200 MVA & W.D.NO.72313A17200
2. DIMENSIONS MARKED THUS ARE OVER ALL SHIPPING DIMENSIONS EXCLUSIVE OF PACKING.
3. PVC, SWA, PVC ARMURED CABLE WIRING UPTO MARSHALLING BOX ARE SUPPLIED BY BHEL, BUT NOT SHOWN IN THIS DRG. FOR CLARITY.
4. FOUNDATION BOLTS, NUTS & WASHERS ETC. ARE SUPPLIED BY BHEL.
5. OUT SIDE PAINTING SHALL BE TO SHADE 631 OF IS-5 PU PAINT.
6. HARDWORD SHALL BE HDG. M-12 & ABOVE AND DF. S.S. UP TO M-10

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

APPROVED

[Signature]

AE EE SE

ADDITIONAL INFORMATION	WO. 72313A17200
STATUS OF DRAWING	U

DISTRIBUTION OF PRINT
TRE-1, TRP-1,
BAY1&2-2, BAY9-4,


Y ELECTRICALS LTD
JHANSI

DRN	NAME	SLGN	DATE	NO. OF VAR
CHD	S.P.G		15.02.19	—
APPD	A.SINGH		15.02.19	—

INVENTORY NO.	SIGN & DATE
---------------	-------------

A									
		REV	DATE	ALTERED		REV	DATE	ALTERED	
				CHECKED				CHECKED	
8		7		6		5			

DISTRIBUTION OF PRINTS	
TRE-1, TRP-1, BAY1&2-2, BAY9-4,	
REV	DATE
	ALTERED CHECKED
4	

DEPT. RE		GRADE OF UN. TOL.	SCALE	WEIGHT (KG)	REF. TO ASSY. NO.	ITEM NO	NO. OF ITEM	REV.
CODE	406	DIM. $\frac{1}{4}$ "		—	1 463 00 50 036	—	—	—
TITLE					DRAWING NO.			
TABLE OF FITTING					1 463 00 50 036			
CARD CODE					SHEET NO. 02 NO. OF SHEETS 02			